

VAG FLOWJET

Automatic Air Valve for Wastewater



Operating and Maintenance Instructions



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1. General



1.1 Safety

These Operating and Maintenance Instructions must be observed and used together with the general 'VAG Valve Installation and Operating Instructions'.

You may not make any unauthorised changes to this product or the supplied modules. VAG is in no way liable for any consequential damages that are incurred by unauthorised changes.

When using this valve, the generally accepted technical rules (for example, DIN standards, ATV-DVWK Regulations, DVGW Worksheets, VDI Guidelines etc.) must be observed. Installations may only be carried out by qualified technical staff.

Additional technical details and information, such as dimensions, performance data, material and areas of application, can be found in the appropriate KAT-1917-A documentation.

1.2 Proper Use

VAG's PE air valve is used in wastewater. The standard version of the valve is suitable for ventilation and operational air release of pressurised pipelines at full operational pressure.

The corresponding technical operating limits (for example, ventilation performance, operating pressure, medium limits, temperature, etc.) can be found in the product-specific documentation (KAT-1917-A-).

Deviating operating conditions and areas of application must be approved by the manufacturer in writing.

2. Transport and Storage

2.1 Transport

The valve must be transported to its place of installation in sturdy, suitably sized packaging. The valve must be protected against climatic conditions and external damage.

If the transport is subject to climatic conditions (for example, transport by sea), the valve must be additionally protected by shrink wrapping and desiccant.

The protective coating applied at the manufacturing plant must be well protected.

2.2 Storage

The elastomer parts (gaskets) must be protected against direct sunlight as long-term sealing cannot be guaranteed otherwise.

The valve must be stored in a dry, well-ventilated area. Direct exposure to heat from radiators must be avoided.

The most important assemblies, such as the shut-off device with integrated gasket and the inner body, are protected from external impurities by protective caps that are applied at the manufacturing plant.

These protective caps must not be removed until the assemblies are installed.

3. Product and Function Description

3.1 Characteristics, Function Description

VAG's PE air valve for wastewater is built as a single-chamber that is directly actuated by the medium. It has the following three basic functions:

- Bleed large amounts of air when filling the pipeline
- Vent large amounts of air when emptying the pipeline
- Bleed smaller amounts of air under full operating pressure

3.2 Areas of Application

VAG's standard PE air valve uses NBR sealants and can be used for the following media:

- ⇒ Water, Raw water and cooling water, Urban wastewater, Media containing grease and oil, Mild acids and alkaline solutions

The inspection advice in Section 6.2, Inspection and Actuation Intervals, must be observed!
For deviating operating conditions and areas of application, contact the manufacturer.

3.3 Authorised and Unauthorised Mode of Operation



VAG's PE air valve is suitable for slop and wastewater.

The valve must not be subjected to extensive external force from station-side extensions as they can damage the valve due to overloading.

The maximum operating temperatures and operating pressures specified in the technical documents must not be exceeded. The closed VAG PE air valve may only be loaded up to its nominal pressure.

The maximum performance data for the ventilation function specified in technical datasheet KAT-1917-A must be observed when planning and dimensioning the pipeline.

4. Installation in a Pipeline

4.1 Station-side Requirements

The valve must be appropriately covered when carrying out dirt-generating activities, for example, painting, masonry and concrete work, in the vicinity of the valve.

4.2 Place of Installation

The place of installation must be such that there is enough space to subsequently control the valve's functions and carry out maintenance activities. See **Table 2** for the installation dimensions.

It is important that the inner parts requiring maintenance can be removed from the top of the body. A free space of at least 500 mm above the valve must be taken into account when planning the installation.

Valves that are installed in the open must be appropriately protected against extreme climatic conditions, such as icing over.

Valves that are installed in a shaft or building should be installed at the highest point of the pipeline.

4.3 Position of Installation

During assembly, ensure the valve is installed vertically. An angular position impacts the valve's function as the float cants in its leads.

For maintenance purposes, a maintenance valve (preferably a VAG ZETA knife gate valve) should be installed between the pipeline and the air valve. There should also be a possibility to release pressure.

4.4 Installation

The lapped flange connection enables the valves to be freely adjusted. Dimension b as displayed in **Table 2** must be observed when selecting the length of the connection screws.

Gaskets made of steel-reinforced rubber (NBR material) are recommended.

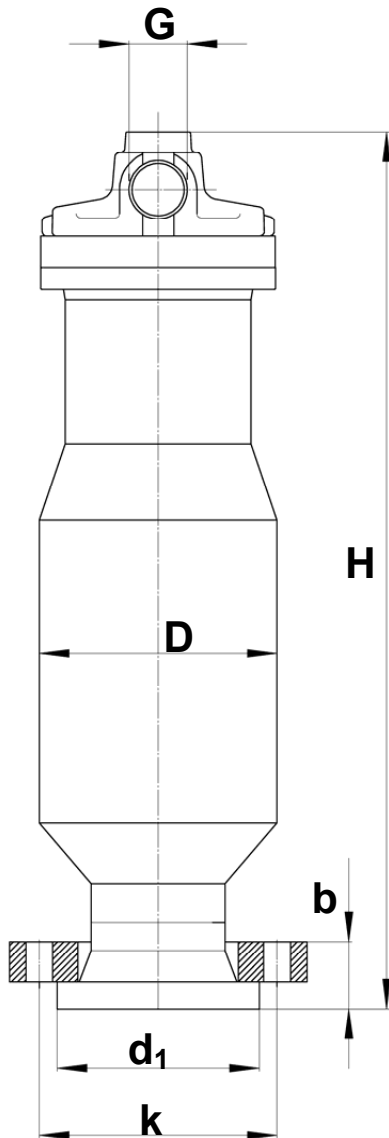


Figure 1: Installation dimensions

Table 2: Table of PE air valve dimensions

Dimensions in mm							
Nominal size	DN		50	80	100	150	200
Construction dimensions	H	ca.	646	590	590	690	690
	b		32	37	38	49	60
	d1		102	138	158	212	268
	k		125	160	180	240	295
	D		160	160	160	225	225
Flange drilling	Quantity		4	8	8	8	12
	Thread		M 16	M 16	M 16	M 20	M 20
Threaded connector DIN ISO 228	G	(Inches)	G 1 1/4"	G 1 1/4"	G 1 1/4"	G 2 1/2"	G 2 1/2"
Weight	Kg	ca.	8	9	10	24	26

Flange connection EN 1092-2 Pressure rating PN 16

5. Putting into Operation

5.1 Visual Inspection

The valve must be visually inspected for external damage that may have occurred during transport before it is installed.

The pipeline and the clamping collar must also be checked for impurities and cleaned if necessary.

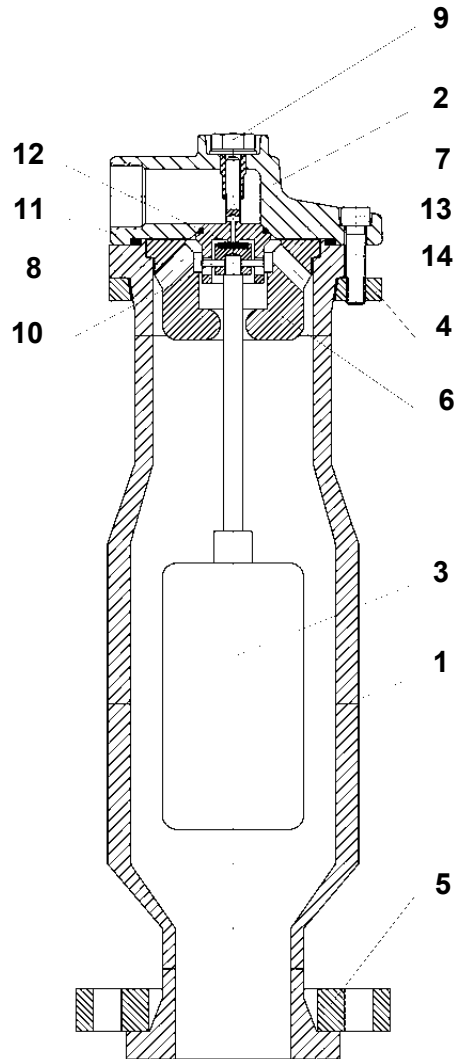


Figure 3: VAG PE Air Valve for Wastewater

5.2 Function Check

A function check must be carried out before the valve is installed in the station.

The float (3) must move freely in the body and the shut-off device (7) must move easily in the lead screw (9).

This check can be carried out without removing the valve. We recommend manually moving the float (3) upward (stroke approx 30 mm) in the body (at small opening distances with a rod) and visually checking the movability of the shut-off device (7) through the opening of the outlet in the bonnet (2).

After installation, the valve is slowly filled by slightly opening the maintenance valve. When the fill level has been reached, the float (3) is lifted and the shut-off device (7) closes the valve. This process can be checked through the opening of the connection in the bonnet (2). The valve should then be leakproof.

The maintenance valve can now be fully opened.

6. Service and Maintenance

6.1 General Safety Advice



Before inspection and maintenance activities are carried out on the valve, the pressurised pipeline must be closed with the maintenance valve and the valve depressurised.

To relieve the pressure of the compressed air in the valve, the bonnet screws (14) must be evenly loosened in a criss-cross pattern until the compressed air escapes from the closed valve.

The bonnet screws can then be completely removed and the valve's inner parts removed from the top of the body.

Depending on the type and toxicity of the operating medium, all of the required safety regulations must be observed!!

Make sure the connections fit tightly and are leakproof after the maintenance activities have been completed and before putting the valve back into operation.

The individual steps that are carried out after the valve is first put into operation (see Section 5) must be carried out.

6.2 Inspection and Actuation Intervals

DVGW Worksheet W 392 recommends maintaining air valves at yearly intervals.

In our experience, the prevalent operating conditions and the degree of the medium's impurities are very different.

The operator must, therefore, determine the necessary maintenance intervals based on its experience.

For this reason, we recommend carrying out a first inspection after four weeks, and in the first year at least four inspections at equal intervals.

6.3 Maintenance Activities and Changing Parts

6.3.1 Checking for Impurities

Sedimentation must be cleaned from the inside of the body and the removed inner parts, for example, with a pressure washer.

6.3.2 Checking the Sealing Elements

The bonnet gasket (11), the O-ring (13) in the shut-off device (7) and the gasket (12) in the pressure piece (8) must be checked to make sure they are intact.

Remove the pin (10) to dismantle the shut-off device (7) and clean the inner area.

The parts are reassembled in the opposite sequence. In the event the gasket (12) no longer sticks tightly to the pressure piece (8), we recommend replacing it completely with a new part with a gasket that is glued on at the manufacturing plant as special glue with an activator must be used if this part is to stick properly.

6.3.3 Vent Hole

The vent hole in the shut-off device (7) is cleaned by blowing it out or by piercing.

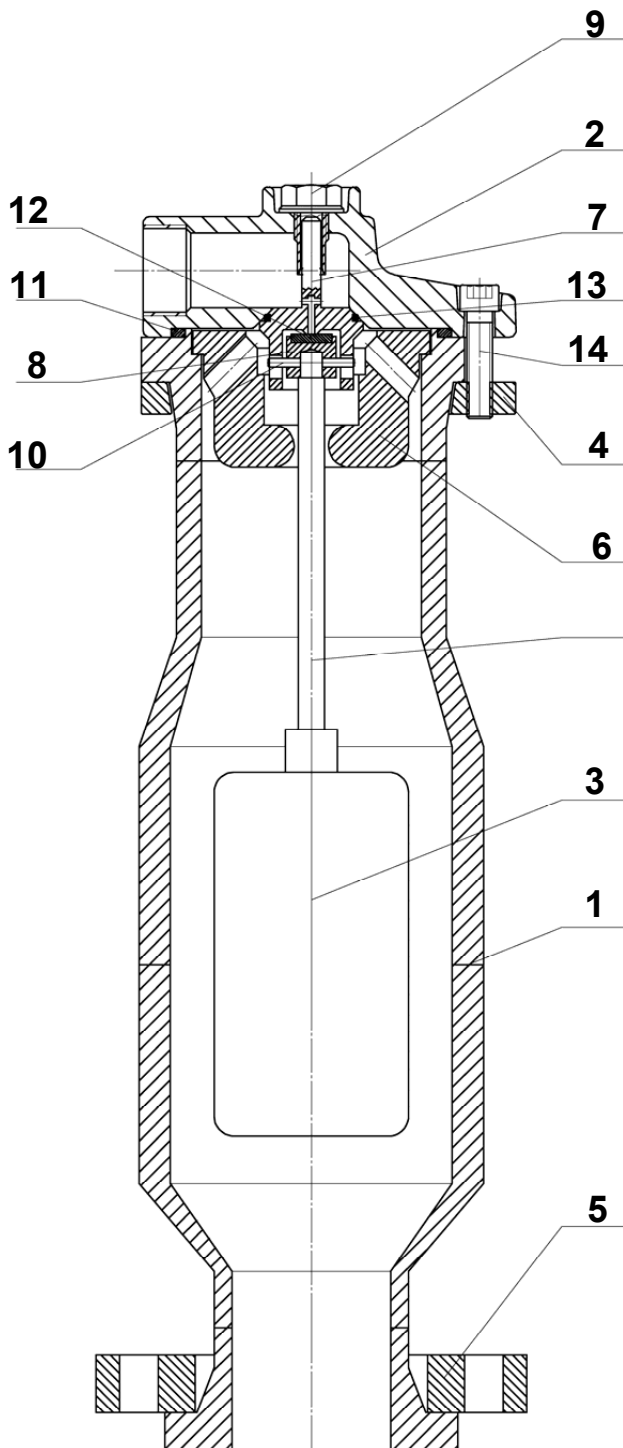
6.3.4 Checking the Float

The float (3) must first be visually checked for external damage. The tightness against infiltrating medium can be checked by shaking it to determine if there is fluid inside the float or by checking the immersion depth in water (must immerse by approx 50% and swim). Next, check the fixed connection between the float rod and the float.

6.3.5 Part Replacement Recommendations (See Table 4 - Parts list, Spare parts)

6.3.6 Assembly and Resuming Operation according to Section 5.2

6.3.7 Parts List and Recommended Spare Parts



Teil part	Benennung description	Werkstoff material	1)	2)
1	Gehäuse body	PE 100		
2	Deckel bonnet	EN-JS 1030		
3	Schwimmer floater	PE 100	●	
4	Deckelflansch flange	1.4301		
5	Losflansch lapped flange	Stahl / PP		
6	Kopfteil heading part	POM		
7	Ventilglocke shut-off-device	POM	●	●
8	Druckstück pressure piece	POM		●
9	Führungsschraube lead screw	1.4305		
10	Stift pin	PA		
11	O-Ring	NBR	●	
12	Dichtung gasket	NBR	●	●
13	O-Ring	NBR	●	●
14	Zylinderschraube cylindrical screw	A2-70		

1)...empfohlene Ersatzteile / recommended spare parts
 2)...Verschleißteile / part subject to wear

Table 4: Parts list and recommended spare part sets