

1. General

VAG valves are designed and manufactured to the state of the art and their operation is always safe.

However, valves may present certain hazards if their are used improperly or not for their intended purpose.

Everyone involved in the assembly, disassembly, operation and maintenance of valves at the operator's plant must have read and understood the complete Operating Instructions (UVV, VBG1 Sect 14 ff)

It is advisable for the user to have this confirmed in writing (UVV, VBG1 Sect. 7 Clause 2).

The pipeline section must be depressurised and all hazards must be eliminated before any protective devices are removed and/or work is performed on the valves. Lower the drop weight, if required.

Unauthorised, erroneous and inadvertent actuation as well as any hazardous movement caused by stored energy (compressed air, water under pressure etc.) must be prevented). For the use and operation of valves the generally accepted engineering rules, such as DIN Standards, DVGW Codes of Practice, VDI Guidelines, VDMA Standard Sheets must be observed.

In case of plants subject to monitoring, the relevant laws and regulations, such as the Industrial Code, the Accident Prevention Regulations, Steam Boiler Regulations, AD Codes of Practice must be complied with.

Additionally, the local Accident Prevention Regulations apply.

2. Identification + Field of Application

According to DIN EN 19, all valves are provided with an identification specifying the nominal diameter (DN), the nominal pressure (PN), the body material, the manufacturer's logo and, if required, with an arrow which shows the flow direction.

For the field of application and operation limits, the enclosures to our quotations as well as the respective operation and maintenance instructions must be observed. They can be downloaded at www.vag-group.com.

3. Installation

The installation of valves immediately downstream of pump pressure pipe joints, upstream and downstream of elbows, Y-filters, T-pieces or butterfly valves and plunger valves is to be avoided.

The required damping zones of at least 5 x DN upstream and 5-8 x DN downstream of the valve need to be observed. If these distances are not complied with, turbulent flow may cause disturbances in the system.

For non-return valves, the minimum flow velocity specified in the technical data sheets must be observed.

All valves should be stored in a dry place and be protected against dirt and damage.

Do not remove the protective covers until immediately prior to installation of the valve. Before installation, clean the passage and check the sealing surfaces wherever possible. When installing control valves and non-return valves, observe the flow direction.

When installing a valve, make sure that the seals at the connection flanges are centered and that

the flanges of the pipeline connected are aligned axially and in parallel with each other.

Flange bolts need to be fastened crosswise using a uniform torque. For the installation of powder-coated valves, washers must be placed under the connection bolts to the pipeline flanges for protection.

When installing wafer-type butterfly valves:

VAG CEREX®300-W,

VAG CEREX®300-L

with profiled seals, no additional flange gaskets must be used. The connection to FLEXINOX® is not possible.

For the welding-in of plastic valves, e.g. VAG HYDRUS® PE Hydrants, special regulations must be complied with.

When laying the pipeline make sure that the valve body is not exposed to any harmful forces from the pipeline.

If construction work is being performed close to or above the valve, the valve must be covered to protect it from dirt caused by the construction work.

In case of buried installation of the valve, make sure that the pipeline on both sides of the valve is properly bedded to prevent its subsiding in the area where the valve is installed and the resulting bending stress.

Do not use the valve as the anchor point of the pipeline.

When valves are painted over, stems, stuffing boxes, the knife of the VAG-ZETA®Knife Gate Valve, position indicators and identification labels must not be painted over. If the plant is sand-blasted for cleaning purposes, the parts need to be covered appropriately. If solvents are used for cleaning, it needs to be ensured that no solvents can penetrate into stuffing boxes, the stem or shaft seal or between the connection flanges to the pipeline as they would destroy the seals and gaskets.

4. Commissioning and operation

Before putting new plants into operation and in particular after repair work has been performed, the pipeline system needs to be purged with the valve completely open. In case of control valves, a screen with a suitable mesh size should be installed upstream of the valve to prevent the accumulation of dirt inside the valve. In doing so, it needs to be ensured that the valve materials are not damaged. As a standard, the valve is closed by turning in clockwise direction.

The dimensions of the stems and actuators allow the valve to be operated by one person using the hand lever, the handwheel or a T-key. Extensions for actuation are prohibited and may damage the valve due to excessive loads. Valves with a 90° turn, e.g. butterfly valves, have a limit stop on the hand lever and/or on the gear unit. Forcibly turning the lever or gear beyond that point may result in a break. Proper function of the valve should be checked by opening and closing it several times. For pressure tests, the pressure applied to the closed valve must not exceed its nominal pressure.

In case of hot working pipelines, the cover bolts and gland nuts may have to be refastened evenly. Before refastening, the valve needs to be opened by about two turns.

Electrically actuated valves have to be switched in the following way:

Resilient seated gate valves:

"CLOSE" moment-dependent (the moment to be adjusted needs to be known),
"OPEN" path-dependent.

All other types:

"CLOSE" and "OPEN" moment-dependent.

5. Modes of operation

Do not exceed the maximum admissible temperature of the equipment.

Do not exceed the maximum admissible operating overpressure.

Do not load a close valve beyond the maximum admissible nominal pressure. Do not extend the control elements (e.g. with a lever).

6. Maintenance

We recommend operating valves over their entire stroke at least once per year

6.1 Safety instructions

Before dismantling the complete valve from the pipeline or before performing any repair or maintenance work, i.e.

- **before loosening** body connecting bolts, bonnets, covers, glands, plug bolts
- **before the disassembly** of directly mounted actuators

the valve must be depressurised and, in case of hot working pipelines, must be cooled down so that the fluid is below its vaporisation temperature. If poisonous or noxious media are conveyed, the valve must also be drained and ventilated.

6.2 Actuators

If actuators supplied with external energy (electric, pneumatic, hydraulic) have to be disassembled from the valve, the Safety Instructions under Section 6.1 must be complied with and the external source of energy must be switched off. Please remember that some valves are not self-locking! For the operation and maintenance of the different valve types, their operation and maintenance instructions must be complied with.