Installation, safety and maintenance instructions for gas valves

The gas valve type and date of manufacture are located on the gas valve's nameplate. If you have questions about the gas valve, please provide us with all of the information on the gas valve's nameplate.

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1. SAFETY REGULATIONS AND INSTRUCTIONS

These instructions must be provided before any work on or with the product, before installation and commissioning, before maintenance and repair work, and before any other use. Keep these instructions available for any future use and for any future owners.

These operating instructions must be read carefully before any work on or with the product. Observe and act in accordance with the following information and warnings to prevent hazards to persons or property or to avoid malfunctions.

The product documentation is to be regarded as part of the gas valve and must be included with the gas valve if the gas valve is sold or transferred.
This product documentation may and should be copied and distributed in order to provide information about risks and hazard avoidance.

1.1. Hazard levels for warnings

This product documentation uses the following hazard levels to indicate potentially hazardous situations and important safety regulations:

DANGER

Indicates an imminently hazardous situation which will result in serious injury or even death if the specified actions are not taken. Compliance with the instructions is imperative.

WARNING

Indicates a potentially hazardous situation which will result in serious injury or even death if the specified actions are not taken. Exercise extreme caution while working.

CAUTION

Indicates a potentially hazardous situation which will result in minor injury or damage to property if the specified actions are not taken.

NOTE

A potentially harmful situation can occur and, if not avoided, will lead to property damage.

1.2. Warranty and liability

No warranty or liability claims will be accepted for personal injury or property damage that is due to one or more of the following causes:

- Improper use of the gas valve
- Improper installation, commissioning, operation and maintenance of the gas valve
- Operation of the gas valve with defective safety equipment or with safety and protective equipment which is not properly attached or not fully functional
- Failure to comply with the safety and installation instructions
- Unauthorized structural modifications to the gas valve
- Inexpert repair work
- Force majeure
- Damage resulting from continued use in spite of defects
- Unsuitable fuels
- Defective supply lines

1.3. Personnel qualifications

The product is only to be transported, unpacked, operated, maintained and otherwise used by suitably qualified, trained and instructed technical staff (or by a qualified electrician).

1.4. Basic safety rules

The safety hazards associated with the gas valve must be carefully reassessed following installation in the end product. Commissioning of the end product may only take place following full verification of compliance with all relevant legal requirements, guidelines and application-related safety regulations (such as country-specific accident prevention regulations and technical rules). Note the following when working on the gas valve:

- The gas valve is not to be modified or converted and no attachments are to be fitted without the approval of ebm-papst Landshut.
- Observe the information in the operating instructions provided by the device manufacturer.

1.5. Voltage and current

Check the gas valve's electrical equipment at regular intervals. Replace loose connections and defective cables immediately.

DANGER

Electric charge on the gas valve

Electric shock possible.

→ Stand on a rubber mat when working on an electrically charged gas valve.

WARNING

When control voltage is applied, the gas valve's safety valves will open automatically, e.g. after a power failure.

→ When working on the gas valve, switch off the line voltage and ensure that it cannot be switched on again.

1.6. Electromagnetic radiation

NOTE

Electrical or electromagnetic interference after installing the gas valve in customer equipment.

→ Verify that the entire setup is EMC-compliant.

1.7. Deflagration

DANGER

Gas escaping through leaky housing after deflagration

Risk of fatal injury

→ After a deflagration, verify that the gas valve is gastight.
→ Replace leaking gas valves immediately.

1.8. Hot surface

CAUTION

Coils may become hot

There is therefore a risk of burns. Adequate contact protection must be ensured, for instance by installation in a device with housing.

1.9. Transport

NOTE

Transporting the gas valve

→ Transport the gas valve in its original packaging only.
→ To avoid damage (such as due to shifting loads), packaged gas valves must be adequately secured during transport.

1.10. Storage

- Store the gas valve, whether partially or fully assembled, in its original packaging in a clean, dry place protected from the weather.
- Protect the gas valve against environmental influences and dirt until final installation.
- We recommend storing the gas valve for no longer than one year in order to guarantee trouble-free operation and the longest possible service life.
- Maintain the specified temperature for storage.

1.11. Disposal

Comply with all relevant local requirements and regulations when disposing of the gas valve.

2. INTENDED USE

The gas valve is designed exclusively as a built-in device according to the technical specification. It is neither intended to function independently nor is it intended for transfer to end users.
Any other usage above and beyond this does not conform to the intended purpose and constitutes misuse of the gas valve.
The final manufacturer is responsible for the end product and must ensure that adequate safety measures are taken. Customer equipment must be suited to the mechanical, thermal and service life demands involved. The final manufacturer must verify the safety of all intended applications.

2.1. Intended use also includes

- Using the gas valve at the permitted ambient temperature
- Observance of the specification
- Starting up the built-in component only after installation in the customer equipment
- Operating the gas valve with all protective equipment
- Only conveying gases from gas families 1, 2 and 3 (according to the DVGW – German Technical and Scientific Association for Gas and Water – worksheet G260)
- Operating the gas valve in LPG equipment only at temperatures above 0 °C Only suitable for gaseous LPG; liquid hydrocarbons destroy the seal materials

2.2. Improper use

In particular, use of the gas valve in the following ways is prohibited and could be hazardous:

- Operating the gas valve in an environment that contains flammable gases or dust or combustible solids or fluids
- Contact with materials that could damage gas valve components, e.g. liquids or cleaning agents
- Contact with hardened masonry, concrete walls or floors
- Operation with protective equipment that has been completely or partially disassembled or tampered with
- Exposure to radiation which could damage gas valve parts, e.g. intense UV radiation
- Operation with external vibrations
- Operating the gas valve in an explosive atmosphere
- All other applications not listed as Intended uses

3. CONNECTION AND STARTUP

3.1. Mechanical connection

CAUTION

Cutting and crushing hazard when removing the gas valve from packaging

→ Lift the gas valve carefully out of its packaging, taking care to avoid jarring.
→ Wear safety shoes and, if necessary, cut-resistant safety gloves.

- Check the gas valve for transport damage. Damaged gas valves are not to be installed.
- Install the gas valve in accordance with your application.
- Use suitable fasteners for installation.
- Protect flange surfaces, tighten screws crosswise and ensure that installation is strain-free.
- On installation, provide support for the gas valve at the housing, e.g. using an open-ended wrench of appropriate size.
- Never use the servo pressure regulator or modulator as a lever.

DANGER

Gas leaks from poorly sealed gas valves
Risk of fatal injury

→ The gas supply must be shut off during work on the unit.
→ Before starting it, and after performing any work on it, verify that the gas valve and the gas lines are gastight.
→ Avoid open flame.

DANGER

Leaks may occur.

Deflagration is also a possible cause of long-term damage or housing deformation which may result in leaks. An air-gas mixture may accumulate outside of the gas valve. The device can explode. Severe injuries can result.
→ Determine which hazards arise from installing, operating, servicing or disposing of the gas valve in conjunction with your device.

Avoid any such hazards.
Carry out all necessary measures.

Safety measures if you smell gas

→ Avoid open flame and sparking (such as from switching lights and electrical devices on and off, including cell phones).
→ Open windows and doors.
→ Shut off the gas valve.
→ Warn residents and leave building.
→ From outside the building, inform the gas utility.

DANGER

Toxic gases may be released.

Adjustments to the offset and the main throttle affect the air-fuel ratio and thus the combustion quality. When starting up the unit and after maintenance work, check the settings and correct them if necessary. All settings are only to be made in accordance with the boiler/burner manufacturer's operating instructions.

CAUTION

The use of leak detector spray can lead to malfunctions. Leak detector spray may not come into contact with electrical contacts or get into the membrane opening on the gas valve.

3.2. Electrical hookup

DANGER

Voltage on the gas valve

Electric shock

→ Always connect a protective earth.
→ Check the protective earth.

DANGER

Faulty insulation

Risk of fatal injury from electric shock

→ Only use cables that satisfy the required insulation regulations with regard to voltage, current, insulation material, load rating, etc.
→ Route cables so that they cannot come into contact with rotating parts.

WARNING

Voltage, electric shock

The gas valve is a built-in component and has no isolating switch.

Metallic parts may be live.

→ Use the gas valve only with the cable guard intended for it.
→ Only connect the gas valve to electrical circuits that can be switched off with an all-pole disconnection switch.
→ When working on the gas valve, you must disconnect from the power supply the system/machine in which the gas valve is installed and ensure that it cannot be switched on again.

WARNING

Water ingress into wires or cables

Water ingress at the customer end of the cable can damage the gas valve.

→ Make sure the end of the cable is connected in a dry place.

Requirements

- Check whether the information on the nameplate matches the connection data.
- Before connecting the gas valve, make sure the power supply matches the device voltage.
- Only use cables designed for the current level indicated on the nameplate.

3.3. Plug connection of gas valves

3.3.1. Preparing power cable for connection.

The cables, including the customer interface, are subject to the specifications for internal wiring.

Ensure conformity with applicable standards and check the degree of protection in the final product after installing the ebm-papst gas valve.

3.3.2. Making power supply connections

WARNING

Voltage

The gas valve is a built-in component and has no isolating switch.

→ Connect the gas valve to a suitable tripping unit.
→ Only connect the gas valve to electrical circuits that can be switched off with an all-pole disconnection switch.
→ When working on the gas valve, you must ensure that the system/machine in which the gas valve is installed cannot be switched on again.
→ Do not reach into the opening – risk of injury! Protective earth must be connected.
→ Caution, metallic parts may be live. You may need to disconnect the power supply.
→ In the device, the gas valve must be protected by a fuse, safety temperature limiter, overcurrent release or the like.
→ For equipment protection according to DIN EN 60335-1, a fuse rated for no more than 16 A must be installed upstream in the power supply line.

- Check your connector's pin assignment.
- Connect the built-in connector with the mating connector.
- Ensure that the connector is properly engaged.

3.4. Checking electrical hookup

- Ensure safe isolation from supply (all phases). Secure the gas valve from being switched on again.
- Verify that the mating connector is properly engaged with the built-in connector.
- Verify that the mating connector is correctly attached to the cable.

3.5. General – switching on the device

- Before switching it on, check the gas valve for outwardly visible damage and verify that the protective equipment is functional.
- Apply the nominal supply voltage.

3.6. General – switching off the device

To switch off the gas valve during operation and for maintenance work:

- Disconnect the gas valve from the power supply.
- When disconnecting, be sure to disconnect the ground connection last.

4. MAINTENANCE

- Do not perform any repairs on the gas valve. Send the gas valve to ebm-papst for repair or replacement.
- Always use new seals after removal/replacement of parts.
- It is essential to replace safety-related components at the end of their service life
- ebm-papst stipulates replacement of the gas valve after 10 years or 500,000 switching cycles.
  (VHB – www.vhb-controls.org/positionspapiere)

WARNING

This is a negative pressure regulated gas control.

The gas valve is a built-in component and has no isolating switch.

→ Replace only with the same model number.
Carbon monoxide poisoning, fire or explosion could result from improper control replacement.