

Type 5406 / DN 6, DN 13, DN 20

Safety shut-off device

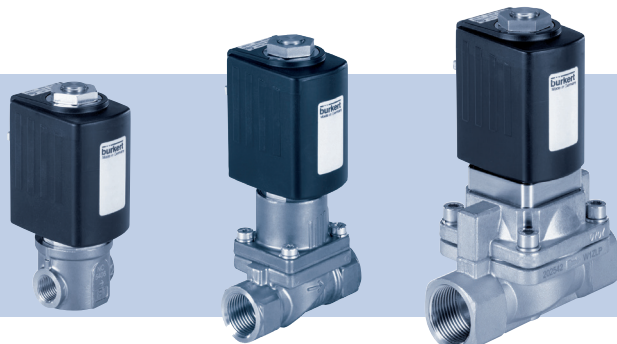
Sicherheitsabsperreinrichtung

Dispositif d'arrêt de sécurité

TÜV certified according to DIN EN ISO 23553-1

TÜV-geprüft nach DIN EN ISO 23553-1

Contrôle TÜV selon DIN EN ISO 23553-1



Operating Instructions

Bedienungsanleitung

Manuel d'utilisation

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1 OPERATING INSTRUCTIONS

The operating instructions describe the entire life cycle of the device. Keep these instructions in a location which is easily accessible to every user and make these instructions available to every new owner of the device.

The operating instructions contain important safety information!

Failure to observe these instructions may result in hazardous situations.

► The operating instructions must be read and understood.

2 SYMBOLS

In these instructions, the following symbols are used.



DANGER!

Warns of an immediate danger!

- ▶ Failure to observe the warning may result in a fatal or serious injury.



WARNING!

Warns of a potentially dangerous situation!

- ▶ Failure to observe the warning may result in a serious or fatal injury.



CAUTION!

Warns of a possible danger!

- ▶ Failure to observe the warning may result in medium or minor injury.

NOTE!

Warns of damage to property!



Important tips and recommendations.

→ designates a procedure which you must carry out.

3 AUTHORIZED USE

Non-intended use of the safety shut-off device Type 5406 may be a hazard to people, nearby equipment and the environment.

- ▶ The device, which controls the supply of heating oil to a burner, was specifically designed for furnaces.
- ▶ Use according to the authorized data, operating and service conditions specified in the contract documents and operating instructions. These are described in the chapter on „[Technical Data](#)“.
- ▶ Bürkert valves must not be used in combination with valves from other manufacturers.
- ▶ Correct transportation, storage and installation, and careful use and maintenance are essential for reliable and faultless operation.
- ▶ The valve 5406 may be used exclusively in the flow of a firing plant.
- The safety shut-off device is designed for heating oils DIN 51603 Part 1-6 with viscosity 1.6 - 76 cST. The use of other media is not permitted without a prior agreement with the Bürkert sales office.

4 BASIC SAFETY INSTRUCTIONS

These safety instructions do not make allowance for any

- contingencies and events which may arise during the installation, operation and maintenance of the devices.
- local safety regulations – the operator is responsible for observing these regulations, also with reference to the installation personnel.



DANGER!

Danger – high pressure!

- ▶ Before loosening the lines and valves, turn off the pressure and vent the lines.

Risk of electric shock!

- ▶ Before reaching into the system, switch off the power supply and secure to prevent reactivation.
- ▶ Observe applicable accident prevention and safety regulations for electrical equipment!

Risk of burns due to hot surface of the device!

- ▶ Do not touch the device with bare hands.



WARNING!

Risk of injury due to malfunction of valves with alternating current (AC).

Sticking core causes coil to overheat, resulting in a malfunction.

- ▶ Monitor process to ensure function is in perfect working order!



WARNING!

Risk of injury due to impaired function after external fire.

- ▶ After an external fire, check the equipment and safety shut-off device.
- ▶ If there is visible damage, replace safety shut-off device!



WARNING!

Risk of short-circuit/escape of media through leaking screw joints.

- ▶ Ensure seals are seated correctly!
- ▶ Carefully screw together coil and device socket or valve and connection plate!



General Hazardous Situations.

To prevent injuries:

- ▶ Ensure that the system cannot be activated unintentionally.
- ▶ Installation and maintenance work may only be carried out by authorized technicians with the appropriate tools.
- ▶ After an interruption in the power supply, ensure that the process is restarted in a defined or controlled manner.
- ▶ The device may be installed and operated only when in a perfect condition and in consideration of the operating instructions for the valve and furnace.
- ▶ Do not put any loads on the valve (e.g. by placing objects on it or standing on it).
- ▶ Do not make any external modifications to the valves. Do not paint the body parts or screws.
- ▶ The general rules of technology must be observed for application planning and operation of the device.



Failure to observe this operating manual and its operating instructions as well as unauthorized tampering with the device release us from any liability and also invalidate the warranty covering the device and accessories!

5 TECHNICAL DATA



The following values are indicated on the type label:

- Ambient and medium temperature, voltage ¹⁾ (tolerance $\pm 10\%$), kind of current, pressure

¹⁾ If used in combination with a return flow valve connected electrically in series, the voltage value on the type label is half the respective mains voltage.

Materials

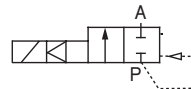
Housing:	DN 6, DN 13: Brass DN 20: Stainless steel
Seat seal:	PTFE (E)
Housing seal:	FKM (F)
Coil jacket:	Epoxy

Media

Heating oils DIN 51603 Part 1-6 at a viscosity
1.6 ... 76 cST (other media by arrangement with the Bürkert sales office)

Operating principle 2/2-way valve

A (NC)



Protection class: IP65 in accordance with EN 60529 with authorized device socket in accordance with DIN 175301-803

5.1 Type label

5.1.1 Standard type label

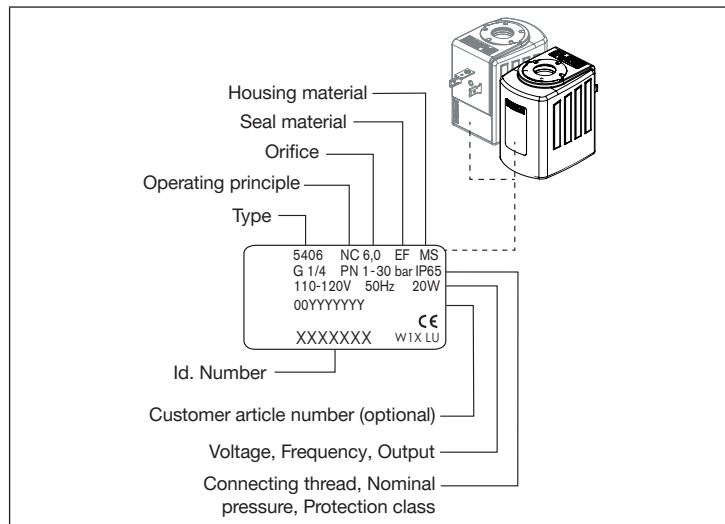


Fig. 1: Location and description of the type label

5.1.2 Type label approval (depending on version)

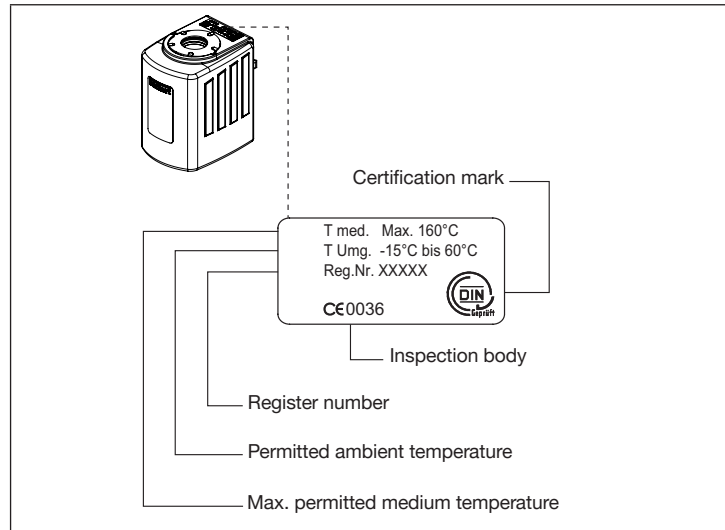


Fig. 2: Location and description of the additional plate

6 INSTALLATION

6.1 Safety instructions



DANGER!

Risk of injury from high pressure in the system!

- ▶ Before loosening the lines and valves, turn off the pressure and vent the lines.

Risk of injury due to electrical shock!

- ▶ Before reaching into the system, switch off the power supply and secure to prevent reactivation!
- ▶ Observe applicable accident prevention and safety regulations for electrical equipment!



WARNING!

Risk of injury from improper installation!

- ▶ Installation may only be carried out by authorized technicians with the appropriate tools!

Risk of injury from unintentional activation of the system and an uncontrolled restart!

- ▶ Secure system from unintentional activation.
- ▶ Following assembly, ensure a controlled restart.

6.2 Before Installation

Installation position:

Installation can be in any position.

Preferably: Drive at the top.

→ To ensure that the safety shut-off device functions reliably, check the pipelines for dirt and clean if required.

Dirt filter:

- For orifice DN 6: A dirt filter is installed in the valve inlet.
- For orifices DN 13 and DN 20:
A dirt filter ($\leq 500 \mu\text{m}$) must be installed before the valve inlet (see „Fig. 3“).

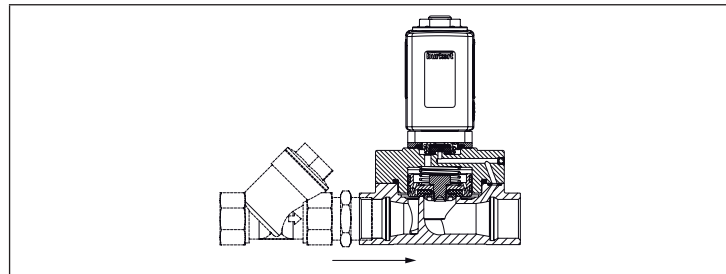


Fig. 3: Installation of the dirt filter

6.3 Installation

- Clean pipelines.
- Only use new seals.
- Hold the device with a suitable tool (open-end wrench) on the housing and screw into the pipeline.
- Observe direction of flow:
From 1 → 2 (from P → A) or direction of arrow on the housing.

NOTE!

Caution risk of breakage!

- Do not use the coil as a lifting arm.

6.4 Connecting the device socket to the power supply



WARNING!

Risk of injury due to electrical shock!

- ▶ Before reaching into the system, switch off the electrical power supply and secure to prevent reactivation!
- ▶ Observe applicable accident prevention and safety regulations for electrical equipment!

If the protective conductor contact between the coil and housing is missing, there is danger of electrical shock!

- ▶ Always connect protective conductor.
- ▶ Check electrical continuity between coil and housing.

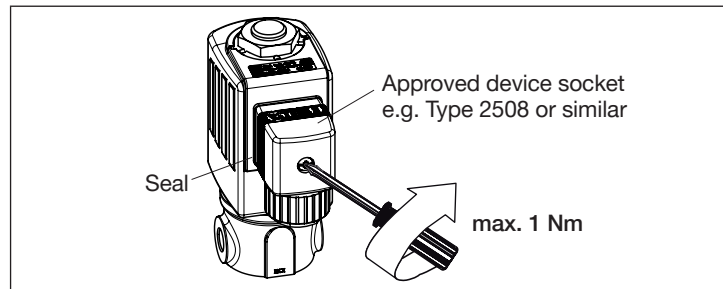


Fig. 4: Connecting the device socket to the power supply

7 MAINTENANCE AND REPAIRS

7.1 Safety instructions



DANGER!

Risk of injury from high pressure in the equipment!

- ▶ Before loosening the lines and valves, turn off the pressure and vent the lines.

Risk of injury due to electrical shock!

- ▶ Before reaching into the system, switch off the power supply and secure to prevent reactivation!
- ▶ Observe applicable accident prevention and safety regulations for electrical equipment!

Risk of injury from improper repair work!

- ▶ Maintenance may only be carried out by authorized technicians with the appropriate tools!

Risk of injury from unintentional activation of the system and an uncontrolled restart!

- ▶ Secure system from unintentional activation.
- ▶ Following maintenance, ensure a controlled restart.

7.2 Installation of coil



WARNING!

Escaping medium!

When a sticking nut is loosened, medium may escape.

- ▶ Do not tighten sticking nut any further.

Electric shock!

If the protective conductor contact between the coil and housing is missing, there is danger of electrical shock!

- ▶ During installation insert the plastic ring (optional) into the housing journal. The plastic ring must not project over the octagonal nipple.
- ▶ Check protective conductor contact after installing the coil.

Overheating, risk of fire!

Connection of the coil without pre-assembled valve will result in overheating and destroy the coil.

- ▶ Connect the coil with pre-assembled valve only.

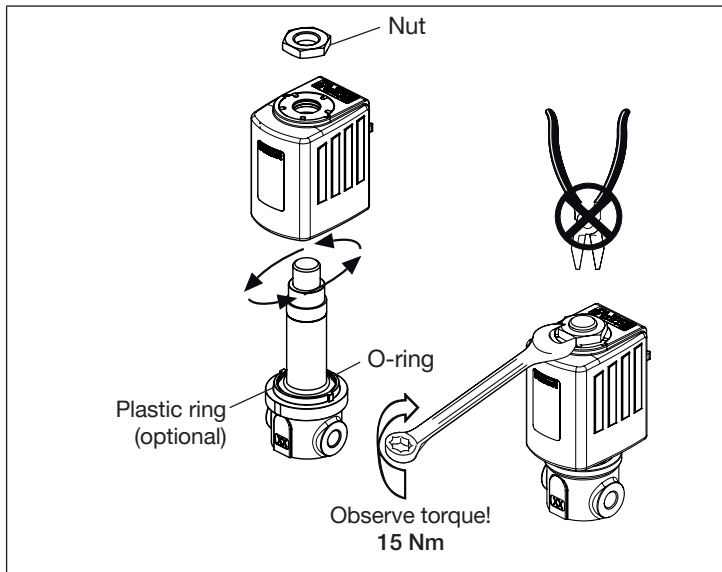


Fig. 5: Coil installation

The rotational position of the coil on the valve housing is arbitrary.

8 MALFUNCTIONS

If malfunctions occur, check whether:

- the device has been installed according to the instructions (correct direction of installation),
- the connection has been made properly,
- the device is not damaged,
- all screws have been tightened,
- the voltage and pressure have been switched on,
- the pipelines are clean.

If the magnet is not attracting

Possible causes:

- Short circuit or coil interrupted,
- Core or core area dirty.

After occurrence of an external fire

- After an external fire, check the equipment and safety shut-off device.
- If there is visible damage, replace safety shut-off device.

9 SPARE PARTS



CAUTION!

Risk of injury and/or damage by the use of incorrect parts!

Incorrect accessories and unsuitable spare parts may cause injuries and damage the device and the surrounding area.

- ▶ Use original accessories and original spare parts from Bürkert only.

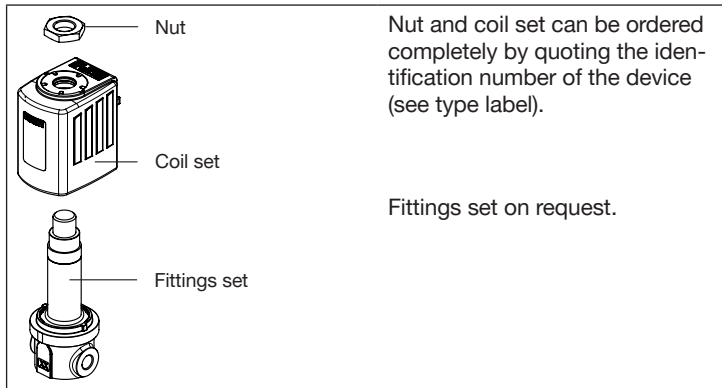


Fig. 6: Spare parts

10 PACKAGING, TRANSPORT, STORAGE, DISPOSAL



CAUTION!

Risk of injury due heavy devices!

- ▶ During transport or during assembly, a heavy device may fall and cause injury.
- ▶ Do not transport, install or remove heavy devices without the aid of a second person and using suitable auxiliary equipment.
- ▶ Use appropriate tools.

NOTE!

Transport damages!

Inadequately protected equipment may be damaged during transport.

- During transportation protect the device against wet and dirt in shock-resistant packaging.
- Avoid exceeding or dropping below the allowable storage temperature.

Incorrect storage may damage the device.

- Store the device in a dry and dust-free location!
- Storage temperature. -30 ... +80 °C.

Damage to the environment caused by device components contaminated with media.

- ▶ Dispose of the device and packaging in an environmentally friendly manner.
- ▶ Observe applicable regulations on disposal and the environment.
- ▶ Observe national waste disposal regulations.

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