

Type 5407

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



1 OPERATING INSTRUCTIONS

The operating instructions contain important information.

- ▶ Read the operating instructions carefully and follow the safety instructions in particular, and also observe the operating conditions.
- ▶ Operating instructions must be available to each user.
- ▶ The liability and warranty for the device are void if the operating instructions are not followed.

1.1 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 instructions to avoid danger.
- designates a procedure which you must carry out.

2 AUTHORIZED USE

Non-intended use of the safety shut-off device Type 5407 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 and is approved in accordance with DIN EN ISO 23553-1.
- 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“.
- Burkert 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 type 5407 may be used exclusively in the return of a firing plant in combination with a valve of type 5406 DN 20 in the flow. Follow installation instructions in chapter „7.3“.
- 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 Burkert sales office.

- Provided the following conditions are met, the valve can also be used for mixtures of EL heating oil and FAME (DIN (SPEC) 51603-6) / (EN 14214):
 - Only FAME fuels that comply with the specification according to EN 14214 or are comparable may be used.
 - In order to reduce effects such as deposit formation and fuel ageing, mixtures of EL heating oil and FAME should always be sufficiently additized. The additive manufacturer's specifications must be observed.

2.1 Definition of term

In these instructions, the term “device” always refers to the safety shut-off device type 5407.

3 BASIC SAFETY INSTRUCTIONS

These safety instructions do not make allowance for any contingencies and events which may arise during installation, operation and maintenance.



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.

Danger due to incorrect medium.

Non-approved media can impair the tightness and function of the valve.

- ▶ Only use media that are listed in the chapter „Technical data“.

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!

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!

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.
- ▶ Do not put any loads on the housing (e.g. by placing objects on it or standing on it).
- ▶ Do not make any external modifications to the device housings. Do not paint the housing parts or screws.

- ▶ 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.
- ▶ The general rules of technology must be observed for application planning and operation of the device.

3.1 Warranty

The warranty is only valid if the device is used as intended in accordance with the specified application conditions.

4 GENERAL INFORMATION

4.1 Contact address

Germany

Bürkert Fluid Control Systems
Sales Center
Chr.-Bürkert-Str. 13-17
D-74653 Ingelfingen
Tel. : +49 (0) 7940 - 10 91 111
Fax: +49 (0) 7940 - 10 91 448
E-mail: info@burkert.com

International

Contact addresses can be found on the final pages of the printed operating instructions.

And also on the internet at: www.burkert.com

4.2 Information on the Internet

The operating instructions and data sheets for Type 5407 can be found on the Internet at: www.burkert.com

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⁾The voltage value on the type label is half the respective mains voltage.

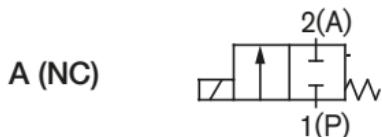
Materials

Housing: Stainless steel
Seat seal: PTFE
Housing seal: FKM
Coil jacket: Epoxy

Media

Heating oils (DIN 51603 Part 1 - 6) and mixtures of EL heating oil and FAME (DIN (SPEC) 51603-6) / (EN 14214) with viscosity: 1.6 ... 76 cST, other media by arrangement with the Burkert sales office

Operating principle 2/2-way valve



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

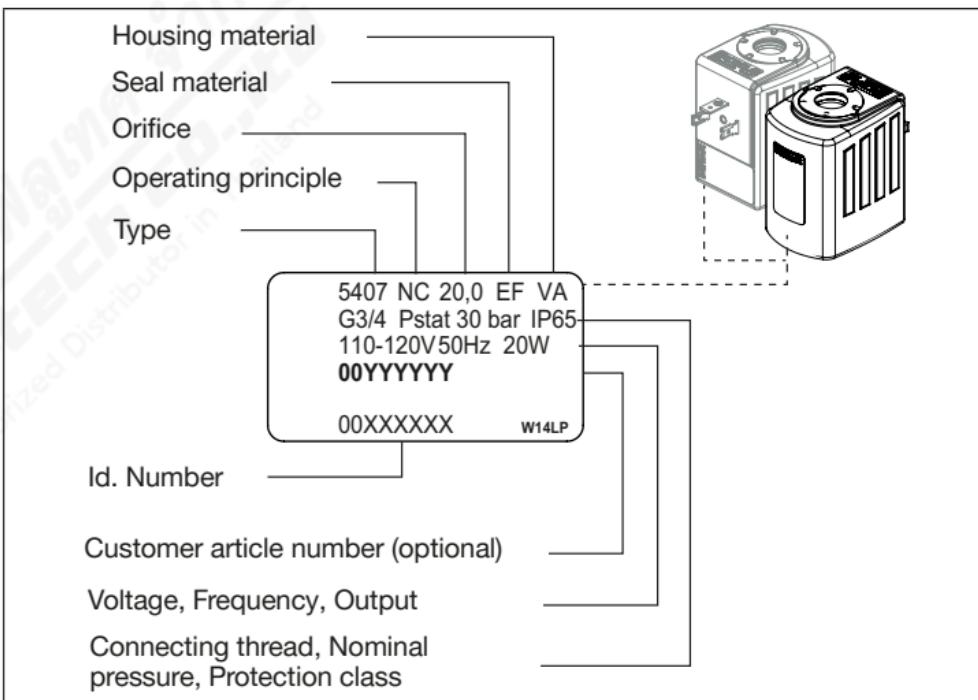


Fig. 1: Location and description of the type label

5.1.2 Type label approval

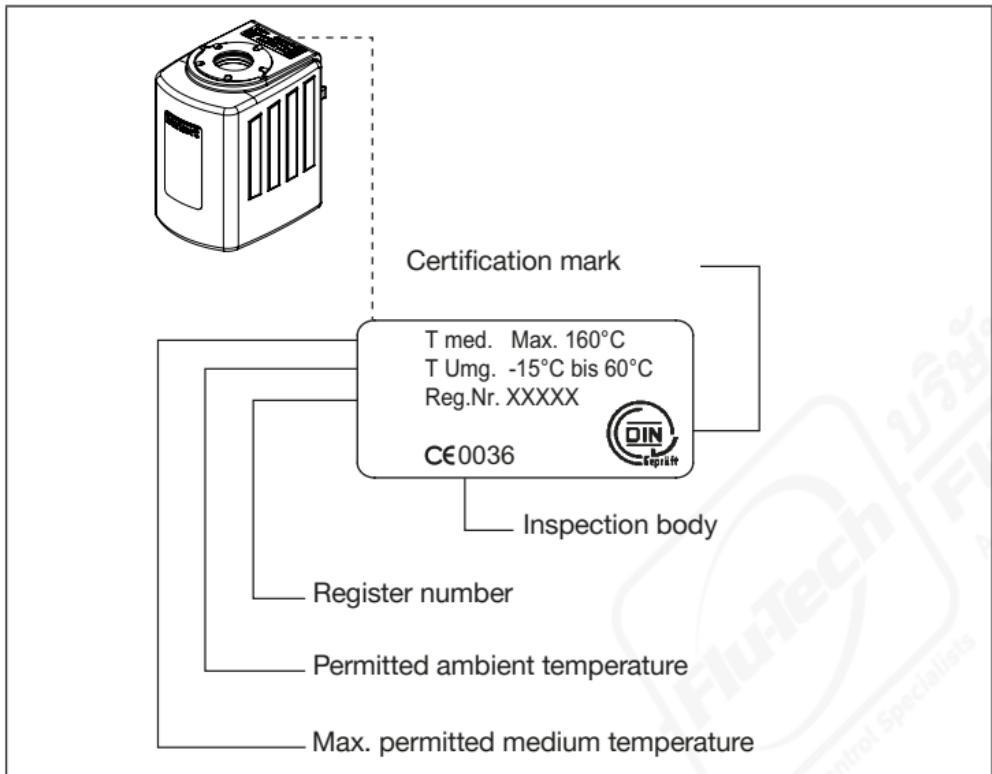


Fig. 2: Location and description of the additional plate

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.

- Prior to installation check pipelines for dirt and clean if necessary.

6.3 Installation

- Hold the device with a suitable tool (open-end wrench) on the housing and screw into the pipeline.
- Observe flow direction:
Direction of flow against direction of arrow on the housing.

NOTE

Caution risk of breakage!

- Do not use the coil as a lifting arm.

Pipelines soiled with sealing material may result in a malfunction!

- Do not seal pipe connections with hemp or PTFE tape.

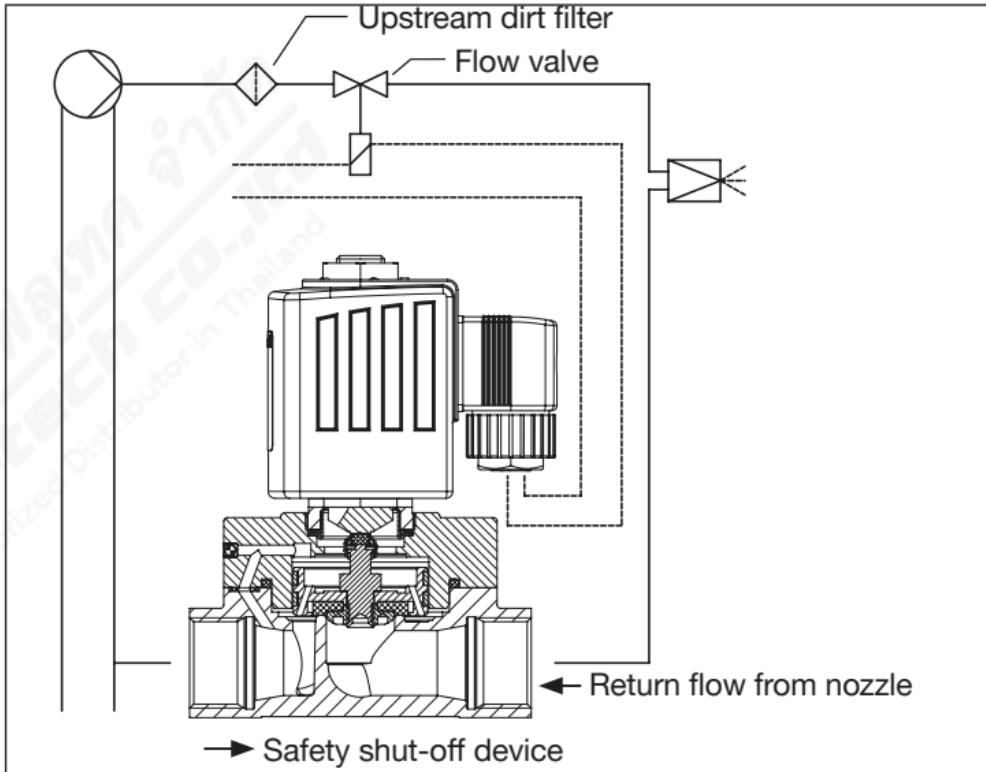


Fig. 3: Installation

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.

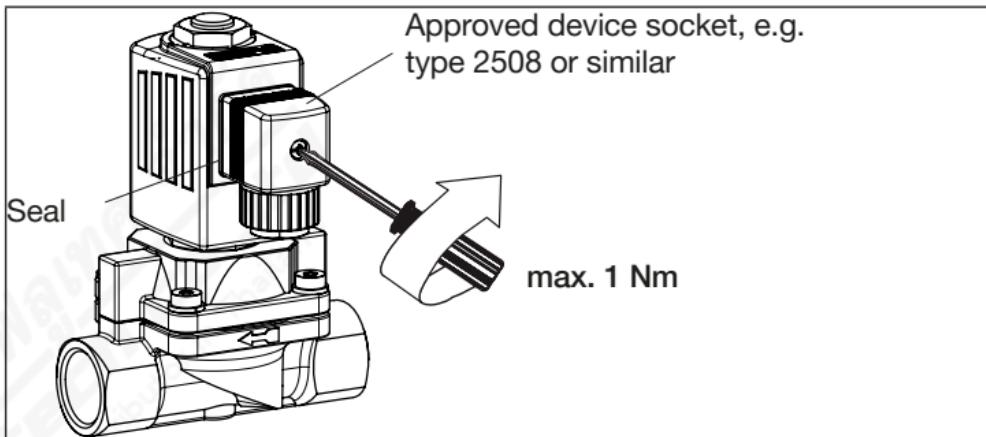


Fig. 4: Connecting the device socket to the power supply

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!

- 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.

7.2.1 Diagram of coil installation

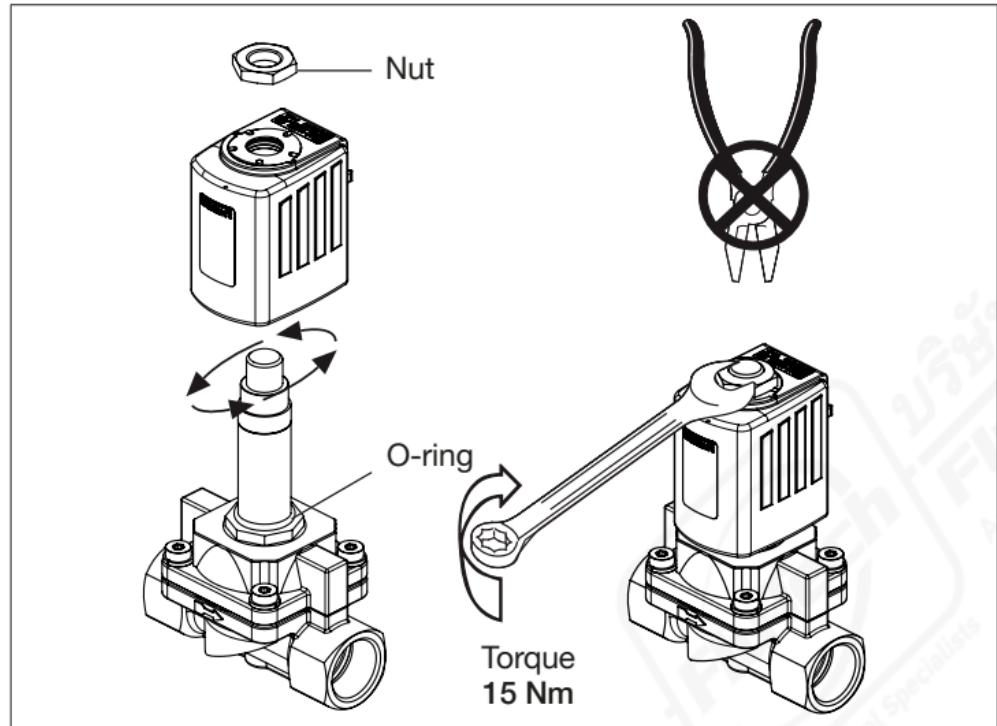


Fig. 5: Coil installation

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 Burkert only.

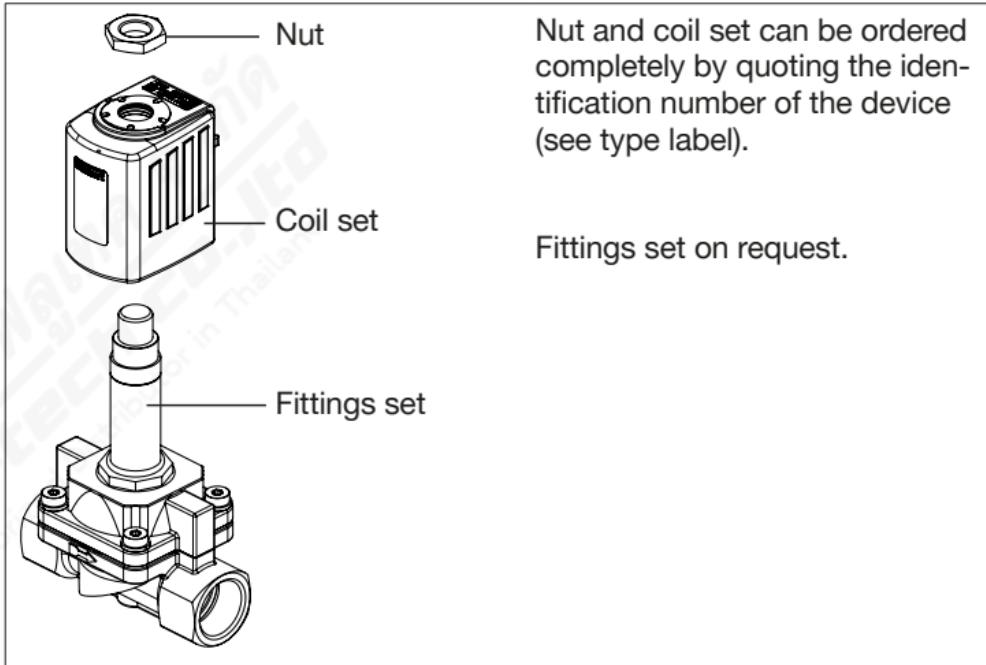


Fig. 6: Spare parts

Nut and coil set can be ordered completely by quoting the identification number of the device (see type label).

Fittings set on request.

10 TRANSPORT, STORAGE, DISPOSAL

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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