bürkert
FLUID CONTROL SYSTEMS

Type 7015, 7016

2/2- and 3/2-way solenoid valve
2/2- und 3/2-Wege-Magnetventil
L'électrovanne 2/2 et 3/2 voies

MAN 1000607866 EN Version: A Status: RL (released | freigegeben) printed: 27.06.2024

Operating Instructions

Bedienungsanleitung
Manuel d'utilisation

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We reserve the right to make technical changes without notice.
Technische Änderungen vorbehalten.
Sous réserve de modifications techniques.

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Operating Instructions 2401/00_EU-ML_00815464 / Original DE

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1 OPERATING INSTRUCTIONS

The operating instructions describe the entire life cycle of the device. Keep these instructions ready to hand at the operating site.

Important safety information.

- Read these instructions carefully.
- Above all, observe the safety instructions, intended use and usage conditions.
- Persons who work on the device must read and understand these instructions.

1.1 Symbols

DANGER

Warns of an immediate danger.

- Failure to observe will result in death or serious injuries.

WARNING

Warns of a potential danger.

- Failure to observe may result in death or serious injuries.

CAUTION

Warns of a potential danger.

- Failure to observe may result in moderate or minor injuries.

NOTE

Warns of damage.

- Failure to observe may result in damage to the device or the system.

Indicates important additional information, tips and recommendations.

Refers to information in these operating instructions or in other documentation.

▶ Designates instructions to avoid a danger.

→ Highlights a procedure which you must carry out.

1.2 Definition of terms

Term	in these instructions, refers to
Device	2/2 and 3/2-way solenoid valve type 7015 and 7016

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2 INTENDED USE

The 2/2 and 3/2-way solenoid valve, type 7015 and 7016 is designed for blocking, dosing, filling and ventilating neutral gaseous and liquid media.

- The device must only be used for its intended purpose. Improper use of the device may be dangerous to people, nearby equipment and the environment.
- Device must specifically be selected for the correct application.
- Device must be flushed and/or cleaned depending on the method and frequency of the area of use.
- Do not use the device outdoors.
- Observe the authorised data, and the operating and usage conditions of the respective devices or products. These specifications can be found in the contract documents, the operating instructions and on the type label.
- Use the device only in conjunction with third-party devices and components recommended and authorised by Bürkert.
- The device must only be used when in perfect condition; always ensure proper storage, transportation, installation and operation.

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3 BASIC SAFETY INSTRUCTIONS

These safety instructions do not take into account any unforeseen circumstances or events occurring during installation, operation and maintenance. The operator is responsible for observing the location-specific safety regulations, including staff safety.

Risk of injury due to high pressure in the system or device.

- Before working on the system or device, switch off the pressure and ventilate and empty the lines.

Risk of injury due to electric shock.

- Before working on the device or system, switch off the power supply and secure to prevent reactivation.
- Observe the applicable accident prevention regulations and safety regulations for electrical devices.

Risk of burns or fire from hot device surfaces due to prolonged operation.

- Keep the device away from highly flammable substances and media and do not touch with bare hands.

Risk of injury due to malfunction if used outdoors.

- Do not use the device outdoors and keep it away from heat sources that could cause the permissible temperature range to be exceeded.

General hazardous situations.

Ensure the following to prevent injuries:

- Use the device only when it is in perfect condition and in accordance with the operating instructions.
- Do not make any internal or external changes to the device and do not subject it to mechanical stress.
- Secure device or system to prevent unintentional activation.
- Make sure only trained technicians carry out installation and maintenance work.
- Install the valves according to the regulations applicable in the respective country.
- After an interruption in the power supply, ensure that the process is restarted in a controlled manner.
- Observe the general rules of the technical equipment.
- Only connect protection class III devices (without protective conductor) to SELV or PELV power sources.
- Only use cable plug for matching solenoid variant. Cable plug B must not be used for a protection class III device.
- If not otherwise specified, then type 7015 and 7016 have the flow direction below the valve seat. In principle, if the pressure is above the nominal pressure then it may lead to the valve opening.

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4 GENERAL NOTES

4.1 Contact address

Germany

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

International

The contact addresses can be found on the back pages of the printed Quickstart.
They are also available online at: country.burkert.com

4.2 Warranty

A precondition for the warranty is that the device is used as intended and that the specified usage conditions are taken into account.

4.3 Information online

Operating instructions and data sheets for Bürkert products can be found on the Internet at:
country.burkert.com

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5 PRODUCT DESCRIPTION

5.1 Product structure

Fig. 1: Device with flange connection

Fig. 2: Device with push-in connection

5.2 Functionality

The 2/2 or 3/2-way solenoid valve consists of a solenoid, a stopper set with a bayonet nut and a valve body. The valve body is connected with a bayonet catch. The valve seat is closed via spring action when the power is off. When the power is on, the core/magnetic core is opened against the spring force, therefore opening the valve seat.

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6 TECHNICAL DATA

6.1 Conformity

Conformities for the type 7015 and 7016 solenoid valve can be viewed on the Bürkert home page at www.country.burkert.com

6.1.1 Food and hygiene conformities

All devices encrypted with a PL code are assessed according to the corresponding manufacturer's declaration. These can be viewed on the Bürkert home page at www.country.burkert.com

The stated conformities exclusively concern the materials, not the construction of the devices.

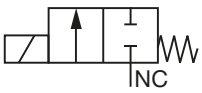
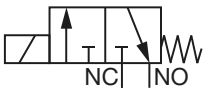
6.2 Operating conditions

Ambient temperature	see data sheet
Medium temperature	see data sheet
Media	neutral gaseous and liquid media that do not attack the body and seal materials, see resistance table at: www.country.burkert.com
Degree of protection	IP20

6.3 Mechanical data

Dimensions	see data sheet
Body material	see type label
Sealing material	see type label

6.4 Fluidic data

Type	Circuit function	Icon	Description
7015	A (NC)		2/2-way valve, direct-acting, closed in rest position
7016	C (NC)		3/2-way valve, direct-acting, normally closed

Pressure range	see type label
Port connections	see data sheet

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6.5 Electrical data

Solenoid dimensions	Solenoid 20 mm (SG2)	Solenoid 24.5 mm (SG3)
Ports	Flat-pin terminal as protection class III Stranded connection on request	Flat-pin terminal as protection class III
Operating voltage	see type label	see type label
Voltage tolerance	±3%	±3%
Nominal power	5 W	7 W
Nominal operating mode	100% duty cycle	100% duty cycle

6.6 Device identification

6.6.1 Type label

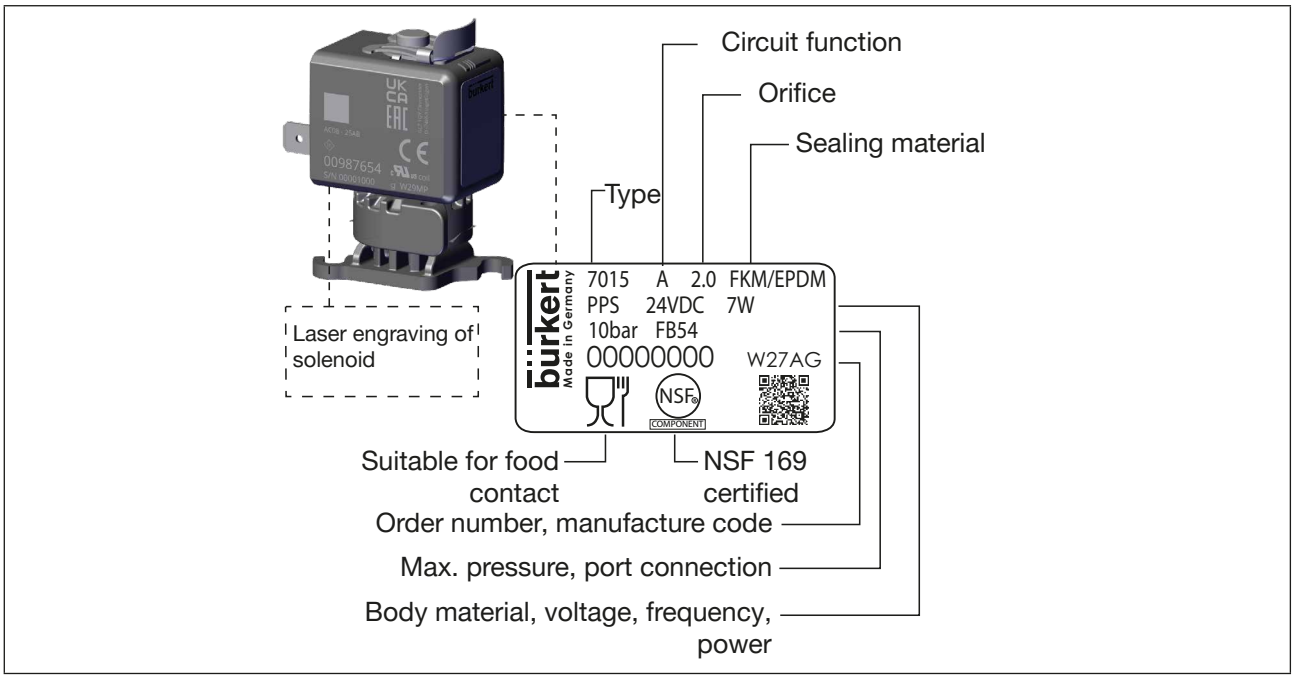

Fig. 3: Description of the type label (example)

6.6.2 Laser engraving of solenoid AC08

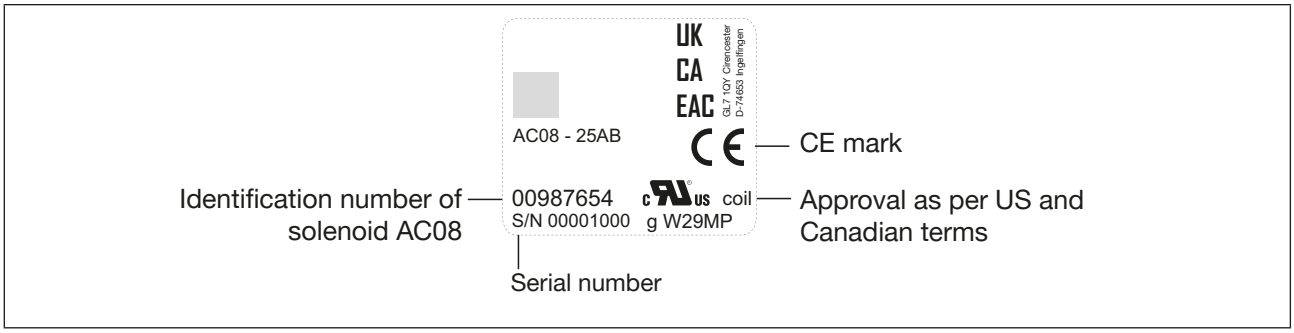

Fig. 4: Description of laser engraving on solenoid AC08

6.7 Approvals

6.7.1 cURus

All AC08 solenoids labelled with cURus are certified in accordance with US and Canadian terms.

Labelling of the solenoid is not necessarily linked with the approval of the valve.

6.7.2 NSF

All devices labelled with NSF are certified in accordance with NSF 169.

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7 INSTALLATION

DANGER

Risk of injury due to high pressure and escaping medium.

▸ Switch off the pressure before working on the device or system. Vent or drain the pipes.

Risk of injury due to electric shock.

▸ Switch off voltage before working on the device or system. Secure against reactivation.

▸ Observe the applicable accident prevention and safety regulations for electrical devices.

WARNING

Risk of injury due to improper installation.

▸ Only trained technicians may perform installation work.

Risk of injury due to unintentional activation of the system and uncontrolled restart.

▸ Secure the system against unintentional activation.

▸ Following installation, ensure a controlled restart.

Prior to installation:

→ Clean pipes and flange connections.

→ Install dirt trap with a machine width of 5 µm in front of the valve.

7.1 Create the fluidic connections to the device

Installation position: any, preferably solenoid facing upward.

Note the flow direction. Letters X and Y label the flow direction. Ports X and Y are the inlet and outlet in accordance with the device type label.

7.1.1 Install devices with push-in connection

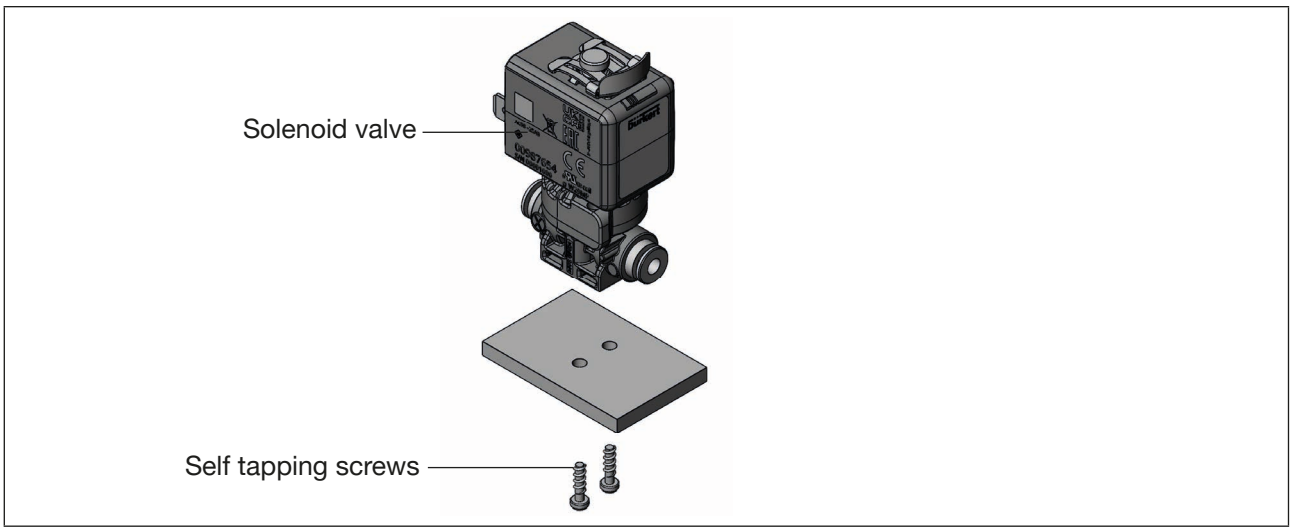

Fig. 5: Installation of devices with push-in connection

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→ Fasten device with self-tapping screws.

→ Insert hoses into push-in connections until they come to a stop. Make sure they are firmly in place.

7.1.2 Install devices with push-in connection with a fastening brace

The fastening brace is not included and can be ordered separately.

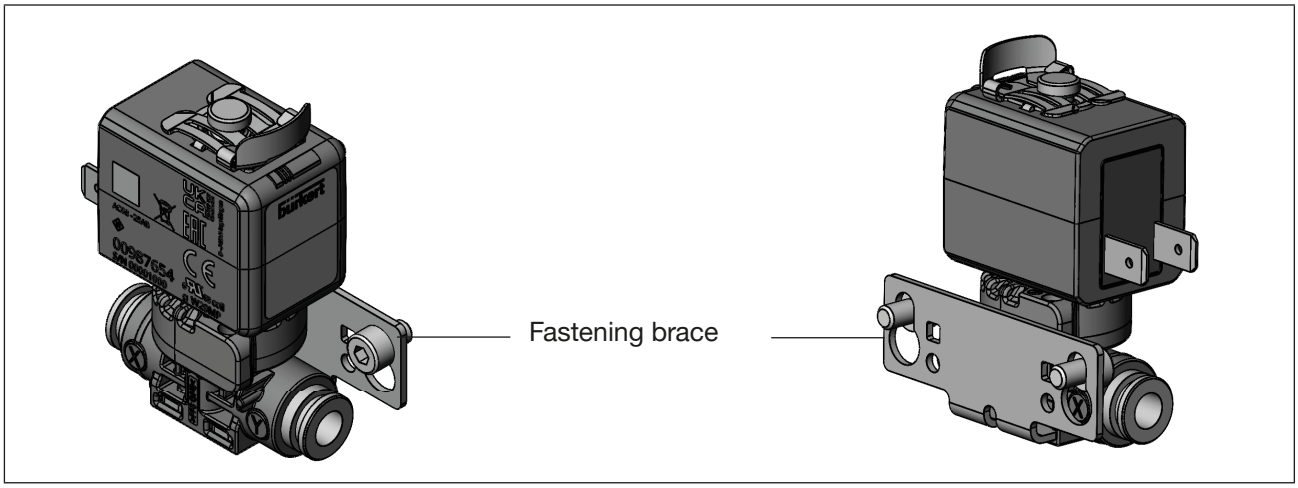

Fig. 6: Installation of devices with a fastening brace

→ Screw in the fastening brace.

→ Connect the push-in valve body fully via the fastening brace.
Solenoid valve can be pushed over (overhead, right or left) in any way.

7.1.3 Installation of devices with flange connection

WARNING

Risk of injury due to escaping medium.

- Ensure that the seals provided are in the correct position on the valve.
- Ensure that the manifold is level.
- Ensure sufficient surface quality of the manifold.

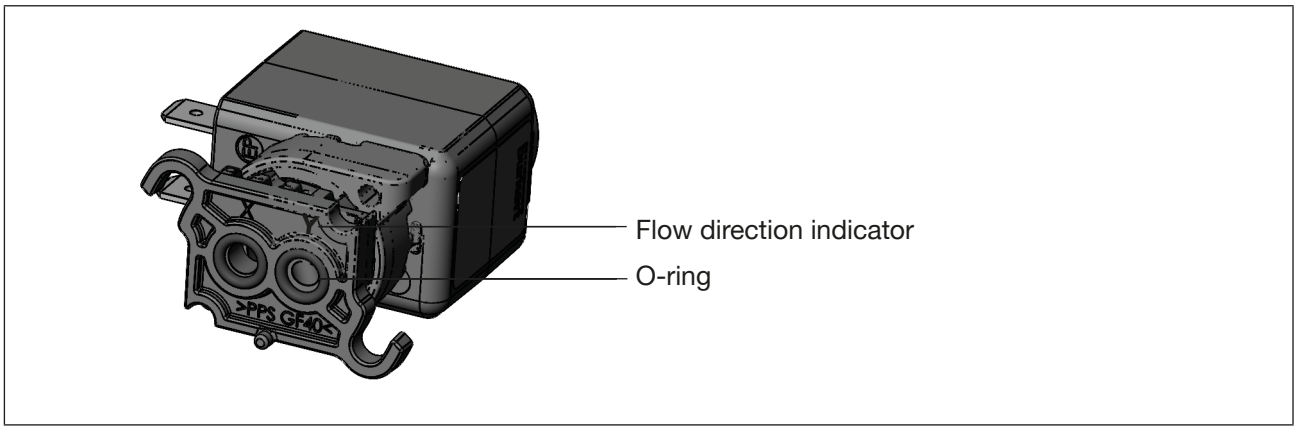

Fig. 7: Flow direction indicator on the device

→ Check O-rings position.

Follow the arrangement of the boreholes.

→ Attach the body and fasten with fastening screws. Observe tightening torque of max. 0.8 Nm.

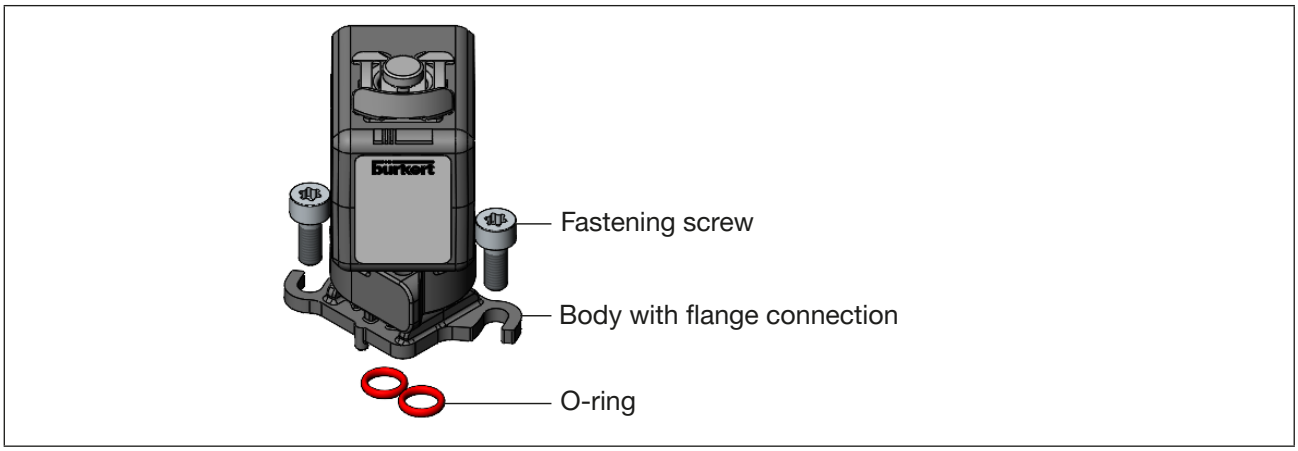

Fig. 8: Installation of devices with flange connection

7.2 Electrically connecting the device

WARNING

Risk of injury due to electric shock.

- Before working on the system or device, switch off the power supply and secure to prevent reactivation.
- Observe the applicable accident prevention regulations and safety regulations for electrical devices.
- Only connect protection class III devices (without protective conductor) to SELV or PELV power sources.
- Only use cable plug for matching solenoid variant. Cable plug B must not be used for a protection class III device.

→ Plug in flat connector.

→ Plug in cable plug.

→ Check electrical passage.

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7.3 Rotate the solenoid

WARNING

Risk of injury due to overheating or fire hazard.

Connecting the solenoid without first installing the armature will lead to overheating and will destroy the solenoid.

▸ Only connect the solenoid after the armature has been installed.

The solenoid can be rotated by 4 x 90°.

→ Rotate the solenoid in the desired direction as far as the locking point.

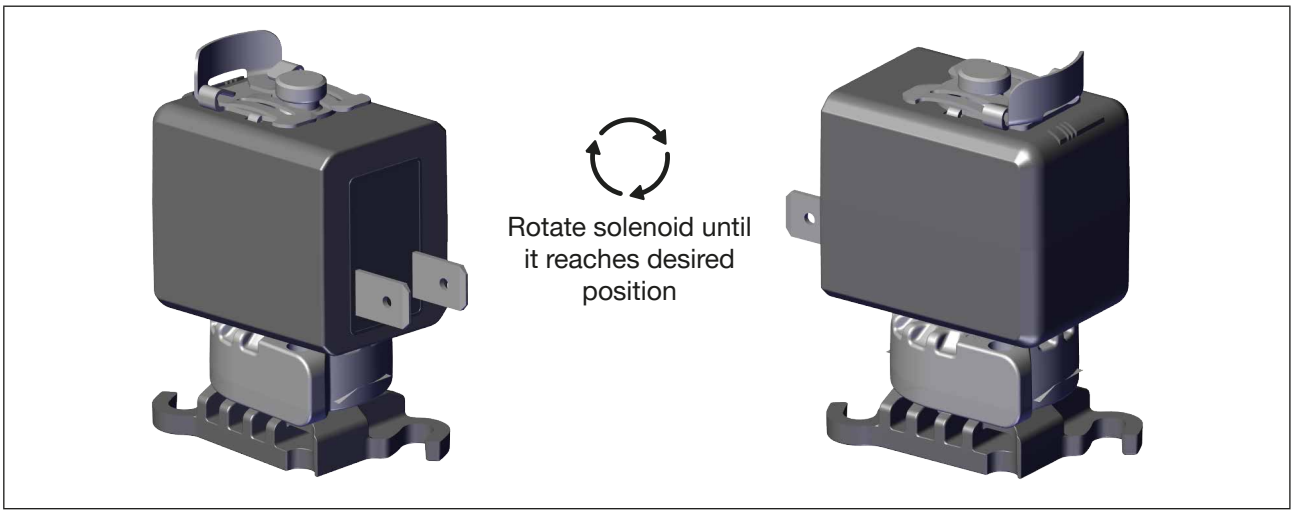

Fig. 9: Rotating the solenoid

7.4 Before using for the first time

For food and hygiene applications, it is recommended to flush the device for use, in accordance with the application.

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8 DISASSEMBLY

DANGER

Risk of injury due to high pressure in the system or device.

▸ Switch off the pressure before working on the device or system. Vent or drain the pipes.

Risk of injury due to electric shock.

▸ Switch off voltage before working on the device or system. Secure against reactivation.

▸ Observe the applicable accident prevention and safety regulations for electrical devices.

Risk of injury due to improper disassembly.

▸ Disassembly may be carried out by authorised technicians only.

→ Shut off the pressure and vent the lines.

→ Switch off electrical voltage.

→ Remove cable plug or flat connector.

Devices with push-in connection:

→ Remove hoses.

Devices with flange connection:

→ Remove the device from the manifold.

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9 MAINTENANCE, TROUBLESHOOTING

WARNING

Risk of injury due to improper maintenance work.

- Only trained technicians may perform maintenance work.
- Secure the system against unintentional activation.
- Ensure a controlled restart after maintenance is completed.

9.1 Maintenance

The device must be flushed and/or cleaned depending on the method and frequency of the area of use.

9.2 Faults

If faults occur, check whether:

→ the device has been installed correctly,

→ the electrical and fluid connections have been properly set up,

→ the device is not damaged,

→ all screw connections have been tightened with the correct tightening torque,

→ voltage and pressure have been applied,

→ the pipes are clean.

If the valve still does not actuate, contact your local Bürkert Service representative.

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10 SPARE PARTS AND ACCESSORIES

CAUTION

Risk of injury and/or damage due to incorrect parts.

Incorrect accessories and unsuitable spare parts may cause personal injuries and damage to the device and the area around it.

▸ Use only original accessories and original spare parts from Bürkert.

The solenoid and armature can be ordered with the device's identification number.

10.1 Replace wearing parts

It is not absolutely necessary to remove the solenoid to replace wearing parts.

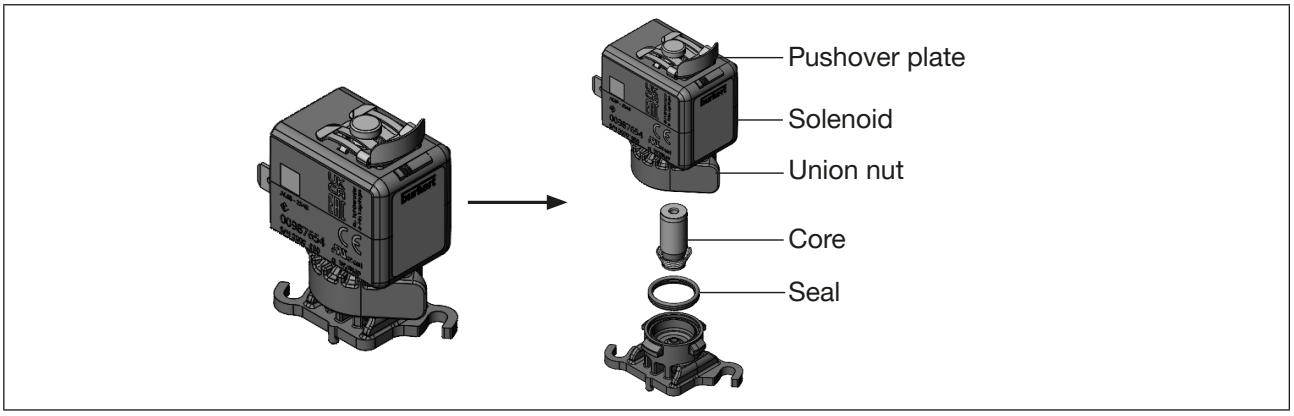

Fig. 10: Wearing parts

If the solenoid has to be removed:

→ Loosen pushover plate.

→ Remove solenoid.

If the solenoid does not have to be removed:

→ Hold the device via the housing and forcefully rotate the union nut with bayonet catch.

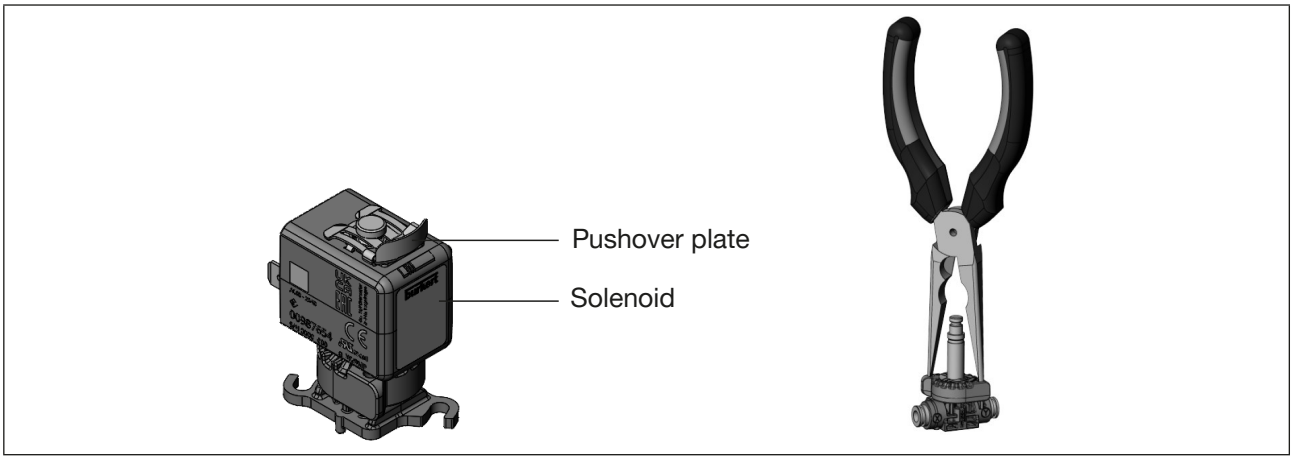

Fig. 11: Secure solenoid with the pushover plate

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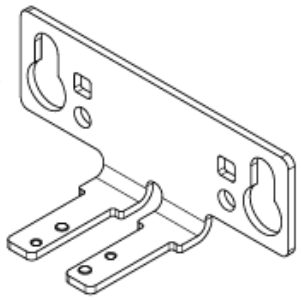
→ Remove union nut with bayonet catch.
→ Replace the core and seal.
→ Put the union nut back on and turn until it engages.
→ If the solenoid has to be removed, put it back on and secure it with the pushover plate.

10.2 Accessories

Accessories	Function	Illustration
Fastening brace	Used for attachment of devices with push-in connection	

Further information can be found in the data sheet: country.burkert.com

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11 PACKAGING, TRANSPORT

NOTE

Damage in transit due to inadequately protected devices.

- ▸ Protect the device against moisture and dirt in shock-resistant packaging during transportation.
- ▸ Observe permitted storage temperature.

12 STORAGE

NOTE

Incorrect storage may damage the device.

- ▸ Store the device in a dry and dust-free location.

Permitted storage temperature: –40…+80 °C

13 ENVIRONMENTALLY FRIENDLY DISPOSAL

- ▸ Follow national regulations regarding disposal and the environment.
- ▸ Collect electrical and electronic devices separately and dispose of them as special waste.

Further information at country.burkert.com

14 EXCLUSION OF LIABILITY

Devices supplied without valve bodies are incomplete devices. Bürkert cannot guarantee the function and technical data in this instance, such as flow coefficient, switchable medium pressure or switching voltage. The mechanical connection to the device must be tested and validated by the customer. The operation must perform a risk assessment for the complete device.

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