bürkert
FLUID CONTROL SYSTEMS

MAN 1000625044 EN Version: C Status: RL (released | freigegeben) printed: 23.08.2026

Type 0470, 5470

3/2 or 4/2-way solenoid valve

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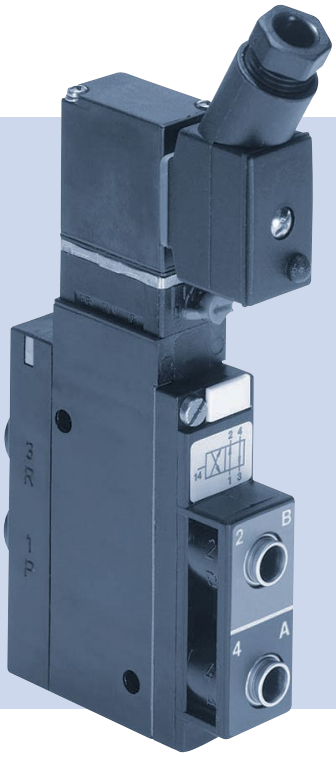

Operating Instructions

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1 The operating instructions

The operating instructions contain important information.

- Read the operating instructions carefully and follow the safety instructions in particular.
- The operating instructions must be available to every user.
- The liability and warranty for Type 0470, 5470 are not applicable if the operating instructions are not followed.

1.1 Symbols

DANGER

Warning of an immediate danger.
- Failure to comply will result in death or serious injury.

WARNING

Warns of a potential danger.
- Failure to observe these warnings may result in serious injuries or death.

CAUTION

Warns of a potential hazard.
- Failure to comply with these instructions may result in moderate or minor injury.

NOTE

Warns of damage.

Important tips and recommendations.

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

1.2 Definition of the term “device”

The term “device” used in the instructions always refers to the Type 0470, 5470.

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2 Intended use

Incorrect use of the solenoid valve Type 0470, 5470 may be a hazard to people, nearby equipment and the surrounding area.

- The device is used exclusively as 3/2 or 4/2-way solenoid valve for the media permitted according to the data sheet of the corresponding type.
- Provided the cable plug is connected and installed correctly, e.g. Bürkert Type 2516 (for Type 5470) or Type 1054 (for Type 0470), the device satisfies degree of protection IP65 in accordance with DIN EN 60529 / IEC 60529.
- In a hazardous area, the device may be used only in accordance with the specification on the separate Ex type label. For the use, observe the additional information enclosed with the device with safety instructions for the EX area.
- Devices without a separate Ex type label may not be used in a potentially explosive area.
- Use according to the authorized data, operating conditions and conditions of use specified in the contract documents, the data sheet and the operating instructions.
- Correct transport, correct storage and installation as well as careful use and maintenance are essential for reliable and problem-free operation.
- Use the device only for its intended purpose.

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3 Basic safety instructions

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

Danger – high pressure!
- Turn off the pressure and vent the lines before loosening lines or valves.

Risk of electric shock!
- Before reaching into the device or the equipment, switch off the power supply and secure to prevent reactivation!
- Observe applicable accident prevention and safety regulations for electrical equipment!

Risk of injury from greatly accelerated device parts!
- Before pressurizing the valve, check that all screw connections and screw joints are tight and secure.

Risk of burns/danger of fire during long-term operation due to hot device surface!
- Keep the device away from highly flammable substances and media and do not touch with bare hands.

To prevent injuries/damage:
- Do not make any internal or external changes to the device and safeguard against unintentional actuation.
- Installation and maintenance work may be carried out only by authorized technicians with the appropriate tools.
- After an interruption in the electrical or pneumatic supply, ensure that the process is restarted in a defined or controlled manner.
- Do not subject the housing to mechanical loads.
- Observe the general accepted technical rules.

3.1 Restrictions

If exporting the device, observe any existing restrictions.

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4 Approvals

The approval mark indicated on the Bürkert labels refers to the Bürkert products.

Devices which must bear the type approval mark were approved at the Kraftfahrtbundesamt under the type approval number

e1*72/245*2006/96*5791*00

and are put into circulation with the indicated type approval mark.

e1
035791

You can obtain an extract of the type approval from the address below.

Bürkert Werke GmbH
CQ-Approval Management
Christian-Bürkert-Str.13-17
D-74653 Ingelfingen

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5 Structure and Function

The valves can be mounted in blocks on the modular pneumatic base rail Type MP05.

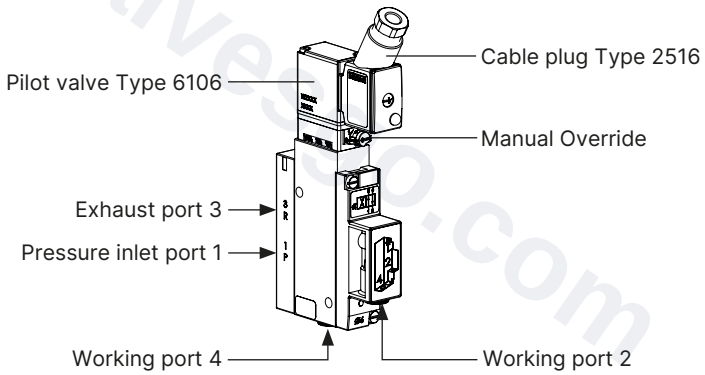
5.1 Structure of the standard designs

5.1.1 Connections

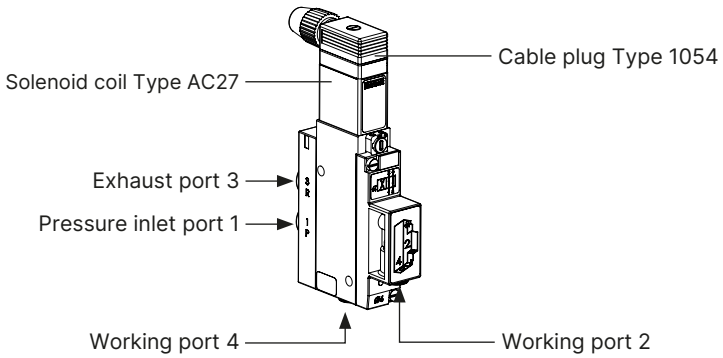
All connections are identified by numbers on the valve surface. These refer to the following functions:

Number	Function
1	Pressure inlet port
2 and 4	Working port
3	Exhaust port

5.1.2 Valve structure Type 5470



5.1.3 Valve structure Type 0470



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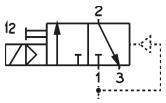
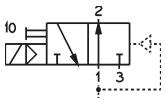
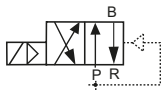
5.2 Circuit functions

C		**3/2-way valve** Normally inlet port 1 closed, working port 2 connected with exhaust port 3.
D		**3/2-way valve** Normally inlet port 1 connected with working port 2, exhaust port 3 closed.
G		**4/2-way valve** Normally inlet port 1 connected with working port 2, working port 4 connected with exhaust port 3.

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6 Technical Data

6.1 Standards and directives

The device complies with the valid EU harmonisation legislation.

The harmonised standards that have been applied for the conformity assessment procedure are listed in the current version of the EU Declaration of Conformity.

6.2 Type label

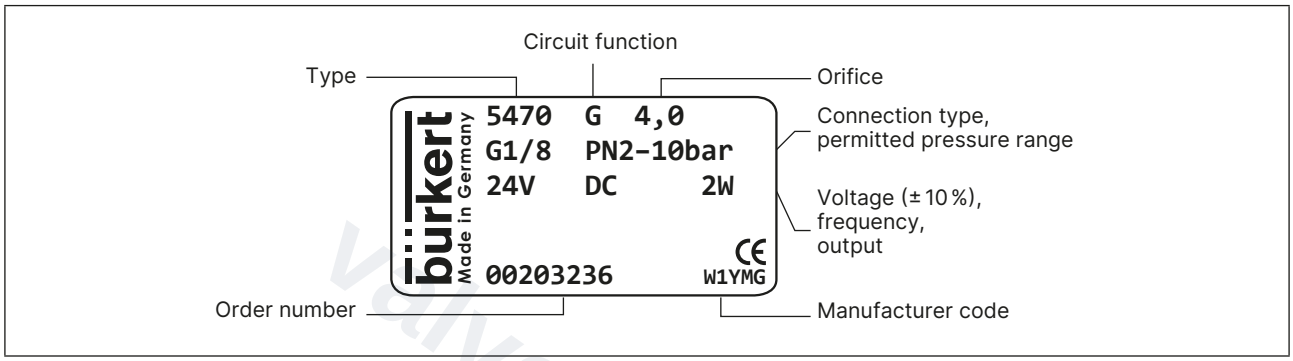

Fig. 1: Example of type label on the pilot-controlled solenoid valve Type 5470

6.3 Operating conditions

Please observe the specifications on the data sheet and on the type label.

Ambient temperature	–10...+55 °C (please observe temperature restrictions on account of approvals)
Permitted medium temperature	–10...+50 °C
Compressed air quality	ISO 8573-1:2010, Class 7.4.4[1)]
Permitted media	Filtered compressed air oiled and unoiled, neutral gases
Permitted pressure range	Observe specifications on type label Pressure difference at least 2 bar between ports 1 and 3
Degree of protection	IP65 as per DIN EN 60529 / IEC 60529 with correctly connected and fitted cable plug, e.g. Bürkert Type 2516
Operating duration	Unless otherwise indicated on the type label, the solenoid system is suitable for continuous operation

1) To prevent the expanded compressed air from freezing, its pressure dew point must be at least 10 K lower than the medium temperature.

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Important information for functional reliability during continuous operation!
If the equipment is switched off for a long period, it is recommended to activate the valves at least 1-2 per day.

Service life

High switching frequency and high pressures reduce the service life.

The valves operate maintenance-free.

6.4 Materials

Housing material: PA

Seal material: NBR

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7 Assembly

7.1 Safety instructions

DANGER!

Risk of injury from high pressure in the system!
- Turn off the pressure and vent the lines before loosening lines or valves.

Risk of injury due to electrical shock!
- Before reaching into the device or the equipment, 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 greatly accelerated device parts and unconnected whiplashing compressed air hoses!
- Before pressurizing the valve, check that all screw connections and screw joints are tight and secure.

Risk of injury from improper assembly!
- Assembly may only be carried out by authorized technicians and with the appropriate tools!

Risk of injury from unintentional activation of the system and uncontrolled restart!
- Secure system against unintentional activation.
- Following assembly, ensure a controlled restart.

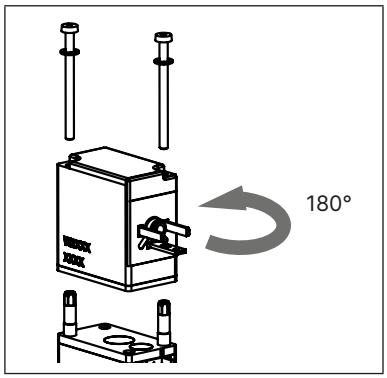
Risk of injury from unintentional activation of the system and uncontrolled restart!
- Secure system against unintentional activation.
- Following assembly, ensure a controlled restart.

7.2 Type 5470, turning the solenoid coil

The valves are supplied fully assembled. If the solenoid coil in the pilot valve is in an unfavorable position for installation, the coil can be turned 180°.

WARNING!

Risk of electrical shock if the coil is incorrectly fitted!
- During installation, make sure that the coil is firmly seated on the valve body so that the protective conductor connection of the coil is in contact with the valve housing.
- Check the function of the protective conductor (for test values, see „Tab. 1: Test values protective conductor function“, page 15).



- Loosen M2 screws and pull coil away from the valve body.
- Turn coil, attach to valve body, and screw on with M2 screws, tightening alternately step by step.
  While doing so, observe the tightening torque.

Tightening torque
1st Level 0.1 Nm (± 0.05 Nm),
2nd Level 0.2 Nm (± 0.05 Nm).

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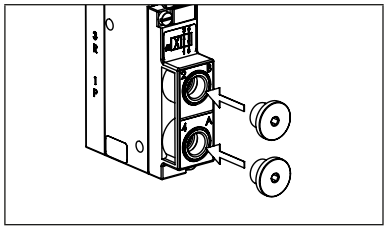
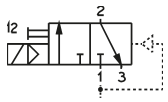
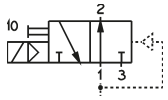
7.3 Conversion from a 4/2 to a 3/2 way valve



To convert the 4/2-way valve into a 3/2-way valve, you must seal connection 2 or connection 4 with a plug depending on the required operating principle.

Connection 2	Connection 4	Circuit function
sealed	open	C 
open	sealed	D 

7.4 Tightening torques port connections

Observe the following tightening torques when screwing in the port connections.
The specified tightening torque may vary depending on the sealing system.

Port size	Marking/function	Recommended tightening torque [Nm]	Maximum tightening torque [Nm]
G1/8	A/B valve outlets and P/R connection if required	3...6	10
NPT1/8			

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8 Pneumatic connection

WARNING!

Risk of injury from greatly accelerated device parts and unconnected whiplashing compressed air hoses!

- Before pressurizing the valve, check that all screw connections and screw joints are tight and secure.

Installation position

Any, preferably with solenoid system face up.

Before connecting:

- Check whether hose lines are dirty and clean.
- If required, install a dirt trap upstream of the valve inlet (≤ 5 µm).

Pneumatic connection

NOTE!

Risk of breakage!

- Do not use coil as a lever arm.
- Do not use a cylinder wrench to tighten screws.

- Hold the device by hand on the housing and connect to the hose line. Do not exceed the standard screw-in depth.
- Seal with PTFE tape or elastomer seal.
- Observe allocation of the connections (see Chapter „5.1.1 Connections“, page 8).
- Align hose lines.

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9 Electrical connection

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!
- When screwing the coil onto the device socket, make sure the seal is correctly seated.

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

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

9.1 Connection of cable plug to the power supply

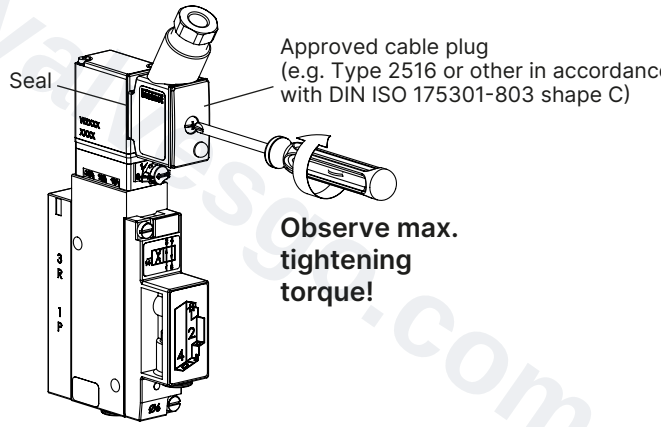

Fig. 2: Connection of cable plug to the power supply, Example type 5470

- Tighten cable plug (for authorized types see data sheet), observing maximum torque (0.3 Nm).
- Check that seal is fitted correctly.
- Connect protective conductor and check electrical continuity between coil and housing (see „Tab. 1: Test values protective conductor function“, page 15)

NOTE!

If the cable plug is designed in such a way that the screw is pointing upwards, insert a seal made of a material compatible with your process under the screw head.

Note the voltage and current type as specified on the type label.

Test values protective conductor function

Pesistor	Test voltage	Test current
max. 0.1 Ω	12 V	1 A

Tab. 1: Test values protective conductor function

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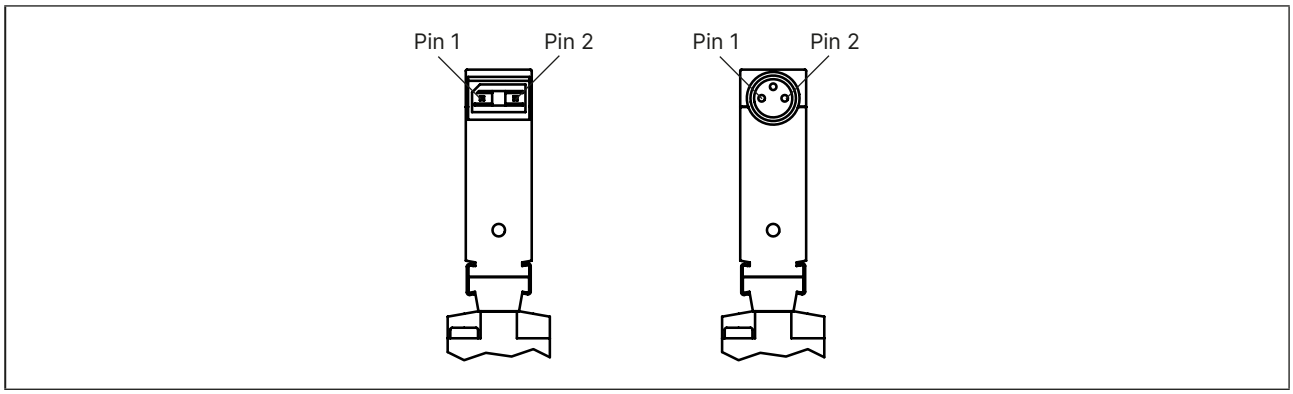
9.2 Actuating the pulse version

The correct polarity is a prerequisite for the device to function: Observe the markings on the coil surface. Pulse duration at least 50 ms.



Plug configuration	Effect		
(+) on pin 2 (–) on pin 1	Pilot valve opened	1–3 2–3	CF G
		1–4	CF C
(+) on pin 1 (–) on pin 2	Pilot valve closed	1–2 4–3	CF G
		4–3	CF C

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10 Manual override

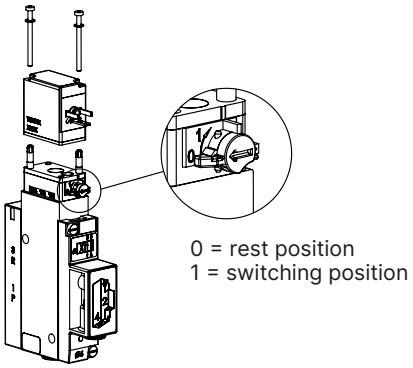

Fig. 3: Manual override based on the example of Type 5470

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11 Disassembly

Disassembly is in reverse sequence to assembly.

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12 Maintenance, troubleshooting

If the valve is used according to these operating instructions, the valve will operate maintenance-free.

12.1 Safety instructions

WARNING!

Risk of injury from improper maintenance!
- ▸ Maintenance may only be carried out by authorized technicians and with the appropriate tools!

Risk of injury due to electrical shock!
- ▸ Before reaching into the device or the equipment, switch off the power supply and secure to prevent reactivation!

Danger – high pressure!
- ▸ Turn off the pressure and vent the lines before loosening lines or valves.

Risk of injury from unintentional activation of the system and uncontrolled restart!
- ▸ Secure system against unintentional activation.
- ▸ Following maintenance, ensure a controlled restart.

12.2 Malfunctions

If malfunctions occur, check whether:
- the device has been installed according to the instructions
- the electrical and pneumatic connections are correct
- the device is not damaged
- all screws have been tightened
- the voltage and pressure have been switched on
- the pipelines are clean
- the manual control is in the normal position

Valve does not switch

Possible causes:
- short circuit or coil interrupted
- core or core area dirty
- medium pressure outside the permitted pressure range

Valve does not close

Possible cause:
- inner compartment of the valve is dirty

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13 Transportation, storage, disposal

NOTE!

Transport damage!

Inadequately protected devices may be damaged during transportation.

- Protect the device against moisture and dirt in shock-resistant packaging during transportation.
- Prevent the temperature from exceeding or dropping below the permitted storage temperature.
- Protect the electrical interfaces of the coil and the pneumatic connections from damage by placing protective caps on them.

Incorrect storage may damage the device.

- Store the device in a dry and dust-free location!
- Storage temperature –40 °C ... +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 disposal and environmental regulations.

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