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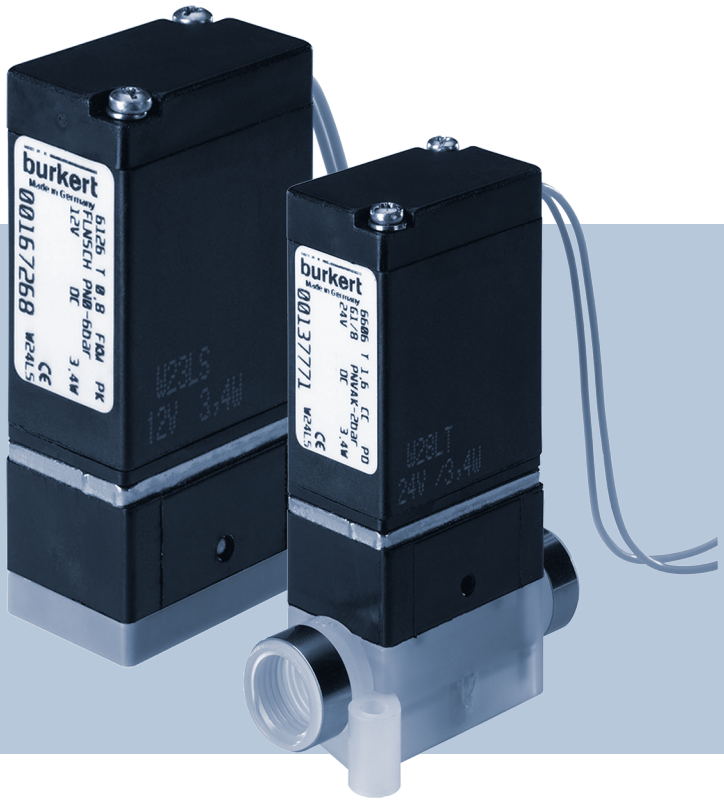
Type 6126/6606

2/2- or 3/2-way solenoid valve



Operating Instructions for all variants

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Technical documentation 2508/07_GBen_00805730_951576715_9007200206785931 / Original DE

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1 About this document

The document is an important part of the product and guides the user to safe installation and operation. The information and instructions in this document are binding for the use of the product.

- Before using the product for the first time, read and observe the whole safety chapter.
- Before starting any work on the product, read and observe the respective sections of the document.
- Keep the document available for reference and give it to the next user.
- Contact the Bürkert sales office for any questions.

Further information concerning the product at Products.

- Enter the article number from the type label in the search bar.

The illustrations in these instructions may vary depending on the product variant.

1.1 Symbols

DANGER!

Warns of a danger that leads to death or serious injuries.

WARNING!

Warns of a danger that can lead to death or serious injuries.

CAUTION!

Warns of a danger that can lead to minor injuries.

NOTICE!

Warns of property damage on the product or the installation.

Indicates important additional information, tips and recommendations.

Refers to information in this document or in other documents.

- Indicates a step to be carried out.

✓ Indicates a result.

Menu Indicates a software user-interface text.

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1.2 Terms and abbreviations

The terms and abbreviations are used in this document to refer to following definitions.

Product	Rocker solenoid valve type 6126, type 6606

1.3 Manufacturer

Bürkert Fluid Control Systems

Christian-Bürkert-Str. 13–17

74653 Ingelfingen

GERMANY

The contact addresses are available at Contact.

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2 Safety

2.1 Intended use

Unauthorised use of type 6126 and type 6606 solenoid valves may be dangerous to people, nearby equipment and the environment.

- Type 6126 and type 6606 solenoid valves are designed to be used in analytical, medicinal and laboratory technology. They are preferably used for dosing, filling, mixing and distributing small quantities.
- Do not use the device outdoors.
- When using the device, observe the authorised data, and the operating and usage conditions specified in the contract documents and in the operating instructions (see Technical data [▶ 9]).
- Use the device only in conjunction with third-party devices and components recommended or approved by Bürkert.
- Prerequisites for safe and trouble-free operation include correct transport, appropriate storage and installation, as well as careful operation and maintenance.
- Only use the device for its intended purpose.

2.2 Basic safety instructions

These safety instructions do not make allowance for any unforeseen circumstances or incidents which may arise during installation, operation and maintenance.

Risk of injury from high pressure in the system/device

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

Risk of injury from electric shock

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

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

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

Medium may leak out if the diaphragm is worn

- Check regularly for any medium leakages.
- If the medium is hazardous, secure the environment against risks.

General dangerous situations

To prevent injuries, the following must be observed:

- The system cannot be activated unintentionally.
- Installation and maintenance may be performed by authorised technicians only and with the appropriate tools.

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- The process must be restarted in a defined or controlled manner after an interruption in the power supply or pneumatic supply.
- The device may only be operated in perfect condition and in accordance with the operating instructions.
- The generally accepted engineering standards must be followed when planning and operating the device.

Electrostatically sensitive components/assemblies!

The device contains electronic components that are susceptible to the effects of electrostatic discharging (ESD). Components that come into contact with electrostatically charged persons or objects are at risk. In the worst-case scenario, they will be destroyed immediately or will fail after start-up.

- Observe the requirements in accordance with EN 61340-5-1 and 5-2 to minimise or avoid the possibility of damage caused by a sudden electrostatic discharge!
- Ensure that you do not touch the electronic components when the power supply voltage is applied!

Type 6126 and type 6606 solenoid valves have been developed with due consideration given to the accepted safety rules and are state of the art. Nevertheless, dangerous situations may occur. Non-observance of these operating instructions and the information contained therein and unauthorised tampering with the device will release us from any liability and also invalidate the warranty covering devices and accessories!

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3 System description

Intended area of application

Type 6126 and type 6606 solenoid valves are designed to be used in analytical, medicinal and laboratory technology. They are preferably used for dosing, filling, mixing and distributing small quantities.

General description

Type 6126 and type 6606 solenoid valves are direct-acting rocker solenoid valves. They have a minimal dead volume and a low-gap, easy-to-flush internal contour. The medium only comes into contact with the body material and the seals. The heat input into the medium is minimal, as the housing is additionally separated from the coil by a stainless steel plate.

Modularity

The valve is modular in design and can be delivered with various port connections depending on the application. It can be used individually and also on blocks.

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4 Technical data

4.1 Operating conditions

WARNING!

Risk of injury

Risk of malfunction when used outdoors!

- Do not use type 6126 or type 6606 outdoors and avoid heat sources that could cause the permissible temperature range to be exceeded.

Ambient temperature	max. +55°C
Storage temperature	-40 ... 55°C
Media	Neutral and aggressive gaseous and liquid media that do not attack the housing or seal materials (see resistance table).
Degree of protection	IP65 with strands or socket IP30 with rectangular plug

Medium temperature		
Nominal diameter	Seal material	Temperature range
Nominal diameter 0.8	FFKM	+5...+50°C
Nominal diameter 0.8	FKM	0...+50°C
Nominal diameter 0.8	EPDM	-5...+50°C
Nominal diameters 1.2 and 1.6	FFKM	+10°C...+50°C
Nominal diameters 1.2 and 1.6	FKM	+5...+50°C
Nominal diameters 1.2 and 1.6	EPDM	0...+50°C

4.2 Standards and directives

This product complies with the legal requirements applicable at the time of placing on the market and has been developed and tested in accordance with the relevant European directives/regulations and harmonized standards. The conformity is documented and, if necessary, supported by evidence. The EU Declaration of Conformity can be found behind the respective type on the home page country.burkert.com

4.3 Mechanical data

Dimensions	see data sheet
Housing material	PPS, PVDF, ETFE, PEEK Brass, stainless steel
Seal material	FFKM, FKM,EPDM

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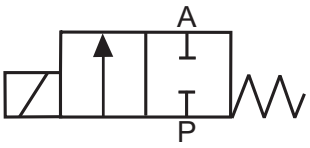
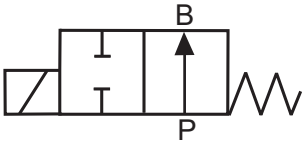
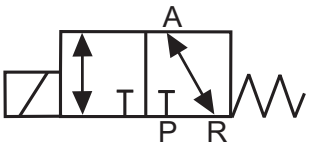
4.4 Pneumatic data

A		2/2-way valve, direct-acting, normally closed
B		2/2-way valve, direct-acting, normally open
T		3/2-way valve, direct-acting, can be used universally

Tab. 1: Circuit functions

Observe the data for voltage, current type and pressure listed on the type label.

Pressure range	Vac ... 2 bar
Port connections	Threaded connection G1/8, NPT1/8 or UNF1/4-28 Flange connection Hose connection

4.5 Type label

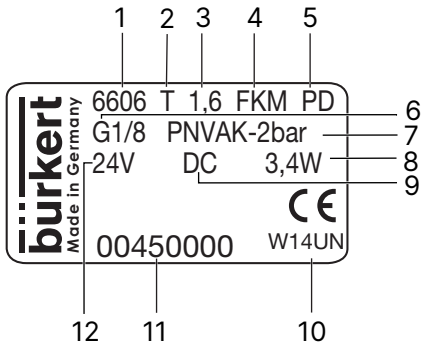


Fig. 1: Example

1	Type	2	Circuit function
3	Orifice	4	Sealing material
5	Body material	6	Connection type
7	PN	8	Power
9	Frequency	10	Manufacture code
11	Article number	12	Voltage

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4.6 Electrical data

Connections	Plug contacts according to DIN 43650 C for socket type 2516 top or side Rectangular plug for type 2505 2 FEP strands, AWG24, 500 mm long
Power supply	12 V DC 24 V DC 111 ... 120 V UC 230 ... 240 V UC
Voltage tolerance	±10% - residual ripple 10%
Nominal power	12 ... 24 V – 3.4 W 110 ... 240 V – 4..0 W
Nominal operating mode	Continuous operation, duty cycle 100%
	for block installation if media or environment temperatures exceed +40°C: Intermittent operation 40% (10 min)

Observe the data for voltage, current type and pressure listed on the type label.

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5 Installation

5.1 Safety instructions

CAUTION!

Risk of injury due to high pressure in the system!

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

CAUTION!

Risk of injury from electric shock!

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

CAUTION!

Risk of injury due to improper installation!

- Installation may be carried out by authorised technicians only and with the appropriate tools!

CAUTION!

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.

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5.2 Fluidic installation

DANGER!

Risk of injury due to high pressure in the system!

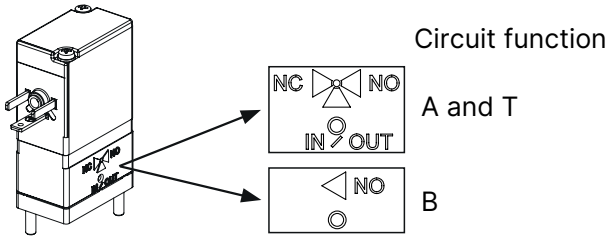
- Before loosening lines and valves, turn off the pressure and vent the lines.

Installation position: any, but preferably with actuator facing up

Installation

Note the flow direction of the valve.

- Clean any contamination from the pipelines and flange connections prior to installation.
- If necessary, install a dirt trap to protect against malfunctions.
  Mesh size: 5 µm



NC (normally closed)	Normally closed port, for CFA
NO (normally open)	Normally open port, for CFB
IN/OUT	for pressure port (distributor) or working port (mixer), at CFT

Tab. 2: Labelling of the valve connections on the housing

The valve body must not be twisted by the fastening screws or by excessive screwing of the connection nipples!

The bodies with threaded or hose connections have mounting lugs for threaded connection from above with M3 screws or from below with tapping screws BZ 3.9 x... DIN 7971.

Body with threaded connection:

- Use PTFE tape as seal material if necessary.
- Only screw in the connection threads by hand.

Body with hose connection:

- Use flexible silicone hose with an inner diameter of 1.6 ... 2 mm

To ensure functional reliability, operate the valve only with the factory-installed coil!

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Valve with flange connection:

NOTICE!

If the tightening torque is too high, it can damage the device.

- Observe the screws' maximum tightening torque!

NOTICE!

Functional failure / device damage when removing the flange plate

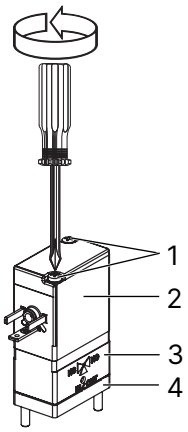
- The valve is equipped with a pressed-in diaphragm that can be damaged when removing the flange plate.
- Do not loosen the flange plate.

DANGER!

Danger due to escaping medium

Leaking connections if the seals are not fitted precisely, if the manifold is uneven or if the surface quality of the manifold is inadequate.

- Ensure that the seals provided are properly seated inside the valve.
- Ensure that the manifold is flat.
- Ensure that the manifold's surface quality is adequate.



1	Screws Coil attachment	2	Coil
3	Housing	4	Flange plate

- Loosen the screws for the coil attachment and remove the coil from the housing.

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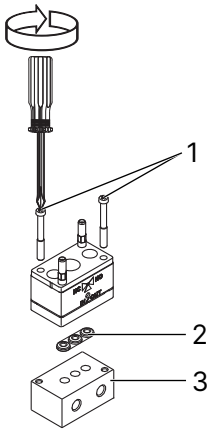
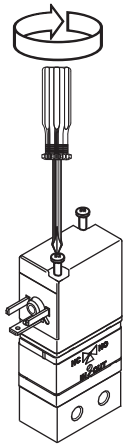


1	Manifold screws	2	Seal
3	Manifold		

- Place seal in the valve.



- Attach fluid group to manifold. Screw in screws at 0.3 ±0.05 Nm.
- Attach coil to housing. Screw alternately, tightening in two steps.
  First, tighten both screws to 0.1 ± 0.05 Nm. Then tighten both screws to 0.2 ± 0.05 Nm.

DANGER!

Risk of electric shock if the protective conductor function is defective!

- After coil installation, check the protective conductor function (see Electrical installation [▶ 16]).

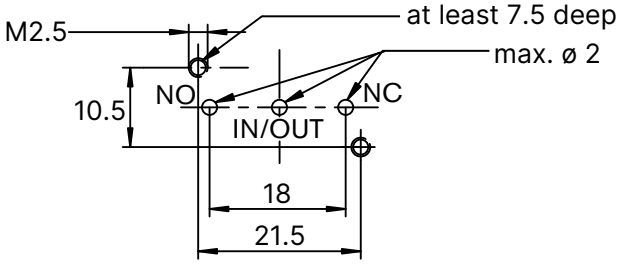


Fig. 2: Dimensioned drawing for manifold

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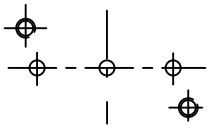
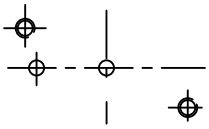
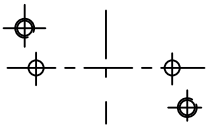
3-way	2-way PVDF and version with minimum dead space	2-way PEEK / PPS
		

Tab. 3: Arrangements of the holes

5.3 Electrical installation

DANGER!

Risk of injury from electric shock!

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

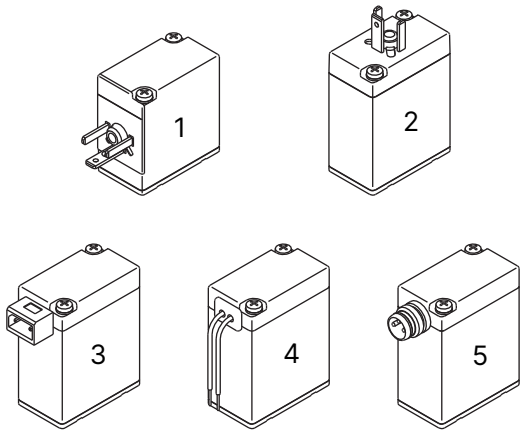


Fig. 3: Electrical connection types

1	Side connection	2	Top connection
3	Rectangular plug	4	Strands
5	Circular plug		

To ensure functional reliability, operate the valve only with the factory-installed coil! Observe the voltage and current type according to the type label. Voltage tolerance ±10%.

Valves with flange housing:

DANGER!

Risk of electric shock if the protective conductor function is defective!

- After coil installation, check the protective conductor function.

- Check the protective conductor function.

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

Connection with socket:

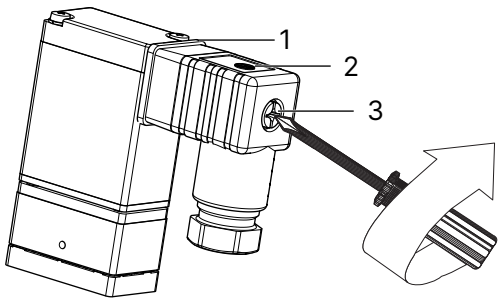
DANGER!

Risk of electric shock if the protective conductor is not connected!

- Always connect the protective conductor!

Earth connection (if available): Middle plug contact

When connecting the electrical connection with the socket, ensure that the seal is seated correctly.



1	Seal	2	Type 2516 cable plug
3	max. tightening torque 0.4 Nm		

NOTICE!

If the tightening torque is too high, it can damage the device!

- Observe the screw's maximum tightening torque.

- Screw the socket to the valve with a maximum tightening torque of 0.4 Nm.

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6 Maintenance, troubleshooting

- Check regularly for any medium leakages

The valve operates maintenance-free under normal conditions.

6.1 Safety instructions

DANGER!

Risk of injury due to high pressure in the system!

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

DANGER!

Risk of injury from electric shock!

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

DANGER!

Risk of injury due to improper maintenance work!

- Maintenance may only be carried out by authorised technicians and with the appropriate tools!

DANGER!

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

- Secure the system against unintentional activation.
- Ensure a controlled restart after maintenance is completed.

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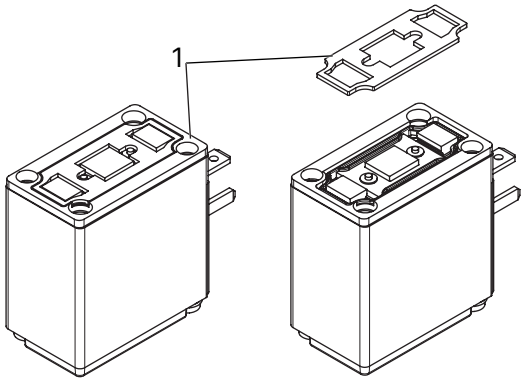
6.2 Maintenance work

Troubleshooting

If faults occur, check:

- the port connections: the fluidics connections are assigned correctly in accordance with the circuit functions (see Fluidic installation [▶ 13])
- the operating pressure, whether it is within the permissible range.
- the power supply and valve control unit
- the position of the coil seal: the seal must not cover the coil's metallic surfaces.

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



1	Coil seal

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7 Spare parts

DANGER!

Risk of injury and/or damage to property due to incorrect parts!

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

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

Accessories and spare parts available on request.

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8 Logistics

8.1 Transport and storage

- Protect the device against moisture and dirt in the original packaging during transportation and storage.
- Avoid UV radiation and direct sunlight.
- Protect connections from damage with protective caps.
- Observe permitted storage temperature.

8.2 Return

No work or tests will be carried out on the device until a valid Contamination Declaration has been received.

- To return a used device to Bürkert, contact the Bürkert sales office. A return number is required.

8.3 Disposal

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

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