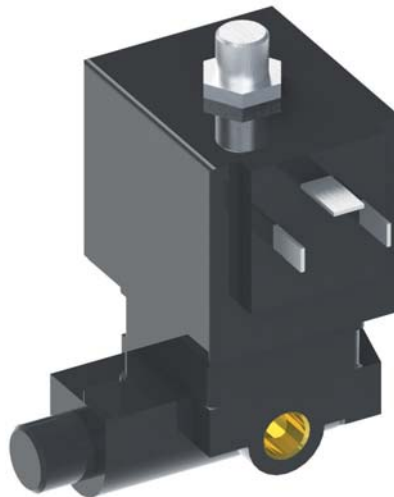


Pilot solenoid valve 6014

Operating manual

Series
type 6014



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Subject to technical modifications.

Read carefully before use.
Save for future use.

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1 About this document

This manual

- is part of the fitting
- applies to all series referred to
- describes safe and proper operation during all operating phases

1.1 Target groups



Operating company

- Responsibilities:
 - Keep this manual available at the place of operation, also for future use.
 - Ensure that employees read and observe this manual and other applicable documents, especially the safety instructions and warnings.
 - Observe any additional country-specific rules and regulations that relate to the system.

Qualified personnel, fitter







- Mechanics qualification:
 - Qualified employees with additional training for fitting the respective pipework
- Electrical qualification:
 - Qualified electrician
- Responsibility:
 - Read, observe and follow this manual and the other applicable documents, especially all safety instructions and warnings.

1.2 Other applicable documents

To download: Type 6014 data sheet Technical data and conditions of operation www.asv-stuebbe.de/pdf_datasheets/301296.pdf	
 To download: CE declaration of conformity Conformity with standards www.asv-stuebbe.de/pdf_DOC/301310.pdf	


Tab. 1 Other application documents, purpose and where found

1.3 Warnings and symbols

Symbol	Meaning
	<ul style="list-style-type: none"> • Immediate acute risk • Death, serious bodily harm
	<ul style="list-style-type: none"> • Potentially acute risk • Death, serious bodily harm
	<ul style="list-style-type: none"> • Potentially hazardous situation • Minor injury
	<ul style="list-style-type: none"> • Potentially hazardous situation • Material damage
	Safety warning sign ► Take note of all information highlighted by the safety warning sign and follow the instructions to avoid injury or death.
►	Instruction
1., 2., ...	Multiple-step instructions
✓	Precondition
→	Cross reference
	Information, notes

Tab. 2 Warnings and symbols


2 General safety instructions

 The manufacturer accepts no liability for damages caused by disregarding any of the documentation.

2.1 Intended use

- Use the fitting exclusively to control pneumatic drives.
- Do not use the fitting outdoors.
- Use the fitting only for the following media:
 - Compressed air (oiled or dry)
 - Nitrogen
 - Instrument air

2.2 General safety instructions

 Read and observe the following regulations before carrying out any work.

2.2.1 Obligations of the operating company

Safety-conscious working

- Only operate the fitting if it is in perfect technical condition and only use it as intended, remaining aware of safety and risks, and adhering to the instructions in this manual.
- Ensure that the following safety aspects are observed and monitored:
 - Intended use
 - Statutory or other safety and accident-prevention regulations
 - Safety regulations governing the handling of hazardous substances
 - Applicable standards and guidelines in the country where the pump is operated
- Make personal protective equipment available.

Qualified personnel

- Ensure all personnel tasked with work on the fitting have read and understood this manual and all other applicable documents, especially the safety, maintenance and repair information, before they start any work.
- Organize responsibilities, areas of competence and the supervision of personnel.
- The following work should be carried out by specialist technicians only:
 - Installation, repair and maintenance work
 - Work on the electrical system
- Make sure that personnel to be trained only work on the fitting under the supervision of specialist technicians.

2.2.2 Obligations of personnel

- Observe the instructions on the fitting and keep them legible, e.g. name plate and identification marking for fluid connections.
- Only carry out work on the fitting if the following requirements are met:
 - System is empty
 - System has been flushed
 - System is depressurized
 - System has cooled down
 - System is secured against being switched back on again
- Do not make any modifications to the device.

2.3 Specific hazards

2.3.1 Hazardous media

- When handling hazardous media (e.g. hot, flammable, explosive, toxic, hazardous to health or the environment), observe the safety regulations for the handling of hazardous substances.
- If the fitting is operated continuously:
 - Protect the hot surface of the housing from contact with highly flammable media.
 - Avoid skin contact with the hot surface of the housing.
- Use personal protective equipment when carrying out any work on the fitting.
- Collect leaking pumped liquid and residues in a safe manner and dispose of in accordance with environmental regulations.

3 Layout and Function

3.1 Name plate

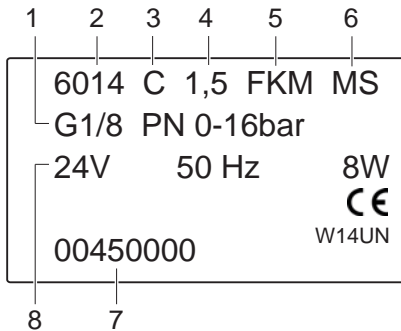


Fig. 1 Name plate (example)

- 1 Pipework connection / rated pressure
- 2 Type
- 3 Mode of operation
- 4 Rated width
- 5 Seal material
- 6 housing material
- 7 ID number
- 8 Voltage / frequency / power

Device types

- Type 6014

3.2 Description

The fitting is a solenoid valve. The fitting is used as a pilot valve for direct attachment to externally-controlled pneumatic drives. The fitting consists of a solenoid drive and a housing with a banjo screw. The fitting is connected to the control air port of the pneumatic drive. The fitting is fitted with manual actuation.

- Mounting position:
 - any
 - It is preferably installed with the magnetic coil facing upwards.
 - The magnetic coil can be rotated through 90° (if installed in a block it can be rotated through 180°)
- The direction of flow is specified (→ 3.4 Direction of flow, Page 5).

3.3 Assembly

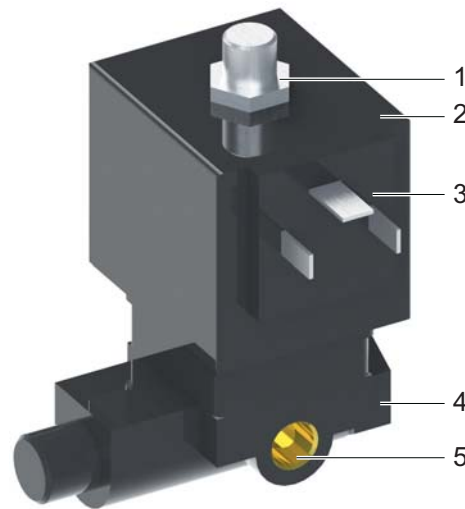



Fig. 2 Assembly

- 1 nut
- 2 Magnetic coil
- 3 Device plug
- 4 Fitting housing
- 5 Pipework connection

3.4 Direction of flow

 Direction of flow from P to A

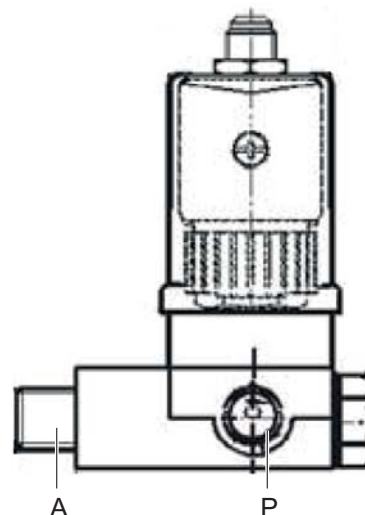


Fig. 3 Direction of flow (example)

4 Transport, Storage and Disposal

4.1 Unpacking and inspection on delivery

1. Unpack the fitting when received and inspect it for transportation damage.
2. Report any transportation damage to the manufacturer immediately.
3. Ensure that the information on the name plate agrees with the order/design data.
4. With immediate installation, dispose of packaging material according to local regulations.
 - For later installation, leave the fitting in the original packaging.

4.2 Transportation

1. If possible, transport fitting (including drive) in the original packaging.
2. Lift fitting manually for transport. For weight specifications (→ Data sheet).


4.3 Storage

NOTE

Material damage due to inappropriate storage!

- ▶ Store the fitting properly.
-
- ▶ Make sure the storage room meets the following conditions:
 - Dry
 - Frost-free
 - Vibration-free
 - Not in direct sunlight
 - Storage temperature +10 °C to +60 °C

4.4 Disposal

 Parts can be contaminated by poisonous or radioactive media to such an extent that cleaning will not be sufficient.

WARNING

Risk of poisoning and environmental damage from medium!

- ▶ Use personal protective equipment when carrying out any work on the fitting.
 - ▶ Before disposing of the fitting:
 - Collect escaping medium and dispose separately according to local regulations.
 - Neutralize residues of medium in the fitting.
 - ▶ Remove the fitting and dispose of it in accordance with local regulations.
-
- ▶ Dispose of the fitting in accordance with local regulations.

5 Installation and connection

5.1 Check operating conditions

1. Ensure the design of the fitting is consistent with the purpose intended:
 - Materials used (→ Type plate).
 - Medium (→ Order and design data).
2. Ensure the required operating conditions are met:
 - Resistance of the body materials and seals to the medium (→ 2.1 Intended use, Page 4).
 - Media temperature (→ Data sheet).
 - Operating pressure (→ Data sheet).
3. Consult with the manufacturer regarding any other use of the device.

5.2 Installing the pilot solenoid on the pneumatic valve

WARNING

Risk of injury due to high pressure!

- ▶ Switch off the compressed air supply to the system and the fitting.
- ▶ Make sure that the compressed air hoses are depressurized and empty.

WARNING

Risk of poisoning and environmental damage from medium!

Leak due to faulty installation.

- ▶ Installation work on the pipes downstream of the pneumatic fitting should be performed only by technicians who have been specially trained for the pipework in question.

NOTE

Material damage due to contamination of the fitting!

- ▶ Make sure no contamination reaches the fitting.

NOTE

Material damage from incorrect installation of fitting

- ▶ Use suitable tools.
- ▶ Comply with the manufacturer's instructions regarding installation of the pneumatic valve.

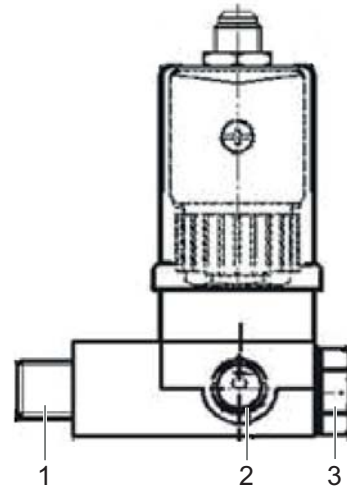


Fig. 4 Installing the pilot solenoid on the pneumatic valve

1. Slide the O-ring supplied on to the threaded spigot (1).
2. Install the fitting with the magnetic preferably aligned upwards.
3. Then attach the fitting to the pneumatic valve with the screw (3) (→ 9.1.3 Tightening torques, Page 11).
4. Screw the compressed air line into the tapped socket (2).

5.3 Connect fitting to electrical system

- ✓ Power supply switched off and secured against being switched back on again.

DANGER

Risk of electrocution!

- ▶ All electrical work must be carried out by qualified electricians only.
- ▶ Switch off the system power supply and secure it against being switched back on again.

1. Ensure correct current type and voltage before electrical connection (→ Data sheet).
2. Ensure that the plug connection is protected against permanent dampness. Provide cover as needed.
3. Connecting cable to connector (→ 9.3 Plug assignment, Page 11).
4. Insert the connector into the connector socket of the fitting. If necessary, rotate the device socket through 90° until the desired position of the device socket is achieved.

6 Operation

6.1 Commissioning


- ✓ Fitting correctly installed and connected

WARNING

Risk of injury and poisoning due to medium spraying out!

- ▶ Use personal protective equipment when carrying out any work on the fitting.
- ▶ After the first loads due to pressure and operating temperature, check that the fitting is not leaking.

6.2 Manual operation

-  In the event of a power failure the fitting can be operated manually.

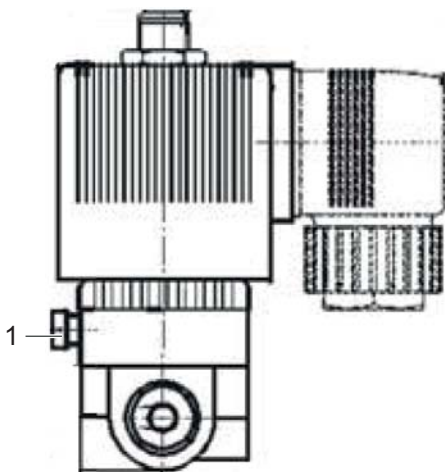


Fig. 5 Manual operation

- ▶ Push the button (1) to open the valve.
The pneumatic valve will now be supplied with compressed air.

7 Maintenance

WARNING

Risk of injury and poisoning due to hazardous media liquids!

- ▶ Use personal protective equipment when carrying out any work on the fitting.

7.1 Servicing

1. Visual and function check (every three months):
 - Normal operating conditions unchanged
 - No leaks
 - No unusual operating noises or vibrations
2. Clean the fitting with a moist cloth if necessary.

7.2 Maintenance

DANGER

Risk of electrocution!

- ▶ All electrical work must be carried out by qualified electricians only.

WARNING

Risk of injury and poisoning due to hazardous or hot media!

- ▶ Use personal protective equipment when carrying out any work on the fitting.
- ▶ Safely collect the media and dispose of it in accordance with environmental regulations.

WARNING

Risk of injury during disassembly!

- ▶ Wear protective gloves, components can be very sharp-edged due to wear or damage.
- ▶ Remove components with springs (e.g. pneumatic drive) carefully, since spring tension can cause components to be ejected.

7.2.1 Removing fitting

1. Ensure that:
 - System is empty
 - System has been flushed
 - System is depressurized
 - System has cooled down
 - System is secured against being switched back on again
2. Remove fitting from the pipe.
3. Decontaminate fitting if required.
 - Dead space in the fitting may still contain medium.

7.3 Replacement parts and return

1. Have the following information ready to hand when ordering spare parts (→ Type plate).
 - Fitting type
 - ID number
 - Nominal pressure and diameter
 - Body and seal material
2. Please complete and enclose the document of compliance for returns (→ www.asv-stuebbe.com/service/downloads).



3. Only use spare parts from ASV Stübbe.

8 Troubleshooting

 **WARNING**

Risk of injury and poisoning due to hazardous or hot media!

- ▶ Use personal protective equipment when carrying out any work on the fitting.
- ▶ Safely collect the media and dispose of it in accordance with environmental regulations.


Consult with the manufacturer regarding faults which are not identified in the following table, or which cannot be traced to the indicated causes.

Error	Possible cause	Corrective action
Valve does not close	Rated voltage is still present	▶ Check control voltage.
	Incorrectly installed	▶ Install fitting in accordance with direction of flow (→ 3.4 Direction of flow, Page 5).
	Plunger disabled	▶ Change fitting.
Valve does not open	Connection voltage is cut or insufficient	▶ Check supply voltage. ▶ Check cable connection and if necessary cable correctly.
	Rated voltage and coil voltage different	▶ Ensure that the fitting is suitable for the intended use. Check specifications of the fitting (→ Data sheet).
	Magnetic coil defective	▶ Change fitting.
	Plunger disabled	
Compressed air escaping at the pneumatic valve port or at the compressed air line.	Leaking connection	▶ Check the connection to the fitting and tighten it if necessary. Use new seal as needed.


Tab. 3 Troubleshooting

9 Appendix


9.1 Technical specifications

 Technical data (→ Data sheet).

9.1.1 Working pressure

 Operating pressure (→ Data sheet).

9.1.2 Pressure and temperature limits

 Pressure and temperature limits (→ Data sheet).

9.1.3 Tightening torques

Description	Size	Tightening torque [Nm]
Screw	19 mm across flats	5

Tab. 4 Tightening torques

9.2 Circuit diagram

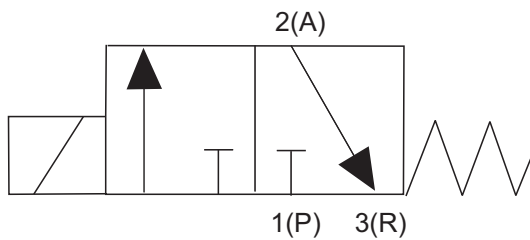



Fig. 6 NC circuit diagram (closed when de-energized)

9.3 Plug assignment

 DIN EN 175301-803 plug socket. The polarity of the connections (1,3) has no effect on operation.

For device plugs with LED: Polarity is in accordance with the printed legend on the connection circuit board.

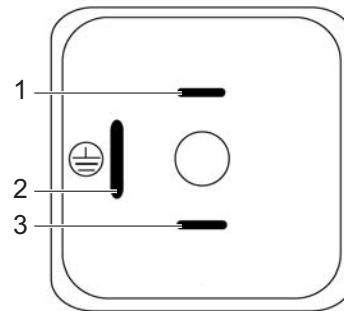


Fig. 7 Connector plug

- 1 control voltage
- 2 Ground conductor connection
- 3 control voltage