

Type 2006

3/2 way globe valve

3/2-Wege-Geradsitzventil

Vanne à siège droit 3/2 voies



Quickstart

English Deutsch Français

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Technische Änderungen vorbehalten.
Sous réserve de modifications techniques.

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Operating Instructions 170 / ~~ÖP~~ / Original DE

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1 QUICKSTART

Quickstart explains, for example, how to install and start-up the device.

A detailed description of the device can be found in the operating instructions for Type 2006.

Keep these instructions in a location which is easily accessible to every user, and make these instructions available to every new owner of the device.

 The operating instructions can be found on the Internet at: www.burkert.com

Important Safety Information!

Read Quickstart carefully and thoroughly. Study in particular the chapters entitled “[Basic safety instructions](#)” and “[Authorized use](#)”.

► Quickstart must be read and understood.

1.1 Symbols



DANGER!

Warns of an immediate danger.



WARNING!

Warns of a potentially dangerous situation.



CAUTION!

Warns of a possible danger.

NOTE!

Warns of damage to property.



Designates additional significant information, tips and recommendations.



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

► designates instructions for risk prevention.

→ designates a procedure which you must carry out.

2 AUTHORIZED USE

Non-authorized use of the globe valve type 2006 may be a hazard to people, nearby equipment and the environment.

- ▶ The device is designed for the controlled flow of liquid and gaseous media.
- ▶ In the potentially explosion-risk area the device may be used only according to the specification on the separate Ex type label. For use observe the additional information enclosed with the device together with safety instructions for the explosion-risk area.
- ▶ Devices without a separate Ex type label may not be used in a potentially explosive area.
- ▶ The admissible data, the operating conditions and conditions of use specified in the contract documents, operating instructions and on the type label are to be observed during use. The designated application cases are specified in the chapter entitled "[5 Product description](#)".
- ▶ The device may be used only in conjunction with third-party devices and components recommended and authorized by Bürkert.
- ▶ Correct transportation, correct storage and installation and careful use and maintenance are essential for reliable and problem-free operation.
- ▶ Use the device only as intended.

3 BASIC SAFETY INSTRUCTIONS

These safety instructions do not make allowance for any

- contingencies and events which may arise during the installation, operation and maintenance of the devices.
- local safety regulations; the operator is responsible for observing these regulations, also with reference to the installation personnel.



DANGER!

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 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 burns.

The surface of the device may become hot during long-term operation.

- ▶ Do not touch the device with bare hands.

General hazardous situations.

To prevent injury, ensure that:

- ▶ The system cannot be activated unintentionally.
- ▶ Do not use in areas which are prone to vibrations.

- ▶ Installation and repair work may be carried out by authorized technicians only and with the appropriate tools.
- ▶ After an interruption in the power supply or pneumatic supply, ensure that the process is restarted in a defined or controlled manner.
- ▶ The device may be operated only when in perfect condition and in consideration of the operating instructions.
- ▶ The general rules of technology apply to application planning and operation of the device.

To prevent damage to property of the device, ensure:

- ▶ Supply the media connections only with those media which are specified as flow media in the chapter entitled "[5 Technical Data](#)".
- ▶ Do not put any loads on the valve (e.g. by placing objects on it or standing on it).
- ▶ Do not make any external modifications to the valves. Do not paint the body parts or screws.



The globe valve type 2006 was developed with due consideration given to accepted safety rules and is state-of-the-art. However, dangers can still arise.

3.1 Definition of the term "Device"

In these instructions, the term "device" always refers to the globe valve type 2006.

4 GENERAL INFORMATION

4.1 Contact addresses

Germany

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

International

Contact addresses are found on the final pages of the printed operating manual. You can also find information on the Internet under: www.burkert.com

4.2 Warranty

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

4.3 Conformity

The globe valve type 2006 conforms with the EC Directives according to the EC Declaration of Conformity.

4.4 Standards

The applied standards, which verify conformity with the EC Directives, can be found on the EC-Type Examination Certificate and / or the EC Declaration of Conformity.

5 TECHNICAL DATA

5.1 General technical data

Control functions (CF)

- Control function A Closed by spring force in rest position
- Control function B Opened by spring force in rest position
- Control function I Actuating function via reciprocal pressurization

Materials and Connections

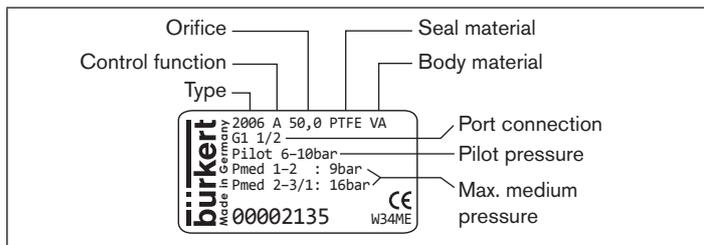
see datasheet

Media

- Control media Neutral gases, air
- Flow media Water, alcohols, oils, fuels, hydraulic liquid, saline solutions, lyes, organic solvents, steam

Installation position Any position, preferably with actuator face up

5.2 Type label (example)



5.3 Operating conditions

5.3.1 Temperature ranges

Actuator size [mm]	Actuator material	Temperature ranges	
		Medium (for PTFE seal)	Environment ¹⁾
50, 63	PA	-10... see "Fig. 1"	-10... see "Fig. 1"
80...125	PA	-10...+180 °C	-10...+60 °C
50...80	PPS	-10...+180 °C	+5...+140 °C
125	PPS	-10...+180 °C	+5...+90 °C ²⁾

Tab. 1: Temperature ranges



¹⁾ If a pilot valve is used, the max. ambient temperature is +55 °C

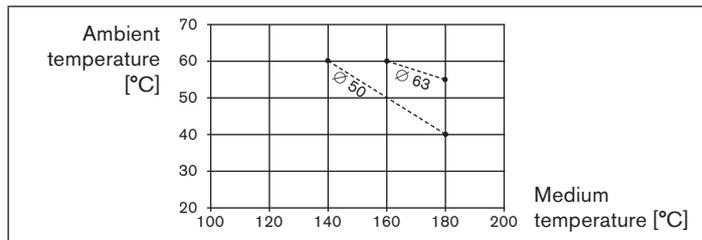


Fig. 1: Temperature range of the maximum medium and ambient temperature for PA actuators

²⁾ briefly up to max. 140 °C

5.3.2 Pressure ranges

Maximum control pressure:

Actuator material	Actuator size [mm]	Max. control pressure [bar]
PA	50...80	10
	125	7
PPS	50...80	10
	125	7

Tab. 2: Maximum control pressure

Maximum operating pressure, control function A:

Orifice [mm]	Actuator size [mm]	Max. medium pressure up to 180 °C [bar] direction of flow	
		1 → 2	2 → 3, 2 → 1
15, 20	50	11	16
	63	16	16
25	63	10	16
32, 40	80	9	16
	125	14	16
50	125	10	16

Tab. 3: Max. operating pressure



For control function F the maximum permitted operating pressure is 16 bar.

5.3.3 Minimum control pressures

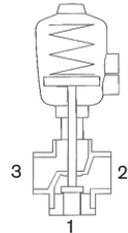
Minimum control pressure p_{min} , control function A:

Orifice [mm]	Actuator size [mm]	Min. control pressure p_{min} [bar]
15, 20	50	4,4
15, 20	63	4,7
25	63	4,9
32, 40	80	6,0
32, 40	125	3,4
50	125	4,3

Tab. 4: Minimum control pressure

Minimum control pressure p_{min}
 when direction of flow 3 → 2:

The required minimum control pressure p_{min} depends on the medium pressure.



6 ASSEMBLY



DANGER!

Risk of injury from high pressure in the equipment.

- ▶ Before dismounting pneumatic lines or valves, turn off the pressure and vent the lines.



WARNING!

Risk of injury from improper assembly.

- ▶ Installation may be carried out by authorized technicians only and 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.

For control function I: Danger if control pressure fails.

For control function I control and resetting occur pneumatically. If the pressure fails, no defined position is reached.

- ▶ To ensure a controlled restart, first pressurize the device with control pressure, then switch on the medium.

6.1 Before installation

- ▶ Before connecting the valve, ensure the pipelines are flush.
- ▶ Any installation position is possible, preferably with actuator face up.
- ▶ Observe direction of flow (see type label).

6.1.1 Preparatory work

→ Clean pipelines (sealing material, swarf, etc).

For customer-specific requirement only:

6.1.2 Remove actuator

Procedure:

→ Clamp valve body into a holding device.

NOTE!

Damage to the seat seal or the seat contour.

- ▶ When removing the actuator, ensure that the valve is in the open position.

→ Control function A and I:

Pressurize lower control air connection with compressed air (4 bar): Valve opens.

→ Place a suitable open-end wrench on the wrench flat of the nipple.

→ Unscrew the actuator off the valve body.

6.2 Installation



WARNING!

Risk of injury from improper installation.

Assembly with unsuitable tools or non-observance of the tightening torque is dangerous as the device may be damaged.

- ▶ For installation use an open-end wrench, never a pipe wrench.
- ▶ Observe the tightening torque (see "[Tab. 5: Tightening torques](#)").

Danger if incorrect lubricants used.

Unsuitable lubricant may contaminate the medium. In oxygen applications there is a risk of an explosion.

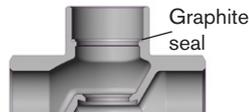
- ▶ In specific applications, e.g. oxygen or analysis applications, use appropriately authorized lubricants only.



Devices with approval in accordance with DIN EN 161

In accordance with DIN EN 161 "Automatic shut-off valves for gas burners and gas installations" a dirt trap must be connected upstream of the valve and prevent the insertion of a 1 mm plug gauge.

- Connect body to pipeline.
- Check graphite seal and, if required, replace. Remove all residues when replacing seal.
- Grease nipple thread before re-installing the actuator (e.g. with Klüber paste UH1 96-402 from Klüber).



NOTE!

Damage to the seal on the swivel plate.

- ▶ When installing the actuator, ensure that the valve is in the open position.

→ Control function A and I: Pressurize lower control air connection with compressed air (4 bar) so that the closing body is lifted off the valve seat and is not damaged when screwed in.

→ Screw actuator into the valve body.

Tightening torques:

Orifice (DN)	Tightening torque (Nm)
15	45 ± 3
20	50 ± 3
25	60 ± 3
32	65 ± 3
40	65 ± 3
50	70 ± 3

Tab. 5: Tightening torques

6.2.1 Rotating the drive

The position of the connections can be aligned steplessly by rotating the drive through 360 °.



WARNING!

Risk of injury from discharge of medium and pressure.

If the direction of rotation is wrong, the body interface may become detached.

- ▶ Turn the actuator **in the specified sense of direction** only (see “Fig. 2”).

NOTE!

Damage to the seal on the swivel plate.

- ▶ When turning the actuator, ensure that the valve is in the open position.

- Clamp the valve body into a holding device (applies only to valves not yet installed).
- For control function A pressurize the lower control air connection with compressed air (4 bar): Valve opens.
- Using a suitable open-end wrench, counter the wrench flat on the pipe.
- Place a suitable open-end wrench on the hexagon of the actuator (see “Fig. 2”).
- By turning the open-end wrench clockwise (viewed from above), move the actuator into the required position.

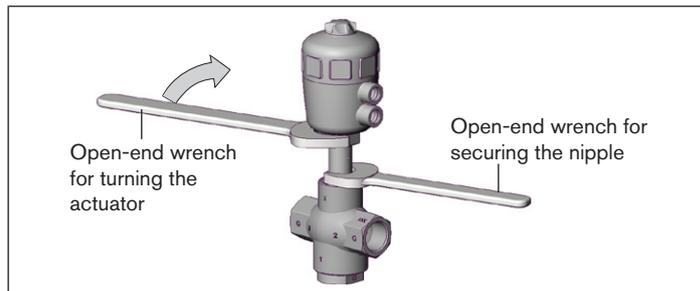


Fig. 2: Turning with open-end wrench

6.3 Pneumatic connection



DANGER!

Risk of injury from high pressure in the equipment.

- ▶ Before dismantling pneumatic lines or valves, turn off the pressure and vent the lines.



WARNING!

Risk of injury from unsuitable connection hoses.

Hoses which cannot withstand the pressure and temperature range may result in hazardous situations.

- ▶ Use only hoses which are authorized for the indicated pressure and temperature range.
- ▶ Observe the data sheet specifications from the hose manufacturers.

For control function I: Danger if control pressure fails.

For control function I control and resetting occur pneumatically. If the pressure fails, no defined position is reached.

- ▶ To ensure a controlled restart, first pressurize the device with control pressure, then switch on the medium.

! If the position of the control air connections is unfavorable for installation of the hoses, these can be steplessly aligned by turning the actuator through 360°. The procedure is described in chapter [“6.2.1 Rotating the drive”](#).

Control air hose: Control air hoses of size 1/4" can be used.

Control function	Control air connection	
	Top	Bottom
A		●
B	●	
I	●	●
	closes lower valve seat	opens



Fig. 3: Control air connection

! If used in an aggressive environment, we recommend conveying all free pneumatic connections into a neutral atmosphere with the aid of a pneumatic hose.

7 START-UP

! Observe the type label specifications and information on pressure and temperature values in section [“5 Technical Data”](#).

7.1 Control pressure

! **WARNING!**

For control function I: Danger if control pressure fails.

If the pressure fails, no defined position is reached.

- ▶ For a controlled restart, initially pressurize the equipment with control pressure and then connect the medium.

→ Set the control pressure according to the type label specifications and flow direction (section [“7.2”](#) and [“7.3”](#)).

7.2 Incoming flow above upper seat (direction of flow 3 → 2)

Control function A (CFA) closes by spring force the lower seat of the valve with the medium flow. The medium pressure supports the closure and seal of the valve seat. The valve is opened by the control pressure.

! **WARNING!**

Risk of injury due to water hammer.

A closing shock can cause lines and the equipment to burst.

- ▶ Only use valves with the flow direction above the seat for gaseous media.

 To ensure complete opening of the upper valve seat, the minimum control pressure must be used.

7.3 Flow direction below the lower seat (direction of flow 1 → 2)

Control function A (CFA) closes by spring force against the medium flow. Control function B (CFB) closes with the control pressure against the medium flow. The medium pressure supports the opening of the valve.

WARNING!

Seat leaks caused by the minimum control pressure being too low (on CFB and CFI) or the medium pressure being too high.

- ▶ Observe the minimum control pressure and medium pressure (see „5.5.1. Pressure ranges“).

8 DISASSEMBLY

DANGER!

Risk of injury from discharge of medium and pressure.

It is dangerous to remove a device which is under pressure due to the sudden release of pressure or discharge of medium.

- ▶ Before removing a device, switch off the pressure and vent the lines.

- Loosen pneumatic connection.
- Remove device.

9 PACKAGING, TRANSPORT, STORAGE

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 permitted storage temperature.

Incorrect storage may damage the device.

- ▶ Store the device in a dry and dust-free location.
- ▶ Storage temperature -20 ... +65 °C.

Damage to the environment caused by device components contaminated with media.

- ▶ Observe applicable regulations on disposal and the environment.
- ▶ Observe national waste disposal regulations.

Type 2006

Packaging, Transport, storage

www.burkert.com