bürkert
FLUID CONTROL SYSTEMS

Type 2000, 2002

2/2 way angle seat valve, 3/2 way globe valve
2/2-Wege-Schrägsitzventil, 3/2-Wege-Geradsitzventil
Vanne à siège incliné 2/2 voies, vanne à siège droit 3/2 voies



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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1 OPERATING INSTRUCTIONS

The operating instructions describe the entire life cycle of the device. 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 contain important safety information!

Failure to observe these instructions may result in hazardous situations.

- The operating instructions must be read and understood.

1.1 Symbols

DANGER!

Warns of an immediate danger!

- Failure to observe the warning may result in a fatal or serious injury.

WARNING!

Warns of a potentially dangerous situation!

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

CAUTION!

Warns of a possible danger!

- Failure to observe this warning may result in a moderately severe or minor injury.

NOTE!

Warns of damage to property!

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

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.

1.2 Definition of the term "Device"

In these instructions, the term "device" always refers to the angle seat valve type 2000 and/or the globe valve type 2002.

2 AUTHORIZED USE

Non-authorized use of the 2/2 way angle seat valve type 2000 and 3/2 way globe valve type 2002 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 "7 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 angle seat valve type 2000 / globe valve type 2002 was developed with due consideration given to accepted safety rules and is state-of-the-art. However, dangers can still arise.

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 Information on the Internet

The operating instructions and data sheets for Type 2000 and 2002 can be found on the Internet at: www.burkert.com

5 PRODUCT DESCRIPTION

5.1 General description

The externally controlled angle seat valve type 2000 / globe valve type 2002 is suitable for liquid and gaseous media.

It uses neutral gases or air (control media) to control the flow-rate of water, alcohol, oil, fuel, hydraulic fluid, saline solution, lye, organic solvent and steam (flow media).

5.2 Properties

- High tightness by self-adjusting packing glands (spindle sealing element).
- High seat tightness by swivel plate.
- High flow values by the streamlined valve body made of stainless steel.
- Actuator can be rotated steplessly through 360°.

5.2.1 Options

- Activation unit
  Different versions of the activation units are available depending on the requirement.
- Stroke limitation
  Limit of the maximum open position/flow rate by means of adjusting screw.
- Feedback indicator
  The device features mechanical limit switches or inductive proximity switches.

5.2.2 Device versions

The angle seat valve / globe valve is available for the following actuator sizes:

Type 2000: ø 40 mm to ø 125 mm
Type 2002: ø 50 mm to ø 125 mm

5.2.3 Restrictions

WARNING!

Risk of injury from water hammer.

A water hammer could crack the lines and device.

- ▸ Use valves with flow inlet above seat for gaseous media and steam only.

6 STRUCTURE AND FUNCTION

6.1 Structure

The angle seat valve / globe valve consists of a pneumatically actuated piston actuator and a 2-way valve body / 3-way valve body. The actuator is manufactured from PA or PPS. The tried and tested, self-adjusting packing gland ensures high tightness. The flow-enhancing valve body made of stainless steel or red bronze enables high flow values.

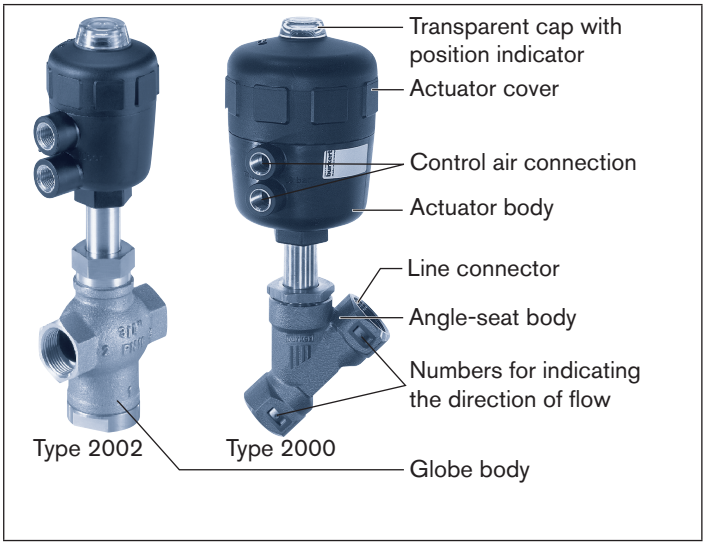


Fig. 1: Structure and description

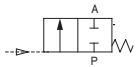
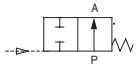
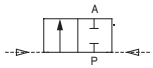
6.2 Function

Depending on the version, the seat of the valve is closed with or against the medium flow.

Spring force (CFA) or pneumatic control pressure (CFB and CFI) generates the closing force on the swivel plate. The force is transferred via a spindle which is connected to the actuator piston.

6.2.1 Control function (CF) for Type 2000 2/2 way angle seat valve

Control function (CF)

CFA		Closed by spring force in rest position.
CFB		Opened by spring force in rest position.
CFI		Actuating function via reciprocal pressurization.

Tab. 1: Type 2000 - Control functions

WARNING!

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.

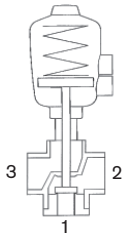
- To ensure a controlled restart, first pressurize the device with control pressure, then switch on the medium.

6.2.2 Control function (CF) and flow modes of operation for type 2002, 3/2 way globe valve

In the case of the globe valve Type 2002 different operating principles can be obtained with the same control function by swapping the pressure and working connections.

Control function A (CFA)

In rest position line connector 1 closed by spring force.

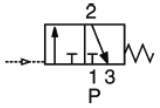
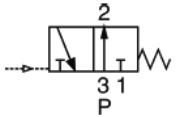
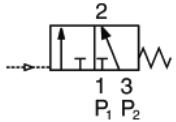
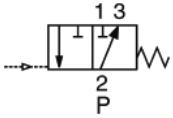


Flow modes of operation	Connection 1	2	3
C	P	A	R
D	R	A	P
E	P1	A	P2
F	A	P	B

A, B: Working connections
P, P1, P2: Pressure connections
R: Pressure relief

Tab. 2: Control function A (CFA)

Flow modes of operation

C		In rest position pressure connection 1 closed, working connection 2 relieved.
D		In rest position pressure connection 3 connected to working connection 2, relief 1 closed.
E		Mixing valve In rest position pressure connection 3 connected to working connection 2, pressure connection 1 closed.
F		Distribution valve In rest position pressure connection 2 connected to working connection 3, working connection 1 closed.

Tab. 3: Type 2001 - flow modes of operation

6.2.3 Incoming flow below seat

Depending on the version, the valve is closed against the medium flow by spring force (control function A, CFA) or by control pressure (control function B, CFB).

As the medium pressure is under the swivel plate, this pressure contributes to the opening of the valve.

WARNING!

Leaking seat if minimum control pressure is too low or medium pressure too high.

If the minimum control pressure is too low for CFB and CFI or the permitted medium pressure is exceeded, the seat may leak.

- Observe minimum control pressure.
- Do not exceed medium pressure.
- See chapter „7.5.2. Pressure ranges“.

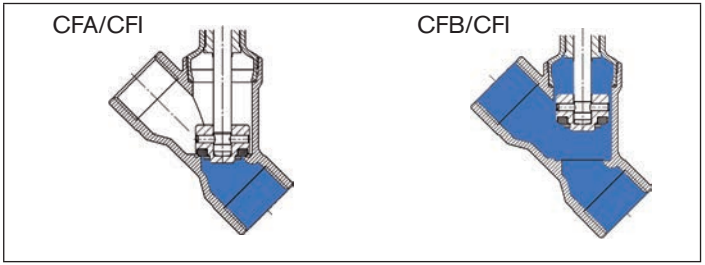


Fig. 2: Incoming flow below seat (closing against medium)

6.2.4 Incoming flow above seat

The valve is closed by spring force (control function A, CFA) with the medium flow. As the medium pressure is over the swivel plate, it supports the closing process of the valve and also contributes to the sealing of the valve seat.

The valve is opened by the control pressure.

WARNING!

Risk of injury from water hammer.

A water hammer could crack the lines and device.

- Use valves with flow inlet above seat for gaseous media and steam only.

To ensure complete opening, the minimum control pressure must be used!

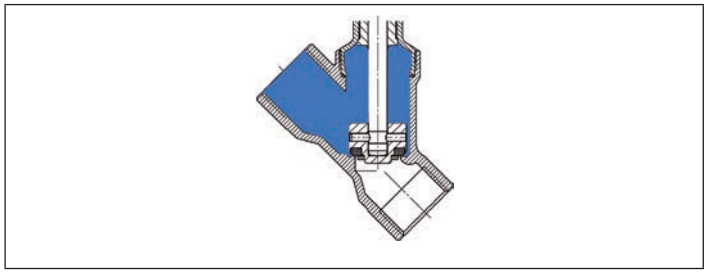


Fig. 3: Incoming flow above seat (closing with medium)

7 TECHNICAL DATA

7.1 Conformity

The angle seat valve type 2000 / globe valve type 2002 conforms with the EC Directives according to the EC Declaration of Conformity.

7.2 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.

7.3 Approvals

The product is authorized for use in Zone 1 and 21 according to the ATEX directive 94/9/EC of category 2 G/D.

7.4 Type label

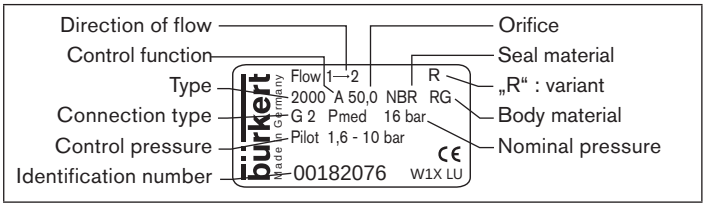


Fig. 4: Example of the type label

7.5 Operating conditions

7.5.1 Temperature ranges

Actuator size [mm]	Actuator material	Temperature ranges	
		Medium (for PTFE seal)	Environment [1]
40 - 63	PA	–10 ... see “Fig. 5”	–10 ... see “Fig. 5”
80 - 125	PA	–10 ... +180 °C	–10 ... +60 °C
40 - 80	PPS	–10 ... +180 °C	+5 ... +140 °C
100 - 125	PPS	–10 ... +180 °C	+5 ... +90 °C [2]

Tab. 4: Temperature ranges

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

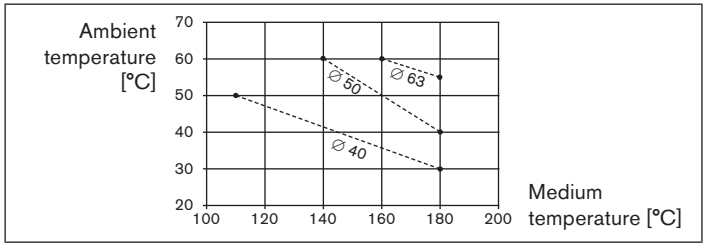


Fig. 5: Temperature range of the maximum medium and ambient temperature for PA actuators

[2] ** briefly up to max. 140 °C*

7.5.2 Pressure ranges

Maximum control pressure 2/2 way and 3/2 way valve:

Actuator material	Actuator size [mm]	Max. control pressure [bar]
PA	40 - 80	10
	125	7
PPS	40 - 80	10
	125	7

Tab. 5: Maximum control pressure

Maximum operating pressure 3/2 way valve, control function A:

Orifice [mm]	Actuator size [mm]	Max. medium pressure up to 180 °C [bar] direction of flow		Min. control pressure [bar]
		1 → 2	2 → 3, 2 → 1	
15 - 20	50	11	16	4.4
	63	16	16	4.7
25	63	10	16	4.9
32 - 40	80	9	16	6.0
	125	14	16	3.4
50	125	10	16	4.3

Tab. 6: Max. operating pressure

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

7.5.3 Minimum control pressures

Incoming flow below seat
(medium flow against the closing direction of the valve)

The required minimum control pressure P_{min} for control function A is:

Actuator size [mm]	40	50	63	80	100	125
P_{min} [bar]	4.0	3.9	4.5	5.0	4.4	3.2

The following graphs illustrate the required minimum control pressure depending on the medium pressure for control functions B and I (incoming flow below seat).

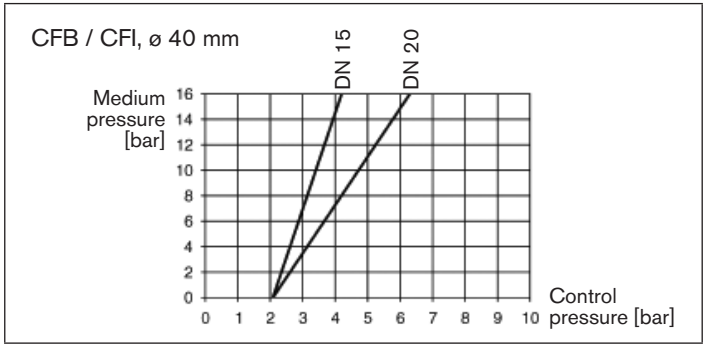


Fig. 6: Pressure graph, actuator ø 40 mm, control function B and I

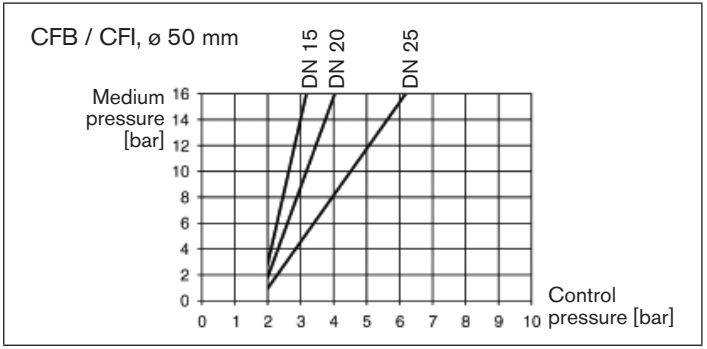


Fig. 7: Pressure graph, actuator ø 50 mm, control function B and I

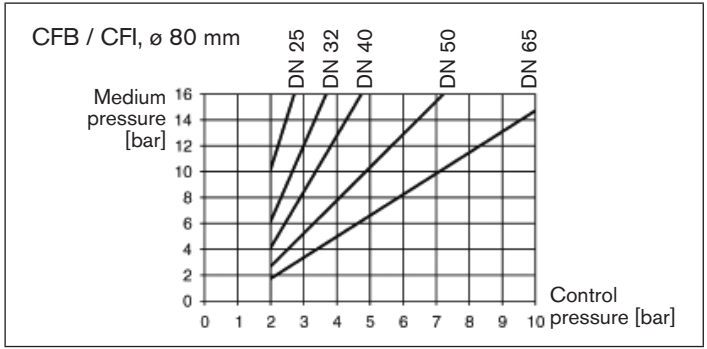


Fig. 9: Pressure graph, actuator ø 80 mm, control function B and I

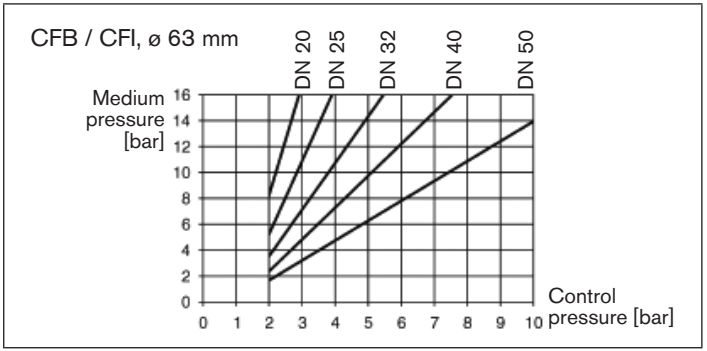


Fig. 8: Pressure graph, actuator ø 63 mm, control function B and I

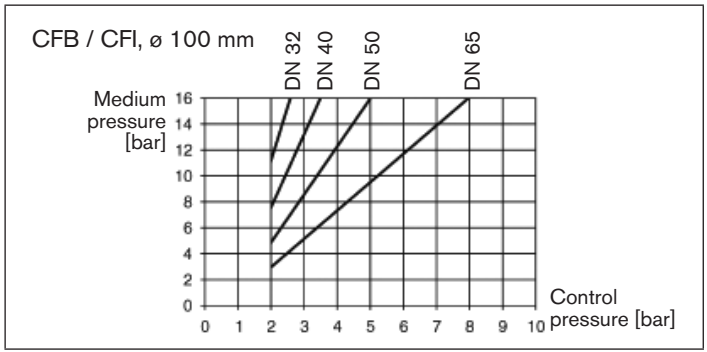


Fig. 10: Pressure graph, actuator ø 100 mm, control function B and I

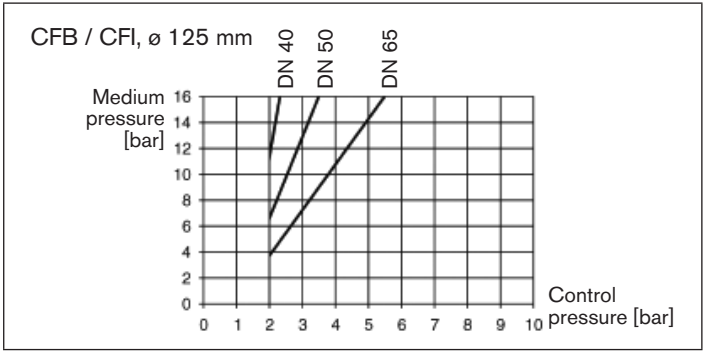


Fig. 11: Pressure graph, actuator ø 125 mm, control function B and I

Incoming flow above seat

(medium flow with the closing direction of the valve)

The following graphs illustrate the required minimum control pressure depending on the medium pressure for control function A (incoming flow above seat).

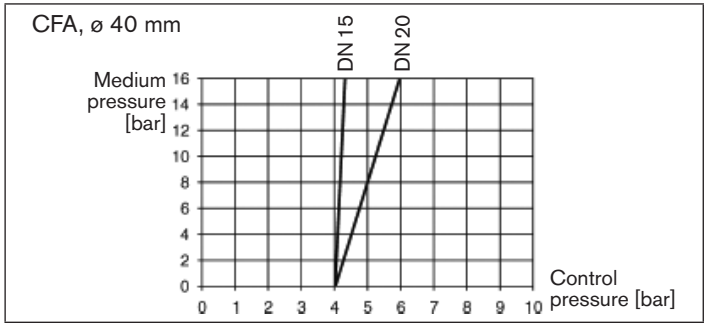


Fig. 12: Pressure graph, actuator ø 40 mm, control function A

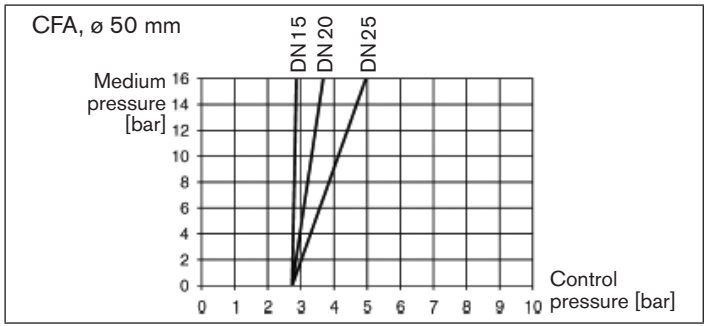


Fig. 13: Pressure graph, actuator ø 50 mm, control function A

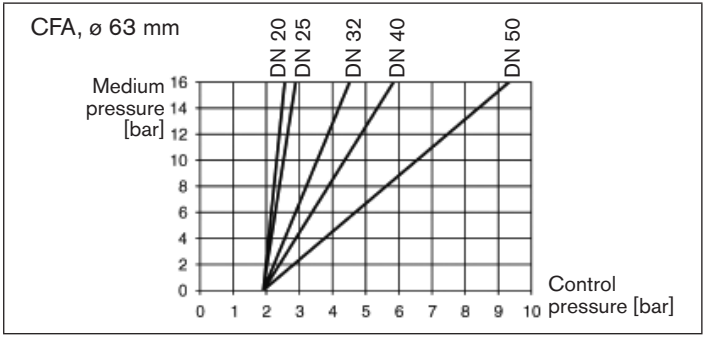


Fig. 14: Pressure graph, actuator ø 63 mm, control function A

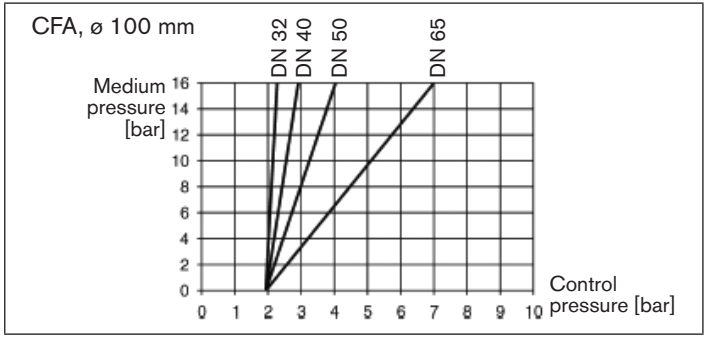


Fig. 16: Pressure graph, actuator ø 100 mm, control function A

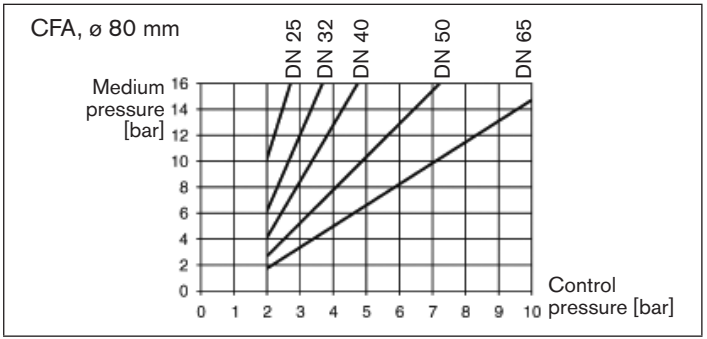


Fig. 15: Pressure graph, actuator ø 80 mm, control function A

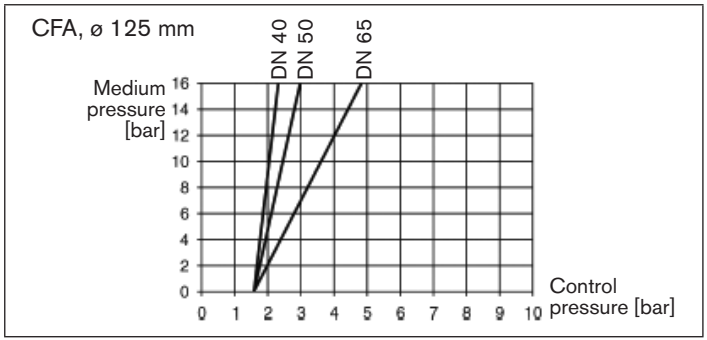


Fig. 17: Pressure graph, actuator ø 125, control function A

7.6 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

Valve	Type 2000 angle seat valve	Type 2002 3/2-way globe valve
Body	Socket body: Red bronze, stainless steel 316L	Red bronze
	Welded and clamped body: Stainless steel 316L	
Actuator	PA or PPS	PA (PPS on request)
Seal	PTFE (NBR, FKM, EPDM on request)	
Packing gland (with silicone grease)	Stainless-steel body: PTFE V rings with spring compensation Red bronze body: PTFE and FKM V rings with spring compensation	

Tab. 7: Materials

Media

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

Connections

Type 2000 angle seat valve	Type 2002 3/2-way globe valve
Socket: G 3/8 to G 2 1/2 (NPT on request)	G 1/2 to G 2
Welded connections: in accordance with EN ISO 1127, DIN 11850 R2 clamped connections: in accordance with ISO 2852, ASME BPE, BS 4825	

Tab. 8: Connections

Other connections on request.

Installation position any position, preferably with actuator face up

8 ASSEMBLY

8.1 Safety instructions

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.

WARNING!

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.

8.2 Before installation

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

8.2.1 Preparatory work

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

Devices with welded body:

Removing the actuator from the valve body:

→ 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 (5 bar): Valve opens.

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

→ Unscrew the actuator off the valve body.

Devices with socket body:

→ Do not remove actuator unless this is a customer-specific requirement.

8.3 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. 9: Tightening torques”).

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.

8.3.1 Installing the body

Welded body:

→ Weld valve body in pipeline system.

Other body designs:

→ Connect body to pipeline.

8.3.2 Installing the actuator (welded body)

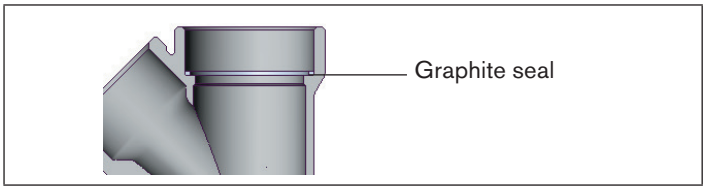


Fig. 18: Graphite seal

→ Check graphite seal and, if required, replace. Remove all residues when replacing seal.

WARNING!

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.

→ 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 (5 bar) so that the swivel plate 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
65	70 ± 3

Tab. 9: Tightening torques

If the body is stainless steel, grease the nipple thread with e.g. Klüber paste UH1 96-402.

8.3.3 Rotating the drive

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

NOTE!

Damage to the seal on the swivel plate!

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

Procedure:

→ Clamp the valve body into a holding device (applies only to valves not yet installed).

→ For control function A and I pressurize the lower control air connection with compressed air (5 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. 19”).

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. 19”).

→ By turning the open-end wrench clockwise (viewed from above), move the actuator into the required position.

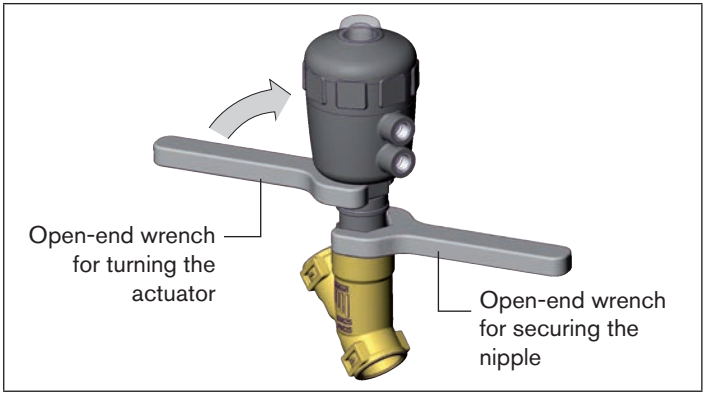


Fig. 19: Turning with open-end wrench

8.4 Pneumatic connection

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 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.

8.4.1 Connection of the control 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 “8.3.3 Rotating the drive”.

Control function A: On the lower connection of the actuator.

Control function B: On the upper connection of the actuator.

Control function I:
On the upper and lower connections of the actuator. Pressure on the lower connection opens the valve, pressure on the upper connection closes the valve.

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



Fig. 20: 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.

Control air hose:
Control air hoses of sizes 1/4" or 1/8" (actuator ø 40 mm) can be used.

9 START-UP

- Observe the type label specifications and information on pressure and temperature values in section “7 Technical Data”.

9.1 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, see section “7.4” and flow direction (section “9.2” and “9.3”).

9.2 Flow direction above the seat

Control function A, CFA: closes by spring force 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, the minimum control pressure must be used!

9.3 Flow direction below the seat

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.

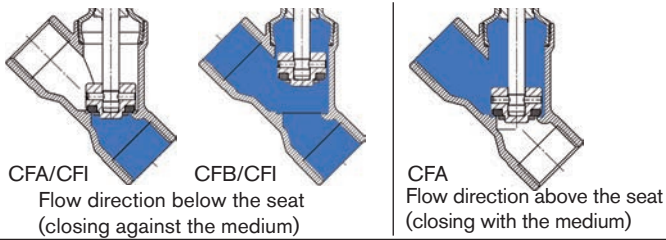


Fig. 21: Flow direction above/below the seat

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“).

10 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.

Procedure:

→ Loosen pneumatic connection.

→ Remove device.

11 MAINTENANCE, TROUBLESHOOTING

11.1 Safety instructions

DANGER!

Risk of injury from high pressure in the equipment!

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

Risk of injury from electric shock (only in conjunction with corresponding actuators)!

- 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 improper maintenance!

- Maintenance 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 maintenance, ensure a controlled restart.

WARNING!

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.

11.2 Maintenance work

Actuator:

The actuator is maintenance-free provided it is used according to these operating instructions.

Wearing parts of the angle seat valve / 3/2-way globe valve:

- Seals
- Swivel plate

→ If leaks occur, replace the particular wearing parts with an appropriate spare part (see Chapter “12 Spare parts”).

11.2.1 Recommended maintenance intervals

The valve should be visually inspected once a year. Shorter maintenance intervals are recommended depending on application conditions. The visual inspection includes the pneumatic connections and the medium connections as well as the deaeration bore in the pipe.

11.2.2 Cleaning

Commercially available cleaning agents can be used to clean the outside.

NOTE!

Avoid causing damage with cleaning agents!

- Before cleaning, check that the cleaning agents are compatible with the body materials and seals.

11.3 Malfunctions

Malfunction	Remedial action
Actuator does not switch	Control air connection interchanged [3)] CFA: Connect lower control air connection CFB: Connect upper control air connection CFI: Lower control air connection: Open Upper control air connection: Close
	Control pressure too low → See pressure specifications on the type label
	Medium pressure too high → See pressure specifications on the type label
	Direction of flow interchanged → See direction or arrow on the type label
Valve is not sealed	Dirt between seal and valve seat → Installing dirt trap
	Seat seal worn → Installing new swivel plate
	Direction of flow interchanged → See direction or arrow on the type label
	Medium pressure too high → See pressure specifications on the type label
	Control pressure too low → See pressure specifications on the type label
Valve is leaking on the release bore	Packing gland worn → Renew packing gland or replace actuator

Tab. 10: Malfunctions

3) *see "8.4 Pneumatic connection"*

12 SPARE PARTS

CAUTION!

Risk of injury and/or damage by the use of incorrect parts!

Incorrect accessories and unsuitable spare parts may cause injuries and damage the device and the surrounding area.

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

12.1 Replacement part sets

The following replacement part sets are available for the angle seat valve Type 2000 / globe valve Type 2002:

- Valve set
  consists of swivel plate, pin and graphite seal.
- Seal set for actuator
  consisting of the sealing and wearing parts of the actuator.

12.1.1 Replacement part sets for angle seat valve

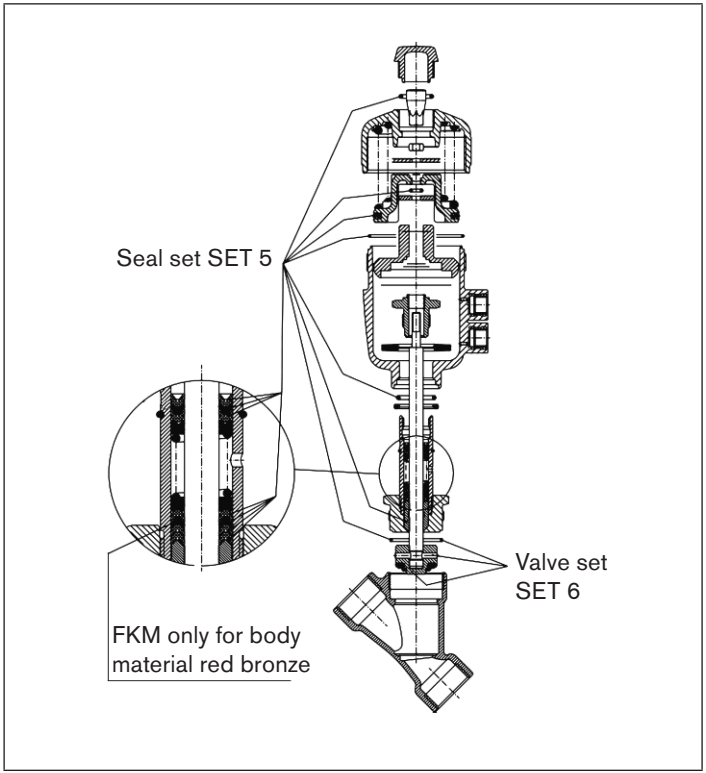


Fig. 22: Spare parts for angle seat valve

12.1.2 Replacement part sets for 3/2 way globe valve

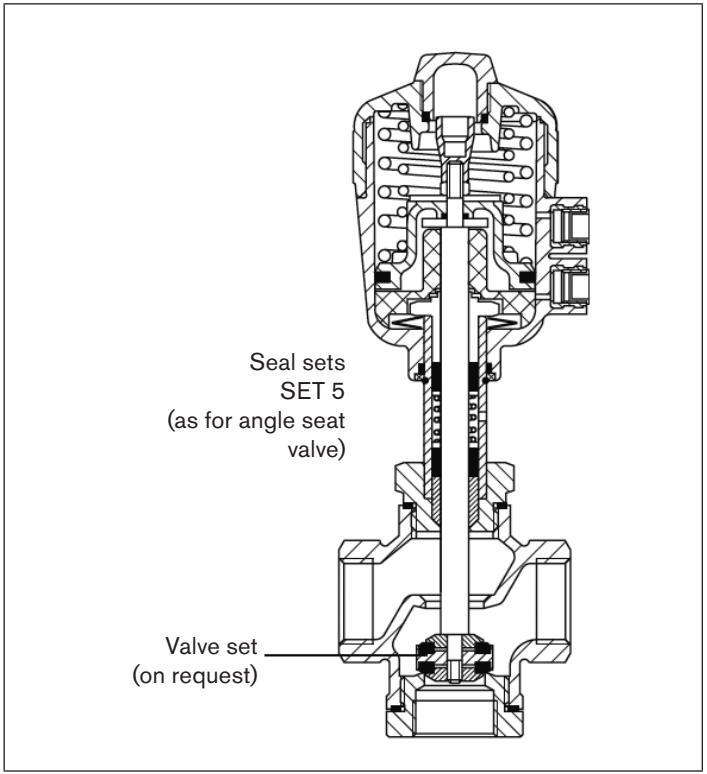


Fig. 23: Spare parts for globe valve

12.1.3 Spare parts for seal set SET 5

Actuator size	Matching valve sizes	Order no. (red bronze body)	Order no. (stainless steel body)
C (ø 40)[4]	DN 15/20/25	233 587	233 587
C (ø 40)	DN15/20/25	288 011	288 011
D (ø 50)	DN 15/20/25	233 588	233 588
E (ø 63)	DN 25-50	233 591	233 591
F (ø 80)	DN 25-65	233 593	233 593
G (ø 100)	DN 32-65	233 594	233 594
H (ø 125)	DN 40-65	233 596	233 596

Tab. 11: SET 5; PA actuator

Actuator size	Matching valve sizes	Order no. (red bronze body)	Order no. (stainless steel body)
C (ø 40)[4]	DN 15/20/25	233 581	233 581
C (ø 40)	DN 15/20/25	288 013	288 013
D (ø 50)	DN 15/20/25	233 582	233 582
E (ø 63)	DN 25-50	233 583	233 583
F (ø 80)	DN 25-65	233 584	233 584
G (ø 100)	DN 32-65	233 585	233 585
H (ø 125)	DN 40-65	233 586	233 586

Tab. 12: SET 5; PPS actuator

[4] *Actuator cover without transparent cap*

12.1.4 Spare parts for valve set SET 6

Valve set SET 6 red bronze body (2/2 way valve):

DN	Order no. (PTFE seal)	Order no. (FKM seal)
15	010 984	011 065
20	010 986	011 070
25[5)]	010 988	011 085
25[6)]	159 635	-
32	011 044	011 088
40	011 046	011 107
50	233 819	233 821
65	233 820	233 822

Tab. 13: SET 6 – red bronze body

Valve set SET 6 stainless steel body (2/2 way valve):

DN	Order no. (PTFE seal)	Order no. (FKM seal)
15	011 134	011 234
20	011 171	011 253
25[7)]	011 202	011 259
25[8)]	160 737	168 816
32	011 208	011 262
40	011 209	011 267
50	233 813	233 817
65	233 815	233 818

Tab. 14: SET 6 – stainless steel body

5) *Actuator size 50*
6) *Actuator size 63*

7) *Actuator size 50*
8) *Actuator size 63*

13 REPAIRS

Further information on repairs can be found in the maintenance and repair instructions which are on the Internet: www.burkert.com

If you have any queries, please contact your Bürkert sales office.

14 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.

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FLUID CONTROL SYSTEMS

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