

## Type 2060

2/2-way angle seat valve  
2/2-Wege-Schrägsitzventil  
Vanne à siège incliné 2/2 voies



## Operating Instructions

Bedienungsanleitung  
Manuel d'utilisation

valvesgo.com

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Technische Änderungen vorbehalten.  
Sous réserve de modifications techniques.

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Operating Instructions 2208/04\_EUeu\_00810532 / Original DE

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# 1 OPERATING INSTRUCTIONS

The operating instructions describe the entire life cycle of the device. Keep these instructions in an easily accessible location for every user. The instructions must be available to each new owner of the device.

## Important safety information.

Failure to observe these instructions may result in hazardous situations.

- The operating instructions must be read and understood.

## 1.1 Definition of the term "device"

The term "device" used in these instructions always refers to the Type 2060 angle seat valve.

In these instructions, the unit bar stands for relative pressure. The absolute pressure is indicated separately in bar(abs).

## 1.2 Symbols



### DANGER!

#### Warns of an immediate danger.

- Failure to observe these instructions will result in death or serious injuries.



### WARNING!

#### Warns of a potentially hazardous situation.

- Failure to observe these instructions may result in serious injuries or death.



### CAUTION!

#### Warns of a potential danger.

- Failure to observe these instructions may result in moderate or minor injuries.

### NOTE!

#### Warns of damage!



Important tips and recommendations.



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

- Designates instructions to avoid danger.

→ Designates a procedure that you must carry out.

## 2 INTENDED USE

**Improper use of the Type 2060 system may be hazardous to people, nearby equipment and the environment.**

- ▶ The device is designed to control the flow of liquid and gaseous media.
- ▶ In potentially explosive environments, the device must only be used in accordance with the specifications on the separate Ex-type label. The additional information and safety instructions relating to potentially explosive environments enclosed with the device must be adhered to when deploying the device.
- ▶ Devices without a separate Ex type label must not be used in the potentially explosive atmosphere.
- ▶ When using the device, observe the specified permissible data as well as the operating and usage conditions set forth in the contract documents and the operating instructions.
- ▶ Prerequisites for safe and trouble-free operation include correct transportation, correct storage and proper installation, start-up, operation and maintenance.
- ▶ Use the device only in conjunction with third-party devices and components recommended or approved by Bürkert.
- ▶ Use the device only as intended.

## 3 BASIC SAFETY INSTRUCTIONS

These safety instructions do not take into account any unforeseen circumstances and events that occur during installation, operation and maintenance.

The plant operator is responsible for observing the local safety regulations, even with reference to the personnel.



### **Risk of injury from high pressure.**

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

### **Risk of injury from electric shock.**

- ▶ Before working on the device, switch off the power supply and secure it against reactivation!
- ▶ Observe any applicable accident prevention regulations and safety regulations for electrical devices.

### **Risk of burns or fire from hot device surfaces due to prolonged operation.**

- ▶ Do not touch the device with your bare hands. Keep away from highly flammable substances and media.

### **Risk of injury of parts being ejected out when opening the actuator.**

- ▶ Do not open the actuator.

### **Risk of injury due to moving parts in the device.**

- ▶ Do not reach into openings.

### General hazardous situations.

To prevent injuries, observe the following:

- ▶ Secure the device against unintentional activation.
- ▶ Only trained technicians carry out installation and maintenance work.
- ▶ Following an interruption in the power supply, ensure that the process is restarted in a controlled manner.
- ▶ Operate the device only when it is in perfect condition and in accordance with the operating instructions.
- ▶ Observe the general rules of technical equipment.

To protect against damage to property, observe the following:

- ▶ Only feed the fluids listed in chapter "[Technical data](#)" into the fluid connections.
- ▶ Do not mechanically load the device.
- ▶ Do not make any changes to the devices. Do not varnish housing parts.

## 4 GENERAL NOTES

### 4.1 Contact addresses

#### Germany

Bürkert Fluid Control Systems  
Sales Centre  
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@burkert.com](mailto:info@burkert.com)

#### International

The contact addresses can be found on the back pages of the printed operating instructions.

They are also available online at: [country.burkert.com](http://country.burkert.com)

### 4.2 Warranty

A precondition for the warranty is that the device is used as intended and that the specified usage conditions are taken into account.

### 4.3 Information on the Internet

Operating instructions and data sheets for Type 2060 can be found online at: [country.burkert.com](http://country.burkert.com)

## 5 PRODUCT DESCRIPTION

### 5.1 Design

The angle seat valve consists of a pneumatically actuated piston actuator and a 2/2-way valve body. The device uses neutral gases or air to control the flow rate of liquid or gaseous media such as water, alcohol, oil, fuel, saline solution, lye, organic solvent or vapour.

The actuator is made of stainless steel.

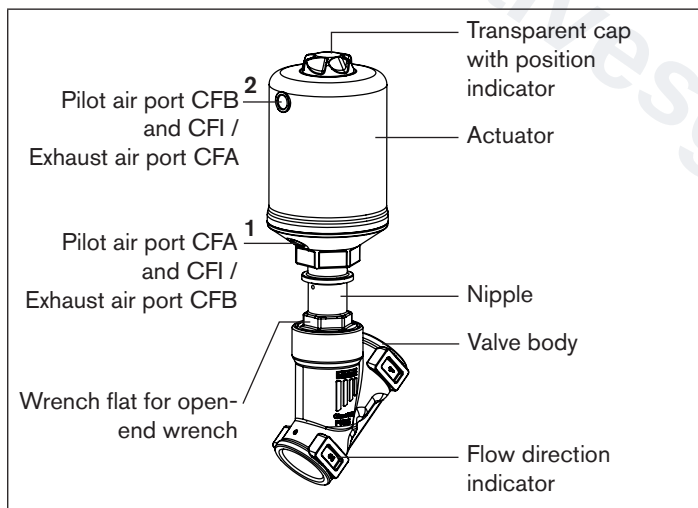


Image 1: Type 2060 angle seat valve, structure and description

### 5.2 Application range



Observe the maximum pressure range on the type label.

- For neutral gases and liquids up to 25 bar (limit: DN65 max. 12 bar).
- Steam up to 230 °C.
- Aggressive media.

### 5.3 Properties

- High seal tightness due to self-adjusting packing gland.
- High flow rate values due to the stainless steel valve body that aids in flow.
- Actuator can be seamlessly rotated by 360°.

#### 5.3.1 Options

- Stroke limitation (as max. or min./max. version)  
Limitation of the open position of the valve and thus the flow rate by means of adjusting screw.
- Position feedback sensor  
Feedback sensor for the valve position using inductive proximity switch or Type 8697 feedback sensor

#### 5.3.2 Device variants

The angle seat valve is available for the following actuator sizes: 50, 70, 90, 130 (see "6.4").

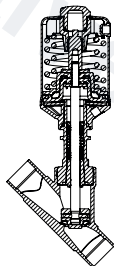
## 5.4 Function

Depending on the variant, the valve seat is closed with or against the medium flow. Spring action (CFA) or pneumatic pilot pressure (CFB and CFI) generate the closing force on the swivel plate. Force is transmitted through a spindle connected to the piston actuator.

### 5.4.1 Control function (CF)

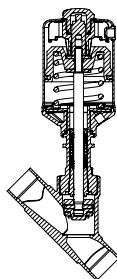
#### Control function A (CFA)

Closed by spring force in rest position



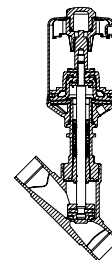
#### Control function B (CFB)

Opened by spring force in rest position



#### Control function I (CFI)

Actuating function via reciprocal pressurization



### 5.4.2 Flow under seat

Depending on the variant, the valve is closed against the medium flow with spring action (CFA) or with control pressure (CFB or CFI). Operating pressure under the pendulum plate helps open the valve.



#### WARNING!

**Valve seat not sealed when control pressure too low or operating pressure too high.**

If control pressure for control function B and control function I is too low or operating pressure is too high, this can cause the valve seat to leak.

- Comply with minimum control pressure and maximum operating pressure.

### 5.4.3 Flow above seat

The valve is closed by spring action (CFA) with the medium flow. The operating pressure above the swivel plate helps close the valve and seal the seat. The valve opens through pilot pressure.



#### **WARNING!**

**Risk of injury from rupturing lines and device with flow direction above the seat.**

In the case of liquid media, a pressure surge can lead to the bursting of pipes and device.

- ▶ Do not use valves with flow direction above the seat for liquid media.



In order to ensure complete opening, the minimum pilot pressure must be used.

## 6 TECHNICAL DATA

### 6.1 Conformity

The angle seat valve Type 2060 INOX conforms to EU directives as per the EU Declaration of Conformity.

### 6.2 Standards

The applied standards as used to verify compliance with the Directives can be found in the EU type examination certificate and/or the EU Declaration of Conformity.

Observe the following operating conditions according to the Pressure Equipment Directive:

| DN port connection | Maximum pressure for compressible fluids of Group 1 (dangerous gases and vapours according to Art. 3, No. 1.3, letter a, first dash) |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| DN65               | 12 bar                                                                                                                               |

## 6.3 Type label



### WARNING!

#### Risk of injury from high pressure.

Excessive pressure can damage the device.

- Comply with pressure range values on the type label.

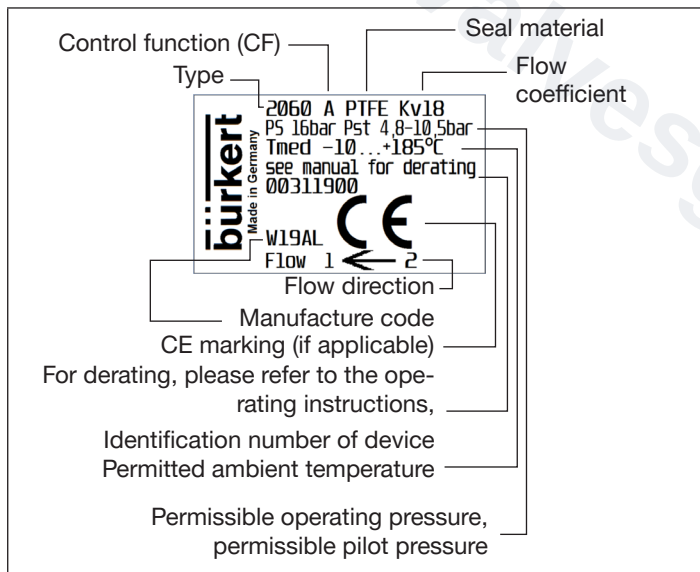


Image 2: Description of the type label (example)

## 6.4 Conversion of actuator sizes

| Actuator size [mm] | Designation | Outer diameter A [mm] | Scale drawing |
|--------------------|-------------|-----------------------|---------------|
| 50                 | D           | 55                    |               |
| 70                 | M           | 75                    |               |
| 90                 | N           | 96                    |               |
| 130                | P           | 137                   |               |

Image 3: Conversion of actuator sizes

## 6.5 Operating conditions

### 6.5.1 Temperature ranges

| Actuator size [mm] | Actuator material | Medium temperature (with PTFE and PEEK seal) | Ambient temperature                                  |
|--------------------|-------------------|----------------------------------------------|------------------------------------------------------|
| 50                 | Stainless steel   | -10...+230 °C                                | see "Image 4",<br>"Tab. 3", "Tab. 4" and<br>"Tab. 5" |
| 70                 |                   |                                              |                                                      |
| 90                 |                   |                                              |                                                      |
| 130                |                   |                                              |                                                      |

Tab. 1: Temperature ranges



The angle seat valve is suitable for steam sterilization.

### 6.5.2 Pressure ranges

| Actuator size [mm] | Maximum pilot pressure |
|--------------------|------------------------|
| 50                 | 10.5 bar               |
| 70                 |                        |
| 90                 |                        |
| 130                | 7.5 bar                |

Tab. 2: Pressure ranges

### Derating pressure and temperature range

Usage limits of the valve (derating operating pressure)

| Temperature  | Operating pressure |
|--------------|--------------------|
| -10 – +50 °C | 25 bar             |
| 100 °C       | 24.5 bar           |
| 150 °C       | 22.4 bar           |
| 200 °C       | 20.3 bar           |
| 230 °C       | 19 bar             |

Tab. 3: Derating the operating pressure as per DIN EN 12516-1/ PN25

| Temperature  | Operating pressure |
|--------------|--------------------|
| -29 – +38 °C | 19 bar             |
| 50 °C        | 18.4 bar           |
| 100 °C       | 16.2 bar           |
| 150 °C       | 14.8 bar           |
| 200 °C       | 13.7 bar           |
| 230 °C       | 12.7 bar           |

Tab. 4: Derating the operating pressure as per ASME B16.5/ ASME B16.34 Cl.150

| Temperature  | Operating pressure |
|--------------|--------------------|
| -10 – +50 °C | 14 bar             |
| 100 °C       | 14 bar             |
| 150 °C       | 13.4 bar           |
| 200 °C       | 12.4 bar           |
| 230 °C       | 11.7 bar           |

Tab. 5: Derating the operating pressure as per JIS B 2220 10K

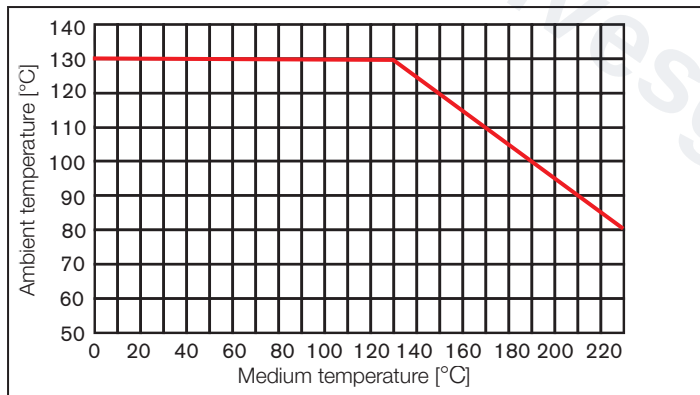


Image 4: Derating VA actuator size 50, 70, 90, 130

Operating and pilot pressure for control function A (CFA), flow direction below seat (standard):

| DN | Maximum operating pressure<br>[bar] |     |     |     | Minimum pilot<br>pressure<br>[bar] |     |     |     |
|----|-------------------------------------|-----|-----|-----|------------------------------------|-----|-----|-----|
|    | Actuator size [mm]                  |     |     |     | Actuator size [mm]                 |     |     |     |
|    | 50                                  | 70  | 90  | 130 | 50                                 | 70  | 90  | 130 |
| 15 | 16                                  | 25  | -   | -   | 4.0                                | 4.8 | -   | -   |
| 20 | 11                                  | 25  |     |     |                                    |     | 5.0 |     |
| 25 | 5.2                                 | 16  |     |     | 25                                 | -   | -   |     |
| 32 | -                                   | 8.5 | 25  | -   | 5.0                                |     |     |     |
| 40 |                                     | 6.0 | 16  |     | 25                                 | -   | 5.0 |     |
| 50 | -                                   | -   | 10  | 25  | -                                  |     | 5.0 |     |
| 65 | -                                   |     | 5.0 | 12  |                                    | -   | 5.6 |     |

Tab. 6: Operating and pilot pressure CFA, standard

Operating pressure and pilot pressure for control function A (CFA), flow direction below seat, reduced spring action (EC04)

| DN | Maximum operating pressure [bar] |     |     |     | Minimum pilot pressure [bar] |     |     |     |
|----|----------------------------------|-----|-----|-----|------------------------------|-----|-----|-----|
|    | Actuator size [mm]               |     |     |     | Actuator size [mm]           |     |     |     |
|    | 50                               | 70  | 90  | 130 | 50                           | 70  | 90  | 130 |
| 15 | 10                               | 16  | –   | –   | 2.7                          | 2.5 | –   | –   |
| 20 | 4.0                              | 12  |     |     |                              |     |     |     |
| 25 | 2.1                              | 6.0 |     |     |                              |     |     |     |
| 32 | –                                | 3.5 | 9.0 | 16  | –                            | –   | 2.5 | 2.5 |
| 40 |                                  | 2.0 | 6.0 |     |                              |     |     |     |
| 50 |                                  | –   | 3.5 |     |                              |     |     |     |
| 65 |                                  |     | –   | 7.5 |                              |     |     |     |

Tab. 7: Operating and pilot pressure CFA, reduced spring action (EC04)

Required minimum control pressure depending on the operating pressure

The following diagrams show the required minimum control pressure for control functions A, B and I, depending on the operating pressure.

Control function A, flow direction above the seat

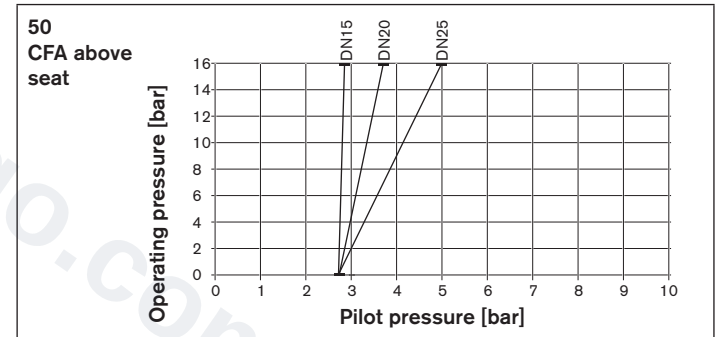


Image 5: Pressure diagram, actuator size 50, control function A, flow direction above the seat

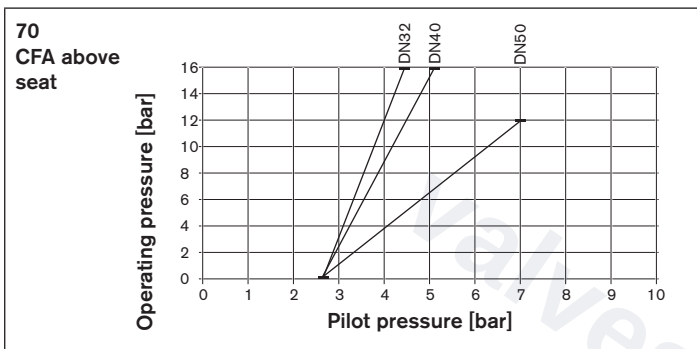


Image 6: Pressure diagram, actuator size 70, control function A, flow direction above the seat

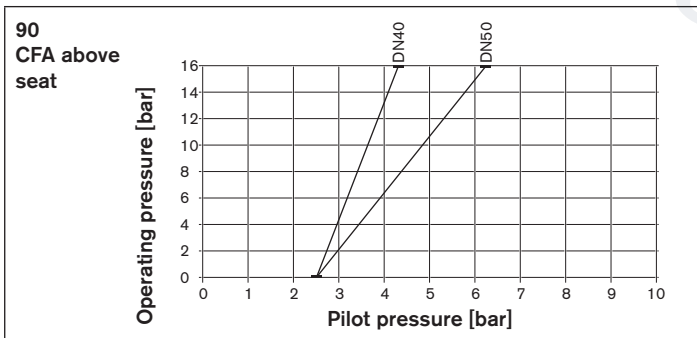


Image 7: Pressure diagram, actuator size 90, control function A, flow direction above the seat

**Control function B and I, flow direction below seat**

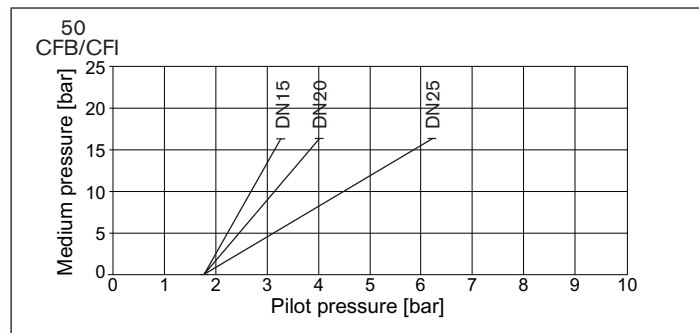


Image 8: Pressure diagram, actuator size 50, control function B and I, flow direction below seat

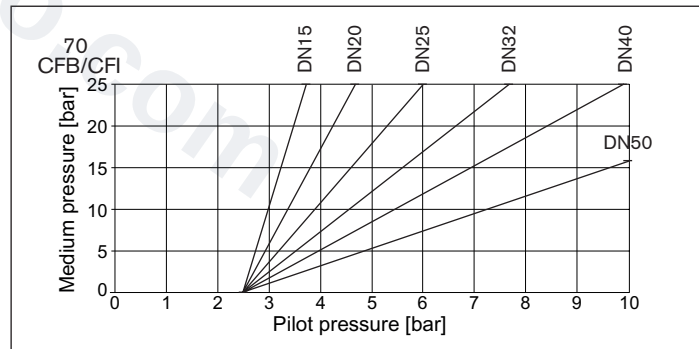


Image 9: Pressure diagram, actuator size 70, control function B and I, flow direction below seat

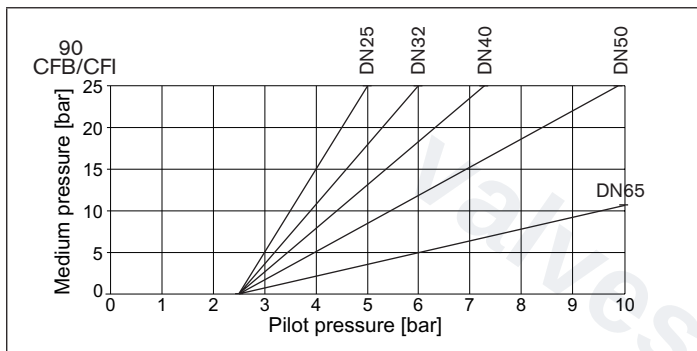


Image 10: Pressure diagram, actuator size 90, control function B and I, flow direction below seat

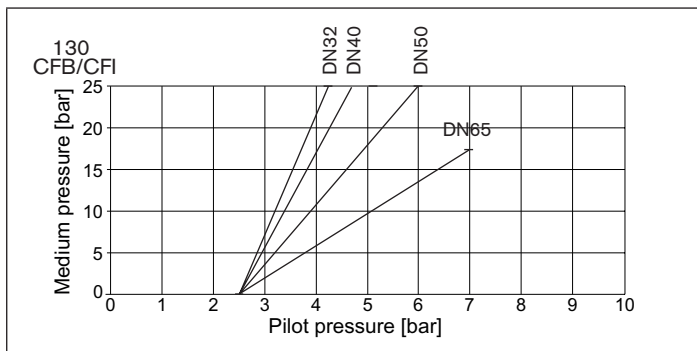


Image 11: Pressure diagram, actuator size 130, control function B and I, flow direction below seat

## 6.6 General technical data

Actuator size See type label  
Control function, see type label Description of control functions, see Chapter "5.4"

Installation position Any, preferably actuator face up

### Media:

Control media Neutral gases, air  
Flow media Water, alcohol, fuel, hydraulic fluid, saline solution, lyes, organic solvent

### Materials:

Valve body 316L  
Actuator Stainless steel  
Sealing elements FKM and EPDM  
Spindle seal (with silicone grease) PTFE V-rings with spring compensation  
Seat seal  
Swivel plate PTFE (NBR, EPDM, FKM, PEEK on request)  
Spindle 1.4401/1.4404  
Spindle guide PEEK

### Connections:

Pilot air port Stainless steel threaded bushing G1/8  
Medium connection Socket: G1/2...G2 1/2 (NPT, RC on request)  
Welded connection: to ISO 4200, DIN 11850 R2, other connections on request

## 7 INSTALLATION



### DANGER!

#### Risk of injury from high pressure in the system.

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



### WARNING!

#### Risk of injury due to improper installation.

- ▶ Installation may only be performed by qualified and trained personnel.
- ▶ Use an open-end wrench for installation.
- ▶ Following installation, ensure a controlled restart.

#### For control function I: Risk of pilot pressure failure.

The valve stays in an undefined position in the event of a pilot pressure failure.

- ▶ To ensure a controlled restart of the device, apply pilot pressure and activate the medium.

#### Risk of injury due to moving parts in the device.

- ▶ Do not reach into openings.

### 7.1 Preparatory work

- Ensure that pipelines are in alignment.
- Remove soiling from pipelines.
- Note flow direction (see type label).

### 7.2 Removing actuator from the valve body

→ Clamp valve body into a collet.

#### NOTE!

##### Damage to the seat seal or seat contour.

- ▶ When removing the actuator, the valve must be in the open position.

→ For control function A pressurize the pilot air port 1 with compressed air: Valve opens.

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

→ Unscrew actuator from the valve body.

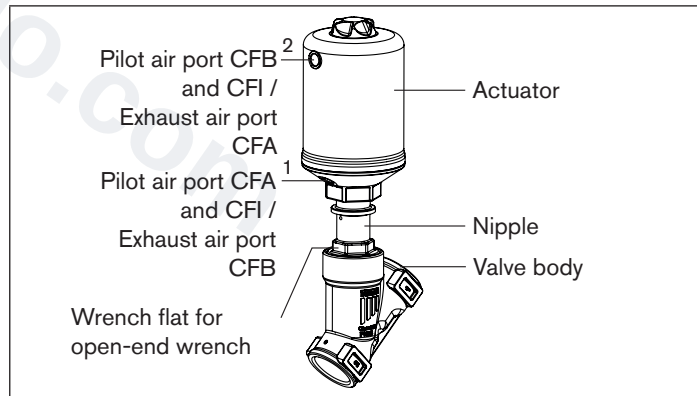


Image 12: Angle seat valve Type 2060

## 7.3 Installing valve body



### WARNING!

#### Risk of injury due to improper installation.

- ▶ Installation may only be performed by qualified and trained personnel.
- ▶ Use an open-end wrench for installation.
- ▶ Observe the tightening torque value.

### Dirt trap for devices with approval according to DIN EN 161

According to DIN EN 161 "Automatic on/off valves for gas burners and gas appliances", a dirt trap, which prevents the penetration of a 1 mm test pin, must be installed upstream of the valve.

If stainless steel valve body approval applies:

→ Mount strainer in front of angle seat valve

### Welded connection:

→ Weld valve body into pipeline.

### Other bodies:

→ Connect valve body to pipeline.

## 7.4 Install actuator (welded connection)

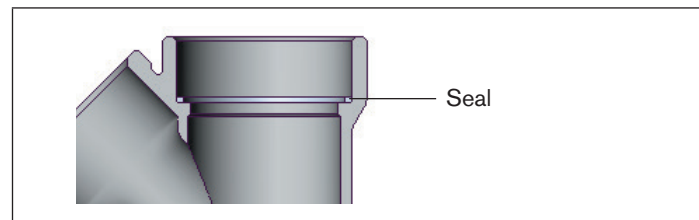


Image 13: Seal

→ Replace seal.



### WARNING!

#### Danger due to incorrect lubricants.

Unsuitable lubricant may contaminate the medium. There is a risk of explosion in oxygen applications.

- ▶ For specific applications, e.g. oxygen or analysis applications, use approved lubricants only.

→ Before re-installation, grease nipple thread (e.g. using Klüber-paste UH1 96-402 from Klüber).

### NOTE!

#### Damage to the seat seal or seat contour.

- ▶ When installing the actuator, the valve must be in the open position.

- For control function A pressurize the pilot air port 1 with compressed air: Valve opens.

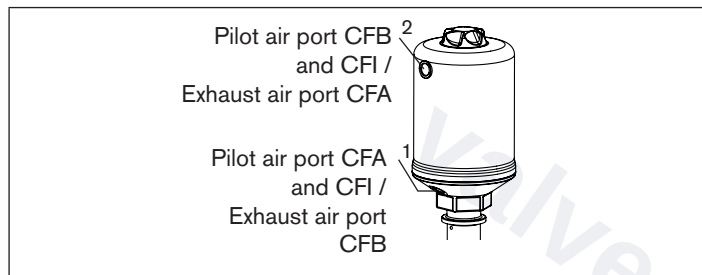


Image 14: Ports

- Screw actuator into the valve body. Note tightening torque values according to "Tab. 8".

| DN | Tightening torque [Nm] |
|----|------------------------|
| 15 | 45 ± 3                 |
| 20 | 50 ± 3                 |
| 25 | 60 ± 3                 |
| 32 | 65 ± 3                 |
| 40 |                        |
| 50 | 70 ± 3                 |
| 65 | 100 ± 3                |

Tab. 8: Tightening torques valve body/nipple

## 7.5 Mount accessories



For description, refer to documentation of corresponding accessories.

## 7.6 Turning actuator

The position of the ports can be seamlessly aligned by turning the actuator 360°.

### NOTE!

**Damage to the seat seal or seat contour.**

- ▶ The valve must be in open position when the actuator is rotated.

- Clamp valve body in a collet  
(only for valves which have not yet been installed).
- For control function A pressurize the pilot air port 1 with compressed air: Valve opens.

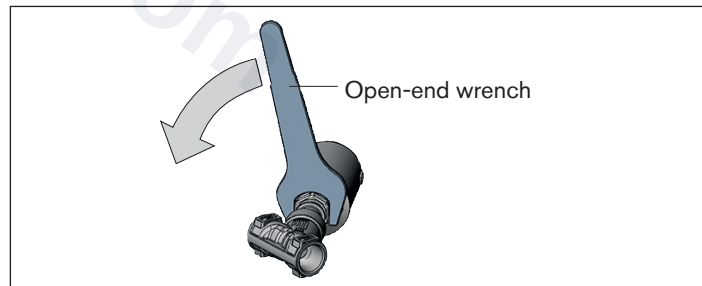


Image 15: Rotating with open-end wrench

- Counter with a suitable open-end wrench on the wrench flat of the nipple.
- Place a suitable open-end wrench on the hexagon head of the actuator.
- Set the actuator to the required position.

## 7.7 Pneumatic connection



### WARNING!

#### Risk of injury due to connecting unsuitable hoses.

- ▶ Only use hoses that can withstand the pressure and temperature of the medium.
- ▶ Note the technical data provided by the hose manufacturer.

#### For control function I: Risk of pilot pressure failure.

The valve stays in an undefined position in the event of a pilot pressure failure.

- ▶ To ensure a controlled restart of the device, apply pilot pressure and activate the medium.

### 7.7.1 Connecting the control medium



If the position of the pilot air ports is unfavourable for installing the hoses, these can be seamlessly aligned by rotating the actuator by 360°.

The procedure is described in Chapter ["7.6"](#).

#### Control function A:

- Connect control medium to pilot air port 1.

#### Control function B:

- Connect control medium to pilot air port 2.

#### Control function I:

- Connect control medium to pilot air port 1 and 2.  
Pressure on pilot air port 1 opens the valve.  
Pressure on pilot air port 2 closes the valve.

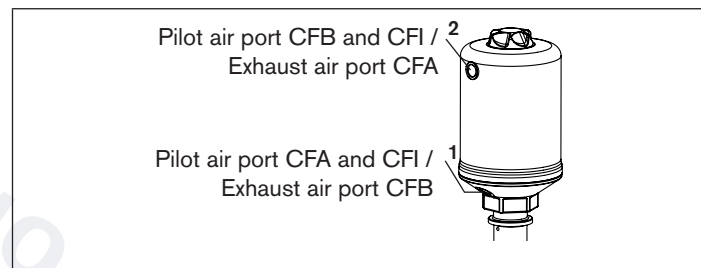


Image 16: Ports

#### Silencer<sup>1)</sup>

- Screw the silencer into the exposed exhaust port.



For usage in an aggressive environment, we recommend using a pneumatic hose to drain all free pneumatic ports in a neutral atmosphere.

#### Pilot air hose

Pilot air hoses of sizes 6/4 mm or 1/4" can be used <sup>2)</sup>.

<sup>1)</sup> Silencers for reducing the loudness of the exhaust air can be ordered as an accessory.

<sup>2)</sup> Push-lock fittings can be ordered as accessories.

## 8 DISASSEMBLY



### **DANGER!**

**Risk of injury from discharge of pressure and escaping medium.**

Dismantling a device which is under pressure is hazardous due to a sudden discharge of pressure or escaping medium.

- ▶ Before disassembly, shut off the pressure and vent all lines.

→ Loosen pneumatic connection.

→ Disassemble the device.

## 9 MAINTENANCE



### **DANGER!**

**Risk of injury from high pressure.**

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



### **WARNING!**

**Risk of injury due to improper maintenance.**

- ▶ Only trained technicians may perform maintenance work.
- ▶ Perform maintenance work using suitable tools only.
- ▶ Ensure a controlled restart after maintenance.

### 9.1 Maintenance

#### 9.1.1 Maintenance work

##### **Actuator:**

The angle seat valve actuator requires no maintenance.

##### **Visual inspection:**

Perform regular visual inspections according to the conditions of use:

→ Check medium ports for tightness.

→ Check relief bore on the pipe for leaks.

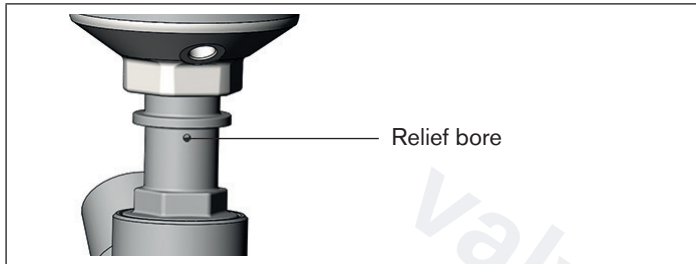


Image 17: Relief bore

### 9.1.2 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 body materials and seals.

## 9.2 Replacing spare parts

### 9.2.1 Changing the valve set

The valve set consists of:

- Swivel plate with seal
- Pin
- Seal

The actuator must be removed from the valve body in order to replace the valve set.

#### **Removing actuator from the valve body**

→ Clamp valve body in a collet (only for valves which have not yet been installed).

#### **NOTE!**

##### **Damage to the seat seal or seat contour.**

- When removing the actuator, the valve must be in the open position.

→ For control function A pressurize the pilot air port 1 with compressed air: Valve opens.

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

→ Unscrew actuator from the valve body.

## Replace the valve set

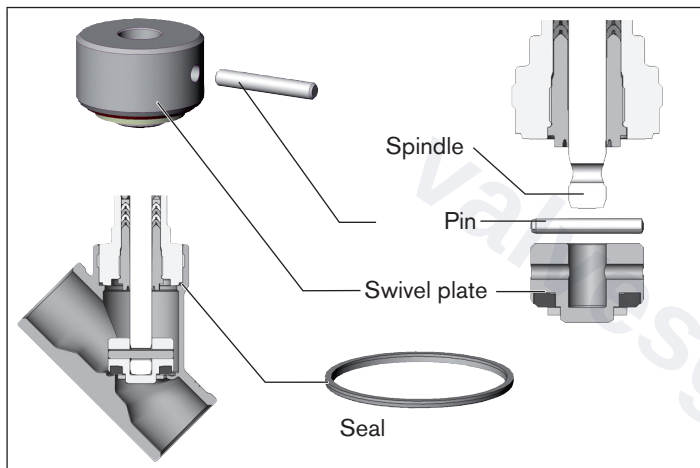


Image 18: Valve set

- Support swivel plate on the cylindrical part using a prism or something similar.
- Knock out pin using a suitable pin punch. Pin punch  $\varnothing$  3 mm, for 10 mm spindle diameter on the swivel plate.  
Pin punch  $\varnothing$  5 mm, for 14 mm spindle diameter on the swivel plate.
- Remove the swivel plate.
- Connect new swivel plate to the spindle.
- Align boreholes in the swivel plate and spindle.

- Support swivel plate on the cylindrical part using a prism or something similar.
- Insert pin into the borehole.
- Caulk pin boreholes on both sides of the swivel plate using a chisel or centre punch.

## Installing actuator on valve body

- Replace seal.



### WARNING!

#### Danger due to incorrect lubricants.

Unsuitable lubricant may contaminate the medium. There is a risk of explosion in oxygen applications.

- For specific applications, e.g. oxygen or analysis applications, use approved lubricants only.

- Before re-installation, grease nipple thread (e.g. using Klüber-paste UH1 96-402 from Klüber).

### NOTE!

#### Damage to the seat seal or seat contour.

- The valve must be in the open position when installing the actuator.
- For control function A pressurize the pilot air port 1 with compressed air: Valve opens.
- Screw actuator into the valve body. Note tightening torque values according to [Tab. 9](#).

| DN | Tightening torque [Nm] |
|----|------------------------|
| 15 | 45 ± 3                 |
| 20 | 50 ± 3                 |
| 25 | 60 ± 3                 |
| 32 | 65 ± 3                 |
| 40 |                        |
| 50 | 70 ± 3                 |
| 65 | 100 ± 3                |

Tab. 9: Tightening torques valve body/nipple



If the position of the pilot air ports is unfavourable for installing the hoses, these can be seamlessly aligned by rotating the actuator by 360°.

The procedure is described in Chapter [“7.6 Turning actuator”](#).

## 9.2.2 Changing the packing gland



### DANGER!

**Risk of injury from discharge of pressure and escaping medium.**

- ▶ Before disassembly, shut off the pressure and vent all lines.



### WARNING!

**Risk of injury due to using wrong tool.**

- ▶ To replace the packing gland, use the special installation or socket wrench.
- ▶ Observe tightening torques.



When using valves with actuator size D(50), or with a combination of actuator size M(70) with DN50, it is not possible to replace the packing gland.

The seal set for the packing gland includes:

- 1 support ring
- 7 chevron seals
- 2 thrust collars
- 1 compression spring
- 1 spindle guide
- Seal
- lubricant

To change the packing gland, first remove the actuator from the valve body and remove the swivel plate.

### Removing actuator from the valve body

- Clamp valve body in a collet (only for valves which have not yet been installed).

### NOTE!

#### Damage to the seat seal or seat contour.

- ▶ When removing the actuator, the valve must be in the open position.

- For control function A pressurize the pilot air port 1 with compressed air: Valve opens.
- Place a suitable open-end wrench on the wrench flat of the nipple.
- Unscrew actuator from the valve body.

### Removing swivel plate

- Knock out pin using a suitable pin punch.  
Pin punch  $\varnothing$  3 mm, for 10 mm spindle diameter on the swivel plate.  
Pin punch  $\varnothing$  5 mm, for 14 mm spindle diameter on the swivel plate.
- Remove the swivel plate.

### Changing the packing gland

- Unscrew spindle guide using a modified socket wrench <sup>3)</sup>.

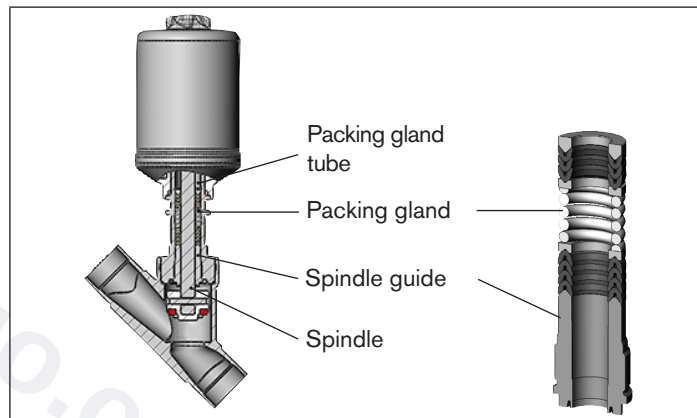


Image 19: Changing the packing gland

<sup>3)</sup> The modified socket wrench is available from your Bürkert sales department.



# **WARNING!**

## **Risk of injury due to parts being ejected.**

When the spindle opening is exposed, the individual parts of the packing gland will be pressed out at an undefined speed when the pilot air port is pressurised.

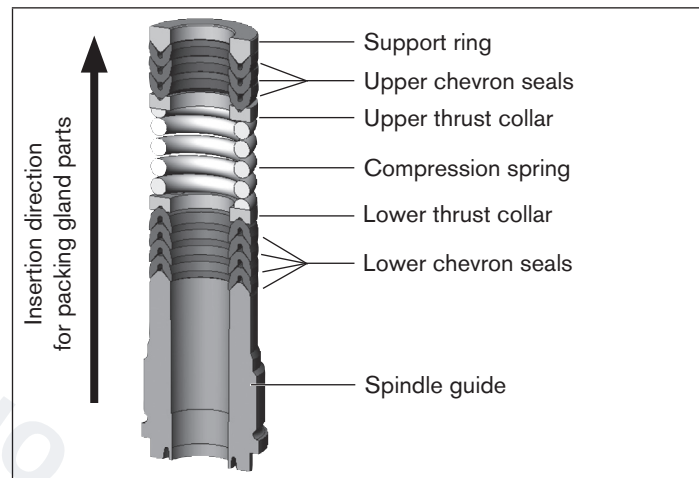
- Before pressurising with pilot air, safeguard the area around the outlet, (e.g. place spindle on a firm surface).

- For **control function A and I** pressurise pilot air port **1** with 6–8 bar.
- For **control function B** pressurise pilot air port **2** with 6–8 bar.
- Grease the individual parts of the new packing gland with the supplied lubricant.
- Place individual parts on the spindle in the specified direction and sequence.
- Push the spindle into the packing gland tube.
- Screw the spindle guide back in using the socket wrench. Note tightening torque values according to ["Tab. 10"](#).

## **Tightening torques spindle guide**

| Spindle diameter | Tightening torque [Nm] |
|------------------|------------------------|
| 10 mm            | 6                      |
| 14 mm            | 15                     |

*Tab. 10: Tightening torques spindle guide*



*Image 20: Insertion direction for packing gland parts*

### Installing swivel plate

- Connect swivel plate to the spindle.
- Align boreholes in the swivel plate and spindle.
- Support swivel plate on the cylindrical part using a prism or something similar.
- Insert pin into the borehole.
- Caulk pin boreholes on both sides of the swivel plate using a chisel or centre punch.

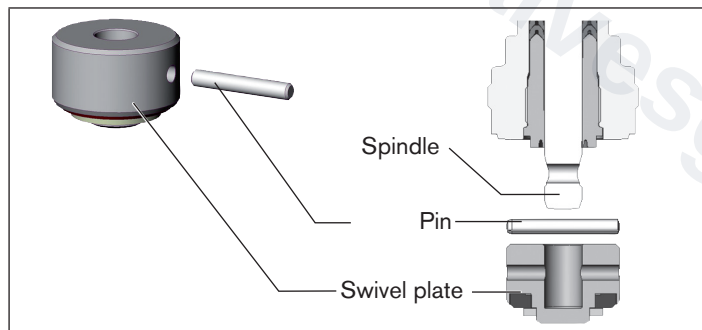


Image 21: Swivel plate

### Installing actuator on valve body

For a description see [“Installing actuator on valve body”](#) on page [22](#).

## 10 FAULTS

| Fault                    | Elimination                                                                |
|--------------------------|----------------------------------------------------------------------------|
| Actuator does not switch | Pilot air port interchanged                                                |
|                          | CFA Connect pilot air port 1                                               |
|                          | CFB Connect pilot air port 2                                               |
|                          | CFI Pilot air port 1: Open<br>Pilot air port 2: Close                      |
|                          | Pilot pressure too low<br>See pressure information on the type label.      |
| Valve is not tight       | Operating pressure too high<br>See pressure information on the type label. |
|                          | Flow direction switched<br>See arrow direction on the type label.          |
|                          | Dirt between seal and valve seat<br>→ Install dirt trap                    |
|                          | Valve seat seal worn<br>→ Install new swivel plate                         |
|                          | Flow direction switched<br>See arrow direction on the type label.          |
|                          | Operating pressure too high<br>See pressure information on the type label. |
|                          | Pilot pressure too low<br>See pressure information on the type label.      |

| Fault                               | Elimination                                               |
|-------------------------------------|-----------------------------------------------------------|
| Valve is leaking on the relief bore | Packing gland worn<br>→ Replace packing gland or actuator |

## 11 SPARE PARTS



### CAUTION!

**Risk of injury and/or damage due to incorrect parts.**

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

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

### 11.1 Replacement part sets

The following replacement part sets are available for the angle seat valve Type 2060:

- Valve set  
consists of swivel plate with PTFE seal, pin and seal.
- Seal set for packing gland  
consists of the individual parts of the packing gland, seal and lubricant  
(the modified socket wrench is not included in the seal set).

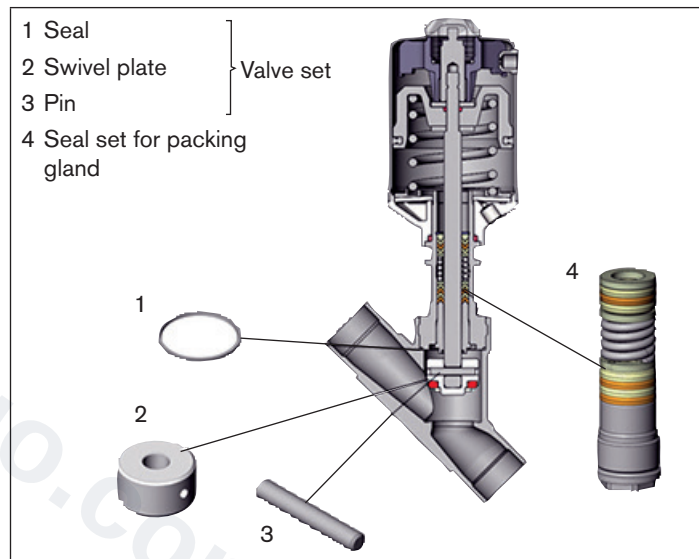


Image 22: Spare parts

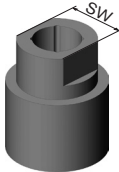
| Valve set (PTFE seal) |              |
|-----------------------|--------------|
| DN                    | Order number |
| 15                    | 011 134      |
| 20                    | 011 171      |
| 25                    | 160 737      |
| 32                    | 011 208      |
| 40                    | 011 209      |
| 50                    | 216 431      |
| 65                    | 241 777      |

Tab. 11: Valve set with PTFE seal

| Seal set for packing gland |               |                  |                              |                                         |
|----------------------------|---------------|------------------|------------------------------|-----------------------------------------|
| Body DN                    | Actuator size | Order number     |                              |                                         |
|                            |               | Standard version | Water version (up to 200 °C) | High temperature version (up to 230 °C) |
| 15...50                    | 70            | 216 433          | 372 661                      | 372 662                                 |
| 32–65                      | 90            | 216 435          | 372 653                      | 372 655                                 |
|                            | 130           |                  |                              |                                         |

Tab. 12: Seal set for packing gland

## 11.2 Installation tools

| Modified socket wrench for packing gland                                          |                 |       |    |              |
|-----------------------------------------------------------------------------------|-----------------|-------|----|--------------|
|  | Socket wrench   | DN    | AF | Order number |
|                                                                                   | Spindle ø 10 mm | 15–40 | 19 | 683 221      |
|                                                                                   | Spindle ø 14 mm | 32–65 | 21 | 683 223      |

Tab. 13: Modified socket wrench



If you have any questions, please contact your Bürkert sales department.

## 12 TRANSPORTATION, STORAGE, DISPOSAL

### NOTE!

#### **Transport damages.**

Inadequately protected devices may be damaged during transport.

- Protect the device against moisture and dirt in shock-resistant packaging during transportation.
- 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  $-40 \dots +55 \text{ }^{\circ}\text{C}$ .

#### **Damage to the environment caused by parts contaminated with media.**

- Dispose of the device and packaging in an environmentally friendly manner.
- Observe applicable disposal and environmental regulations.

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