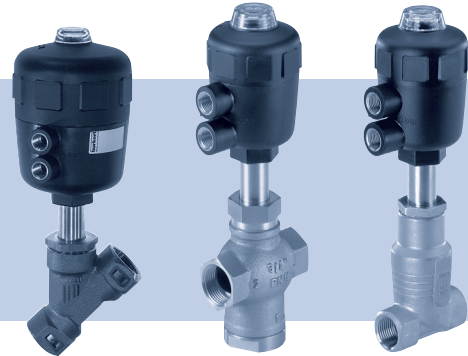


## Type 2000, 2002, 2012

Conversion of control function  
Umbau der Steuerfunktion  
Transformation de la fonction de commande



## Replacement Instructions

Austauschanleitung  
Instructions de remplacement

## REPLACEMENT INSTRUCTIONS

The replacement instructions describe the procedure for converting the control function of process valves of Type 2000 (angle seat valve) and Types 2002 and 2012 (globe valves).

**These instructions contain important safety information.**

Failure to observe these instructions may result in hazardous situations.

- ▶ The replacement instructions must be read and understood before the conversion.

## SYMBOLS

→ designates a procedure which you must carry out.

Warning of serious or fatal injuries:



**DANGER!**

In case of imminent danger.



**WARNING!**

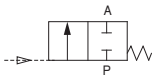
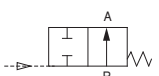
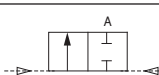
In case of potential danger.

Warning of minor or moderately severe injuries:



**CAUTION!**

## DESCRIPTION OF THE FUNCTIONS

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

### Flow above the seat

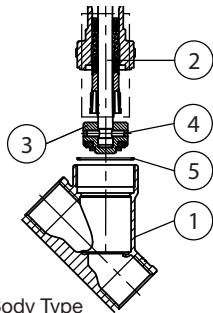
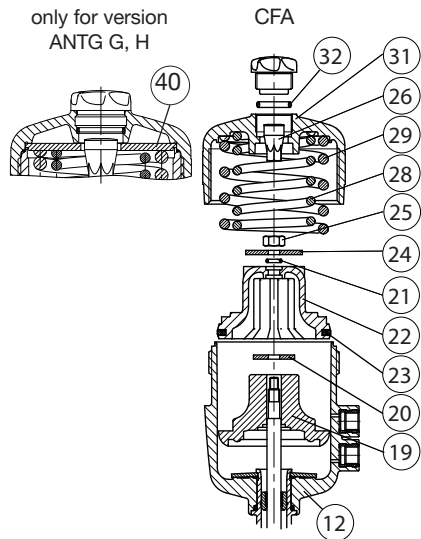
The valve is closed by spring force (CFA) with the medium flow. Medium pressure above the swivel plate supports the closing process and contributes to sealing the valve seat. The valve is opened by the control pressure.

### Flow below the seat

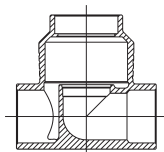
Depending on the model, the valve is closed against the medium flow by spring force (CFA) or by control pressure (CFB). Medium pressure under the swivel plate contributes to opening the valve.

# EXPLODED-VIEW DRAWING

Actuators control function A (closed in rest position by spring force)



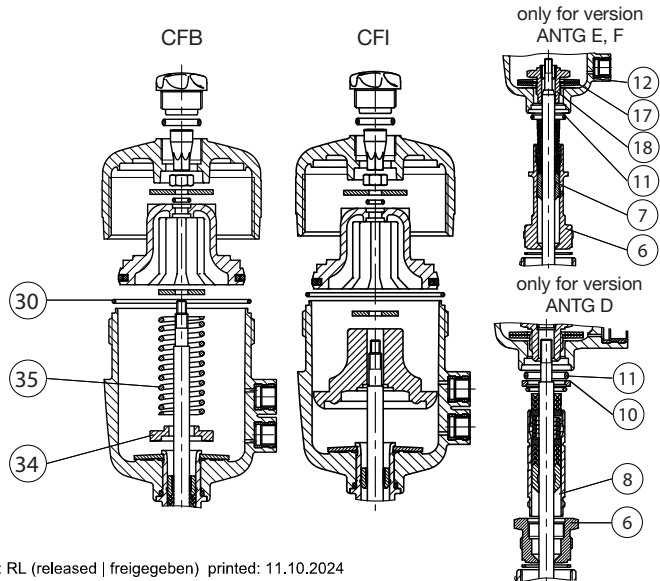
Body Type  
2000 and 2002



Body Type

2012

Actuators control function B (opened in rest position by spring force) and I (dual acting)



## CONVERSION FROM CONTROL FUNCTION A (CFA) TO CONTROL FUNCTION B (CFB)



### DANGER!

Danger – high pressure.

- ▶ Turn off the pressure and vent the lines before loosening lines or valves.

Risk of injury from improper maintenance.

- ▶ Maintenance may be performed by authorized technicians only!
- ▶ To screw on or unscrew valve body or actuator, use an open-end wrench, never a pipe wrench, and observe tightening torques.

Required parts:

| Item | Description       |
|------|-------------------|
| 35   | 1 Pressure spring |
| 30   | 1 O-ring          |
| 5    | 1 Graphite seal   |

- Mount valve ① on the body.



### CAUTION!

Danger through taut springs.

- ▶ Carefully open piston actuator.

- Release cover ③① with special wrench until the springs are completely relaxed, holding up the actuator body ⑫ against the hexagon.



For information about the special wrench, see Chapter “Installation tools”.

- For actuator size G (100 mm) and H (125 mm): Remove washer ④①.
- Remove pressure springs ②⑧ ②⑨.
- Remove position indicator ②⑥ with Allen key.
- Screw actuator on the nipple ⑥ out of the valve body ①.
- Carefully screw in actuator on the swivel plate ③ (only put pressure on the upper section of the swivel plate).
- Release nuts ②⑤.
- Remove pistons ②② with supporting washer ②④.
- Remove filler piece ①⑨ with intermediate washer ②① and O-ring ②①.
- For actuator size G (100 mm) or H (125 mm) and identification “R” on the type label: Insert spring seat ③④.
- Insert pressure springs ③⑤.

- Place intermediate washer ⑳ and lightly lubricated O-ring ㉑ on spindle.
- Insert pistons ㉒ and supporting washer ㉔.
- Wet spindle thread ㉒ with special adhesive LOCTITE 274 and screw on nut ㉕.
- Mount position indicator ㉖.
- Insert new O-ring ㉗ into the groove of the actuator body.



Do not damage sealing edges when replacing the seal!

- Replace graphite seal ⑤.
- **Only for VA body:** Lubricate nipple thread ⑥ with Klüber paste UH1 96-402.
- Clamp body ①.

#### NOTE!

##### Damage to the seat contour.

- ▶ During installation, take care that there is no damage to the seat contour.
- ▶ Observe tightening torques according to [“Tab. 1”](#).

- Screw in nipple ⑥ with actuator in valve body ①.

- **For actuator size G (100 mm) and H (125 mm):** Insert washer ④.
- Mount cover ③ and screw tightly with special wrench.
- Check the valve for function and leaks.

#### Tightening torques

| Material of nipple thread | DN | Tightening torques |
|---------------------------|----|--------------------|
| Brass or stainless steel  | 15 | 45                 |
|                           | 20 | 50                 |
|                           | 25 | 60                 |
|                           | 32 | 65                 |
|                           | 40 | 65                 |
|                           | 50 | 70                 |
|                           | 65 | 70                 |

Tab. 1: Valve body tightening torques

## CONVERSION FROM CONTROL FUNCTION A (CFA) TO CONTROL FUNCTION I (CFI)



### DANGER!

Danger – high pressure.

- ▶ Turn off the pressure and vent the lines before loosening lines or valves.

Risk of injury from improper maintenance.

- ▶ Maintenance may be performed by authorized technicians only.
- ▶ To screw on or unscrew valve body or actuator, use an open-end wrench, never a pipe wrench, and observe tightening torques.

### Required parts:

| Item | Description |
|------|-------------|
| 30   | 1 O-ring    |

- Mount valve ① on the body.



### CAUTION!

Danger through taut springs.

- ▶ Carefully open piston actuator.

- Release cover ③① with special wrench until the springs are completely relaxed, holding up the actuator body ①② against the hexagon.



For information about the special wrench, see Chapter “[Installation tools](#)”.

- For actuator size G (100 mm) and H (125 mm): Remove washer ④①.
- Remove pressure springs ②⑧ ②⑨.
- Insert O-ring ③① into the groove of the actuator body.
- For actuator G (100 mm) and H (125 mm): Insert washer ④①.
- Mount cover ③① and screw tightly with special wrench.
- Check the valve for function and leaks.



For control function I (CFI) connect both control air connections to the control lines.

## CONVERSION FROM FLOW ABOVE THE SEAT TO FLOW BELOW THE SEAT



### DANGER!

Danger – high pressure.

- ▶ Turn off the pressure and vent the lines before loosening lines or valves.

Risk of injury from improper maintenance.

- ▶ Maintenance may be performed by authorized technicians only!
- ▶ To screw on or unscrew valve body or actuator, use an open-end wrench, never a pipe wrench, and observe tightening torques.

Required parts:

| Item   | Description             |
|--------|-------------------------|
| 28, 29 | 1 or 2 Pressure springs |

- Mount valve ① on the body.



### CAUTION!

Danger through taut springs.

- ▶ Carefully open piston actuator.

- Release cover ③① with special wrench until the springs are completely relaxed, holding up the actuator body ⑫ against the hexagon.



For information about the special wrench, see Chapter [“Installation tools”](#).

- For actuator size G (100 mm) and H (125 mm): Remove washer ④①.
- Remove and / or insert pressure springs ⑳ ㉑ depending on actuator.
- For actuator size C (40 mm), D (50 mm), E (63 mm) and F (80 mm): Remove pressure springs and insert new, stronger springs.
- For actuator size G (100 mm) and H (125 mm): Install new outer spring ㉑ in addition to the existing inner spring ㉑.
- For actuator size G (100 mm) and H (125 mm): Insert washer ④①.
- Mount cover ③① and screw tightly with special wrench.
- Check the valve for function and leaks.



Note changed direction of flow and changed pressure range.

## CONVERSION FROM FLOW BELOW THE SEAT TO FLOW ABOVE THE SEAT



### DANGER!

Danger – high pressure.

- ▶ Turn off the pressure and vent the lines before loosening lines or valves.

Risk of injury from improper maintenance.

- ▶ Maintenance may be performed by authorized technicians only!
- ▶ To screw on or unscrew valve body or actuator, use an open-end wrench, never a pipe wrench, and observe tightening torques.

Required parts:

| Item   | Description  |
|--------|--|
| 28, 29 | 2 Pressure springs for actuator C (40 mm), D (50 mm), E (63 mm), F (80 mm) |

- Mount valve ① on the body.



### CAUTION!

Danger through taut springs.

- ▶ Carefully open piston actuator.

- Release cover ③① with special wrench until the springs are completely relaxed, holding up the actuator body ①② against the hexagon.



For information about the special wrench, see Chapter [“Installation tools”](#).

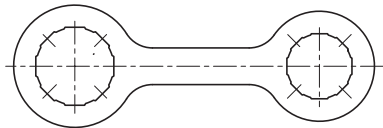
- For actuator size G (100 mm) and H (125 mm): Remove washer ④①.
- Remove and / or insert pressure springs ②⑧ ②⑨ depending on actuator.
- For actuator size C (40 mm), D (50 mm), E (63 mm) and F (80 mm): Remove pressure springs and insert new, weaker springs.
- For actuator size G (100 mm) and H (125 mm): Remove outer spring only ②⑨, inner spring ②⑧ remains in the actuator.
- For actuator size G (100 mm) and H (125 mm): Insert washer ④①.
- Mount cover ③① and screw tightly with special wrench.
- Check the valve for function and leaks.



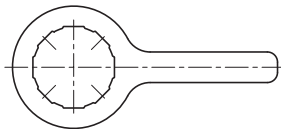
Note changed direction of flow and changed pressure



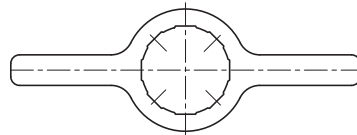
# INSTALLATION TOOLS



| Installation wrench for actuator C (40 mm) and D (50 mm) |        |           |
|--|--------|-----------|
| Actuator   | ø (mm) | Order no. |
| C  | 40     | 639 175   |
| D  | 50     | 639 175   |



| Installation wrench for actuator E (63 mm) |        |           |
|--|--------|-----------|
| Actuator                                   | ø (mm) | Order no. |
| E  | 63     | 639 170   |



| Installation wrench for actuator F (80 mm), G (100 mm) and H (125 mm) |        |           |
|---|--------|-----------|
| Actuator  | ø (mm) | Order no. |
| F   | 80     | 639 171   |
| G   | 100    | 639 172   |
| H   | 125    | 639 173   |

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@burkert.com](mailto:info@burkert.com)



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