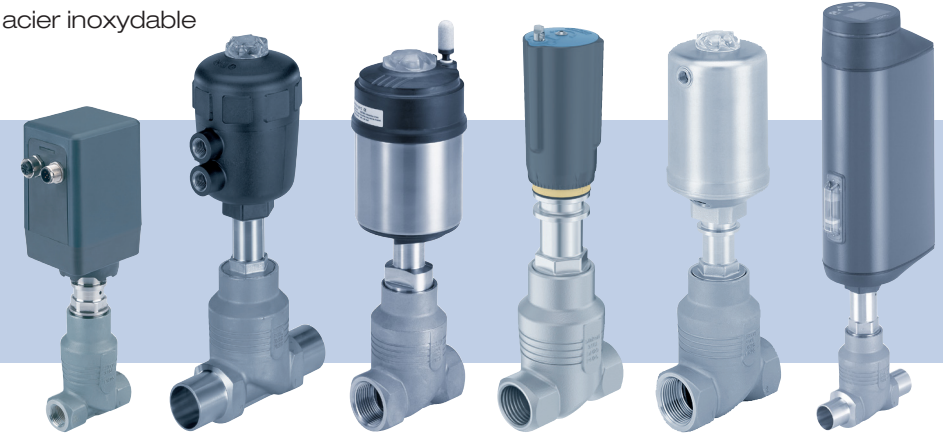
Process valves of the CLASSIC and ELEMENT series, manually operated and electromotive valves as well as valves with stainless steel actuator housings

Prozessventile der Reihen CLASSIC, ELEMENT, handbetätigte und elektromotorische Ventile sowie Ventile mit Antriebsgehäuse aus Edelstahl

Vannes de process des séries CLASSIC, ELEMENT, vannes manuelles et électromotorisées ainsi que vannes avec corps d'actionneur en acier inoxydable

Swivel plate set and control cone set
Pendeltellersatz und Regelkegelsatz
Jeu de clapet plat et jeu de cône de régulation



Replacement Instructions

Austauschanleitung
Instructions de remplacement

MAN 1000637329 EN Version: AStatus: RL (released | freigegeben) printed: 12.02.2025

Table of contents

1 Replacement instructions

This instruction describes the procedure for changing the swivel plate and control cone set.

Important safety information.

- The instruction must be read and understood.

The detailed description of your device can be found in the operating instruction at: www.burkert.com

1.1 Symbols used

DANGER

Immediate danger! Serious or fatal injuries.

NOTE

Warns of damage.

Important tips and recommendations.

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

- Designates an instruction for risk prevention.

→ Designates a procedure which you must carry out.

2 Unscrew actuator from the valve body

DANGER

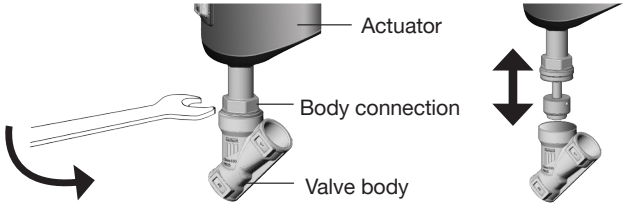
Risk of injury due to high pressure and escaping medium.

- Only work on depressurized systems. Vent and drain the lines.

NOTE

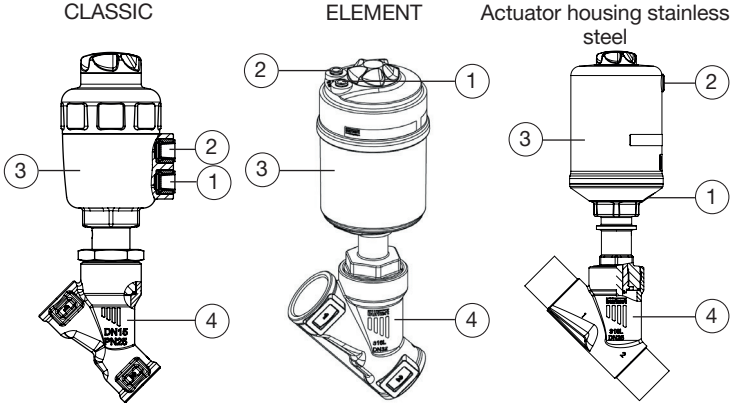
Damage to the valve seat seal or the seat contour.

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



More detailed information on opening and dismounting the respective series is described in the following chapters.

2.1 Valves in the CLASSIC and ELEMENT series and with actuator housing made of stainless steel



Item	Description
1	Pilot air port 1
2	Pilot air port 2

Item	Description
3	Actuator
4	Valve body

→ **CFA and I:** Pressurize pilot air port 1 with compressed air (5 bar).

→ Apply a suitable open-end wrench to the body connection and unscrew the actuator from the valve body.

2.2 Electromotive valves of type 3281

→ Connect valve to Bürkert Communicator.

→ Open valve in MANUAL operating state.

→ Switch off the supply voltage. Wait until the LED goes out.

→ Apply a suitable open-end wrench to the body connection and unscrew the actuator from the valve body.

2.3 Electromotive valves of types 3320, 3321, 3360, 3361

2.3.1 Open valve electrically

Precondition: Device is in the MANUAL operating state.

Devices with display module:

→ Press the upper navigation key to open the valve.

→ Switch off the supply voltage. Wait until the LED goes out.

→ Apply a suitable open-end wrench to the body connection and unscrew the actuator from the valve body.

Devices without display module:

→ Turn the blind cover and remove it.

→ Press the OPEN button until the valve is completely open.

→ Switch off the supply voltage. Wait until the LED goes out.

→ Apply a suitable open-end wrench to the body connection and unscrew the actuator from the valve body.

2.3.2 Open valve mechanically

Precondition: Valve currentless.

In the currentless state, the mechanical manual override can be used. Observe the exact description in the respective operating instructions for your device.

→ Turn and remove the blind cover or display module.

→ Apply light pressure to engage the manual override and turn it anti-clockwise with a suitable Allen key until the valve is open.

→ Apply a suitable open-end wrench to the body connection and unscrew the actuator from the valve body.

For fieldbus variants, the fieldbus module must be removed. Observe the exact description in the respective operating instructions for your device.

2.4 Valves CLASSIC and valves with actuator housing made of stainless steel with control unit

→ **CFA and I:** Loosen the external tubing on pilot air port 1 of the valve.

→ **CFA and I:** Pressurize pilot air port 1 of the actuator with compressed air (5 bar).

→ Apply a suitable open-end wrench to the body connection and unscrew the actuator from the valve body.

2.5 ELEMENT valves with control unit

Precondition: Control unit is in MANUAL operating state (MANU).

Manually move the valve to the open position:

a) Control head

→ Control head with position feedback (without built-in pilot valve): pressurize with compressed air (5 bar) at port 1 of the control unit.

→ Control head with pneumatic control unit (with built-in pilot valve): pressurize pilot air port 1 of the control unit with compressed air (5 bar) and operate the red hand lever on the pilot valve.

→ Positioner or process controller: Switch the control unit to the MANUAL operating state and move the valve manually to the open position.

→ Apply a suitable open-end wrench to the body connection and unscrew the actuator from the valve body.

b) Side control

→ Remove the compressed air supply from the supply pressure connection of the position sensor 1 and pressurize manually with 5 bar.

→ Apply a suitable open-end wrench to the body connection and unscrew the actuator from the valve body.

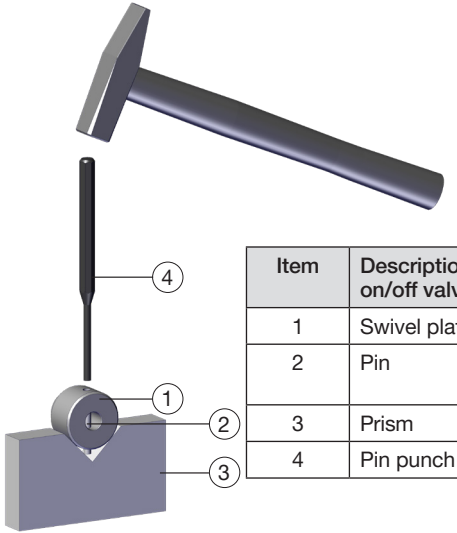
The exact procedure for manually opening the valve depends on the type of the control unit. For further informations read the operating instructions of the control unit.

2.6 Manually operated valves

→ Turn the valve approx. twice to open it and to release the valve seat seal.

→ Apply a suitable open-end wrench to the body connection and unscrew the actuator from the valve body.

3 Replace swivel plate/control cone



Item	Description on/off valves	Description control valves
1	Swivel plate	Control cone
2	Pin	Spring-type straight pin
3	Prism	
4	Pin punch	

→ Support the swivel plate/control cone on the cylindrical part with the help of a prism.

→ Knock out the pin/spring-type straight pin with a suitable pin punch.

→ Remove the swivel plate/control cone.

NOTE

Do not damage the seat seal and seat contour of the swivel plate/control cone.

→ Attach the new swivel plate/control cone and, if required, the reducing sleeve on the spindle.

→ Align the bores of the swivel plate/control cone reduction sleeve and spindle with each other.

→ On/off valves:
Insert the pin into the bore and caulk the pin bores on the swivel plate on both sides with a chisel or centre punch.

→ Control valves:
Set up the spring-type straight pin and carefully hammer it in. Then bring the spring-type straight pin into a central position in relation to the spindle axis.

4 Screw the actuator to the valve body

DANGER

Danger due to lubricant.

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

- Only use lubricants that are suitable for the application. Contact the Bürkert sales department if you have any questions about the application.
- Observe the data sheet information and safety data sheet of the lubricant manufacturer.

The following lubricants are used:

	Klüberpaste UH1 96-402 of the company Klüber Lubrication München GmbH & Co. KG

Only use lubricants approved by Bürkert. If you have any questions, contact your Bürkert sales office.

→ Check seal between actuator and valve body and replace if necessary.

→ For Type 2002: Use sealing tape.

→ For enclosures made of stainless steel: Apply lubricant to the thread between actuator and valve body.

NOTE

Damage to the valve seat seal or the seat contour.

- During assembly, the valve must be in the open position.

→ Move the valve to the open position.

→ Screw actuator into the valve body. Observe tightening torques in the following table.

Tightening torques valve body:

DN	Tightening torque
15	45 ±3 Nm
20	50 ±3 Nm
25	60 ±3 Nm
32	65 ±3 Nm
40	65 ±3 Nm

DN	Tightening torque
50	70 ±3 Nm
65	100 ±3 Nm
80	120 ±5 Nm
100	150 ±5 Nm

5 Execute X.TUNE or teach function

→ For electromotive valves and valves with control unit after mounting the actuator, execute X.TUNE or teach function to ensure that the valve closes tightly.

For detailed information on X.TUNE or the teach function, refer to the respective operating instructions for your control unit.

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

bürkert
FLUID CONTROL SYSTEMS

International address
www.burkert.com

Manuals and data sheets on the Internet: www.burkert.com
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