

## Type 2060, 2061, 2063, 2064, 2065

Max. stroke limitation / Min., max. stroke limitation  
Electrical position indicator / Inductive proximity switch

Max. Hubbegrenzung / Min., max. Hubbegrenzung  
Elektrischer Stellungsrückmelder / Induktiver Näherungsschalter

Limitation de course max. / Limitation de course min. max.  
Indicateur de position électrique / Détecteur de proximité inductif

## Accessories

Zubehör  
Accessoires



We reserve the right to make technical changes without notice.  
Technische Änderungen vorbehalten.  
Sous réserve de modifications techniques.

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Operating Instructions 1708/00\_EU-ML\_00810584 / Original DE

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## 1 ABOUT THESE INSTRUCTIONS

These installation instructions describe the procedure for installation and start-up of the accessory options of types 2060, 2061, 2063, 2064 and 2065. Keep these instructions ready to hand at the operation site.

### Important safety information.

- ▶ Carefully read these instructions.
- ▶ Observe the safety instructions and intended use.
- ▶ Persons, who work on the device, must read and understand these instructions.



A detailed description of the Types 2060, 2061, 2063, 2064 and 2065 can be found in the operating instructions at: [www.burkert.com](http://www.burkert.com)

### 1.1 Auxiliary materials

The following auxiliary materials are recommended in these instructions for assembly:

Type of auxiliary materials	Designation	Manufacturer
Sealer and anti-seize agents	Multi-Silikonfett OKS 1110	OKS Schmierstoffe GmbH <a href="http://www.oks-germany.com">www.oks-germany.com</a>
Liquid adhesive	LOCTITE 274	Henkel Loctite Deutschland GmbH <a href="http://www.loctite.de">www.loctite.de</a>

Tab. 1: Auxiliary materials

### 1.2 Symbols



#### DANGER!

Warns of an immediate danger!

- ▶ Failure to observe the warning will result in fatal or serious injuries.



#### WARNING!

Warns of a potentially dangerous situation!

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



#### CAUTION!

Warns of a potential danger!

- ▶ Failure to observe the warning may result in a moderate or minor injury.

#### NOTE!

Warns of damage!



Important information, tips and recommendations.



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



Designates an instruction which you must follow to prevent a hazard.



Designates a procedure which you must carry out.

## 2 AUTHORIZED USE

The actuators and their accessory parts must only be used for the specific applications provided for and described in the relevant operating instructions, and only in combination with third-party devices and components that are recommended and/or authorized by Bürkert. Any other or more extensive usage is considered contrary to authorized use.

Follow the directions and conditions of use of these installation instructions as well as the authorized data specified in the operating instructions and on the rating plates of the components that are used.

Correct transportation, proper storage and installation, and careful operation and maintenance are essential for ensuring problem-free and reliable operation of the devices.

## 3 BASIC SAFETY INSTRUCTIONS

These safety instructions do not consider any contingencies or incidents which occur during assembly, operation and maintenance. The operator is responsible for observing the location-specific safety regulations, also with reference to the personnel.



### **Risk of injury from high pressure and discharge of medium.**

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

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

- ▶ Before working on the device or system, switch off the power supply and secure to prevent reactivation.
- ▶ Observe applicable accident prevention and safety regulations for electrical equipment.

### **Risk of injury from ejected parts.**

The actuators contain tensioned springs. If the actuator housing is opened, there is a risk of injury from the spring jumping out.

- ▶ Do not open actuator housing.

### General hazardous situations.

To prevent injury, ensure the following:

- ▶ Operate the device only in perfect state and in consideration of the operating instructions.
- ▶ Do not transport, install or remove heavy devices without the aid of a second person and using suitable auxiliary equipment.
- ▶ Secure device or system to prevent unintentional activation.
- ▶ Only trained technicians may perform installation and maintenance work.
- ▶ Install the device according to the regulations applicable in the country.
- ▶ After an interruption in the power supply, ensure that the process is restarted in a controlled manner.
- ▶ Observe the general rules of technology.

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

#### International

Contact addresses can be found on the final pages of the printed operating instructions.

And also on the Internet at: [www.burkert.com](http://www.burkert.com)

### 4.2 Warranty



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

### 4.3 Information on the Internet

The operating instructions and data sheets for Bürkert products can be found on the Internet at: [www.burkert.com](http://www.burkert.com)



## 5 OVERVIEW OF OPTIONS

### 5.1 Max stroke limit

	<p>Actuator size D (50 mm), M (70 mm)</p> <p><b>Special feature:</b></p> <ul style="list-style-type: none"> <li>• to limit the upper end position</li> <li>• for control function A only</li> </ul>
	<p>Actuator size N (90 mm), P (130 mm)</p> <p><b>Special feature:</b></p> <ul style="list-style-type: none"> <li>• to limit the upper end position</li> <li>• for control function A only</li> </ul>

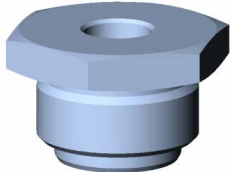
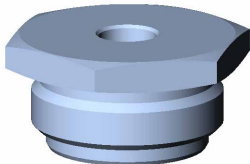
Tab. 2: Max stroke limit

### 5.2 Min and max stroke limit

	<p>Actuator size D (50 mm), M (70 mm)</p> <p><b>Special feature:</b></p> <ul style="list-style-type: none"> <li>• to limit the upper and lower end position</li> <li>• with optical position indicator</li> <li>• for incoming flow under seat only</li> </ul>
	<p>Actuator size N (90 mm), P (130 mm)</p> <p><b>Special feature:</b></p> <ul style="list-style-type: none"> <li>• to limit the upper and lower end position</li> <li>• with optical position indicator</li> <li>• for incoming flow under seat only</li> <li>• pilot pressure reduction for actuator size P (130) with control function I</li> </ul>

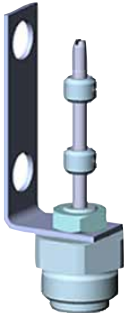

Tab. 3: Min and max stroke limit

### 5.3 Threaded nipple for inductive proximity switch M12 x 1

	<p>Actuator size D (50 mm), M (70 mm)</p> <p><b>Special feature:</b></p> <ul style="list-style-type: none"> <li>• for control function A only</li> <li>• for upper end position feedback</li> </ul>
	<p>Actuator size N (90 mm), P (130 mm)</p> <p><b>Special feature:</b></p> <ul style="list-style-type: none"> <li>• for control function A only</li> <li>• for upper end position feedback</li> </ul>

Tab. 4: Threaded nipple for inductive proximity switch M12 x 1

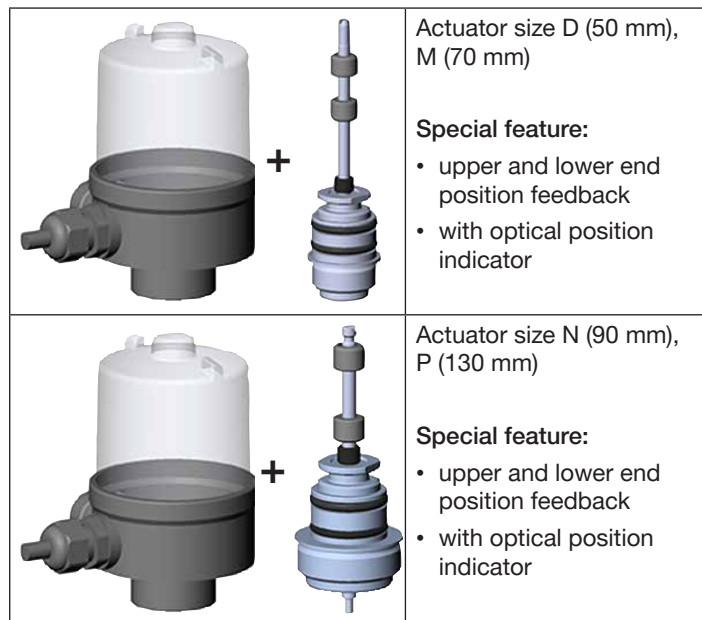
### 5.4 Mounting bracket for two inductive proximity switches M12 x 1

	<p>Actuator size D (50 mm), M (70 mm)</p> <p><b>Special feature:</b></p> <ul style="list-style-type: none"> <li>• upper and lower end position feedback</li> </ul>
	<p>Actuator size N (90 mm), P (130 mm)</p> <p><b>Special feature:</b></p> <ul style="list-style-type: none"> <li>• upper and lower end position feedback</li> </ul>

Tab. 5: Mounting bracket for two inductive proximity switches M12 x 1



## 5.5 Electrical position indicator Type 8697 (with adaptation)



Tab. 6: Electrical position indicator Type 8697 (with adaptation)

## 6 OPTION: MAX STROKE LIMIT



### WARNING!

Risk of injury from forcibly ejected parts.

If this option is used with incoming medium flow over seat, there is a danger that parts of the device could be forcibly ejected by strong opening impacts.

► Use the option with incoming flow under seat only.



Use the max stroke limit option only with:

- Control function A.

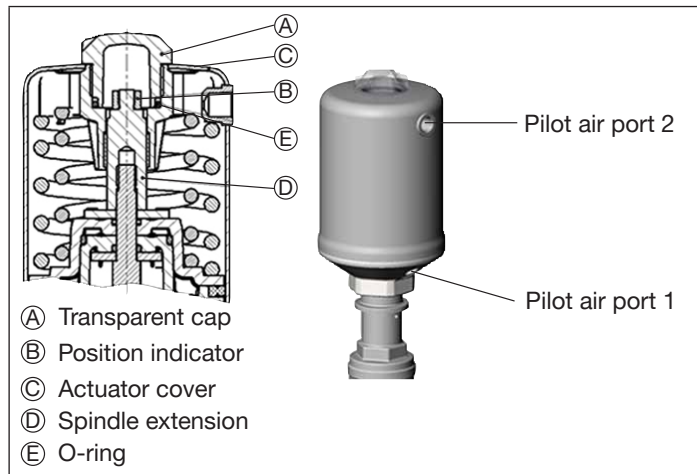


Fig. 1: Description of the parts, actuator size D, M, N and P

## 6.1 Before installation

### **!** DANGER!

Risk of injury from high pressure and discharge of medium.

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

- Interrupt the flow of medium.
- Switch off the pilot air.
- Empty the valve body.
- Unscrew the transparent cap **(A)** from the actuator cover **(C)**.

### **!** DANGER!

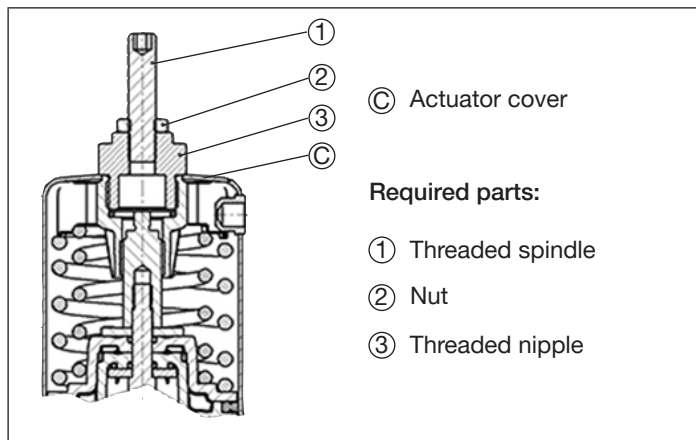
Risk of injury from high pressure.

Without the transparent cap, the actuator blows freely upward when the pilot pressure is applied to the wrong connection.

- ▶ Apply the pilot pressure for control functions A and I only on pilot air port 1.

- To remove the optical position indicator **(B)** move the actuator to the upper end position:  
Apply the pilot pressure to connection 1.
- Unscrew the optical position indicator **(B)** from the spindle extension.

## 6.2 Installation of the max stroke limit



**(C)** Actuator cover

Required parts:

**(1)** Threaded spindle

**(2)** Nut

**(3)** Threaded nipple

Fig. 2: Installation of the max stroke limit

- Screw the threaded nipple **(3)** into the actuator cover **(C)**.  
Observe tightening torques: Actuator D and M: 20 Nm.  
Actuator N and P: 25 Nm.
- Turn the threaded spindle **(1)** to adjust the upper end position.
- Secure the threaded spindle **(1)** with nut **(2)**.
- Check the valve for function and leaks.


## 7 OPTION: MIN AND MAX STROKE LIMIT

### WARNING!

Risk of injury from forcibly ejected parts.

If this option is used with incoming medium flow over seat, there is a danger that parts of the device could be forcibly ejected by strong opening impacts.

► Use the option with incoming flow under seat only.

 Use the max stroke limit option only with:

- Incoming flow under seat.

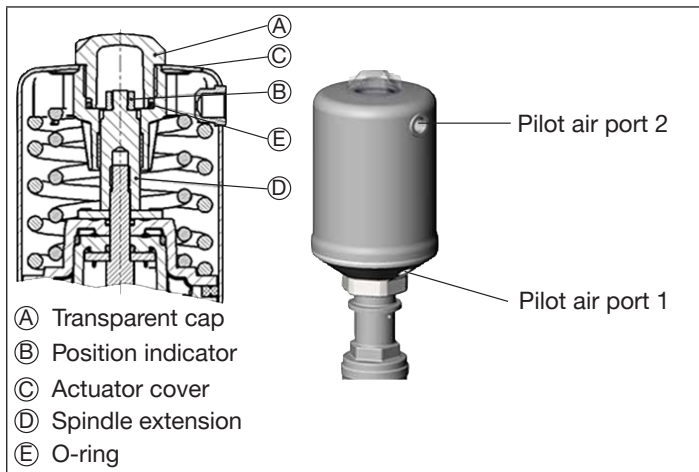


Fig. 3: Description of the parts, actuator size D, M, N and P

## 7.1 Before installation

### DANGER!

Risk of injury from high pressure and discharge of medium.

► Before working on the system or device, switch off the pressure and vent or drain lines.

- Interrupt the flow of medium.
- Switch off the pilot air.
- Empty the valve body.
- Unscrew the transparent cap (A) from the actuator cover (C).

### DANGER!

Risk of injury from high pressure.

Without the transparent cap, the actuator blows freely upward when the pilot pressure is applied to the wrong connection.

► Apply the pilot pressure for control functions A and I only on pilot air port 1.

- **Control function A and I:**  
To remove the optical position indicator (B) move the actuator to the upper end position:  
Apply the pilot pressure to pilot air port 1 (one pressure pulse is sufficient for control function I).
- Unscrew the position indicator (B) from the spindle extension (D).
- **For actuator size N and P:**  
Check the position of the O-ring (E) and if necessary reposition it on the base.

## 7.2 Installation of the min and max stroke limit, actuator size D and M

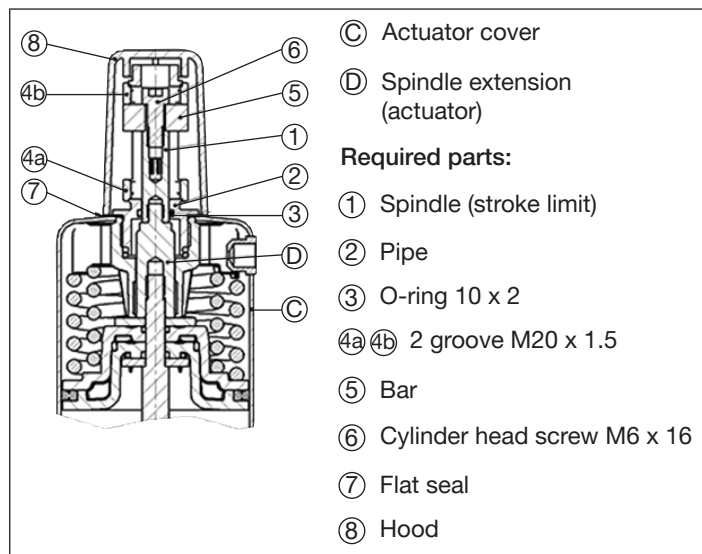


Fig. 4: Installation of the min and max stroke limit, actuator D and M

- Fit O-ring ③ in the recess in the pipe ②.
- Lubricate pipe ② and spindle ① with e.g. multi-silicone grease OKS 1110.

- To secure the spindle ①, apply a little Loctite 274 in the threaded hole of the spindle.
- Screw the spindle ① onto the spindle extension of the actuator ④ (hexagon socket wrench size 4).
- Mount flat seal ⑦ on pipe ②.
- Screw nut ④a onto the pipe ② and all the way to the bottom.
- Lubricate pipe ② in the running area of the O-ring ③ with e.g. multi-silicone grease OKS 1110.
- Carefully pull the pipe ② over the spindle ①, ensuring that you do not damage the O-ring ③.
- **Control function B:**  
Place the bar ⑤ on the spindle ① and screw the pipe ② into the actuator cover ③ (2-edge, wrench size 17). Observe tightening torque of 20 Nm.
- **Control function A and I:**  
Screw pipe ② into actuator cover ③ (2-edge with wrench size 17). Observe tightening torque of 20 Nm. Place the bar ⑤ on the spindle ①.
- To secure the cheese-head screw ⑥ apply a little Loctite 274 to the thread of the cheese-head screw.
- Screw the cheese-head screw ⑥ into the spindle ①.
- Screw the upper nut ④b onto the pipe ②.
- Limit the stroke appropriately with the upper nut ④b.
- Screw on the hood ⑧ finger-tight.
- Check the valve for function and leaks.

**!** Note the hardening time of the Loctite before placing the valve in operation.

### 7.3 Installation of the min and max stroke limit, actuator size N and P

**!** **WARNING!**

Risk of injury from forcibly ejected parts.

If this option is used

- with incoming medium flow over seat or
- for actuator size P (130) control function I and a pilot pressure > 5 bar

there is a danger that parts of the device could be forcibly ejected by strong opening impacts.

- ▶ Use the option with incoming flow under seat only.
- ▶ For actuator size P (130) with control function I, reduce the pilot pressure to max. 5 bar.

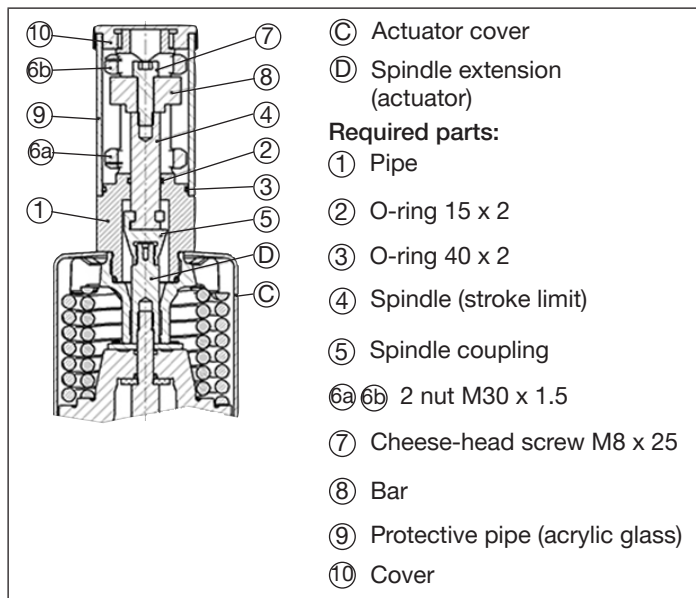


Fig. 5: Installation of the min und max stroke limit, actuator size N and P

- To secure the spindle coupling (5), apply a little Loctite 274 in the threaded hole.
- Screw spindle coupling (5) onto the spindle extension of the actuator (D) (wrench size 13).
- Screw nut (6a) onto the pipe (1) and all the way to the bottom.

- Fit O-ring ③ in pipe ①.
- Lubricate spindle ④ in the running area of the O-ring ② with e.g. multi-silicone grease OKS 1110.
- Lubricate O-ring ② in the pipe ① with e.g. multi-silicone grease OKS 1110.
- Carefully pull the pipe ① over the spindle ④, ensuring that you do not damage the O-ring ②.
- **Control function B:**  
Place the bar ⑧ on the spindle of the stroke limitation ④ and screw pipe ① into the actuator cover ③.  
Observe tightening torque of 25 Nm.
- **Control functions A and I:**  
Screw pipe ① into the actuator cover ③ (2-edge, wrench size 24), tightening torque 25 Nm. Place the bar ⑧ on the spindle of the stroke limitation ④.
- To secure the cheese-head screw ⑦ apply a little Loctite 274 to the thread of the cheese-head screw.
- Screw the cheese-head screw ⑦ into the spindle ④.
- Screw the upper nut ⑥ onto the pipe.
- Limit the stroke appropriately with the nuts ⑥a ⑥b.
- Place protective pipe ⑨ on pipe ①.
- Screw on the cover ⑩ finger-tight.
- Check the valve for function and leaks.

**!** Note the hardening time of the Loctite before placing the valve in operation.

## 8 OPTION: THREADED NIPPLE FOR INDUCTIVE PROXIMITY SWITCH M12 x 1

- !** Use this option only for:
- Control function A.

The option makes it possible to adapt an inductive proximity switch M12 x 1 (e.g. Turck or Balluf) for flush installation on the actuator. This option records the upper end position of the actuator. The target is the spindle extension. The proximity switch is not included in the scope of supply.

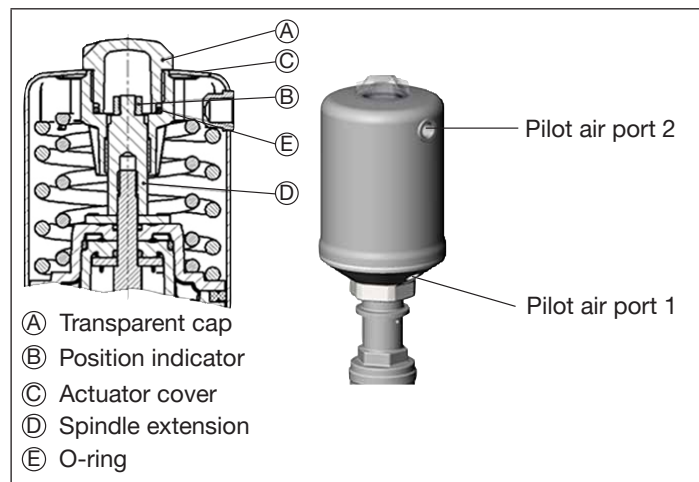


Fig. 6: Representation of the parts, actuator size D, M, N and P

## 8.1 Tasks before installation

### DANGER!

Risk of injury from high pressure and discharge of medium.

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

- Interrupt the supply of medium flow.
- Switch off the pilot air.
- Empty the valve body.
- Unscrew transparent cap **(A)** off the actuator cover **(C)**.

### DANGER!

Risk of injury from high pressure.

Without the transparent cap, the actuator blows freely upward when the pilot pressure is applied to the wrong connection.

- ▶ Apply pilot pressure for control function A to connection 1 only.

- To remove the position indicator **(B)**, move the actuator to the upper end position:  
Apply pilot pressure to connection 1.
- Unscrew position indicator from **(B)** spindle extension **(D)**.

## 8.2 Installing the threaded nipple

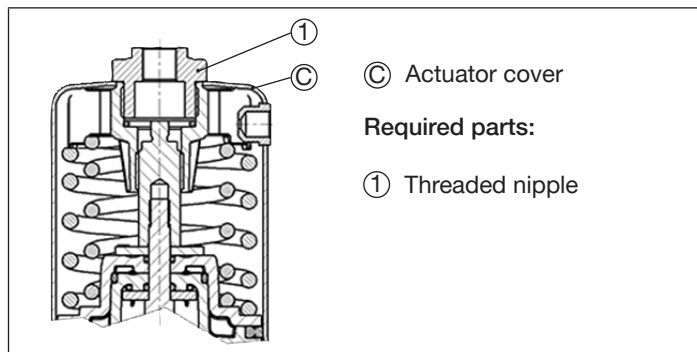


Fig. 7: Installing the threaded nipple for inductive proximity switch

- Screw threaded nipple **(1)** into the actuator cover **(C)**. Observe tightening torque of 15 Nm.

### NOTE!

If the proximity switch is screwed in too deeply, it may be damaged by the switching movement of the valve.

- ▶ Align the screw-in depth of the proximity switch with the upper end position of the actuator (note the switching distance of the proximity switch).

- To install the proximity switch, move the actuator to the upper end position:  
Apply pilot pressure to connection 1.

- Screw the proximity switch into the threaded nipple ①.
- Secure the screw-in depth of the proximity switch with a lock nut (included in the scope of supply of the proximity switch).
- Check the valve for function and leaks.

## 9 OPTION: MOUNTING BRACKET FOR TWO INDUCTIVE PROXIMITY SWITCHES M12 x 1

The option makes it possible to adapt two inductive proximity switches M12 x 1 (for example Turck or Balluf) for flush installation on the actuator. The upper and lower end positions of the actuator are recorded. The target is the switch cam. Lower proximity switches are not included in the scope of supply.

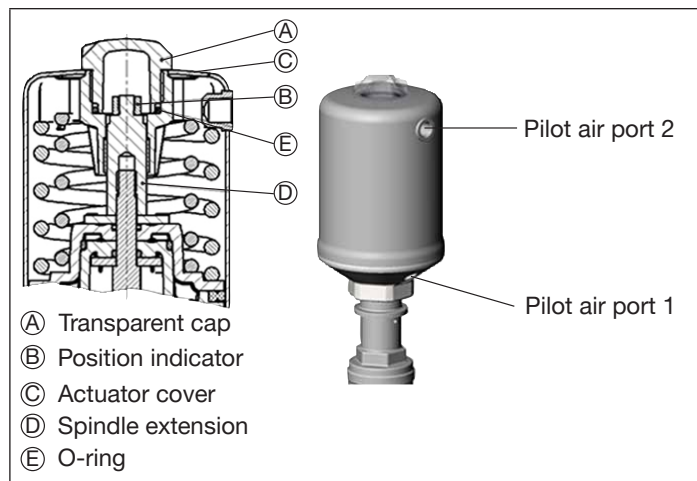


Fig. 8: Representation of the parts, actuator size D, M, N and P



## 9.1 Tasks before Installation

### DANGER!

Risk of injury from high pressure and discharge of medium.

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

- Interrupt the supply of medium flow.
- Switch off the pilot air.
- Empty the valve body.
- Unscrew transparent cap **(A)** off the actuator cover **(C)**.

### DANGER!

Risk of injury from high pressure!

Without the transparent cap, the actuator blows freely upward when the pilot pressure is applied to the wrong connection.

- ▶ Apply the pilot pressure for control functions A and I only on connection 1.
- **Control functions A and I:**  
To remove the position indicator **(B)**, move the actuator to the upper end position:  
Apply pilot pressure to connection 1 (one pressure pulse is sufficient for control function I).
  - Unscrew position indicator from **(B)** spindle extension **(D)**.
  - Check the position of the O-ring **(E)** and reposition it on the base if required.

## 9.2 Installing the mounting bracket, actuator size D and M

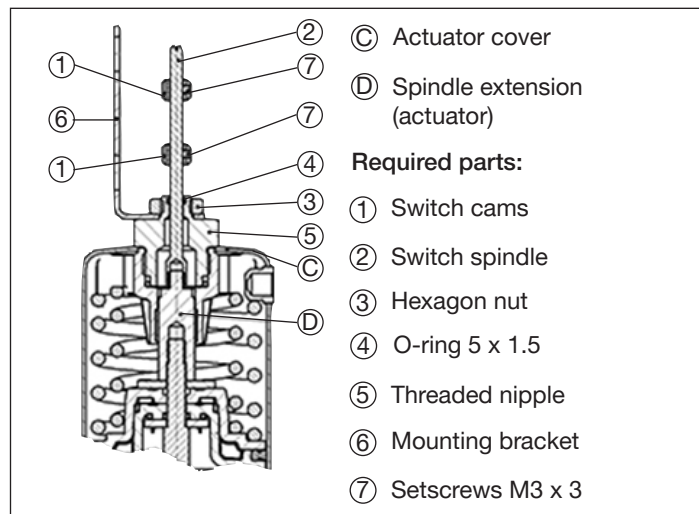


Fig. 9: Installing mounting bracket for 2 proximity switches, actuator size D and M

## 9.2.1 Installing the mounting bracket

- Apply a little Loctite 274 in the threaded hole M6 of the switch spindle ②.
- Fit O-ring ④ in the undercut in the threaded nipple ⑤.
- Lubricate switch spindle ② and O-ring ④ with e.g. multi-silicone grease OKS 1110.
- Guide threaded nipple ⑤ over the switch spindle ② and screw into the actuator cover ③. Observe tightening torque of 15 Nm.
- Screw switch spindle ② onto end of spindle extension thread ① using a screwdriver, max. tightening torque: 1 Nm. This is facilitated by moving the actuator into the upper end position.

### Control functions A and I:

Apply pilot pressure to connection 1 (one pressure pulse is sufficient for control function I).

- Fasten the mounting bracket ⑥ with nut ③ on the threaded nipple ⑤.
- Pull the two switch cams ① onto the switch spindle ② and screw in the setscrews ⑦ (do not tighten).

## 9.2.2 Installing the proximity switch



The proximity switch is not included in the scope of supply.

- Fasten the proximity switch (normally included in the scope of supply of the proximity switch) into the designated holes in the mounting bracket using two nuts each ⑥.
- Adjust the screw-in depth of the proximity switches to match the switching distance to the switch cams.



If required, loosen the mounting bracket ⑥ on the nut ③ and turn it around the actuator axis.

## 9.2.3 Positioning of the switch cams

- Align the position of the lower switch cam ① to the lower proximity switch while the actuator is in the lower end position. Fix switch cam ① to the switch spindle ② using setscrew ⑦.  
Tightening torque: 0.4...0.6 Nm.
- Align the position of the upper switch cam ① with the upper proximity switch while the actuator is in the upper end position. Fix switch cam ① to the switch spindle ② using setscrew ⑦.  
Tightening torque: 0.4...0.6 Nm.
- Check the valve for function and leaks.



Note the hardening time of the Loctite before placing the valve in operation.

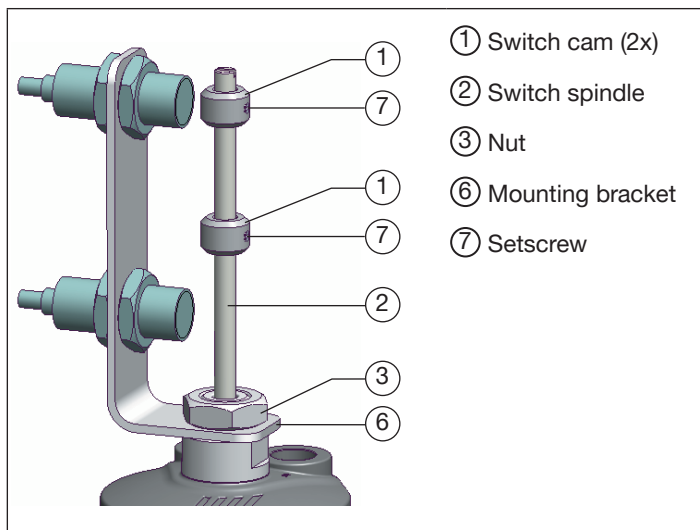


Fig. 10: Positioning of the switch cams

For control function **A** the lower end position is the rest position. The upper end position is reached by applying a pilot pressure to connection 1.

For control function **B** the lower end position is reached by applying a pilot pressure to connection 1. The upper end position is the rest position.

For control function **I** the lower end position is reached by a pressure pulse on connection 2 and the upper end position is reached by a pressure pulse on connection 1.

### 9.3 Installing the mounting bracket, actuator size N and P

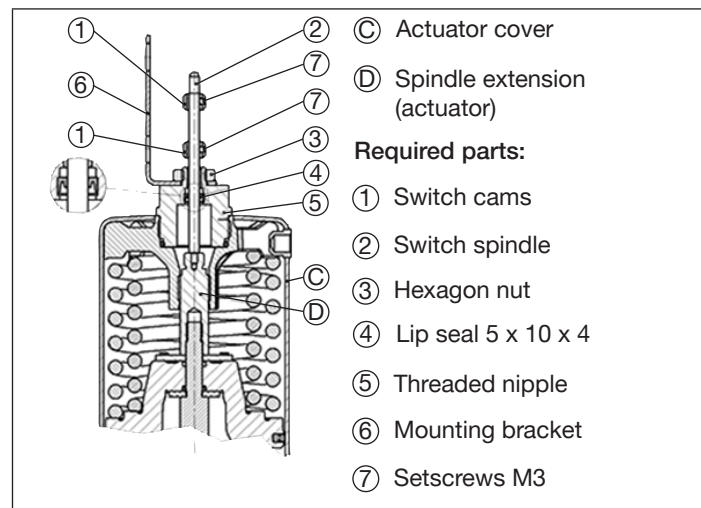


Fig. 11: Installing mounting bracket for 2 proximity switches, actuator size N and P

### 9.3.1 Installing the mounting bracket

→ Apply a little Loctite 274 in the upper threaded hole (M3) of the spindle extension ①. This is facilitated by moving the actuator into the upper end position.

#### Control functions A and I:

Apply pilot pressure to connection 1 (one pressure pulse is sufficient for control function I).

→ Fit the lip seal ④ in the undercut of the threaded nipple ⑤.

→ Lubricate switch spindle ② and lip seal ④ with e.g. multi-silicone grease OKS 1110.


→ Screw threaded nipple ⑤ into the actuator cover ③. Tightening torque: 25 Nm.

→ Screw the switch spindle ② into the threaded hole of the spindle extension ① using a screwdriver. Tightening torque 1 Nm.

→ Fasten the mounting bracket ⑥ with nut ③ on the threaded nipple.


→ Pull the two switch cams ① onto the switch spindle ② and screw in the setscrews ⑦ (do not tighten).

### 9.3.2 Installing the proximity switch

 The proximity switch is not included in the scope of supply.

→ Fasten the proximity switch (normally included in the scope of supply of the proximity switch) into the designated holes in the mounting bracket using two nuts each ⑥.

→ Adjust the screw-in depth of the proximity switches to match the switching distance to the switch cams.


 If required, loosen the mounting bracket ⑥ on the nut ③ and turn it around the actuator axis.

### 9.3.3 Positioning of the switch cams

→ Align the position of the lower switch cam ① to the lower proximity switch while the actuator is in the lower end position. Fix switch cam ① to the switch spindle ② using setscrew ⑦.  
Tightening torque: 0.4...0.6 Nm.

→ Align the position of the upper switch cam ① with the upper proximity switch while the actuator is in the upper end position. Fix switch cam ① to the switch spindle ② using setscrew ⑦.  
Tightening torque: 0.4...0.6 Nm.

→ Check the valve for function and leaks.

 Note the hardening time of the Loctite before placing the valve in operation.

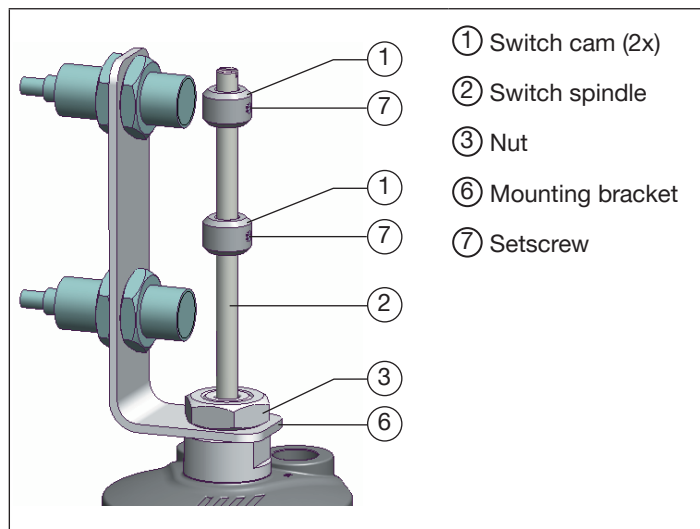


Fig. 12: Positioning of the switch cams

For control function **A** the lower end position is the rest position. The upper end position is reached by applying a pilot pressure to connection 1.

For control function **B** the lower end position is reached by applying a pilot pressure to connection 1. The upper end position is the rest position.

For control function **I** the lower end position is reached by a pressure pulse on connection 2 and the upper end position is reached by a pressure pulse on connection 1.

## 10 OPTION: POSITION FEEDBACK TYPE 8697

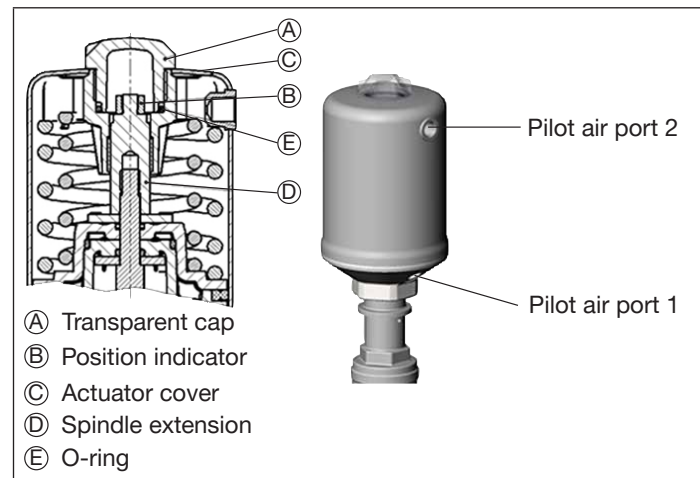


Fig. 13: Representation of the parts, actuator size D, M, N and P

## 10.1 Tasks before installation

- Interrupt the supply of medium flow.
- Switch off the pilot air.
- Empty the valve body.
- Unscrew transparent cap (A) off the actuator cover (C).

### **!** DANGER!

#### Risk of injury from high pressure!

Without the transparent cap, the actuator blows freely upward when the pilot pressure is applied to the wrong connection.

- ▶ Apply the pilot pressure for control functions A and I only on connection 1.

#### → Control functions A and I:

To remove the position indicator (B), move the actuator to the upper end position:

Apply pilot pressure to connection 1 (one pressure pulse is sufficient for control function I).

- Unscrew position indicator from (B) spindle extension (D).

## 10.2 Installing the position feedback, actuator size D and M

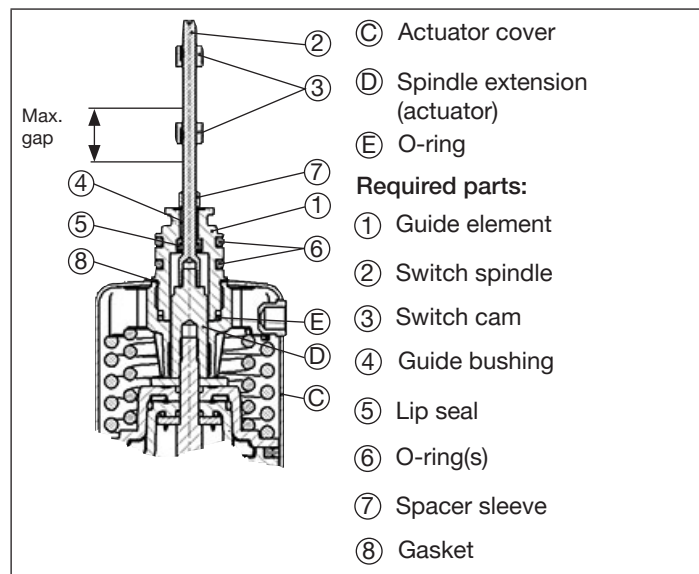


Fig. 14: Installing electrical position feedback Type 8697, actuator size D and M

## 10.2.1 Installing the switch spindle

### NOTE!

**Lip seal will be damaged if incorrectly installed.**

The lip seal is pre-mounted in the guide element and must be "locked into position" in the undercut.

▶ When installing the switch spindle, do not damage the lip seal.

- Push switch spindle ② through the guide element ①.
- To secure the switch spindle, apply a little threadlocker (Loctite 290) in the threaded hole of the switch spindle.
- Check that the O-ring ⑥ is in the correct position.
- Screw guide element ① to the actuator cover ③. Maximum tightening torque 8 Nm.
- Screw switch spindle ② onto the spindle extension ④. To do this, there is a slot on the upper side. Maximum tightening torque 1 Nm.
- Push spacer sleeve ⑦ onto the switch spindle ② up to the guide element ①.

## 10.2.2 Positioning the switch cam on the switch spindle

- Push lower switch cam ③ up to the spacer sleeve ⑦.
- Push upper switch cam ③ until it is 3 mm from the start of the spindle.



Ensure that the gap between the two switch cams is maximum (see "Fig. 14").

- Push electrical feedback onto the actuator.
- Push electrical feedback all the way down to the actuator and turn it into the required position.

### NOTE!

**If the torque is too high when screwing in the fastening screw, the degree of protection IP65 / IP67 cannot be guaranteed!**

- ▶ The fastening screw may be tightened to a maximum torque of 0.5 Nm only.
- Attach the electrical feedback to the actuator using the two side fastening screws. In doing so, tighten the fastening screws hand-tight only. Maximum tightening torque 0.5 Nm.

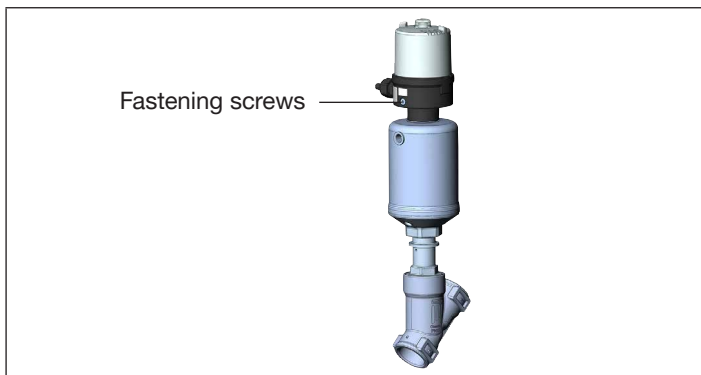


Fig. 15: Tightening fastening screws

### 10.3 Installing the position feedback, actuator size N and P

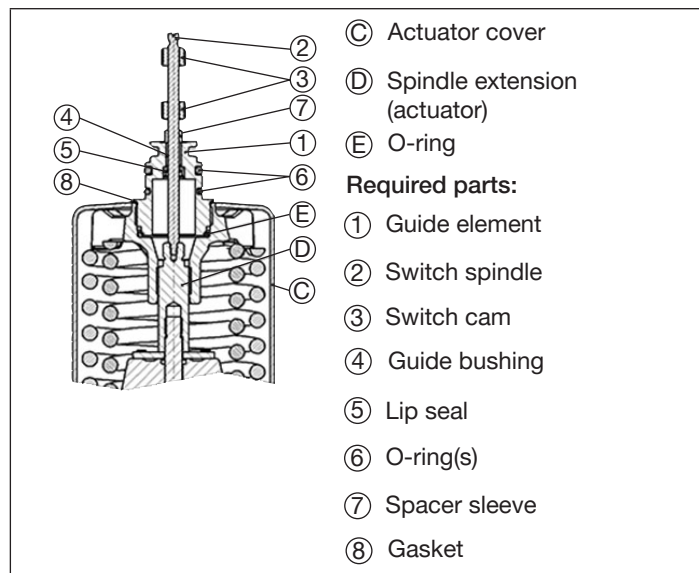


Fig. 16: Installing electrical position feedback Type 8697, actuator size N and P



### 10.3.1 Installing the switch spindle

#### NOTE!

**Lip seal will be damaged if incorrectly installed.**

The lip seal is pre-mounted in the guide element and must be "locked into position" in the undercut.

▶ When installing the switch spindle, do not damage the lip seal.

- Push switch spindle ② through the guide element ①.
- To secure the switch spindle ②, apply a little threadlocker (Loctite 290) in the threaded hole of the switch spindle.
- Check that the O-ring ⑥ is in the correct position.
- Screw guide element ① to the actuator cover ③. Maximum tightening torque 8 Nm.
- Screw switch spindle ② onto the spindle extension ④. To do this, there is a slot on the upper side. Maximum tightening torque 1 Nm.
- Push spacer sleeve ⑦ onto the switch spindle ② up to the guide element ①.

### 10.3.2 Positioning the switch cam on the switch spindle

- Push lower switch cam ③ up to the spacer sleeve ⑦.
- Push upper switch cam ③ until it is 3 mm from the start of the spindle.



Ensure that the gap between the two switch cams is maximum (see "Fig. 16").

- Push electrical feedback onto the actuator.
- Push electrical feedback all the way down to the actuator and turn it into the required position.

#### NOTE!

**If the torque is too high when screwing in the fastening screw, the degree of protection IP65 / IP67 cannot be guaranteed!**

- ▶ The fastening screw may be tightened to a maximum torque of 0.5 Nm only.
- Attach the electrical feedback to the actuator using the two side fastening screws. In doing so, tighten the fastening screws hand-tight only. Maximum tightening torque 0.5 Nm.

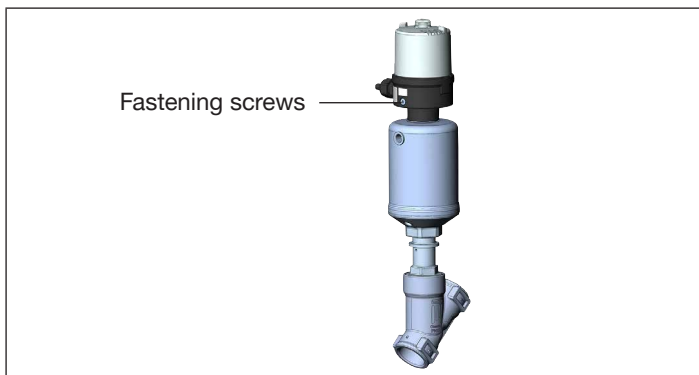


Fig. 17: Tightening fastening screws

## 10.4 Electrical installation



Electrical installation is described in the operating instructions for Type 8697. Operating instructions can be found on the Internet at: [www.burkert.com](http://www.burkert.com)

## 11 ORDER NUMBERS

Accessories	Actuator size	Order number
Maximum stroke limitation	D (50 mm)	699 550
	M (70 mm)	
	N (90 mm)	699 994
	P (130 mm)	
Minimum and maximum stroke limitation	D (50 mm)	699 986
	M (70 mm)	
	N (90 mm)	699 998
	P (130 mm)	
Threaded nipple for inductive proximity switch	D (50 mm)	698 536
	M (70 mm)	
	N (90 mm)	698 537
	P (130 mm)	
Mounting bracket for two inductive proximity switches	D (50 mm)	699 990
	M (70 mm)	
	N (90 mm)	699 992
	P (130 mm)	
Electrical position feedback Type 8697 (adaption set for FA05)	D (50 mm)	699 551
	M (70 mm)	
	N (90 mm)	580 000
	P (130 mm)	



[www.burkert.com](http://www.burkert.com)