
# Assembly and Operating Manual SRH-plus

## Pneumatic rotary actuator

Translation of the original operating manual

Hand in hand for tomorrow

# Imprint



**Technical changes:**
We reserve the right to make alterations for the purpose of technical improvement.

**Document number:** 389428

**Version:** 10.00 | 05/07/2024 | en

Dear Customer,

Thank you for trusting our products and our family-owned company, the leading technology supplier of robots and production machines.

Our team is always available to answer any questions on this product and other solutions. Ask us questions and challenge us. We will find a solution!

Best regards,

Your SCHUNK team

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**Please read the operating manual in full and keep it close to the product.**

# Table of Contents

# 1 General

## 1.1 About this manual

This manual contains important information for a safe and appropriate use of the product.

This manual is an integral part of the product and must be kept accessible for the personnel at all times.

Before starting work, the personnel must have read and understood this operating manual. Prerequisite for safe working is the observance of all safety instructions in this manual.

In addition to these instructions, the documents listed under ▸ 1.1.3 [🗋 7] are applicable.

**NOTE:** The illustrations in this manual are intended to provide a basic understanding and may deviate from the actual version.

### 1.1.1 Presentation of Warning Labels

To make risks clear, the following signal words and symbols are used for safety notes.

**⚠ DANGER**

**Dangers for persons!**

Non-observance will inevitably cause irreversible injury or death.

**⚠ WARNING**

**Dangers for persons!**

Non-observance can lead to irreversible injury and even death.

**⚠ CAUTION**

**Dangers for persons!**

Non-observance can cause minor injuries.

***CAUTION***

**Material damage!**

Information about avoiding material damage.

### 1.1.2 Definition of Terms

The term "product" replaces the product name on the title page in this manual.

### 1.1.3 Applicable documents

- General terms of business *
- Catalog data sheet of the purchased product *
- Assembly and operating manuals of the accessories *

The documents labeled with an asterisk (*) can be downloaded from **schunk.com/downloads**.

### 1.1.4 Sizes

This operating manual applies to the following sizes:

- Size 20
- Size 25
- Size 30
- Size 35
- Size 40
- Size 50
- Size 60

### 1.1.5 Variants

This operating manual applies to the following variations:

- SRH-plus with electrical feed-through (EDF) and lateral cable outlet
- SRH-plus with electrical feed-through (EDF) and axial cable outlet
- SRH-plus with center bore (CB)

## 1.2 Warranty

If the product is used as intended, the warranty is valid for 24 months from the ex-works delivery date under the following conditions:

- Observe the specified maintenance and lubrication intervals
- Observe the ambient conditions and operating conditions

Parts touching the workpiece and wear parts are not included in the warranty.

## 1.3 Accessory kit

**With media feed-through**

| Size | ID number |
|---|---|
| 20 | 5514982 |
| 25 | 5514986 |
| 30 | 5518654 |
| 35 | 5514990 |
| 40 | 5514994 |
| 50 | 5514998 |
| 60 | 5515002 |

Content of the accessories pack: ▸ 8.8 [🗋 50].

## 1.4 Accessories

A wide range of accessories are available for this product

For information regarding which accessory articles can be used with the corresponding product variants, see catalog data sheet.

## 1.5 Sealing kit

**With media feed-through**

| Size | ID number |
|---|---|
| 20 | 5521800 |
| 25 | 5521802 |
| 30 | 5521804 |
| 35 | 5521806 |
| 40 | 5521808 |
| 50 | 5521810 |
| 60 | 5521812 |

**With center bore**

| Size | ID number |
|---|---|
| 20 | 5521799 |
| 25 | 5521801 |
| 30 | 5521803 |
| 35 | 5521805 |
| 40 | 5521807 |
| 50 | 5521809 |
| 60 | 5521811 |

contents of the sealing kit, ▸ 8.8 [🗋 50].

# 2 Basic safety notes

## 2.1 Intended use

The product may only be used for swiveling permissible attachment parts or workpieces.

- The product may only be used within the scope of its technical data, ▶ 3 [🗋 16].
- When implementing and operating components in safety-related parts of the control systems, the basic safety principles in accordance with DIN EN ISO 13849-2 apply. The proven safety principles in accordance with DIN EN ISO 13849-2 also apply to categories 1, 2, 3 and 4.
- The product is intended for installation in a machine/automated system. The applicable guidelines for the machine/automated system must be observed and complied with.
- The product is intended for industrial and industry-oriented use.
- Appropriate use of the product includes compliance with all instructions in this manual.

## 2.2 Not intended use

Inappropriate use includes using the product as a cutting tool or drilling tool, for example.

- Any utilization that exceeds or differs from the appropriate use is regarded as misuse.

## 2.3 Constructional changes

**Implementation of structural changes**

Modifications, changes or reworking, e.g. additional threads, holes, or safety devices, can damage the product or impair its functionality or safety.

- Structural changes should only be made with the written approval of SCHUNK.

## 2.4 Spare parts

**Use of unauthorized spare parts**

Using unauthorized spare parts can endanger personnel and damage the product or cause it to malfunction.

- Use only original spare parts or spares authorized by SCHUNK.

## 2.5 Ambient conditions and operating conditions

**Required ambient conditions and operating conditions**

Incorrect ambient and operating conditions can make the product unsafe, leading to the risk of serious injuries, considerable material damage and/or a significant reduction to the product's life span.

- Make sure that the product is used only in the context of its defined application parameters, ▸ 3 [🗋 16].
- Make sure that the product is a sufficient size for the application.
- Make sure that the environment is free from splash water and vapors as well as from abrasion or processing dust. Exceptions are products that are designed especially for contaminated environments.

## 2.6 Personnel qualification

**Inadequate qualifications of the personnel**

If the personnel working with the product is not sufficiently qualified, the result may be serious injuries and significant property damage.

- All work may only be performed by qualified personnel.
- Before working with the product, the personnel must have read and understood the complete assembly and operating manual.
- Observe the national safety regulations and rules and general safety instructions.

The following personal qualifications are necessary for the various activities related to the product:

**Trained electrician**

Due to their technical training, knowledge and experience, trained electricians are able to work on electrical systems, recognize and avoid possible dangers and know the relevant standards and regulations.

**Qualified personnel**

Due to its technical training, knowledge and experience, qualified personnel is able to perform the delegated tasks, recognize and avoid possible dangers and knows the relevant standards and regulations.

**Instructed person**

Instructed persons were instructed by the operator about the delegated tasks and possible dangers due to improper behaviour.

**Service personnel of the manufacturer**

Due to its technical training, knowledge and experience, service personnel of the manufacturer is able to perform the delegated tasks and to recognize and avoid possible dangers.

## 2.7 Personal protective equipment

### Use of personal protective equipment

Personal protective equipment serves to protect staff against danger which may interfere with their health or safety at work.

- When working on and with the product, observe the occupational health and safety regulations and wear the required personal protective equipment.
- Observe the valid safety and accident prevention regulations.
- Wear protective gloves to guard against sharp edges and corners or rough surfaces.
- Wear heat-resistant protective gloves when handling hot surfaces.
- Wear protective gloves and safety goggles when handling hazardous substances.
- Wear close-fitting protective clothing and also wear long hair in a hairnet when dealing with moving components.

## 2.8 Notes on safe operation

### Incorrect handling of the personnel

Incorrect handling and assembly may impair the product's safety and cause serious injuries and considerable material damage.

- Avoid any manner of working that may interfere with the function and operational safety of the product.
- Use the product as intended.
- Observe the safety notes and assembly instructions.
- Do not expose the product to any corrosive media. This does not apply to products that are designed for special environments.
- Eliminate any malfunction immediately.
- Observe the care and maintenance instructions.
- Observe the current safety, accident prevention and environmental protection regulations regarding the product's application field.

## 2.9 Transport

### Handling during transport

Incorrect handling during transport may impair the product's safety and cause serious injuries and considerable material damage.

- When handling heavy weights, use lifting equipment to lift the product and transport it by appropriate means.

- Secure the product against falling during transportation and handling.
- Stand clear of suspended loads.

## 2.10 Malfunctions

**Behavior in case of malfunctions**

- Immediately remove the product from operation and report the malfunction to the responsible departments/persons.
- Order appropriately trained personnel to rectify the malfunction.
- Do not recommission the product until the malfunction has been rectified.
- Test the product after a malfunction to establish whether it still functions properly and no increased risks have arisen.

## 2.11 Disposal

**Handling of disposal**

The incorrect handling of disposal may impair the product's safety and cause serious injuries as well as considerable material and environmental harm.

- Follow local regulations on dispatching product components for recycling or proper disposal.

## 2.12 Fundamental dangers

**General**

- Observe safety distances.
- Never deactivate safety devices.
- Before commissioning the product, take appropriate protective measures to secure the danger zone.
- Disconnect power sources before installation, modification, maintenance, or calibration. Ensure that no residual energy remains in the system.
- If the energy supply is connected, do not move any parts by hand.
- Do not reach into the open mechanism or movement area of the product during operation.

### 2.12.1 Protection during handling and assembly

**Incorrect handling and assembly**

Incorrect handling and assembly may impair the product's safety and cause serious injuries and considerable material damage.

- Have all work carried out by appropriately qualified personnel.

- For all work, secure the product against accidental operation.
- Observe the relevant accident prevention rules.
- Use suitable assembly and transport equipment and take precautions to prevent jamming and crushing.

**Incorrect lifting of loads**

Falling loads may cause serious injuries and even death.

- Stand clear of suspended loads and do not step into their swiveling range.
- Never move loads without supervision.
- Do not leave suspended loads unattended.

### 2.12.2 Protection during commissioning and operation

**Falling or violently ejected components**

Falling and violently ejected components can cause serious injuries and even death.

- Take appropriate protective measures to secure the danger zone.
- Never step into the danger zone during operation.

### 2.12.3 Protection against dangerous movements

**Unexpected movements**

Residual energy in the system may cause serious injuries while working with the product.

- Switch off the energy supply, ensure that no residual energy remains and secure against inadvertent reactivation.
- Never rely solely on the response of the monitoring function to avert danger. Until the installed monitors become effective, it must be assumed that the drive movement is faulty, with its action being dependent on the control unit and the current operating condition of the drive. Perform maintenance work, modifications, and attachments outside the danger zone defined by the movement range.
- To avoid accidents and/or material damage, human access to the movement range of the machine must be restricted. Limit/prevent accidental access for people in this area due through technical safety measures. The protective cover and protective fence must be rigid enough to withstand the maximum possible movement energy. EMERGENCY STOP switches must be easily and quickly accessible. Before starting up the machine or automated system, check that the EMERGENCY STOP system is working. Prevent operation of the machine if this protective equipment does not function correctly.

### 2.12.4 Protection against electric shock

**Possible electrostatic energy**

Components or assembly groups may become electrostatically charged. When the electrostatic charge is touched, the discharge may trigger a shock reaction leading to injuries.

- The operator must ensure that all components and assembly groups are included in the local potential equalisation in accordance with the applicable regulations.
- While paying attention to the actual conditions of the working environment, the potential equalisation must be implemented by a specialist electrician according to the applicable regulations.
- The effectiveness of the potential equalisation must be verified by executing regular safety measurements.

## 2.13 Notes on particular risks

**⚠ DANGER**

**Risk of fatal injury from suspended loads!**

Falling loads can cause serious injuries and even death.

- Stand clear of suspended loads and do not step within their swiveling range.
- Never move loads without supervision.
- Do not leave suspended loads unattended.
- Wear suitable protective equipment.

**⚠ WARNING**

**Risk of injury from objects falling and being ejected!**

Falling and ejected objects during operation can lead to serious injury or death.

- Take appropriate protective measures to secure the danger zone.

**⚠ WARNING**

**Risk of injury due to unexpected movements!**

If the power supply is switched on or residual energy remains in the system, components can move unexpectedly and cause serious injuries.

- Before starting any work on the product: Switch off the power supply and secure against restarting.
- Make sure, that no residual energy remains in the system.

**⚠ WARNING**

**Risk of injury from sharp edges and corners!**

Sharp edges and corners can cause cuts.

- Use suitable protective equipment.

**⚠ WARNING**

**Risk of burns through contact with hot surfaces!**

Surfaces of components can heat up severely during operation. Skin contact with hot surfaces causes severe burns to the skin.

- For all work in the vicinity of hot surfaces, wear safety gloves.
- Before carrying out any work, make sure that all surfaces have cooled down to the ambient temperature.

**⚠ WARNING**

**Risk of injury from parts coming loose!**

If the shock absorbers are faulty, the product can become damaged. Parts coming loose in this way can lead to injuries.

- Regularly check the components for wear and damage.

**⚠ WARNING**

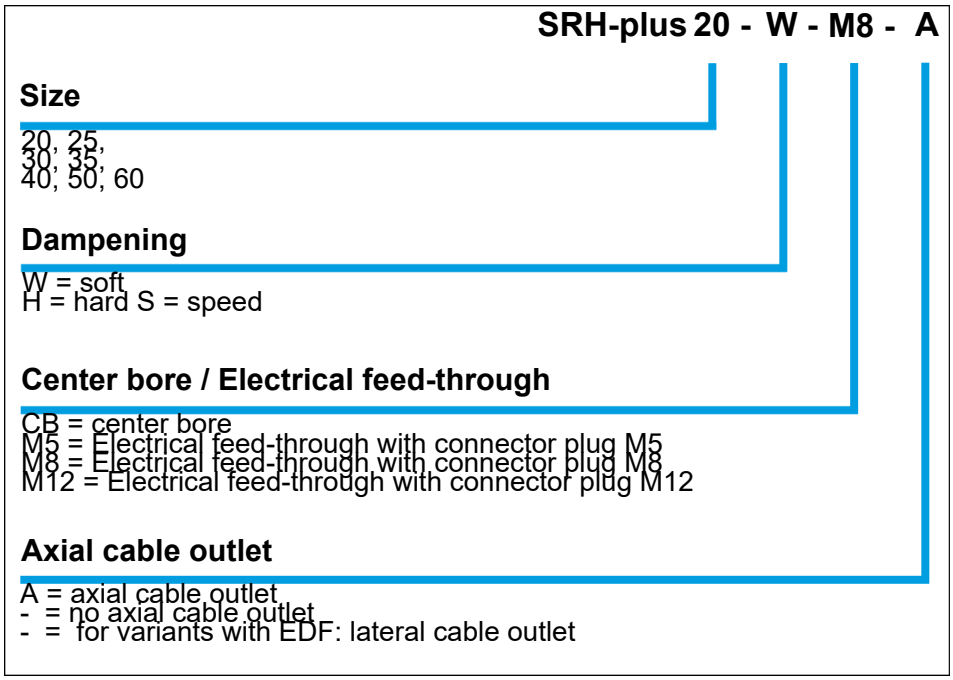
**Risk of injury if the condition or behavior of the product is undefined!**

Cutting off the compressed air supply in an uncontrolled manner could lead to undefined states and behavior. This may cause personal injury or material damage.

- The operator must define suitable emergency stop and restarting strategies.
  - ⇨ Emergency stop strategies: e.g. by means of controlled shut down
  - ⇨ Restarting strategies: e.g. using pressure build-up valves or suitable valve switching sequences

# 3 Technical data

## 3.1 Type key




*Type key*

## 3.2 Basic data

| Designation | Value |
|---|---|
| Noise emission [dB(A)] | ≤70 |
| Pressure medium | Compressed air, compressed air quality according to ISO 8573-1:2010 [7:4:4] |
| Min. pressure [bar] | 3 |
| Max. pressure [bar] | 8 |

*Tab.: Basic data swivel unit*

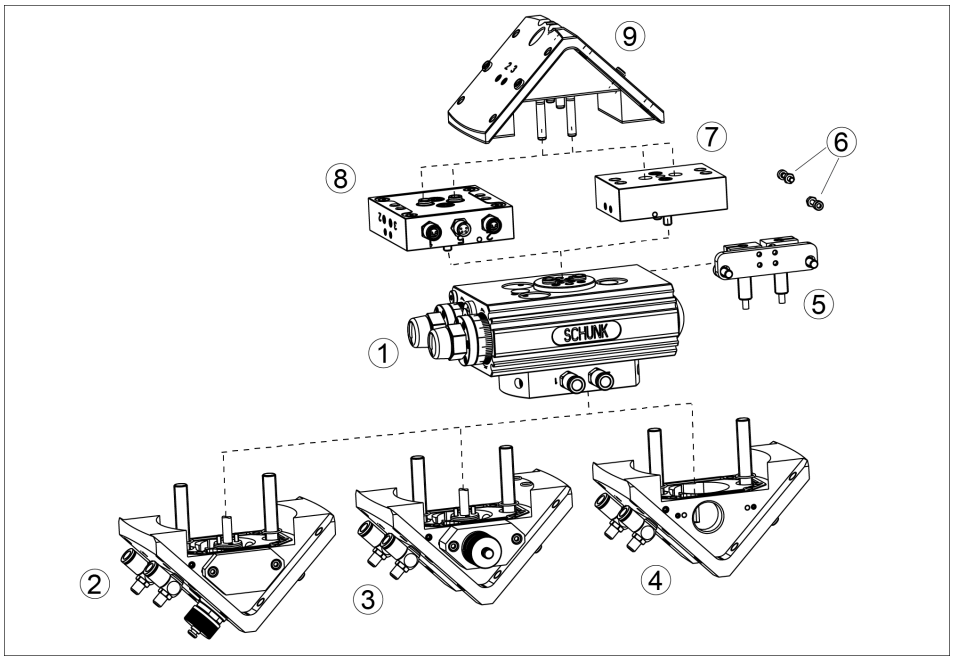
| Designation | Value |
|---|---|
| Max. voltage [V] | 24 |
| Max. current per wire [A] | 1 |

*Tab.: Basic data EDF*

More technical data is included in the catalog data sheet. Whichever is the latest version.

# 4 Design and description

## 4.1 Design




*Design SRH-plus*

| | | | |
|---|---|---|---|
| 1 | SRU-plus | 6 | Sensor query |
| 2 | Screw-on bracket with axial cable outlet | 7 | Distributor plate for CB |
| 3 | Screw-on bracket with lateral cable outlet | 8 | Distributor plate for EDF |
| 4 | Screw-on bracket for CB | 9 | Swivel head |
| 5 | Sensor query | | |

## 4.2 Description

The product is a pneumatic swivel unit for fast loading and unloading tasks, with integrated fluid and electrical feed-through.

**Variant elektrical feed-through (EDF)**

With the variant with electrical feedthrough (EDF) sensor signals for monitoring the product can be reliably transmitted and discharged via a lateral or axial outlet.

**Variant center bore (CB)**

With the variant with center bore for example, cables can be routed through the product..

# 5 Assembly

## 5.1 Installing and connecting

**⚠ WARNING**

**Risk of injury due to unexpected movements!**

If the power supply is switched on or residual energy remains in the system, components can move unexpectedly and cause serious injuries.

- Before starting any work on the product: Switch off the power supply and secure against restarting.
- Make sure, that no residual energy remains in the system.

***CAUTION***

**Risk of damage to the product!**

If the end position is approached too hard, the product may be damaged.

- As a rule, a rotary movement must take place without impact and bouncing.
- To do this, carry out sufficient throttle and dampening.
- Observe specifications in the catalog data sheet.

***CAUTION***

**Material damage due to opened exhaust air throttle valves!**

If during first actuation the exhaust throttle valves are open, the product may move in an uncontrolled manner.

- Close the exhaust air throttle valves completely before applying pressure.

**Overview**

1. Screw the product to the machine/system, ▸ 5.2.1 [🗋 20].
   - ⇨ Use centering sleeves from the enclosed accessory pack.
   - ⇨ Observe the tightening torque for the mounting screws.
2. Screw the attachment part to the swivel head, ▸ 5.2.1 [🗋 20].
3. In the main air connections "A" and "B", screw in throttle valves and connect compressed air lines, ▸ 5.2.2 [🗋 22].
   - ⇨ In die Hauptluftanschlüsse "A" und "B" Verschlussschrauben einschrauben, ▸ 5.2.2 [🗋 22].
   - ⇨ In die Zuluftleitungen für die Luftanschlüsse "a" und "b" Drosselventile montieren.

4. Check that all of the throttle valves are closed.
5. Screw in locking screws in open and not required air connections where appropriate.
6. Adjust the angle of rotation, ▸ 5.3.1 [🗋 28].
7. Adjust the swiveling speed, ▸ 5.3.2 [🗋 31].
8. Adjust shock absorber stroke, ▸ 5.3.3 [🗋 32].
9. Mount the sensor, ▸ 5.4 [🗋 34].

## 5.2 Connections

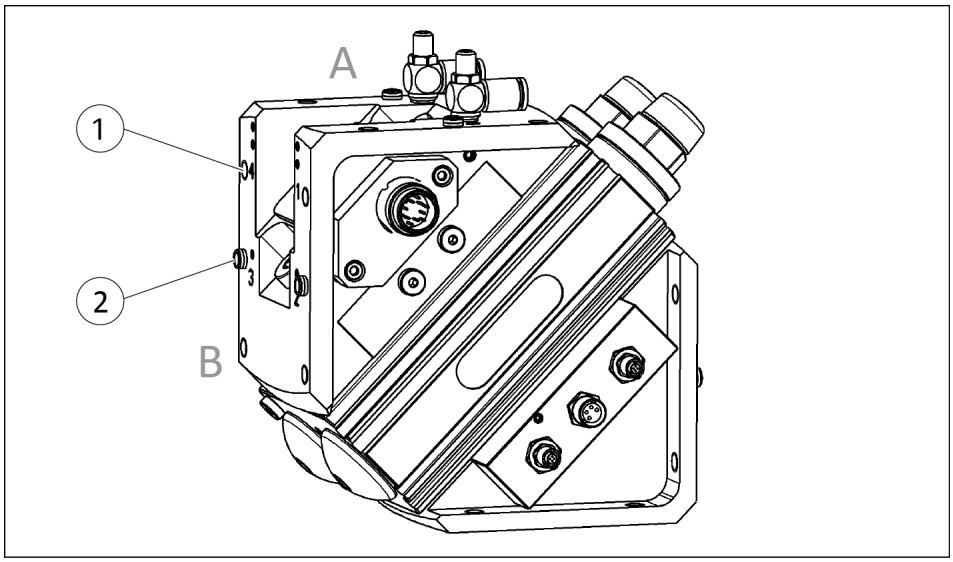
### 5.2.1 Mechanical connection

**NOTE**
For connection dimensions, see drawings in the catalog.

**Connections on the screw-on bracket**

The product can be assembled from two sides.

Centering sleeves for the mounting screws are included in the accessory kit.



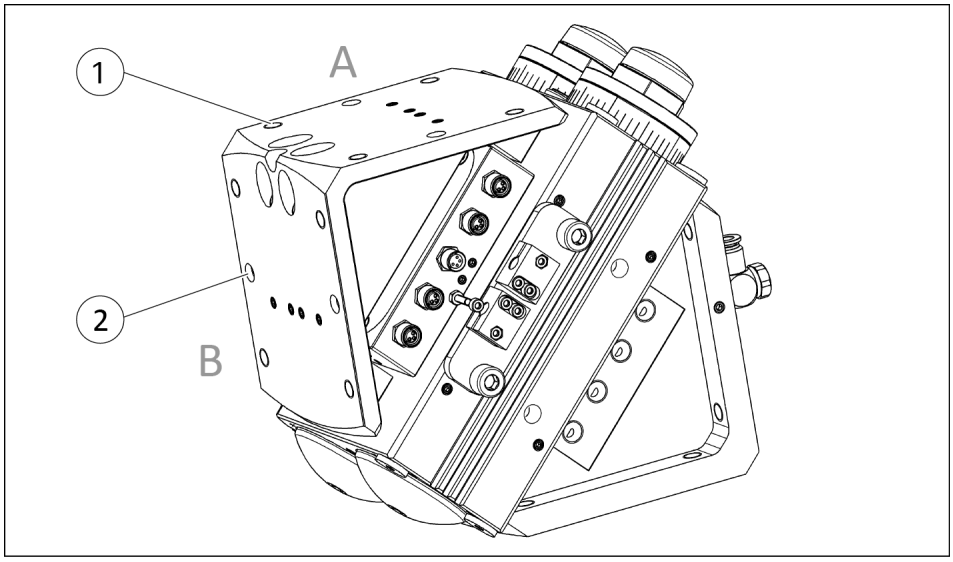

*Assembly options*

| Size | ◻ Screw * (4x) | ◻ Centering sleeve (2x) |
|---|---|---|
| 20 | M6/7 | Ø6 |
| 25 | M6/7 | Ø6 |
| 30 | M6/8.5 | Ø6 |
| 35 | M6/8.5 | Ø6 |
| 40 | M8/12 | Ø10 |
| 50 | M10/18 | Ø10 |
| 60 | M10/18 | Ø10 |

** Thread / max. depth of engagement from locating surface [mm]*

## Connections on the swivel head

Two attachment parts can be mounted on the product.




*Connections for attachment part*

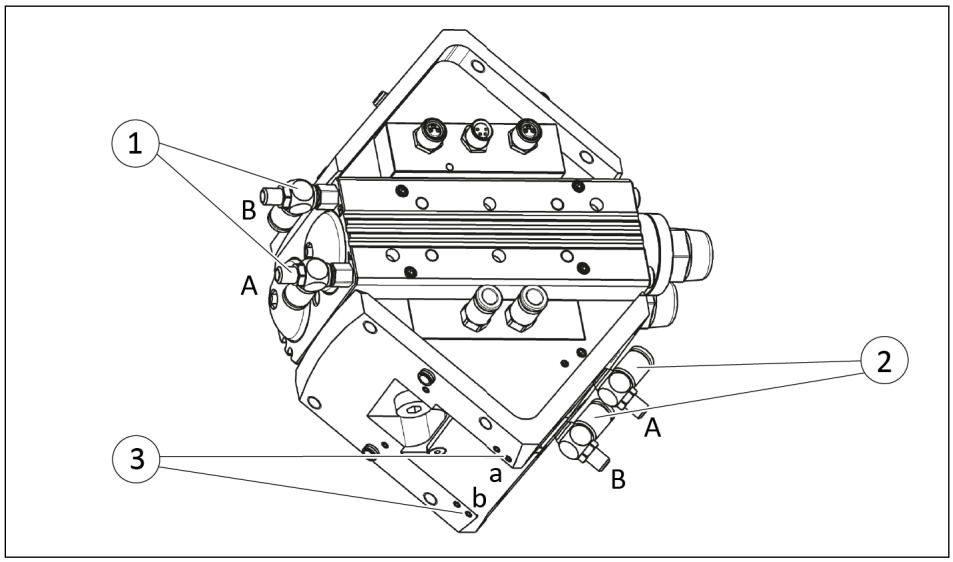
| Size | ⌀ Screw * (4x) | ⌀ Centering sleeve (2x) |
|---|---|---|
| 20 | M6/5.5 | Ø6 |
| 25 | M6/5.5 | Ø6 |
| 30 | M6/5.5 | Ø6 |
| 35 | M6/6 | Ø6 |
| 40 | M8/8 | Ø8 |
| 50 | M12/10.5 | Ø12 |
| 50 | M12/10.5 | Ø12 |

** Thread / max. depth of engagement from locating surface [mm]*

### 5.2.2 Pneumatic connection

**NOTE**

- Observe the requirements for the compressed air supply, ▸ 3 [🗋 16].
- In case of compressed air loss (cutting off the energy line), the components lose their dynamic effects and do not remain in a secure position. However, the use of a SDV-P pressure maintenance valve is recommended in this case in order to maintain the dynamic effect for some time. Product variants are also offered with mechanical gripping force via springs, which also ensure a minimum clamping force in the event of a pressure drop.




*Compressed air connections*

| Designation | Function |
|---|---|
| Hose-free direct connection | |
| a | swiveling 0° – 180° |
| b | swiveling 180° – 0° |
| Main air connections | |
| A | swiveling 0° – 180° |
| B | swiveling 180° – 0° |

## Dimensions

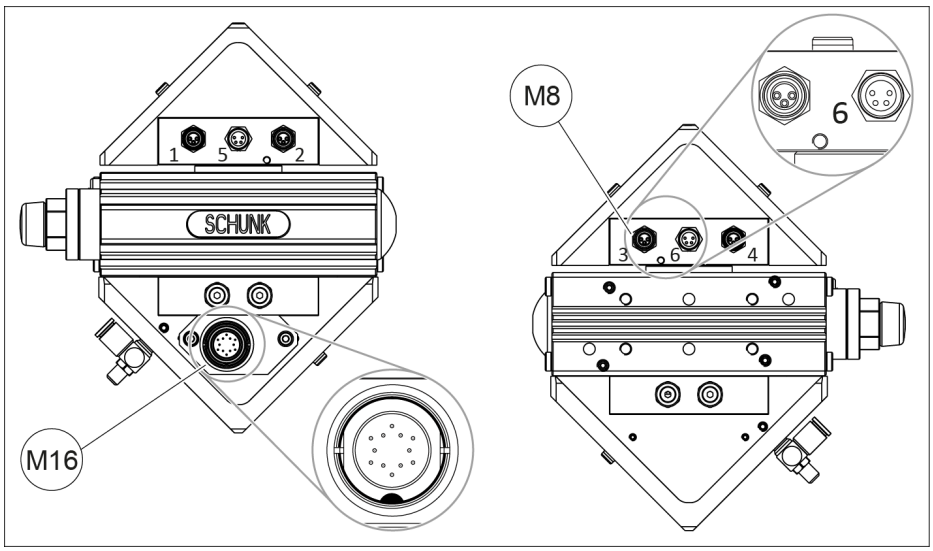
**Thread diameter and depth of engagement [mm] of the air connections**

| Size | ◻ Hose connection to swivel unit | ◻ Hose connection to screw-on bracket | ◻ Direct connection to screw-on bracket |
|---|---|---|---|
| 20 | M5/13 | M5/6 | M3/6 |
| 25 | M5/13 | M5/6 | M3/6 |
| 30 | M5/13 | M5/8 | M4/6 |
| 35 | M5/13 | M5/6 | M5/8 |
| 40 | G1/8"/13 | G1/8"/6.5 | M5/8 |
| 50 | G1/8"/13 | G1/8"/10 | M5/8 |
| 60 | G1/8"/8 | G1/8"/8 | M5/8 |

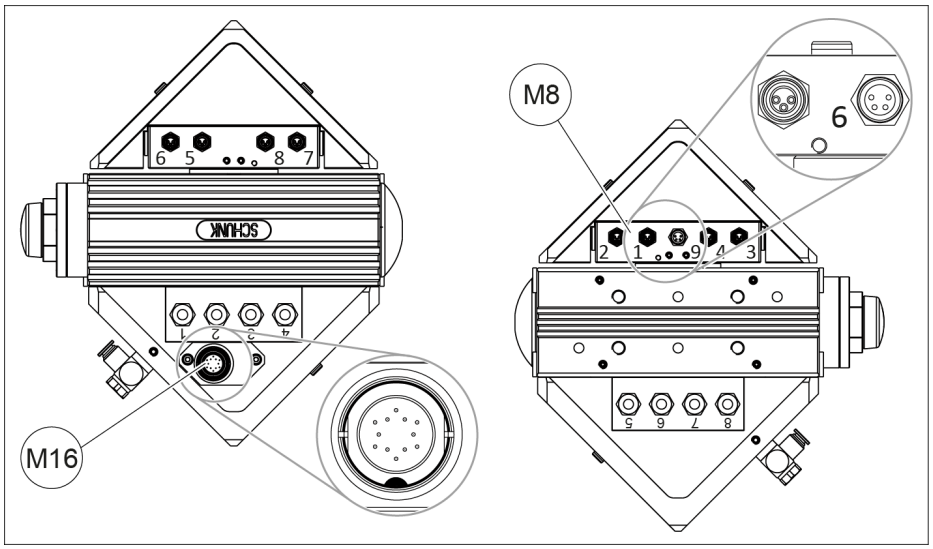
- Only open the air connections required.
- Seal those main air connections that are not needed using the locking screws from the accessory pack.
- For hose-free direct connections, use the 0-rings from the accessory pack.
- Use throttle valve from the accessory pack for the main air connections.
- With hose-free direct connections, throttle valves must be fitted in front of the main air connections.

## 5.2.3 Electrical connection

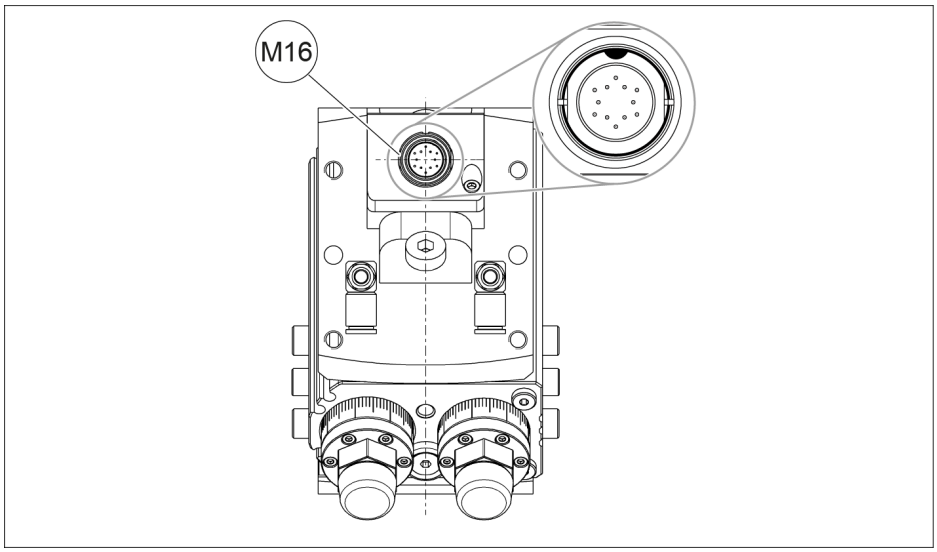
### 5.2.3.1 Connection overview SRH-plus 20-60




*SRH-plus 20-35 lateral cable outlet*



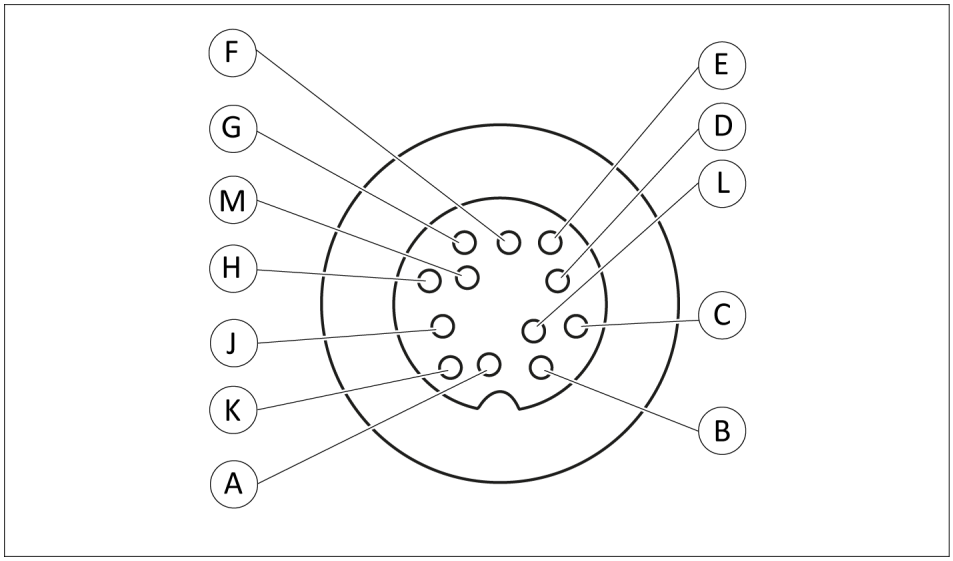

*SRH-plus 40-60 lateral cable outlet*




*SRH-plus axial cable outlet*

**Bending radius**

Minimum bending radius for constant movement:
10 x cable diameter




*Pin assignment, connector M16*

**Pin-assignment 20-35 EDF**

| Pin | Pin assignment |
|---|---|
| A | Switching signal, sensor 3 |
| B | GND (common) |
| C | Switching signal, sensor 2 |
| D | Switching signal, sensor 4 |
| E | Switching signal, sensor 1 |
| F | Switching signal 1, sensor 5 |
| G | Switching signal 2, sensor 5 |
| H | +24 V (common) |
| J | Switching signal 1, sensor 6 |
| K | Switching signal 2, sensor 6 |
| L | - not connected - |
| M | - not connected - |
| Shield | SHD |

**Pin-assignment 40-60 EDF**

| Pin | Pin assignment |
|---|---|
| A | Switching signal, sensor 3 |
| B | GND (common) |
| C | Switching signal, sensor 2 |
| D | Switching signal, sensor 4 |
| E | Switching signal, sensor 1 |
| F | Switching signal, sensor 5 |

| Pin | Pin assignment |
|---|---|
| G | Switching signal, sensor 6 |
| H | +24 V (common) |
| J | Switching signal, sensor 7 |
| K | Switching signal 1, sensor 9 |
| L | Switching signal 2, sensor 9 |
| M | Switching signal, sensor 8 |
| Shield | SHD |

## 5.3 Settings

**CAUTION**

**Material damage due to erroneous settings!**

If the end position is approached too hard, the product may be damaged.

- Adjust exhaust throttle valve and shock absorber so that the movement is braked smoothly.

The swiveling angle, swiveling speed and absorber stroke must be set for operation.

The settings must always be configured under subsequent operational conditions. If the operating conditions change, e.g. weight of the workpiece, check that the movement decelerates smoothly. If necessary, readjust swiveling speed and absorber stroke.

**Angle of rotation**

The angle of rotation is set in order to achieve a fine adjustment of the end positions.

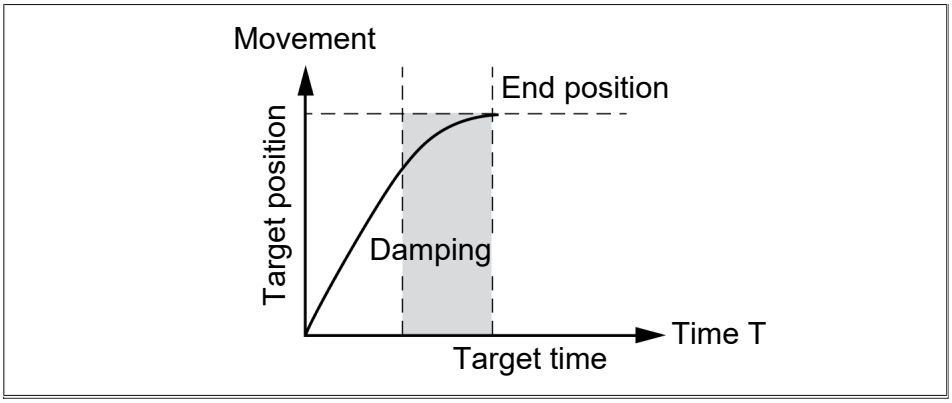
The end positions can be adjusted by ±3°. If the end positions are adjusted, the swiveling speed and absorber stroke may have to be readjusted.

**Swiveling speed and absorber stroke**

The swiveling speed and absorber stroke are adjusted to ensure a harmonious motion sequence for the operating conditions, as both settings are dependent on each other.

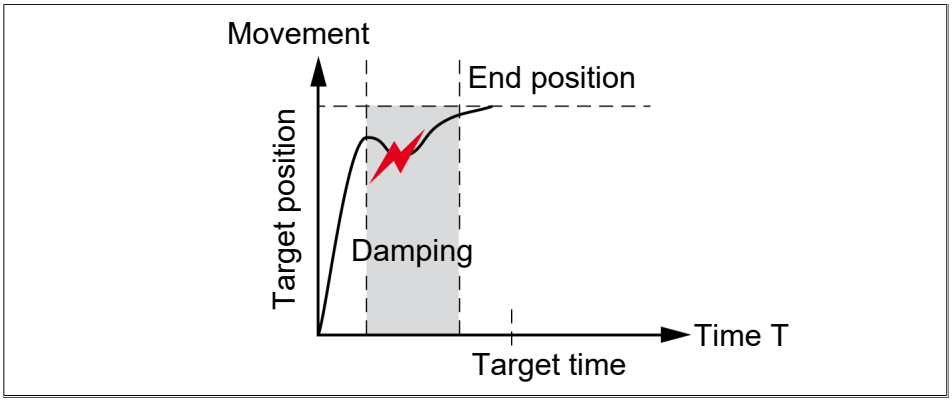
Each end position is set separately. The position of the exhaust throttle valve and shock absorber may deviate from one another.

**Optimal setting**

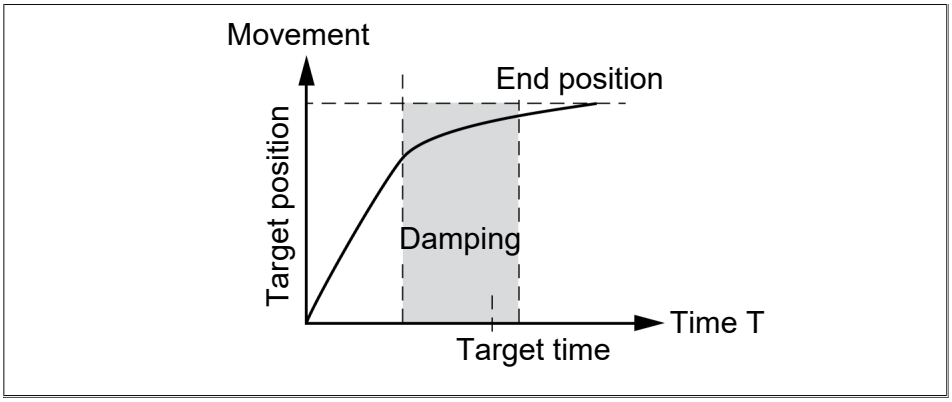



Swiveling speed and absorber stroke are optimal.

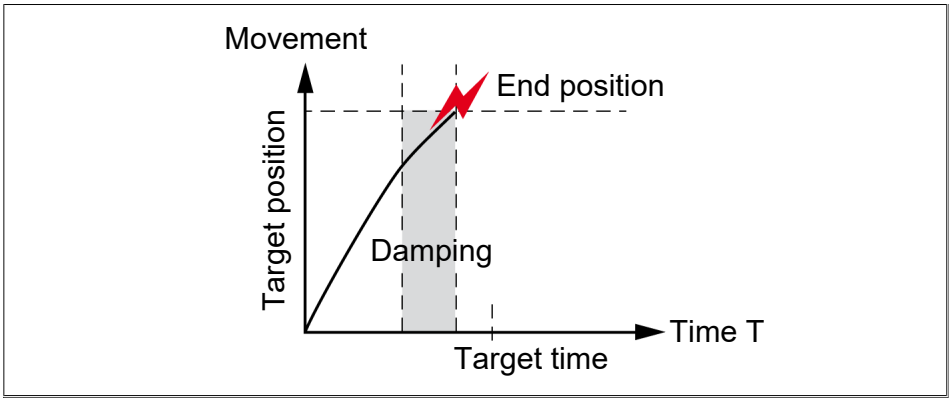
**Erroneous adjustment**




Swiveling speed too high. Assembly oscillates back.




Absorber stroke is too long. End position is reached too slowly.




Absorber stroke is too short. Assembly hits the end position.

### 5.3.1 Adjust swivel angle

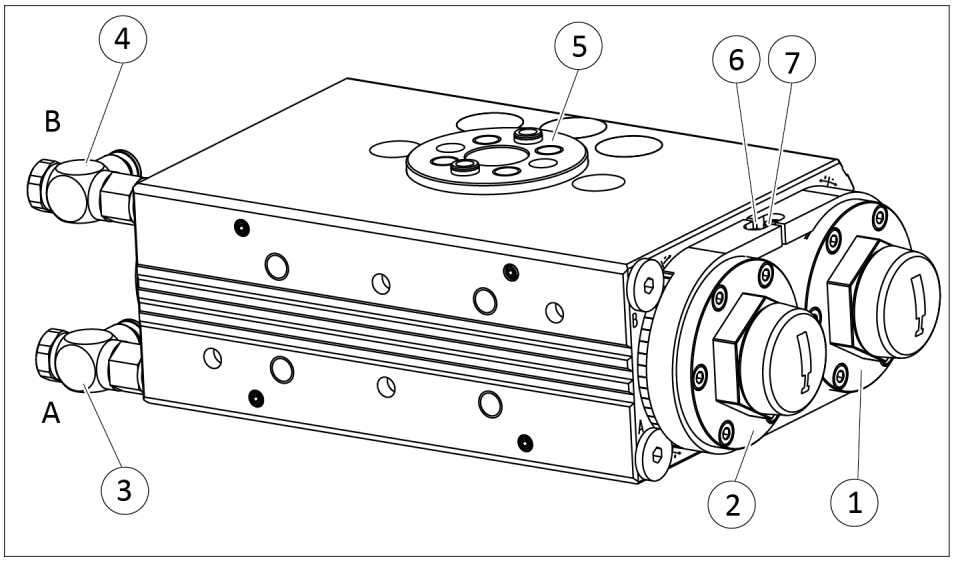
**CAUTION**

**Material damage due to incorrect settings!**

By incorrect setting of the swivel angle parts can come loose and the product may be damaged.

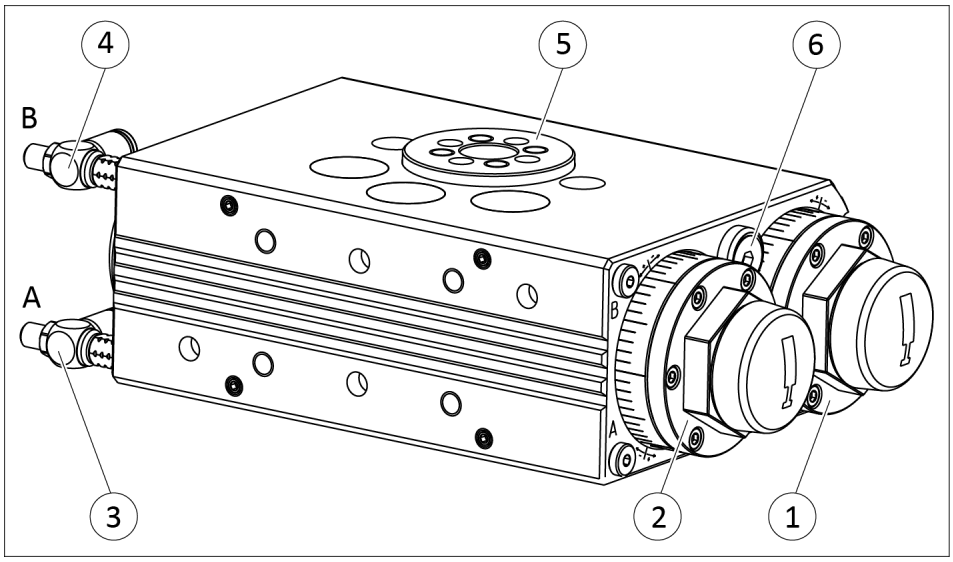
- Only trained stuff may set the swivel angle.
- Before setting the swivel angle release pressure.

## Version with clamp shell




1. Loosen screw of the limiting sleeve (6) approx. one revolution.
2. Actuate air connection *B* (4).
3. Open exhaust throttle valve on air connection *A* (3) until the pinion (5) starts to move.
   ⇨ Pinion swivels towards the end position.
4. Set the desired end position by twisting the stop *B* (2).
5. Check end position.
   ⇨ To do this, ventilate air connection *B* (4) and actuate it again, if necessary adjust end position.
6. Tighten screw (6).
7. Loosen screw (7) approx. one revolution.
8. Ventilate air connection *B* (4) and actuate air connection *A* (3).
9. Open exhaust throttle valve on air connection *B* (4) until the pinion (5) starts to move.
   ⇨ Pinion swivels towards the end position.
10. Set the desired end position by twisting the stop *A* (1).
11. Check end position.
    ⇨ To do this, ventilate air connection *A* (3) and actuate it again, if necessary adjust end position.
12. Tighten screw (7).
    ⇨ Tightening torque:SRH-plus20-30: 1,2 Nm
    ⇨ Tightening torque:SRH-plus 35-50: 2,1 Nm
13. Swivel repeatedly to test the setting, adjust if necessary.

## Version with limiting sleeves




1. Loosen screw of the limiting sleeve (6) approx. one revolution.
2. Actuate air connection *B* (4).
3. Open exhaust throttle valve on air connection *A* (3) until the pinion (5) starts to move.
   ⇨ Pinion swivels towards the end position.
4. Set the desired end position by twisting the stop *B* (2).
5. Check end position.
   ⇨ To do this, ventilate air connection *B* (4) and actuate it again, if necessary adjust end position.
6. Ventilate air connection *B* (4) and actuate air connection *A* (3).
7. Open exhaust throttle valve on air connection *B* (4) until the pinion (5) starts to move.
   ⇨ Pinion swivels towards the end position.
8. Set the desired end position by twisting the stop *A* (1).
9. Check end position.
   ⇨ To do this, ventilate air connection *A* (3) and actuate it again, if necessary adjust end position.
10. Tighten screw (6).
    ⇨ Tightening torque: SRH-plus 20-40: 10 Nm
    ⇨ Tightening torque: SRH-plus 50-60: 24 Nm
11. Swivel repeatedly to test the setting, adjust if necessary.

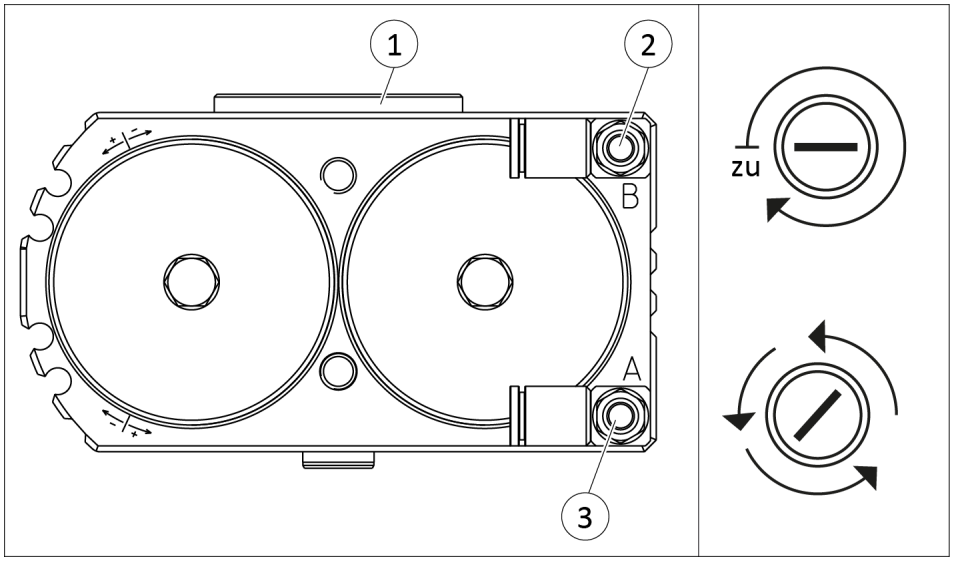
### 5.3.2 Adjust swiveling speed

**CAUTION**

**Material damage due to too high swiveling speed!**

If the swiveling speed is too high, the assembly will be decelerated abruptly by the shock absorber and will continue to oscillate until reaching the end position. This will overload the shock absorber and may cause damage to it.

- Adjust the swiveling speed in a way, that the movement decelerate smoothly in the end position.




1. Close both exhaust throttle valves completely.
2. **At the air connection A (3):**
3. Actuate air connection *A* (3).
4. Open exhaust throttle valve until the pinion (1) starts to move.
   ⇨ Pinion swivels towards the end position.
5. Continue to open the exhaust throttle valve incrementally until the movement brakes smoothly.
6. If the swivel speed is too high, the exhaust throttle valve must be closed again incrementally, until the optimal swivel time is reached.
7. Swivel repeatedly to test the setting, readjust if necessary.
8. **On the air connection B (2):**
   Repeat the steps for the other end position.

**NOTE**

Further setting of the movement is carried out via the absorber stroke, ▸ 5.3.3 [🗋 32].

For the variants with pneumatic and locked center position, air supply throttle valves must be mounted to various air connections, ▸ 5.2.2 [🗋 22]. The sequence for setting the swivel speed with the air supply throttle valve is identical to the sequence with mounted exhaust throttle valve.

In addition to air connections *A* and *B* the air connections *C* and *D* must also be set for the variants with pneumatic and locked center position.

For the variant with locked center position and separate piston chambers, the air connections *A1*, *A2*, *B1* and *B2* must be set.

### 5.3.3 Adjust absorber stroke

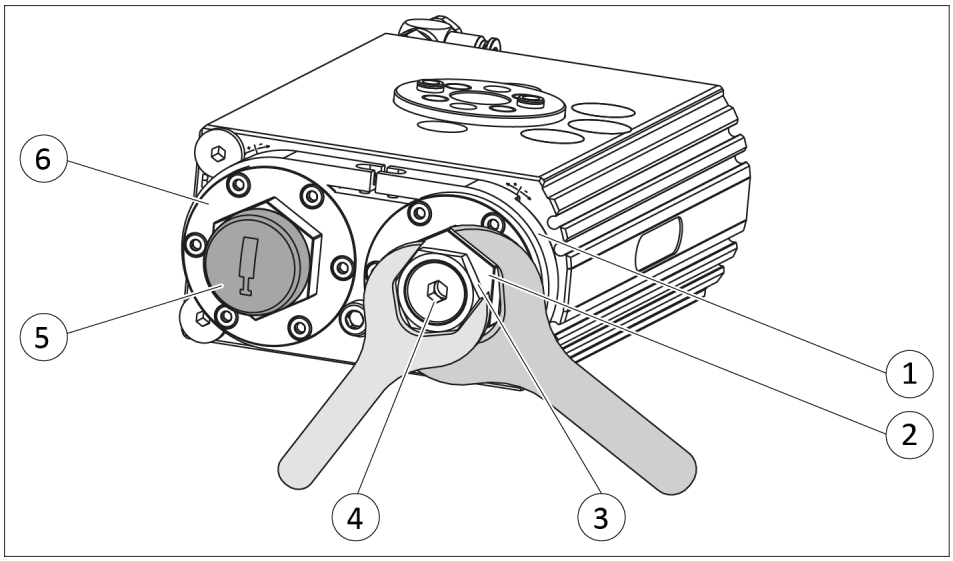
**CAUTION**

**Material damage to the product possible!**

If the maximum adjustment range of the absorber stroke is exceeded, this can cause leaks in the product.

- When setting the absorber stroke, adhere to the maximum adjustment range.

| Size | Max. adjustment range [mm] |
|---|---|
| 20 | 7.5 |
| 25 | 7.5 |
| 30 | 7.5 |
| 35 | 6.5 |
| 40 | 6.5 |
| 50 | 10.5 |
| 60 | 10.5 |




1. Check deceleration of the movement in the end positions.

- ⇨ If the absorber stroke is too long, the end position is reached too slowly.
- ⇨ If the absorber stroke is too short, the assembly impacts in the end position.

2. **On the first shock absorber (1):**
   remove cover (5).
3. Fix back stop *A* (2) and loosen nut (3) on stop pin *A* (4).
4. Fix back stop *A* (2) and set stop pin *A* (4).

**NOTE**

If the absorber stroke is changed, the swivel speed might also need to be changed as well, so that the movement remains smooth, ▸ 5.3.2 [🗋 31].

- ⇨ **IMPORTANT! If the stop pin is unscrewed too far, this may cause the rotary actuator to leak.**
  By unscrewing stop pin *A* (4), the absorber stroke is reduced.
- ⇨ By screwing in stop pin *A* (4), the absorber stroke is increased.

5. Fix stop pin *A* (4) and tighten bolt (3).
6. Fix back stop *A* (2) and tighten bolt (3).
7. Swivel repeatedly to test the setting, set again if necessary.
   - ⇨ The end positions must be approached gently.
8. Put on cover cap (4).
9. **On the second shock absorber (6)**
   Repeat the steps for the other end position.

**NOTE**

Depending on the loading condition, the settings for the two shock absorbers may deviate widely from each other.

## 5.4 Mounting the sensor

**NOTE**

Observe the assembly and operating manual of the sensor for mounting and connecting.

The product is prepared for the use of sensors.

- For the exact type designations of suitable sensors, please see catalog datasheet and ▸ 5.4.1 [🗋 34].
- For technical data for the suitable sensors, see assembly and operating manual and catalog datasheet.
  - The assembly and operating manual and catalog datasheet are included in the scope of delivery for the sensors and are available at schunk.com.
- Information on handling sensors is available at schunk.com or from SCHUNK contact persons.

### 5.4.1 Overview of sensors

| Size | MMS 22 | MMS 22-PI1 | IN 80 |
|---|---|---|---|
| 20 | ✓ | ✓ | ✓ |
| 25 | ✓ | ✓ | ✓ |
| 30 | ✓ | ✓ | ✓ |
| 35 | ✓ | ✓ | ✓ |
| 40 | ✓ | ✓ | ✓ |
| 50 | ✓ | ✓ | ✓ |
| 60 | ✓ | ✓ | ✓ |

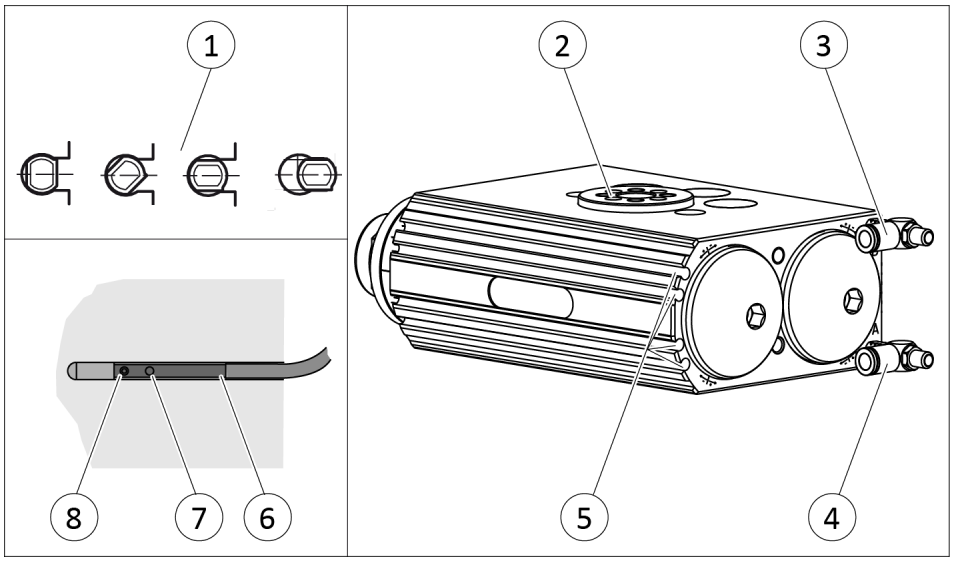
### 5.4.2 Mounting MMS 22 magnetic switch

***CAUTION***

**Risk of damage to the sensor during assembly!**

- Observe the maximal tightening torque.

The sensors can be mounted via four grooves in the housing of the product.




1. Connect magnetic switch and secure cable, see sensor assembly and operating manual.
2. Actuate air connection *A* (4).
   ⇨ Pinion (2) swivels towards the end position.
3. Slide the first magnetic switch (6) into a groove (5).
   **Or:** Screw magnetic switch (6) into a groove (5) (1).
4. Slide magnetic switch (6) until it switches and the LED (7) illuminates.
5. Tighten set screw (8).
   ⇨ Tightening torque: 10 Nm
6. Ventilate air connection *A* (4).
7. Actuate air connection *B* (3).
   ⇨ Pinion (2) swivels in the other end position.
8. Slide the second magnetic switch (6) into the other groove (5).
   **Or:** Screw magnetic switch (6) into the other groove (5).
9. Slide magnetic switch (6) until it switches and the LED (7) illuminates.
10. Tighten set screw (8).
    ⇨ Tightening torque: 10 Nm
11. Check switching positions, set again if necessary.

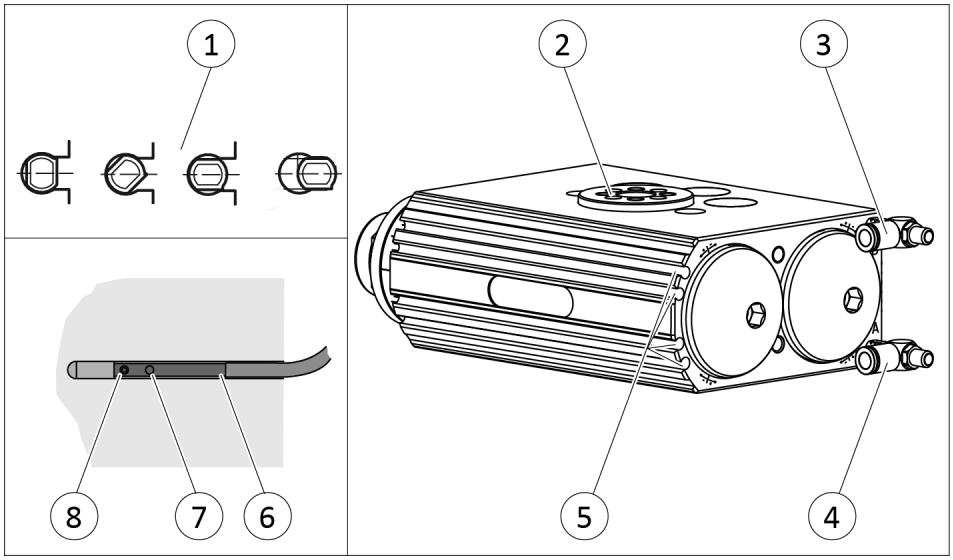
### 5.4.3 Mounting MMS 22-PI1 magnetic switch

**CAUTION**

**Risk of damage to the sensor during assembly!**

- Observe the maximal tightening torque.

The sensors can be mounted via four grooves in the housing of the product.




1. Connect magnetic switch and secure cable, see sensor assembly and operating manual.
2. Actuate air connection *A* (4).
   ⇨ Pinion (2) swivels towards the end position.
3. Slide the first magnetic switch (6) into a groove (5).
   **Or:** Screw magnetic switch (6) into a groove (5) (1).
4. Adjust magnetic switch (6), see Sensor Assembly and Operating Manual.
5. Tighten set screw (8).
   ⇨ Tightening torque: 10 Nm
6. Ventilate air connection *A* (4).
7. Actuate air connection *B* (3).
   ⇨ Pinion (2) swivels in the other end position.
8. Slide the second magnetic switch (6) into the other groove (5).
   **Or:** Screw magnetic switch (6) into the other groove (5).
9. Adjust magnetic switch (6), see Sensor Assembly and Operating Manual.
10. Tighten set screw (8).
    ⇨ Tightening torque: 10 Nm

11. Check switching positions, set again if necessary.

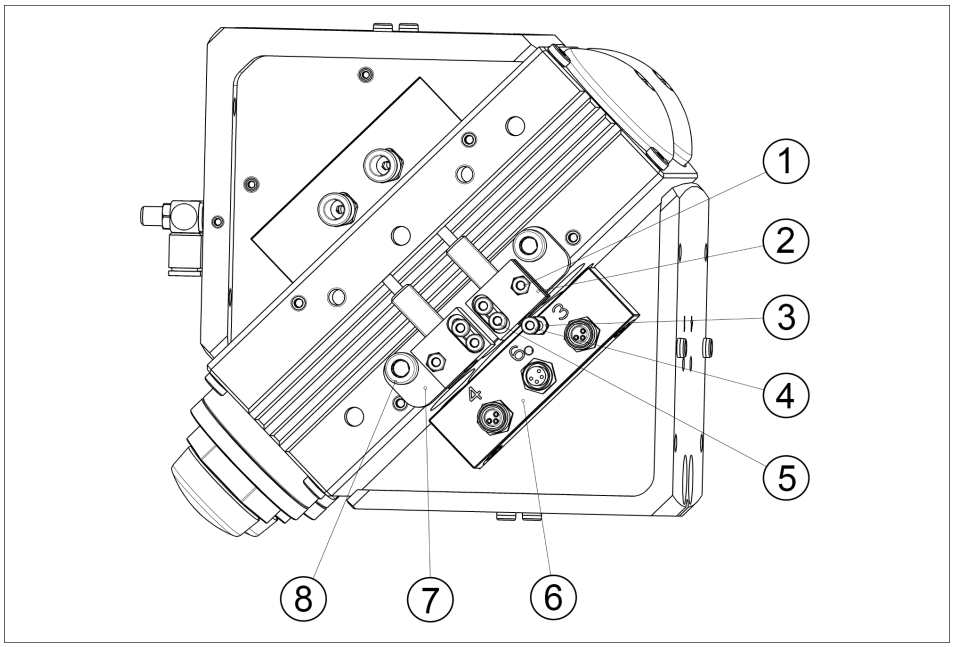
### 5.4.4 Assemble inductive proximity switch IN 80

**CAUTION**

**Material damage to the product or sensor possible!**

If the fast clamping sleeve is inserted too far into the sensor bracket, the switch cam and the sensor may collide during swiveling.

- Do not insert the fast clamping sleeve too far into the sensor bracket.
- Pay attention to the distance between fast clamping sleeve and switch cam.




*Attachment of inductive proximity switches*

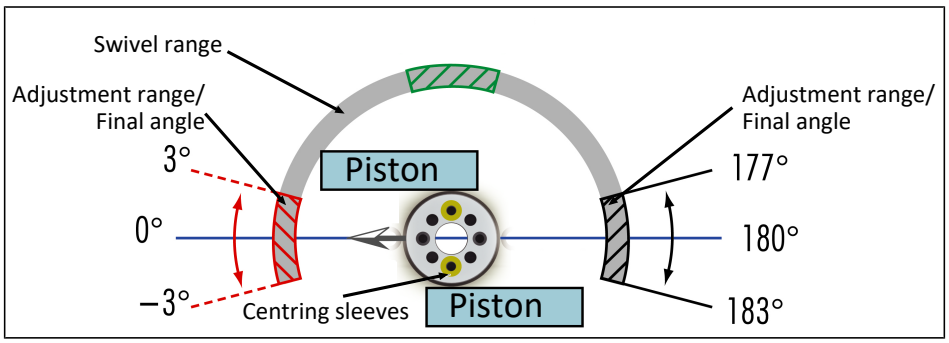
| Size | integrated electrical feed-through (EDF version) | Center bore (Version CB) |
|---|---|---|
| 20 | M3x20 | M3x30 |
| 25 | M3x25 | M3x35 |
| 30 | M3x30 | M3x40 |
| 35 | M3x30 | M3x40 |
| 40 | M3x25 | M3x40 |
| 50 | M3x45 | M3x45 |
| 60 | M3x55 | M3x60 |

*Tab.: Proximity switch switching cam screw dimension*

1. Fasten the retaining plate (7) with the screws (5).
2. Fasten the bracket (2) to the retaining plate with the screws (5).
3. Push the sensors up to the stop in the bracket (2) and clamp them in this position with the screws (1).
4. Determine the screw length of the control cam (4) using the previous table.
5. Attach a suitable screw (4) to the distributor plate (6) and secure it with the counter nut (3).
6. Slightly loosen the screws (5) on the first bracket. Adjust the bracket (2) in such a way that the sensor responds. Re-tighten the screws (5).
7. Swivel the product by 180°.
8. Slightly loosen the screws (5) on the second bracket. Adjust the bracket (2) in such a way that the sensor responds. Re-tighten the screws (5).
9. Check switching positions, reset if necessary.

# 6 Start-up

## 6.1 Setting ranges of the variants




*End position adjustability 3°*

## 6.2 Base unit

**Basic setting 180°**

- Actuate connection A.
  The pinion turns clockwise to stop B.

**Basic setting 0°**

- Actuate air connection B. The pinion turns back to stop A.

# 7 Troubleshooting

## 7.1 Product does not move smoothly to the end positions

| Possible cause | Corrective action |
|---|---|
| Dampening stroke shifted. | Adjust absorber stroke.<br>▸ 5.3.3 [🗋 32] |
| Shock absorber defective. | Check or, if need be, replace the shock absorber.<br>▸ 8 [🗋 42] |

## 7.2 Product does not travel through the rotating angle

| Possible cause | Corrective action |
|---|---|
| Accumulation of dirt between stop / sleeve and pistons. | Clean and lubricate product.<br>▸ 8 [🗋 42] |
| End positions are adjusted incorrectly. | Adjust end position.<br>▸ 5.3.1 [🗋 28] |
| Pressure drops below minimum. | Check air supply.<br>▸ 5.2.2 [🗋 22] |
| Components have come loose e.g. due to overloading. | Send product with a SCHUNK repair order or dismantle product. |
| Shock absorber defective. | Check or, if need be, replace the shock absorber.<br>▸ 8 [🗋 42] |

## 7.3 Product rotates jerkily

| Possible cause | Corrective action |
|---|---|
| Too little grease in the mechanical guiding areas. | Clean and lubricate product.<br>▸ 8 [🗋 42] |
| Compressed air lines blocked. | Check compressed air lines of damage. |
| Swiveling speed set too fast | Adjust swiveling speed<br>▸ 5.3.2 [🗋 31] |

## 7.4 Product does not move

| Possible cause | Corrective action |
|---|---|
| Component part defective. | Replace component or send it to SCHUNK for repair. |
| | Have Schunk check the application. |
| Pressure drops below minimum. | Check air supply.<br>▸ 5.2.2 [🗋 22] |
| Compressed air lines switched. | Check compressed air lines. |

| Possible cause | Corrective action |
|---|---|
| Unused air connections open. | Close unused air connections.<br>▶ 5.2.2 [🗋 22] |
| Both exhaust air throttle valves are closed. | Open one exhaust air throttle valve. |
| Proximity switch defective or set incorrect. | Adjust sensor or if necessary change sensor.<br>▶ 5.4 [🗋 34] |

## 7.5 Torque is diminishing

| Possible cause | Corrective action |
|---|---|
| Compressed air can escape. | Check seals, if necessary, disassemble the product and replace seals.<br>▶ 8.7 [🗋 49] |
| Too much grease in the mechanical movement space. | Clean and lubricate product.<br>▶ 8 [🗋 42] |
| Pressure drops below minimum. | Check air supply.<br>▶ 5.2.2 [🗋 22] |

# 8 Maintenance

## 8.1 Notes

**Original spare parts**

Use only original spare parts of SCHUNK when replacing spare and wear parts.

## 8.2 Maintenance interval

**CAUTION**

**Material damage due to hardening lubricants!**

Lubricants harden more quickly at temperatures above 60°C, leading to possible product damage.

- Reduce the lubricant intervals accordingly.

**All sizes**

| Interval | Maintenance work |
|---|---|
| daily | Visually inspect the function of the shock absorbers, ▸ 8.4.1 [🗋 44]. |

**Size 20 – 40**

| Interval [Mio. cycles] | Maintenance work |
|---|---|
| 2 | Clean all parts thoroughly, check for damage and wear, if necessary replace seals and wearing parts,▸ 8.7 [🗋 49]. |
| 2 | Treat all grease areas with lubricant, ▸ 8.3 [🗋 43]. |
| 2 | Check that the shock absorbers are working, if necessary replace shock absorber, ▸ 8.6 [🗋 48]. |

**Size 50 – 60**

| Interval [Mio. cycles] | Maintenance work |
|---|---|
| 1 | Clean all parts thoroughly, check for damage and wear, if necessary replace seals and wearing parts,▸ 8.7 [🗋 49]. |
| 1 | Treat all grease areas with lubricant, ▸ 8.3 [🗋 43]. |
| 1 | Check that the shock absorbers are working, if necessary replace shock absorber,▸ 8.6 [🗋 48]. |

## 8.3 Lubricants/Lubrication points (basic lubrication)

During maintenance, treat all greased areas with lubricant. Thinly apply lubricant with a lint-free cloth.

SCHUNK recommends the lubricants listed.

| Lubricant point | Lubricant |
|---|---|
| The teeth and the pinion | SCHUNK grease 1 |
| Seals and sealing surfaces | SCHUNK grease 1 |

Details regarding SCHUNK lubricant designations are available at **schunk.com/lubricants**.

The product contains food-compliant lubricants as standard. Components such as rolling bearings, linear guides, or shock absorbers are not provided with food-compliant lubricants. **The requirements of standard EN 1672-2:2020 are not fully met.**

**NOTE**

- Change contaminated food-compliant lubricant.
- Observe information in the safety data sheet from the lubricant manufacturer.

## 8.4 Inspect and set shock absorbers

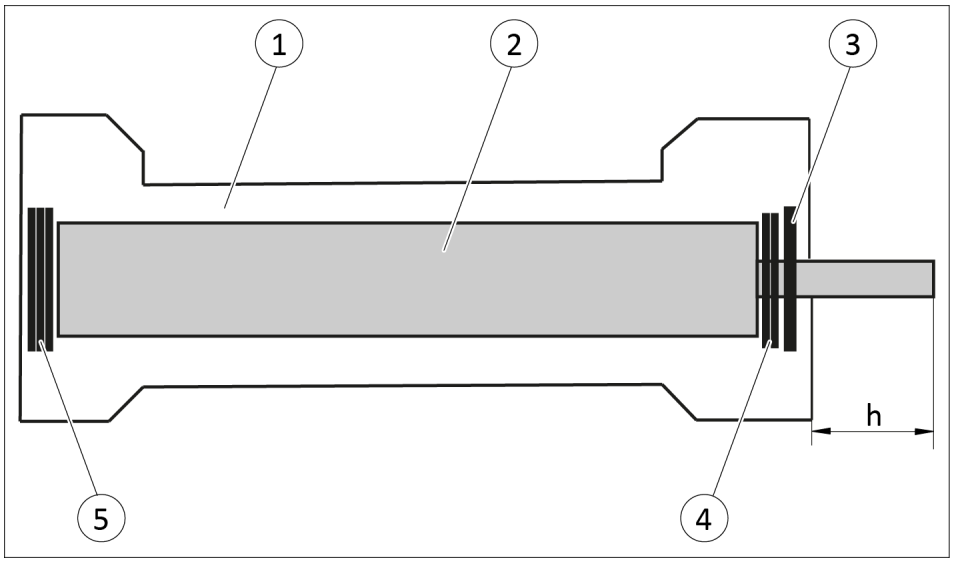
### 8.4.1 Inspect shock absorbers

The shock absorbers are specially tested and can only be acquired from SCHUNK. The shock absorbers have a limited lifespan, depending on the load.

- Regulary check that the shock absorbers are working.
  - ⇨ The shock absorber is working correctly if the product moves softly into the end positions when set correctly and the prescribed swiveling time is reached.

### 8.4.2 Set shock absorber overhang

For production reasons, shock absorbers may be of different sizes. If a shock absorber is exchanged, the new shock absorber with fitting disks must be set to the corresponding shock absorber overhang (h).




1. First set the shock absorber overhang (h) of the shock absorber (2) in the piston (1) with fitting disks (5) ▸ 8.4.3 [🗋 44].
2. After this, reduce the play of the shock absorber (2) to the safety ring (3) with fitting disks (4).
   - ⇨ The shock absorber (2) must be fitted in the pistons (1) as free from play as possible.

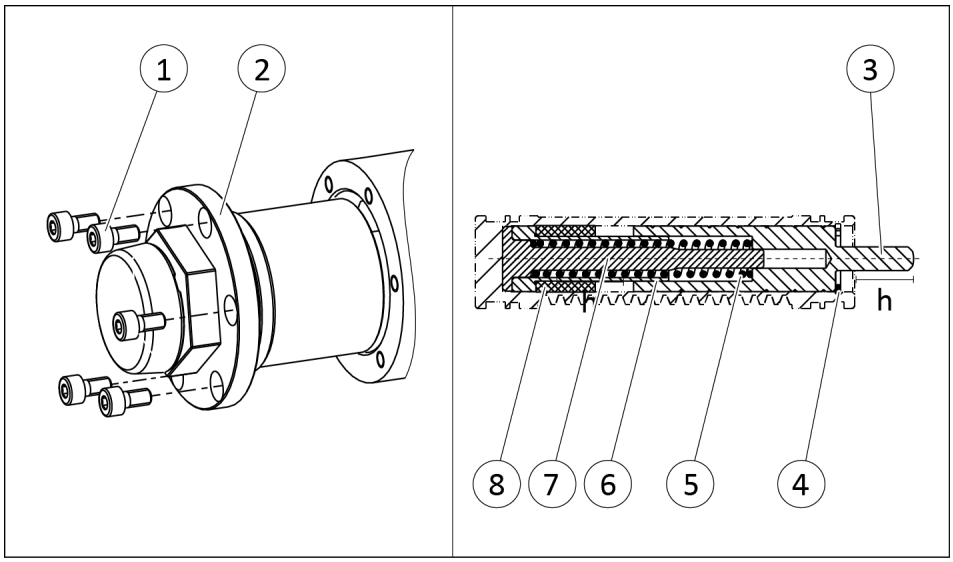
### 8.4.3 Shock absorber types and shock absorber overlap (h)

| Size | Shock absorber | Shock absorber overtap h [mm] | Tolerance [mm] |
|---|---|---|---|
| 20 W | FED 14 | 4.6 (without spring) | -0.2 |
| 20 H | --- | --- | --- |

| Size | Shock absorber | Shock absorber overtap h [mm] | Tolerance [mm] |
|---|---|---|---|
| 25 W | WP-M 0.4-266 | 14 | -0.1 |
| 25 H | WP-M 0.4-366 | 14 | -0.1 |
| 30 W | WP-M 0.6-466 | 19.5 | -0.1 |
| 30 H | WP-M 0.6-566 | 16 | -0.1 |
| 35 W | WP-M 0.6-366 | 19.5 | -0.1 |
| 35 H | WP-M 0.6-366 | 19.5 | -0.1 |
| 40 W | WP-M 1.0-266 | 22 | -0.1 |
| 40 H | WP-M 1.0-466 | 22 | -0.1 |
| 50 W | WP-M 1.0-266 | 22 | -0.1 |
| 50 H | WP-M 1.0-466 | 22 | -0.1 |
| 60 W | WP-M | --- | ± 0.05 |
| 60 H | WP-M | --- | ± 0.05 |
| 20 W | FED 14 | 4.6 (without spring) | -0.2 |
| 20 H | --- | --- | --- |
| 25 W | WP-M 0.4-266 | 14 | -0.1 |
| 25 H | WP-M 0.4-366 | 14 | -0.1 |
| 30 W | WP-M 0.6-466 | 19.5 | -0.1 |
| 30 H | WP-M 0.6-566 | 16 | -0.1 |
| 35 W | WP-M 0.6-366 | 19.5 | -0.1 |
| 35 H | WP-M 0.6-366 | 19.5 | -0.1 |
| 40 W | WP-M 1.0-266 | 22 | -0.1 |
| 40 H | WP-M 1.0-466 | 22 | -0.1 |
| 50 W | WP-M 1.0-266 | 22 | -0.1 |
| 50 H | WP-M 1.0-466 | 22 | -0.1 |
| 60 W | WP-M | --- | ± 0.05 |
| 60 H | WP-M | --- | ± 0.05 |

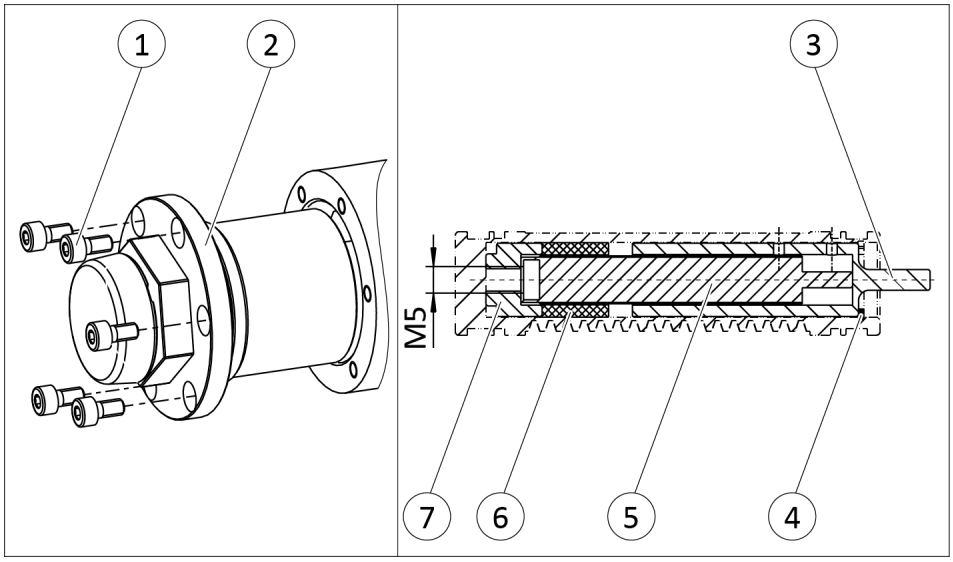
## 8.5 Servicing shock absorber

### 8.5.1 Servicing shock absorbers (absorber variant -W)



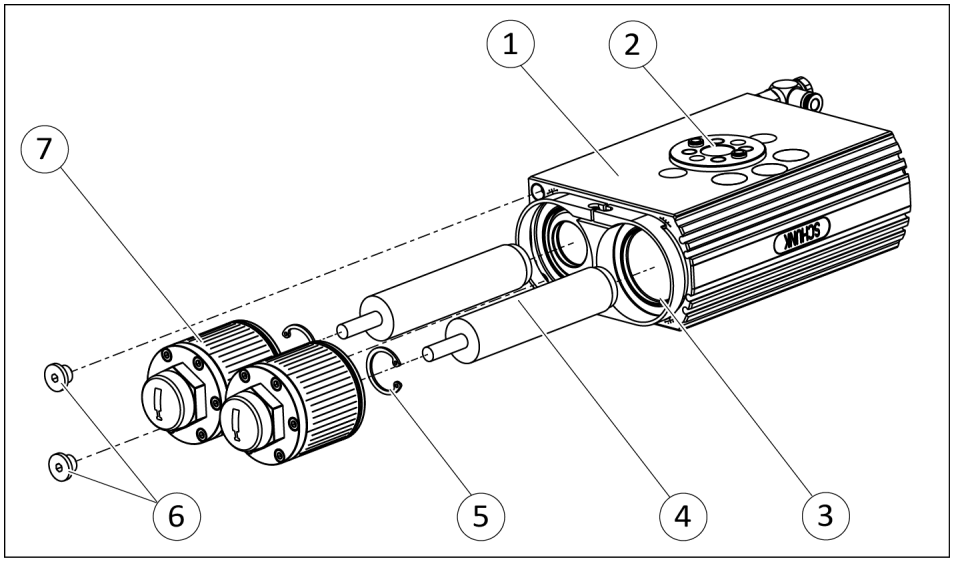

1. Undo the screws (1).
2. Pull off the stop cover (2).
3. Remove the safety ring (4) from the piston.
4. Pull out the piston rod (3) and remove the compression spring (5).
5. Pull out the piston (7) with the guide sleeve (6) and dampening ring (8).
6. Replace dampening ring (8).
7. Insert the piston (7) with the guide sleeve (6) and dampening ring (8) using the piston rod (3) as far as possible.
8. Check the shock absorber overlap (h),
   ▸ 8.4.3 [🗋 44].
   ⇨ If necessary, add or remove fitting disks on base side until the required absorber overlap (h) is reached.
9. Remove the piston rod (3).
10. Grease and insert the compression spring (5).
11. Grease the piston rod (3) inside and outside and insert it.
12. Mount the safety ring (4).
    ⇨ Pay attention to the correct installation position of the safety ring.
13. Mount the stop cover (2) with screws (1).

### 8.5.2 Servicing shock absorbers (absorber variant -S)




1. Undo the screws (1).
2. Pull off the stop cover (2).
3. Remove the safety ring (4) from the piston.
4. Pull out the piston rod (3) and remove the absorber (5).
5. Use the M5 thread to pull out the cover (7) and dampening ring (6).
6. Replace dampening ring (6).
7. Insert the cover (7) with the dampening ring (6) using the piston rod (3) as far as possible.
8. Remove the piston rod (3).
9. Grease and insert the shock absorber (5).
10. Grease the piston rod (3) inside and outside and insert it.
11. Remount the safety ring (4).
    ⇨ Pay attention to the correct installation position of the safety ring.
12. Mount the stop cover (2) with screws (1).

## 8.6 Changing shock absorbers (base unit)



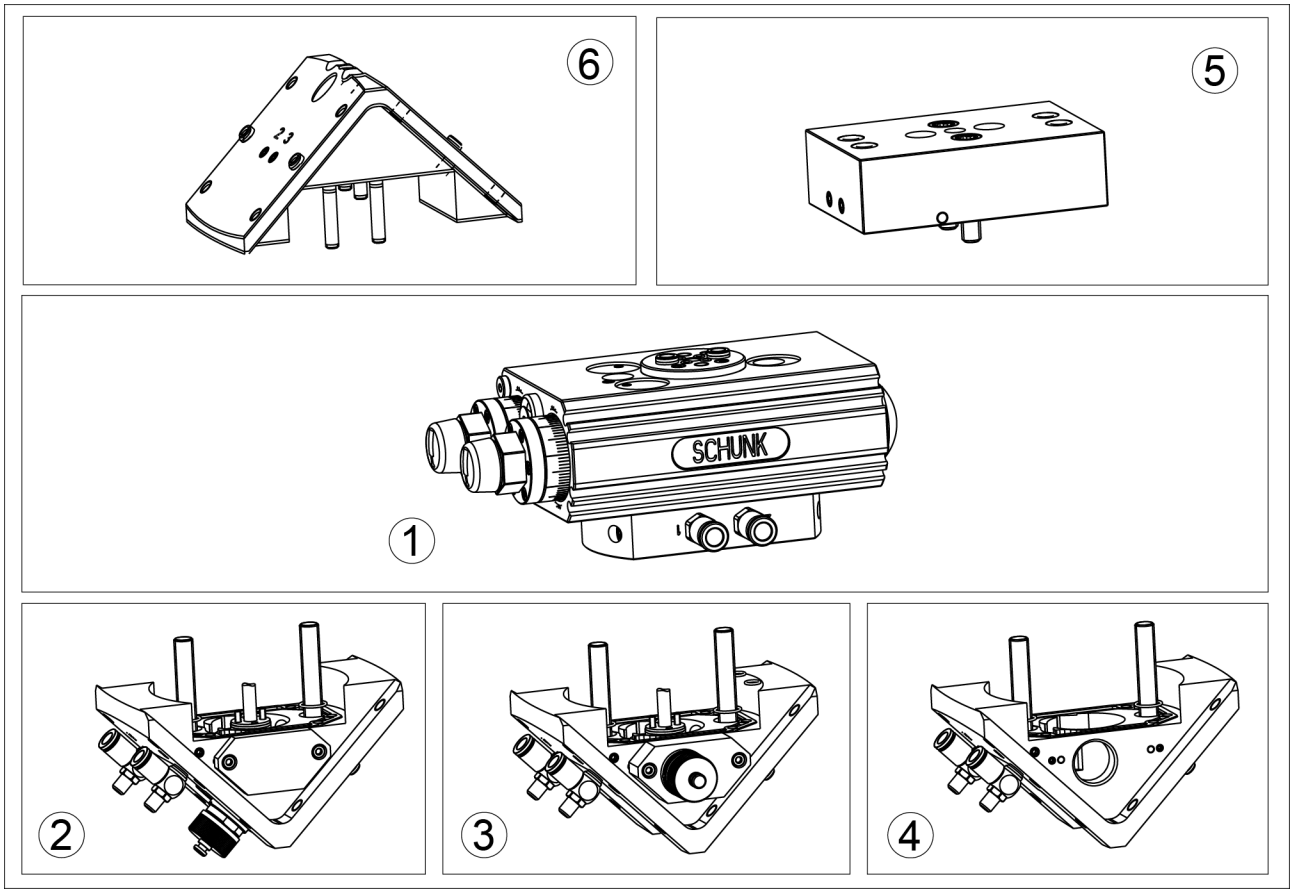

1. Ventilate rotary actuator.
2. Unscrew screws (6).
3. Turn pinion (2) to end position.
4. Remove stop cover (7).
5. Remove safety ring (5) on piston (3).
6. Pull out shock absorber (4) with fitting disks.
7. Insert new shock absorbers.
8. Set shock absorber overhang (h),
   ▸ 8.4.2 [🗋 44].
9. Set safety ring (5) in the groove of the piston.
10. Turn pinion (2) to end position.
    ⇨ Piston (3) is retracted into the housing (1).
11. Screw on stop cover (7) again.
12. Proceed analogously for the second shock absorber.
13. If necessary, adjust the shock absorber, ▸ 5.3 [🗋 27].

## 8.7 Dismantling and assembling swivel unit

Position of the item numbers: ▶ 8.8 [🗋 50]

1. Ventilate rotary actuator.
2. Remove all air lines and energy lines.
3. Dismantle sensors if necessary.
4. Unscrew screws (201) and screw-on bracket (77).
5. Unscrew screw (202) and remove swivel head (4).
6. Unscrew screw (35) and remove both stop covers (3).
7. Remove curved cover (5).
8. Mark the installation position of the pinion (2/19) and the pistons (24).
9. Remove the protective cover (22)
10. Disassemble the safety ring (49) on the pinion (2/19).
11. Remove the flange (20).
12. Pull the pinion (2/19) out of the housing (1).
13. Assemble the swivel unit in reverse order.
    - ⇨ Unless otherwise specified, secure all screws and nuts with Loctite no. 243 and tighten with the appropriate tightening torque.

## 8.8 Assembly drawing



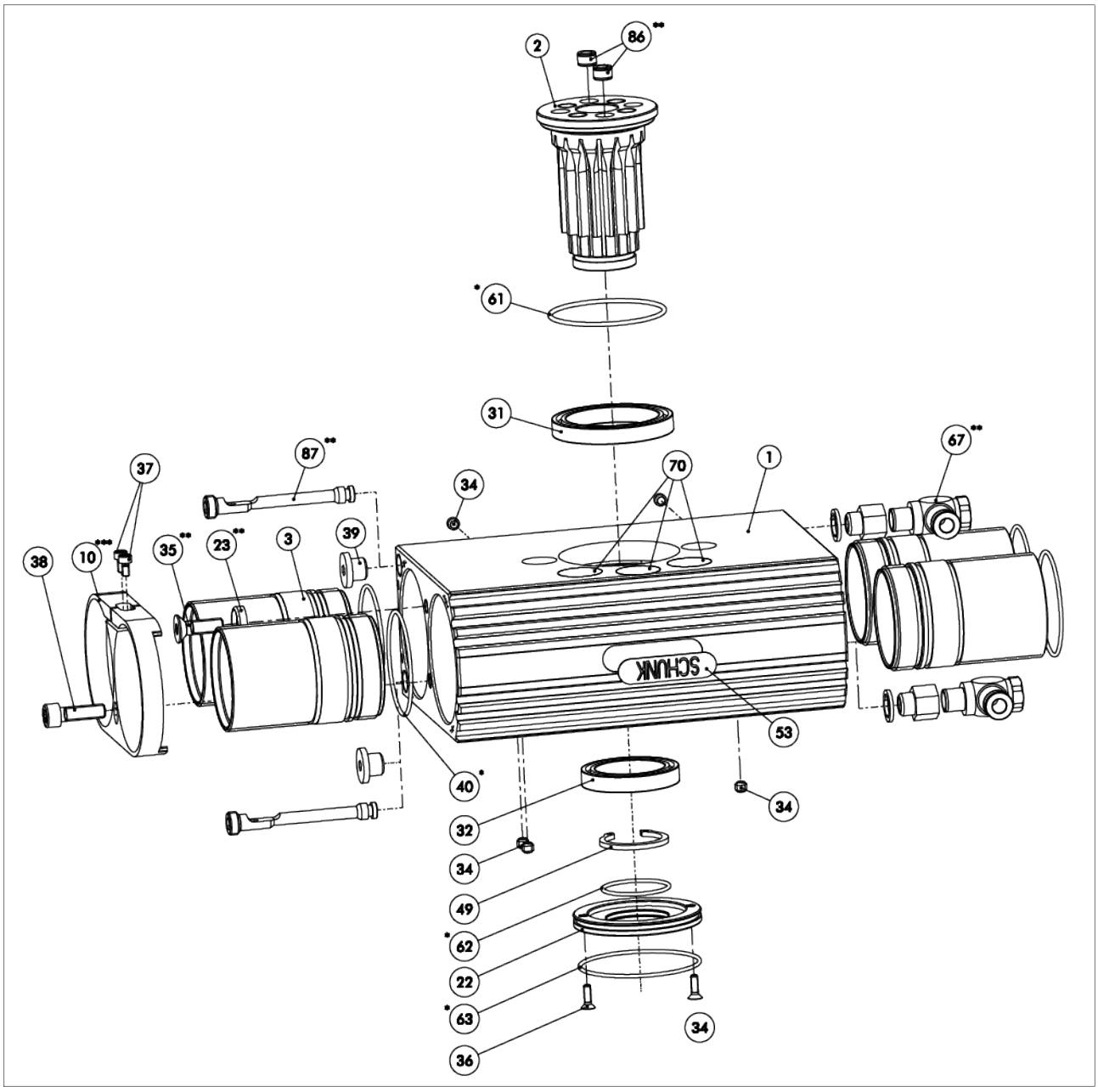

*Component overview*

| | | |
|---|---|---|
| 1 | Basic components and media feed-through | ▸ 8.8.1 [🗋 51] |
| 2 | Screw-on bracket with axial cable outlet | ▸ 8.8.2.1 [🗋 54] |
| 3 | Screw-on bracket with clateral cable outlet | ▸ 8.8.2.2 [🗋 55] |
| 4 | Screw-on bracket CB | ▸ 8.8.2.3 [🗋 56] |
| 5 | Distributor plate CB | ▸ 8.8.2.4 [🗋 56] |
| 6 | Swivel head | ▸ 8.8.2.5 [🗋 57] |

### 8.8.1 SRU assembly group

#### 8.8.1.1 Basic components

**without fluid feed-through**

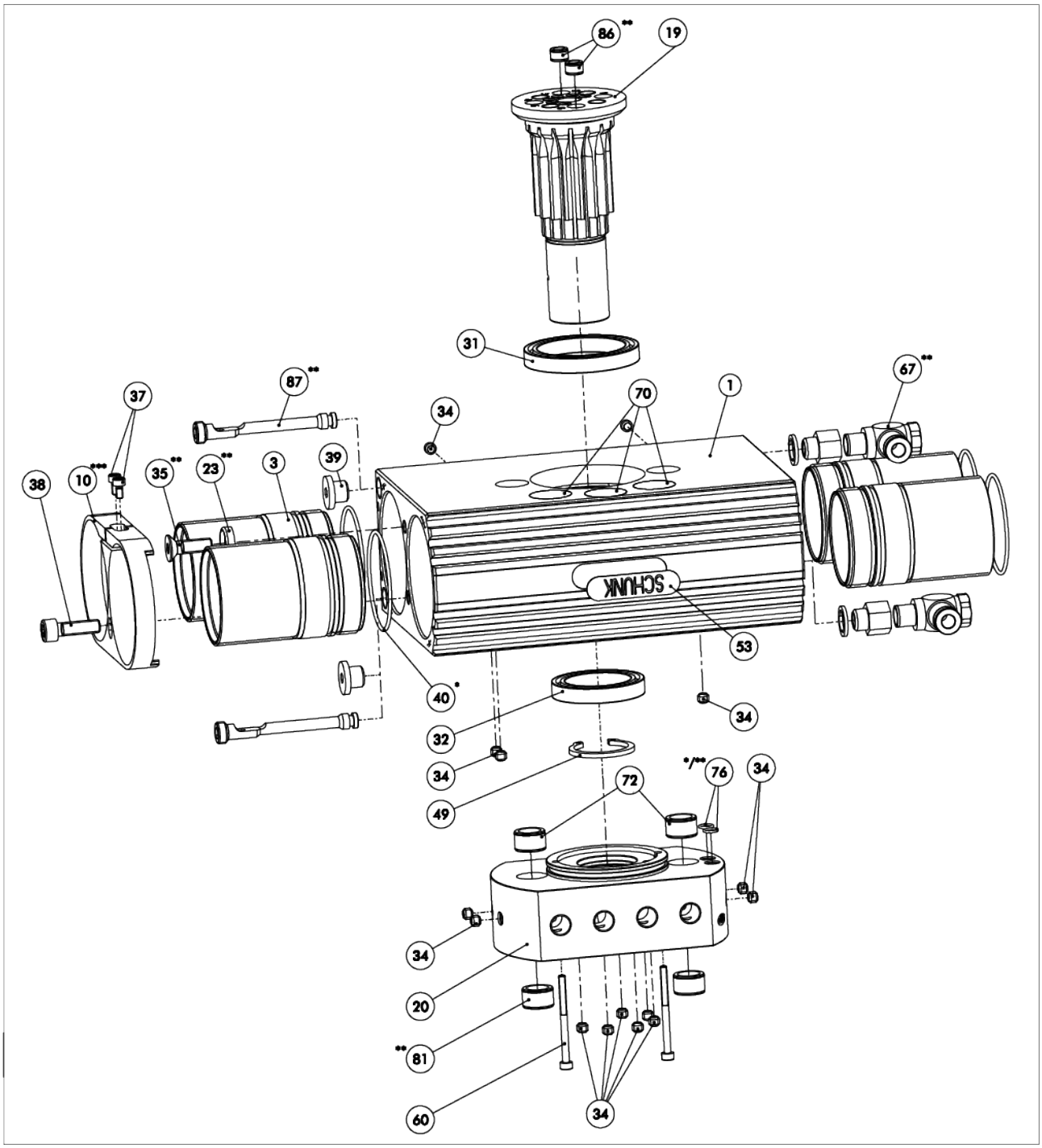



* Contained in seal kit.

** Contained in accessory pack.

▯ Variants "explosion-protected version" does not include a clamp shell. They are clamped by an eccentric.

**with fluid feed-through**

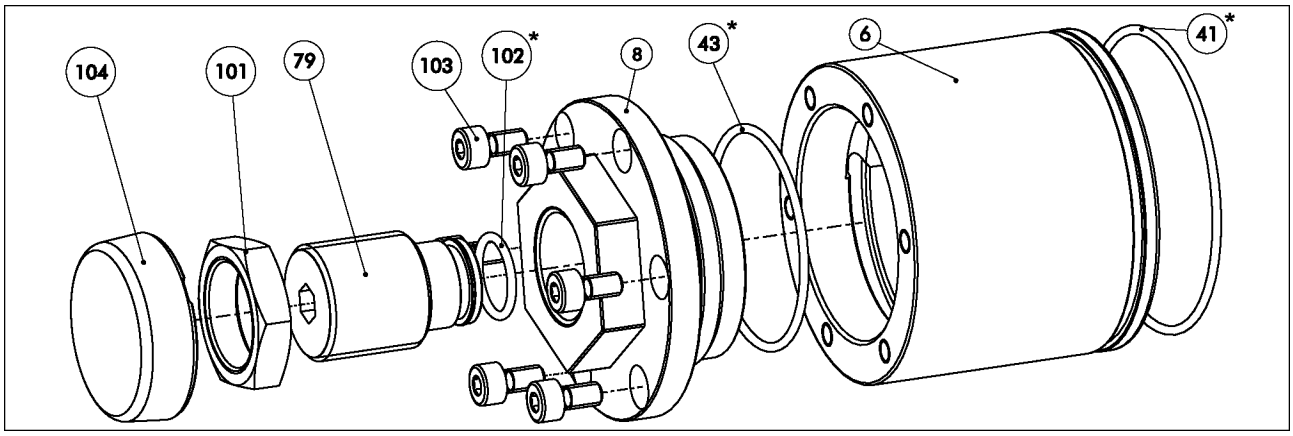



* Contained in seal kit.

** Contained in accessory pack.

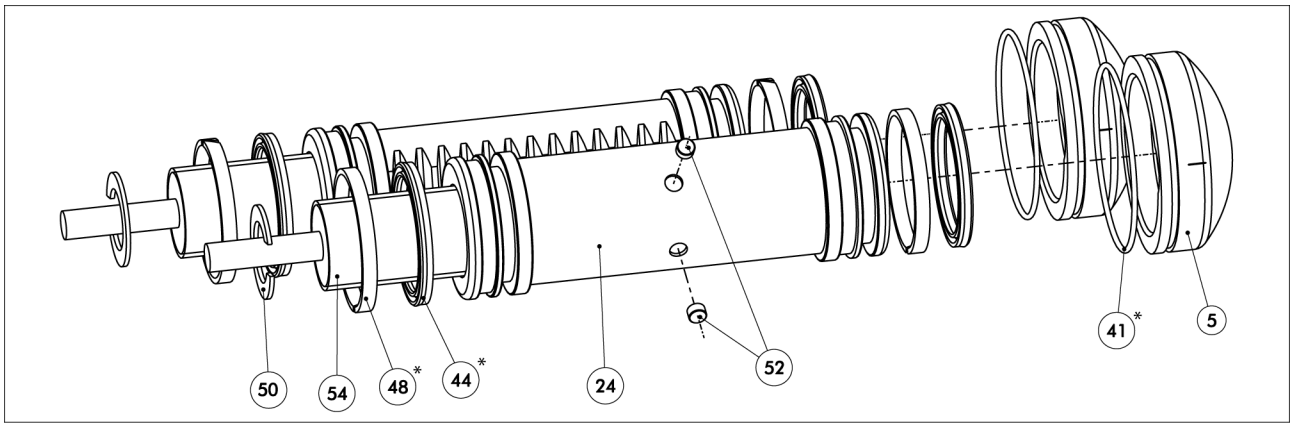
▯ Variants "explosion-protected version" does not include a clamp shell. They are clamped by an eccentric.

### 8.8.1.2 Anschlagseite Endlageneinstellbarkeit 3°



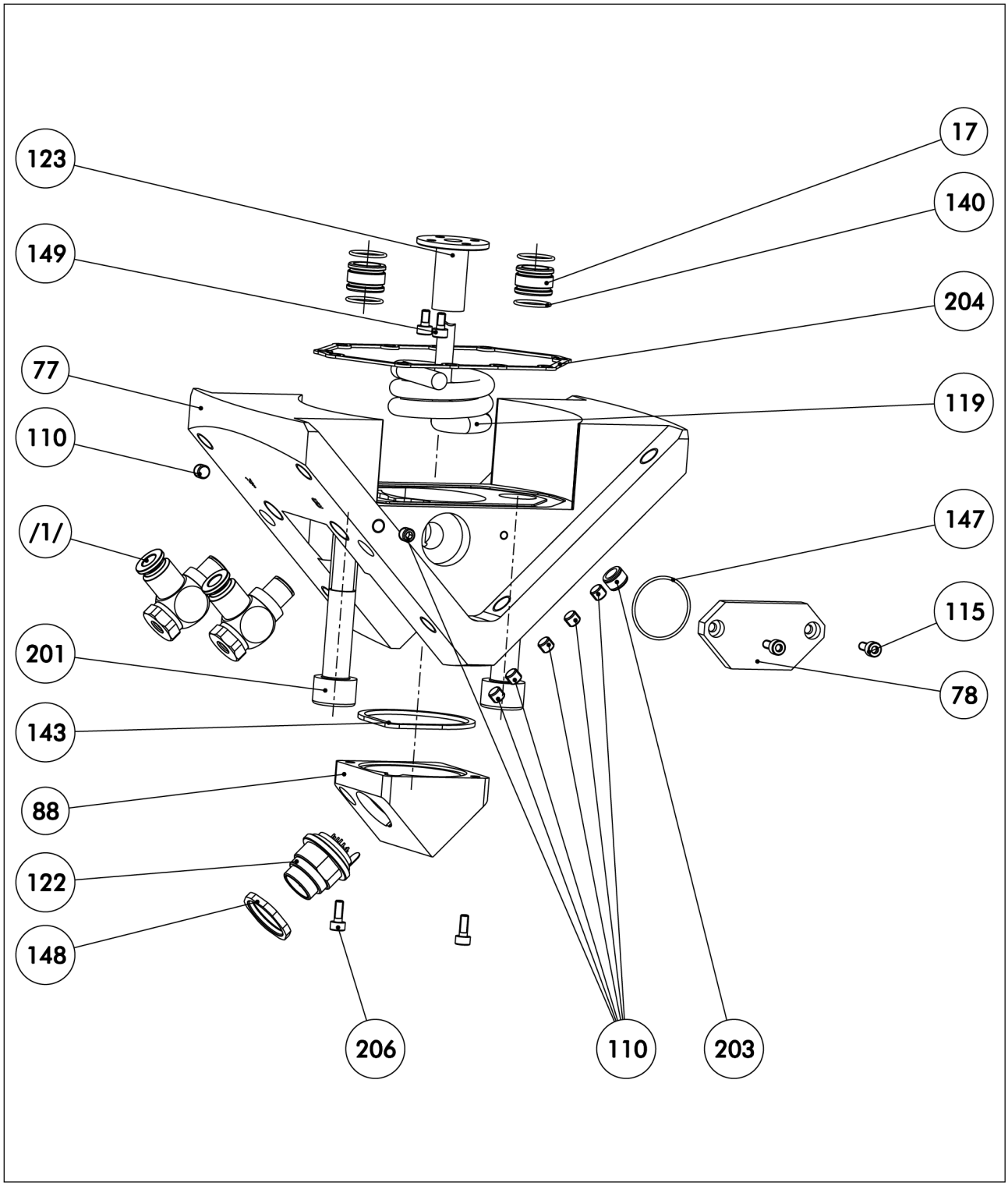

* Contained in seal kit.

### 8.8.1.3 Piston and cover basic unit



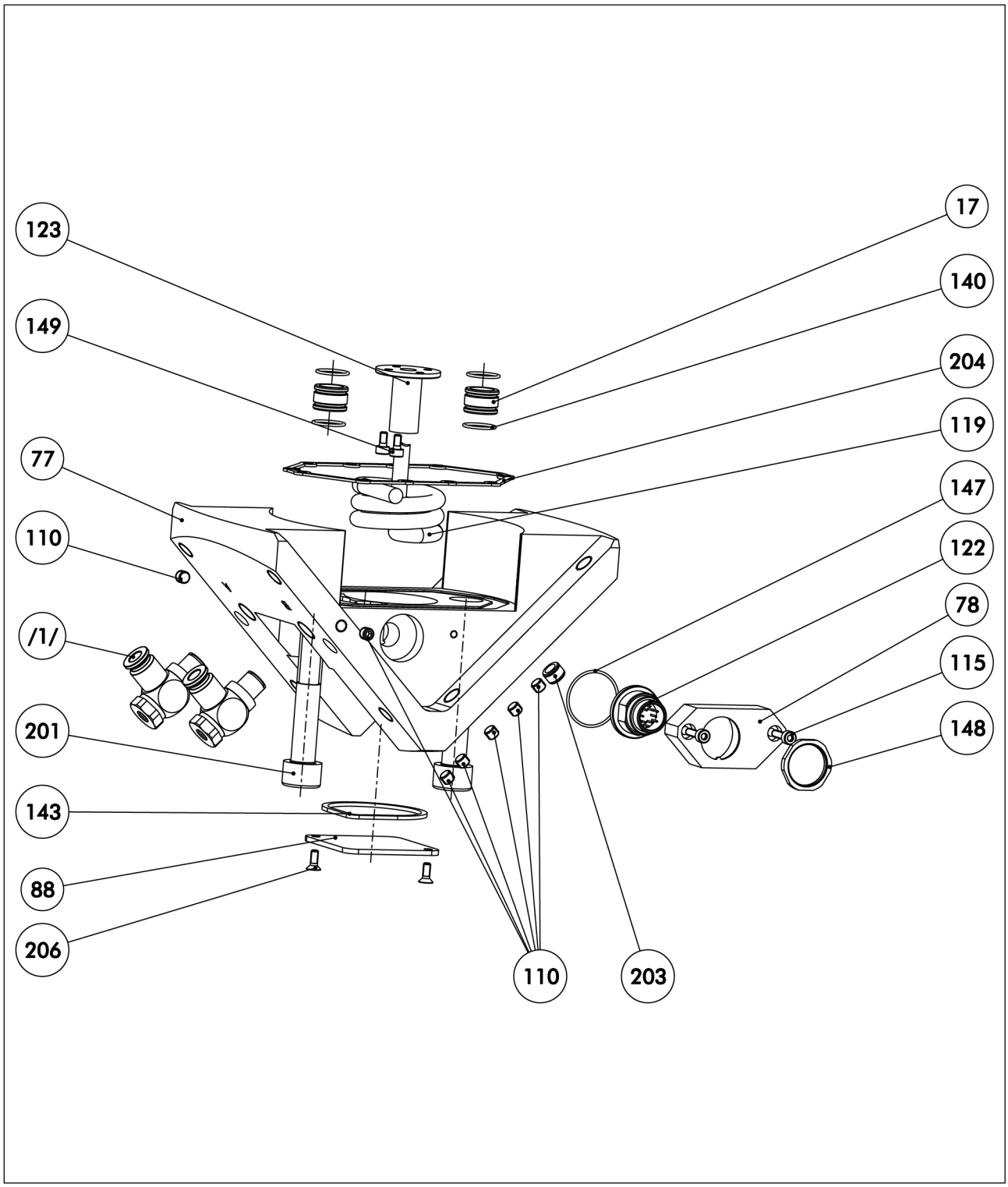
### 8.8.2 Assembly SRH

#### 8.8.2.1 Screw-on bracket with axial cable outlet



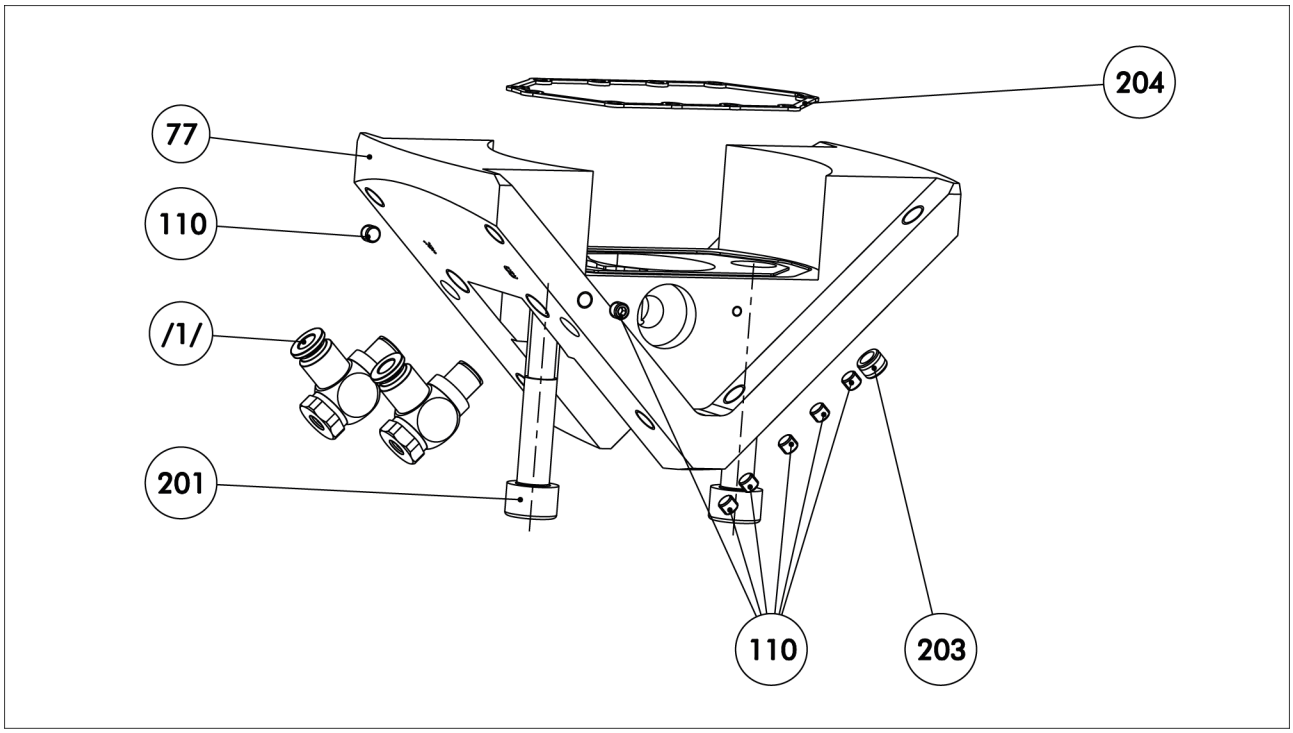

*Screw-on bracket with axial cable outlet*

### 8.8.2.2 Screw-on bracket with lateral cable outlet



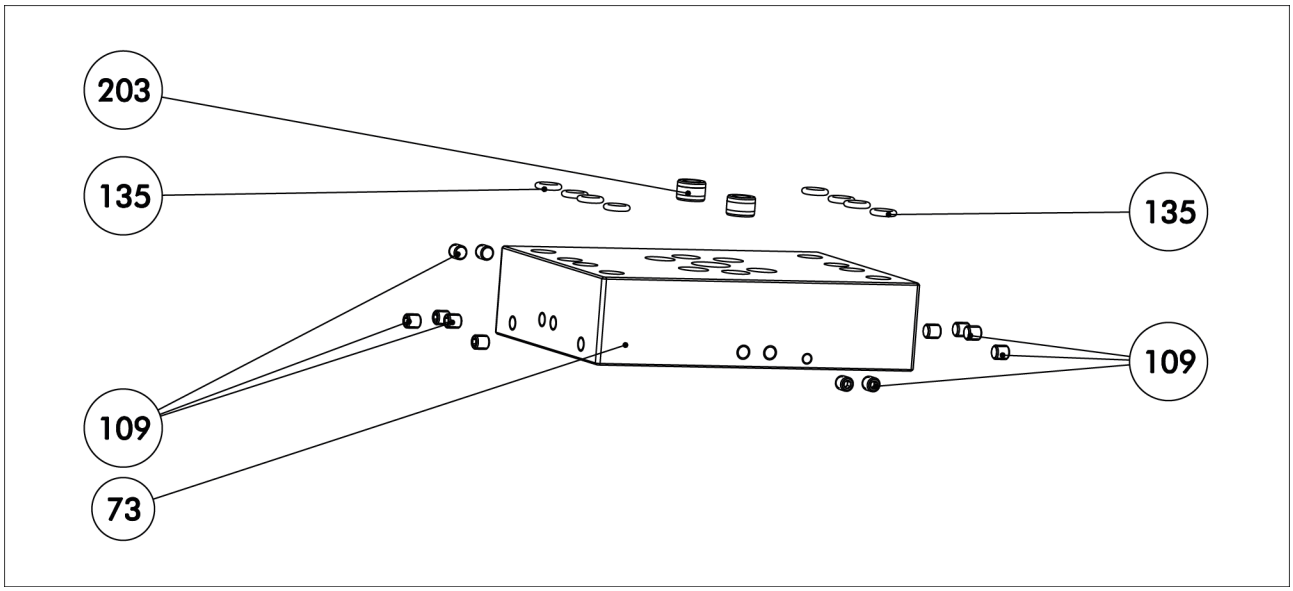

*Screw-on bracket with lateral cable outlet*

### 8.8.2.3 Screw-on bracket CB



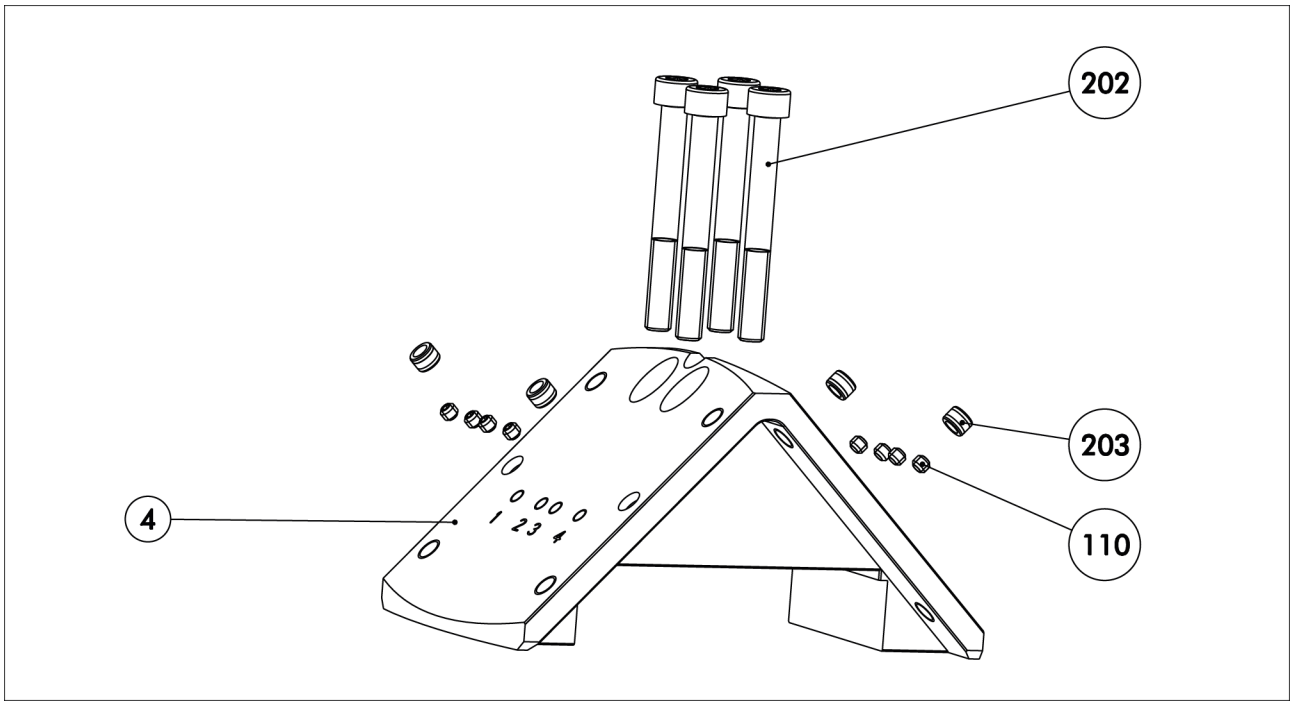

*Screw-on bracket CB*

### 8.8.2.4 Distributor plate CB




*Distributor plate CB*

### 8.8.2.5 Swivel head




*Swivel head*

# 9 Translation of the original declaration of incorporation

in terms of the Directive 2006/42/EG, Annex II, Part 1 Section B.

| | |
|---|---|
| Manufacturer/<br>Distributor | SCHUNK SE & Co. KG<br>Spanntechnik \| Greiftechnik \| Automatisierungstechnik<br>Bahnhofstr. 106 – 134<br>D–74348 Lauffen/Neckar |

We hereby declare that the partly completed machine described below

| | |
|---|---|
| Product designation: | Pneumatic rotary actuator / SRH-plus /pneumatic |
| ID number | 359240 ... 359337 |

meets the following basic occupational health and safety of the Machinery Directive 2006/42/EC:

No. 1.1.1, No. 1.1.2, No. 1.1.3, No. 1.1.5, No. 1.3.2, No. 1.5.3, No. 1.5.4, No. 1.5.6, No. 1.5.8, No. 1.5.10, No. 1.5.11, No. 1.5.13

The partly completed machinery may not be put into operation until it has been confirmed that the machine into which the partly completed machinery is to be installed complies with the provisions of the Machinery Directive (2006/42/EC). The declaration shall be rendered invalid if modifications are made to the product.

Applied harmonized standards, especially:

| | |
|---|---|
| EN ISO 12100:2010 | Safety of machinery – General principles for design – Risk assessment and risk reduction |

The special technical documentation according to Annex VII, Part B, belonging to the partly completed machine, has been created.

Person authorized to compile the technical documentation:
Stefanie Walter, Address: see manufacturer's address

*Signature: see original declaration*

Lauffen/Neckar, April 2024

Dr.-Ing. Manuel Baumeister,
Head of Systems Engineering,
Technology & Innovation

# 10 UKCA declaration of incorporation

in accordance with the Supply of Machinery (Safety) Regulations 2008.

| | |
|---|---|
| Manufacturer/<br>Distributor | SCHUNK Intec Limited<br>Clamping and gripping technology<br>3 Drakes Mews, Crownhill<br>MK8 0ER Milton Keynes |

We hereby declare that on the date of the declaration the following partly completed machine complied with all basic safety and health regulations found in the
"Supply of Machinery (Safety) Regulations 2008".
The declaration shall be rendered invalid if modifications are made to the product.

| | |
|---|---|
| Product designation: | Pneumatic rotary actuator / SRH-plus / pneumatic |
| ID number | 359240 ... 359337 |

The partly completed machine may not be put into operation until it has been confirmed that the machine into which the partly completed machine is to be installed complies with the provisions of the "Supply of Machinery (Safety) Regulations 2008".

Applied harmonized standards, especially:

| | |
|---|---|
| EN ISO 12100:2010 | Safety of machinery – General principles for design – Risk assessment and risk reduction |

The special technical documentation according to Annex VII, Part B, belonging to the partly completed machine, has been created.

Person authorized to compile the technical documentation:
Marcel Machado, address: refer to manufacturer's address

Lauffen/Neckar, April 2024

Dr.-Ing. Manuel Baumeister,
Head of Systems Engineering,
Technology & Innovation

# 11 Information on the RoHS Directive, REACH Regulation and Substances of Very High Concern (SVHC)

**RoHS Directive**

SCHUNK products are classified as "large-scale stationary installations" or as "large-scale stationary industrial tools" within the meaning of Directive 2011/65/EU and its extension 2015/863/EU "on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)", or fulfill their intended function only as part of one. Therefore products from SCHUNK do not fall within the scope of the directive at this time.

**REACH Regulation**

Products from SCHUNK fully comply with the regulations of Regulation (EC) No. 1907/2006 "concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)" and its amendment 2022/477. SCHUNK attaches great importance to completely avoiding chemicals of concern to humans and the environment wherever possible.

Only in rare exceptional cases do SCHUNK products contain SVHC substances on the candidate list with a mass content above 0.1%. In accordance with Article. 33 (1) of Regulation (EC) No. 1907/2006, SCHUNK complies with its duty to "communicate information on substances in articles" and lists the components concerned and the substances used in an overview that can be viewed at **schunk.com\SVHC**.

*Signature: see original declaration*

Lauffen/Neckar, April 2024

Dr.-Ing. Manuel Baumeister,
Head of Systems Engineering,
Technology & Innovation

**SCHUNK SE & Co. KG**
**Spanntechnik | Greiftechnik | Automatisierungstechnik**

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