
# Assembly and Operating Manual JGP

## 2-Finger Parallel Gripper

Translation of the original manual

Hand in hand for tomorrow

# Imprint



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

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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 [🗋 6] 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 *

Die mit Stern (*) gekennzeichneten Unterlagen können unter **schunk.com/downloads** heruntergeladen werden.

### 1.1.4 Sizes

This operating manual applies to the following sizes:

- JGP 40
- JGP 50
- JGP 64
- JGP 80
- JGP 100
- JGP 125
- JGP 160
- JGP 200
- JGP 240
- JGP 300

### 1.1.5 Variants

This operating manual applies to the following variations:

- JGP without gripping force maintenance
- JGP with gripping force maintenance "O.D. gripping" (AS)
- JGP with gripping force maintenance "I.D. gripping" (IS)

## 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 Scope of delivery

The scope of delivery includes

- 2-Finger Parallel Gripper JGP in the version ordered
- Assembly and Operating Manual

- Accessory pack

### 1.3.1 Accessories kit

Content of the accessory pack:

- 6 x Centering sleeves for mounting
- 2 x O-ring for hose-free direct connection
- 2 x screw plug for hose connection

| Accessory pack for | JGP |
|---|---|
| JGP 40 | 5518410 |
| JGP 50 | 5512043 |
| JGP 64 | 5512044 |
| JGP 80 | 5512045 |
| JGP 100 | 5512046 |
| JGP 125 | 5512047 |
| JGP 160 | 5512048 |
| JGP 200 | 5512049 |
| JGP 240 | 5513858 |
| JGP 300 | 5512050 |

## 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.

### 1.4.1 Seal kit

| Seal kit for | JGP |
|---|---|
| JGP 40 | 5516793 |
| JGP 50 | 0370891 |
| JGP 64 | 0370892 |
| JGP 80 | 0370893 |
| JGP 100 | 0370894 |
| JGP 125 | 0370895 |
| JGP 160 | 0370896 |
| JGP 200 | 0370897 |
| JGP 240 | 0370987 |
| JGP 300 | 0370898 |

contents of the sealing kit, ▶ 7.5 [🗋 53].

# 2 Basic safety notes

## 2.1 Intended use

The product is designed exclusively for gripping and temporarily holding workpieces or objects.

- The product may only be used within the scope of its technical data, ▸ 3 [🗋 16].
- 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. Its use outside enclosed spaces is only permitted if suitable protective measures are taken against outdoor exposure. The product is not suitable for use in salty air.
- The product can be used within the permissible load limits and technical data for holding workpieces during simple machining operations, but is not a clamping device according to EN 1550:1997+A1:2008.
- Appropriate use of the product includes compliance with all instructions in this manual.
- Any utilization that exceeds or differs from the appropriate use is regarded as misuse.

## 2.2 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.

## 2.3 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.

## 2.4 Gripper fingers

**Requirements of gripper fingers**

Accumulated energy can make the product unsafe and risk the danger of serious injuries and considerable material damage.

- Execute the gripper fingers in such a way that the product reaches either the "open" or "closed" position in a de-energized state.
- Only change gripper fingers if no residual energy can be released.
- Make sure that the product and the top jaws are a sufficient size for the application.

## 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].

## 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 from sharp edges and corners!**

Sharp edges and corners can cause cuts.

- Use suitable protective equipment.

**⚠ 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 crushing and impacts!**

Serious injury could occur during movement of the base jaw, due to breakage or loosening of the gripper fingers or if the workpiece is lost.

- Wear suitable protective equipment.
- Do not reach into the open mechanism or the movement area of the product.

**⚠ WARNING**

**Risk of injury due to spring forces!**

Parts are under spring tension on products which clamp using spring force or which have gripping force maintenance. While disassembling components can move unexpectedly and cause serious injuries.

- Disassemble the product cautiously.
- Make sure that no residual energy remains in the system.

**⚠ WARNING**

**Risk of injury from objects falling during energy supply failure**

Products with a mechanical gripping force maintenance can, during energy supply failure, still move independently in the direction specified by the mechanical gripping force maintenance.

- Secure the end positions of the product with SCHUNK SDV-P pressure maintenance valves.

# 3 Technical data

## Connection data

| Designation | JGP |
|---|---|
| Pressure medium | Compressed air, compressed air quality according to ISO 8573-1:2010 [7:4:4] |
| Nominal operating pressure [bar] | 6 |
| Minimum pressure [bar]<br>without maintenance of gripping force<br>with maintenance of gripping force | <br>2.5<br>4 |
| Max. pressure [bar]<br>without gripping force maintenance<br>with gripping force maintenance | <br>8<br>6.5 |
| Pressure range for air purge [bar] | 0.5 – 1 |

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

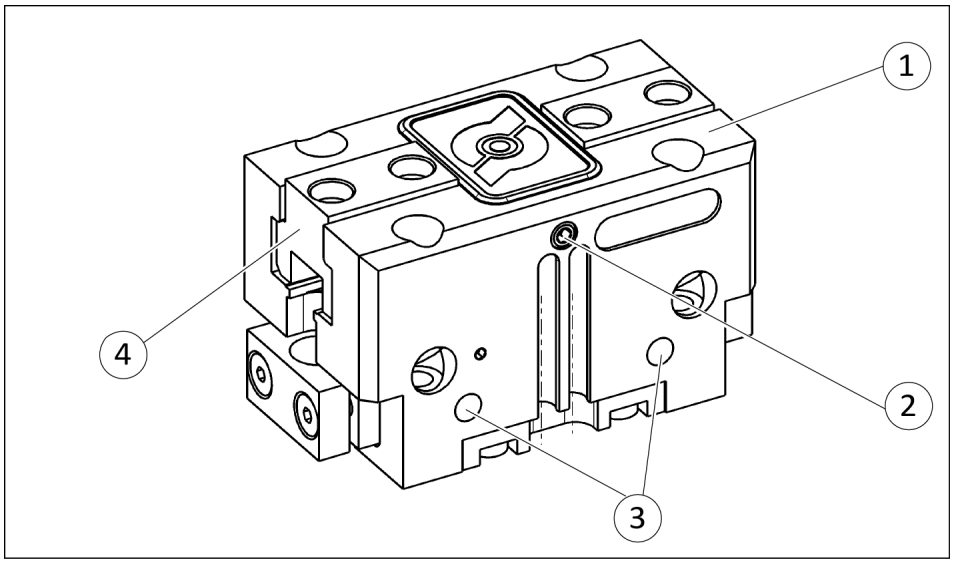
## Ambient conditions and operating conditions

| Designation | JGP |
|---|---|
| Ambient temperature [°C]<br>min.<br>max. | <br>+5<br>+90 |
| Protection class IP * | 40 |
| Noise emission [dB(A)] | ≤ 70 |

* For use in dirty ambient conditions (e.g. sprayed water, vapors, abrasion or processing dust) SCHUNK offers corresponding product options as standard. SCHUNK also offers customized solutions for special applications in dirty ambient conditions.

# 4 Design and description

## 4.1 Design




*2-Finger Parallel Gripper*

| | |
|---|---|
| 1 | Housing |
| 2 | Air purge connection |
| 3 | Compressed air main connection |
| 4 | Base jaw |

## 4.2 Description

Universal 2-finger parallel gripper with T-slot guidance

# 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***

**Damage to the gripper is possible!**

If the maximum permissible finger weight or the permissible mass moment of inertia of the fingers is exceeded, the gripper can be damaged.

- A jaw movement always has to be without jerks and bounce.
- You must therefore implement sufficient reduction and/or damping.
- Observe the information in the catalog data sheet.

**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.

1. Check the evenness of the mounting surface, ▸ 5.2.1 [🗋 20].
2. Only open the required air connections (main connection or direct connection), ▸ 5.2.2 [🗋 23].

3. Connect the product via the hose-free direct connection.
   ⇨ Use O-rings from the accessory pack.
   ⇨ Seal main air connections which are not required with locking screws.
4. OR: Connect compressed air lines to the main air connections "A" and "B".
   ⇨ Screw in air connections (plug connections).
   OR: Screw on throttle valve in order to be able to perform sufficient throttling and/or damping.
5. Screw the product to the machine/system, ▸ 5.2.1 [🗋 20].
   ⇨ If necessary, use appropriate connection elements (adapter plates).
   ⇨ Observe the maximal tightening torque, admissible screw-in depth and, if necessary, strength class.
   ⇨ When mounting from the rear or at the side: use cylindrical pins for fixing the product in place.
6. Secure the gripper fingers to the base jaws, ▸ 5.2.1 [🗋 20].
   ⇨ Use centering sleeves from the enclosed accessory pack.
7. Connect air purge connection if necessary.
8. Connect the sensor, see assembly and operating manual of the sensor.
9. Mount the sensor, ▸ 5.3 [🗋 24].

## 5.2 Connections

### 5.2.1 Mechanical connection

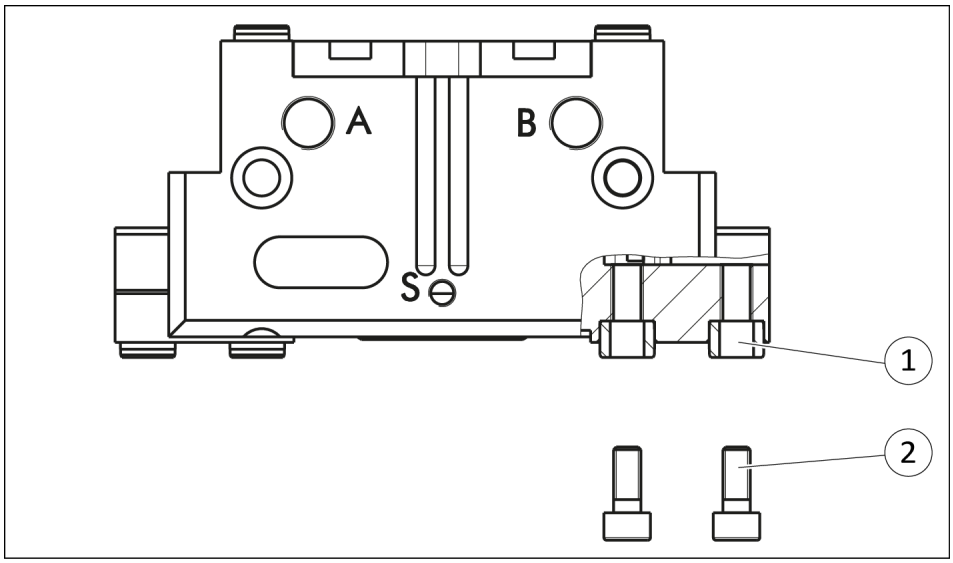
**Evenness of the mounting surface**

The values apply to the whole mounting surface to which the product is mounted.

| Edge length | Permissible unevenness |
|---|---|
| < 100 | < 0.02 |
| > 100 | < 0.05 |

*Tab.: Requirements for evenness of the mounting surface (Dimensions in mm)*

**Connections at the base jaws**



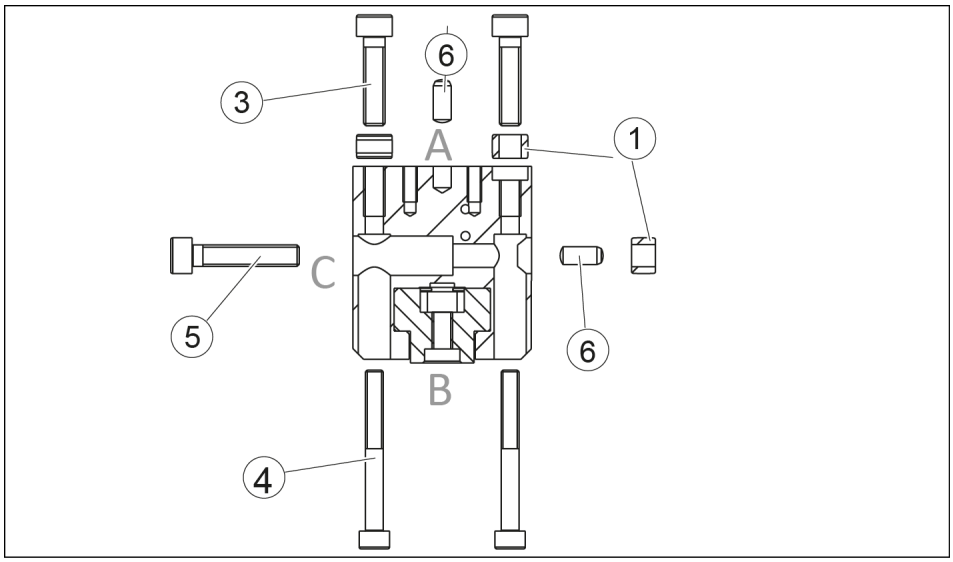

*Connections at the base jaws*

| Item | Mounting | JGP | | | | |
|---|---|---|---|---|---|---|
| | | 40 | 50 | 64 | 80 | 100 |
| 1 | Centering sleeve | Ø4 | Ø5 | Ø6 | Ø8 | Ø10 |
| 2 | Thread in base jaws | M2.5 | M3 | M4 | M5 | M6 |
| | Mounting screw strength class | | | 12.9 | | |
| | Max. depth of engagement from locating surface [mm] | 6.1 | 8.5 | 10 | 10 | 14 |

| Item | Mounting | JGP | | | | |
|---|---|---|---|---|---|---|
| | | 125 | 160 | 200 | 240 | 300 |
| 1 | Centering sleeve | Ø10 | Ø14 | Ø16 | Ø16 | Ø22 |
| 2 | Thread in base jaws | M6 | M10 | M12 | M12 | M16 |
| | Mounting screw strength class | | | 12.9 | | |
| | Max. depth of engagement from locating surface [mm] | 13 | 17 | 17 | 21 | 28 |

**Connections at the housing**

The product can be mounted from three sides.

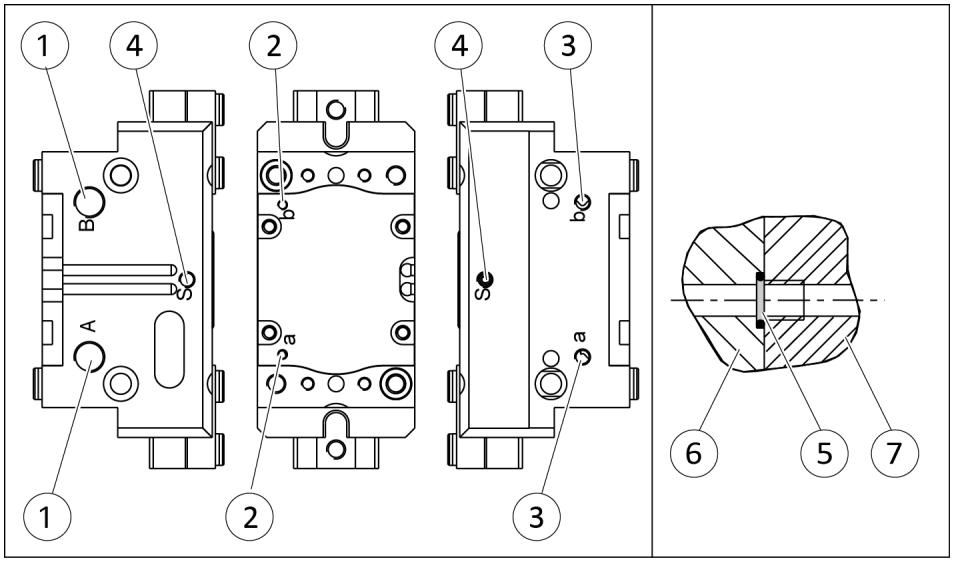



*Connections at the housing*

| Item | Mounting | JGP | | | | | |
|---|---|---|---|---|---|---|---|
| | | 40 | 50 | 64 | 80 | 100 | 125 |
| **Side A** | | | | | | | |
| 1 | Mounting screw | M3 | M4 | M5 | M5 | M6 | M8 |
| | Max. depth of engagement from locating surface [mm] | 6 | 11 | 12 | 15 | 14 | 20 |
| | for variants IS/AS | 9 | 16 | 18 | 18 | 16 | 20 |
| 2 | Centering sleeve | Ø5 | Ø6 | Ø8 | Ø8 | Ø10 | Ø12 |
| 6 | Fitting bore for centering pin [mm] | – | – | $Ø4^{H7}$ | $Ø4^{H7}$ | $Ø5^{H7}$ | $Ø6^{H7}$ |
| **Side B** | | | | | | | |
| 4 | Mounting screw | M2.5 | M3 | M4 | M4 | M5 | M6 |
| | Mounting screw according to standard | DIN EN ISO 4762 | | | | | |
| 2 | Centering sleeve | Ø5 | Ø6 | Ø8 | Ø8 | Ø10 | Ø12 |
| **Side C** | | | | | | | |
| 5 | Mounting screw | M2.5 | M3 | M4 | M5 | M6 | M8 |
| | Mounting screw according to standard | DIN EN ISO 4762<br>Max. strength class 8.8 | | | | | |
| 3 | Centering sleeve | Ø5 | Ø6 | Ø8 | Ø8 | Ø10 | Ø12 |
| 7 | Fitting bore for centering pin [mm] | – | – | $Ø4^{H7}$ | – | $Ø5^{H7}$ | $Ø6^{H7}$ |

| Item | Mounting | JGP | | | |
|---|---|---|---|---|---|
| | | 160 | 200 | 240 | 300 |
| **Side A** | | | | | |
| 1 | Mounting screw | M8 | M10 | M12 | M16 |
| | Max. depth of engagement from locating surface [mm] | 20 | 20 | 25.5 | 31 |
| | for variants IS/AS | 20 | 20 | 23 | 31 |
| 2 | Centering sleeve | Ø12 | Ø14 | Ø16 | Ø22 |
| 6 | Fitting bore for centering pin [mm] | $Ø6^{H7}$ | – | – | $Ø10^{H7}$ |
| **Side B** | | | | | |
| 4 | Mounting screw | M6 | M8 | M10 | M12 |
| | Mounting screw according to standard | DIN EN ISO 4762 | | | |
| 2 | Centering sleeve | Ø12 | Ø14 | Ø16 | Ø22 |
| **Side C** | | | | | |
| 5 | Mounting screw | M8 | M10 | M12 | M16 |
| | Mounting screw according to standard | DIN EN ISO 4762<br>Max. strength class 8.8 | | | |
| 3 | Centering sleeve | Ø12 | Ø14 | Ø16 | Ø22 |
| 7 | Fitting bore for centering pin [mm] | $Ø6^{H7}$ | $Ø8^{H7}$ | – | $Ø10^{H7}$ |

### 5.2.2 Pneumatic connection




*Air connections*

| | |
|---|---|
| 1 | Main connections (Hose connection)<br>(A = open, B = close) |
| 2 | Hose-free direct connection at the base<br>(a = open, b = close) |
| 3 | Hose-free direct connection |
| 4 | Air purge connection |
| Hose-free direct connection | |
| 5 | O-ring |
| 6 | Attachment |
| 7 | Product |

| Item | 40 | 50 | 64 | 80 | 100 | 125 | 160 | 200 | 240 | 300 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 x M3 | 2 x M5 | 2 x M5 | 2 x M5 | 2 x R1/8 " | 2 x R1/8 " | 2 x R1/8 " | 2 x R1/8 " | 2 x R1/4 " | 2 x R1/4 " |
| 2 | 2 x M2 | 2 x M3 | 2 x M3 | 2 x M3 | 2 x M3 | 2 x M5 | 2 x M5 | 2 x M5 | 2 x M5 | 2 x M5 |
| 3 | 2 x M3 | 2 x M5 | 2 x M5 | 2 x M5 | 2 x M5 | 2 x M5 | 2 x M5 | 2 x M5 | 2 x M5 | 2 x M5 |
| 4 | M3 | M5 | M5 | M5 | M5 | M5 | M5 | M5 | M5 | M5 |

*Tab.: Thread diameter of the air connections*

## 5.3 Mounting the sensor

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

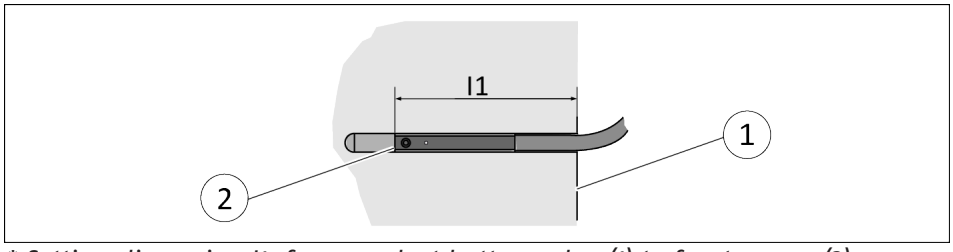
The product is prepared for the use of sensors.

- For the exact type designations of suitable sensors, please see catalog datasheet and ▶ 5.3.1 [🗋 24].
- 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.

### 5.3.1 Overview of sensors

| Designation | JGP | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 40 | 50 | 64 | 80 | 100 | 125 | 160 | 200 | 240 | 300 |
| Magnetic switch MMS 22 | X | X | X | X | X | X | X | X | X | X |
| Programmable magnetic switch MMS 22-PI1 | X | | X | X | X | X | X | X | X | X |
| Programmable magnetic switch MMS 22-PI2 | X | | X | X | X | X | X | | | |
| Programmable magnetic switch MMS-P 22 | X | X | X | X | X | X | X | | | |
| Magnetic switch MMS 22-IOL | X | X | X | X | X | X | X | | | |
| Inductive proximity switch IN 80 | | | X | X | X | X | X | X | X | X |
| Reed switch RMS 80 | | | X | X | X | X | X | X | X | X |
| Flexible position sensor FPS-F5 with FPS-S M8 | | | X | X | X | X | X | X | X | X |
| Analog position sensor APS-M1 | | | X | X | X | X | X | X | X | X |
| Analog position sensor APS-Z80 | | | X | X | X | X | X | X | X | X |
| Radio system RSS R1/T2 with Reed switch RMS 80 | | | X | X | X | X | X | X | X | X |

### 5.3.2 Setting dimensions for magnetic switches




** Setting dimension l1, from product bottom edge (1) to front sensor (2)*

The setting dimension applies for the following sensors:

- Programmable magnetic switch MMS 22-PI1
- Programmable magnetic switch MMS 22-PI2
- Programmable magnetic switch MMS-P 22

| Size | l1* [mm] | Size | l1* [mm] |
|---|---|---|---|
| 40 | 14.9 | 100 | 27.7 |
| 40 AS | 18.9 | 100 AS | 19.9 |
| 40 IS | 23.9 | 100 IS | 53.7 |
| 50 | 15.4 | 125 | 23.0 |
| 50 AS | 20.8 | 125 AS | 59.6 |
| 50 IS | 31.4 | 125 IS | 52.9 |
| 64 | 22.4 | 160 | 31.4 |
| 64 AS | 19.2 | 160 AS | 71.9 |
| 64 IS | 40.4 | 160 IS | 71.4 |
| 80 | 26.0 | | |
| 80 AS | 22.4 | | |
| 80 IS | 44.0 | | |

**NOTE**

The magnetic switch MMS 22-PI1 can be adjusted and taught in two ways.

- "Standard mode" allows for quick installation on the T-nut preset by SCHUNK in the groove or the defined setting dimension "l1."
- In "Optimal Mode", the sensor identifies the optimal position in the groove itself.
  SCHUNK recommends "Optimal Mode" for setting the sensors.

Further information on the installation of the sensor, ▶ 5.3.6 [🗋 28]

### 5.3.3 Switch-off hysteresis for magnetic switches

**Sensors MMS 22, MMS 22-PI1, MMS 22-PI2 and MMS-P 22**

The smallest detectable difference in stroke is defined in the following table:

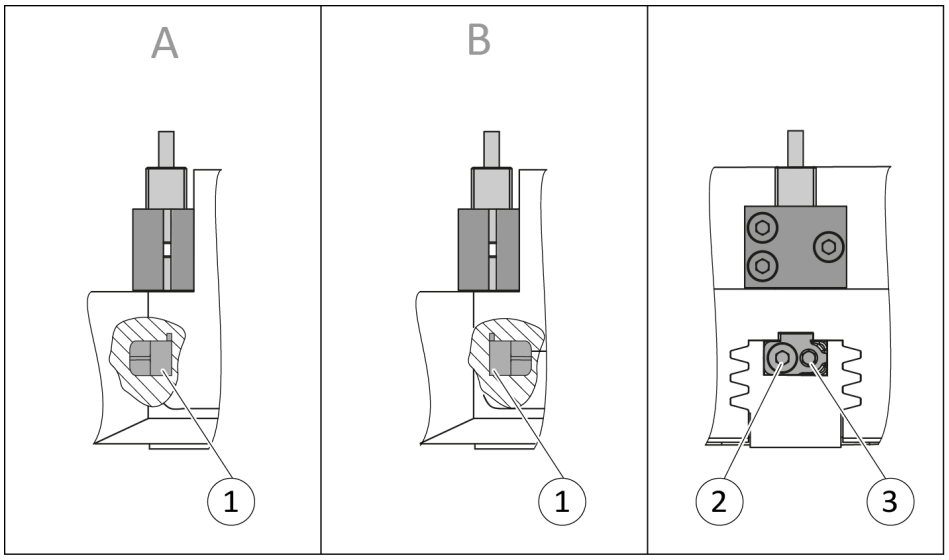
| For products with X mm nominal stroke per jaw | Min. query range per jaw/ min. queried stroke difference per jaw |
|---|---|
| X ≤ 5 mm | 30 % of the nominal stroke per jaw |
| X > 5 mm to X ≤ 10 mm | 20 % of the nominal stroke per jaw |
| X > 10 mm | 10 % of the nominal stroke per jaw |

*Tab.: The smallest detectable difference in stroke based on the nominal stroke*

**Example:** Product with 7 mm nominal stroke per jaw

7 mm * 20% = 1.4 mm

### 5.3.4 Turn control cam




*Turn control cam, example control cam for inductive monitoring*

Depending on the jaw stroke, it may be necessary to change the alignment of the control cam for the sensors IN 80 and RMS 80.

In the image, the installation situation (A) shows the control cam in the delivery state of the product and the installation situation (B) shows the turned control cam.

In order to change the alignment of the control cam, proceed as follows:

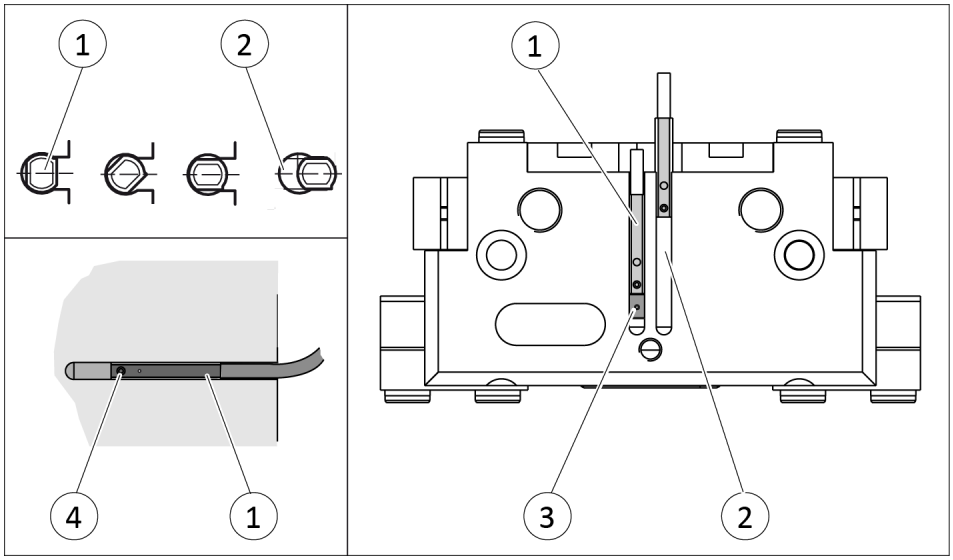
1. Undo the screw (2).
2. Remove control cam (1) from the product, turn and re-insert it into the product.
3. Turn the screw (3) to push the position of the control cam (1).

### 5.3.5 Mounting magnetic switch MMS 22

**CAUTION**

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

- Observe the maximal tightening torque.




*Positioning the magnetic switches*

**Position "Gripper open" or "Part gripped (I.D. gripping)"**

1. Bring product in the position to be set.
2. If necessary remove T-nut (3).
3. Turn the sensor 1 (1) into the groove (2).
   OR: Slide the sensor 1 (1) into the groove (2) until the sensor 1 (1) stops at the end of the groove.
4. Pull the sensor 1 (1) back again slowly until it switches.
5. Secure the sensor 1 (1) using the set-screw (4).
   Tightening torque: 10 Ncm
6. Bring product into the "Gripper open" or "Part gripped" position and test the function.

**Position "Gripper closed" or "Part gripped (O.D. gripping)"**

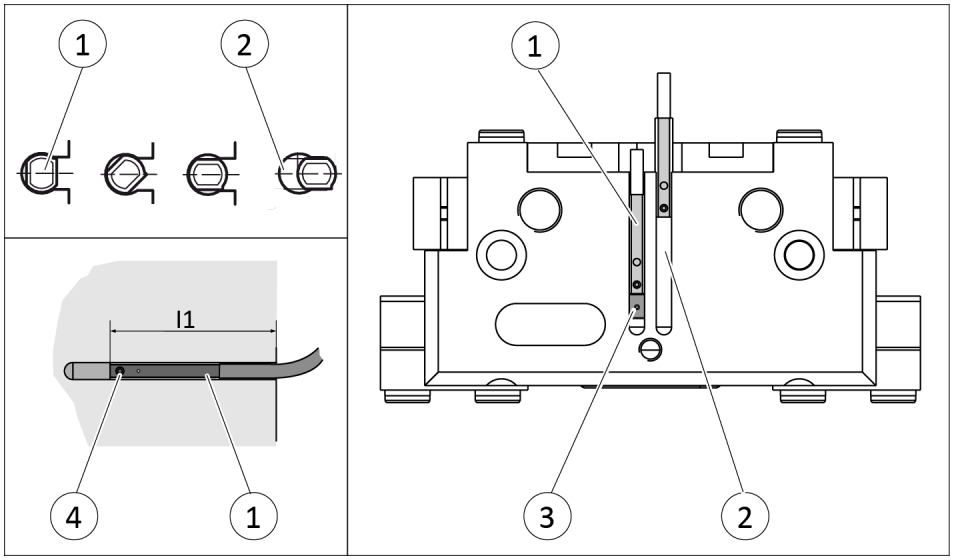
1. Bring product in the position in which it is to be set.
2. If necessary remove T-nut (3).
3. Turn the sensor 2 (1) into the groove (2).
   OR: Slide sensor 2 (1) into the groove (2) in the direction of the housing middle (3), until the sensor 2 (1) switches.
4. Secure the sensor 2 (1) using the set-screw (4).
   Tightening torque: 10 Ncm
5. Bring product into the "Gripper closed" or "Part gripped" position and test the function.

### 5.3.6 Mounting programmable magnetic switch MMS 22-PI1

**CAUTION**

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

- Observe the maximal tightening torque.




**NOTE**

The magnetic switch MMS 22-PI1 can be adjusted and taught in two ways.

- "Standard mode" allows for quick installation on the T-nut preset by SCHUNK in the groove or the defined setting dimension "l1."
- In "Optimal Mode", the sensor identifies the optimal position in the groove itself.
  SCHUNK recommends "Optimal Mode" for setting the sensors.

**Setting the sensor in "Optimum mode"**

1. Put product in the position in which it is to be set.
2. Hold teaching tool to the sensor 1 (1) until the sensor flashes.
3. Slide sensor 1 (1) into the groove (2), until the sensor 1 flashes rapidly.
   ⇨ The optimum position is displayed.
4. Secure the sensor 1 (1) using the set-screw (3).
   Tightening torque: 10 Ncm
5. Hold teaching tool to the sensor 1 (1) to confirm the position.
   ⇨ The sensor 1 (1) has been taught in.
6. Repeat steps for sensor 2.

**Alternatively for size 40 – 160, except size 50:**
**Setting the sensor in "Standard mode"**

1. Turn the sensor 1 (1) into the groove (2).
   OR: Slide the sensor 1 (1) into the groove (2) until the sensor 1 (1) stops at the T-nut (3).
2. Secure the sensor 1 (1) using the set-screw (4).
   Tightening torque: 10 Ncm
3. Adjust sensor 1 (1), see sensor assembly and operating manual.
4. Repeat steps for sensor 2.

**NOTE**

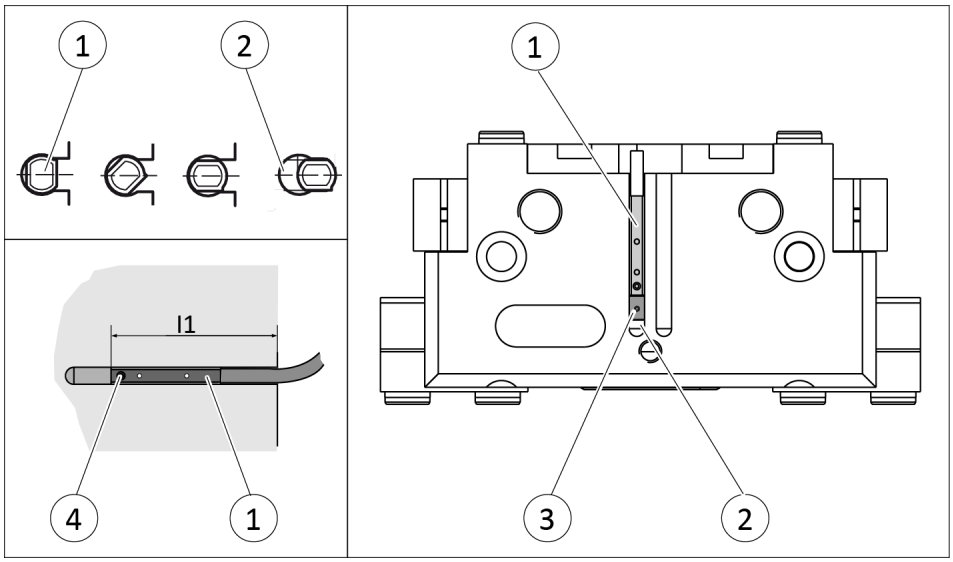
If there is no T-nut available, slide the sensor according to dimension l1 into the groove (2), ▶ 5.3.2 [🗋 25].

### 5.3.7 Mounting programmable magnetic switch MMS 22-PI2

**CAUTION**

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

- Observe the maximal tightening torque.




**NOTE**

If there is no T-nut available, slide the sensor according to dimension l1 into the groove (2), ▸ 5.3.2 [🗋 25].

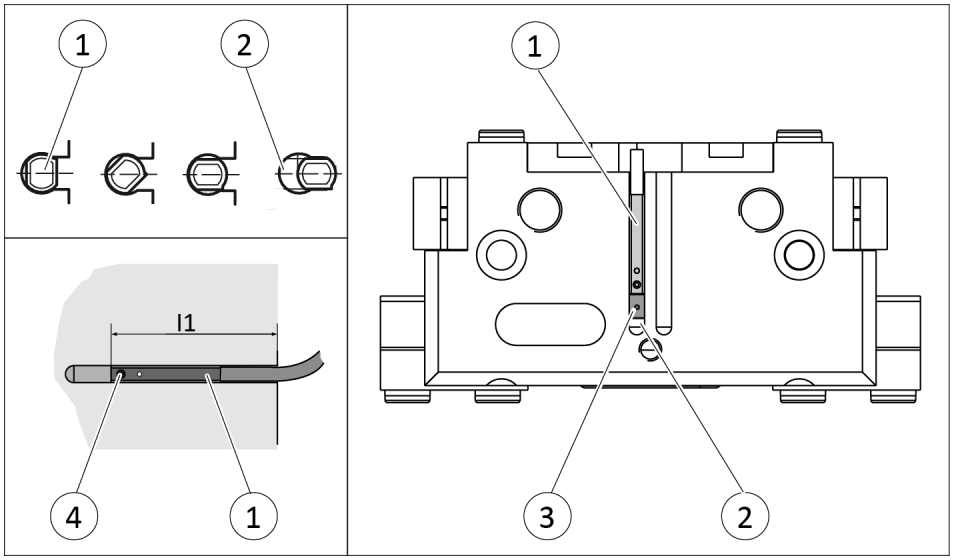
1. Turn the sensor (1) into the groove (2).
   OR: Slide the sensor (1) into the groove (2) until the sensor (1) stops at the T-nut (3).
2. Secure the sensor (1) using the set-screw (4).
   Tightening torque: 10 Ncm
3. Adjust sensor (1), see sensor assembly and operating manual.

### 5.3.8 Mounting programmable magnetic switch MMS-P 22

**CAUTION**

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

- Observe the maximal tightening torque.




**NOTE**

If there is no T-nut available, slide the sensor according to dimension l1 into the groove (2), ▶ 5.3.2 [🗋 25].

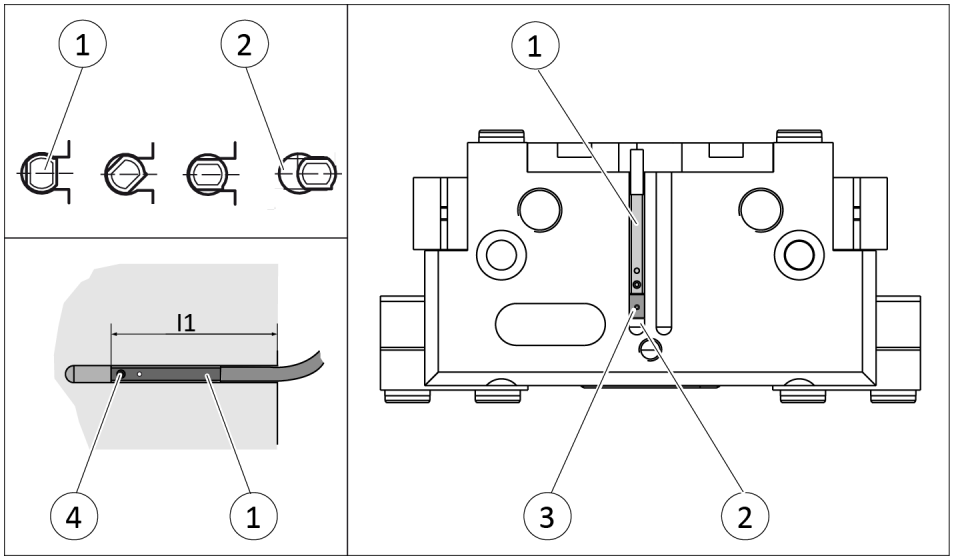
1. Turn the sensor (1) into the groove (2).
   OR: Slide the sensor (1) into the groove (2) until the sensor (1) stops at the T-nut (3).
2. Secure the sensor (1) using the set-screw (4).
   Tightening torque: 10 Ncm
3. Adjust sensor (1), see sensor assembly and operating manual.

### 5.3.9 Mounting the MMS 22-IOL magnetic switch

**CAUTION**

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

- Observe the maximal tightening torque.




**NOTE**

If there is no T-nut available, slide the sensor according to dimension l1 into the groove (2), see following table.

1. Turn the sensor (1) into the groove (2).
   OR: Slide the sensor (1) into the groove (2) until the sensor (1) stops at the T-nut (3).
2. Secure the sensor (1) using the set-screw (4).
   Tightening torque: 10 Ncm
3. Adjust sensor (1), see sensor assembly and operating manual.

| Size | l1* [mm] | Size | l1* [mm] |
|---|---|---|---|
| 40 | 15.4 | 100 | 28.8 |
| 40 AS | 20.0 | 100 AS | 22.1 |
| 40 IS | 20.0 | 100 IS | 55.7 |
| 50 | At stop | 125 | 23.0 |
| 50 AS | 23.0 | 125 AS | 59.7 |
| 50 IS | At stop | 125 IS | 57 |
| 64 | 22.5 | 160 | 35.6 |
| 64 AS | 19.3 | 160 AS | 76.1 |
| 64 IS | 39.6 | 160 IS | 75.6 |
| 80 | 26.6 | | |
| 80 AS | 22.1 | | |
| 80 IS | 44.6 | | |

*Tab.: Dimensions l1*

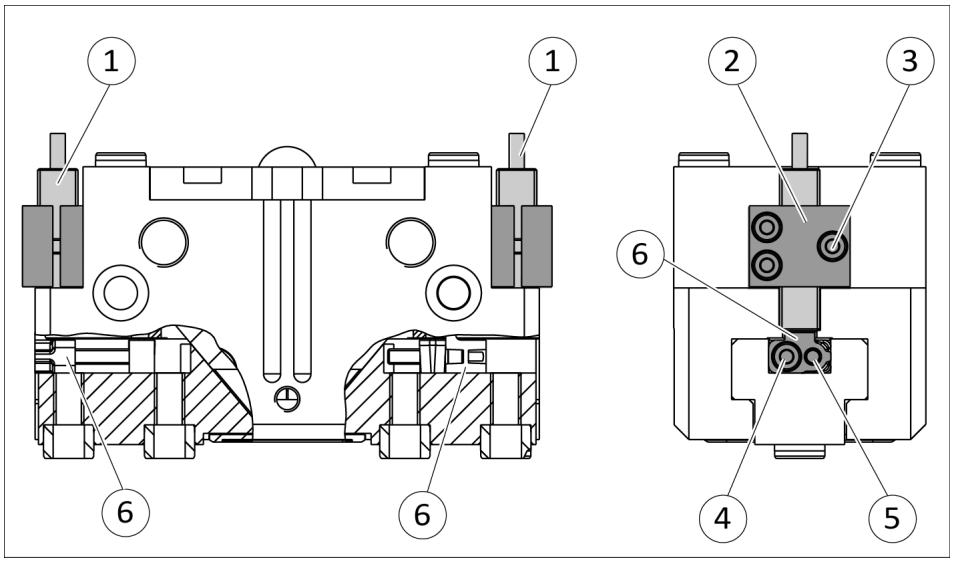
### 5.3.10 Mounting inductive proximity switch IN 80

**CAUTION**

**Blockade of the gripper after setting or replacing of the switching cam!**

The switching cam can be tilt in the guide, if it was not fixed exactly in the base jaw.

- Apply the switching cam in the direction of the base jaw, so that the cam does not contact the housing of the gripper.




**Position "Gripper open" or "Part gripped (I.D. gripping)"**

1. Slide the sensor 1 (1) into the bracket (2) until it stops.
2. Tighten the screw (3) on the bracket (2).
   Tightening torque: 0.2 Nm
3. Open gripper or grip part.
4. Unfasten the screw (4).
5. Turn the screw (5) to adjust the position of the control cam (6).
   ⇨ Slide control cam (6) inwards until the sensor 1 (1) no longer responds.
   Move the control cam (6) back towards the outside until the sensor 1 (1) begins to switch.
6. Tighten screw (4) while pressing the control cam in the direction of the gripper fingers. **IMPORTANT! The control cam may tilt in the guide if it has not been tightened properly.**
   ⇨ Switching point is set.
7. Bring product into the "Gripper open" or "Part gripped" position and test the function.

**Position "Gripper closed" or "Part gripped (O.D. gripping)"**

1. Slide the sensor 2 (1) into the bracket (2) until it stops.
2. Tighten the screw (3) on the bracket (2).
   Tightening torque: 0.2 Nm
3. Close gripper or grip part.
4. Unfasten the screw (4).
5. Turn the screw (5) to adjust the position of the control cam (6).
   ⇨ Slide control cam (6) outwards until the sensor 2 (1) no longer responds.
   Move the control cam (6) back towards the inside until the sensor 2 (1) begins to switch.
6. Tighten screw (4) while pressing the control cam in the direction of the gripper fingers. **IMPORTANT! The control cam may tilt in the guide if it has not been tightened properly.**
   ⇨ Switching point is set.
7. Bring product into the "Gripper closed" or "Part gripped" position and test the function.

**NOTE**

If the switching position cannot be queried, it may be that the alignment of the control cam has to be changed, ▸ 5.3.4 [🗋 26].

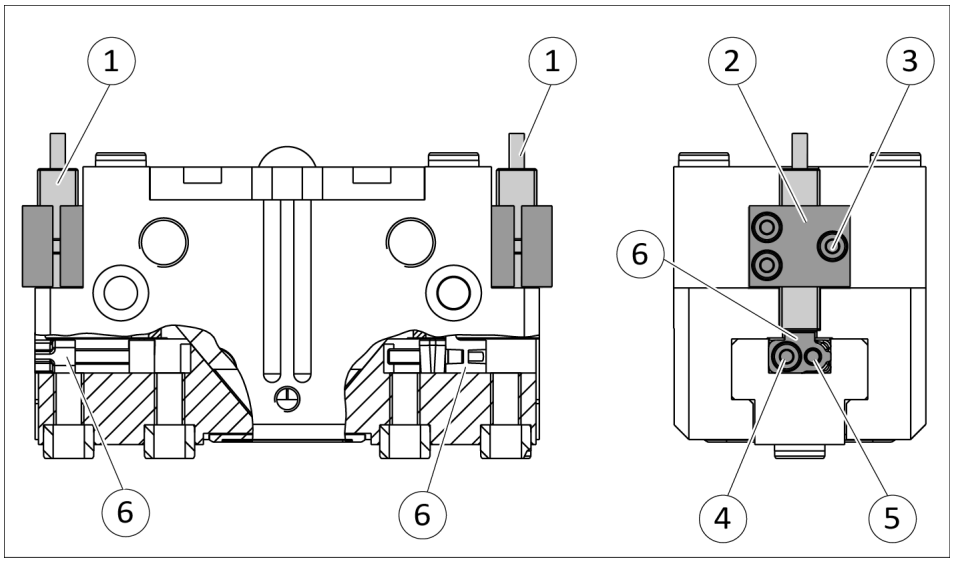
### 5.3.11 Mounting reed switch RMS 80

**CAUTION**

**Blockade of the gripper after setting or replacing of the switching cam!**

The switching cam can be tilt in the guide, if it was not fixed exactly in the base jaw.

- Apply the switching cam in the direction of the base jaw, so that the cam does not contact the housing of the gripper.




**Position "Gripper open" or "Part gripped (I.D. gripping)"**

1. Slide the sensor 1 (1) into the bracket (2) until it stops.
2. Tighten the screw (3) on the bracket (2).
   Tightening torque: 0.2 Nm
3. Open gripper or grip part.
4. Unfasten the screw (4).
5. Turn the screw (5) to adjust the position of the control cam (6).
   ⇨ Slide control cam (6) inwards until the sensor 1 (1) no longer responds.
   Move the control cam (6) back towards the outside until the sensor 1 (1) begins to switch.
6. Tighten screw (4) while pressing the control cam in the direction of the gripper fingers. **IMPORTANT! The control cam may tilt in the guide if it has not been tightened properly.**
   ⇨ Switching point is set.
7. Bring product into the "Gripper open" or "Part gripped" position and test the function.

**Position "Gripper closed" or "Part gripped (O.D. gripping)"**

1. Slide the sensor 2 (1) into the bracket (2) until it stops.
2. Tighten the screw (3) on the bracket (2).
   Tightening torque: 0.2 Nm
3. Close gripper or grip part.
4. Unfasten the screw (4).
5. Turn the screw (5) to adjust the position of the control cam (6).
   ⇨ Slide control cam (6) outwards until the sensor 2 (1) no longer responds.
   Move the control cam (6) back towards the inside until the sensor 2 (1) begins to switch.
6. Tighten screw (4) while pressing the control cam in the direction of the gripper fingers. **IMPORTANT! The control cam may tilt in the guide if it has not been tightened properly.**
   ⇨ Switching point is set.
7. Bring product into the "Gripper closed" or "Part gripped" position and test the function.

**NOTE**

If the switching position cannot be queried, it may be that the alignment of the control cam has to be changed, ▸ 5.3.4 [🗋 26].

### 5.3.12 Mounting flexible position sensor FPS

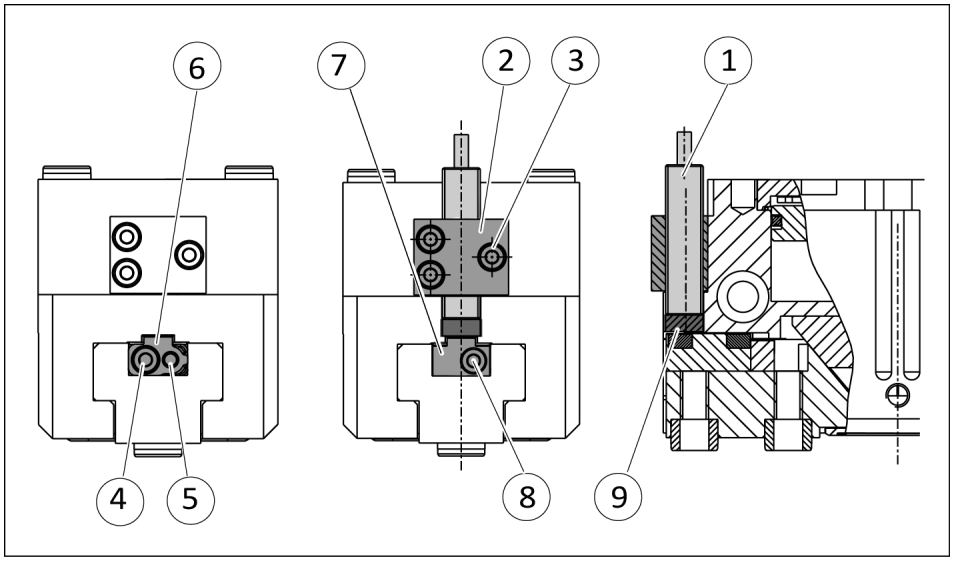
The flexible position sensor FPS consists of a torque sensor system controller and the sensor FPS-S M8.

To be able to mount the sensor, the gripper has to be retrofitted with a special mounting kit.

**CAUTION**

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

- Observe the maximal tightening torque.




1. Move product to the "gripper open" position.
2. Loosen screw (4) and remove control cam (6) for the inductive monitoring from the base jaw.
3. Remove screw (5) from the base jaw.
4. Slide control cam (7) from the mounting kit with the recess at the front into the base jaw.
5. Screw the control cam (7) to the base jaw using the screw (8).
6. Slide spacer shim (9) into the bracket (2) to the stop.
7. Slide the sensor (1) to the stop into the bracket (2).
8. Tighten the screw (3) on the bracket (2).
   Tightening torque: 0.2 Nm
9. Adjust sensor (1), see assembly and operating manual of the sensor.

### 5.3.13 Mounting analog position sensor APS-M1

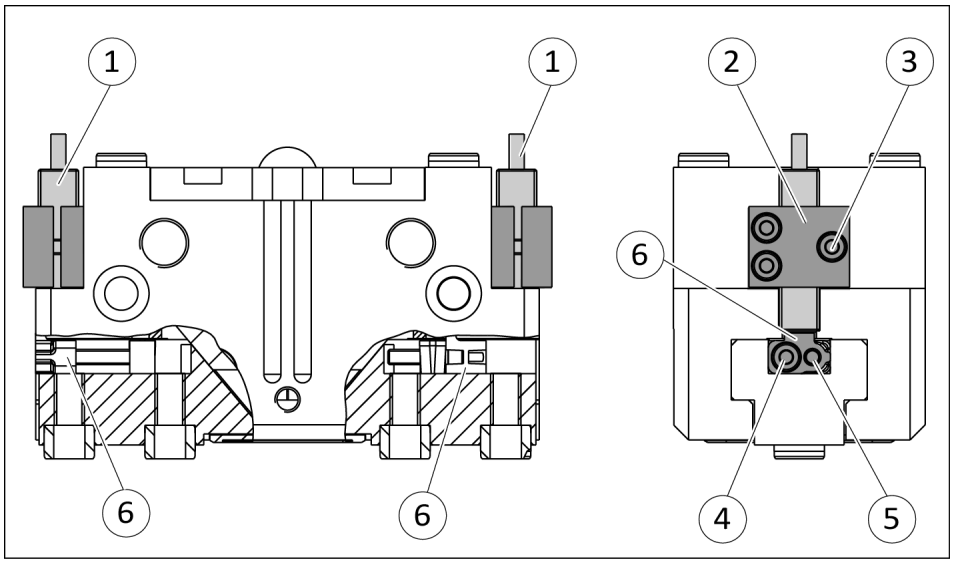
To be able to mount the sensor, the gripper has to be retrofitted with a special mounting kit.

**CAUTION**

**Blockade of the gripper after setting or replacing of the switching cam!**

The switching cam can be tilt in the guide, if it was not fixed exactly in the base jaw.

- Apply the switching cam in the direction of the base jaw, so that the cam does not contact the housing of the gripper.




1. Move product to the "gripper open" position.
2. Loosen screw (4) and remove control cam (6) for the inductive monitoring from the base jaw.
3. Apply adhesive to the top and sides of the control cam (6) from the mounting kit.
   ⇨ Make sure that there is no adhesive on the bottom of the control cam (6), which comes into contact with the sensor.
   ⇨ SCHUNK recommends the adhesive Loctite 290 or 638.
4. Slide control cam (6) out of the mounting kit front into the base jaw.
   ⇨ Ensure that the higher front side of the control cam (6) is pointing outwards.
5. Tighten screw (4) slightly.
6. Turn the screw (5) to push the position of the control cam (6).
7. Tighten screw (4) and in doing so press the control cam (6) in the direction of the gripper finger.

8. Slide the sensor (1) to the stop into the bracket (2).
9. Tighten the screw (3) on the bracket (2).
   Tightening torque: 0.2 Nm
10. Adjust sensor (1), see assembly and operating manual of the sensor.

### 5.3.14 Mounting analog position sensor APS-Z80

To be able to mount the sensor, the gripper has to be retrofitted with a special mounting kit.

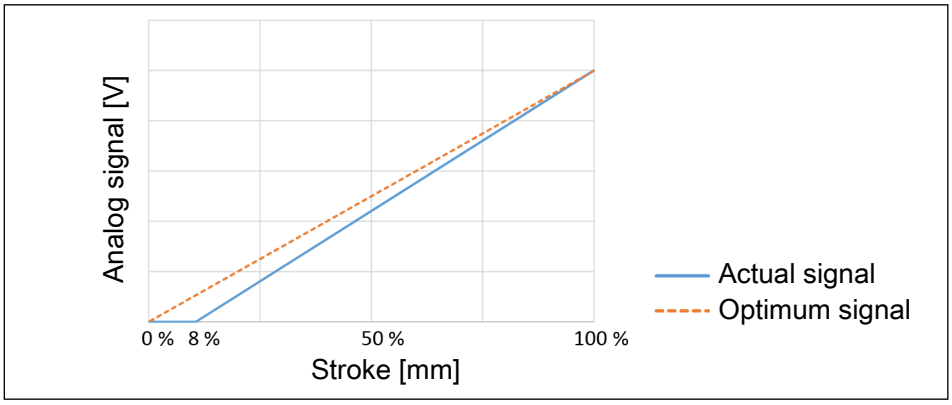
**CAUTION**

**Blockade of the gripper after setting or replacing of the switching cam!**

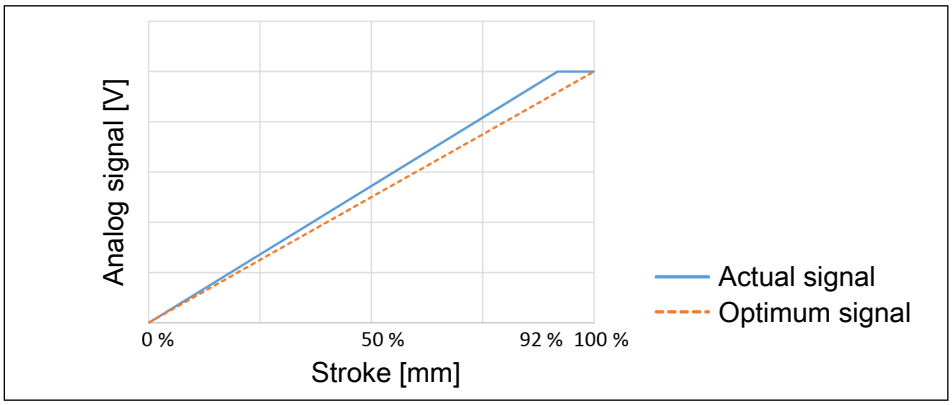
The switching cam can be tilt in the guide, if it was not fixed exactly in the base jaw.

- Apply the switching cam in the direction of the base jaw, so that the cam does not contact the housing of the gripper.

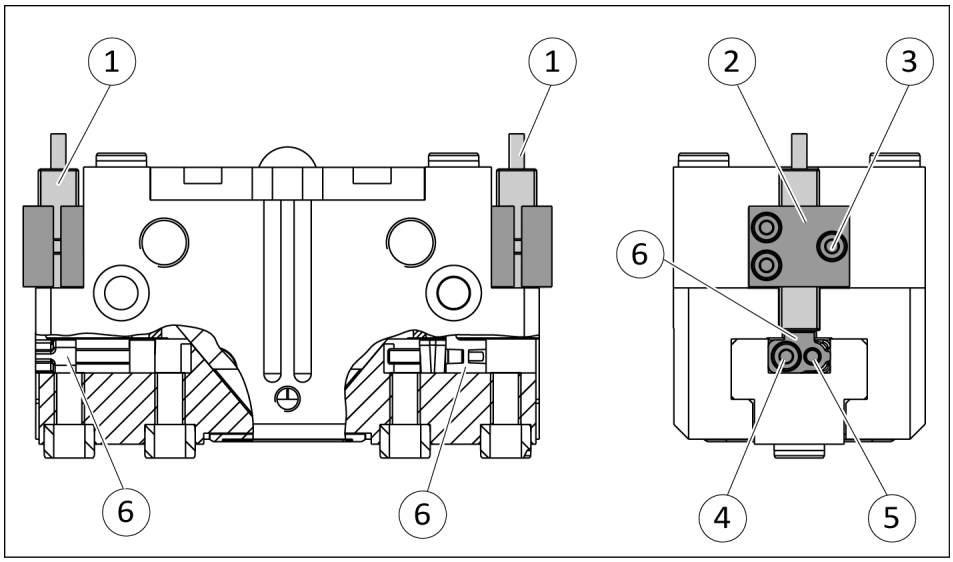
During the monitoring process, the first 8% of the nominal stroke will not produce a change in the analog signal. With O.D. gripping the "Gripper closed" position and with I.D. gripping the "Gripper opened" position cannot be queried. Should you have questions, do not hesitate to contact SCHUNK.




*Analog signal on O.D. gripping*




*Analog signal on I.D. gripping*




1. Move product to the "gripper open" position.
2. Loosen screw (4) and remove control cam (6) for the inductive monitoring from the base jaw.
3. Remove screw (5) from the base jaw.
4. Apply adhesive to the top and sides of the control cam (6) from the mounting kit.
   - ⇨ Make sure that there is no adhesive on the bottom of the control cam (6), which comes into contact with the sensor.
   - ⇨ SCHUNK recommends the adhesive Loctite 290 or 638.
5. Slide control cam (6) into the base jaw to the stop.
   - ⇨ Ensure that the higher front side of the control cam (6) is pointing outwards.
6. **IMPORTANT! The control cam (6) must no longer move after it is screwed on.**
   Screw the control cam (6) to the base jaw using the screw (5).
   - ⇨ Secure the screw (5) with medium-strength locking liquid.
7. Slide the sensor (1) to the stop into the bracket (2).
8. Tighten the screw (3) on the bracket (2).
   Tightening torque: 0.2 Nm
9. Adjust sensor (1), see the Sensor Assembly and Operating Manual.

### 5.3.15 Mounting the radio system RSS-R1/T2

The radio system RSS-R1/T2 can be used with the following sensors:

- Reed switch RMS 80

**Assembly**

1. Install the sensor, ▸ 5.3.11 [🗋 35].
2. Adjust the sensor, see the assembly and operating manual for the sensor.
3. Connect the radio system, see the assembly and operating manual for the radio system.

# 6 Troubleshooting

## 6.1 Product does not move

| Possible cause | Corrective action |
|---|---|
| Base jaws jam in housing, e.g. mounting surface is not sufficiently even. | Check the evenness of the mounting surface. ▸ 5.2.1 [🗋 20]<br>Loosen the mounting screws of the product and actuate the product again. |
| Pressure drops below minimum. | Check air supply. ▸ 5.2.2 [🗋 23] |
| Compressed air lines switched. | Check compressed air lines. |
| Proximity switch defective or set incorrect. | Readjust or change sensor. |
| Unused air connections open. | Close unused air connections. |
| Component part defective. | Replace component or send it to SCHUNK for repair. |

## 6.2 Product is not executing the complete stroke

| Possible cause | Corrective action |
|---|---|
| Dirt deposits between cover and piston. | Clean and if necessary re-lubricate. |
| Dirt deposits between basic jaws and guidance. | Disassemble and clean the product. |
| Pressure drops below minimum. | Check air supply. ▸ 5.2.2 [🗋 23] |
| Mounting surface is not sufficiently flat. | Check the evenness of the mounting surface. ▸ 5.2.1 [🗋 20] |
| Component part defective. | Replace component or send it to SCHUNK for repair. |

## 6.3 Product is opening or closing abruptly

| Possible cause | Corrective action |
|---|---|
| Too little grease in the mechanical guiding areas. | Clean and lubricate product. |
| Compressed air lines blocked. | Check compressed air lines of damage. |
| Mounting surface is not sufficiently flat. | Check the evenness of the mounting surface. |

## 6.4 Gripping force is dropping

| Possible cause | Corrective action |
|---|---|
| Compressed air can escape. | Check seals, if necessary, disassemble the product and replace seals. |
| Too much grease in the mechanical movement space. | Clean and lubricate product. |

| Possible cause | Corrective action |
|---|---|
| Pressure drops below minimum. | Check air supply.<br>▶ 3 [🗋 16] |
| Component part defective. | Replace component or send it to SCHUNK for repair. |

## 6.5 Product does not achieve the opening and closing times

| Possible cause | Corrective action |
|---|---|
| Compressed air lines are not installed optimally. | If present: Open the flow control couplings on the product to the maximum that the movement of the jaws occurs without bouncing and hitting. |
| | Check compressed air lines. |
| | Inner diameters of compressed air lines are of sufficient size in relation to compressed air consumption. |
| | Keep compressed air lines between the product and directional control valve as short as possible. |
| | Flow rate of valve is sufficiently large relative to the compressed air consumption. |
| | **IMPORTANT! The one-way flow control valve must not be removed even if the opening and closing times are not achieved.** |
| | If you still cannot achieve the open and close times in the latest catalog, we recommend the use of quick-air-vent-valves directly at the product. |

# 7 Maintenance

## 7.1 Notes

**Original spare parts**

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

**Replacement of the housing and base jaws**

The base jaws and the guides in the housing are matched to each other. To replace these parts, send the product to SCHUNK with a repair order.

**Type 40–100:**

**Maintenance of module with gripping force maintenance "A.D. gripping" (A.D.)**

The pistons have to be aligned using an assembly device. Therefore we recommend to have the module serviced and the seals replaced by SCHUNK.

If this is not possible, you can carry out the maintenance and replace the seals yourself.

## 7.2 Maintenance intervals

**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.

| Interval (million cycles) for JGP | | Maintenance work |
|---|---|---|
| 40 – 160 | 200 – 300 | |
| 2 | 1 | Clean all parts thoroughly, check for damage and wear, if necessary replace seals and wearing parts, ▶ 7.4 [🗋 47].<br>The seals are in the enclosed sealing kit., ▶ 1.4.1 [🗋 7]. |
| 2 | 1 | Treat all grease areas with lubricant, ▶ 7.3 [🗋 46].<br>Oil or grease external steel parts. |

## 7.3 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 |
|---|---|
| Metallic sliding surfaces | SCHUNK grease 3 |
| Seals and sealing surfaces | SCHUNK grease 1 |
| Cylinder surfaces | SCHUNK grease 1 |

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

The product contains food-compliant lubricants as standard. **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.

## 7.4 Disassembly and assembly

### 7.4.1 Disassemble the product

#### 7.4.1.1 Variant without maintenance of gripping force

Position of the item numbers, ▶ 7.5 [🗋 53].

1. Remove the compressed air hoses.
2. Remove the cover (5).
3. Mark the installation position of the piston (3) and the base jaws (2) in the housing (1).
4. Unscrew the screws (41) and remove the cover (4).
5. Unscrew the screws (40) and remove the cylinder piston (60) from the housing (1).
6. Press the piston (3) upward out of the housing (1).
7. Pull the base jaws (2) out of the housing (1).

#### 7.4.1.2 Variant with maintenance of gripping force (O.D. gripping)

Position of the item numbers, ▶ 7.5 [🗋 53].

**⚠ WARNING**

**Risk of injury due to spring forces!**

The cover may be ejected due to the high spring forces.

- Dismantle the product carefully.

**⚠ WARNING**

**Risk of injury due to spring forces!**

The cylinder piston is under spring tension.

- Carefully disassemble the product.

1. Remove the compressed air hoses.
2. Remove the cover (5).
3. Mark the installation position of the piston (3) and the base jaws (2) in the housing (1).
4. **WARNING Danger of injury due to spring forces! The cover housing is spring tensioned. Carefully disassemble the product.**Clamp the gripper between the base jaws (2) and the cover (9) in the vise so that you can still remove the 4 screws (46).
5. Unscrew the screws (46).
6. Open the vise carefully and remove the cover (9).
7. Remove the centering sleeves (19).

8. **WARNING Danger of injury due to spring forces! The cylinder piston is under spring tension. Carefully disassemble the product.** Clamp the gripper carefully between the base jaws (2) and the cylinder piston (60).
9. Unscrew the screws (45).
10. Carefully unclamp the vise until the spring force is released
11. Remove the cylinder piston (60) from the housing (1).
12. Types 125–160: Remove the distance bolts (11) from the housing (1).
13. Press the piston (3) upward out of the housing (1).
14. Pull the base jaws (2) out of the housing (1).

#### 7.4.1.3 Variant with maintenance of gripping force (I.D. gripping)

Position of the item numbers, ▶ 7.5 [🗋 53].

**⚠ 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 due to spring forces!**

The cover may be ejected due to the high spring forces.

- Dismantle the product carefully.

1. Remove the compressed air hoses.
2. Remove the cover (5).
3. Mark the installation position of the piston (3) and the base jaws (2) in the housing (1).
4. **WARNING Danger of injury due to spring forces! The cover housing is spring tensioned. Carefully disassemble the product.** Clamp the module between the base jaws (2) and the cover (9) in the vise such that it is still possible to remove the four screws (46).
5. Unscrew the screws (46).
6. Carefully unclamp the vise until the spring force (25) is released.

7. Remove the cover (9) and the compression spring (25).
8. Unscrew screw (40) and remove cylinder piston (60) from the housing (1).
9. Press the piston (3) upward out of the housing (1).
10. Pull the base jaws (2) out of the housing (1).

## 7.4.2 Assembling the product

### 7.4.2.1 Notes for assembly

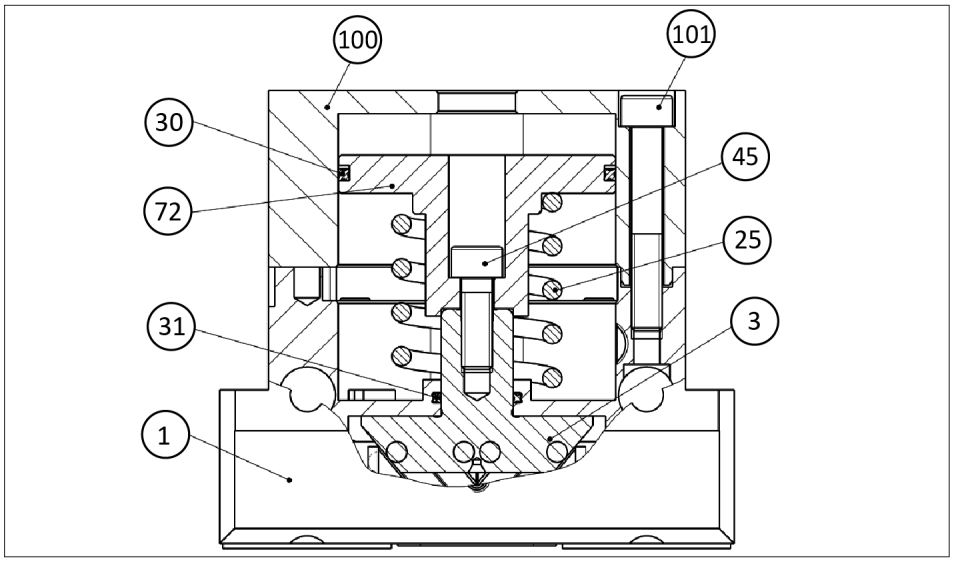
Assembly takes place in the opposite order to disassembly.
Observe the following:

- For variant with "O.D. gripping" maintenance of gripping force (AS):
  - Sizes 40–100: assemble cylinder piston using an assembly device, ▸ 7.4.2.2 [🗋 49].
  - Size 125: assemble in the reverse order without assembly device.
  - Sizes 160–300: assemble cylinder piston using two assembly devices, ▸ 7.4.2.2 [🗋 49].

- Unless otherwise specified, secure all screws and nuts with Loctite no. 243 and tighten with the appropriate tightening torque. ▸ 7.4.2.4 [🗋 53]

### 7.4.2.2 Assembly with assembly device

**Installation of the sizes 40–100 using an assembly device**




*Assembly device cylinder piston*

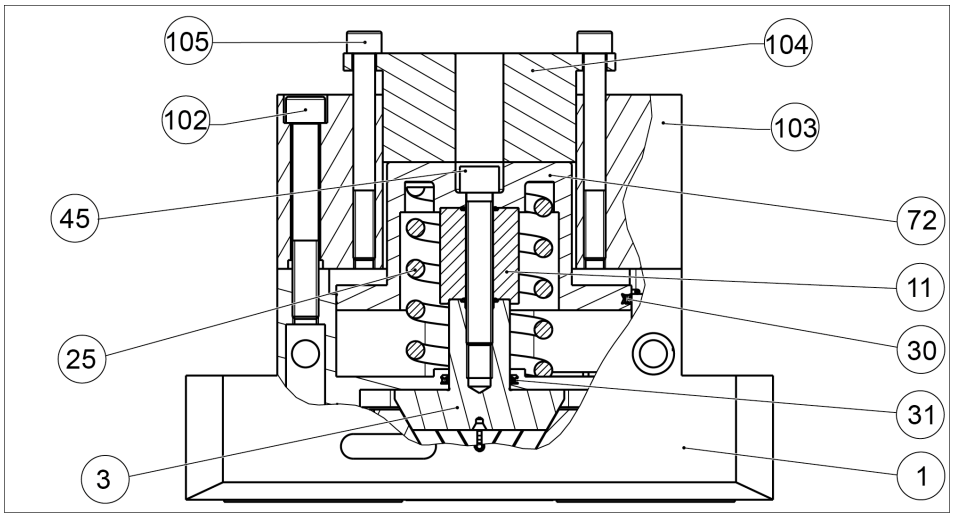
1. Install the base jaws (2) and piston (3) in the housing (50).
2. Put the cylinder piston (10) with the sealing (30) and the spring force (25) in the housing (50).

3. Carefully put device (100) over the cylinder piston (60) and attach to the housing (50) using the screws (101).
4. Screw in screw (45) and tighten with the appropriate tightening torque, ▸ 7.4.2.4 [🗋 53].
5. Remove the device (100) and continue to assemble the gripper in the opposite order to disassembly, ▸ 7.5 [🗋 53].

**Assembly of the size 125**

The assembly of the size 125 has to be carried out in the opposite order and a assembly device is not needed.

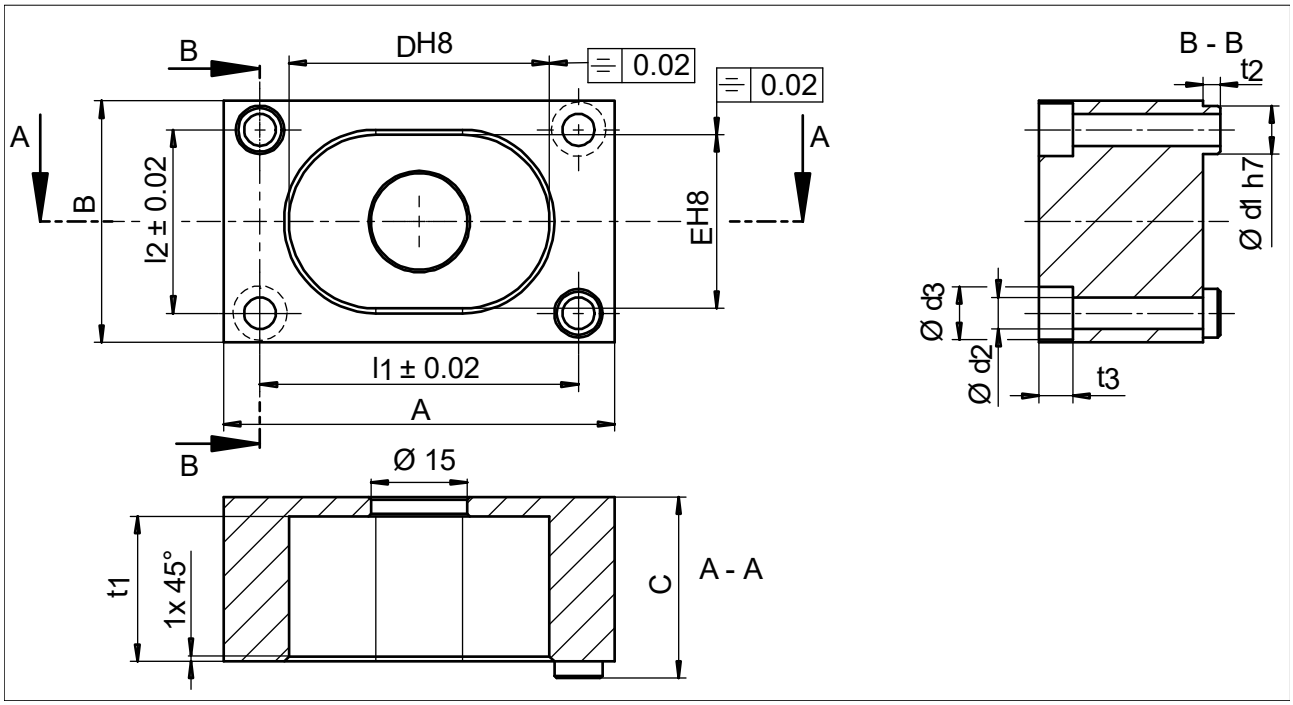
**Assembly of the sizes 160–300 with two assembly devices**




1. Install the base jaws (2) and piston (3) with the sealing (31) in the housing.
2. Put the spring force (25), distance bolts (11) and the cylinder piston (10) with the seal (30) in the housing (50).
3. Carefully put device 1 (103) over the cylinder piston (10) and attach to the housing (50) using the screws 1 (102).
4. Put on device 2 (104) and screw it evenly on device 1 (103) using screws 2 (105).
5. Screw in screw (45) in the cylinder piston (60) and tighten with the appropriate tightening torque, ▸ 7.4.2.4 [🗋 53].
6. Remove device.
7. Put sealing (32/34) in and mount the cover (9) using the screws (46), ▸ 7.5 [🗋 53].

### 7.4.2.3 Assembly device cylinder piston with gripping force maintenance

#### 7.4.2.3.1 Sizes 40 – 100



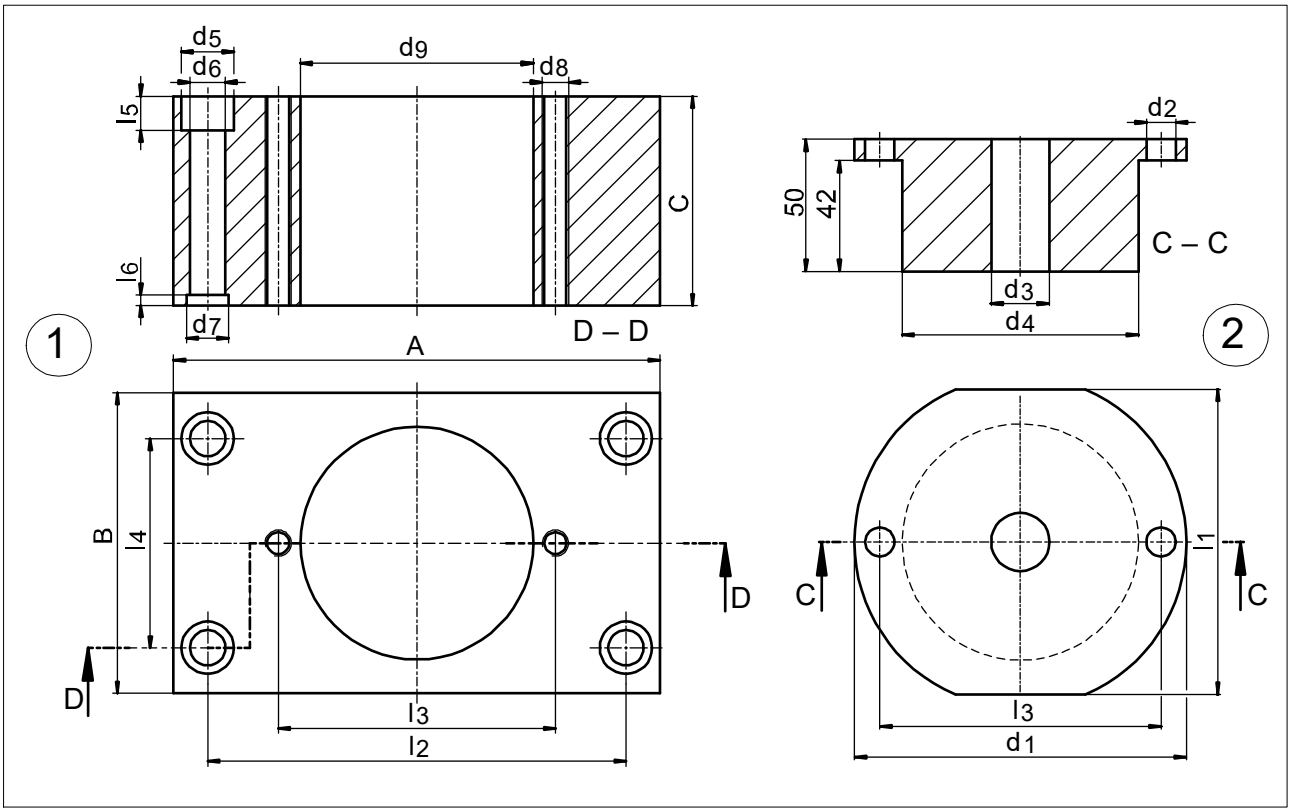

**Tab.: Cylinder piston assembly device – dimensions in mm**

| JGP | a | b | c | d | e | l1 | l2 | d1 | d2 | d3 | t1 | t2 | t3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 38 | 24 | 20 | 22.5 | 14.5 | 32 | 18 | 5 | 3.5 | 6.5 | 14 | 2 | 4 |
| 50 | 42 | 30 | 25 | 25 | 19 | 35 | 22 | 6 | 3.5 | 8 | 18 | 2.5 | 6 |
| 64 | 52 | 36 | 27 | 31 | 24 | 42 | 27 | 8 | 5.5 | 10 | 23 | 2.5 | 7 |
| 80 | 63 | 42 | 32 | 42 | 30 | 52 | 32 | 8 | 5.5 | 10 | 25 | 2.5 | 6 |
| 100 | 81 | 50 | 38 | 54 | 36 | 66 | 38 | 10 | 6.6 | 11 | 30 | 3.5 | 7 |

| JGP | Screw (DIN EN ISO 4762) Item 101 |
|---|---|
| 40 | M3 x 20 |
| 50 | M3 x 25 |
| 64 | M5 x 30 |
| 80 | M5 x 35 |
| 100 | M6 x 40 |

*Tab.: Screw for assembly device*

### 7.4.2.3.2 Sizes 160–300




*Assembly device for maintaining the gripping force*

**Tab.: Cylinder piston assembly device – dimensions in mm**

| Type | A | B | C | d1 | d2 | d3 | d4 | d5 | d6 | d7 |
|---|---|---|---|---|---|---|---|---|---|---|
| JGP 160 | 125 | 72 | 50 | 90.5 | 9 | 18 | 57.5 | 15 | 9 | 12 |
| JGP 200 | 154 | 100 | 65 | 110 | 9 | 20 | 78 | 18 | 11 | 14 |
| JGP 240 | 186 | 115 | 80 | 125 | 11 | 22 | 88 | 20 | 13.5 | 16 |
| JGP 300 | 210 | 140 | 95 | 149 | 11 | 30 | 114.3 | 26 | 17.5 | 22 |

**Tab.: Cylinder piston assembly device – dimensions in mm**

| Size | d8 | d9 | l1 | l2 | l3 | l4 | l5 | l6 |
|---|---|---|---|---|---|---|---|---|
| JGP 160 | M8 | 58.5 | 72 | 100 | 74.5 | 56 | 9 | 3 |
| JGP 200 | M8 | 79 | 100 | 130 | 95 | 70 | 11 | 4 |
| JGP 240 | M10 | 89 | 115 | 160 | 106 | 80 | 13 | 4 |
| JGP 300 | M10 | 115.3 | 139 | 180 | 130 | 96 | 17 | 6 |

| Item | JGP | | | |
|---|---|---|---|---|
| | 160 | 200 | 240 | 300 |
| 1 | M8 x 60 | M10 x 80 | M12 x 90 | M16 x 110 |
| 2 | M8 x 65 | M8 x 80 | M10 x 95 | M10 x 110 |

*Tab.: Screws for cylinder piston assembly device*

#### 7.4.2.4 Tightening torque for screws

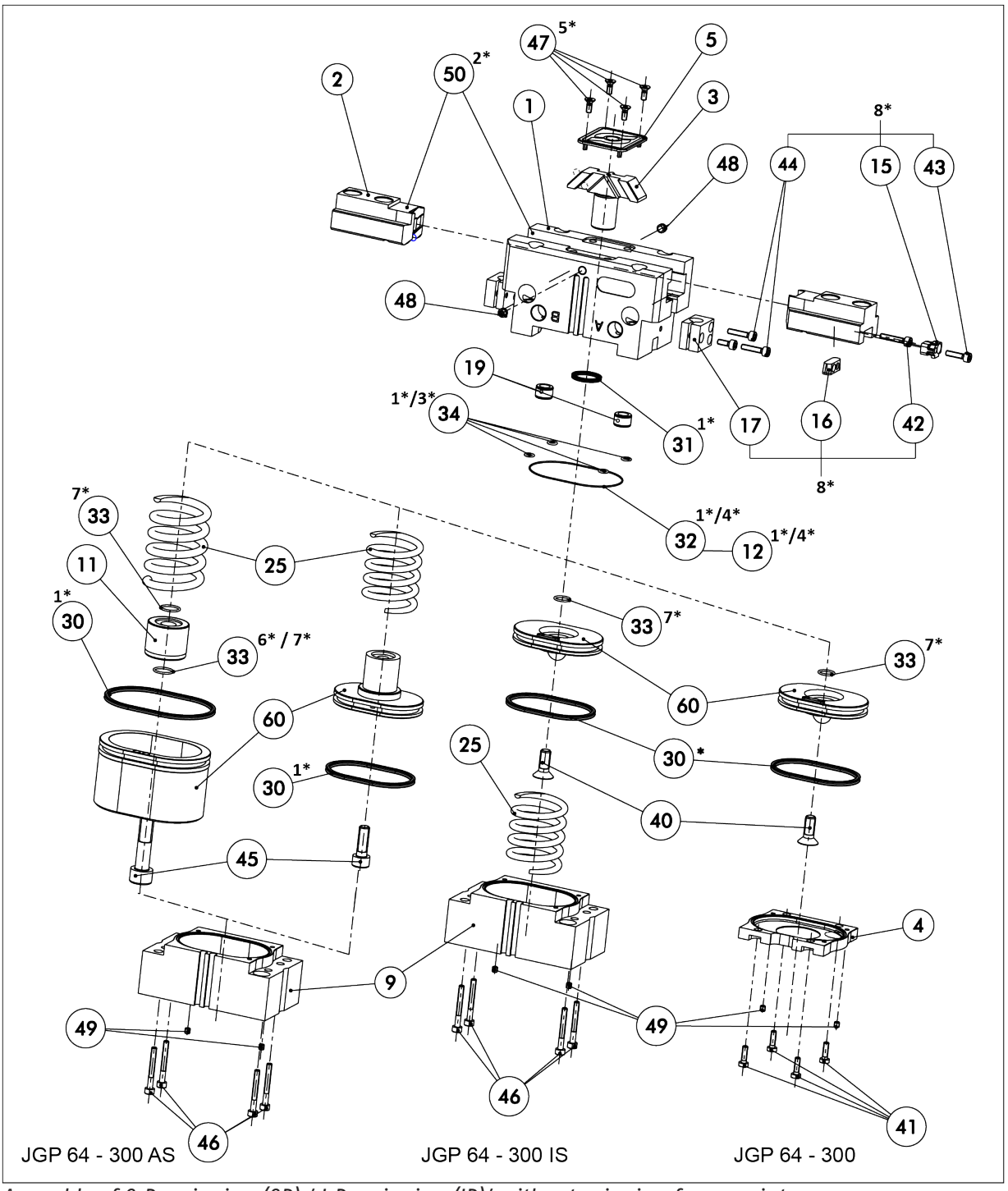
Position of the item numbers, ▶ 7.5 [🗋 53]

**Tab.: Screw tightening torques**

| Item | JGP 40 | JGP 50 | JGP 64 | JGP 80 | JGP 100 | JGP 125 | JGP 160 | JGP 200 | JGP240 | JGP 300 |
|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 2.2 Nm | 2.2 Nm | 5.9 Nm | 10 Nm | 10 Nm | 24 Nm | 47 Nm | 75 Nm | 75 Nm | 120 Nm |
| 41 | 0.73 Nm | 1.3 Nm | 1.3 Nm | 3 Nm | 3 Nm | 6 Nm | 6 Nm | 6 Nm | 6 Nm | 6 Nm |
| 45 | 2.2 Nm | 2.2 Nm | 10 Nm | 17 Nm | 17 Nm | 41 Nm | 83 Nm | 116 Nm | 116 Nm | 150 Nm |
| 46 | 0.73 Nm | 1.3 Nm | 1.3 Nm | 3 Nm | 2.9 Nm | 6 Nm | 6 Nm | 25 Nm | 25 Nm | 25 Nm |

## 7.5 Assembly drawing

The following figure is an example image.
It serves for illustration and assignment of the spare parts.
Variations are possible depending on size and variant.




*Assembly of O.D. gripping (OD) / I.D. gripping (ID)/ without gripping force maintenance*

1* Wearing part, replace during maintenance.
Included in the seal kit. Seal kit can only be ordered completely.

2* Positions are adapted to each other and can not be replaced by the customer.

3* for sizes 100 – 300

4* Item. 12 for sizes 40 – 80
Item. 32 for sizes 100 – 300

5* from size 200

6* for size 125

7* for size 160

8* for sizes 64 – 240

# 8 Translation of the original declaration of incorporation

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

| | |
|---|---|
| Manufacturer/ Distributor | SCHUNK SE & Co. KG<br>Toolholding and Workholding \| Gripping Technology \| Automation Technology<br>Bahnhofstr. 106 – 134<br>D–74348 Lauffen/Neckar |

We hereby declare that the partly completed machine described below

| | |
|---|---|
| Product designation: | 2–Finger Parallel Gripper / JGP /pneumatic |
| ID number | 0308600 ... 0308802 |

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, March 2024

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

# 9 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: | 2-Finger Parallel Gripper / JGP / pneumatic |
| ID number | 0308600 ... 0308802 |

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, March 2024

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

# 10 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, March 2024

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

**SCHUNK SE & Co. KG**
**Toolholding and Workholding | Gripping Technology | Automation Technology**

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