



Assembly and Operating Manual

PGN-plus

2-Finger Parallel Gripper

Translation of the original manual

Hand in hand for tomorrow

Imprint

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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

Customer Management

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

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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.

NOTICE

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 *
- For ATEX versions: Supplementary sheet "Installation and operating instructions - EX" *

The documents labeled with an asterisk (*) can be downloaded from [schunk.com/downloads](https://www.schunk.com/downloads).

1.1.4 Sizes

This operating manual applies to the following sizes:

- PGN-plus 40
- PGN-plus 50
- PGN-plus 64
- PGN-plus 80
- PGN-plus 100
- PGN-plus 125
- PGN-plus 160
- PGN-plus 200
- PGN-plus 240
- PGN-plus 300
- PGN-plus 380

1.1.5 Variants

This operating manual applies to the following variations:

- PGN-plus stroke 1
- PGN-plus stroke 2
- PGN-plus with gripping force maintenance "O.D. gripping" (AS)
- PGN-plus with gripping force maintenance "I.D. gripping" (IS)
- PGN-plus dust-tight (SD)
- PGN-plus high-temperature (V/HT)
- PGN-plus force intensification (KVZ)
- PGN-plus anti-corrosion (K)
- PGN-plus precision (P)
- PGN-plus ATEX (EX)

1.2 Warranty

If the product is used as intended, the warranty is valid for 36 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 PGN-plus in the version ordered
- Safety information (product-specific instructions available online)

Accessory pack

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

ID.-No. of the accessory pack

Size	ID number
40	5518410
40 V/HT	395518410
50	5512043
50 V/HT	395512043
64	5512044
64 V/HT	395512044
80	5512045
80 V/HT	395512045
100	5512046
100 V/HT	395512046
125	5512047
125 V/HT	395512047
160	5512048
160 V/HT	395512048
200	5512049
200 V/HT	395512049
240	5513858

Size	ID number
240 V/HT	395513858
300	5512050
300 V/HT	395512050
380	5515137
380 V/HT	395515137

Tab.: ID.-No. of the accessory pack

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.

ID.-No. of the seal kit

Size	ID number
40	5516793
40 V/HT	395516793
40 SD	5518709
50	0370891
50 V/HT	0370940
50 SD	5518710
50 CPC	5515863
64	0370892
64 V/HT	0370908
64 SD	5518711
64 CPC	5515864
80	0370893
80 V/HT	0370941
80 SD	5518712
80 CPC	5515865
100	0370894
100 V/HT	0370942
100 SD	5518713
100 CPC	5515866
125	0370895
125 V/HT	0370926
125 SD	5518714
125 CPC	5515867
160	0370896
160 V/HT	0370922
160 SD	5518715
160 CPC	5515868
200	0370897
200 V/HT	0370939
200 SD	5518716
200 CPC	5520936

Size	ID number
240	0370987
240 V/HT	0370988
240 SD	5518717
300	0370898
300 V/HT	0370943
300 SD	5518718
380	0370989
380 V/HT	0370990
380 SD	5518719

Tab.: ID.-No. of the accessory pack

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 [19].
- 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 [📄 19].

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.

2.13 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 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 from sharp edges and corners!

Sharp edges and corners can cause cuts.

- Use suitable protective equipment.

3 Technical data

Connection data

Pressure medium	Compressed air, compressed air quality according to ISO 8573-1:2010 [7:4:4]
Nominal operating pressure [bar]	6
Minimum pressure [bar] without maintenance of gripping force	2.5
Minimum pressure [bar] with maintenance of gripping force	4
Maximum pressure [bar] without maintenance of gripping force	8
Maximum pressure [bar] with maintenance of gripping force	6.5
Maximum pressure [bar] with force intensified cylinder	6
Pressure range for air purge [bar]	0.5 – 1

Ambient conditions and operating conditions

Designation

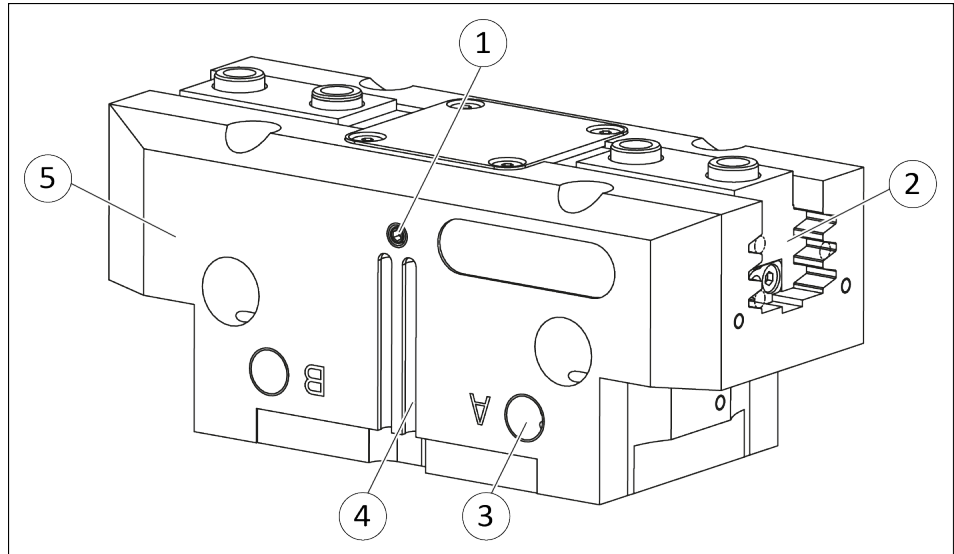
Ambient temperature [°C] min.	+5
Ambient temperature [°C] max.	+90
Ambient temperature [°C] max. (variant V/HT)	+130
IP rating*	40
IP rating (variant SD)	64
Noise emission [dB(A)]	≤70

* 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.

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

4 Design and description

4.1 Design



2-Finger Parallel Gripper

- | | |
|---|--------------------------------|
| 1 | Air purge connection |
| 2 | Base jaw |
| 3 | Compressed air main connection |
| 4 | Groove for magnetic switch |
| 5 | Housing |

4.2 Description

Universal 2-finger parallel gripper with large gripping force and high maximum moments thanks to multi-tooth 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.

NOTICE

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.

1. Check the evenness of the mounting surface, ▶ 5.2.1 [📄 23].
2. Connect product via the hose-free direct connection, ▶ 5.2.2 [📄 27].
3. OR: Connect supply lines to the main air connections A and B, ▶ 5.2.2 [📄 27].
 - ⇒ Unscrew locking screws.
 - ⇒ Screw air connections.
 - ⇒ OR: Screw throttle valve in order to be able to carry out sufficient throttling and/or dampening.

4. Screw the product to the machine/system, ▶ 5.2.1 [📄 23].
 - ⇒ Use suitable connecting elements (adapter plates) if necessary.
 - ⇒ Observe permissible depth of engagement and if required strength class.
5. Connect air purge connection if necessary.
6. Connect the sensor, see sensor assembly and operating manual.
7. Installing the sensor, ▶ 5.3 [📄 29].

Dust-tight (SD)

NOTE

In order to achieve perfect functioning of the gripper, the set-screw of the air purge connection must be removed and replaced with a pneumatic connection when using the dust-tight variant (SD). SCHUNK recommends using the air purge connection within the scope of the technical data, ▶ 3 [📄 19].

5.2 Connections

5.2.1 Mechanical connection



⚠ DANGER

Danger of explosion in potentially explosive areas!

- Observe supplementary sheet for products with explosion-resistant versions "PGN-plus -...-EX".

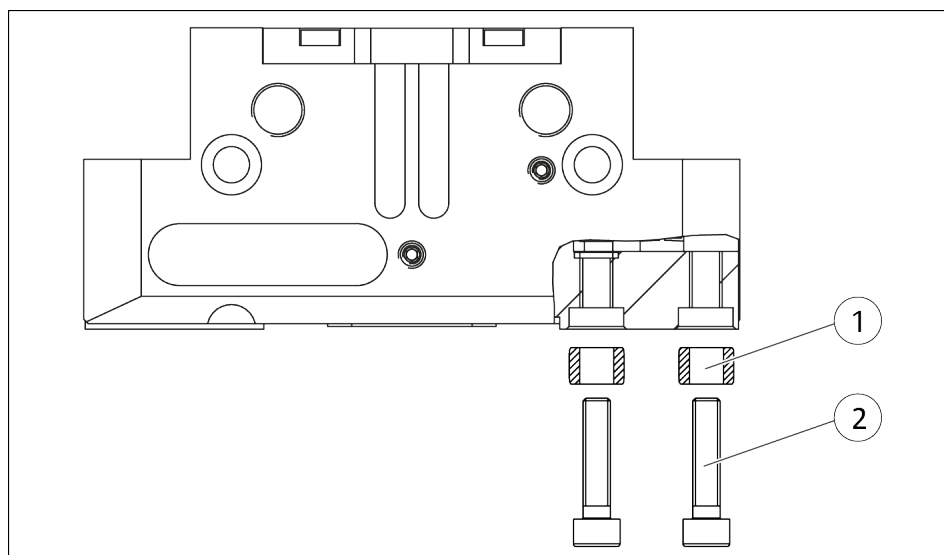
Evenness of the mounting surface

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

PGN-plus	① Centering sleeve	② Screws *
40	Ø4	M2.5/6.1
50	Ø5	M3/8.5
64	Ø6	M4/10
80	Ø8	M5/10
100	Ø10	M6/14
125	Ø10	M6/13
160	Ø14	M10/17
200	Ø16	M12/17
240	Ø16	M12/21
300	Ø22	M16/28
380	Ø28	M20/40

* Max. depth of engagement from locating surface [mm]

Dust-tight (SD)

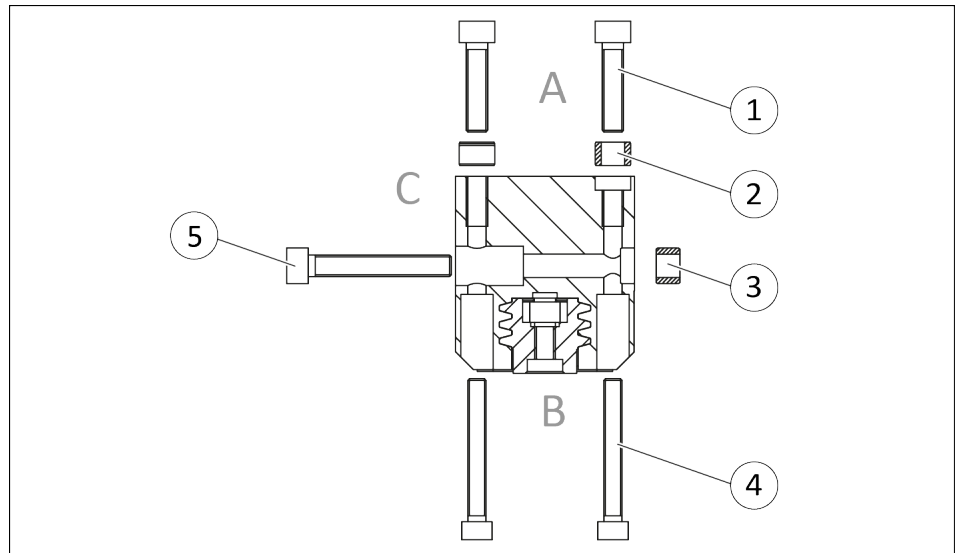
NOTE

On delivery of the dust-tight version (SD) the intermediate jaws are screwed onto the base jaws. The intermediate jaws can become off while removing the screws.

Observe during assembly, that the intermediate jaws are between the base jaws and the gripper finger.

Connections at the housing

The product can be mounted from three sides.



Connections at the housing

Anschluss Seite A

PGN-plus	① Screws *	② Centering sleeve
40	M3/6	Ø5
40 AS	M3/9	Ø5
40 IS	M3/9	Ø5
50	M4/11	Ø6
50 AS	M4/16	Ø6
50 IS	M4/16	Ø6
64	M5/12	Ø8
64 AS	M5/18	Ø8
64 IS	M5/18	Ø8
80	M5/15	Ø8
80 AS	M5/18	Ø8
80 IS	M5/18	Ø8
100	M6/14	Ø10
100 AS	M6/16	Ø10
100 IS	M6/16	Ø10
125	M8/20	Ø12

PGN-plus	① Screws *	② Centering sleeve
125 AS	M8/20	Ø12
125 IS	M8/20	Ø12
160	M8/20	Ø12
160 AS	M8/20	Ø12
160 IS	M8/20	Ø12
200	M10/20	Ø14
200 AS	M10/20	Ø14
200 IS	M10/20	Ø14
240	M12/25.5	Ø16
240 AS	M12/23	Ø16
240 IS	M12/23	Ø16
300	M16/31	Ø22
300 O.D.	M16/31	Ø22
300 I.D.	M16/31	Ø22
380	M20/38	Ø28
380 O.D.	M20/31	Ø28
380 I.D.	M20/31	Ø28

* Max. depth of engagement from locating surface [mm]

Connection side B

PGN-plus	④ Screws *	② Centering sleeve
40	M2.5	Ø5
50	M3	Ø6
64	M4	Ø8
80	M4	Ø8
100	M5	Ø10
125	M6	Ø12
160	M6	Ø12
200	M8	Ø14
240	M10	Ø16
300	M12	Ø22
380	M16	Ø28

* Mounting screw according to standard DIN EN ISO 4762

Connection side C

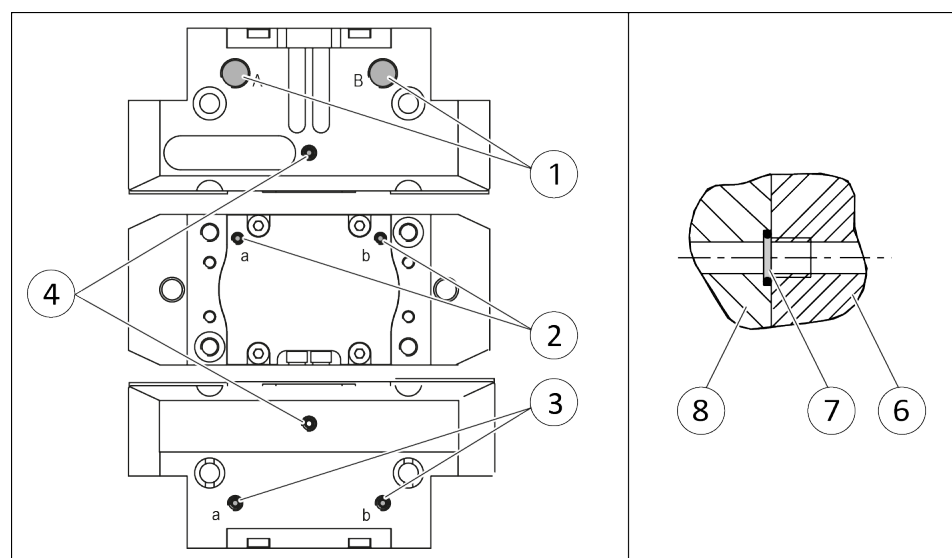
PGN-plus	⑤ Screws *	③ Centering sleeve
40	M2.5	Ø5
50	M3	Ø6
64	M4	Ø8
80	M5	Ø8
100	M6	Ø10
125	M8	Ø12
160	M8	Ø12
200	M10	Ø14
240	M12	Ø16
300	M16	Ø22
380	M20	Ø28

* Mounting screw according to standard DIN EN ISO 4762, max. strength class 8.8

5.2.2 Pneumatic connection

NOTE

- Observe the requirements for the compressed air supply, ▶ 3 [19].
- 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.



Air connections

1 Main connections (Hose connection)
(A = open, B = close)

2 Hose-free direct connection at the base
(a = open, b = close)

3 Hose-free direct connection

4 Air purge connection

Hose-free direct connection

6 Product

7 O-ring

8 Attachment

- Open only the air connections that are needed.
- Close unused main air connections using the screw plugs from the enclosed pack.
- For a hose-free direction connection, use the O-rings from the enclosed pack.

Size	Main air connections *	Air purge connection *
40	M3/4	M3/4
50	M5/6	M5/6
64	M5/6	M5/6
80	M5/6	M5/6
100	G1/8 / 7	M5/6
125	G1/8 / 7	M5/6
160	G1/8 / 7	M5/6
200	G1/8 / 7	M5/6
240	G1/8 / 8	M5/6
300	G1/4 / 12	M5/6
380	G1/4 / 12	M5/8

* Max. depth of engagement from locating surface [mm]

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.

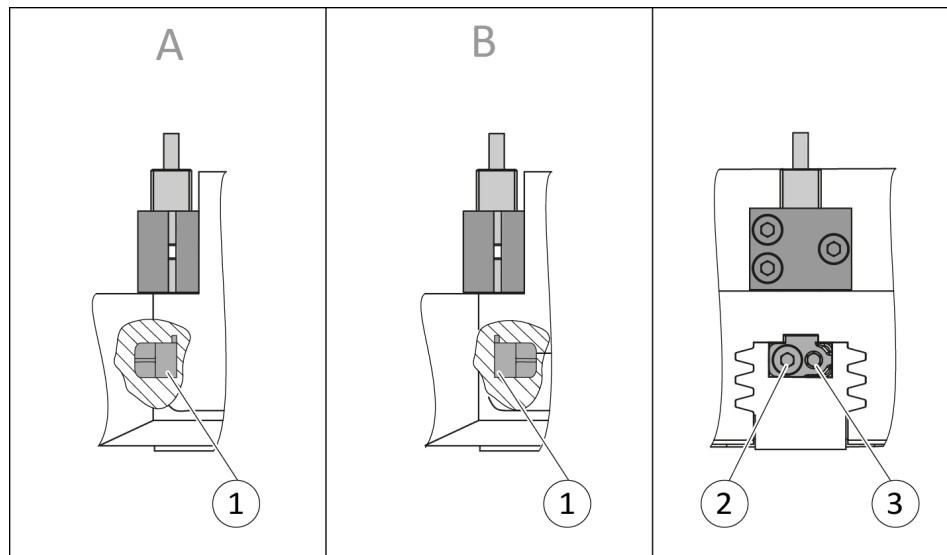
- For the exact type designations of suitable sensors, please see catalog datasheet and ▶ 5.3.1 [📄 29].
- For technical data for the suitable sensors, see assembly and operating manual and catalog datasheet.
 - The assembly and operating manual and catalog datasheet are included in the scope of delivery 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

PGN-plus	IN 80	MMS 22	MMS 22-PI2	MMS-P 22	MMS 22-PI1	MMS 22-IOL	MMS 22-A	APS-Z80	RMS 22	RMS 80	FPS-F5 with FPS-S M8	FPS-F5 with MMS 22-A	APS-M1	RSS R1/T2 with RMS 22	RSS R1/T2 with RMS 80
40	⊘	✓	✓	✓	✓	✓	✓	⊘	⊘	⊘	⊘	✓	⊘	⊘	⊘
50	⊘	✓	⊘	✓	✓	✓	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘
64	✓	✓	✓	✓	✓	✓	✓	✓	⊘	✓	✓	✓	✓	⊘	✓
80	✓	✓	✓	✓	✓	✓	✓	✓	⊘	✓	✓	✓	✓	⊘	✓
100	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
125	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
160	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
200	✓	✓	⊘	⊘	✓	⊘	⊘	✓	✓	✓	✓	⊘	✓	✓	✓
240	✓	✓	⊘	⊘	✓	⊘	⊘	✓	✓	✓	✓	⊘	✓	✓	✓
300	✓	✓	⊘	⊘	✓	⊘	⊘	✓	✓	✓	✓	⊘	✓	✓	✓
380	✓	✓	⊘	⊘	✓	⊘	⊘	✓	✓	✓	✓*	⊘	✓	✓	✓

* Only for the "Hub 2" variant.

5.3.2 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).

5.3.3 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:

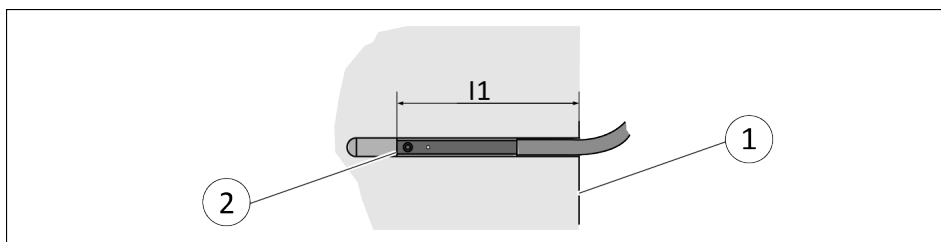
For products with X mm nominal stroke per jaw	Min. query range per jaw/ min. queried stroke difference per jaw
$X \leq 5$ mm	30 % of the nominal stroke per jaw
$X > 5$ mm to $X \leq 10$ mm	20 % of the nominal stroke per jaw
$X > 10$ mm	10 % of the nominal stroke per jaw

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

Example: Product with 7 mm nominal stroke per jaw

$$7 \text{ mm} * 20\% = 1.4 \text{ mm}$$

5.3.4 Setting dimensions for magnetic switches



* Setting dimension l_1 , from product bottom edge (1) to front sensor (2)

The setting dimension applies for the following sensors:

Size	Setting dimension l_1^* [mm]		
	MMS 22-PI1	MMS 22-PI2	MMS-P 22
40	14.9	14.9	14.9
40 AS	18.9	18.9	14.9
40 IS	23.9	23.9	23.9
40 CPC	27.6	27.6	27.6
40 AS-KVZ	36.6	36.6	36.6
40 IS-KVZ	36.6	36.6	36.6
50	15.4	-	-
50 AS	20.8	-	-
50 IS	31.4	-	-
50 CPC	30.7	-	-
50 AS-KVZ	46.7	-	-
50 IS-KVZ	46.7	-	-
64	22.4	22.4	22.4
64 AS	19.2	19.2	19.2
64 IS	40.4	40.4	40.4
64 CPC	41.4	41.4	41.4
64 AS-KVZ	59.4	59.4	59.4
64 IS-KVZ	59.4	59.4	59.4
80	26	26	26
80 AS	22.4	22.4	22.4
80 IS	44	44	44
80 CPC	48.5	48.5	48.5
80 AS-KVZ	66.5	66.5	66.5
80 IS-KVZ	66.5	66.5	66.5
100	27.7	27.7	27.7
100 AS	19.9	19.9	19.9
100 IS	53.7	53.7	53.7

Size	Setting dimension l1* [mm]		
	MMS 22-PI1	MMS 22-PI2	MMS-P 22
100 CPC	54.2	54.2	54.2
100 AS-KVZ	80.2	80.2	80.2
100 IS-KVZ	80.2	80.2	80.2
125	23	23	23
125 AS	59.6	59.6	59.6
125 IS	52.9	52.9	52.9
125 CPC	55.5	55.5	55.5
125 AS-KVZ	85.4	85.4	85.4
125 IS-KVZ	85.4	85.4	85.4
160	31.4	31.4	31.4
160 AS	71.9	71.9	71.9
160 IS	71.4	71.4	71.4
160 CPC	68.9	68.9	68.9
160 AS-KVZ	108.9	108.9	108.9
160 IS-KVZ	108.9	108.9	108.9
200	-	-	-
240	-	-	-
300	-	-	-
380	-	-	-

* Dimension l1 Bottom edge of the product to front edge of the sensor

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.

5.3.5 Mount the inductive proximity switch IN 80

NOTICE

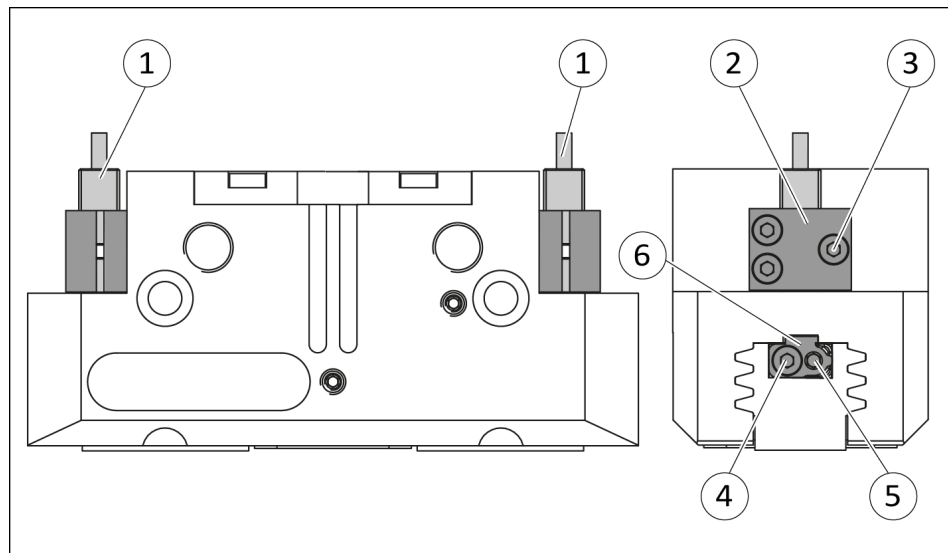
Blockade of the gripper after setting or replacing of the switching cam!

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.

Variant Dust-tight:

Before attaching the sensor, remove the sealing bolts from the bracket. Before adjusting the control cam, unscrew the set-screw from the side cover.



The switching point of the position "Gripper open" and "Gripper closed" have already been set by SCHUNK. If these positions are to be used, carry out the following:

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. Slide the sensor 2 (1) to the stop into the bracket (2).
4. Tighten the screw (3) on the bracket (2).
Tightening torque: 0.2 Nm
5. Bring product into the "gripper open" or "gripper closed" position and test the function.

If other switching points are to be used, do the following:

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. **NOTICE! 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. **NOTICE! 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.

Variant Dust-tight:

Screw in set-screw into the side cover.

NOTE

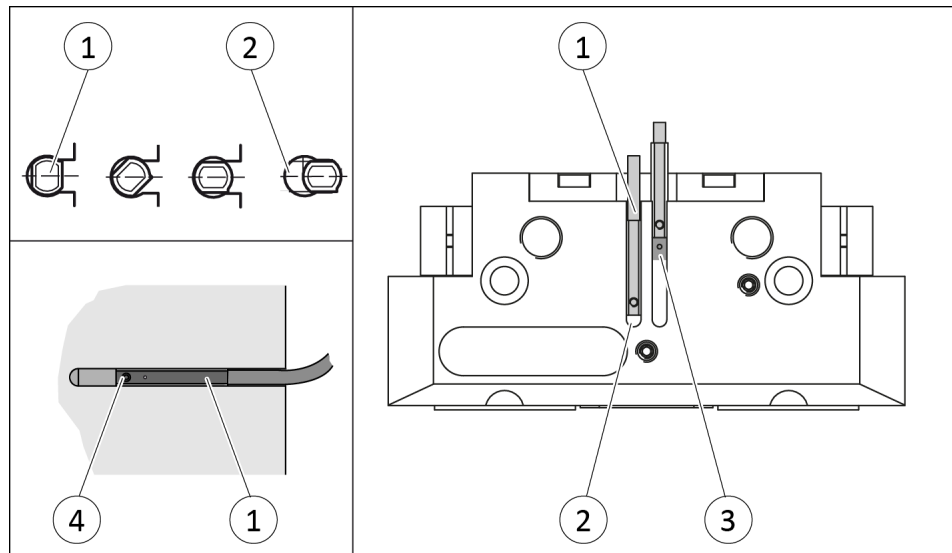
If the switching position cannot be queried, it may be that the alignment of the control cam has to be changed, ► 5.3.2 [□ 30].

5.3.6 Mount the magnetic switch MMS 22

NOTICE

Risk of damage to the sensor during assembly!

- Observe the maximal tightening torque.



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)"

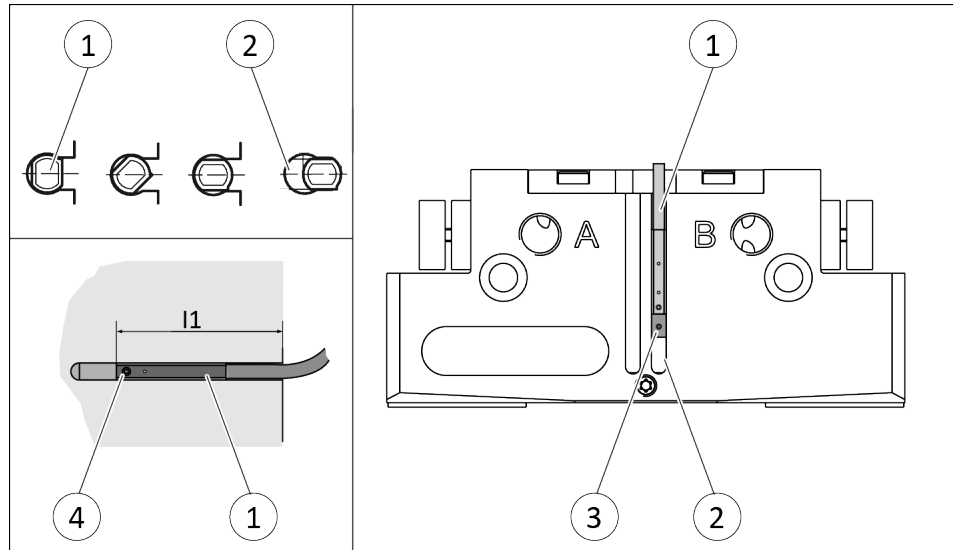
1. Bring product in the position in which it is to be set.
2. If necessary remove T-nut (3).
3. Turn the sensor 2 (1) into the groove (2).
OR: Slide sensor 2 (1) into the groove (2) in the direction of the housing middle (3), until the sensor 2 (1) switches.
4. Secure the sensor 2 (1) using the set-screw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

5.3.7 Mount the programmable magnetic switch MMS 22-PI2

NOTICE

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 l_1 into the groove (2), ► 5.3.4 [31].

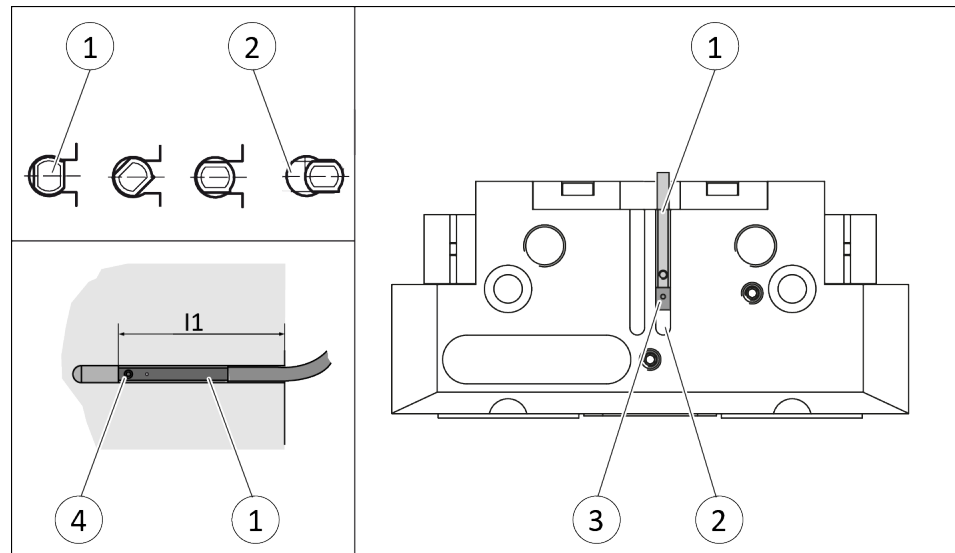
1. Turn the sensor (1) into the groove (2).
OR: Slide the sensor (1) into the groove (2) until the sensor (1) stops at the T-nut (3).
2. Secure the sensor (1) using the set-screw (4).
Tightening torque: 10 Ncm
3. Adjust sensor (1), see sensor assembly and operating manual.

5.3.8 Mount the programmable magnetic switch MMS 22-P 22

NOTICE

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 l_1 into the groove (2), ► 5.3.4 [31].

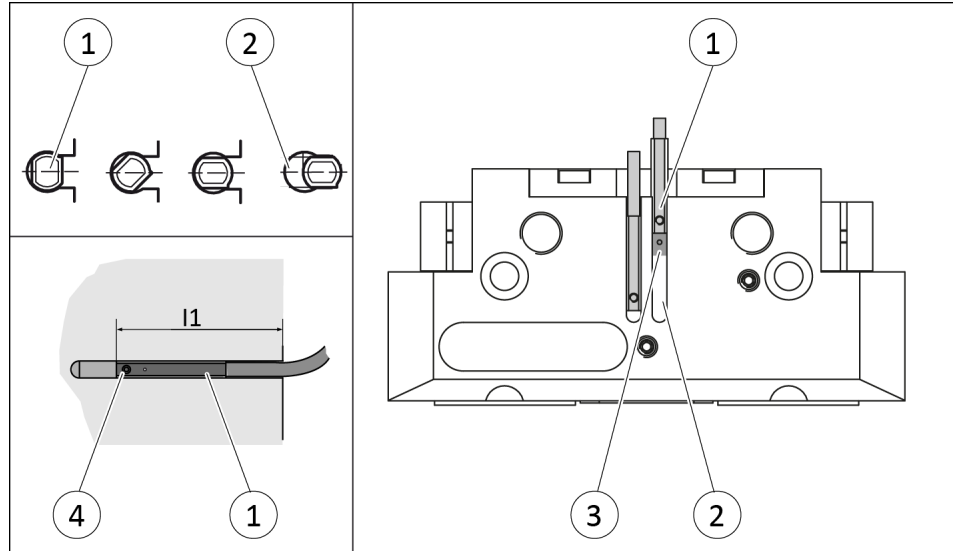
1. Turn the sensor (1) into the groove (2).
OR: Slide the sensor (1) into the groove (2) until the sensor (1) stops at the T-nut (3).
2. Secure the sensor (1) using the set-screw (4).
Tightening torque: 10 Ncm
3. Adjust sensor (1), see sensor assembly and operating manual.

5.3.9 Mount the programmable magnetic switch MMS 22-PI1

NOTICE

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 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

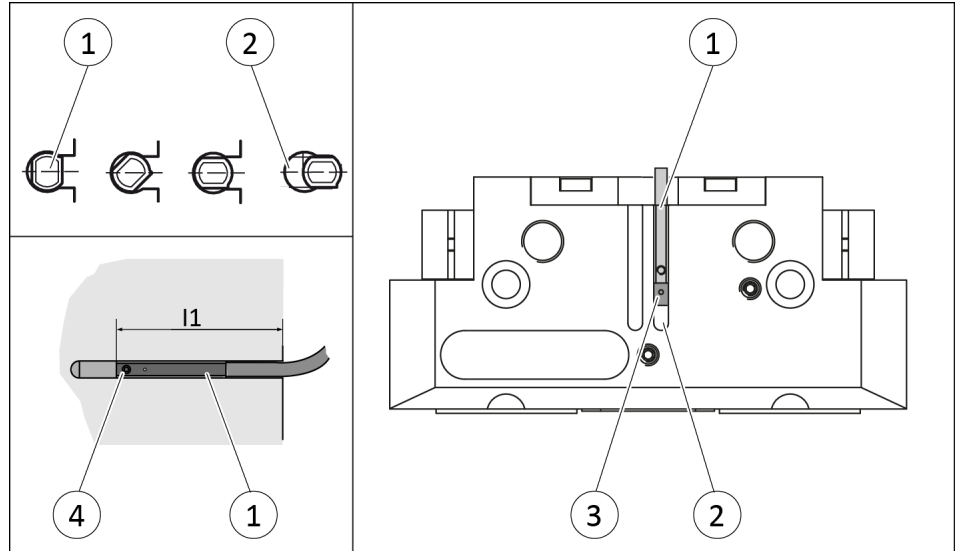
If there is no T-nut available, slide the sensor according to dimension I1 into the groove (2), ► 5.3.4 [□ 31].

5.3.10 Mounting the magnetic switch MMS 22-I0L

NOTICE

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 l_1 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	l_1^* [mm]
40	15.4
40 AS	20
40 IS	20
40 CPC	28.2
40 AS-KVZ	37.2
40 IS-KVZ	37.2
50	At stop
50 AS	23
50 IS	At stop
50 CPC	At stop
50 AS-KVZ	At stop

Size	l1* [mm]
50 IS-KVZ	At stop
64	22.4
64 AS	19.2
64 IS	39.5
64 CPC	41.4
64 AS-KVZ	59.4
64 IS-KVZ	59.4
80	26.5
80 AS	22
80 IS	44.5
80 CPC	49
80 AS-KVZ	67
80 IS-KVZ	67
100	28.7
100 AS	22
100 IS	55.6
100 CPC	55.2
100 AS-KVZ	81.2
100 IS-KVZ	81.2
125	23
125 AS	59.6
125 IS	56.9
125 CPC	55.5
125 AS-KVZ	85.5
125 IS-KVZ	85.5
160	35.5
160 AS	76.0
160 IS	75.5
160 CPC	71.9
160 AS-KVZ	111.9
160 IS-KVZ	111.9

Tab.: Setting dimensions

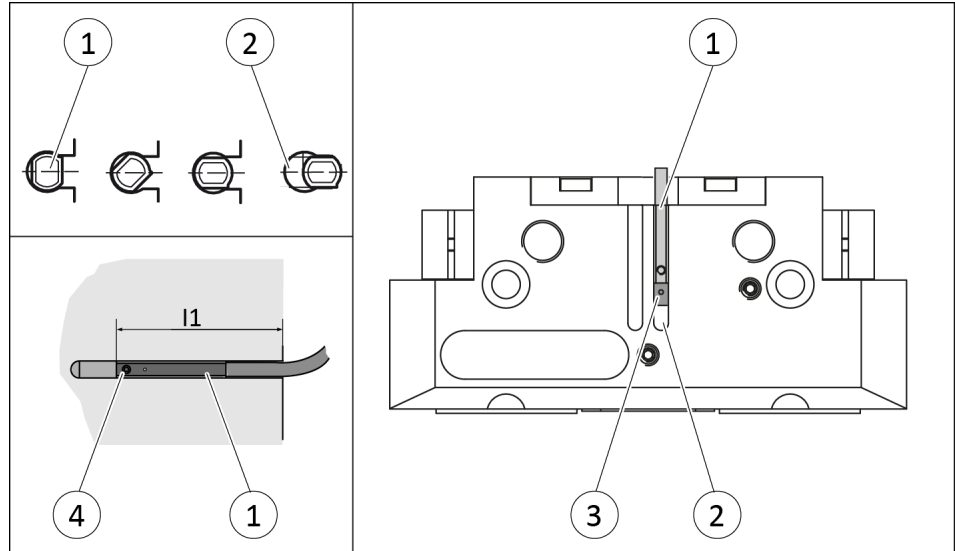
* Dimension l1 Bottom edge of the product to front edge of the sensor

5.3.11 Mount the analog magnetic switch MMS 22-A

NOTICE

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 l_1 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	l_1^* [mm]
40	13
40 AS	22.4
40 IS	21.7
40 CPC	25.8
40 AS-KVZ	34.8
40 IS-KVZ	34.8
64	22.4
64 AS	19.2
64 IS	39.5
64 CPC	41.4
64 AS-KVZ	59.4

Size	l1* [mm]
64 IS-KVZ	59.4
80	26.5
80 AS	22
80 IS	44.5
80 CPC	49.0
80 AS-KVZ	67.0
80 IS-KVZ	67.0
100	28.7
100 AS	22
100 IS	55.6
100 CPC	55.2
100 AS-KVZ	81.2
100 IS-KVZ	81.2
125	23
125 AS	59.6
125 IS	56.9
125 CPC	55.5
125 AS-KVZ	85.5
125 IS-KVZ	85.5
160	34.4
160 AS	71.7
160 IS	71.7
160 CPC	71.9
160 AS-KVZ	111.9
160 IS-KVZ	111.9

Tab.: Setting dimensions

* Dimension l1 Bottom edge of the product to front edge of the sensor

5.3.12 Mount the analog position sensor APS-Z80

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

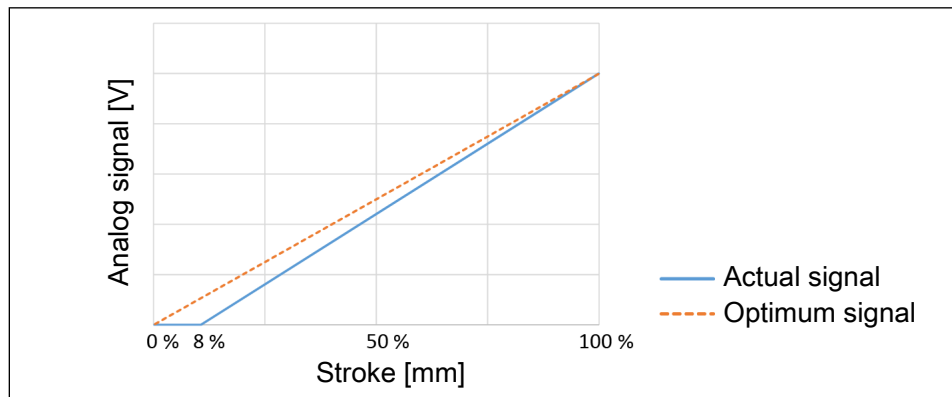
NOTICE

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

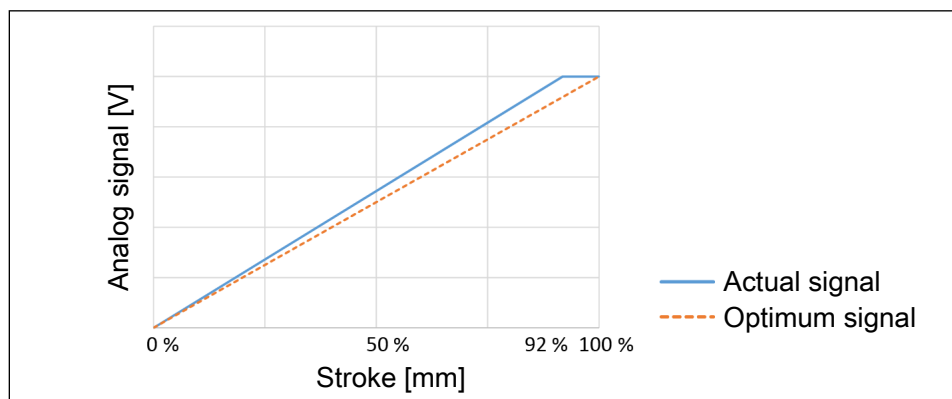
The switching cam can be tilt in the guide, if it was not fixed exactly in the base jaw.

- 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.



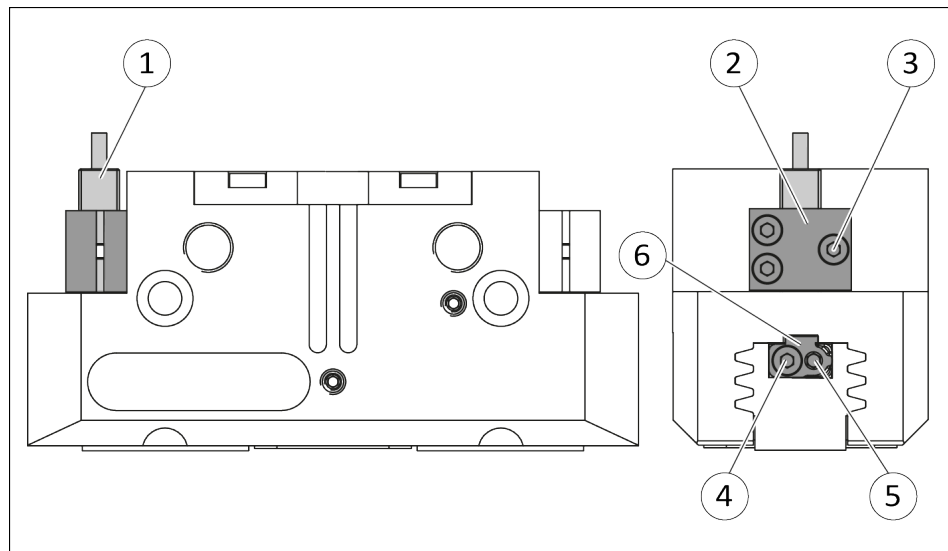
Analog signal on O.D. gripping



Analog signal on I.D. gripping

Variant Dust-tight:

Before attaching the sensor, remove the sealing bolts from the bracket. Before adjusting the control cam, unscrew the set-screw from the side cover.



1. Move product to the "grripper 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. **NOTICE! 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.

Variant Dust-tight:

Screw in set-screw into the side cover.

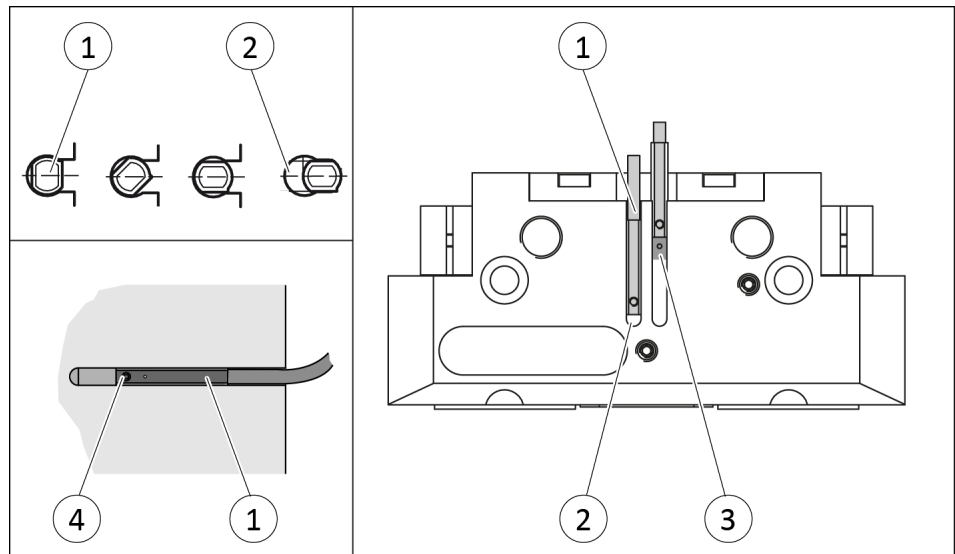
5.3.13 Mount the reed switch RMS 22

NOTICE

Material damage due to an incorrect tightening torque!

If the threaded pin is tightened with an incorrect tightening torque, the product may be damaged.

- Observe a maximum tightening torque of 10 Ncm for the set-screws.



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.

5.3.14 Mount the reed switch RMS 80

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

NOTICE

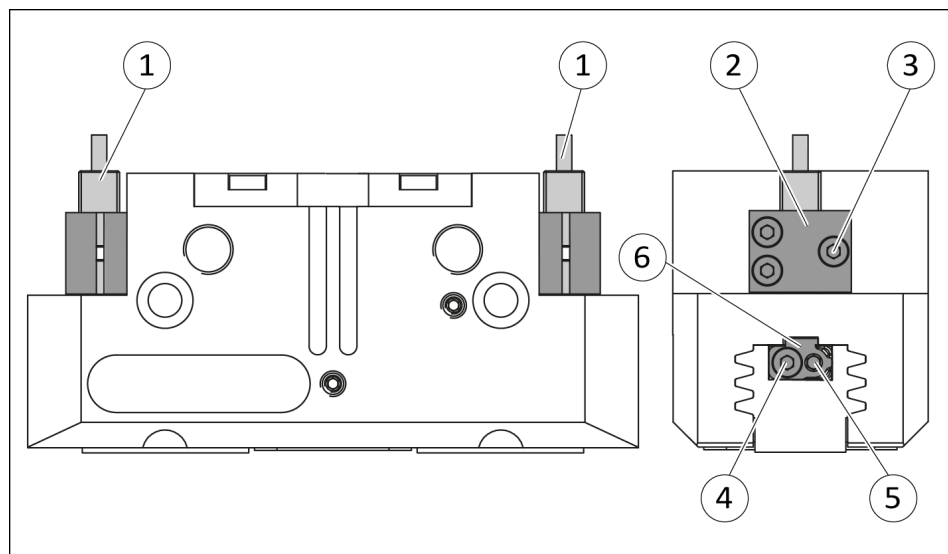
Blockade of the gripper after setting or replacing of the switching cam!

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.

Variant Dust-tight:

Before attaching the sensor, remove the sealing bolts from the bracket. Before adjusting the control cam, unscrew the set-screw from the side cover.



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

1. Loosen screw (4) and remove the control cam (6) for inductive sensing from the base jaw.
2. Push the control cam (6) from the mounting kit into the base jaw.
 - ⇒ Make sure that the side with the magnet is facing inwards.
3. Tighten screw (4) slightly
4. Slide the sensor 1 (1) into the bracket (2) until it stops.
5. Tighten the screw (3) on the bracket (2).
Tightening torque: 0.2 Nm
6. Open gripper or grip part.
7. Unfasten the screw (4).
8. 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.
9. Tighten screw (4) while pressing the control cam in the direction of the gripper fingers. **NOTICE! The control cam may tilt in the guide if it has not been tightened properly.**
 - ⇒ Switching point is set.
10. Bring product into the "Gripper open" or "Part gripped" position and test the function.

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

1. Loosen screw (4) and remove the control cam (6) for inductive sensing from the base jaw.
2. Push the control cam (6) from the mounting kit into the base jaw.
 - ⇒ Make sure that the side with the magnet is facing outwards.
3. Tighten screw (4) slightly
4. Slide the sensor 1 (1) into the bracket (2) until it stops.
5. Tighten the screw (3) on the bracket (2).
Tightening torque: 0.2 Nm
6. Close gripper or grip part.
7. Unfasten the screw (4).
8. 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 1 (1) begins to switch.
9. Tighten screw (4) while pressing the control cam in the direction of the gripper fingers. **NOTICE! The control cam may tilt in the guide if it has not been tightened properly.**
 - ⇒ Switching point is set.
10. Bring product into the "Gripper closed" or "Part gripped" position and test the function.

Variant Dust-tight:

Screw in set-screw into the side cover.

NOTE

If the switching position cannot be queried, it may be that the alignment of the control cam has to be changed, ► 5.3.2 [30].

5.3.15 Mount the flexible position sensor FPS

The flexible position sensor FPS consists of an evaluation unit and one of the following sensors:

- MMS 22-A-5V
- FPS-S M8

NOTICE

Risk of damage to the sensor during assembly!

- Observe the maximal tightening torque.

5.3.15.1 Mounting the MMS 22-A-5V

Note: In order to mount the sensor MMS 22-A-5V, no additional attachment kit is required.

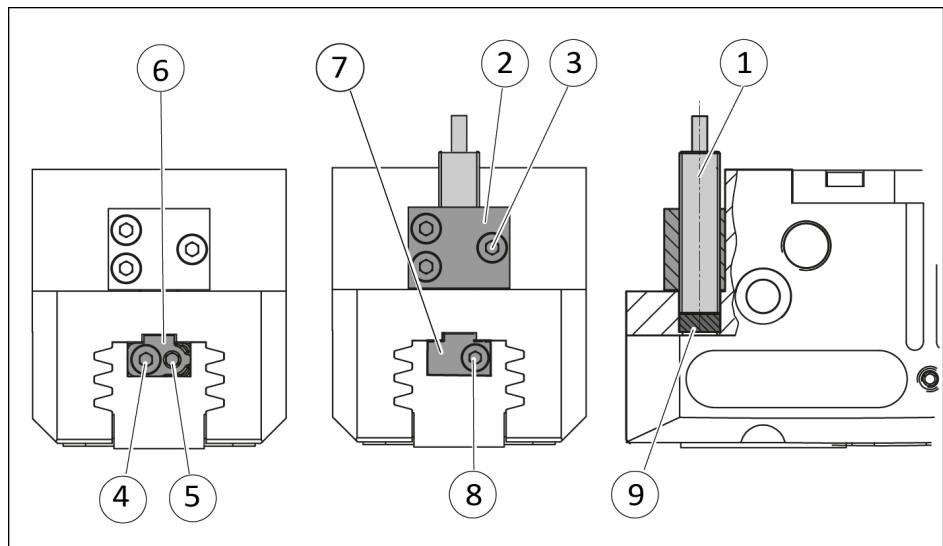
1. Assembling the sensor, ▶ 5.3.11 [42] .
2. Connect the control unit output and adjust the sensor (see assembly and operating manual of the sensor).

5.3.15.2 Mounting the FPS-M8

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

Variant Dust-tight:

Before attaching the sensor, remove the sealing bolts from the bracket. Before adjusting the control cam, unscrew the set-screw from the side cover.



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.

Variant Dust-tight:

Screw in set-screw into the side cover.

5.3.16 Mount the analog position sensor APS-M1

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

NOTICE

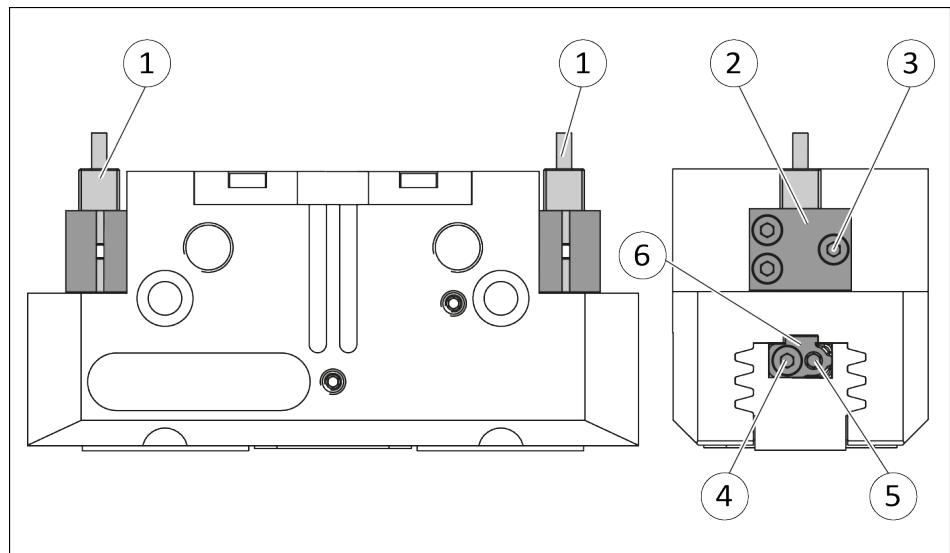
Blockade of the gripper after setting or replacing of the switching cam!

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.

Variant Dust-tight:

Before attaching the sensor, remove the sealing bolts from the bracket. Before adjusting the control cam, unscrew the set-screw from the side cover.



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.

Variant Dust-tight:

Screw in set-screw into the side cover.

5.3.17 Mount the radio system RSS-R1/T2

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

- Reed switch RMS 22
- Reed switch RMS 80

5.3.17.1 Assembly RMS 22

1. Installing the sensor , ▶ 5.3.13 [📄 46].
2. Adjust sensor, see Translation of Sensor Assembly and Operating Manual.
3. Connect radio system RSS-R1/T2, see Translation of Radio System Assembly and Operating Manual.

5.3.17.2 Assembly RMS 80

1. Installing the sensor , ▶ 5.3.14 [📄 47].
2. Adjust sensor, see Translation of Sensor Assembly and Operating Manual.
3. Connect radio system RSS-R1/T2, see Translation of Radio System Assembly and Operating Manual.

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 [23]
Pressure drops below minimum.	Check air supply. ▶ 3 [19]
Compressed air lines switched.	Check compressed air lines. ▶ 5.2.2 [27]
Proximity switch defective or set incorrect.	Readjust or change sensor.
Unused air connections open.	Close unused air connections.
Flow control valve closed.	Open the flow control valve.
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 [27]
Mounting surface is not sufficiently flat.	Check the evenness of the mounting surface. ▶ 5.2.1 [23]
Component part defective.	Replace component or send it to SCHUNK for repair.

6.3 Product opens or closes abruptly

Possible cause	Corrective action
Too little grease in the mechanical guiding areas.	Clean and lubricate product. ▶ 7 [57]
Compressed air lines blocked.	Check compressed air lines of damage.
Mounting surface is not sufficiently flat.	Check the evenness of the mounting surface.
One-way flow control valve is missing or adjustet incorrectly.	Install and adjust one-way flow control valve.
Loading too large.	Check permissible weight and length of the gripper fingers.

6.4 Product does not achieve the opening and closing times

Possible cause	Corrective action
Compressed air lines are not installed optimally.	<p>If present: Open the flow control couplings on the product to the maximum that the movement of the jaws occurs without bouncing and hitting.</p> <hr/> <p>Check compressed air lines.</p> <hr/> <p>Inner diameters of compressed air lines are of sufficient size in relation to compressed air consumption.</p> <hr/> <p>Flow rate of valve is sufficiently large relative to the compressed air consumption.</p> <hr/> <p>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.</p>
Compressed air can escape.	Check seals, if necessary, disassemble the product and replace seals.
Component part defective.	Replace component or send it to SCHUNK for repair.
Too much grease in the mechanical movement space.	Clean and lubricate product. ▶ 7 [📄 57]
Loading too large.	Check permissible weight and length of the gripper fingers.

6.5 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.
Pressure drops below minimum.	Check air supply. ▶ 3 [📄 19]
Component part defective.	Replace component or send it to SCHUNK for repair.

7 Maintenance

7.1 Notes



⚠ DANGER

Danger of explosion in potentially explosive areas!

- Observe supplementary sheet for products with explosion-resistant versions "PGN-plus -...-EX".



⚠ 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.

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.

Maintenance of version with gripping force maintenance I.D. gripping and O.D. gripping

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

7.2 Maintenance and lubrication intervals

NOTICE

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)	10
Interval (million cycles)	5
Interval (million cycles)	10 (Size 40 - 160) 5 (Size 200 - 380)

7.3 Lubricants/Lubrication points

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

SCHUNK recommends the lubricants listed.

Greasing area	Lubricant
Metallic sliding surfaces	SCHUNK grease 3
Seals and sealing surfaces	SCHUNK grease 1
Bore hole at the piston	SCHUNK grease 1

Details regarding 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.

The guides in the housing can be re-lubricated as needed. Remove the set-screw of the air purge connection and replace it with a lubrication nipple.

7.4 Disassemble the product

7.4.1 Variant without maintenance of gripping force

Position of the item numbers: ▶ 7.7 [📄 68]

1. Remove the compressed air hoses.
2. Remove the cover (5).
3. Mark the installation position of the piston (3/8) and the base jaws (2/7) 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 (3/8) upward out of the housing (1).
7. Pull the base jaws (2/7) out of the housing (1).

7.4.2 Variant with maintenance of gripping force (O.D. gripping)



⚠ WARNING

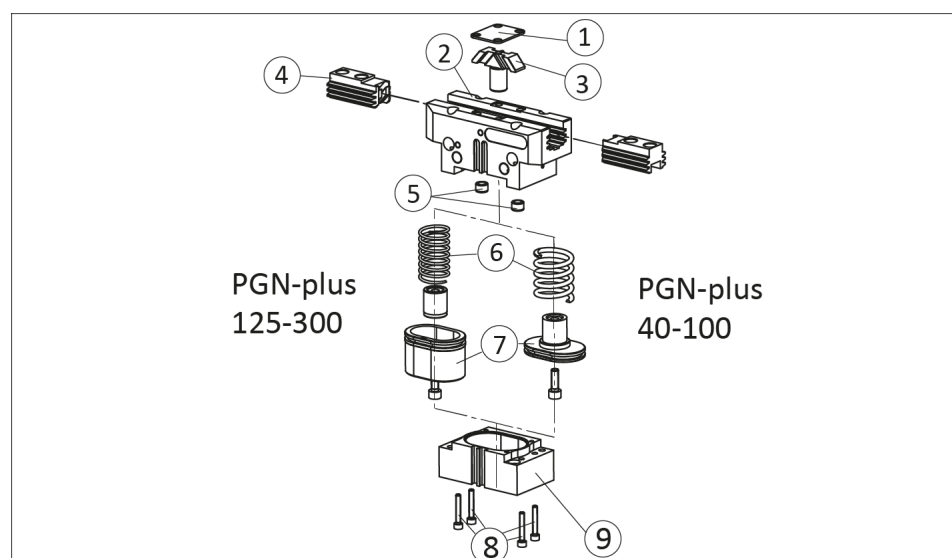
Risk of injury due to spring forces!

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

- Dismantle the product carefully.

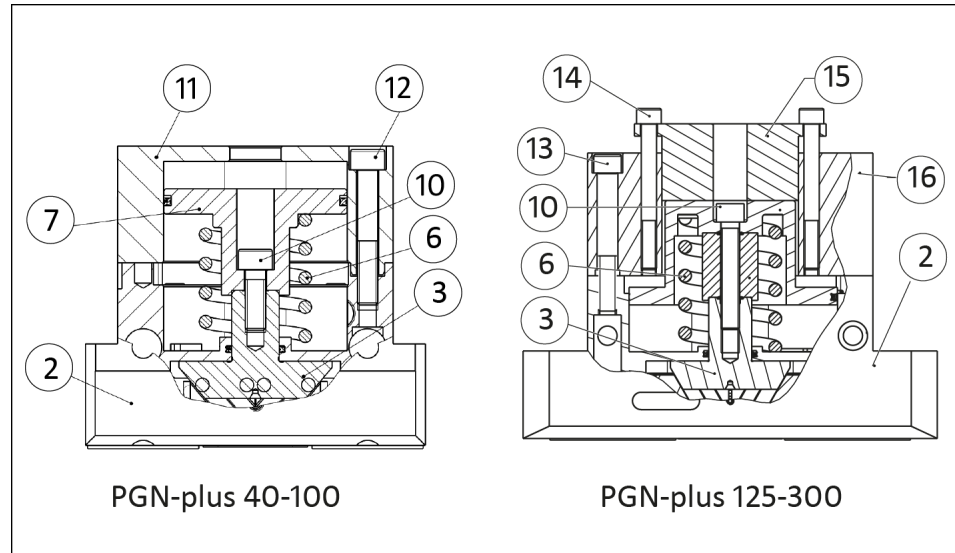
NOTE

Use an assembly device to remove the cylinder piston, ▶ 7.6 [📄 66].



1. Remove the compressed air hose.
2. Remove the cover (1).
3. Mark the installation positions of the piston (3) and the base jaws (4) on the housing (2).

4. **WARNING! Risk of injury due to spring forces! The cover and the cylinder piston are under spring tension. Carefully disassemble the gripper.** Clamp the gripper between the base jaws (4) and the cover (9) in the vise so that it is still possible to remove the four screws (8).
5. Unfasten and remove the screws (8).
6. Open the vise carefully and remove the cover (9).



7. **Sizes 40–100:** Instead of the cover (9), place the device (11) on the housing (2) using the centering sleeves (5) and screw both parts together with screws (12).
8. Instead of the cover (9), place the device (11) on the housing (2) using the centering sleeves (5) and screw both parts together with screws (12).
9. **Sizes 125–380:** Sizes 125–380 require a two-part device. Instead of the cover (9), place device 1 (16) on the housing (2) using the centering sleeves and screw both parts together with screws 1 (13). Position device part 2 (15) in part 1 (16) and screw together with 2 screws (14).
10. Sizes 125–380 require a two-part device. Instead of the cover (9), place device 1 (16) on the housing (2) using the centering sleeves and screw both parts together with screws 1 (13). Position device part 2 (15) in part 1 (16) and screw together with 2 screws (14).
11. Unscrew and remove the screw (10).
12. **Sizes 40–100:** Evenly unscrew screws (12) and carefully remove the device (11).
13. Evenly unscrew screws (12) and carefully remove the device (11).

14. **Sizes 125–380:** Evenly unscrew screws (13) and carefully remove the device (15/16).
15. Evenly unscrew screws (13) and carefully remove the devices (15/16).
16. Push the piston (3) upwards out of the housing (2).
17. Pull the base jaws (4) out of the housing (2).

7.4.3 Variant with maintenance of gripping force (I.D. gripping)

Position of the item numbers: ▶ 7.7 [📄 68]



⚠️ 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 lines.
2. Remove the cover (5).
3. Mark the installation positions of the piston (3/8) and the base jaws (2/7) on the housing (1).
4. **WARNING! Risk of injury due to spring forces! The cover is under spring tension. Carefully disassemble the product.** Clamp the product between the base jaws (2/7) and the cover (9) in the vise so that it is still possible to remove the four screws (46).
5. Unfasten and remove the screws (46).
6. Carefully open the vise until the compression spring (25) has no more tension.
7. Remove the cover (9) and the pressure spring (25).
8. Unscrew screw (40) and remove cylinder piston (60) from the housing (1).
9. Push the pistons (3/8) upwards out of the housing (1).
10. Pull the base jaws (2/7) out of the housing (1).

7.4.4 Variant with dust cover

In variant with dust cover, the dust cover must be removed first. ▶ 7.7.2 [📄 70]

1. Completely unscrew the screws (91) and remove the plain washers (92) and centering sleeves (86). Screws (91) and the plain washers (92) only serve the purpose of protection during transport.
2. Pull the intermediate jaws (84) upwards and out and remove the o-rings (87) and shims (83).

3. Slacken the countersunk screws (89) and remove the cover plate (82).
4. Unscrew the screws (90) and detach the covers (81).

7.4.5 Version with power booster cylinder (KVZ) without gripping force

Position of the item numbers: ▶ 7.7.3 [📄 71]

1. Remove the compressed air hoses.
2. Remove the cover (5).
3. Mark the installation position of the piston (3/8) and the base jaws (2/7) in the housing (1).
4. Unscrew the screws (41) and remove the cover (4).
5. Unscrew the screw (51) and remove the cylinder piston (6) and spacer piston (66) from the intermediate housing (65).
6. Unscrew the screws (46/54) and remove the intermediate housing (65).
7. Remove the second cylinder piston (6) from the housing (1).
8. Press the piston (3/8) upwards out of the housing (1).
9. Pull the base jaws (2/7) out of the housing (1).

7.5 Servicing and assembling the product

Maintenance

- Clean all parts thoroughly and check for damage and wear.
- Treat all grease areas with lubricant, ▶ 7.3 [58]
- Oil or grease external steel parts
- Replace all wear parts / seals. ▶ 7.7 [68]
 - Position of the wearing parts, ▶ 7.7 [68]
 - Order no. for the seal kits, ▶ 1.4 [10]

Assembly

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

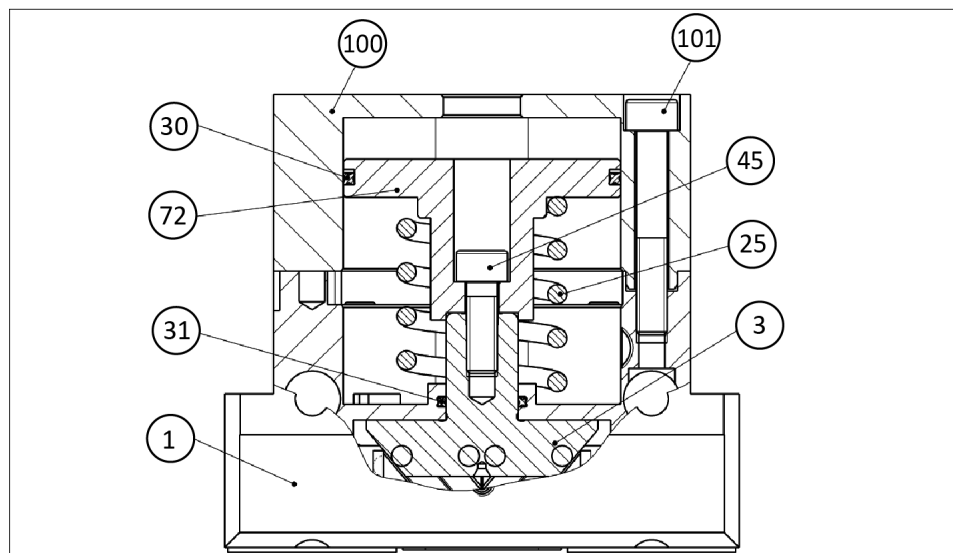
- Unless otherwise specified, secure all screws and nuts with Loctite no. 243 and tighten with the appropriate tightening torque. ▶ 7.5.6 [65]
- For the variant with maintenance of gripping force "O.D. gripping", sizes 40–100, mount the cylinder piston with the help of an assembly device ▶ 7.6.1 [66], for sizes 125–380, mount the cylinder piston with the help of a second assembly device ▶ 7.6.2 [67].

7.5.1 Variant without maintenance of gripping force

Reassemble in reverse order of disassembly.

7.5.2 Variant with maintenance of gripping force (O.D. gripping)

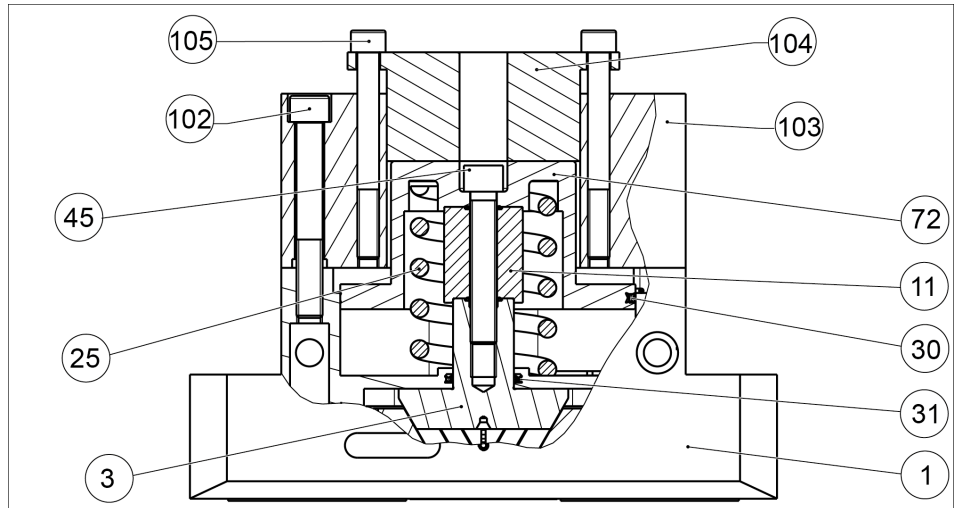
Sizes 40–100



- Dimensions of the assembly devices: ▶ 7.6.1 [66]
 - Further Item numbers, which are not illustrated in this figure: ▶ 7.7.1 [69]
1. Fit the base jaws (2/7) and the piston (3/8) in the housing (1).
 2. Fit the cylinder piston (10) with seals (30/33) and the compression spring (25) into the housing (1).

3. Carefully put the device (100) over the cylinder piston (10) and attach to the housing using the screws (101).
4. Insert the screw (45) and tighten to the required torque ▶ 7.5.6 [65].
5. Remove the device (100) and continue to assemble the gripper in the reverse order to the order for disassembling ▶ 7.7 [68].

Sizes 125 - 380 with two assembly devices



- Dimensions of the assembly devices: ▶ 7.6.2 [67]
 - Further Item numbers, which are noch illustrated in this figure: ▶ 7.7.1 [69]
1. Assemble the base jaws (2/7) and piston (3/8) with sealing (31) in the housing.
 2. Insert the pressure spring (25), the distance pin (11) and the cylinder piston (10) with the sealings (30/33) into the housing (1).
 3. Carefully put the device (101) over the cylinder piston and mount onto the housing (1) with the screws (102).
 4. Attach device 2 (104) and fasten it evenly onto device 1 (103) with screws 2 (105).
 5. Insert screw (45) into the cylinder piston and fasten them with the required torque ▶ 7.5.6 [65].
 6. Remove the devices (103/104).
 7. Insert the sealings (32/34) and assemble the cover (9) with the aid of screws (46) ▶ 7.7 [68].

7.5.3 Variant with maintenance of gripping force (I.D. gripping)

Reassemble in reverse order of disassembly ▶ 7.4.3 [61].

7.5.4 Variant with dust cover

Reassemble in reverse order of disassembly ▶ 7.4.4 [61].

7.5.5 Version with power booster cylinder (KVZ) without gripping force

Reassemble in reverse order of disassembly ▶ 7.4.5 [62].

7.5.6 Screw tightening torques

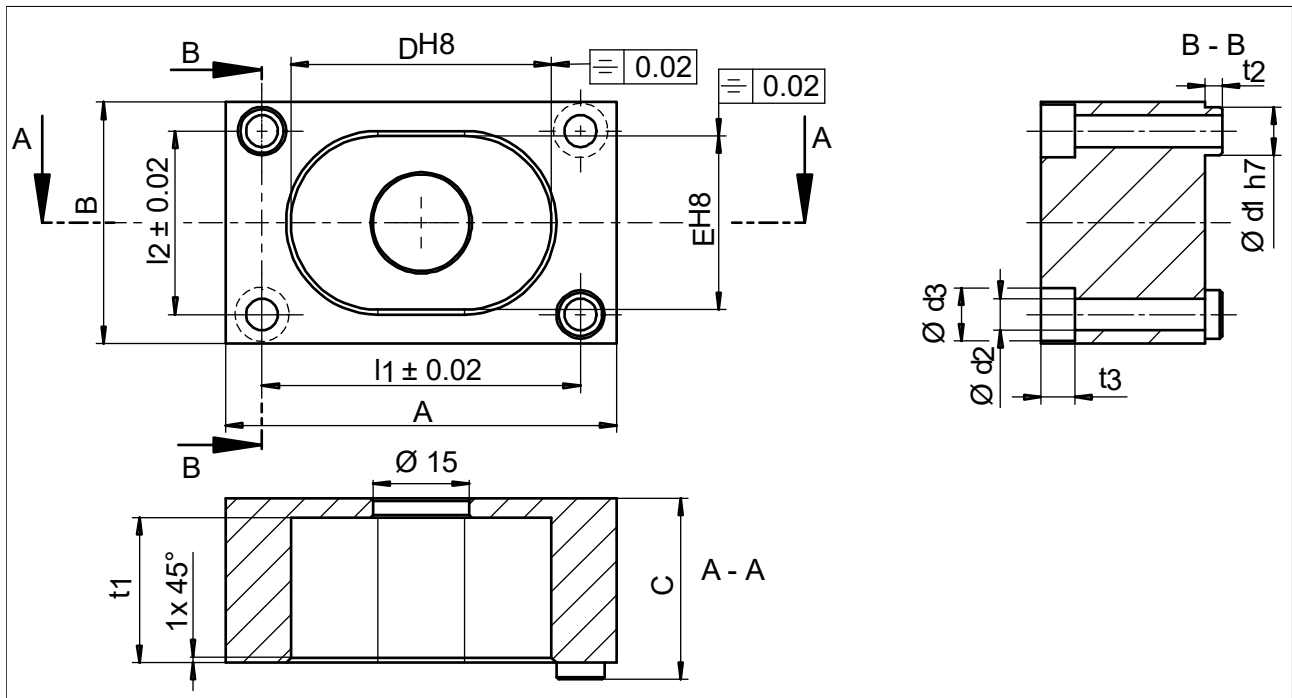
Position of the item numbers: ▶ 7.7 [68]

Size	Item 40	Item 41	Item 45	Item 46	Item 51
40	0.8	0.73	2.2	0.73	0.8
50	0.8	1.3	2.2	1.3	0.8
64	6	1.3	10	1.3	6
80	10	3	17	3	10
100	17	3	17	3	17
125	24	6	41	6	24
160	48	6	83	6	48
200	75	6	116	25	-
240	75	6	116	25	-
300	120	6	150	25	-
380	200	6	200	50	-

Tab.: Tightening torque [Nm]

7.6 Assembly device cylinder piston with gripping force maintenance

7.6.1 Sizes 40 - 100



Tab.: Cylinder piston assembly device – dimensions in mm

PGN-plus	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

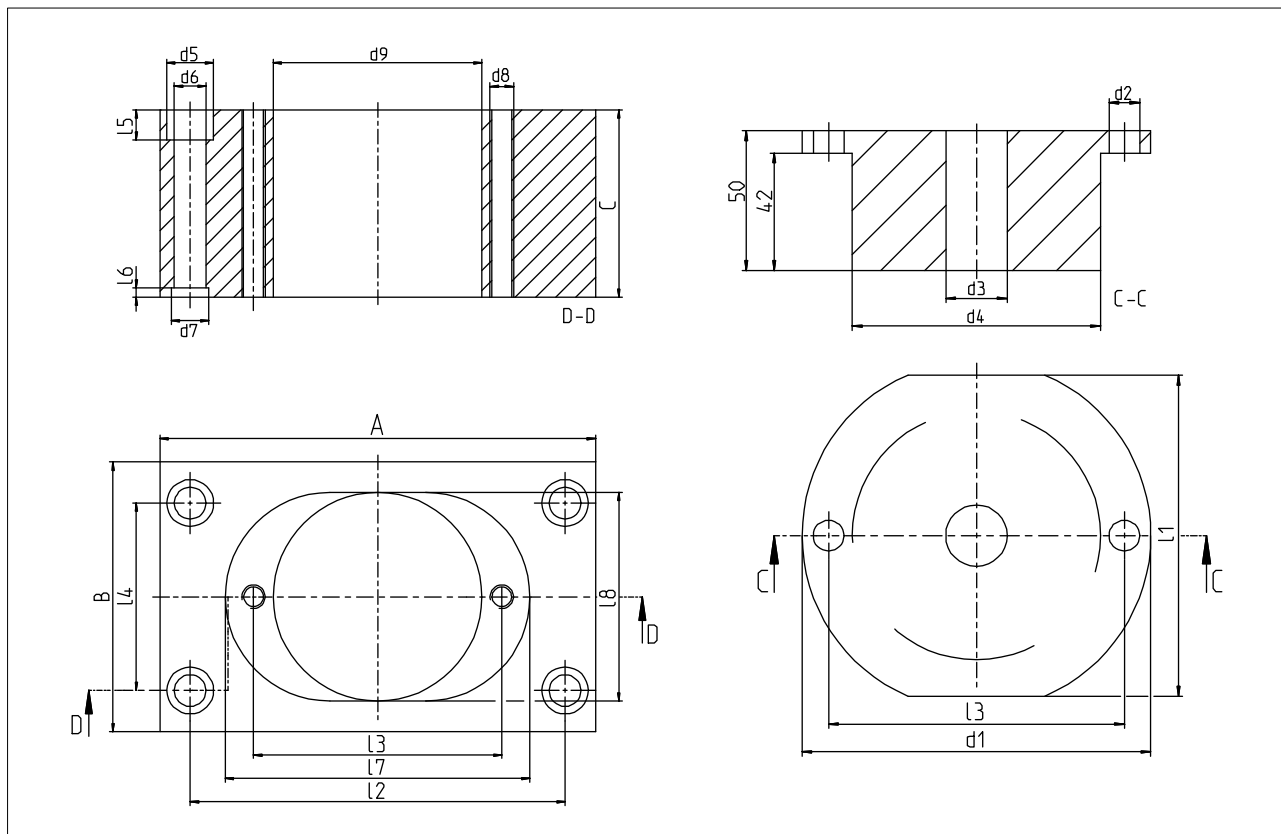
PGN-plus

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

7.6.2 Sizes 125 – 380



Tab.: Cylinder piston assembly device – dimensions in mm

PGN-plus	A	B	C	d1	d2	d3	d4	d5	d6	d7
125	100	60	50	96	9	15	45	14	9	12
160	125	58.5	72	100	74.5	56	9	3	-	-
200	154	79	100	130	95	70	11	4	-	-
240	186	89	115	160	106	80	13	4	-	-
300	210	115.3	139	180	130	96	17	6	-	-
380	285	170	110	180	13.5	32	129	33	22	28

PGN-plus	d8	d9	l1	l2	l3	l4	l5	l6	l7	l8
125	M8	-	60	82	80	45	9	3	67	46
160	M8	58.5	72	100	74.5	56	9	3	-	-
200	M8	79	100	130	95	70	11	4	-	-
240	M10	89	115	160	106	80	13	4	-	-
300	M10	115.3	139	180	130	96	17	6	-	-
380	M12	130	170	250	150	116	21	8	-	-

PGN-plus	Screw Item102	Screw Item 105
125	M8 x 55	M8 x 60
160	M8 x 60	M8 x 65
200	M10 x 80	M8 x 80
240	M12 x 90	M10 x 95
300	M16 x 110	M10 x 110
380	M20 x 120	M12 x 125

Tab.: Screw for assembly device

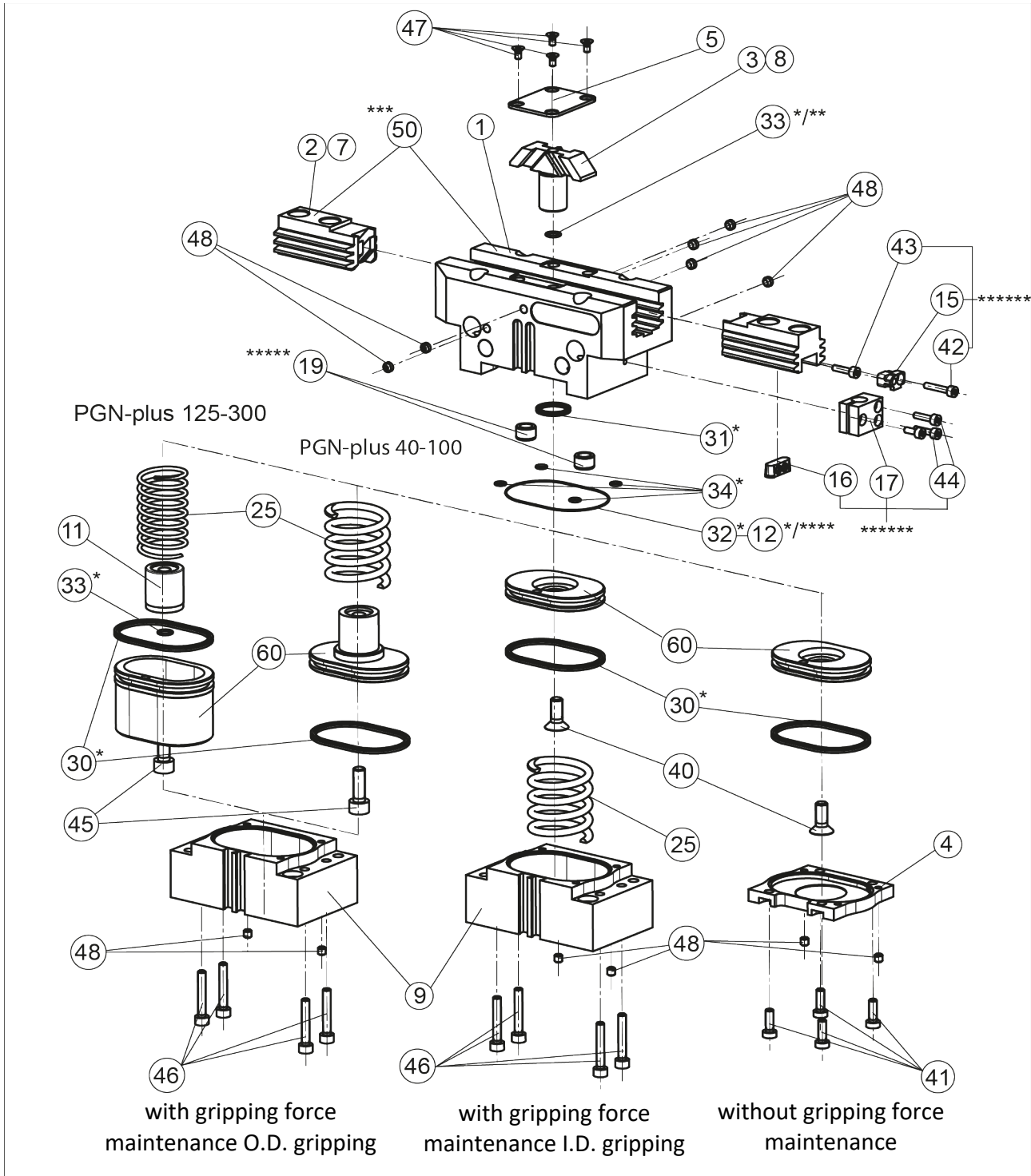
7.7 Drawings

The following figures are example images.

They serve for illustration and assignment of the spare parts.

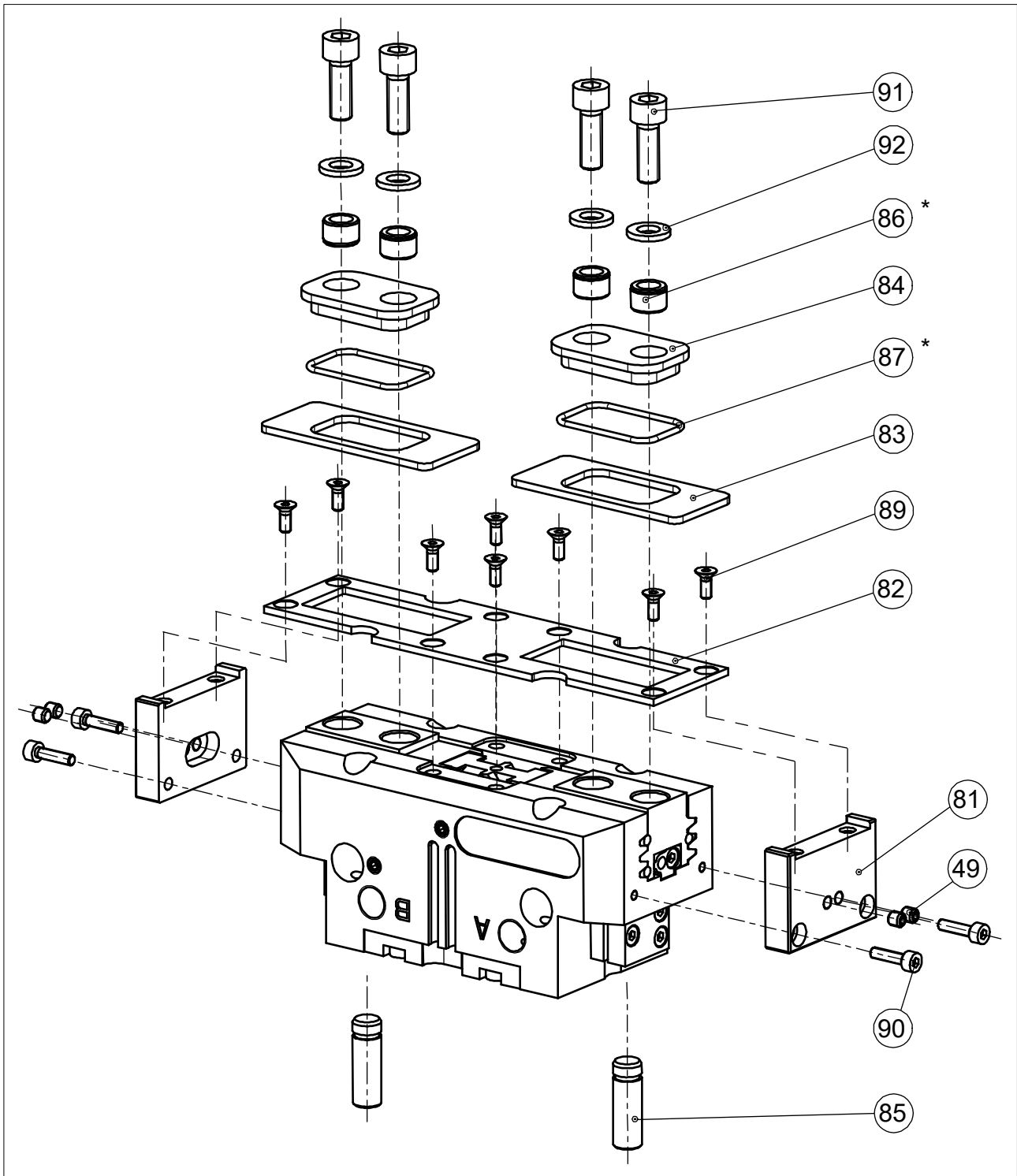
Variations are possible depending on size and variant.

7.7.1 Standard



- * Wearing part, replace during maintenance.
- ** Included in the seal kit. Seal kit can only be ordered completely.
- *** Positions are adapted to each other and can not be replaced by the customer.
- **** not with PGN-plus 40 - 125
- ***** not with PGN-plus 40 - 80
- ***** not with PGN-plus 40/50

7.7.2 Dust cover



* Wearing part, replace during maintenance.

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
Spanntechnik | Greiftechnik | Automatisierungstechnik
Bahnhofstr. 106 – 134
D-74348 Lauffen/Neckar

We hereby declare that the partly completed machine described below

Product designation: 2-Finger Parallel Gripper / PGN-plus /pneumatic
ID number 0371080 ... 0371477, 37371080 ... 37371477, 38371080 ... 38371477,
39371080 ... 39371477

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 2025

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/ Distributor SCHUNK Intec Limited
 Clamping and gripping technology
 3 Drakes Mews, Crownhill
 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 / PGN-plus / pneumatic
 ID number 0371080 ... 0371477, 37371080 ... 37371477, 38371080 ... 38371477,
 39371080 ... 39371477

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 2025

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

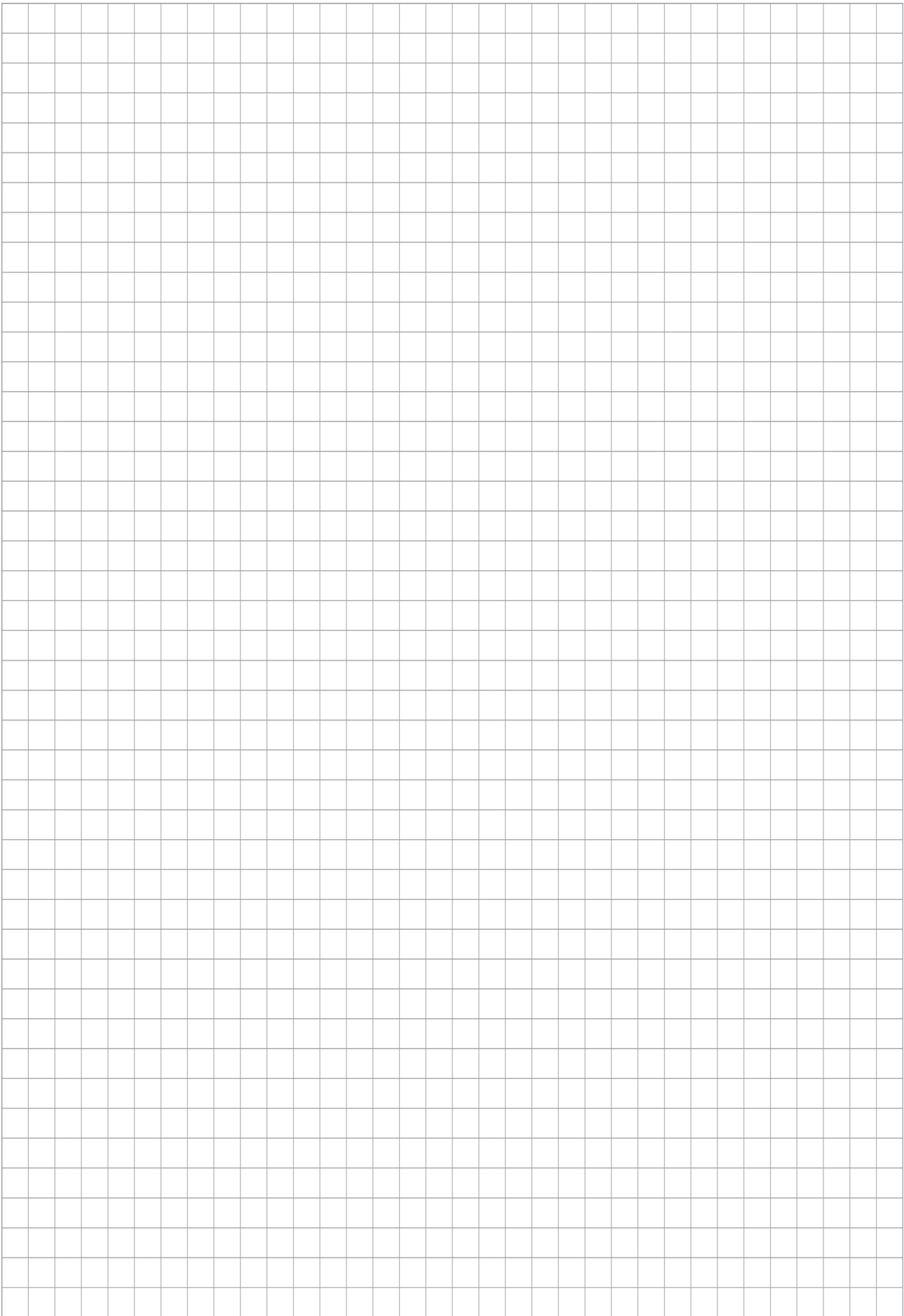
Products from SCHUNK fully comply with the regulations of Regulation (EC) No. 1907/2006 "concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)" and its amendment 2022/477. SCHUNK attaches great importance to completely avoiding chemicals of concern to humans and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

Signature: see original declaration

Lauffen/Neckar, March 2025

Dr.-Ing. Manuel Baumeister,
Head of Systems Engineering,
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SCHUNK SE & Co. KG
Spanntechnik | Greiftechnik | Automatisierungstechnik

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