



Assembly- and Operating Manual

PGL-plus-P

2-Finger Parallel Gripper

Translation of the original manual

Hand in hand for tomorrow

Imprint

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Technical changes:

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Document number: 1508044

Version: 06.00 | 14/10/2024 | en

Dear Customer,

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

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

Best regards,

Your SCHUNK team

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 ▶ 1.1.4 [7] are applicable.

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

1.1.1 Presentation of Warning Labels

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



⚠ DANGER

Dangers for persons!

Non-observance will inevitably cause irreversible injury or death.



⚠ WARNING

Dangers for persons!

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



⚠ CAUTION

Dangers for persons!

Non-observance can cause minor injuries.

CAUTION

Material damage!

Information about avoiding material damage.

1.1.2 Definition of Terms

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

1.1.3 Symbol definition

The following symbols are used in this manual:

■ Prerequisite for an action

1. Action 1

2. Action 2

⇒ Intermediate results

⇒ Final results

▶ 1.1.3 [7]: chapter number and [page number] in hyperlinks

1.1.4 Applicable documents

- General terms of business *
- Catalog data sheet of the purchased product *
- Assembly and operating manuals of the accessories *
- For variant with integrated sensor system (IOL): Software Manual "PGL-plus-P with Integrated Sensor System, IO-Link Protocol" *

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

1.1.5 Sizes

This operating manual applies to the following sizes:

- PGL-plus-P 10
- PGL-plus-P 13
- PGL-plus-P 16
- PGL-plus-P 20
- PGL-plus-P 25

1.1.6 Variants

This operating manual applies to the following variations:

- PGL-plus-P
- PGL-plus-P with gripping force maintenance "O.D. gripping" (AS)
- PGL-plus-P with gripping force maintenance "I.D. gripping" (IS)
- PGL-plus-P high-temperature (V)
- PGL-plus-P precision (P)
- PGL-plus-P with integrated sensor system (IOL)

NOTE

Variants with safe, certified gripping force maintenance (ASC and ISC) are described in a separate manual. This can be downloaded from [schunk.com](https://www.schunk.com).

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 ambient conditions and operating conditions, ▶ 2.5 [11]
- Observe the specified maintenance intervals, ▶ 7 [48]

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

Designation	PGL-plus-P
Warranty duration [months]	36
or maximum cycles [mil.]*	30

* A cycle consists of a complete gripping process: "Open gripper" and "Close gripper".

1.3 Scope of delivery

The scope of delivery includes

- 2-Finger Parallel Gripper PGL-plus-P in the version ordered
- Accessory pack

Content of the accessory pack:

- 2x centering sleeves for gripper fastening
- 2x locking screw
- 3 x O-ring for hose-free direct connection

ID.-No. of the accessory pack

Size	ID number
PGL-plus-P 10	1505890
PGL-plus-P 10-V	1510679
PGL-plus-P 13	1505891
PGL-plus-P 13-V	1510690
PGL-plus-P 16	1505892
PGL-plus-P 16-V	1510691
PGL-plus-P 20	1505894
PGL-plus-P 20-V	1510692
PGL-plus-P 25	1505895
PGL-plus-P 25-V	1510693

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 Spare parts packages

Spare parts packages allow for the maintenance and repair of individual components. For information on the range of the spare parts packages, see www.schunk.com > Service.

The following spare parts packages are available for this product:

- Spare part package "Sealing kit"
- Spare part package "IO-Link sensor"

Size	ID number
PGL-plus-P 10	1504656
PGL-plus-P 10-V	1510567
PGL-plus-P 13	1504658
PGL-plus-P 13-V	1510669
PGL-plus-P 16	1504659
PGL-plus-P 16-V	1510703
PGL-plus-P 20	1504660
PGL-plus-P 20-V	1510717
PGL-plus-P 25	1504661
PGL-plus-P 25-V	1510720

Tab.: ID. No. spare part kit "Seal kit"

Contents of the spare parts package, ▶ 7.7 [61].

Size	ID number
PGL-plus-P 10	1524550
PGL-plus-P 13	1524554
PGL-plus-P 16	1524561
PGL-plus-P 20	1524563
PGL-plus-P 25	1524564

Tab.: ID. No. spare part kit "IO-Link sensor"

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 [17].
- 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 [📄 17].

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 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.

2.11.1 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.

2.11.2 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.

2.11.3 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 Notes on particular risks



⚠ 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 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.

- Take suitable protective measures to secure the danger zone.



⚠ WARNING

Risk of injury due to magnetic fields in the immediate vicinity!

In case of exposure to magnetic fields, the product may malfunction. Workpieces may fall down or be ejected and cause severe injuries.

- Adequately shield magnetic fields in the immediate vicinity of the product, so that exact limits according to EN IEC 61000 are not exceeded.
- Make sure that the product is prevented from malfunctioning.



⚠ 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.

3 Technical data

Connection data

Designation	PGL-plus-P
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
• with maintenance of gripping force AS/IS	4
Maximum pressure [bar]:	
• without maintenance of gripping force	8
• with maintenance of gripping force AS / IS	6.5
Pressure range for air purge [bar]	0.5 – 1

Ambient conditions and operating conditions

Designation	PGL-plus-P
Ambient temperature [°C]:	
• Min.	5
• Max.	90
• Max. - high-temperature (V) **	130
• Max. - with integrated sensor system (IOL)	70
Protection class IP *	64
Noise emission [dB(A)]	≤70

* The product achieves protection class IP67 through use of an air purge.

** The product is suitable for gripping hot objects and for temporary use at higher ambient temperatures. Avoid heating the product up to the specified maximum ambient temperature by taking appropriate protective measures, otherwise this can lead to increased wear and reduce the service life. Contact SCHUNK about selecting possible protective measures.

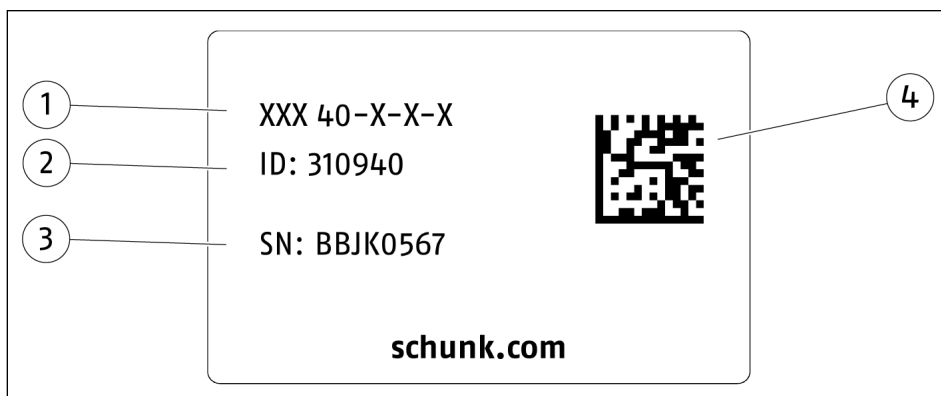
Connection data of the integrated IO-Link sensor (variant IOL)

Designation	PGL-plus-P-IOL
Nominal voltage [VDC]	24
• Min.	18
• Max.	30
Residual ripple supply voltage [% V _{ss}]	≤2
Nominal current [mA]	≤200
Short circuit protection	yes
Inverse-polarity protection	yes
Material, sensor housing	PBT GF15/stainless steel 430f
Material, active sensor surface	PBT GF20
Cable connector	M8 connector, 4-pin
Specification:	V1.1
Transmission rate	COM2
Port	Class A
Protection class IP, Sensor	67
Protection class, sensor	3
Ambient temperature [°C]	
• Min. Sensor	-25
• Product Min.	5
• Max. Sensor, product	70
Max. Linearity deviation from the final value [%]	1.5 *
Resolution [mm]	0.025 *
Detectable workpiece difference [mm]	up to 0.1 *
Max. Temperature error from the final value [%]	3 *
Response time / typ. Switching time / cycle time [ms]	2.7

* If a workpiece distinctiveness <0.5 mm is required, a regular teach routine (e.g. daily) must be included in the process sequence to calibrate the system limits as well as the workpieces. The values apply at nominal operating pressure (6 bar), room temperature (23°C), gripping height at point "P" (see catalog) and during operation without air purge. Deviations may occur with other parameters.

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

3.1 Name plate



1 Product designation

2 ID

3 Serial number

4 Data matrix code

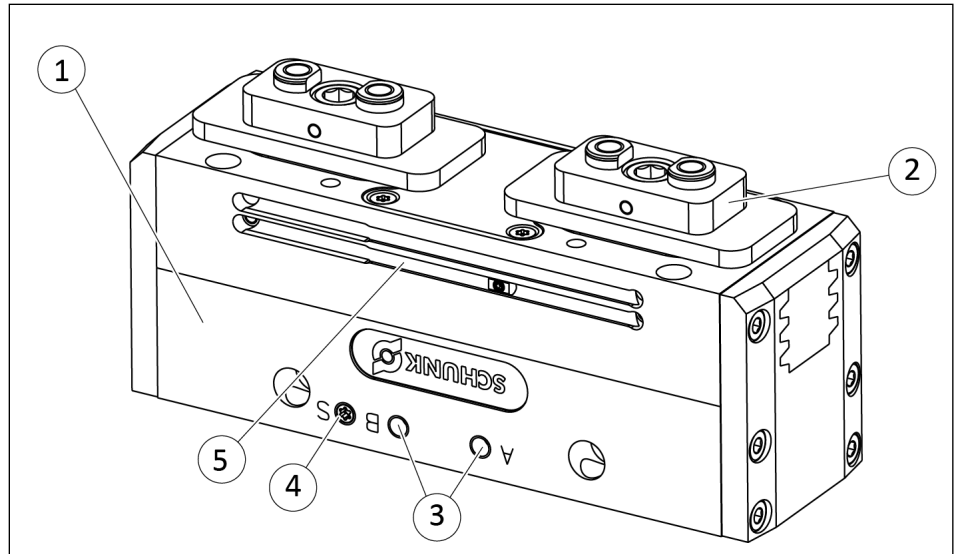
Scan code or enter serial number on the web and get all the product information: operating manuals, spare parts packages, software updates and much more.

For further information, visit [schunk.com/serialisierung](https://www.schunk.com/serialisierung)

A separate app may be required for scanning with a mobile phone.

4 Design and description

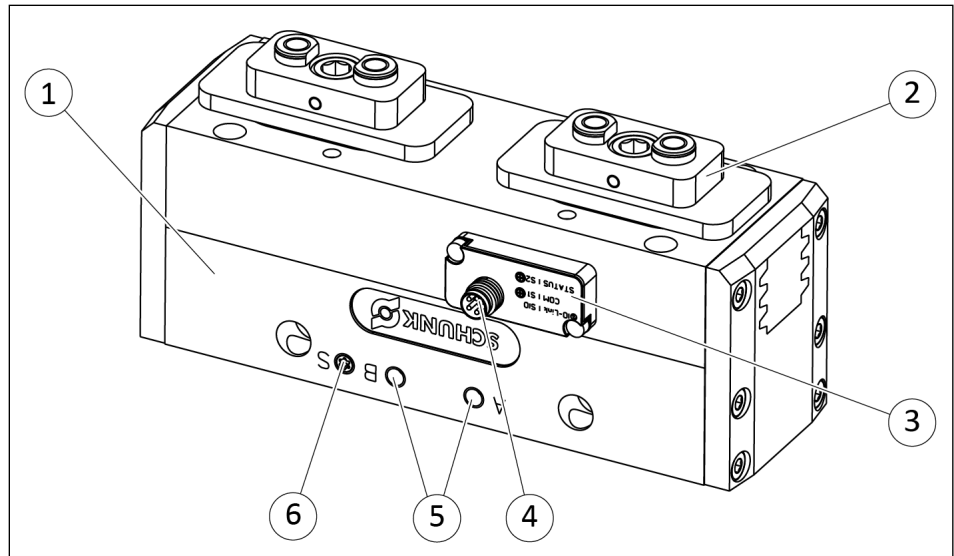
4.1 Design



2-Finger Parallel Gripper

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

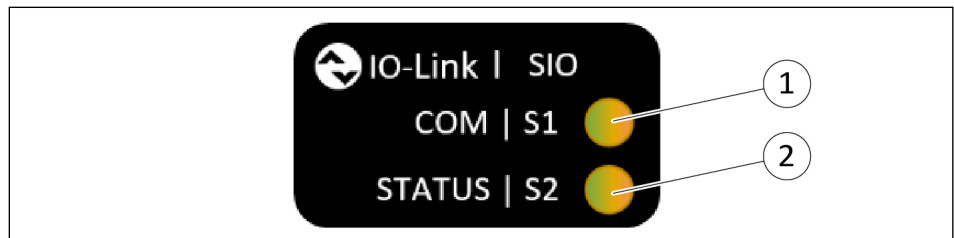
4.1.1 Variant IOL structure



2-Finger Parallel Gripper- IOL

- 1 Housing
- 2 Base jaw
- 3 LED display
- 4 Connecting plug
- 5 Compressed air main connection
- 6 Air purge connection

LED display



Display 2-Finger Parallel Gripper- IOL

LED	Designation	Color	Status	Mode	
				SIO *	IOL**
1	COM S1	Green/ Orange	Off	Voltage supply polarity is reversed or not in the valid range.	Voltage supply polarity is reversed or not in the valid range.
			On (Orange)	Sensor output S1=1	
			On (Green)	Sensor is ready for operation. Sensor output S1=0	IO-Link communication not active.
			Flashing (Green), 100 ms off, 90 ms on		IO-Link communication active.

LED	Designation	Color	Status	Mode	
				SIO *	IOL**
2	STATUS S2	Green/ Orange	Off	Sensor output S2=0	Sensor is ready for operation
			On (Orange)	Sensor output S2=1	Error. Error message sent via IO-Link.

* SIO mode for operation without IO-Link master

** IO-Link mode for operation with IO-Link master

NOTE

For more information, see Software Manual "PGL-plus-P with Integrated Sensor System, IO-Link Protocol".

4.2 Description

Universal 2-finger parallel gripper with a large jaw stroke, integrated sensor system and high maximum moments due to use of a multi-tooth guidance.

5 Assembly and settings

5.1 Safety



⚠ WARNING

Risk of injury due to unexpected movements!

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

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



⚠ CAUTION

Risk of injury due to contact with lubricants!

Lubricant may cause irritation and allergic reactions if it contacts the skin or eyes.

- Avoid contact between lubricant and skin or eyes.
- Wear safety goggles and protective gloves.
- Observe information on the safety data sheet of the lubricant.



⚠ CAUTION

Risk of injury from lifting heavy loads!

Lifting, holding and carrying products with a heavy weight – especially in awkward postures – can lead to back disorders and injuries.

- Use appropriate aids to lift and handle the product.
- Take safety measures that prevent the product from falling.
- Wear suitable protective equipment.

5.2 Installing and connecting

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.

Overview

1. Check the evenness of the mounting surface, ▶ 5.3.1 [📄 25].
2. Only open the required air connections (main connection or direct connection), ▶ 5.3.2 [📄 28].
3. Connect the product via the hose-free direct connection.
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, ▶ 5.3.1 [📄 25].
 - ⇒ If necessary, use appropriate connection elements (adapter plates).
 - ⇒ Observe permissible depth of engagement and if required strength class.
6. Connect air purge connection if necessary.
7. Attach additional structure to the product if necessary, ▶ 5.4 [📄 31]
8. Connect the sensor, see assembly and operating manual of the sensor.
9. Mount the sensor, ▶ 5.5 [📄 33].
10. **Variant IOL:** Place cable for IO-Link on the M8 connector and tighten the threaded ring by hand ▶ 4.1.1 [📄 21].
For more information on commissioning, see Software Manual "PGL-plus-P with Integrated Sensor System, IO-Link Protocol".

5.3 Connections

5.3.1 Mechanical connection

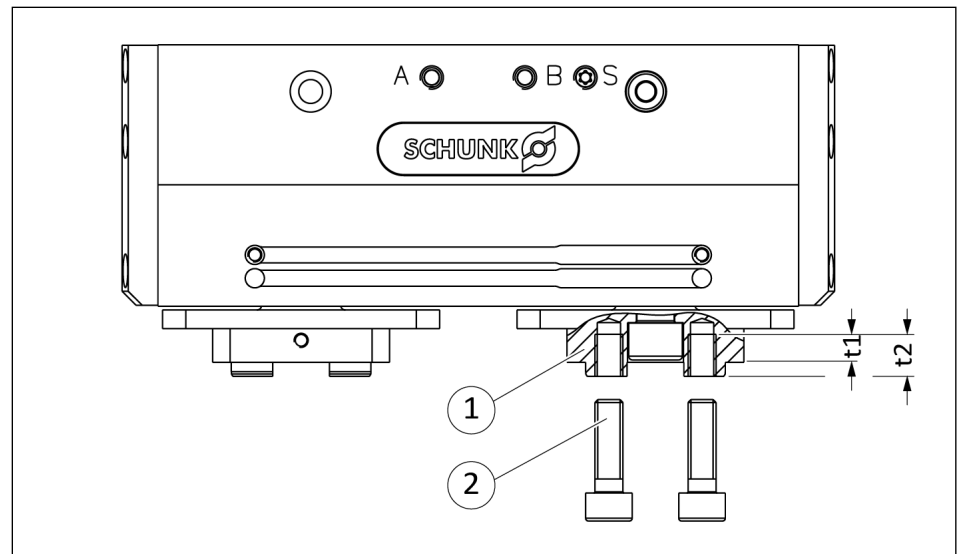
Evenness of the mounting surface

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

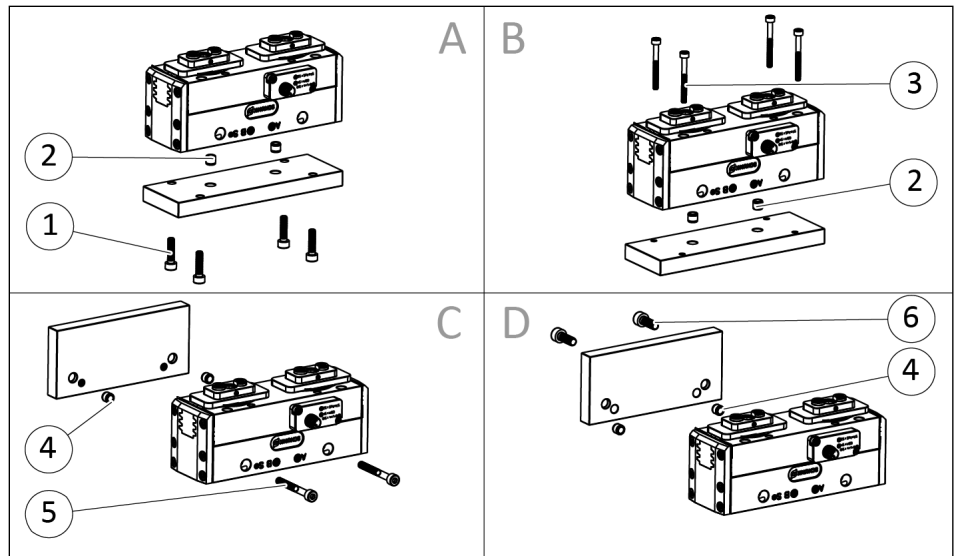


Connections at the base jaws

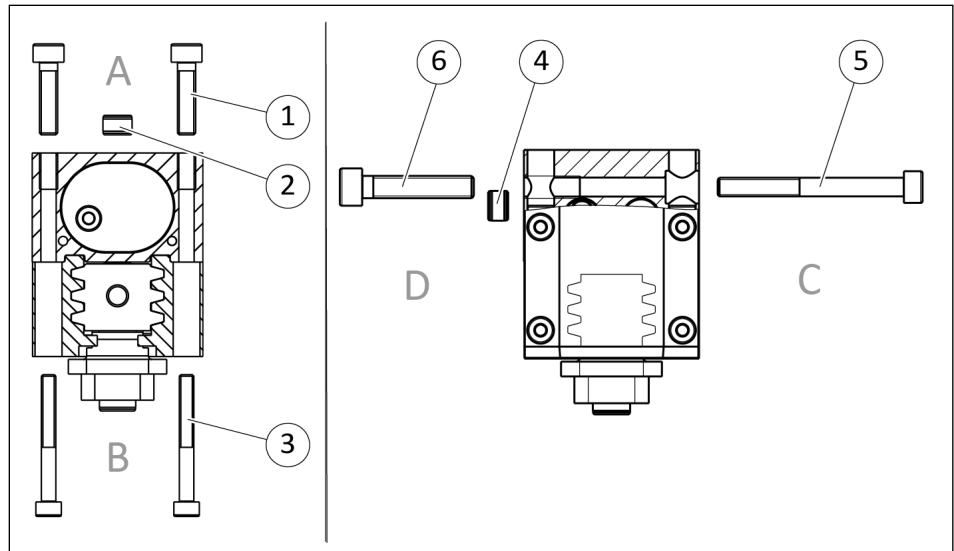
Item	Mounting	PGL-plus-P				
		10	13	16	20	25
1	Outer diameter centering	Ø 6	Ø 8	Ø 10	Ø 10	Ø 14
2	Mounting screw	M4	M5	M6	M6	M10
	Mounting screw strength class	12.9				
	t1: Screw-in depth from stop face [mm]	4	5	6	6	8
	t2: Thread depth [mm]	6.5	7.5	9	9	12

Connections at the housing

The product can be assembled from four sides.



Connection possibilities



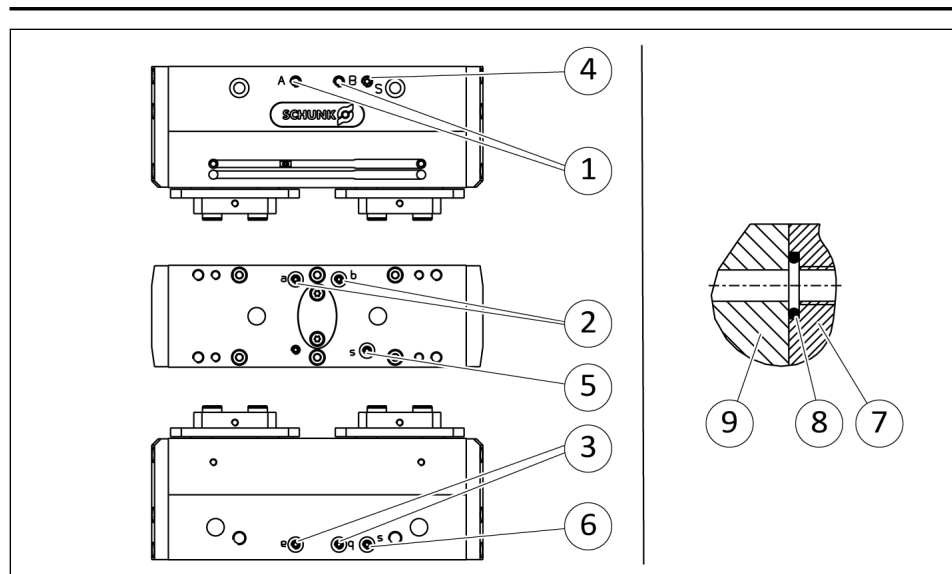
Connections at the housing

Item	Mounting	PGL-plus-P				
		10	13	16	20	25
Side A						
1	Mounting screw	M4	M4	M5	M6	M8
	Max. depth of engagement from locating surface [mm]	8	8	10	12	16
2	Centering sleeve	∅ 6	∅ 6	∅ 8	∅ 10	∅ 12
Side B						
3	Mounting screw	M3	M3	M4	M5	M6
	Mounting screw according to standard	DIN EN ISO 4762				
2	Centering sleeve	∅ 6	∅ 6	∅ 8	∅ 10	∅ 12
Side C						
5	Mounting screw	M4	M4	M5	M6	M8
	Mounting screw according to standard	DIN EN ISO 4762 Max. strength class 8.8				
4	Centering sleeve	∅ 6	∅ 6	∅ 8	∅ 10	∅ 12
Side D						
6	Mounting screw	M5	M5	M6	M8	M10
	Max. depth of engagement from locating surface [mm]	10	12	15	17	20
4	Centering sleeve	∅ 6	∅ 6	∅ 8	∅ 10	∅ 12

5.3.2 Pneumatic connection

NOTE

- Observe the requirements for the compressed air supply, ▶ 3 [17].
- 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 (a = open, b = close)
4	Air purge connection (S)
5	Hose-free air purge connection at the base (s)
6	Hose-free air purge connection (s)
Hose-free direct connection (a, b) / Air purge connection (s)	
7	Product
8	O-ring
9	Adapter plate

- 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.

Item	Mounting	PGL-plus-P				
		10	13	16	20	25
1	Thread in the main air connections	M5	M5	M5	G1/8	G1/8
	Max. depth of engagement from locating surface [mm]	5	5	5	7	7
4	Thread in the air purge connection	M3	M5	M5	M5	M5
	Max. depth of engagement from locating surface [mm]	3.5	3.5	5	5	5

Air purge connection

The air purge makes it difficult for dirt to penetrate the product. The product achieves protection class IP 67 through use of an air purge.

5.3.3 Electrical connection – IOL variant

CAUTION

Risk of damage to the electronics!

A faulty connection can cause damage to the internal electronics.

- The supply network must be a "PELV" network type for power and logic.
- Observe the PIN assignment of the connecting terminals.
- Maximum cable length: 20 m.
- Make sure that all components are properly grounded.

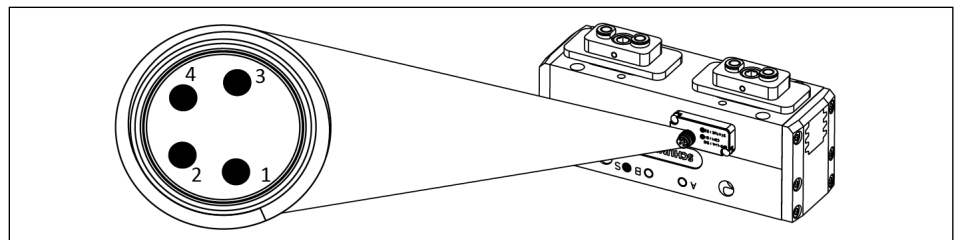
NOTE

Note on EMC conformity (in accordance with EN 61000-6-4:2007 + A1:2011):

- The product may only be used in DC distribution networks with an expansion of < 30 m.

Plug connector product	Plug connector provided by the customer
Connector 4-pin, M8, A-coded	Connection cable 4-pin, M8 socket, A-coded

Tab.: Components of the electrical connection



IO-Link connector, 4-pin, M8

Pin	Signal	Description
1	L+	+24 V
2	I/Q	Switching signal DI (SIO)
3	L-	GND
4	C/Q	Switching signal DI (SIO) or IO-Link (SDCI)

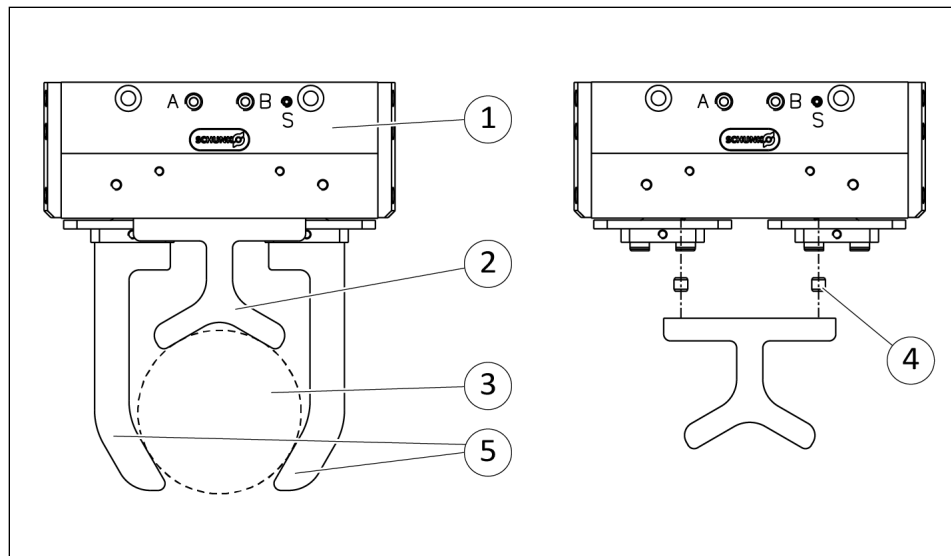
NOTE

For more information, see Software Manual "PGL-plus-P with Integrated Sensor System, IO-Link Protocol".

Voltage supply and control

5.4 Attaching additional structure

An additional structure can be used as an option, e.g. for supporting workpieces.



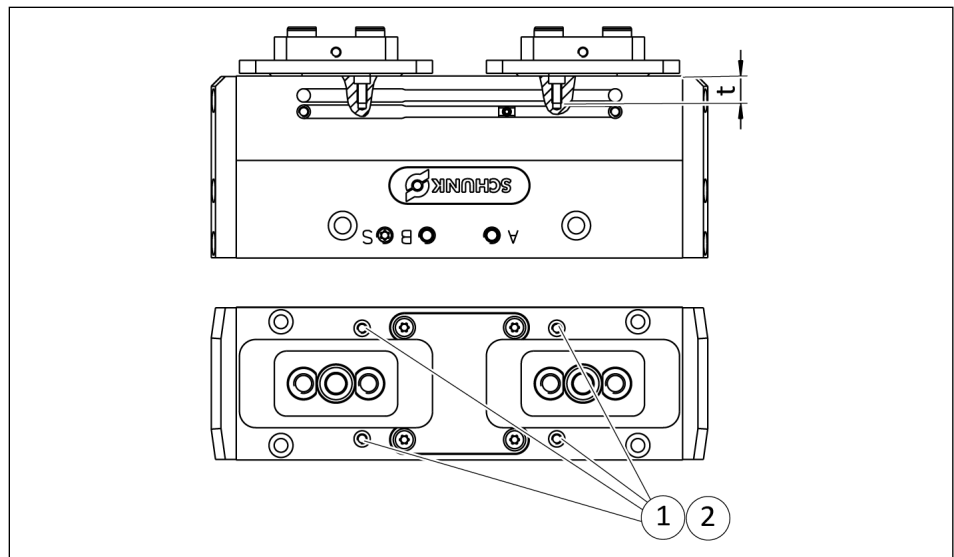
Product with additional structure

1	Product	4	Centering sleeve
2	Additional structure	5	Gripper finger
3	Workpiece		

NOTE

- The external dimensions of the additional structure can exceed the external dimensions of the product but must not interfere with the motion sequence of the gripper fingers.
- When inductive proximity switches are used, the connections for the additional structure cannot be fully utilized, since the control cams attached to the base jaws overrun the threads and a collision would otherwise occur.

Connection dimensions



Connections for additional structures

Item	Mounting	PGL-plus-P				
		10	13	16	20	25
1	Thread in the housing	M2.5	M3	M3	M5	M6
	Max. screw-in depth "t" from stop face [mm]	7	8	8	13	15
	• for variant IOL	5.5	6.5	8	13	15
2	Centering sleeve	∅ 4	∅ 5	∅ 5	∅ 8	∅ 8

Mounting the additional structure

- Mount the additional structure on the product using four screws and centering sleeves.
 - ⇒ Note: The centering sleeves are not included in the scope of delivery and can be ordered from SCHUNK.

5.5 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 ▶ 5.5.1 [33].
- 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.

5.5.1 Overview of sensors

Designation	PGL-plus-P				
	10	13	16	20	25
Inductive proximity switch IN 80	X	X	X	X	X
Magnetic switch MMS 22	X	X	X	X	X
Programmable magnetic switch MMS 22-PI2	X	X	X	X	X
Programmable magnetic switch MMS 22-PI1	X	X	X	X	X
Magnetic switch MMS 22-IOL	X	X	X	X	X
Analog magnetic switch MMS 22-A	X	X	X	X	X

Variant IOL

NOTE

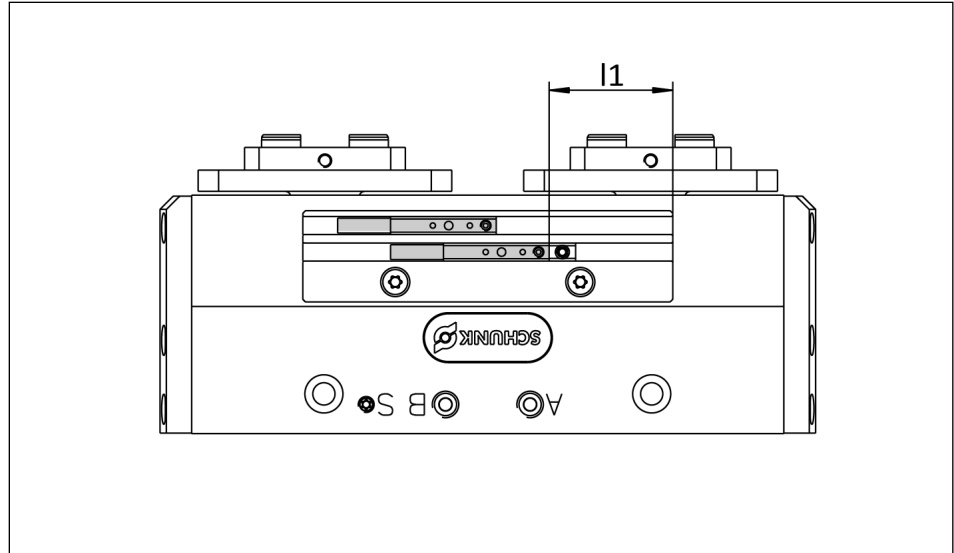
- **The variant with integrated sensor system (IOL)** has a sensor integrated in the gripper. The positions can be monitored over the entire stroke via the IO-Link interface. This variant does not require assembly.
- The positions "Gripper closed" and "Gripper open" are set in the factory.
- For more information on commissioning, see Software Manual "PGL-plus-P with Integrated Sensor System, IO-Link Protocol".

5.5.2 Setting dimensions for magnetic switches

The sensors can be pushed into the groove from the right or left. Depending on the side of the cable outlet, there are different setting dimensions.

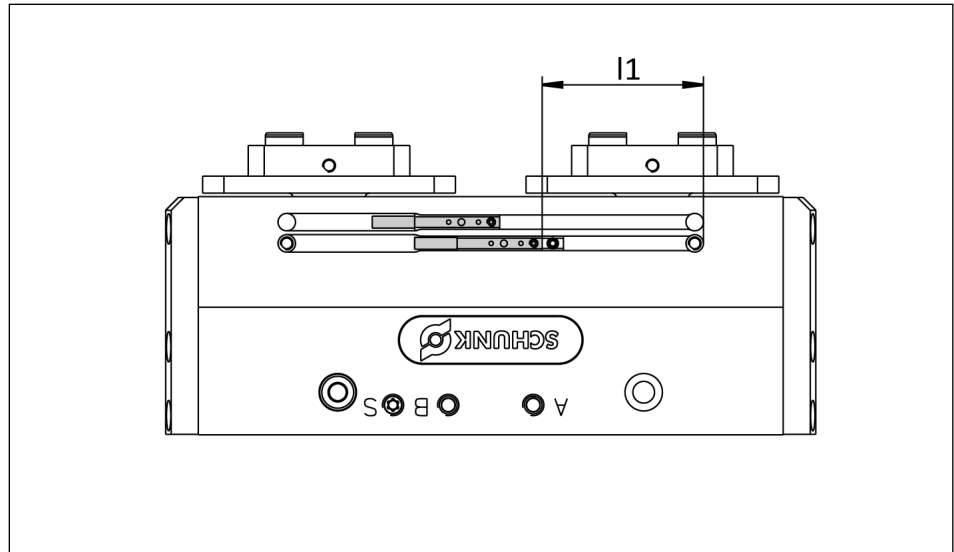
Left cable outlet

PGL-plus-P 10-13



PGL-plus-P 10-13: Setting dimension l1, cable outlet left

PGL-plus-P 16-25



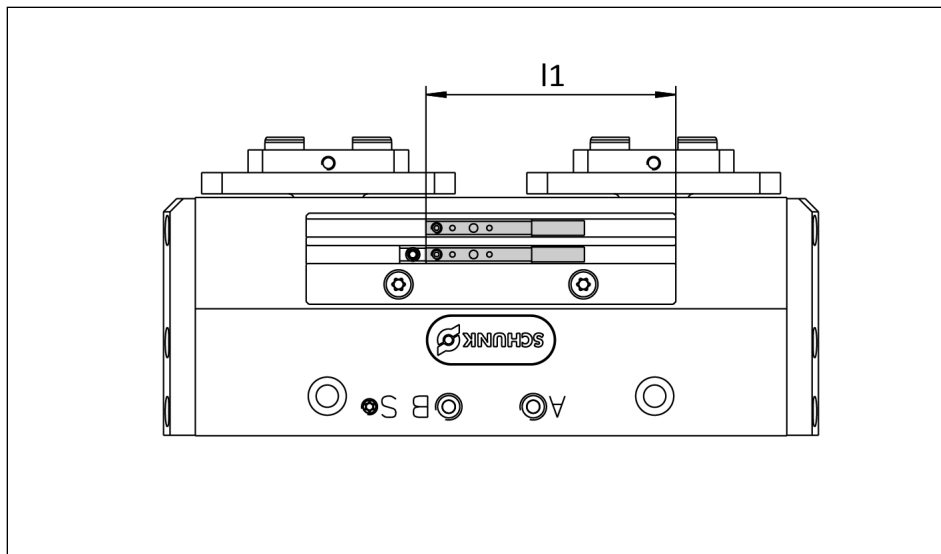
PGL-plus-P 16-25: Setting dimension l1, cable outlet left

Size	Setting dimensions l1 [mm]		
	MMS 22-PI1 MMS 22-PI2	MMS 22-A	MMS 22-IOL
10	17.8	19.8	18.6
13	18.4	20.4	19.8
16	33	35	33.8
20	45.2	47.2	45.6
25	62.6	64.1	63.7

Tab.: Setting dimension l1 - cable outlet left

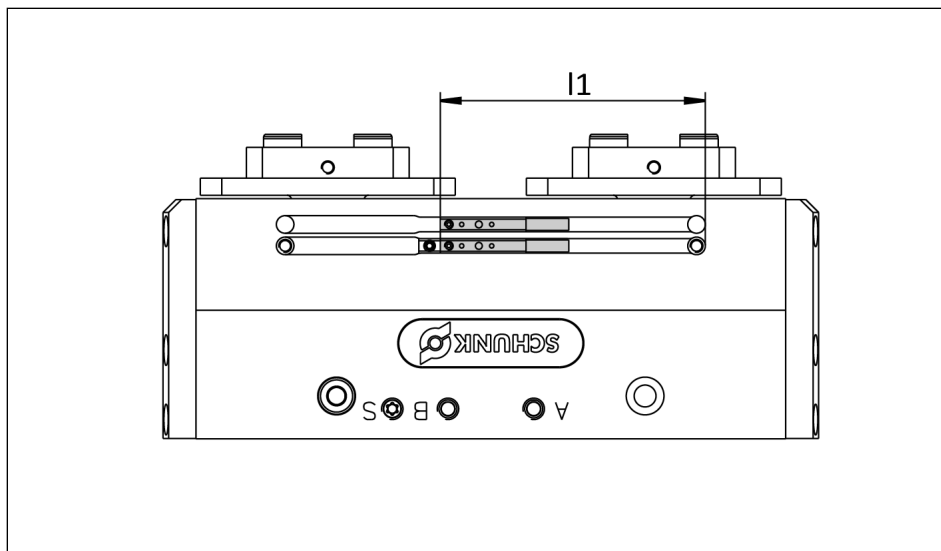
Right cable outlet

PGL-plus-P 10-13



PGL-plus-P 10-13: Setting dimension l1, cable outlet right

PGL-plus-P 16-25



PGL-plus-P 16-25: Setting dimension l1, cable outlet right

Size	Setting dimensions l1 [mm]		
	MMS 22-PI1 MMS 22-PI2	MMS 22-A	MMS 22-IOL
10	46.7	44.9	46
13	47.3	45.4	47.2
16	61.9	60	61.2
20	74	72.1	72.9
25	91.5	89.9	91.1

Tab.: Setting dimension l1 - cable outlet right

5.5.3 Switch-off hysteresis for magnetic switches

Sensors MMS 22-PI1, MMS 22-PI2:

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

For products with X mm nominal stroke per jaw	Min. monitoring area per jaw/ min. stroke difference to be monitored 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.: Minimum detectable stroke difference from nominal stroke

Example: Product with 7 mm nominal stroke per jaw

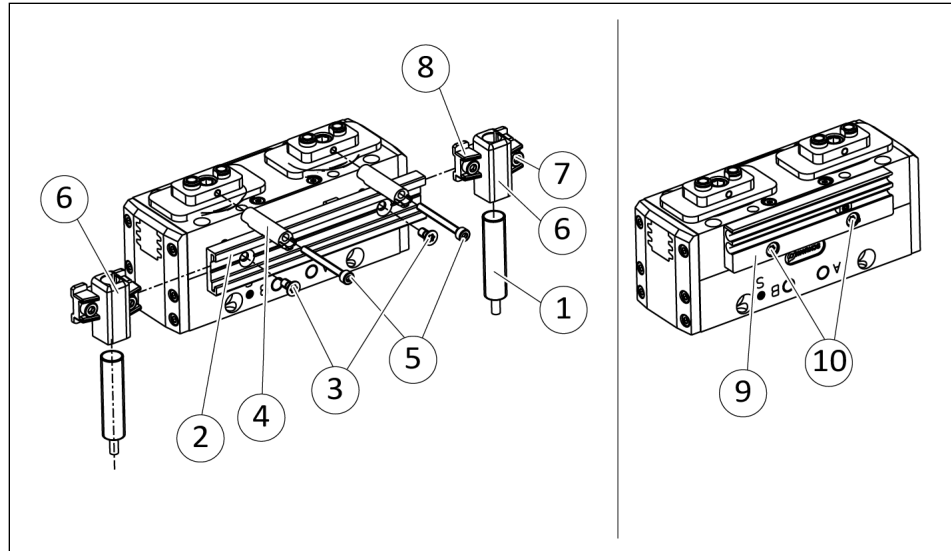
7 mm * 20% = 1.4 mm

5.5.4 Mounting inductive proximity switch IN

CAUTION

Risk of damage to the sensor during assembly!

- Observe the maximal tightening torque.



To mount the IN proximity switches, the product must be retrofitted with a special attachment kit. This attachment kit is available from SCHUNK. See catalog for types that can be ordered. Alternatively, the product can be ordered with pre-assembled attachment kit.

Mounting the attachment kit

1. Size 10–13: If the attachment kit is mounted on the front, loosen screws (10) and remove the sensor holder for the magnetic switch (9).
2. Secure the sensor rail (2) with screws (3).
 - ⇒ Size 16–25: Measure the distance between the top edge of the sensor rail and the housing. The following distance should be available:
Size 16: 1.2 mm, Size 20: 0.4 mm, Size 25: 0.8 mm
If the distance is too large, turn the sensor rail by 180° and secure.
3. Secure the control cam (4) with screws (5).
4. Loosen screw (8) and push sensor holder (6) into the side of the sensor rail (2). Observe the installation position, the long side must point downwards.

Mount sensor – position "Gripper open" or "Part gripped (I.D. gripping)"

1. Loosen the screw (7) on the bracket (6).

2. Slide the sensor (1) to the stop into the bracket (6).
3. Tighten the screw (7) on the bracket (6).
⇒ Tightening torque: 0.2 Nm
4. Put product in the position in which it is to be set.
5. Position the bracket (6) together with the sensor (1) at one end of the sensor rail (2). Slowly slide the bracket (6) from the outside inwards until the sensor switches.
Secure the bracket (6) in this position with screw (8).
⇒ Tightening torque: 0.2 Nm
6. Bring the product into position "Gripper open" or "Part gripped (I.D. gripping)" and test the function.

Mount sensor – position "Gripper closed" or "Part gripped (O.D. gripping)"

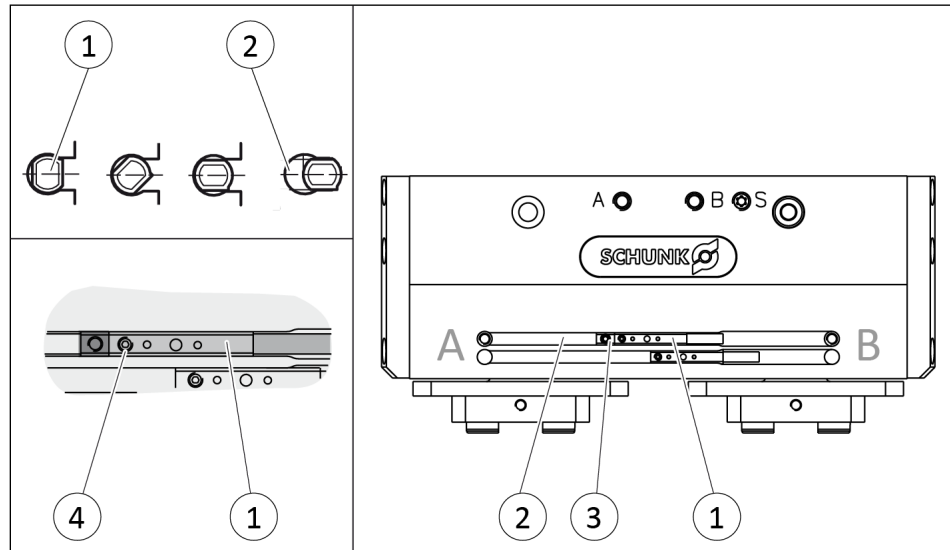
1. Loosen the screw (7) on the bracket (6).
2. Slide the sensor (1) to the stop into the bracket (6).
3. Tighten the screw (7) on the bracket (6).
⇒ Tightening torque: 0.2 Nm
4. Put product in the position in which it is to be set.
5. Slide the bracket (6) together with the sensor (1) to the center of the sensor rail (2). Slowly slide the bracket (6) outwards until the sensor switches.
Secure the bracket (6) in this position with screw (8).
⇒ Tightening torque: 0.2 Nm
6. Bring the product into position "Gripper closed" or "Part gripped (O.D. gripping)" and test the function.

5.5.5 Mounting MMS 22 magnetic switch

CAUTION

Risk of damage to the sensor during assembly!

- Observe the maximal tightening torque.



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

1. Put the product in the desired position.
2. If necessary remove T-nut (3).
3. Turn sensor 1 (1) into the groove (2).
OR: Slide sensor 1 (1) into the groove (2) until sensor 1 (1) stops at starting point/groove end "B".
4. Pull 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 the product into position "Gripper open" or "Part gripped (I.D. gripping)" and test the function.

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

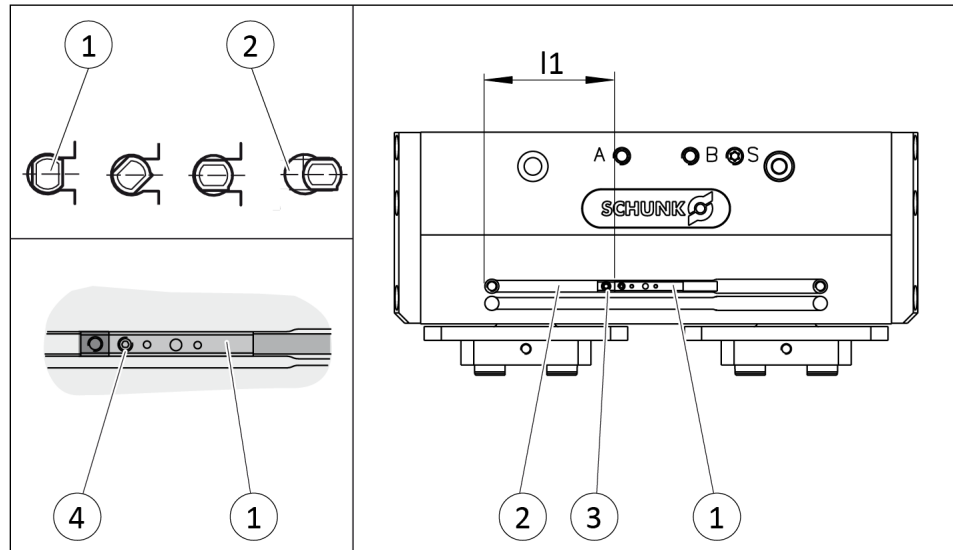
1. Put the product in the desired position.
2. If necessary remove T-nut (3).
3. Turn sensor 2 (1) into the groove (2).
OR: Slide sensor 2 (1) into the groove (2) until sensor 2 (1) stops at groove end "A".
4. Pull sensor 2 (1) back again slowly until it switches.
5. Secure sensor 2 (1) using the set-screw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

5.5.6 Mounting programmable MMS 22-PI2 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 l_1 into the groove (2), ► 5.5.2 [34].

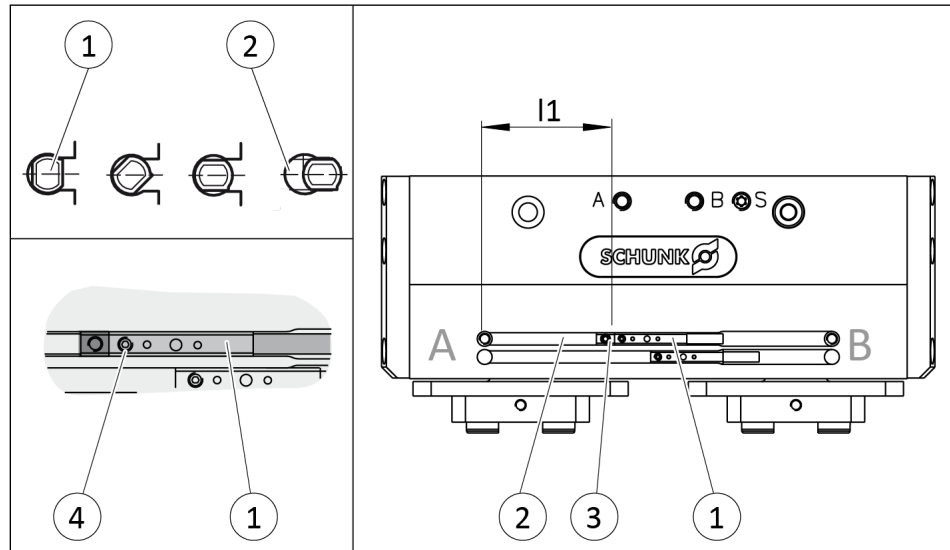
1. Turn the sensor (1) into the groove (2).
OR: Slide the sensor (1) into the groove (2) until the sensor (1) stops at the T-nut (3).
2. Secure the sensor (1) using the set-screw (4).
Tightening torque: 10 Ncm
3. Adjust sensor (1), see sensor assembly and operating manual.

5.5.7 Mounting MMS 22-PI1 programmable 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 l_1 into the groove (2), ► 5.5.2 [34].

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 " l_1 ."
- 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":

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

1. Put product in the position in which it is to be set.
2. If necessary remove T-nut (3).
3. Turn sensor 1 (1) into the groove (2).
OR: Slide sensor 1 (1) into the groove (2) until sensor 1 (1) stops at starting point/groove end "B".
4. Hold teaching tool to the sensor 1 (1) until the sensor flashes.
5. Pull sensor 1 (1) back again slowly until it switches.

6. Slide sensor 1 (1) into the groove (2) slowly in the direction of the housing middle (3), until the sensor 1 (1) flashes rapidly.
⇒ The optimum position is displayed.
7. Secure the sensor 1 (1) using the set-screw (4).
Tightening torque: 10 Ncm
8. Hold teaching tool to the sensor 2 (1) to confirm the position.
⇒ Sensor 1 (1) has been taught in.
9. Bring the product into position "Gripper open" or "Part gripped (I.D. gripping)" and test the function.

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

1. Put product in the position in which it is to be set.
2. If necessary remove T-nut (3).
3. Turn sensor 2 (1) into the groove (2).
OR: Slide sensor 2 (1) into the groove (2) until sensor 2 (1) stops at groove end "A".
4. Hold teaching tool to the sensor 2 (1) until the sensor flashes.
5. Pull sensor 2 (1) back again slowly until it flashes rapidly.
⇒ The optimal position is displayed.
6. Secure sensor 2 (1) using the set-screw (4).
Tightening torque: 10 Ncm
7. Hold teaching tool to the sensor 2 (1) to confirm the position.
⇒ Sensor 2 (1) has been taught in.
8. Bring the product into position "Gripper closed" or "Part gripped (O.D. gripping)" and test the function.

Setting the sensor in "Standard mode":

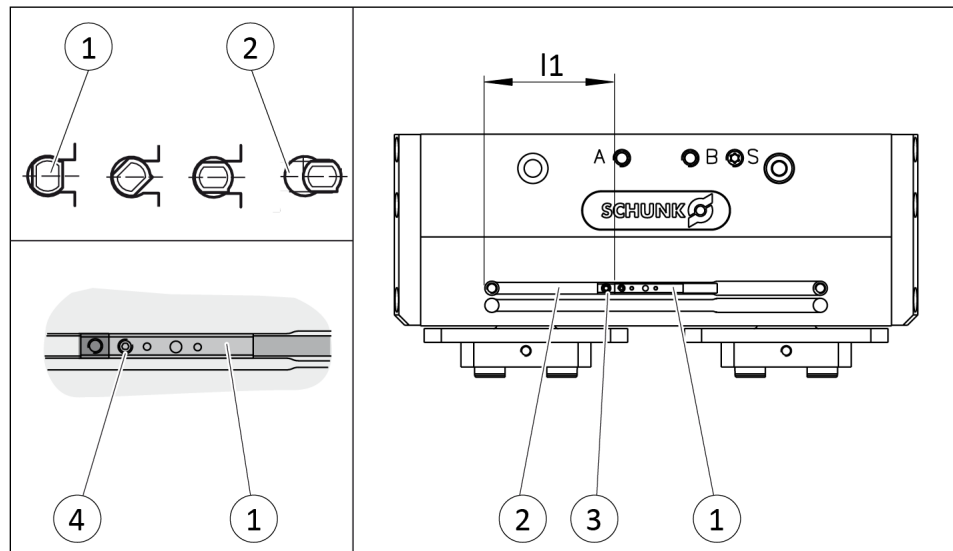
1. Turn the sensor 1 (1) into the groove (2).
OR: Slide the sensor 1 (1) into the groove (2) until the sensor 1 (1) stops at the T-nut (3).
2. Secure the sensor 1 (1) using the set-screw (4).
Tightening torque: 10 Ncm
3. Adjust sensor 1 (1), see sensor assembly and operating manual.
4. Repeat steps for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

5.5.8 Mounting the magnetic switch MMS 22-IOL

CAUTION

Risk of damage to the sensor during assembly!

- Observe the maximal tightening torque.



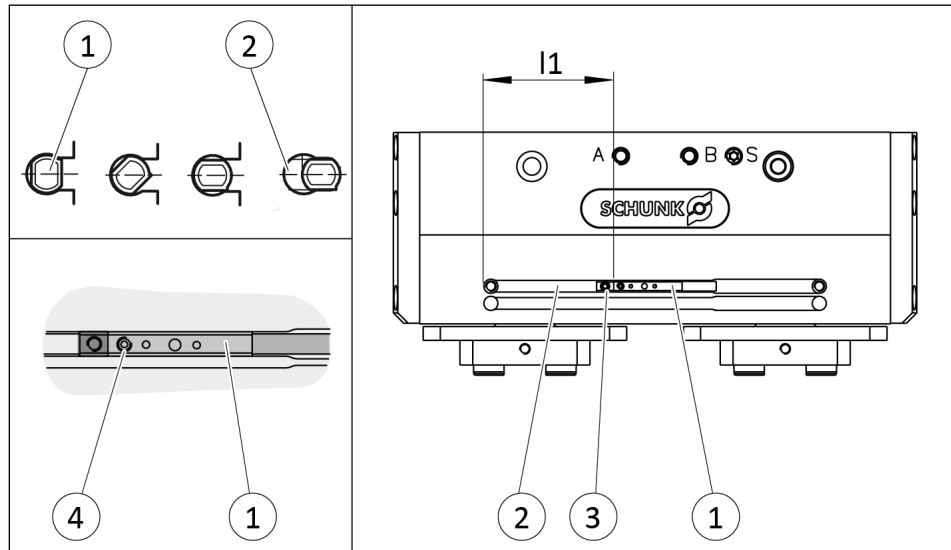
1. Adjust the T-nut (3) to dimension l_1 , ► 5.5.2 [34].
2. Slide sensor (1) into the groove (2) until the sensor (1) stops at the T-nut (3).
3. Secure the sensor (1) using the set-screw (4).
Tightening torque: 10 Ncm
4. Adjust sensor (1), see the Sensor Assembly and Operating Manual.

5.5.9 Mounting analog MMS 22-A magnetic switch

CAUTION

Risk of damage to the sensor during assembly!

- Observe the maximal tightening torque.



1. Adjust the T-nut (3) to dimension l_1 , ► 5.5.2 [34].
2. Slide the sensor (1) over the insertion pocket into the groove (2) according to the shown orientation of the cable outlet until the sensor (1) rests against the T-nut (3).
3. Secure the sensor (1) using the set-screw (4).
Tightening torque: 10 Ncm
4. Adjust sensor (1), see Translation of Sensor Assembly and Operating Manual.

NOTE

- The installation position and orientation described above ensures optimum operation of the sensor, especially in the two peripheral areas.
- The function of the sensor in the two peripheral areas is **not** ensured if the lower groove is used or the sensor is inserted offset by 180°.

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. ▶ 5.3.1 [25]
Pressure drops below minimum.	Check air supply. ▶ 3 [17]
Compressed air lines switched.	Check compressed air lines. ▶ 5.3.2 [28]
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 basic jaws and guidance.	Disassemble and clean the product.
Pressure drops below minimum.	Check air supply. ▶ 3 [17]
Mounting surface is not sufficiently flat.	Check the evenness of the mounting surface. ▶ 5.3.1 [25]
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.
Compressed air lines blocked.	Check compressed air lines of damage.
Mounting surface is not sufficiently flat.	Check the evenness of the mounting surface. ▶ 5.3.1 [25]
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.
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.	<p>Check air supply.</p> <p>▶ 3 [17]</p>
Component part defective.	Replace component or send it to SCHUNK for repair.

6.6 Variant IOL

6.6.1 No communication with the product (LED is flashing or does not light up)

Possible cause	Corrective action
No voltage supply	Check the voltage supply and apply voltage if necessary.

Possible cause	Corrective action
	Check that the plug connection is connected properly and check the pin allocation.
No IO-Link connection	Check cables and connections for function and ensure compatibility of the IO-Link master.

6.6.2 Faults that are displayed via LED status

Possible cause	Corrective action
No voltage supply	<p>Check device status via IO-Link.</p> <p>Take measures according to error message.</p> <p>Acknowledge error. See Software Manual "PGL-plus-P with Integrated Sensor System, IO-Link Protocol".</p>

7 Maintenance

7.1 Safety



⚠ WARNING

Risk of injury due to unexpected movements!

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

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



⚠ CAUTION

Risk of injury from lifting heavy loads!

Lifting, holding and carrying products with a heavy weight – especially in awkward postures – can lead to back disorders and injuries.

- Use appropriate aids to lift and handle the product.
- Take safety measures that prevent the product from falling.
- Wear suitable protective equipment.



⚠ CAUTION

Risk of injury due to contact with lubricants!

Lubricant may cause irritation and allergic reactions if it contacts the skin or eyes.

- Avoid contact between lubricant and skin or eyes.
- Wear safety goggles and protective gloves.
- Observe information on the safety data sheet of the lubricant.



⚠ CAUTION

Risk of cuts due to sharp edges!

A sharp burr can form on the gripper fingers due to wear, which can lead to cuts.

- Wear suitable protective equipment.

Original spare parts

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

7.2 Maintenance intervals

The product is maintenance-free provided that the ambient and operating conditions are met, ▶ 2.5 [11].

Although the product is maintenance-free, it should be regularly inspected visually to ensure that it functions properly.

In the case of extreme ambient and operating conditions, such as

- Contaminated environments
- High temperatures
- Operations using compressed air quality that does not meet ISO 8573-1: 7:4:4

the product must be cleaned, checked for damage and wear, relubricated and the seals replaced as required.

This will help achieve a long service life even under extreme ambient and operating conditions.

Perform all maintenance work without a gripped workpiece!

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.

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 1
Seals and sealing surfaces	SCHUNK grease 1
Cylinder surfaces	SCHUNK grease 1
Serration	SCHUNK grease 1

Details regarding SCHUNK lubricant designations are available at [schunk.com/lubricants](https://www.schunk.com/lubricants).

The product contains food-compliant lubricants as standard.

The requirements of standard EN 1672-2:2020 are not fully met.

NOTE

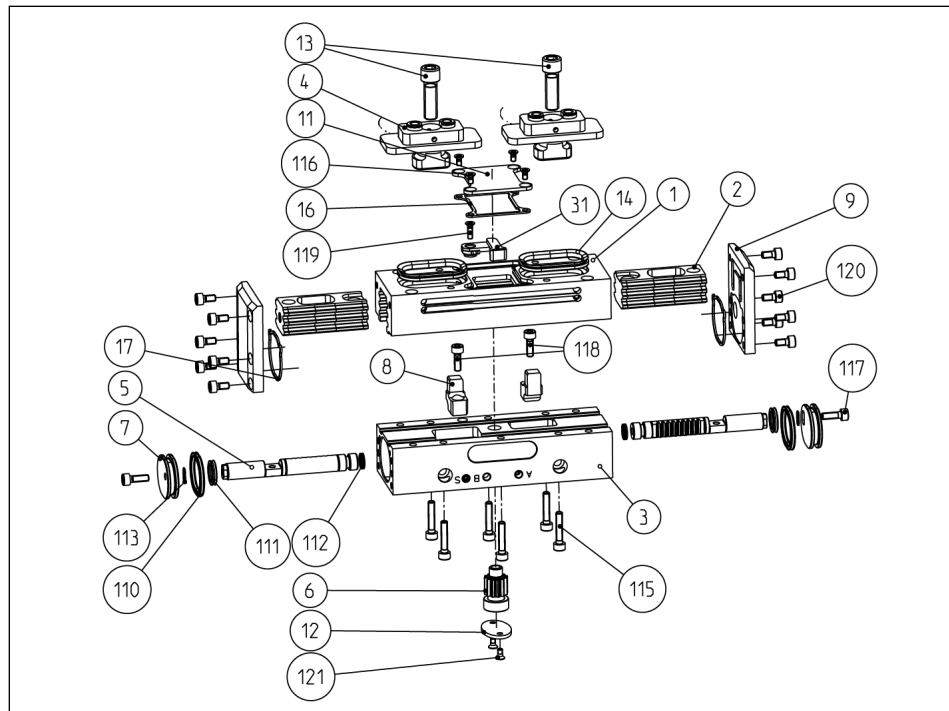
- Change contaminated food-compliant lubricant.
 - Observe information in the safety data sheet from the lubricant manufacturer.
-

7.4 Replace seals

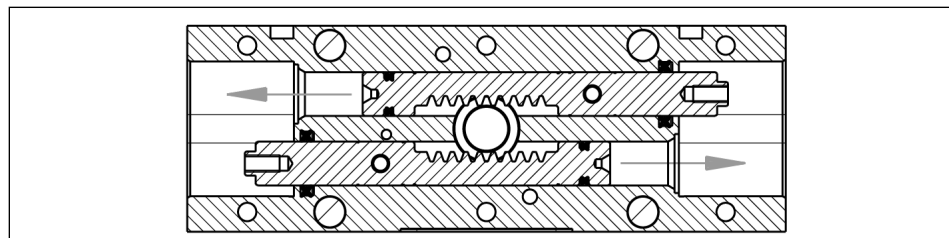
7.4.1 Changing seals (variant without gripping force maintenance)

NOTE

It is recommended to have SCHUNK change the seals.



Changing seals (variant without gripping force maintenance)



Gear rack removal direction (5)

Remove old seals

- There is no compressed air or energy supply.
 - No workpiece is gripped.
1. Remove all compressed air lines, ► 5.3.2 [28].
 2. Remove product from the system/machine.
 3. Remove screws (120) and take off cover (9).
 4. Remove screws (115).
 5. Pull guide housing (1) and drive housing (3) apart.
 6. Mark the installation position of the jaws (2) on the guide housing (1).
 7. Remove screws (13) and take out base jaws (4).
 8. Remove screws (116) and take off the cover (11).

9. Remove the jaws (2) from the housing (1).
10. Remove screws (117) and take cylinder piston (7) out of the drive housing (3).
11. Remove screw (121), remove cover (12) and take pinion (6) out of the drive housing (3).
12. Remove screw (118), remove driver (8).
13. Press the gear rack (5) into the drive housing (3) and remove it from the other side.
14. Remove old seals (14,16,17,110,111,112 and 113).

Install new seals

Note: When installing, secure all screws with medium-strength threadlocker and observe the tightening torque, ▶ 7.6 [60].

1. Clean guiding areas.
2. Attach new seals (110,111,112) from the seal kit.
3. Re-lubricate guiding areas and serration.
4. Press the gear rack (5) into the drive housing (3).
IMPORTANT! Observe the installation position and direction of the gear racks (5) in the drive housing (3).
5. Press the driver (8) into the gear rack (5) and secure with the screw (118).
6. Push the driver (8) together and press the pinion (6) into the drive housing (3).
7. Secure the cover (12) with the screws (121).
8. Insert the seals (113) into the cylinder piston (7).
9. Insert the cylinder piston (7) into the drive housing (3).
10. Tighten screws (117).
11. Insert jaws (2) into the guide housing (1). **IMPORTANT! Observe the installation position of the jaws (2) in the housing (1).**
12. Insert the magnet holder (31) into the jaw (2) and fasten it with the screw (119).
13. Insert the flat gasket (16).
14. Secure the cover (11) with the screws (116).
15. Insert the gaskets (14).
16. Press base jaws (4) into jaws (2) and secure with screw (13).
17. Assemble the guide housing (1) and drive housing (3) and secure with the screws (115).
18. Insert the flat gasket (17) into the cover (9).
19. Secure the cover (9) with the screws (120).
20. Mount product onto the system/machine.
21. Connect all compressed air lines.

7.4.2 Changing seals (variant with "O.D. gripping" gripping force maintenance)

NOTE

During assembly, the cylinder piston must be aligned precisely. We therefore recommend having SCHUNK change the seals.

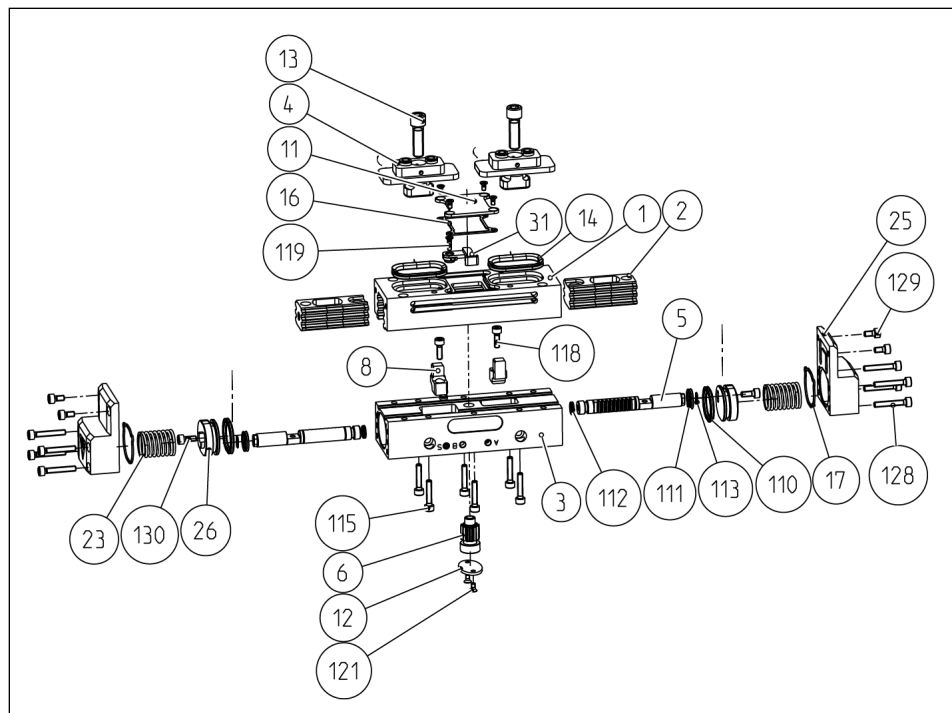


⚠ WARNING

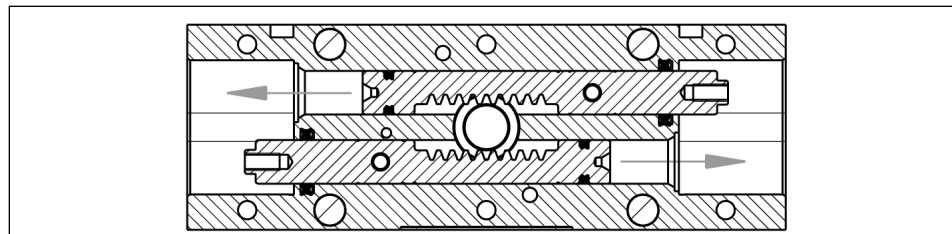
Risk of injury due to spring forces!

Products that use spring force or have gripping force maintenance contain parts that are under spring tension. This can cause components to move unexpectedly when being dismantled, which may result in serious injuries.

- Carefully dismantle the product.



Changing seals (variant with gripping force maintenance "O.D. gripping" (AS))



Gear rack removal direction (5)

Remove old seals

- There is no compressed air or energy supply.
 - No workpiece is gripped.
1. Remove all compressed air lines, ▶ 5.3.2 [28].

2. Remove product from the system/machine.
3. **CAUTION Cover (25) is under spring tension.** Carefully remove the screws (128, 129). Remove cover (25) and spring (23).
4. Remove screws (115).
5. Pull guide housing (1) and drive housing (3) apart.
6. Mark the installation position of the jaws (2) on the guide housing (1).
7. Remove screws (13) and take out base jaws (4).
8. Remove screws (116) and take off the cover (11).
9. Remove screws (119) and take off the magnet holder (11).
10. Remove the jaws (2) from the housing (1).
11. Remove screws (130) and take cylinder piston (26) out of the drive housing (3).
12. Remove screw (121), remove cover (12) and take pinion (6) out of the drive housing (3).
13. Remove screw (118), remove driver (8).
14. Press the gear rack (5) into the drive housing (3) and remove it from the other side.
15. Remove old seals (14,16,17,110,111,112 and 113).

Install new seals

Note: When installing, secure all screws with medium-strength threadlocker and observe the tightening torque, ▶ 7.6 [□ 60].

1. Clean guiding areas.
2. Attach new seals (110,111,112) from the seal kit.
3. Re-lubricate guiding areas and serration.
4. Press the gear rack (5) into the drive housing (3).
IMPORTANT! Observe the installation position and direction of the gear racks (5) in the drive housing (3).
5. Press the driver (8) into the gear rack (5) and secure with the screw (118).
6. Push the driver (8) together and press the pinion (6) into the drive housing (3).
7. Secure the cover (12) with the screws (121).
8. Insert the seals (113) into the cylinder piston (26).
9. Insert the cylinder piston (26) into the drive housing (3).
10. Tighten screws (130).
11. Insert jaws (2) into the guide housing (1). **IMPORTANT! Observe the installation position of the jaws (2) in the housing (1).**

- 12.** Insert the magnet holder (31) into the jaw (2) and fasten it with the screw (119).
- 13.** Insert the flat gasket (16).
- 14.** Secure the cover (11) with the screws (116).
- 15.** Insert the gaskets (14).
- 16.** Press base jaws (4) into jaws (2) and secure with screw (13).
- 17.** Assemble the guide housing (1) and drive housing (3) and secure with the screws (115).
- 18.** Insert the flat gasket (17) into the cover (25).
- 19.** Insert the spring (23) into the drive housing (3). In doing so, observe the alignment of the spring in relation to the cylinder piston.
- 20.** Secure the cover (25) with screws (128, 129).
- 21.** Mount product onto the system/machine.
- 22.** Connect all compressed air lines.

7.4.3 Changing seals (variant with "I.D. gripping" gripping force maintenance)

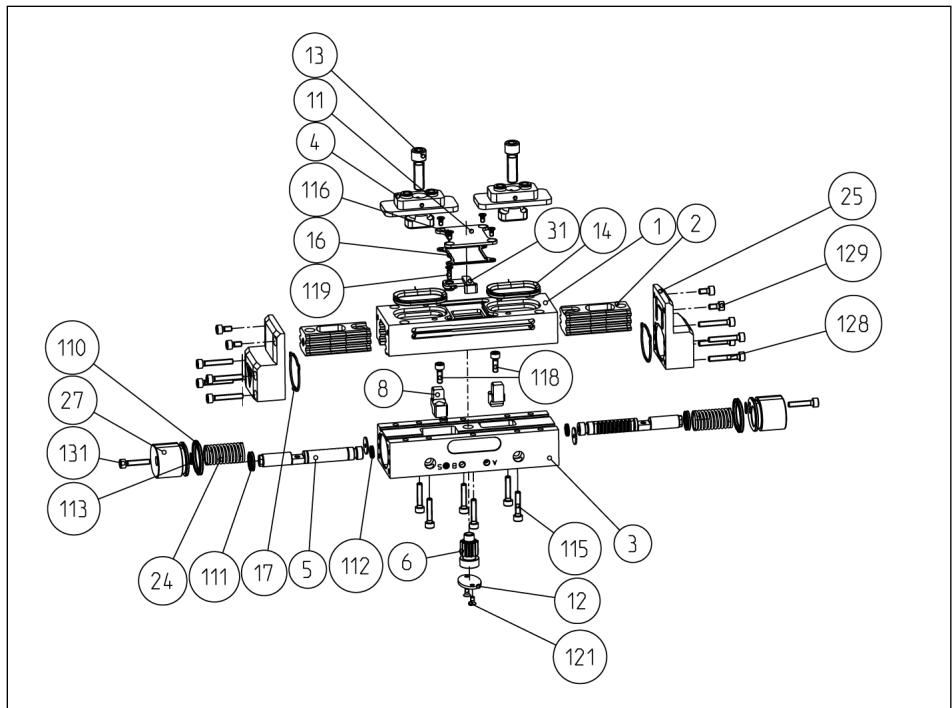


⚠ WARNING

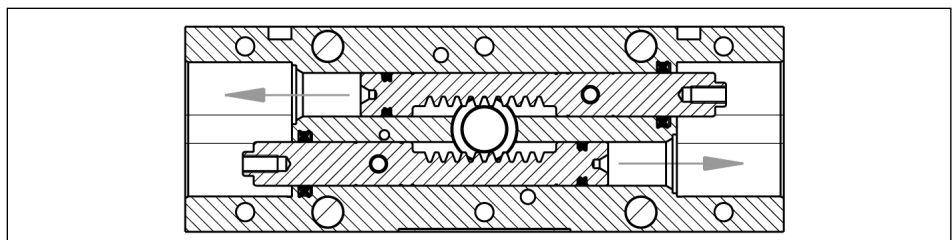
Risk of injury due to spring forces!

Products that use spring force or have gripping force maintenance contain parts that are under spring tension. This can cause components to move unexpectedly when being dismantled, which may result in serious injuries.

- Carefully dismantle the product.



Changing seals (variant with gripping force maintenance "I.D. gripping" (IS))



Gear rack removal direction (5)

Remove old seals

- There is no compressed air or energy supply.
 - No workpiece is gripped.
1. Remove all compressed air lines, ▶ 5.3.2 [28].
 2. Remove product from the system/machine.
 3. Remove screws (128, 129) and take off cover (25).

4. CAUTION The cylinder piston is under spring tension.

Carefully remove screws (131) and take cylinder piston (27), spring (24) out of the drive housing (3).

5. Remove screws (115).
6. Pull guide housing (1) and drive housing (3) apart.
7. Mark the installation position of the jaws (2) on the guide housing (1).
8. Remove screws (13) and take out base jaws (4).
9. Remove screws (116) and take off the cover (11).
10. Remove screws (119) and take off the magnet holder (11).
11. Remove the jaws (2) from the housing (1).
12. Remove screw (121), remove cover (12) and take pinion (6) out of the drive housing (3).
13. Remove screw (118), remove driver (8).
14. Press the gear rack (5) into the drive housing (3) and remove it from the other side.
15. Remove old seals (14,16,17,110,111,112 and 113).

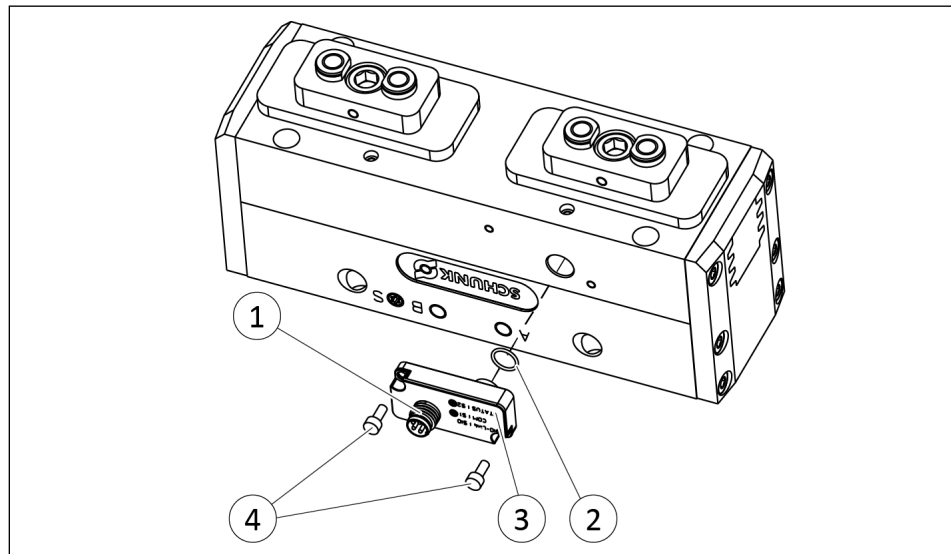
Install new seals

Note: When installing, secure all screws with medium-strength threadlocker and observe the tightening torque, ▶ 7.6 [60].

1. Clean guiding areas.
2. Attach new seals (110,111,112) from the seal kit.
3. Re-lubricate guiding areas and serration.
4. Press the gear rack (5) into the drive housing (3).
IMPORTANT! Observe the installation position and direction of the gear racks (5) in the drive housing (3).
5. Press the driver (8) into the gear rack (5) and secure with the screw (118).
6. Push the driver (8) together and press the pinion (6) into the drive housing (3).
7. Secure the cover (12) with the screws (121).
8. Insert the seal (113) into the cylinder piston (27).
9. Tighten the screw (131).
10. Insert jaws (2) into the guide housing (1). **IMPORTANT! Observe the installation position of the jaws (2) in the housing (1).**
11. Insert the magnet holder (31) into the jaw (2) and fasten it with the screw (119).
12. Insert the flat gasket (16).
13. Secure the cover (11) with the screws (116).

- 14.** Insert the gaskets (14).
- 15.** Press base jaws (4) into jaws (2) and secure with screw (13).
- 16.** Assemble the guide housing (1) and drive housing (3) and secure with the screws (115).
- 17.** Insert the flat gasket (17) into the cover (25).
- 18. CAUTION The components are under spring tension!** Place the spring (24) in the cylinder piston (27) and push it carefully in the direction of the drive housing (3). Tighten the screw (131).
- 19.** Secure the cover (25) with screws (128, 129).
- 20.** Mount product onto the system/machine.
- 21.** Connect all compressed air lines.

7.5 Changing the sensor (for IOL variant)



Changing the sensor (variant IOL)

Saving data

It is possible to read out the data of the sensor and transfer it to the new sensor.

To do this, save the sensor data to the control system before disassembling the sensor, see Software Manual "PGL-plus-P with Integrated Sensor System, IO-Link Protocol".

Removing the sensor

- There is no compressed air or energy supply.
 - No workpiece is gripped.
1. Loosen the threaded ring fitting on the IO-Link cable and remove the cable from the connector (1).
 2. Loosen screws (4) and pull sensor (3) out of the housing.

Installing the sensor

1. Prepare the new sensor system. This is available from SCHUNK, ▶ 1.4.1 [9].
2. Mount the new O-ring seal (2) on the sensor head.
3. Insert sensor (3) into the sensor hole until the stop.
4. Install and tighten the screws (4) with medium-strength threadlocker.
 - ⇒ Tightening torque: 0.11 Nm

NOTE

For information on commissioning after a sensor change, see Software Manual "PGL-plus-P with Integrated Sensor System, IO-Link Protocol"

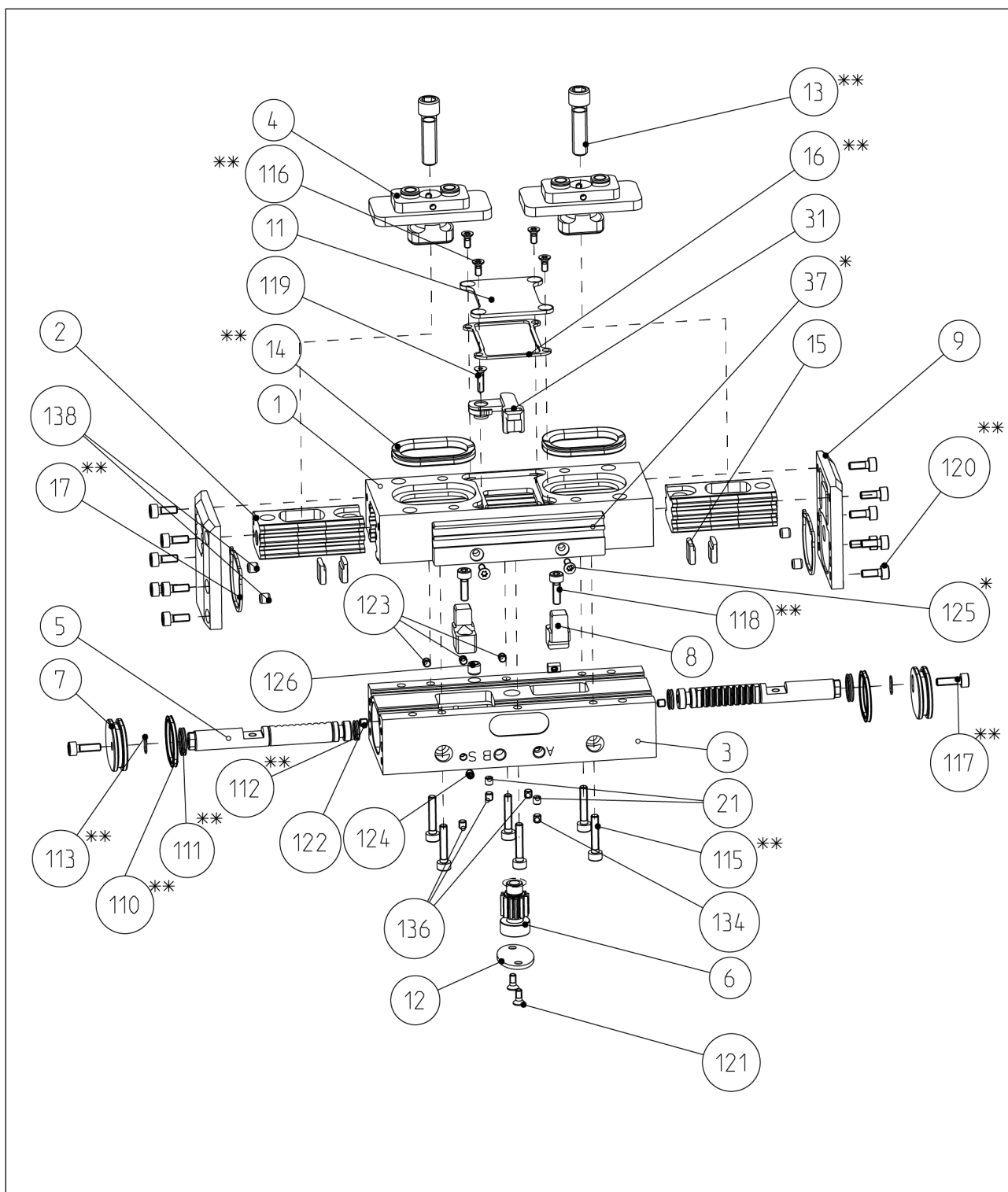
7.6 Tightening torques

Position of the item numbers: ▶ 7.7 [61]

Size	Item 13	Item 115	Item 116	Item 117	Item 118	Item 119	Item 120, 128, 129
PGL-plus-P 10	9	0.53	0.27	2.1	2.1	0.06	0.53
PGL-plus-P 13	15	0.94	0.53	2.1	2.1	0.11	0.94
PGL-plus-P 16	37	2.2	0.94	5.3	5.3	0.21	2.2
PGL-plus-P 20	72	4.3	2.2	11	11	0.21	4.3
PGL-plus-P 25	120	4.3	2.2	18	18	0.45	7.3

Tab.: Tightening torque for screws – details in Nm

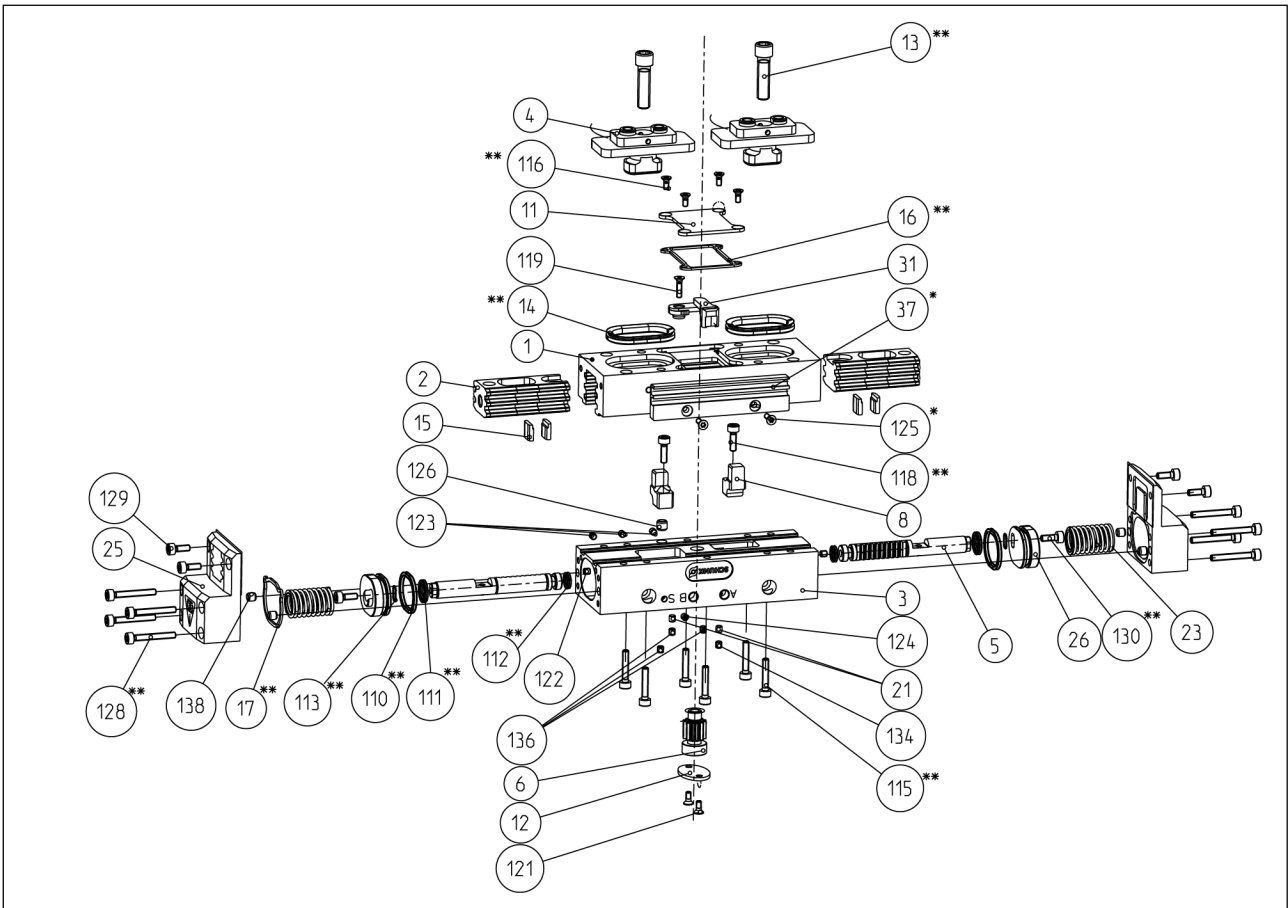
7.7 Assembly drawing



PGL-plus-P 10 – 25 standard

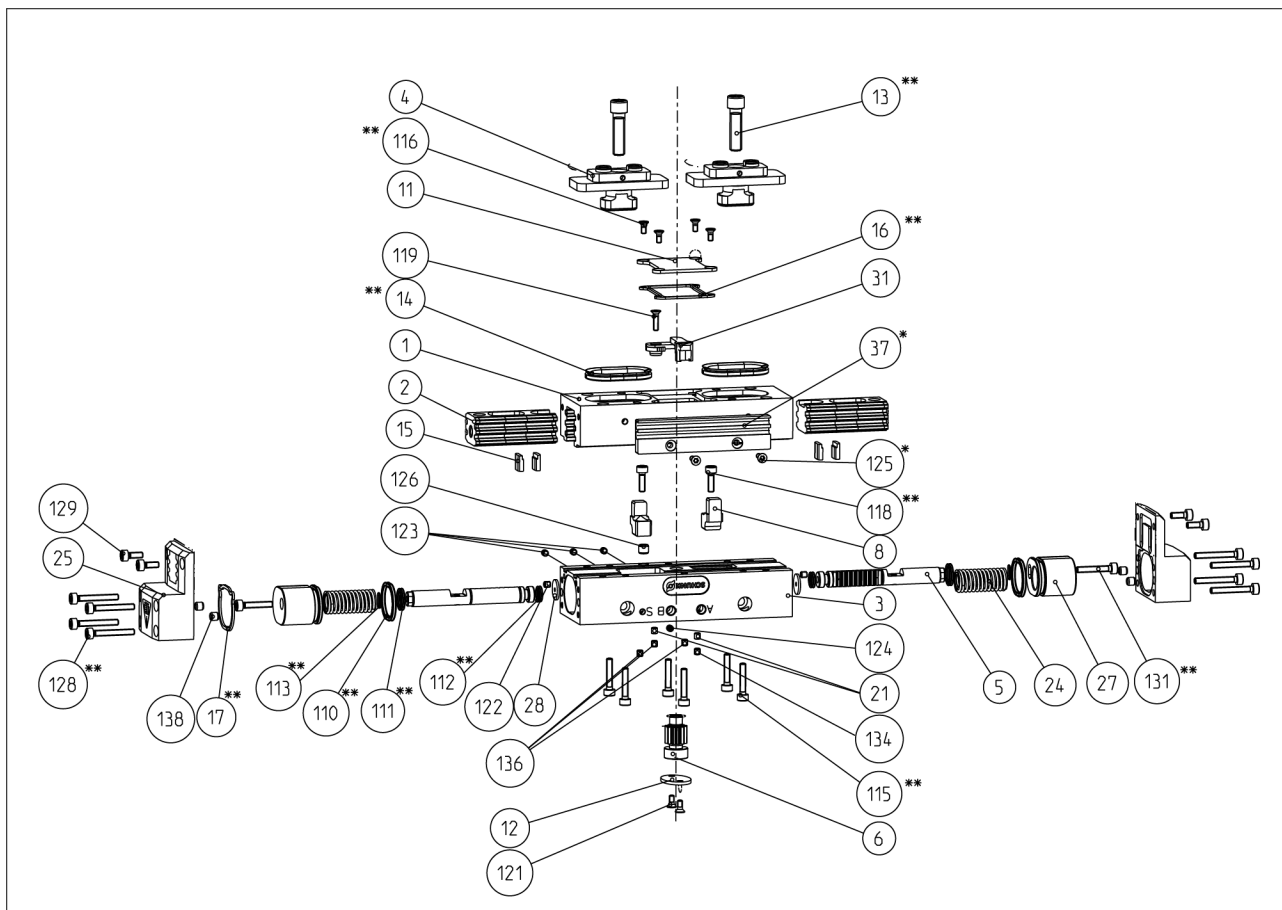
* Not with PGL-plus-P 16 – 25

** Included in the "sealing kit" spare parts package



PGL-plus-P 10 – 25 with gripping force maintenance for O.D. gripping

- * Not with PGL-plus-P 16 – 25
- ** Included in the "sealing kit" spare parts package



PGL-plus-P 10 – 25 with gripping force maintenance for I.D. gripping

- * Not with PGL-plus-P 16 – 25
- ** Included in the "sealing kit" spare parts package

8 Disassembly and disposal



⚠ 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.
-
- Disconnect the entire energy supply from the product, discharge any accumulated residual energy.
 - Remove any lubricant and dispose of in an environmentally friendly manner.
 - Follow local regulations on dispatching product components for recycling or proper disposal.

9 Translation of 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 / PGL-plus-P / pneumatic
ID 1476521 ... 1476523, 1476563, 1476565, 1476569, 1476570,
1476596 ... 1476598, 1476603 ... 1476605, 1476640 ... 1476642,
1476647 ... 1476649, 1476668, 1476685 ... 1476687,
1476702 ... 1476704, 1476818, 1476835 ... 1476837,
1476842 ... 1476844, 1476863, 1476870 ... 1476872,
1476877 ... 1476879, 1512484, 1512491 ... 1512493, 1512498 ... 1512500

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

EN ISO 14118:2018 Safety of Machinery – Prevention of unexpected start-up

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

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

Signature: see original declaration

Lauffen/Neckar, April 2024

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

10 UKCA declaration of incorporation

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

Manufacturer/
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 / PGL-plus-P / pneumatic
ID number 1476521 ... 1476523, 1476563, 1476565, 1476569, 1476570, 1476596 ...
 1476598, 1476603 ... 1476605, 1476640 ... 1476642, 1476647 ...
 1476649, 1476668, 1476685 ... 1476687, 1476702 ... 1476704, 1476818,
 1476835 ... 1476837, 1476842 ... 1476844, 1476863, 1476870 ...
 1476872, 1476877 ... 1476879, 1512484, 1512491 ... 1512493, 1512498 ...
 1512500

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

EN ISO 14118:2018 Safety of Machinery – Prevention of unexpected start-up

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

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



Lauffen/Neckar, April 2024

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

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

RoHS Directive

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

REACH Regulation

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

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

Signature: see original declaration

Lauffen/Neckar, April 2024

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



SCHUNK SE & Co. KG
Spanntechnik | Greiftechnik | Automatisierungstechnik

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