

Assembly and Operating Manual

PLG

Configurable Pneumatic 2-Finger Long-Stroke Gripper

Translation of Original Operating
Manual

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

Tel. +49-7133-103-2503

Fax +49-7133-103-2189

cmg@de.schunk.com



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 [6] are applicable.

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

1.1.1 Presentation of Warning Labels

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



⚠ DANGER

Dangers for persons!

Non-observance will inevitably cause irreversible injury or death.



⚠ WARNING

Dangers for persons!

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



⚠ CAUTION

Dangers for persons!

Non-observance can cause minor injuries.

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 *
- Assembly and Operating Manual for Position Clamping **

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

Documents marked with asterisks (**) can be downloaded from www.mayr.com.

1.1.4 Sizes and variants

This manual applies to the following sizes and variants:

	PLG 30	- 250	- 2	- SYN	- AKO-	...
Size	20/30/50/75/120					
Stroke per jaw	100 mm – 400 mm (freely selectable in increments of 1 mm)					
Finger version	1 = short finger length 2 = long finger length					
Synchronization	SYN = synchronous OSY = without synchronization ASY = asynchronous					
Gripper mounting *	- = none APL = one-piece adapter plate (gripper side) AKO = complete adapter plate (gripper side + blank) ISO... = complete adapter plate (gripper side + ISO flange)					
Options *	-KPI/-SDV-P/-HBA/-SAB/-IN/-IPM -> All available options can be found in the catalog data sheet. * no details on the name plate					

Type key

The catalog data sheet contains more information. The latest relevant version is valid.

1.2 Warranty

If the product is used as intended, the warranty is valid for 12 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

- Configurable Pneumatic 2-Finger Long-Stroke Gripper PLG in the version ordered
- Assembly and operating manual for the product including declaration of incorporation
- Accessory pack

Content of the accessory pack:

- 8 x centering sleeves for mounting the finger

Note: In the case of the adapter plate with ISO flange variant, the mounting material is already pre-assembled and included in the scope of delivery.

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.

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 [15].
- 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 for the gripper fingers

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

- 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 [📄 15].

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.



⚠ WARNING

Risk of injury from objects falling during energy supply failure

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

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

3 Technical data

Connection data

Designation	
Pressure medium	Compressed air, compressed air quality according to ISO 8573-1:2010 [7:4:4]
Nominal operating pressure [bar]	6
Minimum pressure [bar]	2
Maximum pressure [bar]	6
Minimum pressure position clamping [bar]	4

Ambient conditions and operating conditions

Designation	
Ambient temperature [°C]	
min.	+5
max.	+90
Protection class IP	30
Noise emission [dB(A)]	≤70

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

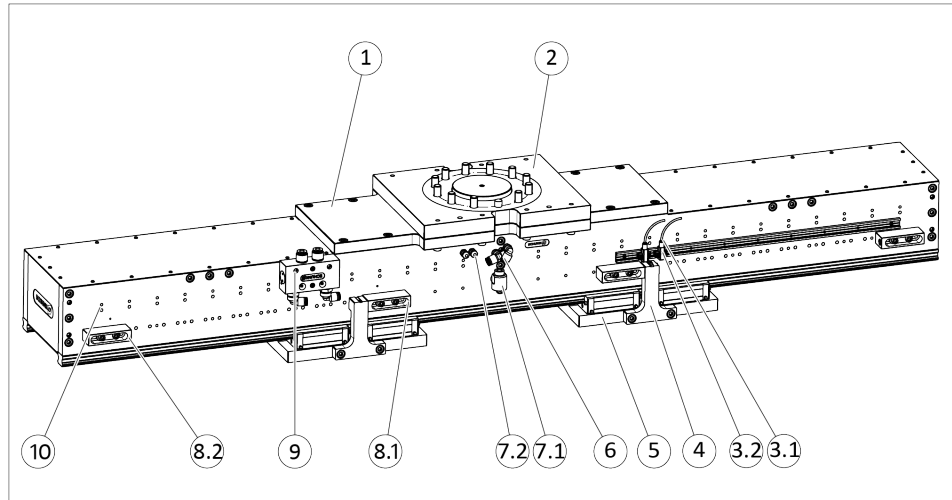
Technical data of the position clamping (variant KP)

Designation	PLG				
	20	30	50	75	120
Size of clamping element	30	40	40.1	60	70
Holding force per clamping element [N]	800	1500	2100	4600	7500
Mayr type	30/381.00 1.0/4.0/8 00	40/381.00 1.0/4.0/15 00	40/381.011 .0/4.0/210 0	60/381.00 1.0/4.0/4 600	70/381.00 1.0/4.0/75 00

For more information on the sensor, visit www.mayr.com.

4 Design and description

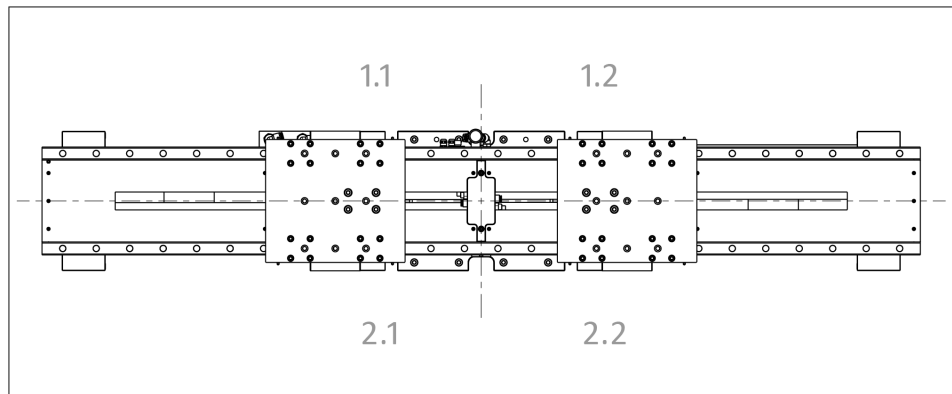
4.1 Design



Configurable Pneumatic 2-Finger Long-Stroke Gripper PLG with all possible options shown

- | | |
|-----|---|
| 1 | One-piece adapter plate (gripper side) |
| 2 | Complete adapter plate consisting of: <ul style="list-style-type: none"> • One-piece adapter plate (item 1) + blank (blank without drilling pattern) or • One-piece adapter plate (item 1) + ISO flange EN ISO 9409, ▶ 6.2.1.1 [26] |
| 3.1 | Inductive proximity switch |
| 3.2 | Attachment kit for inductive proximity switch incl. guide rail |
| 4 | Stop for stroke limitation and cam switch for inductive monitoring |
| 5 | Base jaw |
| 6 | Main compressed air connection |
| 7* | Position clamping, ▶ 4.1.1 [17] |
| 7.1 | Compressed air connection for position clamping / quick air relief valve |
| 7.2 | Cable fitting (cable outlet) monitoring position clamping |
| 8.1 | Freely positionable end stops in the direction of closing |
| 8.2 | Freely positionable end stops in the direction of opening |
| 9 | Pressure maintenance valve SDV-P |
| 10 | Lateral mounting option for attachments |
| * | not shown |

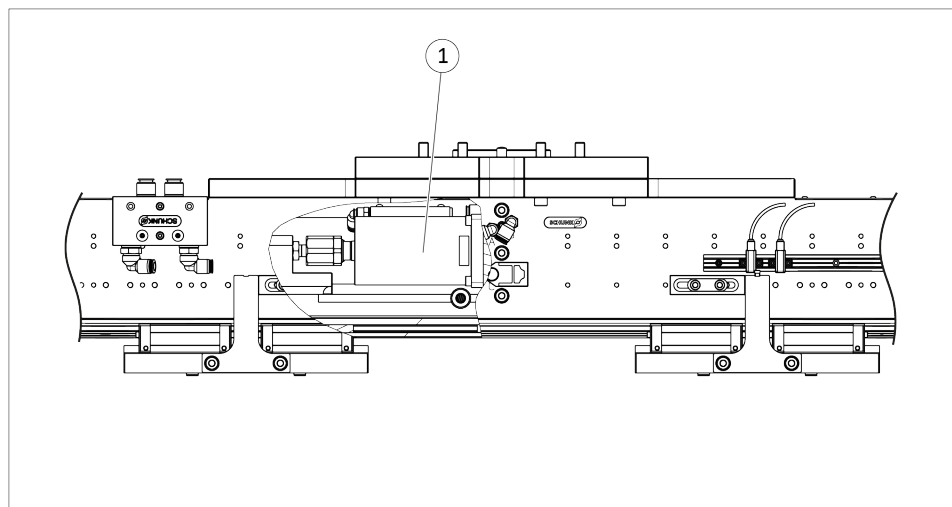
Positions for the individually configurable options



Page 1: Name plate with product designation

Page 2: SCHUNK name plate

4.1.1 Position clamping



1 Position clamping

The spring-loaded closing and pneumatically opening ROBA® linear stop clamps a piston rod steplessly and free from play. The piston chamber is filled with compressed air (min. 4 bar), thereby canceling out the spring force. In the event of a power failure, the compressed air in the piston chamber is discharged. The spring force acts on the clamping element.

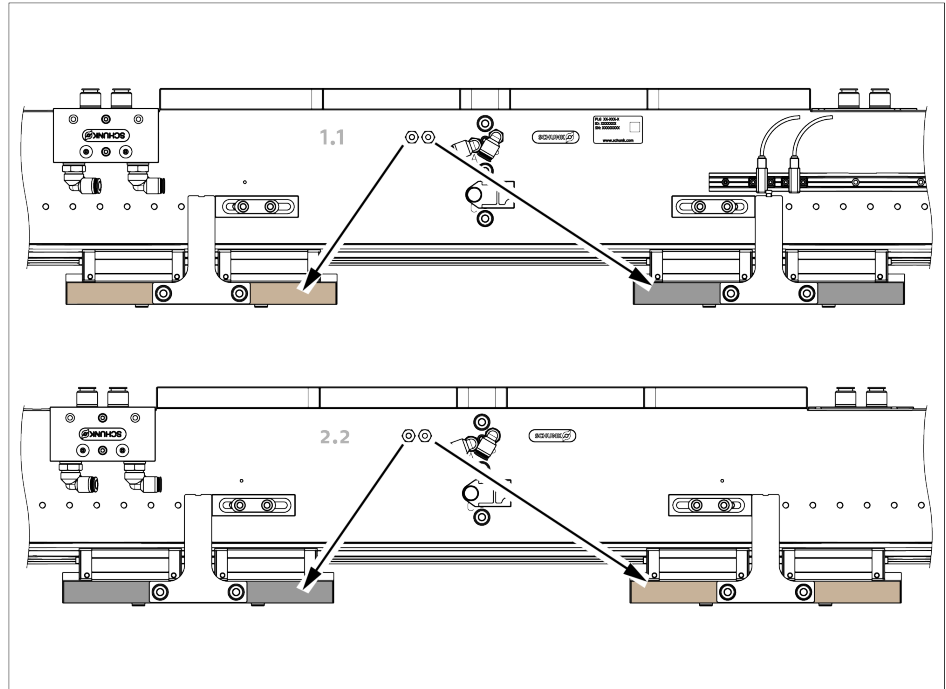
The piston rod clamps reliably and securely.

4.1.1.1 Cable outlet

NOTE

The cable outlet is mounted depending on the configuration of the position clamp.

Cable outlet at position 1.1 or 2.2.

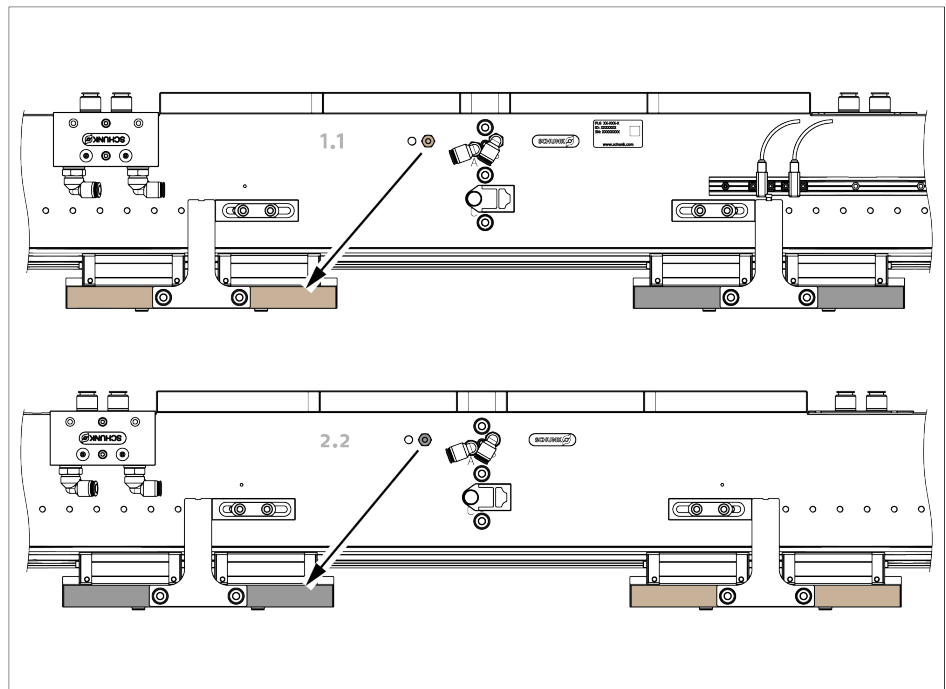


Cable outlet on position 1.1 or 2.2

Variant ASY and cable outlet at position 1.1 and 2.2.

NOTE

With the ASY variant and the selection "Position clamping incl. monitoring (cable outlet at position 1.1 and 2.2.)", there is **only** one cable outlet per side, which belongs to the position clamping of the **left** base jaw.



Variant ASY with cable outlet on pos. 1.1 and 2.2

4.2 Description

Pneumatic 2-finger parallel gripper with long jaw stroke, high gripping force and profiled rail guide for the use of long gripper fingers

By pressure actuation of the opposite piston, the base jaws are guided by a carrier on the piston, and are set in motion. The synchronization of the jaw stroke is done with a rack and pinion principle.

Synchronous variant (SYN): Both base jaws are controlled together and synchronized via rack-and-pinion kinematics.

Asynchronous variant (ASY): Both base jaws can be controlled independently and separately from each other.

Without synchronization (OSY): Enables the two base jaws to be controlled together, whereby the movement of these is not synchronized.

5 Transport

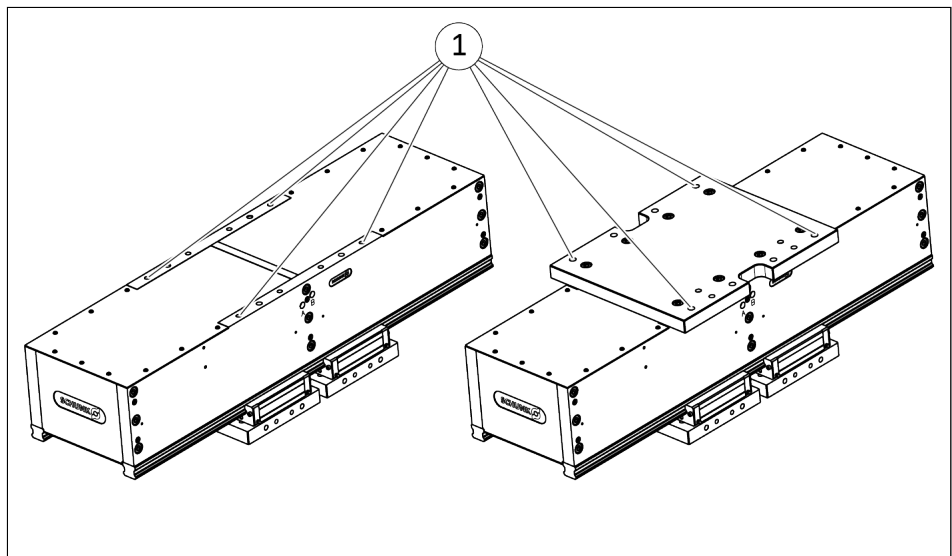


⚠ WARNING

Risk of injury from falling of the product!

During transport and assembly the product may fall down and cause serious injuries.

- Secure unit with adequately sized straps.
- Use transport threads.
- Wear appropriate safety equipment.



Left: without adapter plate /

Right: one-piece adapter plate

- 1.** Fasten eye bolts to the threads/through-holes (1) provided for this purpose.
Note: Eyebolts are not included.
- 2.** When handling heavy weights, use lifting equipment to lift the product and transport it by appropriate means.
 - ⇒ Remove the eyebolts after transport.

6 Assembly

6.1 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.



⚠ WARNING

Risk of injury from falling of the product!

During transport and assembly the product may fall down and cause serious injuries.

- Secure unit with adequately sized straps.
- Use transport threads.
- Wear appropriate safety equipment.



⚠ WARNING

Risk of injury due to improperly carried out assembly!

Improperly carried out assembly work can lead to severe injuries and property damage.

- Before beginning work, ensure sufficient assembly clearance.
- Secure components from falling down or over.
- Ensure that all work has been carried out in accordance with the specifications in these instructions.
- Observe tightening torques.

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)

Overview

1. Screw the product to the machine/system, ▶ 6.2.1 [22].
 - ⇒ Observe the maximal tightening torque, admissible screw-in depth and, if necessary, strength class.
 - ⇒ Use suitable connecting elements (adapter plates) if necessary.
2. Secure the gripper fingers to the base jaws, ▶ 6.2.1 [22].

6.2 Connections

6.2.1 Mechanical connection

6.2.1.1 Connections on the housing

Mounting the gripper

The product offers different options for mounting on robots or gantries, which can be configured:

- without adapter plate, ▶ 6.2.1.1 [📄 23].
- with one-piece adapter plate, ▶ 6.2.1.1 [📄 24].
- with one-piece adapter plate and blank (without drilling pattern), customer-side assembly.
- with one-piece adapter plate and ISO flange, ▶ 6.2.1.1 [📄 25].

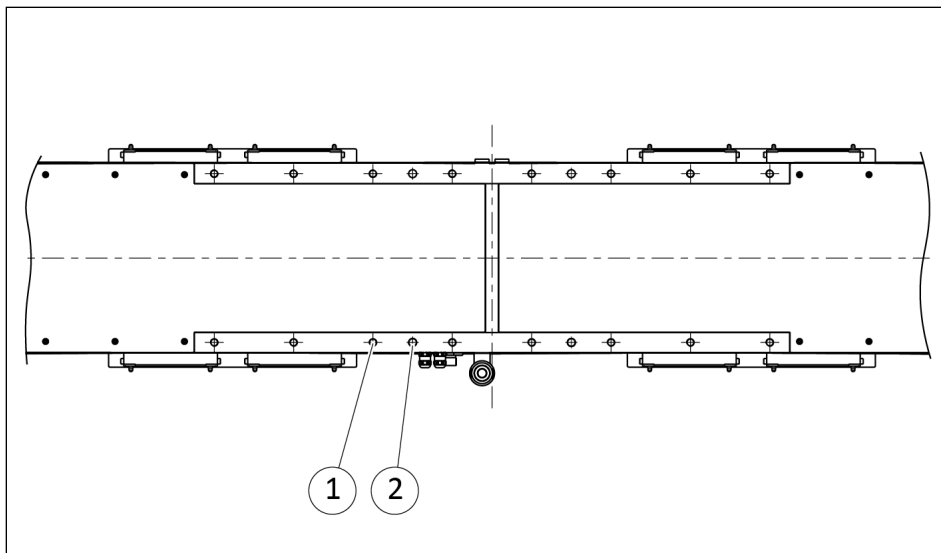
Further information and technical data are available in the catalog data sheet. The latest relevant version is valid.

Mounting without adapter plate

NOTE

Customer-side adapter plate to be designed according to the application!

All existing threads must be used!



Item	Mounting	PLG				
		20	30	50	75	120
1	Thread	M8	M8	M10	M12	M16
	Required number of screws [piece]	8 – 16				
	Mounting screw according to standard	DIN EN ISO 4762				
	Mounting screw strength class	12.9				
	Max. tightening torque [Nm]	43	43	82	150	230
	Max. depth of engagement from locating surface [mm]	16	16	20	20	28
2	Cylindrical pin [mm]	∅6	∅8	∅10	∅12	∅12
	Number of cylindrical pins required [piece]	2				

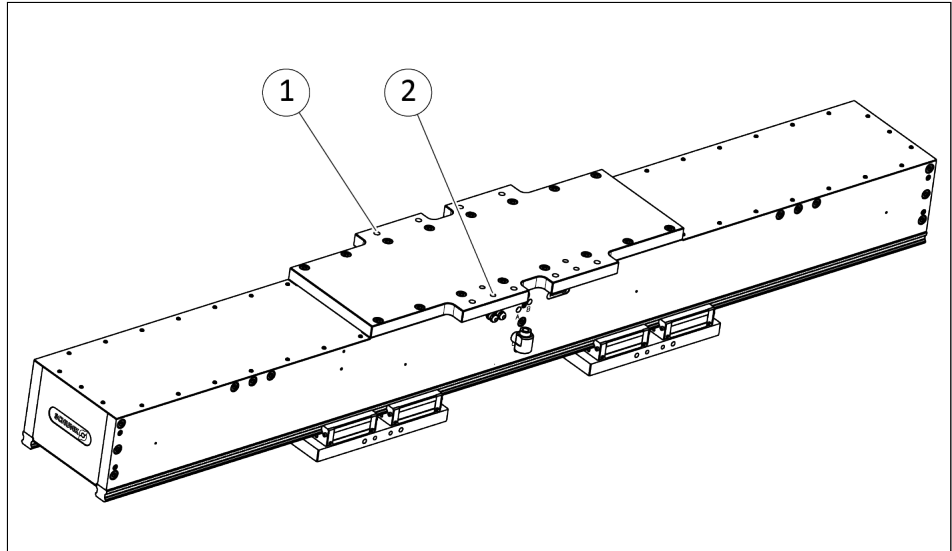
- Secure the product using screws and cylindrical pins.
- ⇒ Note tightening torques for the mounting screws.

Mounting with one-piece adapter plate

NOTE

Customer-side adapter plate to be designed according to the application!

All existing threads must be used!



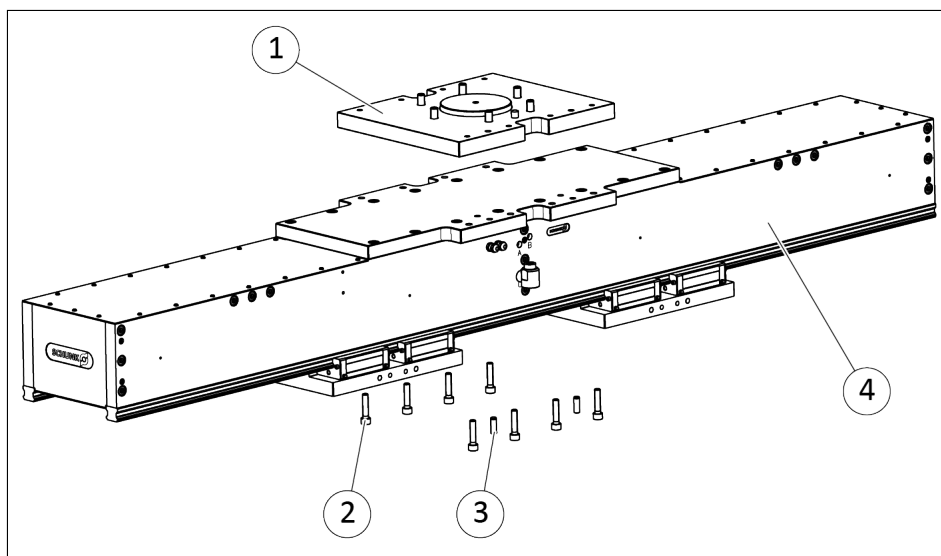
Item	Mounting	PLG				
		20	30	50	75	120
1	Through-hole for mounting screws	M8	M8	M10	M12	M16
	Required number of screws [piece]	8	8	8	8	8
	Mounting screw according to standard	DIN EN ISO 4762				
	Mounting screw strength class	12.9				
	Max. tightening torque [Nm]	43	43	82	150	230
2	Cylindrical pin [mm]	Ø6	Ø8	Ø10	Ø12	Ø12
	Number of cylindrical pins required [piece]	2	2	2	2	2

- Secure the product using screws and cylindrical pins.
- ⇒ Note tightening torques for the mounting screws.

Mounting with complete adapter plate

NOTE

All existing threads must be used!



Item	Mounting	PLG				
		20	30	50	75	120
2	Mounting screw	M8	M8	M10	M12	M16
	Required number of screws [piece]	8	8	8	8	8
	Mounting screw according to standard	DIN EN ISO 4762				
	Mounting screw strength class	12.9				
	Max. tightening torque [Nm]	43	43	82	150	230
3	Cylindrical pin [mm]	Ø6	Ø8	Ø10	Ø12	Ø12
	Number of cylindrical pins required [piece]	2	2	2	2	2

1. Remove screws (2) and cylindrical pin (3) and mount the adapter plate (1) on the robot/gantry using mounting material. Note: The mounting material for the adapter plate is included in the scope of delivery.
 2. Secure the product to the adapter plate (1) using screws (2) and cylindrical pins (3).
- ⇒ Note tightening torques for the mounting screws.

Designation	Description
ISO80 ^{*/**}	Complete adapter plate EN ISO 9409-1-80-6-M8
ISO100 ^{**}	Complete adapter plate EN ISO 9409-1-100-6-M8
ISO125	Complete adapter plate EN ISO 9409-1-125-6-M10
ISO160/M10	Complete adapter plate EN ISO 9409-1-160-6-M10
ISO160/M12	Complete adapter plate EN ISO 9409-1-160-11-M12
ISO200/M12	Complete adapter plate EN ISO 9409-1-200-12-M12
ISO200/M16	Complete adapter plate EN ISO 9409-1-200-12-M16

Tab.: Possible ISO flange dimensions

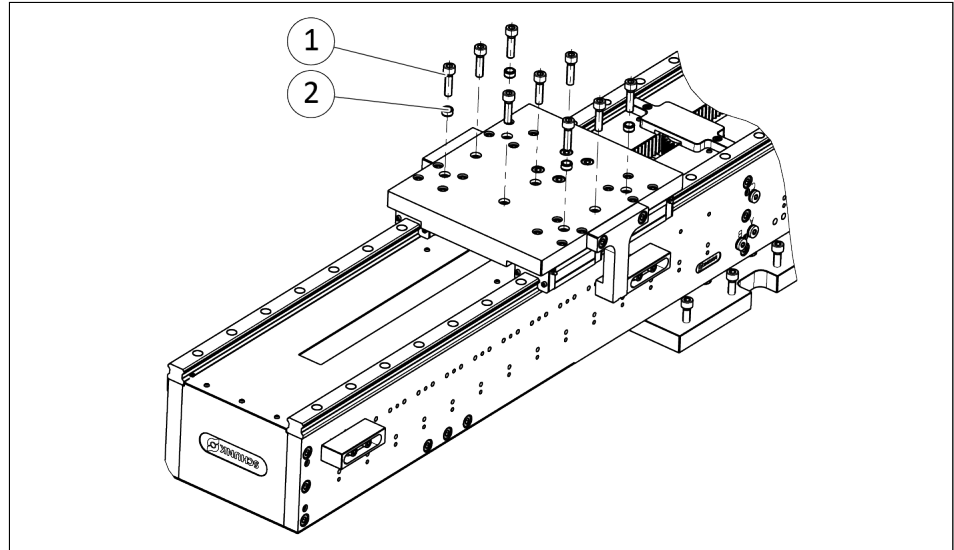
* not for size 75

** not for size 120

6.2.1.2 Connections to the base jaws

NOTE

The data sheet contains all dimensions for mounting the gripper fingers.



Connections at the base jaws

Item	Mounting	20	30	50	75	120
1	Thread in base jaws	M6	M8	M10	M12	M12
	Required number of screws per base jaw [piece]			9		
	Mounting screw strength class			12.9		
	Max. depth of engagement from locating surface [mm]	16	16	25	25	25
	Max. tightening torque [Nm]	18	43	85	150	150
2 *	Centering sleeve [mm]	Ø10	Ø12	Ø14	Ø16	Ø16
	Required number of centering sleeves per base jaw [piece]	4	4	4	4	4

* contained in accessory kit

6.2.2 Pneumatic connection



⚠ 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

Risk of damage to the gripper!

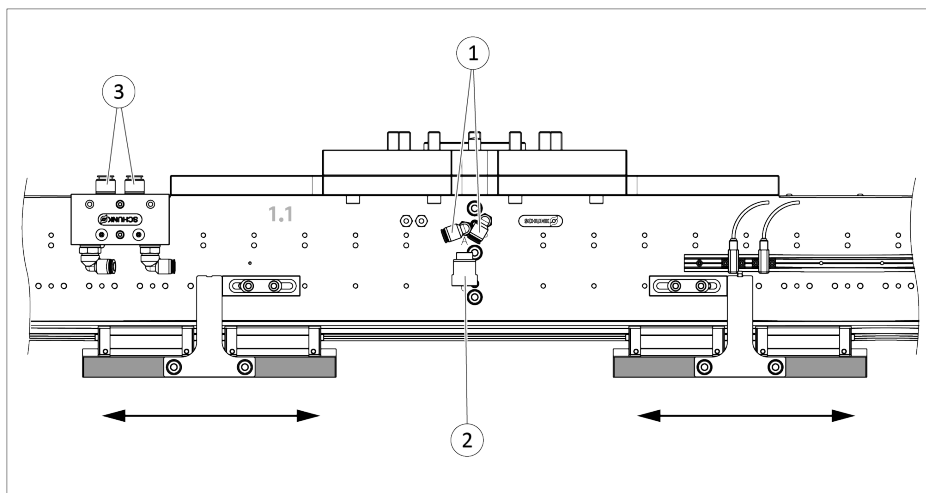
If the maximum permissible finger weight or the permissible mass moment of inertia of the fingers is exceeded, the gripper can be damaged.

- As a rule, a jaw movement must take place without impact and bouncing.
- To do this, carry out sufficient throttling and/or damping if necessary.
- Observe specifications in the catalog data sheet.

NOTE

- Observe the requirements for the compressed air supply, ▶ 3 [15].

SYN and OSY variant



Pneumatic connection for SYN and OSY variant

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

2* Compressed air connection (C) for position clamping/quick air relief valve
Note: In the de-energized state, the position clamping is activated, ▶ 3 [15].

3** Main connections

* only for option with position clamping / quick air relief valve

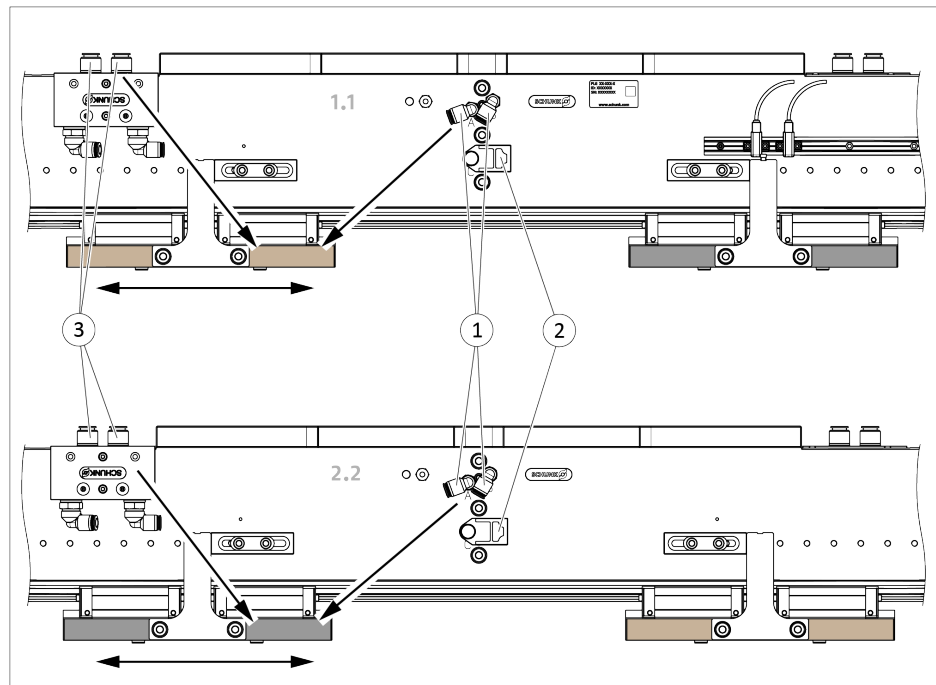
** only for the option with pressure maintenance valve SDV-P

Variant ASY

NOTE

For the ASY variant, the main air connections must be pressurized on both sides.

Each side controls **only the left** base jaw.



Pneumatic connection variant ASY

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

2* Compressed air connection (C) for position clamping/quick air relief valve
Note: In the de-energized state, the position clamping is activated, ▶ 3 [15].

3** Main connections

* only for option with position clamping / quick air relief valve

** only for the option with pressure maintenance valve SDV-P

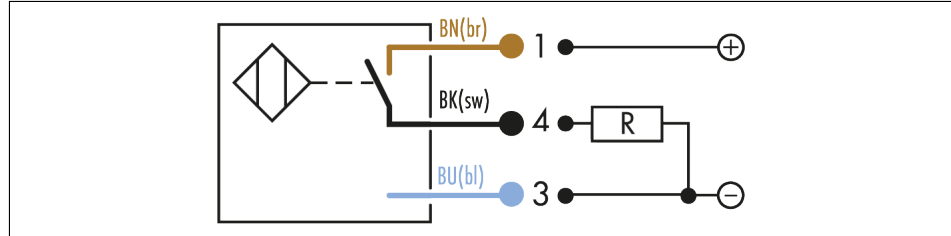
6.2.3 Electrical connection - "KP" variant

NOTICE

Risk of damage to the electronics!

A faulty connection can cause damage to the internal electronics.

Voltage supply and control



PNP/closer

NOTE

- **The variant with position clamping (KP)** has one sensor per clamping element. The sensor monitors the switching state of the position clamp.

Measurement operating voltage [VDC]	24
Operating voltage [VDC]	10–30
Cable length [m]	2

6.3 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 ▶ 6.3.1 [📄 32].
- 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.

6.3.1 Overview of sensors

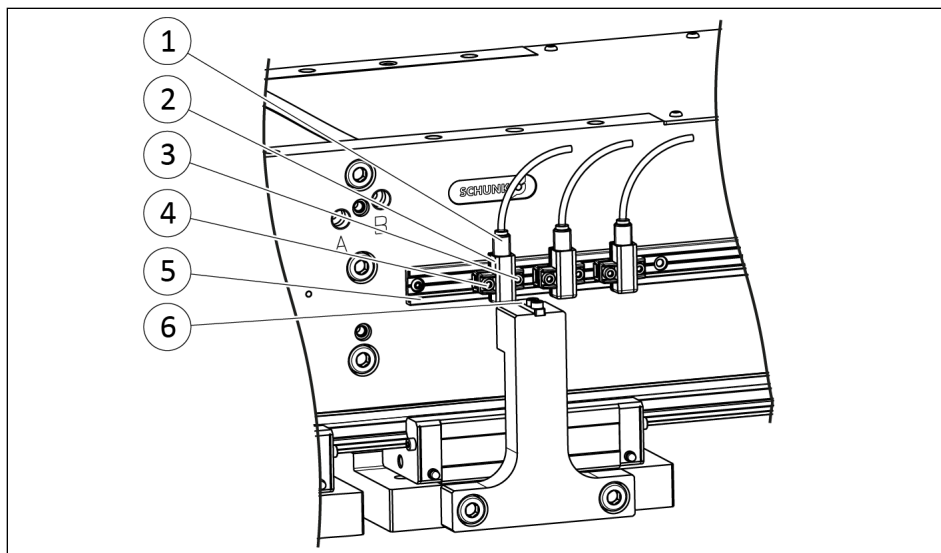
Size	IN 80	BIR
20	✓	✓
30	✓	✓
50	✓	✓
75	✓	✓
120	✓	✓

6.3.2 Mounting the inductive proximity switch

NOTICE

Risk of damage to the sensor during assembly!

- Observe the maximal tightening torque.

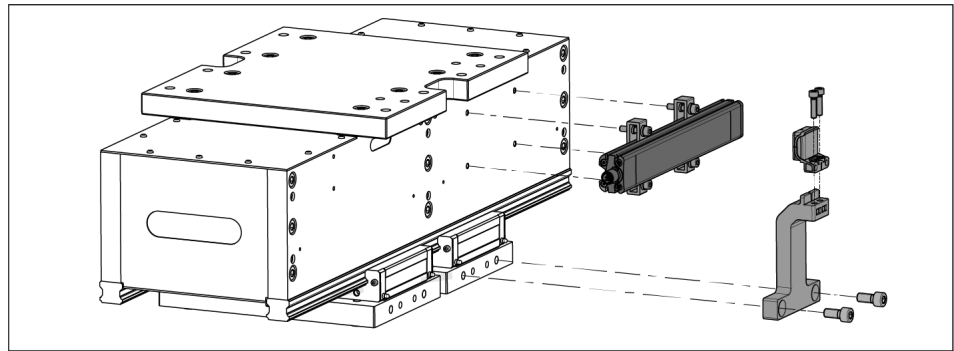


Mounting and adjusting the sensor

Note: If the product has been configured with sensors, steps 1–3 are omitted.

1. Loosen the screw (4) on the bracket (2).
2. Slide the sensor (1) to the stop in the bracket (2).
3. Tighten the screw (4) on the bracket (2).
⇒ Tightening torque: 0.2 Nm
4. Put product in the position in which it is to be set.
5. Push the bracket (2) together with the sensor (1) to the left end of the sensor rail (5). Slowly move the bracket (2) to the right so that the sensor switches.
Secure the bracket (2) in this position with screw (3).
⇒ Tightening torque: 0.2 Nm

6.3.3 Note on the Balluff BIR inductive analog position sensor



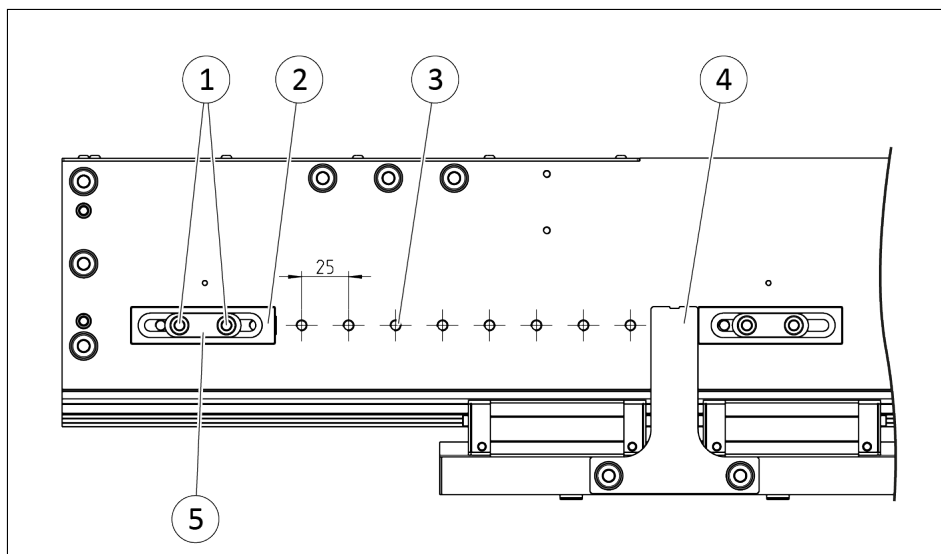
Information on operating and adjusting the sensor system can be found in the sensor operating manual (<http://www.Balluff.com>).

Sensor data

Sensor designation	Range of stroke [mm]	Ident number Balluff
BIR 200	100 ... 190	BIR0003
BIR 300	100 ... 290	BIR0006
BIR 500	100 ... 400	BIR000A

6.4 Adjusting freely positionable end stops

When delivered, end stops are pre-assembled to the innermost or outermost position possible. These can be adjusted to the desired stroke-limiting positions.



In each mounting position, the stop (2) can be moved by ± 12.5 mm.

Note: End stops have to be positioned so that the movable stop of the base jaw (4) strikes simultaneously on both sides.

Moving the freely positionable stop:

1. Loosen screws (1) and move stop (2) up to ± 12.5 mm.
2. Tighten screws (1).

Offsetting the freely positionable stop:

1. Remove the screws (1).
2. Mount the stop (2) with screws (1) and shim (5) on the desired hole (2).
3. Move stop (2) up to ± 12.5 mm.
4. Tighten screws (1).

Item	Mounting	PLG				
		20	30	50	75	120
1	Thread	M6	M6	M8	M10	M10
	Mounting screw according to standard	DIN EN ISO 4762				
	Mounting screw strength class	12.9				
	Max. tightening torque [Nm]	18	18	43	85	85

Tab.: Screw tightening torques

7 Troubleshooting

7.1 Product does not move

Possible cause	Corrective action
Base jaws jammed on the rail, e.g. mounting surface is not sufficiently even.	Check the evenness of the mounting surface. ▶ 6.2.1 [22].
	Loosen the mounting screws of the product and actuate the product again.
Pressure drops below minimum.	Check air supply. ▶ 6.2.2 [28]
Compressed air lines switched.	Check compressed air lines.
Proximity switch defective or set incorrect.	Readjust or change sensor.
Unused air connections open.	Close unused air connections.
Position clamping not released.	Check air supply. ▶ 3 [15]
Component part defective.	Replace component or send it to SCHUNK for repair.

7.2 Product does not execute a complete stroke

Possible cause	Corrective action
Pressure drops below minimum.	Check air supply. ▶ 6.2.2 [28]
Mounting surface is not sufficiently flat.	Check the evenness of the mounting surface. ▶ 6.2.1 [22]
Component part defective.	Send product with a SCHUNK repair order or dismantle product.

7.3 Product is opening or closing abruptly

Possible cause	Corrective action
Too little grease in the mechanical guiding areas.	Clean and lubricate product.
Compressed air lines blocked.	Check compressed air lines of damage.
Mounting surface is not sufficiently flat.	Check the evenness of the mounting surface.
Air supply	Design the air supply lines to the gripper so that they have the largest possible cross-section and working pressure.
Control of gripper	Select valves with a correspondingly large flow volume (liters).

7.4 Gripping force is dropping

Possible cause	Corrective action
Compressed air can escape.	Check seals, if necessary, disassemble the product and replace seals.
Too much grease in the mechanical movement space.	Clean and lubricate product.
Pressure drops below minimum.	Check air supply. ▶ 3 [15]
Component part defective.	Replace component or send it to SCHUNK for repair.

7.5 Product does not achieve the opening and closing times

Possible cause	Corrective action
Compressed air lines are not installed optimally.	If present: Open the flow control couplings on the product to the maximum that the movement of the jaws occurs without bouncing and hitting.
	Check compressed air lines.
	Inner diameters of compressed air lines are of sufficient size in relation to compressed air consumption.
	Keep compressed air lines between the product and directional control valve as short as possible.
	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.

8 Maintenance and repair

8.1 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.

8.2 Observation of the 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.

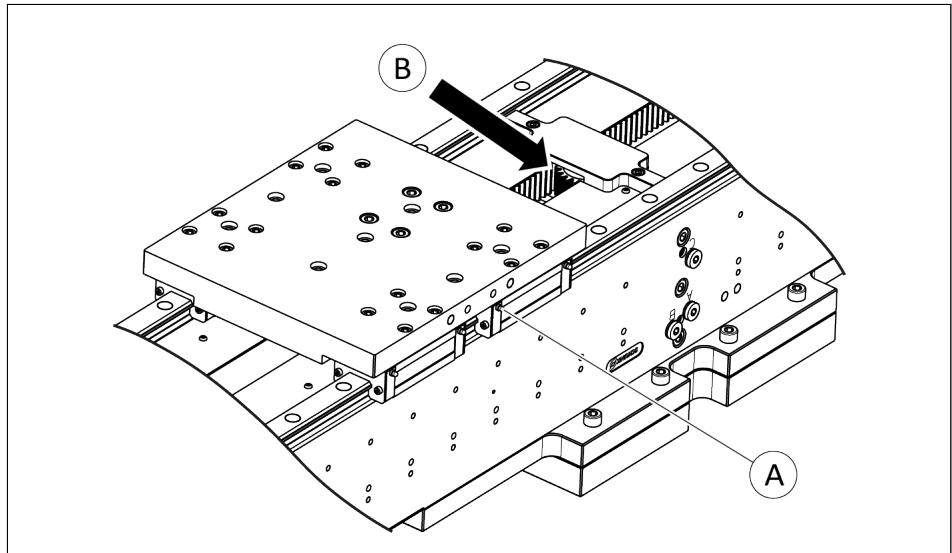
Maintenance interval	Maintenance work
0.5 million cycles or every 6 months	Treat all grease areas with lubricant, ▶ 8.3 [40].
daily	For short gripping strokes (< 30 mm): Travel an entire stroke.
regularly	Dry clean all parts thoroughly, check for damage and wear. Remove coarse contamination such as chips and debris. Oil or grease external steel parts.

8.3 Lubricants/Lubrication points (basic lubrication)

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

SCHUNK recommends the lubricants listed.

Provably equivalent lubricants can also be used. If different lubricants are used than the recommended ones, a compatibility test must be carried out.



Lubrication points per base jaw

Item	Lubricant point	Lubricant	Lubrication nipple
A	Linear guide (2x per base jaw)	SCHUNK grease 10	THK PB107 (PLG 20, PLG 30) THK A-M6F (PLG 50, PLG 75, PLG 120)
B	Pinion/gear rack	SCHUNK grease 3	-

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

The product contains food-compliant lubricants as standard. Components such as rolling bearings, linear guides, or shock absorbers are not provided with food-compliant lubricants.

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

NOTE

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

8.4 Lubricate product



⚠ WARNING

Risk of injury due to moving parts!

When moving the gripper fingers, body parts may get squashed/hit causing severe injuries.

- Do not interfere with moving parts during operation.
- Observe position and direction of movement of the gripper fingers.

-
1. Supply the pinion/gear rack and linear guides with grease (via the lubricating nipple), ▶ 8.3 [📄 40].
 2. Alternately open and close the gripper completely.

8.5 Seal replacement

Seals may only be replaced by SCHUNK Service.

8.6 Repair

Repair by the customer is not provided.

Have all repair work on the product carried out only by SCHUNK Service.

9 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.

10 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: Configurable Pneumatic 2-Finger Long-Stroke Gripper / PLG

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, August 2025

p.p. Jochen Beyl; Head of Project Management,
Gripping Systems & Handling Solutions

11 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: Configurable Pneumatic 2-Finger Long-Stroke Gripper, PLG

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".

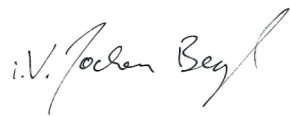
Applied harmonized standards, especially:

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, August 2025



p.p. Jochen Beyl; Head of Project Management, Gripping Systems & Handling Solutions

12 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

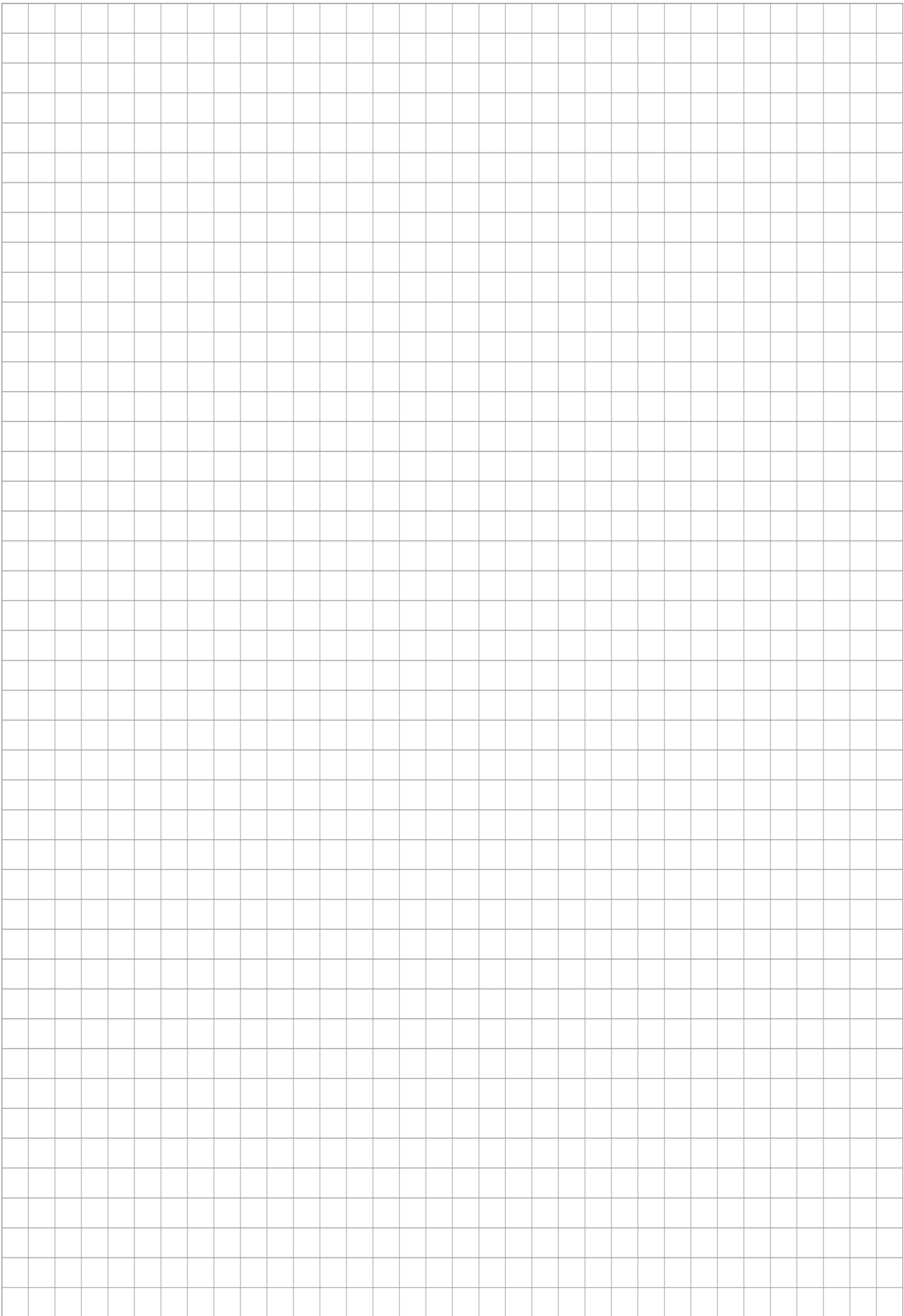
Products from SCHUNK fully comply with the regulations of Regulation (EC) No. 1907/2006 "concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)" and its amendment 2022/477. SCHUNK attaches great importance to completely avoiding chemicals of concern to humans and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

p.p. Jochen Beyl;
Head of Project Management,
Gripping Systems & Handling Solutions

Lauffen/Neckar, August 2025







SCHUNK SE & Co. KG
Spanntechnik | Greiftechnik | Automatisierungstechnik

Bahnhofstr. 106 - 134
D-74348 Lauffen/Neckar
Tel. +49-7133-103-0
info@de.schunk.com
schunk.com

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