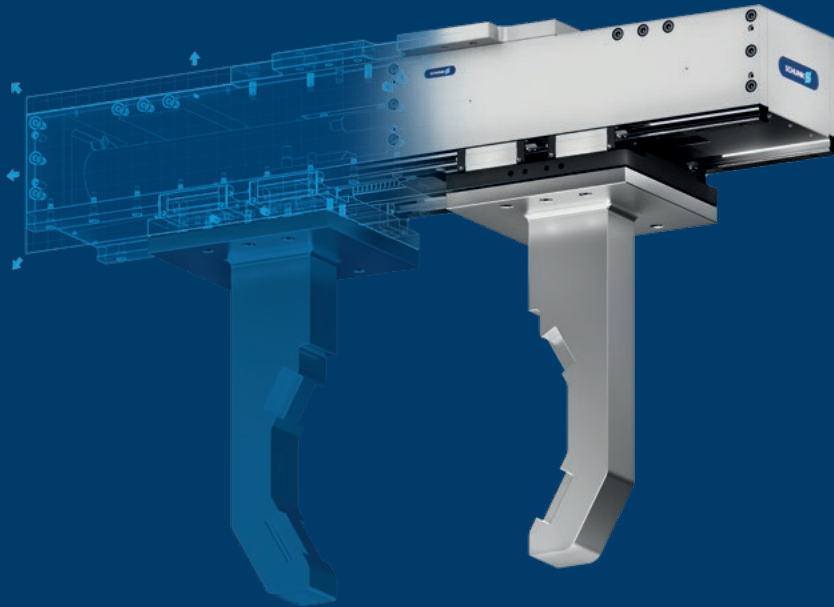




Hand in hand for tomorrow



Product data sheet

Customized and configurable long-stroke gripper PLG 120

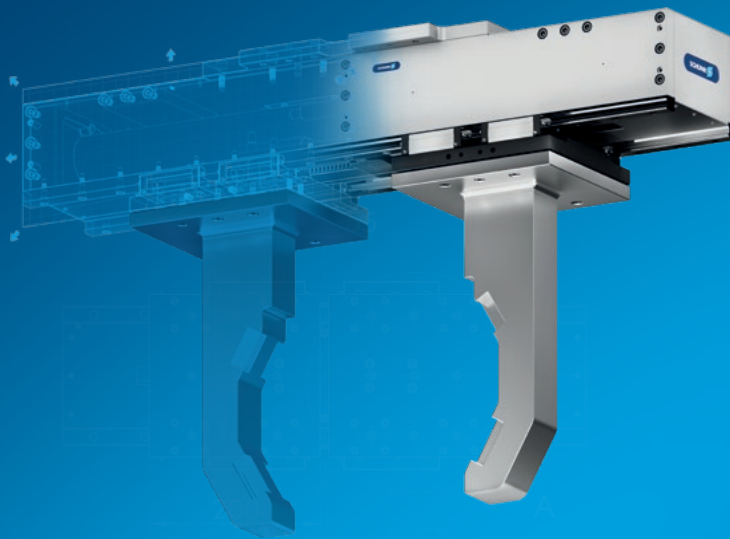
Individual. Powerful. Flexible.

Customized and configurable long-stroke gripper PLG

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

Field of application

Individual solution for a wide range of applications through the customized configuration of the gripper in clean to slightly dirty environments



Advantages – Your benefits

High level of flexibility due to long jaw stroke and high gripping force

Use of long gripper fingers made possible due to the high maximum moments of the profiled rail guide

Application specific standard gripper through diverse variants and options and individual configuration

License-free and browser-based web tool can be used without its own CAD program

Attractive prices and short delivery times enable fast and efficient project processes

Reduced design effort Simple and fast construction of individual long-stroke grippers via the web tool

SCHUNK know-how reduces your effort and risk

CAD data available at the push of a button Gripper can be immediately integrated into the CAD system design



Sizes
Quantity: 5



Weight
19.03 .. 137.7 kg



Gripping force
1650 .. 11650 N



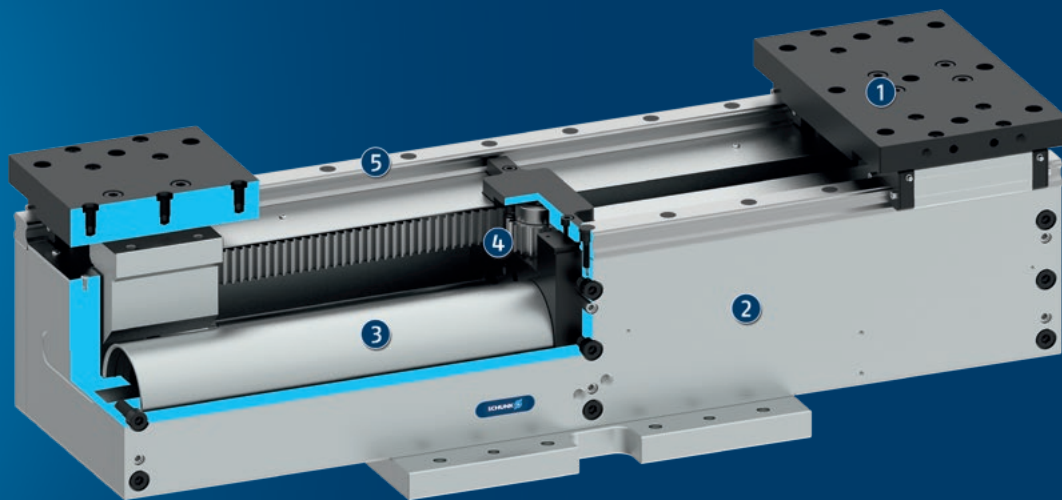
Min. stroke per jaw
100 mm



Max. stroke per jaw
400 mm

Functional description

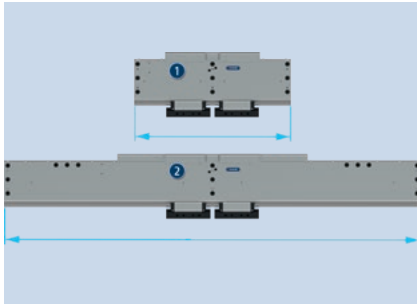
By pressure actuation of the opposing piston, the base jaws are guided by a carrier on the piston, and are set in motion. The synchronization of the jaw stroke is done with a rack and pinion principle.



- ① **Base jaw**
for the connection of workpiece-specific gripper fingers
- ② **Housing**
weight-optimized design
- ③ **Drive**
two double-actuated pneumatic cylinders
- ④ **Kinematics**
pinion and rack principle for centric clamping, even at large strokes
- ⑤ **Profiled rail guide**
highly loadable, nearly backlash-free base jaw guidance for long finger lengths

Detailed functional description

Individually configurable stroke



The stroke per jaw can be configured to customer specifications between 100 mm and 400 mm per jaw with millimeter precision.

- ❶ Variant with 100 mm stroke per jaw
- ❷ Variant with 400 mm stroke per jaw

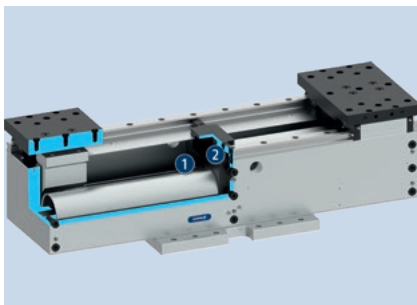
Finger version



The gripper is available in two finger versions. In addition to the basic variant for short finger lengths, a variant with a long finger length can also be configured for corresponding applications.

- ❶ Short finger length with two guiding carriages per base jaw
- ❷ Long finger length with four guiding carriages per base jaw

Synchronization



The gripper can be configured as a synchronous and asynchronous variant as well as a variant without synchronization. For the synchronous variant, the two base jaws are controlled together and are synchronized via gear rack-and-pinion kinematics. The variant without synchronization enables the two base jaws to be controlled together, whereby their movement is not synchronized. For the asynchronous variant, it is possible to control the two base jaws independently and separately from each other.

- ❶ Without pinion
- ❷ Closed holes for individual control of the gripper jaws

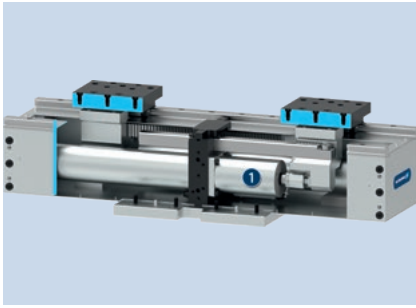
Gripper mounting



The gripper offers different options for mounting on robots or gantries.

- ❶ Without adapter plate (please observe the installation instructions)
- ❷ One-piece adapter plate (gripper side)
- ❸ Adapter plate, complete (gripper side + blank)
- ❹ Adapter plate, complete for screw connection according to EN ISO 9409

Position clamping



The position clamping enables the base jaw position to be clamped in the de-energized condition.

- ① One clamping element each, incl. monitoring via a magnetic switch, clamps the piston rod of the drive piston for reliable position clamping

Pressure maintenance valve



Pre-assembled pressure maintenance valve (incl. hosing) for temporary force and position maintenance in case of pressure failure.

- ① SDV-P 10-E incl. hosing

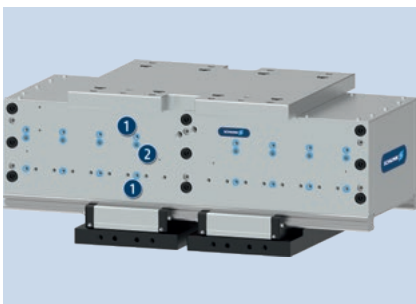
Stroke limitation



The gripper can optionally be equipped with stroke limitation. With freely positionable end stops, the stroke of the gripper can be limited for specific applications or workpieces. Opening or closing direction or both directions can be optionally limited.

- ① Freely positionable end stops
- ② Stop mounted on the base jaw

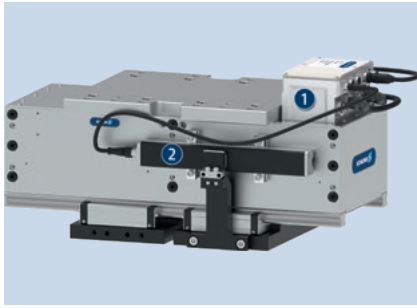
Lateral mounting options



Optional mounting options on the gripper for customized additional attachments such as cameras, sensor distributors or blow-out nozzles.

- ① Connection thread for additional attachment
- ② Fit for centering pins

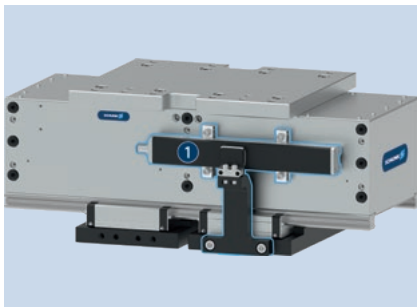
Pneumatic positioning device



The pre-assembled PPD (pneumatic positioning device) enables flexible activation of the PLG via IO-Link. Together with the inductive position measuring system, free positioning as well as gripping force and speed adjustment of the PLG are possible.

- ① Pneumatic positioning device PPD
- ② Inductive position measuring system

Inductive position measuring system



The "inductive position measuring system" option enables the entire stroke of the gripper to be queried by analog means.

- ① Attachment kit for inductive position measuring system

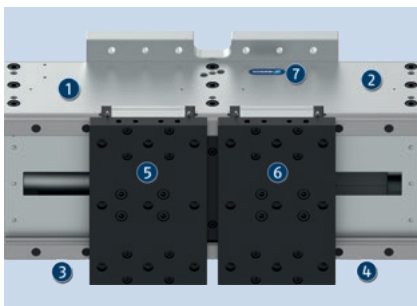
Mounting kit for inductive proximity switch



Due to the external attachment of up to ten inductive proximity switches on up to four gripper sides, a corresponding number of positions can be monitored.

- ① Mounted attachment kit for inductive proximity switches (incl. C-rail for mounting the sensor bracket, sensor brackets in selected quantity as well as mounting material)
- ② Inductive proximity switch IN 80

Option positions



Numerous options (such as monitoring with inductive proximity switches) can be placed both at the front (Position 1.X) and at the rear (Position 2.X) of the gripper. In the picture, you can see the four possible positions.

- ① Position 1.1
- ② Position 1.2
- ③ Position 2.1
- ④ Position 2.2
- ⑤ Base jaw 1
- ⑥ Base jaw 2
- ⑦ Name plate with engraved ID

General notes about the series

Housing material: Aluminum alloy

Base jaw material: hard-anodized, high strength aluminum

Warranty: 12 months

Scope of delivery: Centering sleeves for finger mounting, mounting material for gripper mounting for variants with AKO EN ISO..., assembly instructions (operating manual with declaration of incorporation available online).

Gripping force: is the arithmetic sum of the individual force applied to each jaw at distance P (see illustration).

Finger length: is measured from the reference surface as the distance P in direction to the main axis. The maximum permissible finger length applies until the nominal operating pressure is achieved. With higher pressures, the finger length must be reduced proportionally to the nominal operating pressure.

Repeat accuracy: is defined as a distribution of the end Position for 100 consecutive strokes.

Closing and opening times: are movement times of the base jaws only, without application-specific gripper fingers. Valve switching times, fill times, or PLC reaction times are not included, and are to be considered when cycle times are calculated.

How to get to the online configurator: The configurator can be accessed via the SCHUNK website or via <https://schunk.com/us/en/konfigurator-plg> available directly.

Holding force position clamping: describes the sum of the clamping force on the piston rods of the two installed clamping elements.

Application example

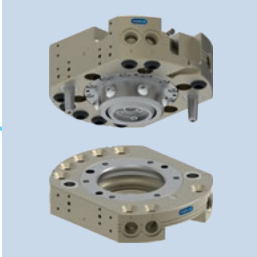
Gripping unit for handling control cabinets

- ❶ customized long-stroke gripper PLG
- ❷ long gripper finger
- ❸ Control cabinet



SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Tool changer



Pressure maintenance valve



Inductive proximity switch



Compensation unit

① For more information on these products can be found on the following product pages or at [schunk.com](https://www.schunk.com).

Options and special information

Food-grade lubrication: The product contains food-compliant lubricants as standard. The requirements of standard EN 1672-2:2020 are not fully met. The relevant NSF certificates are available at <https://info.nsf.org/USDA/Listings.asp> using the lubricant information in the operating manual. Components such as rolling bearings, linear guides, or shock absorbers are not provided with food-compliant lubricants.

Configurator for long-stroke grippers

SCHUNK is changing the way grippers are custom designed for your exact application.

<https://schunk.com/us/en/konfigurator-plg>

Just three steps to a customized long-stroke gripper

Step 1: Gripper configuration

incl. visualization of 3D preview in real time

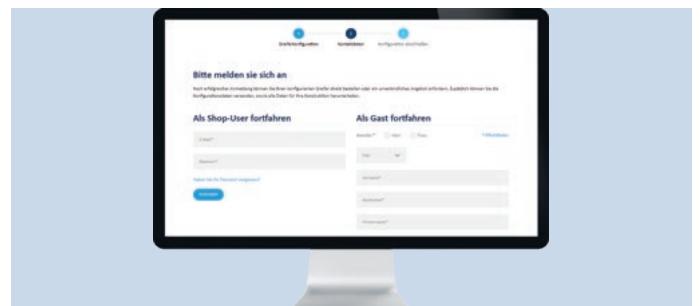
- Size selection
- Configuration of the gripper stroke
- Selection of the variant (finger variant, synchronization, gripper fastening...)
- Selection of options (stroke limitation, position monitoring...)



Step 2: Contact details

Online log in

- Log in with SCHUNK shop user access or
- Log in as a guest



Step 3: Complete configuration

CAD download, requesting a quote, or ordering the configured gripper fingers

- Specify the number of grippers
- Order product directly or
- Request a quote (to order from SCHUNK via the usual ordering processes)
- Send configuration as a link
- Download the CAD-files



Ordering example

	PLG	30	-	250	-	2	-	SYN	-	AKO	-	KP1.1	-	SDV-P1.1	-	HBA	-	SAB	-	PPD1	-	IPM1.1	-	IN1.1/6	-	INK 80-S
Description	PLG																									
Size		20/30/50/75/120																								
Stroke per jaw		100 ... 400																								
Finger version																										
		1 = short finger length																								
		2 = long finger length																								
Synchronization																										
		SYN = synchronous																								
		OSY = without synchronization																								
		ASY = asynchronous																								
Gripper mounting																										
		- = no																								
		APL = adapter plate, one-piece (gripper side)																								
		AKO = adapter plate, complete (gripper side + blank)																								
		ISO80 = adapter plate complete EN ISO 9409-1-80-6-M8																								
		ISO100 = adapter plate complete EN ISO 9409-1-100-6-M8																								
		ISO125 = adapter plate complete EN ISO 9409-1-125-6-M10																								
		ISO160/M10 = adapter plate complete EN ISO 9409-1-160-6-M10																								
		ISO160/M12 = adapter plate complete EN ISO 9409-1-160-11-M12																								
		ISO200/M12 = adapter plate complete EN ISO 9409-1-200-6-M12																								
		ISO200/M16 = adapter plate complete EN ISO 9409-1-200-12-M16																								
		ISO250/M12 = Adapter plate complete EN ISO 9409-1-250-6-M12																								
Position clamping incl. monitoring																										
		- = no																								
		KP1.1 = Position clamping incl. monitoring (cable outlet at position 1.1)																								
		KP2.2 = Position clamping incl. monitoring (cable outlet at position 2.2)																								
		KP1.1/2.2 = position clamping incl. monitoring (cable outlet at position 1.1 and 2.2)																								
Pressure maintenance valve																										
		- = Not included in the scope of delivery																								
		SDV-P1.1 = pressure maintenance valve SDV-P 10-E mounted at position 1.1																								
		SDV-P2.2 = pressure maintenance valve SDV-P 10-E mounted at position 2.2																								
		SDV-P1.1/2.2 = pressure maintenance valve SDV-P 10-E mounted at position 1.1 and 2.2																								
Stroke limitation																										
		- = Not included in the scope of delivery																								
		HBA = stroke limitation in opening direction																								
		HBI = stroke limitation in closing direction																								
		HBA/HBI = stroke limitation in opening and closing direction																								

Ordering example

PLG 30 - 250 - 2 - SYN - AKO - KP1.1 - SDV-P1.1 - HBA - SAB - PPD1 - IPM1.1 - IN1.1/6 - INK 80-S

lateral mounting option for attachment parts

- = no

SAB = lateral mounting option for attachment parts

Pneumatic positioning device

- = Not included in the scope of delivery

PPD1 = Pneumatic positioning device mounted at position 1 (monitoring GBA 1)

PPD2 = Pneumatic positioning device mounted at position 2 (monitoring GBA 2)

PPD1/2 = 2 pneumatic positioning devices mounted at position 1 and 2 (monitoring GBA 1 and GBA 2)

Inductive position measuring system

- = Not included in the scope of delivery

IPM1.1 = Inductive position measuring system mounted at position 1.1 (interrogation GBA 1)

IPM2.2 = Inductive position measuring system mounted at position 2.2 (interrogation GBA 2)

IPM1.1/2.2 = Inductive position measuring system mounted at position 1.1 and position 2.2 (interrogation GBA 1 and GBA 2)

Mounting kit for inductive proximity switch

- = Not included in the scope of delivery

IN1.1/X = Attachment kit for X sensors mounted at position 1.1

IN1.2/X = Attachment kit for X sensors mounted at position 1.2

IN2.1/X = Attachment kit for X sensors mounted at position 2.1

IN2.2/X = Attachment kit for X sensors mounted at position 2.2

Inductive sensors

- = Not included in the scope of delivery

IN 80-S-M8 = IN 80-S-M8 included in scope of delivery and mounted

IN 80-S-M12 = IN 80-S-M12 included in scope of delivery and mounted

INK 80-S = INK 80-S included in scope of delivery and mounted

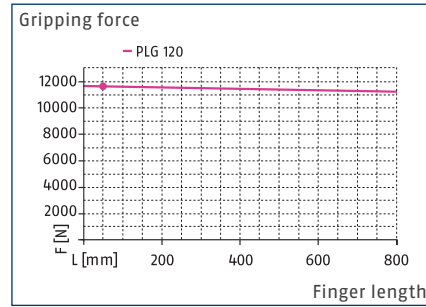
IN 80-O-M8 = IN 80-O-M8 included in scope of delivery and mounted

IN 80-O-M12 = IN 80-O-M12 included in scope of delivery and mounted

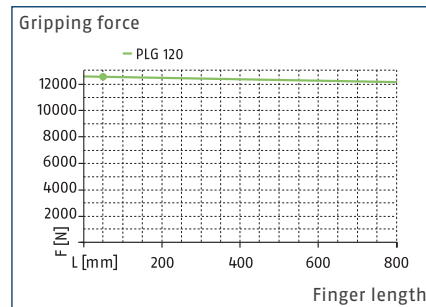
INK 80-O = INK 80-O included in scope of delivery and mounted



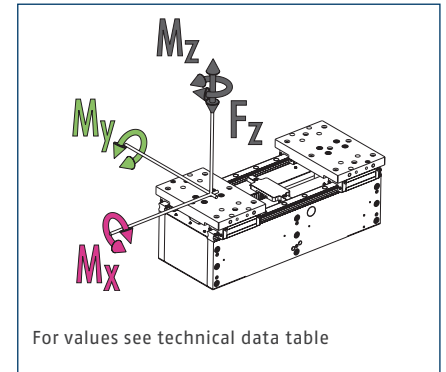
Gripping force O.D. gripping



Gripping force I.D. gripping



Max. loads



① The indicated moments and forces are static values, apply for each base jaw and may appear simultaneously. Loads may occur in addition to the moment generated by the gripping force itself. Please also refer to the diagram for the moment loads.

Technical data

Description		PLG 120-XXX-1-SYN	PLG 120-XXX-1-ASY	PLG 120-XXX-1-OSY	PLG 120-XXX-2-SYN	PLG 120-XXX-2-ASY	PLG 120-XXX-2-OSY
Finger version		short	short	short	long	long	long
Synchronization		Synchron	Asynchronous	without synchronization	Synchron	Asynchronous	without synchronization
Min. stroke per jaw	[mm]	100	100	100	100	100	100
Max. stroke per jaw	[mm]	400	400	400	400	400	400
Closing/opening force	[N]	11650/12500	11650/12500	11650/12500	11650/12500	11650/12500	11650/12500
Weight*	[kg]	98.3	94.6	94.6	137.7	133.9	133.9
Additional mass per 1 mm stroke**	[kg]	0.135	0.135	0.135	0.133	0.133	0.133
Min./nom./max. operating pressure	[bar]	2/6/6	2/6/6	2/6/6	2/6/6	2/6/6	2/6/6
Closing/opening time*	[s]	1.7/2.2	1.7/2.2	1.7/2.2	1.7/2.2	1.7/2.2	1.7/2.2
Max. permissible finger length	[mm]	280	280	280	800	800	800
Max. permissible weight per finger	[kg]	35	35	35	35	35	35
IP protection class		30	30	30	30	30	30
Min./max. ambient temperature	[°C]	5/90	5/90	5/90	5/90	5/90	5/90
Repeat accuracy	[mm]	0.03	0.03	0.03	0.03	0.03	0.03
Holding force position clamping ***	[N]	15000	15000	15000	15000	15000	15000
Moments Mx max./My max./Mz max.*	[Nm]	364/1400/560	364/1400/560	364/1400/560	520/2000/800	520/2000/800	520/2000/800
Forces Fz max.	[N]	6000	6000	6000	7500	7500	7500

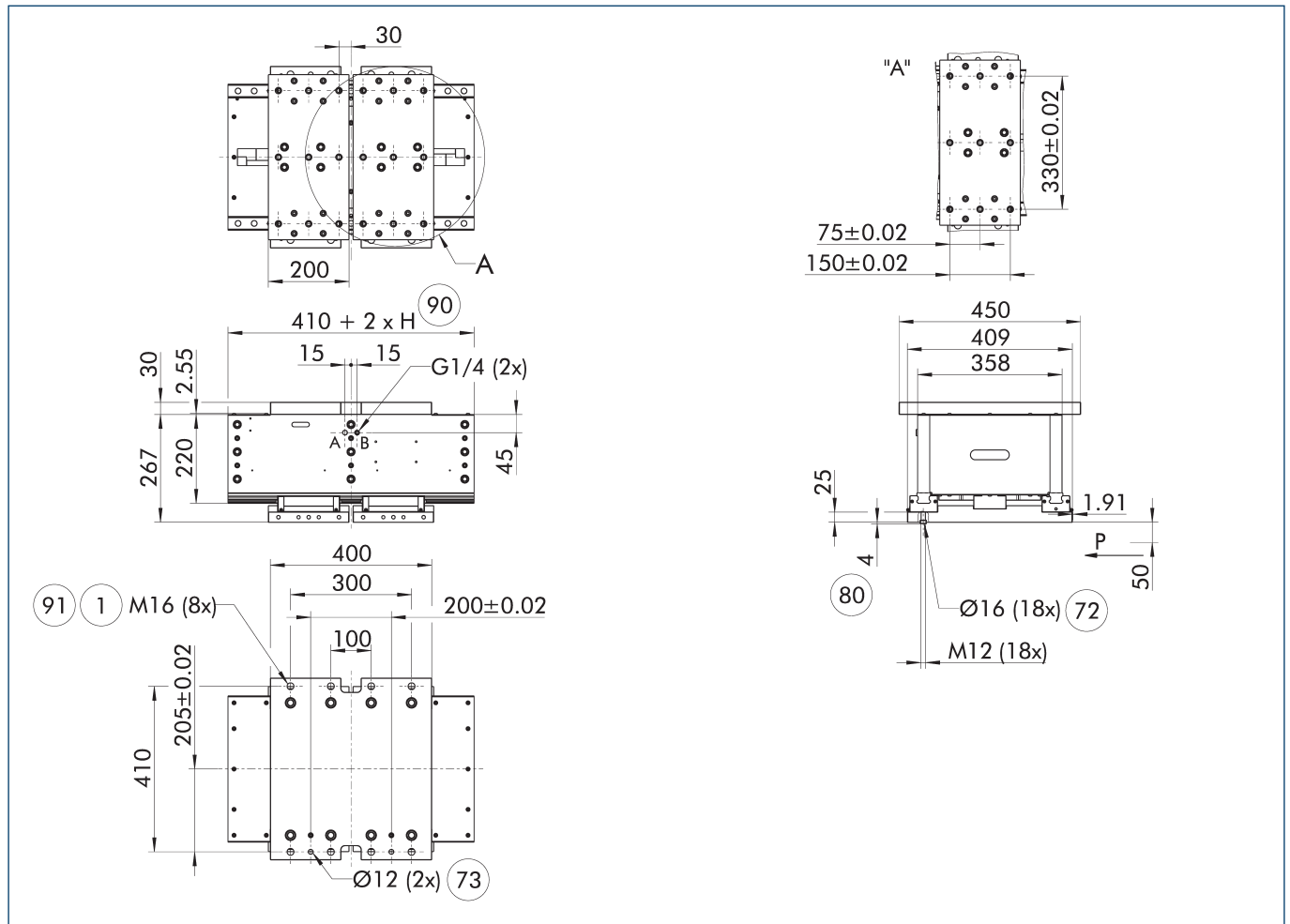
① You will find the complete or supplementary technical data for all combination options in the PDF datasheet following your individual configuration.

* related to the basic variant shown with 100 mm stroke per jaw without additional options

** **refers to the basic variant without additional options

*** **referring to the variant with position clamping

Main view PLG 120-...-1-...



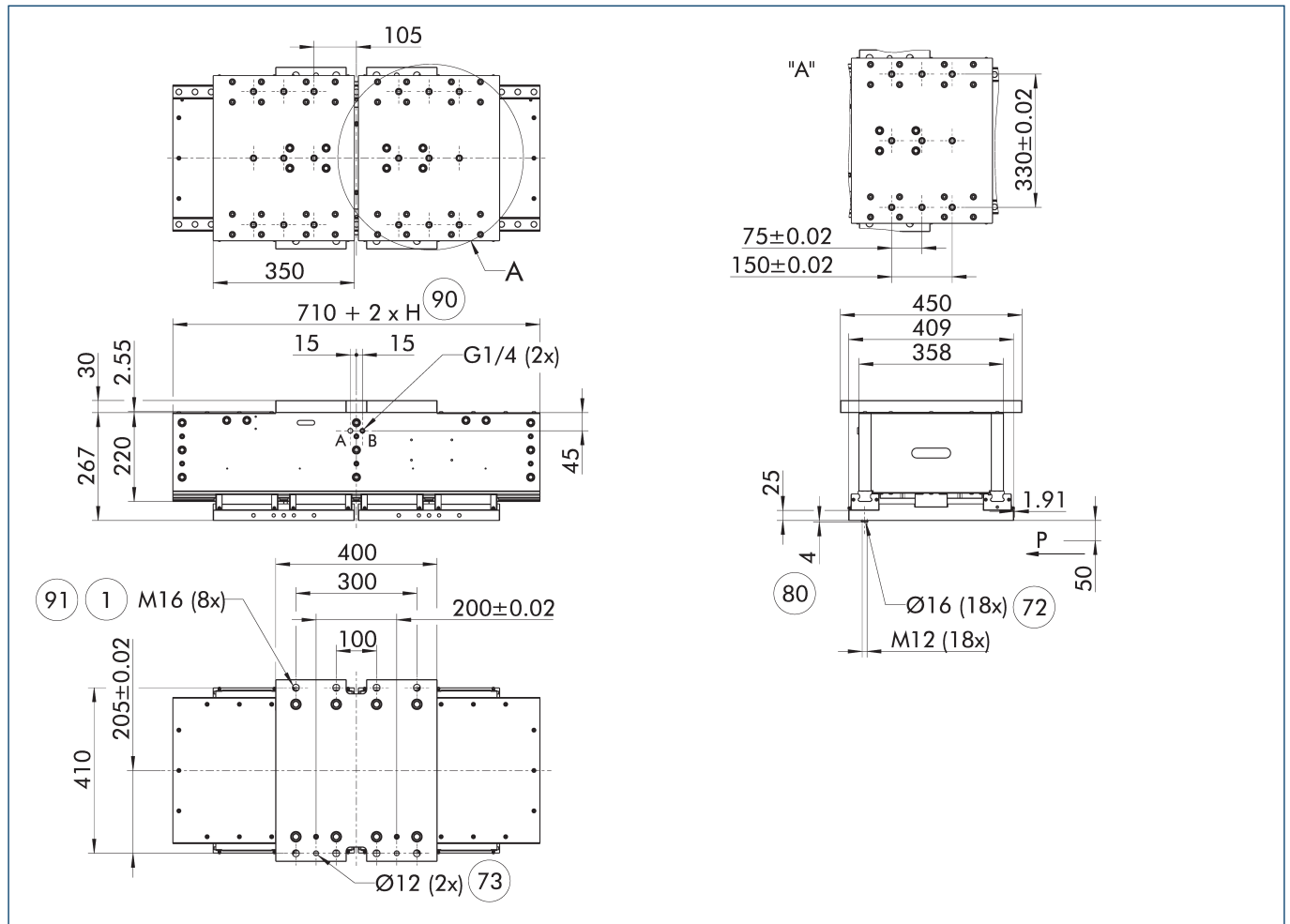
The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

- | | |
|---------------------------------|---|
| A Main connection open gripper | 80 Depth of the centering sleeve hole in the counter part |
| B Main connection close gripper | 90 Stroke per jaw |
| 1 Gripper connection | 91 Through holes for screw connections |
| 72 Fit for centering sleeves | |
| 73 Fit for centering pins | |

PLG 120

Customized and configurable long-stroke gripper

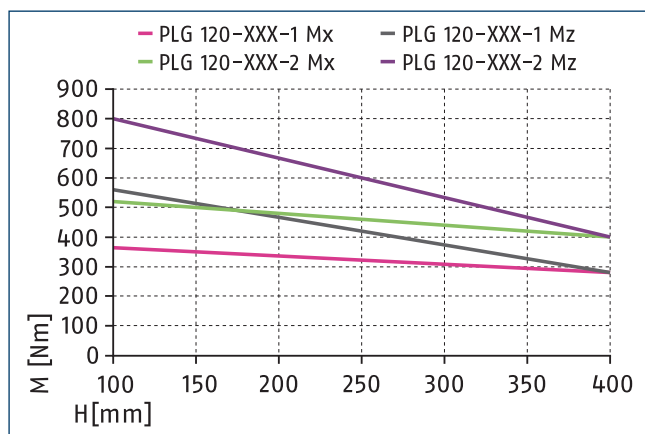
Main view PLG 120-...-2-...



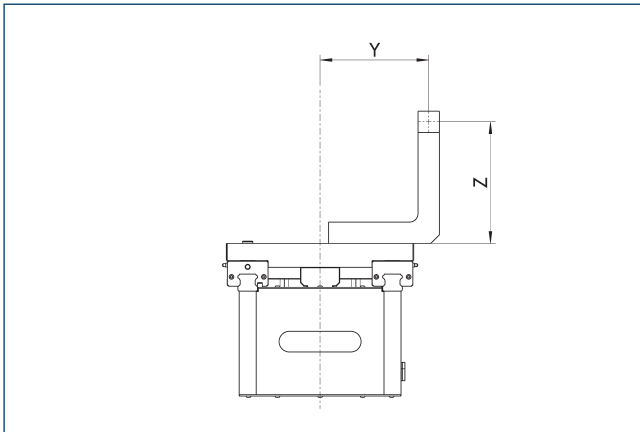
The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

- A Main connection open gripper
- B Main connection close gripper
- 1 Gripper connection
- 72 Fit for centering sleeves
- 73 Fit for centering pins
- 80 Depth of the centering sleeve hole in the counter part
- 90 Stroke per jaw
- 91 Through holes for screw connections

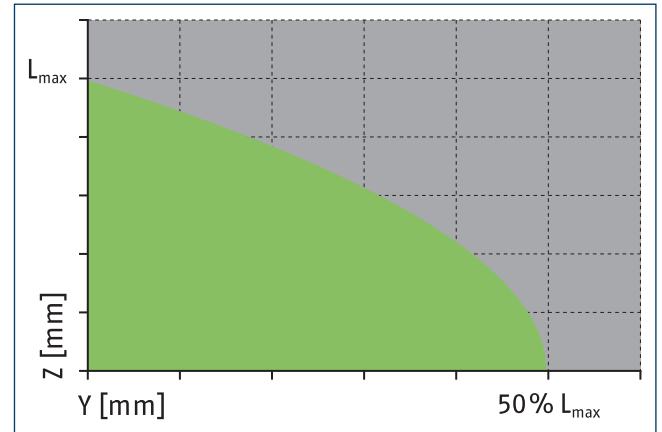
Moment loading



Maximum permitted finger projection



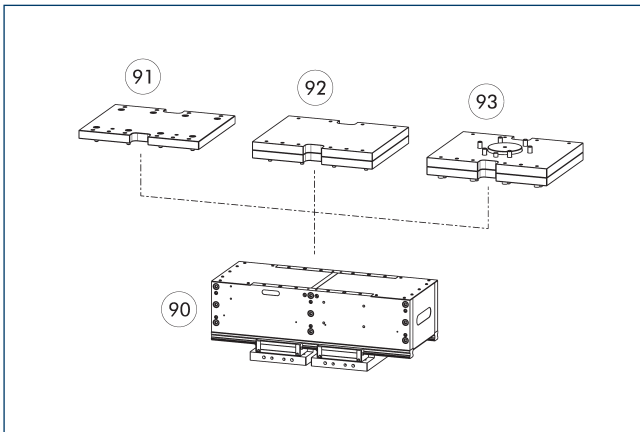
Finger version: short finger length



L_{max} is equivalent to the maximum permitted finger length, see the technical data table.

For the "long finger length" variant, no lateral projection is permitted.

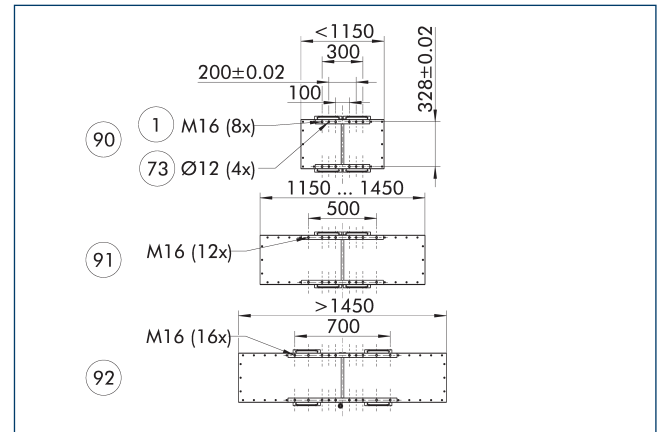
Gripper mounting



- ⑨① Without adapter plate (please observe the installation instructions in the Assembly and Operating Manual)
- ⑨② Adapter plate, complete (gripper side + blank)
- ⑨③ Adapter plate, complete (gripper side + ISO)
- ⑨① One-piece adapter plate (gripper side)

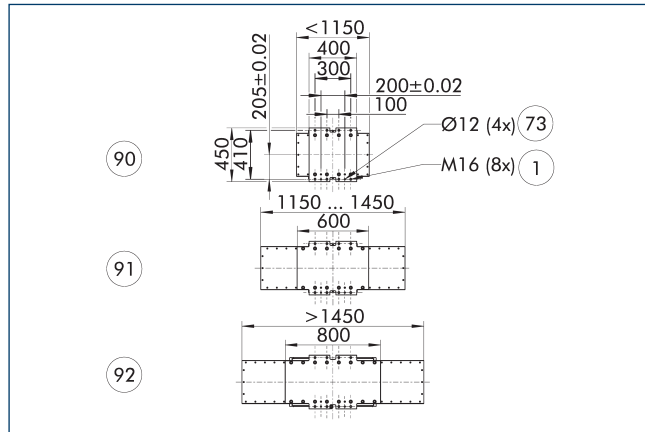
The gripper offers different options for mounting on robots or gantries.

Fastening the gripper without adapter plate



- ① Gripper connection
- ⑦③ Fit for centering pins
- ⑨① Adapter plate up to and including 1149 mm gripping length
- ⑨① Adapter plate between 1150 mm to 1450 mm gripping length
- ⑨② Adapter plate over 1450 mm gripping length
- ① Please observe the installation instructions in the Assembly and Operating Manual.

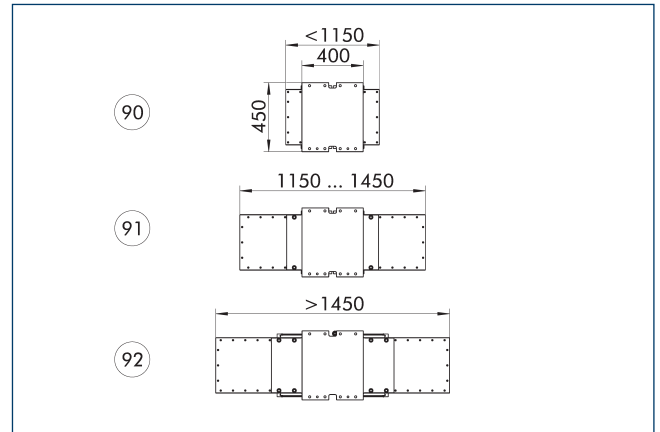
One-piece adapter plate (gripper side)



- ① Gripper connection
- ⑦ Fit for centering pins
- ⑨ Adapter plate up to and including 1149 mm gripping length
- ⑨ Adapter plate between 1150 mm to 1450 mm gripping length
- ⑨ Adapter plate over 1450 mm gripping length

The provided adapter plate includes the screw-on pattern of the gripper, as well as the interface to the second adapter plate. The second adapter plate must be manufactured by the customer. By using a two-part adapter plate, the gripper can also be mounted and fixed from the top side.

Two-piece adapter plate

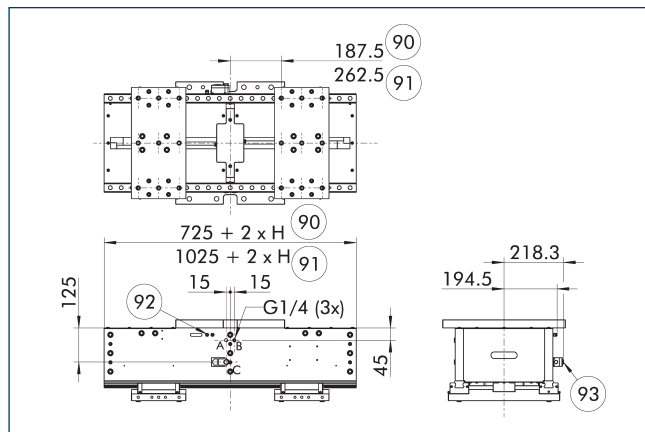


- ⑨ Adapter plate up to and including 1149 mm gripping length
- ⑨ Adapter plate between 1150 mm to 1450 mm gripping length
- ⑨ Adapter plate over 1450 mm gripping length

With the "adapter plate complete (gripper side + blank)" variant, the screw-on pattern of the customer interface can be inserted into the blank second adapter plate. This reduces the work required from the customer to a minimum. In the "adapter plate complete (gripper side + ISO)" variant, a flange according to EN ISO 9409 is included in the adapter plate on the robot side.

- ① The drawing shows the blank. The possible screw-on patterns according to EN ISO 9409 can be found in the configurator.

Position clamping

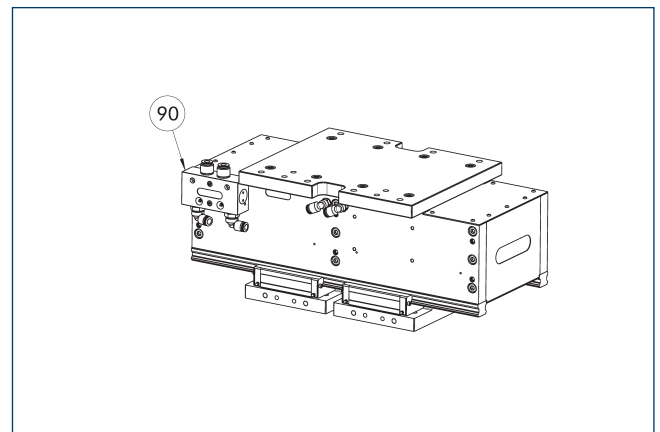


- ⑨ for "short finger length" variant
- ⑨ for "long finger length" variant
- ⑨ Monitoring of clamping elements
- ⑨ Main connection of the position clamp incl. quick air relief valve

The position clamping enables the base jaw position to be clamped in a de-energized state. One clamping element each, incl. monitoring via a magnetic switch, clamps the piston rod of the drive piston for reliable position clamping. The drawing shows changes in dimensions of the variants with position clamping compared to the variant shown in the main view without position clamping.

- ① For more detailed information on the magnetic switch, please refer to the assembly and operating manual.

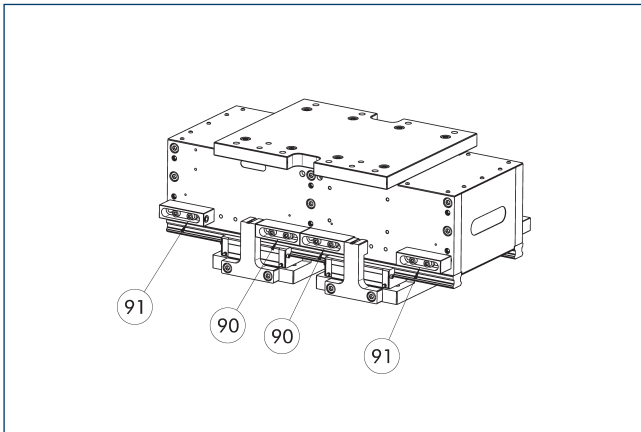
Pressure maintenance valve



- ⑨ SDV-P pressure maintenance valve

Pre-assembled pressure maintenance valve (incl. hoses) for temporary force and position maintenance in case of pressure failure.

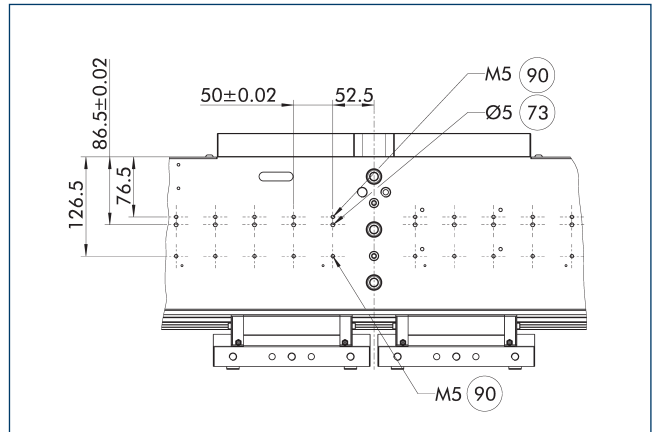
Stroke limitation



- 90 Stroke limitation in closing direction 91 Stroke limitation in opening direction

The gripper can optionally be equipped with stroke limitation. With freely positionable end stops, the stroke of the gripper can be limited for specific applications or workpieces. Opening or closing direction or both directions can be optionally limited.

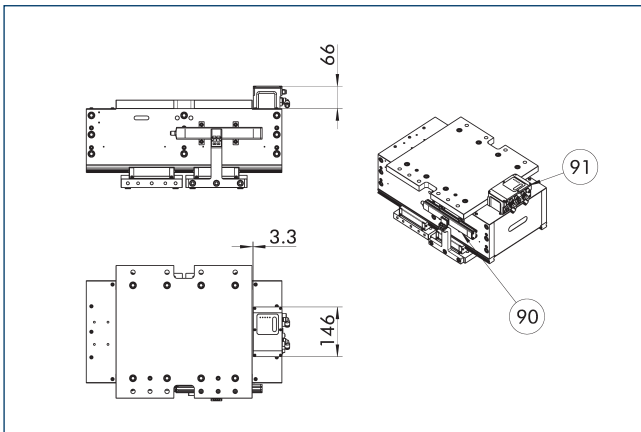
Lateral mounting options



- 73 Fit for centering pins 90 Thread

Optional mounting options on the gripper for customized additional attachments such as cameras, sensor distributors or blow-out nozzles. The drawing shows the position of the mounting options.

Pneumatic positioning device

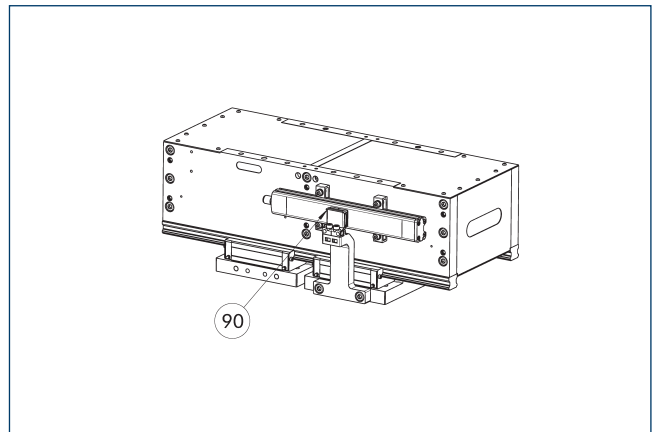


- 90 Pneumatic positioning device PPD 91 Inductive position measuring system

The "pneumatic positioning device" option can only be selected in combination with the "inductive position measuring system" option

① For further dimensions, please refer to the online configurator at <https://schunk.com/de/de/konfigurator-plg>

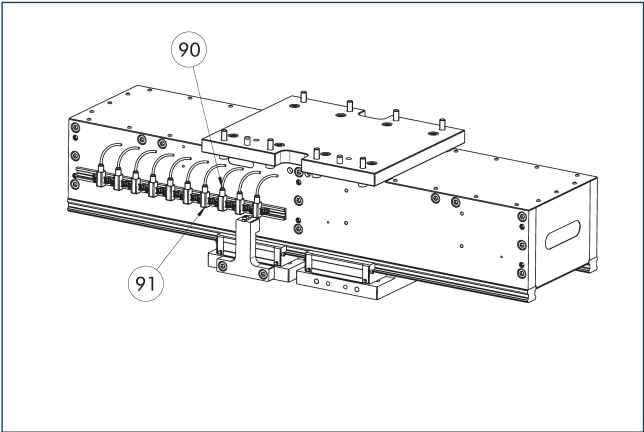
Inductive position measuring system



- 90 Inductive position measuring system

The "inductive position measuring system" option enables the entire stroke of the gripper to be queried by analog means.

Inductive proximity switches



- 90 Inductive proximity switch
- 91 Attachment kit incl. holder for inductive proximity switch

The sensors can be selected and ordered directly in the configurator. These are then pre-assembled on the gripper. Alternatively, the sensors can be ordered separately as spare parts and other accessories (e.g. cable extensions, sensor distributors, etc.) using the following ID.

Description	ID	Often combined
Inductive proximity switch		
IN 80-0-M12	0301588	
IN 80-0-M8	0301488	
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	
INK 80-0	0301551	
INK 80-S	0301550	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
Clip for connector/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Sensor distributor		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.



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