Superior Clamping and Gripping

SCHUNK®

Product Information

Gripper for small components EGP 25

High Performance Density. Fast. Compact.

Gripper for small components EGP

Electric 2-finger parallel gripper with smooth-running base jaws guided on roller bearings

Field of application

Gripping and moving of small to medium-sized workpieces with flexible force and high speed in clean environments, such as assembly, testing, laboratory and pharmaceutical industry

Advantages – Your benefits

Highest performance density for the use of smaller grippers sizes

Control via digital I/O for easy commissioning and rapid integration into existing systems.

Two to four stage adjustable gripping force for simple adaption to sensitive workpieces

Backlash-free, pre-loaded cross roller guide for precise gripping with nearly constant force for all permissible finger lengths

Very high maximum cycles per minute for highest productivity

Compact dimensions for minimal interfering contours in the application

Proven a thousand times MPG-plus basis for equal gripping forces and strokes with identically high efficiency

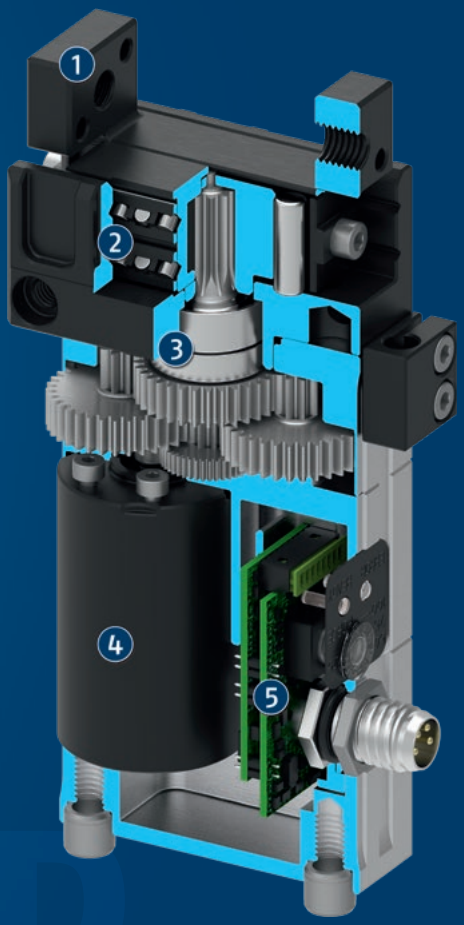
Brushless DC servomotor for almost wear-free use and a long service life

Control via IO-Link Enables pre-positioning of the gripper finger and evaluation of the gripper condition as well as the adjustability of special gripping modes.

Sizes	Weight	Gripping force	Stroke per jaw	Workpiece weight
Quantity: 4	0.11 .. 0.83 kg	12 .. 300 N	3 .. 10 mm	0.07 .. 1.25 kg

Functional description

The brushless servomotor drives the base jaw via the gear mechanism.
The jaw stroke is synchronized by means of rack and pinion kinematics.



① **Base Jaw**
for the connection of workpiece-specific gripper fingers

② **Cross roller guidance**
precise gripping due to backlash-free base jaw guidance

③ **Gear**
Rack and pinion principle for centric gripping

④ **Drive**
Brushless DC servomotor

⑤ **Control electronics**
Integrated control and power electronics for decentralized control of the servomotor

General notes about the series

Operating principle: Rack and pinion principle

Housing material: Aluminum alloy, coated

Base jaw material: Steel

Actuation: servo-electric, via brushless DC servomotor

Warranty: 24 months

Scope of delivery: Accessory kit for centering sleeves, bracket for proximity switch, assembly instructions.

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.

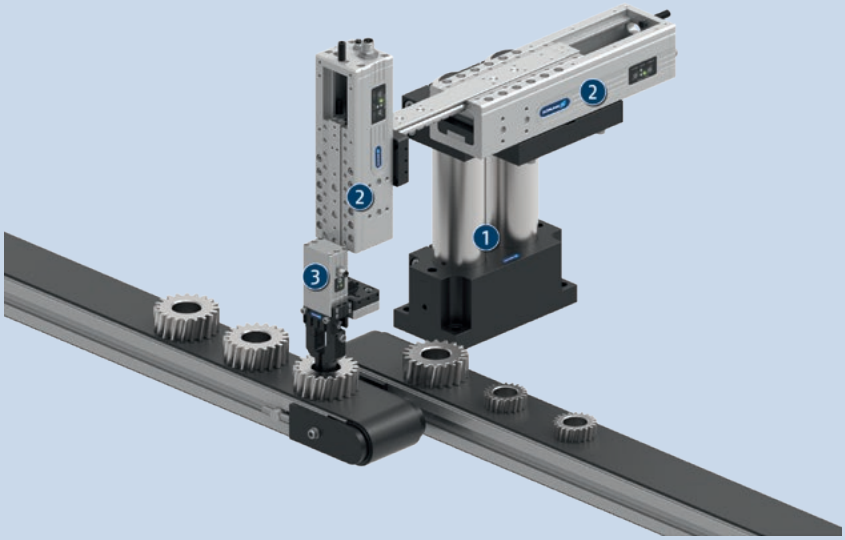
Repeat accuracy (gripping): defined as the spread of the actual position at 100 consecutive closing or opening movements on a rigid workpiece or a fixed workpiece stop under constant conditions.

Repeat accuracy (positioning, unidirectional): defined as the spread of the actual position of the base jaws after 100 consecutive movements to a target position from the same direction under constant conditions.

Repeat accuracy (positioning, bi-directional): defined as the spread of the actual position of the base jaws after 100 consecutive movements to a target position from both directions under constant conditions.

Workpiece weight: is calculated for force-fit gripping with a coefficient of static friction of 0.1 and a safety factor of 2 against workpiece slippage at acceleration due to gravity g. For form-fit or capture gripping, there are significantly higher permissible workpiece weights.

Closing and opening times: are purely the times that the base jaws or fingers are in motion. PLC reaction times are not included in the above-mentioned times and must be taken into consideration when determining cycle times.



Application example

Pick & place unit driven by linear motor for dynamic movements.

1. Pillar assembly system
2. Electric linear module ELP
3. Electric 2-finger parallel gripper EGP

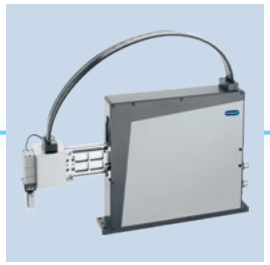
SCHUNK offers more ...

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

Linear module

Rotation unit

Rotary gripper module



Pick & Place Unit

Connection cables

Inductive proximity switches

Flexible position sensor

Finger blank

ⓘ For more information on these products can be found on the following product pages or at schunk.com.

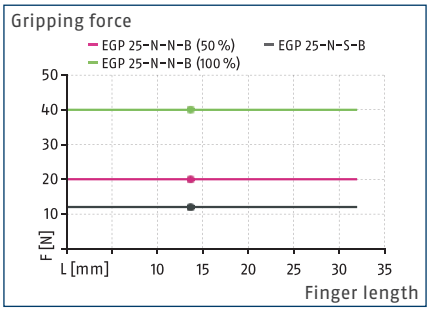
Options and special information

Manually adjustable gripping force: With an integrated rotary switch, the gripping force can be adjusted in two stages for the EGP 25 to 100% and 50%, and in four stages for EGP 40, 50 and 64 to 100%, 75%, 50%, and 25%.
Version with IO-Link: The integration of IO-Link makes it possible to adjust the gripping force, to pre-position the gripper fingers and to evaluate the gripper status.
New! Gripping modes with IO-Link: In addition to a cycle time-optimized gripping mode (FastGrip), the IO-Link version also offers a gripping mode with pulse reduction of the gripping force (SoftGrip) for gripping fragile workpieces.
Speed version S: for faster closing and opening times due to the use of a different gear ratio. The option of a gripping force adjustment is no longer available.
Optional status monitoring via external sensor system: The status of the gripper can be monitored by external senors.
Optional adapter plates: Space saving, front-end fastening of the gripper is enabled by optional adapter plates.
KA connection cable: Connection cables with an angled or a straight female connector can be ordered in various lengths to connect the gripper with the power supply and higher-level control system.

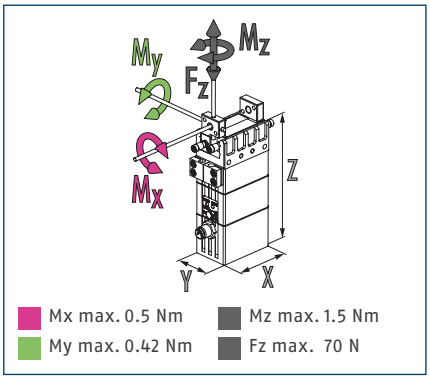
EGP 25

Gripper for small components

Gripping force



Dimensions and maximum loads



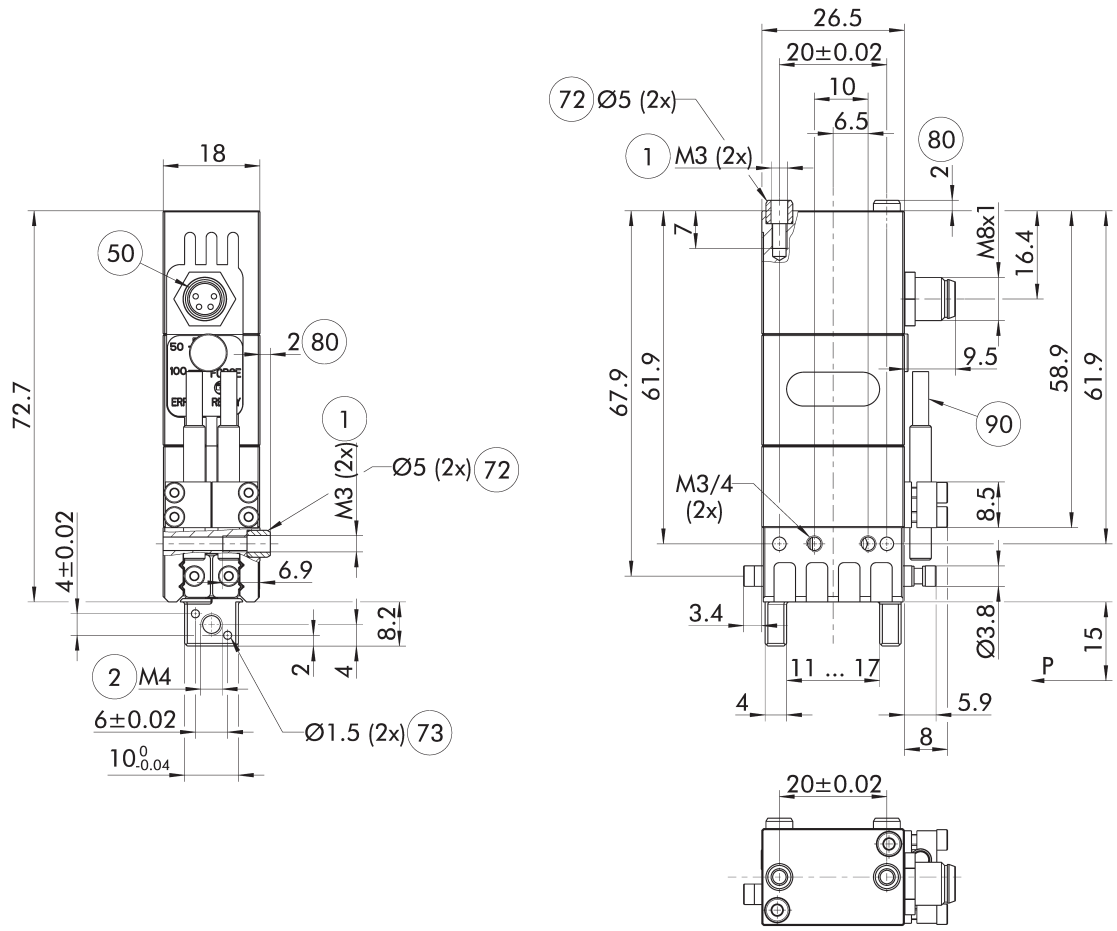
Mx max. 0.5 Nm
Mz max. 1.5 Nm
My max. 0.42 Nm
Fz max. 70 N

ⓘ The indicated moments and forces are statical values, apply for each base jaw and may appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

Technical data

Description		EGP 25-N-N-B	EGP 25-N-S-B
ID		0310900	0310902
General operating data			
Stroke per jaw	[mm]	3	3
Min./max. gripping force	[N]	20/40	12/12
Recommended workpiece weight	[kg]	0.2	0.07
Max. permissible finger length	[mm]	32	32
Max. permissible mass per finger	[kg]	0.02	0.02
Repeat accuracy (gripping)	[mm]	0.02	0.02
Closing/opening time	[s]	0.09/0.09	0.03/0.03
Weight	[kg]	0.11	0.12
Min./max. ambient temperature	[°C]	5/55	5/55
IP protection class		30	30
Cleanroom class ISO 14644-1:1999		5	5
Noise emission	[dB(A)]	<70	<70
Dimensions X x Y x Z	[mm]	26.5 x 18 x 72.7	27 x 18 x 72.7
Electrical operating data			
Nominal voltage	[V]	24	24
Nominal current	[A]	0.14	0.14
Max. current	[A]	1	1
Controller electronics		integrated	integrated
Communication interface		Digital inputs	Digital inputs
Number of digital I/O		2/-	2/-

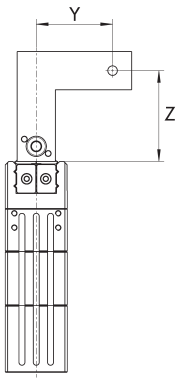
Main view

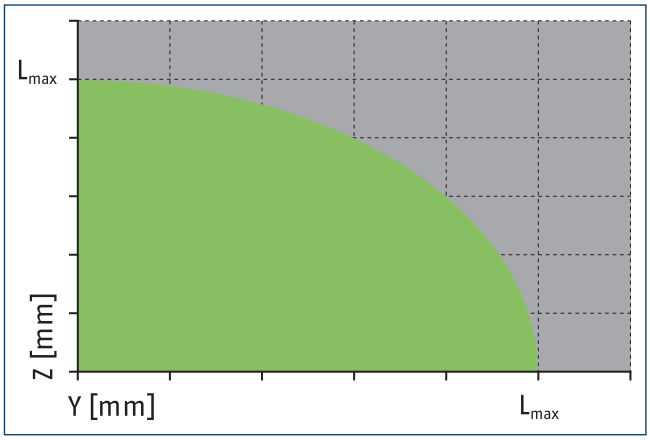


The drawing shows the basic version of the gripper with open jaws, without dimensional consideration of the options described below.

1 Gripper connection
2 Finger connection
50 Electrical connection
72 Fit for centering sleeves
73 Fit for centering pins
80 Depth of the centering sleeve hole in the counter part
90 Sensor IN ...

Maximum permitted finger projection





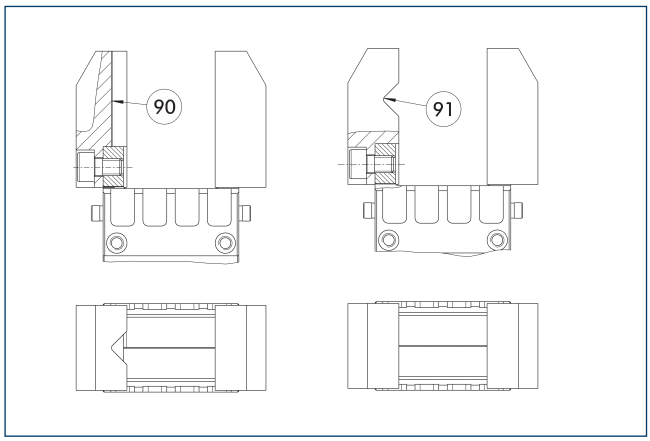
Permitted range
Inadmissible range

Lmax is equivalent to the maximum permitted finger length, see the technical data table.

EGP 25

Gripper for small components

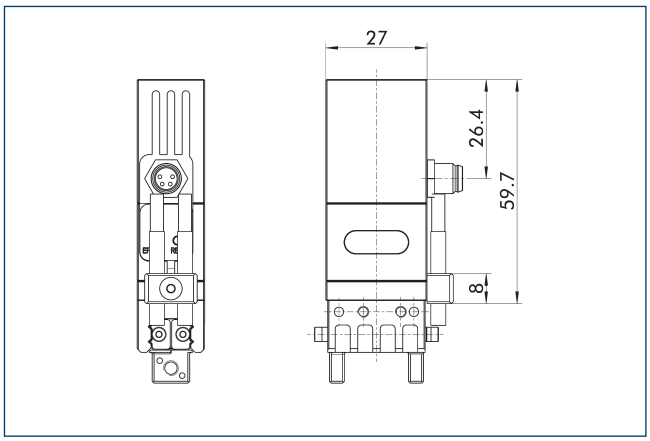
Jaw design



(90) Vertically positioned prism (91) Horizontally positioned prism

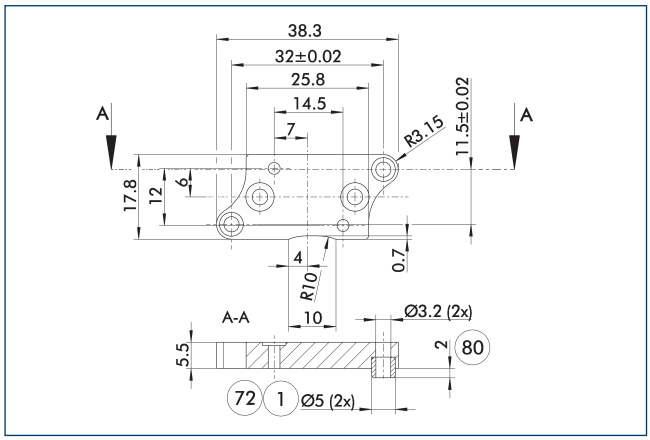
A workpiece, which is gripped using three points of contact, can be reliably gripped with high repeatability. A system with more than three points of contact is overdetermined. The drawing shows two alternative gripper finger designs for coaxial and radial gripping of a cylindrical part.

Speed version S



The speed version S offers reduced closing and opening times by using a different internal gear ratio. The drawing shows the changes in dimension of the speed version in comparison to the basic version illustrated in the main view.

Adapter plate



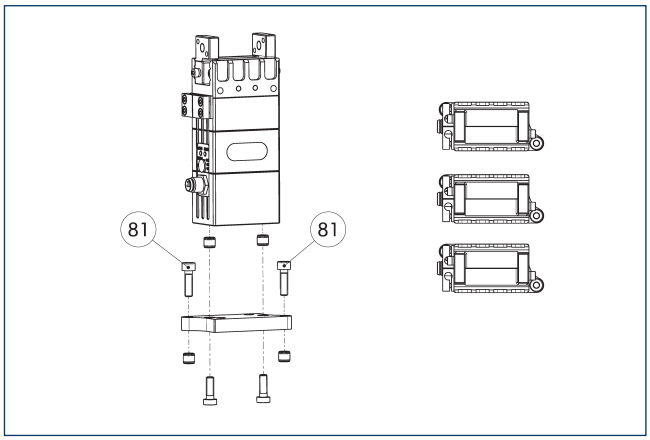
(1) Gripper connection
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part

The adapter plate includes an O-ring* for a direct air connection, additional centering sleeves, and screws for mounting the gripper.
*Optional only with pneumatic actuators

Description	ID	
Adapter plate		
APL-MPG-plus 25	0305507	

ⓘ The adapter plate is a separately ordered, optional accessory.

Adapter plate



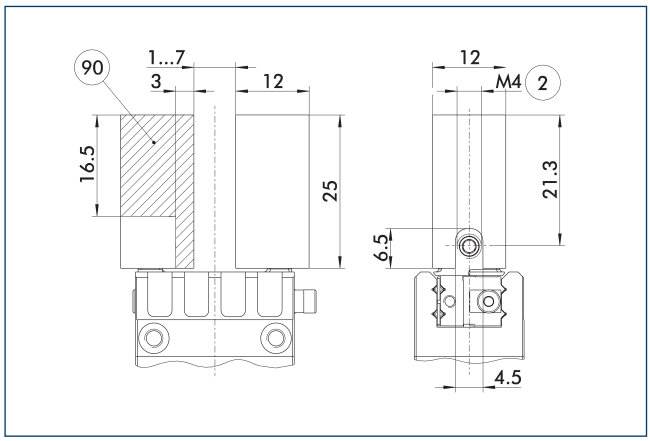
(81) Not included in the scope of delivery

The adapter plate includes an O-ring* for a direct air connection, additional centering sleeves, and screws for mounting the gripper.
*Optional only with pneumatic actuators

Description	ID	
Adapter plate		
APL-MPG-plus 25	0305507	

ⓘ The adapter plate is a separately ordered, optional accessory.

Finger blanks with BSWS ABR-BSWS-MPG-plus 25



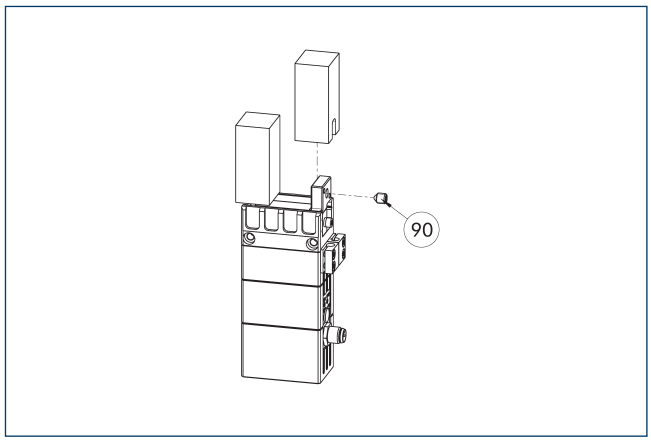
(2) Finger connection

(90) Machining volume

Finger blanks for customized subsequent machining with integrated jaw quick-change system for precise and fast finger changes.

Description	ID	Scope of delivery
Finger blank with jaw quick-change system		
ABR-BSWS-MPG-plus 25	0302894	2

Finger blanks with BSWS

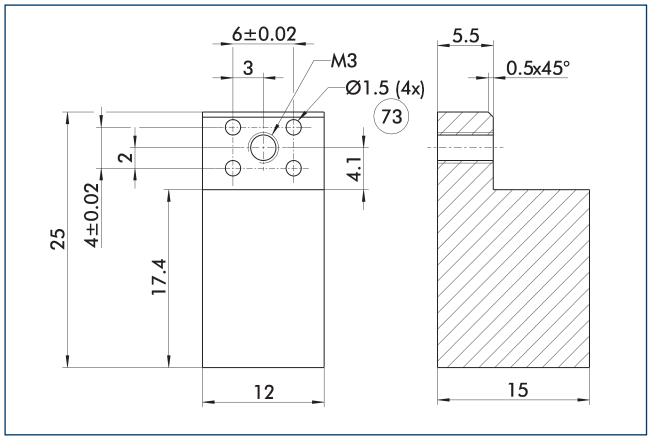


(90) Included in the scope of delivery

The finger blanks with jaw quick-change system allow fast and manual gripper finger changes. The mechanical interface to the gripper is already integrated. Only the specific workpiece geometry needs to be machined into the finger blank.

Description	ID	Scope of delivery
Finger blank with jaw quick-change system		
ABR-BSWS-MPG-plus 25	0302894	2

Finger blanks ABR-MPG-plus 25

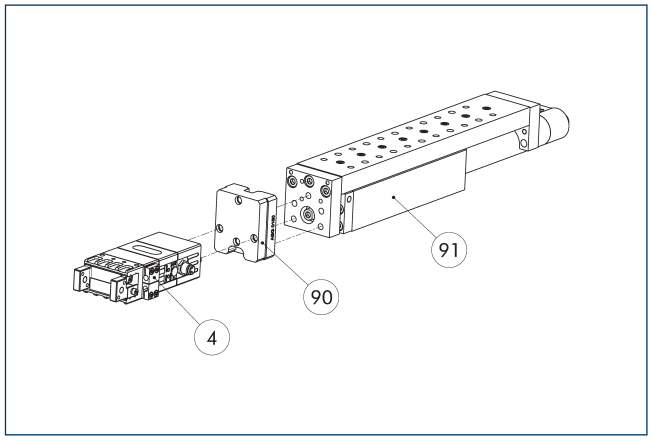


(73) Fit for centering pins

The drawing shows the finger blank which can be reworked by the customer.

Description	ID	Material	Scope of delivery
Finger blank			
ABR-MPG-plus 25	0340211	Aluminum	2

Modular Assembly Automation



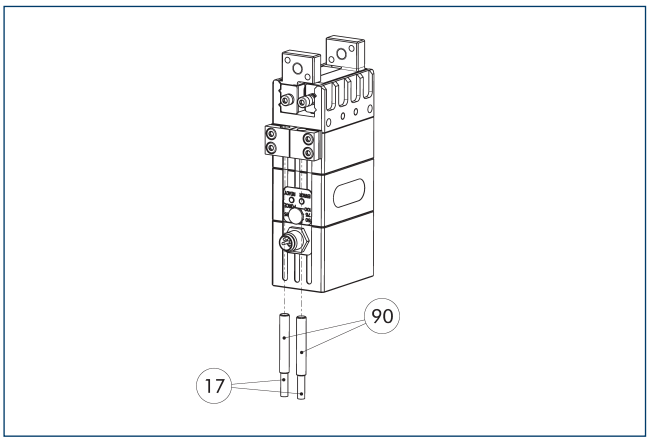
(4) Grippers

(90) ASG adapter plate

(91) CLM/KLM/LM/ELP/ELM/ELS/HLM linear modules

Grippers and linear modules can be combined with standard adapter plates from the modular assembly system. For more information see our main catalog "Modular Assembly Automation".

IN 40 inductive proximity switches



(17) Cable outlet

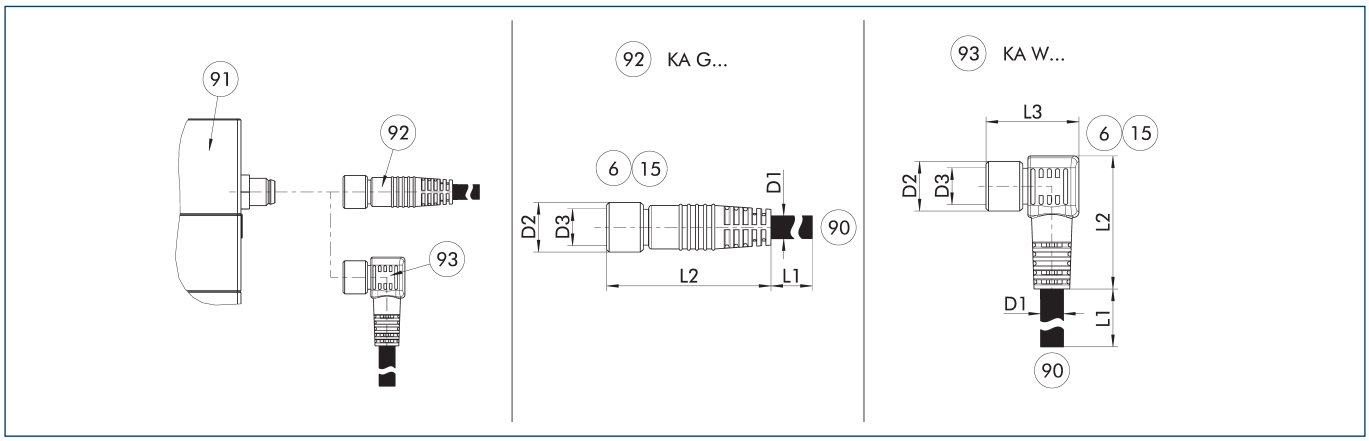
(90) Inductive proximity switches

Directly mounted end position monitoring.

Description	ID	Often combined
Inductive proximity switches		
IN 40-S-M12	0301574	
IN 40-S-M8	0301474	●
INK 40-S	0301555	
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 plug/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.

Connection cables



KA G... Connection cable with straight socket
KA W... Connection cable with angular socket

(6) Connection module side
(15) Socket
(90) SAC connection cable with open wire strands
(91) Connection plug component
(92) Cable with straight female connector
(93) Cable with angled female connector

The connection cable is ideal for connecting the corresponding components to the controller or the power supply unit. The connection cable has a 4-pin M8 socket on one side and an open wire strand on the other side for individual connections. The connection cables are suitable for use both in the cable track as well as in torsion applications.

Description	ID	L1	D1	L2	D2	L3	D3	Often combined
		[m]	[mm]	[mm]	[mm]	[mm]		
Connection cable – suitable for drag chains and a high torsion resistance								
KA GLN0804-I0-00200-A	1310371	2	4.8	33.7	10		M8	
KA GLN0804-I0-00500-A	1310375	5	4.8	33.7	10		M8	●
KA GLN0804-I0-01000-A	1310379	10	4.8	33.7	10		M8	
KA WLN0804-I0-00200-A	1310372	2	4.8	27.9	10	18.9	M8	
KA WLN0804-I0-00500-A	1310376	5	4.8	27.9	10	18.9	M8	
KA WLN0804-I0-01000-A	1310381	10	4.8	27.9	10	18.9	M8	

ⓘ Please observe the min. bending radius for cable track-compatible cables or the max. torsion angle for torsion-compatible cables. These are generally 10 times the cable diameter or +/- 180°/m.

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