



Superior Clamping and Gripping



Product Information

Gripper for small components EGP 40

EGP

Gripper for small components

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 the prepositioning of the gripper finger and the evaluation of the gripper condition



Sizes
Quantity: 4



Weight
0.11 .. 0.83 kg



Gripping force
12 .. 300 N



Stroke per jaw
3 .. 10 mm

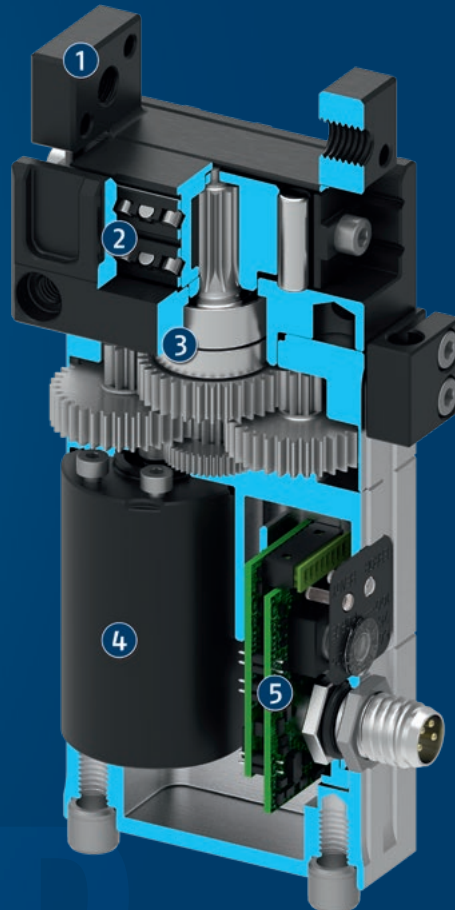


Workpiece weight
0.07 .. 1.25 kg

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.

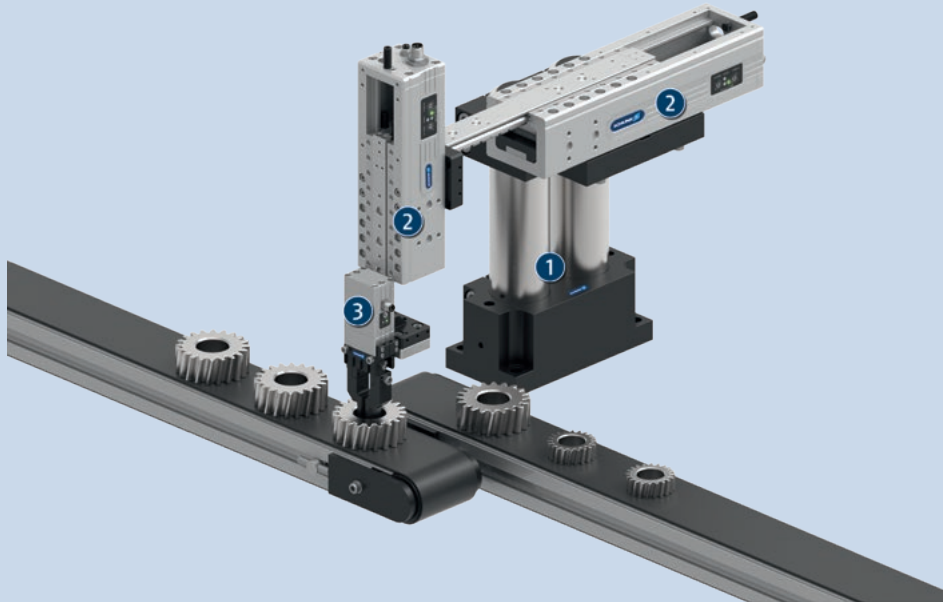
Repeat accuracy (gripping): defined as the spread of the actual position at 100 consecutive closing or opening movements on a rigid workpiece or a fixed workpiece stop under constant conditions.

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 EGP even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Linear module



Rotation unit



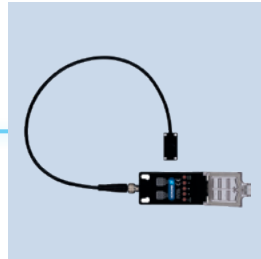
Rotary gripper module



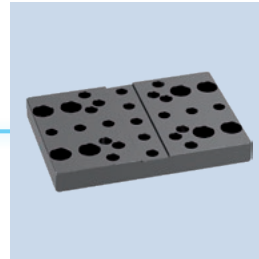
Pick & Place Unit



Inductive proximity switches



Flexible position sensor



Adapter plate



Finger blank



Connection cables

① For more information on these products can be found on the following product pages or at schunk.com. Please contact us: SCHUNK technical hotline +49-7133-103-2696

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%.

Optional status monitoring via external sensor system: The status of the gripper can be monitored by external sensors.

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.

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.

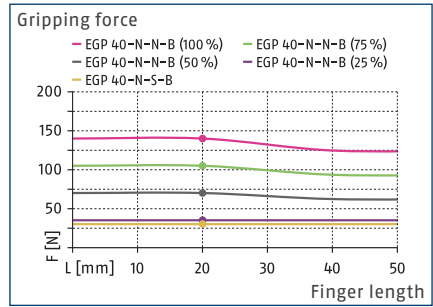
Version with IO-Link: The integration of IO-Link makes it possible to adjust the gripping force, to pre-position the gripper fingers and to evaluate the gripper status.

EGP 40

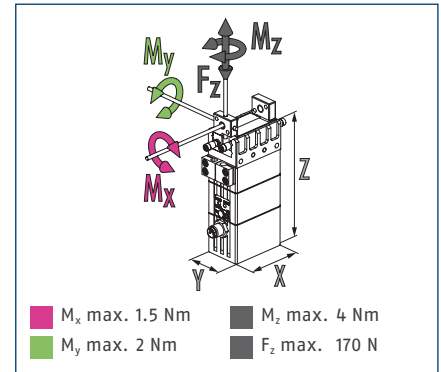
Gripper for small components



Gripping force



Dimensions and maximum loads

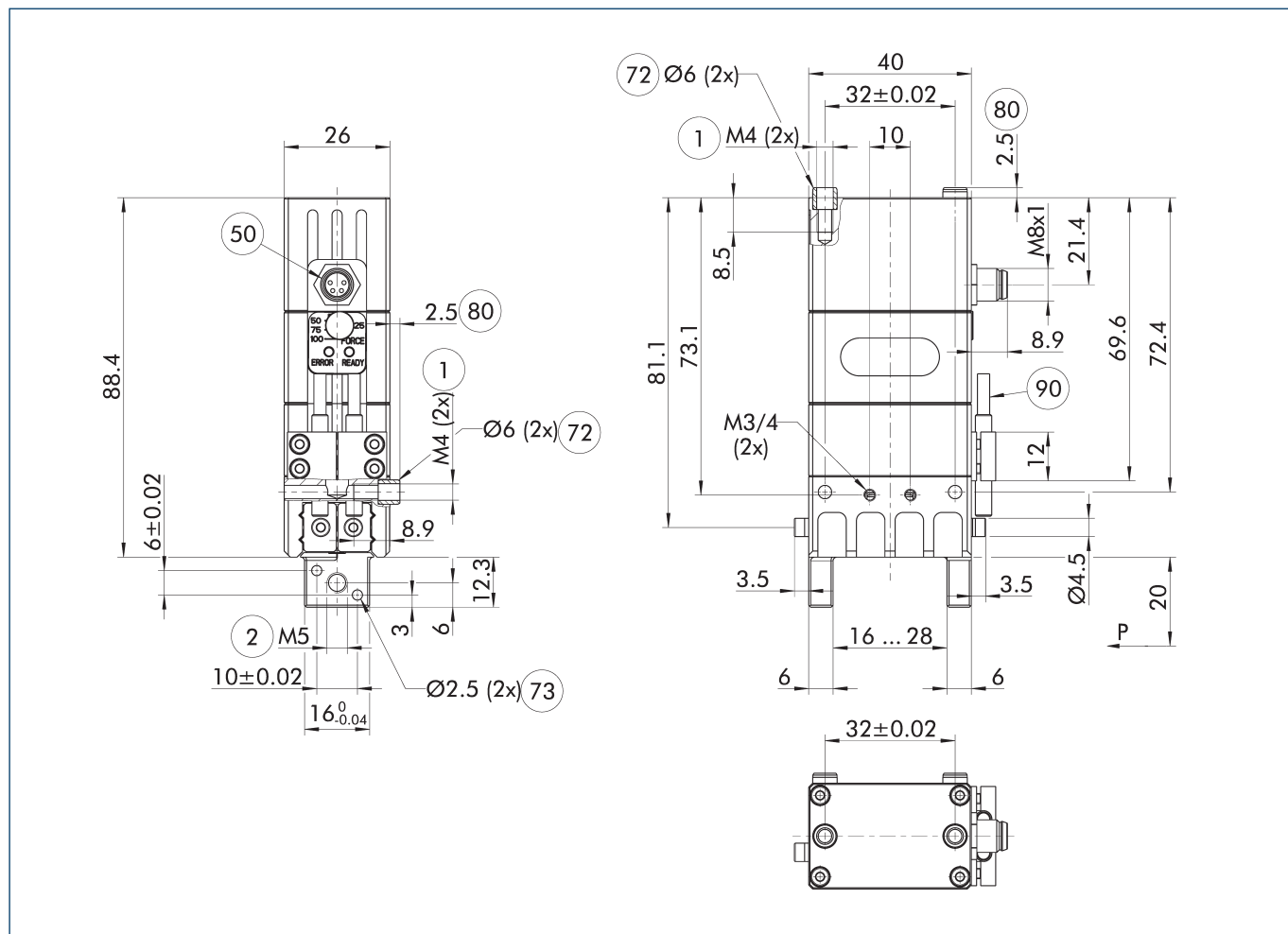


① The indicated moments and forces are static values, apply for each base jaw and should not appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

Technical data

Characterization		EGP 40-N-N-B	EGP 40-N-S-B
ID		0310940	0310942
General operating data			
Stroke per jaw	[mm]	6	6
Min./max. gripping force	[N]	35/140	30/30
Recommended workpiece weight	[kg]	0.7	0.15
Max. permissible finger length	[mm]	50	50
Max. permissible mass per finger	[kg]	0.08	0.08
Repeat accuracy (gripping)	[mm]	0.02	0.02
Closing/opening time	[s]	0.2/0.2	0.06/0.06
Weight	[kg]	0.32	0.3
Min./max. ambient temperature	[°C]	5/55	5/55
IP protection class		30	30
Noise emission	[dB(A)]	<70	<70
Dimensions X x Y x Z	[mm]	40 x 26 x 88.4	40 x 26 x 88.4
Electrical operating data			
Nominal voltage	[V]	24	24
Nominal current	[A]	0.2	0.2
Max. current	[A]	2	2
Controller electronics		integrated	integrated
Communication interface		Digital inputs	Digital inputs
Number of digital I/O		2/-	2/-
Options and their characteristics			
Version with IO-Link		1372735	
Weight	[kg]	0.34	
Specification		V1.1	
Transmission rate		COM2	
Port		Class B	
Repeat accuracy (positioning, unidirectional)	[mm]	±0.1	
Repeat accuracy (positioning, bi-directional)	[mm]	±0.2	

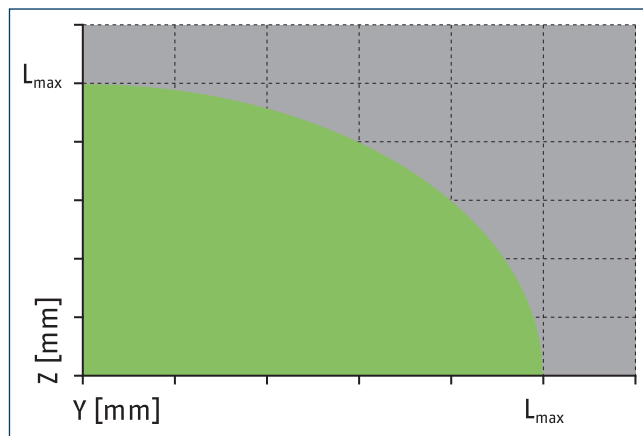
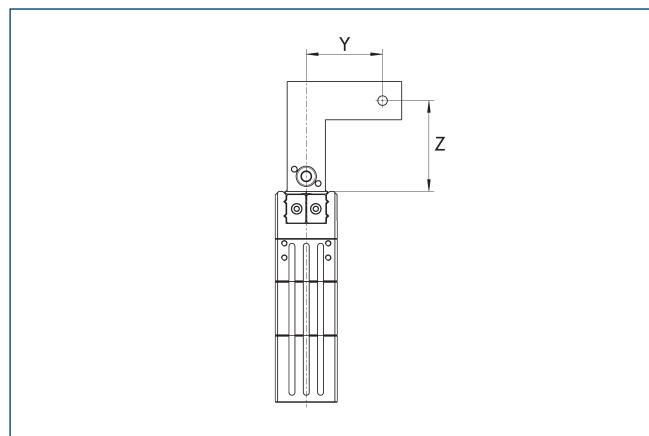
Main view



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
- ⑤⑩ Electrical connection
- ⑦⑩ Fit for centering sleeves
- ⑦⑩ Fit for centering pins
- ⑧⑩ Depth of the centering sleeve hole in the counter part
- ⑨⑩ Sensor IN ...

Maximum permitted finger projection

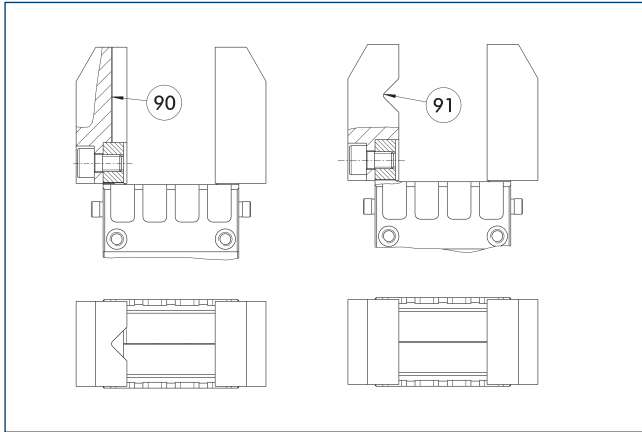


■ Permitted range ■ Inadmissible range
 L_{max} is equivalent to the maximum permitted finger length, see the technical data table.

EGP 40

Gripper for small components

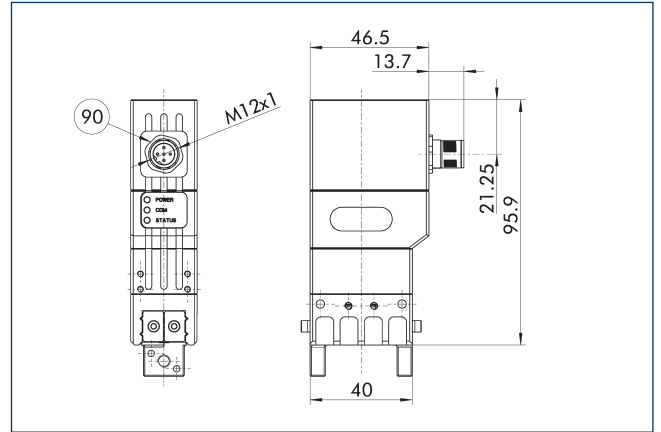
Jaw design



- ⑨⑩ Vertically positioned prism
- ⑨⑪ 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.

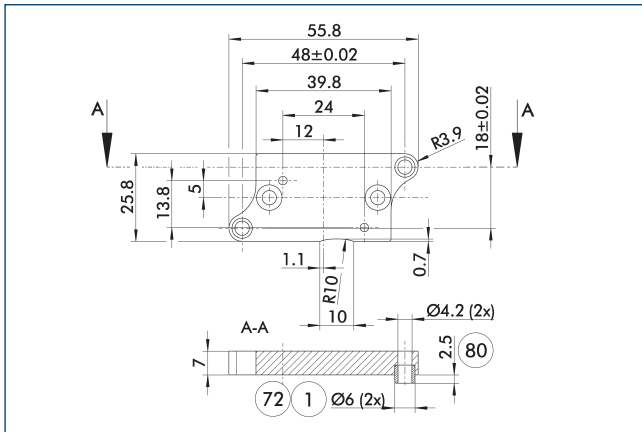
I0-Link version I0L



- ⑨⑩ M12, 5-pin

The position of the gripper fingers and the gripping force can be set flexibly on the I0-link version. The drawing shows dimensional changes of the I0-Link version compared to the basic version found in the main view.

Adapter plate



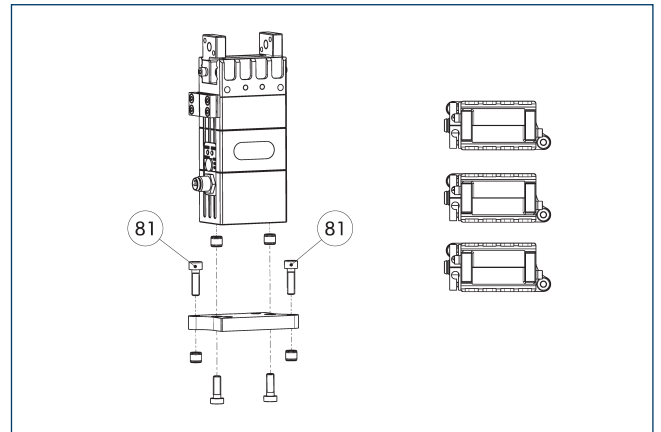
- ① Gripper connection
- ⑦② Fit for centering sleeves
- ⑧⑩ Depth of the centering sleeve hole in the counter part

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

Characterization	ID
Adapter plate	
APL-MPG-plus 40	0305527

⑩ The adapter plate is a separately ordered, optional accessory.

Adapter plate



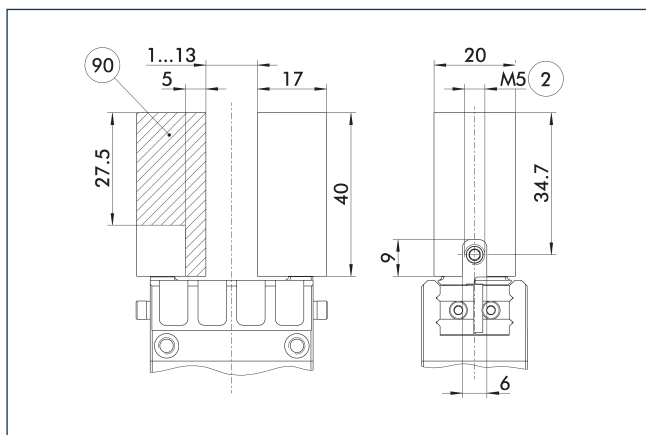
- ⑧⑪ Not included in the scope of delivery

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

Characterization	ID
Adapter plate	
APL-MPG-plus 40	0305527

⑩ The adapter plate is a separately ordered, optional accessory.

Finger blanks with BSWS ABR-BSWS-MPG-plus 40

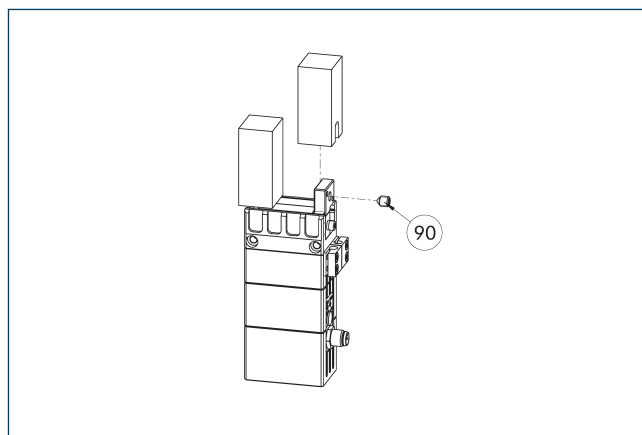


② Finger connection ⑨⑩ Machining volume

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

Characterization	ID	Scope of delivery
Finger blank with jaw quick-change system		
ABR-BSWS-MPG-plus 40	0302896	2

Finger blanks with BSWS

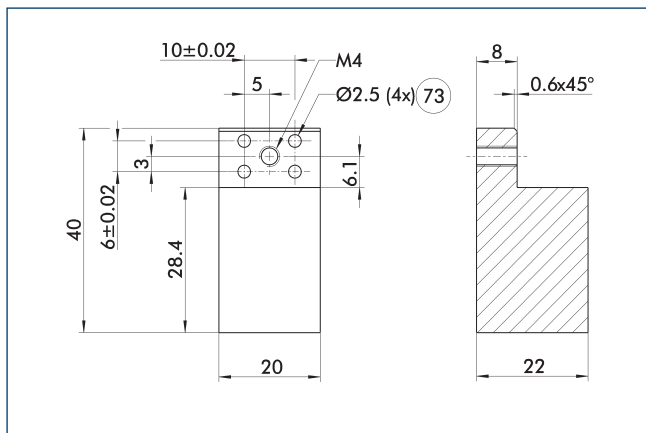


⑨⑩ Included in the scope of delivery

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.

Characterization	ID	Scope of delivery
Finger blank with jaw quick-change system		
ABR-BSWS-MPG-plus 40	0302896	2

Finger blanks ABR-MPG-plus 40

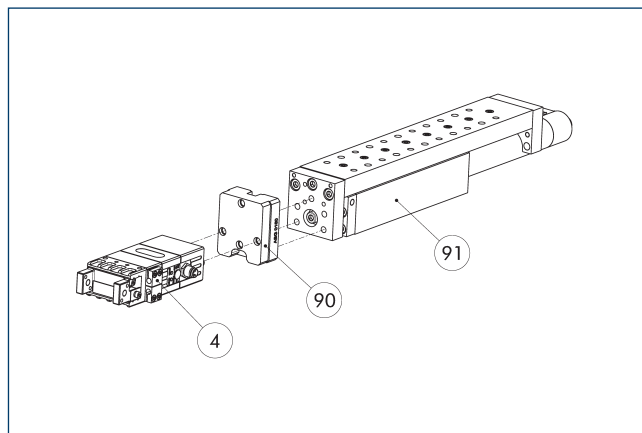


⑦③ Fit for centering pins

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

Characterization	ID	Material	Scope of delivery
Finger blank			
ABR-MPG-plus 40	0340213	Aluminum	2

Modular Assembly Automation



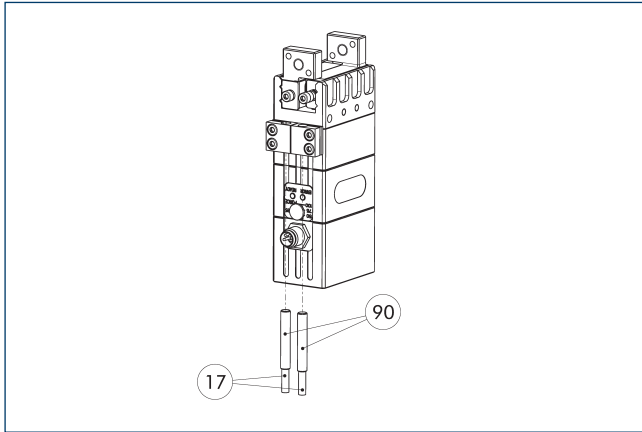
④ Grippers ⑨① CLM/KLM/LM/ELP/ELM/ELS/HLM linear modules
⑨⑩ ASG adapter plate

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".

EGP 40

Gripper for small components

IN 40 inductive proximity switches



17 Cable outlet

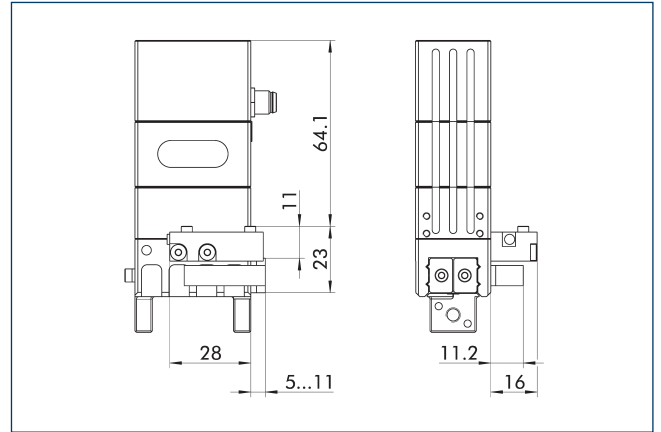
90 Inductive Proximity Switches

Directly mounted end position monitoring.

Characterization	ID	Often combined
Inductive proximity switches		
IN 40-S-M12	0301574	
IN 40-S-M8	0301474	●
INK 40-S	0301555	
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	
clip for plug/socket		
CLI-M12	0301464	
CLI-M8	0301463	
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	
Sensor distributor		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M12	0301747	
V4-M8	0301746	
V8-M12	0301752	
V8-M8	0301751	

① 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.

Attachment kit for FPS

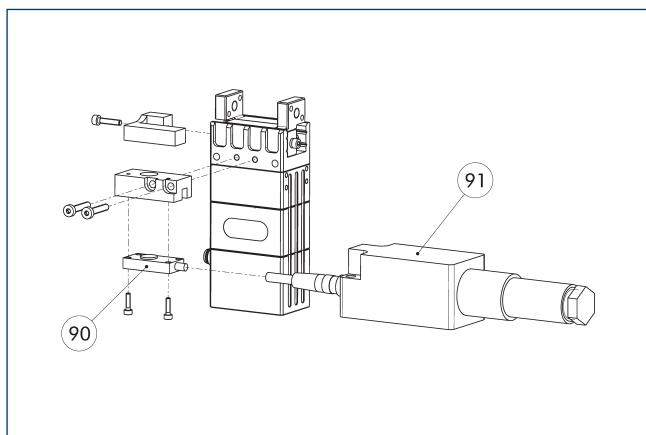


The following FPS position sensor can differentiate between five programmable areas or switching points for the stroke of a gripper, and can be used in connection with a PC as a measuring system.

Characterization	ID	
Attachment kit for FPS		
AS-FPS-MPG-plus 40	0301762	

① This attachment kit needs to be ordered optionally as an accessory.

Flexible position sensor



90 FPS-S sensor

91 FPS-F5 evaluation electronic

Flexible position monitoring of up to five positions.

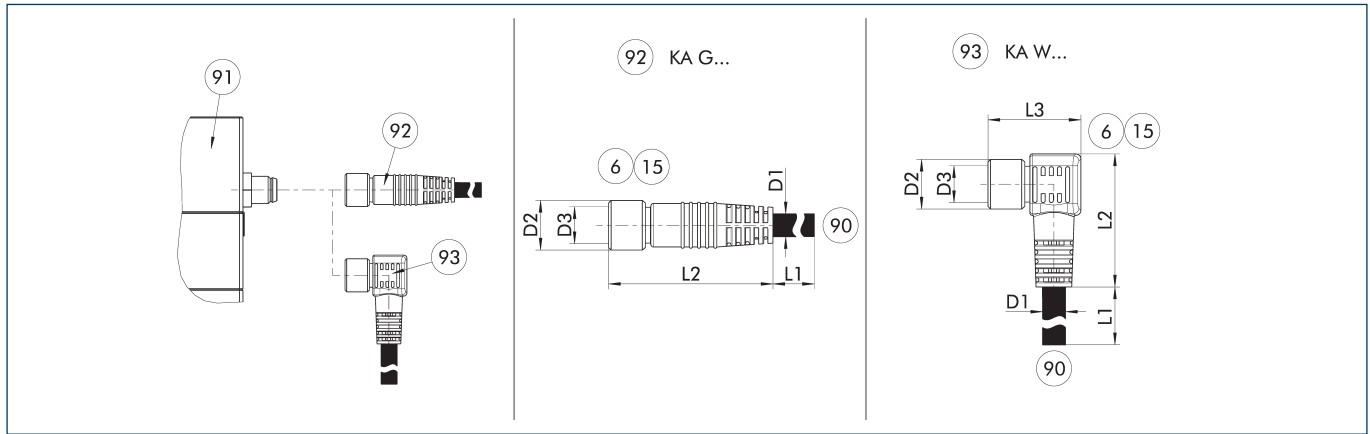
Characterization	ID	Often combined
Attachment kit for FPS		
AS-FPS-MPG-plus 40	0301762	
Sensor		
FPS-S 13	0301705	
Cable extension		
KV BG08-SG08 3P-0050	0301598	
KV BG08-SG08 3P-0100	0301599	
Evaluation electronics		
FPS-F5	0301805	●

- ① When using an FPS system, an FPS sensor (FPS-S) as well as an electronic processor (FPS-F5 / F5 T) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are optionally available – see catalog chapter “Accessories.”

EGP 40

Gripper for small components

Connection cable for digital I/O



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

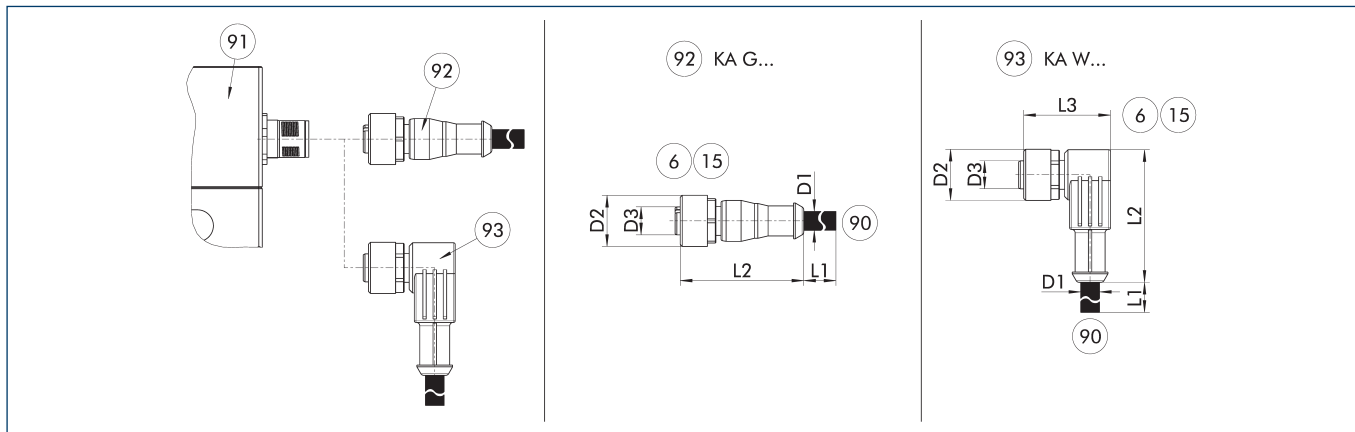
- ⑥ Connection module side
- ⑬ Socket
- ⑨⑩ SAC connection cable with open wire strands
- ⑨① Connection plug component
- ⑨② Cable with straight female connector
- ⑨③ Cable with angled female connector

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.

Characterization	ID	L1 [m]	D1 [mm]	L2 [mm]	D2 [mm]	L3 [mm]	D3	Often combined
Digital connection cable I/O – drag chain and torsion compatible								
KA GLN0804-IO-00200-A	1310371	2	4.8	33.7	10		M8	
KA GLN0804-IO-00500-A	1310375	5	4.8	33.7	10		M8	●
KA GLN0804-IO-01000-A	1310379	10	4.8	33.7	10		M8	
KA WLN0804-IO-00200-A	1310372	2	4.8	27.9	10	18.9	M8	
KA WLN0804-IO-00500-A	1310376	5	4.8	27.9	10	18.9	M8	
KA WLN0804-IO-01000-A	1310381	10	4.8	27.9	10	18.9	M8	

① 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.

IO-Link connection cable



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

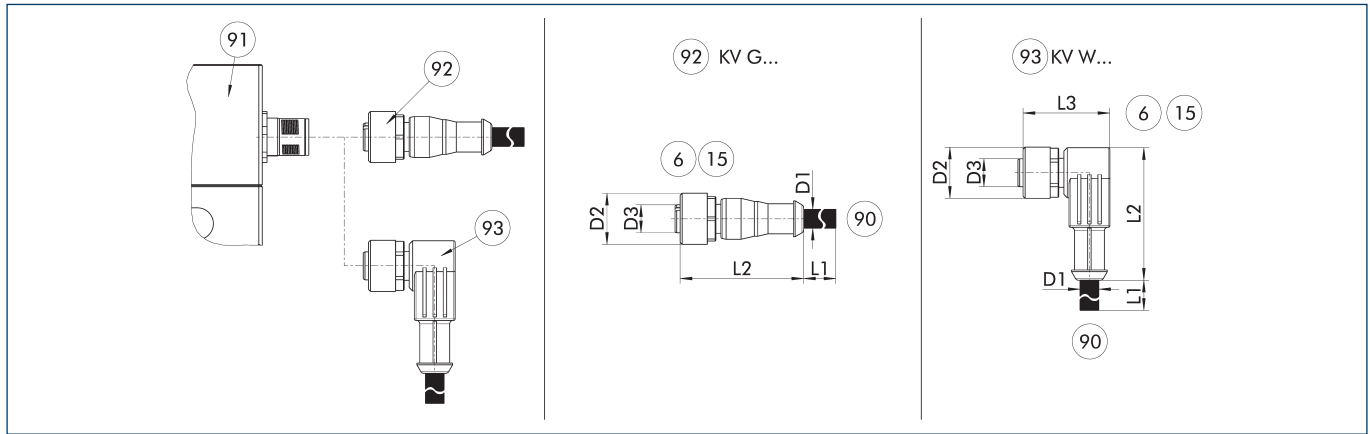
- ⑥ Connection module side
- ⑬ Socket
- ⑨⑩ SAC connection cable with open wire strands
- ⑨① Connection plug component
- ⑨② Cable with straight female connector
- ⑨③ Cable with angled female connector

The connection cable is ideal for connecting the corresponding components to the control system. The connection cable has a 5-pin M12 socket on one side, and open wire strands 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.

Characterization	ID	L1 [m]	D1 [mm]	L2 [mm]	D2 [mm]	L3 [mm]	D3	Wire- ϕ [mm ²]
IO-Link connection cable – drag chain and torsion-compatible								
KA GLN1205-IOL-00500-A	1387207	5	4.8	38	15		M12	0.34
KA GLN1205-IOL-01000-A	1387209	10	4.8	38	15		M12	0.34
KA WLN1205-IOL-00500-A	1387210	5	4.8	39	15	28	M12	0.34
KA WLN1205-IOL-01000-A	1387211	10	4.8	39	15	28	M12	0.34

① 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.

IO-Link cable extension



KV G... Cable extension with straight socket
 KV W... Cable extension with angled socket

⑥ Connection module side
 ⑮ Socket
 ⑨⑩ Cable end with straight connector

⑨① Connection plug component
 ⑨② Cable with straight female connector
 ⑨③ Cable with angled female connector

The cable extensions are ideal for connecting the relevant components to the control system, or for use as extension cables. The cable extensions have a 5-pin M12 connector with a straight or angled design on the module side and a 5-pin M12 plug with a straight design on the other side. The cable extensions are suitable for use in the cable track and in torsion applications.

Characterization	ID	L1 [m]	D1 [mm]	L2 [mm]	D2 [mm]	L3 [mm]	D3
IO-Link cable extension – cable track and torsion-compatible							
KV GGN1205-IOL-00200-A	1387195	2	4.8	41	15		M12
KV GGN1205-IOL-00500-A	1387199	5	4.8	41	15		M12
KV WGN1205-IOL-00200-A	1387202	2	4.8	39	15	28	M12
KV WGN1205-IOL-00500-A	1387205	5	4.8	39	15	28	M12

① 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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