



Superior Clamping and Gripping



Product Information

Gripper for small components MPG-plus 64

MPG-plus

Gripper for small components

Powerful. Fast. Long fingers.

Gripper for small components MPG-plus

2-finger parallel gripper with smooth roller guides of the base jaws

Field of application

Gripping and moving of small to medium-sized workpieces in low contaminated environments, such as assembly, testing, laboratory and pharmaceutical industry

Advantages – Your benefits

Cross roller guidance for precise gripping through due to a scope-free base jaw guidance

Base jaws guided on double roller bearings ensuring low friction and smoothly running

Optimized basic load rating suitable for using long gripper fingers

Drive concept oval piston for maximum gripping forces

Monitoring with electronic magnetic switches for a maximized process reliability

Mounting from two sides in four screw directions for universal and flexible gripper assembly

Air supply via hose-free direct connection or screw connections for flexible pressure supply in all automated systems

Compact dimensions for minimal interfering contours in handling

NEW: food-grade lubrication as a solution for an easy entry into medical technology, lab automation, pharmaceutical and food industry



12520002



Sizes
Quantity: 9



Weight
0.01 .. 0.63 kg



Gripping force
9 .. 370 N



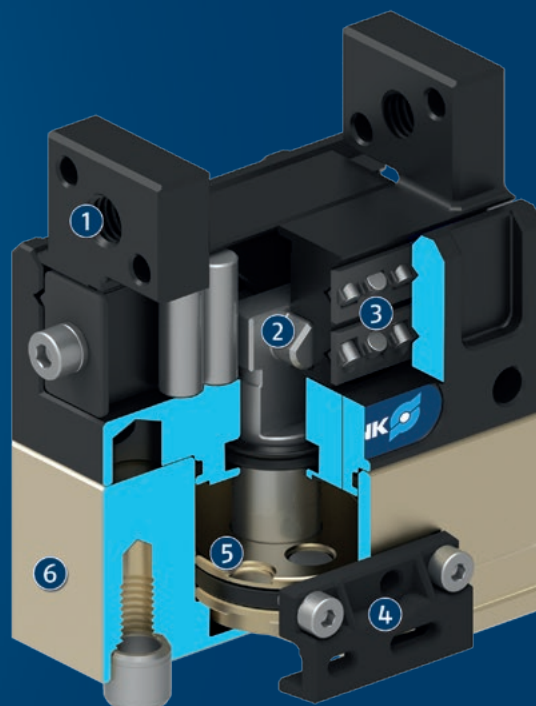
Stroke per jaw
1 .. 10 mm



Workpiece weight
0.05 .. 1.25 kg

Functional description

The oval piston is moved up or down by compressed air. The angled active surfaces of the wedge-hook produce a synchronized, parallel jaw motion.



- ① **Base Jaw**
for the connection of workpiece-specific gripper fingers
- ② **Wedge-hook design**
for high force transmission and centric gripping
- ③ **Cross roller guidance**
precise gripping due to backlash-free base jaw guidance
- ④ **Sensor system**
for monitoring two switching points
- ⑤ **Oval piston drive**
for power generation
- ⑥ **Housing**
is weight-optimized due to the use of high-strength aluminum alloy

MPG-plus

Gripper for small components

General notes about the series

Operating principle: Wedge-hook kinematics

Housing material: Aluminum alloy, anodized

Cover housing material: Steel

Base jaw material: Steel

Actuation: pneumatic, with filtered compressed air as per ISO 8573-1:2010 [7:4:4].

Warranty: 24 months

Service life characteristics: on request

Scope of delivery: Centering sleeves, O-rings for direct connection, assembly instructions (operating manual with declaration of incorporation is available online)

Gripping force maintenance device: possible by using the version with mechanical gripping force maintenance or pressure maintenance valve SDV-P

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.

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. Valve switching times, hose fill times, or PLC reaction times are not included, and are to be considered when cycle times are calculated.

Application example

Pneumatic pick & place unit for small components.

- 1 Pillar assembly system
- 2 Linear module CLM
- 3 2-finger parallel gripper MPG-plus



SCHUNK offers more ...

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



Rotation unit



Linear module



Pick & Place Unit



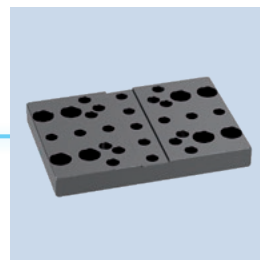
Manual change system



Attachment valve



Pressure maintenance valve



Adapter plate



Finger blank



Flexible position sensor



Magnetic switches



Inductive proximity switches

① For more information on these products can be found on the following product pages or at schunk.com.

Options and special information

Gripping force maintenance version AS/IS: The mechanical gripping force maintenance version ensures minimum gripping force even in the event of a pressure drop. In the AS/IS version this acts as a closing force, in the IS version as an opening force.

Optional adapter plates: allows frontal mounting of the gripper

Precision version P: for the highest accuracy

Version FPS for flexible position sensor: This version is prepared for the use with the flexible position sensor FPS, and allows monitoring of several gripping positions.

protective cover version HUE: Fully protects the gripper against external influences

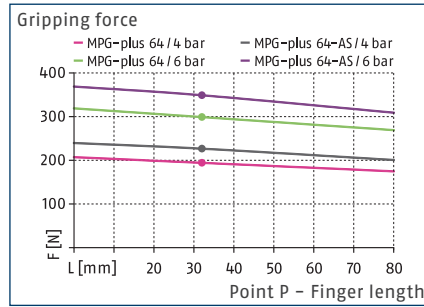
Food-grade lubrication: The requirements of EN 1672-2:2020 are not fully met.

MPG-plus 64

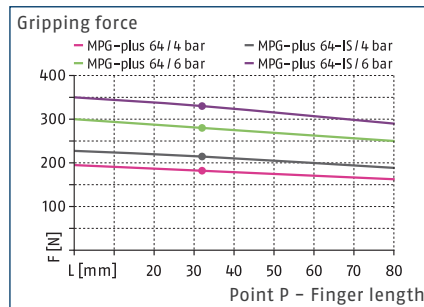
Gripper for small components



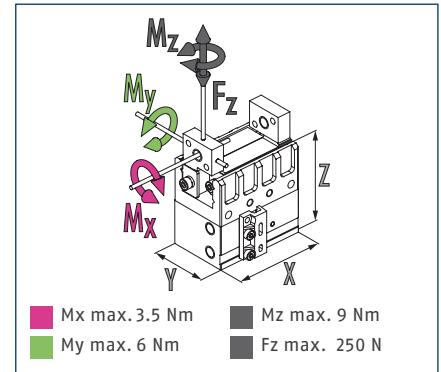
Gripping force O.D. gripping



Gripping force I.D. gripping



Dimensions and maximum loads



① The indicated moments and forces are static values, apply for each base jaw and may appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

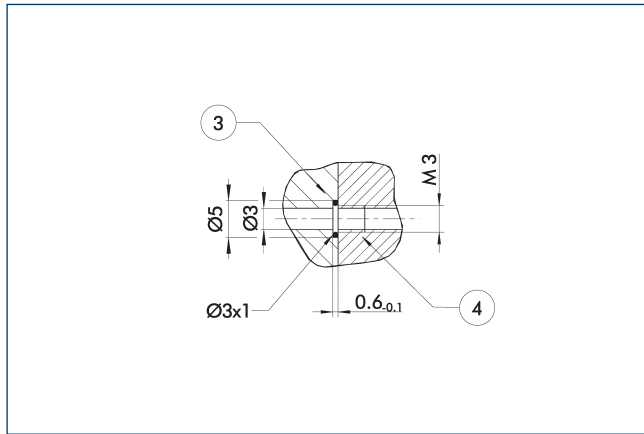
Technical data

Description		MPG-plus 64	MPG-plus 64-AS	MPG-plus 64-IS
ID		0305541	0305542	0305543
Stroke per jaw	[mm]	10	10	10
Closing/opening force	[N]	300/280	370/-	-/335
Min. spring force	[N]		70	55
Weight	[kg]	0.53	0.62	0.63
Recommended workpiece weight	[kg]	1.25	1.25	1.25
Fluid consumption double stroke	[cm ³]	15	27	24.5
Min./nom./max. operating pressure	[bar]	2/6/8	4/6/6.5	4/6/6.5
Closing/opening time	[s]	0.08/0.08	0.085/0.12	0.12/0.085
Closing/opening time with spring	[s]		0.30	0.30
Max. permissible finger length	[mm]	80	80	80
Max. permissible weight per finger	[kg]	0.24	0.24	0.24
IP protection class		30	30	30
Min./max. ambient temperature	[°C]	5/90	5/90	5/90
Repeat accuracy	[mm]	0.02	0.02	0.02
Cleanroom class ISO 14644-1:2015		6	6	6
Dimensions X x Y x Z	[mm]	64 x 35 x 54	64 x 35 x 69	64 x 35 x 69
Options and their characteristics				
High-temperature version		39305541	39305542	39305543
Min./max. ambient temperature	[°C]	5/100	5/100	5/100
Precision version		0305546	0305548	0305549

MPG-plus 64

Gripper for small components

Hose-free direct connection M3

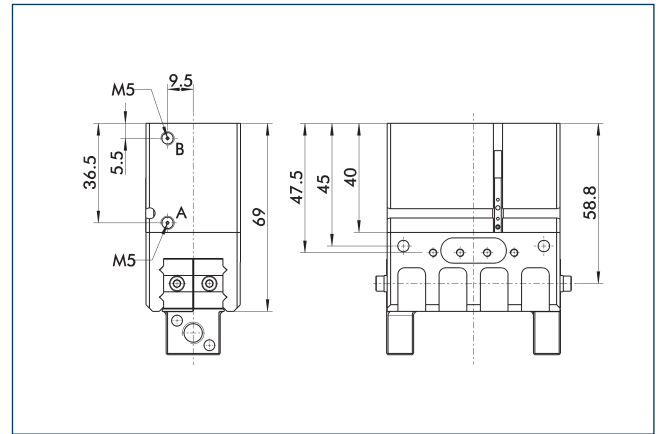


③ Adapter

④ Grippers

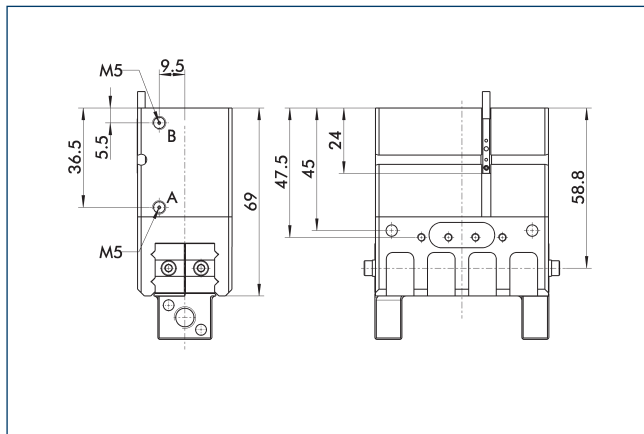
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Gripping force maintenance AS



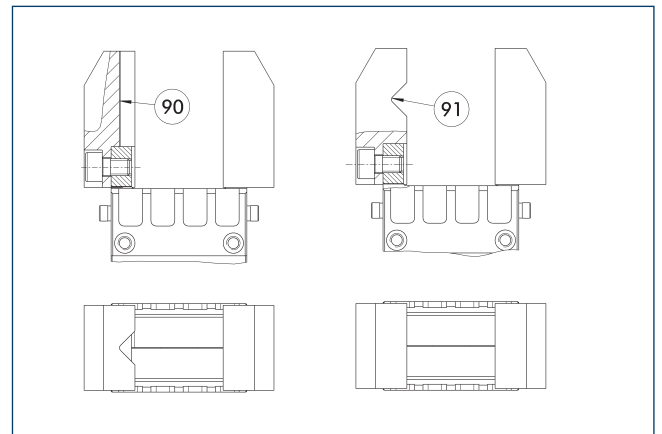
The mechanical gripping force maintenance device ensures that a minimum clamping force will be applied even if there is a drop in pressure. This acts as closing force in the AS / S version, and as opening force in the IS version. Besides this, the gripping force maintenance device can be used to increase the gripping force or for single actuated gripping.

Gripping force maintenance IS



The mechanical gripping force maintenance device ensures that a minimum clamping force will be applied even if there is a drop in pressure. This acts as closing force in the AS / S version, and as opening force in the IS version. Besides this, the gripping force maintenance device can be used to increase the gripping force or for single actuated gripping.

Jaw design

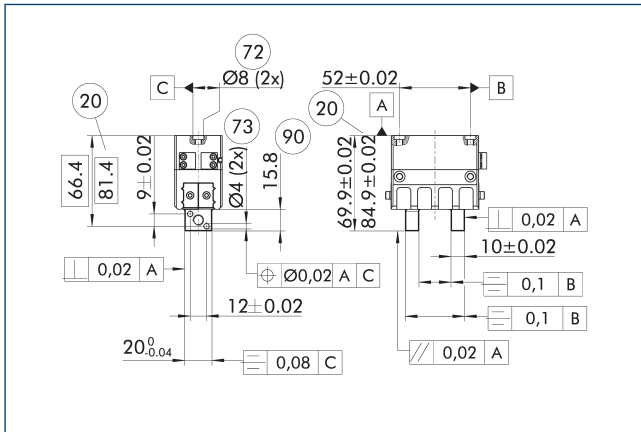


⑨⑩ Vertically positioned prism

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.

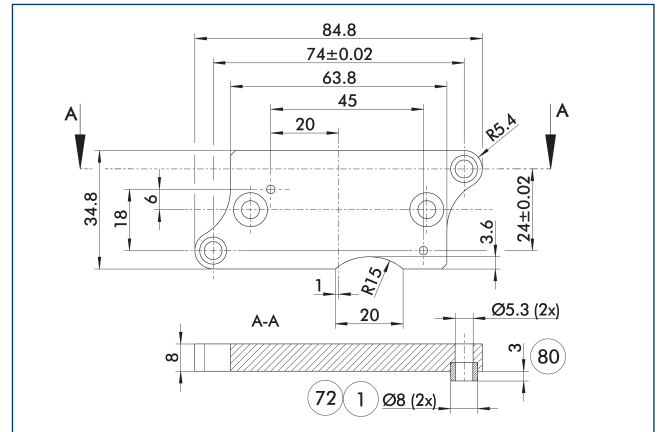
Precision version



- ②0 For AS / IS version
- ⑦3 Fit for centering pins
- ⑦2 Fit for centering sleeves
- ⑨0 Length of the usable finger surface

The indicated tolerances just refer to the variants of precision versions shown in the chart of technical specifications. All other variants of precision versions are available on request.

Adapter plate



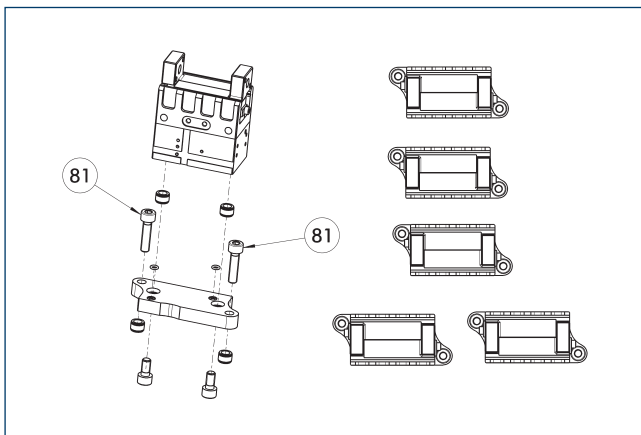
- ① Gripper connection
- ⑦2 Fit for centering sleeves
- ⑧0 Depth of the centering sleeve hole in the counter part

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 64	0305547

① The adapter plate is a separately ordered, optional accessory.

Adapter plate



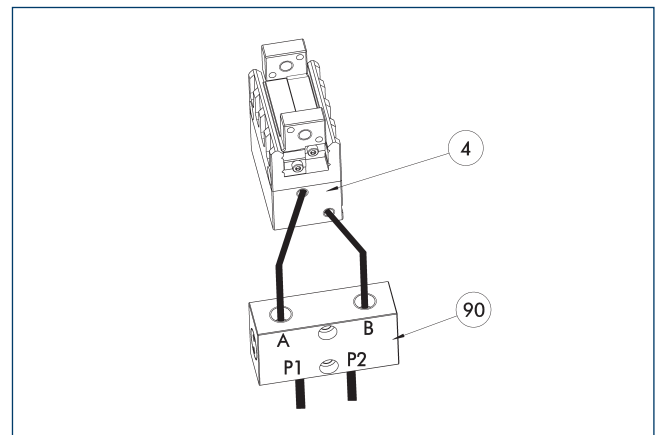
- ⑧1 Not included in the scope of delivery

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 64	0305547

① The adapter plate is a separately ordered, optional accessory.

SDV-P pressure maintenance valve



- ④ Grippers
- ⑨0 SDV-P pressure maintenance valve

The SDV-P pressure maintenance valve ensures in emergency STOP situations that the pressure in the piston chamber of pneumatic gripper, swivel, linear, and quick-change modules is temporarily maintained.

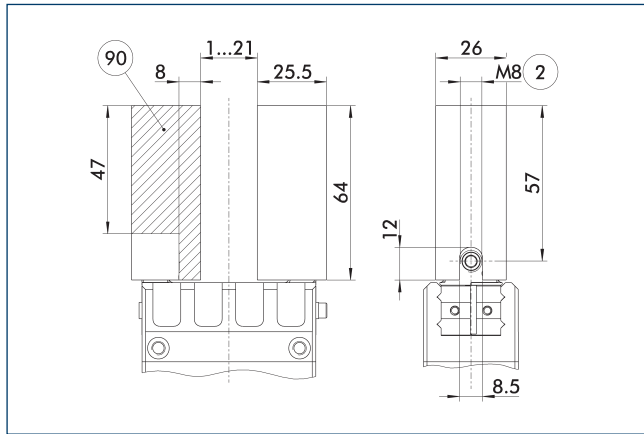
Description	ID	Recommended hose diameter [mm]
Pressure maintenance valve		
SDV-P 04	0403130	6
Pressure maintenance valve with air bleed screw		
SDV-P 04-E	0300120	6

① In order to achieve the specified closing and opening time for each gripper variant, the recommended hose diameter must be used. The direct allocation of the respective variant of the gripper for the respective SDV-P can be found at schunk.com.

MPG-plus 64

Gripper for small components

Finger blanks with BSWS ABR-BSWS-MPG-plus 64

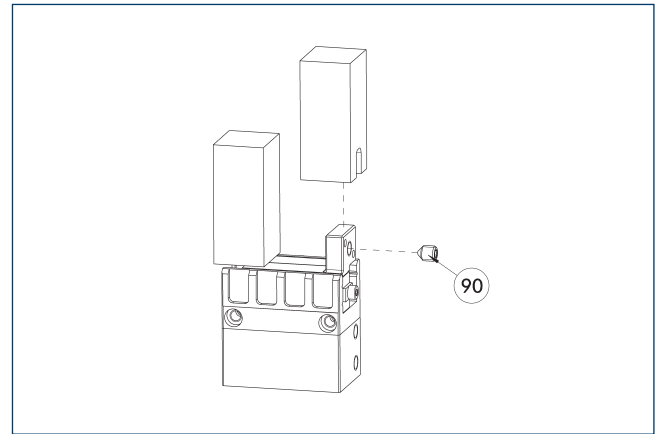


- ② Finger connection
- ⑨⑩ Machining volume

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 64	0302898	2

Finger blanks with BSWS

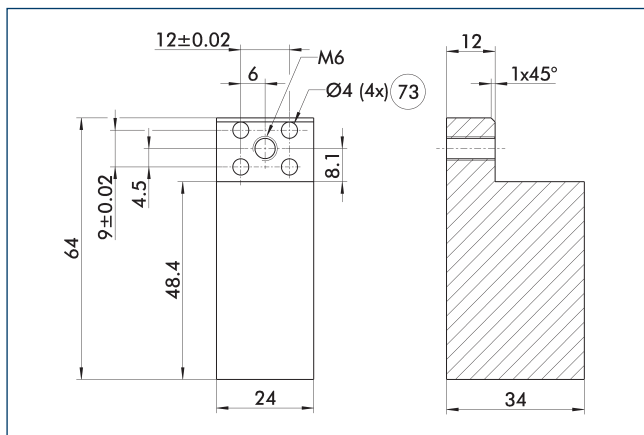


- ⑨⑩ Included in the jaw quick-change system's scope of delivery

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 64	0302898	2

Finger blanks ABR-MPG-plus 64

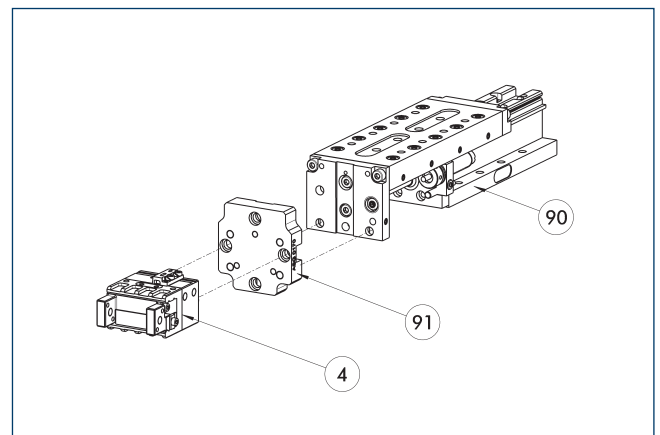


- ⑦③ Fit for centering pins

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

Description	ID	Material	Scope of delivery
Finger blank			
ABR-MPG-plus 64	0340215	Aluminum (3.4365)	2

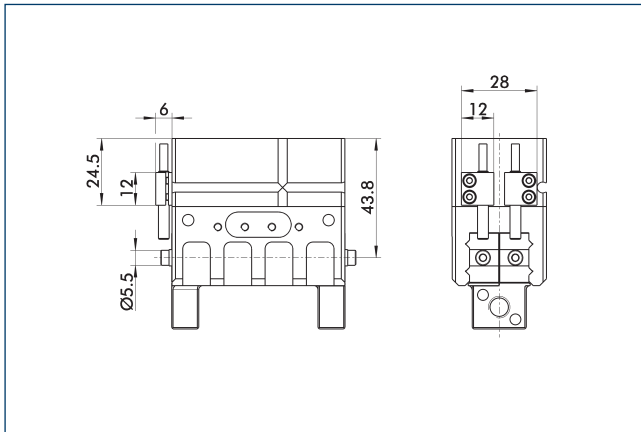
Modular Assembly Automation



- ④ Grippers
- ⑨⑩ CLM/KLM/LM/ELP/ELM/ELS/HLM linear modules
- ⑨① 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".

Attachment kit for proximity switch IN 40

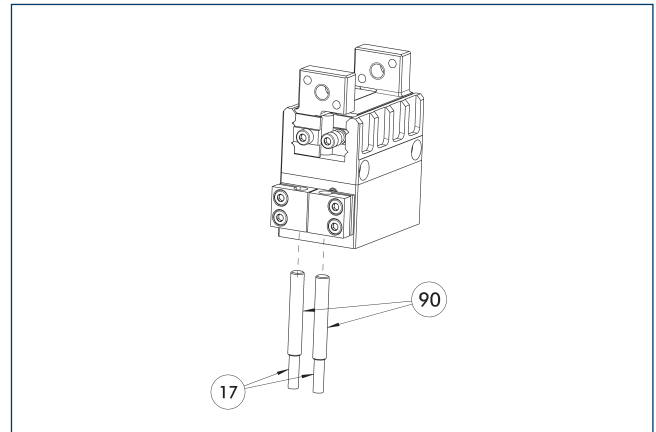


The attachment kit includes a bracket, switch cams, and mounting screws. Proximity switches have to be ordered separately.

Description	ID
Attachment kit for proximity switch	
AS-IN40-MPG-plus	0305545

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

IN 40 inductive proximity switches



①7 Cable outlet

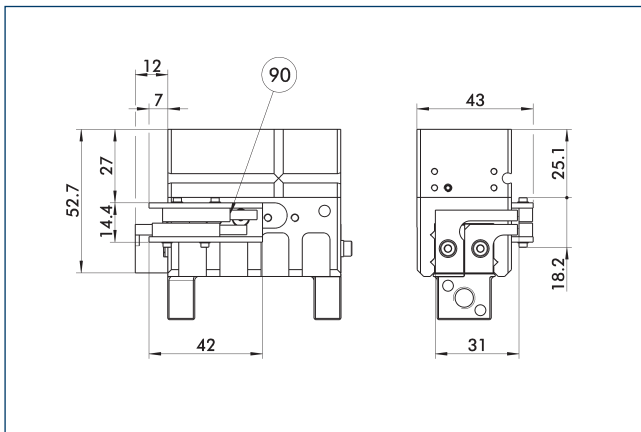
⑨0 Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN40-MPG-plus	0305545	
Inductive proximity switches		
IN 40-S-M12	0301574	
IN 40-S-M8	0301474	●
INK 40-S	0301555	

① Two sensors (closer/S) are required for each unit and extension cables are available as an option. This attachment kit needs to be ordered optionally as an accessory. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

Attachment kit for proximity switch IN 5



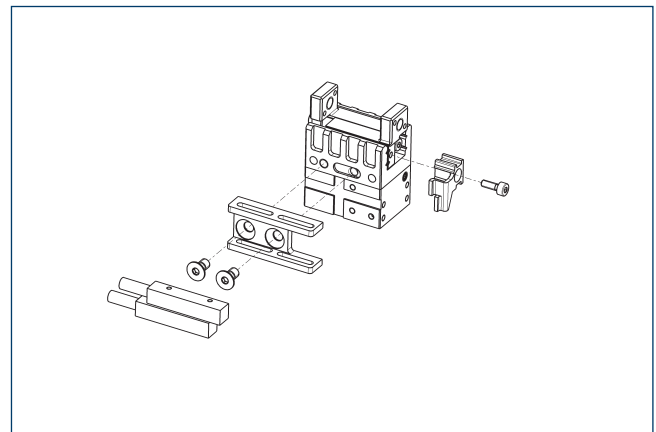
⑨0 Sensor IN ...

The attachment kit includes a bracket, switch cams, and mounting screws. Proximity switches have to be ordered separately.

Description	ID
Attachment kit for proximity switch	
AS-MPG 64	0340154

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

IN 5 inductive proximity switches



End position monitoring can be mounted with an attachment kit.

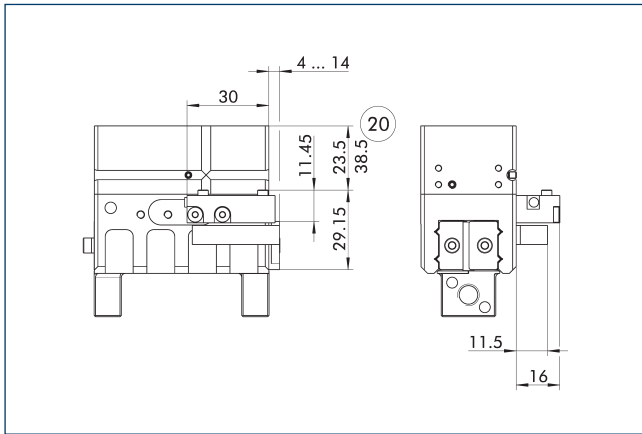
Description	ID	Often combined
Attachment kit for proximity switch		
AS-MPG 64	0340154	
Inductive proximity switches		
IN 5-S-M12	0301569	
IN 5-S-M8	0301469	●
INK 5-S	0301501	●

① Two sensors (closer/S) are required for each unit and extension cables are available as an option. This attachment kit needs to be ordered optionally as an accessory. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

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Gripper for small components

Attachment kit for FPS



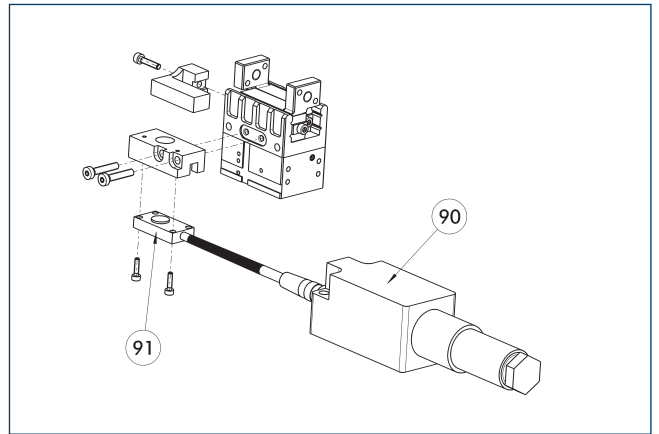
20 For AS / IS version

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.

Description	ID
Attachment kit for FPS	
AS-FPS-MPG 64	0301764

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

Flexible position sensor



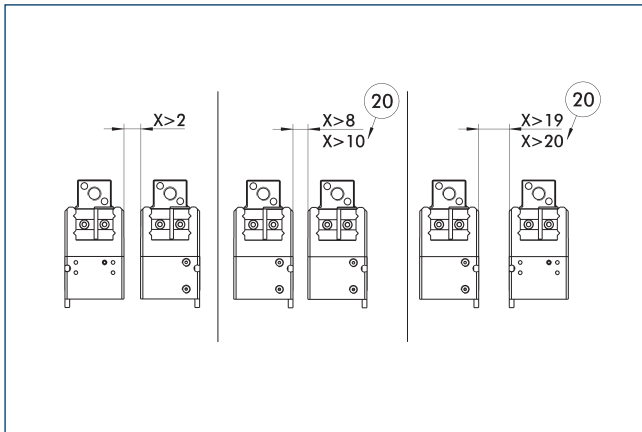
90 FPS-F5 evaluation electronic 91 FPS-S sensor

Flexible position monitoring of up to five positions.

Description	ID	Often combined
Attachment kit for FPS		
AS-FPS-MPG 64	0301764	
Sensor		
FPS-S 13	0301705	
Evaluation electronics		
FPS-F5	0301805	●
Cable extension		
KV BG08-SG08 3P-0050	0301598	
KV BG08-SG08 3P-0100	0301599	

ⓘ 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.”

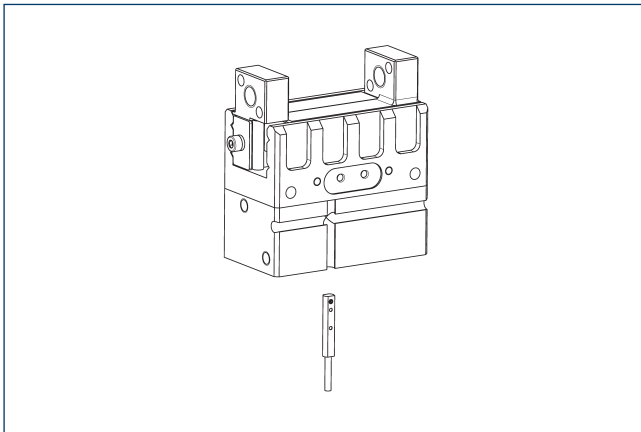
Monitoring for stacked arrangements



20 For AS / IS version

CAUTION: Monitoring is carried out by magnetic switches, and in case of side-by-side assembly of several units, a minimum distance of X mm between the units must be maintained.

Programmable magnetic switch MMS 22-PI2



Position monitoring with two programmable positions per sensor and electronics built into the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

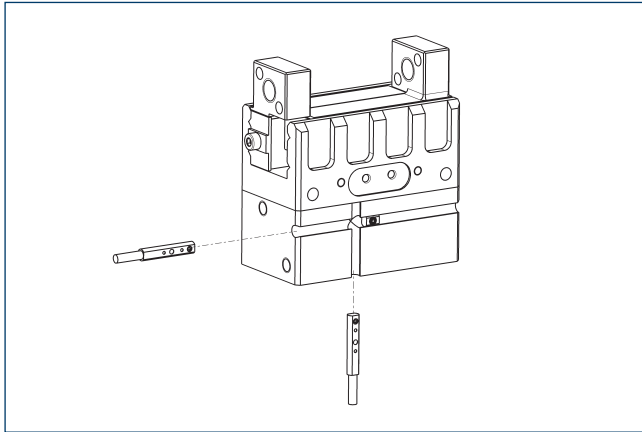
Description	ID	Often combined
Programmable magnetic switch		
MMS 22-PI2-S-M8-PNP	0301180	●
MMSK 22-PI2-S-PNP	0301182	
Programmable magnetic switch with lateral cable outlet		
MMS 22-PI2-S-M8-PNP-SA	0301186	
MMSK 22-PI2-S-PNP-SA	0301188	
Programmable magnetic switch with stainless steel housing		
MMS 22-PI2-S-M8-PNP-HD	0301130	
MMSK 22-PI2-S-PNP-HD	0301132	

- ① One sensor is required per unit for monitoring two positions.
Extension cables and sensor distributors are optionally available.
Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

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Gripper for small components

MMS-P programmable magnetic switch

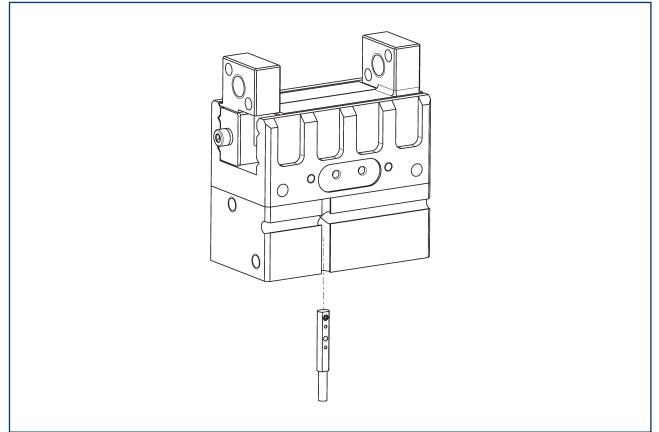


Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

- ① One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

Analog position sensor MMS-A

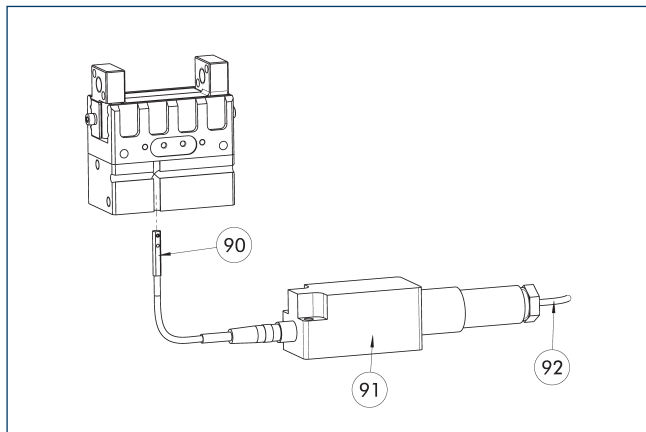


No-contact measuring, analog multi-position monitoring for any number of positions.

Description	ID	
Analog position sensor		
MMS 22-A-10V-M08	0315825	
MMS 22-A-10V-M12	0315828	

- ① One sensor is required for each gripper. No additional mounting kit is required – the gripper is equipped for use of the sensor by default. Further information and technical data can be found in the catalog chapter sensor systems.

Flexible position sensor with MMS-A



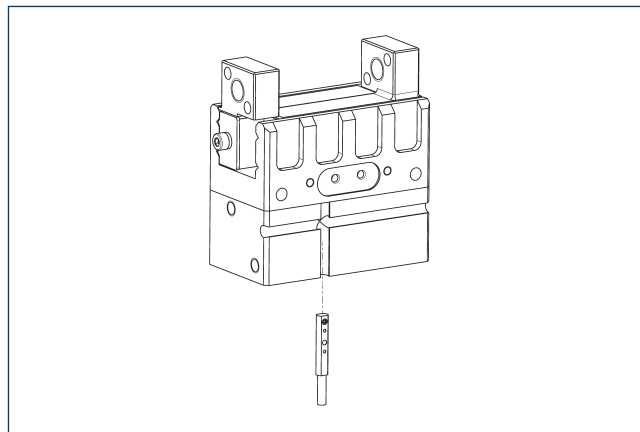
- ⑨⑩ MMS 22-A-... sensor
- ⑨① FPS-F5 evaluation electronic
- ⑨② Connection cables

Flexible position monitoring of up to five positions.

Description	ID
Analog position sensor	
MMS 22-A-05V-M08	0315805
Evaluation electronics	
FPS-F5	0301805
Connection cables	
KA BG16-L 12P-1000	0301801

- ① When using an FPS system, one MMS 22-A-05V and one electronic processor (FPS-F5) are required per each gripper, as well as a mounting kit (AS), if listed. Cable extensions (KV) are optionally available – see catalog chapter "Accessories."

Programmable magnetic switch MMS-I0-Link



Sensor for multi-position monitoring through detection of the complete gripper stroke. The sensor is mounted directly in the C-slot of the gripper. Sensor programming on the gripper takes place via the IO-Link interface or the MT magnetic teach tool (included in scope of delivery). An IO-Link master is required for operation.

Description	ID
Programmable magnetic switch	
MMS 22-I0L-M08	0315830
MMS 22-I0L-M12	0315835

- ① One sensor is required for each gripper. No additional mounting kit is required – the gripper is equipped for use of the sensor by default. Further information and technical data can be found in the catalog chapter sensor systems.



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