



Hand in hand for tomorrow



Product data sheet

Gripper for small components KGG 140

KGG

Gripper for small components

Compact. Flexible. Slim.

Gripper for small components KGG

Narrow 2-finger parallel gripper with large stroke

Field of application

for universal use in clean environments with light to medium workpiece weights and a large stroke range

Advantages – Your benefits

Robust T-slot guidance for high maximum moments

Pneumatic 2-piston drive design for direct power transmission and high efficiency

Rack and pinion principle for centric clamping

Mounting from two sides in three 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



Sizes
Quantity: 7



Weight
0.09 .. 4.2 kg



Gripping force
45 .. 540 N



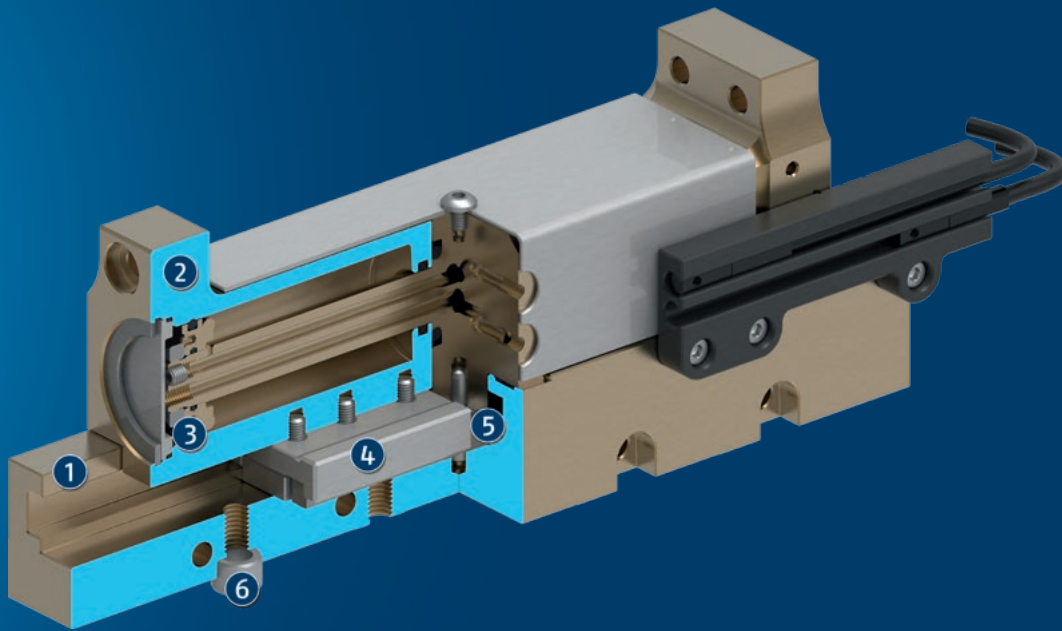
Stroke per jaw
10 .. 60 mm



Workpiece weight
0.23 .. 2.7 kg

Functional description

The aligned base jaws are actuated with compressed air directly by the fixed piston, which opens and closes them. The base jaws are synchronized by the internal rack and pinion arrangement.



- ① **Housing**
is weight-optimized due to the use of high-strength aluminum alloy
- ② **Base jaw**
for the connection of workpiece-specific gripper fingers
- ③ **Drive**
pneumatic 2-piston system
- ④ **Sliding guide**
high maximum moments due to the robust T-slot guidance
- ⑤ **Kinematics**
pinion and rack principle for centric clamping, even at large strokes
- ⑥ **Centering and mounting possibilities**
for assembly of the gripper to a base area and at the long side

General notes about the series

Operating principle: Directly driven base jaws, synchro-
nized by rack and pinion

Housing material: Aluminum alloy, anodized

Base jaw material: Aluminum alloy, anodized

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: Gripper in the ordered variant,
accessory kit (centering sleeves, O-rings for direct connec-
tion/detailed contents see operating manual) and safety
information. Product-specific instructions can be down-
loaded at schunk.com/downloads-manuals.

Gripping force maintenance: possible with pressure
maintenance valve SDV-P

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

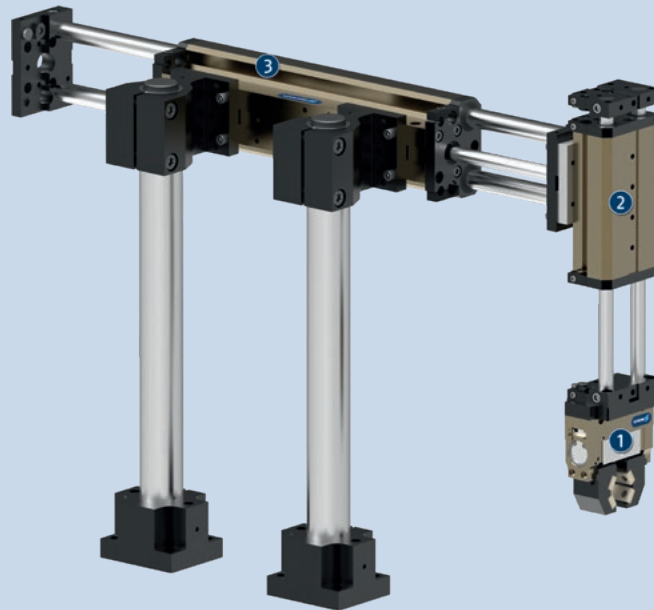
Finger length: is measured from the reference surface as
the distance P in direction to the main axis.

The maximum permissible finger length applies until the
nominal operating pressure is achieved. With higher
pressures, the finger length must be reduced proportio-
nally 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 movement times of the
base jaws only, without application-specific gripper
fingers. 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

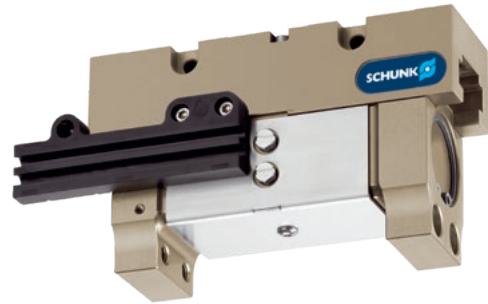
Sorting unit for small components
which require an especially long
gripper stroke due to their variation in
size.

- ① 2-finger parallel gripper KGG with
workpiece-specific fingers
- ② Linear module KLM for vertical
movement

- ③ Linear module KLM for horizontal
movement

SCHUNK offers more ...

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



Miniature swivel unit



Linear module



Pick & Place Unit



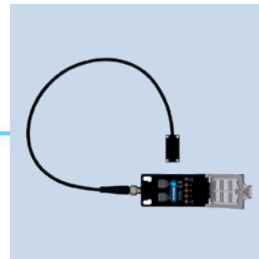
Pressure maintenance valve



Inductive proximity switch



Magnetic switches



Flexible position sensor



Finger blank

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

Please note that the weight of the gripper fingers should be as low as possible for long-stroke grippers.

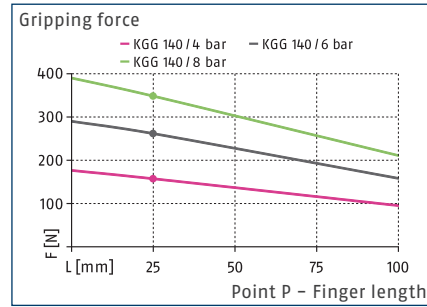
Food-grade lubrication: The product contains food-compliant lubricants as standard. The requirements of EN 1672-2:2020 are not fully met. The relevant NSF certificates are available at <https://info.nsf.org/USDA/Listings.asp> using the lubricant information in the operating manual.

KGG 140

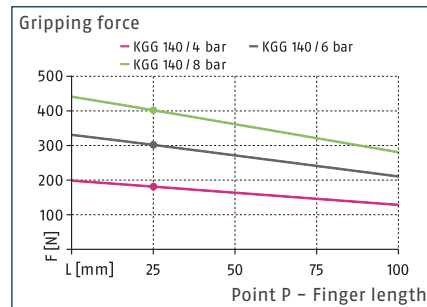
Gripper for small components



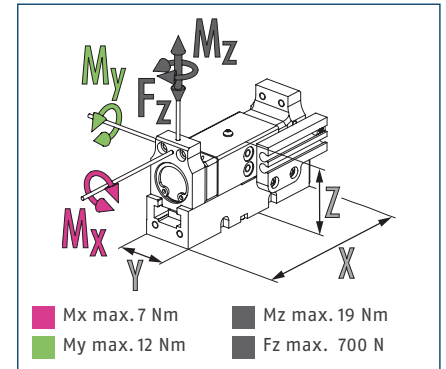
Gripping force O.D. gripping



Gripping force I.D. gripping



Dimensions and maximum loads



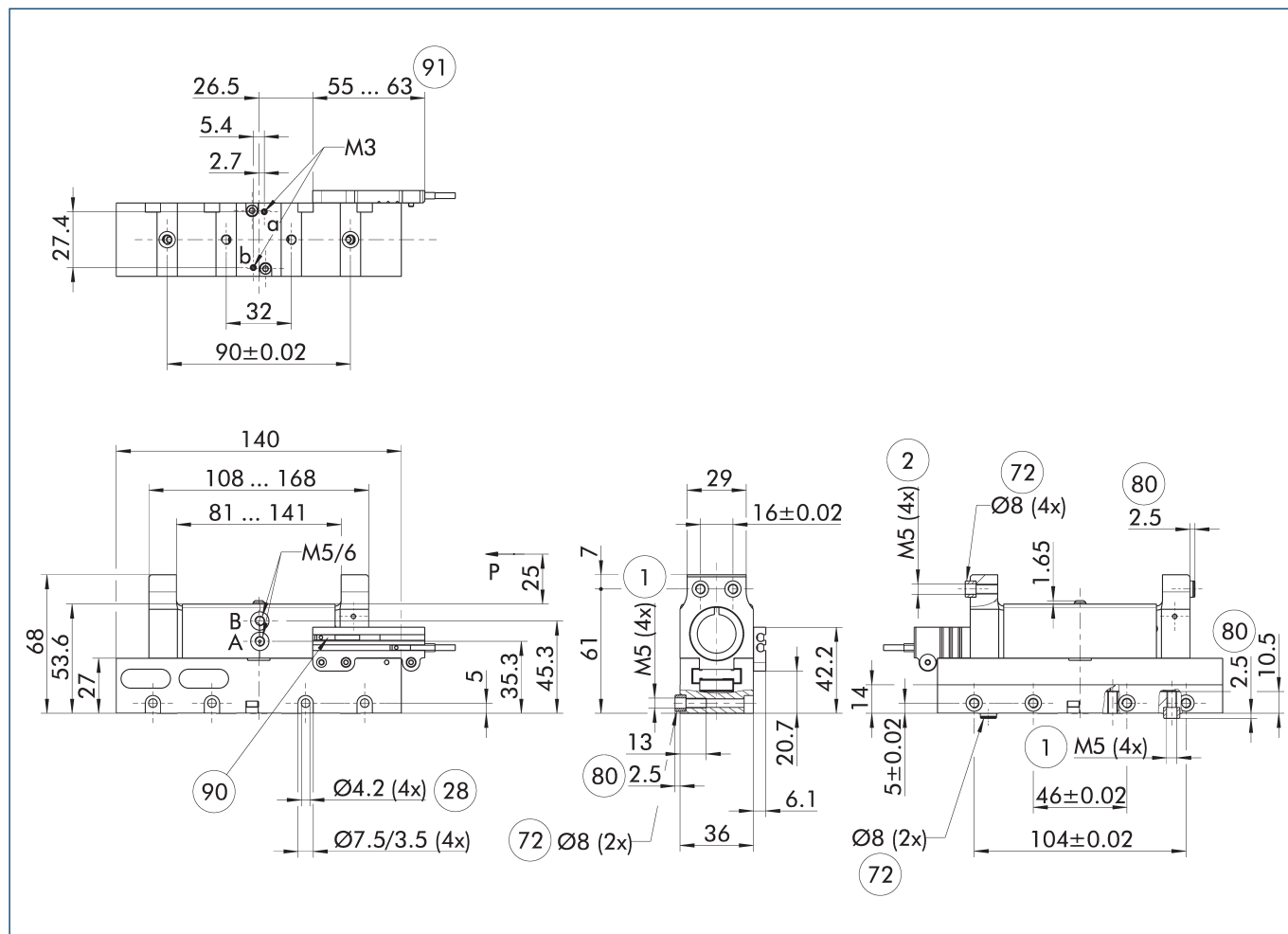
① The indicated moments and forces are static values, apply for each base jaw and may appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

Technical data

Description		KGG 140-60
ID		0303070
Stroke per jaw	[mm]	30
Closing/opening force	[N]	260/300
Weight	[kg]	0.77
Recommended workpiece weight	[kg]	1.3
Cylinder volume per double stroke	[cm³]	42
Min./nom./max. operating pressure	[bar]	2.5/6/8
Closing/opening time	[s]	0.17/0.17
Max. permissible finger length	[mm]	100
Max. permissible weight per finger	[kg]	0.5
IP protection class		40
Min./max. ambient temperature	[°C]	5/90
Repeat accuracy	[mm]	0.02
Cleanroom class ISO 14644-1		7
Dimensions X x Y x Z	[mm]	140 x 36 x 53.6

① It may take a few 100 gripping cycles until the full gripping force (as indicated in the data table) will be available.

Main view KGG 140-60



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

① The SDV-P pressure maintenance valve can be used as a gripping force maintenance device (see catalog section on accessories).

A, a Main / direct connection, gripper opening

B, b Main / direct connection, gripper closing

① Gripper connection

② Finger connection

②⑧ Through-hole

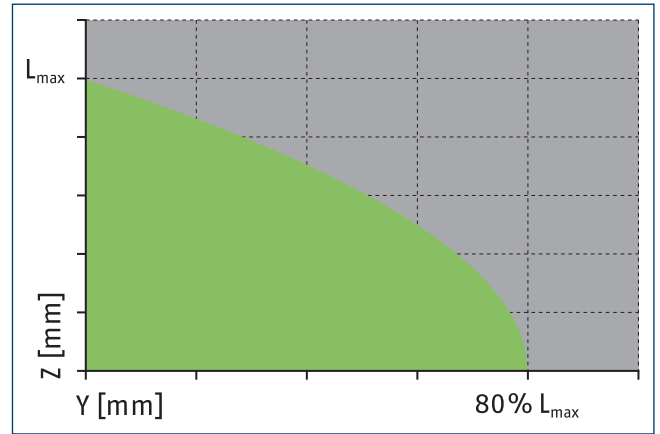
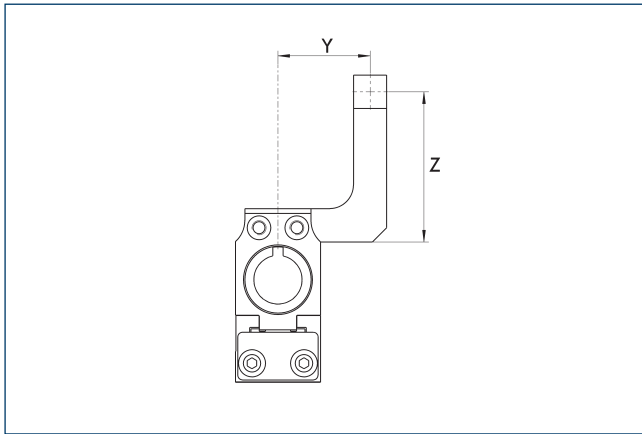
⑦② Fit for centering sleeves

⑧① Depth of the centering sleeve hole in the counter part

⑨① Sensor MMS 22..

⑨① The holder can be shortened depending on the sensor selection (see operating instructions)

Maximum permitted finger projection

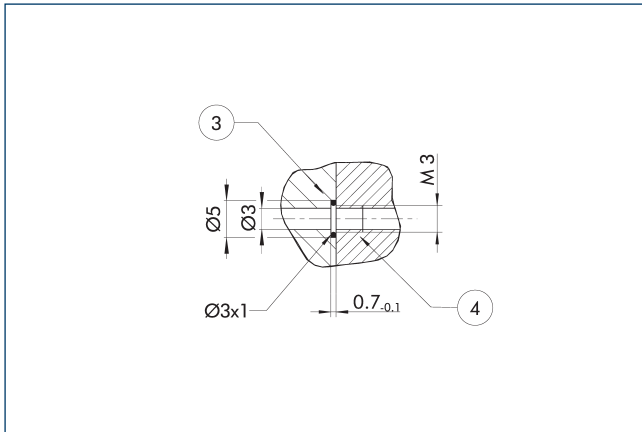


■ Permitted range

■ Inadmissible range

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

Hose-free direct connection M3

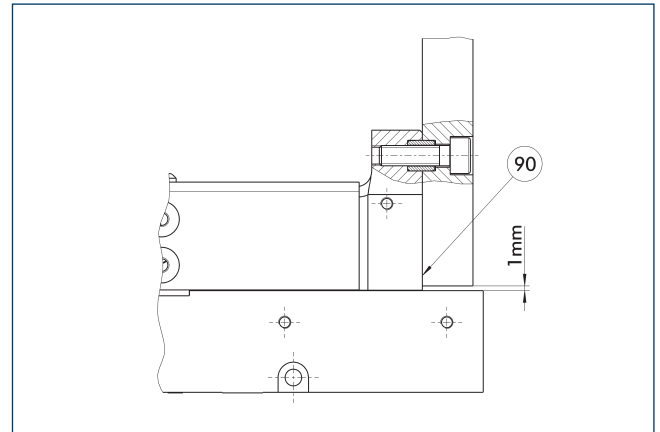


③ Adapter

④ Grippers

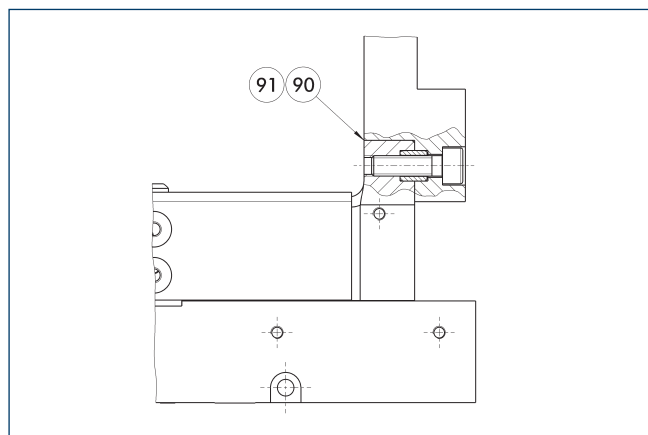
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Jaw design O.D. gripping



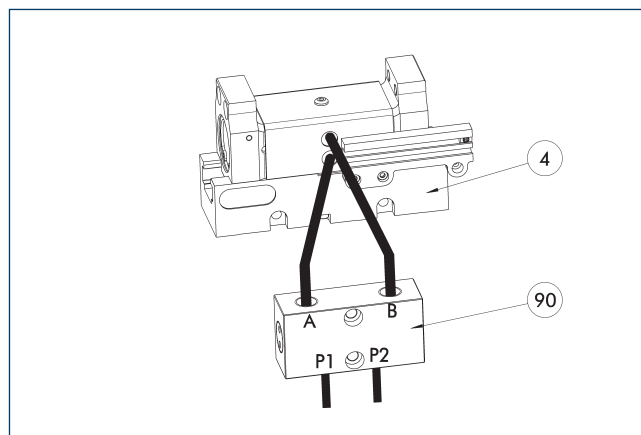
⑨ Support of the top jaws at the base jaw

Jaw design I.D. gripping



- 90 Support of the top jaws at the base jaw
- 91 For dimensions of steps at the top jaw see drawings of finger blanks

SDV-P pressure maintenance valve



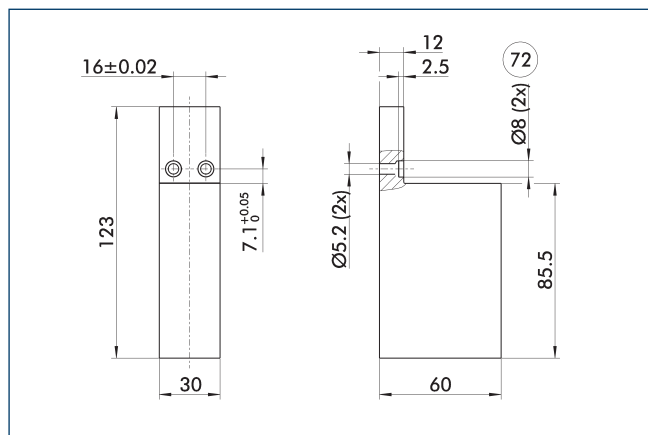
- 4 Grippers
- 90 SDV-P pressure maintenance valve

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.

Finger blanks RB 140

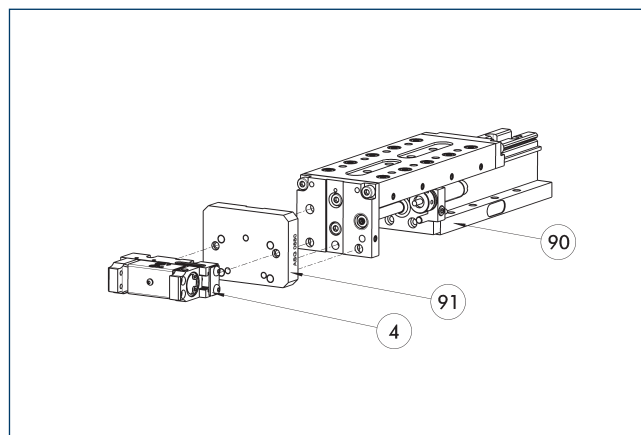


- 72 Fit for centering sleeves

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

Description	ID	Material	Scope of delivery
Finger blank			
RB 140	0303091	Aluminum (3.3206)	2

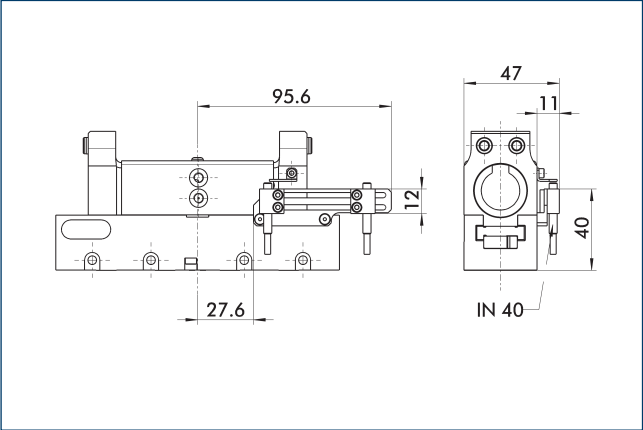
Modular Assembly Automation



- 4 Grippers
- 90 Linear module CLM/KLM/LM/ELP/ELM/ELS/HLM
- 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

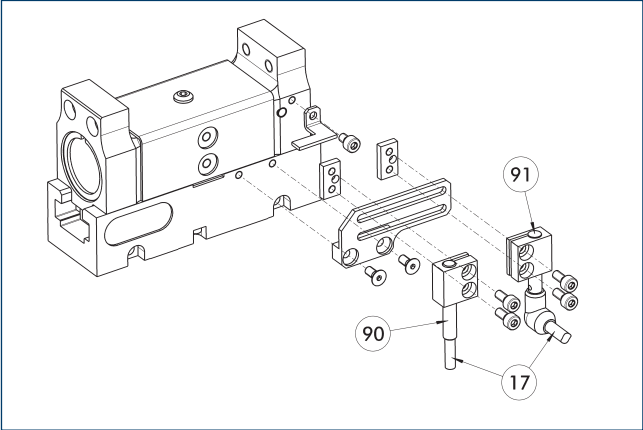


End position monitoring can be mounted with an attachment kit.

Description	ID	
Attachment kit for proximity switch		
AS-KGG 80-60/100-80/140-60	0303084	

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

Inductive proximity switches



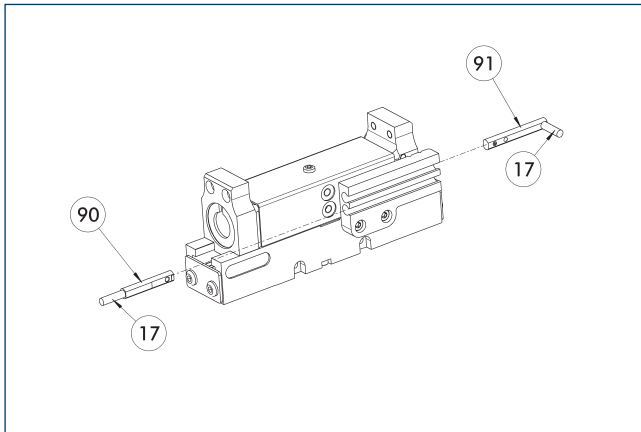
- Ⓐ Cable outlet
- Ⓐ Sensor IN...-SA
- Ⓐ Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-KGG 80-60/100-80/140-60	0303084	
Inductive proximity switch		
IN 40-S-M12	0301574	
IN 40-S-M8	0301474	●
INK 40-S	0301555	
Inductive proximity switch with lateral cable outlet		
IN 40-S-M12-SA	0301577	
IN 40-S-M8-SA	0301473	●
INK 40-S-SA	0301565	

ⓘ 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.

Electronic magnetic switch MMS



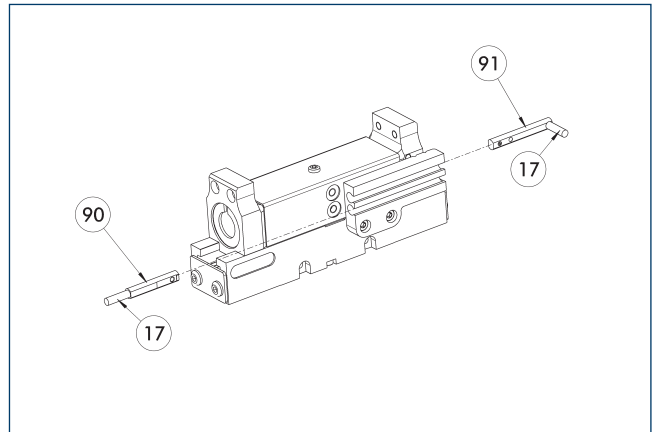
- ①⑦ Cable outlet ①⑨ Sensor MMS 22...-SA
 ①⑩ Sensor MMS 22..

End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Electronic magnetic switch		
MMS 22-S-M8-PNP	0301032	●
MMSK 22-S-PNP	0301034	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M8-PNP-SA	0301042	●
MMSK 22-S-PNP-SA	0301044	
Reed Switches		
RMS 22-S-M8	0377720	●
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
Clip for connector/socket		
CLI-M8	0301463	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
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.

Programmable magnetic switch MMS 22-PI1



- ①⑦ Cable outlet ①⑨ Sensor MMS 22 ..-PI1-...-SA
 ①⑩ Sensor MMS 22 PI1-...

Position monitoring with one programmable position per sensor and integrated electronic system in the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) 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-PI1-S-M8-PNP	0301160	●
MMSK 22-PI1-S-PNP	0301162	
Programmable magnetic switch with lateral cable outlet		
MMS 22-PI1-S-M8-PNP-SA	0301166	●
MMSK 22-PI1-S-PNP-SA	0301168	
Programmable magnetic switch with stainless steel housing		
MMS 22-PI1-S-M8-PNP-HD	0301110	●
MMSK 22-PI1-S-PNP-HD	0301112	

- 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.



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