Hand in hand for tomorrow

SCHUNK®

Product data sheet

Gripper for small components KGG 280

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

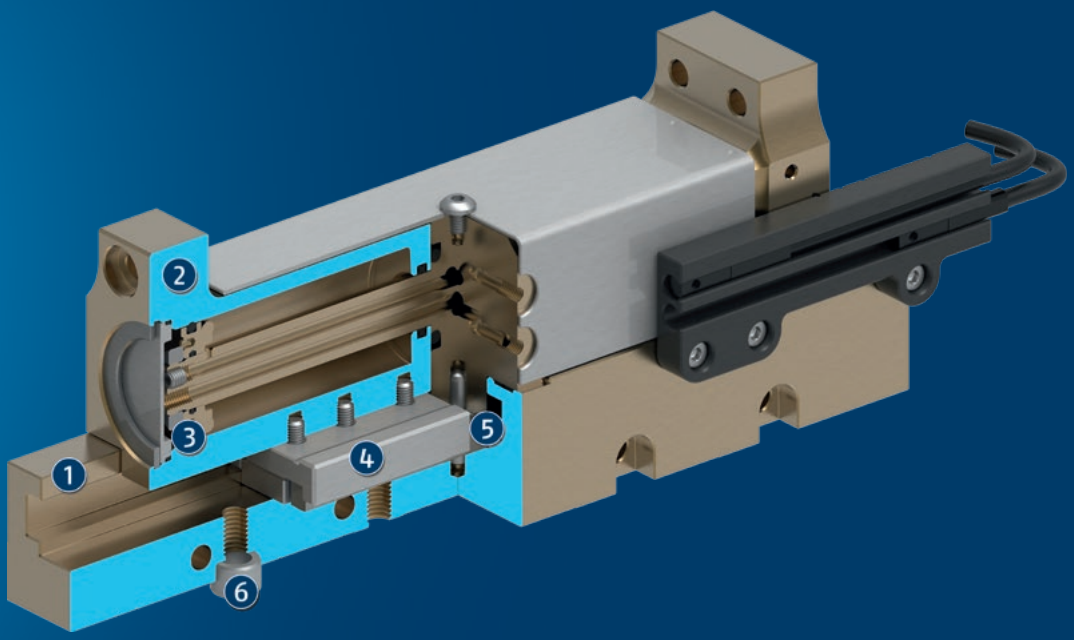
Mounting from two sides in three screw directions for universal and flexible gripper assembly

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

Sizes	Weight	Gripping force	Stroke per jaw	Workpiece weight
Quantity: 7	0.09 .. 4.2 kg	45 .. 540 N	10 .. 60 mm	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, synchronized 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 connection/detailed contents see operating manual) and safety information. Product-specific instructions can be downloaded at schunk.com/downloads-manuals.

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

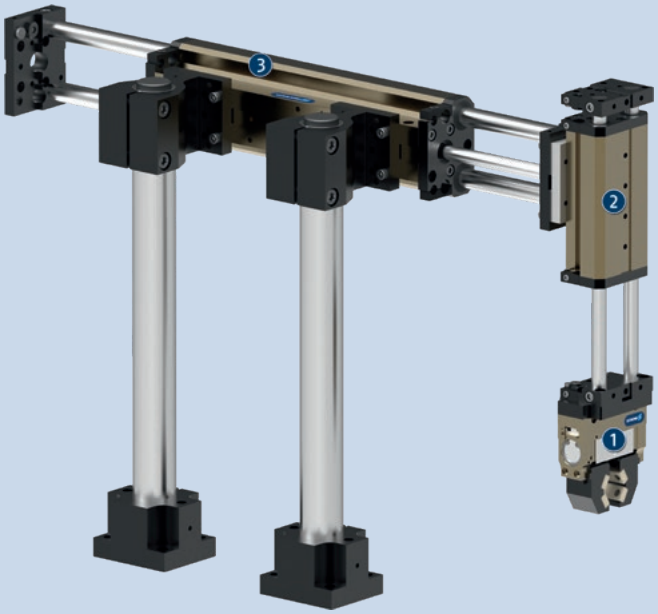
Gripping force: is the arithmetic sum of the individual force applied to each jaw at distance P (see illustration).

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 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 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.



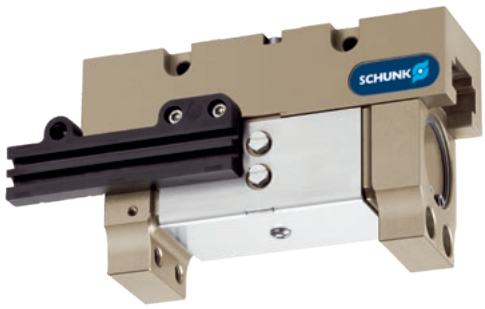
Application example

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

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

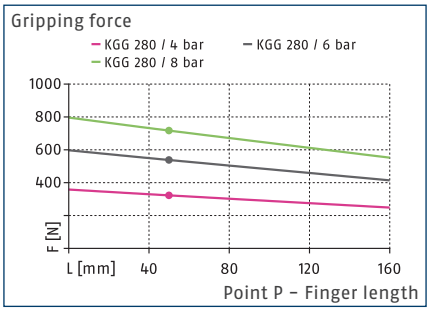
Options and special information

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.

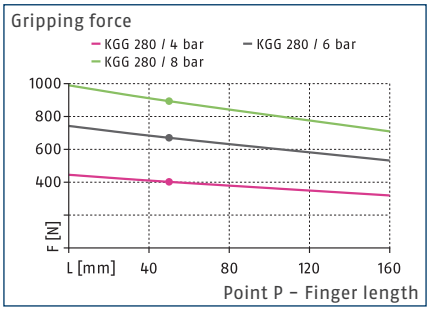
KGG 280

Gripper for small components

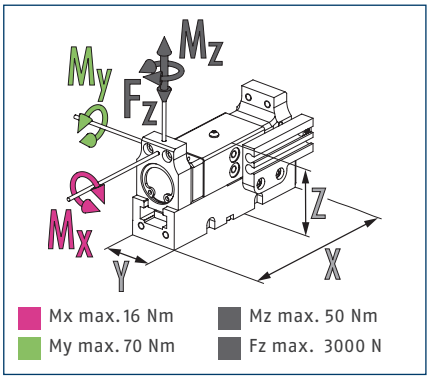
Gripping force O.D. gripping



Gripping force I.D. gripping



Dimensions and maximum loads



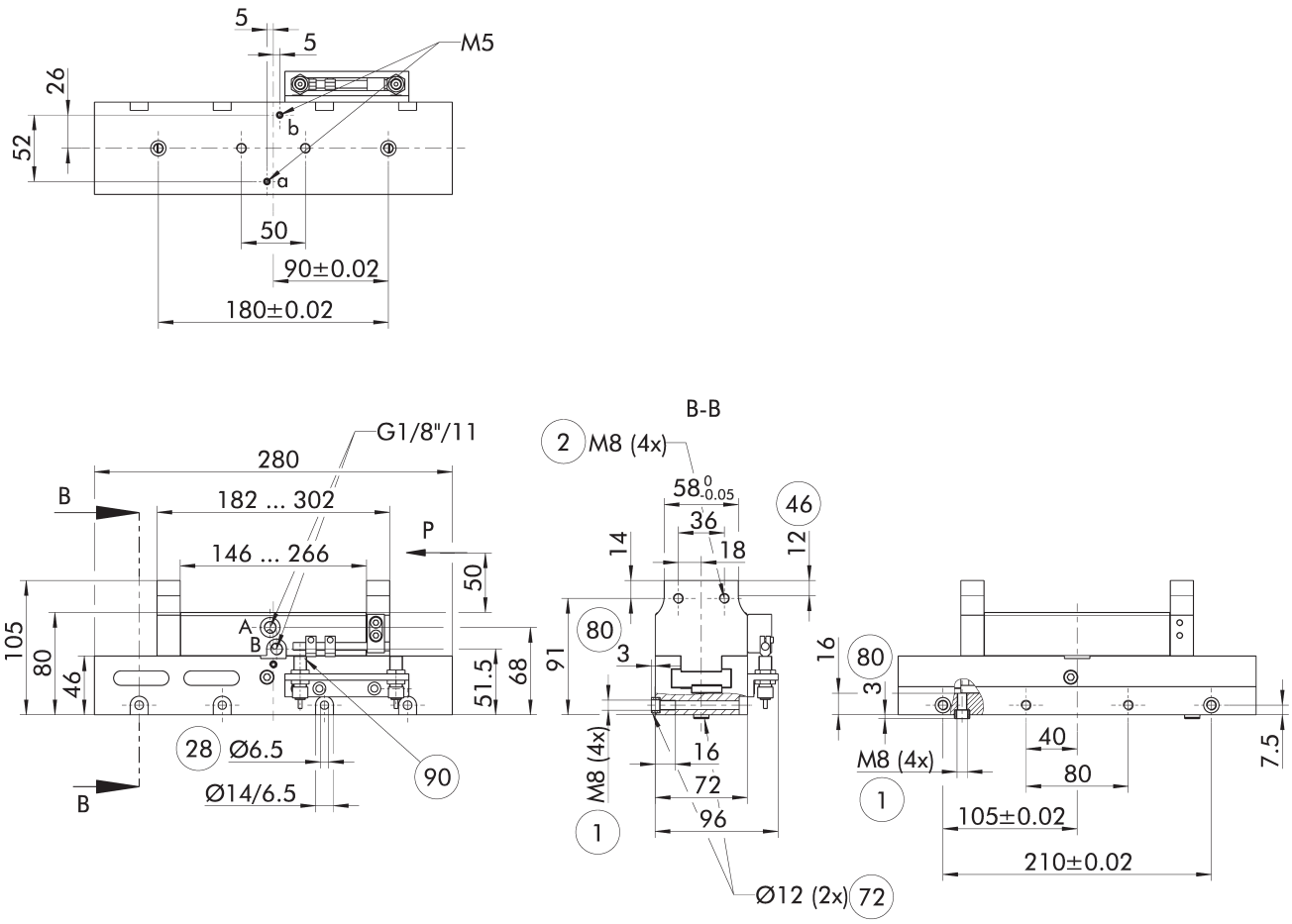
ⓘ The indicated moments and forces are statical values, apply for each base jaw and may appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

Technical data

Description		KGG 280
ID		0340313
Stroke per jaw	[mm]	60
Closing/opening force	[N]	540/670
Weight	[kg]	4.2
Recommended workpiece weight	[kg]	2.7
Cylinder volume per double stroke	[cm³]	170
Min./nom./max. operating pressure	[bar]	2.5/6/8
Closing/opening time	[s]	0.29/0.25
Max. permissible finger length	[mm]	160
Max. permissible weight per finger	[kg]	2
IP protection class		30
Min./max. ambient temperature	[°C]	5/90
Repeat accuracy	[mm]	0.1
Cleanroom class ISO 14644-1		7
Dimensions X x Y x Z	[mm]	280 x 72 x 80

ⓘ 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 280

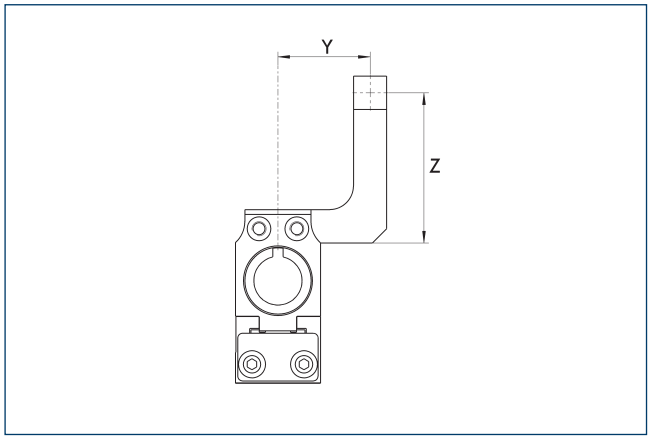


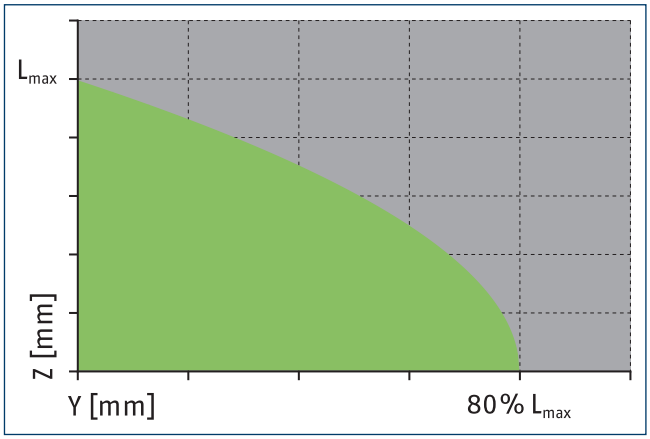
The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

ⓘ 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
(46) Fitting depth
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part
(90) Sensor IN ...

Maximum permitted finger projection





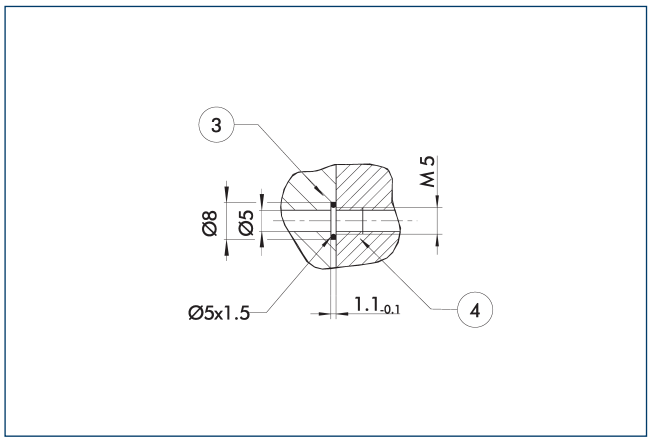
Permitted range
Inadmissible range

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

KGG 280

Gripper for small components

Hose-free direct connection M5

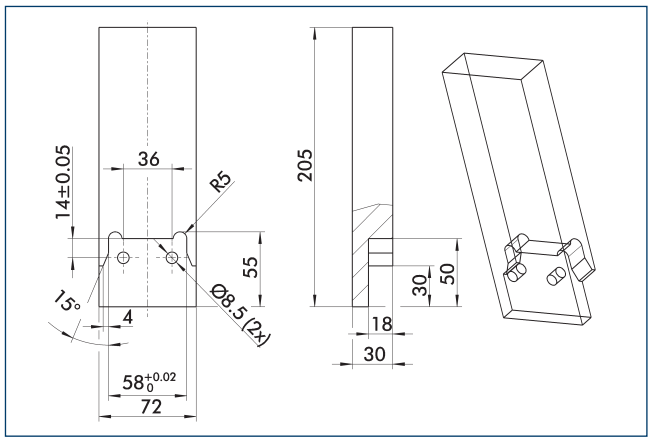


(3) Adapter

(4) Grippers

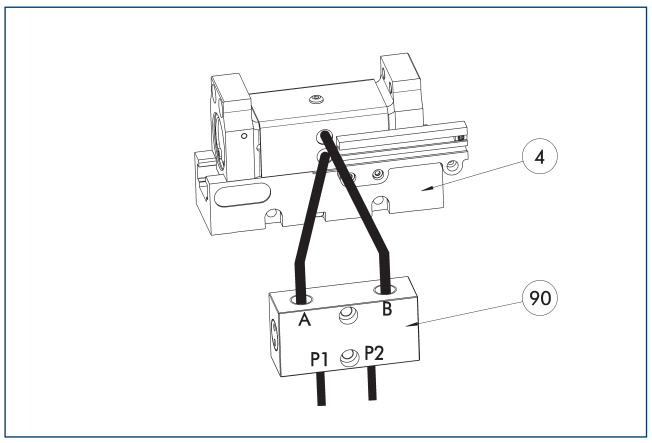
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Jaw design



Suggestion for connection dimensions of the gripper fingers

SDV-P pressure maintenance valve



(4) Grippers

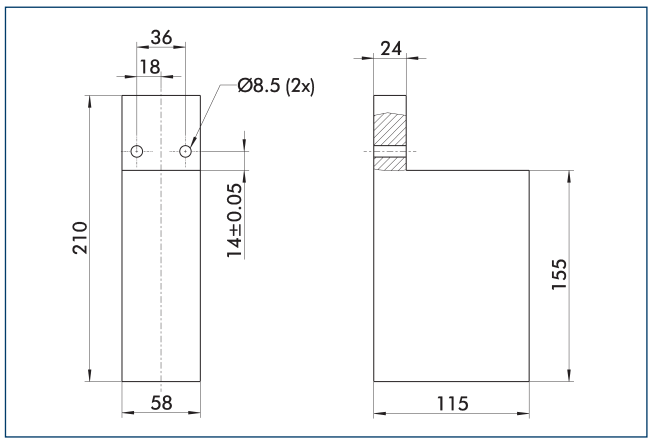
(90) SDV-P pressure maintenance valve

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

ⓘ 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.

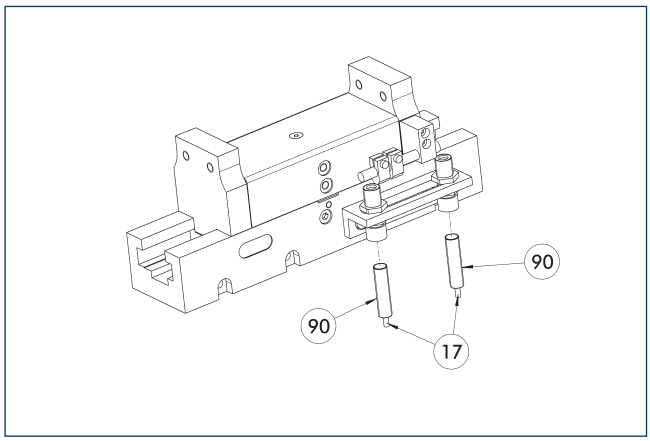
Finger blanks RB 280



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

Description	ID	Material	Scope of delivery
Finger blank			
RB 280	0300287	Aluminum (3.3206)	2

Inductive proximity switches



(17) Cable outlet (90) Sensor IN ...

Directly mounted end position monitoring.

Description	ID	Often combined
Inductive proximity switch		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	●
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.

SCHUNK SE & Co. KG
Spanntechnik
Greiftechnik
Automatisierungstechnik

Bahnhofstr. 106 - 134
D-74348 Lauffen/Neckar
Tel. +49-7133-103-0
Fax +49-7133-103-2399
info@de.schunk.com
schunk.com

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