



Hand in hand for tomorrow



Product data sheet

Universal gripper GMP 12

Gripper for small components GMP

2-finger parallel gripper with robust T-slot guidance

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

Constant gripping force Over the entire stroke range

Choice of I.D. or O.D. gripping for maximum flexibility in applications

The gripper head for the drive unit can be continuously rotated

Integration of a gripping force maintenance is optional for firm grip even in the event of power failure

End-position monitoring up to four monitoring sets possible

Standardized mounting bores for numerous combinations with other components from the modular system

Factory-made combinations for rotary gripper modules without rotating power lines are possible



Sizes
Quantity: 4



Weight
0.14 .. 0.86 kg



Gripping force
50 .. 420 N



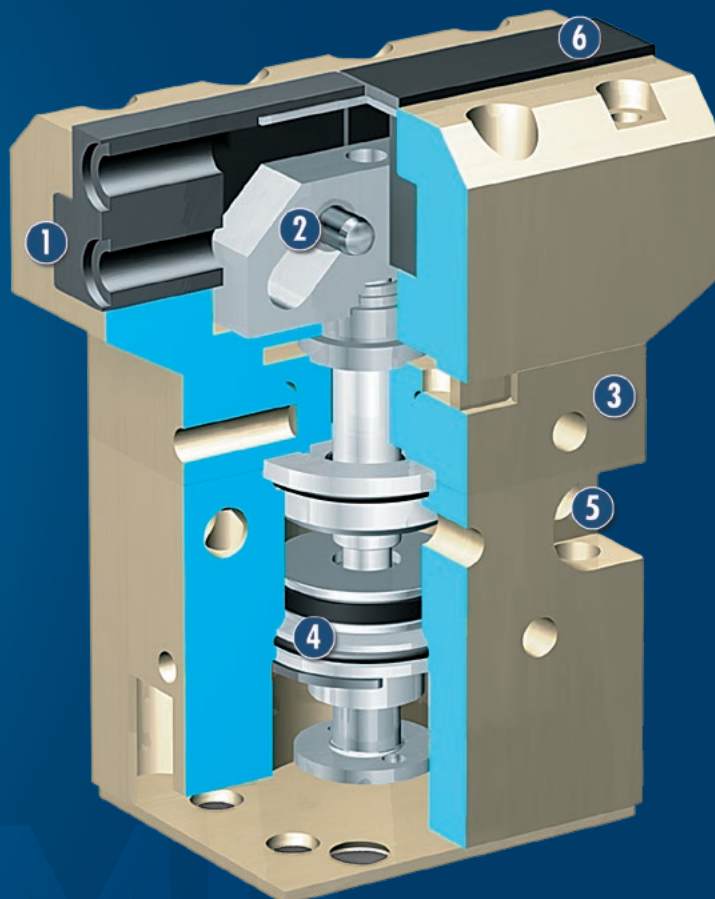
Stroke per jaw
2.5 .. 8 mm



Workpiece weight
0.25 .. 1.4 kg

Functional description

The piston is moved up or down with compressed air. Together with the guidance of the base jaws, the diagonal pull turns the piston movement into a synchronized opening and closing.



- ① **Sliding guide**
Precise gripping due to the use of a scope-free, ground guidance
- ② **Kinematics**
internal, power transmission via line contact
- ③ **Rotation adapter**
Flexible; twisting of the gripping head to the drive unit
- ④ **Drive**
double-acting piston drive system
- ⑤ **Sleeve with central bore for centering pin**
Completely integrated in the module system
- ⑥ **Base jaws**
for the connection of workpiece-specific gripper fingers

General notes about the series

Operating principle: interior wedge-hook kinematics

Housing material: Aluminum alloy, anodized

Base jaw material: Steel

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

Warranty: 24 months

Scope of delivery: Completely ready for operation without bracket for proximity switch and without proximity switch

Gripping force maintenance: 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.

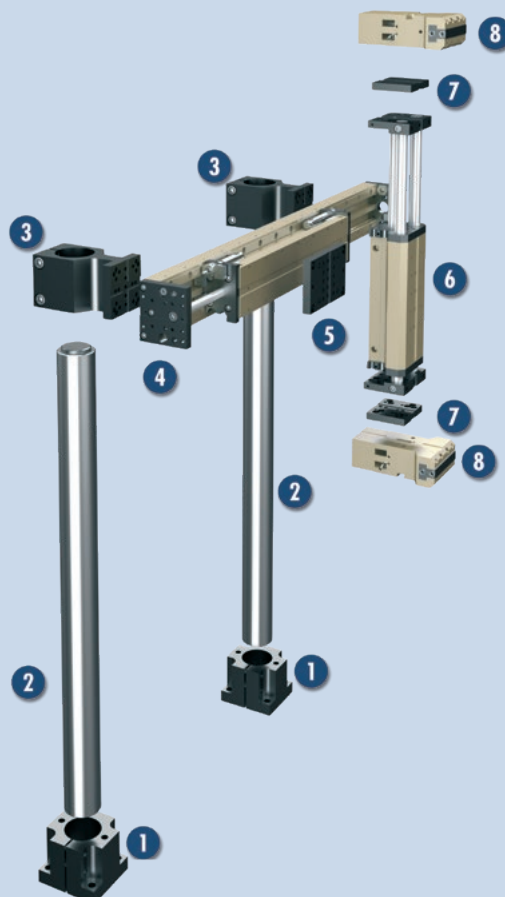
Workpiece weight: is calculated for force-fit gripping with a coefficient of static friction of 0.1 and a safety factor of 2 against workpiece slippage at acceleration due to gravity g. For form-fit or capture gripping, there are significantly higher permissible workpiece weights.

Closing and opening times: are 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

Pneumatic cross gantry with double gripping unit for small components

- ❶ Single base support SOE
- ❷ Hollow pillar SLH
- ❸ Single mounting plate APEV
- ❹ Linear axis LM
- ❺ Adapter plate APL
- ❻ Linear axis KLM
- ❼ Adapter plate APL
- ❽ Parallel gripping module, GMP



SCHUNK offers more ...

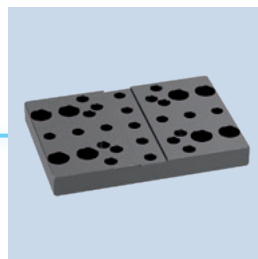
The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



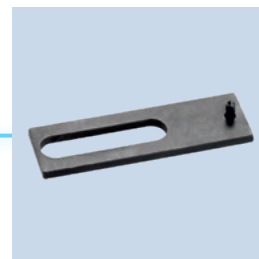
Fittings



Pillar assembly systems



Adapter plate



Centering strips



Pressure maintenance valve



Inductive proximity switches



Sensor cables

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

Options and special information

Rotation adapter version: The gripper head can be continuously adjusted and indexed in relation to the drive.

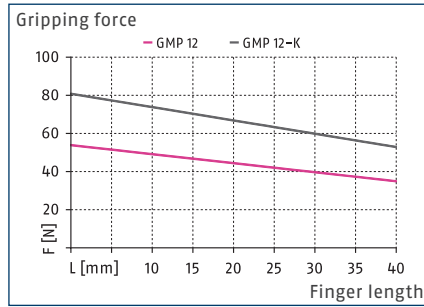
Anti-corrosion version K: for use in corrosion-inducing atmospheres

GMP 12

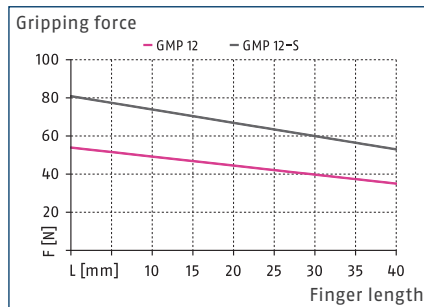
Universal gripper



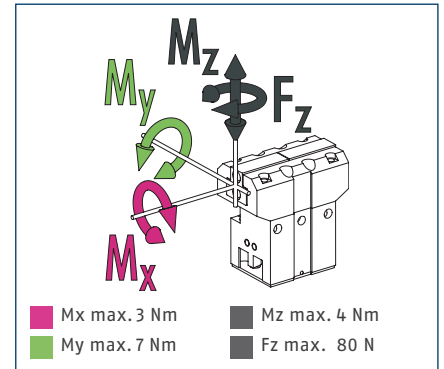
Gripping force O.D. gripping



Gripping force I.D. gripping



Max. loads

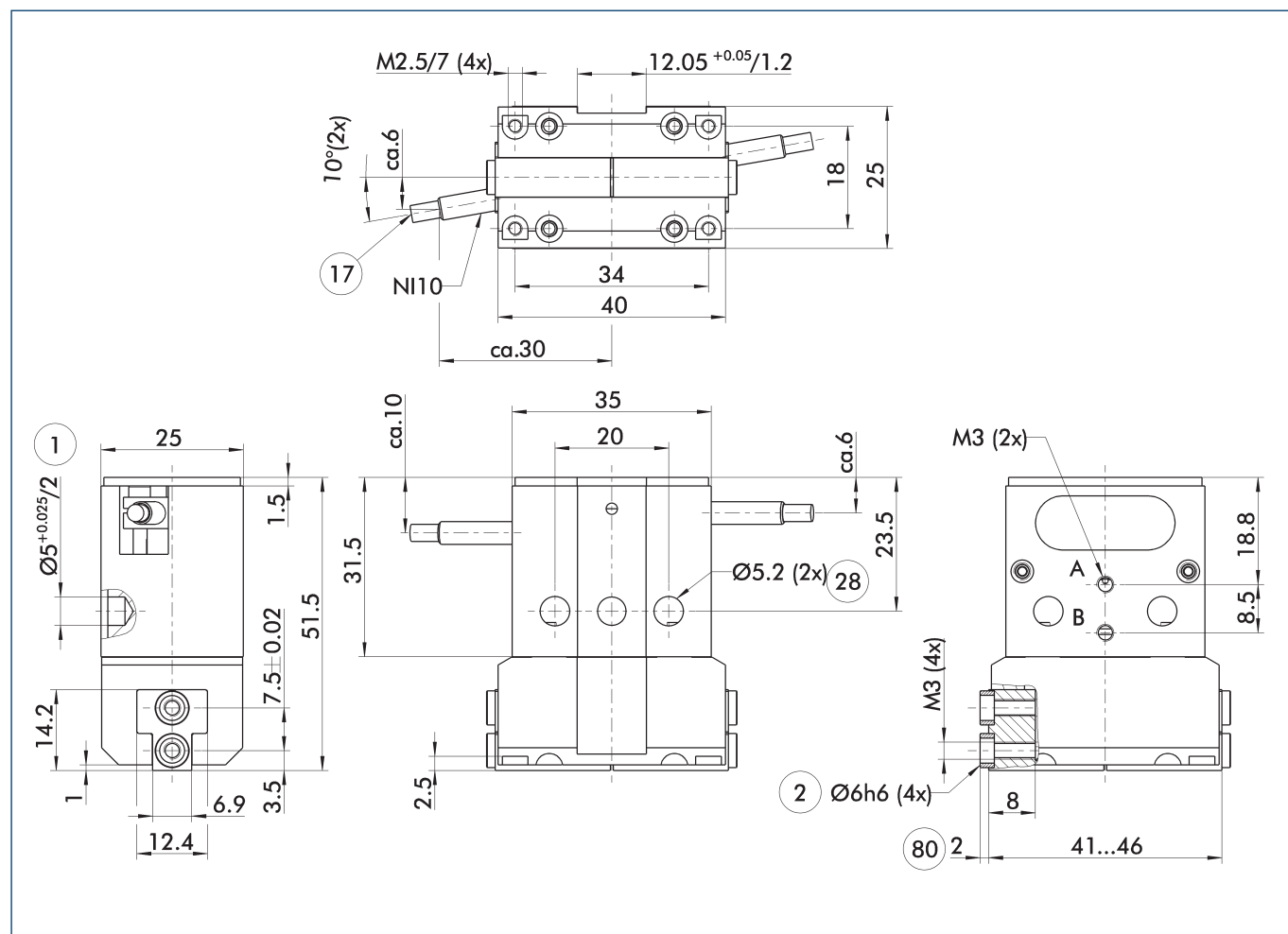


① The indicated moments and forces are static values, apply for each base jaw and may appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

Technical data

Description		GMP 12	GMP 12-K	GMP 12-S
ID		0313110	0313112	0313111
Stroke per jaw	[mm]	2.5	2.5	2.5
Closing/opening force	[N]	50/50	75/-	-/75
Min. spring force	[N]		25	25
Weight	[kg]	0.14	0.16	0.16
Recommended workpiece weight	[kg]	0.25	0.25	0.25
Cylinder volume per double stroke	[cm ³]	0.87	0.87	0.87
Min./nom./max. operating pressure	[bar]	3/6/8	5/6/8	5/6/8
Closing/opening time	[s]	0.02/0.02	0.015/0.025	0.025/0.015
Max. permissible finger length	[mm]	40	40	40
Max. permissible weight per finger	[kg]	0.06	0.06	0.06
IP protection class		40	40	40
Min./max. ambient temperature	[°C]	5/60	5/60	5/60
Repeat accuracy	[mm]	0.02	0.02	0.02
Options and their characteristics				
Rotation adapter version		GMP 12-D	GMP 12-Z	GMP 12-X
ID		0313113	0313115	0313114
Weight	[kg]	0.16	0.18	0.18

Main view



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

A, a Main / direct connection, gripper opening

B, b Main / direct connection, gripper closing

① Gripper connection

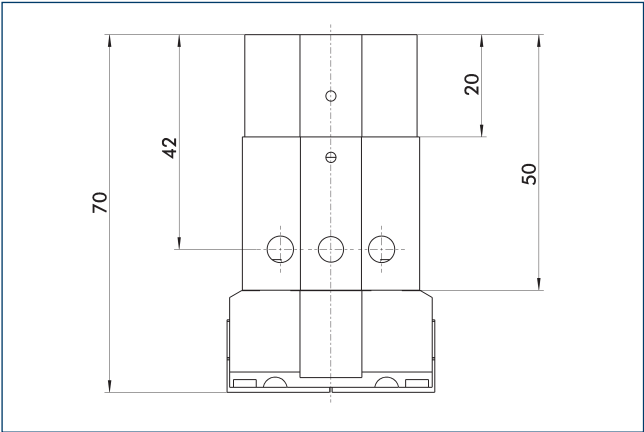
② Finger connection

①7 Cable outlet

②8 Through-hole

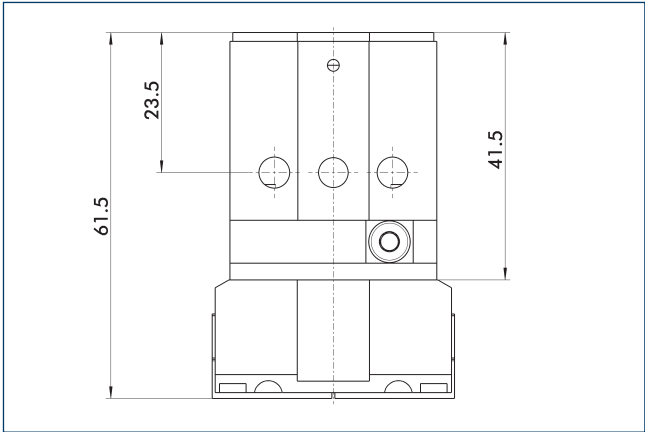
②0 Depth of the centering sleeve hole in the counter part

Gripping force maintenance K/S



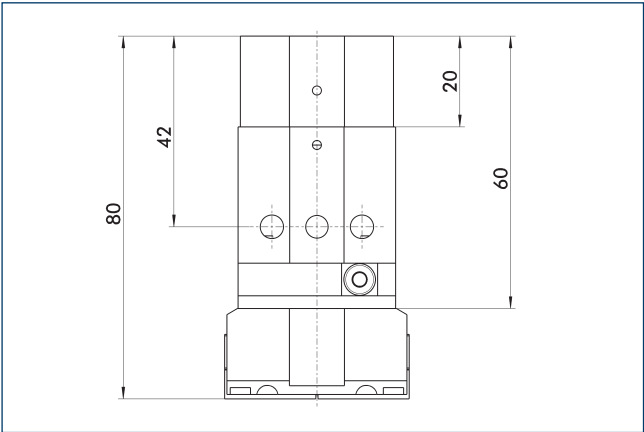
The mechanical gripping force maintenance ensures that a minimum gripping force will be applied even if there is a drop in pressure. This acts as closing force for the K variant and as opening force for the S variant. The gripping force safety can be installed without other components from the K variant into the S variant and vice versa. Besides this, the gripping force maintenance can be used to increase gripping force or for single actuated gripping.

Rotation adapter D



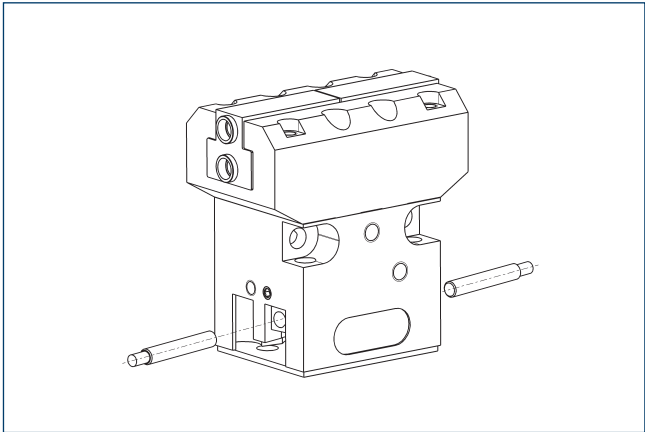
The two-part rotation adapter enables the gripping head to be continuously rotated in order to flexibly adjust the position of the gripper fingers on the workpiece. The only thing to do is to release the clamping screw. After the adjustment has been made, a hole can be drilled out to place a cylindrical pin or a fixing thread for clamping.

Gripping force safety & rotation adapter Z/X



This variant combines the functions of the gripping force maintenance with the one of the rotation adapter. The gripping force maintenance acts as a closing force for the Z-variant and as an opening force for the X-variant.

Inductive proximity switches



Directly mounted end position monitoring.

Description	ID	Often combined
Inductive proximity switches		
GMNS 12-G	0313331	●
GMNS 12-W	0313332	
GMNS 12-X	0313330	
Clip for connector/socket		
CLI-M8	0301463	

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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