Gripping modules

GRIPPING MODULES

SCHUNK offers you the most extensive program of gripping modules. From pneumatically or electrically driven grippers to small-component, universal, and long-stroke grippers and industry-specific gripping solutions. Please consult our main catalog for further information about SCHUNK gripping modules. Here is an extract from our range of products.

Gripping modules, pneumatic

2-finger gripper for small components

3-finger universal gripper with multi-tooth guide

2-finger universal gripper with multi-tooth guide

2-finger radial gripper, GWB

Gripping modules, electric

2-finger universal gripper, PowerCube system

2-finger gripper for small components, MEG

Special gripper

2-finger clean-room gripper, DKG-RR

O-ring gripper for external and internal assembly

Sizes
80/81 .. 200/201

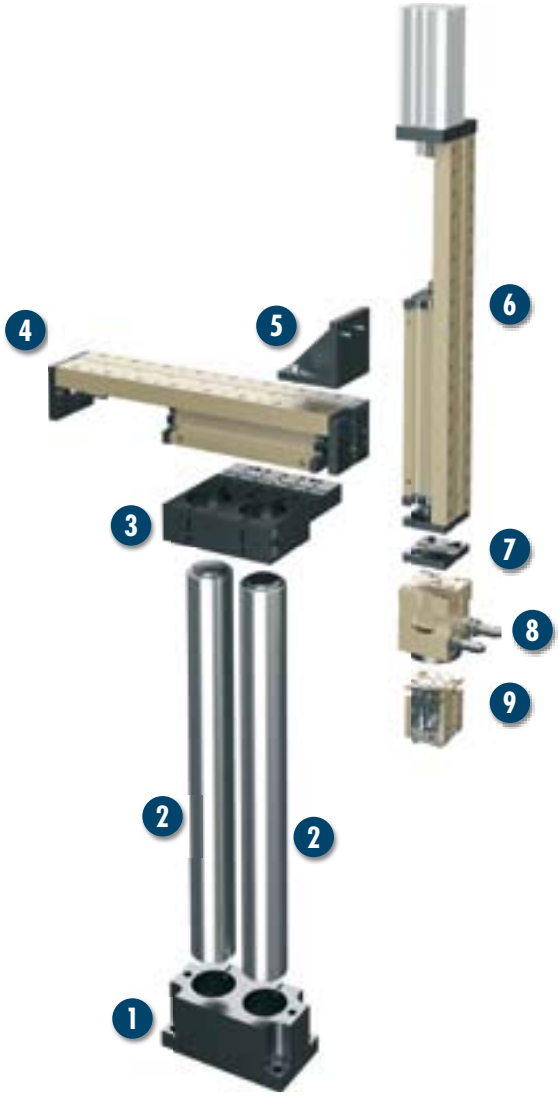
Mass
0.32 kg .. 1.75 kg

Gripping force
120 N .. 600 N

Stroke per finger
2.5 mm .. 10 mm

Workpiece weight, force-fit gripping
Up to 3.0 kg

Application example



Pneumatic pick & place unit with additional third vertical position and workpiece turning

1. Double socket, SOD 055
2. Hollow pillar, SLH 055-0500
3. Double mounting plate, APDH 085
4. Linear module, LM 200-H150
5. Reinforcing bracket, VW 100
6. Linear module with intermediate stop, LM 100-H175-ZZA101-H50
7. Adapter plate, APL 120
8. Rotary module, RM 110-W090-2
9. Parallel gripping module, GM 101-K

Short-stroke gripper for small components

2-finger parallel grippers with circular guide

Area of application

Griping and moving small to medium workpieces in low-contamination areas; for example, in assembly, testing, labs, pharmaceuticals, and many others.

Advantages – your benefits

Compact design
For minimum interfering contours in use

Round rod guidance of the base jaws
For excellent guidance characteristics

Special set screws
For the limiting of the adjustable stroke in both directions

Integration of a gripping force safety device without additional parts is optional
For firm grip even in the event of power failure

End-position monitoring
Using an optional standardized monitoring set

Standardized mounting bores
For numerous combinations with other GEMOTEC system elements

General information about the series

Working principle
Wedge-hook kinematics

Housing material
Aluminum alloy, hard-anodized

Guidance
Circular guide, ground and hardened

Actuation
Pneumatic, via filtered compressed air (10 µm): dry, lubricated, or non-lubricated
Pressurizing medium: requirements for compressed air quality class according to DIN ISO 8573-1: Quality class 4

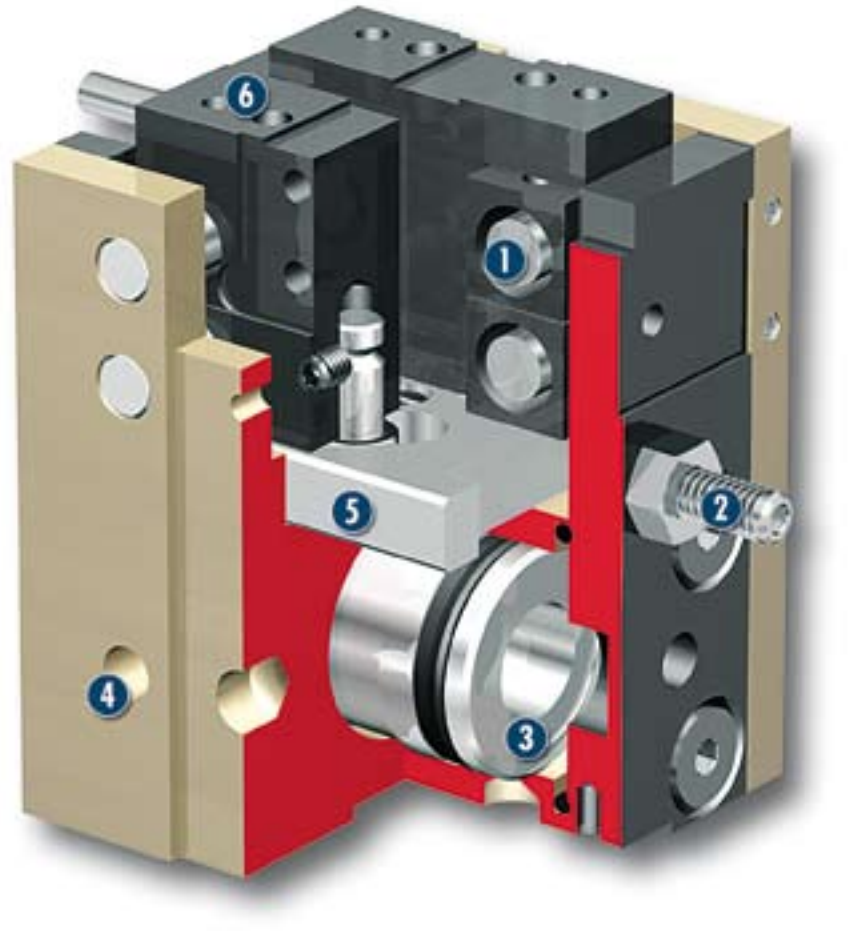
Scope of delivery
Completely ready for operation
without bracket for proximity switch and without proximity switch

Warranty
24 months

Gripping force retaining device
Can be integrated without additional interfering contour in the standard gripper

For production reasons, the colors may vary from those shown in the catalog.

Cross-section of function



1 **Circular guide**
Simple and yet non-elastic

2 **Stroke limitation**
For limiting the opening or closing stroke

3 **Drive**
No piston rod, so the effective surface is the same in both directions

4 **Modular design hole pattern**
Completely integrated in the module system

5 **Kinematics**
Inside, power transmission via line contact

6 **Base jaws**
For adaptation of the workpiece-specific gripper fingers

Description of function

The application of pressure to the opposite piston surfaces guides the movement through a connecting member to the base jaws.

Options and special information

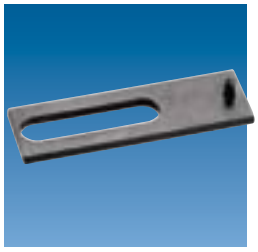
This module can be combined as standard with many elements from the modular system. You can find more information in the “Accessories” chapter.

Accessories

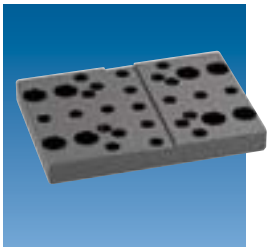
Accessories from SCHUNK – the ideal components for the best functionality, reliability, and controlled production for all automation modules.

Fittings

Centering strips



Adapter plates



Inductive proximity switch, NI

Sensor cable

Pillar assembly systems

Pressure maintenance valve

ⓘ Please see the side views at the end of the respective size for information concerning specific sizes, accessories availability for that size, designation, and ID numbers. You can find more information about our accessories program in the "Accessories" part of the catalog.

General information about the series

Gripping force

This is the arithmetic sum of the gripping forces applied to each claw jaw, measured at a distance of 20 mm from the upper edge of the gripper.

Finger length

The finger length is measured from the upper edge of the base jaw in the direction of the main axis.

Repeat accuracy

This is defined as the distribution of the end positions of 100 successive strokes.

Workpiece weight

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

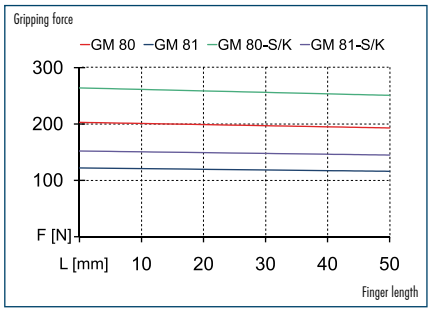
Closing and opening times

Closing and opening times are only movement times of the base jaws or fingers. Valve switching times, hose filling times, or PLC reaction times are not a part of this and are to be considered when cycle times are calculated.

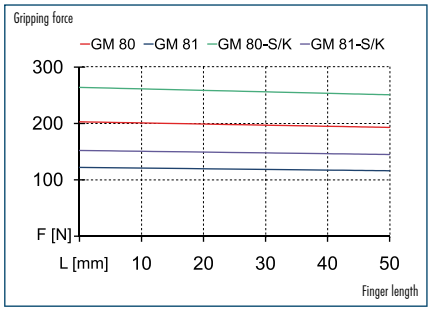
GM 80/81

Gripping modules · Pneumatic · 2-finger parallel gripper · Short-stroke gripper for small components

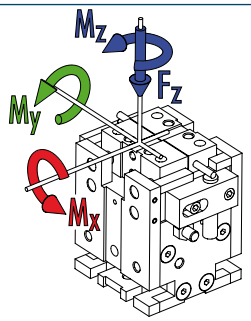
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



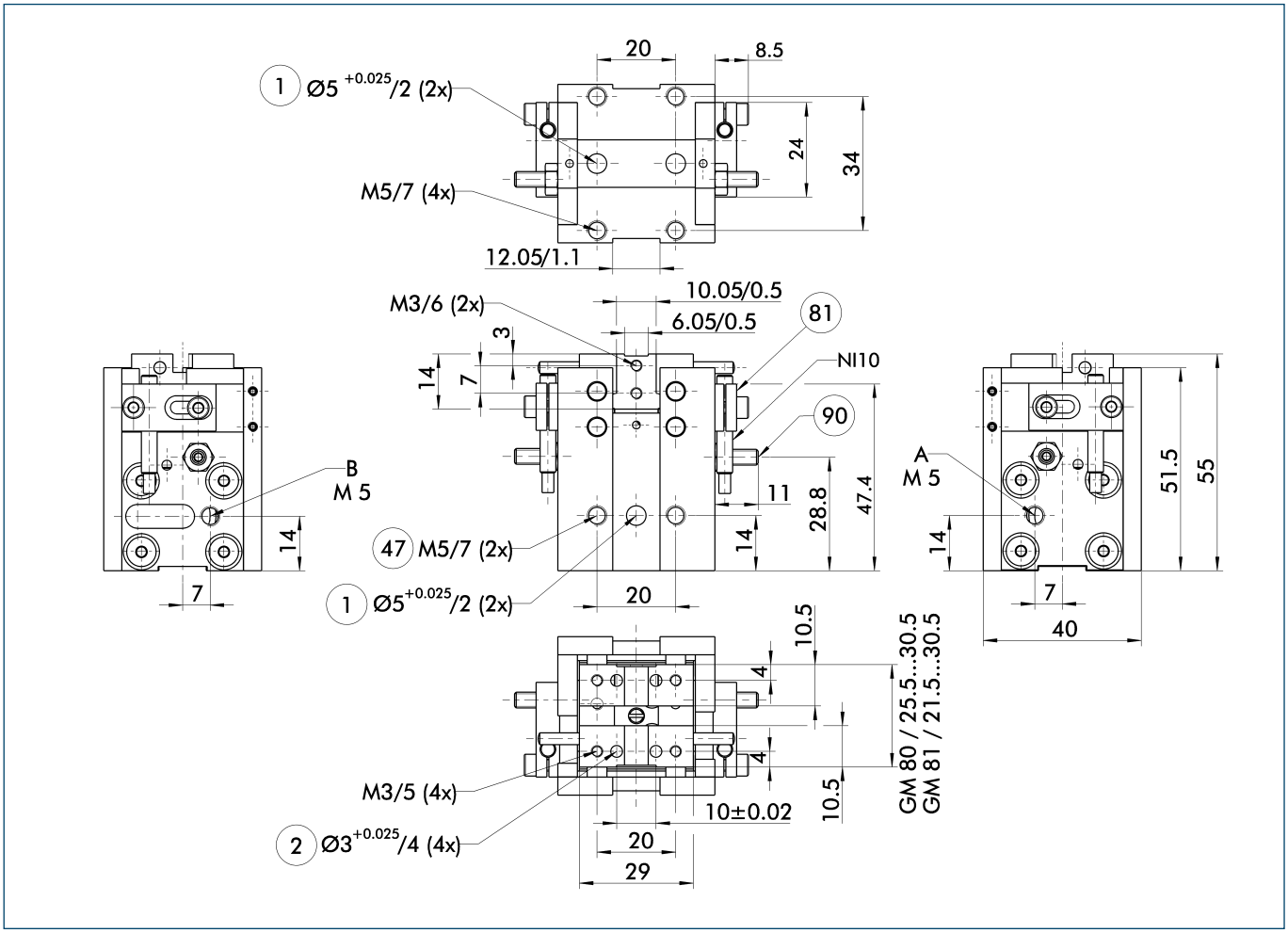
- M_x max. 8 Nm
- M_y max. 6 Nm
- M_z max. 8 Nm
- F_z max. 180 N

ⓘ Moments and forces apply per base jaw and may occur among themselves at the same time. M_y may occur additionally to the moment produced by the gripping force itself.

Technical data

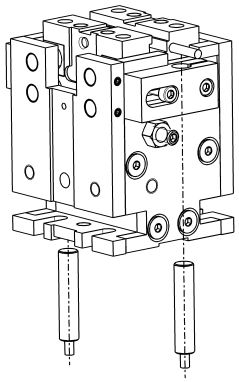
Designation		GM 80	GM 81	GM 80-K	GM 81-K	GM 80-S	GM 81-S
	ID	0313060	0313063	0313062	0313065	0313061	0313064
Stroke per jaw	[mm]	2.5	4.5	2.5	4.5	2.5	4.5
Closing grip force	[N]	200	120	260	150		
Opening grip force	[N]	200	120			260	150
Min. grip force applied by spring	[N]			60	30	60	30
Mass	[kg]	0.32	0.32	0.32	0.32	0.32	0.32
Recommended workpiece weight	[kg]	1.0	0.6	1.0	0.6	1.0	0.6
Fluid consumption for double stroke	[cm³]	3.86	3.86	3.86	3.86	3.86	3.86
Minimum pressure	[bar]	3	3	4.5	4.5	4.5	4.5
Maximum pressure	[bar]	8	8	8	8	8	8
Nominal operating pressure	[bar]	6	6	6	6	6	6
Closing time	[s]	0.02	0.02	0.015	0.015	0.025	0.025
Opening time	[s]	0.02	0.02	0.025	0.025	0.015	0.015
Max. permissible finger length	[mm]	50	50	50	50	50	50
IP rating		40	40	40	40	40	40
Min. ambient temperature	[°C]	5	5	5	5	5	5
Max. ambient temperature	[°C]	60	60	60	60	60	60
Repeat accuracy	[mm]	± 0.02	± 0.02	± 0.02	± 0.02	± 0.02	± 0.02

Main views



A, a Main and direct connections, gripper open
B, b Main and direct connections, gripper close
(1) Gripper connection
(2) Finger connection
(47) on both sides
(81) Not included in the scope of delivery
(90) Set screw for stroke limitation

Sensor systems



End-position monitoring:
Inductive proximity switch, can be directly mounted

Designation	ID	Scope of delivery	Recommended product
GMNS 50-X	0313339	Bracket, sensor	
GMNS 50-G	0313340	Bracket, sensor, straight cable extension	•
GMNS 50-W	0313341	Bracket, sensor, angled cable extension	

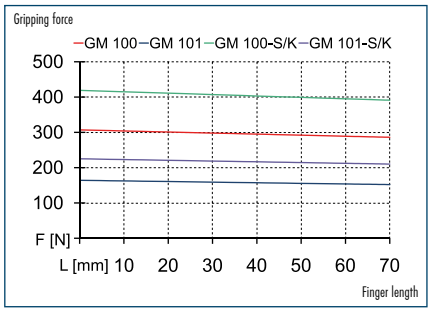
ⓘ Two sensors are needed for each gripper

You can find further information and components for the accessories mentioned here in the “Accessories” part of the catalog.

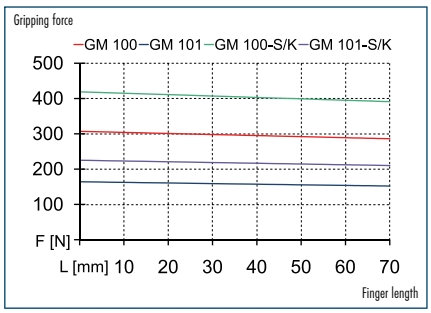
GM 100/101

Gripping modules · Pneumatic · 2-finger parallel gripper · Short-stroke gripper for small components

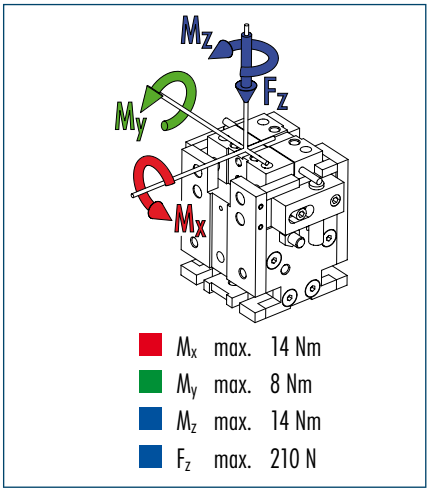
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

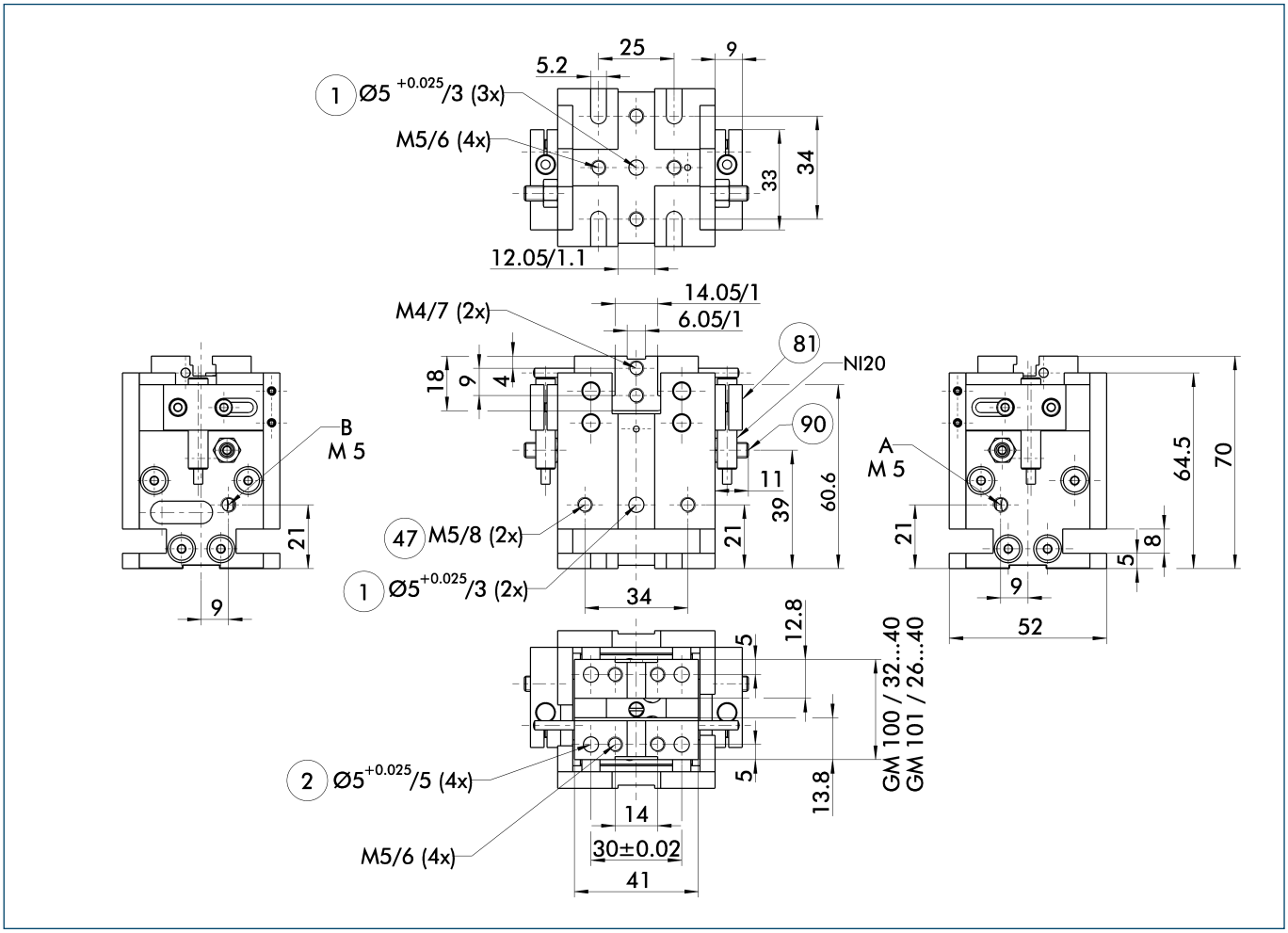


ⓘ Moments and forces apply per base jaw and may occur among themselves at the same time. M_y may occur additionally to the moment produced by the gripping force itself.

Technical data

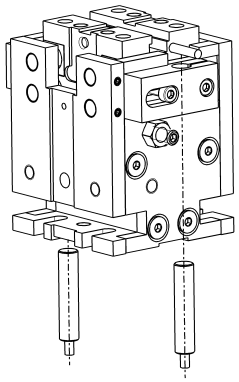
Designation		GM 100	GM 101	GM 100-K	GM 101-K	GM 100-S	GM 101-S
	ID	0313069	0313072	0313071	0313074	0313070	0313073
Stroke per jaw	[mm]	4	7	4	7	4	7
Closing grip force	[N]	300	160	410	220		
Opening grip force	[N]	300	160			410	220
Min. grip force applied by spring	[N]			110	60	110	60
Mass	[kg]	0.62	0.62	0.62	0.62	0.62	0.62
Recommended workpiece weight	[kg]	1.5	0.8	1.5	0.8	1.5	0.8
Fluid consumption for double stroke	[cm^3]	9.78	9.78	9.78	9.78	9.78	9.78
Minimum pressure	[bar]	3	3	4.5	4.5	4.5	4.5
Maximum pressure	[bar]	8	8	8	8	8	8
Nominal operating pressure	[bar]	6	6	6	6	6	6
Closing time	[s]	0.03	0.03	0.025	0.025	0.04	0.04
Opening time	[s]	0.03	0.03	0.04	0.04	0.025	0.025
Max. permissible finger length	[mm]	70	70	70	70	70	70
IP rating		40	40	40	40	40	40
Min. ambient temperature	[°C]	5	5	5	5	5	5
Max. ambient temperature	[°C]	60	60	60	60	60	60
Repeat accuracy	[mm]	± 0.02	± 0.02	± 0.02	± 0.02	± 0.02	± 0.02

Main views



A, a Main and direct connections, gripper open
B, b Main and direct connections, gripper close
(1) Gripper connection
(2) Finger connection
(47) on both sides
(81) Not included in the scope of delivery
(90) Set screw for stroke limitation

Sensor systems



End-position monitoring:
Inductive proximity switch, can be directly mounted

Designation	ID	Scope of delivery	Recommended product
GMNS 100-X	0313342	Bracket, sensor	
GMNS 100-G	0313343	Bracket, sensor, straight cable extension	•
GMNS 100-W	0313344	Bracket, sensor, angled cable extension	

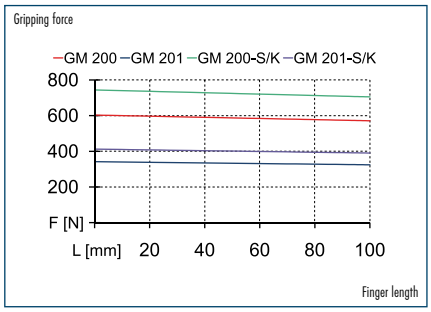
ⓘ Two sensors are needed for each gripper

You can find further information and components for the accessories mentioned here in the “Accessories” part of the catalog.

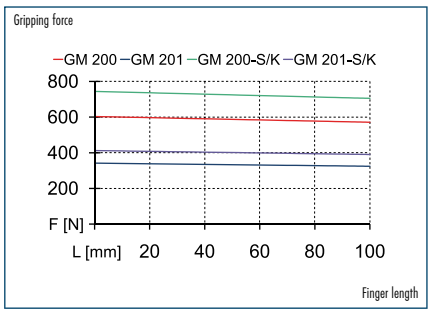
GM 200/201

Gripping modules · Pneumatic · 2-finger parallel gripper · Short-stroke gripper for small components

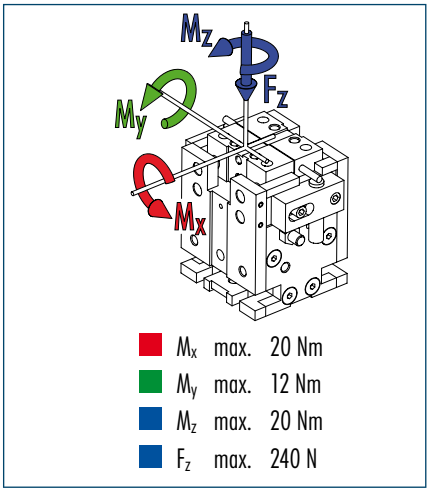
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

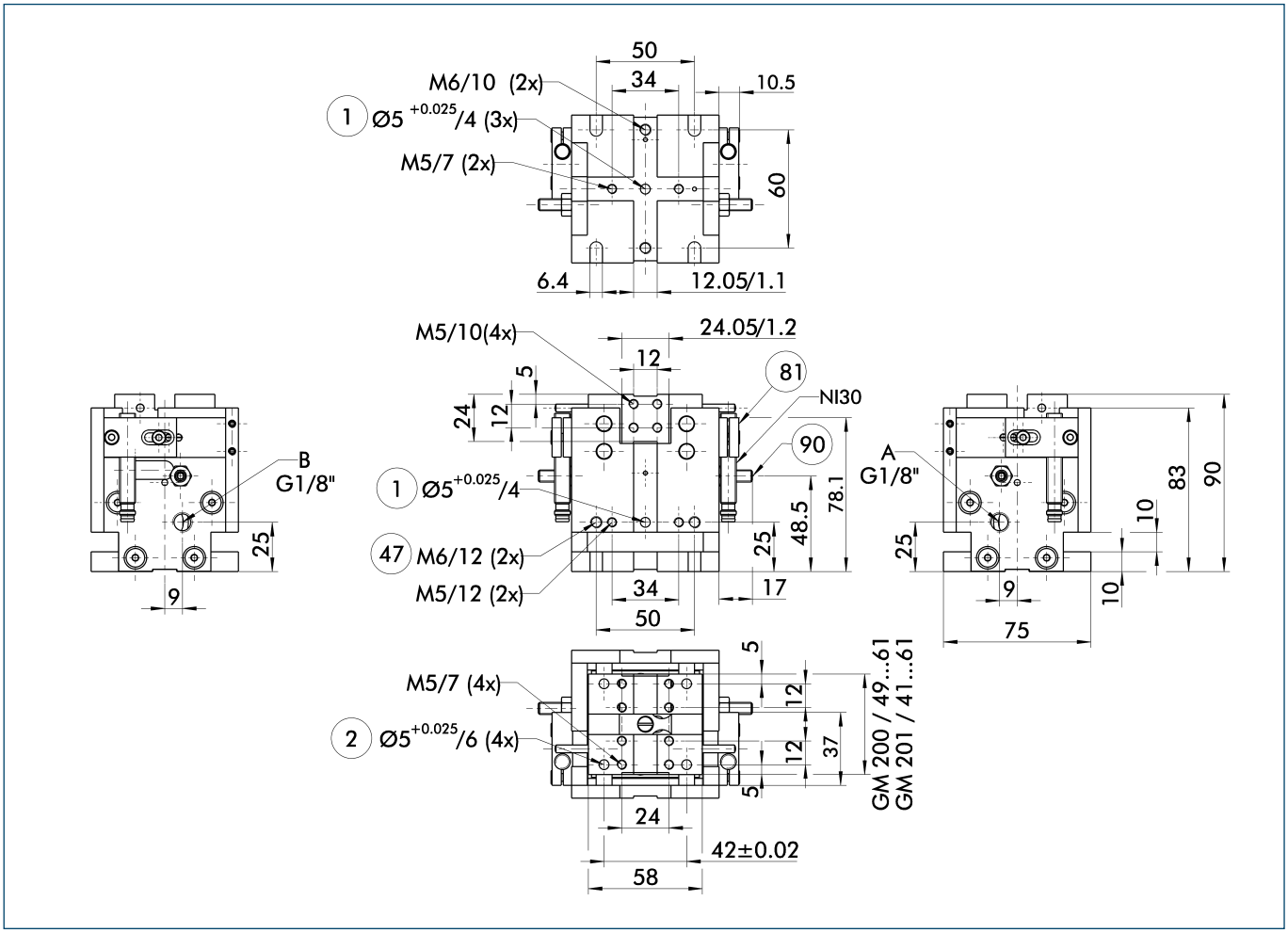


ⓘ Moments and forces apply per base jaw and may occur among themselves at the same time. M_y may occur additionally to the moment produced by the gripping force itself.

Technical data

Designation		GM 200	GM 201	GM 200-K	GM 201-K	GM 200-S	GM 201-S
	ID	0313078	0313081	0313080	0313083	0313079	0313082
Stroke per jaw	[mm]	6	10	6	10	6	10
Closing grip force	[N]	600	340	740	410		
Opening grip force	[N]	600	340			740	410
Min. grip force applied by spring	[N]			140	70	140	70
Mass	[kg]	1.75	1.75	1.75	1.75	1.75	1.75
Recommended workpiece weight	[kg]	3.0	1.7	3.0	1.7	3.0	1.7
Fluid consumption for double stroke	[cm³]	25.88	25.88	25.88	25.88	25.88	25.88
Minimum pressure	[bar]	3	3	4.5	4.5	4.5	4.5
Maximum pressure	[bar]	8	8	8	8	8	8
Nominal operating pressure	[bar]	6	6	6	6	6	6
Closing time	[s]	0.05	0.05	0.04	0.04	0.06	0.06
Opening time	[s]	0.05	0.05	0.06	0.06	0.04	0.04
Max. permissible finger length	[mm]	100	100	100	100	100	100
IP rating		40	40	40	40	40	40
Min. ambient temperature	[°C]	5	5	5	5	5	5
Max. ambient temperature	[°C]	60	60	60	60	60	60
Repeat accuracy	[mm]	± 0.02	± 0.02	± 0.02	± 0.02	± 0.02	± 0.02

Main views



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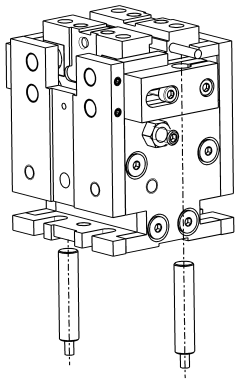
(90) Set screw for stroke limitation

Sensor systems



End-position monitoring:
Inductive proximity switch, can be directly mounted

Designation	ID	Scope of delivery	Recommended product
GMNS 200-X	0313345	Bracket, sensor	
GMNS 200-G	0313346	Bracket, sensor, straight cable extension	•
GMNS 200-W	0313347	Bracket, sensor, angled cable extension	

ⓘ Two sensors are needed for each gripper

You can find further information and components for the accessories mentioned here in the “Accessories” part of the catalog.