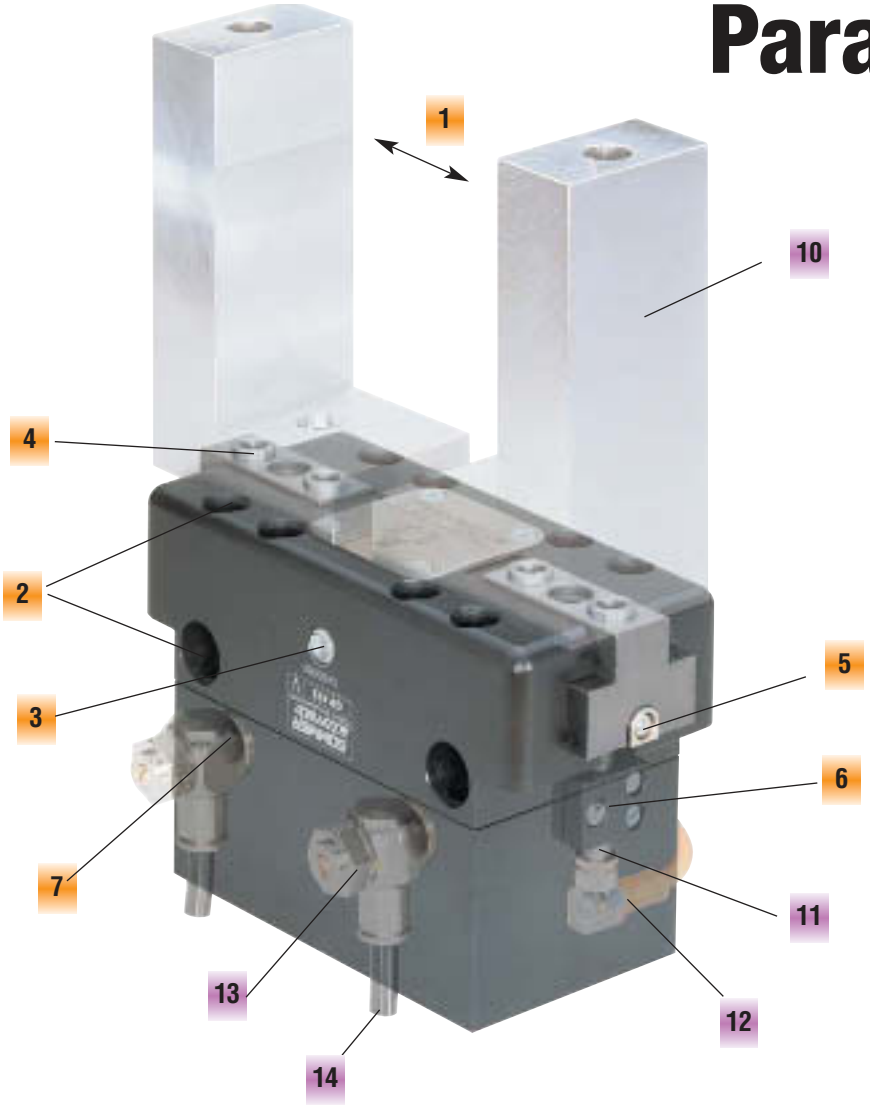
Parallel gripper

with T-slot guide



Features

1 Stroke
2 Hole for socket head screw
3 Lubricating nipple for mechanism
4 Removable centering sleeves
5 Spring-loaded trip dogs
6 Sensor mount
7 Air connection at the front (alternatively on the back and bottom)

Accessories

10 Universal Jaws
11 Proximity Switch
12 Cable for proximity switch
13 Pneumatic fittings
14 Pneumatic hose

The final tests …

...have long been aced, and in several circles, declared the winner: The T-slot guide, good old traditional engineering. Rugged and dependable no matter which way you look at it. All of which are made from hard-coated aluminum and have hardened and ground T-slot steel jaws.

We offer the sizes GP406 to GP430 in up to 7 different models - with springs (for self-locking, opening and closing) and without. Except for the three smallest sizes, the standard version (without spring, large stroke, small force) is available as a hydraulic model with 30 bar operating pressure. All grippers are also available temperature-resistant up to 150°C.

All grippers are maintenance-free up to 1.5 million cycles, after which they can be regreased at the lubricating nipple between the jaws. If oil-free air is used, we recommend lubricating the cylinder with Renolit. Several attachment holes allow for added mounting convenience.

The centering sleeves on the jaws ensure a precise mounting of the tooling fingers, which is important if they are changed often. In this case, we can also supply universal jaws made of steel and aluminum. For more details, see accessories on page 17. The pneumatic ports for opening and closing are located on the front, back and bottom. At the bottom, the ports are closed with grub screws and can be used for tubeless connections.

For part-sensing, we have something very special, indeed: Under the jaws, there are spring-actuated trip dogs, which can be adjusted precisely and infinitely with a screw. The setting can be fixed with the grub screws located on the side of the jaws. Sensor mounts are located beneath the trip dogs, allowing optimum mounting of a proximity switch.

Note:
If the gripper is used as a single-acting device, the unused port must be vented or an air filter must be installed to prevent a vacuum in the piston chamber from hindering operation.

Explanations

The following abbreviations mean;

Opening / closing by spring:

NO = Standard design, self-locking, spring opening (long stroke, standard force)

NC = Standard design, self-locking, spring closing (long stroke, standard force)

SC = Heavy-duty design, self-locking, spring closing (short stroke, large force)

SO = Heavy-duty design, self-locking, spring opening (short stroke, large force)

Without spring:

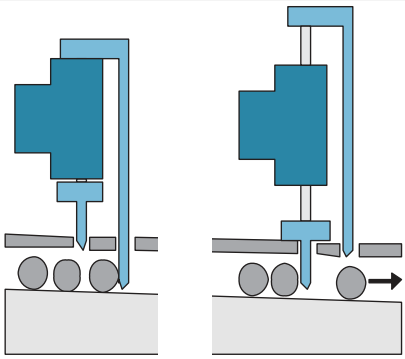
N = Standard design, (long stroke, standard force)

S = Heavy-duty design, (short stroke, large force)

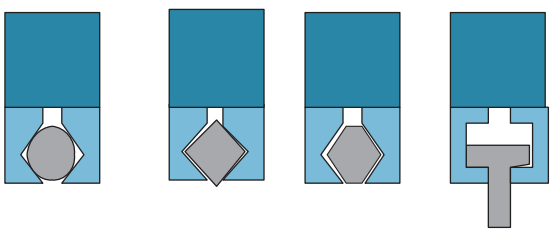
Hydraulic Version:

NH = Standard design, hydraulic up to 40 bar (long stroke, large force)

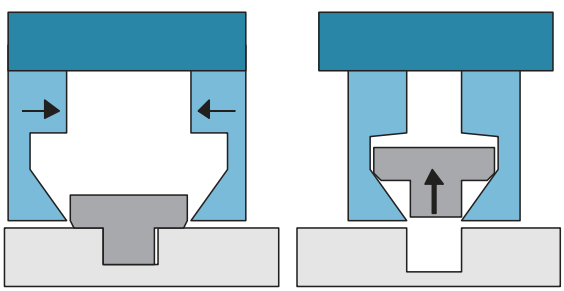
Application Ideas



Parallel grippers can be used for separating parts.
A Gripper closing - all the balls are retained
B Gripper opening - one ball is released, the others are retained.
(Also see our separator).

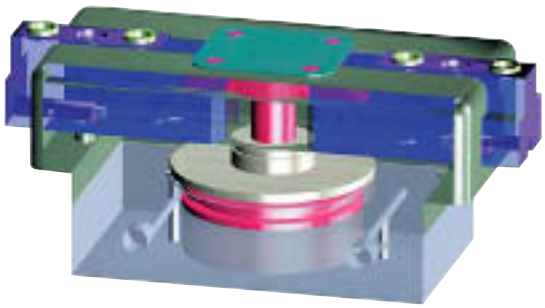


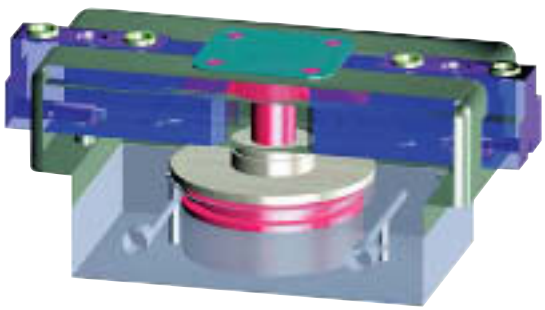
Different profiles may be gripped using prism-shaped jaws (larger holding force).



The 45Þ slope of the jaws allows the part to be lifted out of the hole when the gripper closes. This eliminates the need for a retraction mechanism even with the parallel grippers.

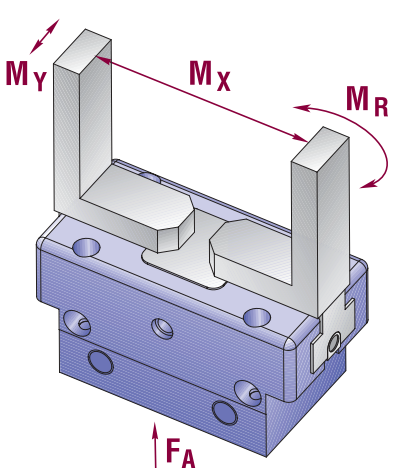
Schematic…
On every product page, you will find the following schematic which helps describe the max allowable forces and movements for that particular model.





Operation

A double-acting pneumatic cylinder drives a slide (red). The guided T-slot jaws (blue) are moved linearly to open and closed positions by the slope on the slide. On the “S” version, the slopes are steeper. The translation allows more force with a shorter stroke. In the NC and SC models, a compression spring is installed at the top of the piston chamber, which can be used for self-locking and boosting power during closing or for single-acting operation. Conversely, the NO and SO models have a spring, which supports opening, installed at the bottom of the piston chamber.



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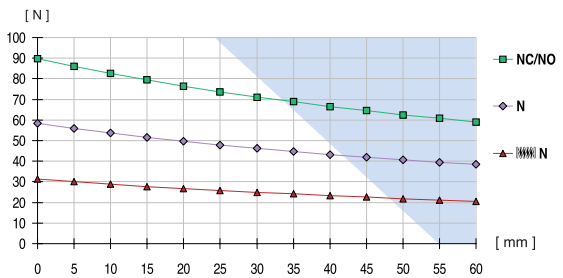
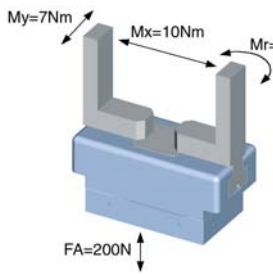
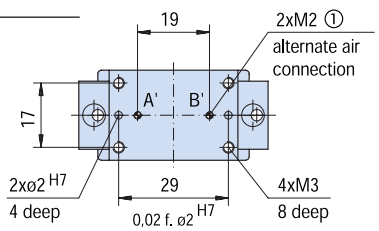
Gripping force as a function of jaw length

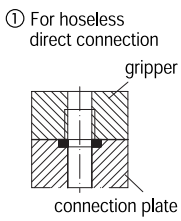


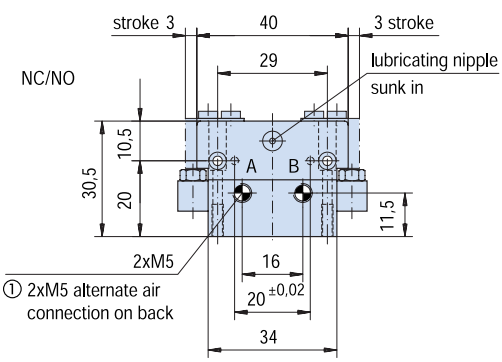
Colored area: increased wear and tear to be expected

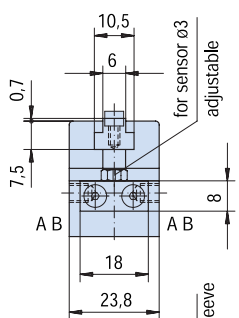


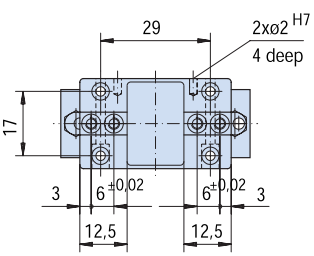
Max Allowable Forces on Jaws

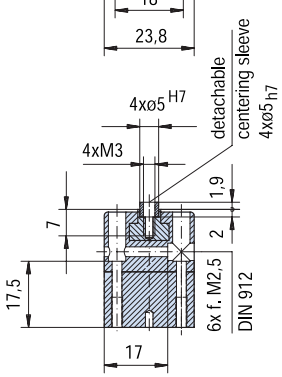


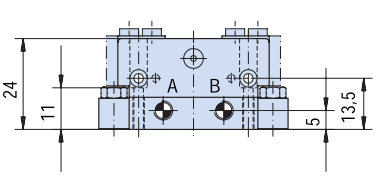












Order no.:						
GP403 N	**GP403 NC**	**GP403 NO**				
Drive:						
pneum.	pneum.	pneum.				
Stroke per jaw [mm]:						
3	3	3				
Gripping force in closing and opening [N]:						
58	-	-				
Gripping force in closing [N]:						
-	90	-				
Gripping force in opening [N]:						
-	-	90				
Self-locking via:						
DSV1/8	Spring	Spring				
Closing time/opening time [s]:						
0,006	0,01	0,01				
Repeatability ± [mm]:						
0,025	0,025	0,025				
Min./max. operating pressure [bar]:						
3 / 8	5 / 8	5 / 8				
Air volume per cycle [cm³]:						
2	3	3				
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80				
Temp. resistant version up to 150° C [add to part number]:						
T2	T2	T2				
Piston diameter [mm]:						
16	16	16				
Weight [kg]:						
0,08	0,1	0,1				

All data measured at 6 bar.

See Page 17 for Accessory list.

Parallel gripper
with T-slot guide

**Advantages, benefits, comparisons and tips!
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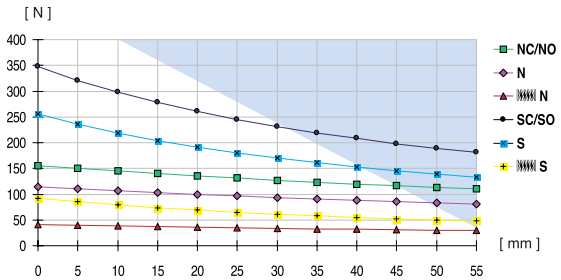
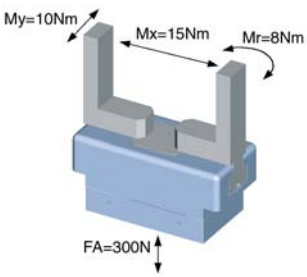
Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected

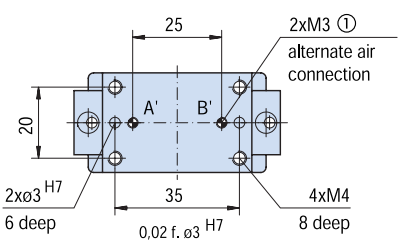


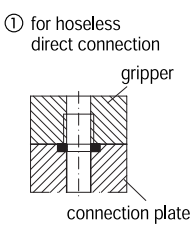
Max Allowable Forces on Jaws

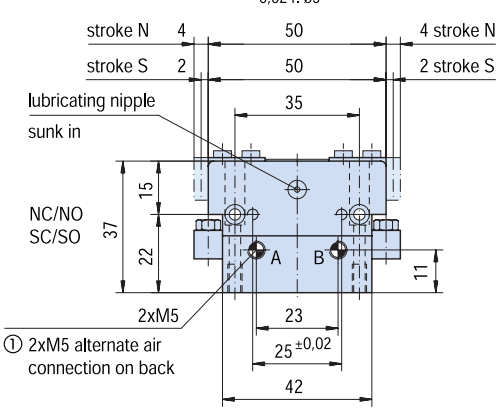
Order no.:					
GP404 N	**GP404 NC**	**GP404 NO**	**GP404 S**	**GP404 SC**	**GP404 SO**
Drive:					
pneum.	pneum.	pneum.	pneum.	pneum.	pneum.
Stroke per jaw [mm]:					
4	4	4	2	2	2
Gripping force in closing and opening [N]:					
115	-	-	255	-	-
Gripping force in closing [N]:					
-	155	-	-	350	-
Gripping force in opening [N]:					
-	-	155	-	-	350
Self-locking via:					
DSV1/8	Spring	Spring	DSV1/8	Spring	Spring
Closing time/opening time [s]:					
0,008	0,012	0,012	0,008	0,012	0,012
Repeatability ± [mm]:					
0,025	0,025	0,025	0,025	0,025	0,025
Min./max. operating pressure [bar]:					
3 / 8	5 / 8	5 / 8	3 / 8	5 / 8	5 / 8
Air volume per cycle [cm³]:					
3	5	5	3	5	5
Min./max. operating temperature [°C]:					
5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80
Temp. resistant version up to 150C [add to part number]:					
T2	T2	T2	T2	T2	T2
Piston diameter [mm]:					
20	20	20	20	20	20
Weight [kg]:					
0,13	0,17	0,17	0,13	0,17	0,17

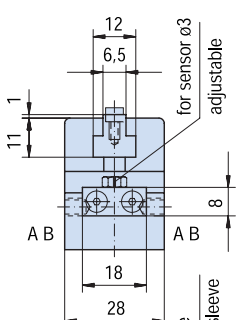
All data measured at 6 bar.

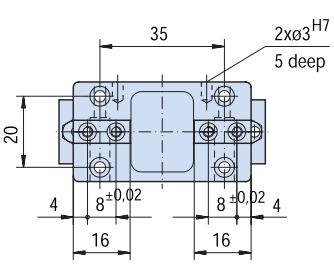
See Page 17 for Accessory list.

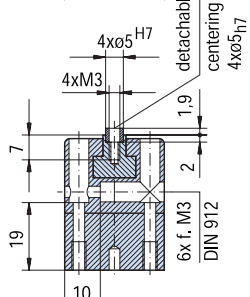




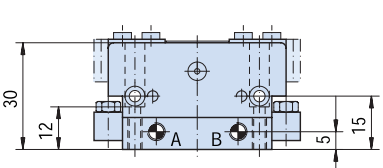


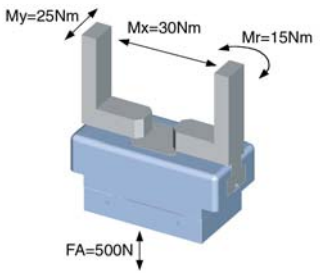






N/S





Parallel gripper
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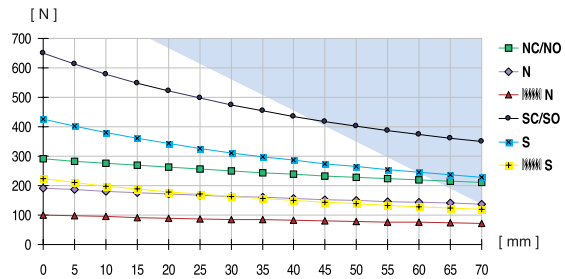
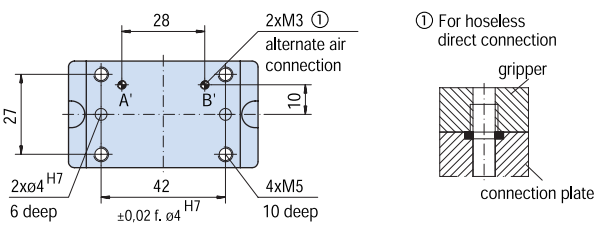
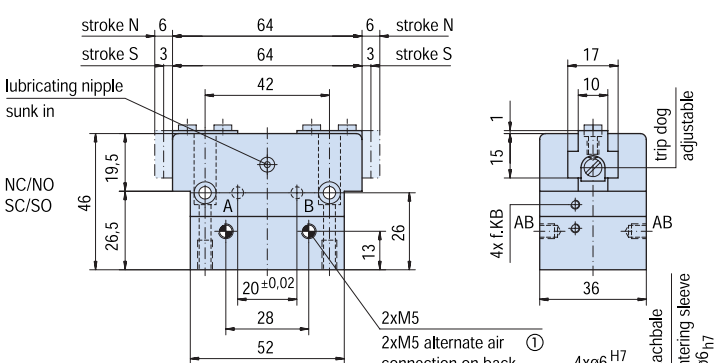
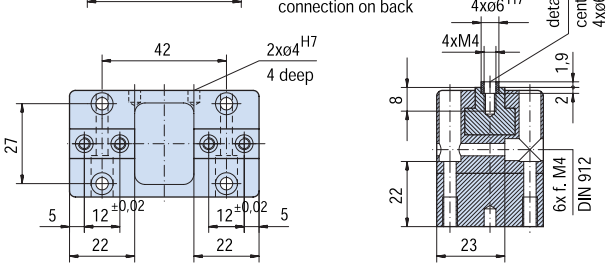
Gripping force as a function of jaw length

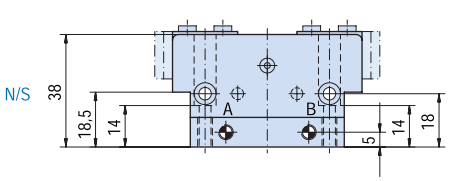


Colored area: increased wear and tear to be expected









Order no.:					
GP406 N	**GP406 NC**	**GP406 NO**	**GP406 S**	**GP406 SC**	**GP406 SO**
Drive:					
pneum.	pneum.	pneum.	pneum.	pneum.	pneum.
Stroke per jaw [mm]:					
6	6	6	3	3	3
Gripping force in closing and opening [N]:					
190	-	-	420	-	-
Gripping force in closing [N]:					
-	290	-	-	650	-
Gripping force in opening [N]:					
-	-	290	-	-	650
Self-locking via:					
DSV1/8	Spring	Spring	DSV1/8	Spring	Spring
Closing time/opening time [s]:					
0,009	0,015	0,015	0,009	0,015	0,015
Repeatability ± [mm]:					
0,025	0,025	0,025	0,025	0,025	0,025
Min./max. operating pressure [bar]:					
3 / 8	5 / 8	5 / 8	3 / 8	5 / 8	5 / 8
Air volume per cycle [cm³]:					
7	11	11	7	11	11
Min./max. operating temperature [°C]:					
5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80
Temp. resistant version up to 150° C [add to part number]:					
T2	T2	T2	T2	T2	T2
Piston diameter [mm]:					
25	25	25	25	25	25
Weight [kg]:					
0,27	0,32	0,32	0,27	0,32	0,32

All data measured at 6 bar.

See Page 17 for Accessory list.

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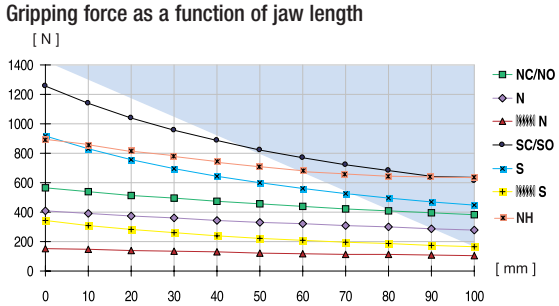
Gripping force as a function of jaw length



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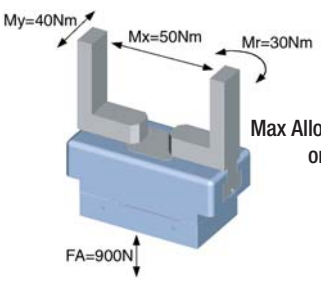
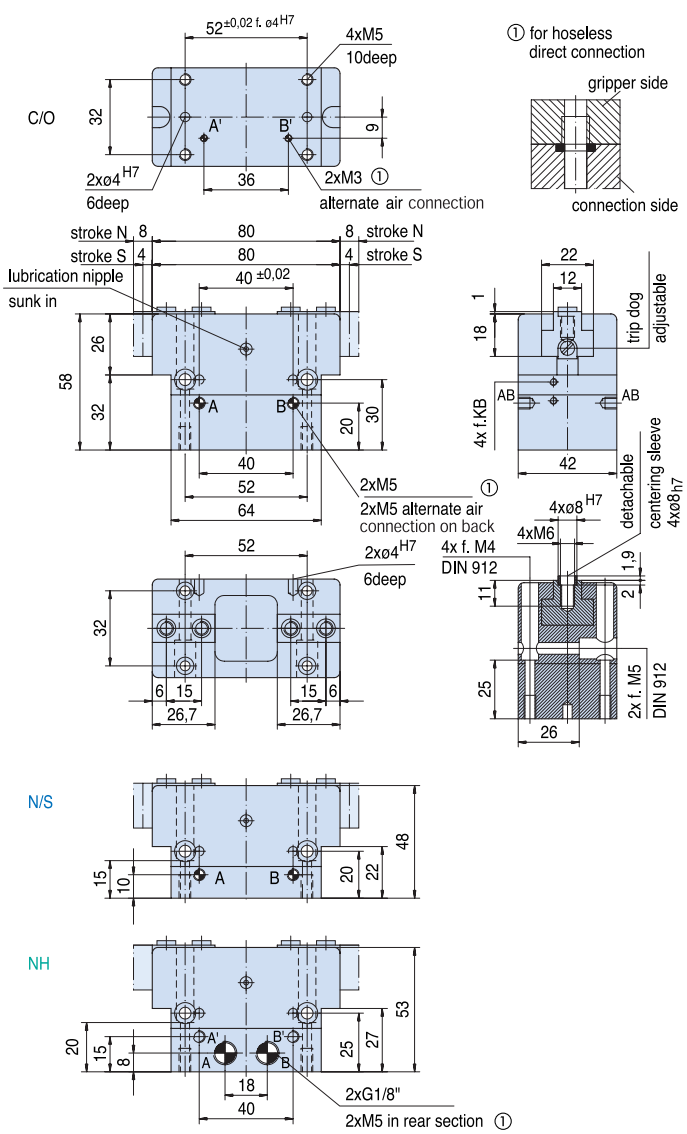


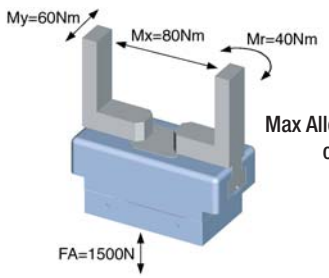
Max Allowable Forces on Jaws

Order no.:						
GP408 N	**GP408 NC**	**GP408 NO**	**GP408 S**	**GP408 SC**	**GP408 SO**	**GP408 NH**
Drive:						
pneum.	pneum.	pneum.	pneum.	pneum.	pneum.	hydr.
Stroke per jaw [mm]:						
8	8	8	4	4	4	8
Gripping force in closing and opening [N]:						
400	-	-	900	-	-	920
Gripping force in closing [N]:						
-	560	-	-	1260	-	-
Gripping force in opening [N]:						
-	-	560	-	-	1260	-
Self-locking via:						
DSV1/8	Spring	Spring	DSV1/8	Spring	Spring	-
Closing time/opening time [s]:						
0,012	0,02	0,02	0,012	0,02	0,02	0,5
Repeatability ± [mm]:						
0,025	0,025	0,025	0,025	0,025	0,025	0,025
Min./max. operating pressure [bar]:						
3 / 8	5 / 8	5 / 8	3 / 8	5 / 8	5 / 8	10 / 40
Air volume per cycle [cm³]:						
18	27	27	18	27	27	-
Oil volume per cycle [cm³]:						
-	-	-	-	-	-	8
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80
Temp. resistant version up to 150° C [add to part number]:						
T2	T2	T2	T2	T2	T2	T2
Piston diameter [mm]:						
35	35	35	35	35	35	24
Weight [kg]:						
0,51	0,58	0,58	0,51	0,58	0,58	0,51

All data measured at 6 bar (hydr. 30 bar).

See Page 17 for Accessory list.





Max Allowable Forces on Jaws

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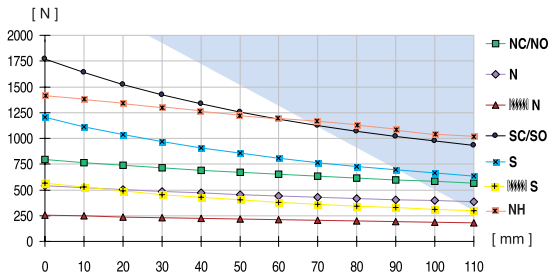
Gripping force as a function of jaw length



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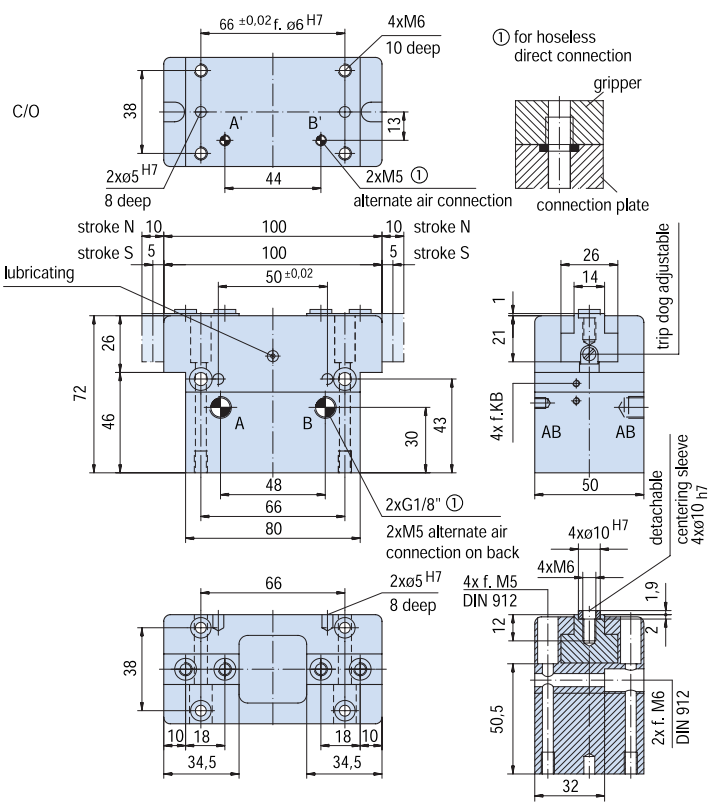
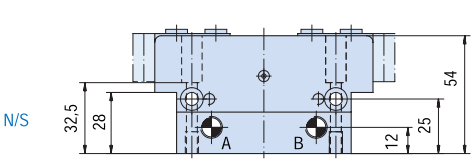
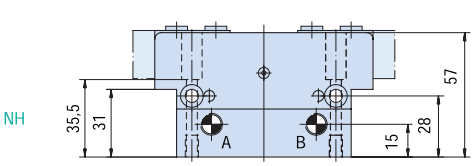






Order no.:						
GP410 N	**GP410 NC**	**GP410 NO**	**GP410 S**	**GP410 SC**	**GP410 SO**	**GP410 NH**
Drive:						
pneum.	pneum.	pneum.	pneum.	pneum.	pneum.	hydr.
Stroke per jaw [mm]:						
10	10	10	5	5	5	10
Gripping force in closing and opening [N]:						
560	-	-	1200	-	-	1450
Gripping force in closing [N]:						
-	780	-	-	1760	-	-
Gripping force in opening [N]:						
-	-	780	-	-	1760	-
Self-locking via:						
DSV1/8	Spring	Spring	DSV1/8	Spring	Spring	-
Closing time/opening time [s]:						
0,05	0,08	0,08	0,05	0,08	0,08	0,4
Repeatability ± [mm]:						
0,025	0,025	0,025	0,025	0,025	0,025	0,025
Min./max. operating pressure [bar]:						
3 / 8	5 / 8	5 / 8	3 / 8	5 / 8	5 / 8	10 / 40
Air volume per cycle [cm³]:						
28	52	52	28	52	52	-
Oil volume per cycle [cm³]:						
-	-	-	-	-	-	18
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80
Temp. resistant version up to 150° C [add to part number]:						
T2	T2	T2	T2	T2	T2	T2
Piston diameter [mm]:						
40	40	40	40	40	40	30
Weight [kg]:						
0,82	1	1	0,82	1	1	0,82

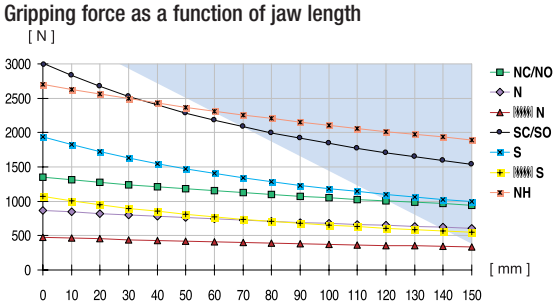
All data measured at 6 bar (hydr. 30 bar).

See Page 17 for Accessory list.

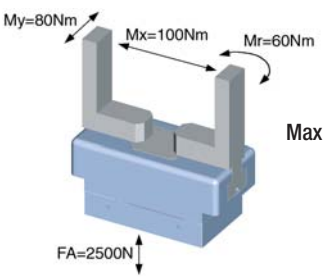
Parallel gripper
with T-slot guide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are on page 17.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected

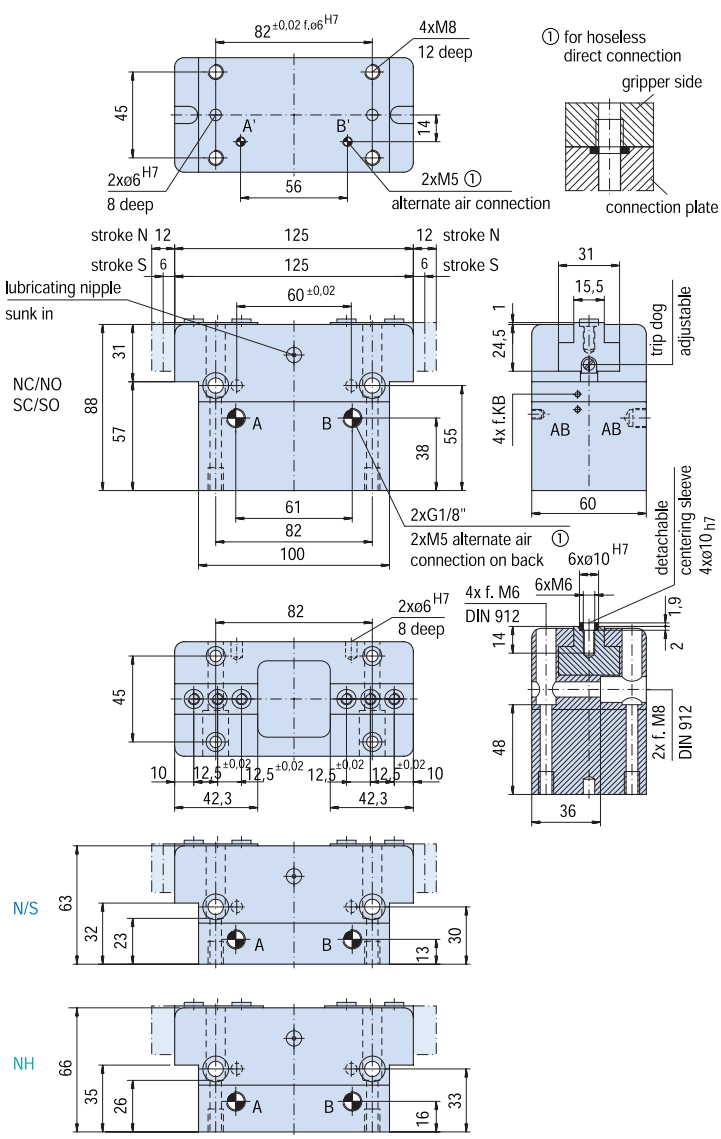


Max Allowable Forces on Jaws

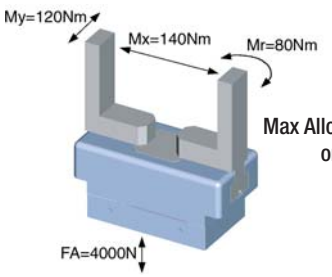
Order no.:						
GP412 N	**GP412 NC**	**GP412 NO**	**GP412 S**	**GP412 SC**	**GP412 SO**	**GP412 NH**
Drive:						
pneum.	pneum.	pneum.	pneum.	pneum.	pneum.	hydr.
Stroke per jaw [mm]:						
12	12	12	6	6	6	12
Gripping force in closing and opening [N]:						
900	-	-	1950	-	-	2700
Gripping force in closing [N]:						
-	1400	-	-	3000	-	-
Gripping force in opening [N]:						
-	-	1400	-	-	3000	-
Self-locking via:						
DSV1/8	Spring	Spring	DSV1/8	Spring	Spring	-
Closing time/opening time [s]:						
0,08	0,1	0,1	0,08	0,1	0,1	0,5
Repeatability ± [mm]:						
0,025	0,025	0,025	0,025	0,025	0,025	0,025
Min./max. operating pressure [bar]:						
3 / 8	5 / 8	5 / 8	3 / 8	5 / 8	5 / 8	10 / 40
Air volume per cycle [cm³]:						
55	100	100	55	100	100	-
Oil volume per cycle [cm³]:						
-	-	-	-	-	-	34
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80
Temp. resistant version up to 150° C [add to part number]:						
T2	T2	T2	T2	T2	T2	T2
Piston diameter [mm]:						
50	50	50	50	50	50	40
Weight [kg]:						
1,4	1,78	1,78	1,4	1,78	1,78	1,4

All data measured at 6 bar (hydr. 30 bar).

See Page 17 for Accessory list.

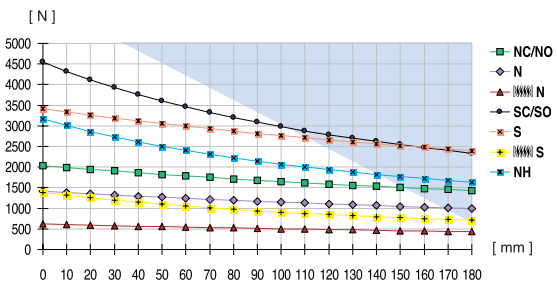


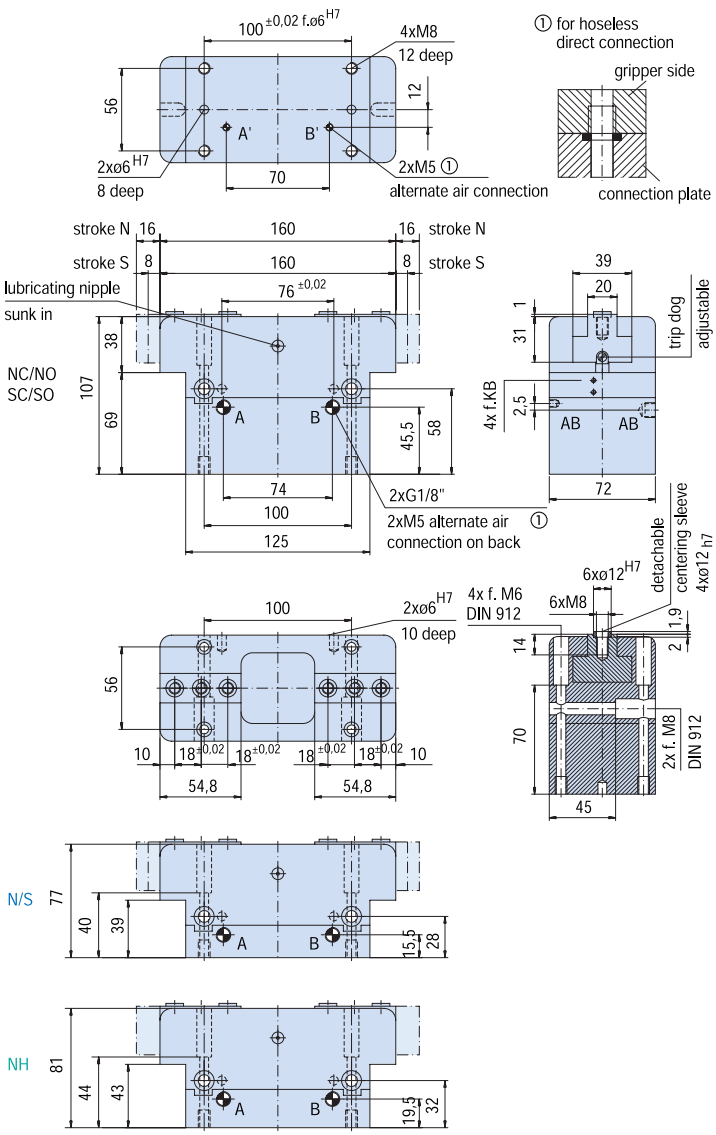
Parallel gripper
with T-slot guide



Max Allowable Forces on Jaws

Advantages, benefits, comparisons and tips! Stacks of information all about this product are on page 17.





Order no.:						
GP416 N	**GP416 NC**	**GP416 NO**	**GP416 S**	**GP416 SC**	**GP416 SO**	**GP416 NH**
Drive:						
pneum.	pneum.	pneum.	pneum.	pneum.	pneum.	hydr.
Stroke per jaw [mm]:						
16	16	16	8	8	8	16
Gripping force in closing and opening [N]:						
1400	-	-	3150	-	-	3350
Gripping force in closing [N]:						
-	2050	-	-	4550	-	-
Gripping force in opening [N]:						
-	-	2050	-	-	4550	-
Self-locking via:						
DSV1/8	Spring	Spring	DSV1/8	Spring	Spring	-
Closing time/opening time [s]:						
0,12	0,2	0,2	0,12	0,2	0,2	0,6
Repeatability ± [mm]:						
0,025	0,025	0,025	0,025	0,025	0,025	0,025
Min./max. operating pressure [bar]:						
3 / 8	5 / 8	5 / 8	3 / 8	5 / 8	5 / 8	10 / 40
Air volume per cycle [cm³]:						
117	183	183	117	183	183	-
Oil volume per cycle [cm³]:						
-	-	-	-	-	-	58
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3	T3	T3	T3	T3
Piston diameter [mm]:						
60	60	60	60	60	60	45
Weight [kg]:						
2,8	3,4	3,4	2,8	3,4	3,4	2,8

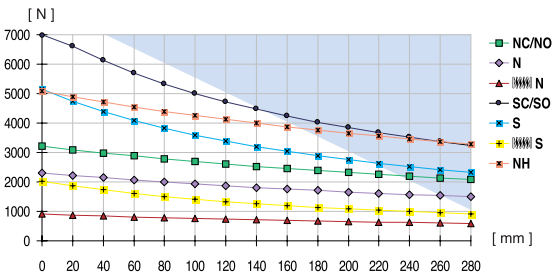
All data measured at 6 bar (hydr. 30 bar).

See Page 17 for Accessory list.

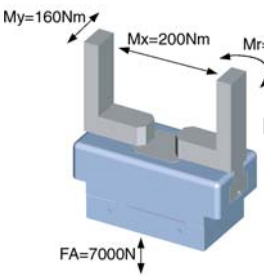
Parallel gripper
with T-slot guide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are on page 17.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected

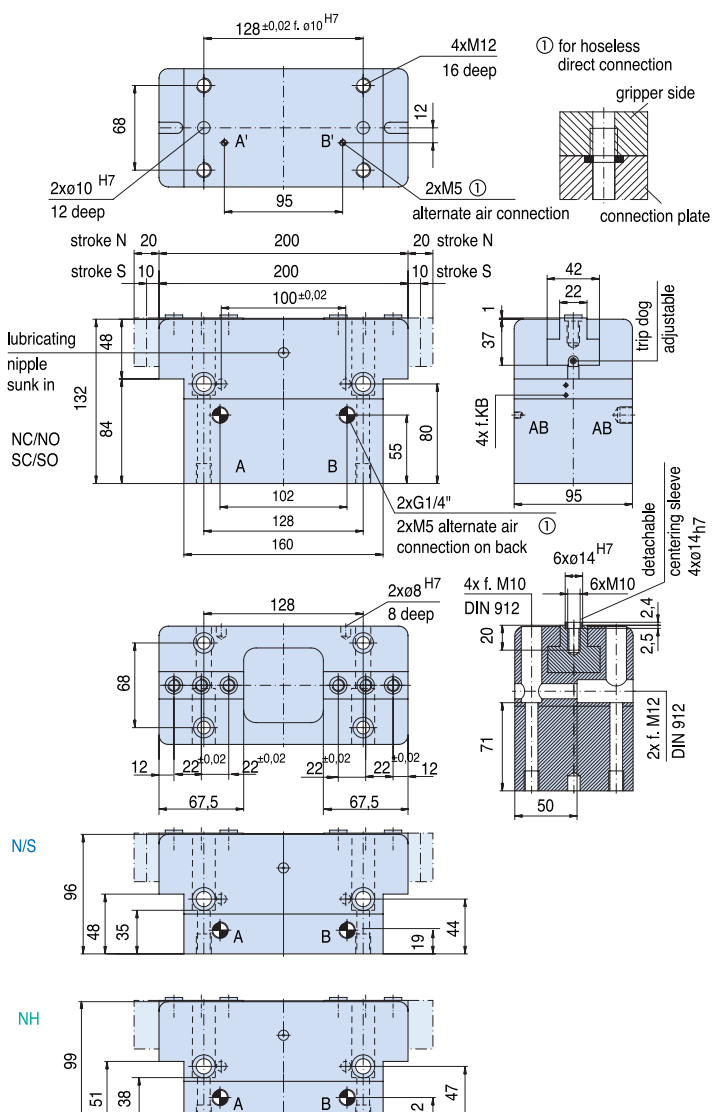


Max Allowable Forces on Jaws

Order no.:						
GP420 N	**GP420 NC**	**GP420 NO**	**GP420 S**	**GP420 SC**	**GP420 SO**	**GP420 NH**
Drive:						
pneum.	pneum.	pneum.	pneum.	pneum.	pneum.	hydr.
Stroke per jaw [mm]:						
20	20	20	10	10	10	20
Gripping force in closing and opening [N]:						
2300	-	-	5100	-	-	5100
Gripping force in closing [N]:						
-	3200	-	-	7000	-	-
Gripping force in opening [N]:						
-	-	3200	-	-	7000	-
Self-locking via:						
DSV1/8	Spring	Spring	DSV1/8	Spring	Spring	-
Closing time/opening time [s]:						
0,15	0,25	0,25	0,15	0,25	0,25	0,6
Repeatability ± [mm]:						
0,025	0,3	0,3	0,025	0,3	0,3	0,025
Min./max. operating pressure [bar]:						
3 / 8	5 / 8	5 / 8	3 / 8	5 / 8	5 / 8	10 / 40
Air volume per cycle [cm³]:						
233	583	583	233	583	583	-
Oil volume per cycle [cm³]:						
-	-	-	-	-	-	110
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3	T3	T3	T3	T3
Piston diameter [mm]:						
80	80	80	80	80	80	55
Weight [kg]:						
5,4	6,7	6,7	5,4	6,7	6,7	5,7

All data measured at 6 bar (hydr. 30 bar).

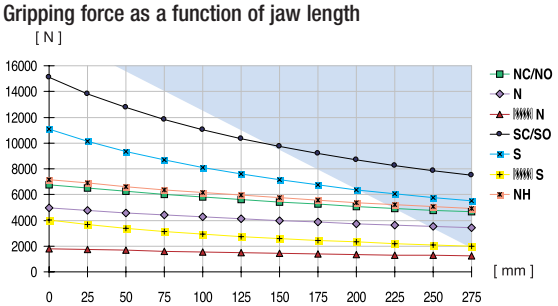
See Page 17 for Accessory list.



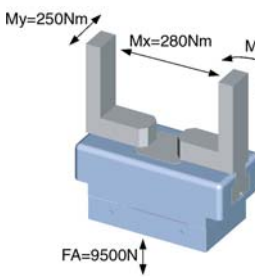
Parallel gripper
with T-slot guide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are on page 17.

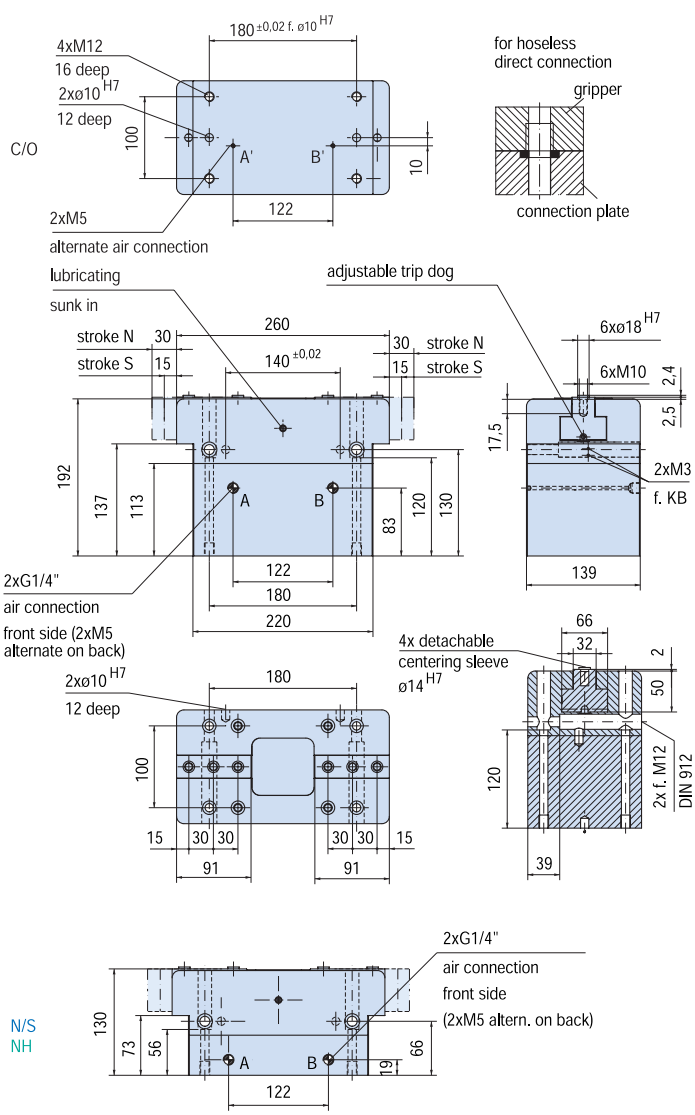
Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected



Max Allowable Forces on Jaws



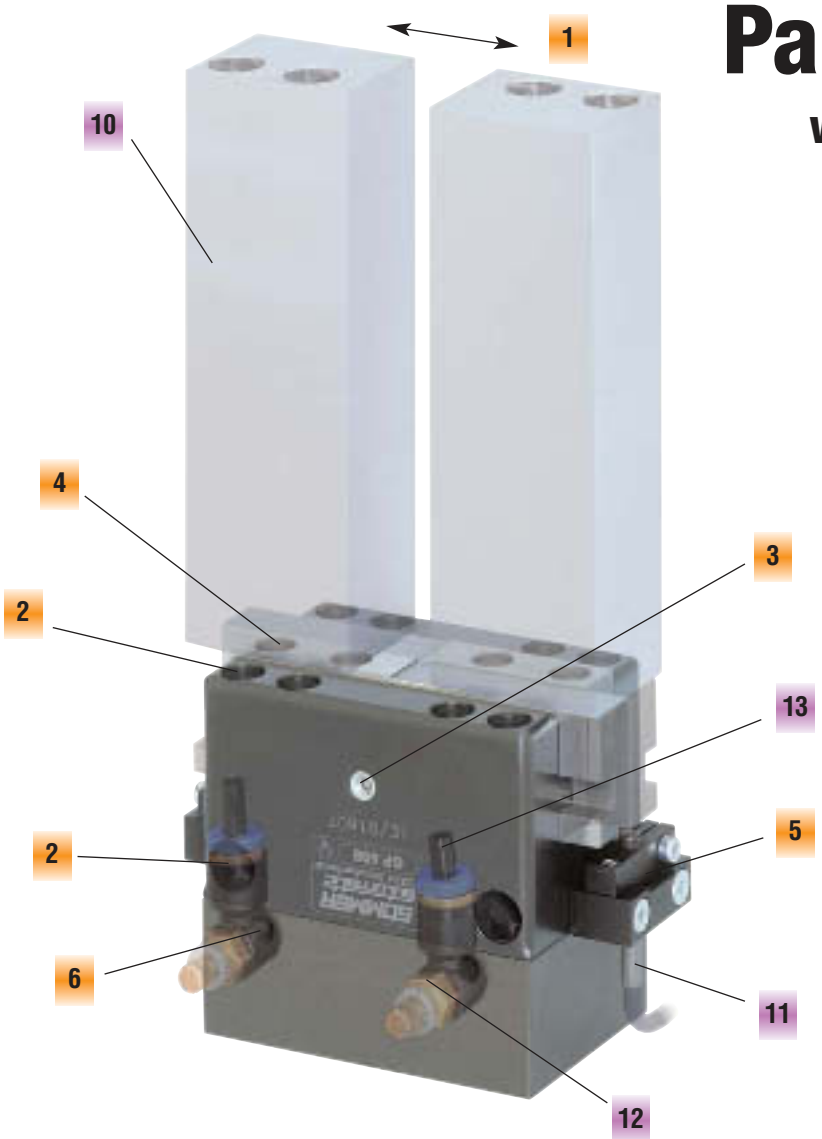
Order no.:						
GP430 N	**GP430 NC**	**GP430 NO**	**GP430 S**	**GP430 SC**	**GP430 SO**	**GP430 NH**
Drive:						
pneum.	pneum.	pneum.	pneum.	pneum.	pneum.	hydr.
Stroke per jaw [mm]:						
30	30	30	15	15	15	30
Gripping force in closing and opening [N]:						
5000	-	-	11000	-	-	7000
Gripping force in closing [N]:						
-	6900	-	-	15000	-	-
Gripping force in opening [N]:						
-	-	6900	-	-	15000	-
Self-locking via:						
DSV1/8	Spring	Spring	DSV1/8	Spring	Spring	-
Closing time/opening time [s]:						
0,2	0,3	0,3	0,2	0,3	0,3	0,8
Repeatability ± [mm]:						
0,025	0,025	0,025	0,025	0,025	0,025	0,025
Min./max. operating pressure [bar]:						
3 / 8	5 / 8	5 / 8	3 / 8	5 / 8	5 / 8	10 / 40
Air volume per cycle [cm³]:						
730	1020	1020	730	1020	1020	-
Oil volume per cycle [cm³]:						
-	-	-	-	-	-	230
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3	T3	T3	T3	T3
Piston diameter [mm]:						
115	115	115	115	115	115	64
Weight [kg]:						
14	18,9	18,9	14	18,9	18,9	14

All data measured at 6 bar (hydr. 30 bar).

See Page 17 for Accessory list.

Parallel gripper

with extended T-slot guide



Features

1 Stroke
2 Hole for cap head screw
3 Lubricating nipple for mechanism
4 Removable centering sleeves
5 Sensor mount
6 Air connection at the front and bottom

Accessories

For specific accessories see page 29

10 Universal jaws
11 Proximity switch
12 One-way valve
13 PU hose

As flat as a flounder

This T-slot series is ideal for longer gripping jaws. The guide extends through the entire length of the housing and allows a low profile due to the flat design.

All types are made of hard-anodized aluminum and have hardened and ground steel jaws with an extended T-slot guide. Starting with size GP608, we offer up to 7 different models - with springs (for self-locking, opening) and without springs. These sizes are also available in a hydraulic version with an operating pressure of 30 bar. All grippers are available heat-resistant up to 150ºC.

All grippers are maintenance-free up to 1.5 million cycles, after which we recommend relubrication via the lubricating nipple.
If oil-free air is used, we recommend lubrication of the cylinder with Renolit. Several attachment holes allow for added mounting convenience.

The centering sleeves on the jaws ensure a precise mounting of the tooling fingers, which is important if they are changed often. For this case, we also can supply universal jaws made of steel or aluminum. For more details, see 'Accessories".

Pneumatic ports for opening and closing are located on the front, back and bottom. At the bottom, the ports are closed with grub screws and can be used for tubeless connections. For sensing, there is a 3 mm sensor mount located beneath the jaws. The two largest sizes will accommodate our sensor mounts for various M3 hole diameters underneath each jaw. In this case, we recommend sensor mount KB 8 for proximity switch NJ 8-E2.

For more details on the proximity switch and other accessories, see the accessory pages.

Note:
If the gripper is used as a single-acting device with spring, the unused port must be vented or an air filter must be installed to prevent a vacuum in the piston chamber from hindering operation.

Explanations

Opening / closing by spring:

NO = Standard design, self-locking, spring opening (long stroke - standard force)
NC = Standard design, self-locking, spring closing (long stroke - standard force)
SC = Heavy-duty design, self-locking, spring closing (short stroke - large force)
SO = Heavy-duty design, self-locking, spring opening (short stroke - large force)

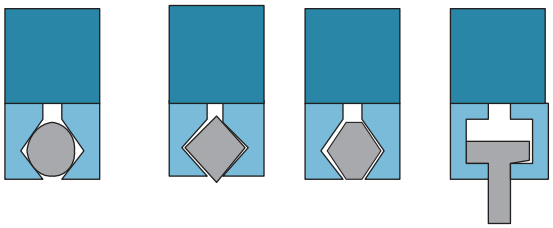
Without spring:

N = Standard design (long stroke - standard force)
S = Heavy-duty design (short stroke - large force)

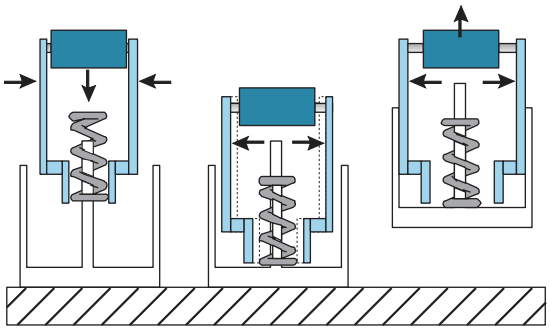
Hydraulic version:

NH = Standard design, hydraulic up to 40 bar (long stroke - large force)

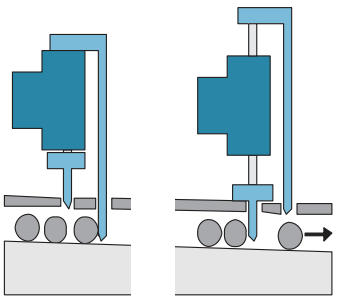
Application Ideas



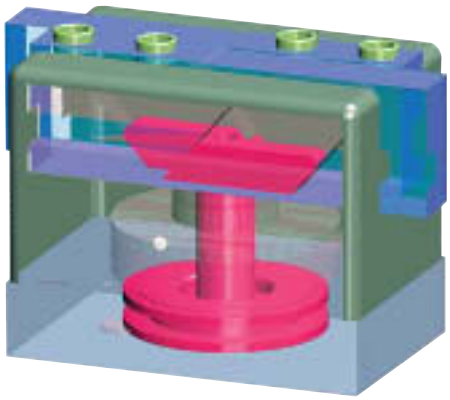
Various types of work pieces can be gripped and longer gripping jaws can be installed.

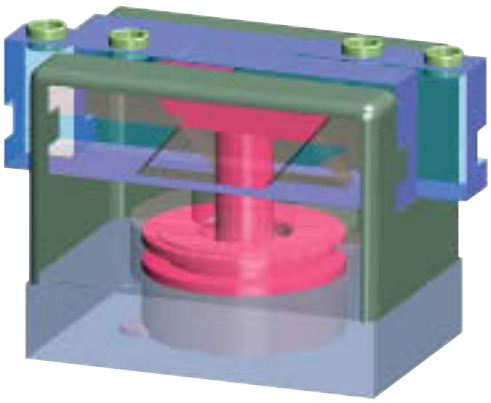


For example, the longer jaws can be installed if a shock absorber assembly is fitted (above).



Parallel grippers can also be used for separating parts.
A Gripper closing - all the balls are retained
B Gripper opening - one ball is released, the others are retained.
(also see our separator)

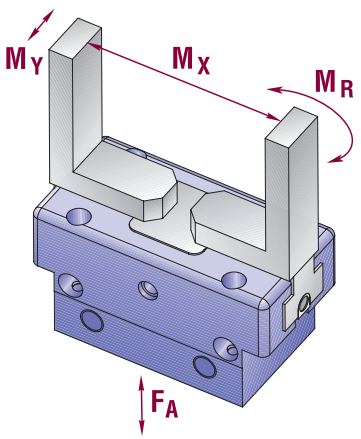




Operation

A double-acting pneumatic cylinder drives a slide (red). The guided T-slot jaws (blue) are moved linearly to open and closed positions by the slope on the slide. On the “S” version, the slopes are steeper. The translation allows more force with a shorter stroke. In the NC and SC models, a compression spring is installed at the top of the piston chamber, which can be used for self-locking and boosting power during closing or for single-acting operation. Conversely, the NO and SO models have a spring installed at the bottom of the position chamber, which supports opening.

Schematic…
On every product page, you will find the following schematic which helps describe the max allowable forces and movements for that particular model.



Parallel gripper with extended T-slot guide

GP604/GP608/GP612

things worth knowing

Highlight

Advantages and uses

… optimal guide relationship … also available with grip force safety device
… very reliable and long service life

- compact design and minimal weight
- centrally opening
- high-precision
- any desired installation position
- multiple air connections
- position sensing possible through inductive proximity switch

… ideal for long gripper jaws! …

Characteristics

Function	
Drive:	double-acting pneumatic cylinder
(depending upon model)	double-acting pneumatic cylinder with integrated spring safety device in the event of pressure loss
Power transfer: (depending on model)	wedge and piston principle with varying transmission
Guide:	flat guide for high moment absorption (Mx) during external and internal gripping
Material	
Housing:	hard-anodized aluminum
Moving parts:	nitrided steel
Maintenance	
Recommended at:	1.5 million cycles
Actuation:	filtered high-pressure air (10 µm), dry or oiled
Maintenance of the mechanics:	thru integrated lubrication nipple – see owners' manual –

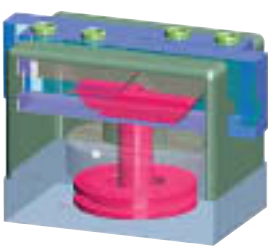
Basic explanations

Terms and illustrations

Grip force safety device:	required during pressure loss for maintaining position of work piece
– pneumatic/hydraulic:	through pressure retention
– mechanical:	through spring tension
– spring power:	specifications based on minimum spring pre-tension
Total power:	arithmetic sum of the individual elements on the gripper jaws
Closing and opening time:	required time for the gripper jaws to cover the maximum stroke length

Model guide

GP6…	Drive	Stroke	Power	Internal gripping	External gripping	Mechanical fail safe
…N	pneumatic	large	normal	●	●	
…NC	pneumatic	large	normal		●	●
…NO	pneumatic	large	normal	●		●
…NH	hydraulic	large	high	●	●	
…S	pneumatic	short	high	●	●	
…SC	pneumatic	short	high		●	●
…SO	pneumatic	short	high	●		●



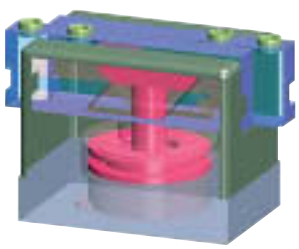
Accessories

Included in purchase price:

- Centering sleeves

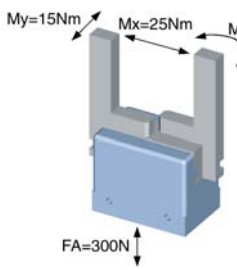
Additional accessory recommendation:

- Universal jaws — Page 33
- Inductive proximity switch — Page 428
- Inductive proximity switch bracket — Page 432
- Pneumatic fittings — Page 442
- Tubing — Page 444
- Control valves — Page 445
- Pressure safety valves — Page 447



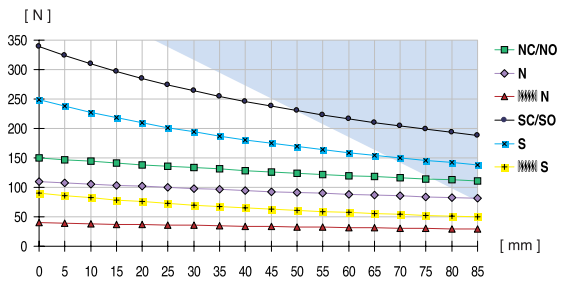
Parallel gripper
with extended T-slot

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are on page 29.



Max Allowable Forces on Jaws

Gripping force as a function of jaw length

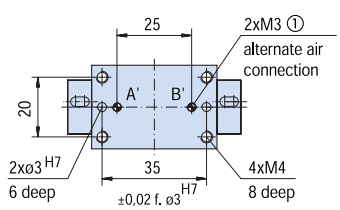


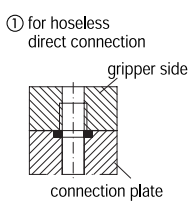
Colored area: increased wear and tear to be expected –

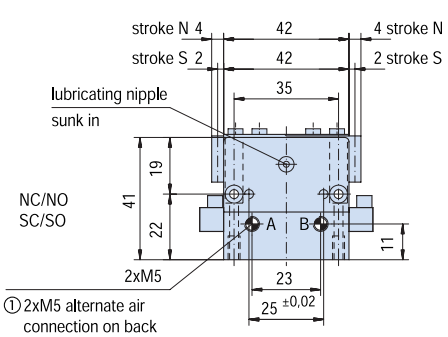
Order no.:					
GP604 N	GP604 NC	GP604 NO	GP604 S	GP604 SC	GP604 SO
Drive:					
pneum	pneum	pneum	pneum	pneum	pneum
Stroke per jaw [mm]:					
4	4	4	2	2	2
Gripping force in closing and opening [N]:					
110	-	-	250	-	-
Gripping force in closing [N]:					
-	150	-	-	340	-
Gripping force in opening [N]:					
-	-	150	-	-	340
Self-locking via:					
DSV1/8	Spring	Spring	DSV1/8	Spring	Spring
Closing time/opening time [s]:					
0,008	0,012	0,012	0,008	0,012	0,012
Repeatability ± [mm]:					
0,025	0,025	0,025	0,025	0,025	0,025
Min./max. operating pressure [bar]:					
3 / 8	5 / 8	5 / 8	3 / 8	5 / 8	5 / 8
Air volume per cycle [cm³]:					
3	5	5	3	5	5
Min./max. operating temperature [°C]:					
5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80
Temp. resistant version up to 150° C [add to part number]:					
T2	T2	T2	T2	T2	T2
Piston diameter [mm]:					
20	20	20	20	20	20
Weight [kg]:					
0,16	0,18	0,18	0,16	0,18	0,18

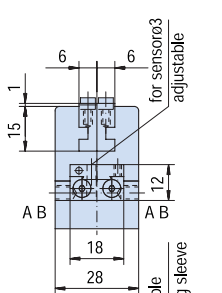
All data measured at 6 bar.

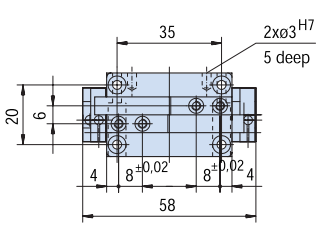
See Page 29 for Accessory list.

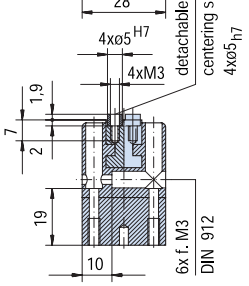




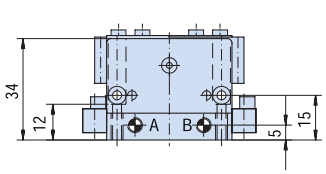








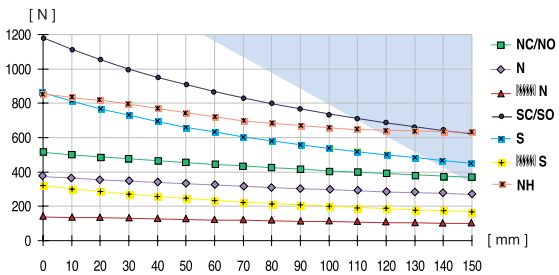
N/S



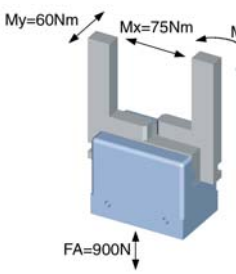
Parallel gripper
with extended T-slot

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are on page 29.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected

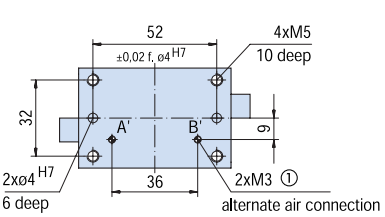


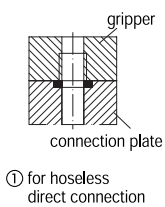
Max Allowable Forces on Jaws

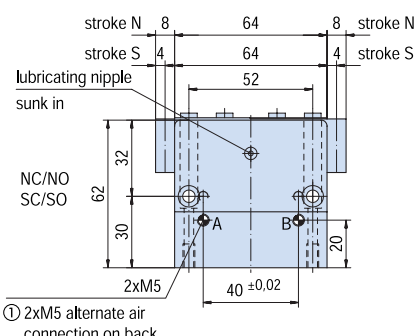
Order no.:						
GP608 N	**GP608 NC**	**GP608 NO**	**GP608 S**	**GP608 SC**	**GP608 SO**	**GP608 NH**
Drive:						
pneum	pneum	pneum	pneum	pneum	pneum	hydr.
Stroke per jaw [mm]:						
8	8	8	4	4	4	8
Gripping force in closing and opening [N]:						
380	-	-	850	-	-	830
Gripping force in closing [N]:						
-	520	-	-	1180	-	-
Gripping force in opening [N]:						
-	-	520	-	-	1180	-
Self-locking via:						
DSV1/8	Spring	Spring	DSV1/8	Spring	Spring	-
Closing time/opening time [s]:						
0,012	0,015	0,015	0,012	0,015	0,015	0,35
Repeatability ± [mm]:						
0,025	0,025	0,025	0,025	0,025	0,025	0,025
Min./max. operating pressure [bar]:						
3 / 8	5 / 8	5 / 8	3 / 8	5 / 8	5 / 8	10 / 40
Air volume per cycle [cm³]:						
18	27	27	18	18	27	-
Oil volume per cycle [cm³]:						
-	-	-	-	-	-	8
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80
Temp. resistant version up to 150° C [add to part number]:						
T2	T2	T2	T2	T2	T2	T2
Piston diameter [mm]:						
35	35	35	35	35	35	24
Weight [kg]:						
0,53	0,58	0,58	0,53	0,58	0,58	0,56

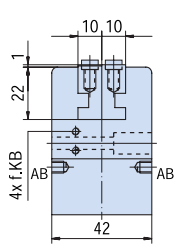
All data measured at 6 bar (hydr. 30 bar).

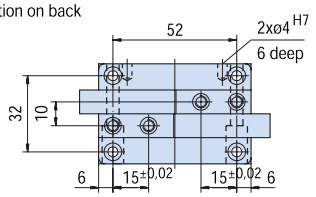
See Page 29 for Accessory list.

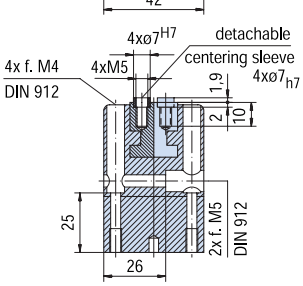


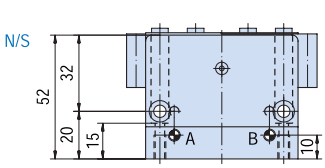


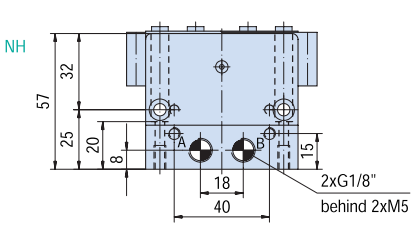






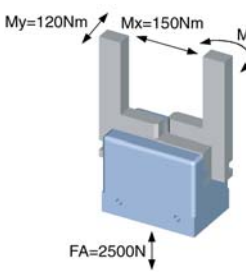






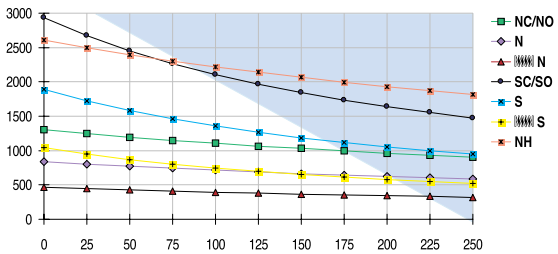
Parallel gripper
with extended T-slot

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are on page 29.

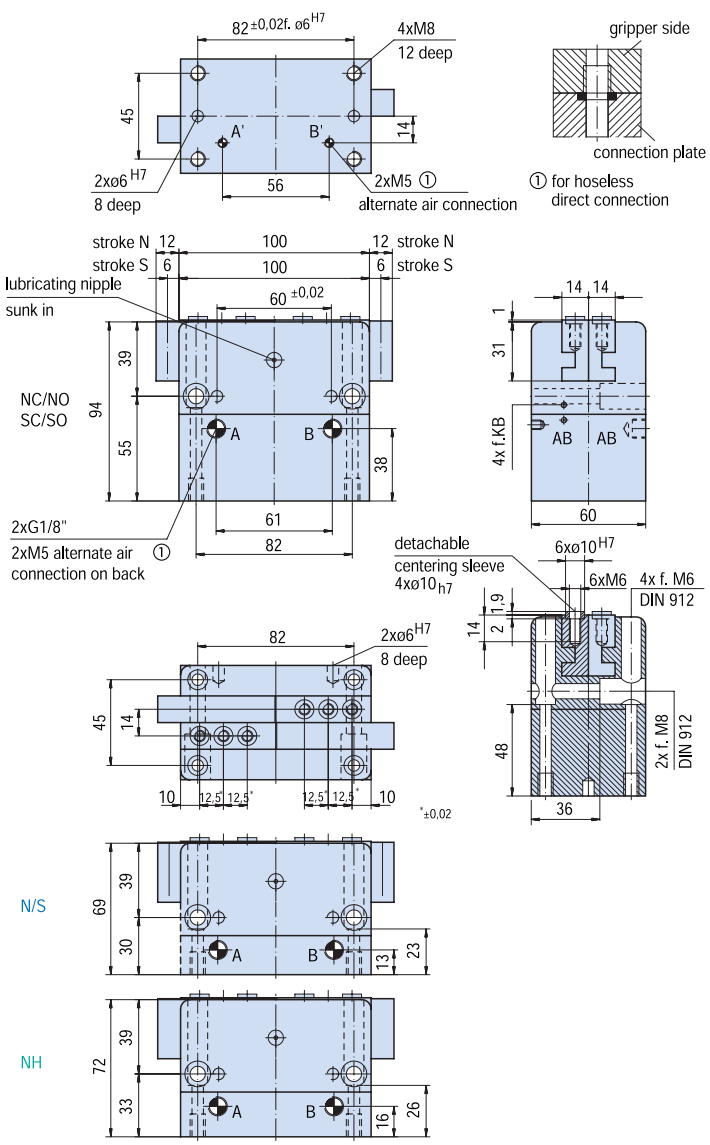


Max Allowable Forces on Jaws

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected

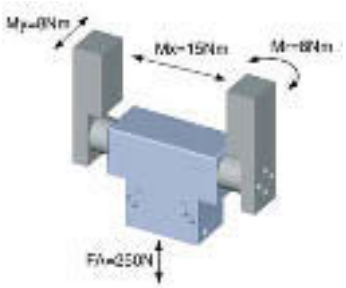


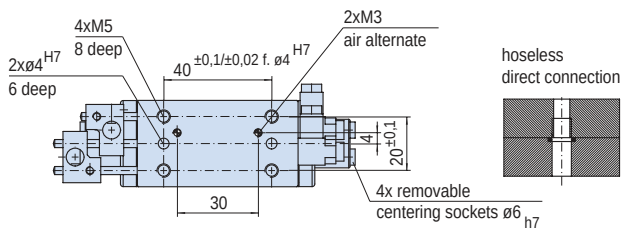
Order no.:						
GP612 N	**GP612 NC**	**GP612 NO**	**GP612 S**	**GP612 SC**	**GP612 SO**	**GP612 NH**
Drive:						
pneum	pneum	pneum	pneum	pneum	pneum	hydr.
Stroke per jaw [mm]:						
12	12	12	6	6	6	12
Gripping force in closing and opening [N]:						
900	-	-	1900	-	-	2650
Gripping force in closing [N]:						
-	1300	-	-	2950	-	-
Gripping force in opening [N]:						
-	-	1300	-	-	2950	-
Self-locking via:						
DSV1/8	Spring	Spring	DSV1/8	Spring	Spring	-
Closing time/opening time [s]:						
0,08	0,1	0,1	0,08	0,1	0,1	0,5
Repeatability ± [mm]:						
0,025	0,025	0,025	0,025	0,025	0,025	0,025
Min./max. operating pressure [bar]:						
3 / 8	5 / 8	5 / 8	3 / 8	5 / 8	5 / 8	10 / 40
Air volume per cycle [cm³]:						
53	100	100	53	100	100	-
Oil volume per cycle [cm³]:						
-	-	-	-	-	-	34
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80	5 / 80
Temp. resistant version up to 150° C [add to part number]:						
T2	T2	T2	T2	T2	T2	T2
Piston diameter [mm]:						
50	50	50	50	50	50	40
Weight [kg]:						
1,6	1,8	1,8	1,6	1,8	1,8	1,53

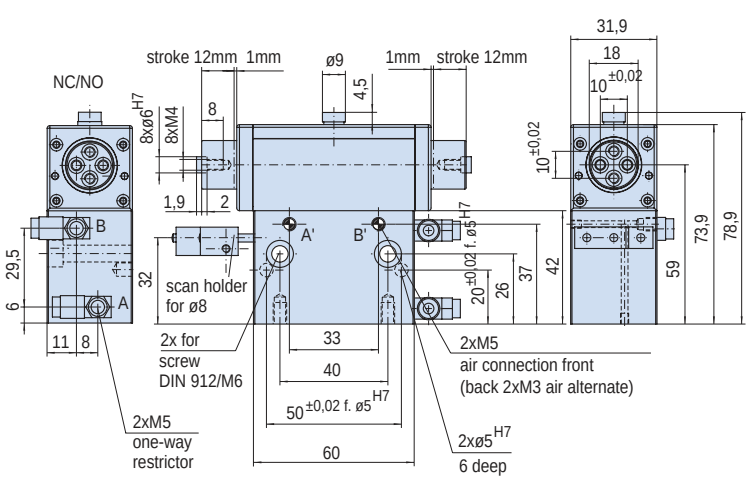
All data measured at 6 bar (hydr. 30 bar).

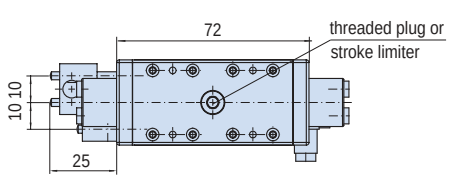
See Page 17 for Accessory list.

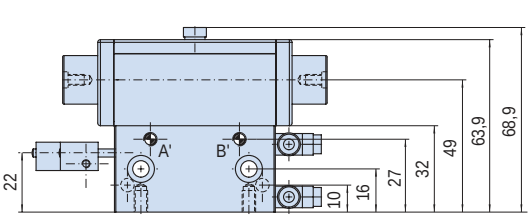
Parallel gripper
with sealed round guide







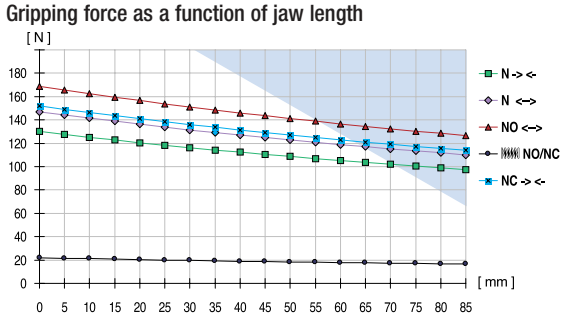




N

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are on page 53.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected

Order no.:						
GP1224 N	**GP1224 NC**	**GP1224 NO**				
Drive:						
pneum.	pneum.	pneum.				
Stroke per jaw [mm]:						
12	12	12				
Gripping force in closing and opening [N]:						
130	-	-				
Gripping force in closing [N]:						
-	155	-				
Gripping force in opening [N]:						
-	-	170				
Self-locking via:						
DSV1/8	Spring	Spring				
Closing time/opening time [s]:						
0,04	0,05	0,05				
Repeatability ± [mm]:						
0,05	0,05	0,05				
Min./max. operating pressure [bar]:						
4 / 8	5 / 8	5 / 8				
Air volume per cycle [cm³]:						
12	17,5	17,5				
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80				
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3				
Piston diameter [mm]:						
25	25	25				
Weight [kg]:						
0,48	0,55	0,55				

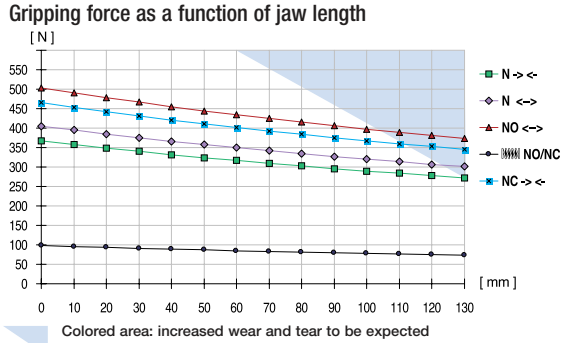
All data measured at 6 bar.

See Page 53 for Accessory list.

Parallel gripper
with sealed round guide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 53.

Gripping force as a function of jaw length

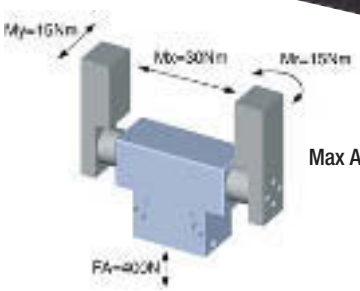


Colored area: increased wear and tear to be expected

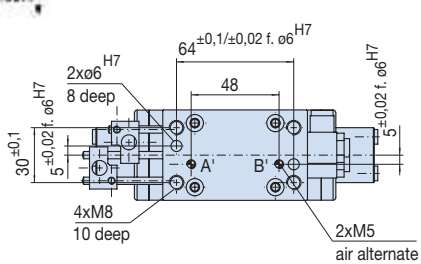
Order no.:						
GP1240 N	**GP1240 NC**	**GP1240 NO**				
Drive:						
pneum.	pneum.	pneum.				
Stroke per jaw [mm]:						
20	20	20				
Gripping force in closing and opening [N]:						
365	-	-				
Gripping force in closing [N]:						
-	465	-				
Gripping force in opening [N]:						
-	-	500				
Self-locking via:						
DSV1/8	Spring	Spring				
Closing time/opening time [s]:						
0,05	0,06	0,06				
Repeatability ± [mm]:						
0,05	0,05	0,05				
Min./max. operating pressure [bar]:						
4 / 8	5 / 8	5 / 8				
Air volume per cycle [cm³]:						
49	65,5	65,5				
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80				
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3				
Piston diameter [mm]:						
40	40	40				
Weight [kg]:						
1,5	1,95	1,95				

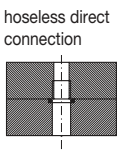
All data measured at 6 bar.

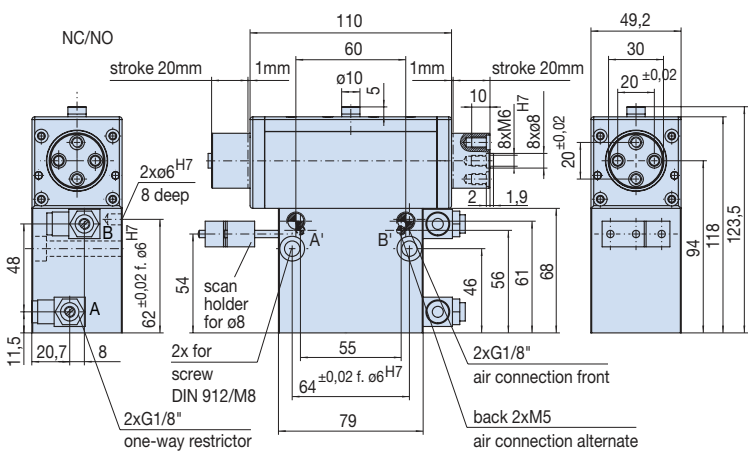
See Page 53 for Accessory list.

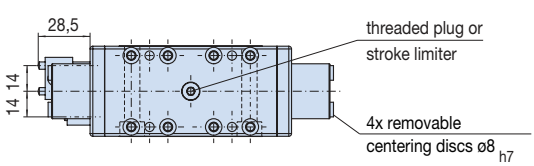


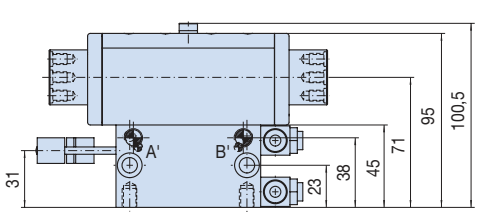
Max Allowable Forces
on Jaws





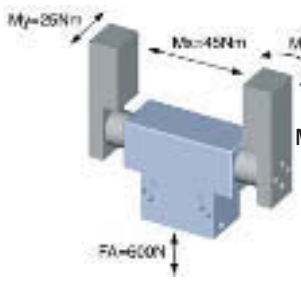






N

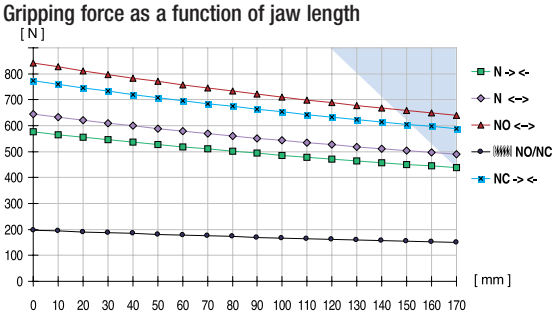
Parallel gripper
with sealed round guide



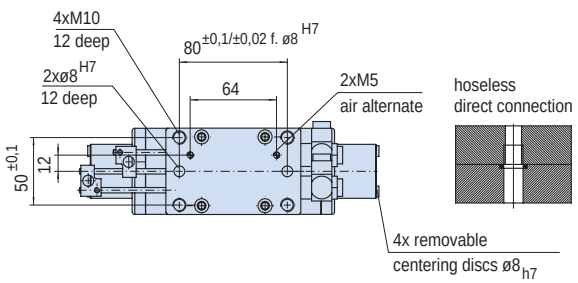
Max Allowable Forces on Jaws

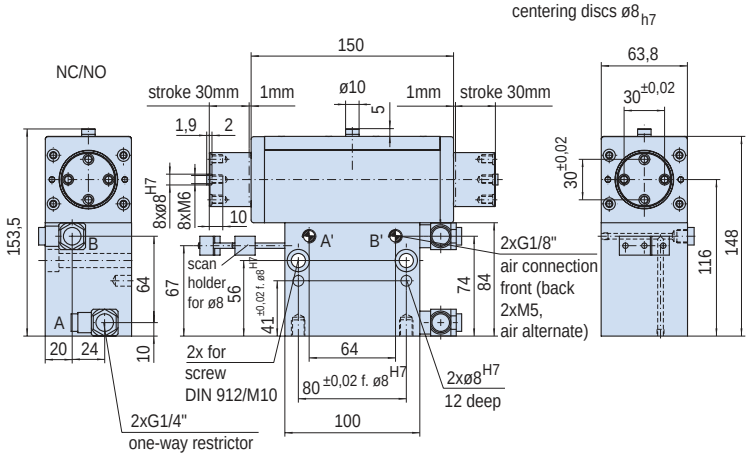
Advantages, benefits, comparisons and tips! Stacks of information all about this product are on page 53.

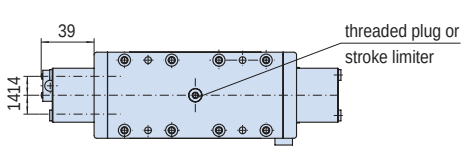
Gripping force as a function of jaw length

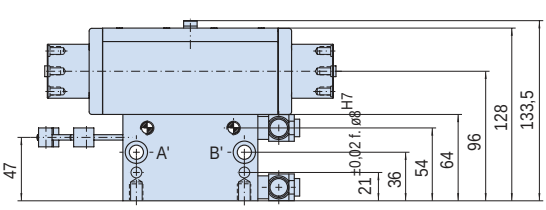


Colored area: increased wear and tear to be expected









Order no.:						
GP1260 N	**GP1260 NC**	**GP1260 NO**				
Drive:						
pneum.	pneum.	pneum.				
Stroke per jaw [mm]:						
30	30	30				
Gripping force in closing and opening [N]:						
580	-	-				
Gripping force in closing [N]:						
-	780	-				
Gripping force in opening [N]:						
-	-	830				
Self-locking via:						
DSV1/8	Spring	Spring				
Closing time/opening time [s]:						
0,08	0,1	0,1				
Repeatability ± [mm]:						
0,05	0,05	0,05				
Min./max. operating pressure [bar]:						
4 / 8	5 / 8	5 / 8				
Air volume per cycle [cm³]:						
115	145	145				
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80				
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3				
Piston diameter [mm]:						
50	50	50				
Weight [kg]:						
3,9	4,3	4,3				

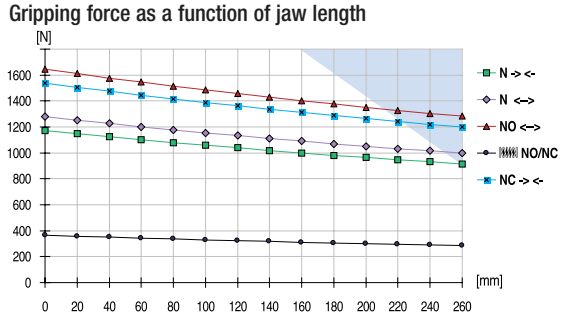
All data measured at 6 bar.

See Page 53 for Accessory list.

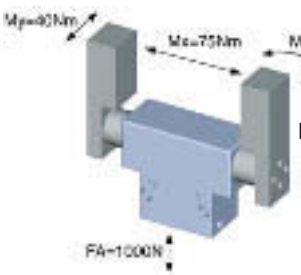
Parallel gripper
with sealed round guide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 53.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected

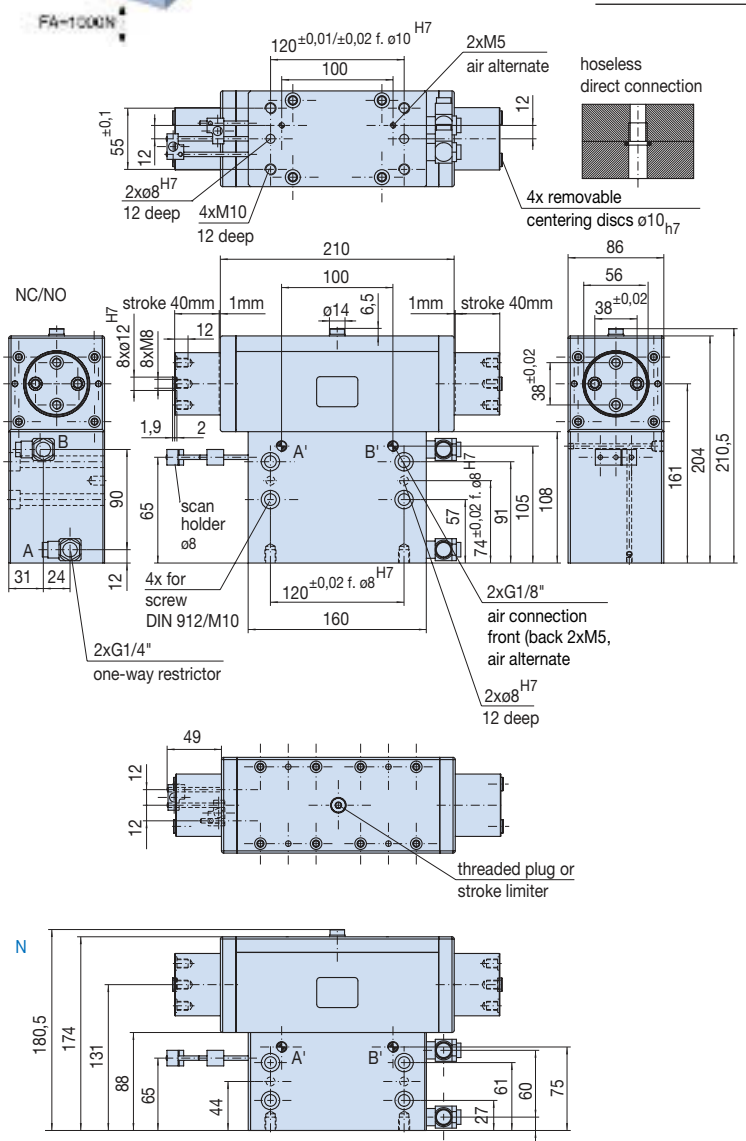


Max Allowable Forces on Jaws

Order no.:						
GP1280 N	**GP1280 NC**	**GP1280 NO**				
Drive:						
pneum.	pneum.	pneum.				
Stroke per jaw [mm]:						
40	40	40				
Gripping force in closing and opening [N]:						
1160	-	-				
Gripping force in closing [N]:						
-	1550	-				
Gripping force in opening [N]:						
-	-	1550				
Self-locking via:						
DSV1/8	Spring	Spring				
Closing time/opening time [s]:						
0,15	0,2	0,2				
Repeatability ± [mm]:						
0,05	0,05	0,05				
Min./max. operating pressure [bar]:						
4 / 8	5 / 8	5 / 8				
Air volume per cycle [cm³]:						
300	380	380				
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80				
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3				
Piston diameter [mm]:						
70	70	70				
Weight [kg]:						
10,5	10,5	10,5				

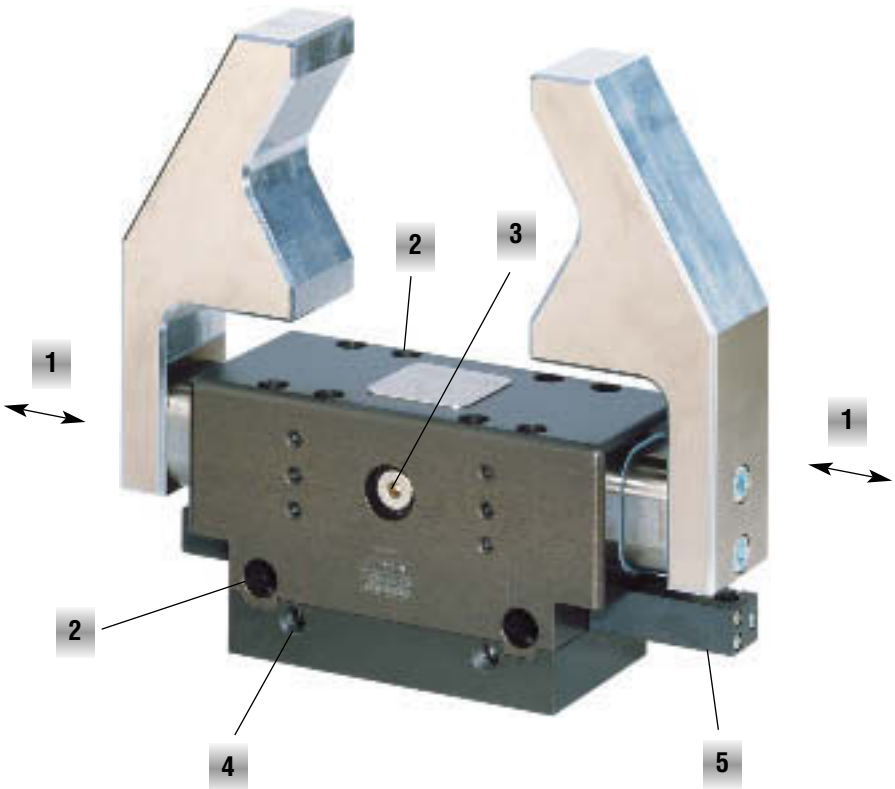
All data measured at 6 bar.

See Page 53 for Accessory list.



Parallel gripper

with sealed 4-sided guides



Features

1 Stroke
2 Hole for socket head screw
3 Access for lubricating the mechanism
4 Air connection at the front, rear and bottom
5 Proximity switch bracket

The dirtiest job is no problem…

for this gripper. It is watertight, no matter if under a coolant shower, in the water or in a fine dust environment. This series is made of hard-anodized aluminum and is equipped with hardened, ground steel jaws. The grippers are available with or without a spring for self-locking or boosting power. Except for the 3 smallest sizes, each is available in a hydraulic version with 30 bar operating pressure. All grippers are also available heat-resistant up to 150° C.

A plug, which can be opened for lubrication, is fitted between the jaws on all grippers. All grippers are maintenance-free up to 1.5 million cycles. The air connections are located on the front, rear and bottom. The bottom ports are closed with grub screws and can be used for tubeless connections.

This series has a multitude of attachment holes for added mounting convenience.
The centering sleeves on the jaws ensure a precise mounting of the jaws, which is important if jaws are changed often. In this case, we also offer universal jaws made of steel or aluminum with preinstalled cams.

Sensing of the open or closed position is done with two supplied trip dogs installed on the jaws. The best position for the trip dogs is shown in the illustration for each universal jaw. Please refer to the accessory section.
Mounts for a 8 mm proximity switch are installed under the jaws. We recommend the "NJ 8-E2".

For more details on proximity switches, universal jaws and other accessories, see the accessory pages.

Note:
The pressure equalization of the sealed mechanism is by means of a connection with the piston chamber, which prevents pump effects.The sealed jaws, when opened, act as an additional piston. For internal gripping, the operating pressure must be reduced as specified.

Explanations

The following abbreviations mean:

Opening / closing by spring:

NO = Standard design,
self-locking, spring opening
(long stroke - standard force)

NC = Standard design,
self-locking, spring closing
(long stroke - standard force)

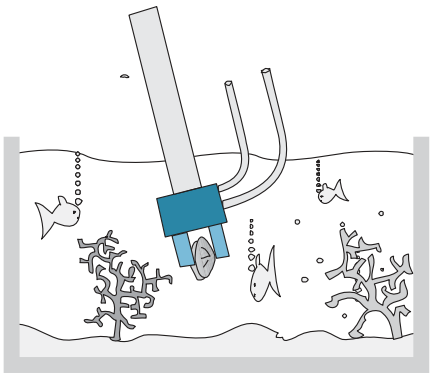
Without spring:

N = Standard design
(long stroke - standard force)

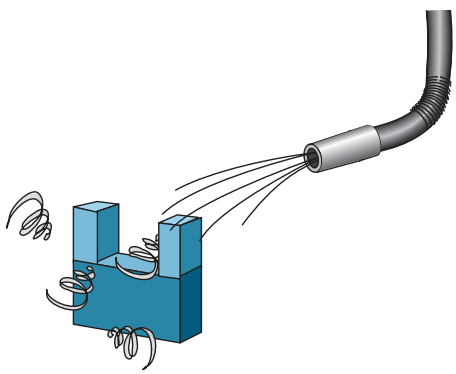
Hydraulic version:

NH = Standard design
hydraulic up to 40 bar
(long stroke - large force)

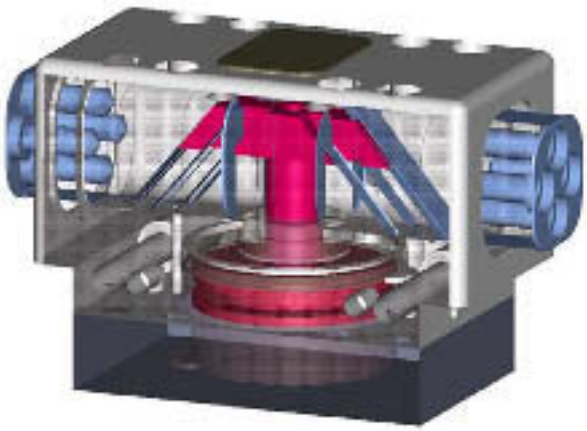
Application Ideas

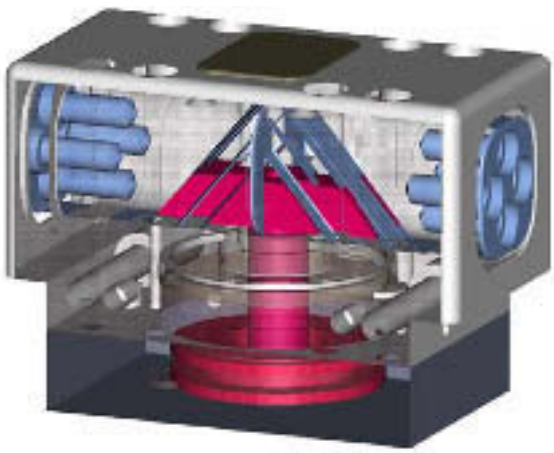


Since the gripper is sealed it can be used under water.



The GP1800 series grippers are protected against dirt, swarf and fluids such as coolants and are ideal for foundry and grinding applications.

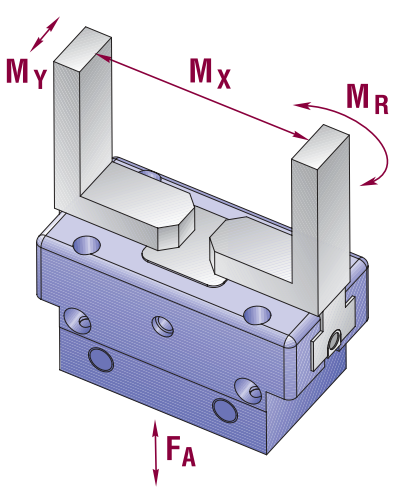




Operation

A double-acting pneumatic cylinder drives a slide (red). The force guided T-slot jaws (blue) are moved linearly to open and closed positions by the slope on the slide. A seal and a wiper (beige) around the jaws prevent the ingress of dirt and water. The protection against rotation provides high guiding stability.

Schematic…
On every product page, you will find the following schematic which helps describe the max allowable forces and movements for that particular model.



Parallel gripper with sealed 4-sided guides

GP1803 up to GP1830

things worth knowing

Advantages and uses

… sealed gripper with precise round guide … also available with grip force safety device… compact design and minimal weight …

Highlight

- centrally opening and closing
- any desired installation position
- multiple air connection possibilities
- position sensing possible through inductive proximity switch

… ideal for dirty environments! …

Characteristics

Function	
Drive:	double-acting pneumatic cylinder
(depending upon model)	double-acting pneumatic cylinder with integrated spring as mechanical safety device in the event of pressure loss
Power transfer: (depending on model)	wedge and piston principle
Guide:	sealed 4-sided guide (for use in a very dirty environment)
Material	
Housing:	hard-anodized aluminum
Functional parts:	nitrided steel
Maintenance	
Recommended at:	1.5 million cycles
Actuation:	filtered high-pressure air (10μm), dry or oiled
Maintenance of the mechanics:	thru integrated lock screw – see owners' manual

A Combination of Advantages

Sealed four-sided guide with rounded corners

- for stability under high moment loads
- superior sealing against dirt and fluids

Basic explanations

Terms and illustrations

Grip force safety device:	required during pressure loss for maintaining position of work piece
– pneumatic/hydraulic:	through pressure retention (one-way valve required DSV 1/8)
– mechanical:	through spring-tension
– spring power:	Specifications based on minimum spring pre-tension
Total power:	arithmetic sum of the individual elements on the gripper jaws
Closing and opening times:	required time for the gripper jaws to cover the maximum stroke length

Model guide

GP 8…	Drive	Stroke	Power	Internal gripping	External gripping	Mechanical fail safe
…N	pneumatic	large	normal	●	●	
…NC	pneumatic	large	normal		●	●
…NO	pneumatic	large	normal	●		●
…NH	hydraulic	large	high	●	●	

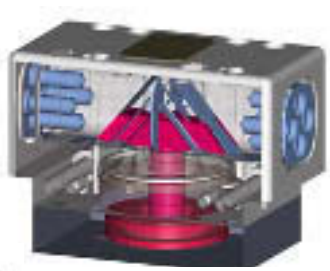
Accessories

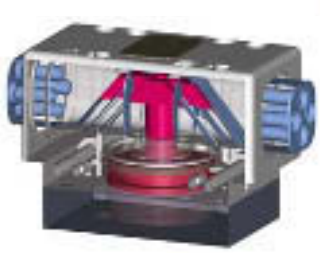
Included in purchase price:

- Centering sleeves
- Inductive proximity switch bracket

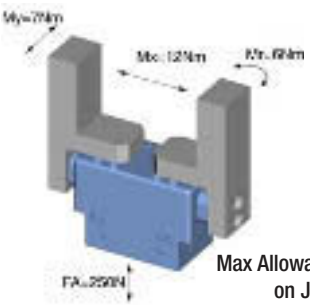
Additional accessory recommendation:

- Universal jaws — Page 45
- Inductive proximity switch — Page 428
- Pneumatic fittings — Page 442
- Tubing — Page 444
- Control valves — Page 445
- Pressure safety valves — Page 447





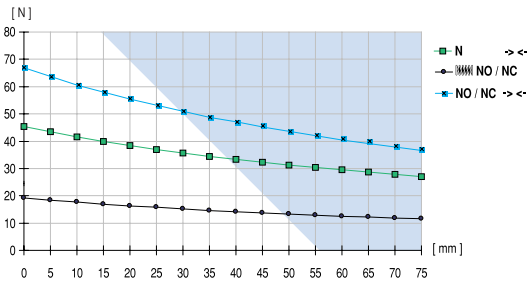
Parallel gripper
with sealed 4-sided guide



Max Allowable Forces on Jaws

Advantages, benefits, comparisons and tips! Stacks of information all about this product are on page 35.

Gripping force as a function of jaw length

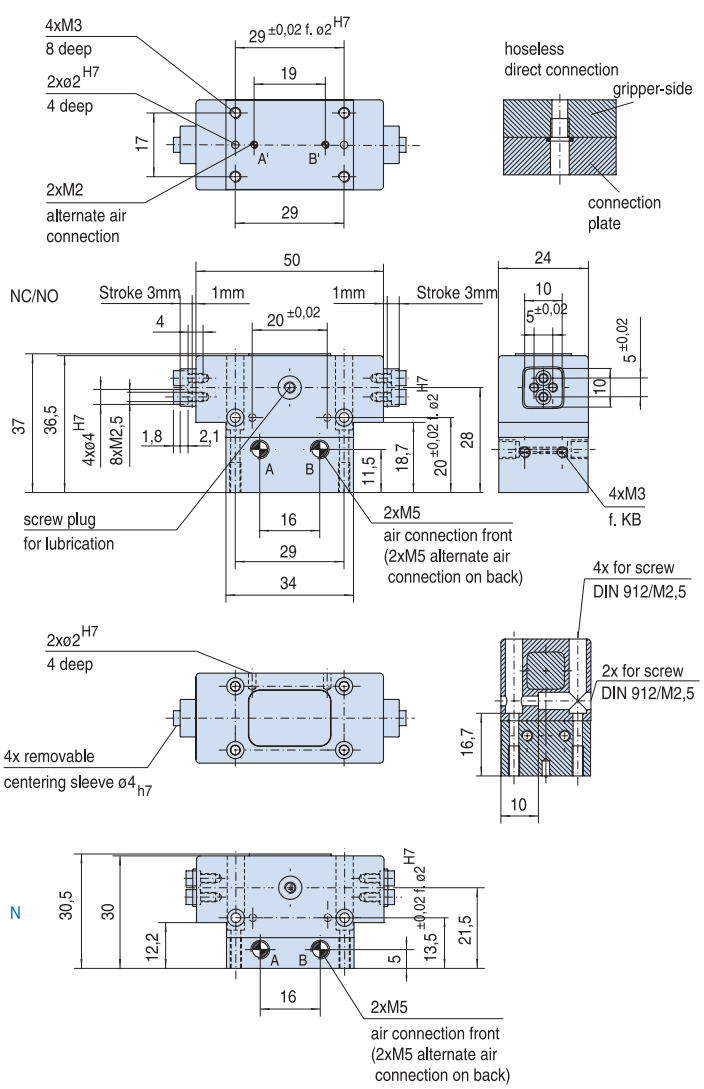


Colored area: increased wear and tear to be expected

Order no.:						
GP1803 N	**GP1803 NC**	**GP1803 NO**				
Drive:						
pneum.	pneum.	pneum.				
Stroke per jaw [mm]:						
3	3	3				
Gripping force in closing [N]:						
45	68	-				
Gripping force in opening [N]:						
48	-	70				
Self-locking via:						
DSV1/8	Spring	Spring				
Closing time/opening time [s]:						
0,02	0,03	0,03				
Repeatability ± [mm]:						
0,05	0,05	0,05				
Min./max. operating pressure for closing [bar]:						
4 / 8	4 / 8	5 / 8				
Min./max. operating pressure for opening [bar]:						
4 / 4	5 / 8	4 / 4				
Air volume per cycle [cm³]:						
2	4	4				
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80				
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3				
Piston diameter [mm]:						
16	16	16				
Weight [kg]:						
0,13	0,15	0,15				

All data measured at 6 bar.

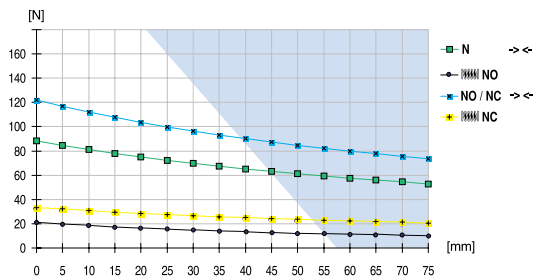
See Page 35 for Accessory list.



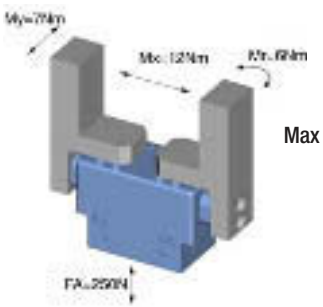
Parallel gripper
with sealed 4-sided guide

Advantages, benefits, comparisons and tips! Stacks of information all about this product are on page 35.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected

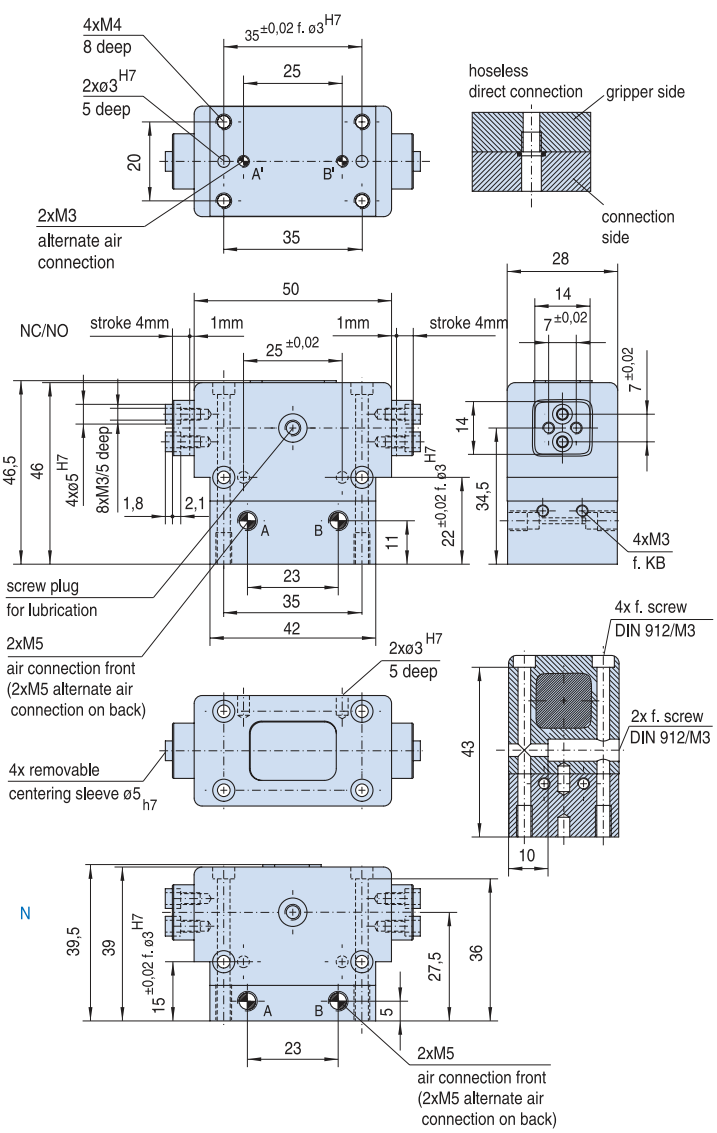


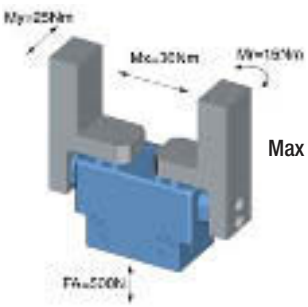
Max Allowable Forces on Jaws

Order no.:						
GP1804 N	**GP1804 NC**	**GP1804 NO**				
Drive:						
pneum.	pneum.	pneum.				
Stroke per jaw [mm]:						
4	4	4				
Gripping force in closing [N]:						
90	122	-				
Gripping force in opening [N]:						
115	-	150				
Self-locking via:						
DSV1/8	Spring	Spring				
Closing time/opening time [s]:						
0,03	0,04	0,04				
Repeatability ± [mm]:						
0,05	0,05	0,05				
Min./max. operating pressure for closing [bar]:						
4 / 8	4 / 8	5 / 8				
Min./max. operating pressure for opening [bar]:						
4 / 4	5 / 8	4 / 4				
Air volume per cycle [cm³]:						
4	5	5				
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80				
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3				
Piston diameter [mm]:						
20	20	20				
Weight [kg]:						
0,16	0,18	0,18				

All data measured at 6 bar.

See Page 35 for Accessory list.



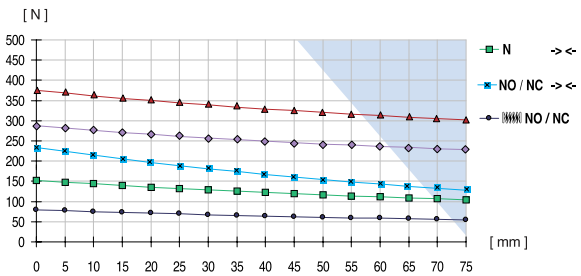


Max Allowable Forces on Jaws

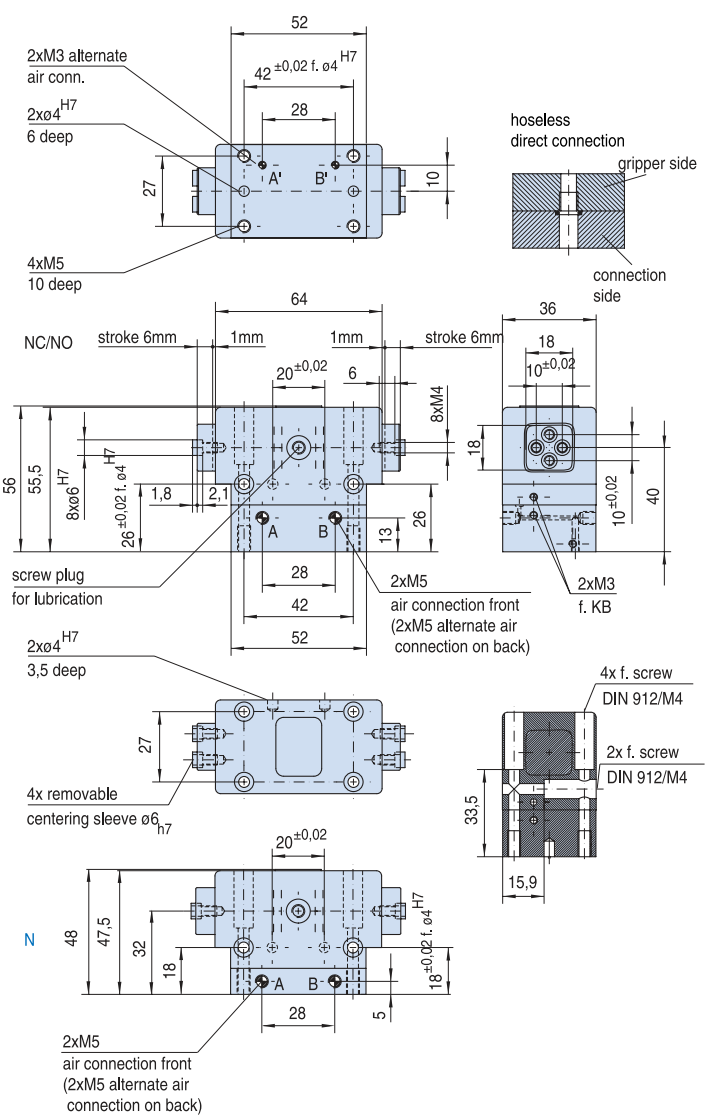
Parallel gripper
with sealed 4-sided guide

Advantages, benefits, comparisons and tips! Stacks of information all about this product are on page 35.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected



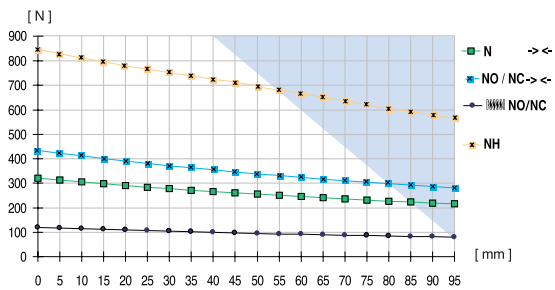
Order no.:						
GP1806 N	**GP1806 NC**	**GP1806 NO**				
Drive:						
pneum.	pneum.	pneum.				
Stroke per jaw [mm]:						
6	6	6				
Gripping force in closing [N]:						
150	235	-				
Gripping force in opening [N]:						
285	-	375				
Self-locking via:						
DSV1/8	Spring	Spring				
Closing time/opening time [s]:						
0,04	0,05	0,05				
Repeatability ± [mm]:						
0,05	0,05	0,05				
Min./max. operating pressure for closing [bar]:						
4 / 8	4 / 8	5 / 8				
Min./max. operating pressure for opening [bar]:						
4 / 4	5 / 8	4 / 4				
Air volume per cycle [cm³]:						
12	17	17				
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80				
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3				
Piston diameter [mm]:						
25	25	25				
Weight [kg]:						
0,4	0,6	0,6				

All data measured at 6 bar.

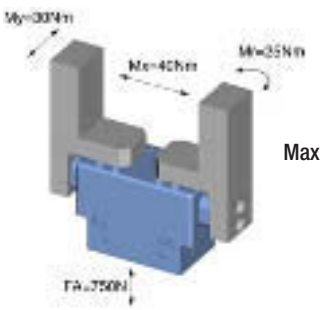
See Page 35 for Accessory list.

Parallel gripper
with sealed 4-sided guide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are on page 35.



Colored area: increased wear and tear to be expected

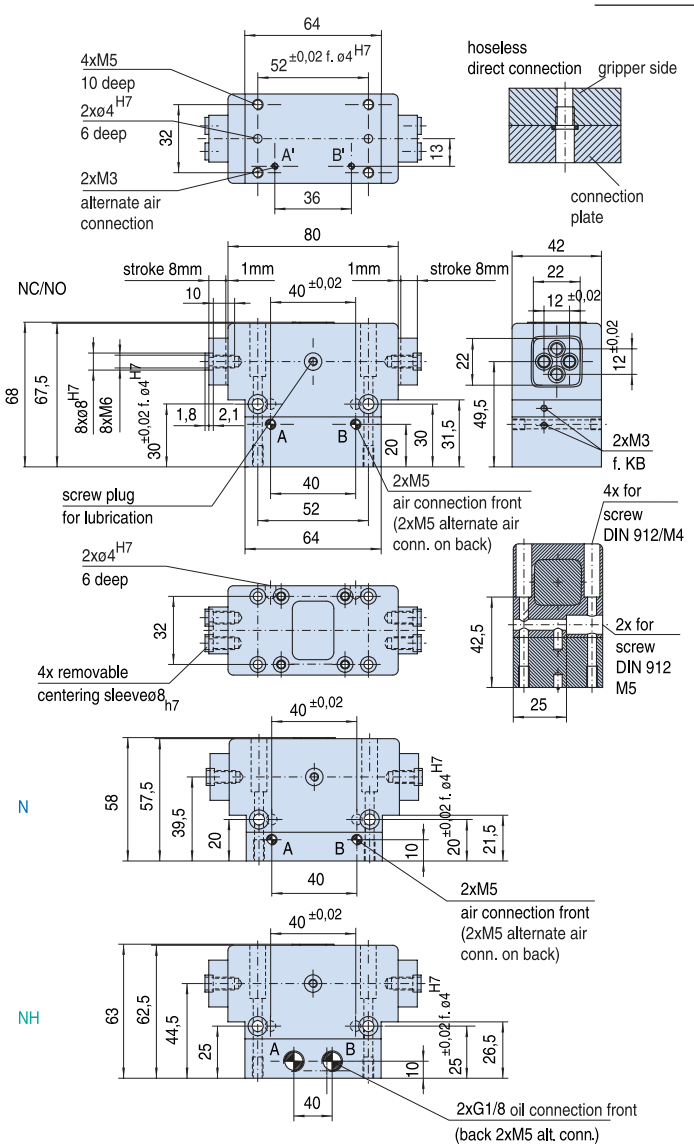


Max Allowable Forces on Jaws

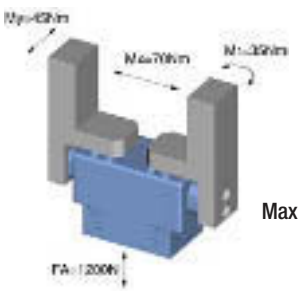
Order no.:							
GP1808 N	**GP1808 NC**	**GP1808 NO**	**GP1808 NH**				
Drive:							
pneum.	pneum.	pneum.	hydr.				
Stroke per jaw [mm]:							
8	8	8	8				
Gripping force in closing and opening [N]:							
-	-	-	840				
Gripping force in closing [N]:							
320	430	-	-				
Gripping force in opening [N]:							
560	-	680	-				
Self-locking via:							
DSV1/8	Spring	Spring	-				
Closing time/opening time [s]:							
0,05	0,06	0,06	0,2				
Repeatability ± [mm]:							
0,05	0,05	0,05	0,025				
Min./max. operating pressure [bar]:							
-	-	-	10 / 30				
Min./max. operating pressure for closing [bar]:							
3 / 8	3 / 8	5 / 8	-				
Min./max. operating pressure for opening [bar]:							
3 / 4	5 / 8	3 / 4	-				
Air volume per cycle [cm³]:							
25	42	42	-				
Oil volume per cycle [cm³]:							
-	-	-	25				
Min./max. operating temperature [°C]:							
5 / 80	5 / 80	5 / 80	5 / 80				
Temp. resistant version up to 150° C [add to part number]:							
T3	T3	T3	T3				
Piston diameter [mm]:							
35	35	35	24				
Weight [kg]:							
0,6	0,7	0,7	0,6				

All data measured at 6 bar (hydr. 30 bar).

See Page 35 for Accessory list.



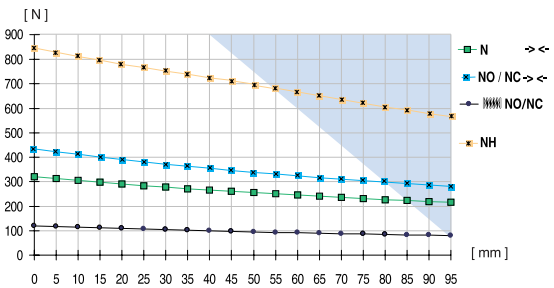
Parallel gripper
with sealed 4-sided guide



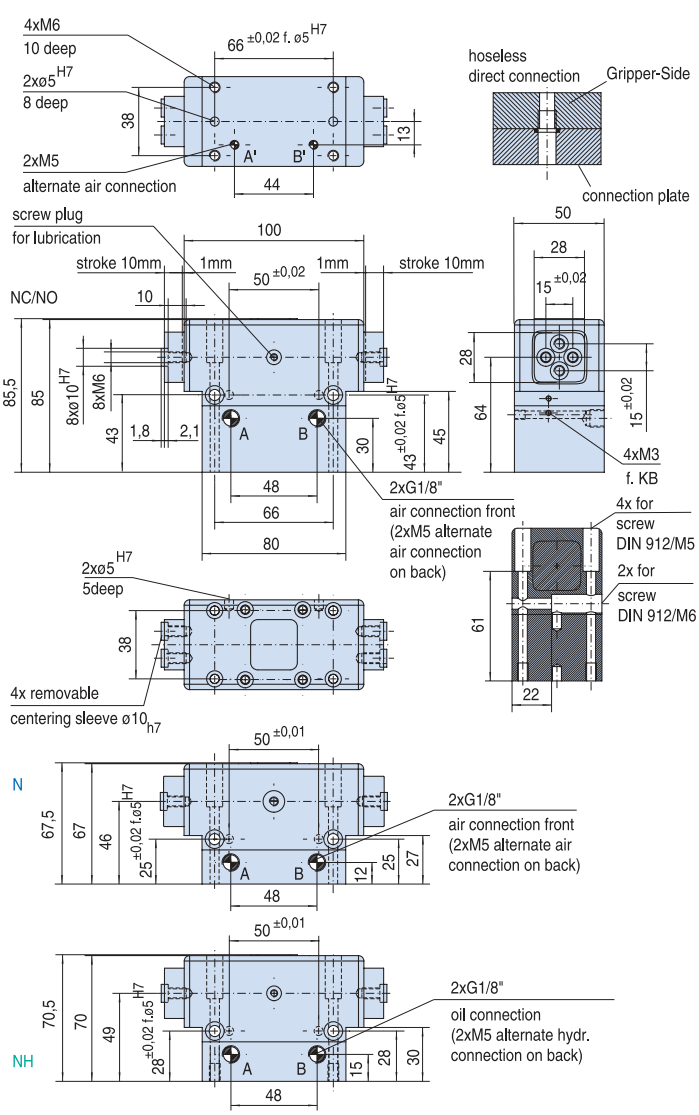
Max Allowable Forces on Jaws

Advantages, benefits, comparisons and tips! Stacks of information all about this product are on page 35.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected



Order no.:						
GP1810 N	**GP1810 NC**	**GP1810 NO**	**GP1810 NH**			
Drive:						
pneum.	pneum.	pneum.	hydr.			
Stroke per jaw [mm]:						
10	10	10	10			
Gripping force in closing and opening [N]:						
-	-	-	1360			
Gripping force in closing [N]:						
420	640	-	-			
Gripping force in opening [N]:						
840	-	1040	-			
Self-locking via:						
DSV1/8	Spring	Spring	-			
Closing time/opening time [s]:						
0,06	0,08	0,08	0,2			
Repeatability ± [mm]:						
0,05	0,05	0,05	0,025			
Min./max. operating pressure [bar]:						
-	-	-	10 / 30			
Min./max. operating pressure for closing [bar]:						
4 / 8	4 / 8	5 / 8	-			
Min./max. operating pressure for opening [bar]:						
4 / 4	5 / 8	4 / 4	-			
Air volume per cycle [cm³]:						
42	72	72	-			
Oil volume per cycle [cm³]:						
-	-	-	28			
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80	5 / 80			
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3	T3			
Piston diameter [mm]:						
40	40	40	30			
Weight [kg]:						
0,9	1,1	1,1	0,9			

All data measured at 6 bar (hydr. 30 bar).

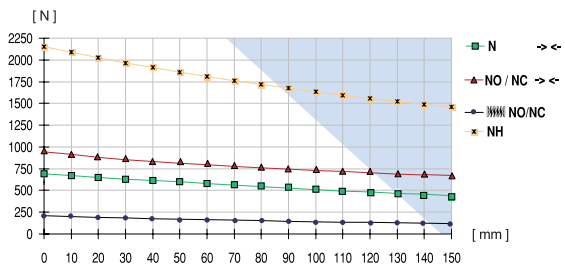
See Page 35 for Accessory list.

Parallel gripper

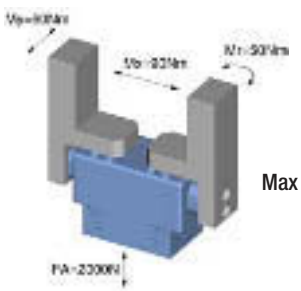
with sealed 4-sided guide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are on page 35.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected

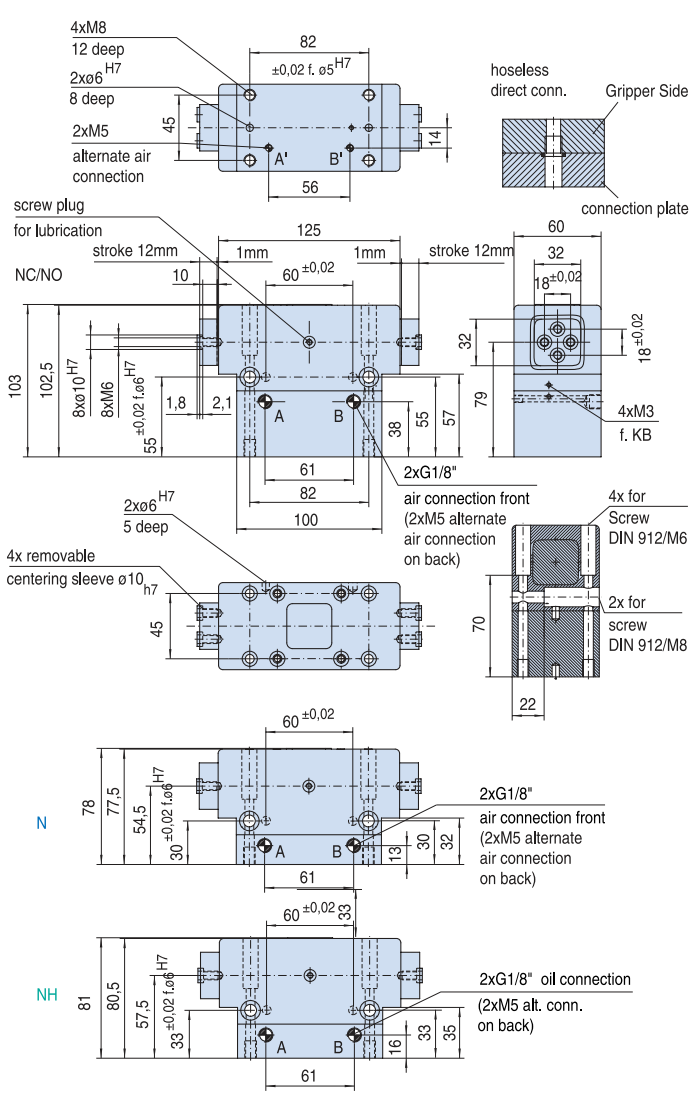


Max Allowable Forces on Jaws

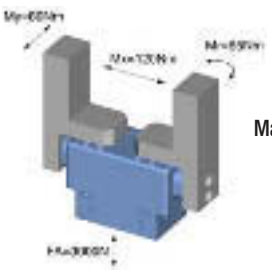
Order no.:							
GP1812 N	**GP1812 NC**	**GP1812 NO**	**GP1812 NH**				
Drive:							
pneum.	pneum.	pneum.	hydr.				
Stroke per jaw [mm]:							
12	12	12	12				
Gripping force in closing and opening [N]:							
690	-	-	2150				
Gripping force in closing [N]:							
-	960	-	-				
Gripping force in opening [N]:							
-	-	960	-				
Self-locking via:							
DSV1/8	Spring	Spring	-				
Closing time/opening time [s]:							
0,07	0,09	0,09	0,2				
Repeatability ± [mm]:							
0,05	0,05	0,05	0,05				
Min./max. operating pressure [bar]:							
4 / 8	5 / 8	5 / 8	10 / 30				
Air volume per cycle [cm³]:							
72	133	133	-				
Oil volume per cycle [cm³]:							
-	-	-	50				
Min./max. operating temperature [°C]:							
5 / 80	5 / 80	5 / 80	5 / 80				
Temp. resistant version up to 150° C [add to part number]:							
T3	T3	T3	T3				
Piston diameter [mm]:							
50	50	50	40				
Weight [kg]:							
1,6	2	2	1,7				

All data measured at 6 bar (hydr. 30 bar).

See Page 35 for Accessory list.



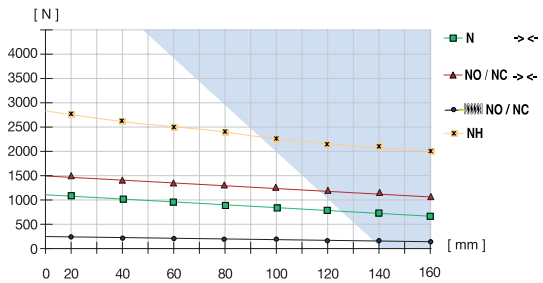
Parallel gripper
with sealed 4-sided guide



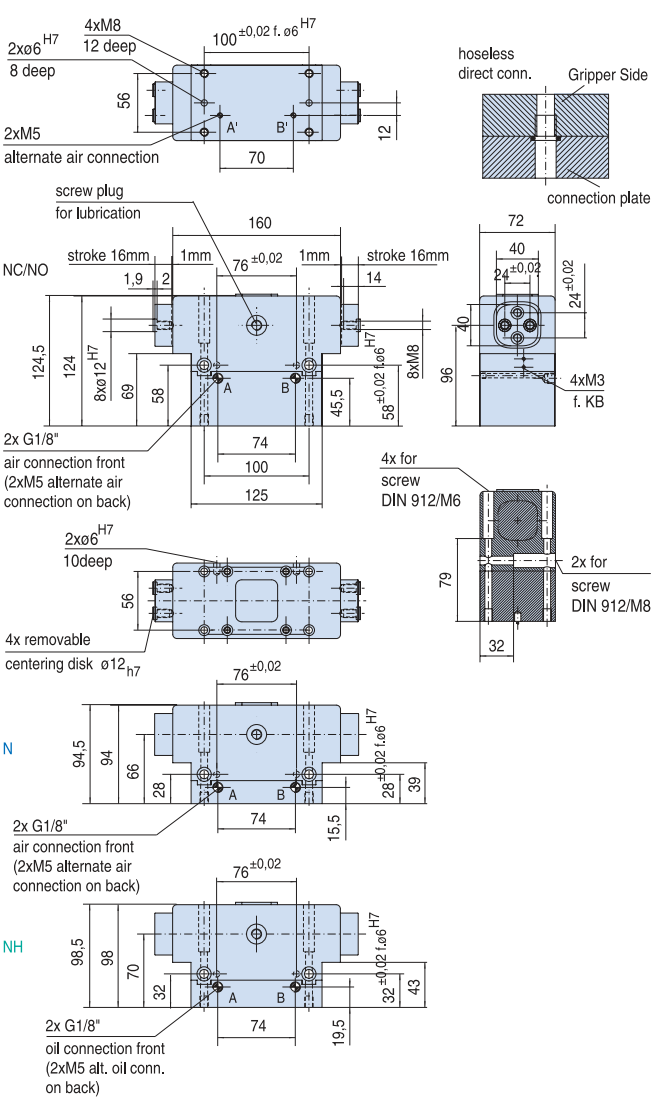
Max Allowable Forces on Jaws

Advantages, benefits, comparisons and tips! Stacks of information all about this product are on page 35.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected



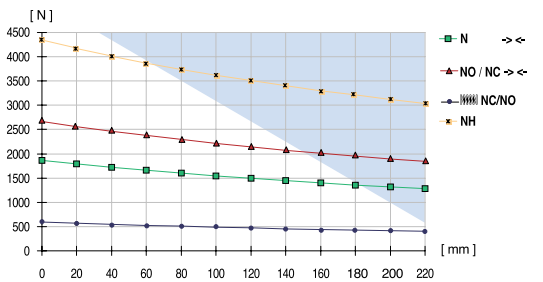
Order no.:						
GP1816 N	**GP1816 NC**	**GP1816 NO**	**GP1816 NH**			
Drive:						
pneum.	pneum.	pneum.	hydr.			
Stroke per jaw [mm]:						
16	16	16	16			
Gripping force in closing and opening [N]:						
1150	-	-	2750			
Gripping force in closing [N]:						
-	1550	-	-			
Gripping force in opening [N]:						
-	-	1550	-			
Self-locking via:						
DSV1/8	Spring	Spring	-			
Closing time/opening time [s]:						
0,1	0,15	0,15	0,3			
Repeatability ± [mm]:						
0,05	0,05	0,05	0,05			
Min./max. operating pressure [bar]:						
4 / 8	5 / 8	5 / 8	10 / 30			
Air volume per cycle [cm³]:						
150	267	267	-			
Oil volume per cycle [cm³]:						
-	-	-	100			
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80	5 / 80			
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3	T3			
Piston diameter [mm]:						
63	63	63	45			
Weight [kg]:						
3,1	3,7	3,7	3,1			

All data measured at 6 bar (hydr. 30 bar).

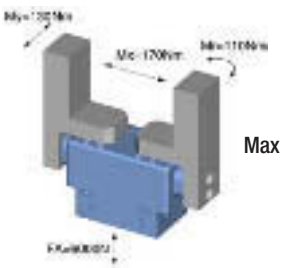
Parallel gripper
with sealed 4-sided guide

Advantages, benefits, comparisons and tips! Stacks of information all about this product are on page 35.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected

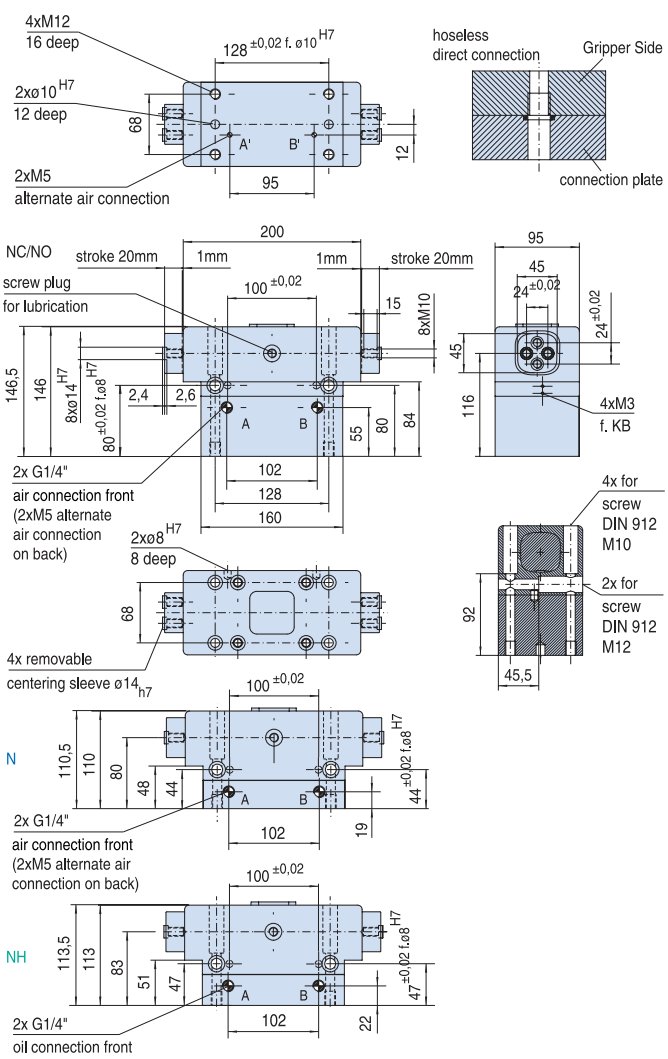


Max Allowable Forces on Jaws

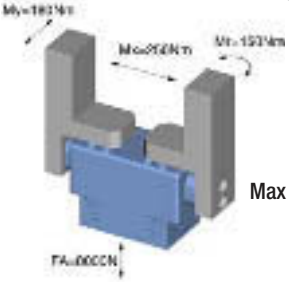
Order no.:						
GP1820 N	**GP1820 NC**	**GP1820 NO**	**GP1820 NH**			
Drive:						
pneum.	pneum.	pneum.	hydr.			
Stroke per jaw [mm]:						
20	20	20	20			
Gripping force in closing and opening [N]:						
1880	-	-	4380			
Gripping force in closing [N]:						
-	2630	-	-			
Gripping force in opening [N]:						
-	-	2630	-			
Self-locking via:						
DSV1/8	Spring	Spring	-			
Closing time/opening time [s]:						
0,2	0,3	0,3	0,5			
Repeatability ± [mm]:						
0,05	0,05	0,05	0,05			
Min./max. operating pressure [bar]:						
4 / 8	5 / 8	5 / 8	10 / 30			
Air volume per cycle [cm³]:						
300	650	650	-			
Oil volume per cycle [cm³]:						
-	-	-	100			
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80	5 / 80			
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3	T3			
Piston diameter [mm]:						
80	80	80	55			
Weight [kg]:						
6	7,3	7,3	6,2			

All data measured at 6 bar (hydr. 30 bar).

See Page 35 for Accessory list.



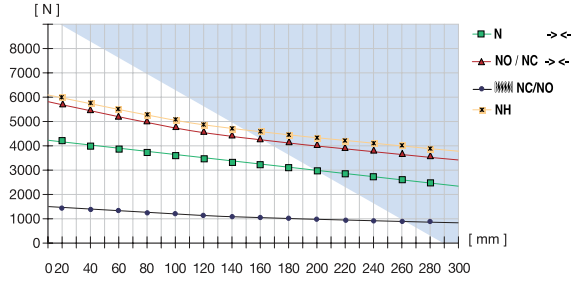
Parallel gripper
with sealed 4-sided guide



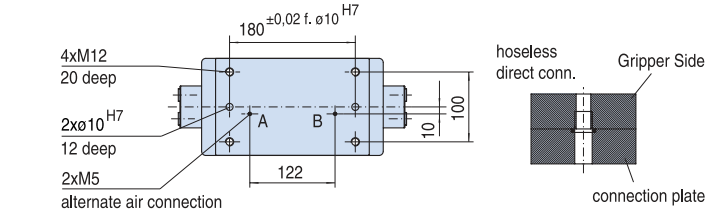
Max Allowable Forces on Jaws

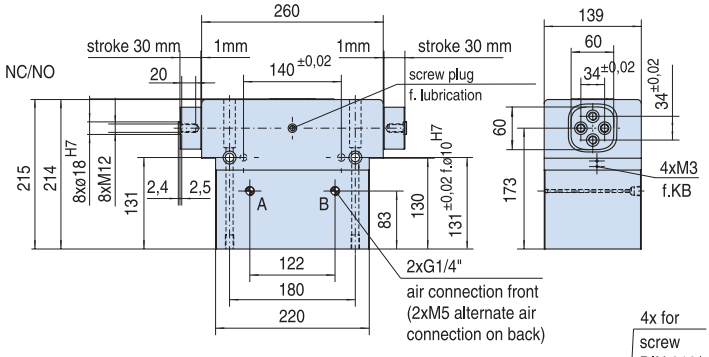
Advantages, benefits, comparisons and tips! Stacks of information all about this product are on page 35.

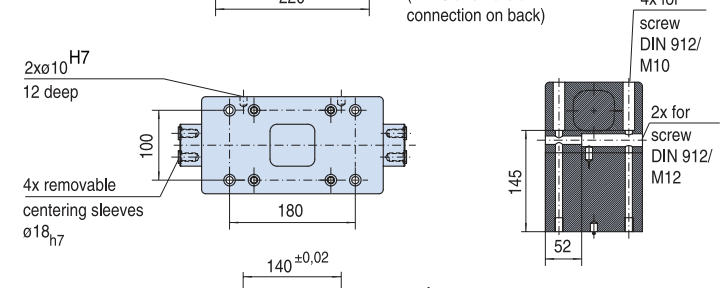
Gripping force as a function of jaw length

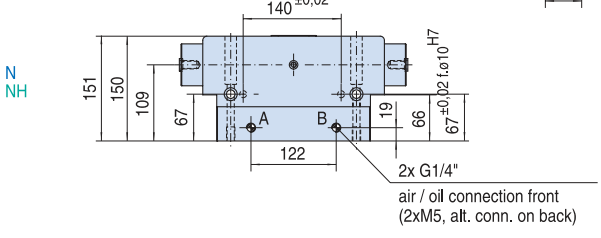


Colored area: increased wear and tear to be expected









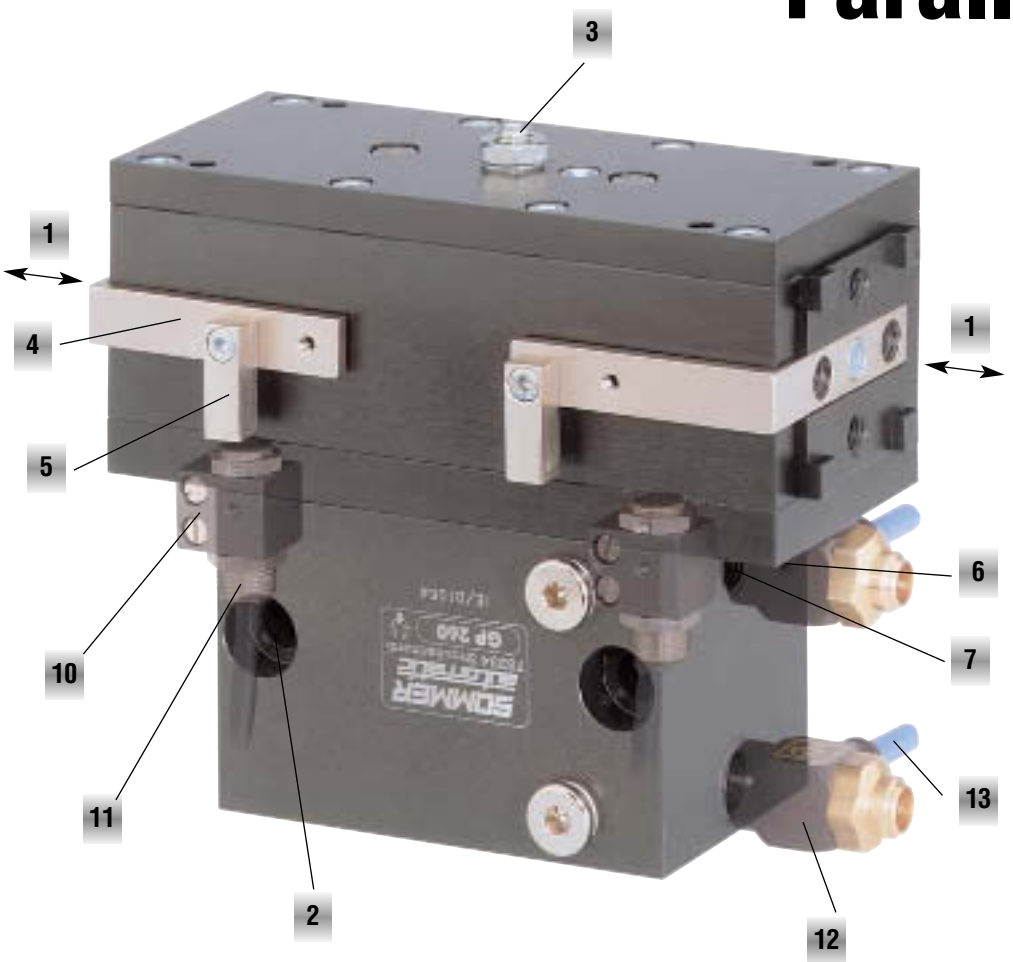
Order no.:						
GP1830 N	**GP1830 NC**	**GP1830 NO**	**GP1830 NH**			
Drive:						
pneum.	pneum.	pneum.	hydr.			
Stroke per jaw [mm]:						
30	30	30	30			
Gripping force in closing and opening [N]:						
4100	-	-	6200			
Gripping force in closing [N]:						
-	5750	-	-			
Gripping force in opening [N]:						
-	-	5750	-			
Self-locking via:						
DSV1/8	Spring	Spring	-			
Closing time/opening time [s]:						
0,3	0,4	0,4	0,6			
Repeatability ± [mm]:						
0,05	0,05	0,05	0,05			
Min./max. operating pressure [bar]:						
4 / 8	5 / 8	5 / 8	10 / 30			
Air volume per cycle [cm³]:						
730	1020	1020	-			
Oil volume per cycle [cm³]:						
-	-	-	230			
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80	5 / 80			
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3	T3			
Piston diameter [mm]:						
115	115	115	64			
Weight [kg]:						
16	22	22	17			

All data measured at 6 bar (hydr. 30 bar).

See Page 35 for Accessory list.

Parallel gripper

with square guide



Features

1 Stroke
2 Hole for socket head screw
3 Stroke-limiting screw
4 Switching bracket
5 Trip dog
6 Vent hole
7 Air connection at the front, bottom and side

Accessories

10 Sensor mount
11 Proximity switch
12 One-way valve
13 PU hose

Explanations

S = Heavy-duty design (short stroke - large force)

Square, practical, good...

...this gripper series has self-centering jaws and is protected against rotation. The gripper's opening stroke can be reduced with the stroke-limiting screw on top of the gripper. After the adjustment, this screw can also be shortened to be flush with the top and glued (tip: for further adjustments, make a slot in the screw).

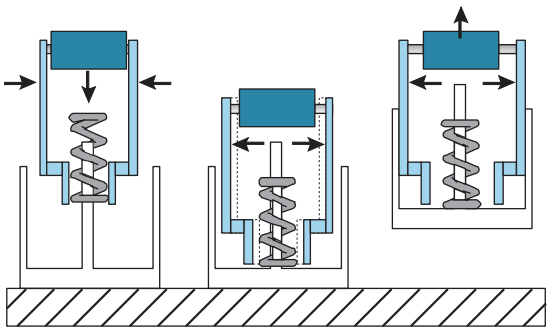
The jaws and housing components are also made of hard-anodized aluminum, thus providing very good sliding characteristics with a high surface hardness. The lateral venting hole allows pressure equalization and it should therefore be left open. An air filter should be installed if the surrounding air is dusty. If the gripper is used in moist areas or briefly immersed in water, the vent hole should be fitted with a hose which should extend above the water line (see example on next page). This ensures venting in every situation.

The jaws are mounted on the side. The trip dogs are located on the front of the gripper and can extend over a mounting screwed into the gripper jaws. These provide sensing for the open and closed positions. The M3 threaded holes underneath the trip dogs can be used to attach sensor mounts for proximity switches of sizes ø 6.5 to 12 mm. (For more details see "Accessories".)

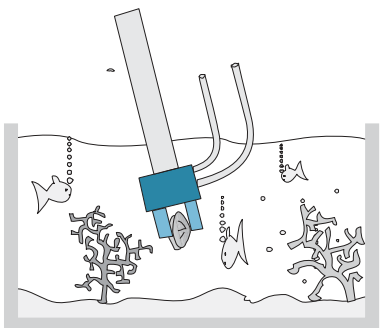
The air connections are on the front and side; at the front they are factory-plugged. Two built-in springs are provided to ensure self-locking and boosting power when gripping. If the gripper is to be used for spreading, the spring should be removed. The spreading force is then about 5% greater than the specified closing forces. The "S" version has a steeper slide slope, which reduces the stroke while increasing the gripping force.

Note:
Our GP1200 series, which will soon supersede this series, is suited for rugged service in a grinding dust medium. It is nearly identical, but it features round jaws and better sealing. More information can be found on the following pages.

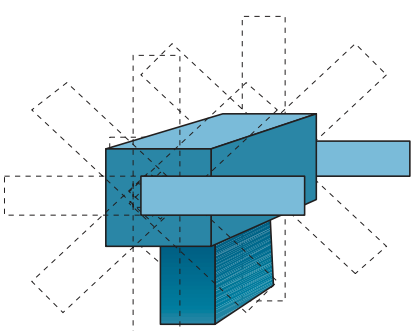
Application Ideas



Longer jaws may be fitted to this gripper, for example as part of a shock absorber assembly (above).

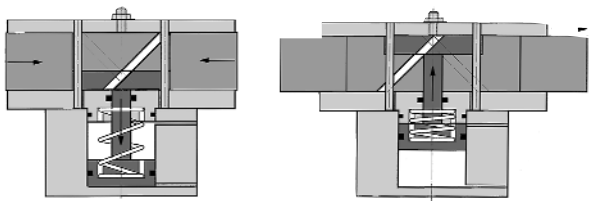


The gripper can be immersed in water for a short time. For pressure equalization in the mechanism, a venting hose must be lead out of the water (cf. venting hole).



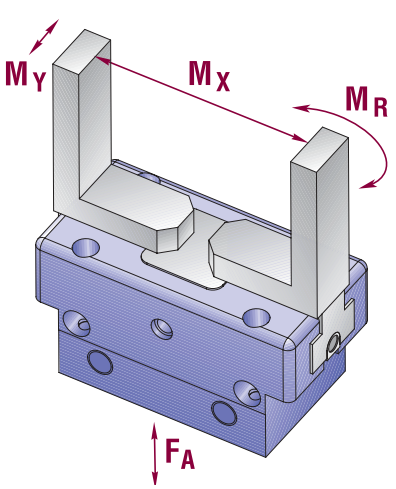
The square guide allows the jaws to be mounted in different positions.

Schematic...
On every product page, you will find the following schematic which helps describe the max allowable forces and movements for that particular model.



Operation (patented)

A double-acting pneumatic cylinder drives a slide. The force-guided jaws are moved in parallel to the open and closed position by the slope of the slide. The jaws are guided over the entire length of the housing and secured against rotation by the square design. Two compression springs support the closing force and provide self-locking. On the "S" version, the slope of the slide is steeper, which reduces the stroke while increasing the gripping force.



Parallel gripper with sealed square guide

GP224/GP240/GP260/GP280

things worth knowing

Advantages and uses

Highlight

… large adjustable stroke with compact design … integrated mechanical grip force safety device… ideal for the addition of long gripping jaws …

- centrally opening and closing
- high-precision
- any desired installation position
- position sensing possible through inductive proximity switch

… optimal guide relationship! …

Characteristics

Function	
Drive:	double-acting pneumatic cylinder
(depending upon model)	double-acting pneumatic cylinder with integrated spring as safety device in the event of pressure loss
Power transfer:	wedge and piston principle
(depending upon model)	
Guides:	flat guide for high momenta absorption (Mx) during external and internal gripping
Material	
Housing:	hard-anodized aluminum
Gripper jaws:	hard-anodized aluminum
Moving parts:	nitrided steel and nonferrous metal (Rg7)
Maintenance	
Recommended at:	1.5 million cycles
Condition:	filtered high-pressure air (10μm), dry or oiled
Maintenance of the mechanics:	thru stroke adjustment screw – see owners' manual –

Basic explanations

Terms and illustrations

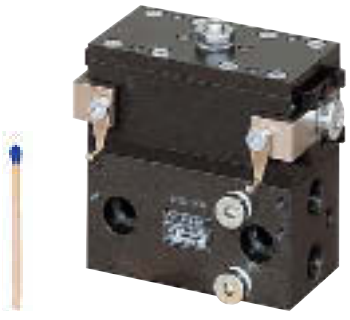
Grip force safety device:	required during pressure loss for maintaining position of work piece
– pneumatic:	through pressure retention (one-way valve required DSV 1/8)
– mechanical:	through spring pre-tension
– spring power:	specifications based on minimum spring pre-tension
Total power:	arithmetic sum of the individual elements on the gripper jaws
Closing and opening times:	required time for the gripper jaws to cover the maximum stroke length

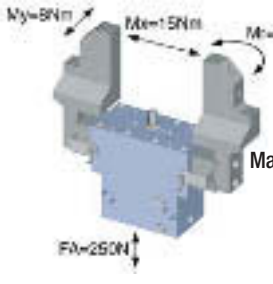
Models

GP2…	Drive	Stroke	Power	Internal gripping	External gripping	Mechanical fail safe
…N	pneumatic	large	normal		●	●
…S	pneumatic	short	high		●	●
…N/99	pneumatic	large	normal	●	●	
…S/99	pneumatic	short	high	●	●	

Accessories

Accessory recommendation:



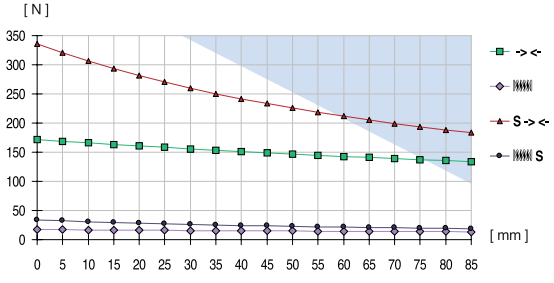


Max Allowable Forces on Jaws

Parallel gripper
with sealed square guide

Advantages, benefits, comparisons and tips! Stacks of information all about this product are on page 47.

Gripping force as a function of jaw length

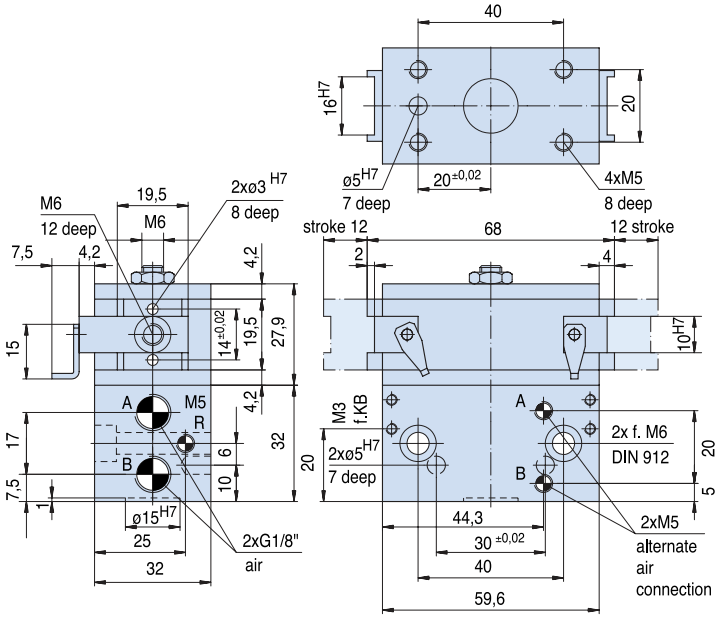


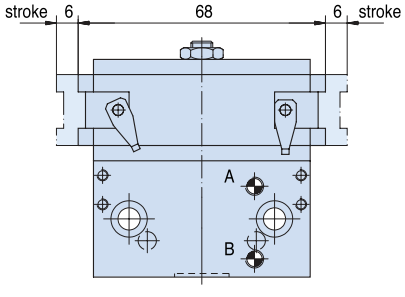
Colored area: increased wear and tear to be expected

Order no.:						
GP224	**GP224 S**	**GP224 /99**	**GP224 S/99**			
Drive:						
pneum.	pneum.	pneum.	pneum.			
Stroke per jaw [mm]:						
12	6	12	6			
Gripping force in closing and opening [N]:						
-	-	160	335			
Gripping force in closing [N]:						
170	335	-	-			
Self-locking via:						
Spring	Spring	DSV1/8	DSV1/8			
Closing time/opening time [s]:						
0,12	0,12	0,1	0,1			
Repeatability ± [mm]:						
0,05	0,05	0,05	0,05			
Min./max. operating pressure [bar]:						
5 / 8	5 / 8	5 / 8	5 / 8			
Air volume per cycle [cm³]:						
12	12	12	12			
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80	5 / 80			
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3	T3			
Piston diameter [mm]:						
25	25	25	25			
Weight [kg]:						
0,3	0,3	0,3	0,3			

All data measured at 6 bar.

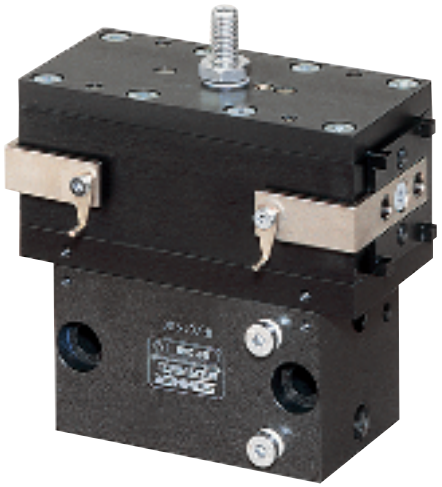
See Page 47 for Accessory list.





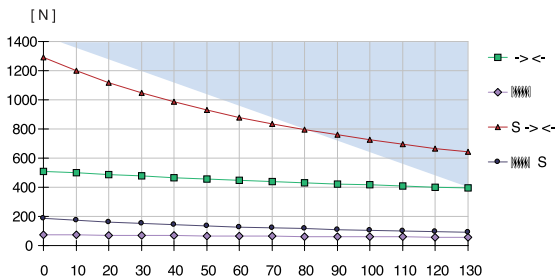
GP224S

Parallel gripper
with sealed square guide

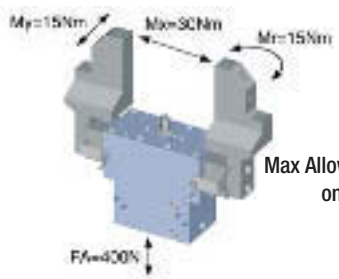


Advantages, benefits, comparisons and tips!
Stacks of information all about this product are on page 47.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected

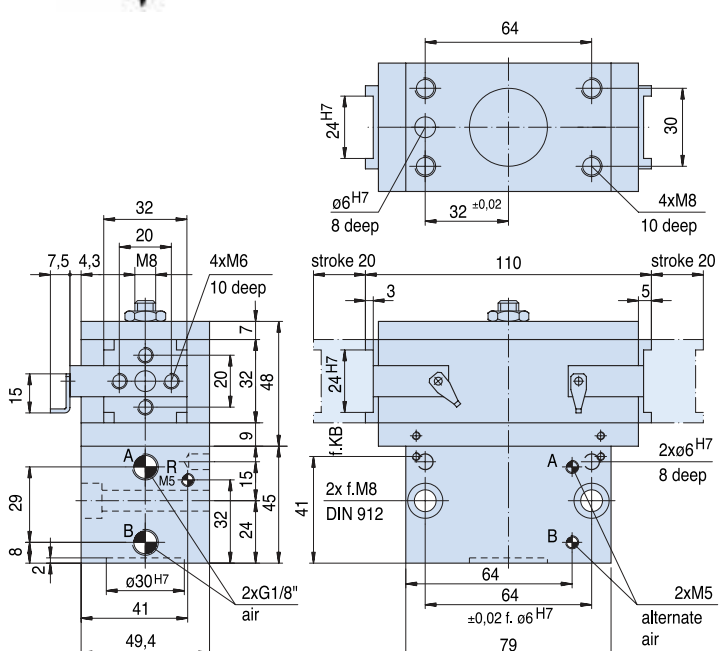


Max Allowable Forces on Jaws

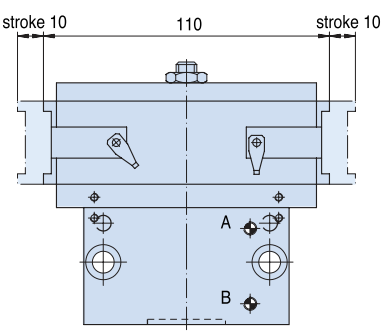
Order no.:						
GP240	**GP240 S**	**GP240 /99**	**GP240 S/99**			
Drive:						
pneum.	pneum.	pneum.	pneum.			
Stroke per jaw [mm]:						
20	8	20	8			
Gripping force in closing and opening [N]:						
-	-	435	1105			
Gripping force in closing [N]:						
510	1290	-	-			
Self-locking via:						
Spring	Spring	DSV1/8	DSV1/8			
Closing time/opening time [s]:						
0,15	0,15	0,12	0,12			
Repeatability ± [mm]:						
0,05	0,05	0,05	0,05			
Min./max. operating pressure [bar]:						
5 / 8	5 / 8	5 / 8	5 / 8			
Air volume per cycle [cm³]:						
49	49	49	49			
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80	5 / 80			
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3	T3			
Piston diameter [mm]:						
40	40	40	40			
Weight [kg]:						
1,16	1,16	1,16	1,16			

All data measured at 6 bar.

See Page 47 for Accessory list.



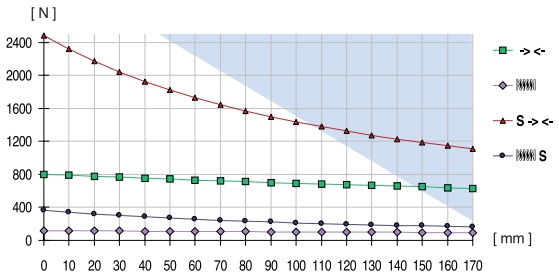
GP240S



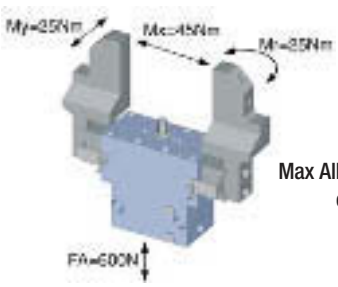
Parallel gripper
with sealed square guide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 47.

Gripping force as a function of jaw length

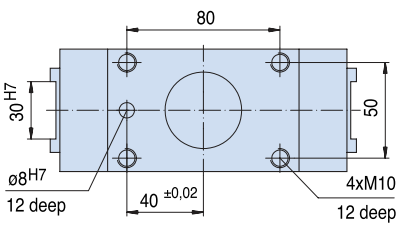


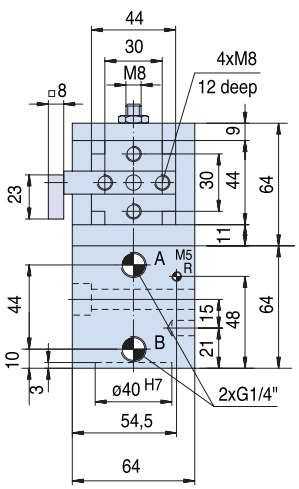
Colored area: increased wear and tear to be expected

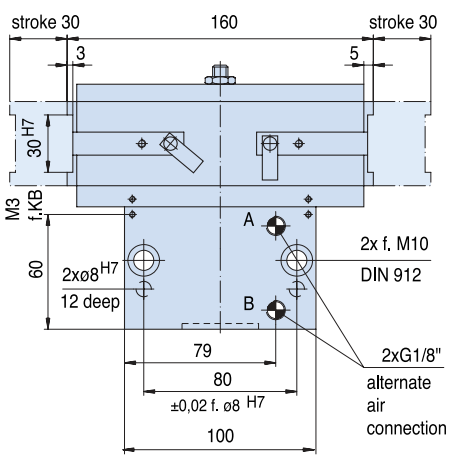


Max Allowable Forces on Jaws

GP260





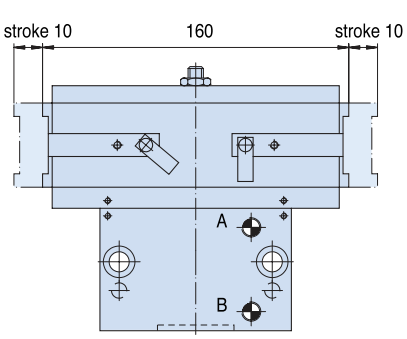


Order no.:						
GP260	**GP260 S**	**GP260 /99**	**GP260 S/99**			
Drive:						
pneum.	pneum.	pneum.	pneum.			
Stroke per jaw [mm]:						
30	10	30	10			
Gripping force in closing and opening [N]:						
-	-	665	2120			
Gripping force in closing [N]:						
800	2480	-	-			
Self-locking via:						
Spring	Spring	DSV1/8	DSV1/8			
Closing time/opening time [s]:						
0,2	0,2	0,15	0,15			
Repeatability ± [mm]:						
0,05	0,05	0,05	0,05			
Min./max. operating pressure [bar]:						
5 / 8	5 / 8	5 / 8	5 / 8			
Air volume per cycle [cm³]:						
115	115	115	115			
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80	5 / 80			
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3	T3			
Piston diameter [mm]:						
50	50	50	50			
Weight [kg]:						
2,9	2,9	2,9	2,9			

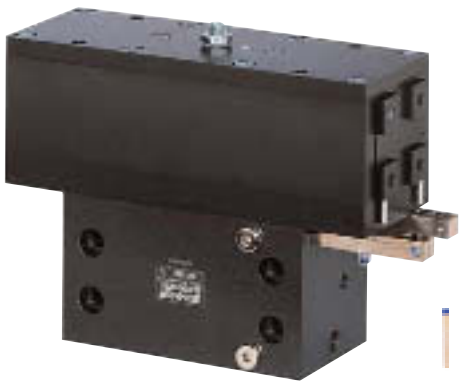
All data measured at 6 bar.

See Page 47 for Accessory list.

GP260S

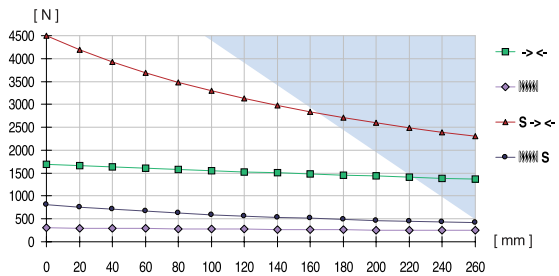


Parallel gripper
with sealed square guide



Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 47.

Gripping force as a function of jaw length

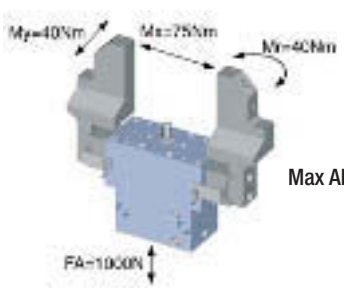


Colored area: increased wear and tear to be expected

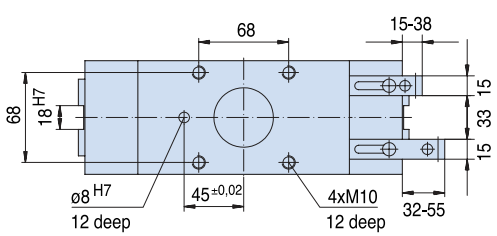
Order no.:						
GP280	**GP280 S**	**GP280 /99**	**GP280 S/99**			
Drive:						
pneum.	pneum.	pneum.	pneum.			
Stroke per jaw [mm]:						
40	15	40	15			
Gripping force in closing and opening [N]:						
-	-	1390	3690			
Gripping force in closing [N]:						
1690	4500	-	-			
Self-locking via:						
Spring	Spring	DSV1/8	DSV1/8			
Closing time/opening time [s]:						
0,25	0,25	0,2	0,2			
Repeatability ± [mm]:						
0,05	0,05	0,05	0,05			
Min./max. operating pressure [bar]:						
5 / 10	5 / 10	5 / 10	5 / 10			
Air volume per cycle [cm³]:						
300	300	300	300			
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80	5 / 80			
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3	T3			
Piston diameter [mm]:						
70	70	70	70			
Weight [kg]:						
8,28	8,28	8,28	8,28			

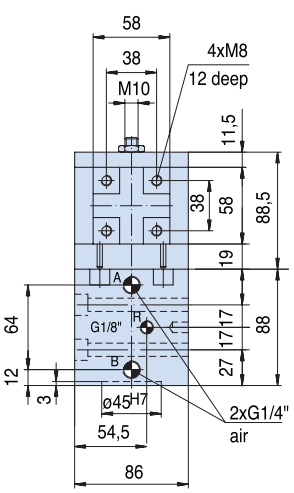
All data measured at 6 bar.

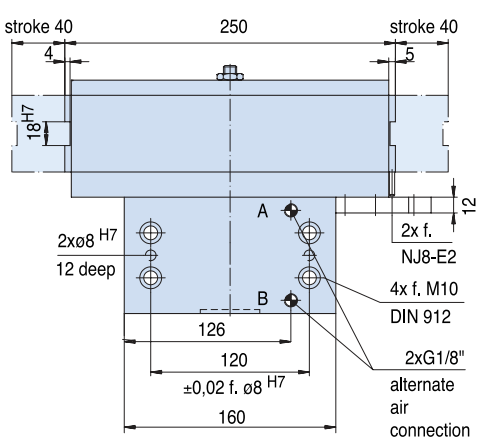
See Page 47 for Accessory list.



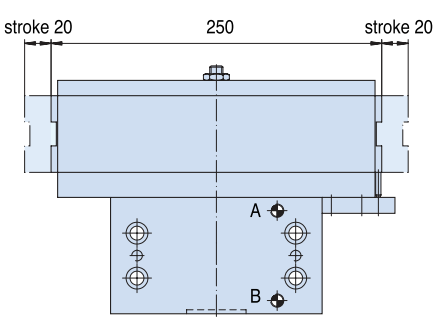
Max Allowable Forces on Jaws





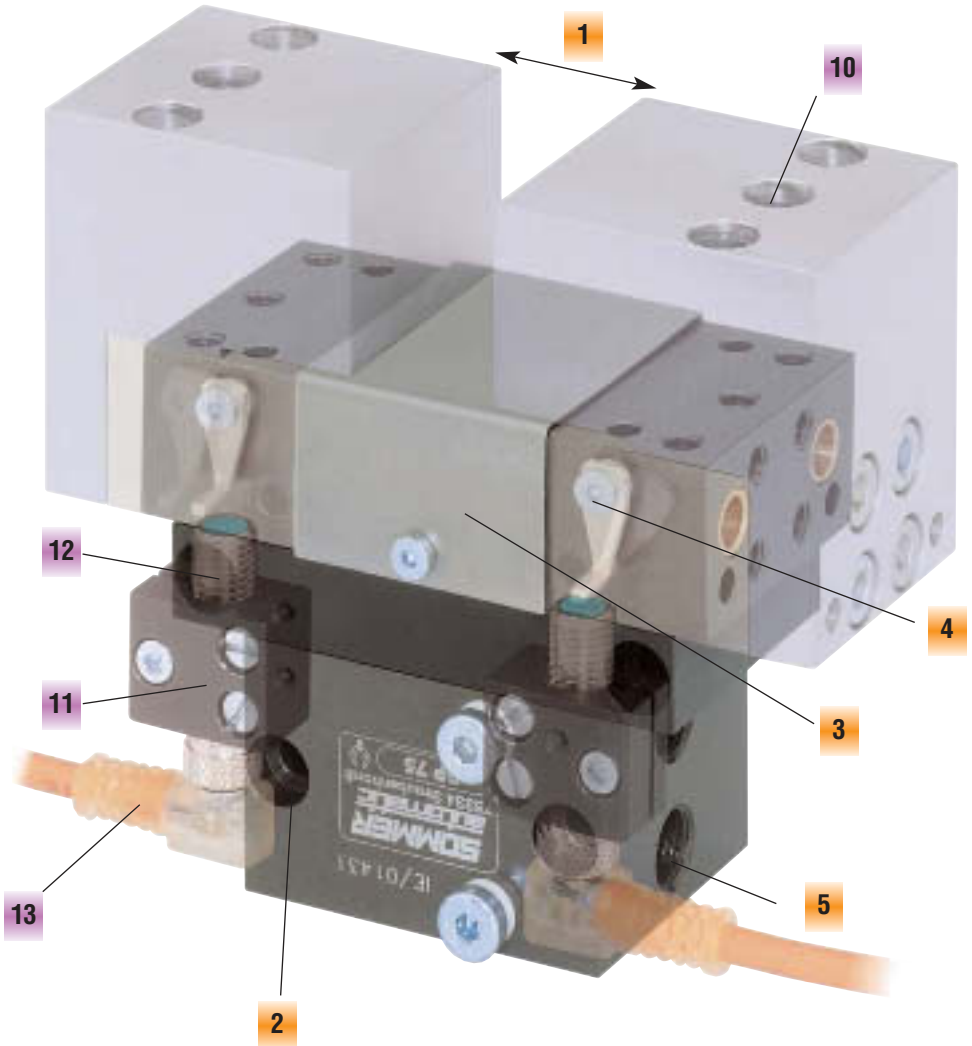


GP280S



Parallel gripper

with roller slide



Features

1 Stroke
2 Hole for socket head screw
3 Cover plate
4 Trip dog
5 Air connection at the front and rear

Accessories

10 Universal jaws
11 Sensor mount
12 Proximity switch, plug-in
13 Cable, plug-in

One of our first designs…

... but still moving as robustly as ever. The jaws are forced in and out with rollers. The jaws run on two guide pins and the jaw position can be sensed by the trip dogs fitted to the front of the gripper. Threaded M3 holes underneath the trip dogs are used for attaching sensor mounts for proximity switches. The switches are available in sizes ø 3 to 12 mm - refer to our accessory page.

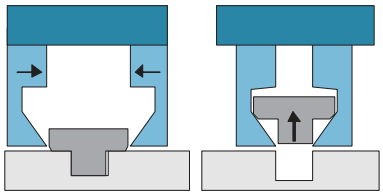
Numerous pinning, centering and attachment holes allow good mounting options. All grippers are double-acting and have air connections on both the front and the side (except GP12 and GP30). Universal aluminum jaws are available for the entire series (see "Accessories"). The "S class", fitted with an additional spring for self-locking in the closed position, is available for the GP45 and GP75 types. With the GP100, the spring is standard.

The GP100S also features a steeper slide, which produces a larger gripping force and mechanical self-locking over the last 1.2 mm (see diagram with GP100S).

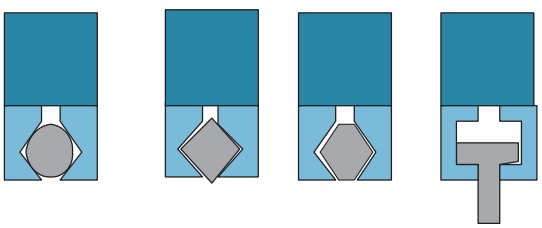
The smaller grippers (GP12, GP19 and GP30) have a slightly different design to achieve greater clamping force. The slides are built in reverse so that during clamping the slide surface area is active as opposed to just the annular piston for the larger grippers.

Note:
For higher loads, we have a nearly identical gripper series with more rugged ball-guided jaws in our program. The description for this series (GP103, GP104, GP105, etc.) follows directly after the GP100.

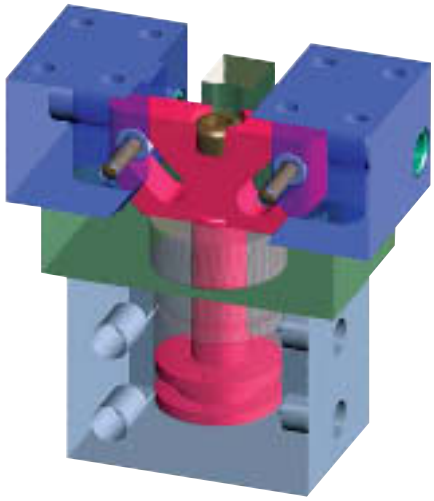
Application Ideas

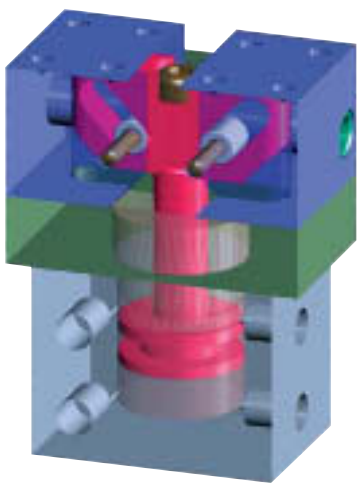


Different profiles may be gripped using a prism.
The 45Þ slope of the jaws allows the part to be lifted out of the hole when the gripper closes. This eliminates the need for a return stroke even with parallel grippers.



Different profiles may be gripped using a prism.

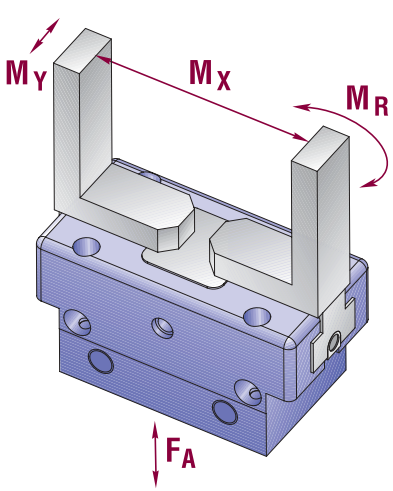




Operation

A double-acting pneumatic cylinder drives a slide (red). The force-guided jaws (blue) are moved concentrically to the opened and closed positions with rollers moving through the slides.

Schematic…
On every product page, you will find the following schematic which helps describe the max allowable forces and movements for that particular model.



Parallel gripper with roller slide

GP12 up to GP100

things worth knowing

Advantages and uses

… conceived for simple gripping tasks … proven design …
… economic with high reliability and long service life …

Highlight

- compact design and minimal weight
- centrally opening and closing
- any desired installation position
- multiple air connection possibilities
- position sensing possible through inductive proximity switch

… the best price/performance ratio! …

Characteristics

Function	
Drive	double-acting pneumatic cylinder
(depending upon model)	double-acting pneumatic cylinder with mechanical safety device in case of pressure loss
Power transfer:	wedge principle with roller slide
Guide:	round guide with slide bearing
Material	
Housing:	hard-anodized aluminum
Moving parts:	hardened steel and nonferrous metal
Maintenance	
Recommended at:	1.5 million cycles
Actuation:	filtered high-pressure air (10μm), dry or oiled
Maintenance of the mechanics:	– see owners' manual –

Basic explanations

Terms and illustrations

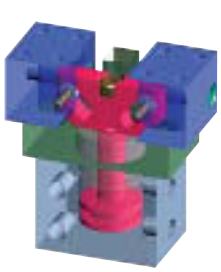
Grip force safety device:	required during pressure loss for maintaining position of workpiece
– pneumatic:	through pressure retention (one-way valve required DSV 1/8)
– mechanical:	through spring pre-tension
Total power:	arithmetic sum of the individual elements on the gripper jaws
Closing and opening times:	required time for the gripper jaws to cover the maximum stroke length

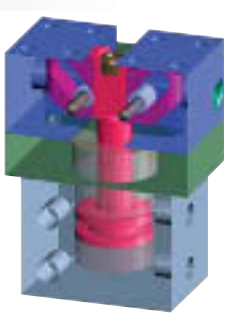
Models

GP ...	Drive	Stroke power	Internal gripping	External gripping	Mechanical fail safe
...12	pneumatic	large	●	●	
...19	pneumatic	large	●	●	
...30	pneumatic	large	●	●	
...45	pneumatic	large	●	●	
...45S	pneumatic	large		●	●
...75	pneumatic	large	●	●	
...75S	pneumatic	large		●	●
...100	pneumatic	large		●	●
...100/99	pneumatic	large	●	●	
...100S	pneumatic	large	●	●	

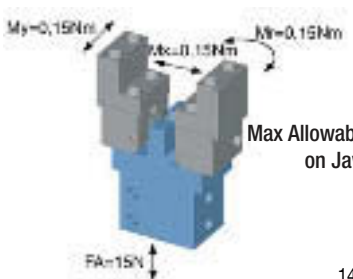
Accessories

Accessory recommendation:





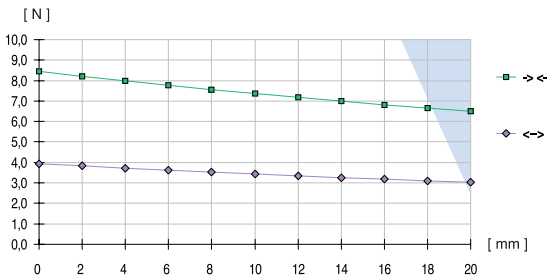
Parallel gripper
with roller slide



Max Allowable Forces on Jaws

Advantages, benefits, comparisons and tips! Stacks of information all about this product are on page 59.

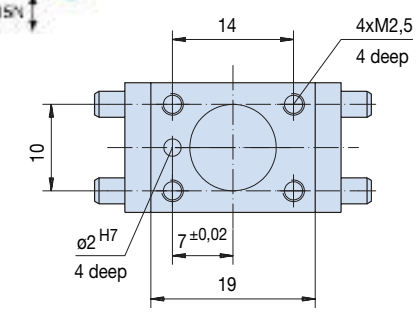
Gripping force as a function of jaw length

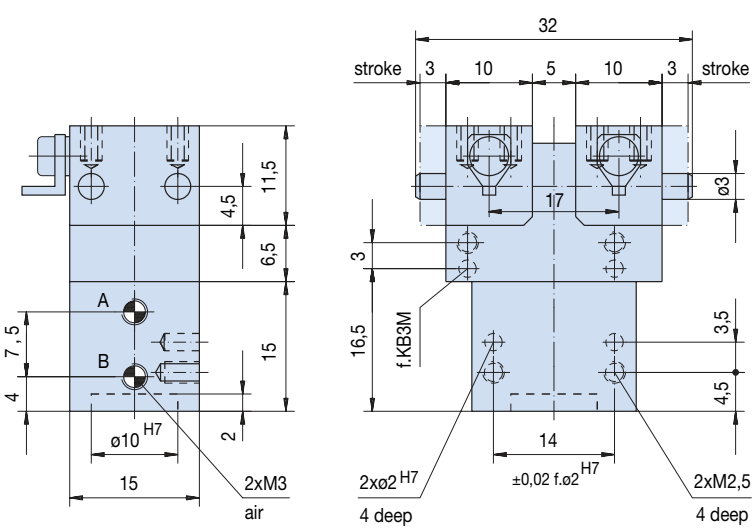


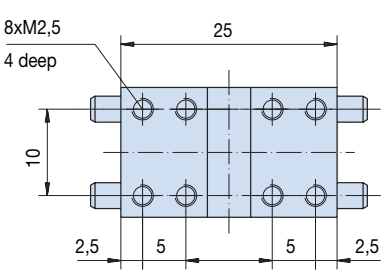
Colored area: increased wear and tear to be expected

Order no.:
GP12
Drive:
pneum.
Stroke per jaw [mm]:
3
Gripping force in closing [N]:
8,4
Gripping force in opening [N]:
4
Self-locking via:
DSV1/8
Closing time/opening time [s]:
0,02
Repeatability ± [mm]:
0,05
Min./max. operating pressure [bar]:
3 / 8
Air volume per cycle [cm³]:
0,4
Min./max. operating temperature [°C]:
5 / 80
Temp. resistant version up to 150° C [add to part number]:
T2
Piston diameter [mm]:
10
Weight [kg]:
0,037

All data measured at 6 bar.



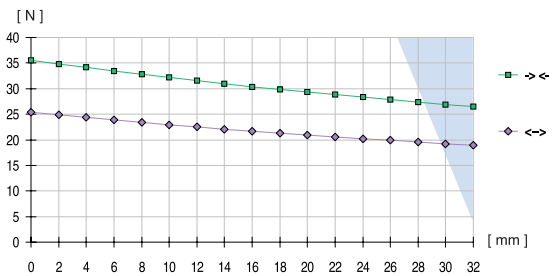




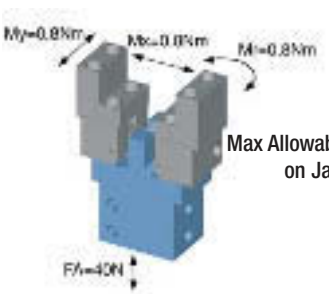
Parallel gripper
with roller slide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 59.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected

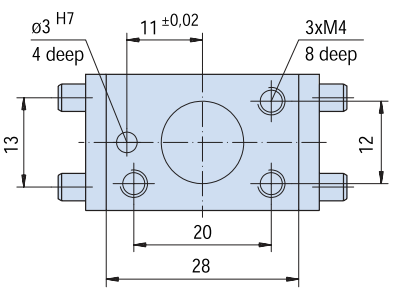


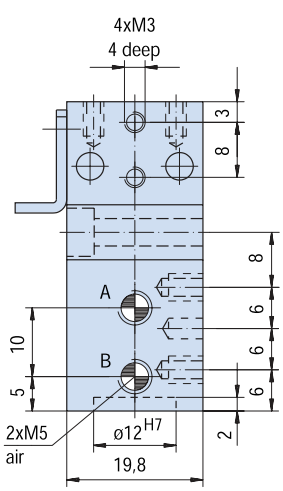
Max Allowable Forces on Jaws

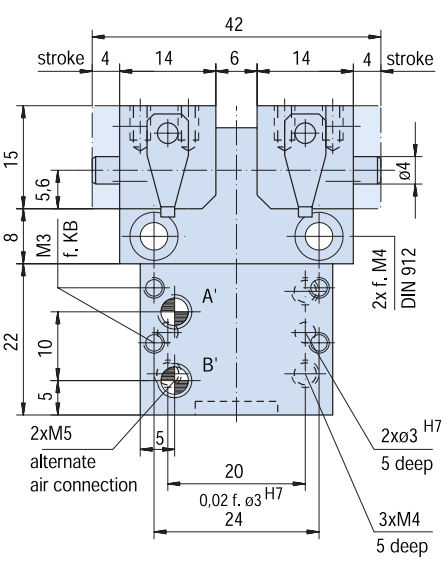
Order no.:
GP19
Drive:
pneum.
Stroke per jaw [mm]:
4
Gripping force in closing [N]:
36
Gripping force in opening [N]:
26
Self-locking via:
DSV1/8
Closing time/opening time [s]:
0,02
Repeatability ± [mm]:
0,05
Min./max. operating pressure [bar]:
3 / 8
Air volume per cycle [cm³]:
1
Min./max. operating temperature [°C]:
5 / 80
Temp. resistant version up to 150° C [add to part number]:
T2
Piston diameter [mm]:
14
Weight [kg]:
0,097

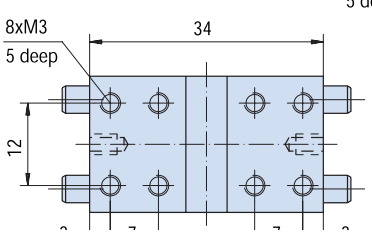
All data measured at 6 bar.

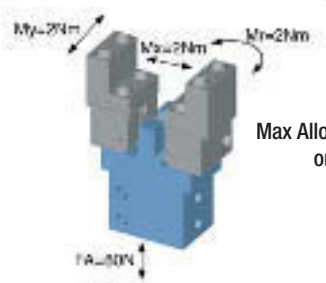
See Page 59 for Accessory list.









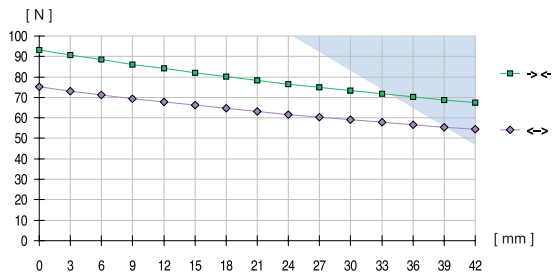


Max Allowable Forces on Jaws

Parallel gripper
with roller slide

Advantages, benefits, comparisons and tips! Stacks of information all about this product are on page 59.

Gripping force as a function of jaw length

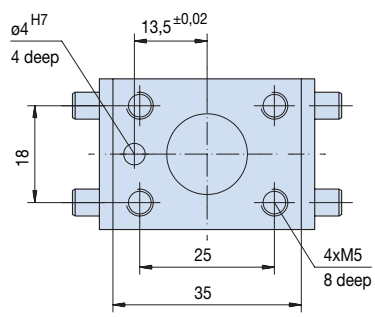


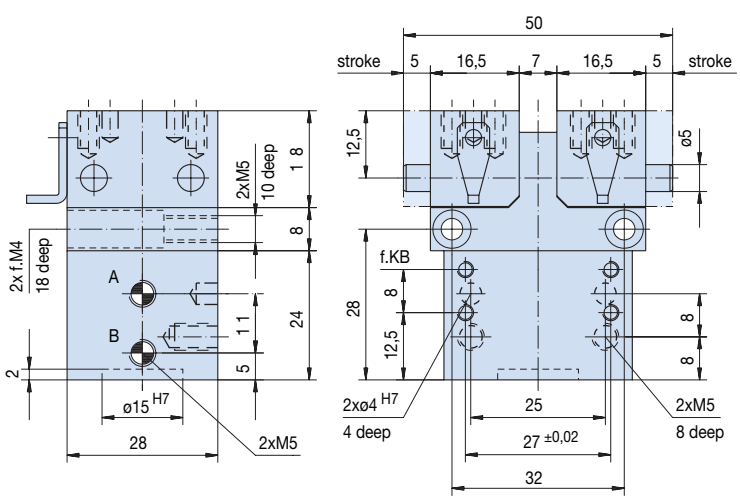
Colored area: increased wear and tear to be expected

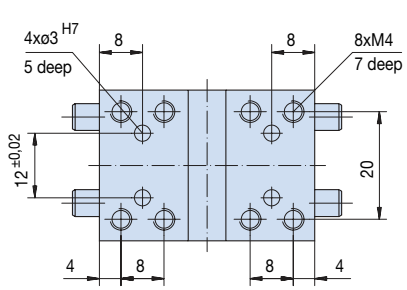
Order no.:
GP30
Drive:
pneum.
Stroke per jaw [mm]:
5
Gripping force in closing [N]:
94
Gripping force in opening [N]:
76
Self-locking via:
DSV1/8
Closing time/opening time [s]:
0,02
Repeatability ± [mm]:
0,05
Min./max. operating pressure [bar]:
3 / 8
Air volume per cycle [cm³]:
0,3
Min./max. operating temperature [°C]:
5 / 80
Temp. resistant version up to 150° C [add to part number]:
T2
Piston diameter [mm]:
20
Weight [kg]:
0,18

All data measured at 6 bar.

See Page 59 for Accessory list.



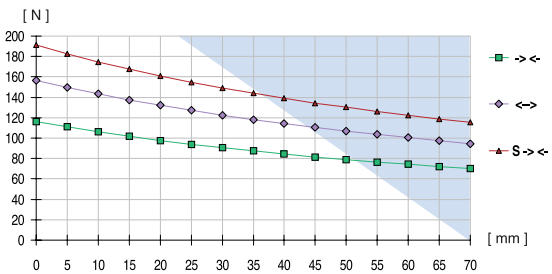




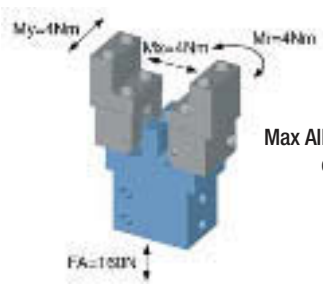
Parallel gripper
with roller slide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 59.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected

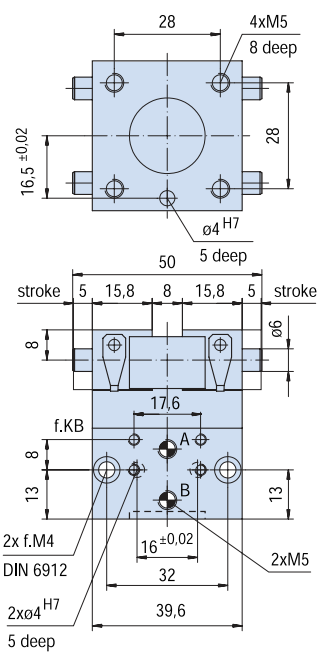


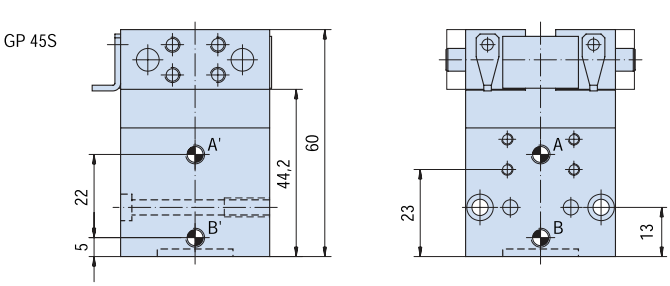
Max Allowable Forces on Jaws

Order no.:	
GP45	GP45 S
Drive:	
pneum.	pneum
Stroke per jaw [mm]:	
5	5
Gripping force in closing [N]:	
118	190
Gripping force in opening [N]:	
155	-
Self-locking via	
DSV1/8	Spring
Closing time/opening time [s]:	
0,03	0,04
Repeatability ± [mm]:	
0,05	0,05
Min./max. operating pressure [bar]:	
3 / 8	5 / 8
Air volume per cycle [cm³]:	
4	8
Min./max. operating temperature [°C]:	
5 / 80	5 / 80
Temp. resistant version up to 150° C [add to part number]:	
T2	T2
Piston diameter [mm]:	
25	25
Weight [kg]:	
0,26	0,31

All data measured at 6 bar.

See Page 59 for Accessory list.

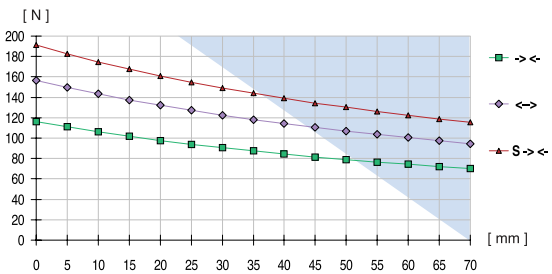




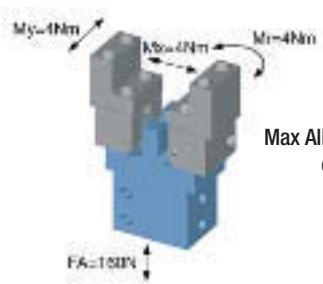
Parallel gripper
with roller slide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 59.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected

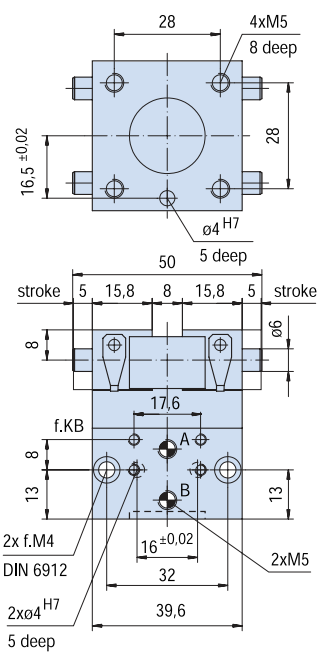


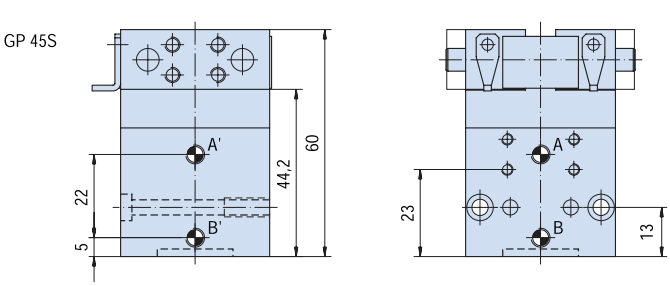
Max Allowable Forces on Jaws

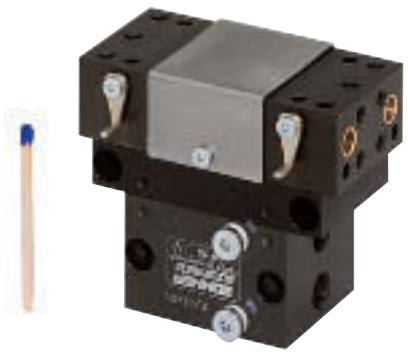
Order no.:	
GP45	GP45 S
Drive:	
pneum.	pneum
Stroke per jaw [mm]:	
5	5
Gripping force in closing [N]:	
118	190
Gripping force in opening [N]:	
155	-
Self-locking via	
DSV1/8	Spring
Closing time/opening time [s]:	
0,03	0,04
Repeatability ± [mm]:	
0,05	0,05
Min./max. operating pressure [bar]:	
3 / 8	5 / 8
Air volume per cycle [cm³]:	
4	8
Min./max. operating temperature [°C]:	
5 / 80	5 / 80
Temp. resistant version up to 150° C [add to part number]:	
T2	T2
Piston diameter [mm]:	
25	25
Weight [kg]:	
0,26	0,31

All data measured at 6 bar.

See Page 59 for Accessory list.



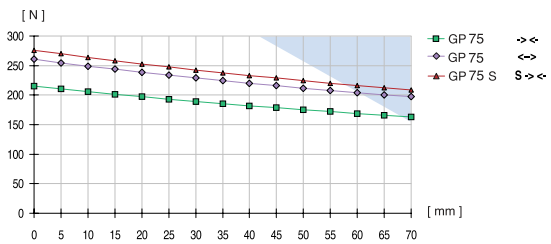


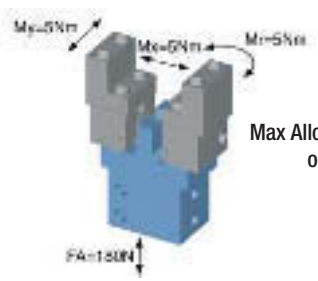


Parallel gripper
with roller slide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 59.

Gripping force as a function of jaw length



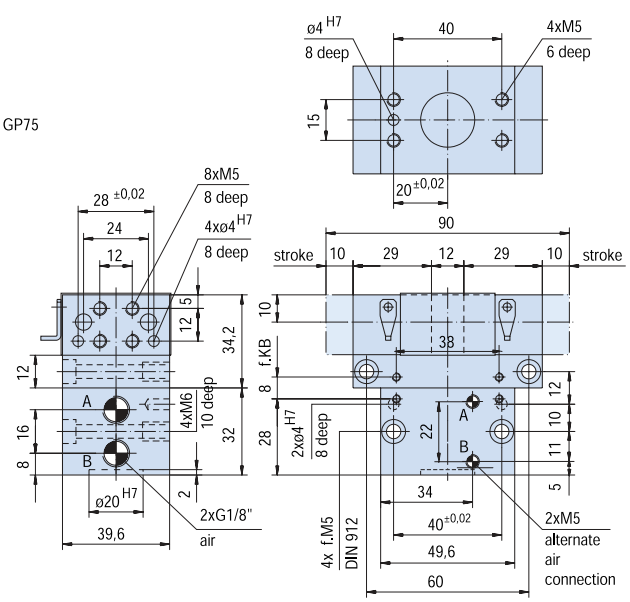


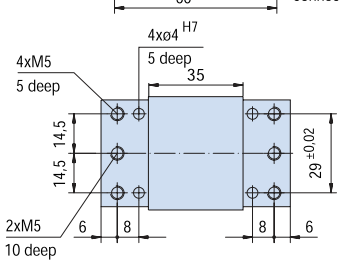
Order no.:						
GP75	**GP75 S**					
Drive:						
pneum.	pneum.					
Stroke per jaw [mm]:						
10	10					
Gripping force in closing [N]:						
220	275					
Gripping force in opening [N]:						
260	-					
Self-locking via:						
DSV1/8	Spring					
Closing time/opening time [s]:						
0,03	0,04					
Repeatability ± [mm]:						
0,05	0,05					
Min./max. operating pressure [bar]:						
3 / 8	5 / 8					
Air volume per cycle [cm³]:						
13	19					
Min./max. operating temperature [°C]:						
5 / 80	5 / 80					
Temp. resistant version up to 150° C [add to part number]:						
T2	T2					
Piston diameter [mm]:						
30	30					
Weight [kg]:						
0,492	0,55					

All data measured at 6 bar.

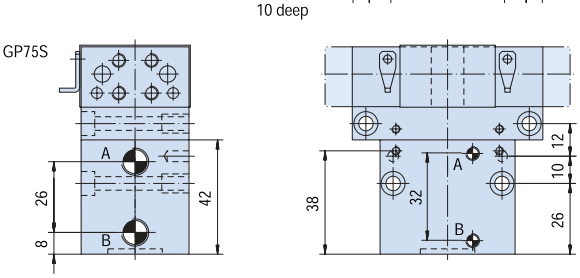
See Page 59 for Accessory list.

GP75





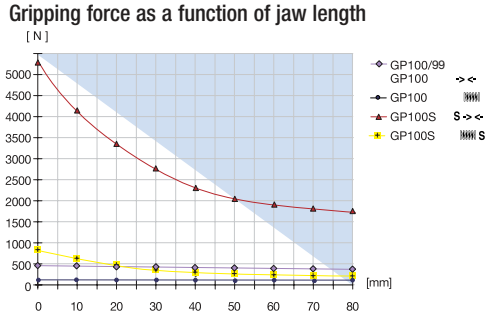
GP75S



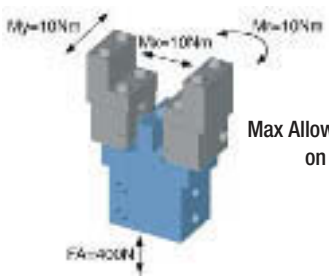
Parallel gripper
with roller slide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 59.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected



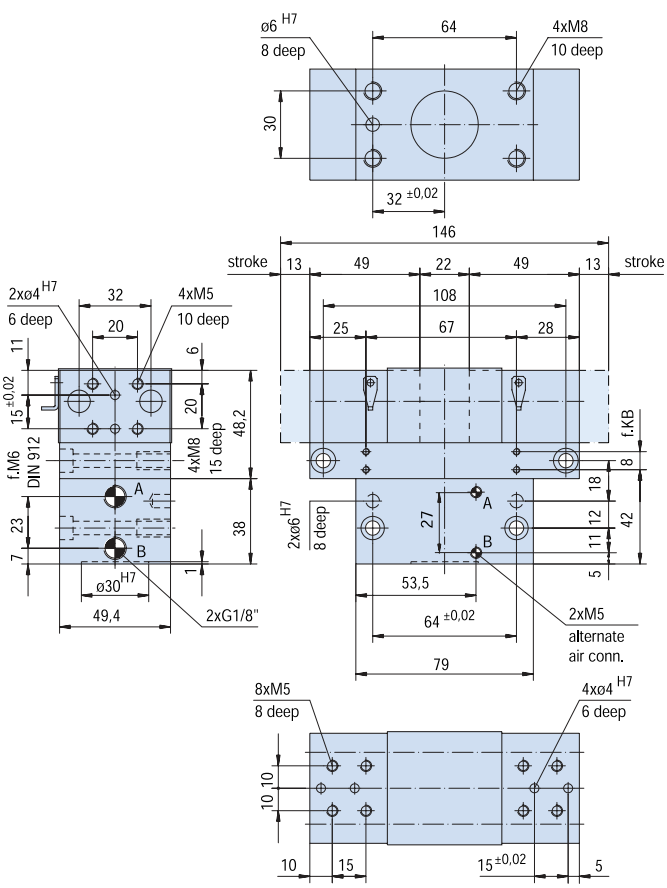
Max Allowable Forces on Jaws

Order no.:						
GP100	**GP100 /99**	**GP100 S**				
Drive:						
pneum.	pneum.	pneum.				
Stroke per jaw [mm]:						
13	13	8				
Gripping force in closing [N]*:						
450	-	5250				
Gripping force in opening [N]:						
-	450	-				
Self-locking via:						
Spring	-	Spring				
Closing time/opening time [s]:						
0,05	0,04	0,05				
Repeatability ± [mm]:						
0,05	0,05	0,05				
Min./max. operating pressure [bar]:						
4 / 8	4 / 8	4 / 8				
Air volume per cycle [cm³]:						
30	30	30				
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80				
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3				
Piston diameter [mm]:						
40	40	40				
Weight [kg]:						
1,4	1,4	1,4				

All data measured at 6 bar.

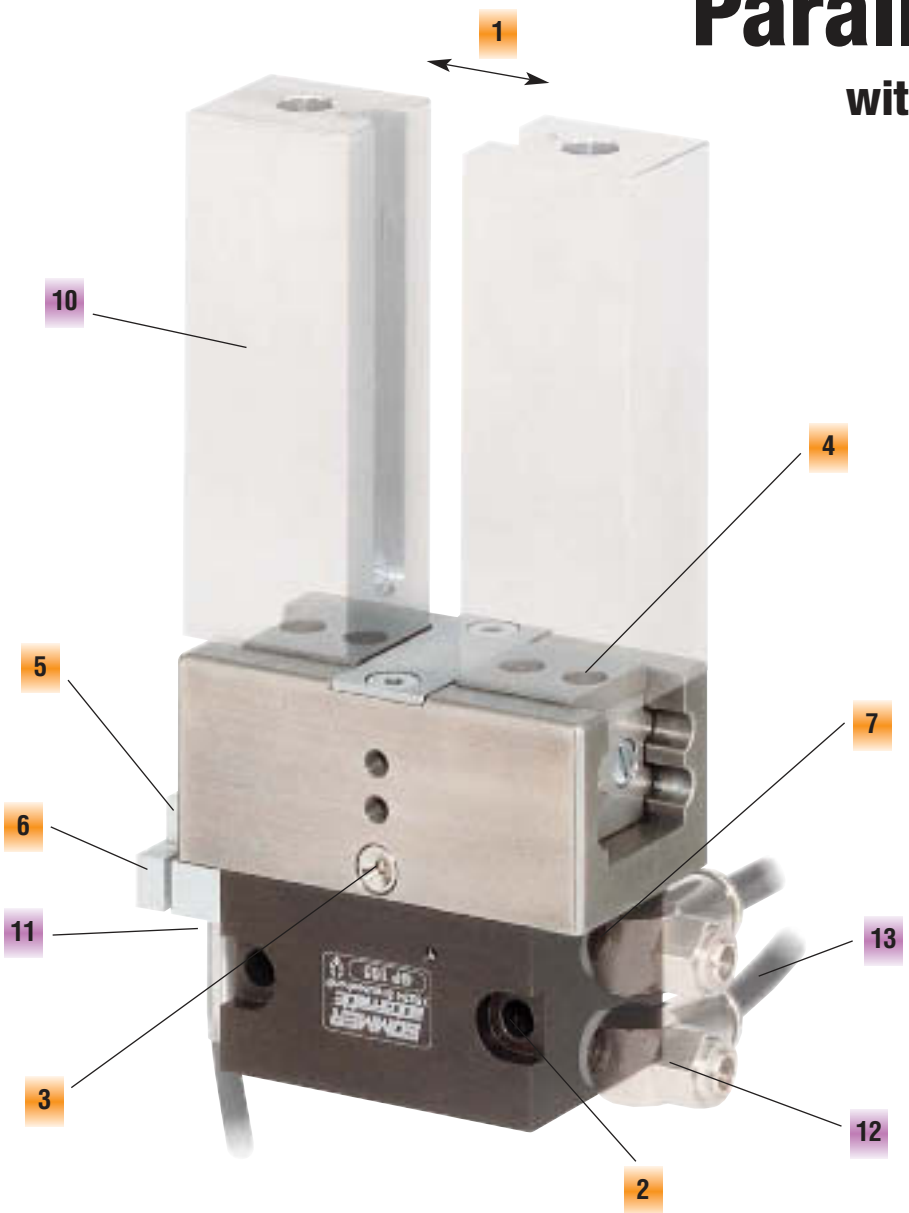
See Page 59 for Accessory list.

* only in last 1.2 mm of stroke



Parallel gripper

with ball bearing guide



Features

1 Hub
2 Hole for socket screw
3 Lubricating nipple for mechanism
4 Removable centering sleeves
5 Trip dog
6 Sensor mount
7 Air connection at the front

Accessories

10 Universal jaws
11 Proximity switch
12 One-way valve
13 PU hose

Designed for longer fingers!

It certainly does not need to be explained, for every mechanical engineer realizes the advantages of a ball guide. Long gripping fingers no longer jam, with forces effective right up to the tips of the fingers.

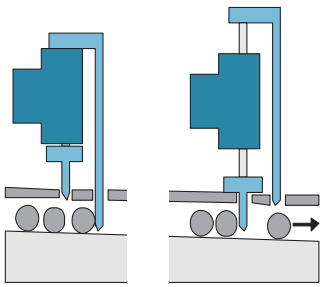
This series is nearly identical to the proven GP series with roller slides. The cylinders are made of hard-anodized aluminum, jaws and upper housing of hardened steel. The hardened steel jaws move in ball guides on both ends and they have a very high guiding stability. All grippers are also available as temperature resistant up to 150PC.

The grippers need no servicing up to 1.5 million operations, after which we recommend regreasing at the lubricating nipple between the jaws. The centering sleeves on the gripper jaws allow precise mounting of the jaws, which is important if the jaws have to be changed often.

In this case, we offer universal jaws made of steel or aluminum. More details can be found in "Accessories". The grippers are all double-acting and have air connections at the front, side and bottom of the gripper. The connections at the bottom and front are closed with grub screws and can be used for hoseless type connections.

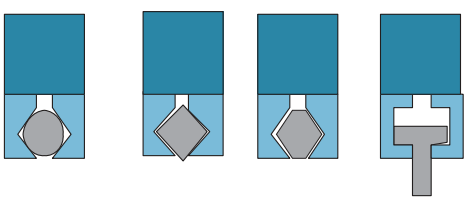
The trip dogs mounted on the side of the jaws are used for sensing. The sensor mounts underneath can be used to attach proximity switches. On GP103 and GP104 grippers, the sensor mounts have a diameter of 4 mm, on GP105, 6.5 mm; and the next larger sizes are provided with M8 mounting holes.

Application Ideas



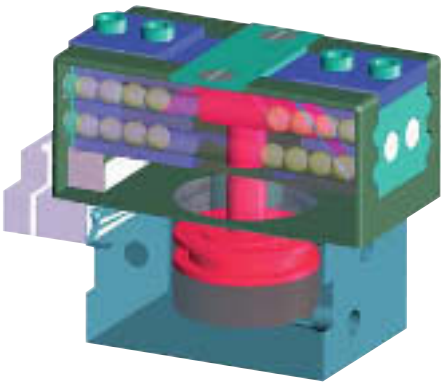
This diagram shows how parts can be separated using parallel grippers. When the jaws close, the balls are secured. When the jaws open, one ball is released while the other remains secured.

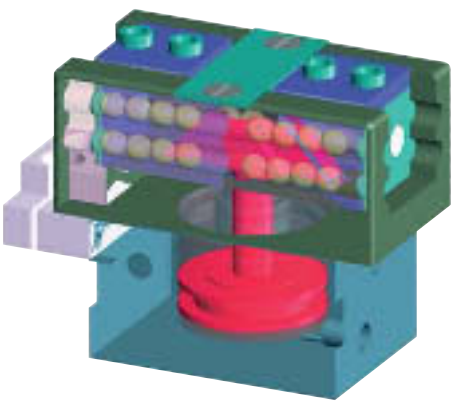
Further applications:
- removal and feeding of machine tools
- for centering parts
- for palletization (moving, loading), etc.



The good guiding characteristics of this series allows a wide range of work pieces.

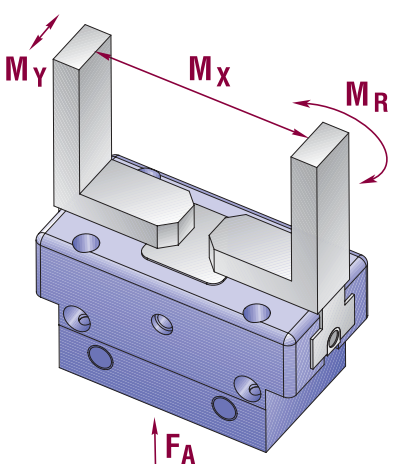
Schematic...
On every product page, you will find the following schematic which helps describe the max allowable forces and movements for that particular model.





Operation (patented)

A double-acting pneumatic cylinder drives a wedge slide (red). The force-guided jaws (blue) are moved in parallel to the open and closed position by the slope of the slide. The jaws are guided by four ball bearings each in the housing. Centering sleeves are provided for precise mounting of the jaws.



Parallel gripper with ball bearing guide

GP103 up to GP115

things worth knowing

Advantages and uses

… high reliability and long service life …

Highlight

- compact design and minimal weight
- centrally opening and closing
- high precision
- any desired installation position
- multiple air connections
- position sensing possible through inductive proximity switch

… nearly equal grip force with varying gripper jaw lengths …

Characteristics

Function	
Drive:	double-acting pneumatic cylinder
Power transfer:	wedge piston principle
Guide:	ball bearing linear guide
Material	
Cylinder:	hard-anodized aluminum housing
Moving parts:	nitrided steel
Maintenance	
Recommended at:	1.5 million cycles
Actuation:	filtered high-pressure air (10μm), dry or oiled
Maintenance of the mechanics:	thru integrated lubrication nipple – see owners' manual –

Basic explanations

Terms and illustrations

Grip force safety device:	required during pressure loss for maintaining position of workpiece
– pneumatic:	through pressure retention (one-way valve required DSV 1/8)
Total power:	arithmetic sum of the individual elements on the gripper jaws
Closing and opening times:	required time for the gripper jaws to cover the maximum stroke length

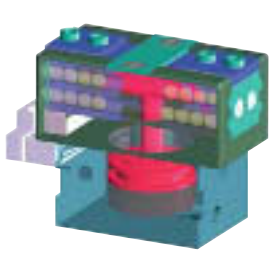
Accessories

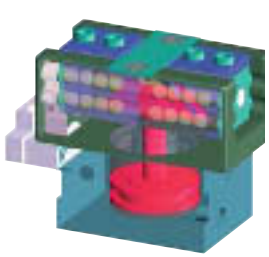
Included with purchase:

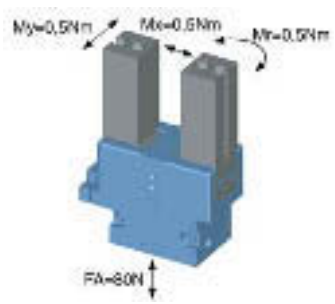
- Centering sleeves
- Bracket for inductive proximity switch

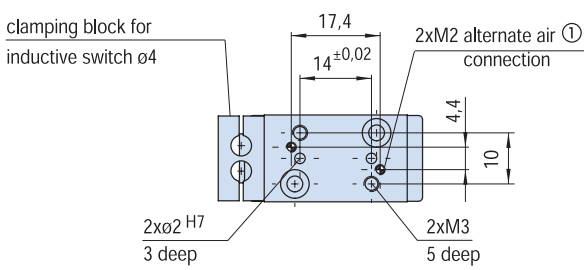
Accessory recommendation:

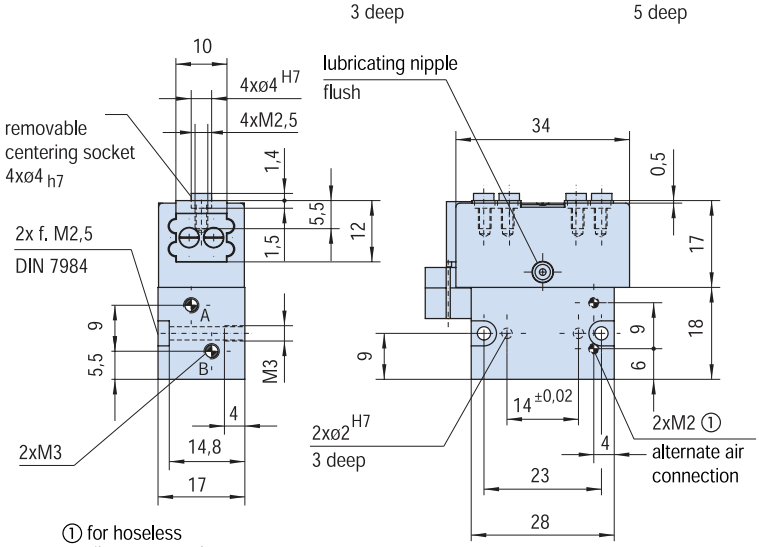
Universal jaws	Page 73
Inductive proximity switch	Page 428
Pneumatic fittings	Page 442
Tubing	Page 444
Control valves	Page 445
Pressure safety valves	Page 447

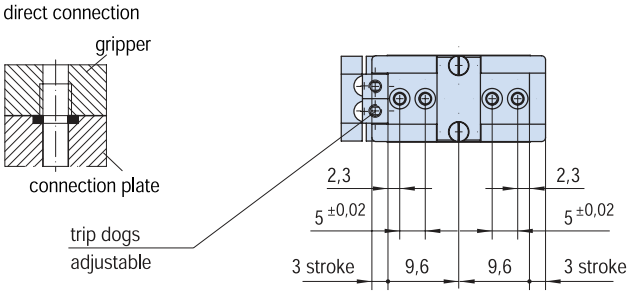








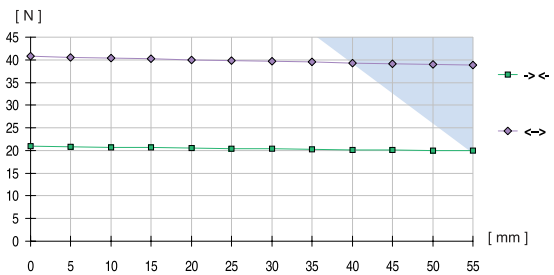




Parallel gripper
with ball bearing guide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 67.

Gripping force as a function of jaw length



Order no.:
GP103
Drive:
pneum.
Stroke per jaw [mm]:
3
Gripping force in closing [N]:
21
Gripping force in opening [N]:
41
Self-locking via:
DSV1/8
Closing time/opening time [s]:
0,02
Repeatability ± [mm]:
0,05
Min./max. operating pressure [bar]:
3 / 8
Air volume per cycle [cm³]:
1
Min./max. operating temperature [°C]:
5 / 80
Temp. resistant version up to 150° C [add to part number]:
T2
Piston diameter [mm]:
12
Weight [kg]:
0,095

All data measured at 6 bar.

Parallel gripper
with ball bearing guide

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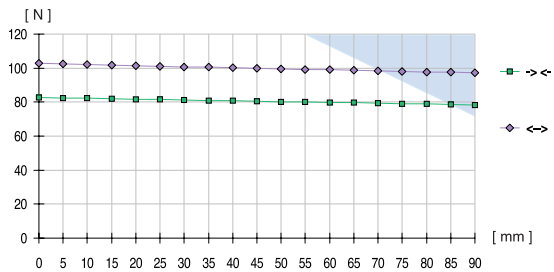
on page 67.

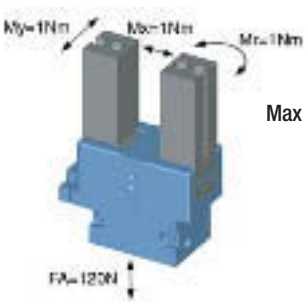
Gripping force as a function of jaw length



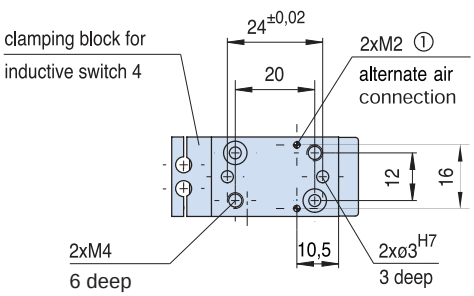
Order no.:
GP104
Drive:
pneum.
Stroke per jaw [mm]:
4
Gripping force in closing [N]:
84
Gripping force in opening [N]:
104
Self-locking via:
DSV1/8
Closing time/opening time [s]:
0,02
Repeatability ± [mm]:
0,05
Min./max. operating pressure [bar]:
3 / 8
Air volume per cycle [cm³]:
2
Min./max. operating temperature [°C]:
5 / 80
Temp. resistant version up to 150° C [add to part number]:
T2
Piston diameter [mm]:
16
Weight [kg]:
0,139

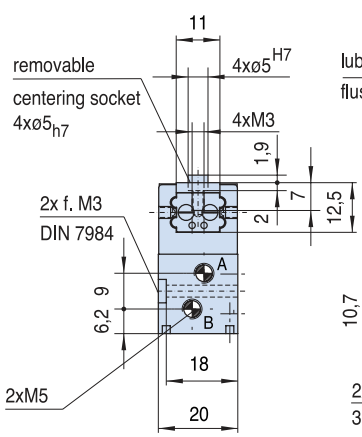
All data measured at 6 bar.

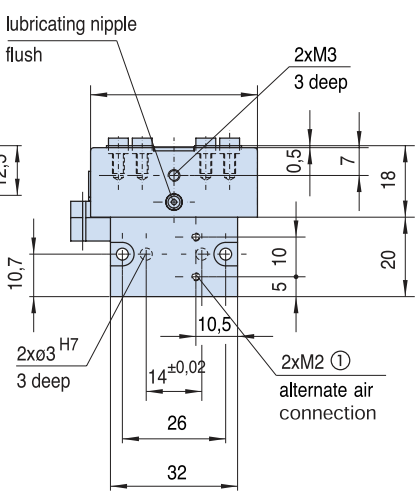
See Page 67 for Accessory list.



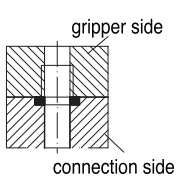
Max Allowable Forces on Jaws

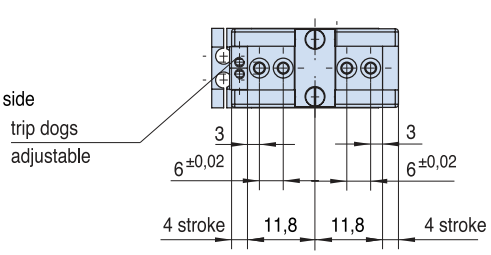




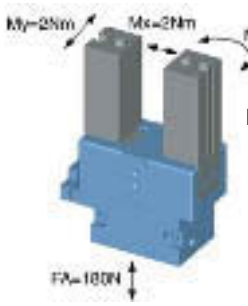


① for hoseless
direct connection





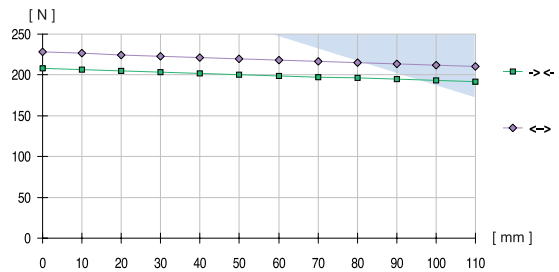
Parallel gripper
with ball bearing guide



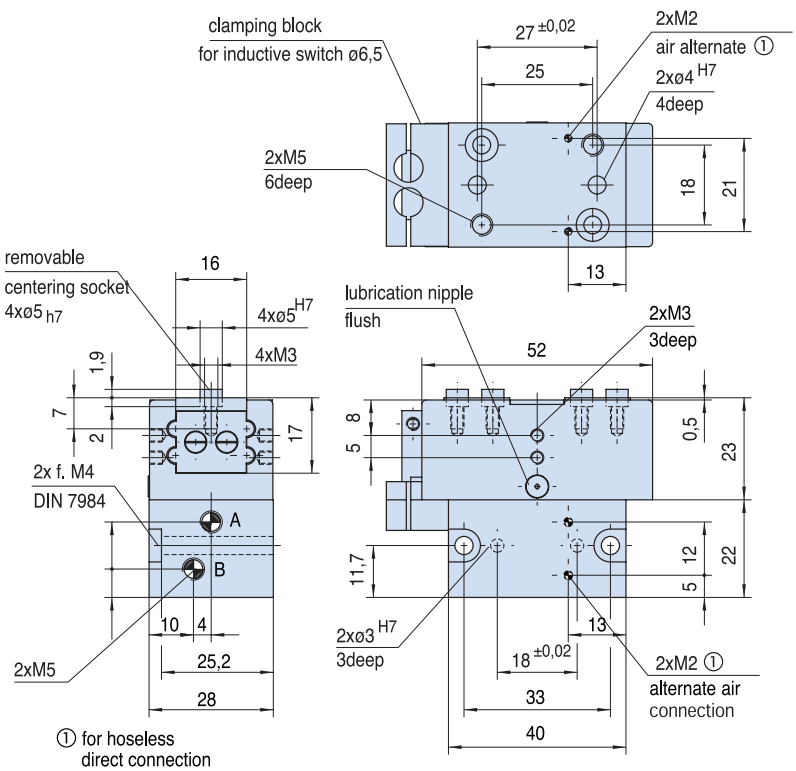
Max Allowable Forces on Jaws

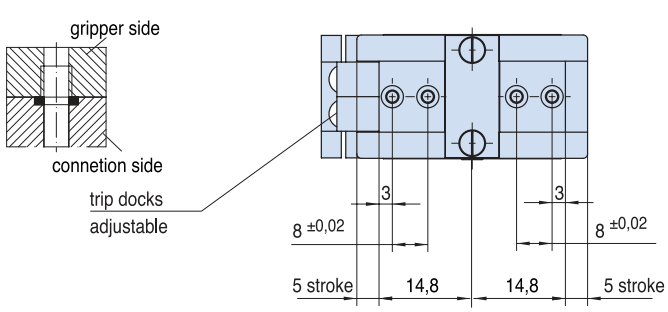
Advantages, benefits, comparisons and tips!
Stacks of information all about this product are on page 67.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected





Order no.:
GP105
Drive:
pneum.
Stroke per jaw [mm]:
5
Gripping force in closing [N]:
210
Gripping force in opening [N]:
230
Self-locking via:
DSV1/8
Closing time/opening time [s]:
0,03
Repeatability ± [mm]:
0,05
Min./max. operating pressure [bar]:
3 / 8
Air volume per cycle [cm³]:
4
Min./max. operating temperature [°C]:
5 / 80
Temp. resistant version up to 150° C [add to part number]:
T2
Piston diameter [mm]:
22
Weight [kg]:
0,313

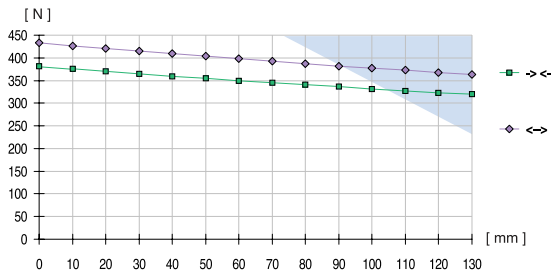
All data measured at 6 bar.

See Page 67 for Accessory list.

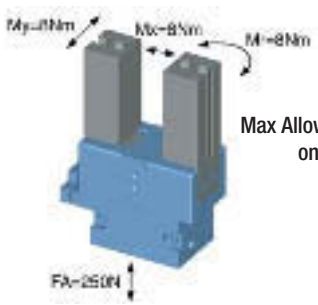
Parallel gripper
with ball bearing guide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 67.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected

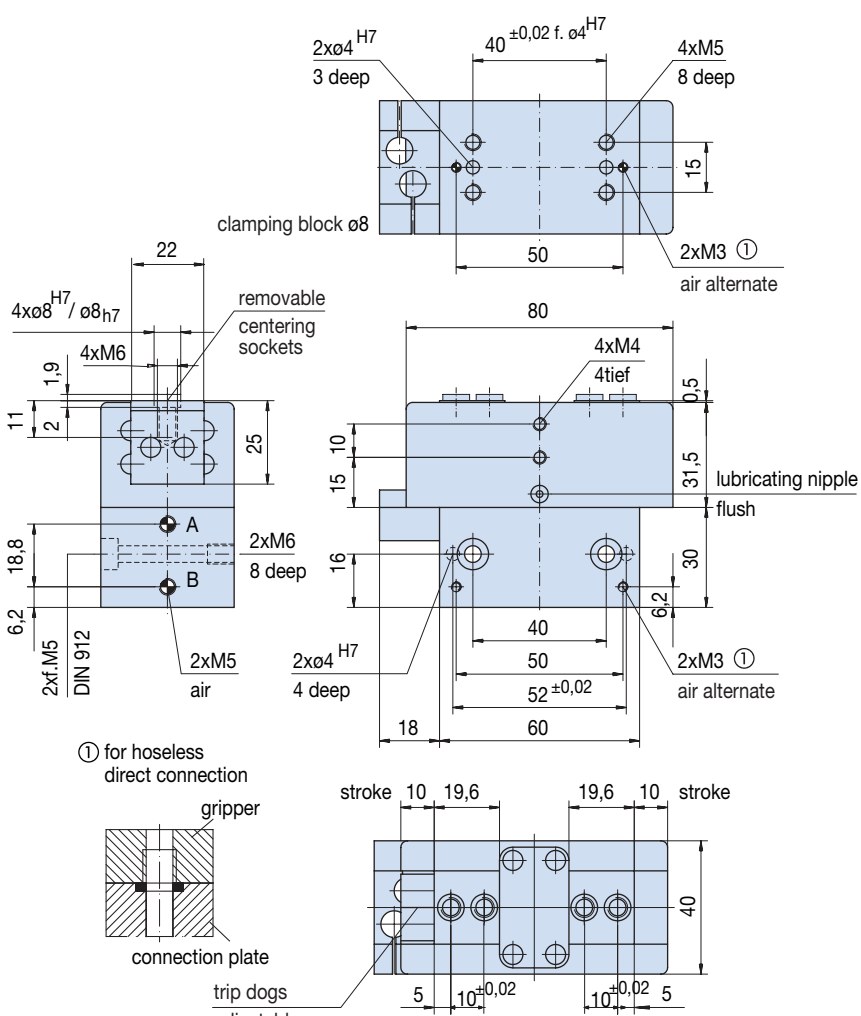


Max Allowable Forces on Jaws

Order no.:
GP110
Drive:
pneum.
Stroke per jaw [mm]:
10
Gripping force in closing [N]:
380
Gripping force in opening [N]:
430
Self-locking via:
DSV1/8
Closing time/opening time [s]:
0,04
Repeatability ± [mm]:
0,05
Min./max. operating pressure [bar]:
3 / 8
Air volume per cycle [cm³]:
17
Min./max. operating temperature [°C]:
5 / 80
Temp. resistant version up to 150° C [add to part number]:
T2
Piston diameter [mm]:
30
Weight [kg]:
0,9

All data measured at 6 bar.

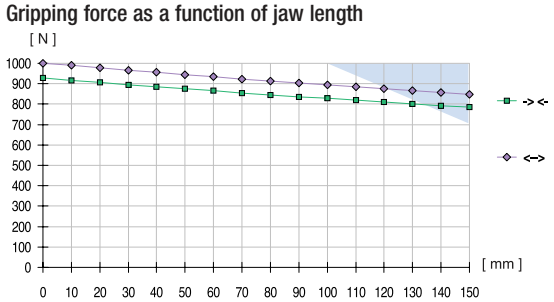
See Page 67 for Accessory list.



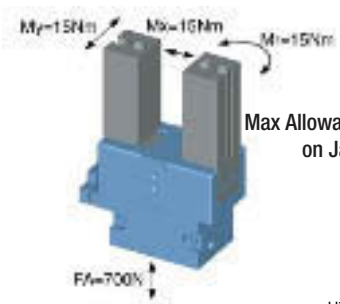
Parallel gripper
with ball bearing guide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 67.

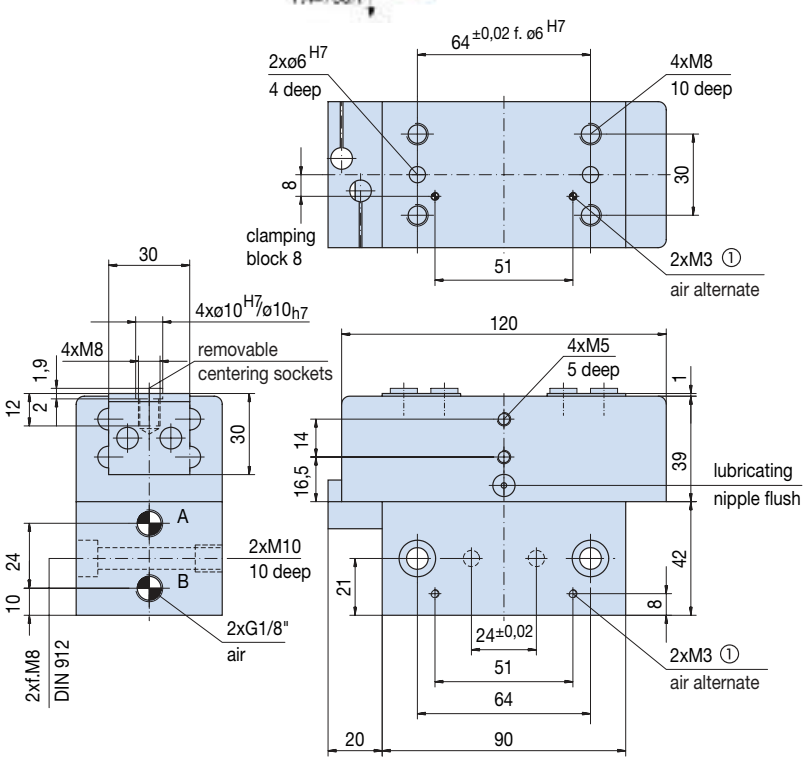
Gripping force as a function of jaw length



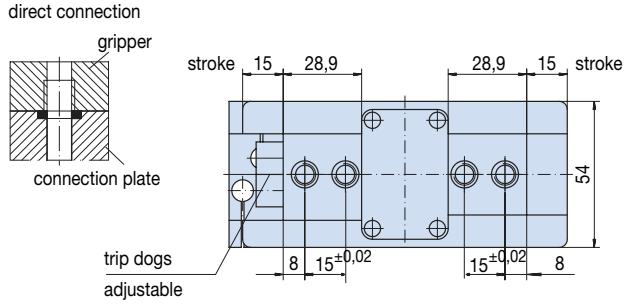
Colored area: increased wear and tear to be expected



Max Allowable Forces on Jaws



① for hoseless direct connection



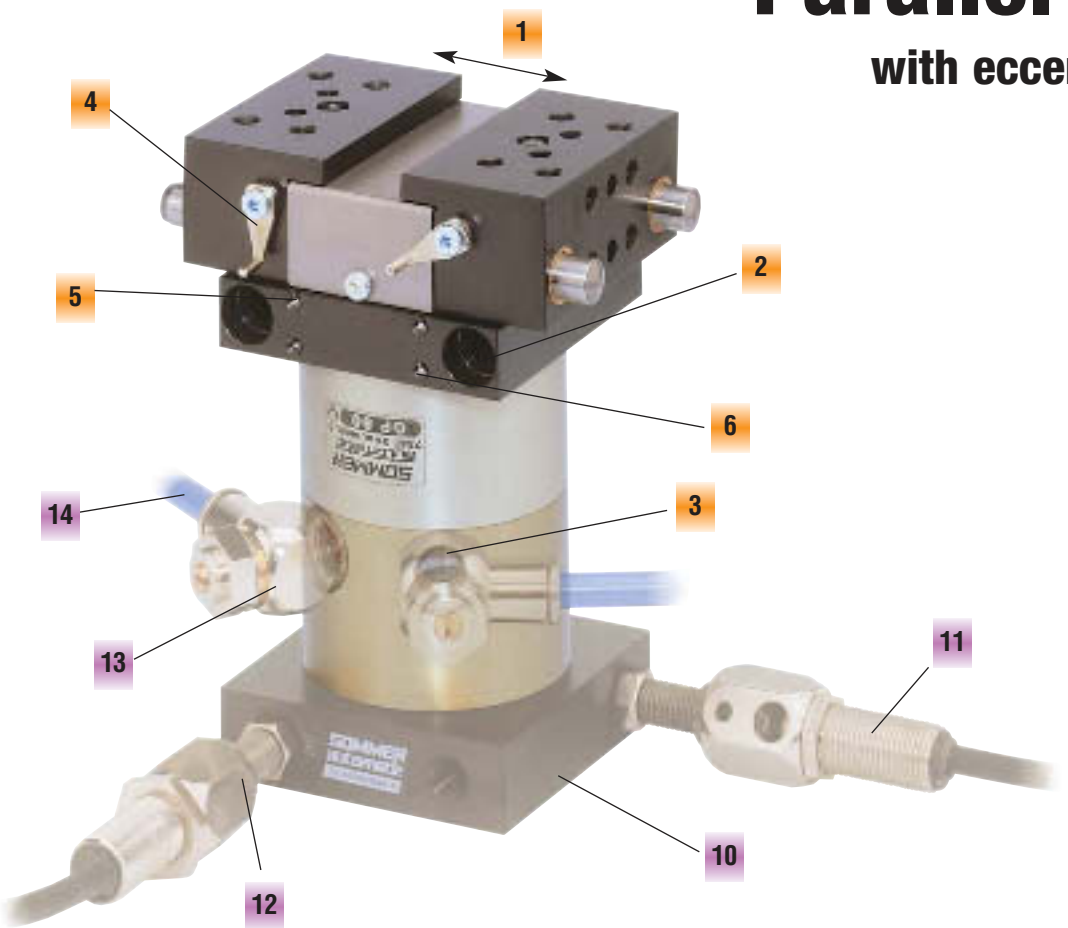
Order no.:
GP115
Drive:
pneum.
Stroke per jaw [mm]:
15
Gripping force in closing [N]:
930
Gripping force in opening [N]:
1000
Self-locking via:
DSV1/8
Closing time/opening time [s]:
0,04
Repeatability ± [mm]:
0,05
Min./max. operating pressure [bar]:
3 / 8
Air volume per cycle [cm³]:
57
Min./max. operating temperature [°C]:
5 / 80
Temp. resistant version up to 150° C [add to part number]:
T3
Piston diameter [mm]:
45
Weight [kg]:
2,1

All data measured at 6 bar.

See Page 67 for Accessory list.

Parallel gripper

with eccentric cam drive



Features

1 Stroke
2 Hole for socket head screw
3 Air connection
4 Removable centering sleeves
5 Trip dog
6 Sensor mount

Accessories

10 Rotation limiter with stop lever
11 Proximity switch
12 Stop stroke adjustment screw
13 Flow control valve
14 PU-hose

One of our originals...

.. but still in the race. Its self-locking is still insurmountable. It is driven by a pneumatic, double-acting rotary vane actuator. A double eccentric cam converts the rotary movement into a parallel displacement. The cam is attached to both jaws and is extended or retracted by the rotary movement. The gripper is mechanically self-locking at both the fully closed and fully opened positions (see diagram).

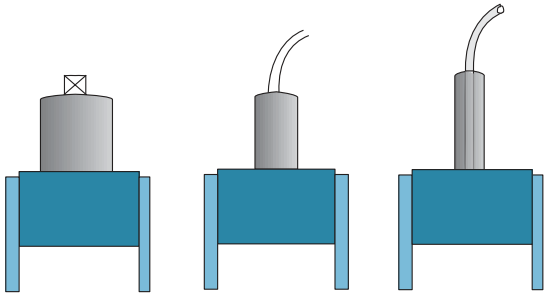
At these points, the gripper also achieves its greatest force. With this type of gripper, the sensor trip dogs are located on the front. Threaded M3 holes underneath the trip dogs are for attaching sensor mounts for proximity switches.

Depending upon the size of the gripper, the switches are available in sizes from 6.5 to 12 mm. Monitoring and simultaneous stroke adjustment can be accomplished with a rotation limiter mounted on the back of the rotor. The rotation limiter is adjusted by means of threaded stops.

The air connections are located on the front of all cam-actuated grippers. On the GP78 and GP80, these can also be located at the bottom on the rotor. The cam-actuated grippers can also be hydraulically operated under certain conditions - up to 12 bar operating pressure.

This gripper series is characterized by mechanical self-locking in the opened and closed condition.

Application Ideas

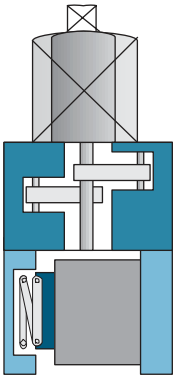


Drive with an air vane motor

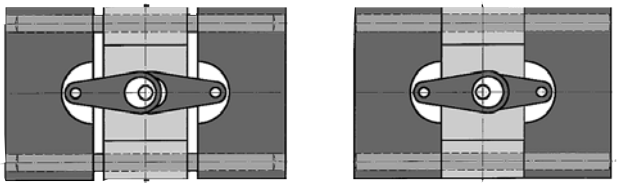
...with an electric motor

... with a hydraulic motor

Various types of drives can be mounted on the back of the grippers, for example, an electric motor or a hydraulic cylinder. There are no internal stops on the mechanism, thus, the gripper can be opened and closed by just rotating the drive shaft continuously.



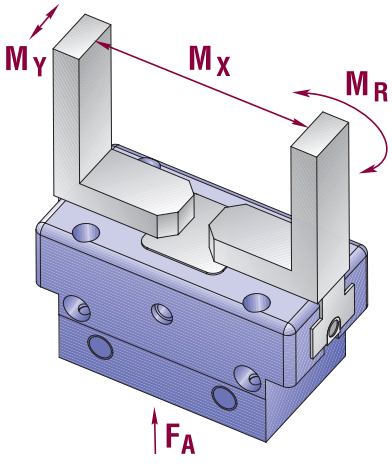
Note: On parts with dimensional tolerances and different sizes, one jaw should be spring-loaded. This ensures mechanical self-locking at the end of the stroke when the cam is either fully extended or fully retracted.



Operation

A double-acting rotary vane actuator turns a double eccentric cam, which is attached to the jaws by means of a rocker arm. This motion causes the jaws to move linearly to the opened and closed positions. The jaws run centrally in parallel on two guide pins. At the end of the stroke, the gripper is mechanically self-locking.

Schematic...
On every product page, you will find the following schematic which helps describe the max allowable forces and movements for that particular model.



Parallel gripper with eccentric cam

GP78/GP80/GP88

Things worth knowing

Advantages and uses

… high grip force … grip force safety devices at the end position …
… highly efficient due to long service life and high reliability …

Highlight

... opened and closed with mechanical self-lock!...

- ▶ centrally opening and closing
- ▶ any desired installation position
- ▶ position sensing possible through inductive proximity switch

Characteristics

Function	
Drive:	pneumatic vane-type cylinders
Power transfer:	thru double eccentric cam with connecting rod
Guide:	round guide with slide bearing
Material	
Housing:	hard-anodized aluminum
Moving parts:	steel and nonferrous metal (Rg7)
Maintenance	
Recommended at:	1.5 million cycles
Actuation:	filtered high-pressure air (10μm), dry or oiled
Maintenance of the mechanics:	– see owners' manual –

Basic explanations

Terms and illustrations

Grip force safety device:	required during pressure loss for maintaining position of workpiece
– pneumatic:	through pressure retention (one-way valve required (DSV1/8)
Total power:	arithmetic sum of the individual elements on the gripper jaws
Closing and opening times:	required time for the gripper jaws to cover the maximum stroke length

Accessories

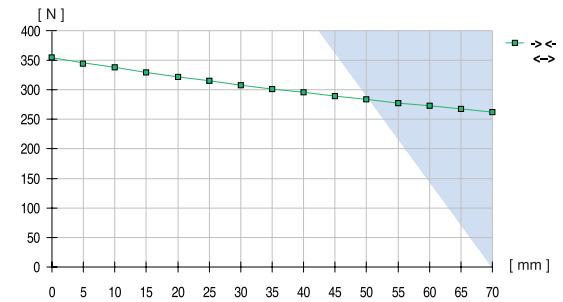
Accessory recommendation:

- ▶ Inductive proximity switch — Page 428
- ▶ Bracket for inductive proximity switch — Page 432
- ▶ Pneumatic fittings — Page 442
- ▶ Tubing — Page 444
- ▶ Control valves — Page 445
- ▶ Pressure safety valves — Page 447

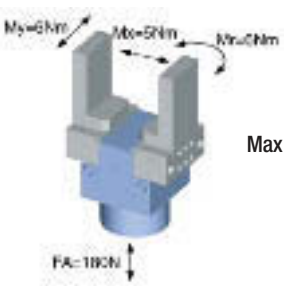
Parallel gripper
with eccentric cam

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 75.

Gripping force as a function of jaw length
(measured at 1 mm before the end of the stroke)

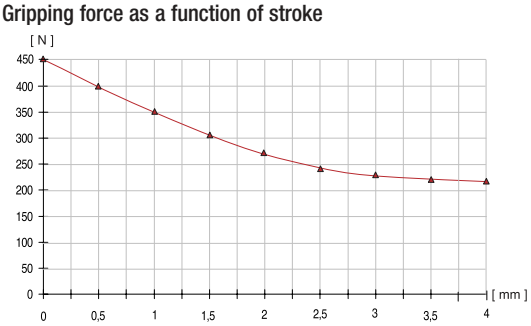


Colored area: increased wear and tear to be expected

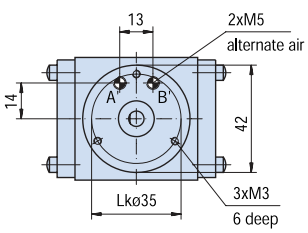


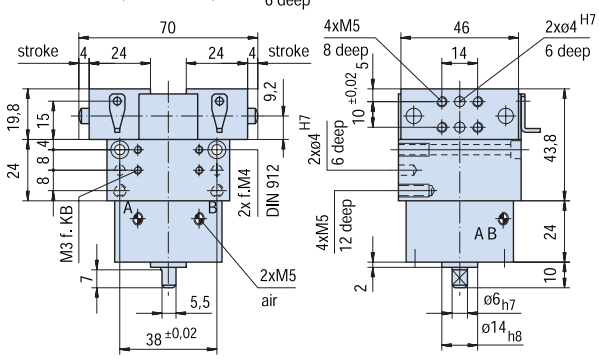
Max Allowable Forces
on Jaws

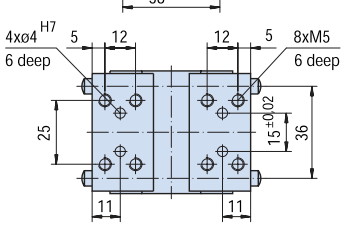
Gripping force as a function of stroke



Before end of stroke





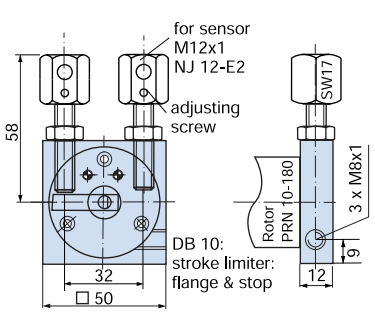


Position inquiry:

Order no.:
DB10
Rotation limiter
with stop

Order no.:
AI-M8x1-38
Stop-Stroke adjusting screw

Order no.:
NJ12-E2
Proximity switch



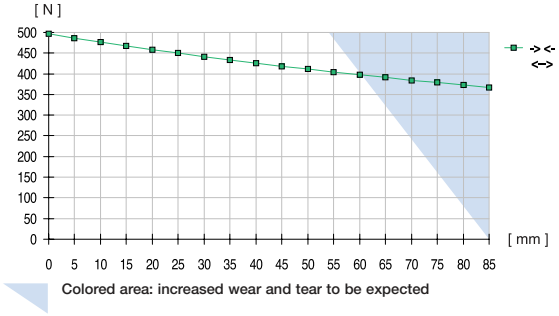
Order no.:
GP78
Drive:
pneum.
Stroke per jaw [mm]:
4
Gripping force in closing and opening [N]:
350
Self-locking via:
mech.
Closing time/opening time [s]:
0,05
Repeatability ± [mm]:
0,05
Min./max. operating pressure [bar]:
3 / 8
Air volume per cycle [cm³]:
10
Min./max. operating temperature [°C]:
5 / 60
Weight [kg]:
0,448

All data measured at 6 bar.

Parallel gripper
with eccentric cam

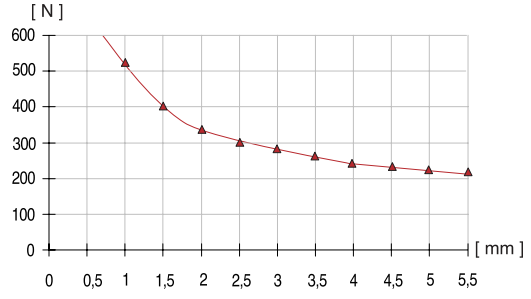
Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 75.

Gripping force as a function of jaw length
(measured at 1 mm before the end of the stroke)

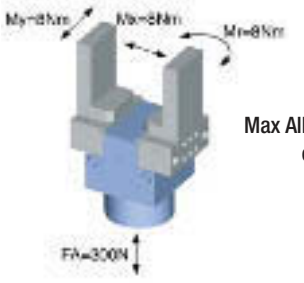


Colored area: increased wear and tear to be expected

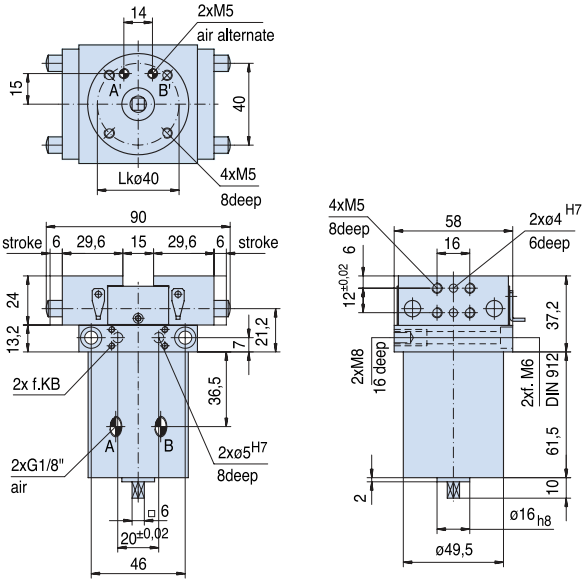
Gripping force as a function of stroke



Before end of stroke



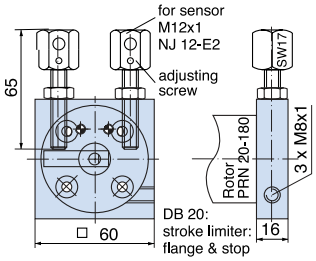
Max Allowable Forces
on Jaws



Order no.:
GP80
Drive:
pneum.
Stroke per jaw [mm]:
6
Gripping force in closing and opening [N]:
500
Self-locking via:
mech.
Closing time/opening time [s]:
0,06
Repeatability ± [mm]:
0,05
Min./max. operating pressure [bar]:
3 / 8
Air volume per cycle [cm³]:
27
Min./max. operating temperature [°C]:
5 / 60
Weight [kg]:
0,828

All data measured at 6 bar.

See Page 75 for Accessory list.



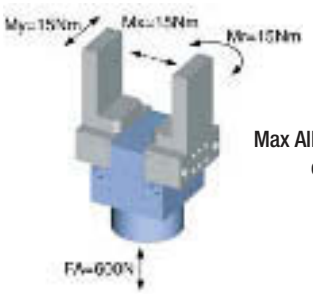
Position inquiry:

Order no.: DB20
Rotation limiter with stop

Order no.: AI-M8x1-38
Stop-Stroke adjusting screw

Order no.: NJ12-E2
Proximity switch

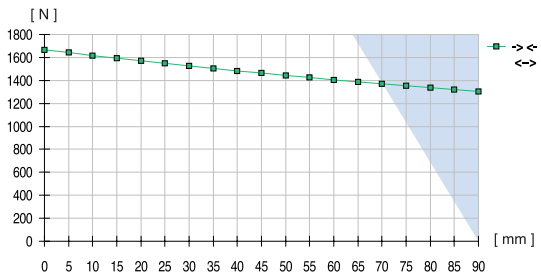
Parallel gripper
with eccentric cam



Max Allowable Forces on Jaws

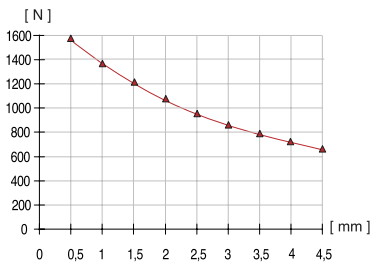
Advantages, benefits, comparisons and tips! Stacks of information all about this product are on page 75.

Gripping force as a function of jaw length (measured at 1mm before the end of stroke)

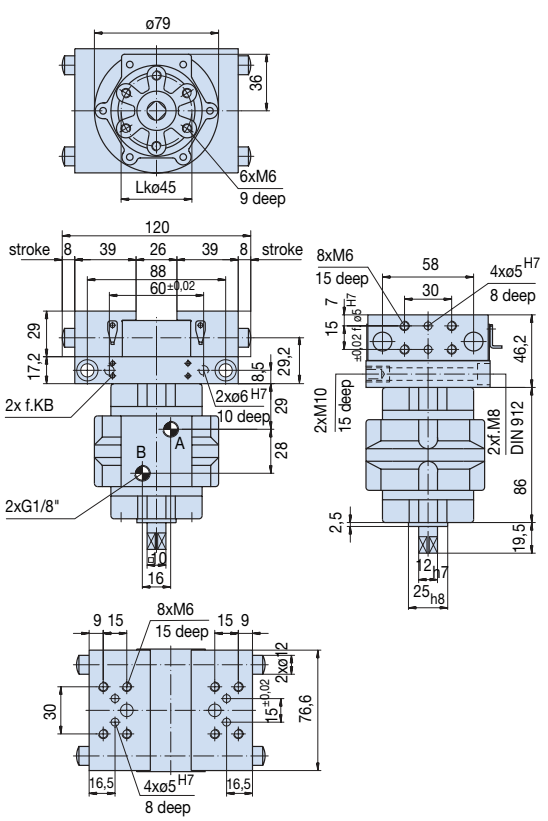


Colored area: increased wear and tear to be expected

Gripping force as a function of stroke



Before end of stroke



Order no.:
GP88
Drive:
pneum.
Stroke per jaw [mm]:
8
Gripping force in closing and opening [N]:
1650
Self-locking via:
mech.
Closing time/opening time [s]:
0,08
Repeatability ± [mm]:
0,05
Min./max. operating pressure [bar]:
3 / 8
Air volume per cycle [cm³]:
27
Min./max. operating temperature [°C]:
5 / 60
Weight [kg]:
1,984

All data measured at 6 bar.

See Page 75 for Accessory list.

Position inquiry:

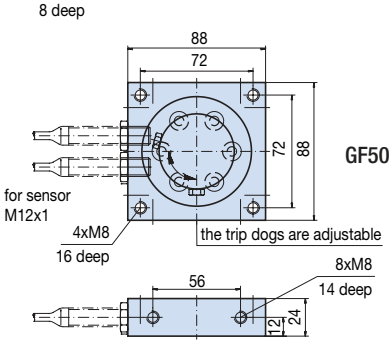
Order no.: GF50
Inquiry with interim position

Alternative:

Order no.: DB50
Flange with stop lever

Order no.: AI-M8x1-38
Stop-stroke adjusting screw

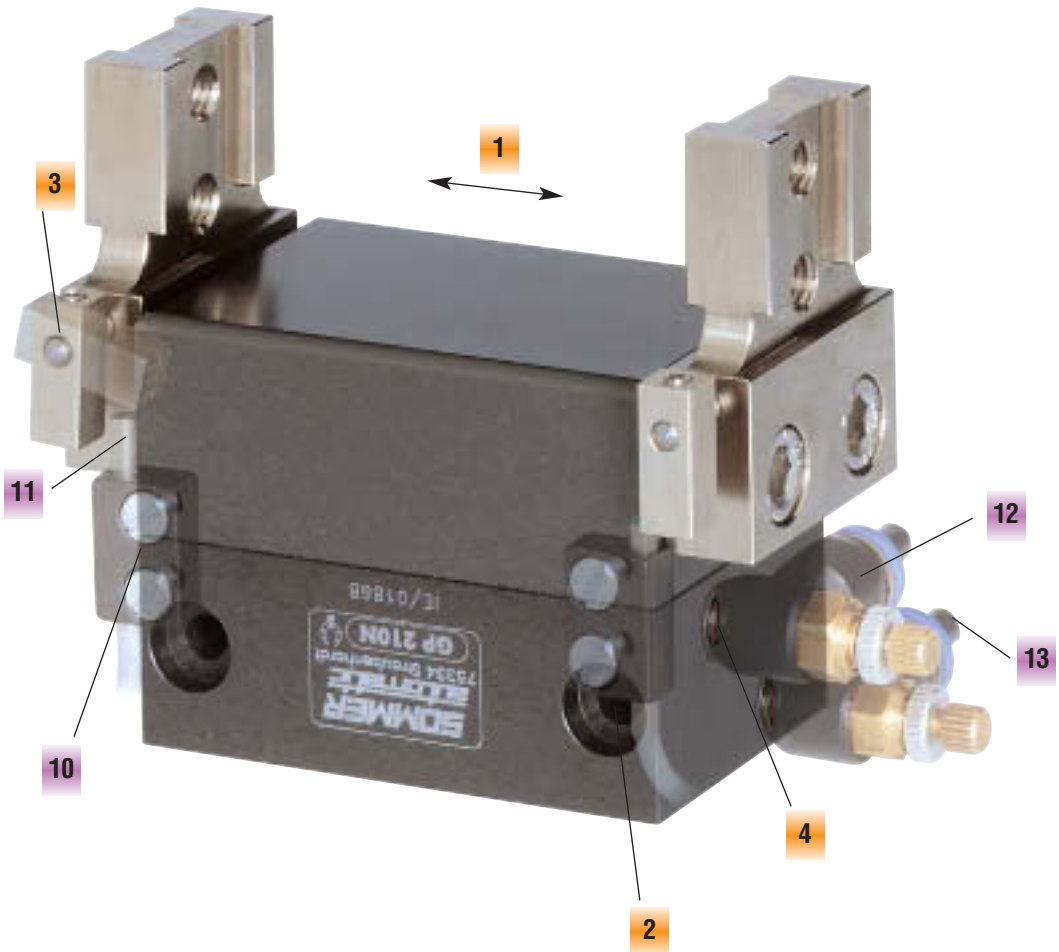
Order no.: NJ12-E2
Proximity switch



GF50

Parallel gripper

with sealed and rust-resistant guide



Features

1 Stroke
2 Hole for socket head screw
3 Trip dog
4 Air connection at the side and rear

Accessories

10 Sensor mount
11 Proximity switch
12 One-way valve
13 PU hose

This gripper series…

… is resistant and impervious to dirt, swarf and water. The radial slide mounted on the piston runs along the bevel of the two guide pins, which are attached to the gripper jaws. These are moved inward or outward, depending on how the gripper is actuated.

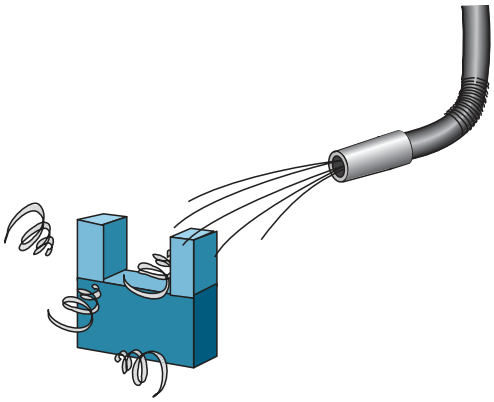
This allows objects to be gripped symmetrically. The gripper jaws are secured against rotation by the two guide pins. The guide pin housing is made of hard-coated aluminum, which allows the guide pins to slide easily.

The gripper is also rust-resistant, with all steel parts nickel-plated. Here too, the adjustable trip dogs are located on the jaws. The sensor mounts for proximity switches can be installed in the M3 threaded holes beneath the trip dogs.

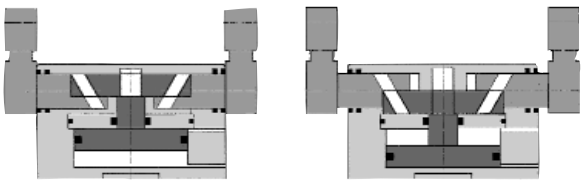
The proximity switches are available in sizes ranging from ø 3 - 6.5 mm, depending on the size of the gripper. Ample holes for pins, centering discs and screws are provided for convenient mounting. The air connections are located on the side of the gripper. The GP210 has factory-plugged air connections at the back.

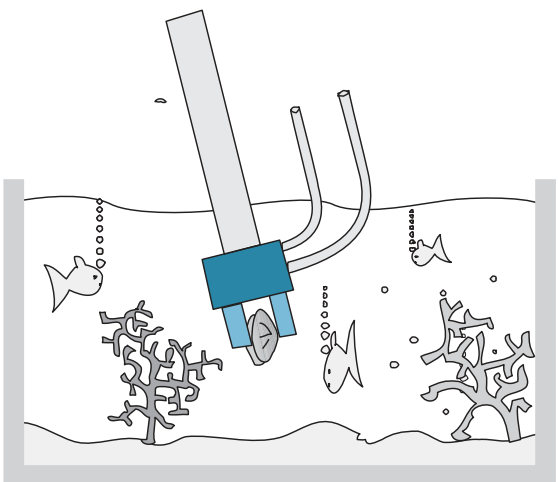
For this series, we also offer suitable universal jaws, which may be reworked for certain applications. For more details, see our accessories section. The jaws of this series are screwed on and pinned from he top.

Application Ideas



The gripper is protected against dirt, swarf and many liquids such as coolants, etc.



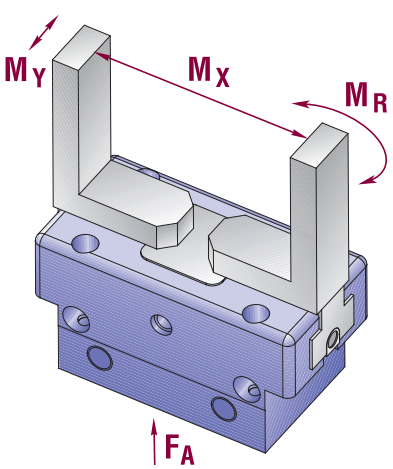


The gripper can also be used under water.

Operation (patents granted)

A double-acting pneumatic cylinder drives a slide. The force-guided jaws are moved in parallel to the open and closed position by the slope of the slide. The jaws are secured against rotation with two sealed guide shafts.

Schematic...
On every product page you will find the following schematic which helps describe the max allowable forces and movements for that particular model.



Parallel gripper sealed and rust-resistant

GP206/GP210

things worth knowing

Advantages and uses

Highlight

… sealed gripper with precise round guide … stainless …
… compact construction with low weight …

… protected from dirt, shavings, and liquids! …

- centrally opening and closing
- any desired installation position
- multiple air connection possibilities
- position sensing possible through inductive proximity switch

Characteristics

Function	
Drive:	double-acting pneumatic cylinder
Power transfer:	wedge piston principle
Guide:	sealed round guide
Material	
Housing:	hard-anodized aluminum
Gripper jaws:	steel, nickel-plated
Guide rods:	steel, nickel-plated
Moving parts:	nitrided steel
Maintenance	
Recommended at:	1.5 million cycles
Actuation:	filtered high-pressure air (10μm), dry or oiled
Maintenance of the mechanics:	– see owners' manual –

Basic explanations

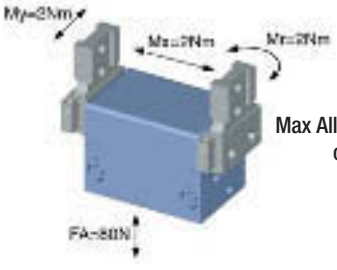
Terms and illustrations

Grip force safety device:	required during pressure loss for maintaining position of work piece
– pneumatic:	through pressure retention (one way valve required DSV 1/8)
Total power:	arithmetic sum of the individual elements on the gripper jaws
Closing and opening times:	required time for the gripper jaws to cover the maximum stroke length

Accessories

Accessory recommendation:

- Inductive proximity switch — Page 428
- Bracket for inductive proximity switch — Page 432
- Pneumatic fittings — Page 442
- Tubing — Page 444
- Control valves — Page 445
- Pressure safety valves — Page 447



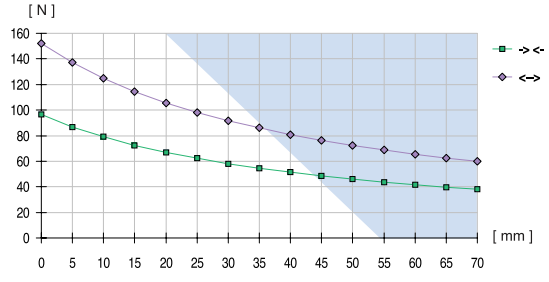
Max Allowable Forces on Jaws

Parallel gripper

sealed and rust-resistant

Advantages, benefits, comparisons and tips! Stacks of information all about this product are on page 79.

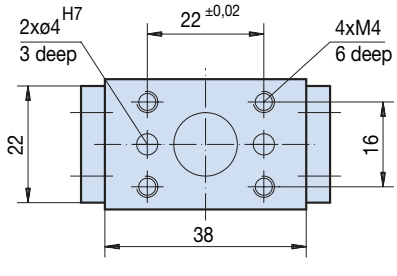
Gripping force as a function of jaw length

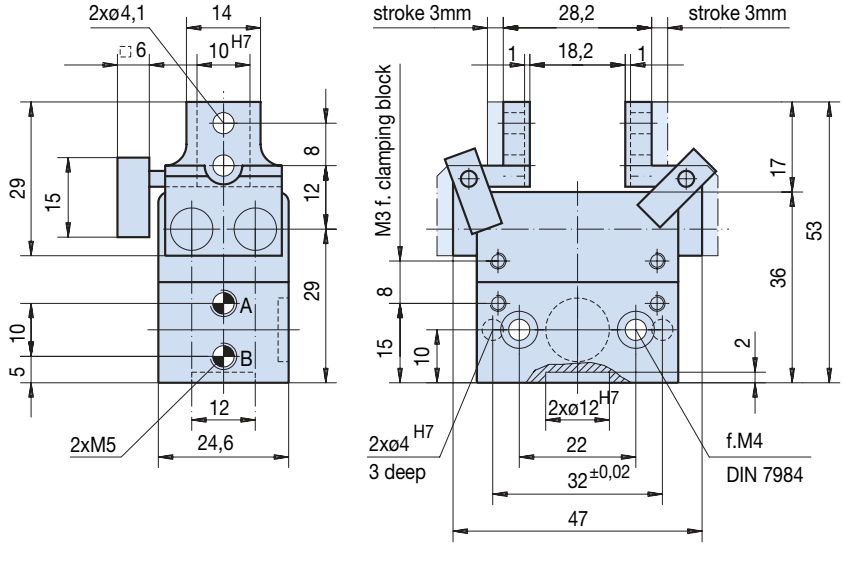


Order no.:
GP206 N
Drive:
pneum.
Stroke per jaw [mm]:
3
Gripping force in closing [N]:
95
Gripping force in opening [N]:
155
Self-locking via:
DSV1/8
Closing time/opening time [s]:
0,03
Repeatability ± [mm]:
0,05
Min./max. operating pressure [bar]:
3 / 8
Air volume per cycle [cm³]:
4
Min./max. operating temperature [°C]:
5 / 80
Temp. resistant version up to 150° C [add to part number]:
T3
Piston diameter [mm]:
16
Weight [kg]:
0,12

All data measured at 6 bar.

See Page 79 for Accessory list.

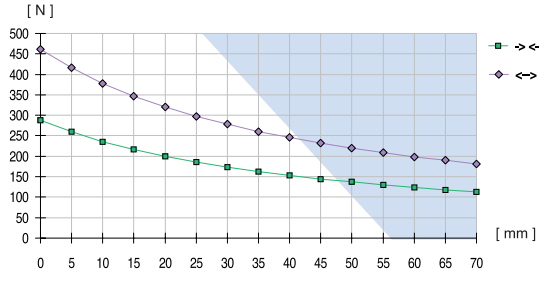




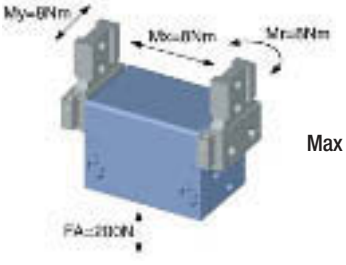
Parallel gripper
sealed and rust-resistant

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 79.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected

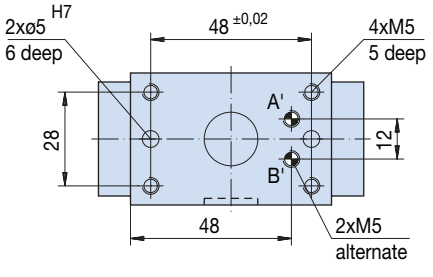


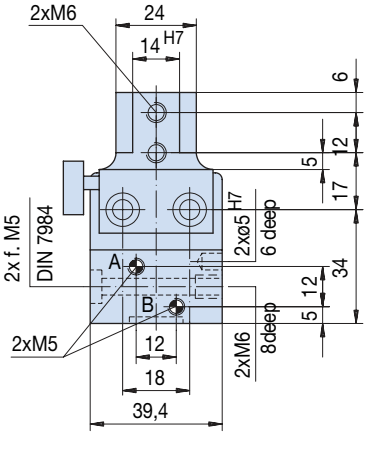
Max Allowable Forces on Jaws

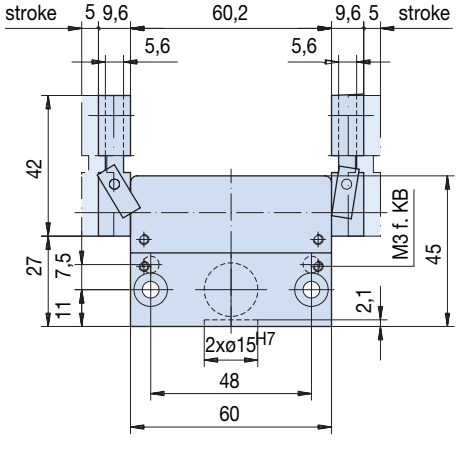
Order no.:
GP210 N
Drive:
pneum.
Stroke per jaw [mm]:
5
Gripping force in closing [N]:
280
Gripping force in opening [N]:
465
Self-locking via:
DSV1/8
Closing time/opening time [s]:
0,04
Repeatability ± [mm]:
0,05
Min./max. operating pressure [bar]:
3 / 8
Air volume per cycle [cm³]:
33
Min./max. operating temperature [°C]:
5 / 80
Temp. resistant version up to 150° C [add to part number]:
T3
Piston diameter [mm]:
25
Weight [kg]:
0,415

All data measured at 6 bar.

See Page 79 for Accessory list.

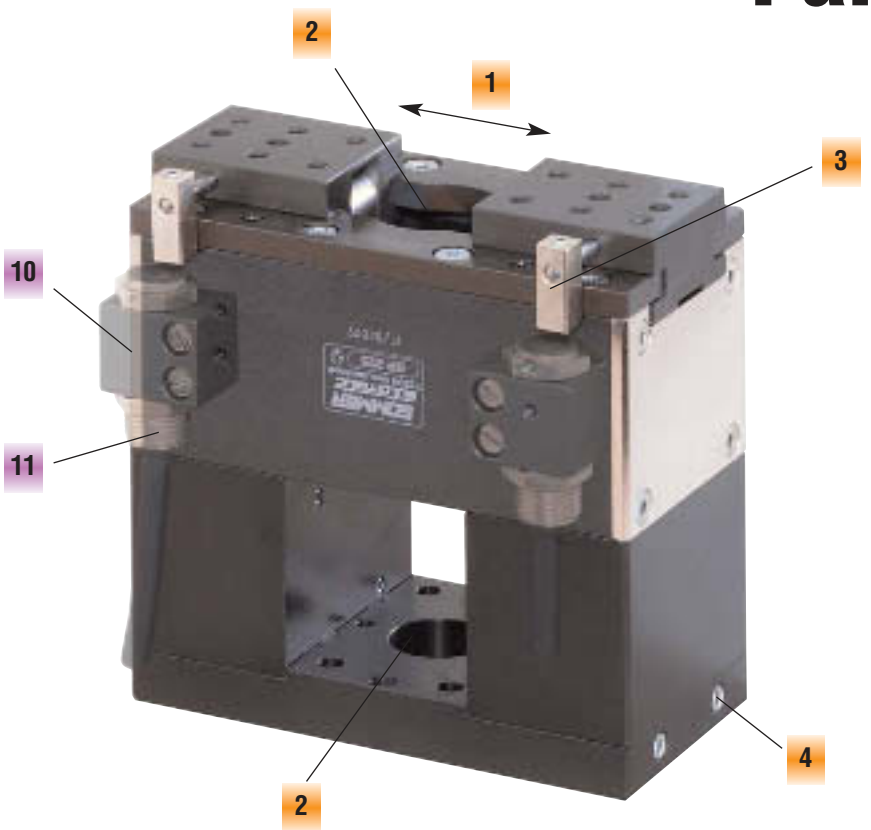






Parallel gripper

with center thru hole



Features

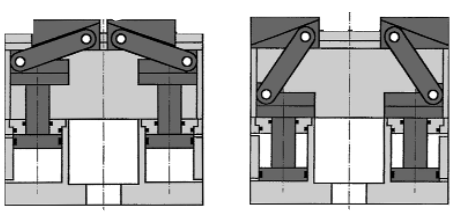
1 Stroke
2 Hole for camera, sensor or cylinder
3 Trip dog
4 Air connection at the front, bottom and side)

Accessories

10 Sensor mount
11 Proximity switch

Operation

Two double-acting pneumatic cylinders move the jaws in parallel to the open and closed positions. The jaws are synchronized by a sliding joint and guided firmly in a slot in the housing.



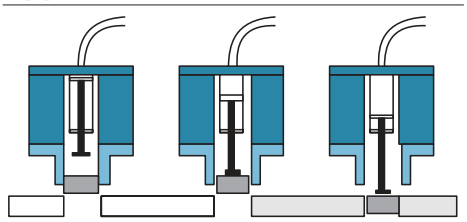
A Smart Fellow...

... among grippers - with a clear vision. A camera, other sensor equipment or a cylinder can be installed in the center, where it is protected against external disturbing edges. No more tangled cables around the gripper since they emanate from the center.

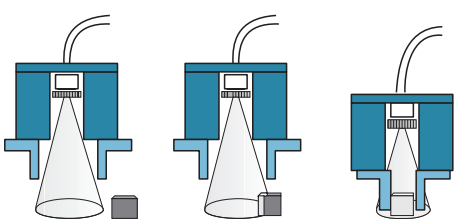
Air connections for opening and closing can be attached to ports on the back or side. The gripper is double-acting and has two cylinders, which are arranged off-center. Both cylinders are linked to each other pneumatically so that only one connection each for A and B are required.

The lever slides attached to the cylinders are also guided in the slide plates at the top so that both cylinders are aligned with each other. The jaws are guided in a T-slot. The sliding parts are made of hard-anodized aluminum, which provides a high surface hardness and good sliding characteristics. As on nearly all gripper models, adjustable trip dogs are mounted on the jaws. The M3 holes underneath the dogs are for attaching sensor mount "KB 12". Proximity switch "NJ 12-E2" fits here for sensing the open and closed positions. More details are in the accessories section.

Applications Ideas

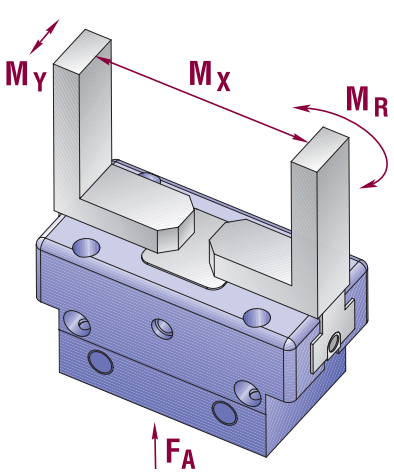


By installing a cylinder in the center of the gripper, several work steps can be carried out simultaneously. For example, in the diagram above a part is being pressed after being laid in a die.



With a sensor or a camera fitted in the center of the gripper, it is possible to sense parts directly while being protected against external damage.

Schematic...
On every product page, you will find the following schematic which helps describe the max allowable forces and movements for that particular model.



Parallel gripper with center thru hole

GP325

things worth knowing

Advantages and uses

… large center bore … mechanical self-locking in the end position (close) …
… high reliability and long service life …

Highlight

… ideal for the integration of a sensor or camera! …

- centrally closing
- any desired installation position
- position sensing possible through inductive proximity switch

Characteristics

Function	
Drive:	two synchronized, double-acting pneumatic cylinders
Power transfer:	piston and toggle linkage
Guide:	flat guide for high moment absorption on all sides
Material	
Housing:	hard-anodized aluminum
Gripper jaws:	hard-anodized aluminum
Moving parts:	nitrided steel and nonferrous metal (Rg7)
Maintenance	
Recommended at:	1.5 million cycles
Actuation:	filtered high-pressure air (10μm), dry or oiled
Maintenance of the mechanics:	– see owners' manual –

Basic explanations

Terms and illustrations

Grip force safety device:	required during pressure loss for maintaining position of workpiece
– pneumatic:	through pressure retention (one-way valve required DSV 1/8)
– mechanical:	through toggle linkage during external gripping
Total power:	arithmetic sum of the individual elements on the gripper jaws
Closing and opening times:	required time for the gripper jaws to cover the maximum stroke length

Accessories

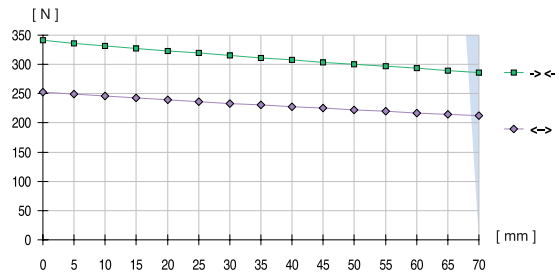
Accessory recommendation:

- Inductive proximity switch — Page 428
- Bracket for inductive proximity switch — Page 432
- Pneumatic fittings — Page 442
- Tubing — Page 444
- Control valves — Page 445
- Pressure safety valves — Page 447

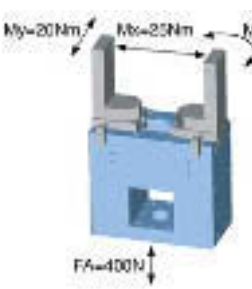
Parallel gripper
with thru hole

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 83.

Gripping force as a function of jaw length



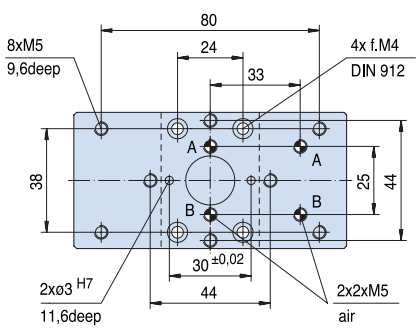
Colored area: increased wear and tear to be expected

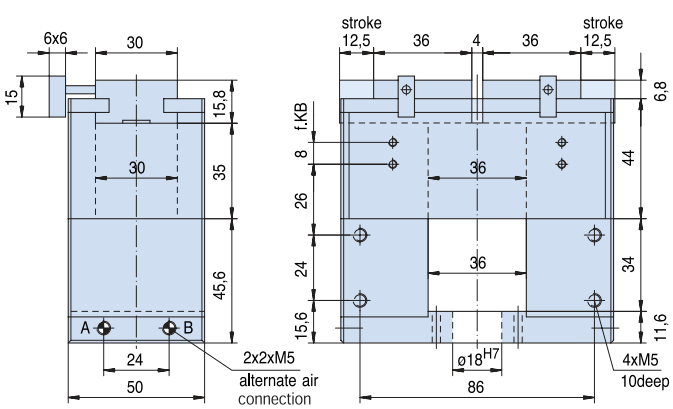


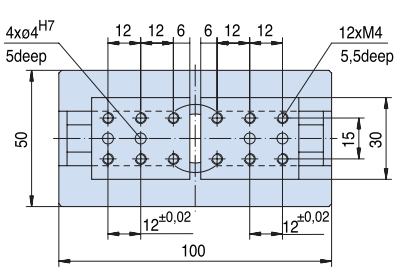
Max Allowable Forces
on Jaws

Order no.:
GP325
Drive:
pneum.
Stroke per jaw [mm]:
12,5
Gripping force in closing [N]:
340
Gripping force in opening [N]:
250
Self-locking via:
mech.
Closing time/opening time [s]:
0,15
Repeatability ± [mm]:
0,05
Min./max. operating pressure [bar]:
3 / 8
Air volume per cycle [cm³]:
20
Min./max. operating temperature [°C]:
5 / 80
Temp. resistant version up to 150° C [add to part number]:
T3
Piston diameter [mm]:
2 x 25
Weight [kg]:
0,98

All data measured at 6 bar.







See Page 83 for Accessory list.

Parallel gripper with curved cam disk

GP500

things worth knowing

Advantages and uses

… large stroke, combined with strong grip force

Highlight

… the robust one! …
… curve controlled …

- centrally opening and closing
- any desired installation position
- position sensing possible through inductive proximity switch cam

Characteristics

Function	
Drive:	pneumatic vane-type cylinders
Power transfer:	cam disk
Material	
Housing:	hard-anodized aluminum and nicke-plated steel
Moving parts:	nitrided steel
Maintenance	
Recommended at:	1.5 million cycles
Actuation:	filtered high-pressure air (10μm), dry or oiled
Maintenance of the mechanics:	– see owners' manual –

Basic explanations

Terms and illustrations

Grip force safety device:	required during pressure loss for maintaining position of workpiece
– pneumatic:	through pressure retention (one way valve required DSV 1/8)
Total power:	arithmetic sum of the individual elements on the gripper jaws
Closing and opening times:	required time for the gripper jaws to cover the maximum stroke length

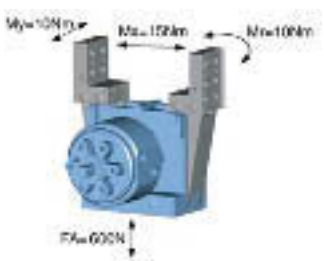
Models

GP …	Drive	Stroke	Power	Internal gripping	External gripping
…500	pneumatic	large		●	●
…500S	pneumatic	large	high		●

Accessories

Accessory recommendation:

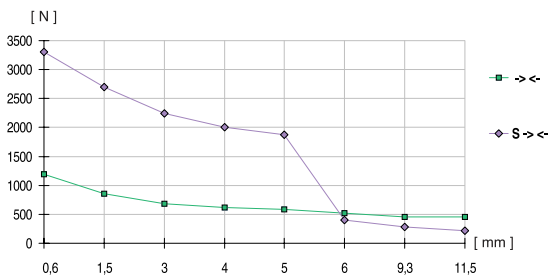
- Inductive proximity switch — Page 428
- Bracket for inductive proximity switch — Page 432
- Pneumatic fittings — Page 442
- Tubing — Page 444
- Control valves — Page 445
- Pressure safety valves — Page 447



Parallel gripper
with cam disk

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 85.

Gripping force as a function of stroke

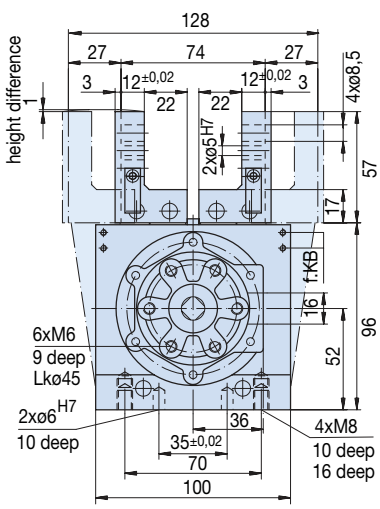


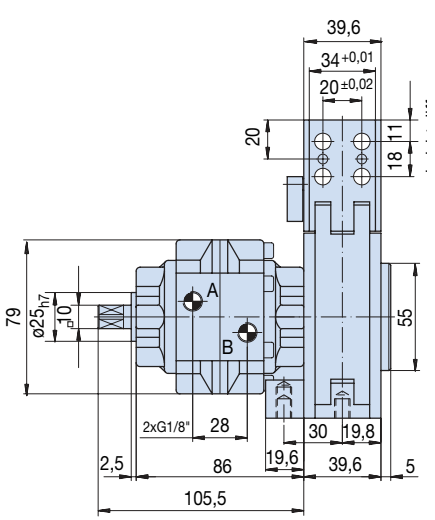
before end of stroke

Order no.:						
GP500	GP500 S					
Drive:						
pneum.	pneum.					
Stroke per jaw [mm]:						
27	25					
Gripping force in closing [N]:						
1200	3300					
Self-locking via:						
mech.	mech.					
Closing time/opening time [s]:						
0,3	0,3					
Repeatability ± [mm]:						
0,1	0,1					
Min./max. operating pressure [bar]:						
4 / 8	4 / 8					
Air volume per cycle [cm³]:						
72	85					
Min./max. operating temperature [°C]:						
5 / 80	5 / 80					
Weight [kg]:						
3,2	3,2					

All data measured at 6 bar.

See Page 85 for Accessory list.





Long-stroke gripper with T-slot guide

GH6040 up to GH64200

things worth knowing

Advantages and uses

… high-grip force, combined with long stroke … robust T-slot guide …

Highlight

… space-saving despite long stroke …

- compact design and minimal weight
- centrally opening and closing
- high precision
- any desired installation position
- position sensing possible through inductive proximity switch

Characteristics

Function	
Drive:	two double-acting pneumatic cylinders
Power transfer:	through gears synchronized rack-and-pinion drive
Guide:	T-slot guide for high power and moment absorption
Material	
Housing:	hard-anodized aluminum
Moving parts:	nitrided steel
Maintenance	
Recommended at:	1.5 million cycles
Actuation:	filtered high-pressure air (10μm), dry or oiled
Maintenance of the mechanics:	via integrated lubrication nipple – see owners' manual –

Basic explanations

Terms and illustrations

Grip force safety device:	required during pressure loss for maintaining position of workpiece
– pneumatic:	through pressure retention (one-way valve required DSV 1/8)
Total power:	arithmetic sum of the individual elements on the gripper jaws
Closing and opening times:	required time for the gripper jaws to cover the maximum stroke length

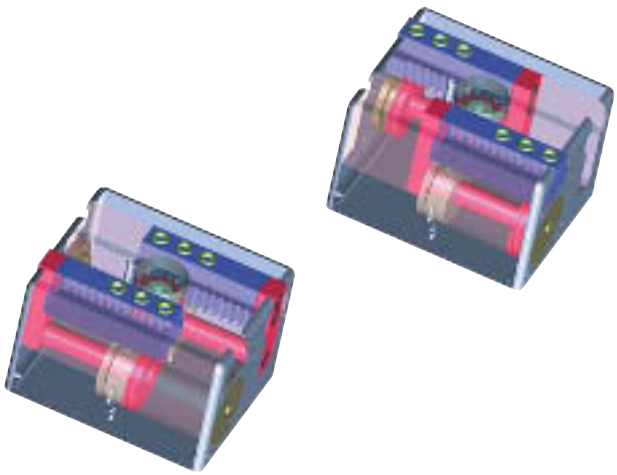
Accessories

Included with purchase:

- Centering sleeves
- Bracket for inductive proximity switch

Accessory recommendation:

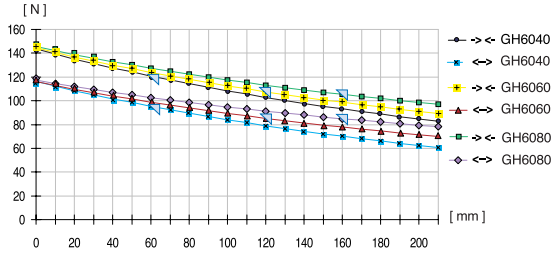
- Universal jaws Page 92
- Inductive proximity switch Page 428
- Pneumatic fittings Page 442
- Tubing Page 444
- Control valves Page 445
- Pressure safety valves Page 447



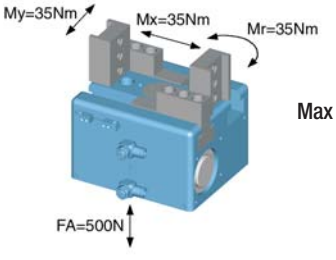
Long-stroke gripper
with T-slot guide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are on page 87.

Gripping force as a function of jaw length



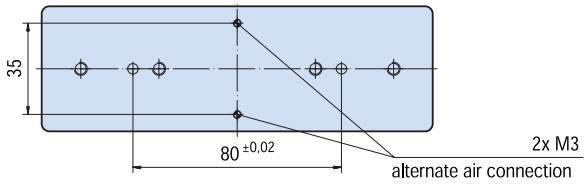
Colored area: increased wear and tear to be expected

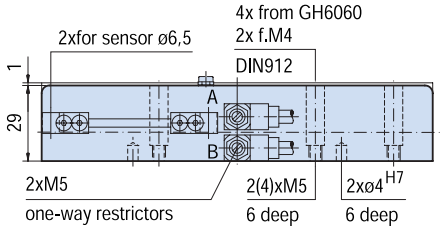


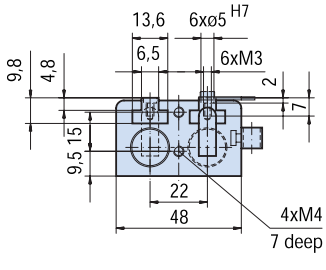
Max Allowable Forces on Jaws

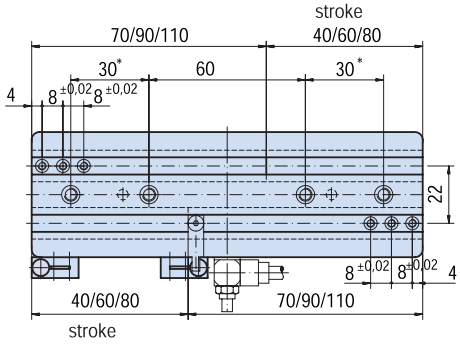
Order no.:						
GH6040	**GH6060**	**GH6080**				
Drive:						
pneum.	pneum.	pneum.				
Stroke per jaw [mm]:						
40	60	80				
Gripping force in closing [N]:						
145	145	145				
Gripping force in opening [N]:						
115	115	115				
Self-locking via:						
DSV1/8	DSV1/8	DSV1/8				
Closing time/opening time [s]:						
0,3	0,35	0,4				
Repeatability ± [mm]:						
0,05	0,05	0,05				
Min./max. operating pressure [bar]:						
4 / 10	4 / 10	4 / 10				
Air volume per cycle [cm³]:						
20	30	40				
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80				
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3				
Piston diameter [mm]:						
14	14	14				
Weight [kg]:						
0,45	0,59	0,75				

All data measured at 6 bar.









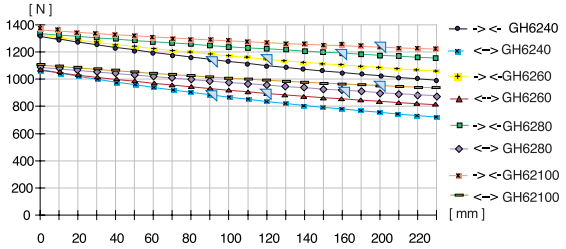
* from GH 6060 on

See Page 87 for Accessory list.

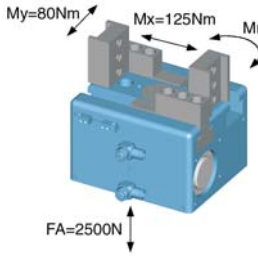
Long-stroke gripper
with T-slot guide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are on page 87.

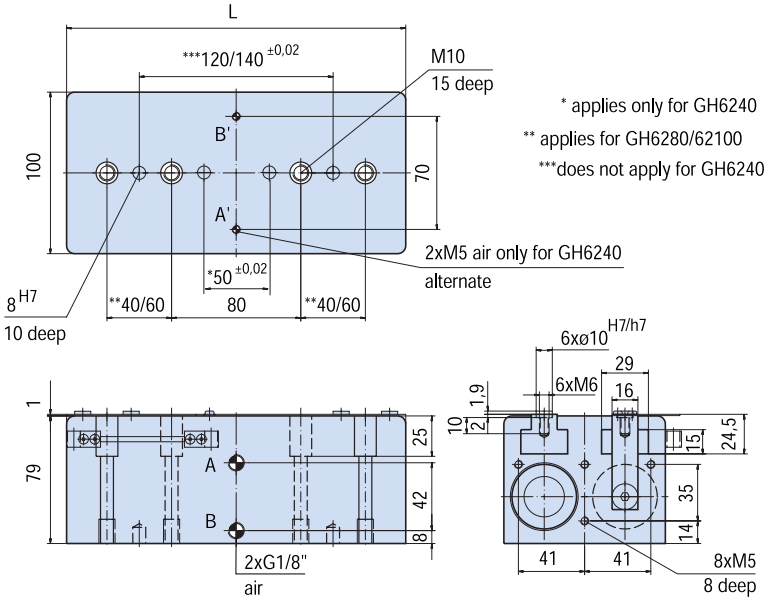
Gripping force as a function of jaw length



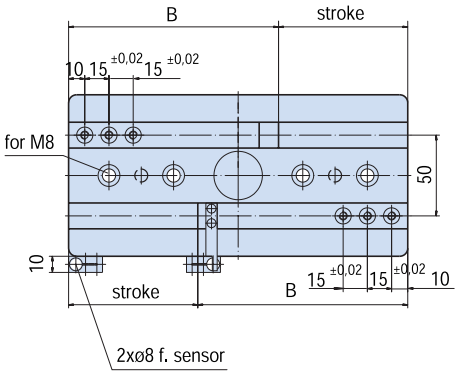
Colored area: increased wear and tear to be expected



Max Allowable Forces on Jaws



* applies only for GH6240
** applies for GH6280/62100
***does not apply for GH6240



	Stroke	B	L
GH6240	40	90	130
GH6260	60	110	170
GH6280	80	130	210
GH62100	100	150	250

Order no.:						
GH6240	**GH6260**	**GH6280**	**GH62100**			
Drive:						
pneum.	pneum.	pneum.	pneum.			
Stroke per jaw [mm]:						
40	60	80	100			
Gripping force in closing [N]:						
1060	1060	1060	1080			
Gripping force in opening [N]:						
1275	1275	1275	1320			
Self-locking via:						
DSV1/8	DSV1/8	DSV1/8	DSV1/8			
Closing time/opening time [s]:						
0,4	0,5	0,5	0,65			
Repeatability ± [mm]:						
0,05	0,05	0,05	0,05			
Min./max. operating pressure [bar]:						
4 / 10	4 / 10	4 / 10				
Air volume per cycle [cm³]:						
185	275	370	460			
Min./max. operating temperature [°C]:						
5 / 80	5 / 80	5 / 80	5 / 80			
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3	T3			
Piston diameter [mm]:						
40	40	40	40			
Weight [kg]:						
3,5	4,1	4,8	5,8			

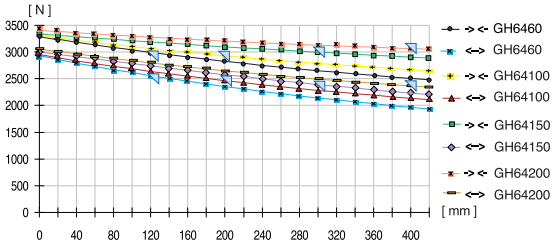
All data measured at 6 bar.

Long-stroke gripper

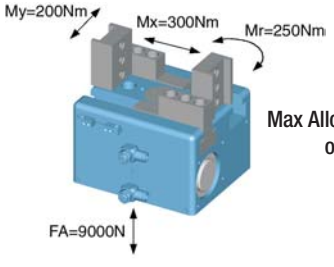
with T-slot guide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 87.

Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected

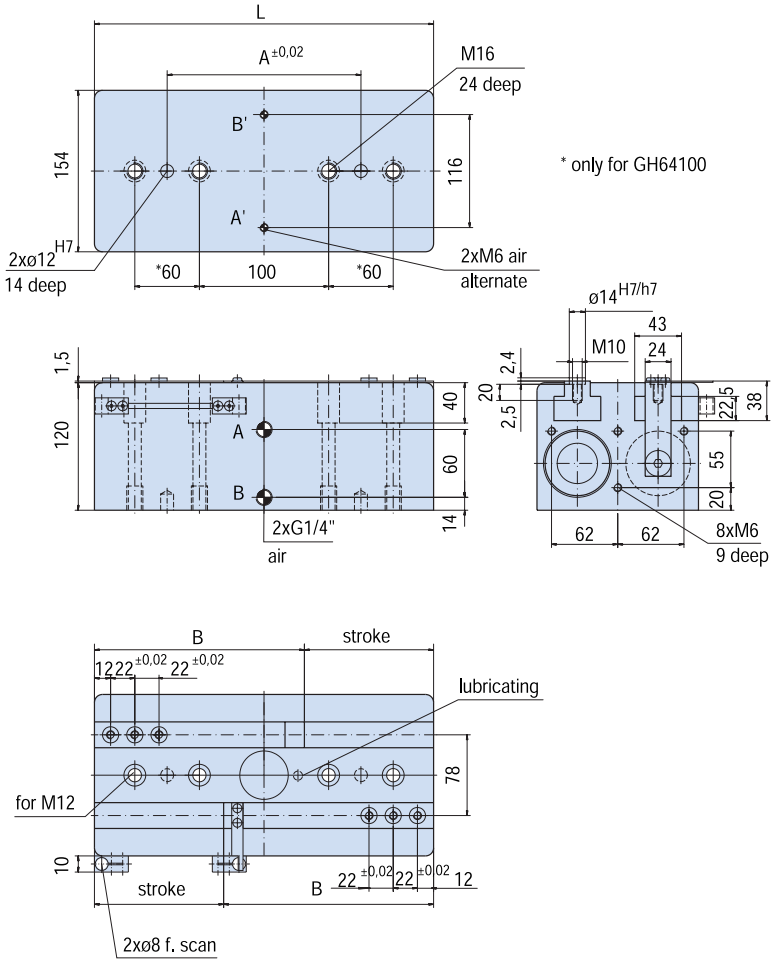


Max Allowable Forces on Jaws

Order no.:						
GH6460	**GH64100**	**GH64150**	**GH64200**			
Drive:						
pneum.	pneum.	pneum.	pneum.			
Stroke per jaw [mm]:						
60	100	150	200			
Gripping force in closing [N]:						
3000	3000	3000	3000			
Gripping force in opening [N]:						
3250	3250	3250	3250			
Self-locking via:						
DSV1/8	DSV1/8	DSV1/8	DSV1/8			
Closing time/opening time [s]:						
0,45	0,6	0,9	1,2			
Repeatability ± [mm]:						
0,05	0,05	0,05	0,05			
Min./max. operating pressure [bar]:						
4 / 10	4 / 10	4 / 10	4 / 10			
Air volume per cycle [cm³]:						
400	683	1060	1380			
Min./max. operating temperature. [°C]:						
5/80	5/80	5/80	5/80			
Temp. resistant version up to 150° C [add to part number]:						
T3	T3	T3	T3			
Piston diameter [mm]:						
63	63	63	63			
Weight [kg]:						
10,8	14,12	by request	by request			

All data measured at 6 bar.

Dimension A [mm]:						
140	160	260	260			
Dimension B [mm]:						
125	165	215	265			
Dimension L [mm]:						
185	265	365	465			



See Page 87 for Accessory list.

Long-stroke gripper with round guide

GH90-GH200

things worth knowing

Advantages and uses

Highlight

… round guide … long stroke …

… compact construction saves valuable space! …

- centrally opening and closing
- any desired installation position
- position sensing possible through inductive proximity switch

Characteristics

Function	
Drive:	two double-acting pneumatic cylinders
Power transfer:	through synchronized rack-and-pinion drive
Guide:	round guide
Material	
Housing:	hard-anodized aluminum
Functional parts:	steel and nonferrous metal
Maintenance	
Recommended at:	1.5 million cycles
Actuation:	filtered high-pressure air (10μm), dry or oiled
Maintenance of the mechanics:	– see owners' manual –

Basic explanations

Terms and illustrations

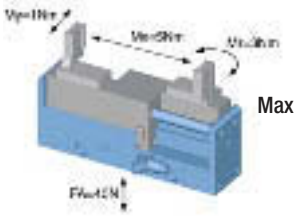
Grip force safety device:	required during pressure loss for maintaining position of workpiece
– pneumatic:	through pressure retention (one-way valve required DSV 1/8)
Total power:	arithmetic sum of the individual elements on the gripper jaws
Closing and opening times:	required time for the gripper jaws to cover the maximum stroke length

Accessories

Accessory recommendation:

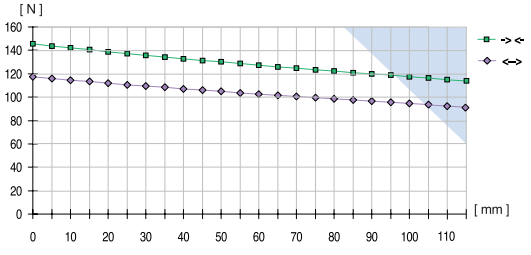
Long-stroke gripper
with round guide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 95.

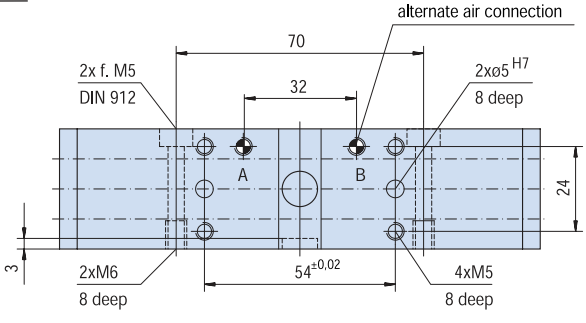


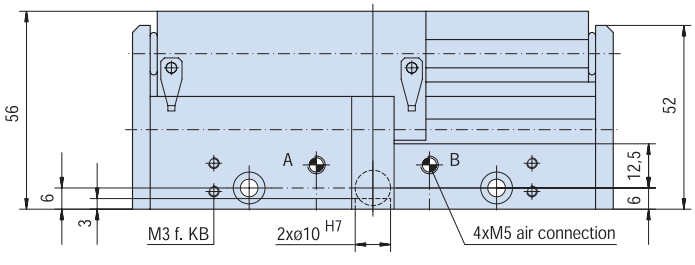
Max Allowable Forces on Jaws

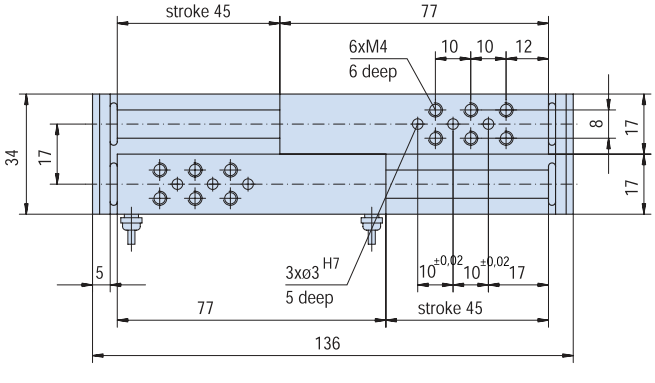
Gripping force as a function of jaw length



Colored area: increased wear and tear to be expected







Order no.:
GH90
Drive:
pneum.
Stroke per jaw [mm]:
45
Gripping force in closing [N]:
115
Gripping force in opening [N]:
140
Self-locking via:
DSV1/8
Closing time/opening time [s]:
0,25
Repeatability ± [mm]:
0,1
Min./max. operating pressure [bar]:
4 / 10
Air volume per cycle [cm³]:
22
Min./max. operating temperature [°C]:
5 / 80
Temp. resistant version up to 150° C [add to part number]:
T3
Piston diameter [mm]:
14
Weight [kg]:
0,7

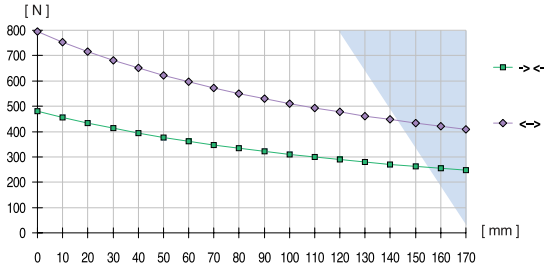
All data measured at 6 bar.

See Page 95 for Accessory list.

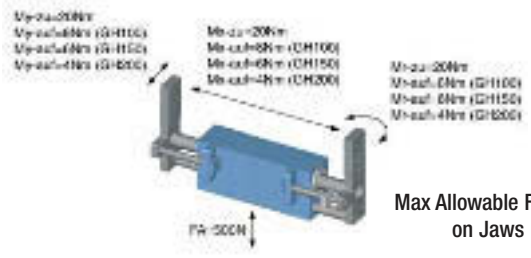
Long-stroke gripper
with round guide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are on page 95.

Gripping force as a function of jaw length



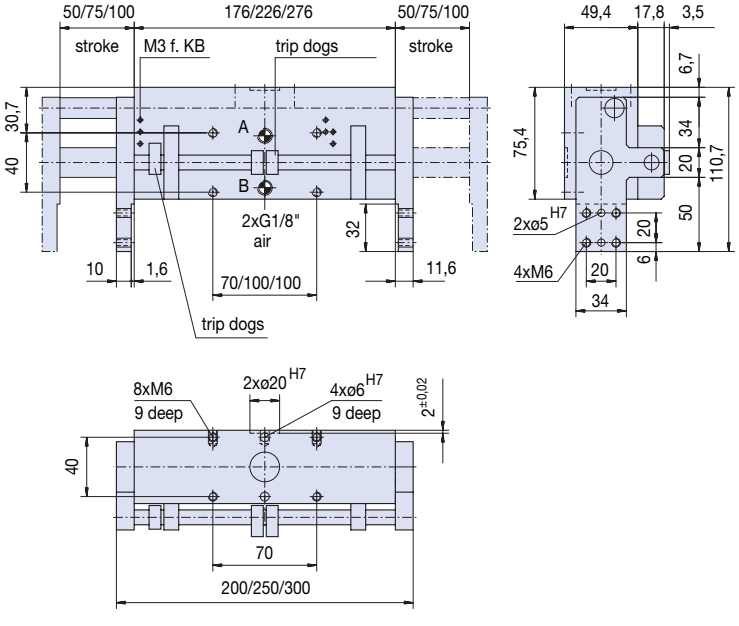
Colored area: increased wear and tear to be expected



Max Allowable Forces on Jaws

Order no.:							
GH100	**GH150**	**GH200**					
Drive:							
pneum.	pneum.	pneum.					
Stroke per jaw [mm]:							
50	75	100					
Gripping force in closing [N]:							
480	480	480					
Gripping force in opening [N]:							
800	800	800					
Self-locking via:							
DSV1/8	DSV1/8	DSV1/8					
Closing time/opening time [s]:							
0,3	0,35	0,4					
Repeatability ± [mm]:							
0,5	0,5	0,5					
Min./max. operating pressure [bar]:							
4 / 7	4 / 7	4 / 7					
Air volume per cycle [cm³]:							
125	187	250					
Min./max. operating temperature [°C]:							
5 / 80	5 / 80	5 / 80					
Temp. resistant version up to 150° C [add to part number]:							
T3	T3	T3					
Piston diameter [mm]:							
32	32	32					
Weight [kg]:							
2,7	3,0	3,9					

All data measured at 6 bar.



See Page 95 for Accessory list.

Heavy-duty long-stroke gripper with linear guide

GH7665/ GH76100

things worth knowing

Advantages and uses

Highlight

… high-grip force, combined with long stroke … linear guide for high moment absorption … economic with high reliability and long service life …

- centrally opening and closing
- high precision
- any desired installation position
- position sensing possible through inductive proximity switch
- with wiper on bearing

… ideal for large moments and loads!

Characteristics

Function	
Drive:	two double-acting pneumatic cylinders
Power transfer:	through synchronized rack-and-pinion drive
Guide:	linear guide
Material	
Housing:	hard-anodized aluminum
Moving parts:	nitrided steel
Maintenance	
Recommended at:	1.5 million cycles
Actuation:	filtered high-pressure air (10μm), dry or oiled
Maintenance of the mechanics:	via integrated lubrication nipple – see owners' manual –

Basic explanations

Terms and illustrations

Grip force safety device:	arithmetic sum of the individual elements on the grab jaws prehensile
Power fuse:	required during pressure loss for maintaining position of work piece
– pneumatic:	through pressure retention
Closing and opening time:	required time for the grab jaws to cover the maximum stroke length

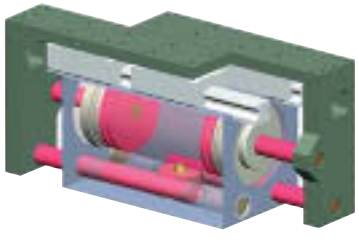
Accessories

Included with purchase:

- Bracket for inductive proximity switch

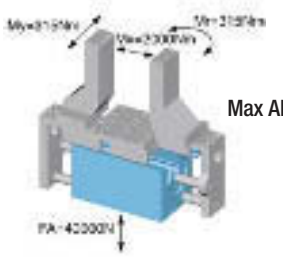
Accessory recommendation:

- Inductive proximity switch — Page 428
- Pneumatic fittings — Page 442
- Tubing — Page 444
- Control valves — Page 445
- Pressure safety valves — Page 447



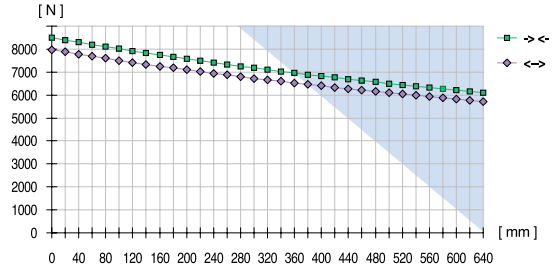
Heavy-duty long-stroke gripper
with linear guide

Advantages, benefits, comparisons and tips!
Stacks of information all about this product are
on page 99.

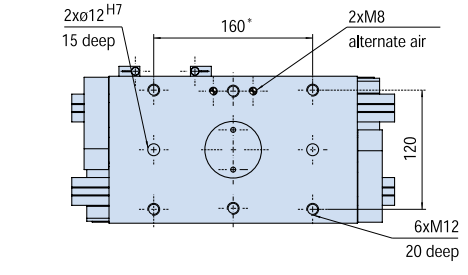


Max Allowable Forces
on Jaws

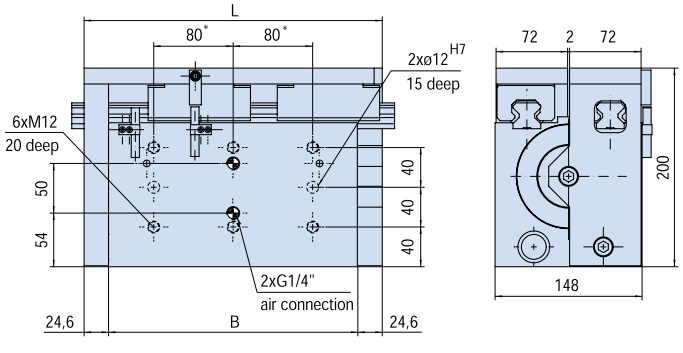
Gripping force as a function of jaw length

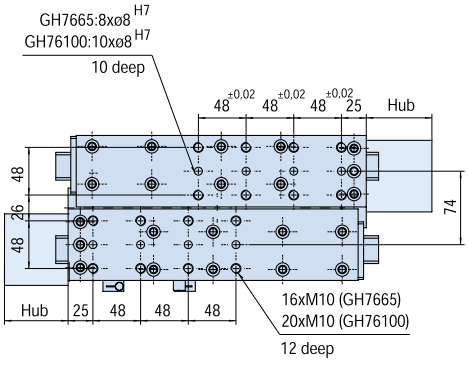


Colored area: increased wear and tear to be expected



* for ø12 H7 ±0,02





	Stroke	B	L
GH7665	65	250	300
GH76100	100	320	370

Order no.:	
GH7665	**GH76100**
Drive:	
pneum.	pneum.
Stroke per jaw [mm]:	
65	100
Gripping force in closing [N]:	
8000	8000
Gripping force in opening [N]:	
8500	8500
Self-locking via:	
DSV1/8	DSV1/8
Closing time/opening time [s]:	
0,6	0,7
Repeatability ± [mm]:	
0,05	0,05
Min./max. operating pressure [bar]:	
3 / 8	3 / 8
Air volume per cycle [cm³]:	
900	1500
Min./max. operating temperature [°C]:	
5 / 80	5 / 80
Temp. resistant version up to 150° C [add to part number]:	
T5	T5
Piston diameter [mm]:	
100	100
Weight [kg]:	
30,9	35,2

All data measured at 6 bar.

See Page 99 for Accessory list.