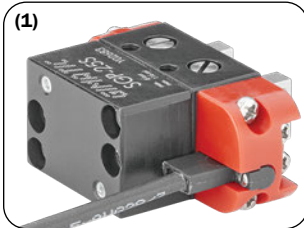


## 2-jaw parallel self-centering pneumatic gripper (series SGP-S)

- Double acting.
- Backlash adjusting system.
- High performance in small dimensions.
- The rugged construction lends itself to heavy duty applications for a trouble free long life without maintenance.
- Various fastening and air feeding options.
- Ready for PRO-SN...HS (1) programmable magnetic sensor.
- Prepared for adjustable inductive sensors.
- Food grade grease FDA-H1.



SGP-16S



SGP-20S



SGP-25S



SGP-32S



SGP-40S



SGP-50S

	SGP-16S	SGP-20S	SGP-25S	SGP-32S	SGP-40S	SGP-50S
Medium	Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Operating pressure range	2.5 ÷ 8 bar		2 ÷ 8 bar			
Operating temperature range	5° ÷ 60°C.					
Opening gripping force at 6 bar on each jaw	16 N	23 N	52 N	67 N	80 N	145 N
Opening total gripping force at 6 bar	32 N	46 N	104 N	134 N	160 N	290 N
Closing gripping force at 6 bar on each jaw	14 N	20 N	47 N	60 N	73 N	126 N
Closing total gripping force at 6 bar	28 N	40 N	94 N	120 N	146 N	252 N
Total stroke	3 mm	4 mm	6 mm	8 mm	12 mm	16 mm
Maximum working frequency	3 Hz	3 Hz	3 Hz	3 Hz	2 Hz	2 Hz
Cycle air consumption	0.2 cm <sup>3</sup>	0.5 cm <sup>3</sup>	1.4 cm <sup>3</sup>	2.4 cm <sup>3</sup>	4.5 cm <sup>3</sup>	10 cm <sup>3</sup>
Closing time without load	0.02 s	0.02 s	0.02 s	0.02 s	0.05 s	0.05 s
Repetition accuracy	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm
Weight	19 g	33 g	43 g	86 g	170 g	250 g

**Sensors**

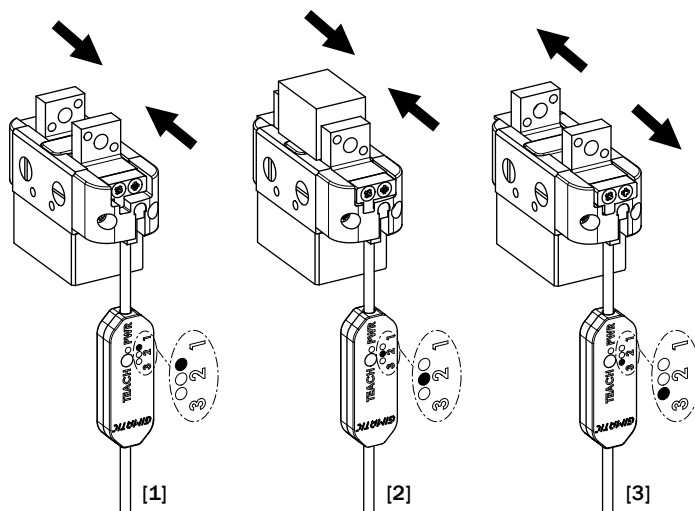
The operating position can be checked by one 3 - outputs programmable sensor (not included), detecting the position of the magnet on the right jaw.

**The recommended sensors for the grippers SGP-20S/25S/32S/40S/50S are:**

PRO-SN4N225HS-G	PNP	2.5m cable
PRO-SN4M225HS-G	NPN	
PRO-SN3N215HS-G	PNP	M8 snap plug connector
PRO-SN3M215HS-G	NPN	

**The recommended sensors for the gripper SGP-16S are:**

PRO-SN4N225-G	PNP	2.5m cable
PRO-SN4M225-G	NPN	
PRO-SN3N215-G	PNP	M8 snap plug connector
PRO-SN3M215-G	NPN	



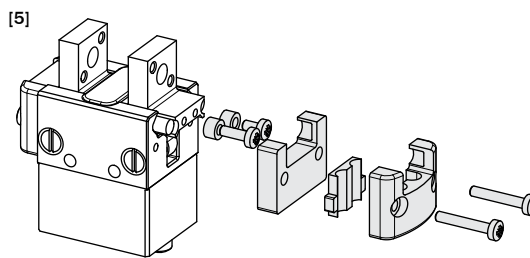
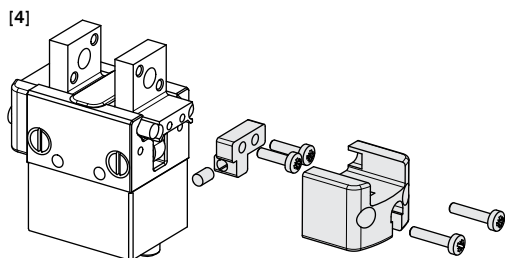
The detected positions can be adjusted by a teaching procedure, so that 3 digital outputs can be:  
 Output 1 - totally closed gripper [1];  
 Output 2 - gripped part intermediate position [2];  
 Output 3 - totally open gripper [3].

**Upgrade**

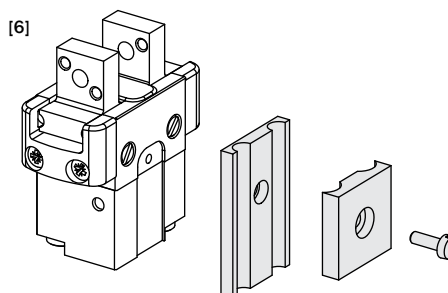
Old grippers can be upgraded in order to use the new teachable sensor [4].

**Downgrade**

New grippers can be downgraded in order to use the inductive sensors [5 and 6].



	Upgrade [4]	Downgrade [5]	Downgrade [6]
SGP-16S	-	-	SGP-16S-KD
SGP-20S	SGP-20S-KU	SGP-20S-KD	-
SGP-25S	SGP-25S-KU	SGP-25S-KD	-
SGP-32S	SGP-32S-KU	SGP-32S-KD	-
SGP-40S	SGP-40S-KU	SGP-40S-KD	-
SGP-50S	-	SGP-50S-KD	-



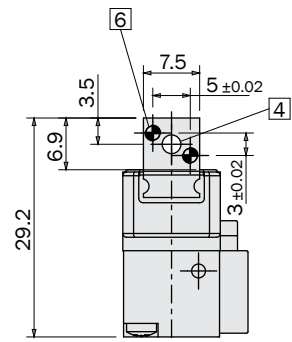
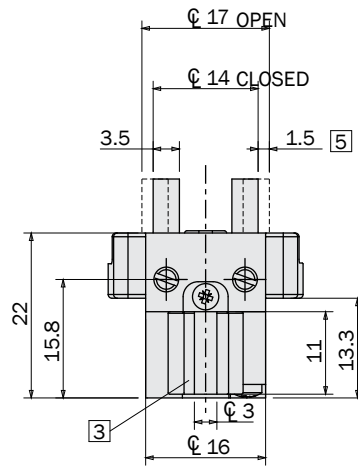
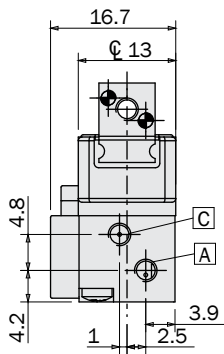
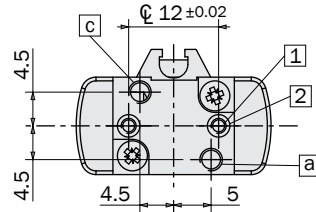
1 (N°2) M2x2.8mm  
Hole for fastening

2 (N°2) Ø3H8x1.2mm  
Hole for fastening

3 Magnetic sensor slot (PRO-SN/SS)

4 M3  
Through hole for fastening

5 Stroke each jaw



6 Ø1.5H8x3.5mm  
Dowel pin hole

7 (N°2) M2x1.5mm  
Hole for fastening

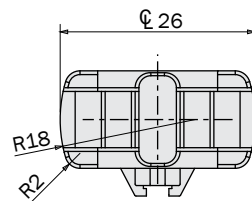
8 (N°2) Ø3H8x1.5mm  
Hole for fastening

a M2.5  
Compressed air in a: gripper opening

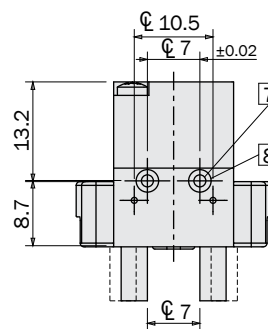
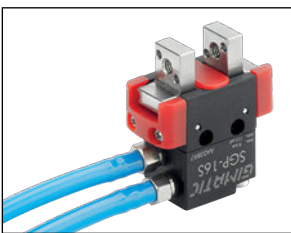
A M3  
Compressed air in A: gripper opening

c M2.5  
Compressed air in c: gripper closing

C M3  
Compressed air in C: gripper closing

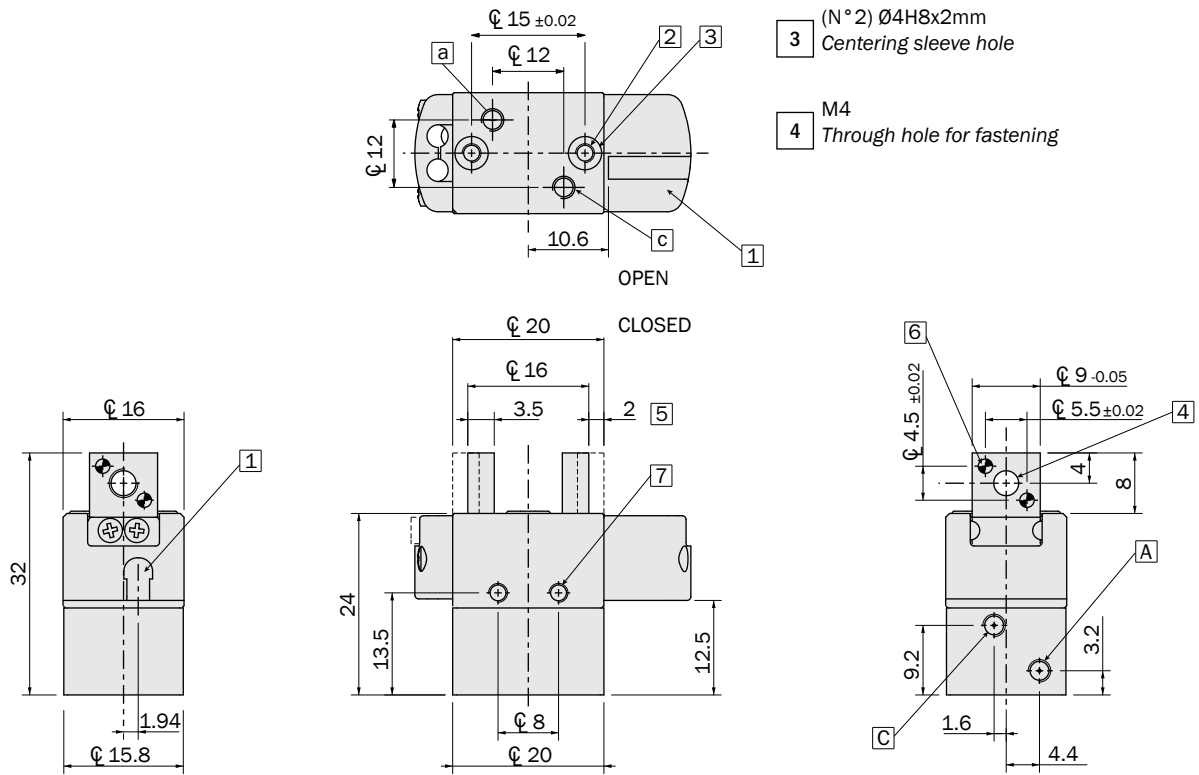


Straight M3 fitting



**Dimensions (mm)**

**SGP-20S**



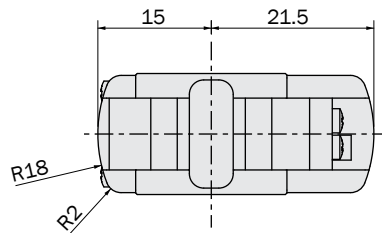
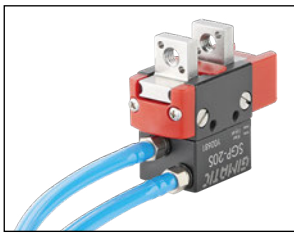
**1** Hole for programmable sensor PRO-SN ...HS

**2** (N° 2) M2.5x6mm  
Hole for fastening

**3** (N° 2) Ø4H8x2mm  
Centering sleeve hole

**4** M4  
Through hole for fastening

Straight M3 fitting



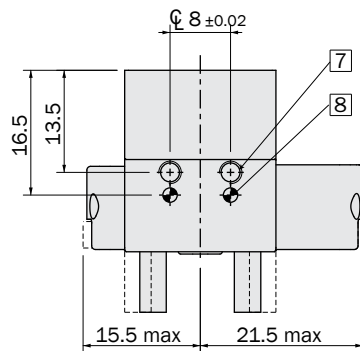
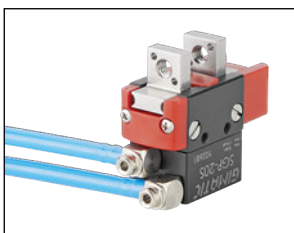
**5** Stroke each jaw

**6** Ø1.5H8x3.5mm  
Dowel pin hole

**7** (N° 2) M2.5x4mm  
Hole for fastening

**8** Ø1.5H8x3mm  
Dowel pin hole

Adjustable M3 fitting



**a** M2.5  
Compressed air in a: gripper opening

**A** M3  
Compressed air in A: gripper opening

**c** M2.5  
Compressed air in c: gripper closing

**C** M3  
Compressed air in C: gripper closing



Dimensions (mm)

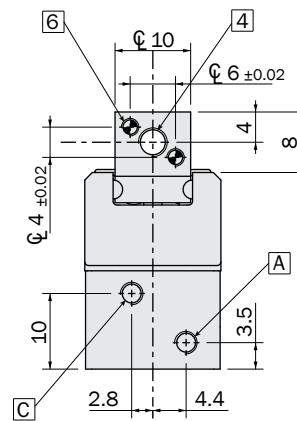
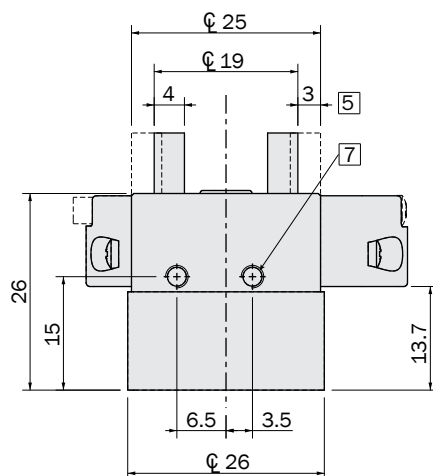
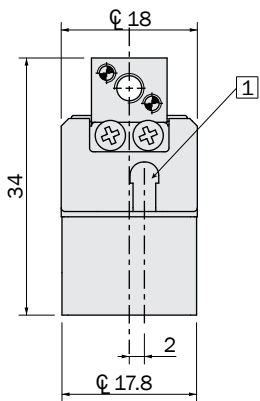
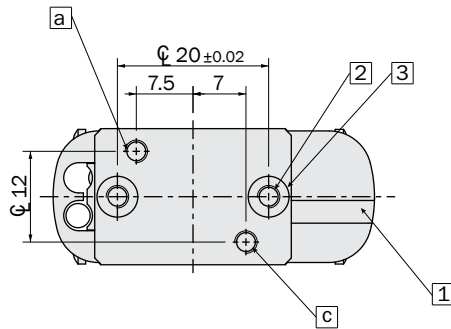
1 Hole for programmable sensor  
PRO-SN...HS

2 (N°2) M3x7mm  
Hole for fastening

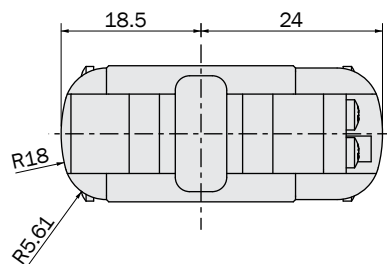
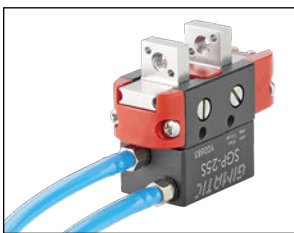
3 (N°2) Ø5H8x2.4mm  
Centering sleeve hole

4 M4  
Through hole for fastening

5 Stroke each jaw



Straight M3 fitting



6 Ø1.5H8x4mm  
Dowel pin hole

7 (N°2) M3x5mm  
Hole for fastening

8 Ø2H8x4mm  
Dowel pin hole

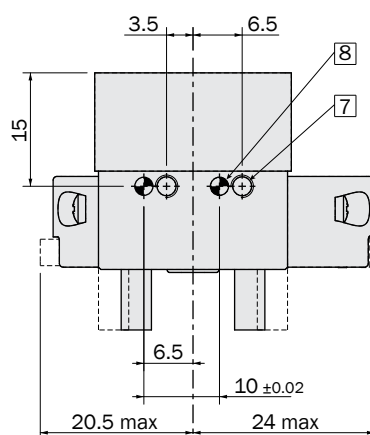
a M3  
Compressed air in a: gripper opening

A M3  
Compressed air in A: gripper opening

c M3  
Compressed air in c: gripper closing

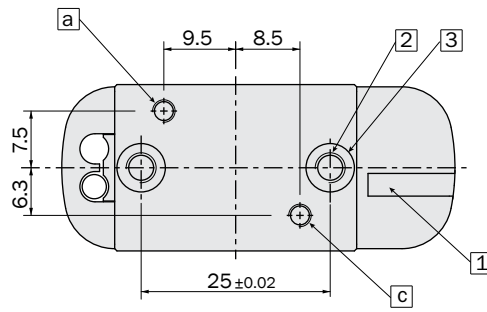
C M3  
Compressed air in C: gripper closing

Adjustable M3 fitting



**Dimensions (mm)**

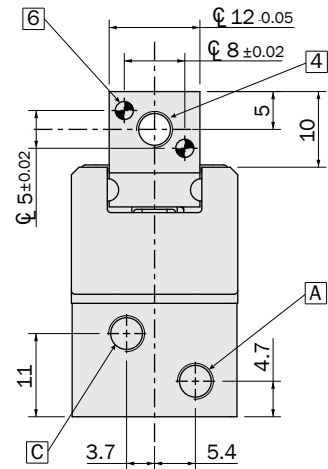
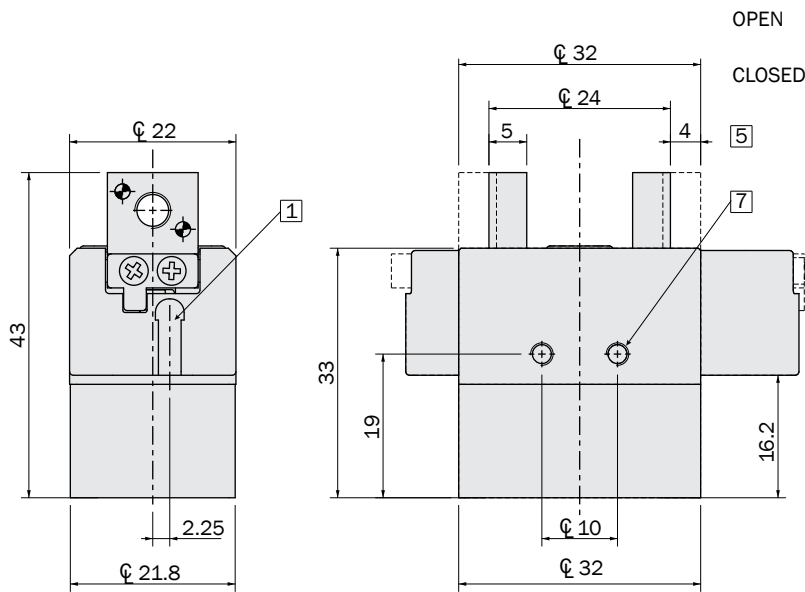
**SGP-32S**



**1** Hole for programmable sensor PRO-SN...HS

**2** (N°2) M4x7.5mm Hole for fastening

**3** (N°2) Ø6H8x2.9mm Centering sleeve hole



**4** M5 Through hole for fastening

**5** Stroke each jaw

**6** Ø2H8x5mm Dowel pin hole

**7** (N°2) M3x5mm Hole for fastening

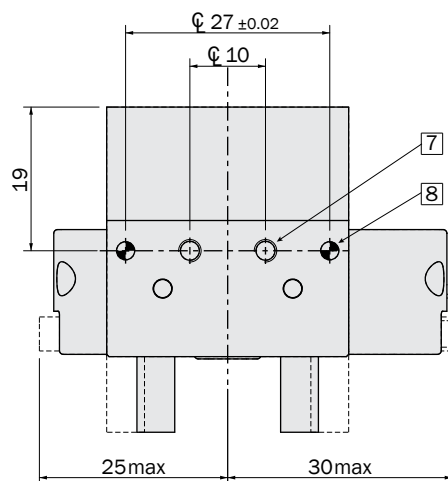
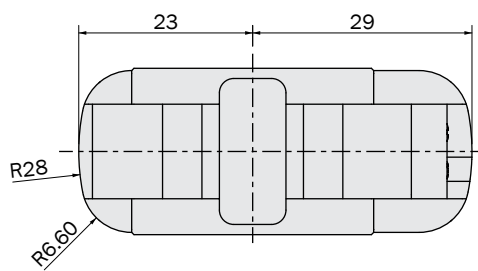
**8** Ø2H8x5mm Dowel pin hole

**a** M3 Compressed air in a: gripper opening

**A** M5 Compressed air in A: gripper opening

**c** M3 Compressed air in c: gripper closing

**C** M5 Compressed air in C: gripper closing



Dimensions (mm)

1 Hole for programmable sensor  
PRO-SN...HS

2 (N°2) M4x9.5mm  
Hole for fastening

3 (N°2) Ø6H8x2.9mm  
Centering sleeve hole

4 M5  
Through hole for fastening

5 Stroke each jaw

6 Ø2.5H8x6mm  
Dowel pin hole

7 (N°2) M3x5mm  
Hole for fastening

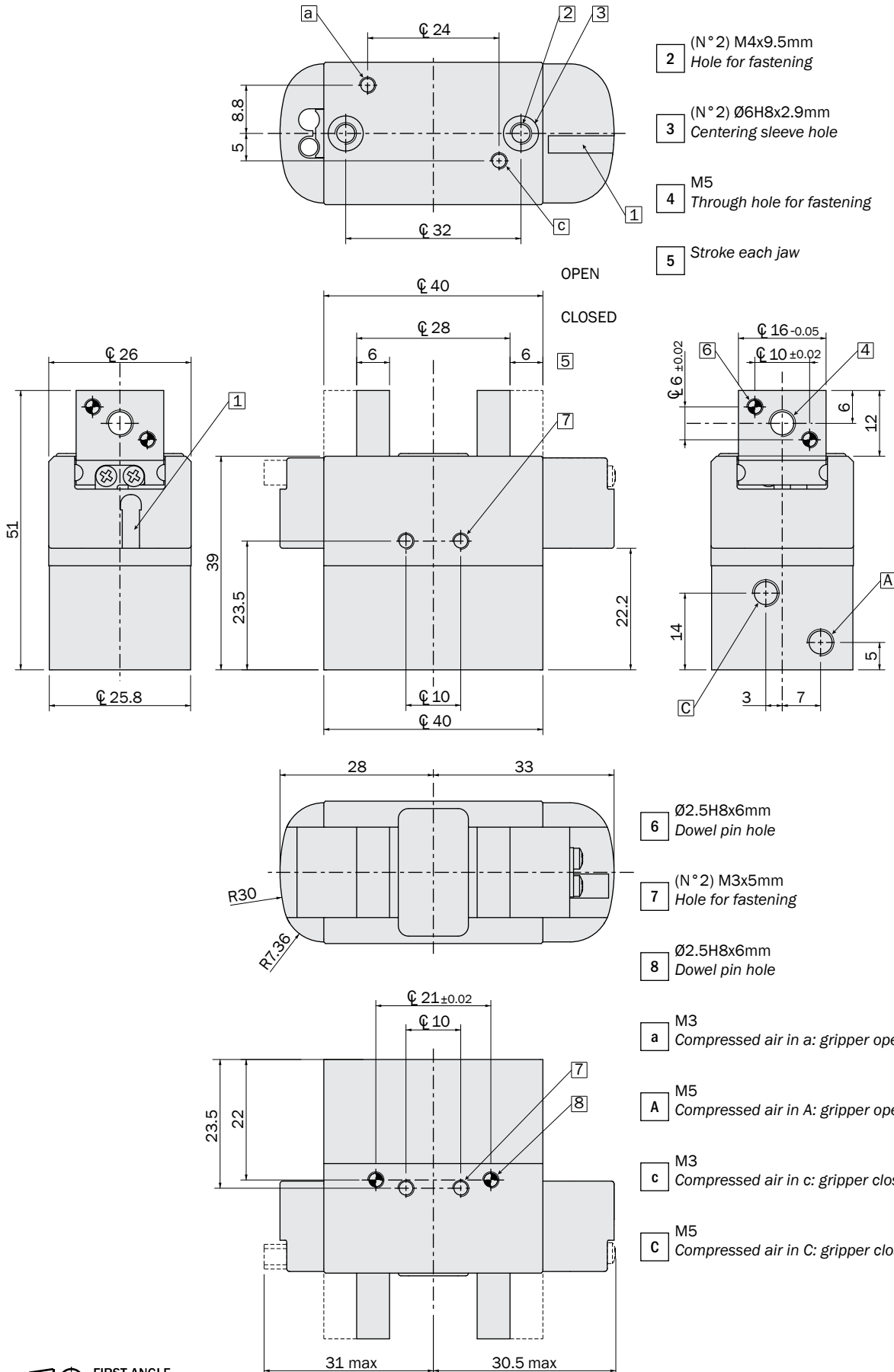
8 Ø2.5H8x6mm  
Dowel pin hole

a M3  
Compressed air in a: gripper opening

A M5  
Compressed air in A: gripper opening

c M3  
Compressed air in c: gripper closing

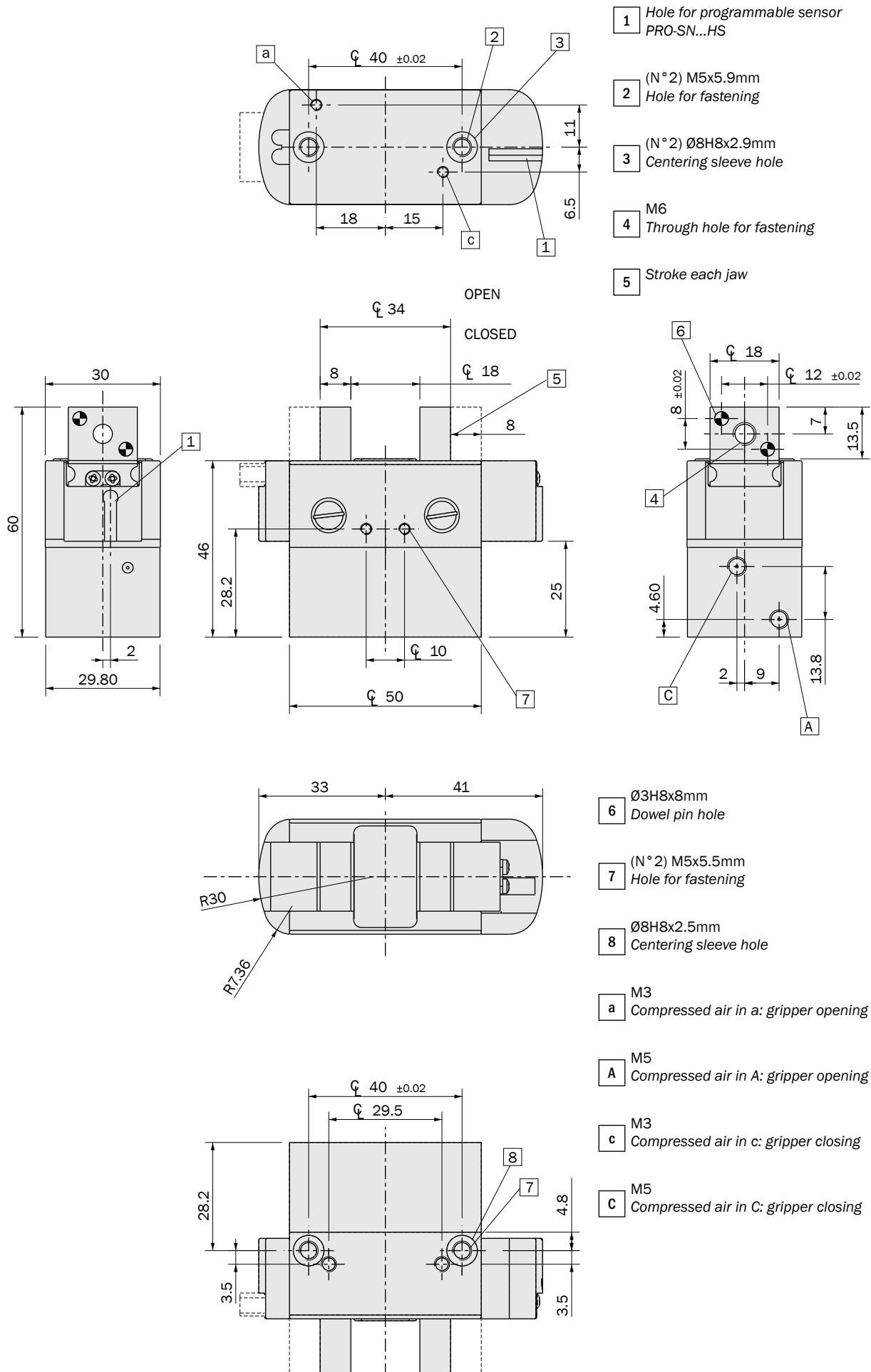
C M5  
Compressed air in C: gripper closing



FIRST ANGLE PROJECTION

**Dimensions (mm)**

**SGP-50S**



- 1** Hole for programmable sensor PRO-SN...HS
- 2** (N°2) M5x5.9mm Hole for fastening
- 3** (N°2)  $\varnothing 8$ H8x2.9mm Centering sleeve hole
- 4** M6 Through hole for fastening
- 5** Stroke each jaw

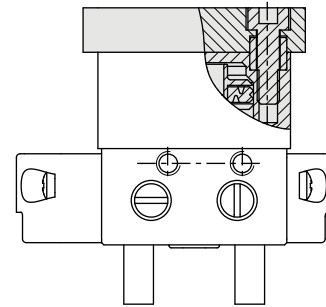
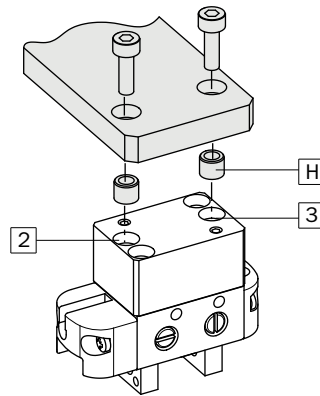
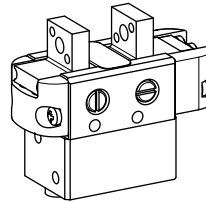
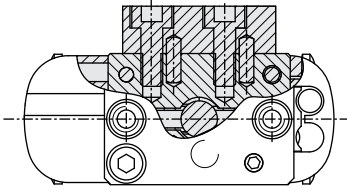
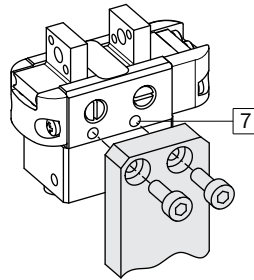
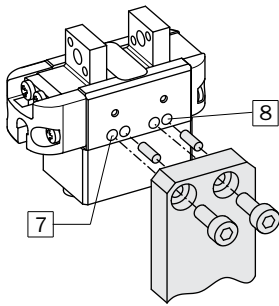
- 6**  $\varnothing 3$ H8x8mm Dowel pin hole
- 7** (N°2) M5x5.5mm Hole for fastening
- 8**  $\varnothing 8$ H8x2.5mm Centering sleeve hole
- a** M3 Compressed air in a: gripper opening
- A** M5 Compressed air in A: gripper opening
- c** M3 Compressed air in c: gripper closing
- C** M5 Compressed air in C: gripper closing



## Fastening

The gripper can be fastened to a static or moving part. When on a moving part, you must pay attention to the forces created by inertia over the gripper and its load.

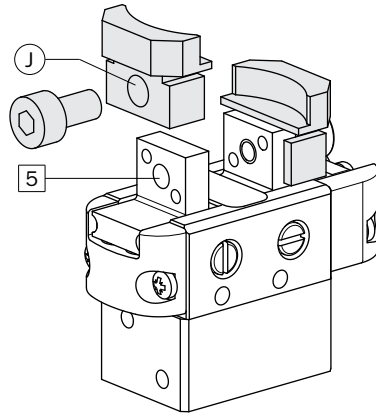
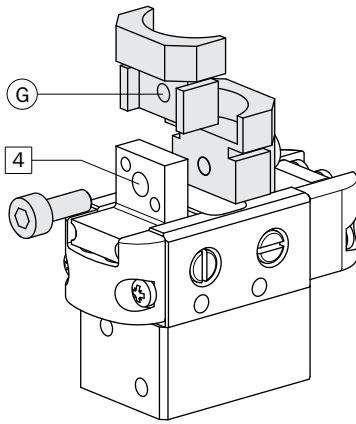
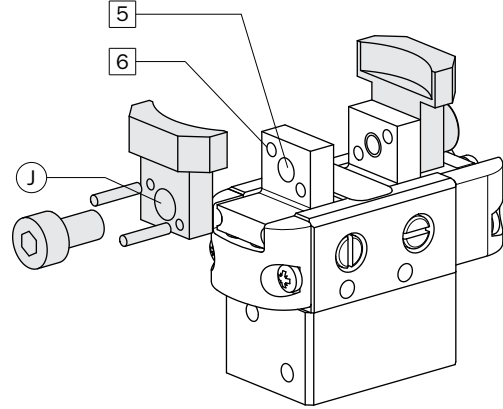
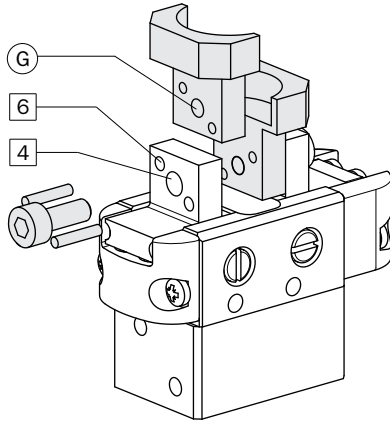
- To fasten the gripper on one side, use a plate with two through holes and two screws to be screwed on the threaded holes **7**. They are on both sides of the gripper housing. The dowel pin holes **8** are on one only side.
- To fasten gripper to base use two screws passing through the holes in the plate and screwed in the threaded holes **2**. Use also the two centering sleeves (H) supplied in the packaging, in the calibrated holes **3**.



	SGP-20S	SGP-25S	SGP-32S	SGP-40S
H	Ø4h8 x Ø2.6 x 4 mm	Ø5h7 x Ø3.2 x 4.4 mm	Ø6h7 x Ø4.2 x 5.3 mm	Ø6h7 x Ø4.2 x 5.3 mm
G	M3	M3	M4	M4
F	9 <sup>-0.05</sup> mm	10 <sup>-0.05</sup> mm	12 <sup>-0.05</sup> mm	16 <sup>-0.05</sup> mm
<b>2</b>	M2.5x6 mm	M3x7 mm	M4x7.5 mm	M4x9.5 mm
<b>3</b>	Ø4H8 x 2 mm	Ø5H8 x 2.4 mm	Ø6H8 x 2.9 mm	Ø6H8 x 2.9 mm
<b>7</b>	M2.5x4 mm	M3x5 mm	M3x5 mm	M3x5 mm
<b>8</b>	Ø1.5H8 x 3 mm	Ø2H8 x 4 mm	Ø2H8 x 5 mm	Ø2.5H8 x 6 mm

The gripping tools must be as short and light as possible. They must be fastened by one screw in the through hole **4** to be screwed in the threaded hole (G) in the gripping tool. Or on the contrary, by a screw passing through (J) and tightened in **5**.

For a precise positioning on the jaw use the calibrated dimension (F), or the dowel pin holes **6**.

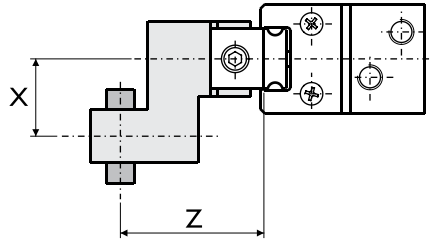


	SGP-20S	SGP-25S	SGP-32S	SGP-40S
<b>4</b> <b>5</b>	M4	M4	M5	M5
<b>6</b>	Ø1.5H8 x 3.5 mm	Ø1.5H8 x 4 mm	Ø2H8 x 5 mm	Ø2.5H8 x 6 mm
<b>G</b>	M3	M3	M4	M4
<b>F</b>	9 <sup>-0.05</sup> mm	10 <sup>-0.05</sup> mm	12 <sup>-0.05</sup> mm	16 <sup>-0.05</sup> mm
<b>J</b>	Ø4.3 mm	Ø4.3 mm	Ø5.3 mm	Ø5.3 mm

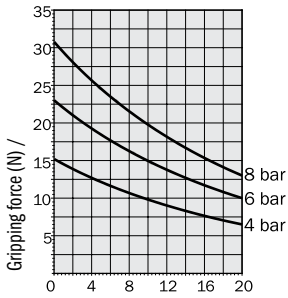
## Gripping force

The graphs show the medium gripping force on each jaw, as a function of the operating pressure, the gripping tool length Z and the overhanging X.

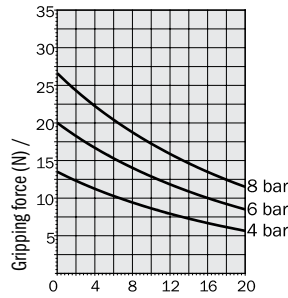
**The force shown in these graphs refers to one jaw. The total force is double.**



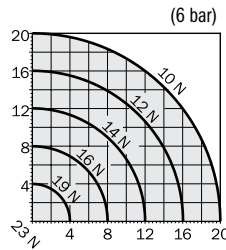
**SGP-20S** opening



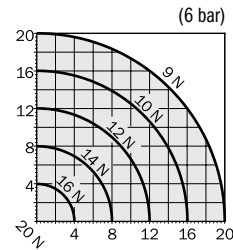
closing



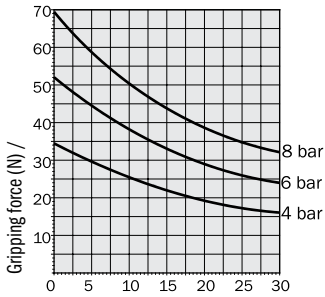
opening



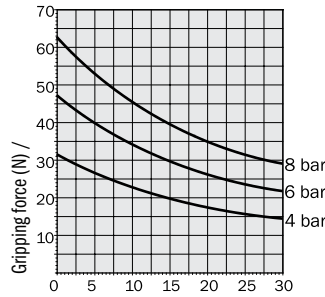
closing



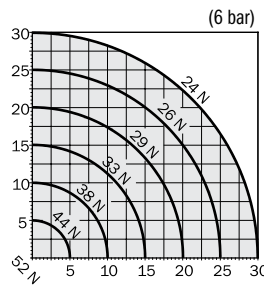
**SGP-25S** opening



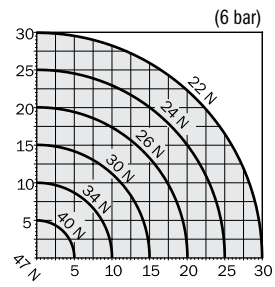
closing



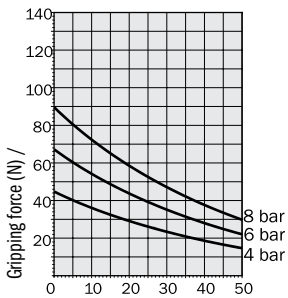
opening



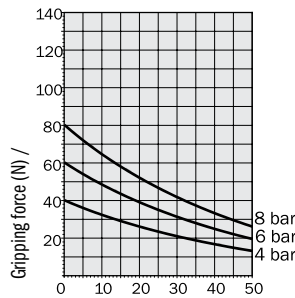
closing



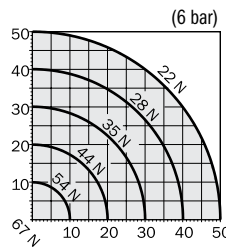
**SGP-32S** opening



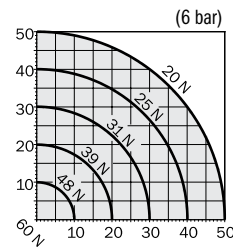
closing



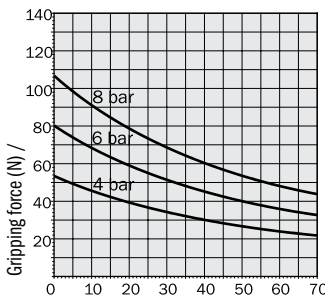
opening



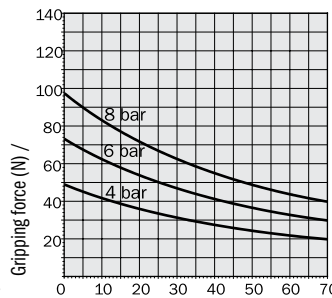
closing



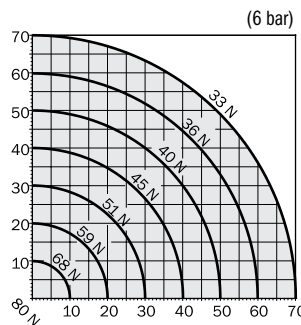
**SGP-40S** opening



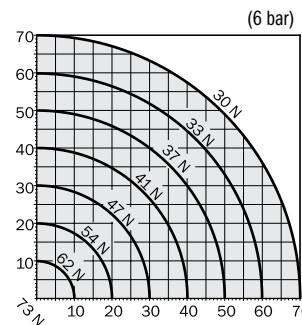
closing



opening

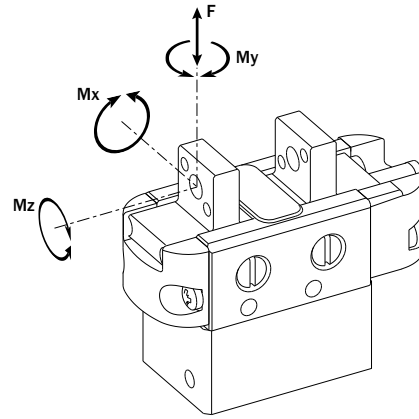


closing



**Safety loads**


Check the table for maximum permitted loads.  
 Excessive forces or torques can damage the gripper, cause functioning troubles and endanger the safety of the operator.  
 F s, Mx s, My s, Mz s, are maximum permitted static loads. Static means with motionless jaws.  
 F d, Mx d, My d, Mz d, are maximum permitted dynamic loads. Dynamic means with running jaws.  
 The following tables show the specified maximum loads (m) on each gripping tool as function of closing or opening time.  
 Use flow controllers (not supplied) to get the proper speed.



	SGP-20S	SGP-25S	SGP-32S	SGP-40S
F s	30 N	50 N	70 N	120 N
Mx s	1 Nm	2 Nm	4 Nm	6 Nm
My s	1 Nm	2 Nm	4 Nm	6 Nm
Mz s	1 Nm	2 Nm	4 Nm	6 Nm
F d	0.3 N	0.5 N	0.7 N	1.2 N
Mx d	1 Ncm	2 Ncm	4 Ncm	6 Ncm
My d	1 Ncm	2 Ncm	4 Ncm	6 Ncm
Mz d	1 Ncm	2 Ncm	4 Ncm	6 Ncm
m 0.2s	30 g	50 g	70 g	120 g
m 0.05s	10 g	20 g	30 g	40 g
m 0.02s	7 g	15 g	20 g	-
m 0.01s	5 g	10 g	-	-

**Gripping**

The gripper is double-acting for either internal (A) or external (B) gripping applications.  
 The opening force is higher.

 Pressurized chamber

