

2-jaw parallel self-centering pneumatic gripper (series SZ)

- Double acting.
- Available with normally closed or normally open spring on request.
- Various options for fastening and feeding.
- Optional magnetic sensors.
- FDA-H1 food-grade grease.
- Stainless steel jaws.



| | SZ08 | SZ12 | SZ16 | SZ20 | SZ25 | SZ32 | SZ40 |
|---|---|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|
| Medium | Compressed air in compliance with ISO 8573-1:2010 [7:4:4] | | | | | | |
| Operating pressure range | 2 ÷ 8 bar | | | 1 ÷ 8 bar | | | |
| Operating temperature range | 5° ÷ 60°C. | | | | | | |
| Opening gripping force at 6 bar on each jaw | 14 N | 25 N | 45 N | 75 N | 115 N | 190 N | 310 N |
| Opening total gripping force at 6 bar | 28 N | 50 N | 90 N | 150 N | 230 N | 380 N | 620 N |
| Closing gripping force at 6 bar on each jaw | 14 N | 25 N | 45 N | 75 N | 115 N | 190 N | 310 N |
| Closing total gripping force at 6 bar | 28 N | 50 N | 90 N | 150 N | 230 N | 380 N | 620 N |
| Total stroke | 7 mm | 8 mm | 12 mm | 16 mm | 20 mm | 25 mm | 30 mm |
| Maximum working frequency | 3 Hz | 3 Hz | 3 Hz | 2 Hz | 2 Hz | 2 Hz | 2 Hz |
| Cycle air consumption | 0.5 cm ³ | 1 cm ³ | 3 cm ³ | 7 cm ³ | 12 cm ³ | 24 cm ³ | 48 cm ³ |
| Opening / Closing time without load | 0.02 s | 0.02 s | 0.03 s | 0.05 s | 0.06 s | 0.08 s | 0.10 s |
| Weight | 35 g | 101 g | 164 g | 337 g | 474 g | 783 g | 1214 g |

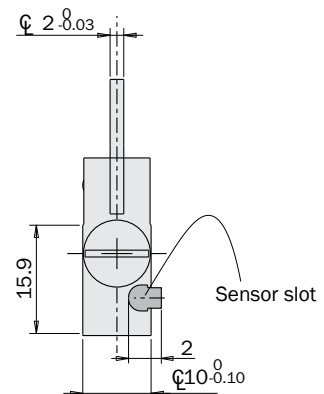
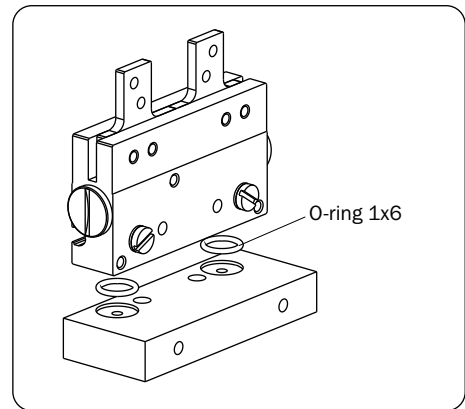
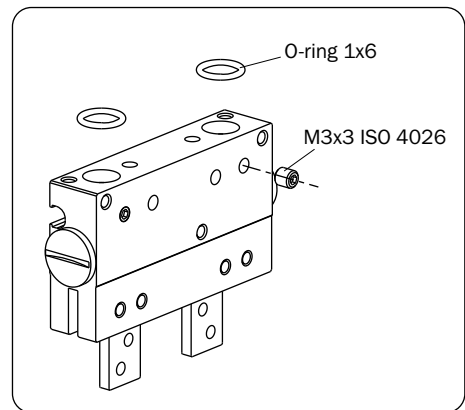
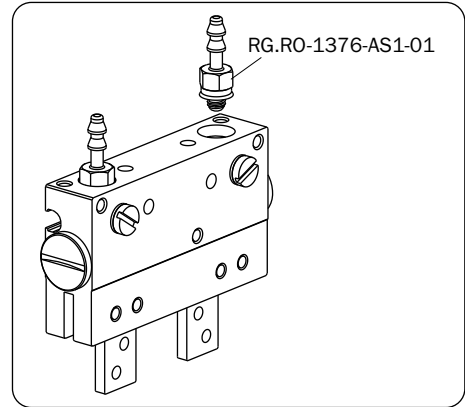
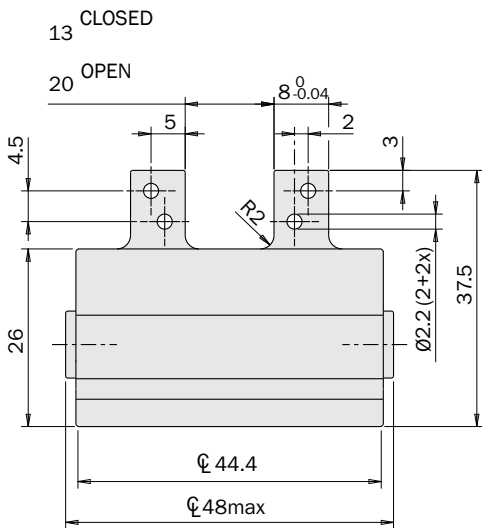
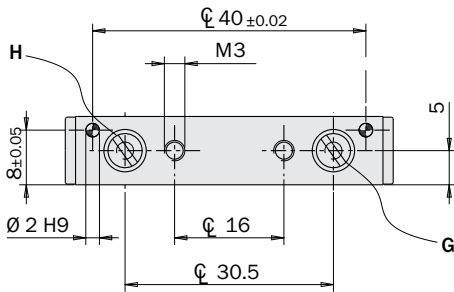
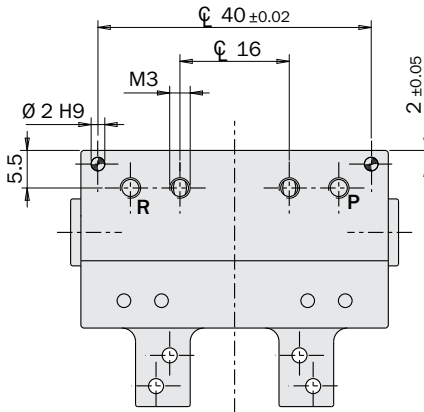
Dimensions (mm)

SZ08

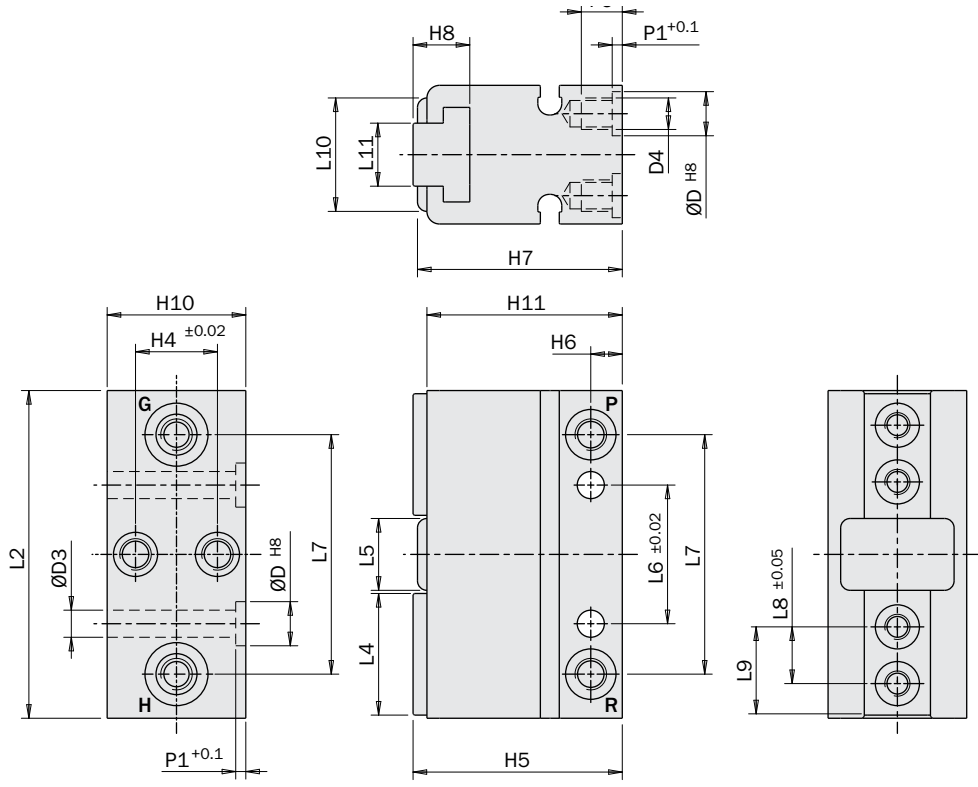
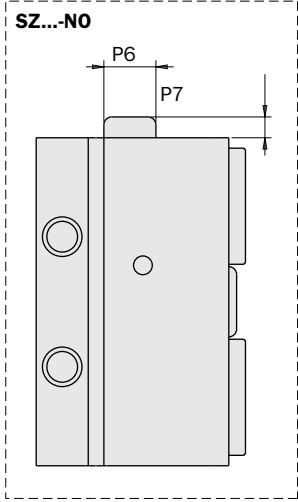


G **P** Compressed air in G/P: gripper opening

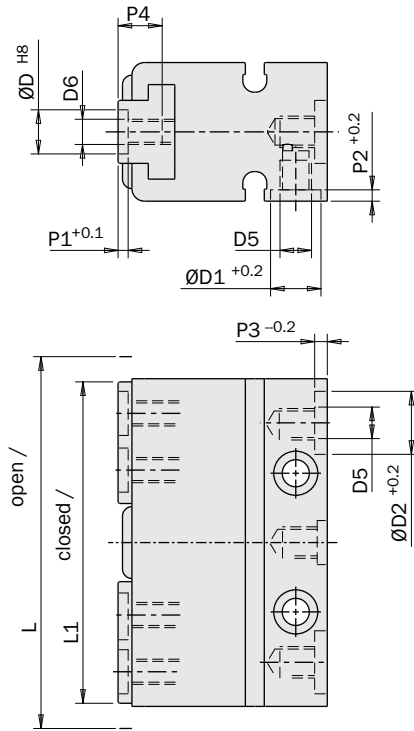
H **R** Compressed air in H/R: gripper closing



Dimensions (mm)



| | SZ12 | SZ16 | SZ20 | SZ25 | SZ32 | SZ40 |
|----------|------|------|------|------|-------|-------|
| D H8 | Ø7 | Ø7 | Ø7 | Ø9 | Ø9 | Ø12 |
| D1 +0.2 | Ø8 | Ø8 | Ø8 | Ø8 | Ø15.6 | Ø15.6 |
| D2 +0.2 | Ø10 | Ø10 | Ø10 | Ø10 | Ø19 | Ø19 |
| D3 | Ø4.3 | Ø5.3 | Ø5.3 | Ø6.3 | Ø6.3 | Ø8.3 |
| D4 | M5 | M5 | M5 | M6 | M6 | M8 |
| D5 | M5 | M5 | M5 | M5 | 1/8"G | 1/8"G |
| D6 | M4 | M5 | M5 | M6 | M6 | M8 |
| H4 ±0.02 | 13 | 15 | 20 | 24 | 29 | 35 |
| H5 | 33.2 | 40.2 | 46 | 55 | 70.5 | 78.5 |
| H6 | 5 | 5 | 5 | 7 | 7 | 9 |
| H7 | 32.5 | 38.5 | 44.5 | 53 | 68.5 | 76.5 |
| H8 | 9 | 12 | 14 | 15 | 19 | 19 |
| H10 | 22 | 25 | 30 | 37 | 42 | 51 |
| H11 | 31 | 37 | 43 | 51.5 | 67 | 75 |
| L | 59 | 71 | 86 | 102 | 117 | 146 |
| L1 | 51 | 59 | 70 | 82 | 92 | 116 |
| L2 | 52 | 63 | 78 | 92 | 105 | 130 |
| L4 | 19.3 | 22.3 | 24 | 29.8 | 32.3 | 41.8 |
| L5 | 11.4 | 13.5 | 21.4 | 21.4 | 26.4 | 31.4 |
| L6 ±0.02 | 22 | 25 | 40 | 50 | 55 | 70 |
| L7 | 38 | 45 | 62 | 73 | 84 | 104 |
| L8 ±0.05 | 9 | 12 | 14 | 16 | 18 | 24 |
| L9 | 14 | 17 | 19 | 23 | 25 | 33 |
| L10 | 18 | 19 | 29 | 29 | 34 | 37 |
| L11 | 10 | 11.5 | 14 | 18 | 20 | 22 |
| P1 +0.1 | 1.6 | 1.6 | 1.6 | 2.1 | 2.1 | 2.6 |
| P2 +0.2 | 1.8 | 1.8 | 1.8 | 1.8 | 3 | 3 |
| P3 -0.2 | 2 | 2 | 2 | 2 | 1.3 | 1.3 |
| P4 | 6.5 | 9 | 10 | 14 | 15 | 16 |
| P5 | 6.5 | 6.5 | 6.5 | 11 | 11 | 15 |
| P6 | Ø6.5 | Ø10 | Ø15 | Ø19 | Ø23.9 | - |
| P7 | 0.7 | 4 | 3.4 | 2.1 | 1.7 | - |



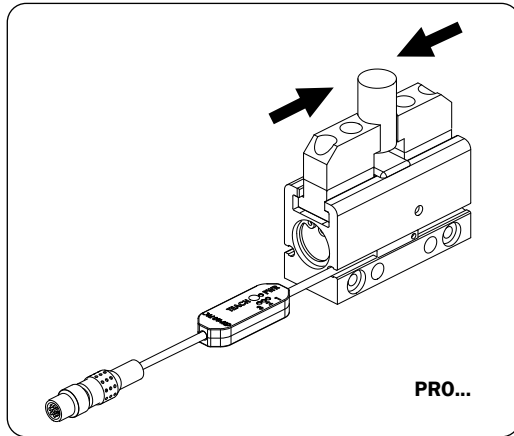
(D5) Air connection

(G) (P) Compressed air in G/P: gripper opening

(H) (R) Compressed air in H/R: gripper closing

Sensors

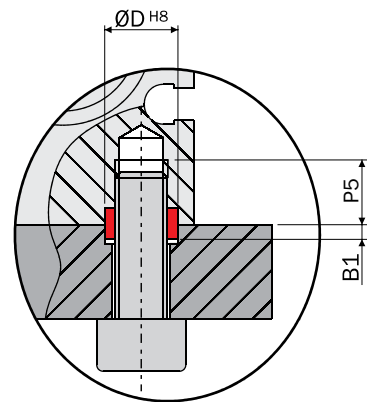
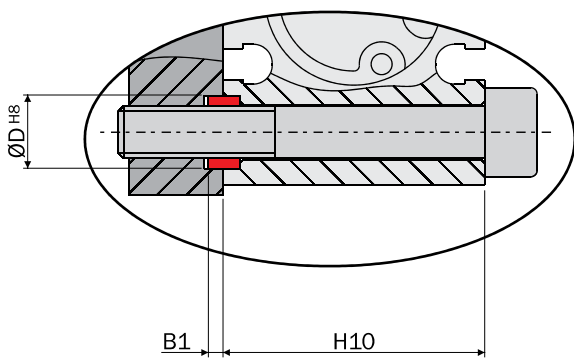
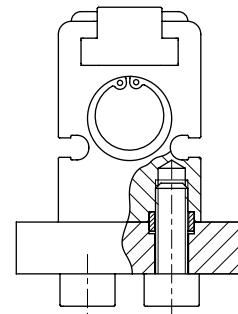
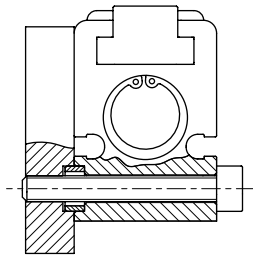
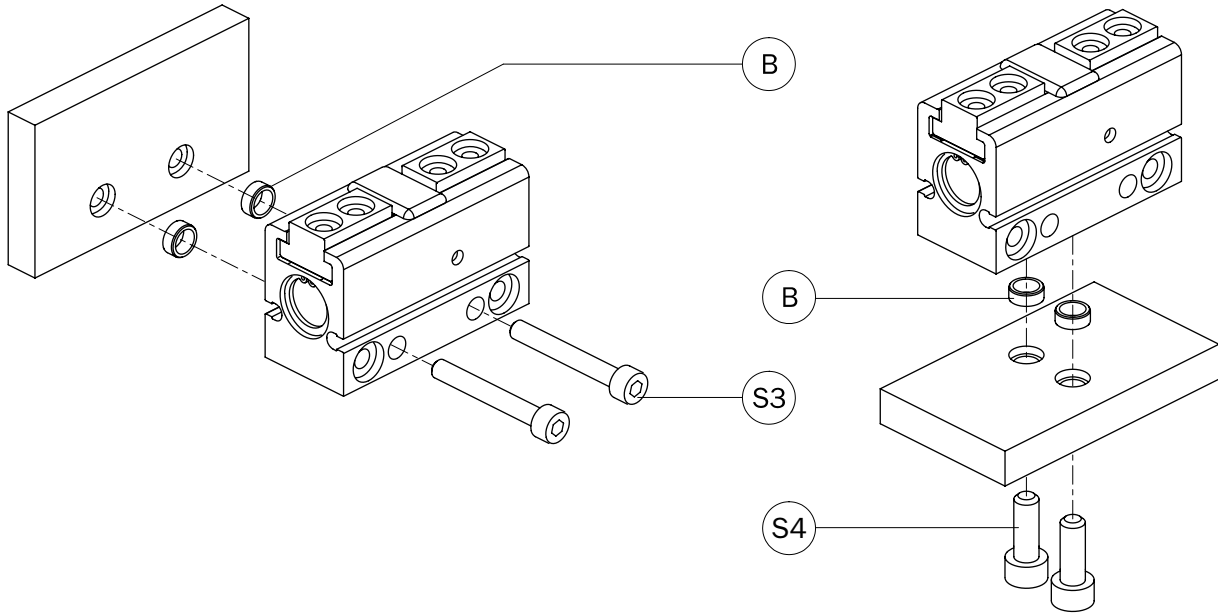
The operating position is detected by proximity magnetic sensors (optional) through a magnet placed on the piston. Therefore, avoid using the gripper in the vicinity of intense magnetic fields or near a large mass of ferromagnetic material as this may cause detection errors.



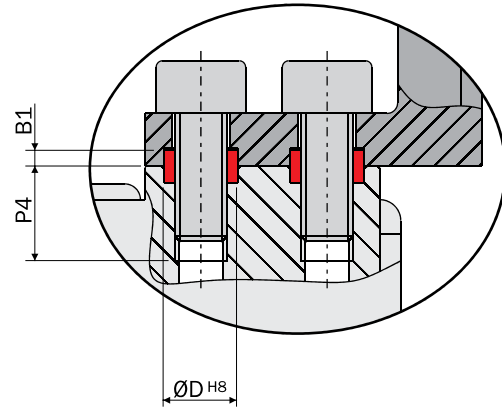
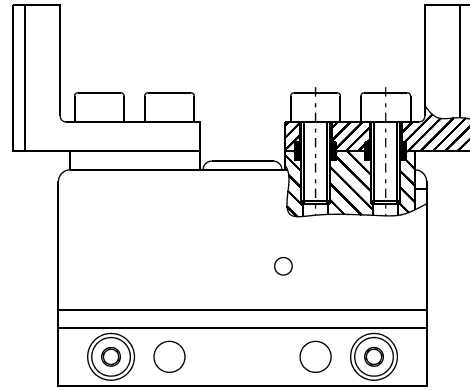
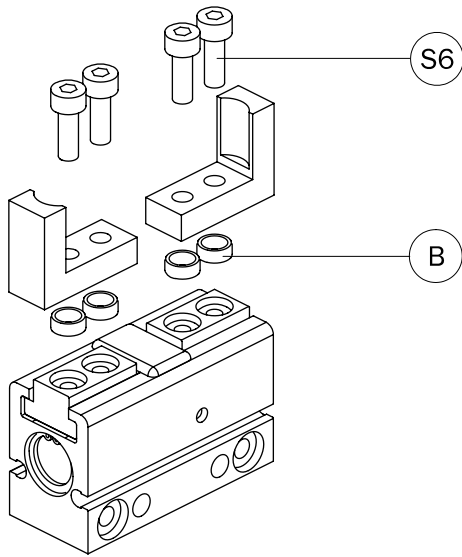
| Code | OUTPUT | Connection | Type |
|----------------|--------------|------------------------|----------------------|
| PRO-SN3M215-G | 3 output NPN | M8 snap plug connector | Programmable |
| PRO-SN3N215-G | 3 output PNP | 2.5m cable | |
| PRO-SN4M225-G | 3 output NPN | | |
| PRO-SN4N225-G | 3 output PNP | | |
| PRO-SS3M215-G | 3 output NPN | M8 snap plug connector | Programmable |
| PRO-SS3N215-G | 3 output PNP | 2.5m cable | |
| PRO-SS4M225-G | 3 output NPN | | |
| PRO-SS4N225-G | 3 output PNP | | |
| PRO-SSR3M215-G | 3 output NPN | M8 snap plug connector | Programmable |
| PRO-SSR3N215-G | 3 output PNP | 2.5m cable | |
| PRO-SSR4M225-G | 3 output NPN | | |
| PRO-SSRN225-G | 3 output PNP | | |
| SN4N225-G | 1 output PNP | 2.5m cable | Standard hysteresis |
| SN4M225-G | 1 output NPN | M8 snap plug connector | |
| SN3N203-G | 1 output PNP | | |
| SN3M203-G | 1 output NPN | | |
| SS4N225-G | 1 output PNP | 2.5m cable | Standard hysteresis |
| SS4M225-G | 1 output NPN | M8 snap plug connector | |
| SS3N203-G | 1 output PNP | | |
| SS3M203-G | 1 output NPN | | |
| SSY3M203-G | 1 output PNP | M8 snap plug connector | Reduced hysteresis |
| SSY3N203-G | 1 output NPN | 2.5m cable | |
| SSY4M225-G | 1 output PNP | | |
| SSY4N225-G | 1 output NPN | | |
| SSQ3M203-G | 1 output PNP | M8 snap plug connector | Ultra low hysteresis |
| SSQ3N203-G | 1 output NPN | 2.5m cable | |
| SSQ4M225-G | 1 output PNP | | |
| SSQ4N225-G | 1 output NPN | | |

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.
 It can be fastened to one side or to the base.
 Use 2 screws (S3 or S4) and 2 centering sleeves (B).



The gripping tools must be as short and light as possible. They must be fastened by 2 screws (S6) and 2 centering sleeves (B).

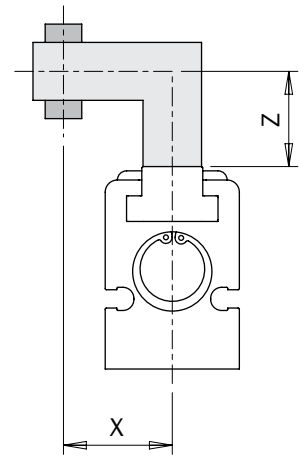


4 centering sleeves (B) for the gripping tools and 2 centering sleeves (B) for the housing are supplied in the packaging.

| | SZ08 | SZ12 | SZ16 | SZ20 | SZ25 | SZ32 | SZ40 |
|-----|------|------------------|------------------|------------------|------------------|------------------|-------------------|
| B | - | Ø7 H=3 | Ø7 H=3 | Ø7 H=3 | Ø9 H=4 | Ø9 H=4 | Ø12 H=5 |
| B1 | - | 1.4 | 1.4 | 1.4 | 1.9 | 1.9 | 2.4 |
| D | - | Ø7 ^{H8} | Ø7 ^{H8} | Ø7 ^{H8} | Ø9 ^{H8} | Ø9 ^{H8} | Ø12 ^{H8} |
| S3 | M3 | M4 | M5 | M5 | M6 | M6 | M8 |
| S4 | M3 | M5 | M5 | M5 | M6 | M6 | M8 |
| P5 | - | 6.5 | 6.5 | 6.5 | 11 | 11 | 15 |
| H10 | - | 22 | 25 | 30 | 37 | 42 | 51 |
| S6 | M2 | M4 | M5 | M5 | M6 | M6 | M8 |
| P4 | - | 6.5 | 9 | 10 | 14 | 15 | 16 |

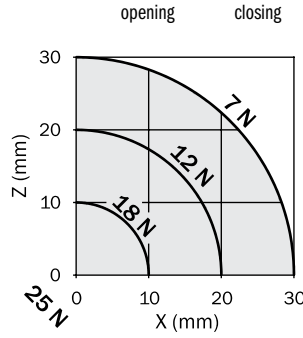
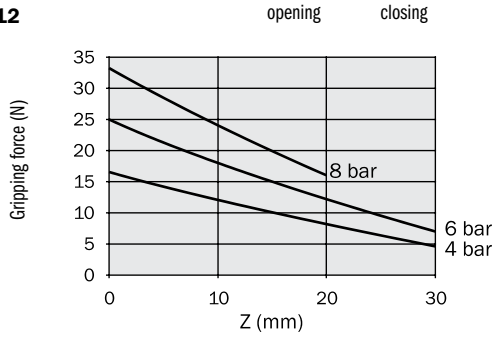
Gripping force

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

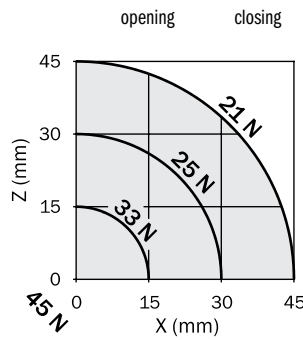
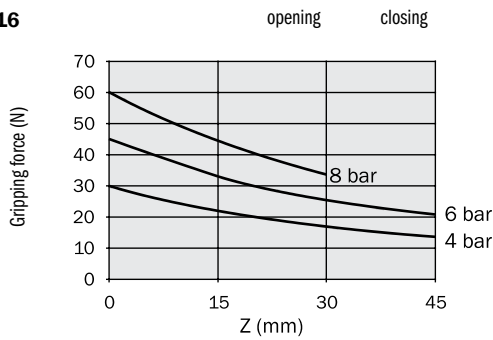


The force shown in these graphs refers to one jaw. The total force is double.

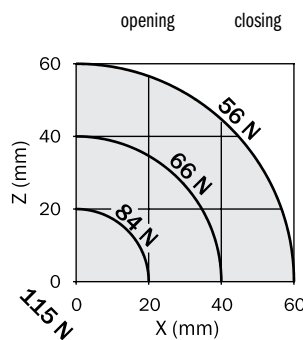
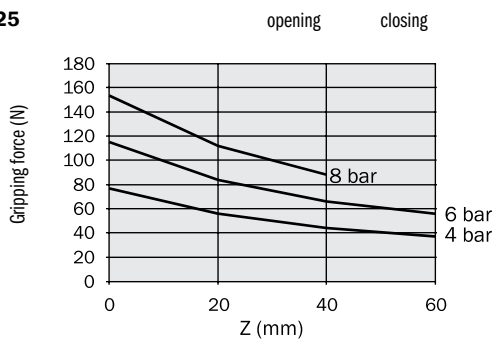
SZ12



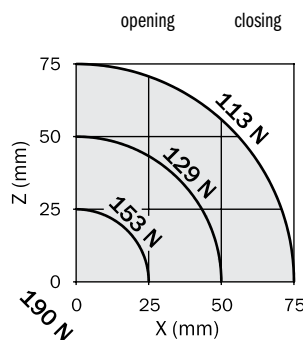
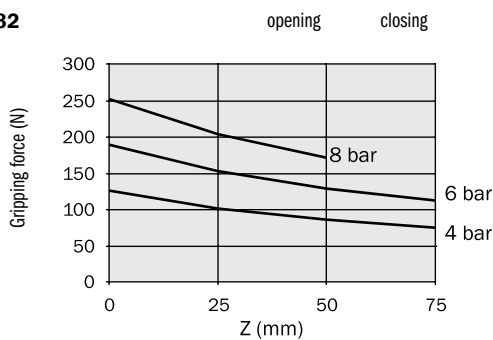
SZ16



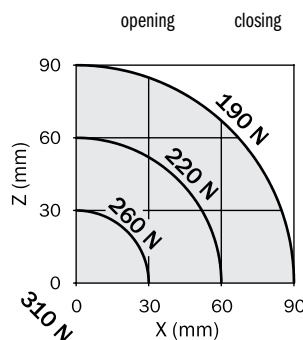
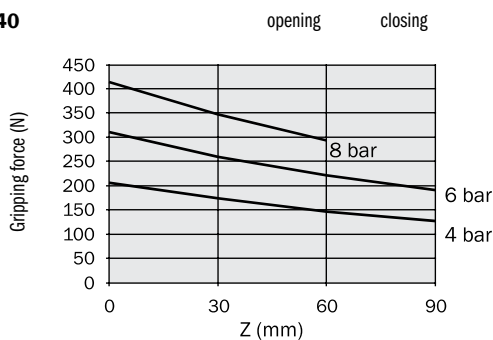
SZ25



SZ32

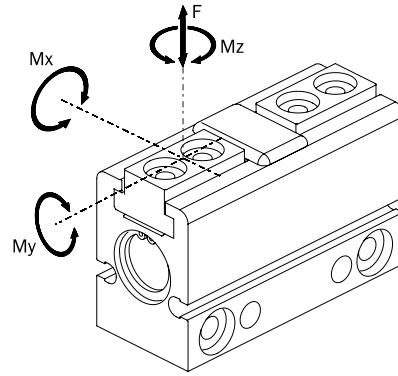


SZ40



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.



| | SZ08 | SZ12 | SZ16 | SZ20 | SZ25 | SZ32 | SZ40 |
|---------|---------|---------|--------|-------|--------|--------|--------|
| F s | 10 N | 50 N | 100 N | 150 N | 200 N | 400 N | 700 N |
| Mx s | 0.25 Nm | 0.5 Nm | 2 Nm | 4 Nm | 6 Nm | 18 Nm | 36 Nm |
| My s | 0.25 Nm | 0.3 Nm | 1.5 Nm | 3 Nm | 4 Nm | 12 Nm | 24 Nm |
| Mz s | 0.25 Nm | 0.5 Nm | 2 Nm | 4 Nm | 6 Nm | 18 Nm | 36 Nm |
| F d | 0.2 N | 1 N | 2 N | 3 N | 4 N | 8 N | 12 Nm |
| Mx d | 0.25 Nm | 1 Ncm | 4 Ncm | 8 Ncm | 12 Ncm | 24 Ncm | 36 Ncm |
| My d | 0.25 Nm | 0.8 Ncm | 3 Ncm | 6 Ncm | 8 Ncm | 16 Ncm | 24 Ncm |
| Mz d | 0.25 Nm | 1 Ncm | 4 Ncm | 8 Ncm | 12 Ncm | 24 Ncm | 36 Ncm |
| m 0.3s | - | - | - | - | - | 800 g | 1200 g |
| m 0.2s | - | - | - | 300g | 400 g | 600 g | 900 g |
| m 0.10s | - | - | 200 g | 250g | 320 g | 400 g | 600 g |
| m 0.08s | 20g | 100 g | 160 g | 200g | 240 g | 300 g | - |
| m 0.06s | 15g | 80 g | 120 g | 150g | 160 g | - | - |
| m 0.03s | 10g | 60 g | 80 g | - | - | - | - |
| m 0.02s | 8g | 40 g | - | - | - | - | - |

Sensors

The operating position is detected by proximity magnetic sensors (optional) through a magnet placed on the piston. Therefore, avoid using the gripper in the vicinity of intense magnetic fields or near a large mass of ferromagnetic material as this may cause detection errors.

The sensors that can be used are:

| Part# | | | Price | SZ12 | SZ16 | SZ25 | SZ32 | SZ40 |
|----------|-----|------------------------|---------|------|------|------|------|------|
| SN4N225G | PNP | 2.5m cable | \$27.20 | ☑ | ☑ | ☑ | ☑ | ☑ |
| SN4M225G | NPN | 2.5m cable | \$27.20 | ☑ | ☑ | ☑ | ☑ | ☑ |
| SN3N203G | PNP | M8 snap plug connector | \$31.16 | ☑ | ☑ | ☑ | ☑ | ☑ |
| SN3M203G | NPN | M8 snap plug connector | \$31.16 | ☑ | ☑ | ☑ | ☑ | ☑ |
| SS4N225G | PNP | 2.5m cable | \$27.20 | ☑ | ☑ | ☑ | ☑ | ☑ |
| SS4M225G | NPN | 2.5m cable | \$27.20 | ☑ | ☑ | ☑ | ☑ | ☑ |
| SS3N203G | PNP | M8 snap plug connector | \$31.16 | ☑ | ☑ | ☑ | ☑ | ☑ |
| SS3M203G | NPN | M8 snap plug connector | \$31.16 | ☑ | ☑ | ☑ | ☑ | ☑ |

