

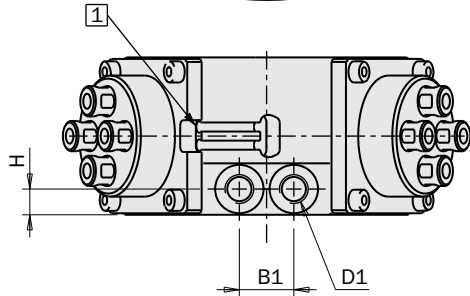
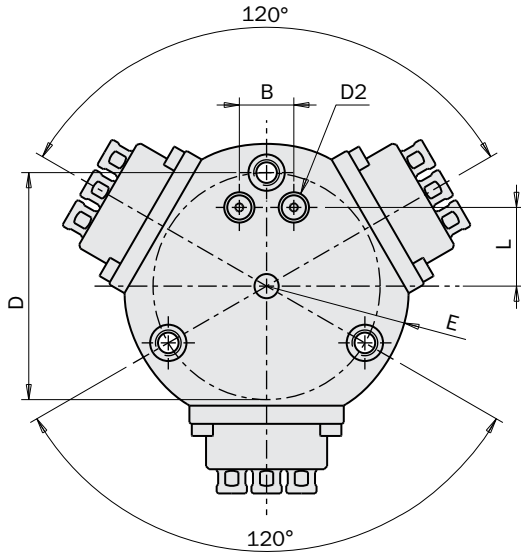
## 3-jaw self-centring pneumatic gripper (series SXT)

- Double acting (normally closed on request).
- Strong gripping force.
- Protection class: IP67.
- Double O-Ring sealing on the columns.
- Suitable for harsh environments.
- Optional magnetic sensors.
- FDA-H1 food-grade grease.

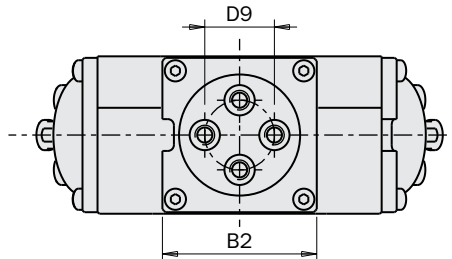
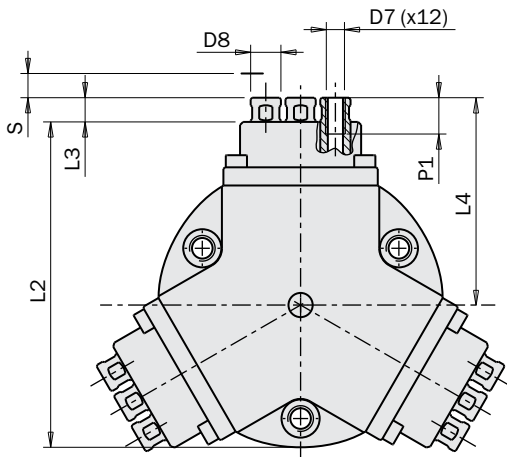
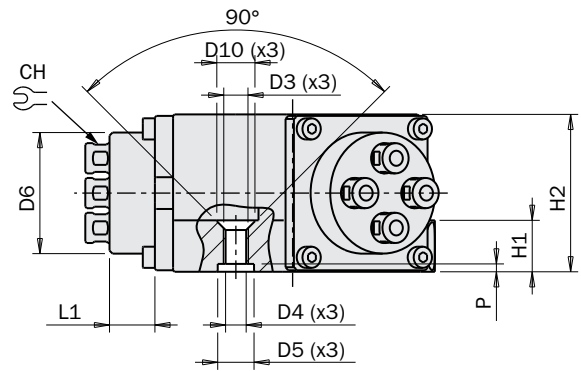


	SXT2505	SXT4008	SXT5012	SXT6315
Medium	Compressed air in compliance with ISO 8573-1:2010 [7:4:4]			
Operating pressure range	2 ÷ 8 bar			
Operating temperature range	5 ÷ 100 °C			
Opening gripping force at 6 bar on each jaw	250 N	650 N	1050 N	1650 N
Opening total gripping force at 6 bar	750 N	1950 N	3150 N	4950 N
Closing gripping force at 6 bar on each jaw	195 N	500 N	800 N	1200 N
Closing total gripping force at 6 bar	585 N	1500 N	2400 N	3600 N
Stroke	3x5 mm	3x8 mm	3x12 mm	3x15 mm
Maximum working frequency	2 Hz	2 Hz	2 Hz	1 Hz
Cycle air consumption	16 cm <sup>3</sup>	60 cm <sup>3</sup>	140 cm <sup>3</sup>	270 cm <sup>3</sup>
Opening / Closing time without load	0.02 s	0.02 s	0.05 s	0.15 s
Repetition accuracy	0.05 mm	0.05 mm	0.05 mm	0.05 mm
Weight	420 g	1100 g	2000 g	3800 g

**Dimensions (mm)**



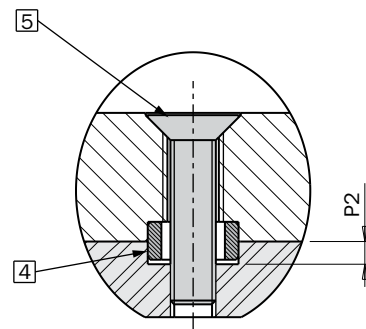
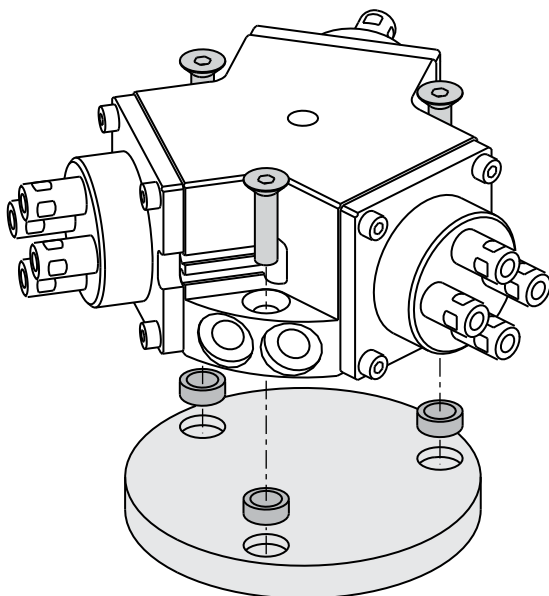
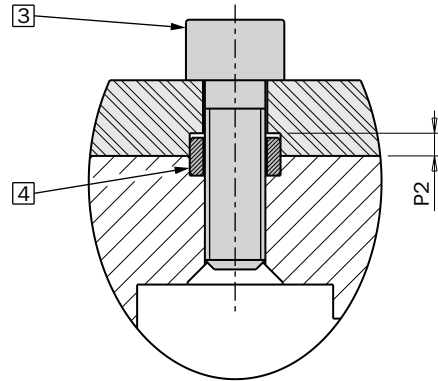
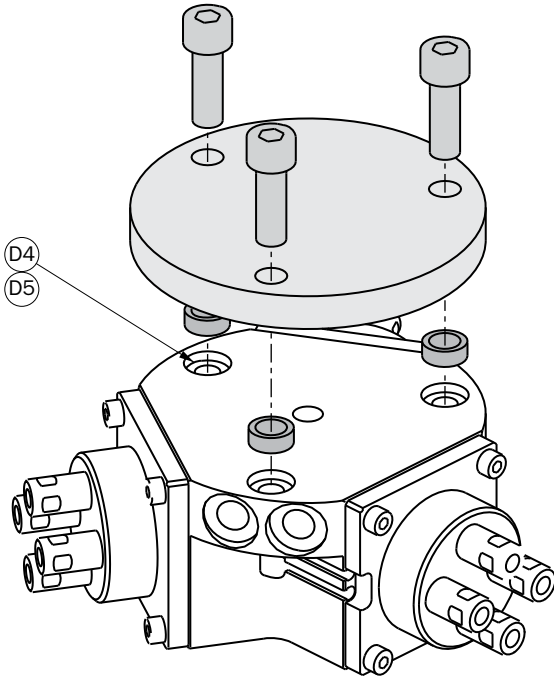
1 Sensor groove



	SXT2505	SXT4008	SXT5012	SXT6315
B	16	18	24	24
B1	16	18	24	24
B2	38	51	63	78
D	±0.02 Ø59	Ø75	Ø98	Ø114
D1	M5	G1/8	G1/8	G1/8
D2	M3	M5	M5	M5
D3	Ø5.2	Ø6.8	Ø6.8	Ø8.5
D4	M6	M8	M8	M10
D5	H8 Ø9	Ø12	Ø12	Ø14
D6	Ø27	Ø40	Ø50	Ø63
D7	M3	M6	M8	M10
D8	f7 Ø6	Ø10	Ø12	Ø16
D9	±0.02 15	Ø23	Ø33	Ø38
D10	Ø11.2	Ø12.6	Ø12.6	Ø17.3
E	R36	R47	R58	R69
H	6	8.5	10	11
H1	12	17	20	22
H2	38	52	64	80
L	24	26	38	45
L1	7.5	15	18	26
L2	78	107.5	133	162
L3	7.5	8	8.5	9.5
L4	49.5	68.5	83.5	102.5
P	+0.1 2.1	2.6	2.6	2.6
P1	6	12	20	20
S (x2)	5	8	12	15
CH	5	9	11	14

**Gripper fastening**

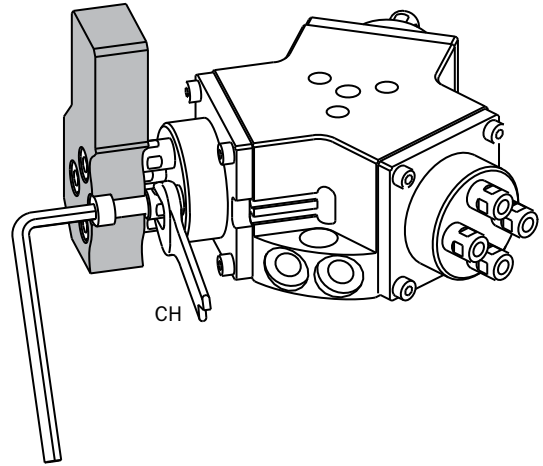
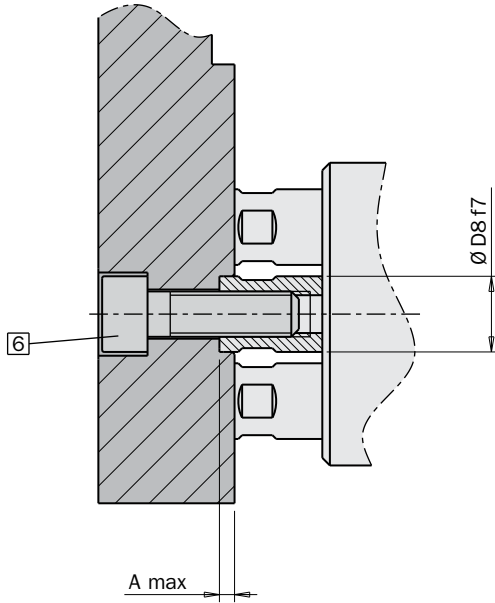
The gripper can be fastened to a static or moving part. When on a moving part, you must pay attention to the inertial force to which the gripper and its load are subjected. Use three screws in the threaded holes (D4) and three centering sleeves [4] in the spot faces (D5). The gripper can be fastened either from the top or from the bottom. Three centering sleeves are supplied with the gripper.



	SXT2505	SXT4008	SXT5012	SXT6315
[3]	M6	M8	M8	M10
[4]	Ø9h7 x 6.4 x 4	Ø12h7 x 8.4 x 5	Ø12h7 x 8.4 x 5	Ø14h7 x 10.5 x 6
[5]	M5	M6	M6	M8
P2	2.2 <sup>-0.2</sup>	2.8 <sup>-0.2</sup>	2.8 <sup>-0.2</sup>	3.8 <sup>-0.2</sup>

**Gripping tool fastening**

This gripper has no jaws and the gripping tools have to be fastened directly on the columns.  
 The gripping tools must be as short and light as possible.  
 They must be fastened by four screws [6] in the threaded holes (D7) of the columns.  
 Drill centering holes for two of the four columns (D8).  
 Hold the column by a wrench key, to avoid unscrewing it.

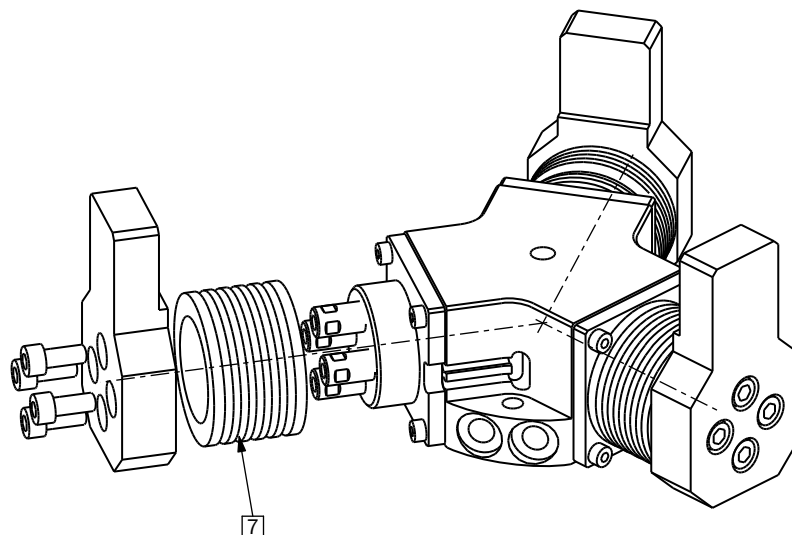


	SXT2505	SXT4008	SXT5012	SXT6315
A	1.5	2	2	2
[6]	M3	M6	M8	M10

An optional bellow in Silicone [7] is available to protect columns.

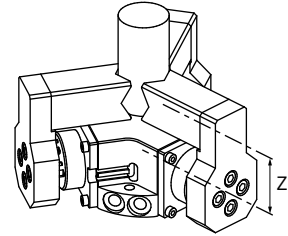
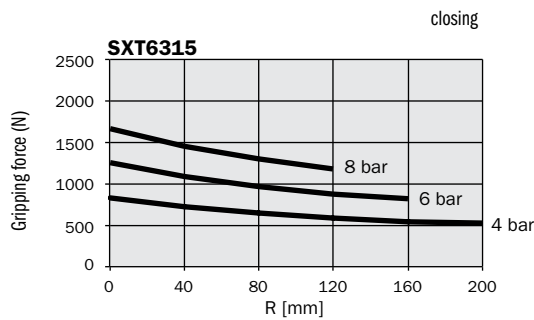
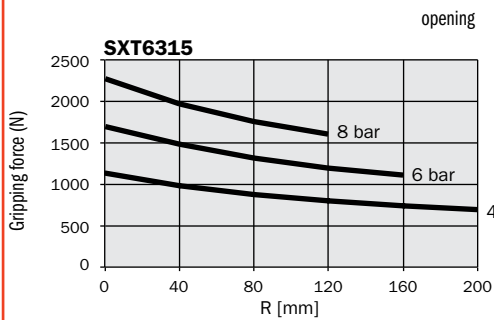
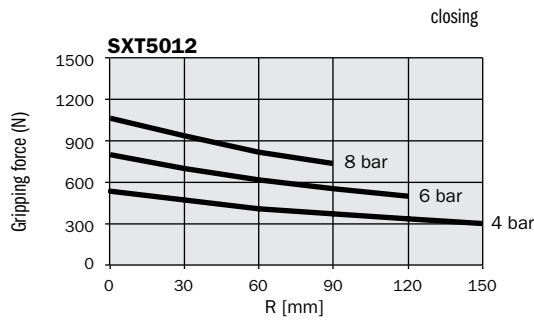
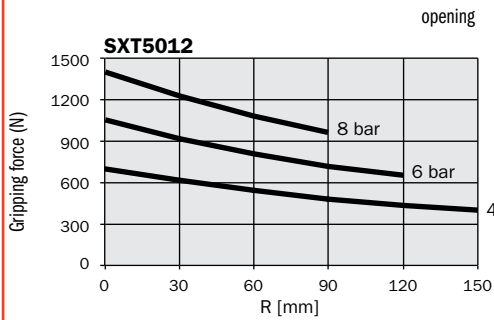
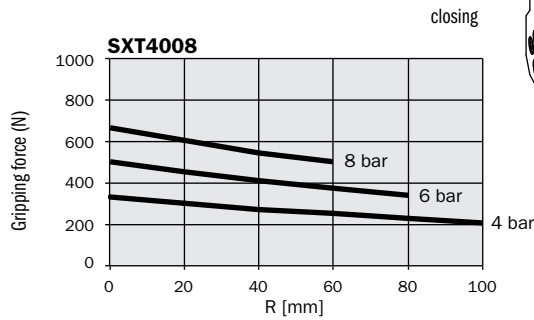
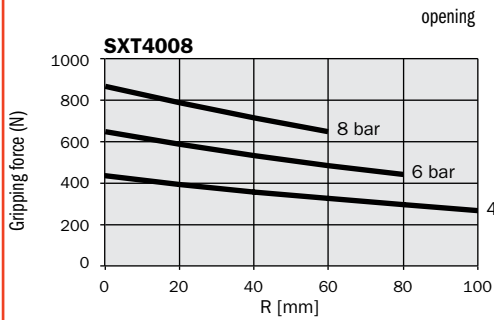
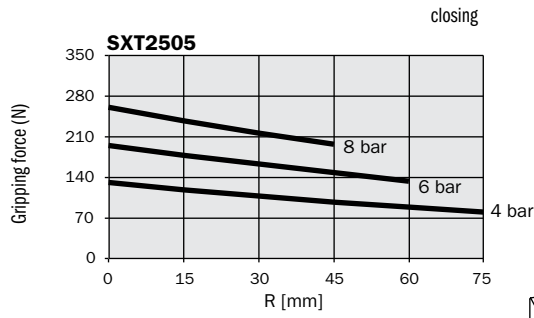
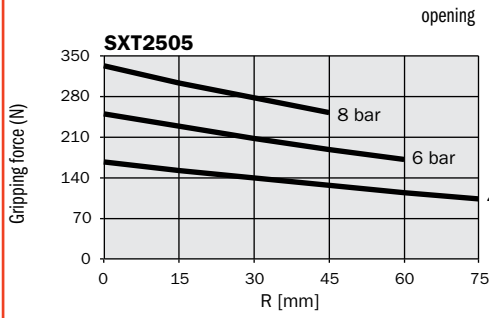
- Code SX25S01 for the gripper SXT2505.
- Code SX40S01 for the gripper SXT4008.
- Code SX50S01 for the gripper SXT5012.
- Code SX63S01 for the gripper SXT6315.

Part#
SX25S01
SX40S01
SX50S01
SX63S01



## Gripping force

The graphs show the medium gripping force on each jaw, as a function of the operating pressure and the distance Z of the gripping point.

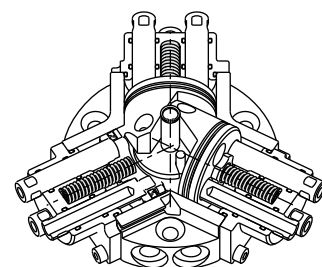


**The force shown in these graphs refers to one jaw. The total force is triple.**

## Spring option

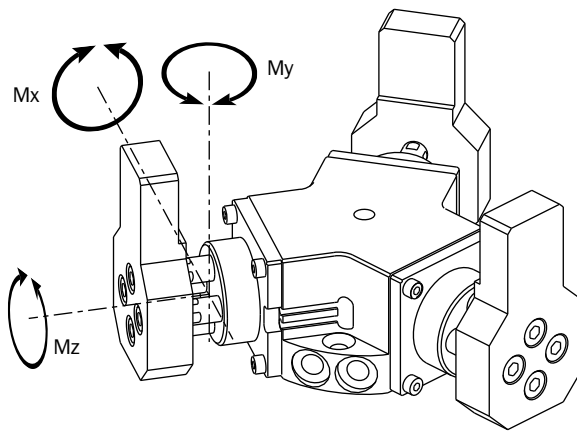
It is also available, on request, with a closing (-NC) spring, providing, after a pressure black-out, about one tenth of the output force at 6 bar.

	SXT4008-NC	SXT5012-NC	SXT6315-NC
Closing force at 6 bar each jaw	544÷568 N	914÷964 N	1350÷1400 N
Opening force at 6 bar each jaw	587÷610 N	871÷921 N	1467÷1517 N
Closing force at 0 bar each jaw	50÷73 N	116÷166 N	129÷179 N
Opening force at 0 bar each jaw	0 N	0 N	0 N



**Safety loads**

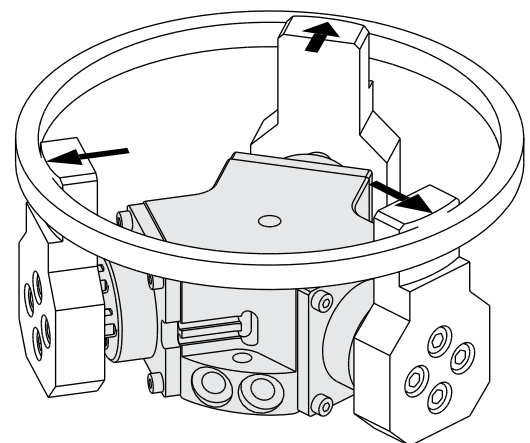
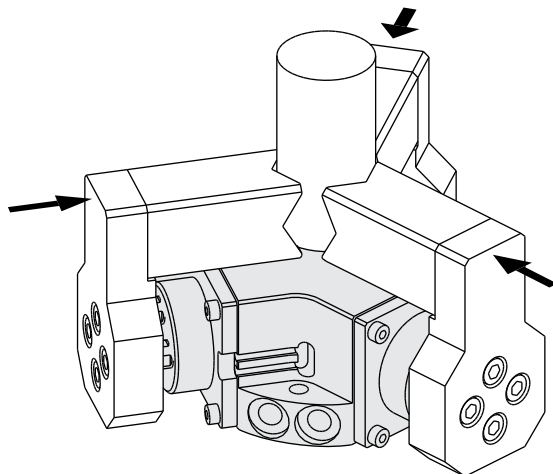
Check the table for maximum permitted loads. Excessive forces or torques can damage the gripper, cause functioning troubles and endanger the safety of the operator.  $M_x s$ ,  $M_y s$ ,  $M_z s$ , are the maximum permitted static loads, that is when the jaws are still.  $M_x d$ ,  $M_y d$ ,  $M_z d$ , are the maximum permitted dynamic loads, that is when the jaws are operating.  $m$  is the maximum permitted weight of each gripping tool, when the gripper operates without speed adjustment. If the weight exceeds the permitted value, the jaw speed must be decreased by means of flow controllers (not supplied).



	SXT2505	SXT4008	SXT5012	SXT6315
$M_x s$	10 Nm	40 Nm	90 Nm	190 Nm
$M_y s$	10 Nm	40 Nm	90 Nm	190 Nm
$M_z s$	5 Nm	20 Nm	40 Nm	100 Nm
$M_x d$	0.1 Nm	0.5 Nm	1.2 Nm	2.7 Nm
$M_y d$	0.1 Nm	0.5 Nm	1.2 Nm	2.7 Nm
$M_z d$	0.1 Nm	0.5 Nm	1.2 Nm	2.7 Nm
$m$	400 g	700 g	1400 g	2100 g

**Gripping**

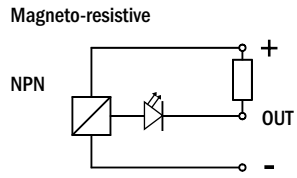
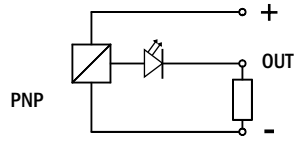
The gripper is double-acting for either internal or external gripping applications. The opening force is higher, than the closing force.



**Sensors**

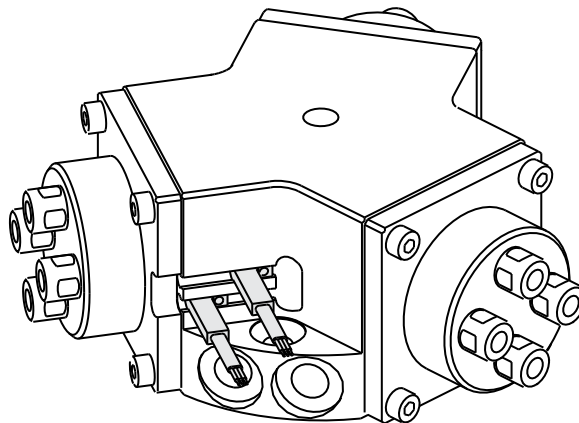
The operating position is detected by magnetic proximity sensors (optional) through a magnet placed on the piston. The use of magnetic proximity sensors is to be avoided in the vicinity of large masses of ferromagnetic material or intense magnetic fields as this may cause detection problems.

The sensors that can be used are:



				SXT
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	☑

They are all provided with a 3-wire flat cable and a LED.



**Compressed air feeding**

The compressed air feeding can be accomplished by the air ports (on one side or on the bottom) with fittings and hoses (not supplied).

Or it can be supplied directly by the mounting plate, through O-Rings (not supplied), after removing the plugs.

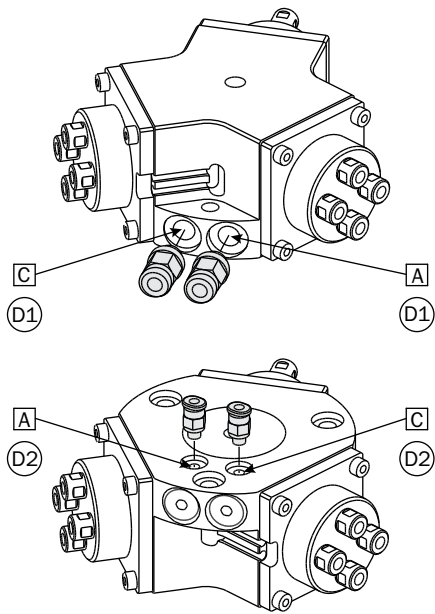
Compressed air in A: gripper opening.

Compressed air in C: gripper closing.

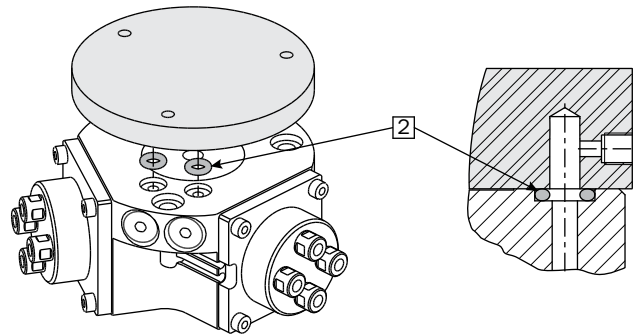
The compressed air, must be filtered from 5 to 40 µm.

Maintain the medium selected at the start, lubricated or not, for the complete service life of the gripper.

The pneumatic circuit must be pressurized progressively, to avoid uncontrolled movements.



	SXT2505	SXT4008	SXT5012	SXT6315
[2]	Ø1.78x5.28	Ø2.62x5.23	Ø2.62x5.23	Ø2.62x5.23
D1	M5	G1/8	G1/8	G1/8
D2	M3	M5	M5	M5



**Pneumatic circuit**

Possible problems on a compressed air circuit:

- 1- Pressure variation.
- 2- Pressurizing with empty gripper.
- 3- Sudden pressure black-out.
- 4- Excessive speed of the jaws.

Possible solutions:

- 1- Compressed air storage (A).
- 2- Start-up valve (B).
- 3- Safety valve (C).
- 4- Flow controller (D).

