

SZ系列-T型滑軌兩指氣壓平行夾爪

- 雙動(氣壓)。
- 彈簧強力夾持設計，應客戶要求提供。
- 專利的中心定位系統。
- 固定位置多方向選擇。
- 可選磁簧感應開關。

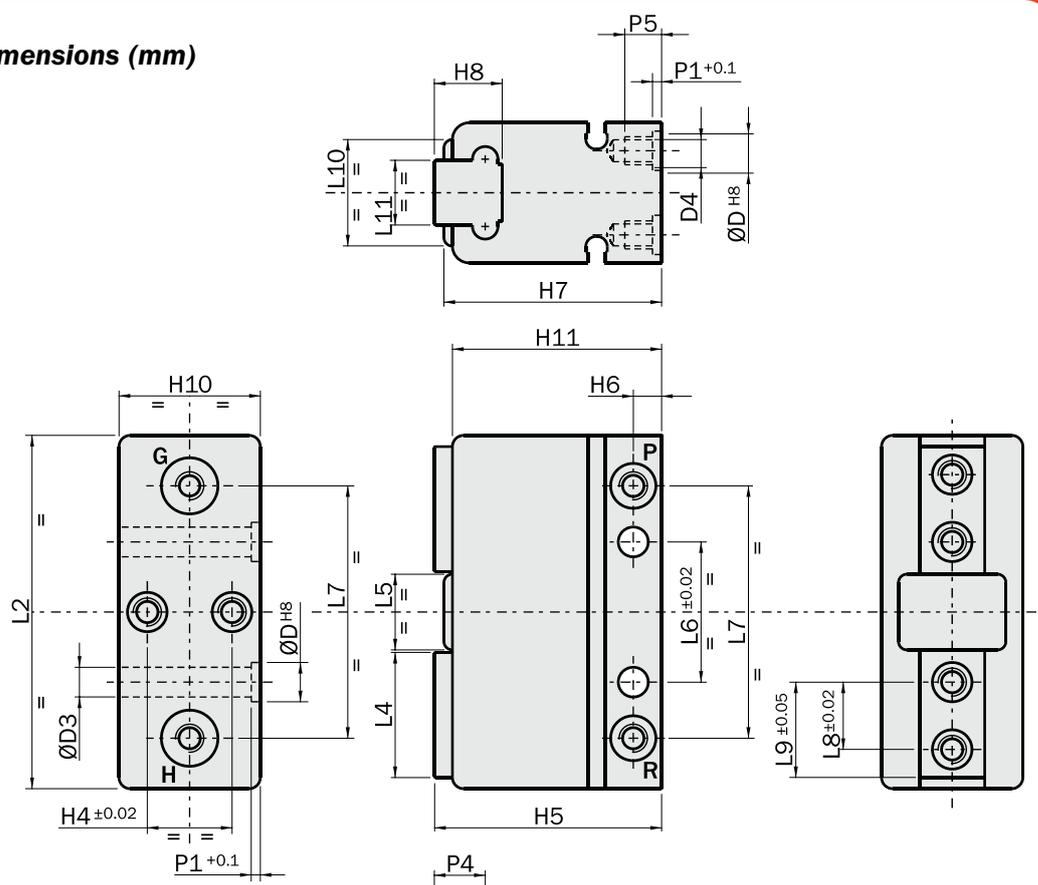
2-jaw parallel self-centering pneumatic gripper (series SZ)

- Double acting.
- Spring closed, upon request.
- Patented self-centering system.
- Various options for fastening and feeding.
- Optional magnetic sensors.

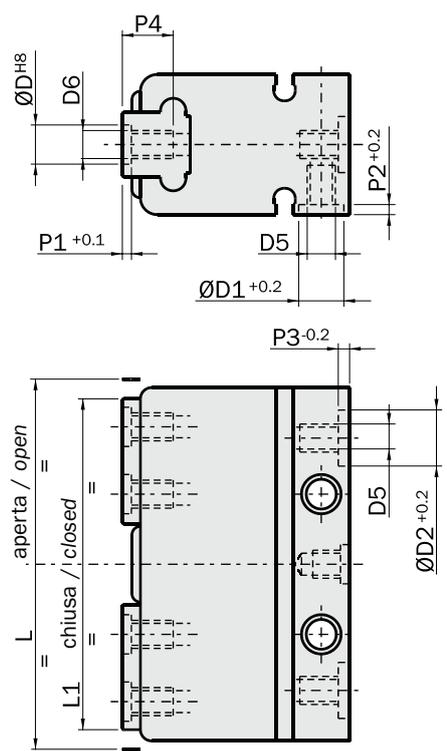


	SZ12	SZ16	SZ25	SZ32	SZ40
Fluido Medium	Aria compressa filtrata, lubrificata / non lubrificata Filtered, lubricated / non lubricated compressed air				
Pressione di esercizio Operating pressure range	2 ÷ 8 bar				
Temperatura di esercizio Operating temperature range	5° ÷ 60°C.				
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar on each jaw	25 N	45 N	115 N	190 N	310 N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	50 N	90 N	230 N	380 N	620 N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar on each jaw	25 N	45 N	115 N	190 N	310 N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	50 N	90 N	230 N	380 N	620 N
Corsa totale (±0.4 mm) Total stroke	8 mm	12 mm	20 mm	25 mm	30 mm
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz	3 Hz	2 Hz	2 Hz	2 Hz
Consumo d'aria per ciclo Cycle air consumption	1 cm ³	3 cm ³	12 cm ³	24 cm ³	48 cm ³
Tempo di apertura / chiusura senza carico Opening / Closing time without load	0.02 s	0.04 s	0.05 s	0.07 s	0.12 s
Peso Weight	0.094 kg	0.153 kg	0.446 kg	0.732 kg	1.135 kg

Dimensioni (mm) / Dimensions (mm)



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



⊙D5 Ingresso aria
Air connection

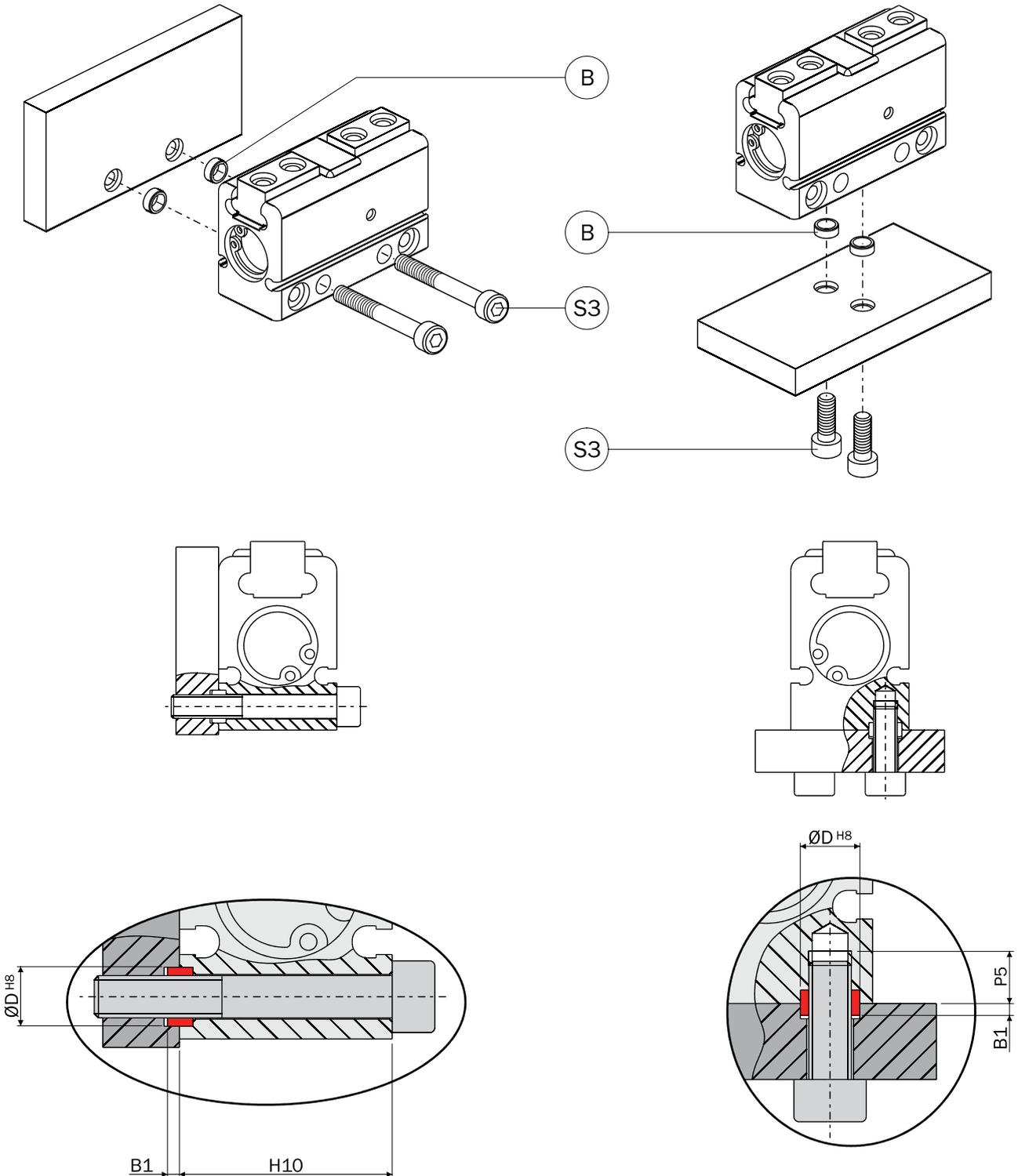
⊙G ⊙P Aria compressa in G/P: apertura della pinza
Compressed air in G/P: gripper opening

⊙H ⊙R Aria compressa in H/R: chiusura della pinza
Compressed air in H/R: gripper closing

B: 定位套筒是讓夾爪在運動中能很緊密的被固定，不會因為在移動中的慣性造成夾爪無法被緊密固定而移位。定位套筒能有多方向可以固定。

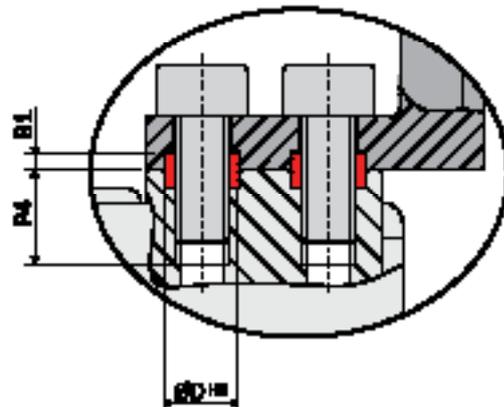
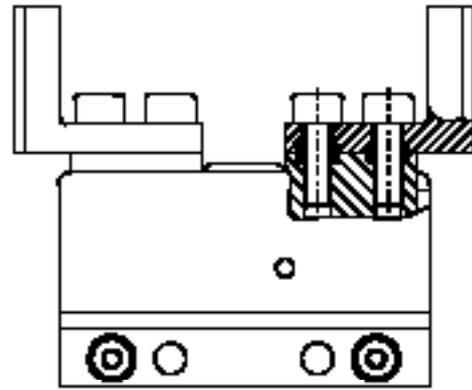
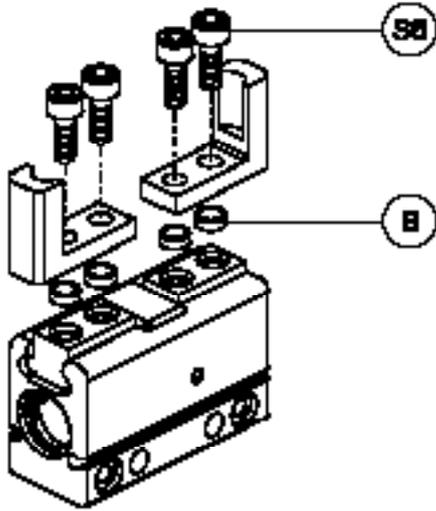
Fastening

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) and 2 centering sleeves (B).



夾持工具必須是短和盡可能輕。
必須將2個螺絲緊固 (S6) 和定位套筒 (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).



Nella confezione della piastra sono fornite 4 boccola di centraggio (B) per le dita di presa e 2 boccola (B) per il corpo.

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

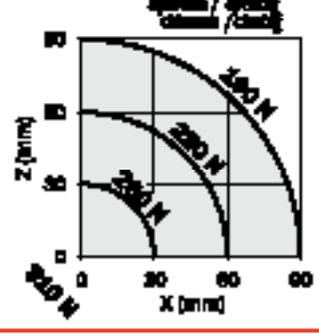
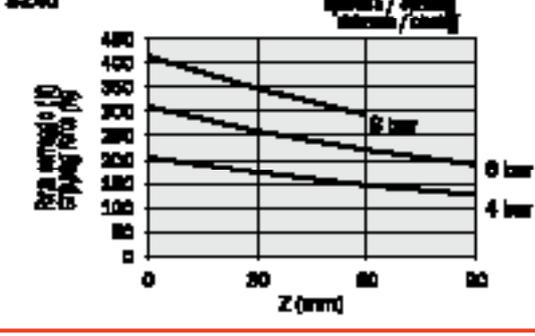
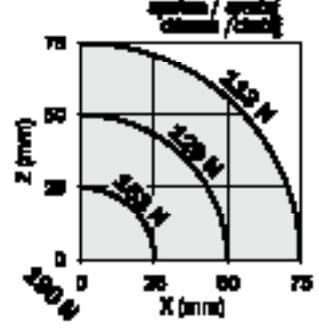
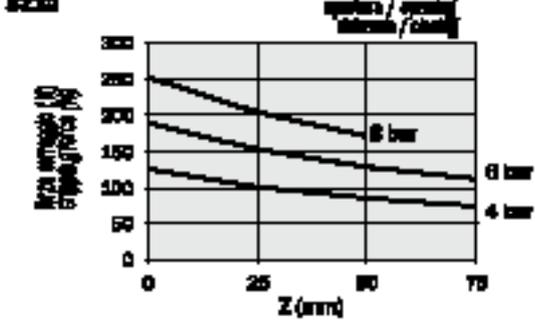
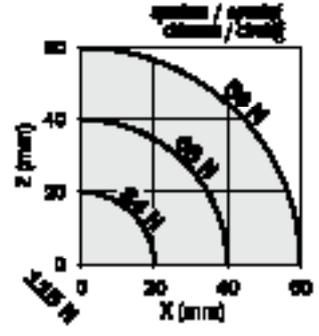
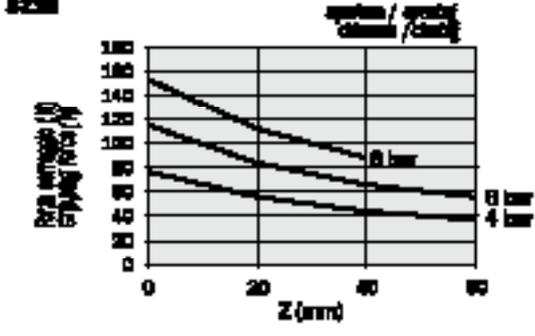
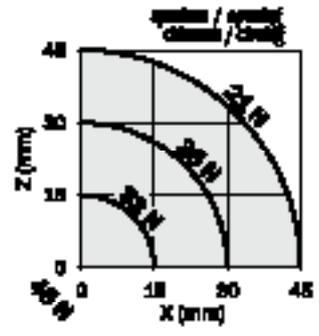
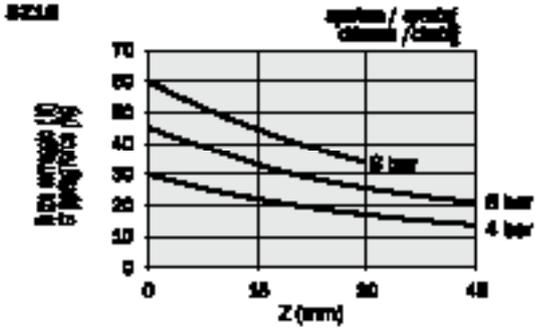
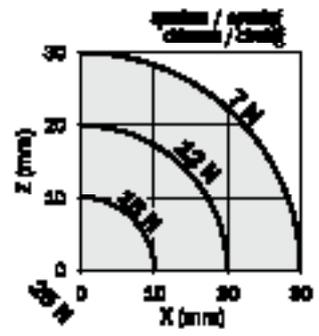
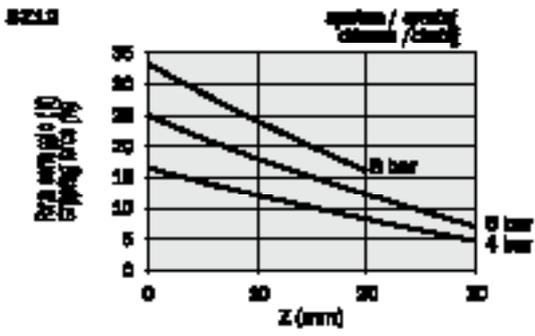
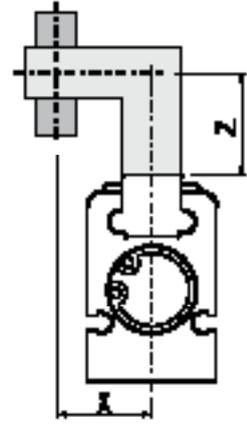
	SZ12	SZ18	SZ25	SZ32	SZ40
B	Ø7 H-3	Ø7 H-3	Ø9 H-4	Ø9 H-4	Ø12 H-5
B1	1.4	1.4	1.9	1.9	2.4
D	Ø7 ^M	Ø7 ^M	Ø9 ^M	Ø9 ^M	Ø12 ^M
S3	M5	M5	M6	M6	M8
P5	6.5	6.5	11	11	15
H10	22	25	37	42	51
S6	M4	M5	M6	M6	M8
P4	6.5	9	14	15	16

夾持力

圖表顯示每個本體的操作壓力、夾持工具的長度Z和X的夾持力。

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 overhang X.



La forza indicata in questi grafici è riferita alla singola griffa. La forza totale è il doppio.

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

安全負載

檢查最大允許負荷，過大的力或力矩會損壞夾具，導致運作的煩惱和危害操作人員的安全。

F_s 、 $M_x s$ 、 $M_y s$ 、 $M_z s$ ，我的S，允許的最大靜載荷。夾爪靜止不動。

F_d 、 $M_x d$ 、 $M_y d$ 、 $M_z d$ ，我的d，允許的最大動態負載。夾爪動態中。

下表顯示指定的最大負載（米）

每個夾持工具的功能關閉或打開時間。使用流量控制器（不提供），以得到適當的速度。

Safety loads

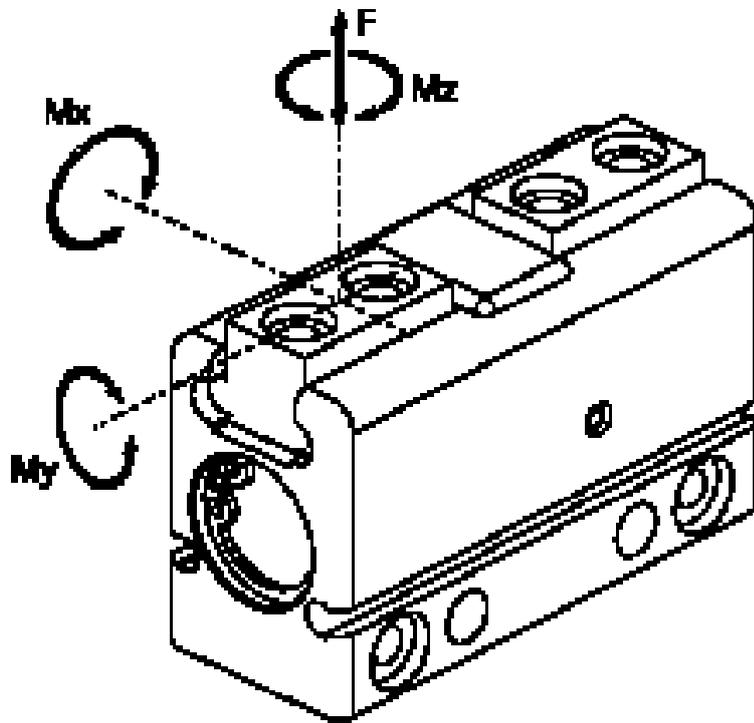
Check the table for maximum permitted loads.

Excessive forces or torques can damage the gripper, cause functioning troubles and endanger the safety of the operator.

F_s , $M_x s$, $M_y s$, $M_z s$, are maximum permitted static loads. Static means with motionless jaws.

F_d , $M_x d$, $M_y d$, $M_z d$, are maximum permitted dynamic loads. Dynamic means with moving jaws.

The following tables show the specified maximum loads (kg) on each gripping tool as function of closing or opening time. Use flow controllers (not supplied) to get the proper speed.



	SZ12	SZ16	SZ25	SZ32	SZ40
F_s	30 N	70 N	100 N	300 N	600 N
$M_x s$	0.3 Nm	1.5 Nm	3 Nm	9 Nm	18 Nm
$M_y s$	0.2 Nm	1 Nm	2 Nm	6 Nm	12 Nm
$M_z s$	0.3 Nm	1.5 Nm	3 Nm	9 Nm	18 Nm
F_d	0.6 N	1.4 N	2 N	4 N	6 Nm
$M_x d$	0.6 Ncm	3 Ncm	6 Ncm	12 Ncm	18 Ncm
$M_y d$	0.4 Ncm	2 Ncm	4 Ncm	8 Ncm	12 Ncm
$M_z d$	0.6 Ncm	3 Ncm	6 Ncm	12 Ncm	18 Ncm
m 0.3s	-	-	200 g	400 g	600 g
m 0.2s	-	140 g	160 g	210 g	300 g
m 0.12s	60 g	120 g	140 g	180 g	240 g
m 0.07s	50 g	100 g	120 g	150 g	-
m 0.06s	40 g	80 g	100 g	-	-
m 0.04s	30 g	60 g	-	-	-
m 0.02s	20 g	-	-	-	-

磁簧近接開關

用近接開關偵測到夾爪的開和關位置，能清楚知道夾爪開和關。

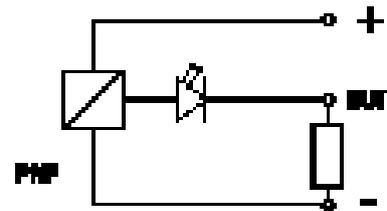
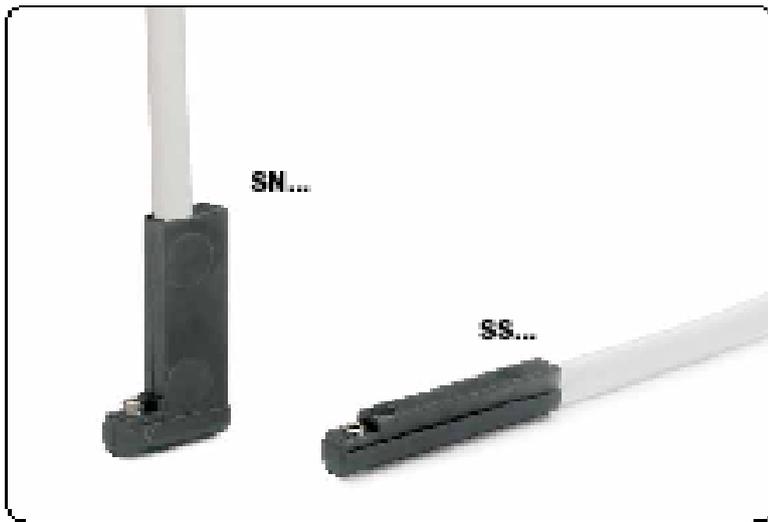
避免在著工作環境周圍有強力的磁性干擾到近接開關的偵測性能。

警告

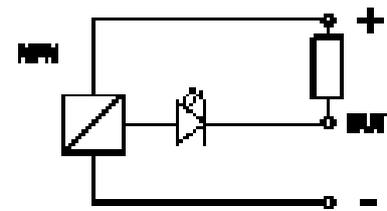
The operating position is detected by proximity magnetic sensors (optional) through a magnet placed on the piston.

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:



Magnetic-actuator



			SZ12	SZ16	SZ25	SZ32	SZ40
SN4N225-G	PNP	Cavo 2.5m / 2.5m Cable	☑	☑	☑	☑	☑
SN4M225-G	NPN	Cavo 2.5m / 2.5m Cable	☑	☑	☑	☑	☑
SN3N203-G	PNP	Connettore M8 / Snap M8 plug connector	☑	☑	☑	☑	☑
SN3M203-G	NPN	Connettore M8 / Snap M8 plug connector	☑	☑	☑	☑	☑
SS4N225-G	PNP	Cavo 2.5m / 2.5m Cable	☑	☑	☑	☑	☑
SS4M225-G	NPN	Cavo 2.5m / 2.5m Cable	☑	☑	☑	☑	☑
SS3N203-G	PNP	Connettore M8 / Snap M8 plug connector	☑	☑	☑	☑	☑
SS3M203-G	NPN	Connettore M8 / Snap M8 plug connector	☑	☑	☑	☑	☑



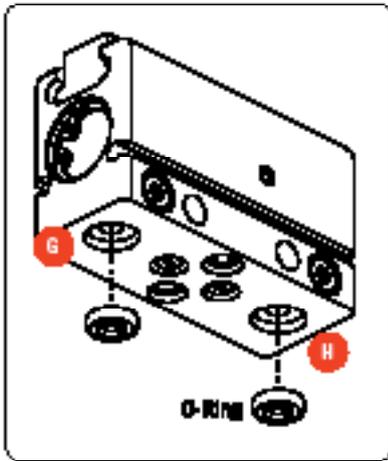
氣壓源

- 氣源過濾以5~40um過濾精度，可潤滑或不潤滑油。
- P和R是一般傳統外接軟管控制。
- E和F是氣孔盲塞。
- G和H是拆除盲塞後，可以隱藏式氣源模組設計運用。

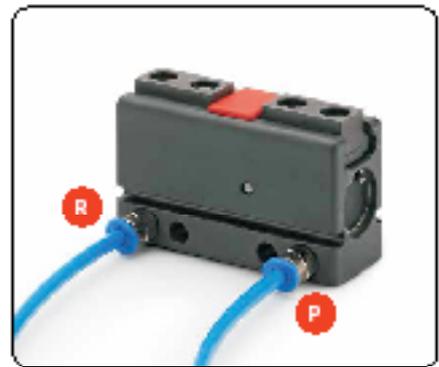
Compressed air feeding

The compressed air feeding can be accomplished on the lateral air ports (P and R) with fittings and hoses (not supplied). Or it can be accomplished directly by the bottom air ports (G and H) removing the plugs (E and F).
Compressed air in P - for gripper opening.
Compressed air in R - for 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.



	SZ12	SZ16	SZ25	SZ32	SZ40
O-Ring	Ø2.62x5.23	Ø2.62x5.23	Ø2.62x5.23	Ø1.78x15.6	Ø1.78x15.6



Circuita pneumatico

Possibili inconvenienti nel circuito di alimentazione dell'aria compressa:

- 1- Oscillazioni di pressione.
- 2- Rifornimento pila vuota all'avvio.
- 3- Improvvisa mancanza di pressione.
- 4- Velocità di estensione eccessiva.

Accorgimenti per risolvere i problemi:

- 1- Serbatoio a riserva (A).
- 2- Valvole di avviamento progressivo (B).
- 3- Valvole di sicurezza (C).
- 4- Regolatori di flusso (D).

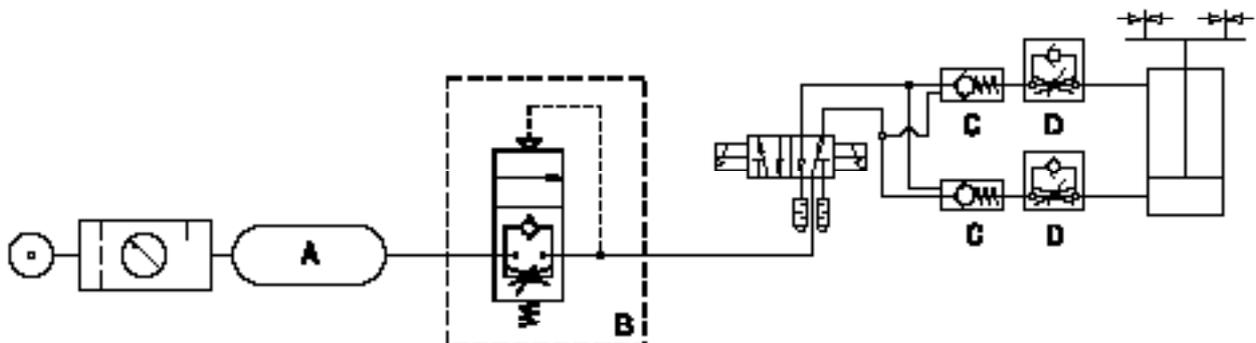
Pneumatic circuit

Possible problems on a compressed air circuit:

- 1- Pressure variation.
- 2- Pressurizing with empty cylinder.
- 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).

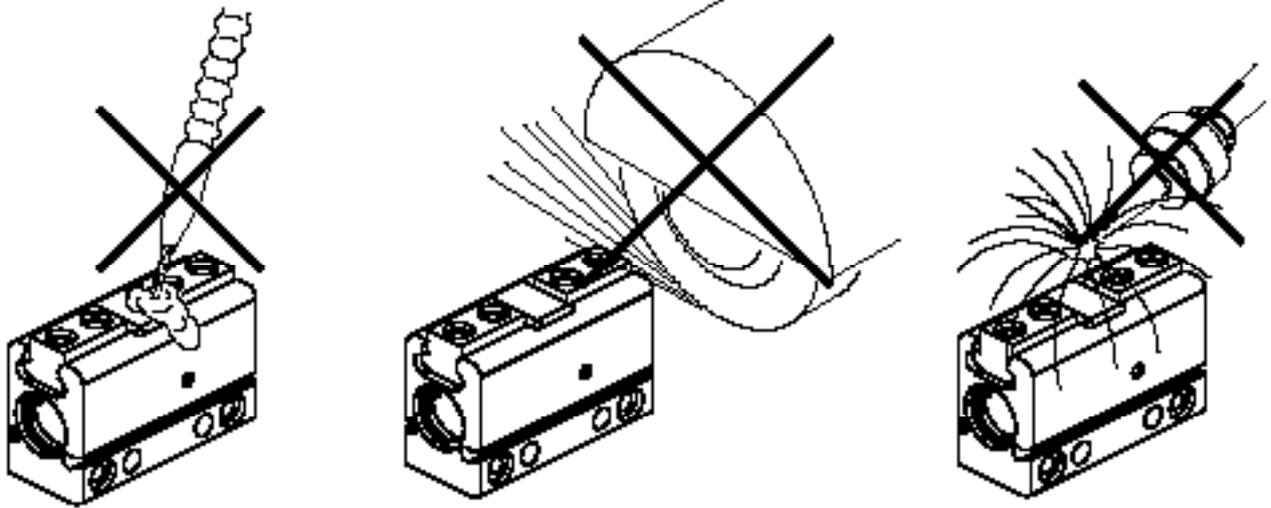


注意事項

決不讓夾爪接觸到腐蝕性物質，焊接飛濺或研磨粉，因為將可能損壞夾爪。
 在操作夾爪時，不要讓非授權的人或物體在運作夾爪的操作範圍內。
 注意機器上不安裝不符合貴國的安全法規和標準。

Caution

Never let the gripper come into contact with corrosive substances, soldering splashes or abrasive powders as they may damage the gripper.
 Never let non-authorized persons or objects stand within the operating range of the gripper.
 Never operate the gripper if the machine on which it is fitted does not comply with safety laws and standards of your country.



Manutenzione

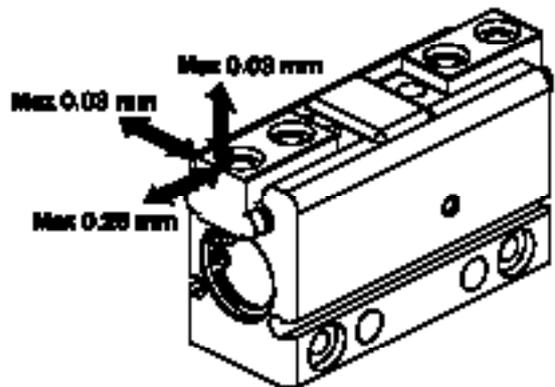
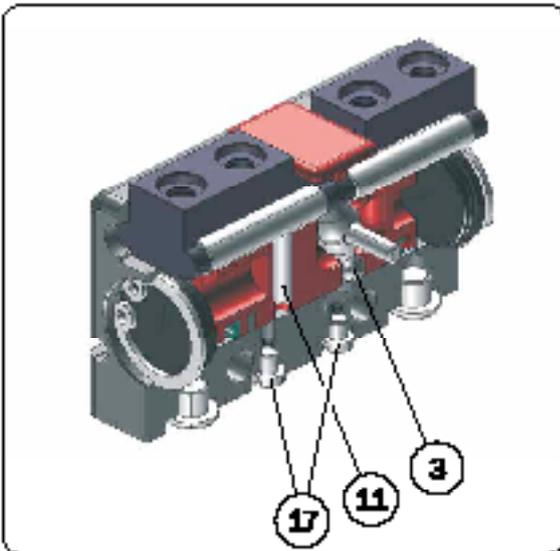
La pinza va lubrificata ogni 10 milioni di cicli con:
 • Molykote DK (per il metallo);
 • Molykote PG75 (guarnizioni).

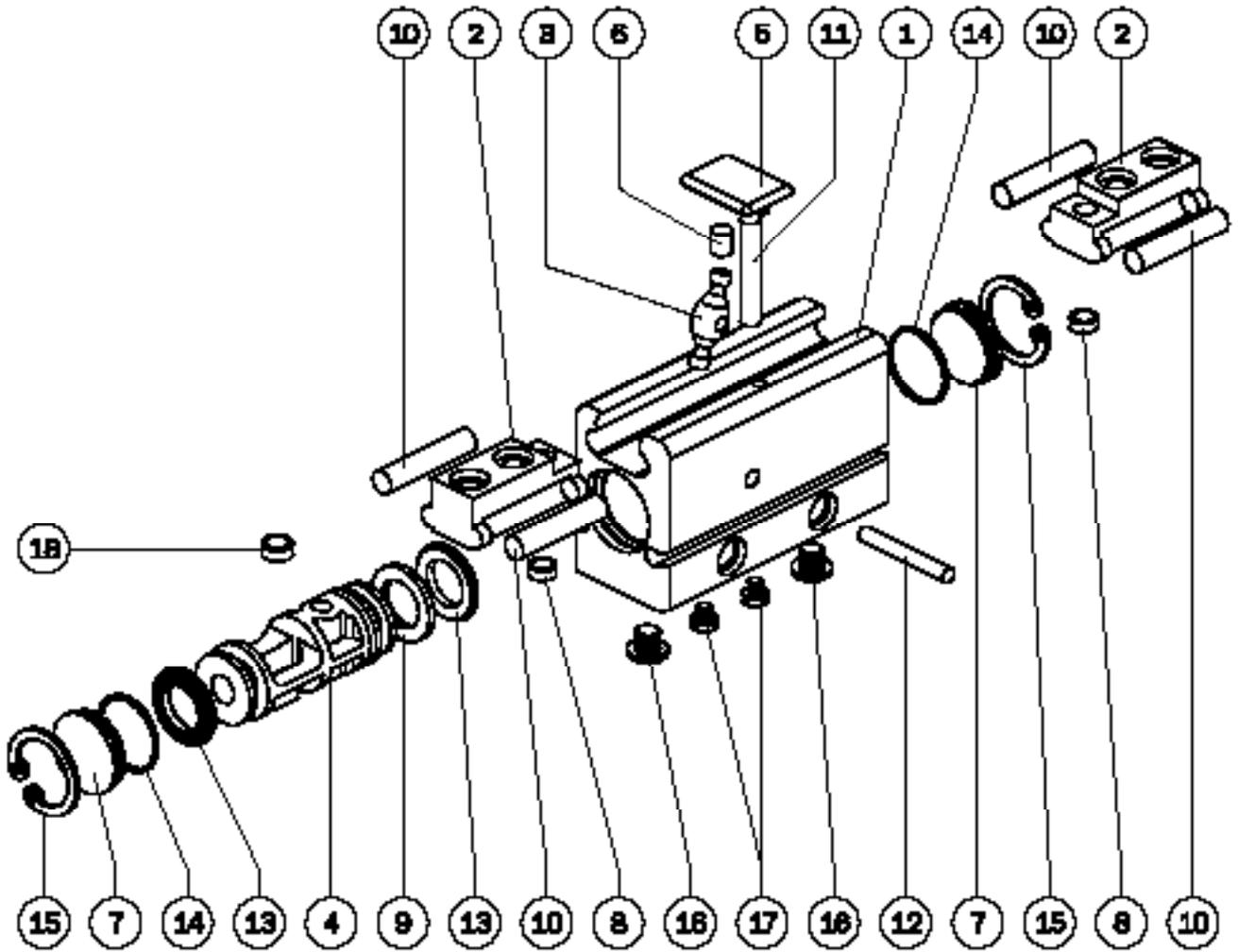
I tappi 17 vanno rimossi solo se occorre smontare la parte 3 e 11.

Wartung

Grease the gripper after 10 million cycles with:
 • Molykote DK (metal or seals);
 • Molykote PG75 (gaskets).

The plugs 17 must be removed only if it is necessary to disassemble the parts 3 and 11.





		SZ12	SZ16	SZ25	SZ32	SZ40		
1	Corpo pila	SZ12-01	SZ16-01	SZ25-01	SZ32-01	SZ40-01	Gripper housing	1
2	Griffa	SZ12-02	SZ16-02	SZ25-02	SZ32-02	SZ40-02	Jaw	2
3	Lava	SZ12-03	SH16-03	SZ25-03	SZ32-03	SZ40-03	Lever	3
4	Pistone	SZ12-04	SH16-04	SZ25-04	SZ32-04	SZ40-04	Piston	4
5	Copertura	SZ12-05	SZ16-05	SZ25-05	SZ32-05	SZ40-05	Cover	5
6	Tappo griffa	SZ12-06	SH16-06	SZ25-06	SZ25-06	SZ40-06	Plug	6
7	Coperchio	SZ12-09	GS-16-06	GS-25-06	SZ32-09	SZ40-09	End cap	7
8	Buccola	SZ12-10	SZ16-10	SZ32-10	SZ32-10	SZ40-10	Bush	8
9	Magnete	HP-12-7	PAR-16-10B	PAR-25-10B	FES-32-3-5	RAD-40-10	Magnet	9
10	Spina di riferimento	Ø4x21.8 DIN 5402	Ø5x23.8 DIN 5402	Ø6x26 DIN 6325	Ø8x40 DIN 6325	Ø6x50 DIN 6325	Dowel pin	10
11	Spina di riferimento	Ø3x18 DIN 6325	Ø4x24 DIN 7	Ø6x26 DIN 6325	Ø8x40 DIN 6325	Ø6x50 DIN 6325	Dowel pin	11
12	Spina di riferimento	Ø2.5x20 DIN 6325	Ø3x24 DIN 6325	Ø5x26 DIN 6325	Ø5x40 DIN 6325	Ø6x50 DIN 6325	Dowel pin	12
13	Guarnizione dinamica	12.5x8.8x2.55 (GUAR-118)	16.5x9.8x2.55 (GUAR-119)	25x19x3.5 (GUAR-064)	32x24x3.5 (GUAR-063)	40x32x3.5 (GUAR-112E)	Dynamic gasket	13
14	O-Ring	Ø1.78xØ2.25 (GUAR-065)	Ø1x1.4 (GUAR-064)	Ø1.78x21.95 (GUAR-025)	Ø1.78x28.3 (GUAR-016)	Ø1.78x34.65 (GUAR-062)	O-RING	14
15	Seeger	Ø13 DIN 472	Ø17 DIN 472	Ø28 DIN 472	Ø33 DIN 472	Ø41 DIN 472	Snap-ring	15
16	Tappo	107-M5	107-M5	107-M5	107-61/8	107-61/8	Plug	16
17	Tappo	DT-205	DT-205	DT-205	107-M5	107-M5	Plug	17
18	Buccola	-	-	-	SZ32-10	SZ40-10	Bush	18