MGX

Pinza pneumatica a 2 griffe ad azione parallela autocentrante serie MGX

- Profilo piatto.
- Guida robusta.
- Elevata forza di serraggio.
- Peso ed ingombri ridotti.
- Precisione dimensionale elevata.
- Disponibile anche con molla in chiusura (-NC) o in apertura (-NO).
- Grasso alimentare FDA-H1.

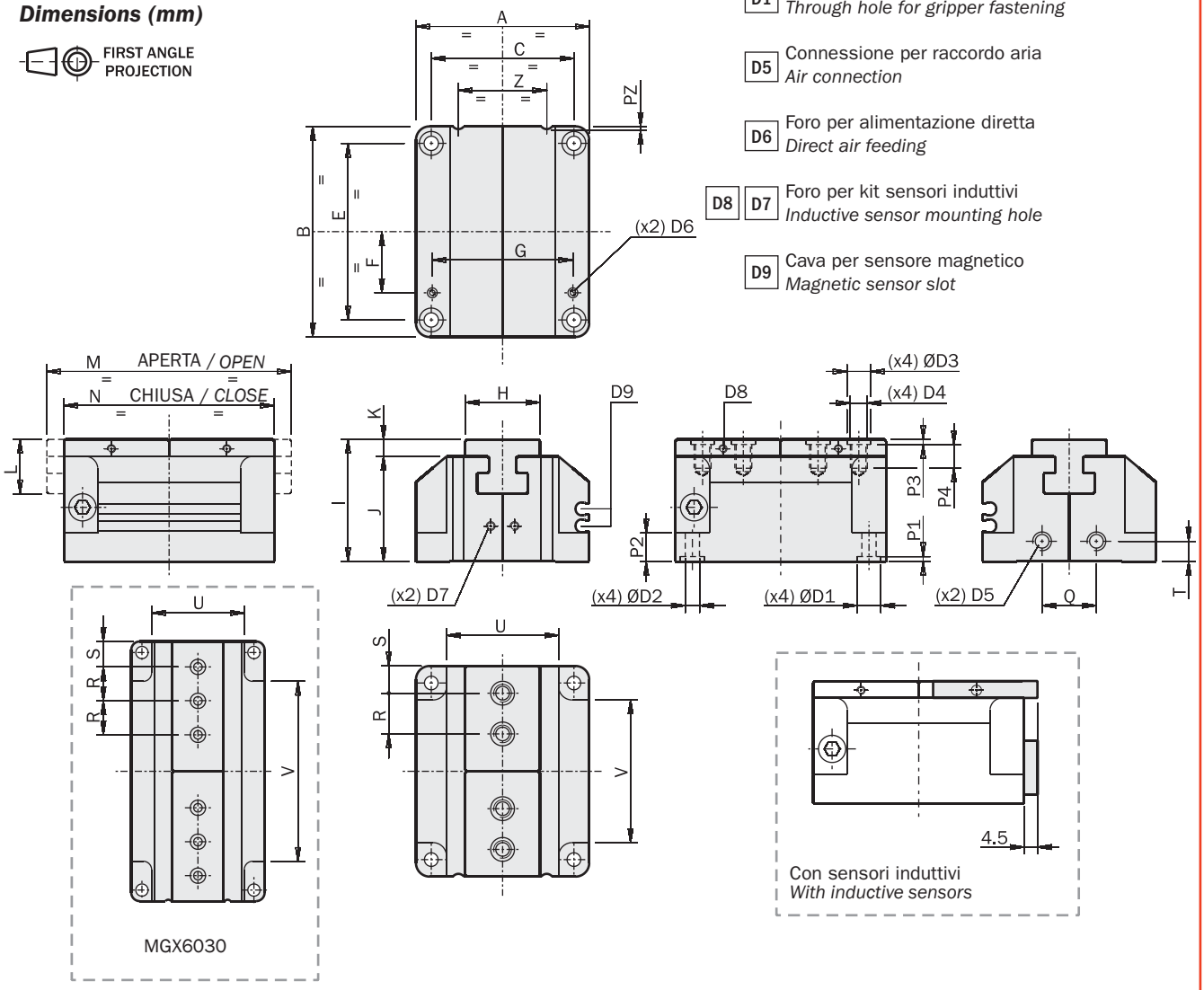
2-jaw parallel self-centering pneumatic gripper series MGX

- *Flat profile.*
- *Robust guide.*
- *High gripping force.*
- *Small weight and dimensions.*
- *High dimensional accuracy.*
- *Spring closed (-NC) or spring open (-NO) option.*
- *FDA-H1 food-grade grease.*

	MGX2005	MGX2508	MGX3210	MGX3214	MGX4015	MGX5020	MGX6030
Fluido *Medium*	Aria compressa a norma ISO 8573-1:2010 [7:4:4] *Compressed air in compliance with ISO 8573-1:2010 [7:4:4]*						
Pressione di esercizio *Operating pressure range*	1.5 ÷ 8 bar						
Temperatura di esercizio *Operating temperature range*	5° ÷ 50°C.						
Forza di serraggio per griffa a 6 bar *Gripping force at 6 bar on each jaw*	90 N	145 N	230 N	160 N	375 N	650 N	830 N
Forza di serraggio totale a 6 bar *Total gripping force at 6 bar*	180 N	290 N	460 N	320 N	750 N	1300 N	1660 N
Corsa totale (±0.3 mm) *Total stroke*	5 mm	8 mm	10 mm	14.6 mm	15 mm	20 mm	30 mm
Frequenza max funzionamento continuativo *Maximum working frequency*	3 Hz	3 Hz	3 Hz	3 Hz	2 Hz	2 Hz	2 Hz
Consumo d'aria per ciclo *Cycle air consumption*	5 cm^3	10 cm^3	22 cm^3	22 cm^3	48 cm^3	86 cm^3	169 cm^3
Tempo di apertura / chiusura senza carico *Opening / Closing time without load*	7 ms	10 ms	20 ms	20 ms	50 ms	70 ms	140 ms
Ripetibilità *Repetition accuracy*	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm
Peso *Weight*	95 g	150 g	270 g	270 g	545 g	900 g	1525 g

Dimensioni (mm)
Dimensions (mm)

FIRST ANGLE PROJECTION



D1 Foro passante per fissaggio pinza
Through hole for gripper fastening

D5 Connessione per raccordo aria
Air connection

D6 Foro per alimentazione diretta
Direct air feeding

D8 D7 Foro per kit sensori induttivi
Inductive sensor mounting hole

D9 Cava per sensore magnetico
Magnetic sensor slot

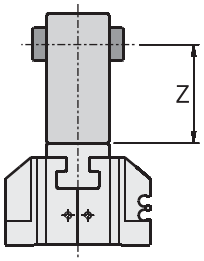
		MGX2005	MGX2508	MGX3210	MGX3214	MGX4015	MGX5020	MGX6030
A		35.8	42	51	51	61.2	70	78.6
B		44	55	62	62	93	118	153
C	±0.04	28.3	33	42	42	51	58	66
D1		Ø5 H7	Ø7 H7	Ø7 H7	Ø7 H7	Ø7 H7	Ø9 H7	Ø9 H7
D2		Ø3.2	Ø4.2	Ø4.2	Ø4.2	Ø5.2	Ø6.2	Ø6.2
D3		Ø5 H7	Ø7 H7	Ø7 H7	Ø7 H7	Ø9 H7	Ø12 H7	Ø9 H7
D4		M3	M4	M5	M5	M6	M8	M6
D5		M5	M5	M5	M5	M5	G1/8"	G1/8"
D6		M3	M3	M3	M3	M3	M3	M3
E	±0.02	36.5	46	52	52	80	105	140
F		12.5	15.5	18	18	27.5	37	43.5
G		27.2	33.6	41.4	41.4	49.6	58.6	67.6
H	±0.05	14	16	22	22	25	28	30
I		26	28.5	36	36	42	49	58
J		22	24	31	31	37	43	51
K		4	4.5	5	5	5	6	7
L		11.2	12.7	16	16	20	25	29
M		49	63	72	76	108	138	183
N		44	55	62	62	93	118	153
P1		1.2	1.5	1.5	1.5	1.5	2	2
P2		5.5	6	8.4	8.4	9	10	13.5
P3		1.2	1.5	1.5	1.5	2	2.5	2.5
P4		5	5.2	7	7	9	12	12
Q		11	12	16	16	31.2	32	40
R	±0.02	9	10	12	12	12	24	20
S		5.5	6	8	8	12.5	14	15
T		5.8	6	6	6	6	8	8
U		20.8	24	33	33	41.2	46	54.6
V		29	37	42	42	65	88	106
Z		17	20	26	26	30	33	35
PZ		0.5	0.5	0.8	0.8	0.8	0.8	0.8

Forza di serraggio

I grafici mostrano la forza per griffa espressa dalla pinza in funzione della pressione e del braccio di leva Z.

Gripping force

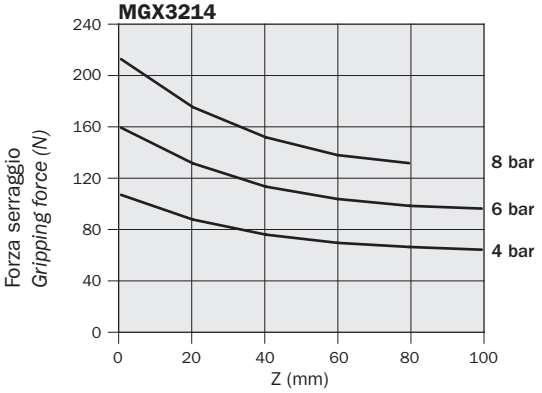
The graphs show the gripping force on each jaw, as a function of the operating pressure and the gripping tool length Z.



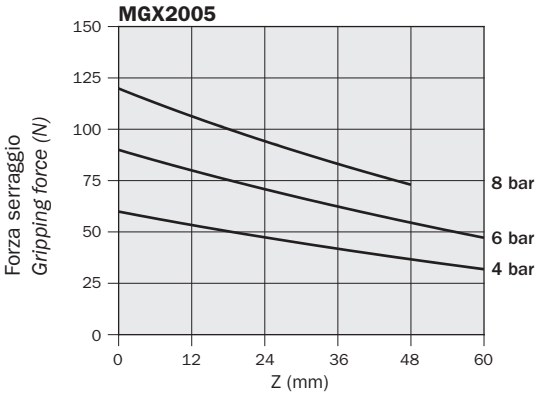
La forza indicata in questi grafici è riferita alla singola griffa.
La forza totale è il doppio.

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

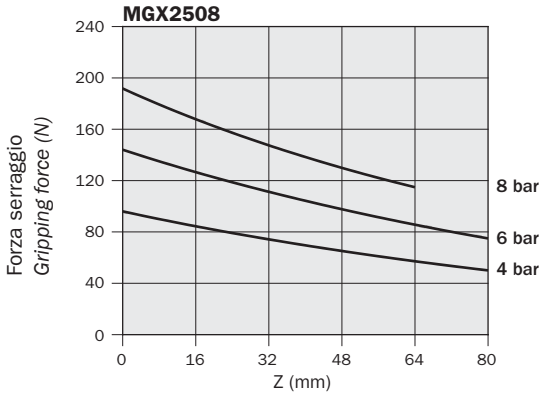
MGX3214



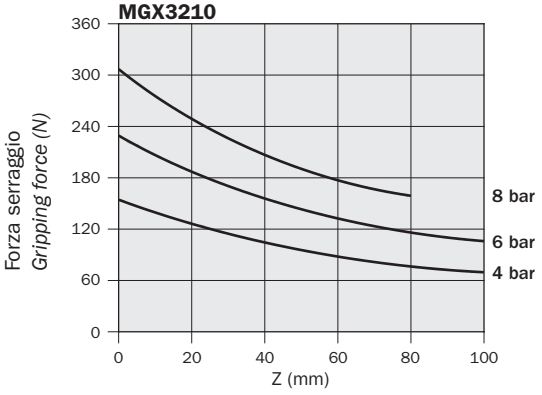
MGX2005



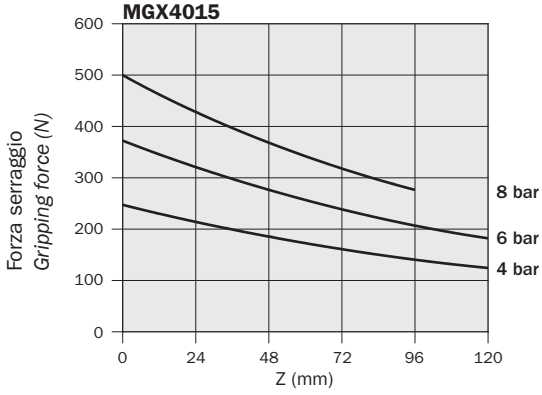
MGX2508



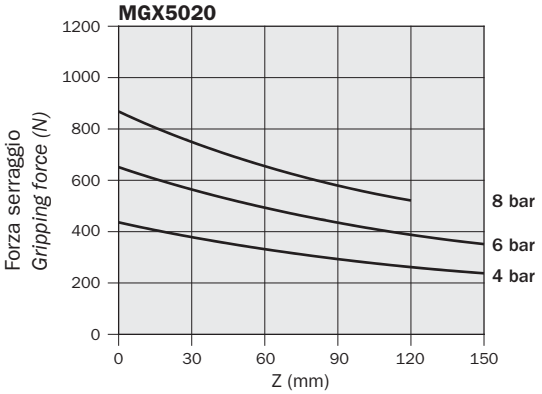
MGX3210



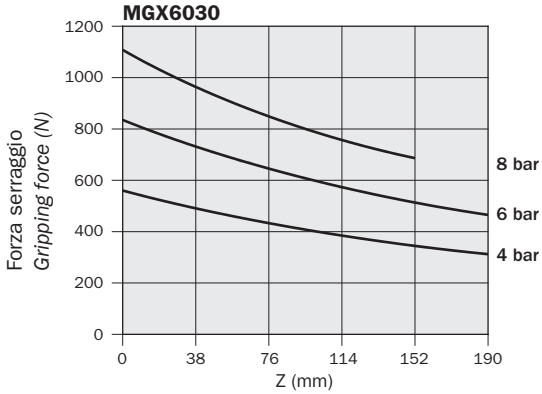
MGX4015



MGX5020



MGX6030

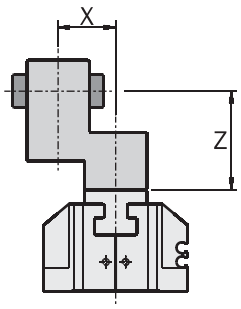


Forza di serraggio

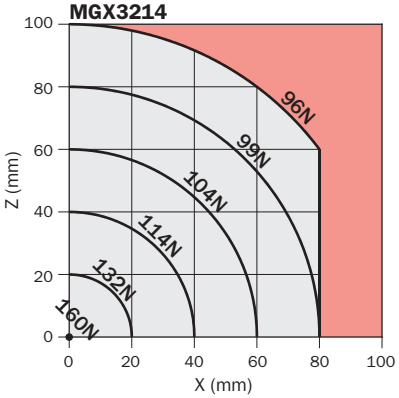
I grafici mostrano la forza per griffa espressa dalla pinza a 6 bar in funzione del braccio Z e del disassamento del punto di presa X.
Diminuire la pressione a 5bar, se la pinza è impiegata nella zona rossa.

Gripping force

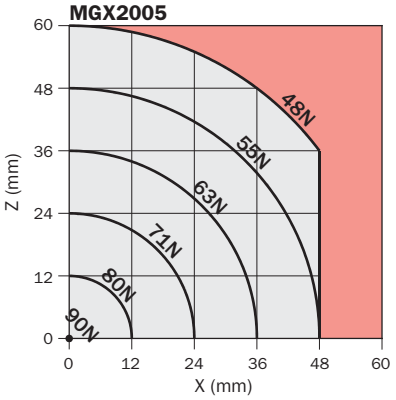
The graphs show the gripping force on each jaw, as a function of the gripping tool length Z and the overhanging X at 6 bar. Decrease the air pressure to 5 bar, if the gripper is used in the red area.



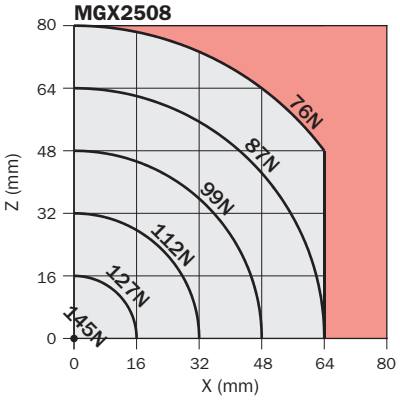
MGX3214



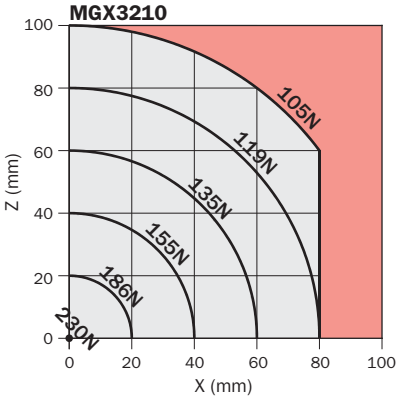
MGX2005



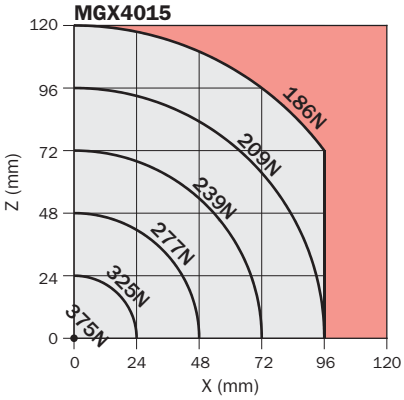
MGX2508



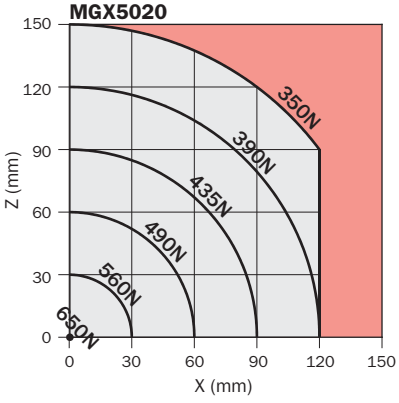
MGX3210



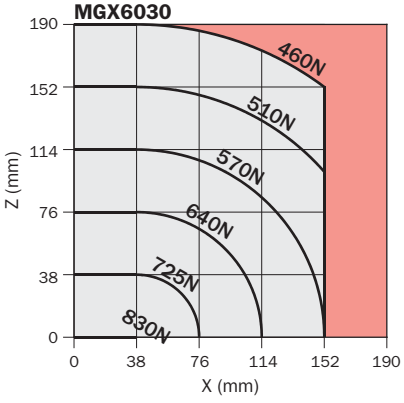
MGX4015



MGX5020



MGX6030



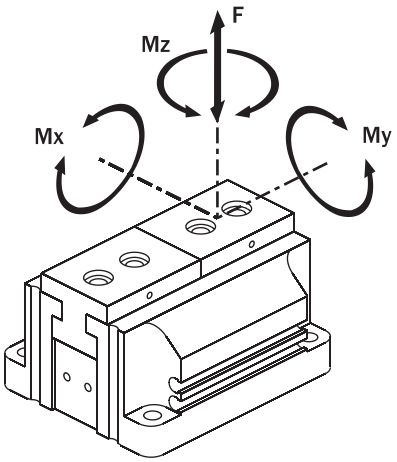
MGX

Carichi di sicurezza

Consultare la tabella per i carichi massimi ammissibili.
Forze e coppie eccessive possono danneggiare la pinza e causare difficoltà di funzionamento compromettendo la sicurezza dell'operatore.
F s, Mx s, My s, Mz s, sono i carichi massimi ammissibili in condizioni statiche, cioè con le griffe ferme.
F d, Mx d, My d, Mz d, sono i carichi massimi ammissibili in condizioni dinamiche, cioè con le griffe in movimento.
m, è il massimo peso ammissibile su ogni dito di presa quando la pinza è utilizzata senza regolazione di velocità; per dita più pesanti di deve diminuire la velocità delle griffe agendo sui regolatori di flusso (non forniti).

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 still jaws.
F d, Mx d, My d, Mz d, are maximum permitted dynamic loads.
Dynamic means running jaws.
m, is the maximum permitted weight of each gripping tool, when the gripper works without speed adjustment.
If the weight is over the permitted value, it is necessary to decrease the speed of the jaw by using flow controllers (not supplied).



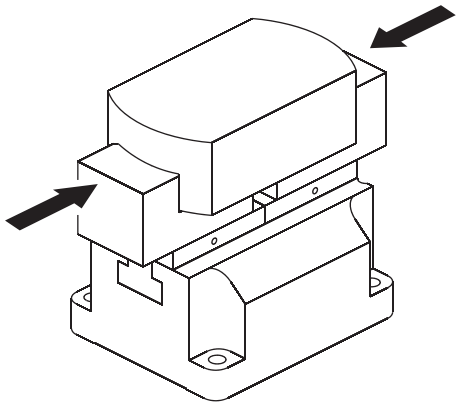
	MGX2005	MGX2508	MGX3210	MGX3214	MGX4015	MGX5020	MGX6030
F s	300 N	400 N	650 N	500 N	1000 N	1500 N	2000 N
Mx s	4 Nm	8 Nm	15 Nm	12 Nm	30 Nm	65 Nm	110 Nm
My s	12 Nm	24 Nm	55 Nm	40 Nm	70 Nm	95 Nm	155 Nm
Mz s	3 Nm	6 Nm	12 Nm	10 Nm	24 Nm	48 Nm	90 Nm
F d	2 N	3 N	6 N	5 N	10 N	17 N	25 N
Mx d	6 Ncm	13 Ncm	34 Ncm	25 Ncm	47 Ncm	80 Ncm	155 Ncm
My d	6 Ncm	13 Ncm	34 Ncm	25 Ncm	47 Ncm	80 Ncm	155 Ncm
Mz d	6 Ncm	13 Ncm	34 Ncm	25 Ncm	47 Ncm	80 Ncm	155 Ncm
m	100 g	200 g	400 g	400 g	600 g	1000 g	1500 g

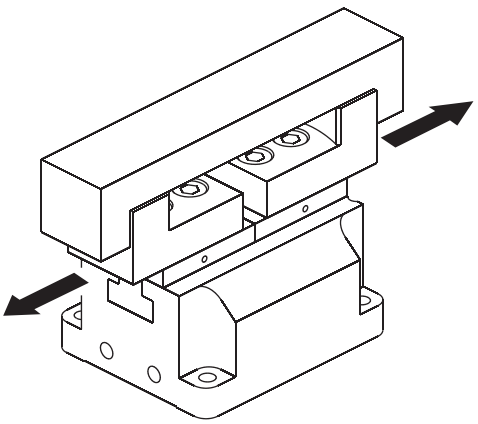
Serraggio

La pinza è a doppio effetto e può quindi essere usata per serrare il carico sia dall'esterno che dall'interno.

Gripping

The gripper is double-acting for either internal or external gripping applications.



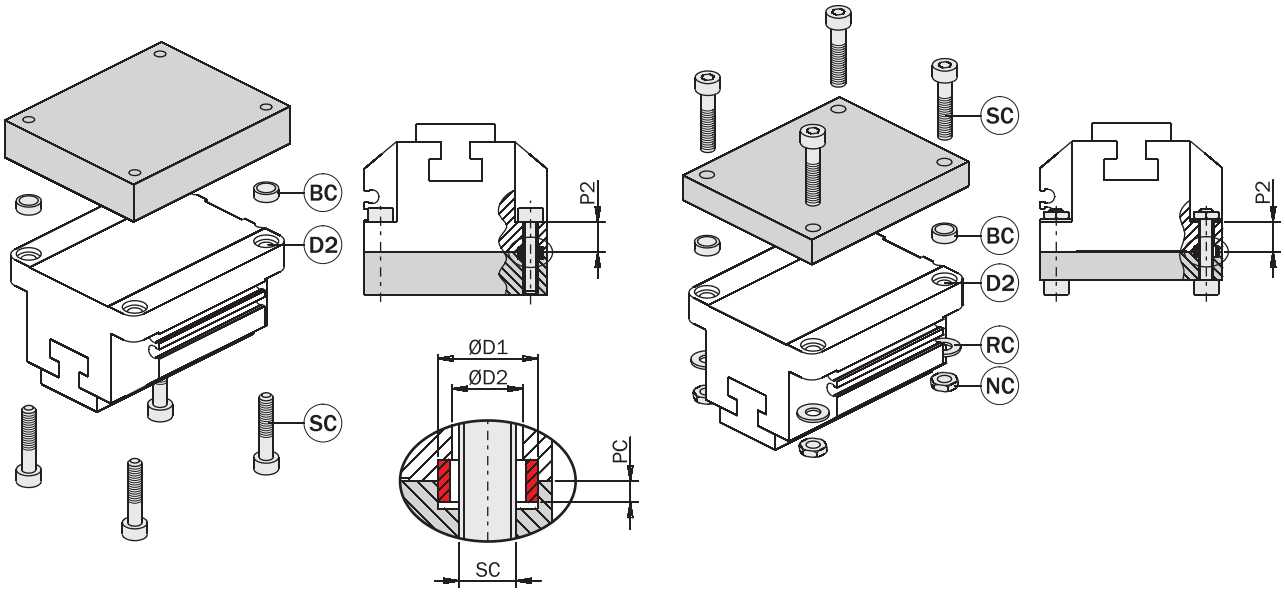


Fissaggio della pinza

La pinza può essere montata in posizione fissa oppure su parti in movimento: in questo caso va considerata la forza d'inerzia cui la pinza ed il suo carico sono sottoposti.
E' possibile fissare la pinza sia dall'alto che dal basso.
Utilizzare 4 viti (SC) e 2 boccole di centraggio (BC).
Nella confezione della pinza sono fornite 4 boccole di centraggio per le dita di presa e 2 boccole per il corpo.

Gripper 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 on the gripper and its load.
It can be fastened from the top or from the bottom.
Use 4 screws (SC) and 2 centering sleeves (BC).
4 centering rings for the gripping tools and 2 centering sleeves for the housing are supplied in the packaging.



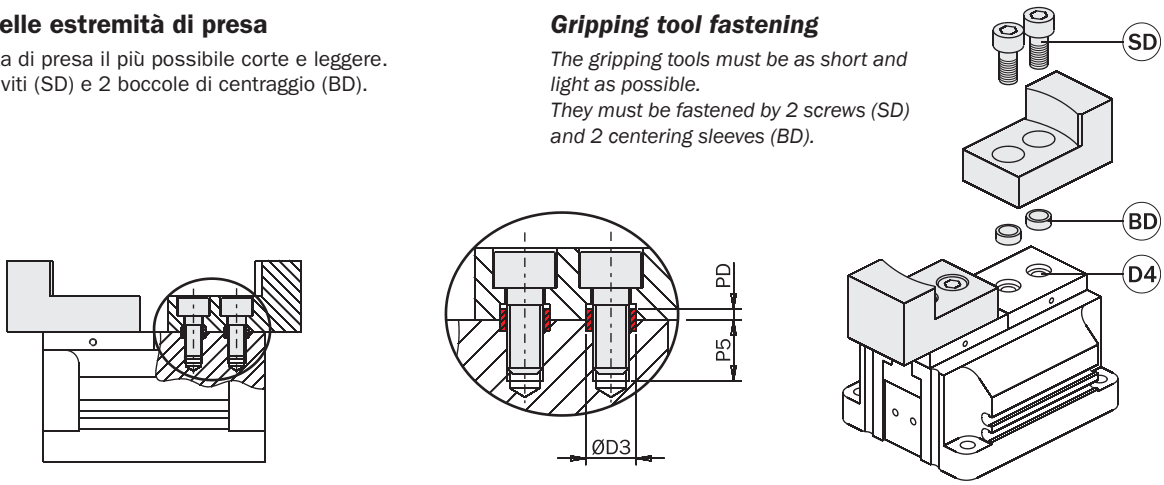
	MGX2005	MGX2508	MGX3210	MGX3214	MGX4015	MGX5020	MGX6030
D1	Ø5 H7 mm	Ø7 H7 mm	Ø7 H7 mm	Ø7 H7 mm	Ø7 H7 mm	Ø9 H7 mm	Ø9 H7 mm
D2	Ø3.2 mm	Ø4.2 mm	Ø4.2 mm	Ø4.2 mm	Ø5.2 mm	Ø6.2 mm	Ø6.2 mm
SC	M3	M4	M4	M4	M5	M6	M6
PC	1.2 mm	1.5 mm	1.5 mm	1.5 mm	1.5 mm	2 mm	2 mm
P2	5.5 mm	6 mm	8.4 mm	8.4 mm	9 mm	10 mm	13.5 mm
NC	M3 CH5.5	M4 CH7	M4 CH7	M4 CH7	M5 CH8	M6 CH10	M6 CH10
RC	Ø6 mm	Ø8 mm	Ø8 mm	Ø8 mm	Ø9 mm	Ø11 mm	Ø11 mm

Fissaggio delle estremità di presa

Costruire le dita di presa il più possibile corte e leggere.
Fissarle con 2 viti (SD) e 2 boccole di centraggio (BD).

Gripping tool fastening

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



	MGX2005	MGX2508	MGX3210	MGX3214	MGX4015	MGX5020	MGX6030
D3	Ø5 H7 mm	Ø7 H7 mm	Ø7 H7 mm	Ø7 H7 mm	Ø9 H7 mm	Ø12 H7 mm	Ø9 H7 mm
SD	M3	M4	M5	M5	M6	M8	M6
P5	6.2 mm	6.7 mm	8.5 mm	8.5 mm	11 mm	14.5 mm	14.5 mm
PD	1.2 mm	1.5 mm	1.5 mm	1.5 mm	2 mm	2.5 mm	1.5 mm

Sensori

Il rilevamento della posizione di lavoro può essere effettuato con sensori magnetici (opzionali), che rilevano il magnete sul pistone, oppure con sensori induttivi (opzionali), che rilevano la presenza delle sfere (SY) inserite nell'appendice (Y).
Due appendici regolabili possono essere fissate alla griffa con le due viti (TY) fornite.
I sensori induttivi devono avere diametro 4mm.

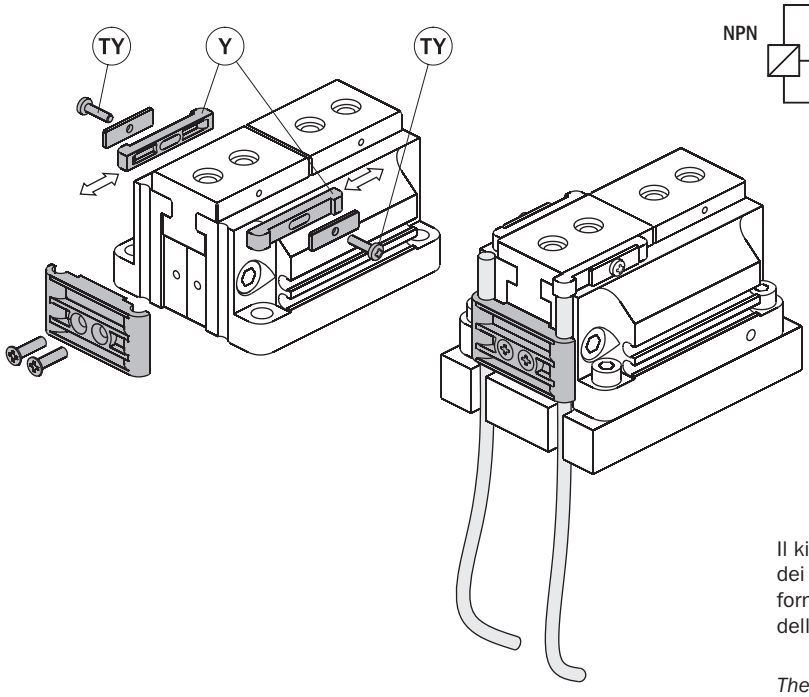
Sensors

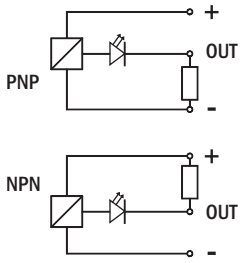
The operating position can be checked by magnetic sensors (optional), detecting the magnet of the piston, or by inductive sensors (optional), detecting the ball (SY) in the appendix (Y).
Two adjustable appendixes can be mounted on the jaw using the supplied screws (TY).
Use 4mm diameter inductive sensors.

Codici di ordinazione dei sensori induttivi:

Ordering codes of the inductive sensors:

SI4M225-G	NPN	Cavo 2.5m *2.5m cable*
SI4N225-G	PNP	





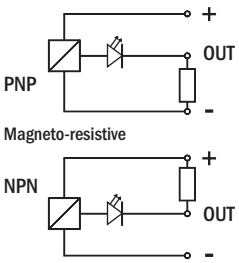
Il kit per il fissaggio dei sensori induttivi è fornito nella confezione della pinza.

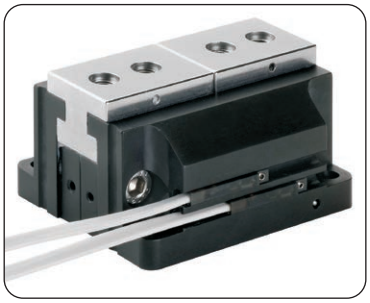
The accessories to fix the inductive sensors are supplied in the packaging.

I sensori magnetici utilizzabili sono i codici Gimatic:

The magnetic sensors from Gimatic are the codes:

SS4N225-G	PNP	Cavo 2.5m *2.5m cable*
SS4M225-G	NPN	
SS3N203-G	PNP	Connettore M8 *M8 snap plug connector*
SS3M203-G	NPN	



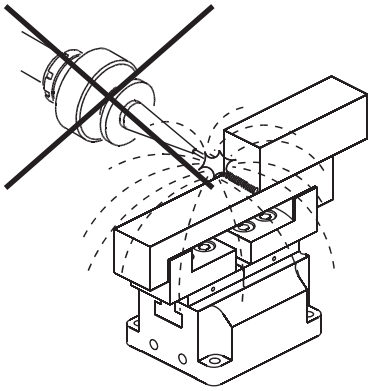


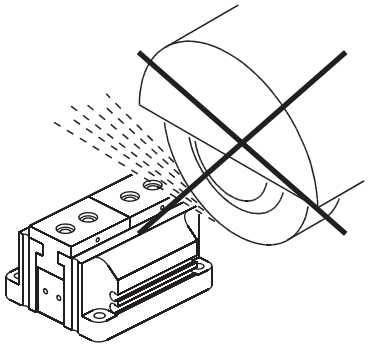
Avvertenze

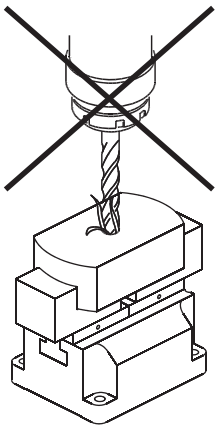
Evitare il contatto con sostanze corrosive, spruzzi di saldatura, polveri abrasive, che potrebbero danneggiare la funzionalità della pinza.
Per nessun motivo, persone od oggetti estranei devono entrare nel raggio d'azione della pinza.
La pinza non deve essere messa in servizio prima che la macchina di cui fa parte sia stata dichiarata conforme alle disposizioni di sicurezza vigenti.

Cautions

Never let the unit come into contact with corrosive substances, soldering splashes or abrasive powders as they may damage the gripper.
Never let personnel 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

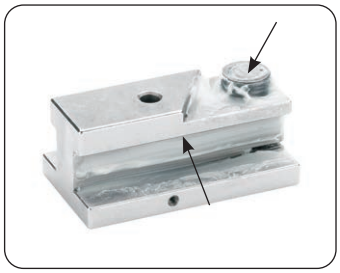
La pinza va ingrassata ogni 10 milioni di cicli con:
- BERULUB FG-H 2 SL
  (Lubrificante NSF H1 Registrazione No. 135919).

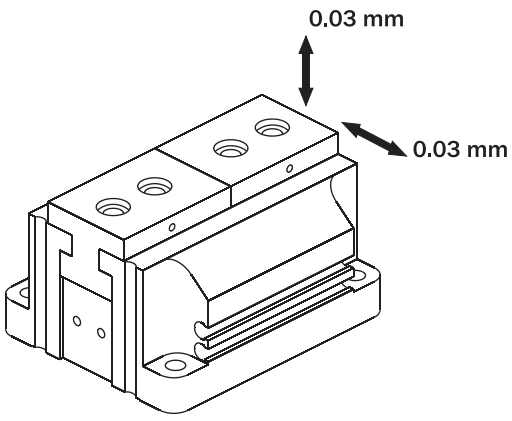
La figura sotto mostra il gioco massimo delle griffe.

Maintenance

Grease the gripper after 10 million cycles with:
- *BERULUB FG-H 2 SL*
  (Lubricant NSF H1 Registration No. 135919).

The picture below shows the jaw maximum backlash.





Connessione pneumatica

La pinza si alimenta con aria compressa dai fori laterali (P e R) montandovi i raccordi dell'aria ed i relativi tubi (non forniti).

Oppure si alimenta direttamente dai fori inferiori (G e H) rimuovendo i tappi (E e F) e montando altri tappi (non forniti) nei fori laterali (P e R).

Aria compressa in P - H: apertura della pinza.
Aria compressa in R - G: chiusura della pinza.

La pinza è azionata con aria compressa filtrata non necessariamente lubrificata.
La scelta iniziale, lubrificata o non lubrificata, deve essere mantenuta per tutta la vita della pinza.
L'impianto pneumatico deve essere pressurizzato gradualmente, per evitare movimenti incontrollati.

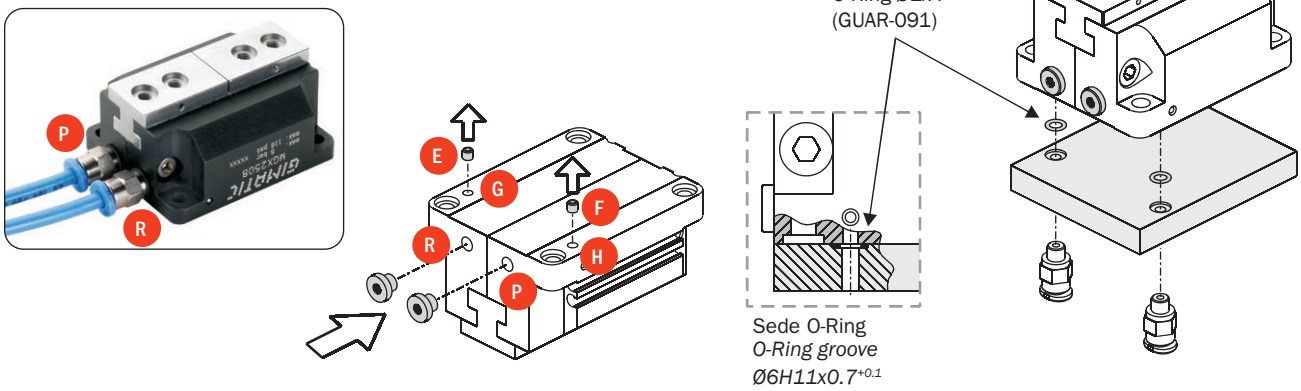
Compressed air feeding

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) and providing other plugs (not supplied) for the lateral air ports (P and R).

Compressed air in P - H: gripper opening.
Compressed air in R - G: gripper closing.

The gripper is driven by filtered compressed air not necessarily lubricated.
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.



Circuito pneumatico

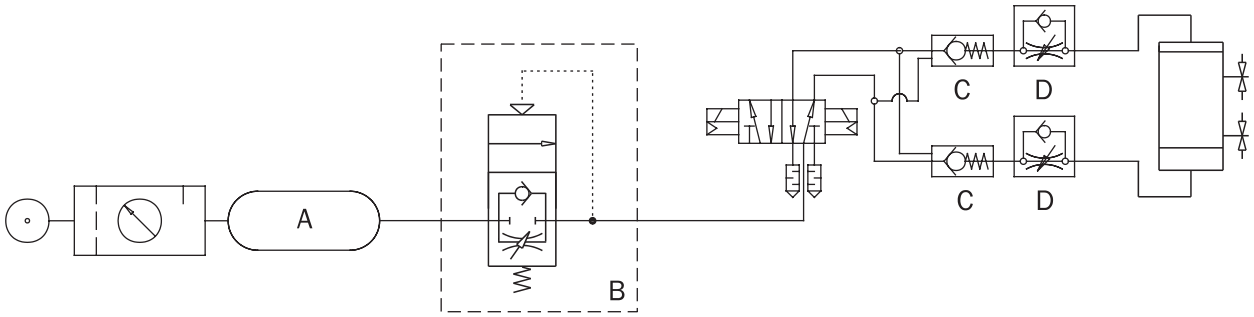
Possibili inconvenienti sul circuito di alimentazione dell'aria compressa:
1- Oscillazioni di pressione.
2- Riempimento pinza vuota all'avvio.
3- Improvvisa mancanza di pressione.
4- Velocità di azionamento eccessiva.

Accorgimenti per risolvere i problemi:
1- Serbatoio esterno (A).
2- Valvola 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 cylinders.
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).



Versioni a molla

A richiesta è disponibile la versione con la molla in chiusura (-NC) o in apertura (-NO), che in assenza d'aria garantisce circa un quarto della forza disponibile a 6 bar.

Spring option

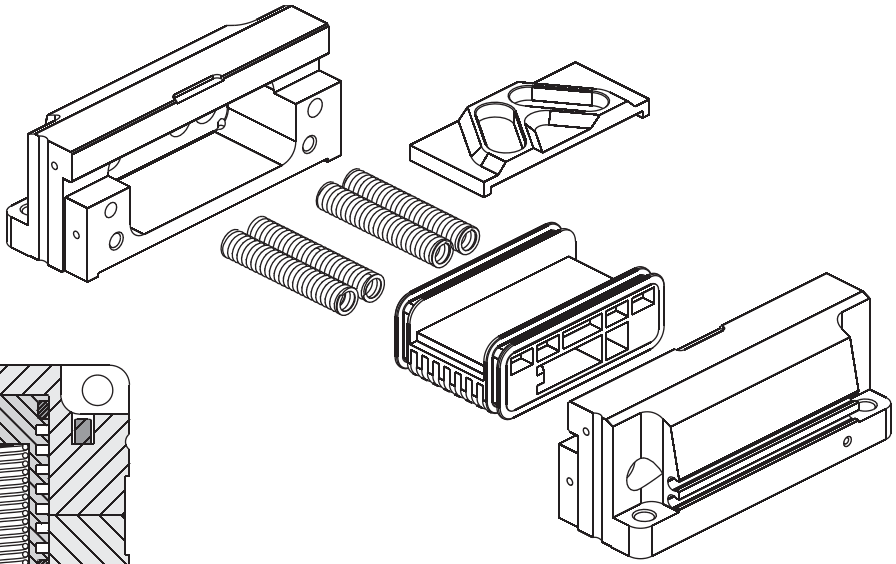
It is also available, on request, with a closing (-NC) or opening (-NO) spring, providing, after a pressure black-out, about one fourth of the output force at 6 bar.

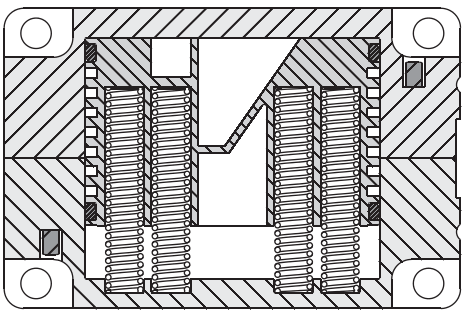
	MGX2005-NC	MGX2508-NC	MGX3210-NC	MGX3214-NC	MGX4015-NC	MGX5020-NC	MGX6030-NC
Forza di chiusura per griffa a 6 bar *Closing force at 6 bar each jaw*	114÷121 N	179÷195 N	285÷306 N	199÷213 N	467÷510 N	792÷871 N	1016÷1110 N
Forza di apertura per griffa a 6 bar *Opening force at 6 bar each jaw*	59÷66 N	95÷111 N	154÷175 N	107÷122 N	240÷283 N	429÷508 N	550÷644 N
Forza di chiusura per griffa a 0 bar *Closing force at 0 bar each jaw*	24÷31 N	34÷50 N	55÷76 N	38÷53 N	92÷135 N	142÷221 N	186÷280 N
Forza di apertura per griffa a 0 bar *Opening force at 0 bar each jaw*	0 N	0 N	0 N	0 N	0 N	0 N	0 N

	MGX2005-NO	MGX2508-NO	MGX3210-NO	MGX3214-NO	MGX4015-NO	MGX5020-NO	MGX6030-NO
Forza di chiusura per griffa a 6 bar *Closing force at 6 bar each jaw*	59÷66 N	95÷111 N	154÷175 N	107÷122 N	240÷283 N	429÷508 N	550÷644 N
Forza di apertura per griffa a 6 bar *Opening force at 6 bar each jaw*	114÷121 N	179÷195 N	285÷306 N	199÷213 N	467÷510 N	792÷871 N	1016÷1110 N
Forza di chiusura per griffa a 0 bar *Closing force at 0 bar each jaw*	0 N	0 N	0 N	0 N	0 N	0 N	0 N
Forza di apertura per griffa a 0 bar *Opening force at 0 bar each jaw*	24÷31 N	34÷50 N	55÷76 N	38÷53 N	92÷135 N	142÷221 N	186÷280 N

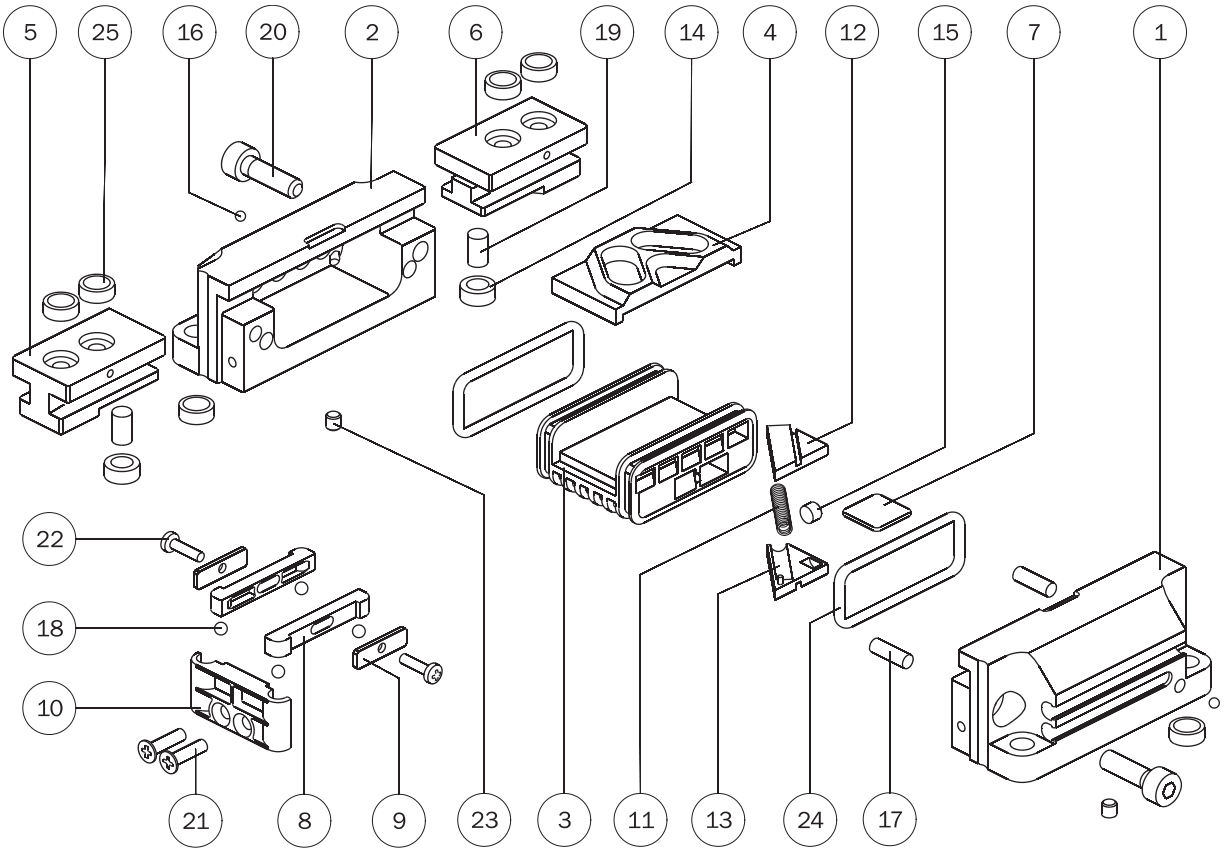
Nelle versioni con le molle la lunghezza massima delle estremità di presa deve essere ridotta del 20%.
Nelle versioni con le molle la minima pressione di utilizzo é 3.5bar.

In the spring versions the maximum gripping tool length should be 20% shorter.
In the spring versions the minimum operating pressure is 3.5bar.



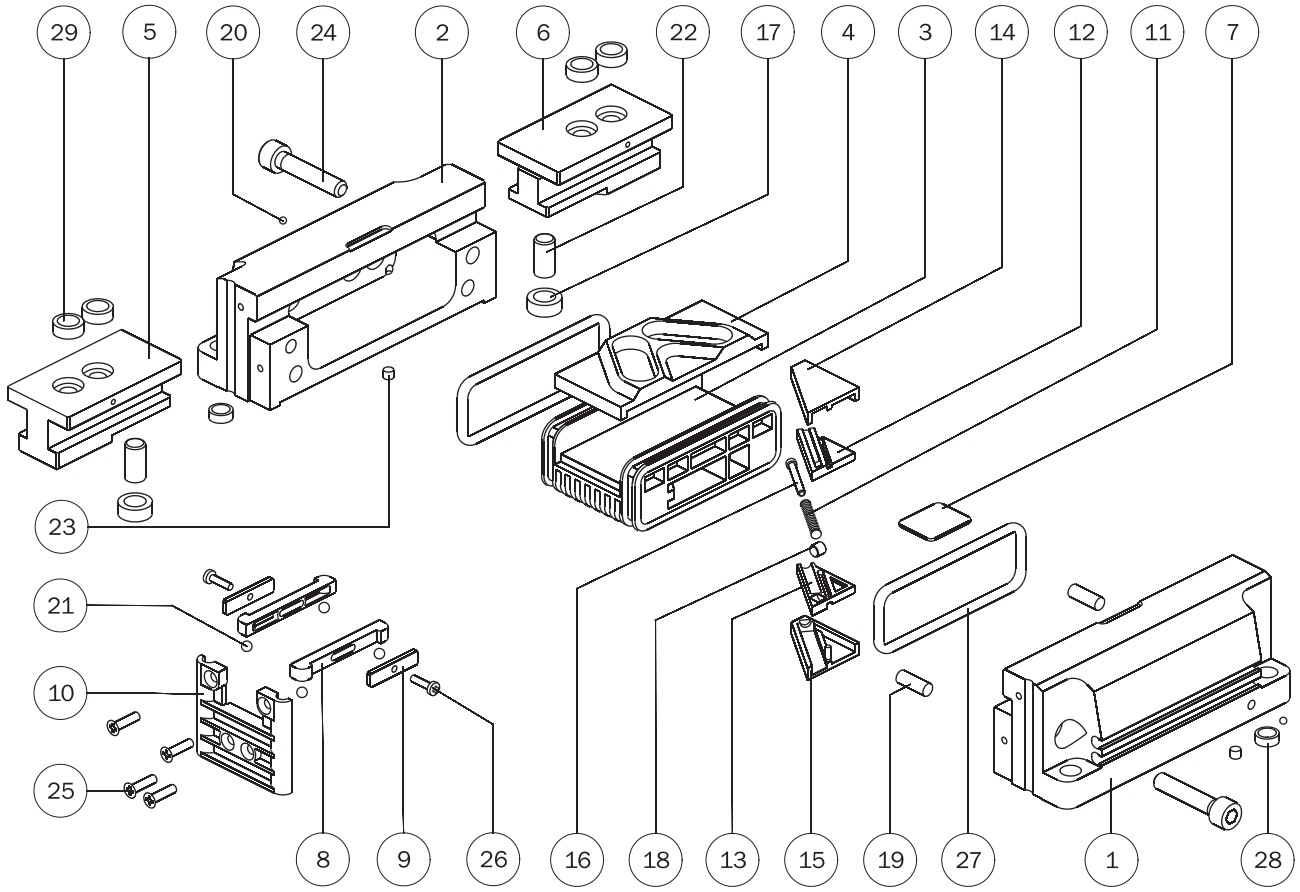


Elenco delle parti
Part list



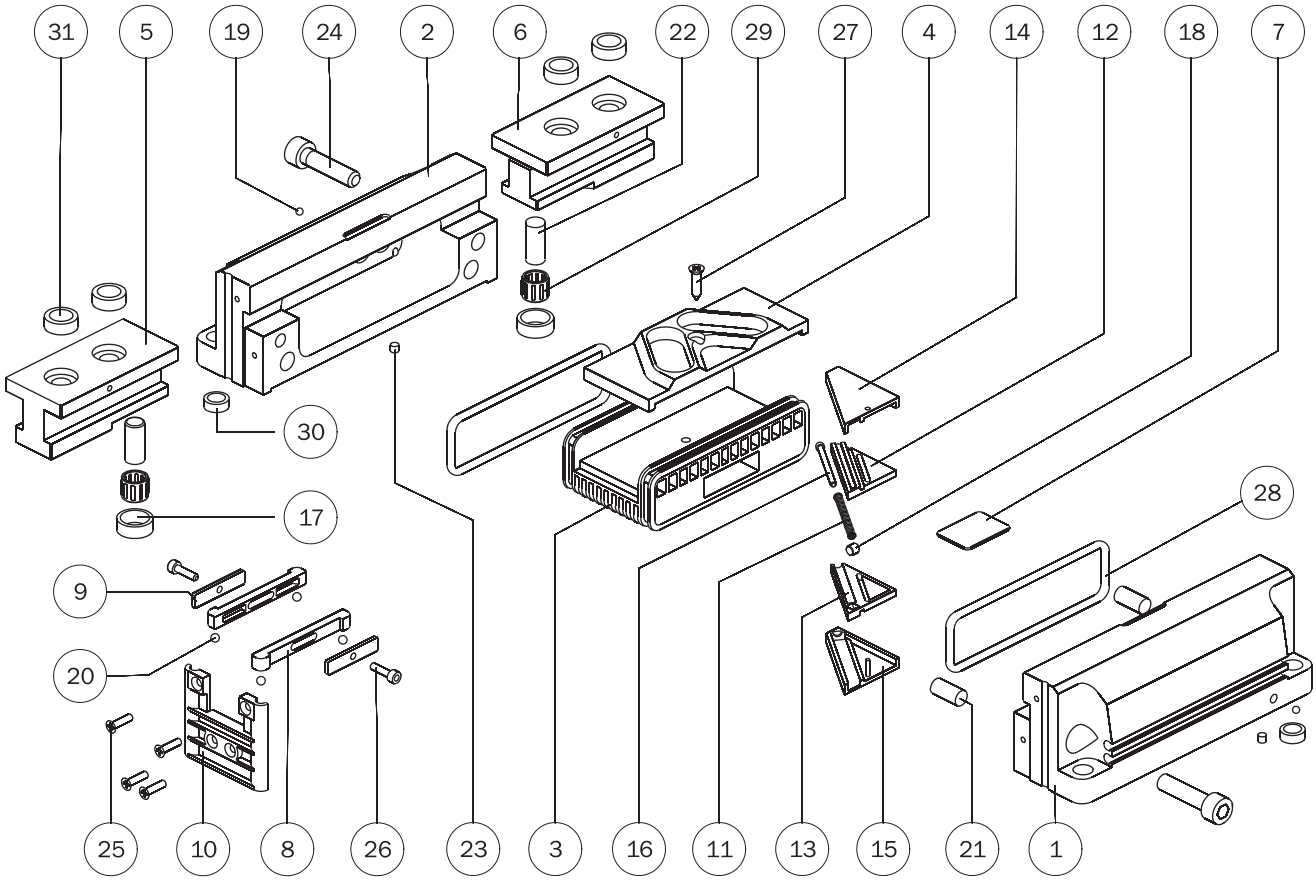
		MGX2005	MGX2508		
1	Semicorpo sinistro	MGX2005-01	MGX2508-01	*Left half body*	*1*
2	Semicorpo destro	MGX2005-02	MGX2508-02	*Right half body*	*2*
3	Pistone	MGX2005-03	MGX2508-03	*Piston*	*3*
4	sore	MGX2005-20	MGX2508-20	*Slider*	*4*
5	Griffa sx	MGX2005-21	MGX2508-21	*Left jaw*	*5*
6	Griffa dx	MGX2005-22	MGX2508-22	*Right jaw*	*6*
7	Protezione	MGF2005-07	MGF2508-07	*Protection*	*7*
8	Piastrina portasfera	MGX2005-08	MGX2508-08	*Ball holder*	*8*
9	Piastrina di fissaggio	MGX2005-09	MGX2508-09	*Fixing plate*	*9*
10	Sede per sensori induttivi	MGX2005-10	MGX2508-10	*Inductive sensor housing*	*10*
11	Molla	MGX2005-12	MGX2508-12	*Spring*	*11*
12	Portamagnete superiore	MGX2005-13	MGX2508-13	*Upper magnet housing*	*12*
13	Portamagnete inferiore	MGX2005-14	MGX2508-14	*Lower magnet housing*	*13*
14	Rotella	MGX2005-23	MGX2508-23	*Roller*	*14*
15	Magnete	EPP12-13	EPP12-13	*Magnet*	*15*
16	Sfera	Ø2 DIN5401A	Ø2 DIN5401A	*Ball*	*16*
17	Spina di riferimento	Ø3x10 mm	Ø3x10 mm	*Dowel pin*	*17*
18	Sfera	Ø2.5 DIN5401A	Ø2.5 DIN5401A	*Ball*	*18*
19	Rullino	Ø3x5.8 mm DIN5402	Ø4x7 mm DIN5402	*Dowel pin*	*19*
20	Vite	M3x12 mm DIN912 INOX A2	M4x14 mm DIN912 INOX A2	*Screw*	*20*
21	Vite	M2.5x10 mm DIN965A INOX A2	M2.5x10 mm DIN965A INOX A2	*Screw*	*21*
22	Vite	M2x8 mm DIN7985 INOX A2	M2x8 mm DIN7985 INOX A2	*Screw*	*22*
23	Vite senza testa	M3x3 mm DIN913 Z/B	M3x3 mm DIN913 Z/B	*Grub screw*	*23*
24	O-Ring	Ø1.78x17.17 HNBR (GUAR-076H)	Ø1.78x23.52 HNBR (GUAR-008H)	*O-Ring*	*24*
25	Boccola	ZBH-5	ZBH-7	*Bush*	*25*

Elenco delle parti
Part list



		MGX3210	MGX3214	MGX4015		
1	Semicorpo sinistro	MGX3210-01	MGX3214-01	MGX4015-01	*Left half body*	*1*
2	Semicorpo destro	MGX3210-02	MGX3214-02	MGX4015-02	*Right half body*	*2*
3	Pistone	MGX3210-03		MGX4015-03	*Piston*	*3*
4	Cursore	MGX3210-20	MGX3214-20	MGX4015-20	*Slider*	*4*
5	Griffa sx	MGX3210-21	MGX3214-21	MGX4015-21	*Left jaw*	*5*
6	Griffa dx	MGX3210-22	MGX3214-22	MGX4015-22	*Right jaw*	*6*
7	Protezione	MGX3210-07	MGX3214-07	MGF4015-07	*Protection*	*7*
8	Piastrina portasfera	MGX3210-08		MGX4015-08	*Ball holder*	*8*
9	Piastrina di fissaggio	MGX3210-09		MGX4015-09	*Fixing plate*	*9*
10	Sede per sensori induttivi	MGX3210-10		MGX4015-10	*Inductive sensor housing*	*10*
11	Molla	MGX3210-12		MGX4015-12	*Spring*	*11*
12	Portamagnete superiore	MGX3210-13		MGX4015-13	*Upper magnet housing*	*12*
13	Portamagnete inferiore	MGX3210-14		MGX4015-14	*Lower magnet housing*	*13*
14	Supporto superiore	MGX3210-15		MGX4015-15	*Upper support*	*14*
15	Supporto inferiore	MGX3210-16		MGX4015-16	*Lower support*	*15*
16	Perno guida	-		MGX4015-19	*Guide pin*	*16*
17	Rotella	MGX3210-23		MGX4015-23	*Roller*	*17*
18	Magnete	EPP12-13		R63-180-20	*Magnet*	*18*
19	Spina di riferimento	Ø3x12mm DIN6325		Ø4x12mm DIN6325	*Dowel pin*	*19*
20	Sfera	Ø2 DIN5401A			*Ball*	*20*
21	Sfera	Ø2.5 DIN5401A		Ø3 AA DIN5401A	*Ball*	*21*
22	Rullino	Ø5x10mm DIN5402		Ø6x12mm DIN5402	*Dowel pin*	*22*
23	Vite senza testa	M3x3 mm DIN913 Z/B			*Screw*	*23*
24	Vite	M5x20mm DIN912 INOX A2		M5x25mm DIN912 INOX A2	*Screw*	*24*
25	Vite	M2.5x10mm DIN965A INOX A2			*Screw*	*25*
26	Vite	M2x8mm DIN7985 INOX A2			*Grub screw*	*26*
27	O-Ring	Ø2.62x28.25 HNBR (GUAR-107H)		MGX4015-18	*O-Ring*	*27*
28	Boccola	ZBH-7			*Bush*	*28*
29	Boccola	ZBH-7		ZBH-9	*Bush*	*29*

Elenco delle parti
Part list



		MGX5020	MGX6030		
1	Semicorpo sinistro	MGX5020-01	MGX6030-01	*Left half body*	*1*
2	Semicorpo destro	MGX5020-02	MGX6030-02	*Right half body*	*2*
3	Pistone	MGX5020-03	MGX6025-03	*Piston*	*3*
4	Cursore	MGX5020-20	MGX6030-20	*Slider*	*4*
5	Griffa sx	MGX5020-21	MGX6030-21	*Left jaw*	*5*
6	Griffa dx	MGX5020-22	MGX6030-22	*Right jaw*	*6*
7	Protezione	MGF5020-07	MGX6030-07	*Protection*	*7*
8	Piastrina portasfera	MGX5020-08	MGX6025-08	*Ball holder*	*8*
9	Piastrina di fissaggio	MGX5020-09	MGX6030-09	*Fixing plate*	*9*
10	Sede per sensori induttivi	MGX5020-10	MGX6025-10	*Inductive sensor housing*	*10*
11	Molla	MGX6025-12	MGX6025-12	*Spring*	*11*
12	Portamagnete superiore	MGX5020-13	MGX6025-13	*Upper magnet housing*	*12*
13	Portamagnete inferiore	MGX5020-14	MGX6025-14	*Lower magnet housing*	*13*
14	Supporto superiore	MGX5020-15	MGX6025-15	*Upper support*	*14*
15	Supporto inferiore	MGX5020-16	MGX6025-16	*Lower support*	*15*
16	Perno guida	MGX6025-19	MGX6025-19	*Guide pin*	*16*
17	Rotella	MGX5020-23	MGX6030-23	*Roller*	*17*
18	Magnete	R63-180-20	R63-180-20	*Magnet*	*18*
19	Sfera	Ø2.5 DIN5401A	Ø2.5 DIN5401A	*Ball*	*19*
20	Sfera	Ø3 AA DIN5401A	Ø3 AA DIN5401A	*Ball*	*20*
21	Spina di riferimento	Ø6x14 DIN6325	Ø6x14 DIN6325	*Dowel pin*	*21*
22	Rullino	Ø7x16 DIN5402	Ø7x14 DIN5402	*Dowel pin*	*22*
23	Vite senza testa	M3x3 mm DIN913 Z/B	M3x3 mm DIN913 Z/B	*Grub screw*	*23*
24	Vite	M6x25 DIN912 INOX A2	M8x30 DIN912 INOX A2	*Screw*	*24*
25	Vite	M2.5x10 DIN965A INOX A2	M2.5x10 DIN965A INOX A2	*Screw*	*25*
26	Vite	M2.5x10 DIN912 INOX A2	M2.5x10 DIN912 INOX A2	*Screw*	*26*
27	Vite	M2.9x13 DIN7982 INOX A2	M2.9x13 DIN7982 INOX A2	*Screw*	*27*
28	O-Ring	MGX5020-18	MGX6030-18	*O-Ring*	*28*
29	Gabbia a rullini	CUSC-029	CUSC-029	*Roller cage*	*29*
30	Boccola	ZBH-9	ZBH-9	*Bush*	*30*
31	Boccola	ZBH-12	ZBH-9	*Bush*	*31*

Note
Notes