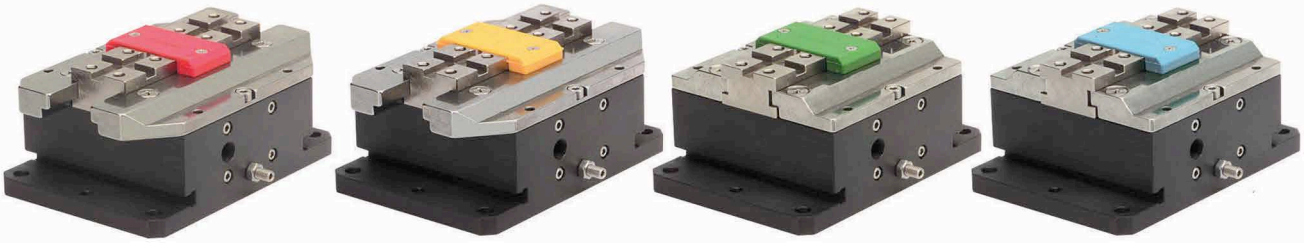
GM

Pinza pneumatica a 2 griffe ad azione parallela autocentrante (serie GM)

- Azionamento a doppio effetto.
- Costruzione robusta: grande durata e affidabilità senza manutenzione.
- Possibilità di scelta su un'ampia gamma di corse e forze di serraggio.
- Forza di serraggio costante su tutta la corsa in apertura ed in chiusura.
- Profilo piatto.
- Fissaggio semplificato attraverso una flangia dotata di fori passanti.
- Regolazione della corsa.
- Sensori magnetici opzionali.

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

- *Double acting.*
- *The rugged construction lends itself to heavy duty applications for a trouble free long life without maintenance.*
- *Wide choice of stroke length and gripping force options.*
- *The gripping force is constant on both directions along the total stroke.*
- *Flat profile.*
- *Easy fastening by through holes on the flange.*
- *Stroke adjustment.*
- *Optional magnetic sensors.*



GM-0100 **GM-0101** **GM-0102** **GM-0103**



GM-0075 **GM-0076** **GM-0077**



GM-0050 **GM-0051** **GM-0052**



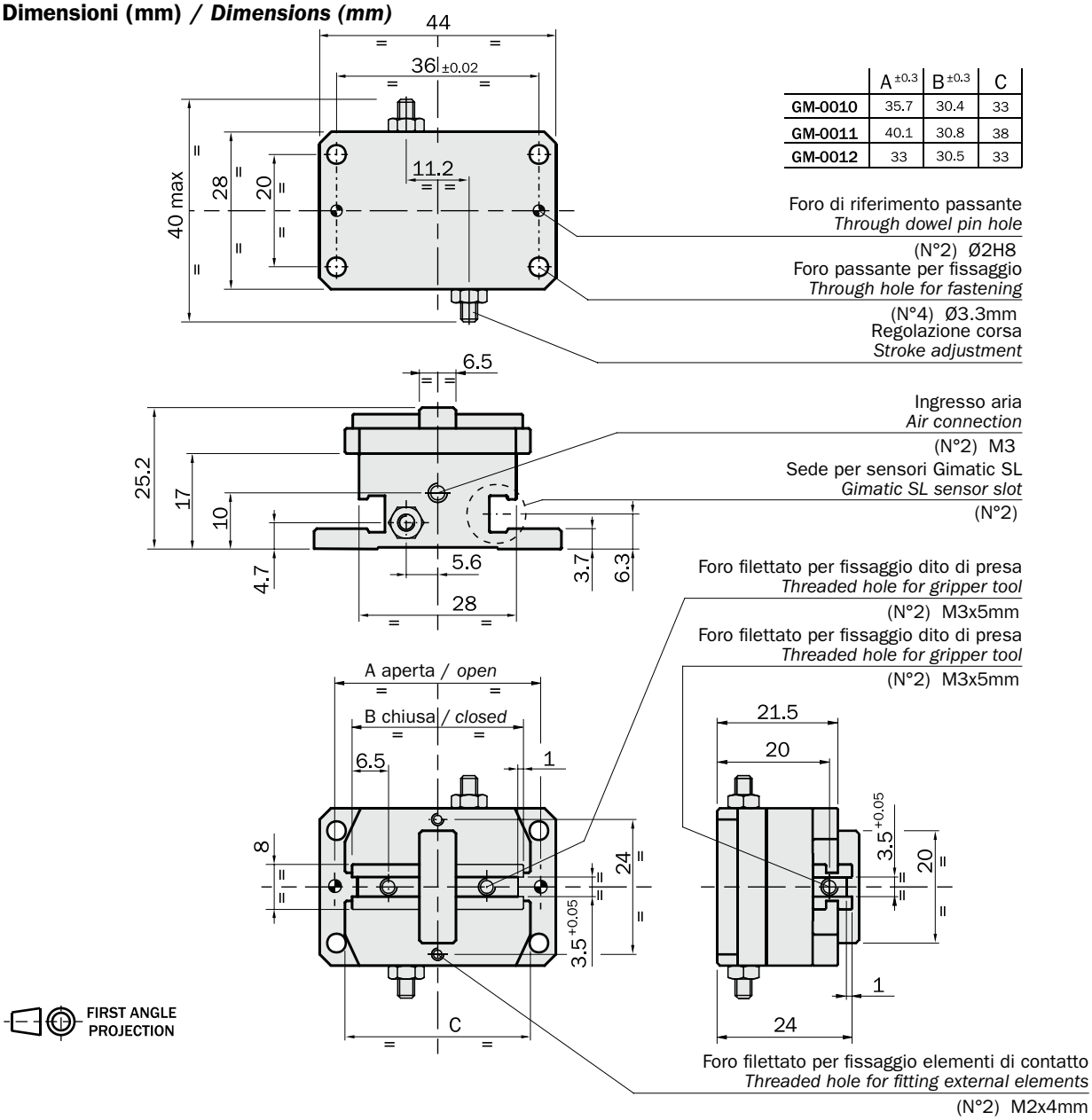
GM-0025 **GM-0026** **GM-0027**



GM-0010 **GM-0011** **GM-0012**

	GM-0010	GM-0011	GM-0012
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*		
Pressione di esercizio *Pressure range*	2÷8 bar		
Temperatura di esercizio *Temperature range*	5÷60 °C.		
Forza di serraggio per griffa a 6 bar *Gripping force at 6 bar on each jaw*	35 N	18 N	70 N
Forza di serraggio totale a 6 bar *Total gripping force at 6 bar*	70 N	36 N	140 N
Corsa totale (±0.3 mm) *Total stroke*	5.3 mm	9.3 mm	2.5 mm
Frequenza max funzionamento continuativo *Maximum working frequency*	3 Hz		
Consumo d'aria per ciclo *Cycle air consumption*	1.5 cm^3		
Tempo di chiusura senza carico *Closing time without load*	0.03 s		
Ripetibilità *Repetition accuracy*	0.02 mm		
Peso *Weight*	70 g	75 g	70 g

Dimensioni (mm) / *Dimensions (mm)*

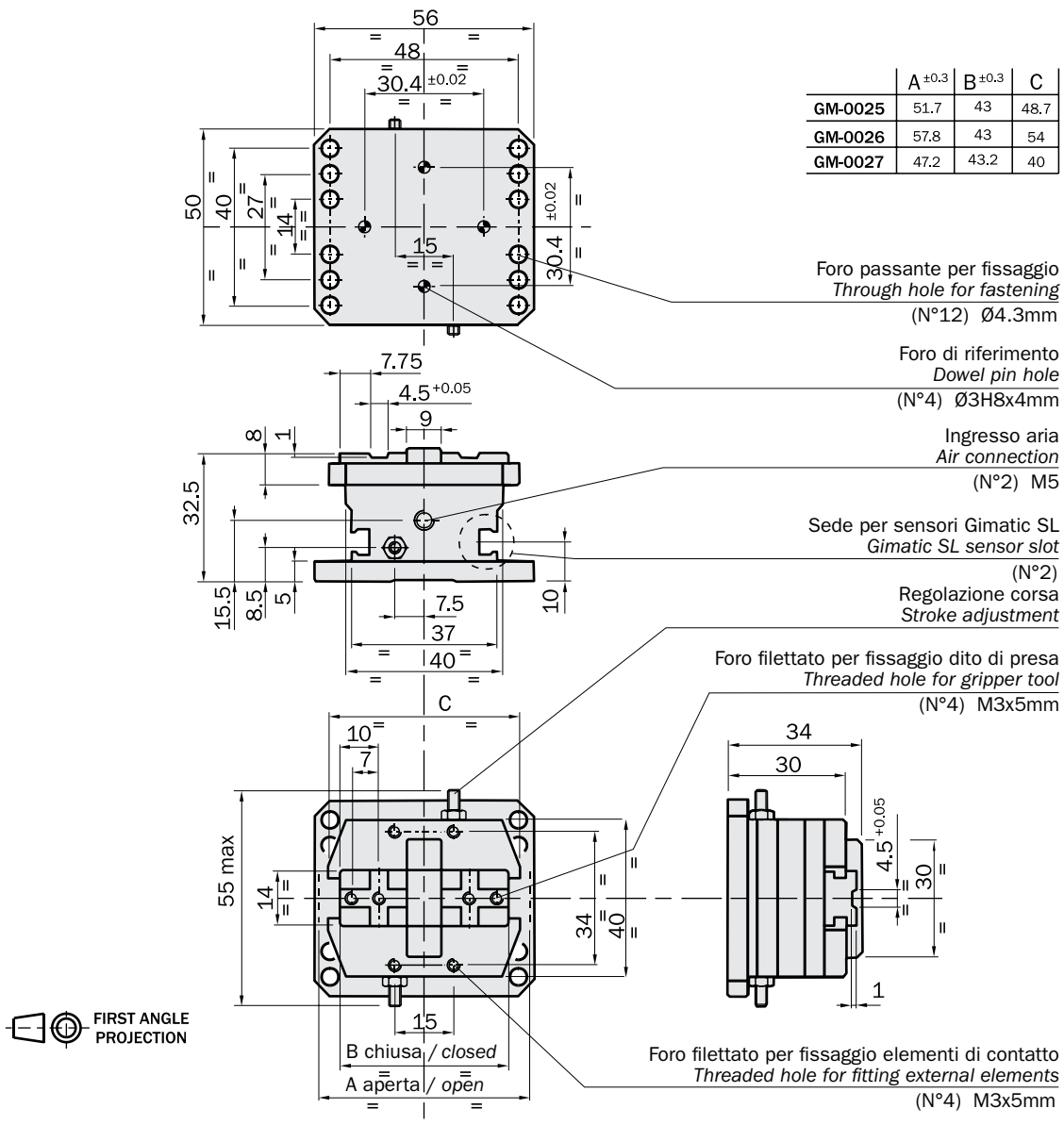


	A ±0.3	B ±0.3	C
GM-0010	35.7	30.4	33
GM-0011	40.1	30.8	38
GM-0012	33	30.5	33

GM

	GM-0025	GM-0026	GM-0027
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 a 6 bar *Gripping force at 6 bar on each jaw*	70 N	40 N	130 N
Forza di serraggio totale a 6 bar *Total gripping force at 6 bar*	140 N	80 N	260 N
Corsa totale (±0.3 mm) *Total stroke*	8.7 mm	14.8 mm	4 mm
Frequenza max funzionamento continuativo *Maximum working frequency*	3 Hz		
Consumo d'aria per ciclo *Cycle air consumption*	3.4 cm^3		
Tempo di chiusura senza carico *Closing time without load*	0.05 s		
Ripetibilità *Repetition accuracy*	0.02 mm		
Peso *Weight*	200 g	210 g	190 g

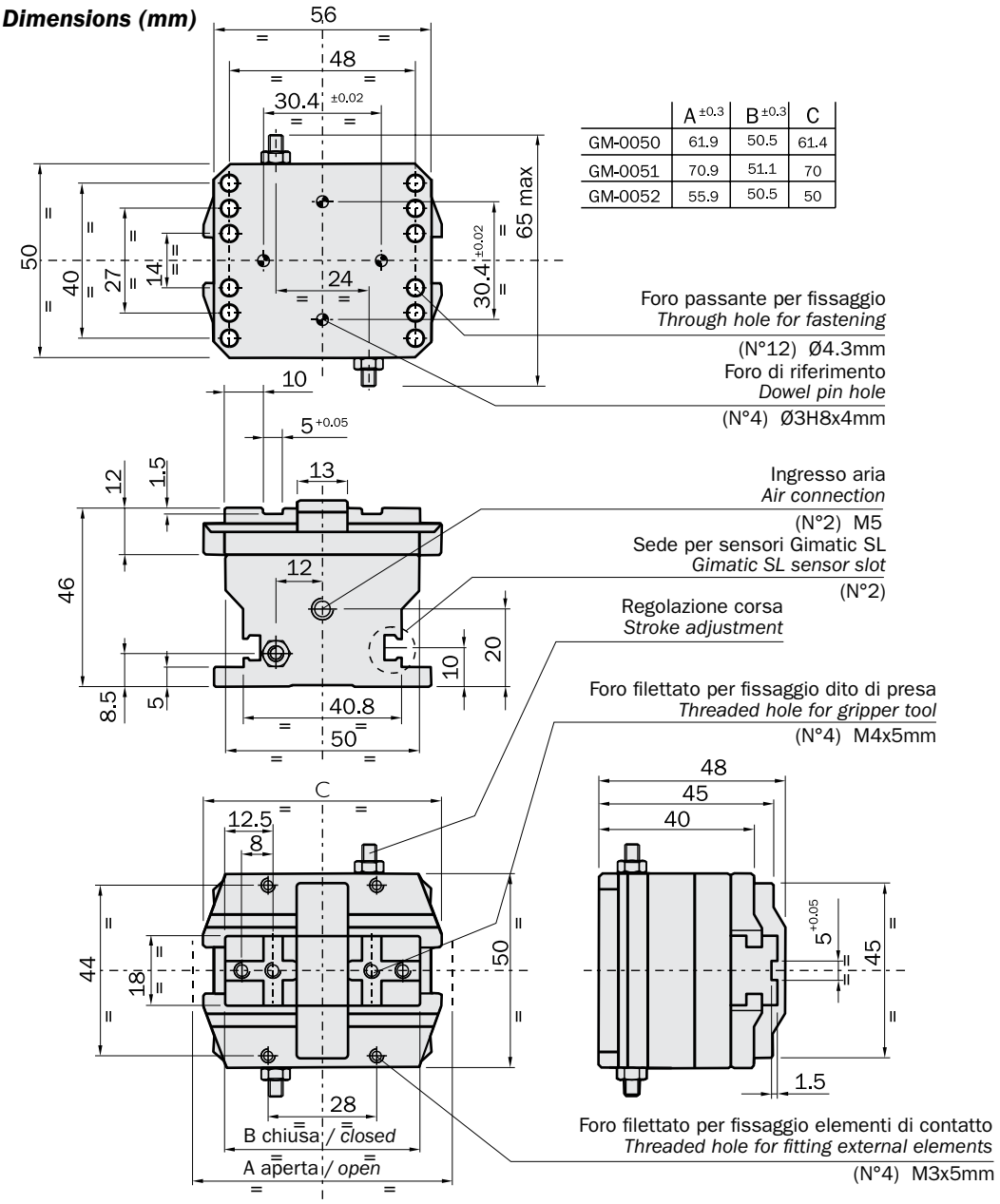
Dimensioni (mm) / *Dimensions (mm)*



	A ±0.3	B ±0.3	C
GM-0025	51.7	43	48.7
GM-0026	57.8	43	54
GM-0027	47.2	43.2	40

	GM-0050	GM-0051	GM-0052
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*		
Pressione di esercizio *Pressure range*	2÷8 bar		
Temperatura di esercizio *Temperature range*	5÷60 °C.		
Forza di serraggio per griffa a 6 bar *Gripping force at 6 bar on each jaw*	160 N	90 N	300 N
Forza di serraggio totale a 6 bar *Total gripping force at 6 bar*	320 N	180 N	600 N
Corsa totale (±0.3 mm) *Total stroke*	11.4 mm	19.8 mm	5.4 mm
Frequenza max funzionamento continuativo *Maximum working frequency*	3 Hz		
Consumo d'aria per ciclo *Cycle air consumption*	12 cm^3		
Tempo di chiusura senza carico *Closing time without load*	0.09 s		
Ripetibilità *Repetition accuracy*	0.02 mm		
Peso *Weight*	370 g	380 g	350 g

Dimensioni (mm) / *Dimensions (mm)*



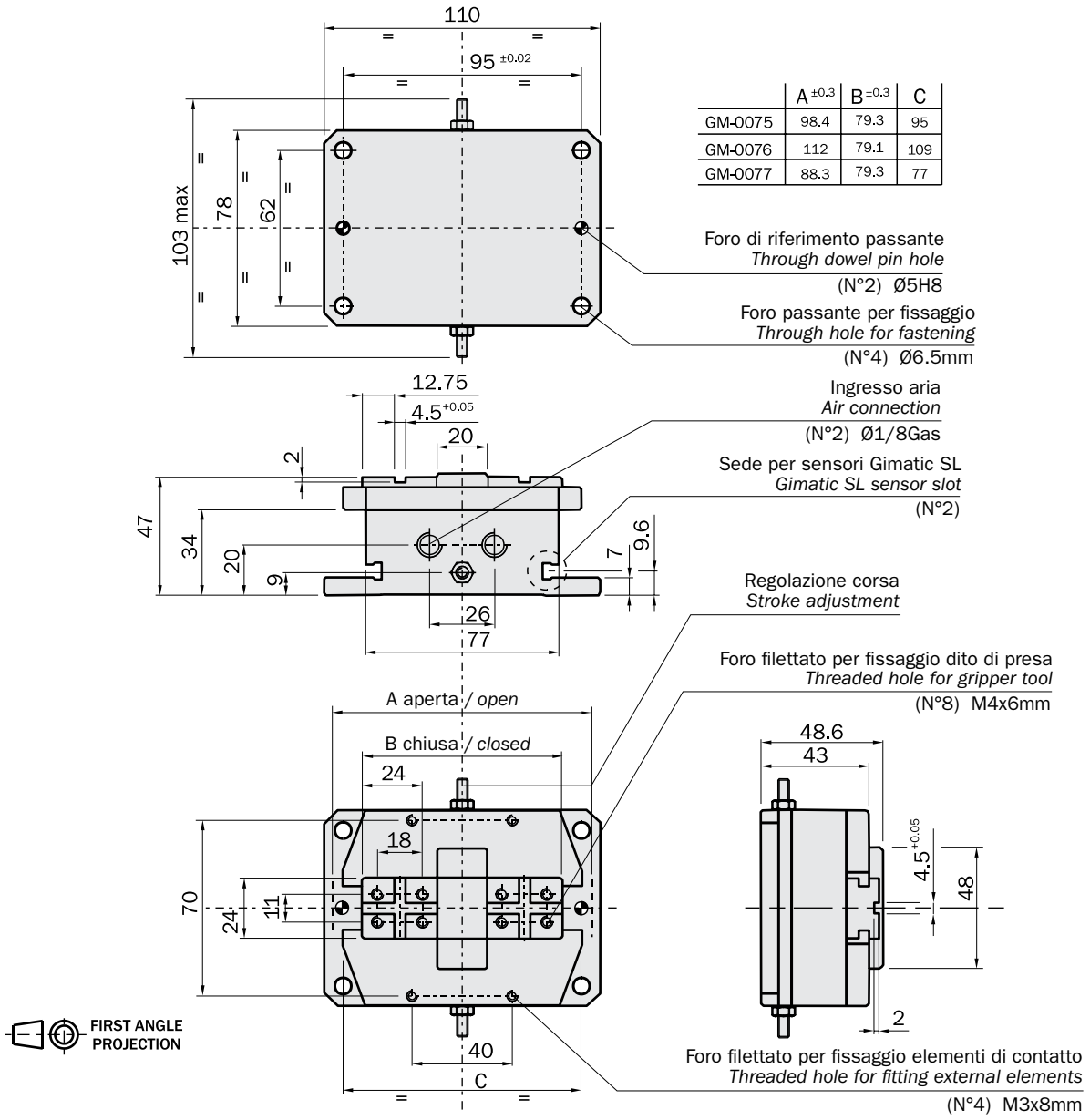
	A ±0.3	B ±0.3	C
GM-0050	61.9	50.5	61.4
GM-0051	70.9	51.1	70
GM-0052	55.9	50.5	50

FIRST ANGLE PROJECTION

GM

	GM-0075	GM-0076	GM-0077
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*		
Pressione di esercizio *Pressure range*	2÷8 bar		
Temperatura di esercizio *Temperature range*	5÷60 °C.		
Forza di serraggio per griffa a 6 bar *Gripping force at 6 bar on each jaw*	250 N	160 N	540 N
Forza di serraggio totale a 6 bar *Total gripping force at 6 bar*	500 N	320 N	1080 N
Corsa totale (±0.3 mm) *Total stroke*	19.1 mm	32.9 mm	9 mm
Frequenza max funzionamento continuativo *Maximum working frequency*	2 Hz		
Consumo d'aria per ciclo *Cycle air consumption*	34 cm^3		
Tempo di chiusura senza carico *Closing time without load*	0.14 s		
Ripetibilità *Repetition accuracy*	0.02 mm		
Peso *Weight*	1050 g	1100 g	1000 g

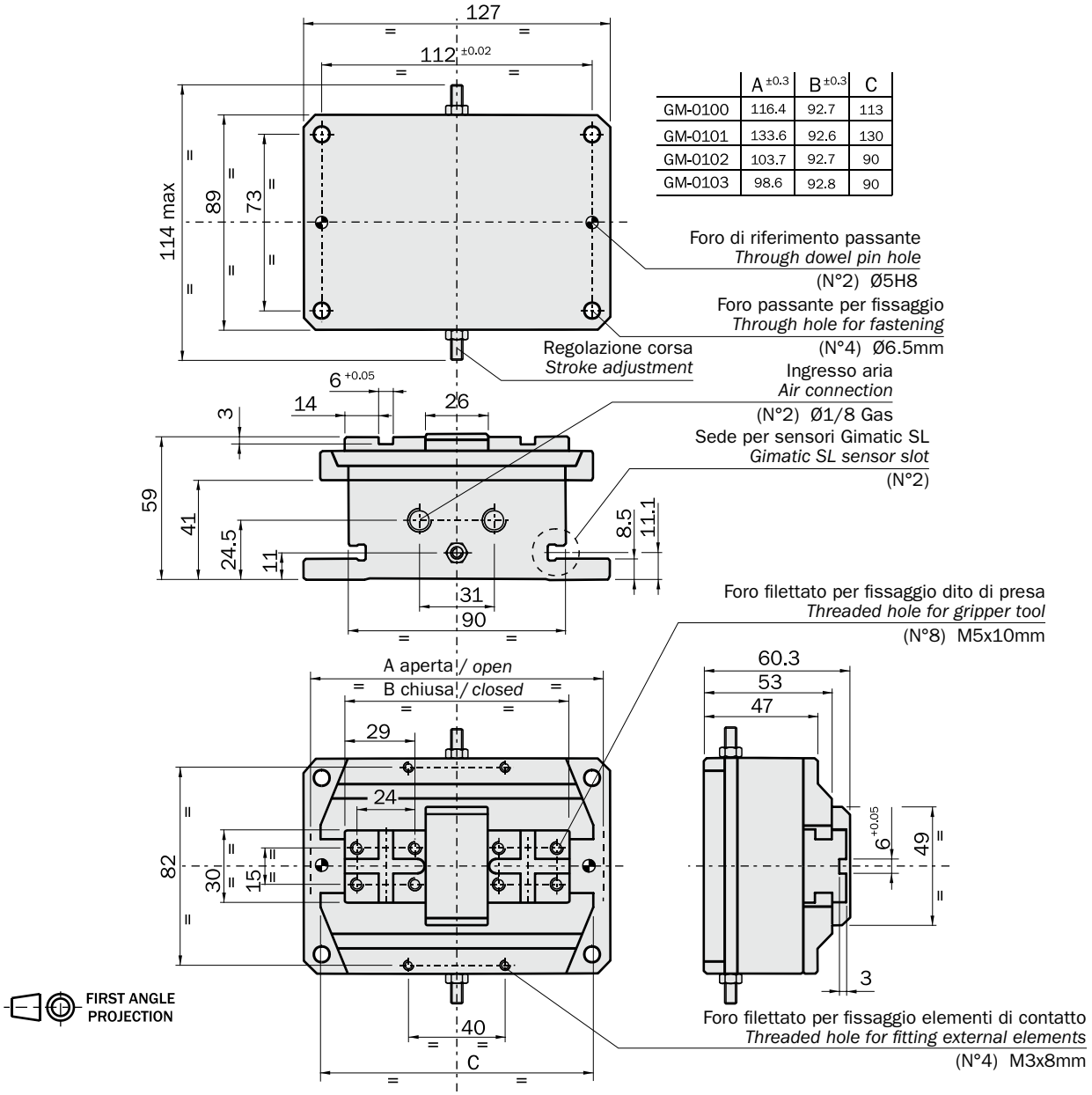
Dimensioni (mm) / *Dimensions (mm)*



	A ±0.3	B ±0.3	C
GM-0075	98.4	79.3	95
GM-0076	112	79.1	109
GM-0077	88.3	79.3	77

	GM-0100	GM-0101	GM-0102	GM-0103
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*			
Pressione di esercizio *Pressure range*	2÷8 bar			
Temperatura di esercizio *Temperature range*	5÷60 °C.			
Forza di serraggio per griffa a 6 bar *Gripping force at 6 bar on each jaw*	450 N	210 N	770 N	1200 N
Forza di serraggio totale a 6 bar *Total gripping force at 6 bar*	900 N	420 N	1540 N	2400 N
Corsa totale (±0.3 mm) *Total stroke*	23.7 mm	41 mm	11 mm	5.8 mm
Frequenza max funzionamento continuativo *Maximum working frequency*	2 Hz			
Consumo d'aria per ciclo *Cycle air consumption*	61 cm^3			
Tempo di chiusura senza carico *Closing time without load*	0.14 s			
Ripetibilità *Repetition accuracy*	0.02 mm			
Peso *Weight*	1600 g	1700 g	1600 g	1580 g

Dimensioni (mm) / *Dimensions (mm)*



	A ±0.3	B ±0.3	C
GM-0100	116.4	92.7	113
GM-0101	133.6	92.6	130
GM-0102	103.7	92.7	90
GM-0103	98.6	92.8	90

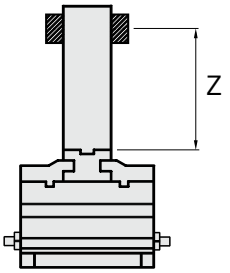
GM

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

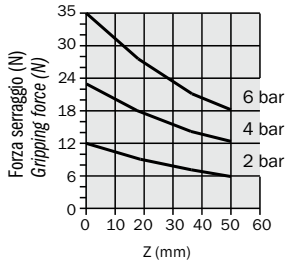
The graphs show the gripping force on each jaw, as a function of the operating pressure and gripping tool length Z.



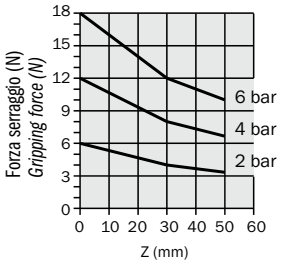
La forza indicata in questi grafici è riferita alla singola griffa.
La forza totale è il doppio.

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

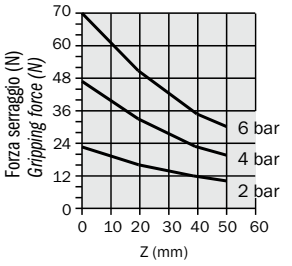
GM-0010



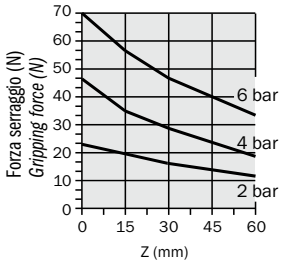
GM-0011



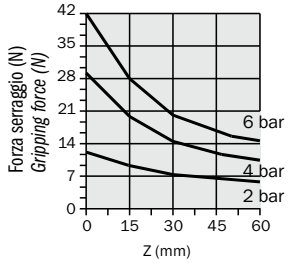
GM-0012



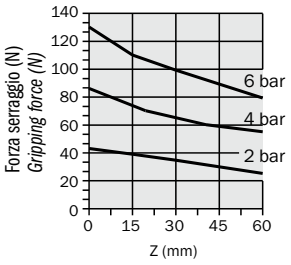
GM-0025



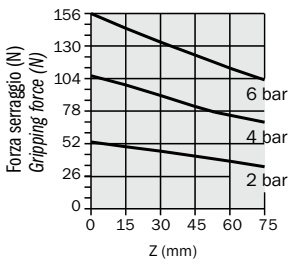
GM-0026



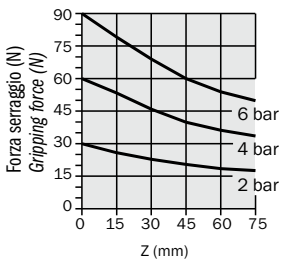
GM-0027



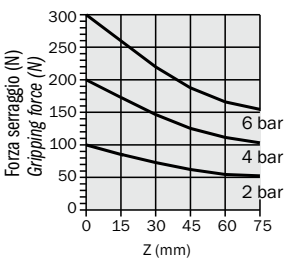
GM-0050



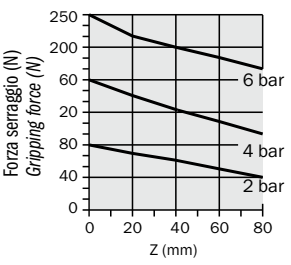
GM-0051



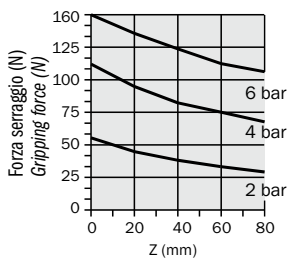
GM-0052



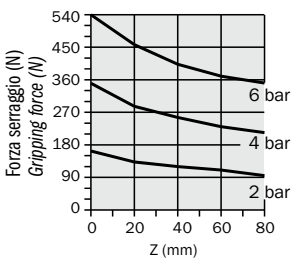
GM-0075



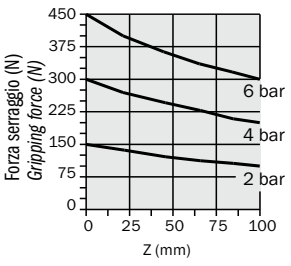
GM-0076



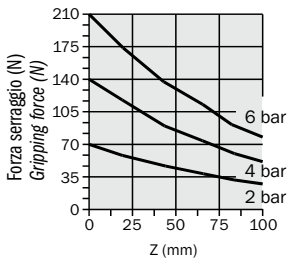
GM-0077



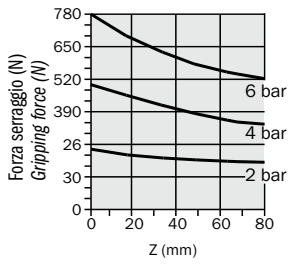
GM-0100



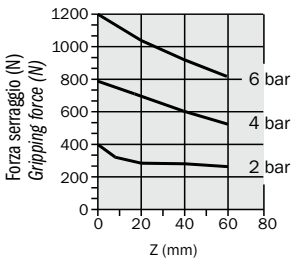
GM-0101



GM-0102



GM-0103

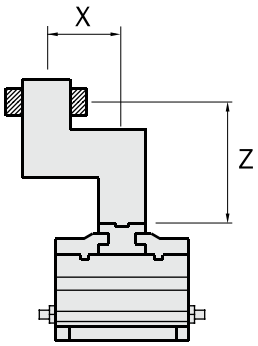


Forza di serraggio

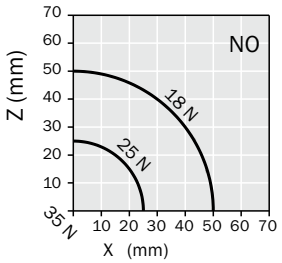
I grafici mostrano la forza per griffa espressa dalla pinza a 6 bar in funzione del braccio Z e del disassamento del punto di presa X.

Gripping force

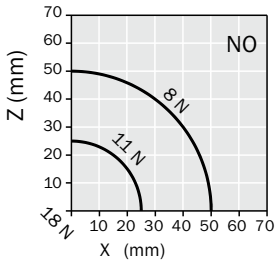
The graphs show the gripping force on each jaw, as a function of the gripping tool length Z and overhanging X at 6 bar.



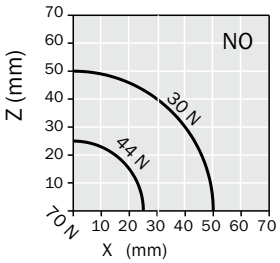
GM-0010



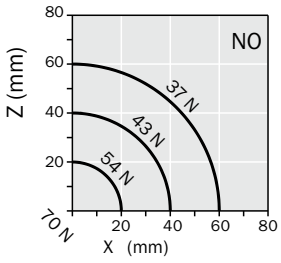
GM-0011



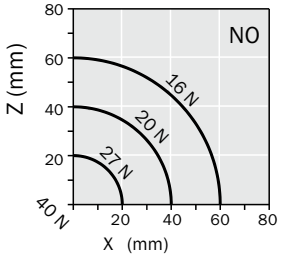
GM-0012



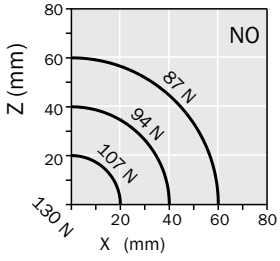
GM-0025



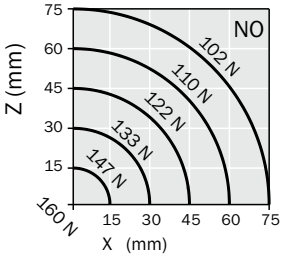
GM-0026



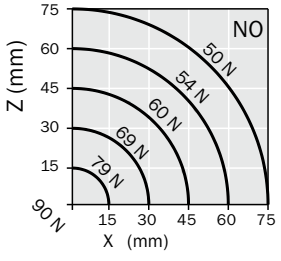
GM-0027



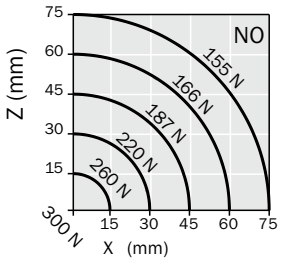
GM-0050



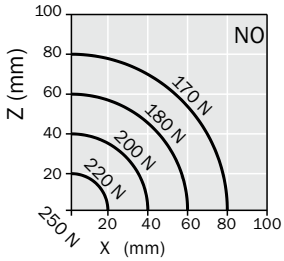
GM-0051



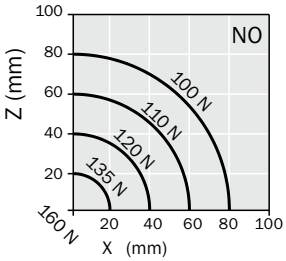
GM-0052



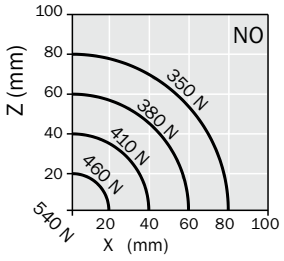
GM-0075



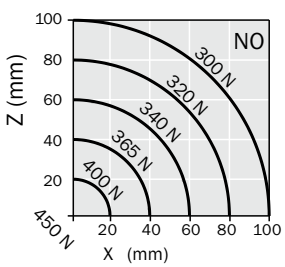
GM-0076



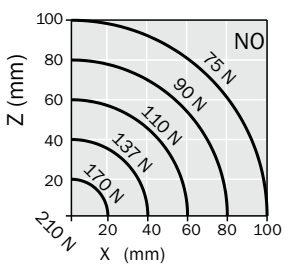
GM-0077



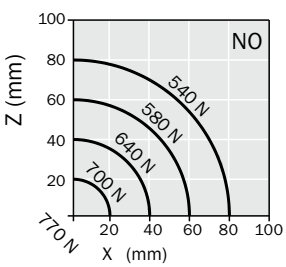
GM-0100



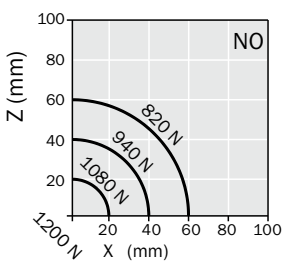
GM-0101



GM-0102



GM-0103



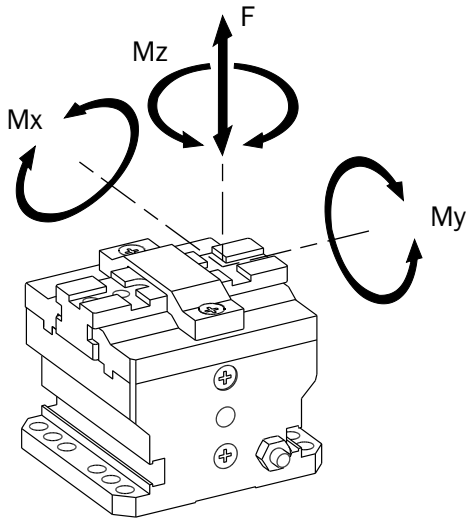
GM

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 si 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).



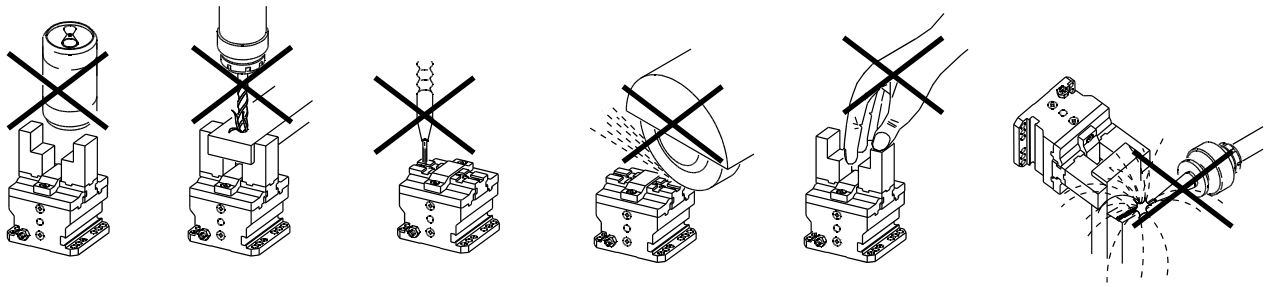
	GM-0010-11-12	GM-0025-26-27	GM-0050-51-52	GM-0075-76-77	GM-0100-101-102-103
F s	50 N	200 N	400 N	800 N	1000 N
Mx s	2 Nm	6 Nm	12 Nm	28 Nm	50 Nm
My s	2 Nm	6 Nm	12 Nm	28 Nm	50 Nm
Mz s	2 Nm	6 Nm	12 Nm	28 Nm	50 Nm
F d	1 N	3 N	4 N	8 N	10 N
Mx d	2 Ncm	6 Ncm	12 Ncm	20 Ncm	30 Ncm
My d	2 Ncm	6 Ncm	12 Ncm	20 Ncm	30 Ncm
Mz d	2 Ncm	6 Ncm	12 Ncm	20 Ncm	30 Ncm
m	50 g	200 g	300 g	400 g	500 g

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.

Caution

Avoid the gripper coming into contact with the following media: coolants which cause corrosion, grinding dust or glowing sparks.
Make sure that nobody can place his/her hand between the gripper tools and there are no objects in the path of the gripper.
The gripper must not run before the whole machine, on which it is mounted, complies with the laws or safety norms of your country.

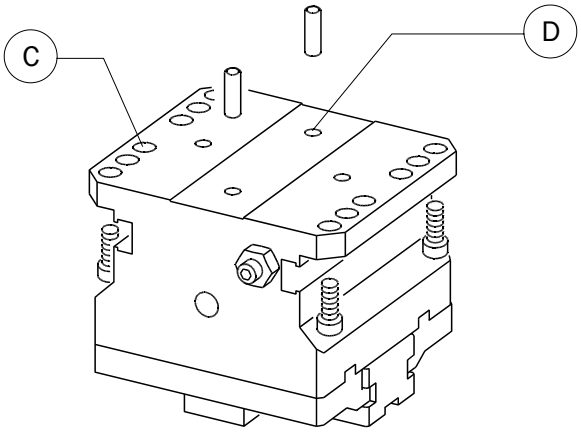


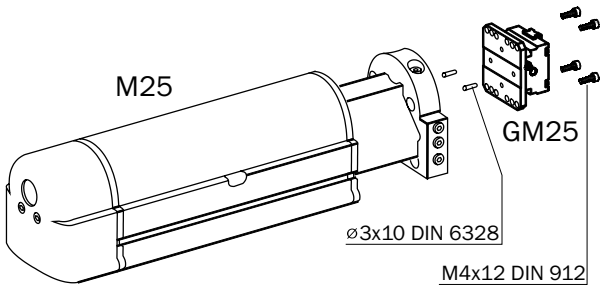
Fissaggio della pinza

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.
Per fissare la pinza montare quattro viti nei fori passanti (C) e due spine nei relativi fori (D).
Le pinze GM-0025/26/27 e GM-0050/51/52 sono integrabili con il sistema di manipolazione Gimapick senza ricorrere a nessuna interfaccia.
Lasciare lo spazio necessario per i raccordi dell'aria.

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.
To fasten the gripper, insert four screws into the through holes (C) and two dowel pins into the proper holes (D).
The grippers GM-0025/26/27 e GM-0050/51/52 can be mounted on the handling system Gimapick without any interface plate.
Allow room to mount the air fittings.





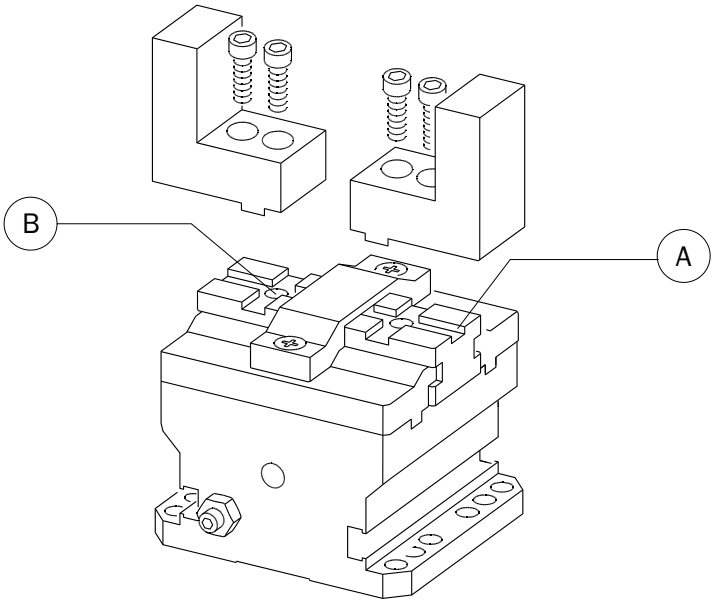
	GM-0010-11-12	GM-0025-26-27	GM-0050-51-52	GM-0075-76-77	GM-0100-101-102-103
C	Ø3.3 mm	Ø4.3 mm	Ø4.3 mm	Ø6.5 mm	Ø6.5 mm
D	Ø2H8	Ø3H8x4 mm	Ø3H8x4 mm	Ø5H8	Ø5H8

Fissaggio delle estremità di presa

Costruire le dita di presa il più possibile corte e leggere.
Per il centraggio sulle griffe utilizzare le scanalature calibrate (A) e per il fissaggio i fori filettati (B).

Gripping tool fastening

The gripping tools must be as short and light as possible.
They must be mounted using the threaded holes (B) and the key slots (A) on the jaws.



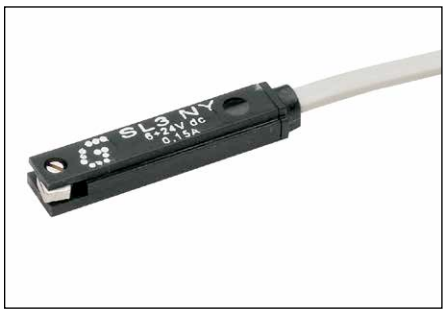
	GM-0010-11-12	GM-0025-26-27	GM-0050-51-52	GM-0075-76-77	GM-0100-101-102-103
A	$3.5^{+0.05}$ x 1 mm	$4.5^{+0.05}$ x 1 mm	$5^{+0.05}$ x 1.5 mm	$4.5^{+0.05}$ x 2 mm	$6^{+0.05}$ x 3 mm
B	M3x5 mm	M3x5 mm	M4x5 mm	M4x6 mm	M5x10 mm

Sensori

Il rilevamento della posizione di lavoro è affidato a uno o più sensori magnetici di prossimità (opzionali), che rilevano la posizione attraverso i magneti sul cursore.

Quindi, per un corretto funzionamento, è da evitare l'impiego in presenza di forti campi magnetici od in prossimità di grosse masse di materiale ferromagnetico.

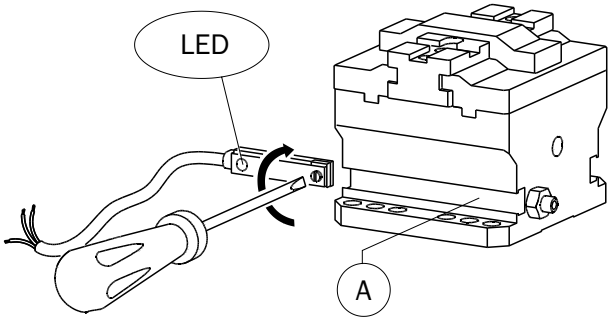
I sensori utilizzabili sono:



SL4N225-G	PNP	Cavo 2.5m / 2.5m cable
SL4M225-G	NPN	Cavo 2.5m / 2.5m cable
SL3N203-G	PNP	Connettore M8 / M8 snap plug connector
SL3M203-G	NPN	Connettore M8 / M8 snap plug connector

Sono tutti dotati di un cavo a tre fili e di un led.

La sequenza qui illustrata mostra come fissare nella cava (A) il sensore con il grano (C) ed il dado (B).

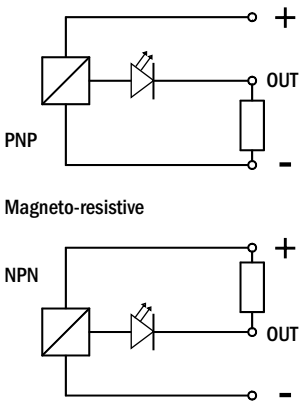


Sensors

The operating position can be checked by magnetic sensors (optional), that detect the magnets on the inner cursor.

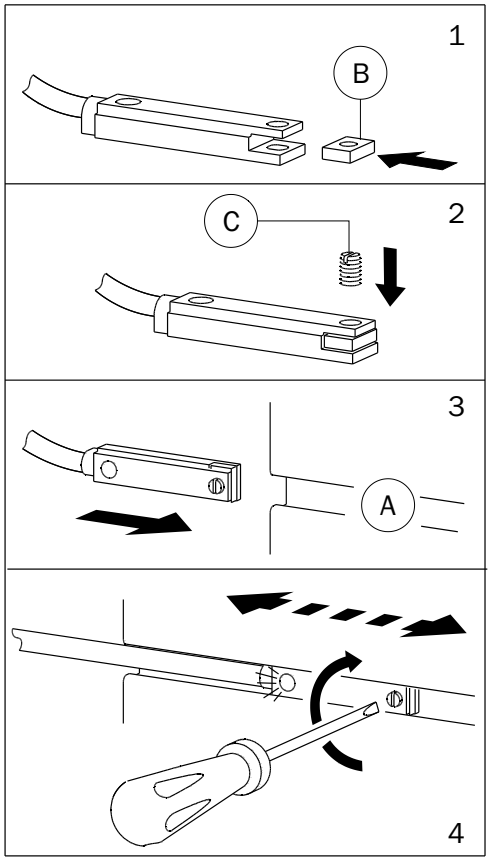
Therefore a near big mass of ferromagnetic material or intense magnetic fields may cause sensing troubles.

Use sensors:



They are all provided with a three-wire cable and a lamp.

Below you can see how to lock the sensor in its groove (A) with the screw (C) and the nut (B).

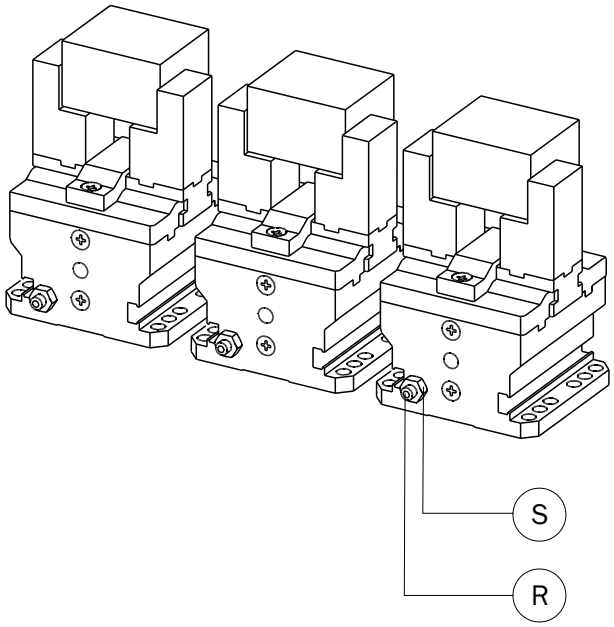


Regolazione della corsa

Avvitando i due grani (R) si riduce la corsa delle griffe.
Allentare il dado (S), eseguire la regolazione agendo sul grano con una chiave a brugola, ribloccare il dado.

Stroke adjustment

You can reduce the jaw stroke by screwing the two grub screws (R). Unloose the nut (S), adjust the stroke using an Allen wrench, and then tighten it again.



Manutenzione

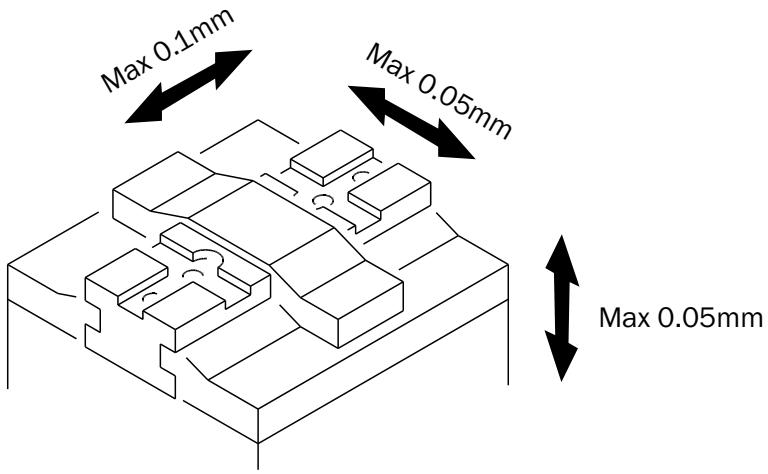
La pinza va ingrassata ogni 40 milioni di cicli con:
- Molykote DX (parti metalliche)
- Molykote PG75 (guarnizioni)

Il gioco delle griffe è indicato qui sotto.

Maintenance

Grease the gripper after 40 million cycles with:
- *Molykote DX (metal on metal)*
- *Molykote PG75 (gaskets)*

The figure below shows the jaw 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).

La pinza è azionata con aria compressa filtrata (5÷40 µm) non necessariamente lubrificata.
La scelta iniziale, lubrificata o non lubrificata, deve essere mantenuta per tutta la vita della pinza.

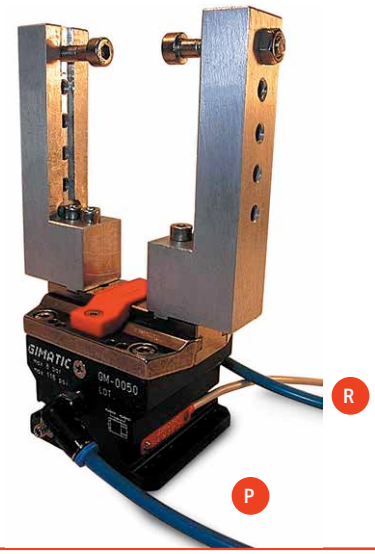
L'impianto pneumatico deve essere pressurizzato gradualmente, per evitare movimenti incontrollati.

Compressed air feeding

The compressed air feeding can be accomplished on the lateral air ports (P and R) with fittings and hoses (not supplied).

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.



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 the 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).

