

Molle

Questa pinza è dotata di molle sotto il pistone.
Per questo motivo e anche per via dello stelo, la massima forza di serraggio si ha con l'aria compressa in FF.
Può essere usata sia a doppio effetto che a semplice effetto.
Le molle possono essere rimosse, seguendo la procedura mostrata nelle foto.

Senza molle la forza di serraggio indicata si riduce:

- del 18% con aria in FF;
- del 37% con aria in HF.

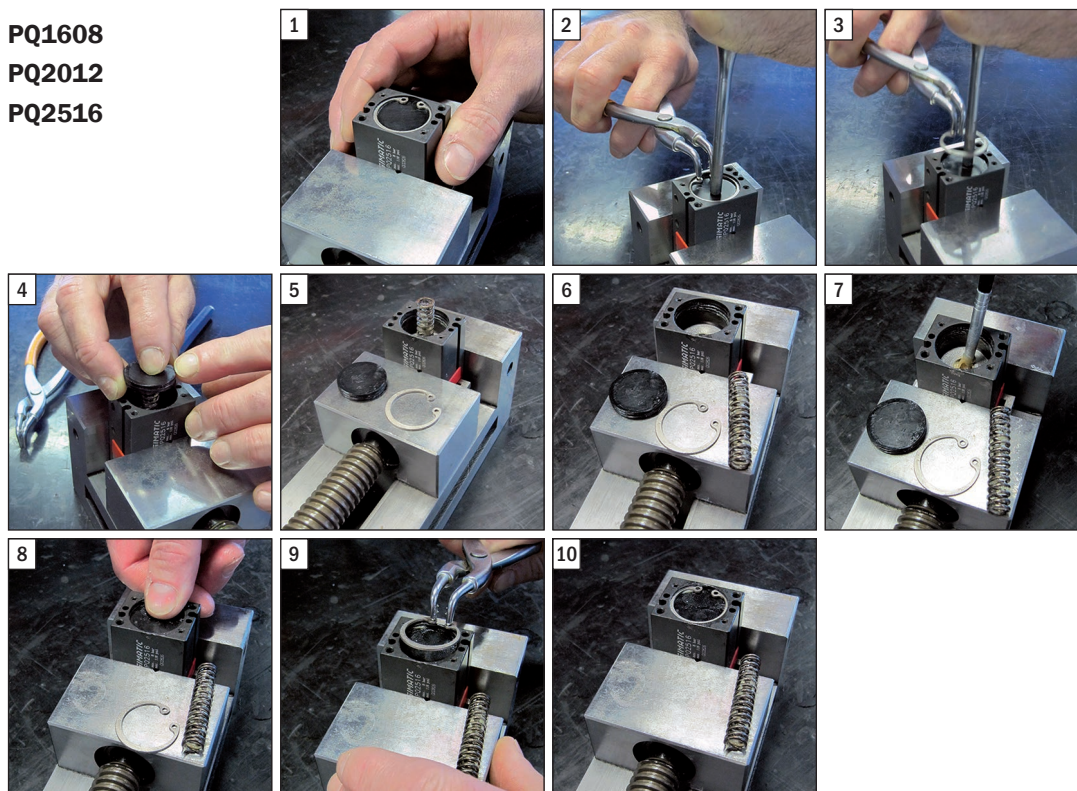
Springs

This gripper is provided with springs under the piston. For this reason and because of the piston rod, its maximum gripping force is achieved with compressed air in FF. The gripper can operate either in single-effect mode or double-effect mode. The springs can be removed, following the procedure illustrated in the photos.

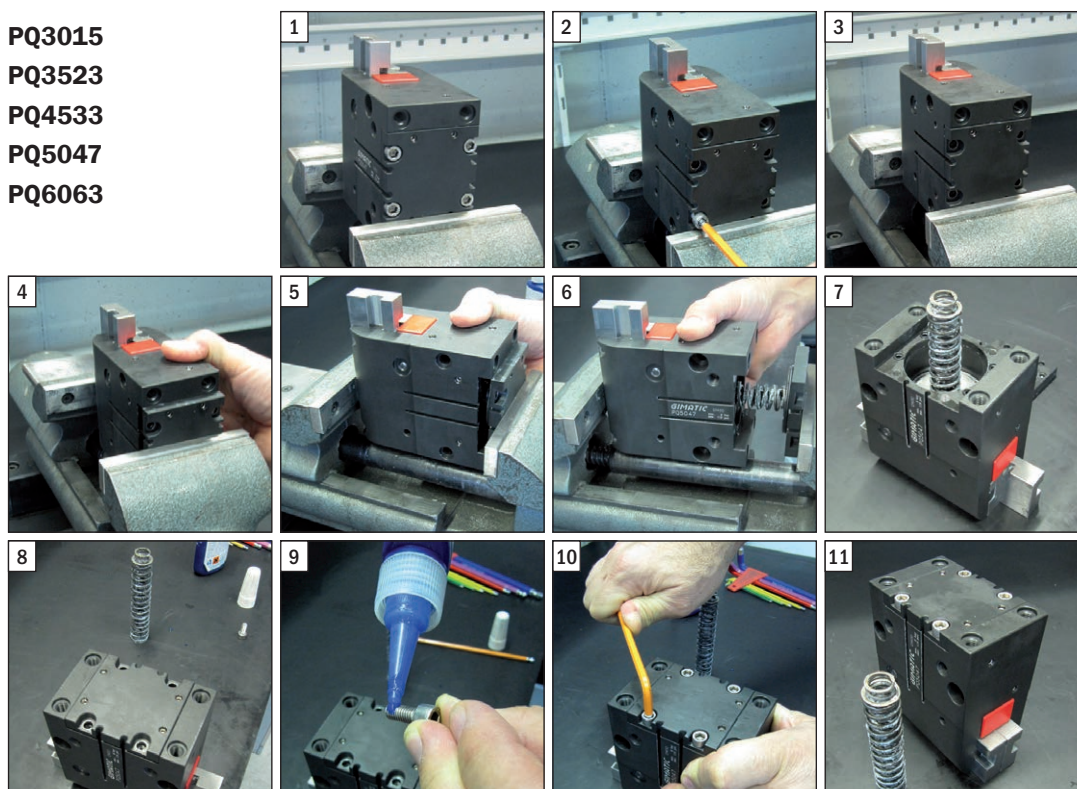
Without springs the resulting gripping force is:

- 18% lower with compressed air in FF;
- 37% lower with compressed air in HF.

PQ1608
PQ2012
PQ2516



PQ3015
PQ3523
PQ4533
PQ5047
PQ6063



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 sul fondo utilizzando due viti (VA) e due spine (BA).

Si può anche fissare su un fianco utilizzando due viti (VB) e due spine (BB).

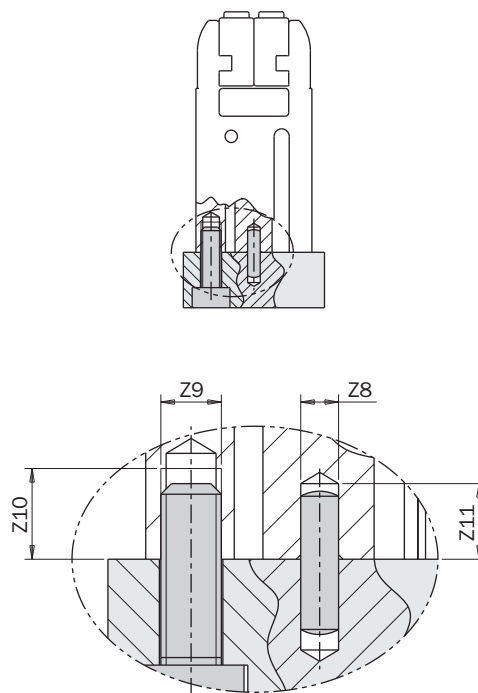
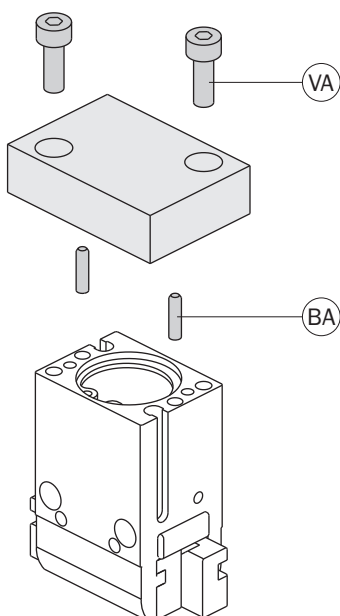
Gripper fastening

The gripper can be fastened to a static or moving part.

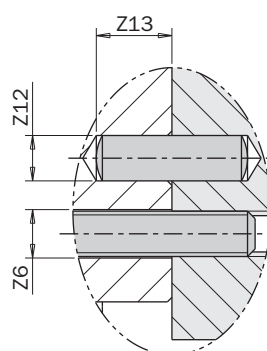
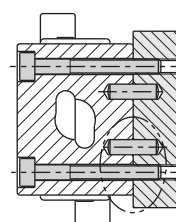
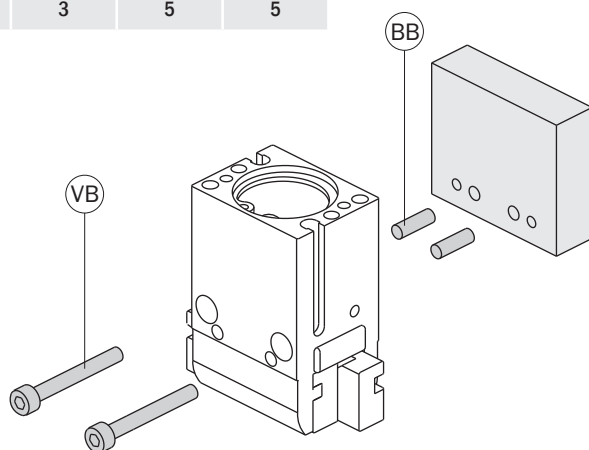
When on a moving part, you must pay attention to the inertial force to which the gripper and its load are subjected.

The gripper can be mounted from the bottom using two screws (VA) and two dowel pins (BA).

It can also be mounted on the side using two screws (VB) and two dowel pins (BB).



	PQ1608	PQ2012	PQ2516
Z6	Ø2.6	Ø3.2	Ø3.2
Z8	Ø2 H7	Ø2.5 H7	Ø3 H7
Z9	M3	M4	M4
Z10	5	6	6
Z11	3	5	5
Z12	Ø2.5 H7	Ø3 H7	Ø3 H7
Z13	3	5	5



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 (VA o VB) e 2 boccole di centraggio (BC).

Nella confezione della pinza sono fornite 4 boccole di centraggio per le dita di presa (BD) e 2 boccole per il corpo (BC).

Si può anche fissare su un fianco con 2 viti (VL) e 2 boccole (BC).

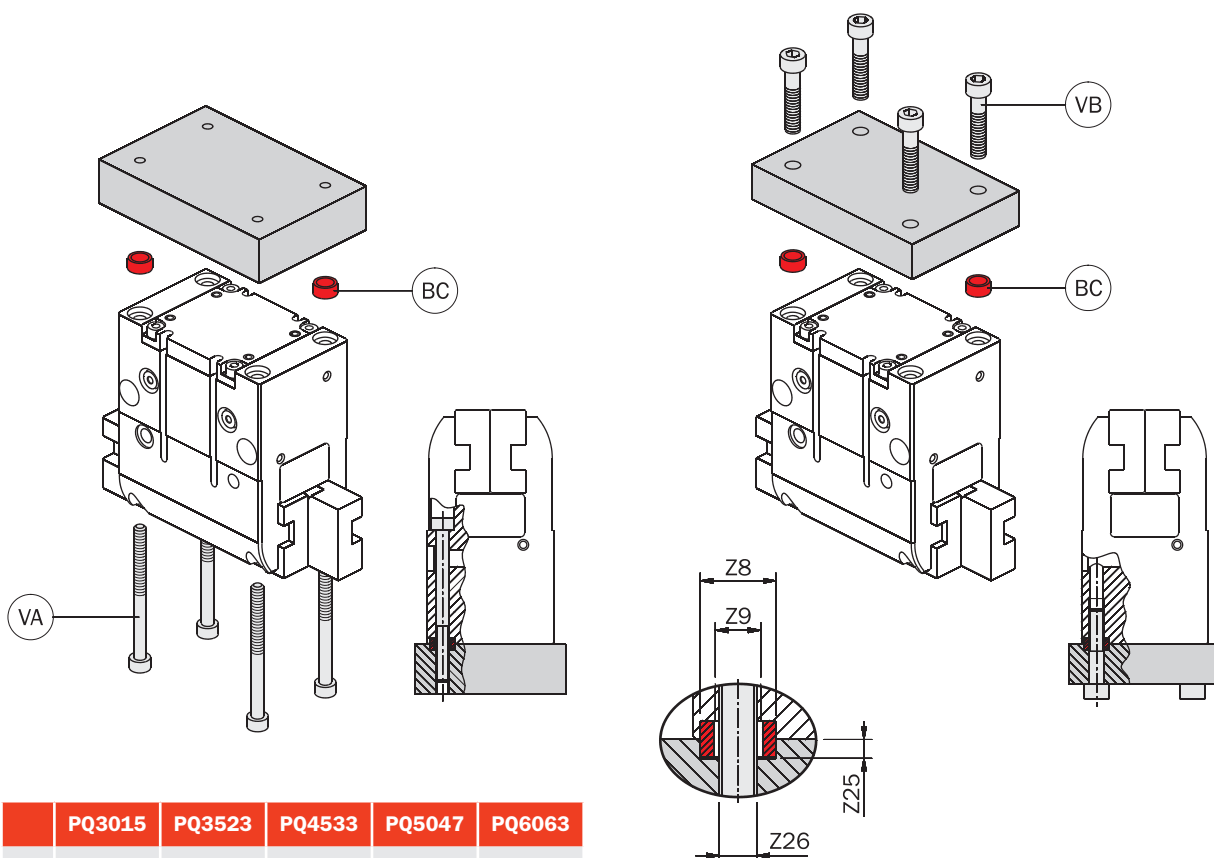
Gripper fastening

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.

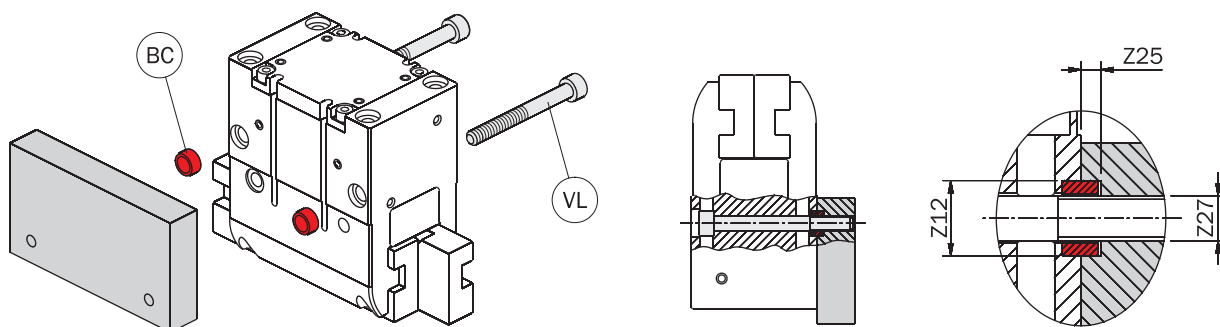
The gripper can be fastened either from the top or from the bottom.

4 centering sleeves for the gripping tools (BD) and 2 centering sleeves for the body (BC) are supplied in the package.

The gripper can also be fastened on one side by 2 screws (VL) and 2 centering sleeves (BC).



	PQ3015	PQ3523	PQ4533	PQ5047	PQ6063
Z8	Ø6 H8	Ø8 H8	Ø10 H8	Ø12 H8	Ø12 H8
Z9	M4	M5	M6	M8	M8
Z12	Ø6 H8	Ø8 H8	Ø10 H8	Ø12 H8	Ø12 H8
Z25	2.8	2.5	2.5	2.5	2.5
Z26	M3	M4	M5	M6	M6
Z27	M3	M5	M6	M8	M8

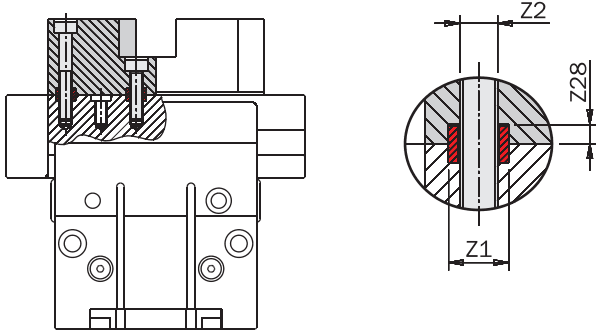
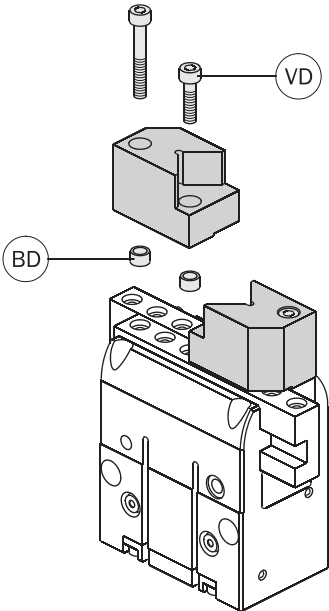


Fissaggio delle estremità di presa

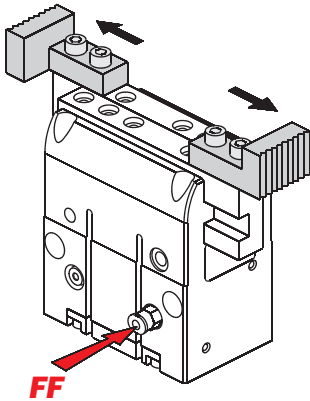
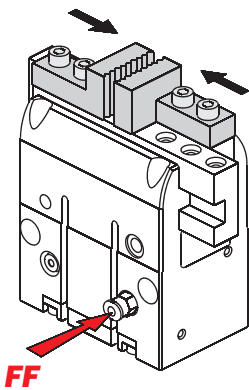
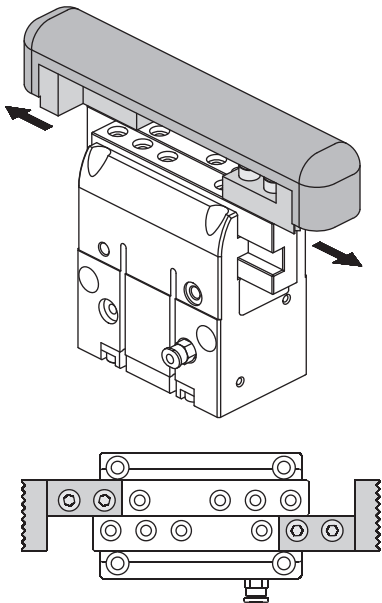
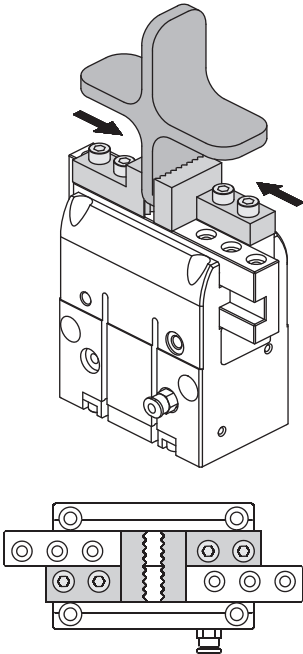
Costruire le dita di presa il più possibile corte e leggere.
Fissarle con 2 viti (VD) e 2 boccole di centraggio (BD).
Per ottenere la massima forza di serraggio, le estremità di presa vanno fissate come indicato nelle illustrazioni, a seconda che la pinza sia usata per serrare il carico dall'esterno o dall'interno.

Fitting the gripping tools

The gripping tools must be as short and light as possible.
They must be fastened by 2 screws (VD) and 2 centering sleeves (BD).
To achieve the maximum gripping force, the gripping tools should be fastened as shown in the pictures below, depending on whether the gripper is used for outside or inside gripping.



	PQ1608	PQ2012	PQ2516	PQ3015	PQ3523	PQ4533	PQ5047	PQ6063
Z1	Ø5 H8	Ø5 H8	Ø6 H8	Ø5 H8	Ø6 H8	Ø8 H8	Ø10 H8	Ø12 H8
Z2	M3	M3	M4	M3	M4	M5	M6	M6
Z28	1.2	1.2	2.8	1.2	2.8	2.5	2.5	2.5



Sensori

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

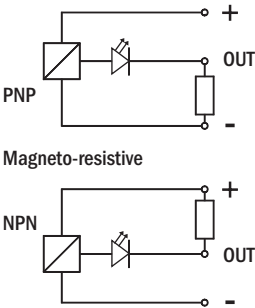
I sensori utilizzabili sono:

			PQ16 PQ20 PQ25	PQ30	PQ35 PQ45 PQ50 PQ60
SN4N225-G	PNP	Cavo 2.5m 2.5m Cable	☒	☒	☒
SN4M225-G	NPN		☒	☒	☒
SN3N203-G	PNP	Connettore M8 Snap M8 plug connector	☒	☒	☒
SN3M203-G	NPN		☒	☒	☒
SS4N225-G	PNP	Cavo 2.5m 2.5m Cable	☐	☒ (1)	☒
SS4M225-G	NPN		☐	☒ (1)	☒
SS3N203-G	PNP	Connettore M8 Snap M8 plug connector	☐	☒ (1)	☒
SS3M203-G	NPN		☐	☒ (1)	☒

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.

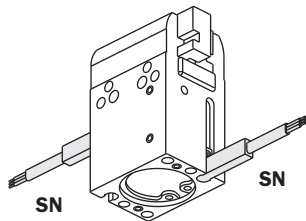
The sensors that can be used are:



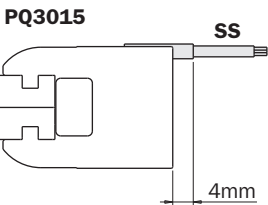
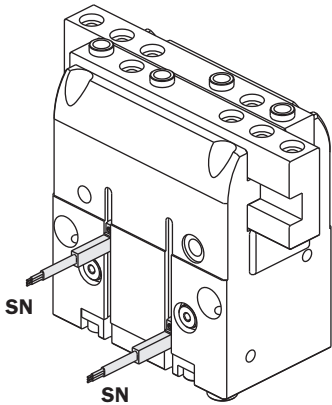
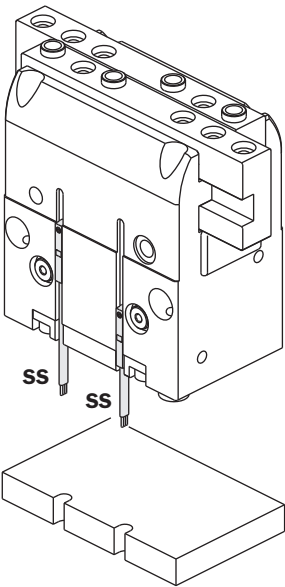
Sono tutti dotati di un cavo piatto a tre fili e di un led.

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

PQ1608
PQ2012
PQ2516



PQ3015
PQ3523
PQ4533
PQ5047
PQ6063



(1)
Sulla PQ3015 i sensori SS sporgono 4mm.

(1)
On the PQ3015 the SS sensors protude 4mm.

Connessione pneumatica

Questa pinza ha varie opzioni di alimentazione.

Alimentando da una delle connessioni FF si avrà il serraggio migliore con tutta la forza della pinza.

Se la pinza viene usata a semplice effetto, sulla connessione FF va avvitato un filtro per evitare l'aspirazione di sporco dall'esterno.

Si possono usare dei raccordi o fornire l'aria compressa attraverso la piastra di fissaggio e gli O-Ring indicati (GG).

Tubi, raccordi, filtri e O-Ring non sono forniti.

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

This gripper has several options for air feeding.

If the compressed air is supplied through one of the FF ports, the gripper will operate with its full force.

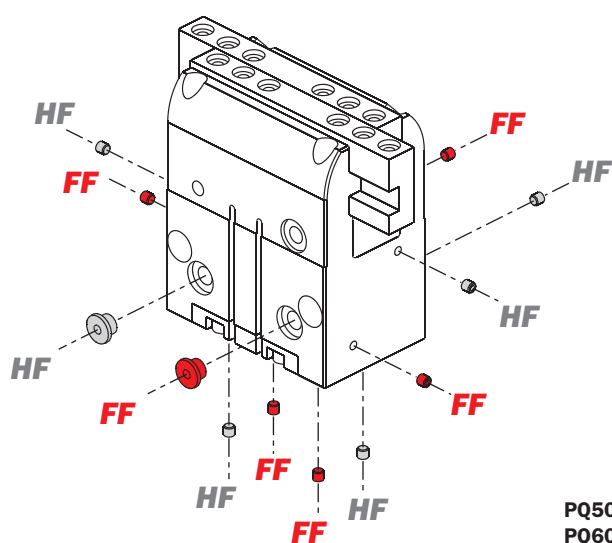
If the gripper is used in the single-acting mode, fit a filter at the FF port to prevent suction of dirt from outside.

Compressed air can be supplied through fittings or through the mounting plate and the O-rings shown (GG).

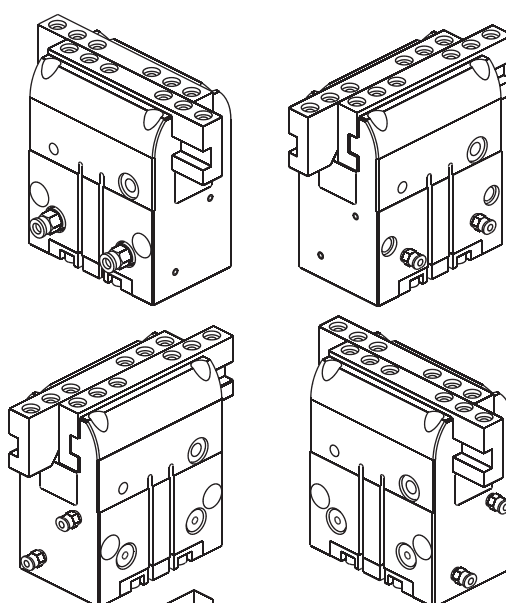
Hoses, fittings, filters and O-Rings are not supplied.

The gripper is driven by filtered compressed air not necessarily lubricated. The initial choice on air lubrication (lubricated or not) must be kept for the complete service life of the gripper.

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



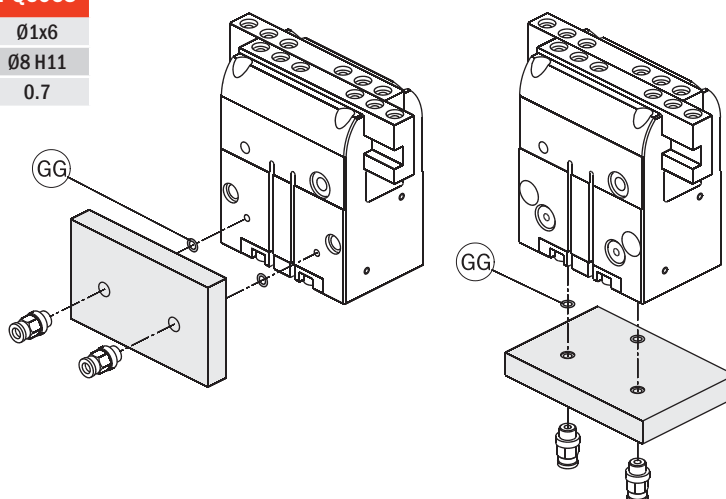
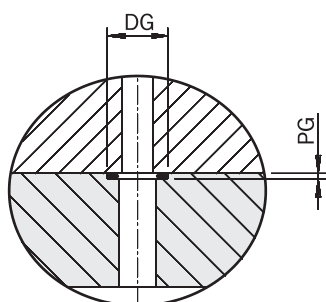
PQ5047
PQ6063



PQ4533
PQ5047
PQ6063

	PQ1608	PQ2012	PQ2516
GG	Ø1x2.5	Ø1x2.5	Ø1x3
DG	Ø4.5 H11	Ø4.5 H11	Ø5 H11
PG	0.7	0.7	0.7

	PQ3015	PQ3523	PQ4533	PQ5047	PQ6063
GG	Ø1x4	Ø1x5	Ø1x6	Ø1x6	Ø1x6
DG	Ø6 H11	Ø7 H11	Ø8 H11	Ø8 H11	Ø8 H11
PG	0.7	0.7	0.7	0.7	0.7



Forza di serraggio

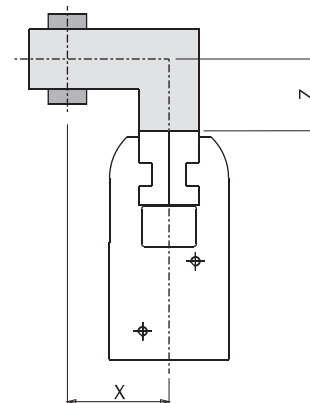
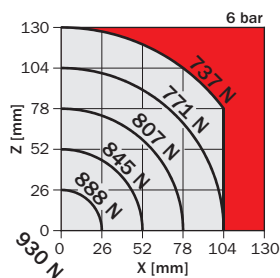
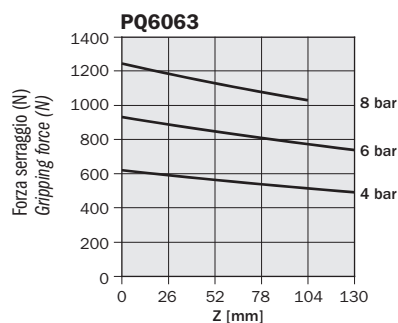
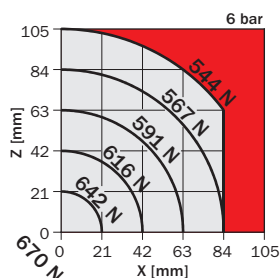
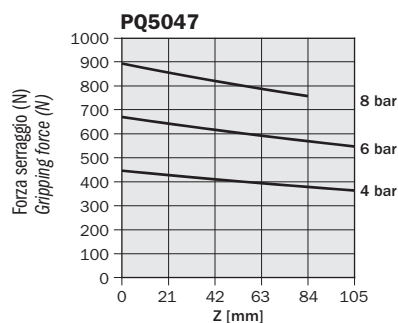
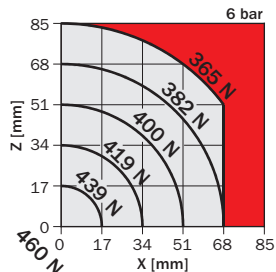
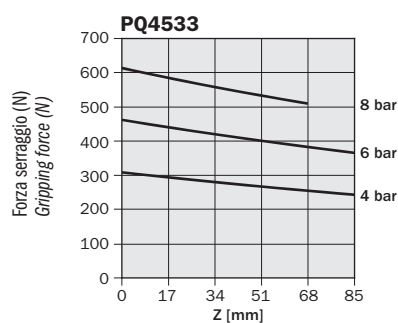
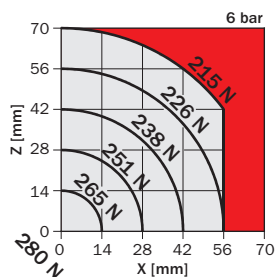
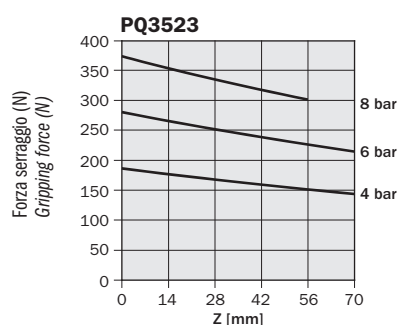
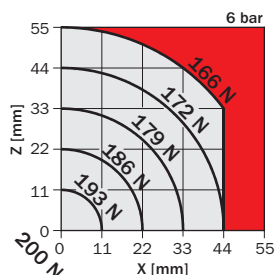
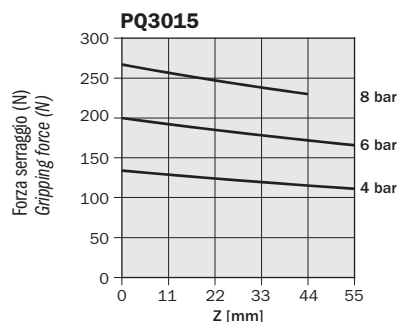
I grafici mostrano la forza per griffa espressa dalla pinza in funzione della pressione, del braccio di leva Z e del disassamento del punto di presa X, quando l'aria compressa è fornita in FF.

Se l'aria compressa è fornita in HF la forza si riduce del 50%.

Gripping force

The graphs show the gripping force on each jaw, as a function of the operating pressure, the lever arm length Z and the misalignment of gripping point X, when compressed air is supplied to FF.

If compressed air is supplied to HF the gripping force is 50% lower.



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

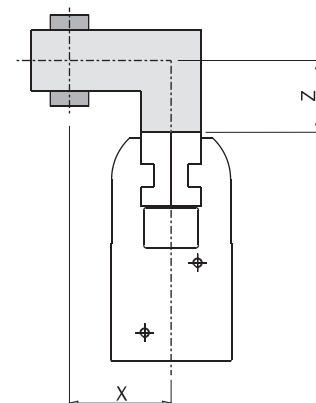
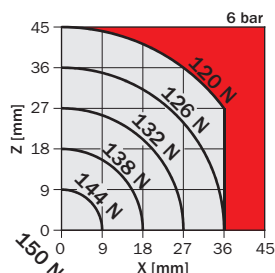
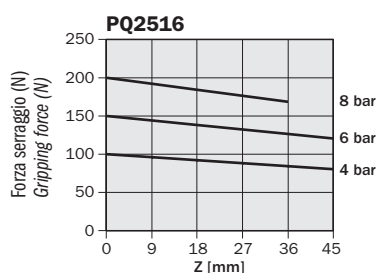
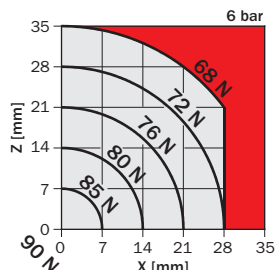
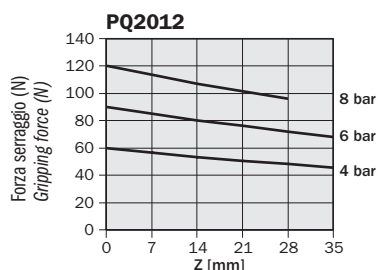
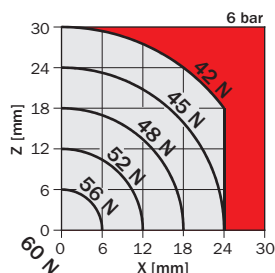
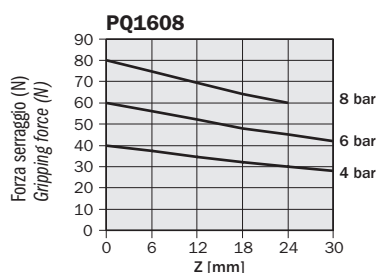
The force shown in these graphs refers to one jaw. The total force is double.

Forza di serraggio

I grafici mostrano la forza per griffa espressa dalla pinza in funzione della pressione, del braccio di leva Z e del disassamento del punto di presa X, quando l'aria compressa è fornita in FF. Se l'aria compressa è fornita in HF la forza si riduce del 50%.

Gripping force

The graphs show the gripping force on each jaw, as a function of the operating pressure, the lever arm length Z and the misalignment of gripping point X, when compressed air is supplied to FF. If compressed air is supplied to HF the gripping force is 50% lower.



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.

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 , $M_x s$, $M_y s$, $M_z s$, sono i carichi massimi ammissibili in condizioni statiche, cioè con le griffe ferme.

F_d , $M_x d$, $M_y d$, $M_z d$, 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).

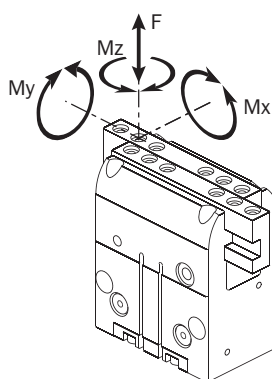
Safety loads

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 , $M_x s$, $M_y s$, $M_z s$, are the maximum permitted static loads, that is when the jaws are still.

F_d , $M_x d$, $M_y d$, $M_z d$, 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).



	PQ1608	PQ2012	PQ2516	PQ3015	PQ3523	PQ4533	PQ5047	PQ6063
F_s	50 N	120 N	250 N	400 N	800 N	1200 N	1600 N	2000 N
$M_x s$	1.5 Nm	2.5 Nm	6 Nm	10 Nm	17 Nm	35 Nm	64 Nm	105 Nm
$M_y s$	1.5 Nm	2.5 Nm	6 Nm	10 Nm	17 Nm	35 Nm	45 Nm	55 Nm
$M_z s$	1 Nm	2 Nm	5 Nm	8 Nm	14 Nm	28 Nm	50 Nm	85 Nm
F_d	0.5 N	1.2 N	2.5 N	4 N	8 N	12 N	18 N	25 N
$M_x d$	1 Ncm	2 Ncm	5 Ncm	8 Ncm	14 Ncm	28 Ncm	64 Ncm	145 Ncm
$M_y d$	1 Ncm	2 Ncm	5 Ncm	8 Ncm	14 Ncm	28 Ncm	64 Ncm	145 Ncm
$M_z d$	1 Ncm	2 Ncm	5 Ncm	8 Ncm	14 Ncm	28 Ncm	64 Ncm	145 Ncm
m	35 g	75 g	150 g	250 g	400 g	750 g	1400 g	2400 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.

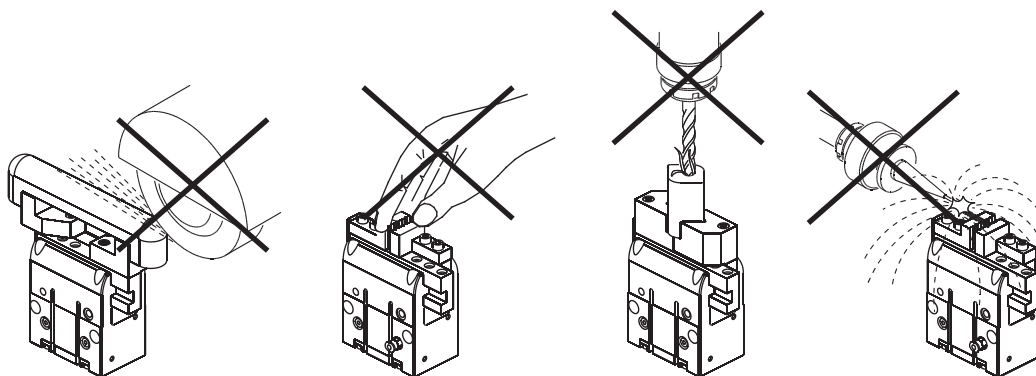
La pinza non deve essere messa in servizio prima che la macchina di cui fa parte sia stata dichiarata conforme alle disposizioni di sicurezza vigenti.

Cautions

Never let the gripper come into contact with corrosive substances 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 ingrassata ogni 10 milioni di cicli con:

- BERULUB FG-H 2 SL
(Lubrificante NSF H1 Registrazione No. 135919).

Il gioco delle griffe è indicato qui sotto.

Maintenance

Grease the gripper after 10 million cycles with:

- BERULUB FG-H 2 SL
(Lubricant NSF H1 Registration No. 135919).

The figure below shows the jaw backlash.

