

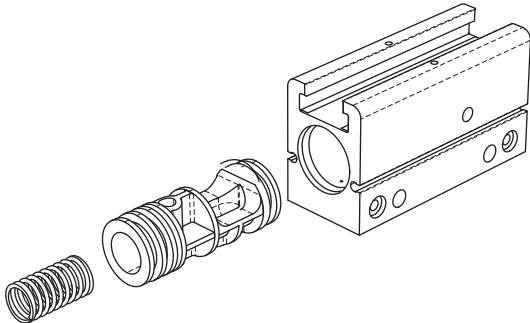
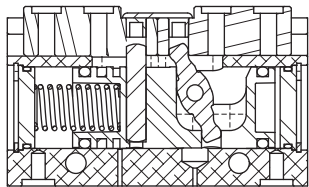
Versioni a molla

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.

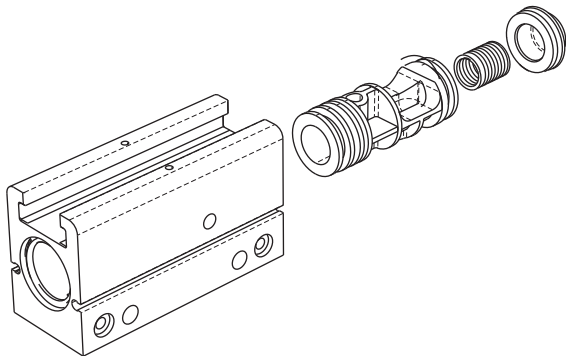
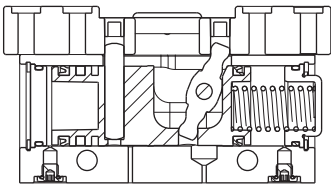
Spring option

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.

|                                                                  | SZ08-NC | SZ12-NC | SZ16-NC | SZ20-NC | SZ25-NC | SZ32-NC | SZ40-NC |
|------------------------------------------------------------------|---------|---------|---------|---------|---------|---------|---------|
| Forza di chiusura a 6 bar<br><i>Closing force at 6 bar total</i> | 38 N    | 60 N    | 108 N   | 184 N   | 280 N   | 454 N   | 738 N   |
| Forza di apertura a 6 bar<br><i>Opening force at 6 bar total</i> | 18 N    | 40 N    | 72 N    | 116 N   | 180 N   | 306 N   | 502 N   |
| Forza di chiusura a 0 bar<br><i>Closing force at 0 bar total</i> | 10 N    | 10 N    | 18 N    | 34 N    | 50 N    | 74 N    | 118 N   |
| Forza di apertura a 0 bar<br><i>Opening force at 0 bar total</i> | 0 N     | 0 N     | 0 N     | 0 N     | 0 N     | 0 N     | 0 N     |



|                                                                         | SZ08-NO | SZ12-NO | SZ16-NO | SZ20-NO | SZ25-NO | SZ32-NO |
|-------------------------------------------------------------------------|---------|---------|---------|---------|---------|---------|
| Forza di chiusura totale a 6 bar<br><i>Closing force at 6 bar total</i> | 18 N    | 40 N    | 68 N    | 116 N   | 180 N   | 306 N   |
| Forza di apertura totale a 6 bar<br><i>Opening force at 6 bar total</i> | 38 N    | 60 N    | 112 N   | 184 N   | 280 N   | 454 N   |
| Forza di chiusura totale a 0 bar<br><i>Closing force at 0 bar total</i> | 0 N     | 0 N     | 0 N     | 0 N     | 0 N     | 0 N     |
| Forza di apertura totale a 0 bar<br><i>Opening force at 0 bar total</i> | 10 N    | 10 N    | 10 N    | 34 N    | 50 N    | 74 N    |



## Fissaggio

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.

Si può fissare su un lato o sul fondo.

Utilizzare 2 viti (S3 o S4) e 2 boccole di centraggio (B), o spine (C) per SZ08.

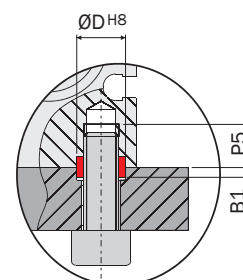
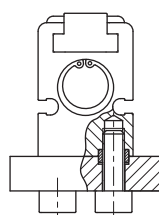
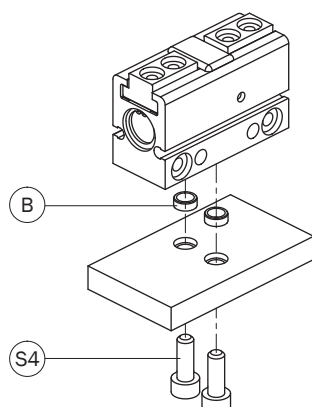
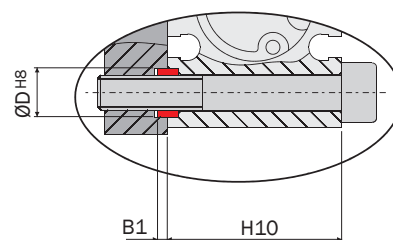
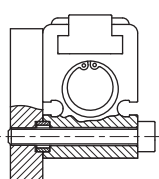
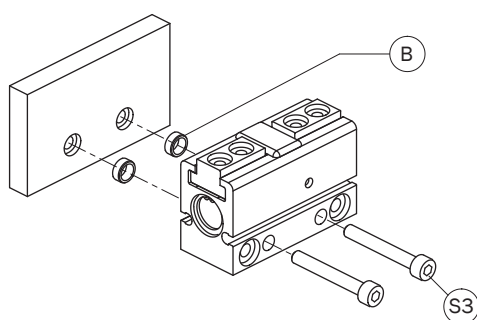
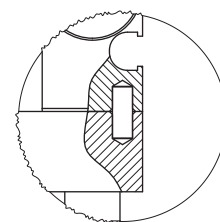
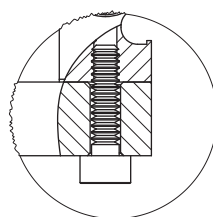
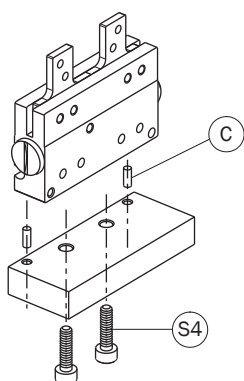
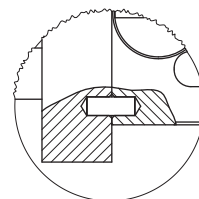
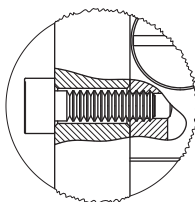
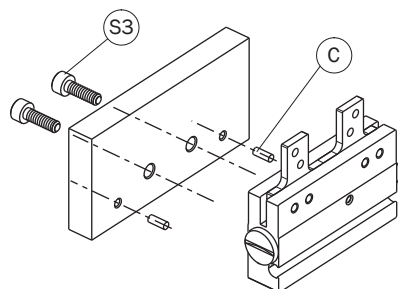
## Fastening

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.

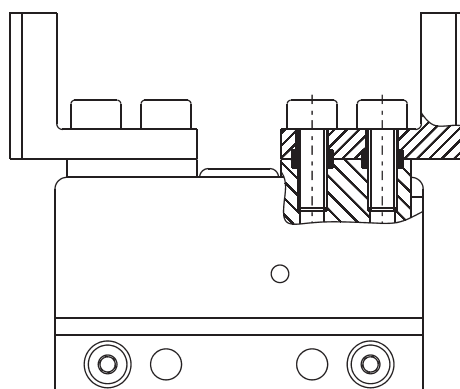
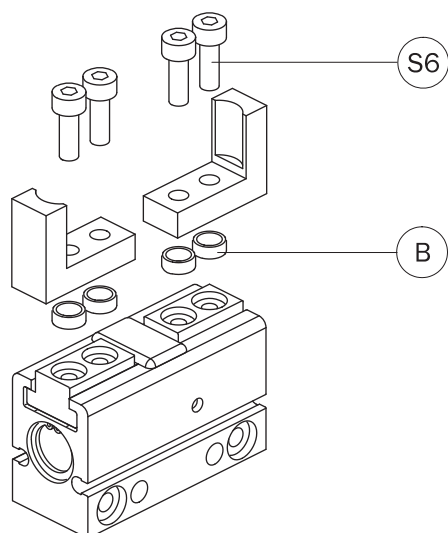
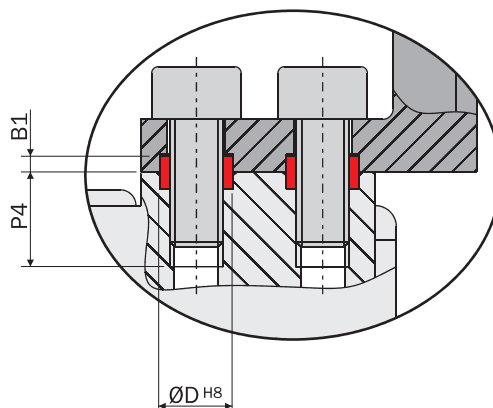
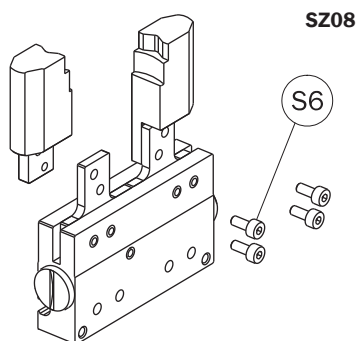
It can be fastened to one side or to the base.

Use 2 screws (S3 or S4) and 2 centering sleeves (B), or dowel pins (C) for SZ08.



Costruire le dita di presa il più possibile corte e leggere.  
Fissarle con 2 viti (S6) e 2 boccole di centraggio (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 pinza sono fornite 4 boccole di centraggio (B) per le dita di presa e 2 boccole (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.

|     | SZ08 | SZ12              | SZ16              | SZ20              | SZ25              | SZ32              | SZ40               |
|-----|------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| B   | -    | Ø7 H=3            | Ø7 H=3            | Ø7 H=3            | Ø9 H=4            | Ø9 H=4            | Ø12 H=6            |
| B1  | -    | 1.4               | 1.4               | 1.4               | 1.9               | 1.9               | 2.4                |
| D   | -    | Ø7 H <sup>B</sup> | Ø7 H <sup>B</sup> | Ø7 H <sup>B</sup> | Ø9 H <sup>B</sup> | Ø9 H <sup>B</sup> | Ø12 H <sup>B</sup> |
| S3  | M3   | M4                | M5                | M5                | M6                | M6                | M8                 |
| S4  | M3   | M5                | M5                | M5                | M6                | M6                | M8                 |
| P5  | -    | 6.5               | 6.5               | 6.5               | 11                | 11                | 15                 |
| H10 | -    | 22                | 25                | 30                | 37                | 42                | 51                 |
| S6  | M2   | M4                | M5                | M5                | M6                | M6                | M8                 |
| P4  | -    | 6.5               | 9                 | 10                | 14                | 15                | 16                 |

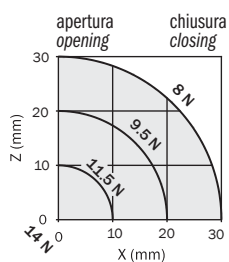
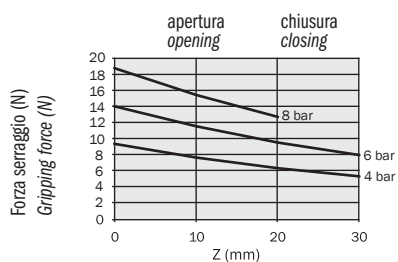
## Forza di serraggio

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.

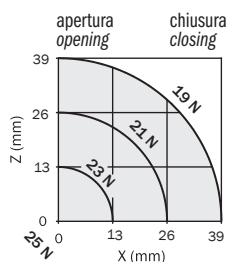
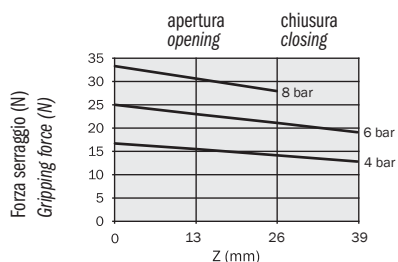
## Gripping force

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

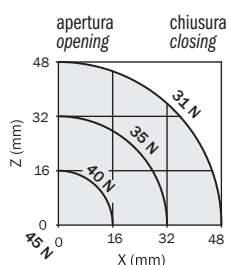
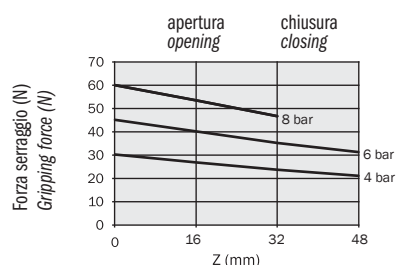
**SZ08**



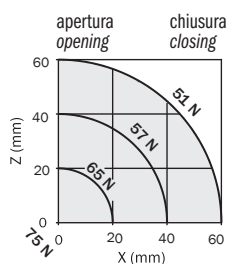
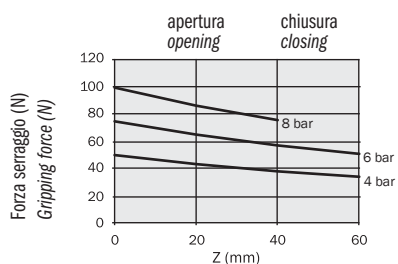
**SZ12**



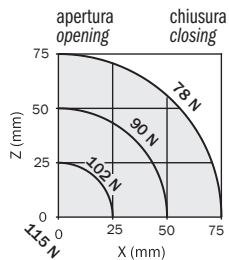
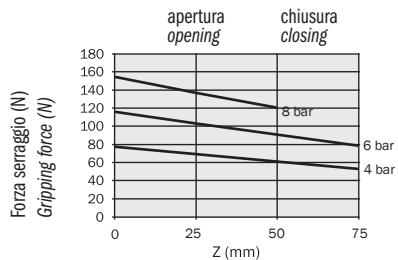
**SZ16**



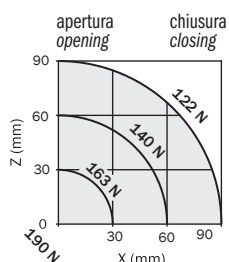
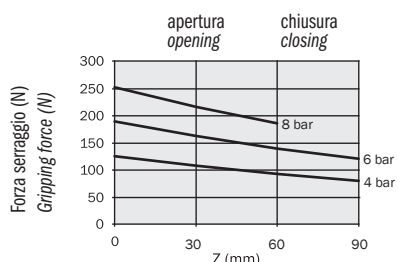
**SZ20**



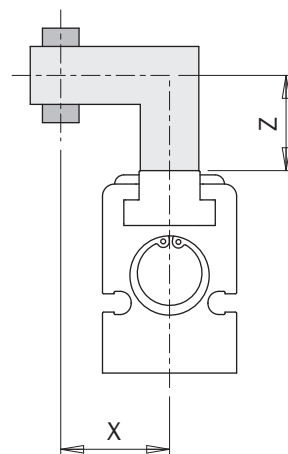
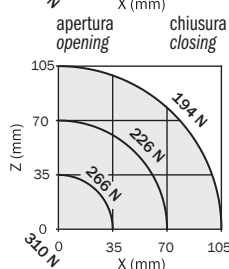
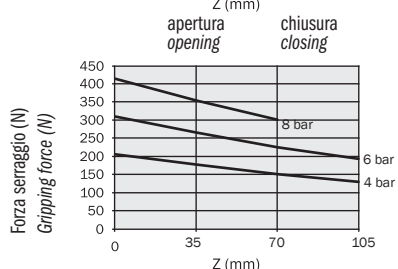
**SZ25**



**SZ32**



**SZ40**



**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.

Inoltre sono riportate le masse ammissibili (m) per ogni dito di presa in funzione del tempo di apertura o chiusura. Usare i regolatori di flusso (non forniti) per ottenere la velocità desiderata.

## Safety loads

Check the table for maximum permitted loads.

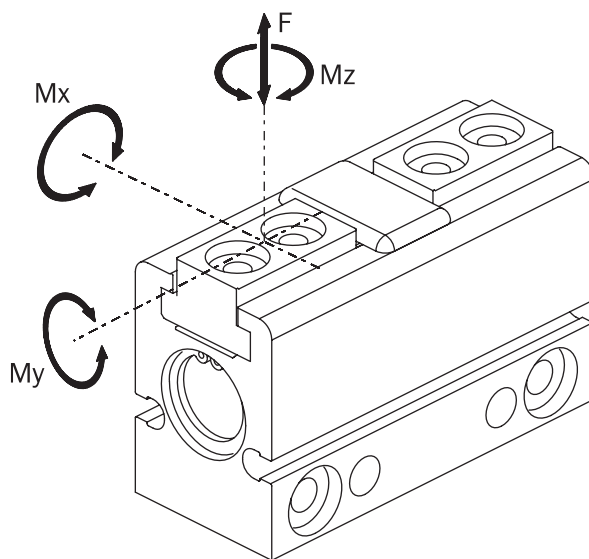
Excessive forces or torques can damage the gripper, cause functioning troubles and endanger the safety of the operator.

$F_s$ ,  $M_x s$ ,  $M_y s$ ,  $M_z s$ , 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 running jaws.

The following tables show the specified maximum loads (m) on each gripping tool as function of closing or opening time.

Use flow controllers (not supplied) to get the proper speed.



|         | SZ08     | SZ12    | SZ16   | SZ20  | SZ25   | SZ32   | SZ40   |
|---------|----------|---------|--------|-------|--------|--------|--------|
| $F_s$   | 10 N     | 50 N    | 100 N  | 150 N | 200 N  | 400 N  | 700 N  |
| $M_x s$ | 0.25 Nm  | 0.5 Nm  | 2 Nm   | 4 Nm  | 6 Nm   | 18 Nm  | 36 Nm  |
| $M_y s$ | 0.25 Nm  | 0.3 Nm  | 1.5 Nm | 3 Nm  | 4 Nm   | 12 Nm  | 24 Nm  |
| $M_z s$ | 0.25 Nm  | 0.5 Nm  | 2 Nm   | 4 Nm  | 6 Nm   | 18 Nm  | 36 Nm  |
| $F_d$   | 0.2 N    | 1 N     | 2 N    | 3 N   | 4 N    | 8 N    | 12 N   |
| $M_x d$ | 0.25 Ncm | 1 Ncm   | 4 Ncm  | 8 Ncm | 12 Ncm | 24 Ncm | 36 Ncm |
| $M_y d$ | 0.25 Ncm | 0.8 Ncm | 3 Ncm  | 6 Ncm | 8 Ncm  | 16 Ncm | 24 Ncm |
| $M_z d$ | 0.25 Ncm | 1 Ncm   | 4 Ncm  | 8 Ncm | 12 Ncm | 24 Ncm | 36 Ncm |
| m 0.3s  | -        | -       | -      | -     | -      | 800 g  | 1200 g |
| m 0.2s  | -        | -       | -      | 300 g | 400 g  | 600 g  | 900 g  |
| m 0.10s | -        | -       | 200 g  | 250 g | 320 g  | 400 g  | 600 g  |
| m 0.08s | 20 g     | 100 g   | 160 g  | 200 g | 240 g  | 300 g  | -      |
| m 0.06s | 15 g     | 80 g    | 120 g  | 150 g | 160 g  | -      | -      |
| m 0.03s | 10 g     | 60 g    | 80 g   | -     | -      | -      | -      |
| m 0.02s | 8 g      | 40 g    | -      | -     | -      | -      | -      |

### 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).

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

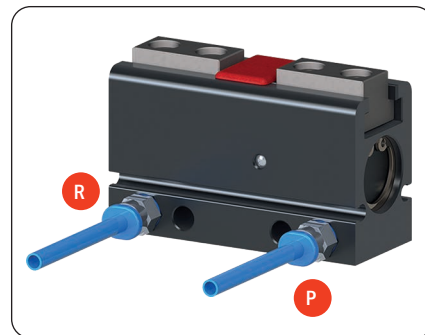
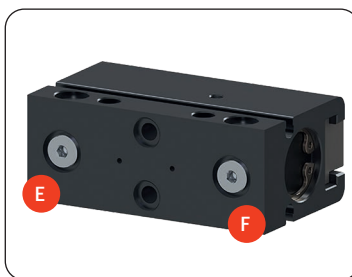
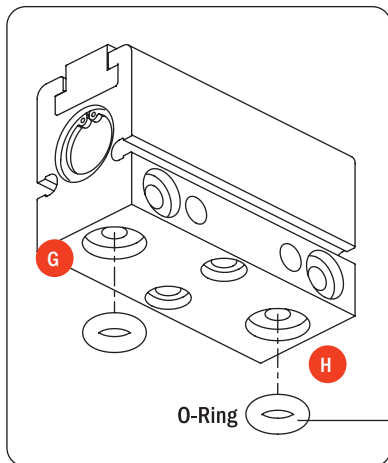
The compressed air feeding can be accomplished on the lateral air ports (P and R) with fittings and hoses (not supplied). Or it can be accomplished directly by the bottom air ports (G and H) removing the plugs (E and F).

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.



| SZ08 | SZ12       | SZ16       | SZ20       | SZ25       | SZ32       | SZ40       |
|------|------------|------------|------------|------------|------------|------------|
| Ø1x6 | Ø2.62x5.23 | Ø2.62x5.23 | Ø2.62x5.23 | Ø2.62x5.23 | Ø1.78x15.6 | Ø1.78x15.6 |

### 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).

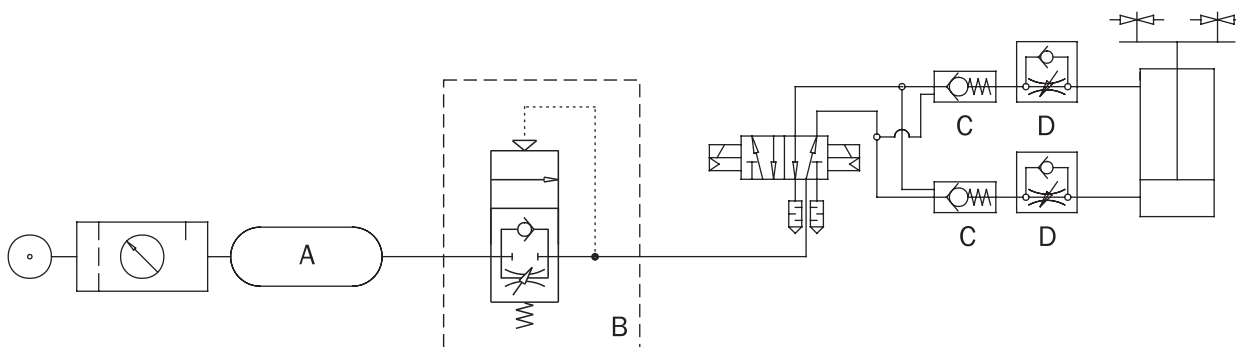
### Pneumatic circuit

Possible problems on a compressed air circuit:

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



### 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.

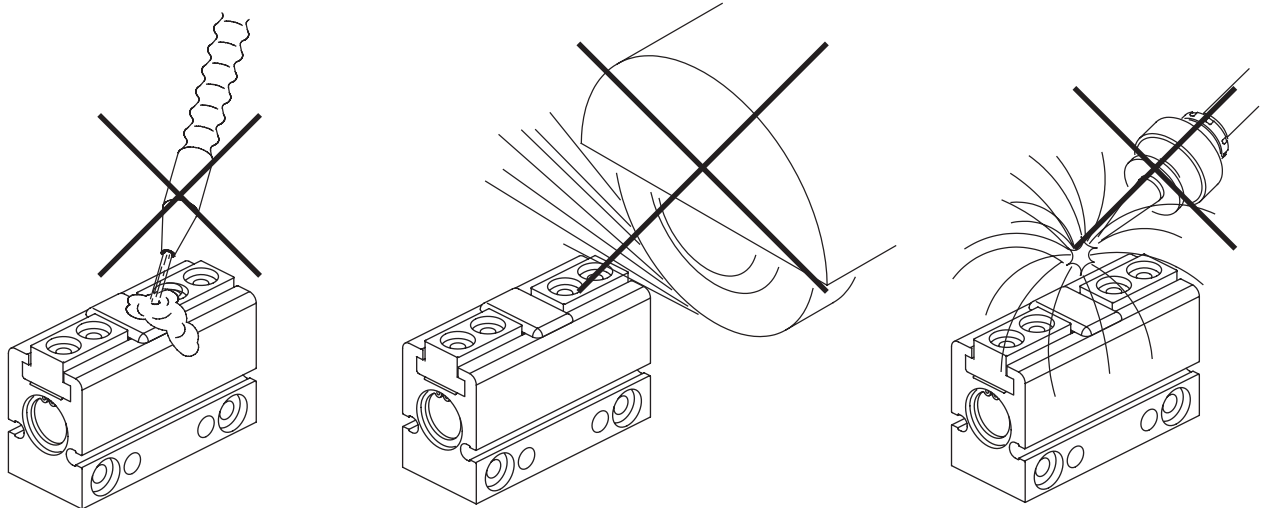
La pinza non deve essere messa in servizio prima che la macchina di cui fa parte sia stata dichiarata conforme alle disposizioni di sicurezza vigenti.

### Caution

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 ingrassata ogni 10 milioni di cicli con:

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

### Maintenance

Grease the gripper after 10 million cycles with:

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

