

Pinza pneumatica a 2 griffe ad azione parallela autocentrante (serie SGP-S)

- Azionamento a doppio effetto.
- Meccanismo di regolazione del gioco brevettato.
- Prestazioni elevate in dimensioni ridotte.
- Costruzione robusta: grande durata e affidabilità senza manutenzione.
- Diverse possibilità di fissaggio e alimentazione.
- Predisposta per sensori induttivi regolabili.

2-jaw parallel self-centering pneumatic gripper (series SGP-S)

- Double acting.
- Patented backlash adjusting system.
- High performance in small dimensions.
- The rugged construction lends itself to heavy duty applications for a trouble free long life without maintenance.
- Various fastening and air feeding options.
- Prepared for adjustable inductive sensors.



SGP-20S



SGP-25S



SGP-32S



SGP-40S

| | SGP-20S | SGP-25S | SGP-32S | SGP-40S |
|--|--|---------------------|---------------------|---------------------|
| Fluido Medium | Aria compressa filtrata, lubrificata / non lubrificata Filtered, lubricated / non lubricated compressed air | | | |
| Pressione di esercizio Operating pressure range | 2 ÷ 8 bar | | | |
| Temperatura di esercizio Operating temperature range | 5° ÷ 60°C. | | | |
| Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar on each jaw | 23 N | 52 N | 67 N | 80 N |
| Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar | 46 N | 104 N | 134 N | 160 N |
| Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar on each jaw | 20 N | 47 N | 60 N | 73 N |
| Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar | 40 N | 94 N | 120 N | 146 N |
| Corsa totale (±0.3 mm) Total stroke | 4 mm | 6 mm | 8 mm | 12 mm |
| Frequenza max funzionamento continuativo Maximum working frequency | 3 Hz | 3 Hz | 3 Hz | 3 Hz |
| Consumo d'aria per ciclo Cycle air consumption | 0.5 cm ³ | 1.4 cm ³ | 2.4 cm ³ | 4.5 cm ³ |
| Tempo di chiusura senza carico Closing time without load | 0.01 s | 0.01 s | 0.02 s | 0.05 s |
| Ripetibilità Repetition accuracy | 0.02 mm | 0.02 mm | 0.02 mm | 0.02 mm |
| Peso Weight | 33 g | 43 g | 86 g | 170 g |

Sensori

Il rilevamento della posizione di lavoro é affidato a due sensori induttivi S1 e S2 (non forniti), che rilevano la posizione delle teste delle viti T1 e T2, situate sulla griffa destra.

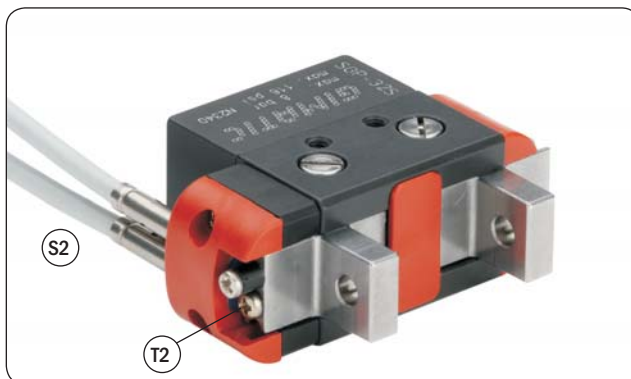
Sensors

The operating position can be checked by two inductive sensors S1 and S2 (not supplied), detecting the position of the screw heads T1 and T2 placed on the right jaw.

Pinza totalmente chiusa / Fully closed gripper



Pinza totalmente aperta / Fully open gripper



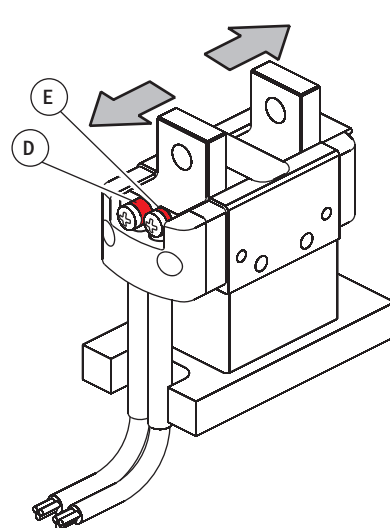
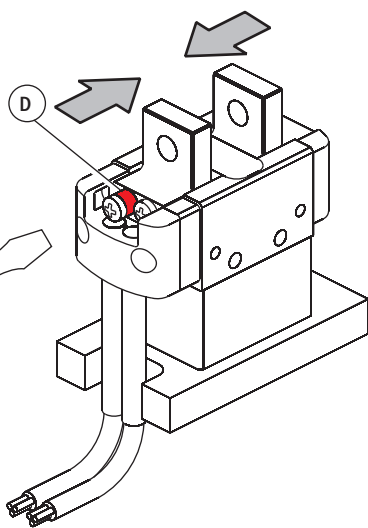
Agendo sulle viti si regola la posizione di lettura dei sensori. Il distanziale di plastica (D) è da accorciare in base alla regolazione.

Il secondo distanziale (E) é da installare, se la pinza è usata per serrare un carico dall'interno.

The detected position can be adjusted by the screws.

The plastic spacer (D) has to be shortened according to the adjustment.

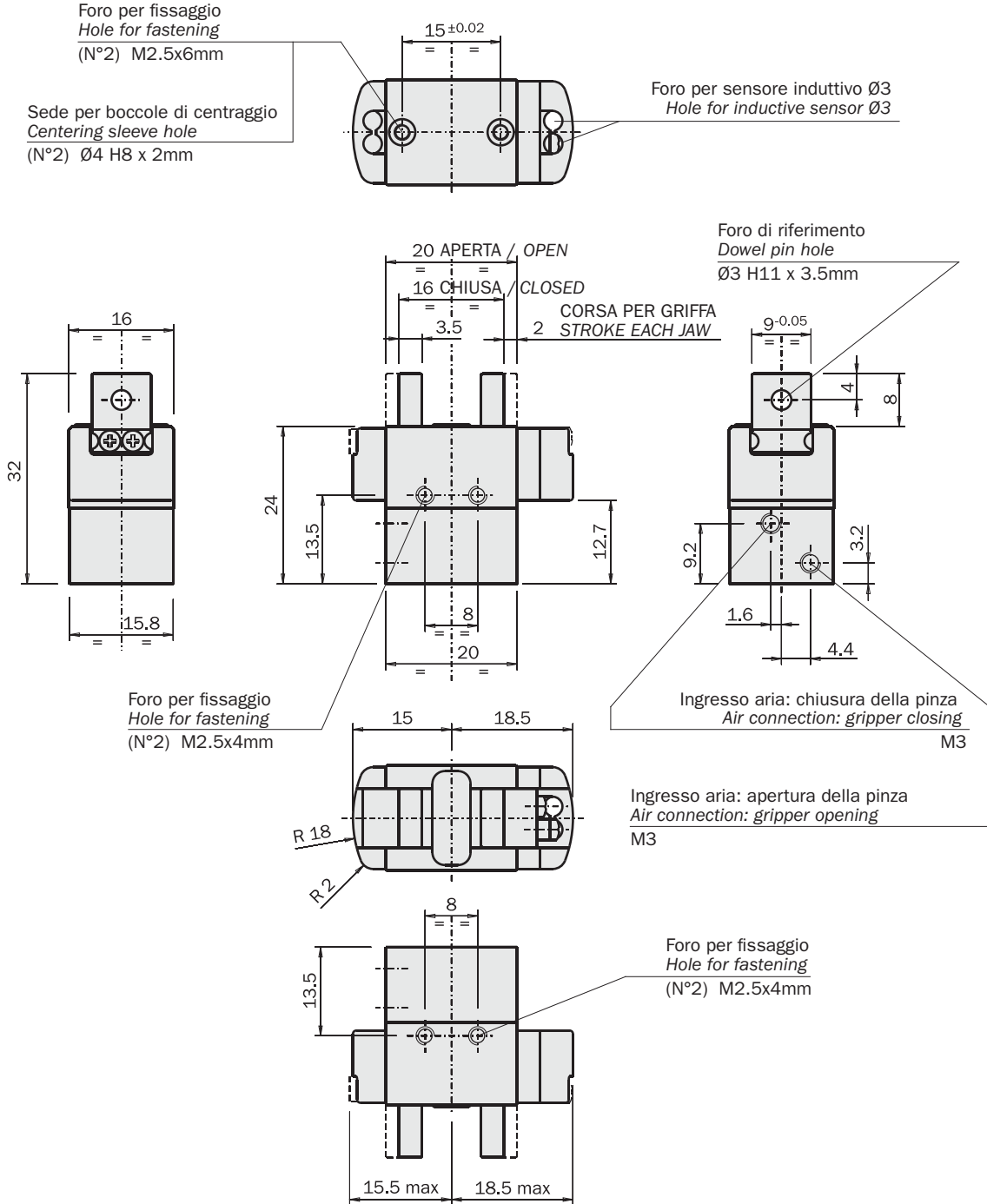
The second spacer (E) is to be installed, when the gripper is used for internal gripping applications.

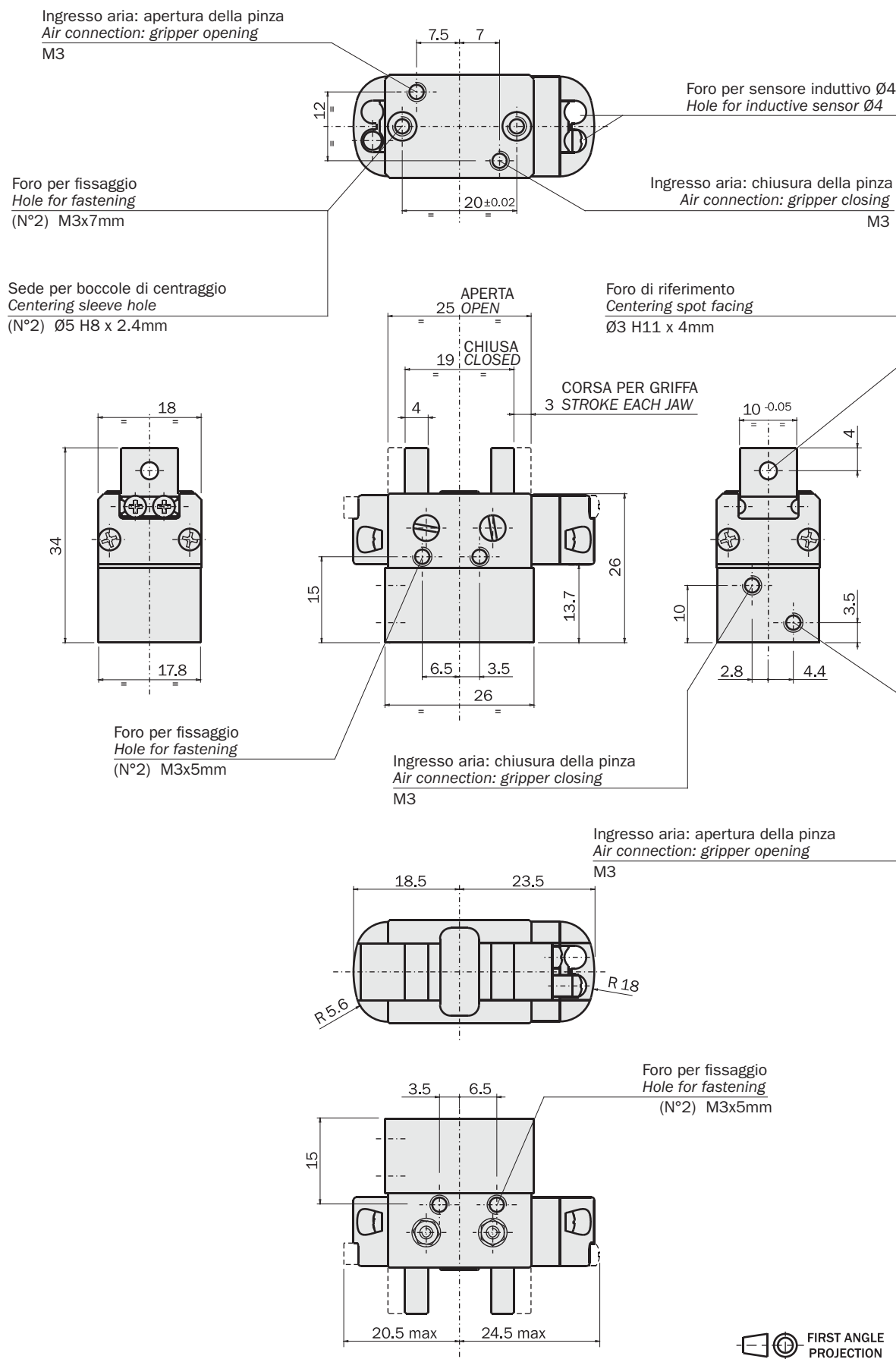


Usare sensori induttivi di diametro 3mm sulla SGP-20S e di diametro 4mm sulle altre taglie.

Use 3mm diameter inductive sensors, on the SGP-20S and 4mm diameter, on the other sizes.

| | SGP-20S | SGP-25S | SGP-32S | SGP-40S |
|---|---------|---------|---------|---------|
| S | Ø3mm | Ø4mm | Ø4mm | Ø4mm |

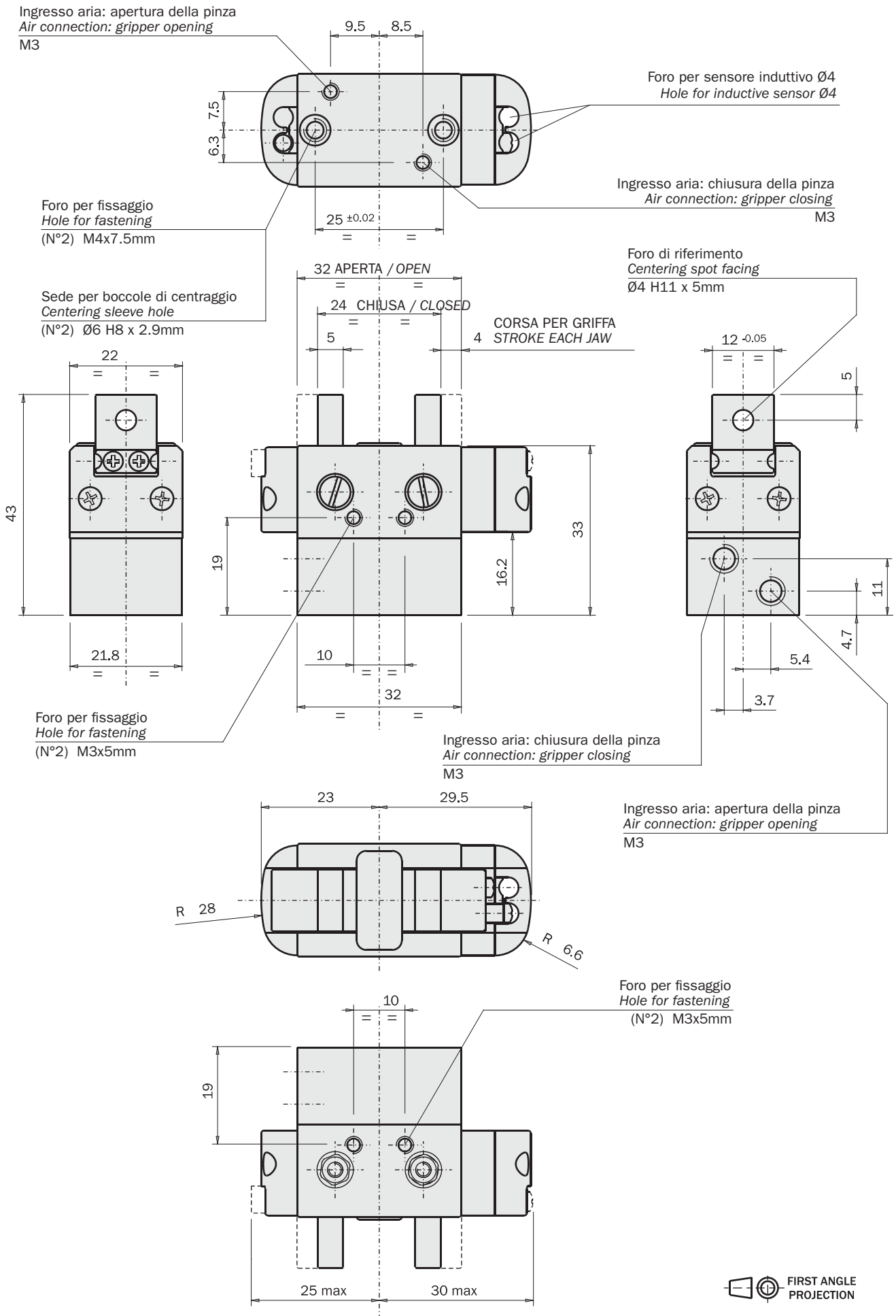




12/2011

Dimensioni (mm) / Dimensions (mm)

SGP-32S



FIRST ANGLE PROJECTION

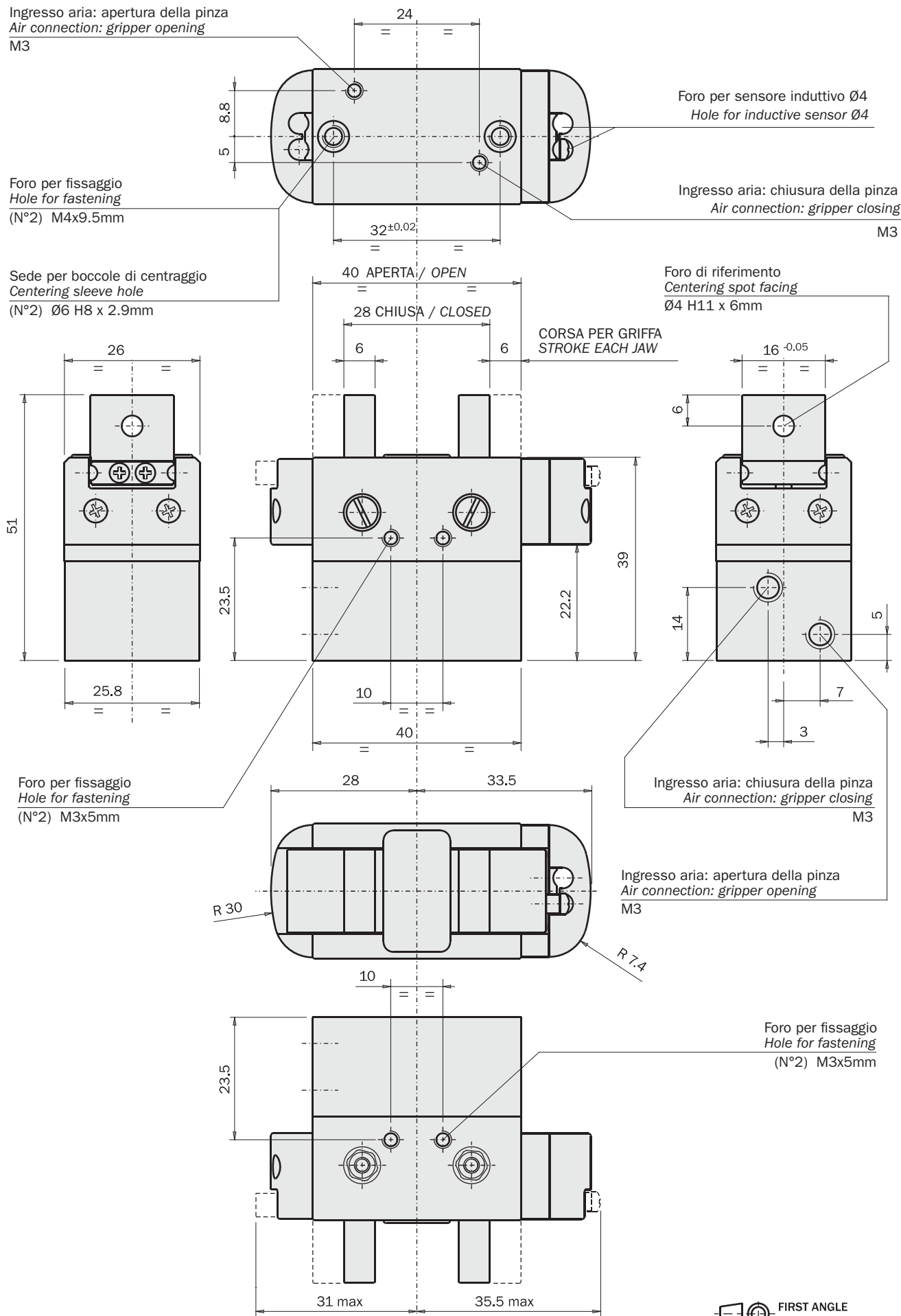
Dimensioni (mm) / Dimensions (mm)

SGP-40S

Ingresso aria: apertura della pinza
Air connection: gripper opening
M3

Foro per fissaggio
Hole for fastening
(N°2) M4x9.5mm

Sede per boccole di centraggio
Centering sleeve hole
(N°2) Ø6 H8 x 2.9mm



PINZE PNEUMATICHE
PNEUMATIC GRIPPERS



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.

1 - Per fissare la pinza su un lato utilizzare due viti passanti nella piastra ed avvitare nei fori filettati (A) della pinza (presenti sulle due facce).

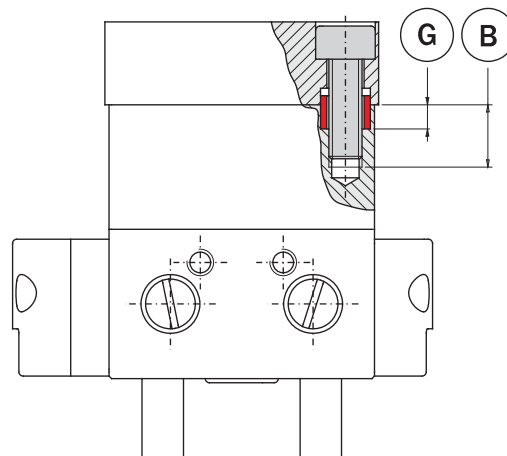
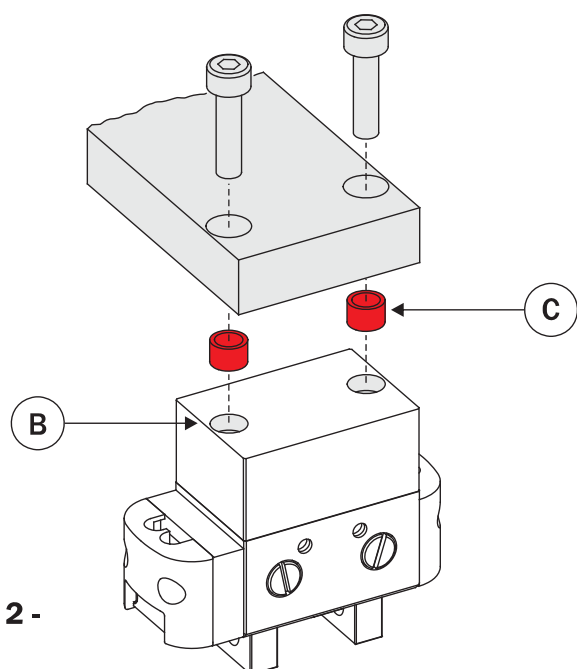
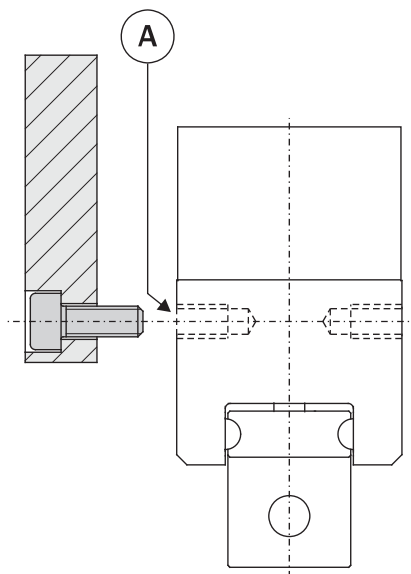
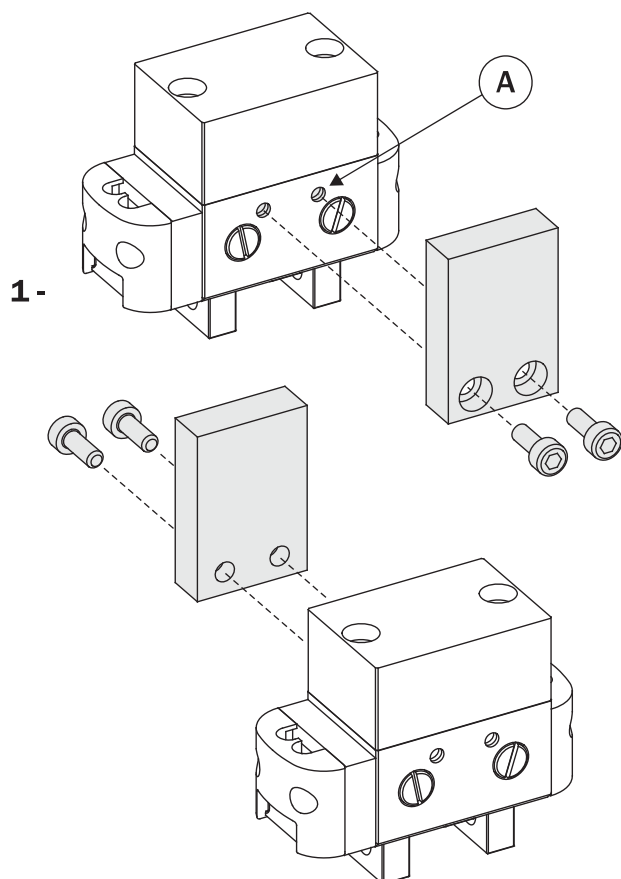
2 - Per fissare la pinza sul fondo utilizzare due viti passanti nella piastra ed avvitare nei fori filettati (B). Usare anche le due boccole (C) fornite nella confezione, per il centraggio nei fori calibrati (G).

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.

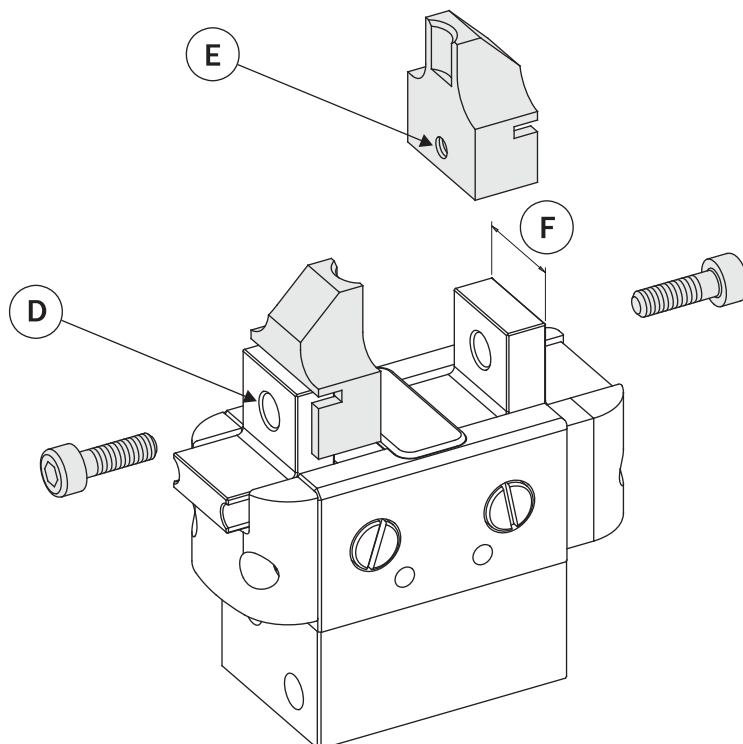
1 - To fasten the gripper on one side, use a plate with two through holes and two screws to be screwed on the threaded holes (A). They are on both sides of the gripper housing.

2 - To fasten gripper to base use two screws passing through the holes in the plate and screwed in the threaded holes (B). Use also the two centering sleeves (C) supplied in the packaging, in the calibrated holes (G).



Costruire le dita di presa il più possibile corte e leggere.
Fissarle con una vite passante nel foro (D) ed avvitata nel foro filettato del dito di presa (E).
Per il centraggio sulle griffe si può fare riferimento alla quota calibrata (F).

The gripping tools must be as short and light as possible.
They must be fastened by one screw in the through hole (D) to be screwed in the threaded hole (E) in the gripping tool.
For a precise positioning on the jaw use the calibrated dimension (F).



| | SGP-20S | SGP-25S | SGP-32S | SGP-40S |
|---|-----------------------|------------------------|------------------------|------------------------|
| A | M2.5x4 mm | M3x5 mm | M3x5 mm | M3x5 mm |
| B | M2.5x6 mm | M3x7 mm | M4x7.5 mm | M4x9.5 mm |
| C | Ø4h8 x Ø2.6 x 4 mm | Ø5h7 x Ø3.2 x 4.4 mm | Ø6h7 x Ø4.2 x 5.3 mm | Ø6h7 x Ø4.2 x 5.3 mm |
| D | Ø3H11 x 3.5 mm | Ø3H11 x 4 mm | Ø4H11 x 5 mm | Ø4H11 x 6 mm |
| E | M3 | M3 | M4 | M4 |
| F | 9 ^{-0.05} mm | 10 ^{-0.05} mm | 12 ^{-0.05} mm | 16 ^{-0.05} mm |
| G | Ø4H8 x 2 mm | Ø5H8 x 2.4 mm | Ø6H8 x 2.9 mm | Ø6H8 x 2.9 mm |

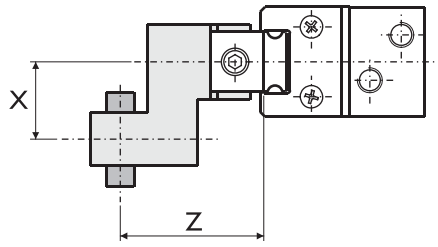
Forza di serraggio

I grafici mostrano la forza media per griffa espressa dalla pinza in funzione della pressione, del braccio di leva Z e del disassamento del punto di presa X.

Gripping force

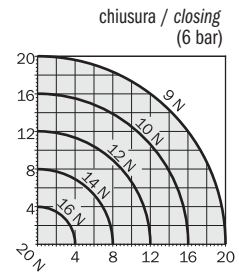
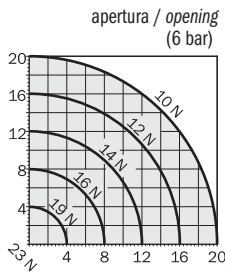
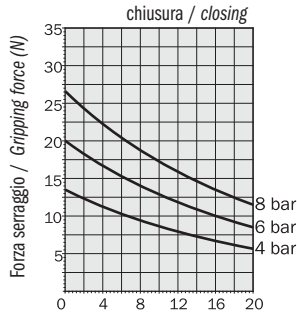
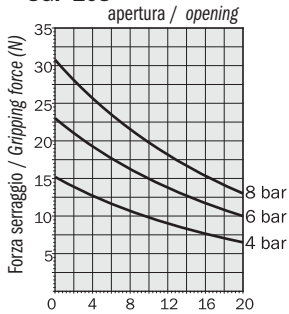
The graphs show the medium gripping force on each jaw, as a function of the operating pressure, the gripping tool length Z and the overhanging X.

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

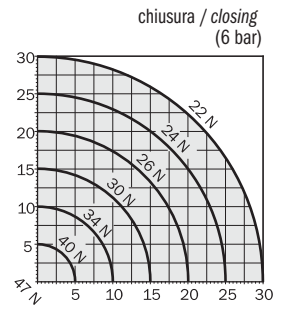
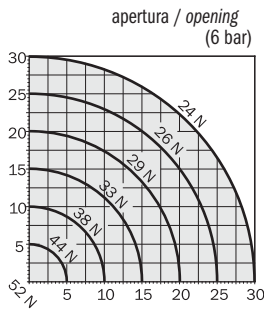
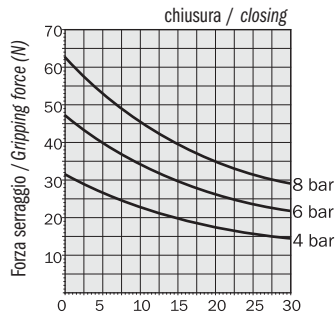
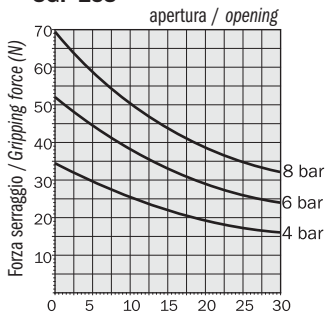


The force shown in these graphs refers to one jaw.
The total force is double.

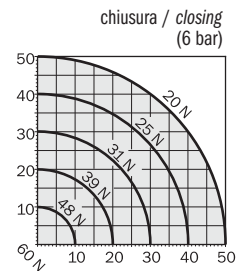
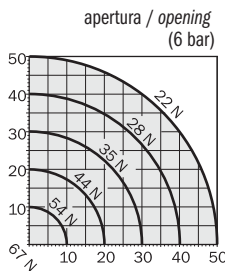
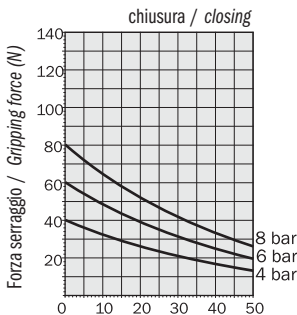
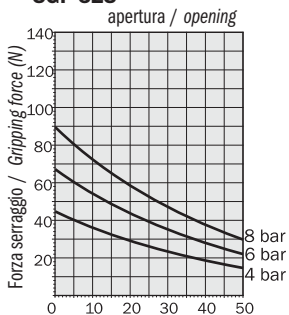
SGP-20S



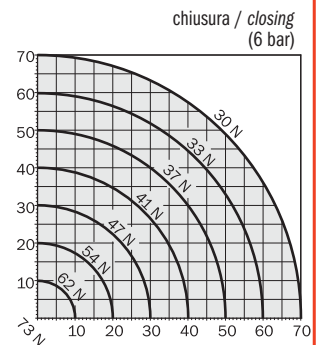
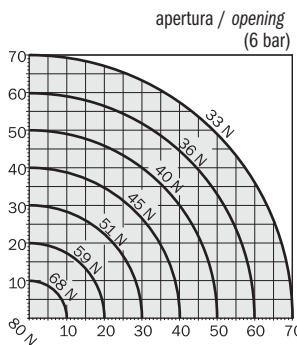
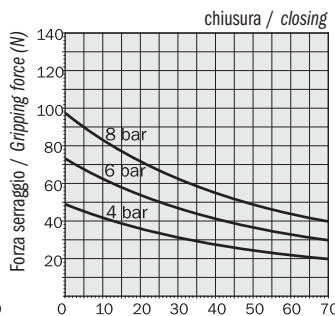
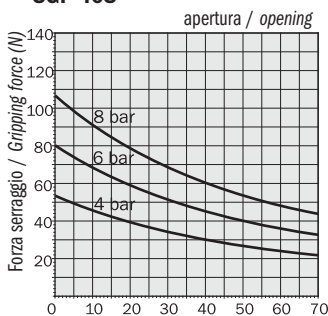
SGP-25S



SGP-32S



SGP-40S



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.

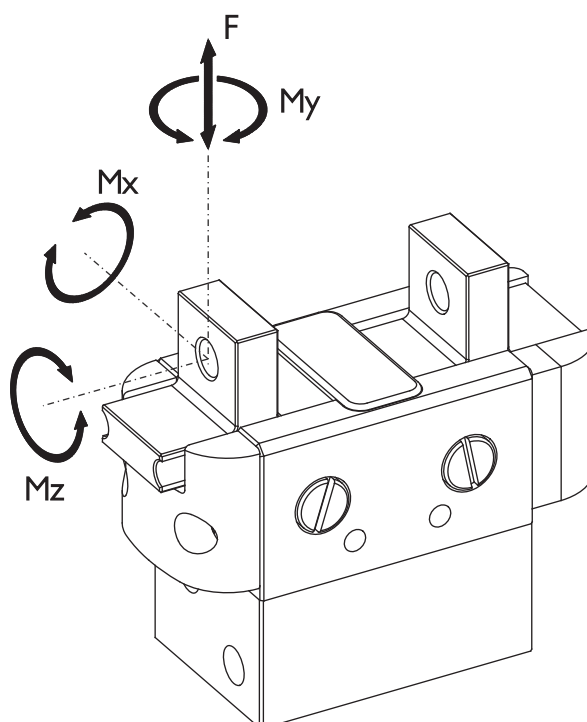
Safety loads

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.



| | SGP-20S | SGP-25S | SGP-32S | SGP-40S |
|-----------|---------|---------|---------|---------|
| F_s | 30 N | 50 N | 70 N | 120 N |
| $M_x s$ | 1 Nm | 2 Nm | 4 Nm | 6 Nm |
| $M_y s$ | 1 Nm | 2 Nm | 4 Nm | 6 Nm |
| $M_z s$ | 1 Nm | 2 Nm | 4 Nm | 6 Nm |
| F_d | 0.3 N | 0.5 N | 0.7 N | 1.2 N |
| $M_x d$ | 1 Ncm | 2 Ncm | 4 Ncm | 6 Ncm |
| $M_y d$ | 1 Ncm | 2 Ncm | 4 Ncm | 6 Ncm |
| $M_z d$ | 1 Ncm | 2 Ncm | 4 Ncm | 6 Ncm |
| m 0.2s | 30 g | 50 g | 70 g | 120 g |
| m 0.05s | 10 g | 20 g | 30 g | 40 g |
| m 0.02s | 7 g | 15 g | 20 g | - |
| m 0.01s | 5 g | 10 g | - | - |

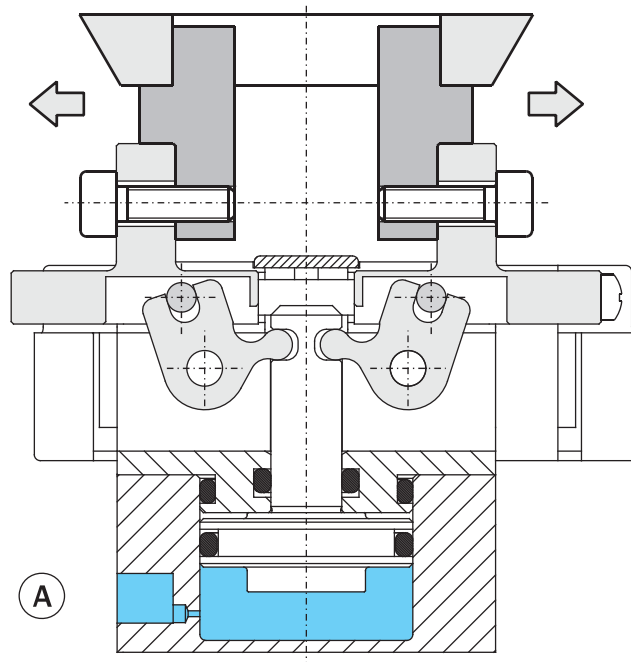
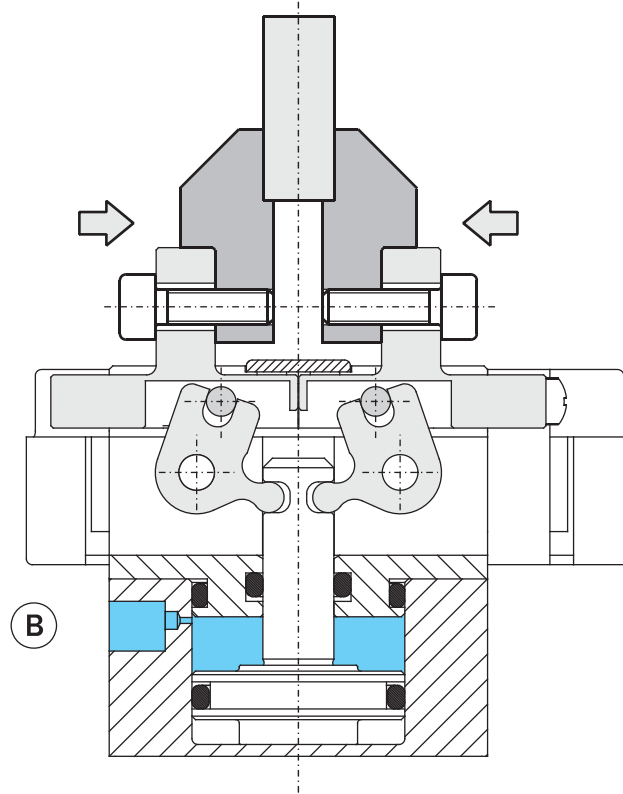
Serraggio

La pinza è a doppio effetto e può quindi essere usata per serrare il carico sia dall'esterno (B) che dall'interno (A). La forza di serraggio è maggiore in apertura.

Gripping

The gripper is double-acting for either internal (A) or external (B) gripping applications. The opening force is higher.

Camera in pressione
Pressurized chamber



Connessione pneumatica

La pinza si alimenta con aria compressa dai fori laterali (A e B) montandovi i raccordi dell'aria ed i relativi tubi (non forniti). Oppure (eccetto SGP-20S) si alimenta direttamente dai fori inferiori (C e D) rimuovendo i tappi.

Aria compressa in A o C: apertura della pinza.
Aria compressa in B o D: chiusura della pinza.

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

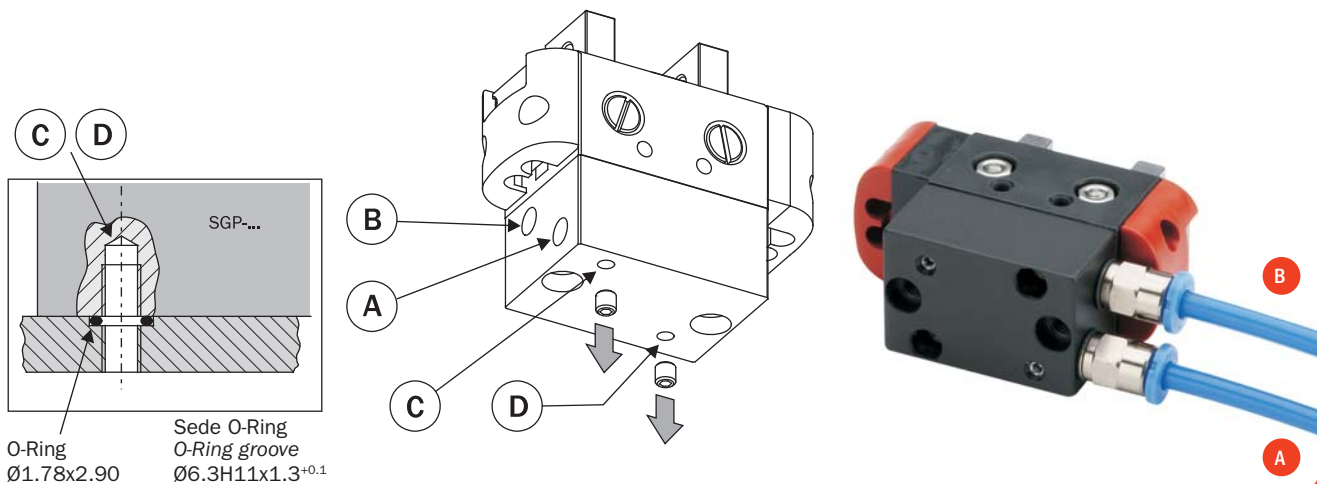
The compressed air feeding can be accomplished on the lateral air ports (A and B) with fittings and hoses (not supplied). Or (except SGP-20S) it can be accomplished directly by the bottom air ports (C and D) removing the plugs.

Compressed air in A or C: gripper opening.
Compressed air in B or D: gripper closing.

The compressed air, must be filtered from 5 to 40 µm.

Maintain the medium selected at the start, lubricated or not, for the complete service life of the gripper.

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



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).

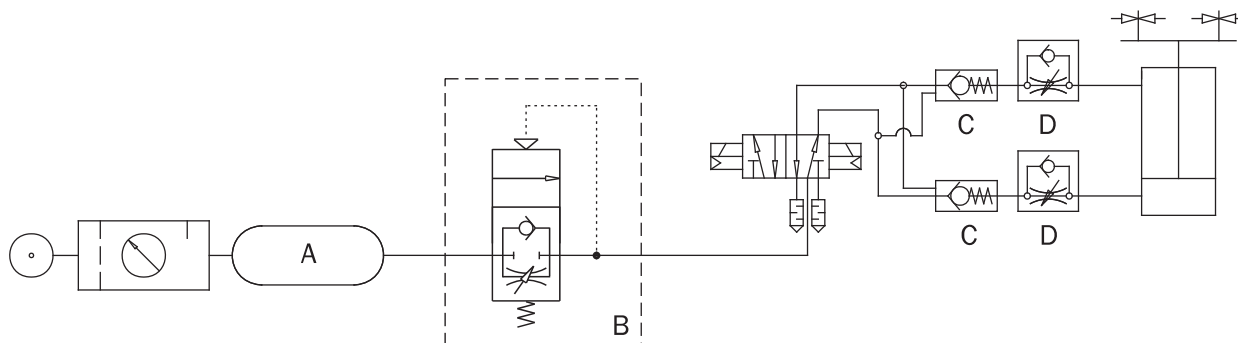
Pneumatic circuit

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

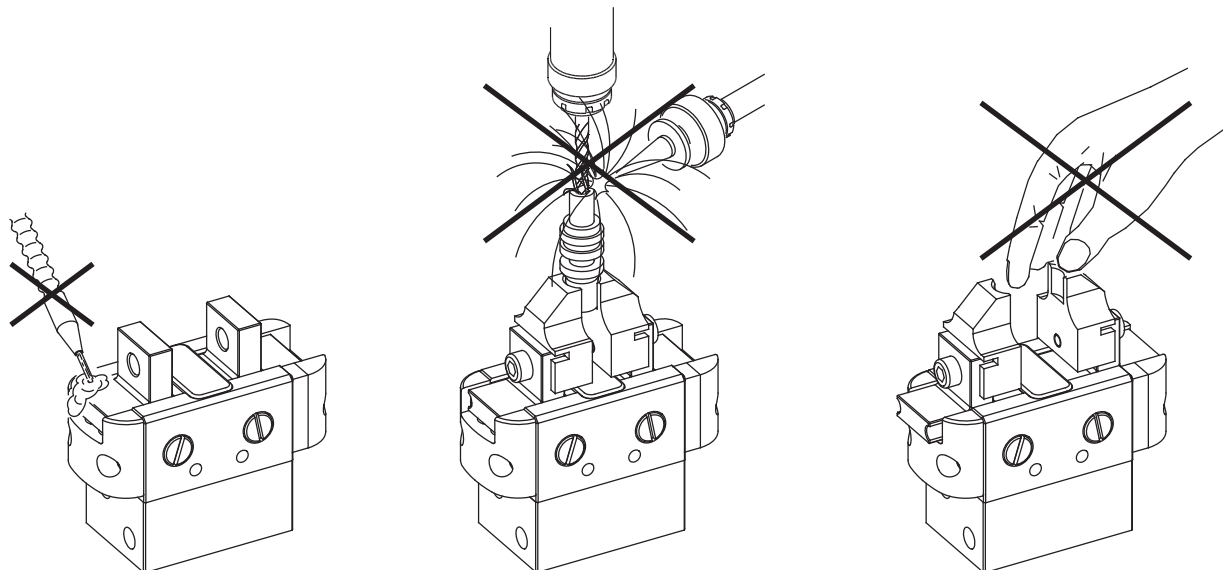
Evitare il contatto con sostanze corrosive, spruzzi di saldatura, polveri abrasive, che potrebbero danneggiare la funzionalità della pinza.

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

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 gripping 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.

**Manutenzione**

La pinza va ingrassata ogni 20 milioni di cicli con:

- Molykote DX (parti metalliche);
- Molykote PG75 (guarnizioni).

Il gioco delle griffe, indicato qui sotto, viene regolato in fabbrica.

NON USARE MAI LE VITI DI REGOLAZIONE PER MODIFICARLO.

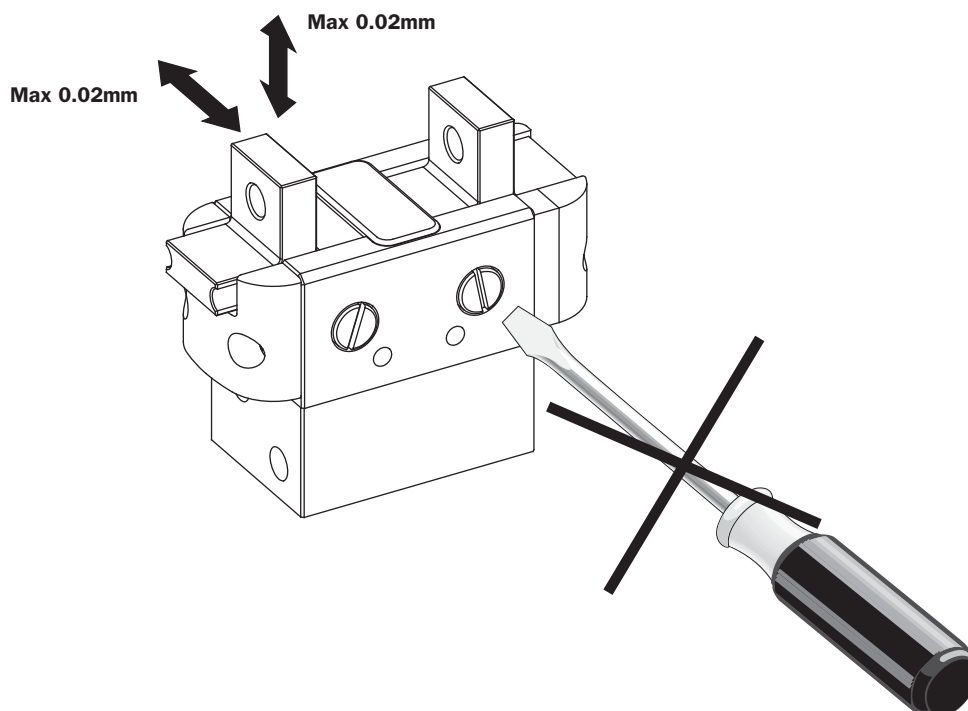
Maintenance

Grease the gripper after 20 million cycles with:

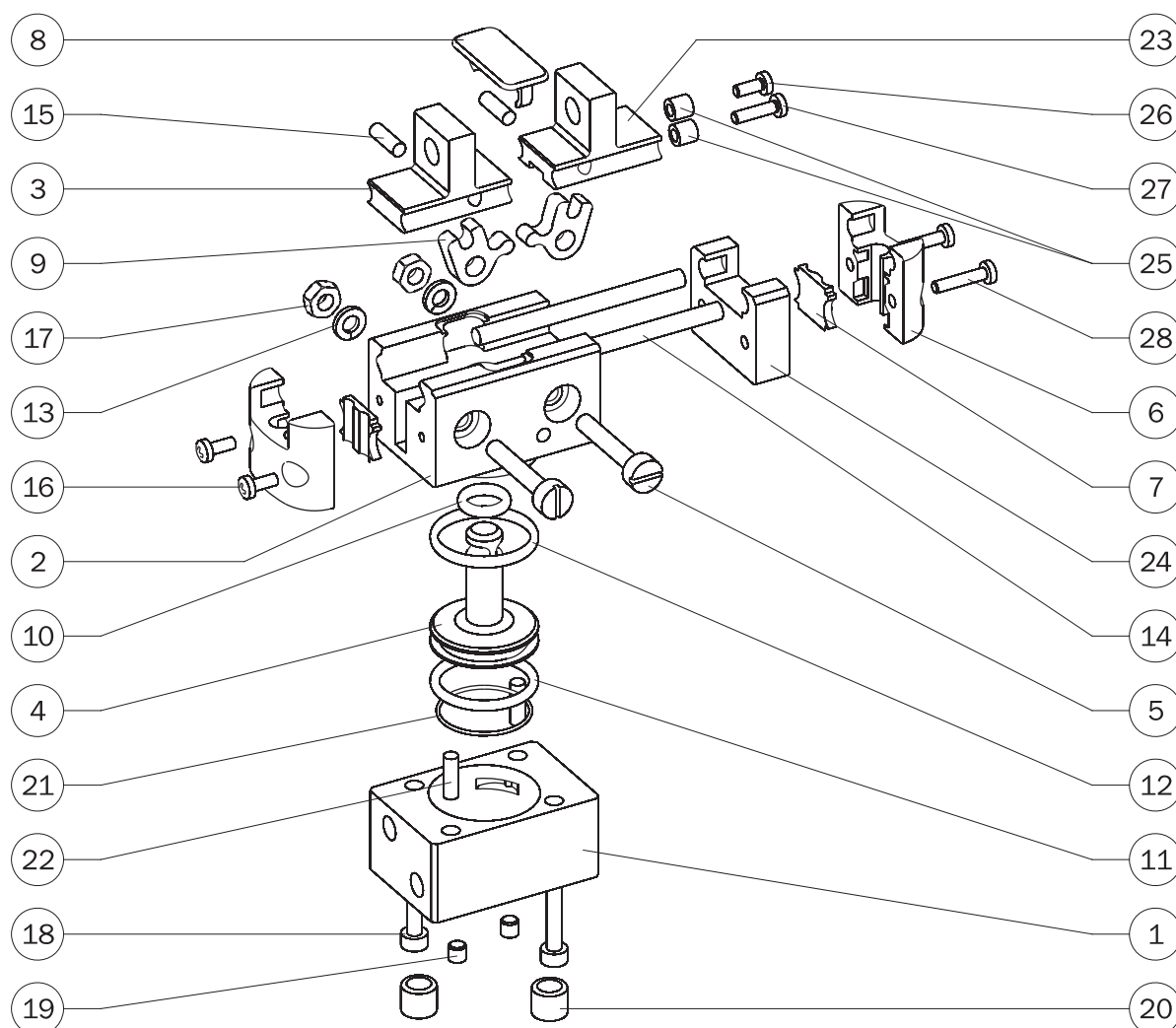
- Molykote DX (metal on metal);
- Molykote PG75 (gaskets).

The jaw backlash, showed in the picture below, is set in factory.

NEVER USE THE ADJUSTING SCREWS TO MODIFY IT.



Elenco delle parti / Part list



| | | SGP-20S | SGP-25S | SGP-32S | SGP-40S | | |
|----|----------------------|-----------------------|-----------------------|-----------------------|------------------------|------------------|----|
| 1 | Corpo pinza | SGP-20-01 | SGP-25-01 | SGP-32-01 | SGP-40-01 | Gripper housing | 1 |
| 2 | Porta fulcri | SGP-20-02 | SGP-25-02 | SGP-32-02 | SGP-40-02 | Jaw holder | 2 |
| 3 | Griffa sinistra | SGP-20-03 | SGP-25-03 | SGP-32-03 | SGP-40-03 | Left jaw | 3 |
| 4 | Pistone | SGP-20-04 | SGP-25-04 | SGP-32-04 | SGP-40-04 | Piston | 4 |
| 5 | Vite speciale | SGP-20-05 | SGP-25-05 | SGP-32-05 | SGP-40-05 | Special screw | 5 |
| 6 | Testata | SGP-20-06 | SGP-25-06 | SGP-32-06 | SGP-40-06 | Head cap | 6 |
| 7 | Guida sensore | SGP-20-07 | SGP-25-07 | SGP-32-07 | SGP-40-07 | Sensor holder | 7 |
| 8 | Protezione | SGP-20-08 | SGP-25-08 | SGP-32-08 | SGP-40-08 | Protection | 8 |
| 9 | Leva | PAR-10-8C | SP-20-4 | SP-25-4 | SGP-40-09 | Lever | 9 |
| 10 | O-RING | Ø1.78x3.69 (GUAR-044) | Ø1.78x4.48 (GUAR-029) | Ø1.78x6.07 (GUAR-039) | Ø1.78x6.75 (GUAR-012) | O-RING | 10 |
| 11 | Guarnizione dinamica | Ø1.78x7.66 (GUAR-045) | 16x9x2.5 (GUAR-002P) | Ø1.78x14 (GUAR-007) | 20x13x2.5 (GUAR-040P) | Dynamic gasket | 11 |
| 12 | O-RING | Ø1x9 (GUAR-168) | Ø1x14 (GUAR-084) | Ø1.78x14 (GUAR-007) | Ø1.78x17.17 (GUAR-076) | O-RING | 12 |
| 13 | Rosetta elastica | - | Ø2.2 DIN127A | Ø3.2 DIN127A | Ø3.2 DIN127A | Elastic washer | 13 |
| 14 | Spina di riferimento | Ø2.5x25mm DIN6325 | Ø2.5x32mm DIN6325 | Ø3x40mm DIN6325 | Ø3x50mm DIN6325 | Dowel pin | 14 |
| 15 | Spina di riferimento | - | Ø2x8mm DIN6325 | Ø2.5x8mm DIN6325 | Ø2.5x11.8 mm DIN5402 | Dowel pin | 15 |
| 16 | Vite | M1.6x5mm DIN7985 | M2x5mm DIN7985A INOX | M2x5mm DIN7985A INOX | M2x5 mm DIN7985A INOX | Screw | 16 |
| 17 | Dado esagonale | - | M2 DIN936 INOX | M3 DIN934 INOX | M3 DIN934 INOX | Nut | 17 |
| 18 | Vite | M2x12mm DIN7985 INOX | M2.5x12mm DIN912 INOX | M2.5x12mm DIN912 INOX | M3x20mm DIN912 INOX | Screw | 18 |
| 19 | Vite senza testa | - | M3x3mm DIN913 | M3x3 mm DIN913 | M3x3 mm DIN913 | Grub screw | 19 |
| 20 | Boccola | SGP-20-09 | SGP-25-09 | SGP-32-09 | SGP-40-09 | Centering sleeve | 20 |
| 21 | O-RING | - | - | Ø1x14 (GUAR-084) | - | O-RING | 21 |
| 22 | Spina di riferimento | Ø2x6.3mm DIN6325 | Ø2x8mm DIN6325 | Ø2.5x8mm DIN6325 | Ø2.5x8mm DIN6325 | Dowel pin | 22 |
| 23 | Griffa destra | SGP-20S-01 | SGP-25S-01 | SGP-32S-01 | SGP-40S-01 | Right jaw | 23 |
| 24 | Distanziale | SGP-20-10 | UG-16-09 | UG-18-09 | SGP-40S-02 | Spacer | 24 |
| 25 | Distanziale | SGP-20-11 | UG-16-11 | UG-16-11 | SGP-40S-03 | Spacer | 25 |
| 26 | Vite | M1.6x3mm DIN7985 | M2x5mm DIN7985 INOX | M2x5mm DIN7985 INOX | M2x5mm DIN7985 INOX | Screw | 26 |
| 27 | Vite | M1.6x5mm DIN7985 | M2x8mm DIN7985 INOX | M2x8mm DIN7985 INOX | M2x12mm DIN7985 INOX | Screw | 27 |
| 28 | Vite | M1.6x8mm DIN7985 | M2x10mm DIN7985 INOX | M2x10mm DIN7985 INOX | M2x10mm DIN7985 INOX | Screw | 28 |