

## 2-jaw parallel self-centering pneumatic gripper (series GS)

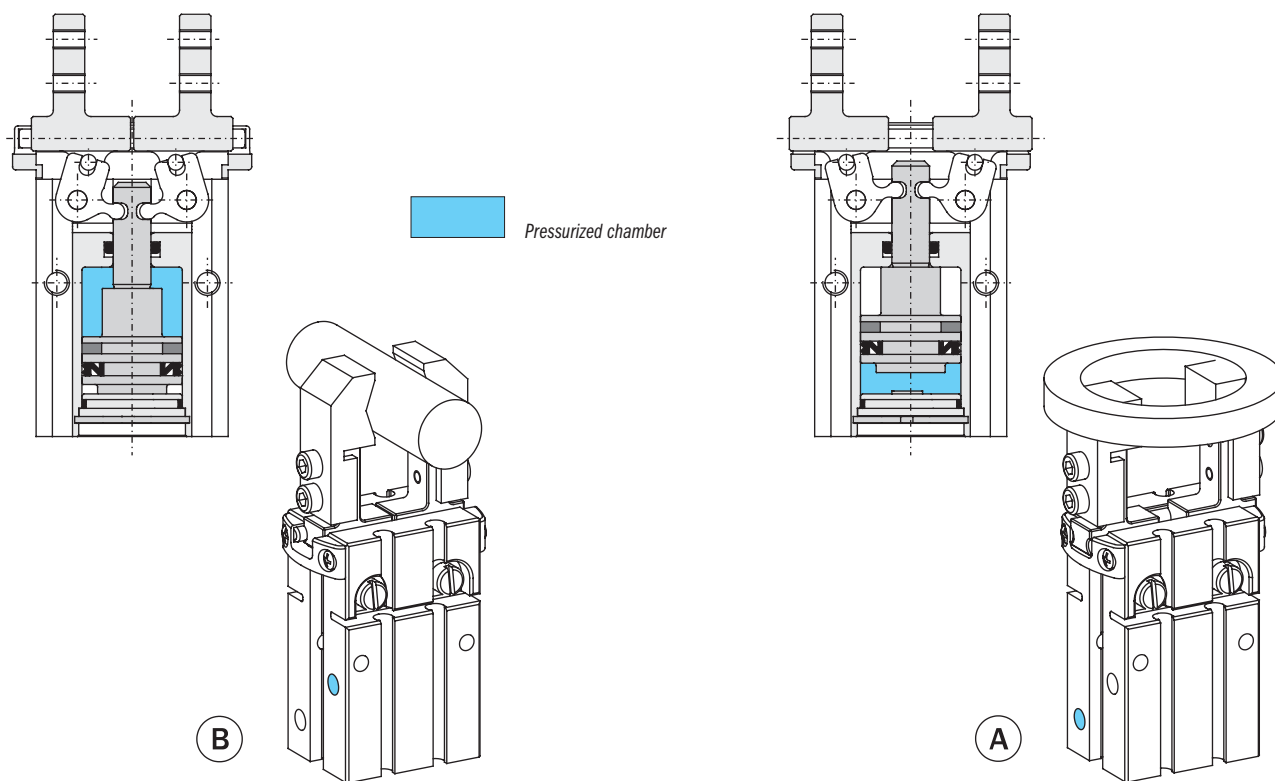
- Double acting.
- Exclusive backlash adjusting system.
- Long life and reliability, maintenance free.
- Various options for fastening.
- Optional proximity magnetic sensors.
- Spring closed (-NC) or spring open (-NO) option.
- FDA-H1 food-grade grease.



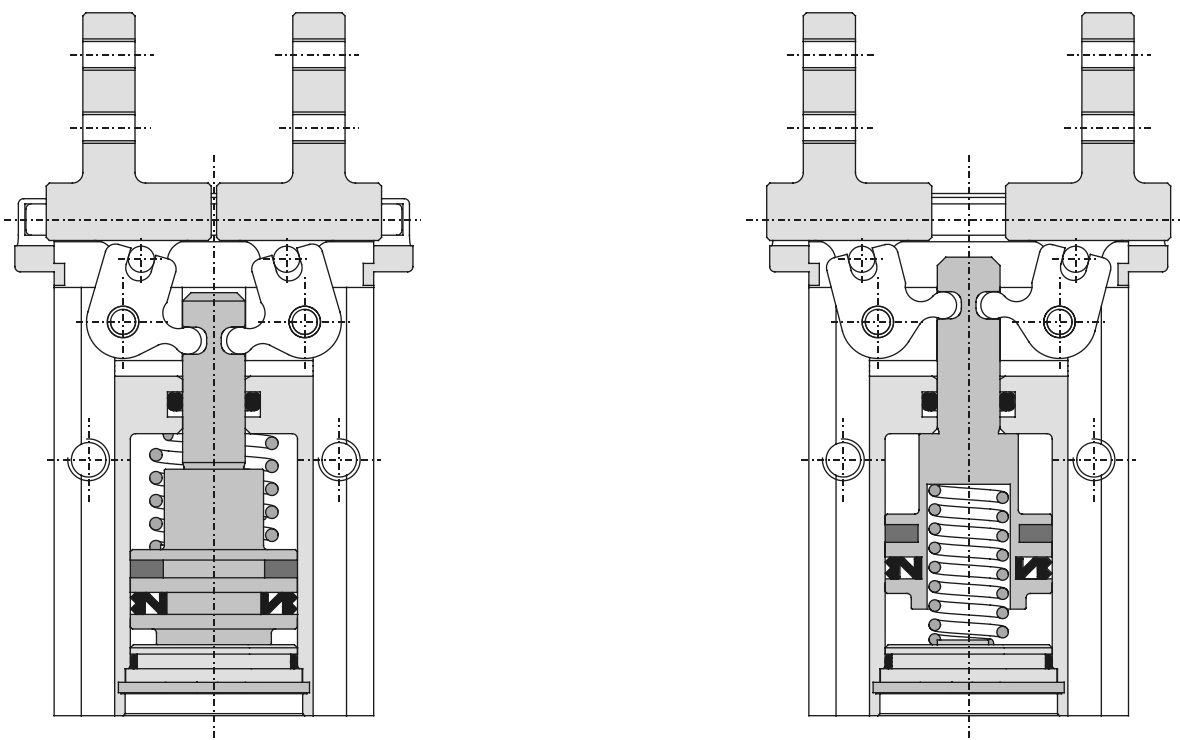
	GS-10	GS-16	GS-20	GS-25	GS-32	GS-40
Fluido Medium	Aria compressa filtrata, lubrificata / non lubrificata Filtered, lubricated / non lubricated compressed air					
Pressione di esercizio Operating pressure range	2.5 ÷ 8 bar	1.5 ÷ 8 bar			1 ÷ 8 bar	
Temperatura di esercizio Operating temperature range	5° ÷ 60°C.					
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar on each jaw	18 N	50 N	106 N	141 N	250 N	350 N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	36 N	100 N	212 N	282 N	500 N	700 N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar on each jaw	14 N	43 N	93 N	127 N	215 N	307 N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	28 N	86 N	186 N	254 N	430 N	614 N
Corsa totale Total stroke (±0.3 mm)	4.6 mm	6.8 mm	10.4 mm	14.4 mm	22 mm	30 mm
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz	3 Hz	2 Hz	2 Hz	2 Hz	2 Hz
Consumo d'aria per ciclo Cycle air consumption	0.7 cm <sup>3</sup>	3 cm <sup>3</sup>	7 cm <sup>3</sup>	14 cm <sup>3</sup>	28 cm <sup>3</sup>	61 cm <sup>3</sup>
Tempo di chiusura senza carico Closing time without load	0.01 s	0.02 s	0.05 s	0.07 s	0.09 s	0.12 s
Ripetibilità Repetition accuracy	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm
Peso Weight	45 g	98 g	207 g	365 g	645 g	1155 g

**Gripping**

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



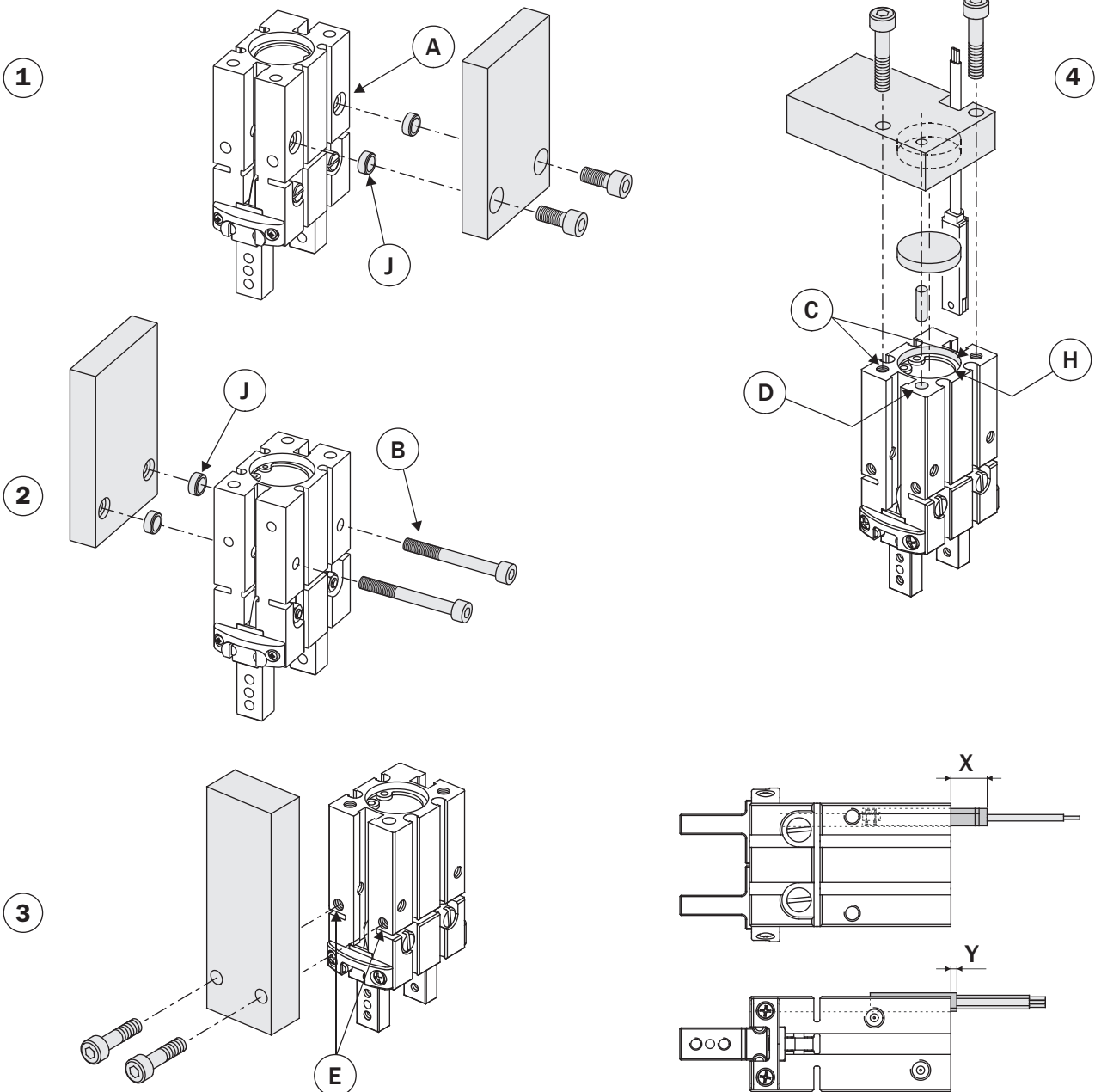
It is also available, on request, with a closing (-NC) or opening (-NO) spring.



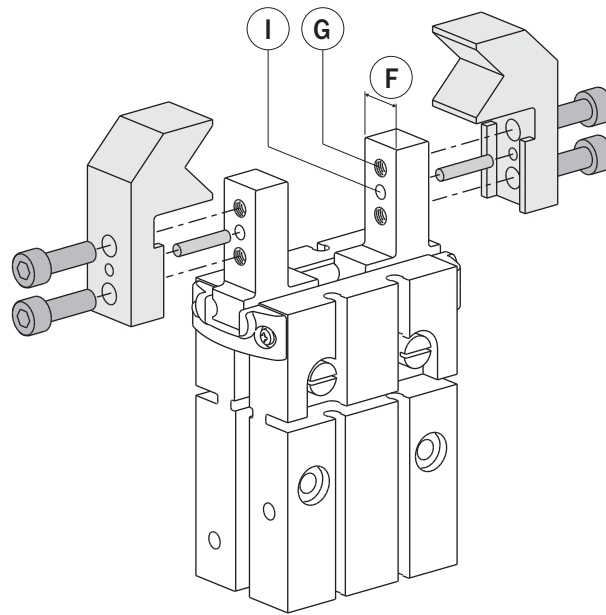
## Fastening

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 the wider side, use a plate with two through holes and two screws to be screwed on the threaded holes (A) on the gripper housing.  
Use 2 centering sleeves (J), where available.
- 2- It is possible to fasten the gripper on the wider side also with two screws (B) passing through the threaded holes (A).  
In this case sensors on the T-slot could be unusable.  
Use 2 centering sleeves (J), where available.
- 3- To fasten the gripper on the narrow side, two screws passing through the holes on the plate, must be screwed into the threaded holes (E) on the gripper housing.
- 4- The gripper can be fastened on the bottom as well, using two screws passing through the holes on the plate and screwed into the threaded holes (C) on the gripper housing.  
For the reference use a pin on the dowel pin hole (D) and a centering disc in the spot face (H). In this case the necessary room for sensor must be provided (X and Y).



The gripping tools must be as short and light as possible. They must be fastened by two screws (G). For a precise positioning on the jaw use the calibrated dimension (F), or the dowel pin holes (I).



	GS-10	GS-16	GS-20	GS-25	GS-32	GS-40
A	M3x5.5 mm	M4x8 mm	M5x10 mm	M6x12 mm	M6x12 mm	M8x21 mm
B	M2.5x22 mm	M3x30 mm	M4x35 mm	M5x45 mm	M5x50 mm	M6x60 mm
C	M3x6 mm	M4x8 mm	M5x10 mm	M6x12 mm	M6x12 mm	M8x17 mm
D	Ø2H9 x 3 mm	Ø3H9 x 3 mm	Ø4H9 x 4 mm	Ø4H9 x 4 mm	Ø5H9 x 5 mm	Ø5H9 x 5 mm
E	M3x6 mm	M4x4.5 mm	M5x8 mm	M6x10 mm	M6x10 mm	M8x21 mm
F	5 <sup>-0.05</sup> mm	8 <sup>-0.05</sup> mm	10 <sup>-0.05</sup> mm	12 <sup>-0.05</sup> mm	15 <sup>-0.05</sup> mm	18 <sup>-0.05</sup> mm
G	M2.5x4 mm	M3x5 mm	M4x8 mm	M5x10 mm	M6x12 mm	M8x14 mm
H	Ø11H9 x 2 mm	Ø17H9 x 2 mm	Ø21H9 x 3 mm	Ø26H9 x 3.5 mm	Ø34H9 x 4 mm	Ø41 <sup>+0.02</sup> <sub>-0.05</sub> x 3 mm
I	Ø1.5H8 x 4 mm	Ø2H8 x 5 mm	Ø2.5H8 x 8 mm	Ø3H8 x 10 mm	Ø4H8 x 12 mm	Ø5H8 x 14 mm

Sensors / Sensores

SC	-	X=2 mm	X=0 mm	X=0 mm	X=0 mm	X=0 mm
SL	X=10 mm + cable	X=10 mm + cable	X=9 mm + cable	X=7 mm + cable	X=7 mm + cable	X=7 mm + cable
SN	-	X=0 mm	X=0 mm	X=0 mm	X=0 mm	X=0 mm
SS	X=2 mm + cable	X=Y=3 mm + cable	X=Y=1 mm + cable	X=Y=1 mm + cable	cable	cable

## 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.

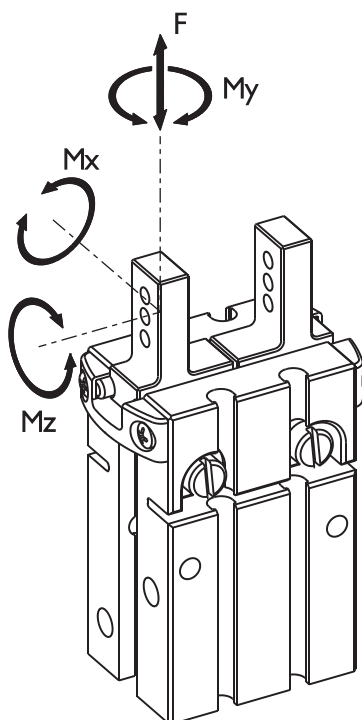
$F_s$ ,  $M_x_s$ ,  $M_y_s$ ,  $M_z_s$ , are maximum permitted static loads.

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.



	GS-10	GS-16	GS-20	GS-25	GS-32	GS-40
$F_s$	25 N	50 N	75 N	125 N	200 N	300 N
$M_x_s$	0.4 Nm	1.5 Nm	5 Nm	8 Nm	18 Nm	30 Nm
$M_y_s$	0.4 Nm	1.5 Nm	5 Nm	8 Nm	12 Nm	20 Nm
$M_z_s$	0.4 Nm	1.5 Nm	5 Nm	8 Nm	18 Nm	30 Nm
$F_d$	0.4 N	0.8 N	1.5 N	2.5 N	3.5 N	4.5 N
$M_x_d$	0.4 Ncm	1.5 Ncm	5 Ncm	8 Ncm	18 Ncm	30 Ncm
$M_y_d$	0.4 Ncm	1.5 Ncm	5 Ncm	8 Ncm	18 Ncm	30 Ncm
$M_z_d$	0.4 Ncm	1.5 Ncm	5 Ncm	8 Ncm	18 Ncm	30 Ncm
$m_{0.2s}$	40 g	80 g	150 g	250 g	350 g	450 g
$m_{0.12s}$	35 g	65 g	125 g	200 g	250 g	300 g
$m_{0.09s}$	30 g	55 g	100 g	150 g	200 g	-
$m_{0.07s}$	25 g	45 g	75 g	100 g	-	-
$m_{0.05s}$	20 g	35 g	50 g	-	-	-
$m_{0.02s}$	15 g	25 g	-	-	-	-
$m_{0.01s}$	10 g	-	-	-	-	-

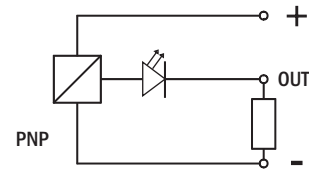
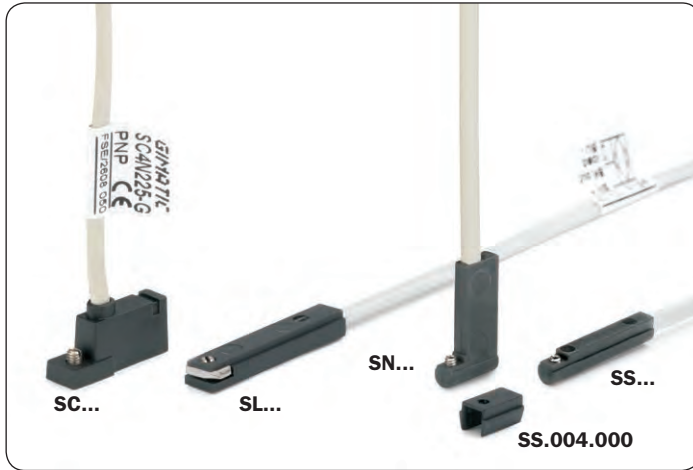
## Sensors

The operating position can be checked by one or more magnetic sensors (optional), that detect the position by the magnet on the piston inside.

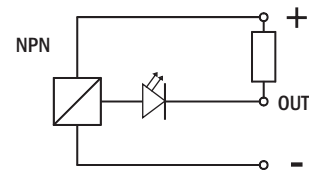
Therefore a near big mass of ferromagnetic material or intense magnetic fields may cause sensing troubles.

I sensori utilizzabili sono:

Use sensors:



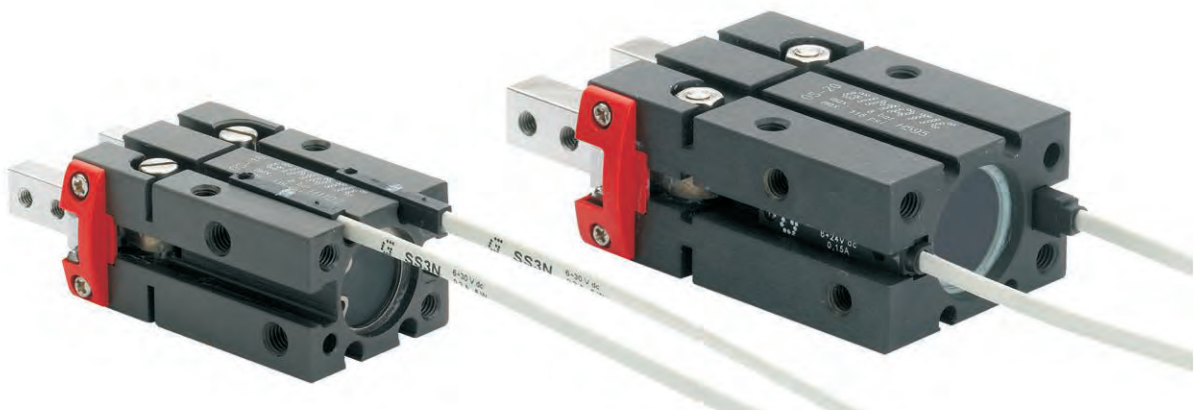
Magneto-resistive



			GS-10	GS-16 / GS-20 / GS-25 / GS-32 / GS-40
SC4N225Y	PNP	Cavo 2.5m / 2.5m cable	<input type="checkbox"/>	<input type="checkbox"/>
SC3N203Y	PNP	Connettore M8 / M8 snap plug connector	<input type="checkbox"/>	<input type="checkbox"/>
SL4N225-G	PNP	Cavo 2.5m / 2.5m cable	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SL4M225-G	NPN	Cavo 2.5m / 2.5m cable	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SL3N203-G	PNP	Connettore M8 / M8 snap plug connector	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SL3M203-G	NPN	Connettore M8 / M8 snap plug connector	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SN4N225-G	PNP	Cavo 2.5m / 2.5m cable	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SN4M225-G	NPN	Cavo 2.5m / 2.5m cable	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SN3N203-G	PNP	Connettore M8 / M8 snap plug connector	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SN3M203-G	NPN	Connettore M8 / M8 snap plug connector	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SS4N225-G	PNP	Cavo 2.5m / 2.5m cable	<input checked="" type="checkbox"/> (1)	<input checked="" type="checkbox"/> (1)
SS4M225-G	NPN	Cavo 2.5m / 2.5m cable	<input checked="" type="checkbox"/> (1)	<input checked="" type="checkbox"/> (1)
SS3N203-G	PNP	Connettore M8 / M8 snap plug connector	<input checked="" type="checkbox"/> (1)	<input checked="" type="checkbox"/> (1)
SS3M203-G	NPN	Connettore M8 / M8 snap plug connector	<input checked="" type="checkbox"/> (1)	<input checked="" type="checkbox"/> (1)

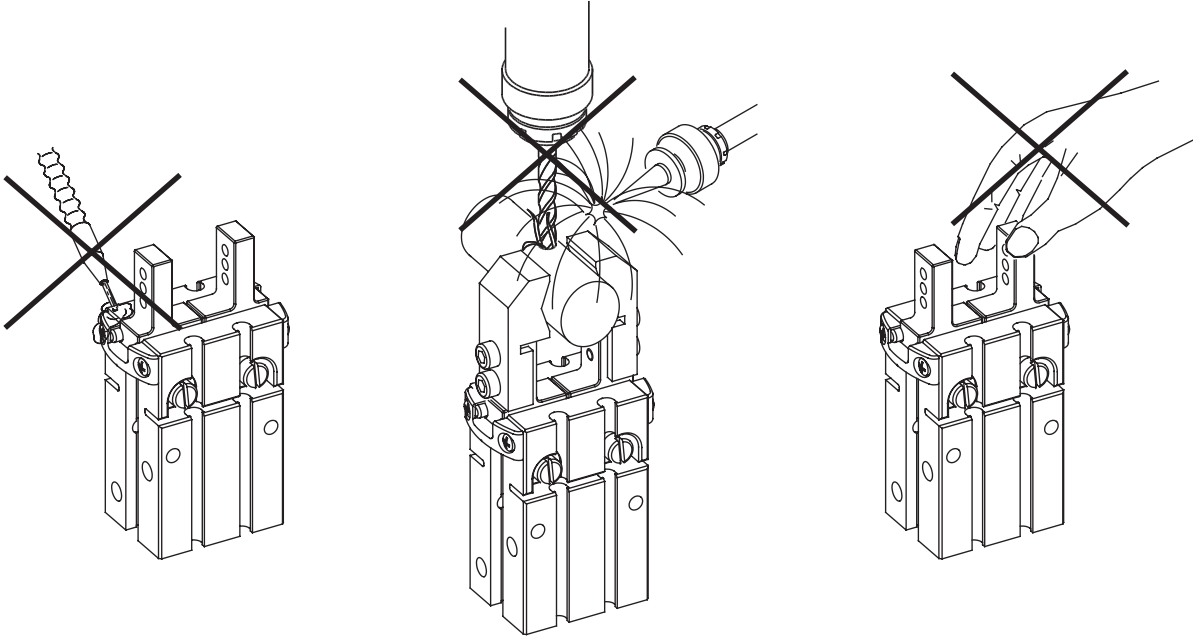
(1)

By the adapter (SS.004.000) provided with the pack K-SENS.



### 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.



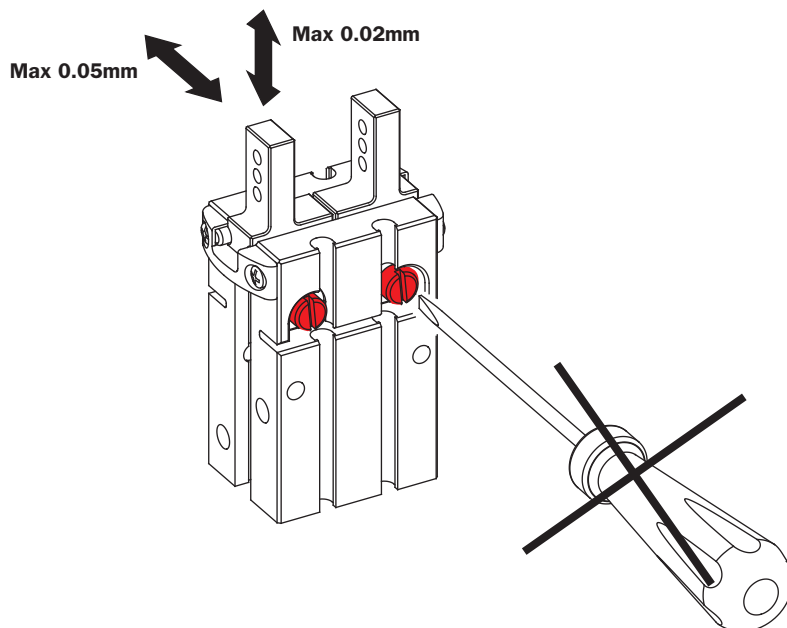
### Maintenance

Grease the gripper after 10 million cycles with:

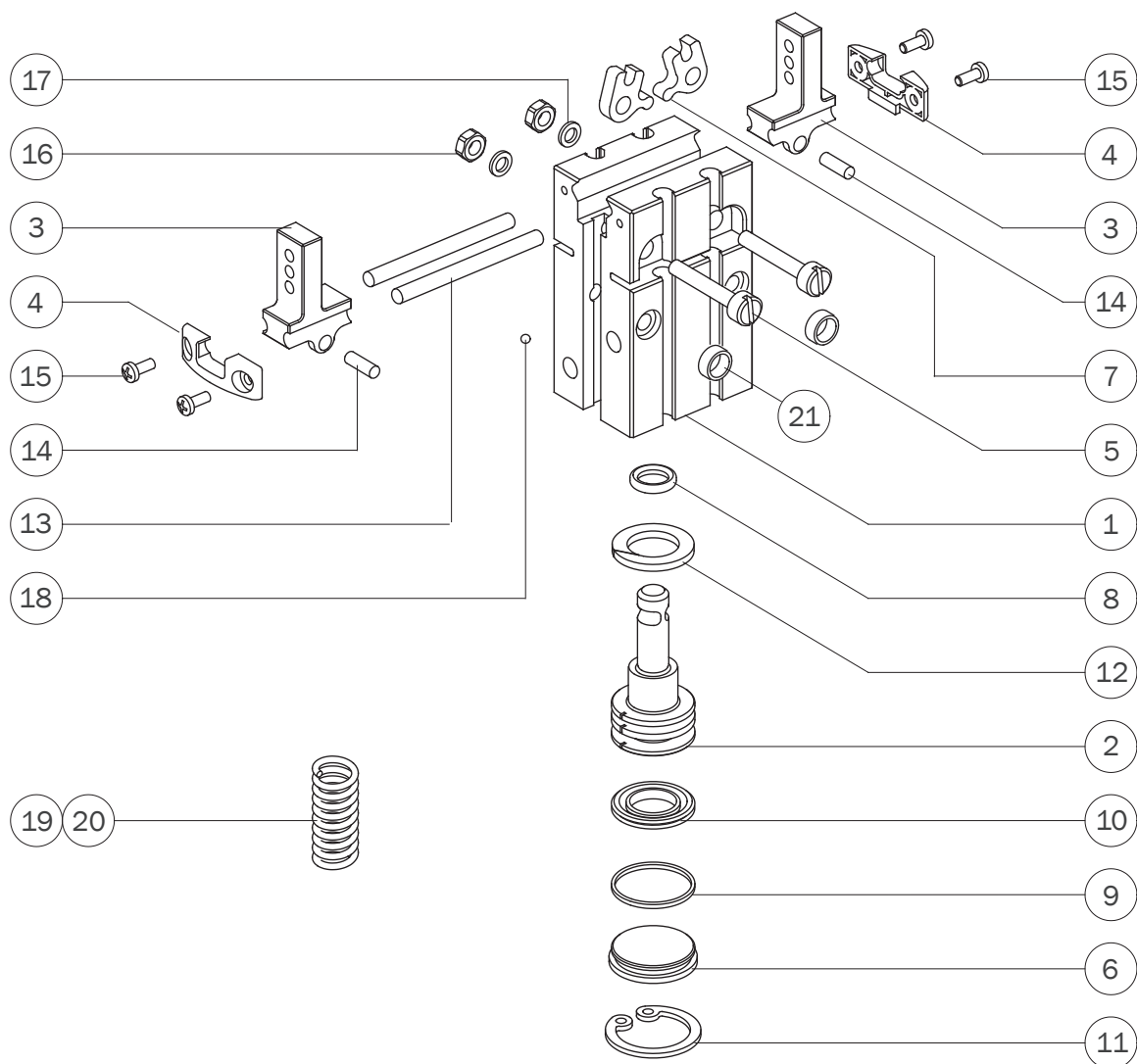
- BERULUB FG-H 2 EP

(Lubricant NSF H1 Registration No. 140486).

The jaw backlash, showed in the picture below, is set in factory. NEVER USE THE ADJUSTING SCREWS TO MODIFY IT.



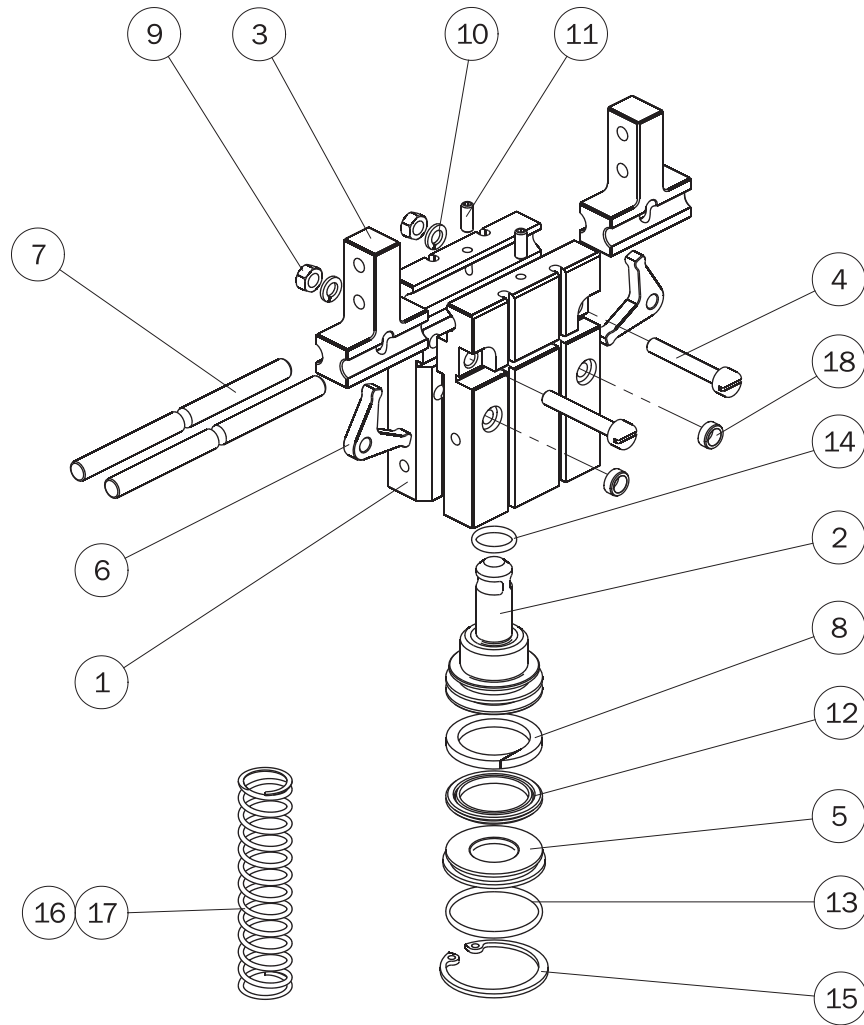
## Part list



		GS-10	GS-16	GS-20	GS-25		
1	Corpo pinza	GS-10-01	GS-16-01	GS-20-01	GS-25-01	Gripper housing	1
2	Pistone	GS-10-02	GS-16-02	GS-20-02	GS-25-02	Piston	2
3	Griffa	GS-10-03	GS-16-03	GS-20-03	GS-25-03	Jaw	3
4	Testata	GS-10-04	GS-16-04	GS-20-04	GS-25-04	Head cap	4
5	Vite speciale	GS-10-05	GS-16-05	GS-20-05	GS-25-05	Special screw	5
6	Tappo	GS-10-06	GS-16-06	GS-20-06	GS-25-06	Cap	6
7	Leva	SP-20-4	SP-25-4	JP-32-3	GS-25-07	Lever	7
8	Anello di tenuta O-RING	Ø1x5 (GUAR-021)	Ø1.78x6.07 (GUAR-039)	Ø1.78x6.75 (GUAR-012)	Ø1.78x7.66 (GUAR-045)	O-RING gasket	8
9	Anello di tenuta O-RING	Ø1.78x6.75 (GUAR-012)	Ø1x14 (GUAR-084)	Ø1.78x17.17 (GUAR-076)	Ø1.78x21.95 (GUAR-025)	O-RING gasket	9
10	Guarnizione dinamica	10x5x2.4 (GUAR-106E)	16x9x2.5 (GUAR-002P)	20x13x2.5 (GUAR-040P)	25x18x2.4 (GUAR-003M)	Dynamic gasket	10
11	Anello elastico per interni	Ø11 mm DIN 472	Ø17 mm DIN 472	Ø21 mm DIN 472	Ø26 mm DIN 472	Retaining ring	11
12	Magnete	GS-10-11	PAR-16-10B	PAR-20-10B	PAR-25-10B	Magnet	12
13	Spina di riferimento	Ø2.5x26 mm DIN 5402	Ø3x36 mm DIN 6325	Ø4x45 mm DIN 6325	Ø4x60 mm DIN 6325	Dowel pin	13
14	Spina di riferimento	Ø2x5.1 mm DIN 5402	Ø2.5x7.8 mm DIN 5402	Ø3x10 mm DIN 6325	Ø4x12 mm DIN 6325	Dowel pin	14
15	Vite	M2x5 mm DIN 7985A	M2x5 mm DIN 7985A	M2x5 mm DIN 7985A	M2.5x5 mm DIN 7985A	Screw	15
16	Dado esagonale	M2 UNI 5587	M3 DIN 934	M4 DIN 934	M4 DIN 934	Nut	16
17	Rosetta	Ø2.2 mm DIN 125A	Ø3.2 mm DIN 127A	Ø4.3 mm DIN 127A	Ø4.3 mm DIN 127A	Washers	17
18	Sfera	Ø2 mm AA DIN 5401 A	-	-	-	Screw	18
19	Molla (solo per NC)	GS-10-08	PAR-16-11B	GS-20-08	GS-25-08	Spring (only NC)	19
20	Molla (solo per NO)	GS-10-09	PAR-16-12B	PAR-20-12B	GS-25-09	Spring (only NO)	20
21	Boccola	ZBH-5	SZ16-10	ZBH-7	ZBH-9	Centering sleeve	21



## Part list



		GS-32	GS-40		
1	Corpo pinza	GS-32-01	GS-40-01	Gripper housing	1
2	Pistone	GS-32-02	GS-40-02	Piston	2
3	Griffa	GS-32-03	GS-40-03	Jaw	3
4	Vite speciale	GS-32-05	GS-40-05	Special screw	4
5	Tappo	GS-32-06	GS-40-06	Cap	5
6	Leva	GS-32-07	GS-40-07	Lever	6
7	Spina di riferimento	GS-32-19	GS-40-19	Dowel pin	7
8	Magnete	FES-32-3-5	T40-10	Magnet	8
9	Dado esagonale	M5 DIN934 Z/B	M8 DIN439B INOX A2	Nut	9
10	Rosetta	Ø5 UNI1751-B Z/B	M8 BN 729	Washers	10
11	Vite senza testa	M4x10 mm DIN912 INOX	M5x12 mm DIN913 INOX	Grub screw	11
12	Guarnizione dinamica	Ø32x23x3 (GUAR-004P)	Ø40x31x3 (GUAR-006P)	Dynamic gasket	12
13	O-Ring	Ø1.78x28.30 (GUAR-016)	Ø1.78x31.47 (GUAR-009)	O-Ring	13
14	O-Ring	Ø1.78x11.89 (GUAR-095)	Ø1.78x14 (GUAR-007)	O-Ring	14
15	Anello elastico per interni	Ø34 DIN472 Z/B	Ø41 DIN472 Z/B	Retaining ring	15
16	Molla (solo per NC)	GS-32-20	GS-40-20	Spring (only NC)	16
17	Molla (solo per NO)	GS-32-21	GS-40-21	Spring (only NO)	17
18	Boccola	ZBH-9	ZBH-12	Centering sleeve	18