

## Compact Parallel Gripper – SGP-S

- Self-centering.
- Double acting.
- High performance in a compact size.
- Patented backlash adjusting system.
- The rugged construction lends itself to heavy-duty applications for a trouble-free long life without maintenance.
- Mounting Brackets available on page 660.
- Finger Blanks available on page 662.
- Sensor ready.

**New Sizes, Check EMI's Website for Info!**



Quick#	7693	6780	6781	6782	6783	7694
Part#	SGP-16S	SGP-20S	SGP-25S	SGP-32S	SGP-40S	SGP-50S
Price	\$237.00	\$271.00	\$271.00	\$307.00	\$320.00	\$336.00
Medium	Filtered, lubricated / non-lubricated compressed air					
Pressure range	36–116 psi			30–116 psi		
Opening total gripping force at 87 psi	7.2 lbf	10.4 lbf	23.4 lbf	30.2 lbf	36 lbf	65.2 lbf
Closing total gripping force at 87 psi	6.2 lbf	9 lbf	21.2 lbf	27 lbf	32.8 lbf	56.6 lbf
Total stroke (± 0.3mm)	3mm	4mm	6mm	8mm	12mm	16mm
Maximum repeatability tolerance	±0.02mm					
Mid-stroke detection capability	with PRO-SN	Yes, with use of PRO-SN..HSG sensors				
Weight	19g	33g	43g	86g	170g	250g

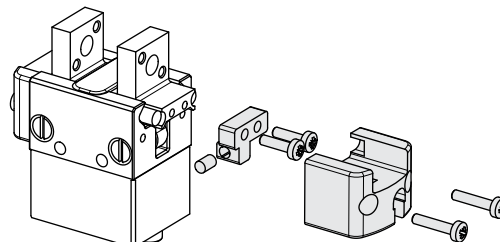
**\*New Sensor Slot Design Changes\* Grippers Now Accept PRO-SN Teachable Sensors**

### Upgrade Earlier Grippers

Old grippers can be upgraded to use new teachable PRO-SN.. sensor.

#### SGP-S Kit to Upgrade

Quick#	Part#	For:	Price
7596	SGP-20S-KU	SGP-20S	\$6.70
7597	SGP-25S-KU	SGP-25S	\$6.70
7598	SGP-32S-KU	SGP-32S	\$6.70
7599	SGP-40S-KU	SGP-40S	\$6.70



## Compact Parallel Gripper – SGP-S

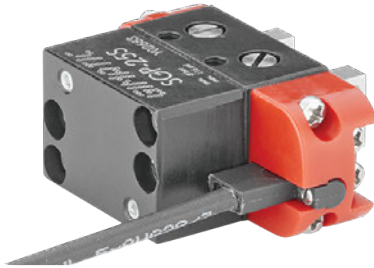
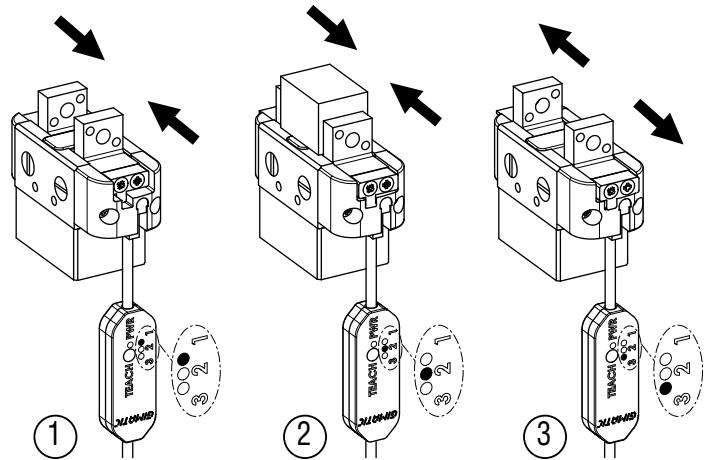
### Sensors

With teachable PRO sensors, the detected positions can be adjusted by a teaching procedure, so that 3 digital outputs can be:

- Output 1 - totally closed gripper [1];
- Output 2 - gripped part intermediate position [2];
- Output 3 - totally open gripper [3].

This achieves accurate three position sensing with one sensor: open, part captured, part missed.

PRO-SN and PRO-SN..HSG teachable sensors are highly accurate and ideal for part confirmation/ mid-stroke detection. See page 978 for more information.



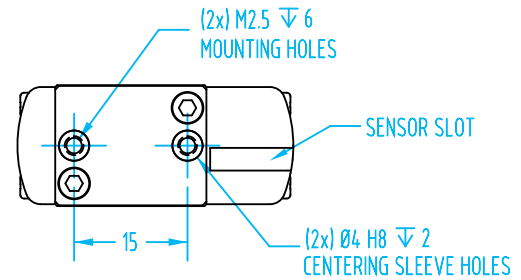
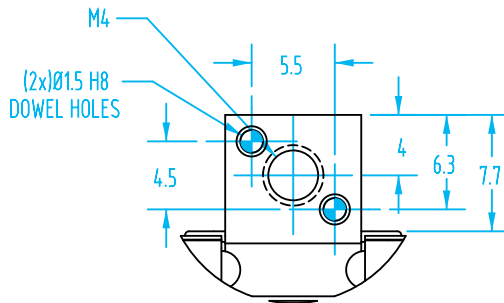
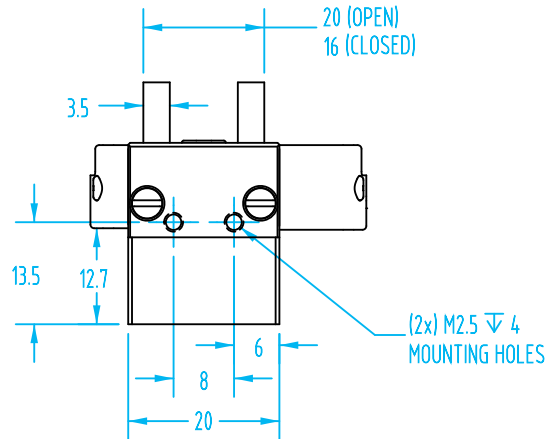
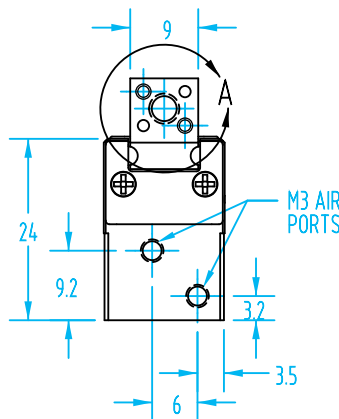
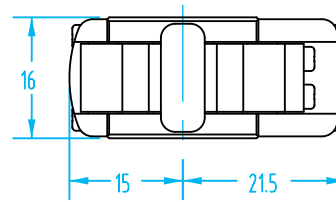
Quick#	Part#	Signal	Description	Price	SGP-16S	All other SGP's
<b>Gimatic Programmable "PRO" magnetoresistive sensors with 3 output signals</b>						
7523	PRO-SN4N225G	PNP	with lead, 2.5m long	\$70.00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7524	PRO-SN4M225G	NPN	with lead, 2.5m long	\$70.00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7526	PRO-SN3N215G	PNP	with M8 connector, 1.5m long	\$92.00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7626	PRO-SN3M215G	NPN	with M8 connector, 1.5m long	\$92.00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Gimatic Programmable, "PRO...HSG" magnetoresistive sensors with 3 output signals</b>						
7635	PRO-SN4N225HSG	PNP	with lead, 2.5m long	\$70.00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7636	PRO-SN4M225HSG	NPN	with lead, 2.5m long	\$70.00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7633	PRO-SN3N215HSG	PNP	with M8 connector, 1.5m long	\$80.00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7634	PRO-SN3M215HSG	NPN	with M8 connector, 1.5m long	\$80.00	<input type="checkbox"/>	<input checked="" type="checkbox"/>

# Compact Parallel Gripper – SGP-S

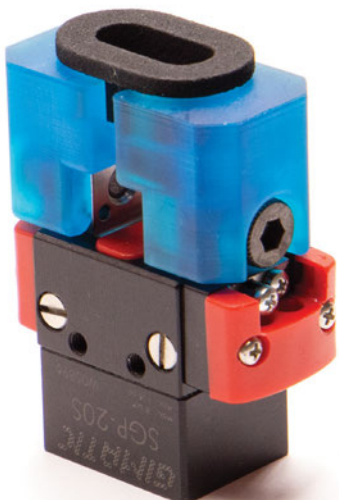
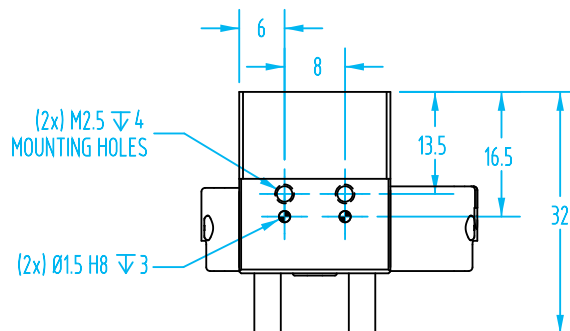
(Dimensioned drawing shown full scale)

**SGP-20S**  
**#6780**

#6780 & #6781 must use  
barb fittings, see page 1070.



DETAIL A  
SCALE 2 : 1



## Custom 3D Printed or Machined Fingers from EMI!

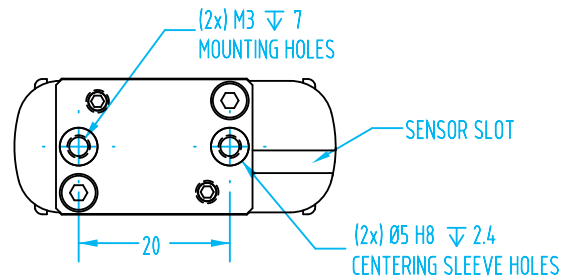
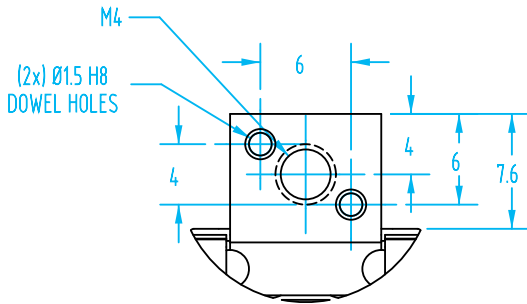
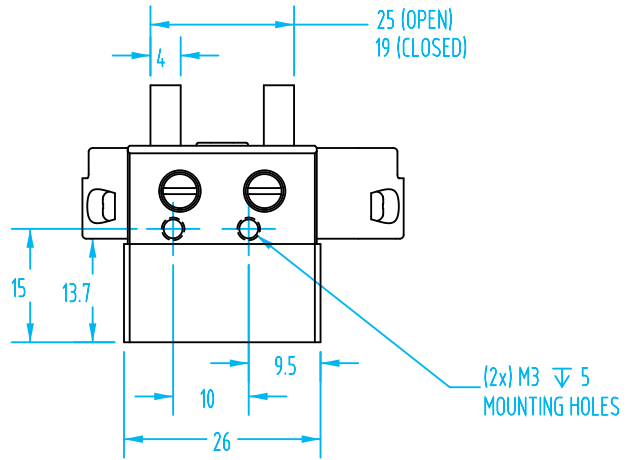
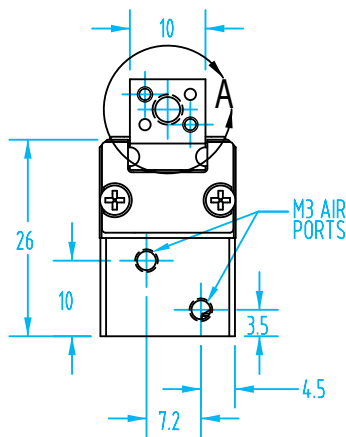
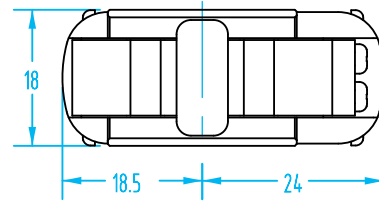
EMI's in-house 3D printing and CNC equipment allow us to provide custom fingers quickly and cost effectively.

**Compact Parallel Gripper – SGP-S**

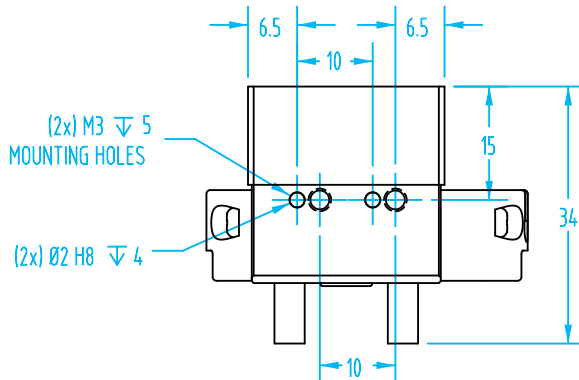
(Dimensioned drawing shown full scale)

**SGP-25S  
#6781**

#6780 & #6781 must use barb fittings, see page 1070.



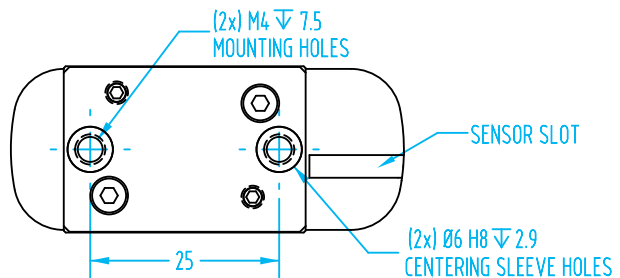
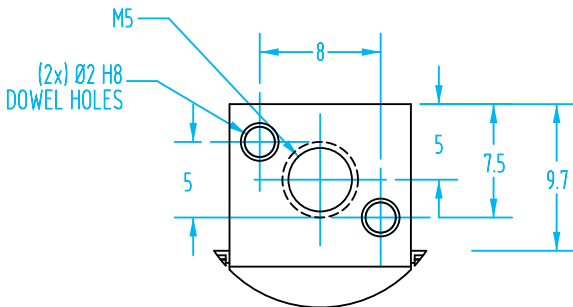
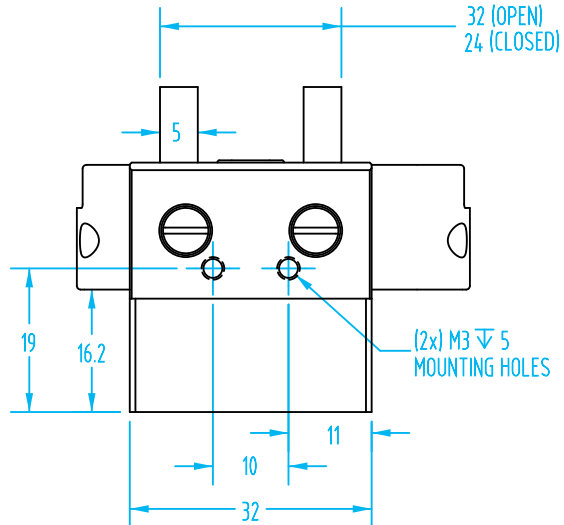
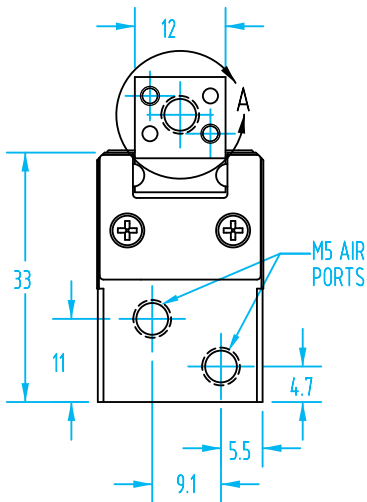
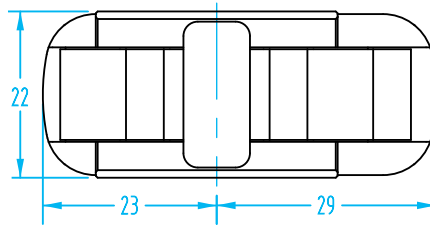
DETAIL A  
SCALE 2 : 1



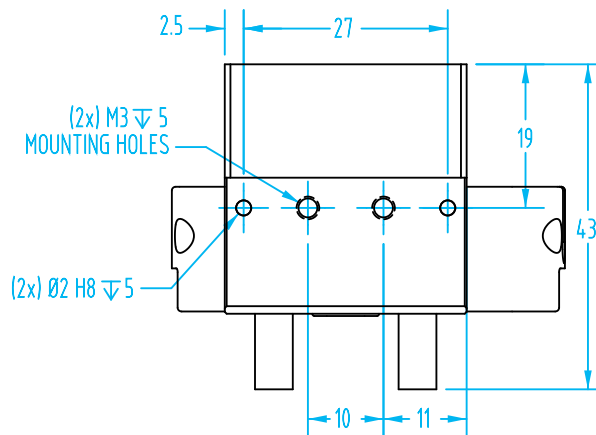
# Compact Parallel Gripper – SGP-S

(Dimensioned drawing shown full scale)

**SGP-32S**  
**#6782**



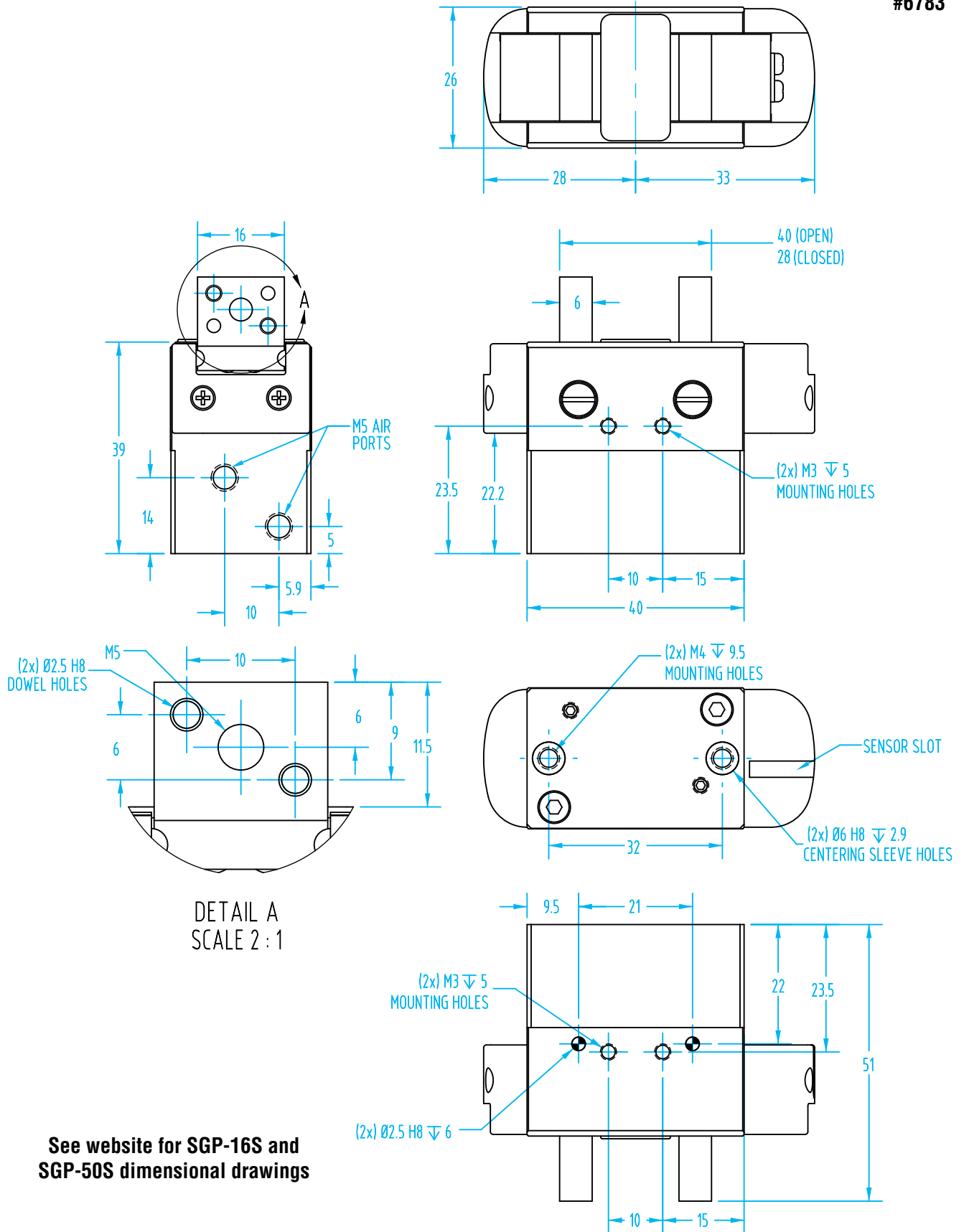
DETAIL A  
SCALE 2 : 1



**Compact Parallel Gripper – SGP-S**

(Dimensioned drawing shown full scale)

**SGP-40S  
#6783**

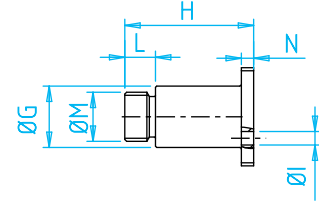
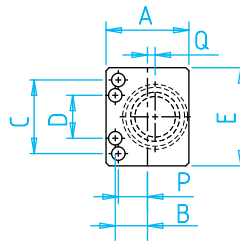


See website for SGP-16S and SGP-50S dimensional drawings

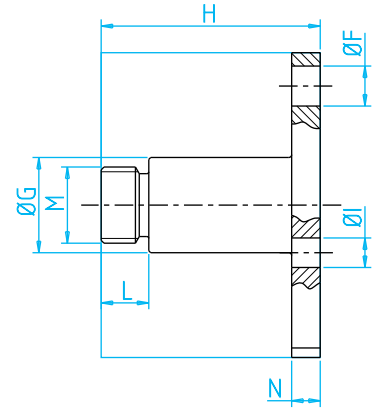
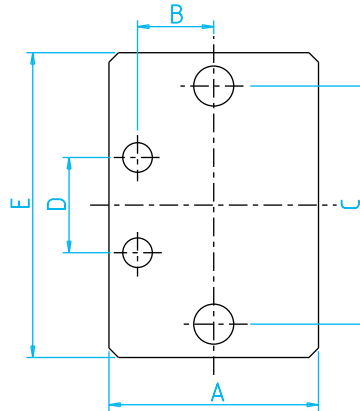
# SGP-S Compact Parallel Gripper Aluminum Mounting Brackets



For Q#7726, MFI-A502:



For all others:



### Mounting Brackets for Compact Grippers

Quick#	Part#	Price	Use with:	Wt.
7726	MFI-A502	\$27.92	SGP-16S	4.2
7324	MFI-A317	\$30.78	SGP-20S	7g
7325	MFI-A316	\$25.41	SGP-25S	9g
7326	MFI-A315	\$25.70	SGP-32S	11g
7327	MFI-A314	\$30.50	SGP-40S	25g
7727	MFI-A503	\$33.44	SGP-50S	43.2

Hardware Included.

	A	B	C	D	E	F	G	H	I	L	M	N	P	Q
MFI-A502	13.5	5.25	12	7	16	/	Ø10	21	Ø2.2	5	M8x1	2	4.75	1.25
MFI-A317	16	5.5	15	8	20	Ø2.6	Ø10	21	Ø2.6	5	M8x1	2	/	/
MFI-A316	18	6	20	10	26	Ø3.1	Ø10	22	Ø3.1	5	M8x1	3	/	/
MFI-A315	22	8	25	10	32	Ø4.2	Ø10	23	Ø3.1	5	M8x1	3	/	/
MFI-A314	26.5	10.25	32	10	40	Ø4.1	Ø10	34	Ø3.1	6	M12x1	4	/	/
MFI-A503	30	/	40	/	50	Ø5.2	Ø20	39	/	8	M17x1	4	/	/

Fittings Available on page 1047



### Extension Tube

Quick#	Part#	Price	OD	Length	Thread	Wt.
5993	OF10L60	\$7.64	10	60	M8x1	7g
5842	OF14L80	\$7.50	14	80	M12x1	10g

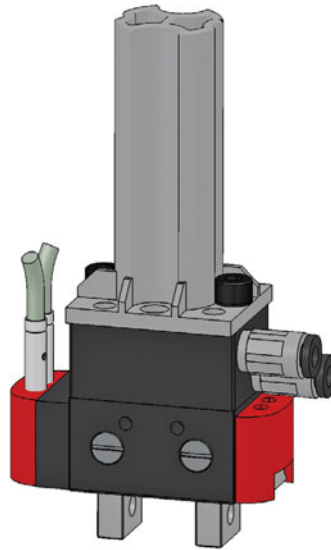
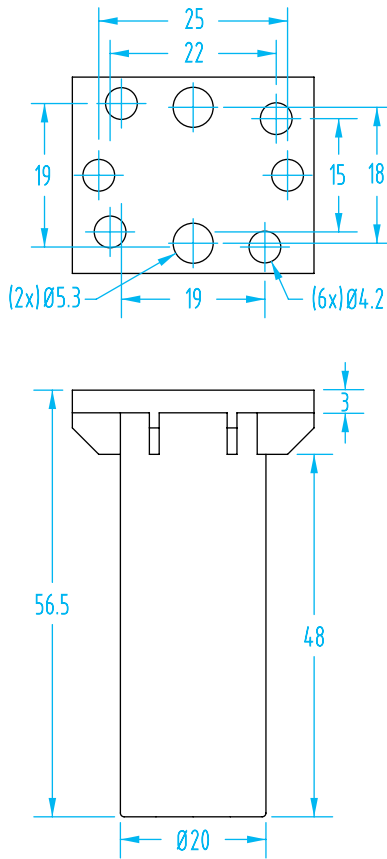


### Extension Tube

Quick#	Part#	Price	OD	Length	Thread	Wt.
3562	VLR10-30	\$8.40	10	30	M8x1	3g
3563	VLR10-60	\$8.40	10	60	M8x1	7g
3531	VLR10-90	\$8.40	10	90	M8x1	11g
3384	VLR14-40	\$8.40	14	40	M12x1	6g
3385	VLR14-80	\$10.50	14	80	M12x1	14g
3386	VLR14-120	\$10.50	14	120	M12x1	23g

### SGP-S Compact Parallel Gripper Composite Mounting Brackets

(Dimensioned drawings shown full scale)

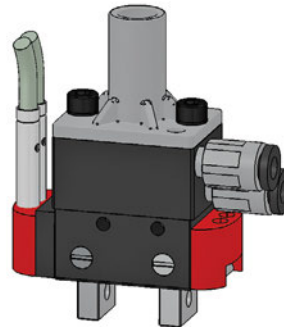
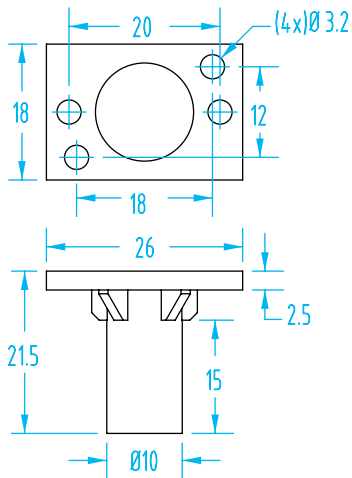


#6375 for use with SGP-32S

#### Composite Mounting Brackets for Compact Grippers

Quick#	Part#	Price	Use with:	Wt.
6375	MFP-A01	\$3.43	SGP-32S	26g
6378	MFP-A04	\$3.02	SGP-25S	5g

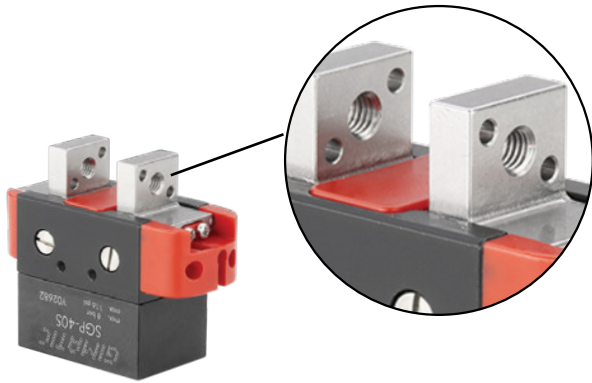
*Order fasteners separately, see 1077.*



#6378 for use with SGP-25S



## Compact Parallel Gripper Finger Blanks for SGP-S & PGR-P – NEW STYLE

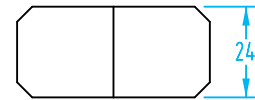
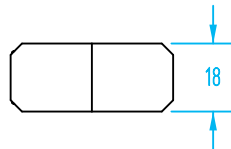
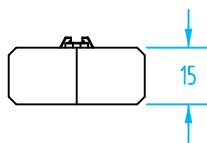


**Finger Blanks on this page are intended to fasten to SGP-S grippers that have a threaded mounting hole on the jaw.**

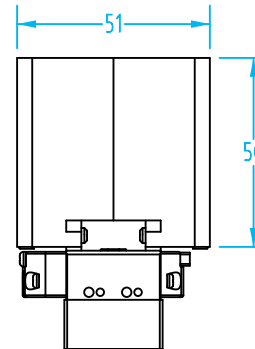
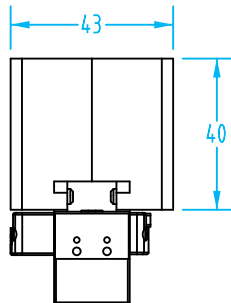
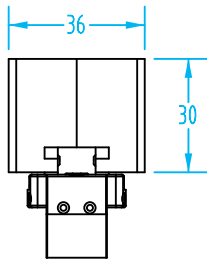
Finger Blanks for SGP-S Grippers

Quick#	Part#	Price	Fits SGP-S	Material	Wt.
7722	SGP-16-FBA2	\$26.02	SGP-16S	Aluminum	40g
7723	SGP-16-FBP2	\$26.02		Nylon	17g
7392	SGP-20-FBA2	\$25.09	SGP-20S & PGR-P20	Aluminum	35g
7393	SGP-20-FBP2	\$19.30		Nylon	19g
7395	SGP-25-FBA2	\$31.00	SGP-25S & PGR-P25	Aluminum	72g
7396	SGP-25-FBP2	\$23.85		Nylon	38g
7397	SGP-32-FBA2	\$35.36	SGP-32S & PGR-P32	Aluminum	117g
7398	SGP-32-FBP2	\$27.20		Nylon	61g
7399	SGP-40-FBA2	\$38.55	SPG-40S & PGR-P40	Aluminum	196g
7400	SGP-40-FBP2	\$29.65		Nylon	102g
7724	SGP-50-FBA2	\$32.29	SGP-50S & PGR-P50	Aluminum	640g
7725	SGP-50-FBP2	\$32.29		Nylon	247g

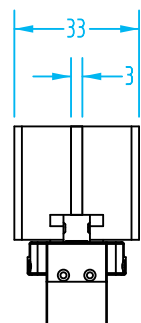
Machine these finger blanks to your part's shape or contact EOAT Engineering for help! For more information on custom finger blanks for your application visit our 3D printing section on page 102.



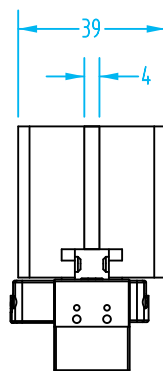
Dimensions with fingers open:



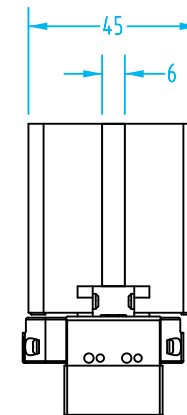
Dimensions with fingers closed:  
(finger blanks are shown overlapped. Cut away material to fit your part)



Size 16



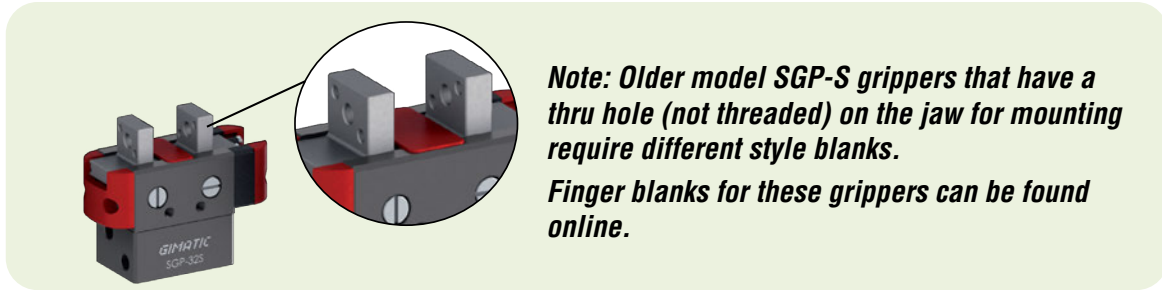
Size 20



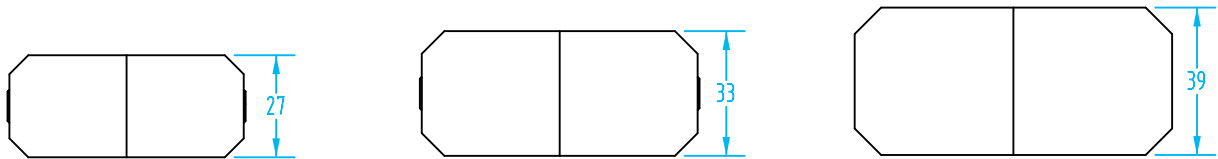
Size 25

## Compact Parallel Gripper Finger Blanks for SGP-S & PGR-P – NEW STYLE

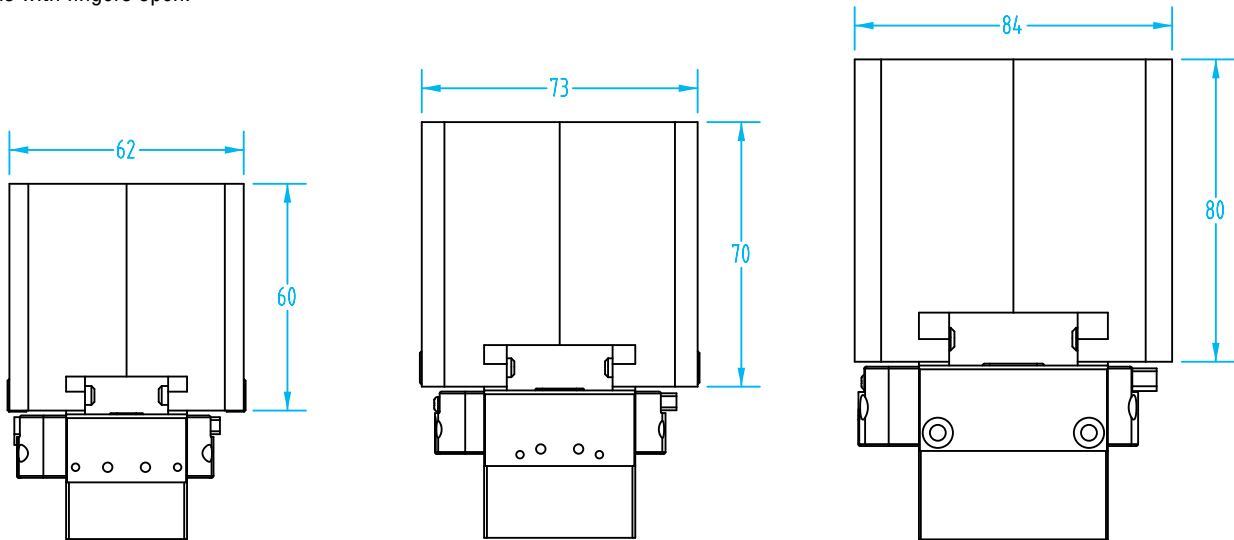
(Dimensioned drawings shown half scale)



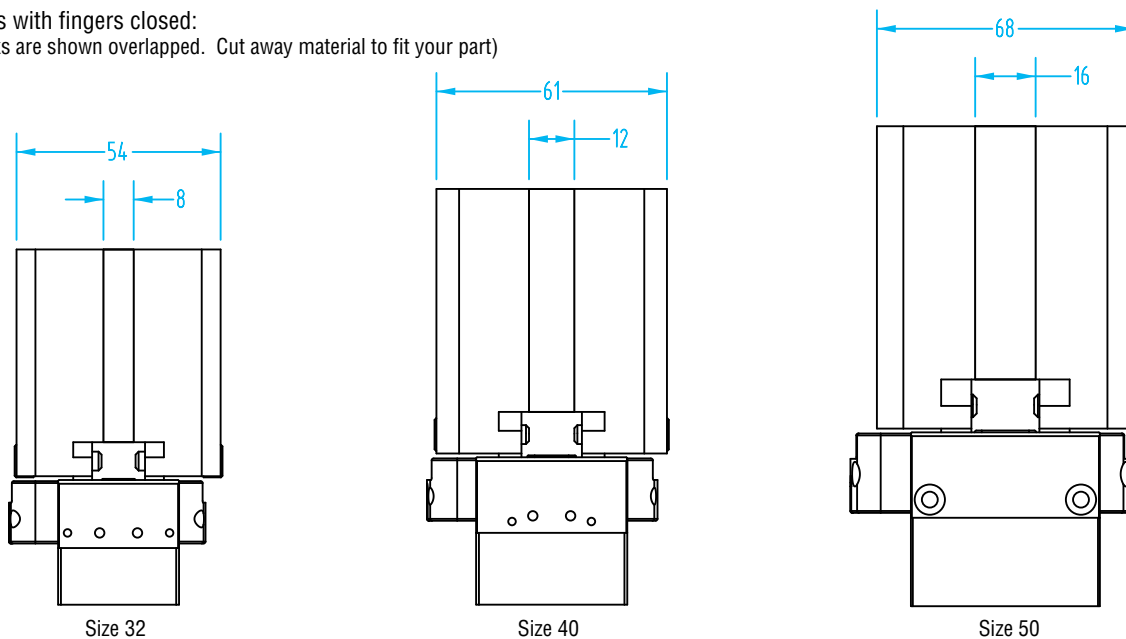
**Note: Older model SGP-S grippers that have a thru hole (not threaded) on the jaw for mounting require different style blanks. Finger blanks for these grippers can be found online.**



Dimensions with fingers open:



Dimensions with fingers closed:  
(finger blanks are shown overlapped. Cut away material to fit your part)



Size 32

Size 40

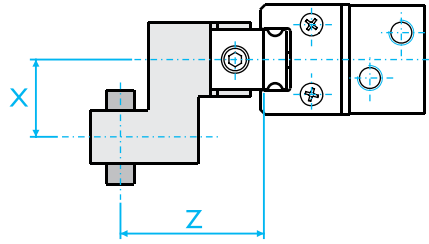
Size 50

# Compact Parallel Gripper – SGP-S

## 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'.

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



**Reference:**

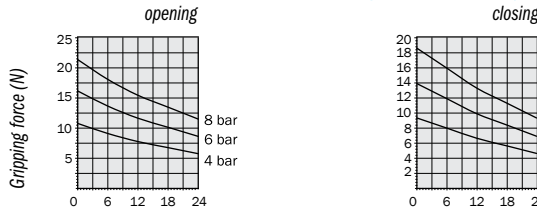
**Force:** N x 0.225 = lbf

**Torque:** Nm x 8.850 = in-lbf

**Torque:** Ncm x 0.089 = in-lbf

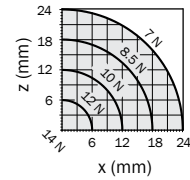
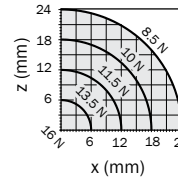
**Pressure:** bar x 14.5 = psi

SGP-16S

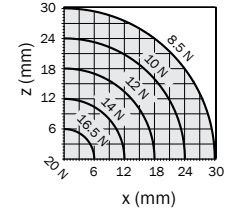
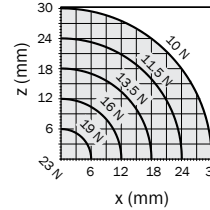


opening (6 bar)

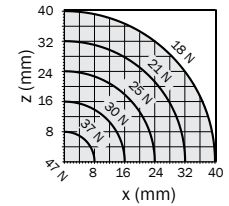
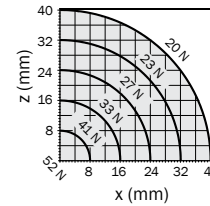
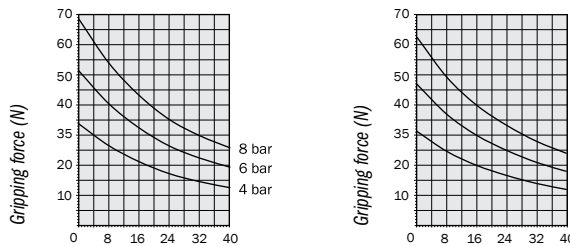
closing (6 bar)



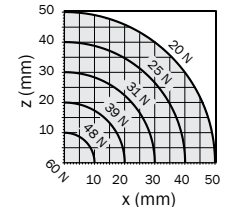
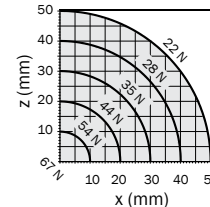
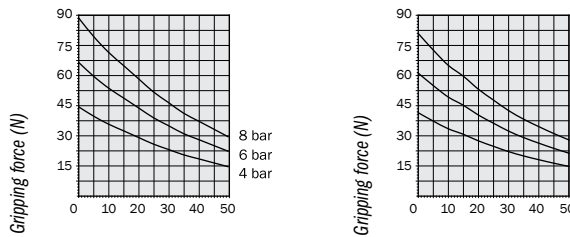
SGP-20S



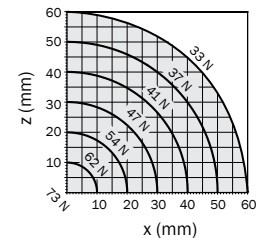
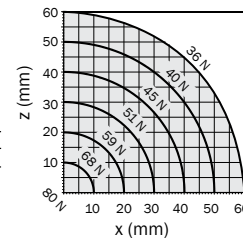
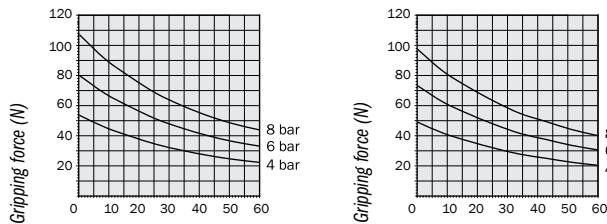
SGP-25S



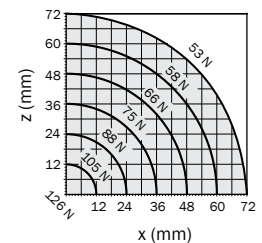
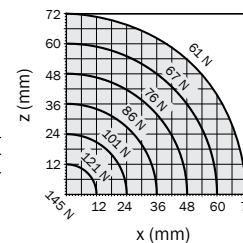
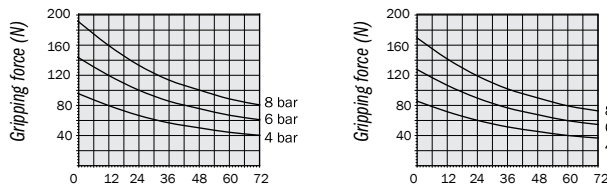
SGP-32S



SGP-40S



SGP-50S



## Compact Parallel Gripper – SGP-S

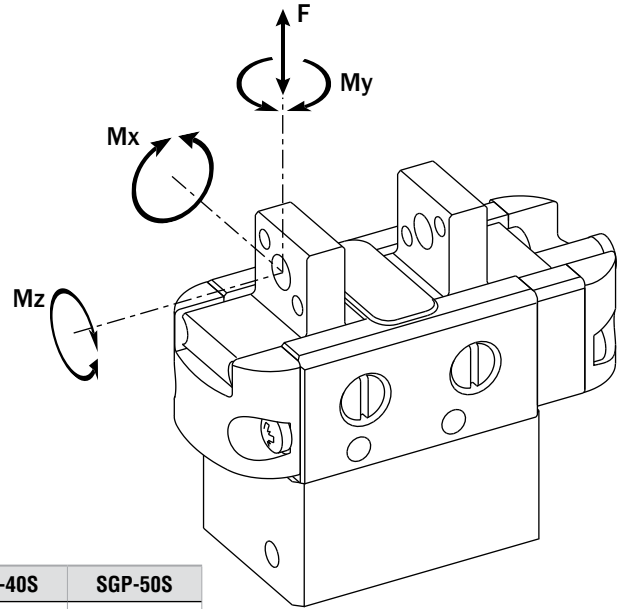
### Safety loads

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 with motionless jaws.

F d, Mx d, My d, Mz 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-16S	SGP-20S	SGP-25S	SGP-32S	SGP-40S	SGP-50S
<b>F s</b>	20 N	30 N	50 N	100 N	160 N	240 N
<b>Mx s</b>	0.5 Nm	1 Nm	2 Nm	4 Nm	6 Nm	10 Nm
<b>My s</b>	0.5 Nm	1 Nm	2 Nm	4 Nm	6 Nm	10 Nm
<b>Mz s</b>	0.5 Nm	1 Nm	2 Nm	4 Nm	6 Nm	10 Nm
<b>F d</b>	0.2 N	0.3 N	0.5 N	1 N	1.6 N	2.4 N
<b>Mx d</b>	0.5 Ncm	1 Ncm	2 Ncm	4 Ncm	6 Ncm	10 Ncm
<b>My d</b>	0.5 Ncm	1 Ncm	2 Ncm	4 Ncm	6 Ncm	10 Ncm
<b>Mz d</b>	0.5 Ncm	1 Ncm	2 Ncm	4 Ncm	6 Ncm	10 Ncm
<b>m 0.2s</b>	20g	30g	50g	100g	160g	240g
<b>m 0.05s</b>	13g	15g	30g	60g	80g	150g
<b>m 0.02s</b>	10g	10g	20g	40g	-	-

**Reference:**

- Force:** N x 0.225 = lbf
- Torque:** Nm x 8.850 = in-lbf
- Torque:** Ncm x 0.089 = in-lbf
- Pressure:** bar x 14.5 = psi

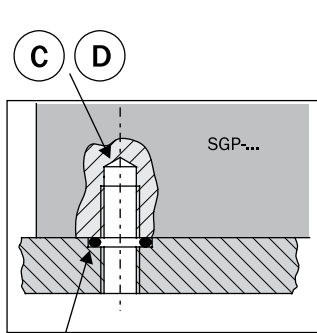
### Compressed air feeding

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

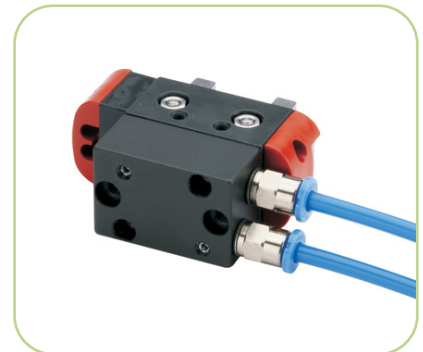
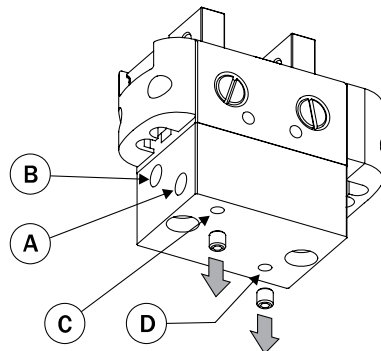
Compressed air in A or C: gripper opening.  
Compressed air in B or D: gripper closing.

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

Fittings Available on page 1047



O-Ring Ø1x3  
O-Ring groove Ø5H11x0.65<sup>+0.1</sup>

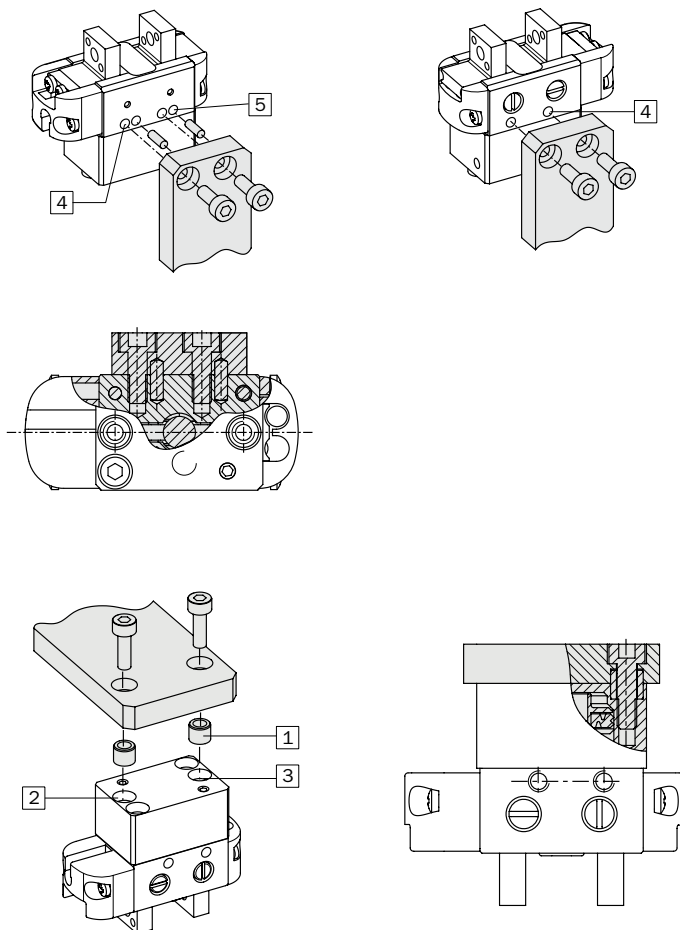


## Compact Parallel Gripper – SGP-S

### Mounting

The gripper can be mounted 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 (4). They are on both sides of the gripper housing. The dowel pin holes (5) are on one only side.
2. To fasten gripper to base use two screws passing through the holes in the plate and screwed in the threaded holes (2). Use also the two centering sleeves (1) supplied in the packaging, in the calibrated holes (3).



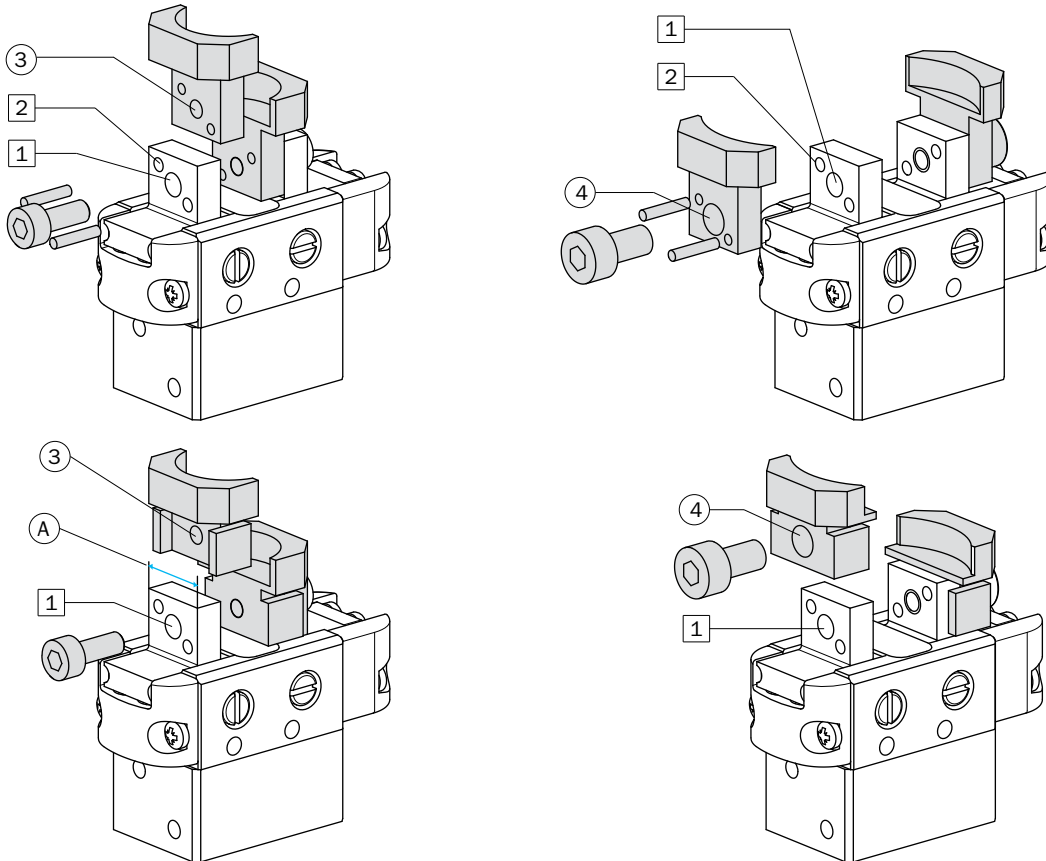
	SGP-16S	SGP-20S	SGP-25S	SGP-32S	SGP-40S	SGP-50S
1	Ø4h8 x Ø2 x 3 mm	Ø4h8 x Ø2.6 x 4 mm	Ø5h7 x Ø3.2 x 4.4 mm	Ø6h7 x Ø4.2 x 5.3 mm	Ø6h7 x Ø4.2 x 5.3 mm	Ø8h8 x Ø5.2 x 5.3 mm
2	M2x2.8 mm	M2.5x6 mm	M3x7 mm	M4x7.5 mm	M4x9.5 mm	M5x8 mm
3	Ø3H8 x 1.2 mm	Ø4H8 x 2 mm	Ø5H8 x 2.4 mm	Ø6H8 x 2.9 mm	Ø6H8 x 2.9 mm	Ø8H8 x 2.5 mm
4	M1.6x2.4 mm	M2.5x4 mm	M3x5 mm	M3x5 mm	M3x5 mm	M5x8.4 mm
5	Ø3H8 x 1.5 mm	Ø1.5H8 x 3 mm	Ø2H8 x 4 mm	Ø2H8 x 5 mm	Ø2.5H8 x 6 mm	Ø8H8 x 2.5 mm

## Compact Parallel Gripper – SGP-S

### Jaw Fastening

The gripping tools must be as short and light as possible.

They must be fastened by one screw in the threaded hole (1) to be screwed in the threaded hole (3) on the gripping tool. Or, by a screw passing through (4) and tightened into (1). For a precise positioning on the jaw use the calibrated dimension (A), or the dowel pin holes (2).



	SGP-16S	SGP-20S	SGP-25S	SGP-32S	SGP-40S	SGP-50S
1	M3	M4	M4	M5	M5	M6
2	Ø1.5H8 x 3.5 mm	Ø1.5H8 x 3.5 mm	Ø1.5H8 x 4 mm	Ø2H8 x 5 mm	Ø2.5H8 x 6 mm	Ø3H8 x 8 mm
3	M2	M3	M3	M4	M4	M5
4	Ø3.3 mm	Ø4.3 mm	Ø4.3 mm	Ø5.3 mm	Ø5.3 mm	Ø6.3 mm
A	7.5 mm	9 -0.05 mm	10 -0.05 mm	12 -0.05 mm	16 -0.05 mm	18 -0.05 mm

Note: '1' dimension is now a threaded mounting hole - 2/2018

### EMI Gripper Kit – Two-Jaw SGP32-S for Industrial Cobots

- This versatile kit can be adapted to other SGP Gripper sizes.
- CRK-SGP32S-A Mass: 285g (subject to change per configuration).
- Includes 5/2 solenoid valve and cable management clamps.
- Includes 1 inductive sensor for mid-stroke workpiece detection.
- Includes an interface plate that mounts directly to any robot.
- Includes 0–8mm V-Groove fingers.
- See 150 page for more information.

