EMI®

Parallel Gripper – GS

- Self-centering.

- Double acting.

- Long life and reliability, maintenance free.

- Different options for fastening.

- Optional sensors available on page 643.

- Spring closed (-NC) or spring open (-NO) option.

- Use FDA approved lubricant and stainless steel parts.

- Finger blanks available on page 637.

- Patented backlash adjusting system.

Mounting Brackets available on page 628.

Double Acting Models

Quick#	6325	6326	6327	6328	6784	6785
Part#	GS-10	GS-16	GS-20	GS-25	GS-32	GS-40
Price	$142.00	$145.00	$161.00	$186.00	$514.00	$717.00
Medium	Filtered, lubricated / non-lubricated compressed air					
Pressure range	36–116 psi	21.7–116 psi			14.5–116 psi	
Opening total gripping force at 87 psi	8 lbf	22.4 lbf	47.6 lbf	63.4 lbf	112.4 lbf	157.4 lbf
Closing total gripping force at 87 psi	6.3 lbf	19.4 lbf	41.8 lbf	57 lbf	96.6 lbf	138 lbf
Total stroke (+/- 0.3mm)	4.6mm	6.8mm	10.4mm	14.4mm	22mm	30mm
Maximum repeatability tolerance	±0.02mm					
Mid-stroke detection with Gimatic Sensor	Yes, see Sensor Reference Guide on page 1010 for details.					
Mid-stroke detection with SMC Sensor	Yes, with D-M9_ SMC sensors and included sensor bracket (see page 1004)					
Weight	45g	98g	207g	365g	645g	1155g

Normally Open Models

Quick#	Part#	Price	Finger Stroke	Wt.
6329	GS-10-NO	$142.00	4.6mm	46g
6330	GS-16-NO	$145.00	6.8mm	99g
6331	GS-20-NO	$161.00	10.4mm	209g
6332	GS-25-NO	$186.00	14.4mm	369g

Normally Closed Models

Quick#	Part#	Price	Finger Stroke	Wt.
6333	GS-10-NC	$142.00	4.6mm	46g
6334	GS-16-NC	$145.00	6.8mm	99g
6335	GS-20-NC	$161.00	10.4mm	209g
6336	GS-25-NC	$186.00	14.4mm	369g

Use Quick#s for easy online ordering.

Parallel Gripper – GS
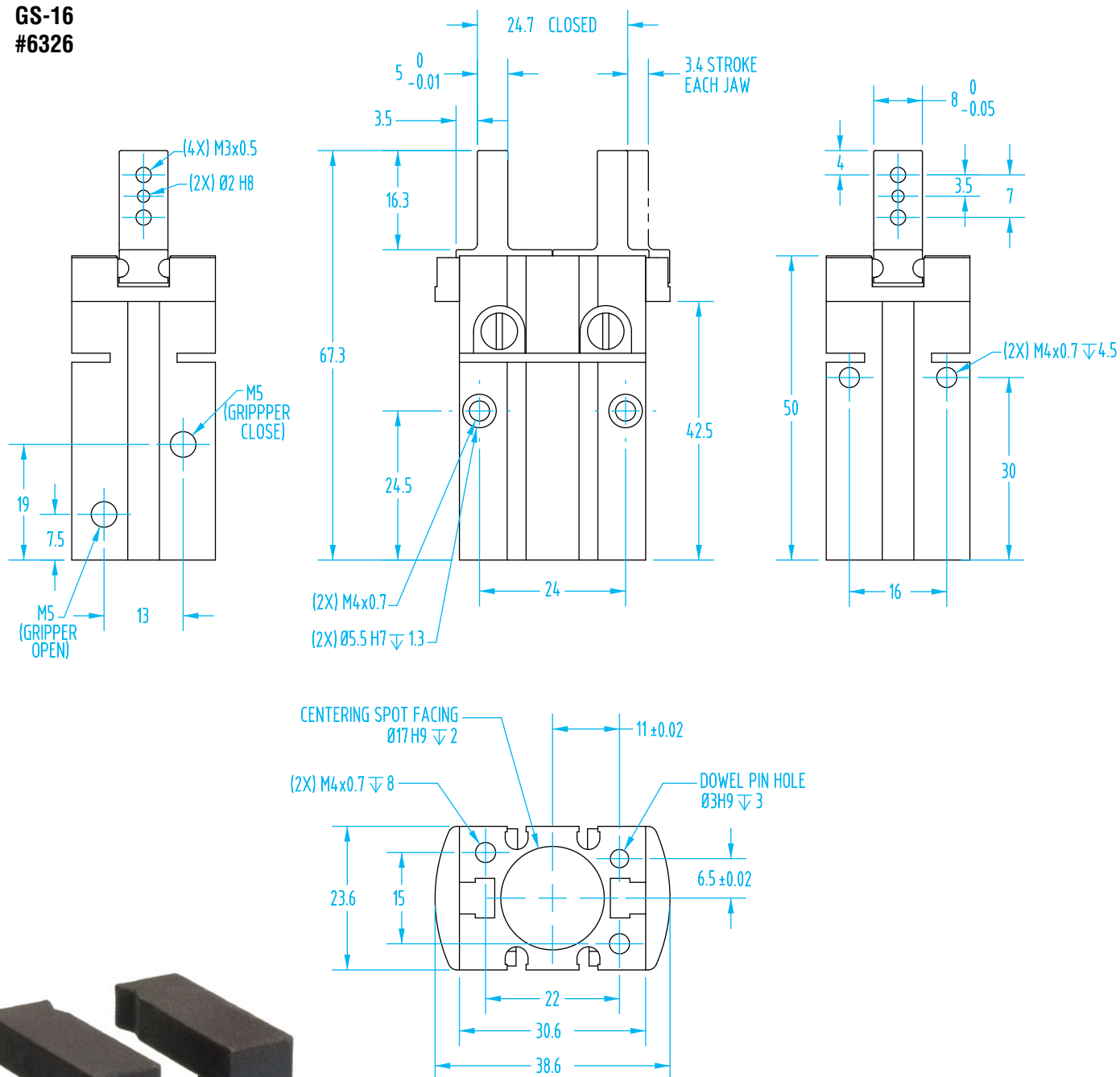
(Dimensioned drawing shown full scale)

GS-10
#6325

(4X) M2.5x0.45
(2X)Ø1.5 H8
M3 (GRIPPPER CLOSE)
19
9
M3 (GRIPPER OPEN)
11

18.7 CLOSED
4 0 -0.01
2.1
2.3 STROKE EACH JAW
12.5
57
23
34.5
(2X) M3x0.5
(2X) Ø5H7 ▽ 1.3
16

5 0 -0.05
2.9
3
5.7
(2X) M3x0.5 ▽ 6
43.8
27
11.4

CENTERING SPOT FACING Ø11 H9 ▽ 2
(2X) M3x0.5 ▽ 6
7.6 ±0.02
DOWEL PIN HOLE Ø2H9 ▽ 3
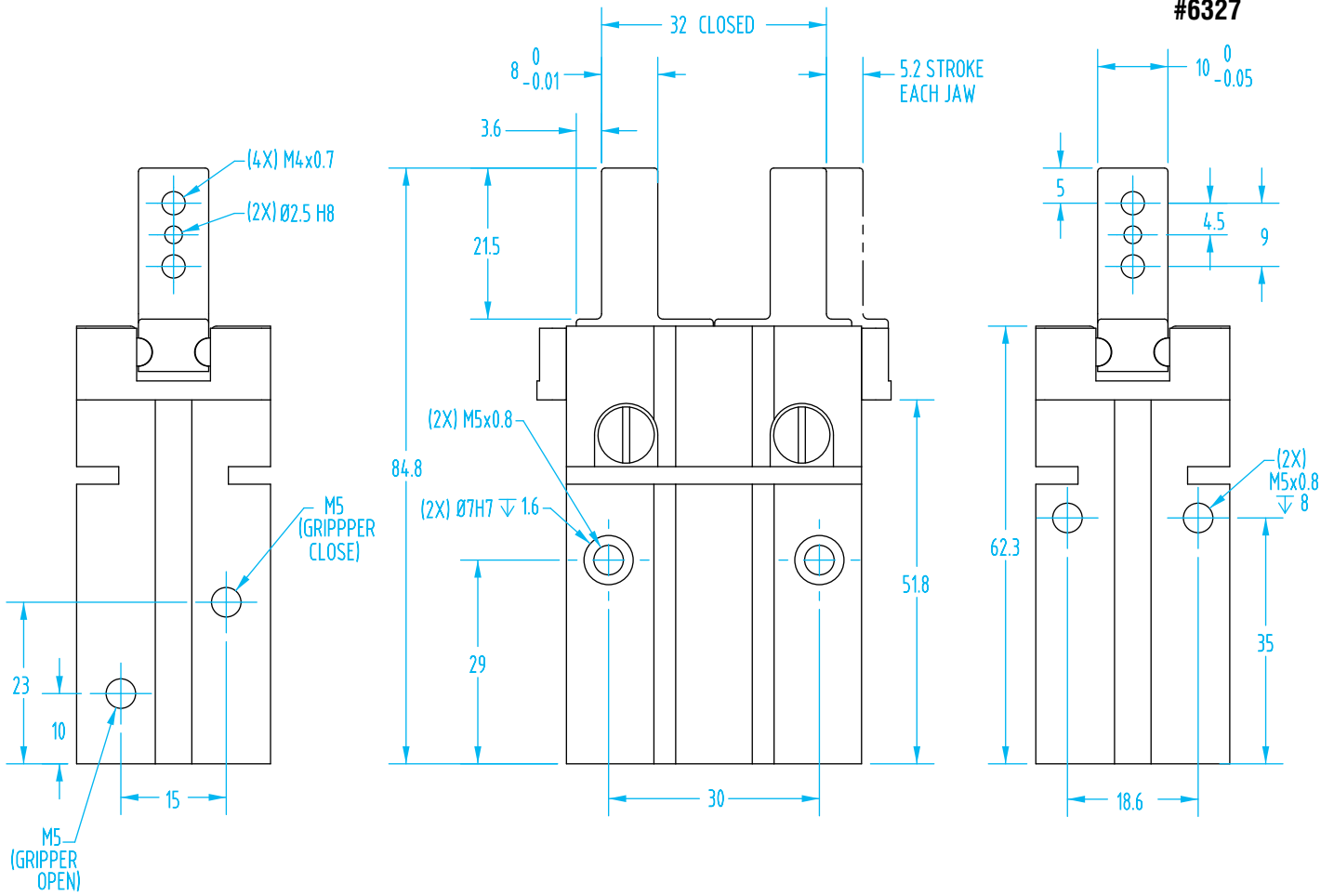5.2 ±0.02
16.4
12
18
23
29.4

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.

EMI
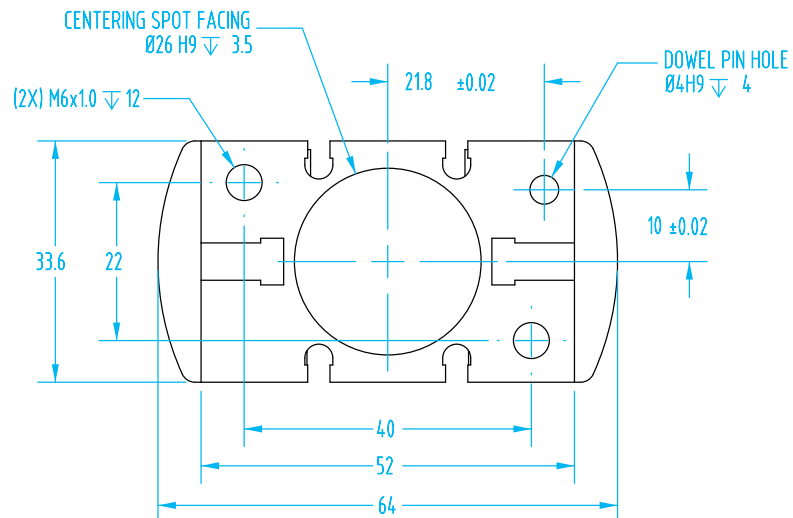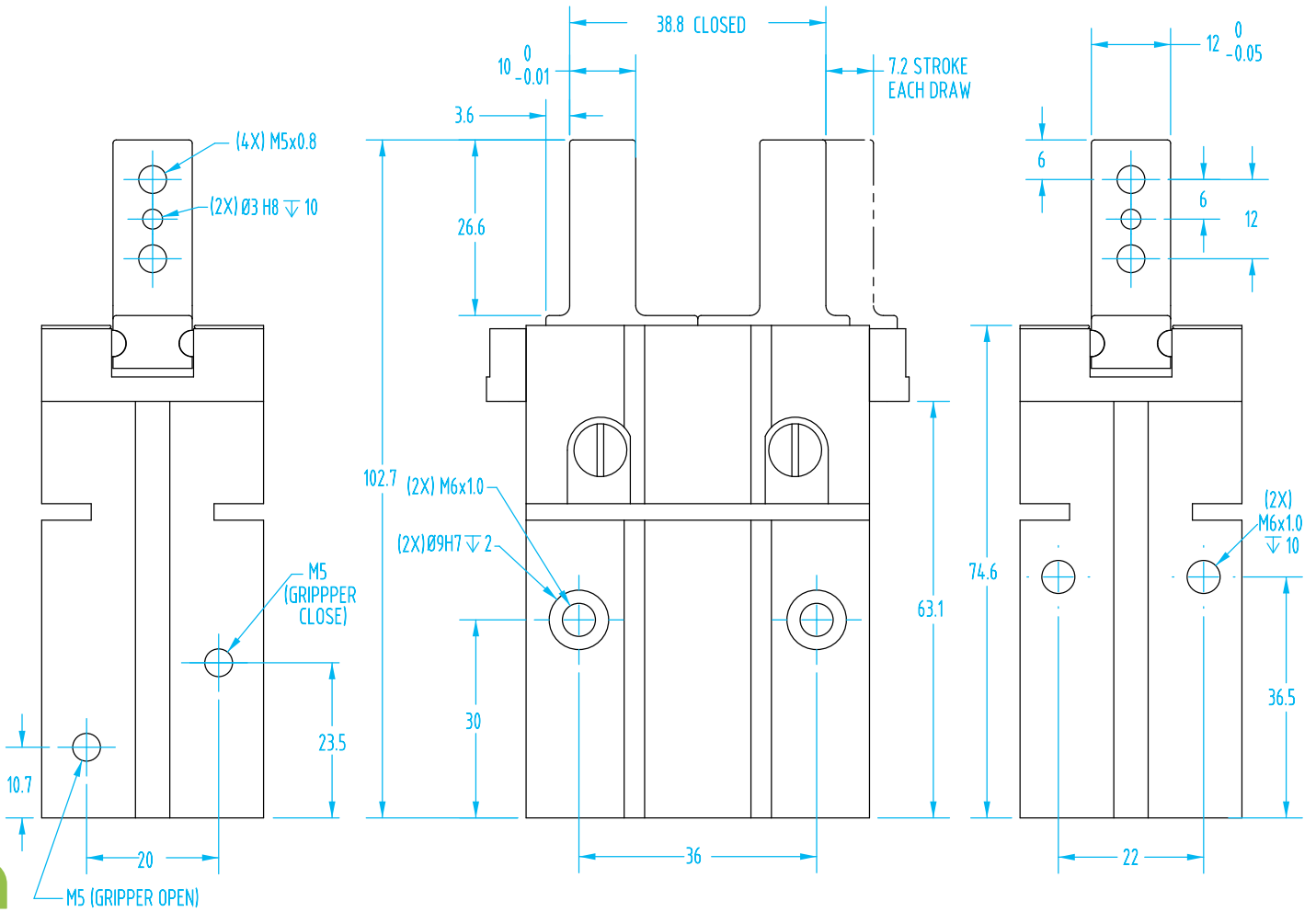
Parallel Gripper – GS

(Dimensioned drawing shown full scale)

GS-16
#6326

24.7   CLOSED

5   0 −0.01

3.4 STROKE
EACH JAW

3.5

16.3

(4X) M3x0.5

(2X) Ø2 H8

8   0 −0.05

4

3.5

7

67.3

M5
(GRIPPPER
CLOSE)

42.5

(2X) M4x0.7 ▽4.5

50

19

24.5

30

7.5

M5
(GRIPPER
OPEN)

13

24

16

(2X) M4x0.7

(2X) Ø5.5 H7 ▽ 1.3

CENTERING SPOT FACING
Ø17 H9 ▽ 2

11 ±0.02

(2X) M4x0.7 ▽ 8

DOWEL PIN HOLE
Ø3 H9 ▽ 3

23.6

15

6.5 ±0.02

22

30.6

38.6

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.

Parallel Gripper – GS

(Dimensioned drawing shown full scale)

GS-20
#6327

32 CLOSED

8 $^{0}_{-0.01}$

5.2 STROKE EACH JAW

3.6

21.5

84.8

(4X) M4x0.7

(2X) Ø2.5 H8

(2X) M5x0.8

(2X) Ø7H7 ▽ 1.6

M5 (GRIPPPER CLOSE)

29

51.8

30

23

10

15

M5 (GRIPPER OPEN)

10 $^{0}_{-0.05}$

5

4.5

9

(2X) M5x0.8 ▽ 8

62.3

35

18.6

CENTERING SPOT FACING Ø21 H9 ▽ 3

16.8 ±0.02

DOWEL PIN HOLE Ø4H9 ▽ 4

(2X) M5x0.8 ▽ 10

7.5 ±0.02

27.6

18

32

42

50.4
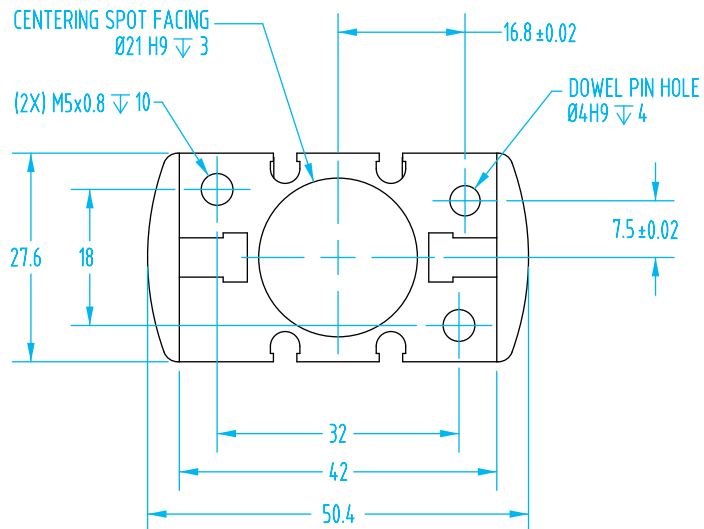
Parallel Gripper – GS

(Dimensioned drawing reduced to fit)

GS-25
#6328

(4X) M5x0.8

(2X) Ø3 H8 ▽ 10

38.8 CLOSED

10 0 −0.01

3.6

7.2 STROKE EACH DRAW

12 0 −0.05

6

6

12

26.6

102.7

(2X) M6x1.0

(2X) Ø9H7 ▽ 2

74.6

63.1

(2X) M6x1.0 ▽ 10

M5 (GRIPPPER CLOSE)

30

36.5

23.5

10.7

20

36

22

M5 (GRIPPER OPEN)

CENTERING SPOT FACING Ø26 H9 ▽ 3.5

(2X) M6x1.0 ▽ 12

21.8 ±0.02

DOWEL PIN HOLE Ø4H9 ▽ 4

33.6

22

10 ±0.02

40

52

64

Parallel Gripper – GS

(Dimensioned drawing reduced to fit)

GS-32
#6784

Front view labels:
- (4X) M6x1.0
- (2X) Ø4H8
- 29.5
- 113
- M5 (GRIPPER CLOSE)
- 31
- 11
- 24
- M5 (GRIPPER OPEN)

Center view labels:
- 50 CLOSED
- 25
- $12\ ^{0}_{-0.01}$
- 11 STROKE EACH JAW
- (2X) M6x1.0
- (2X) Ø9H7 ▽ 2
- 40
- 66.5
- 46

Right view labels:
- $15\ ^{0}_{-0.05}$
- 7
- 7
- 14
- 81
- (2X) M6x1.0 ▽ 10
- 48
- 26

Bottom view labels:
- CENTERING SPOT FACING Ø32H9 ▽ 4
- (2X) M6x1.0 ▽ 12
- DOWEL PIN HOLE Ø5H9 ▽ 5
- 23 ±0.02
- 12 ±0.02
- 40
- 26
- 46
- 60
- 100
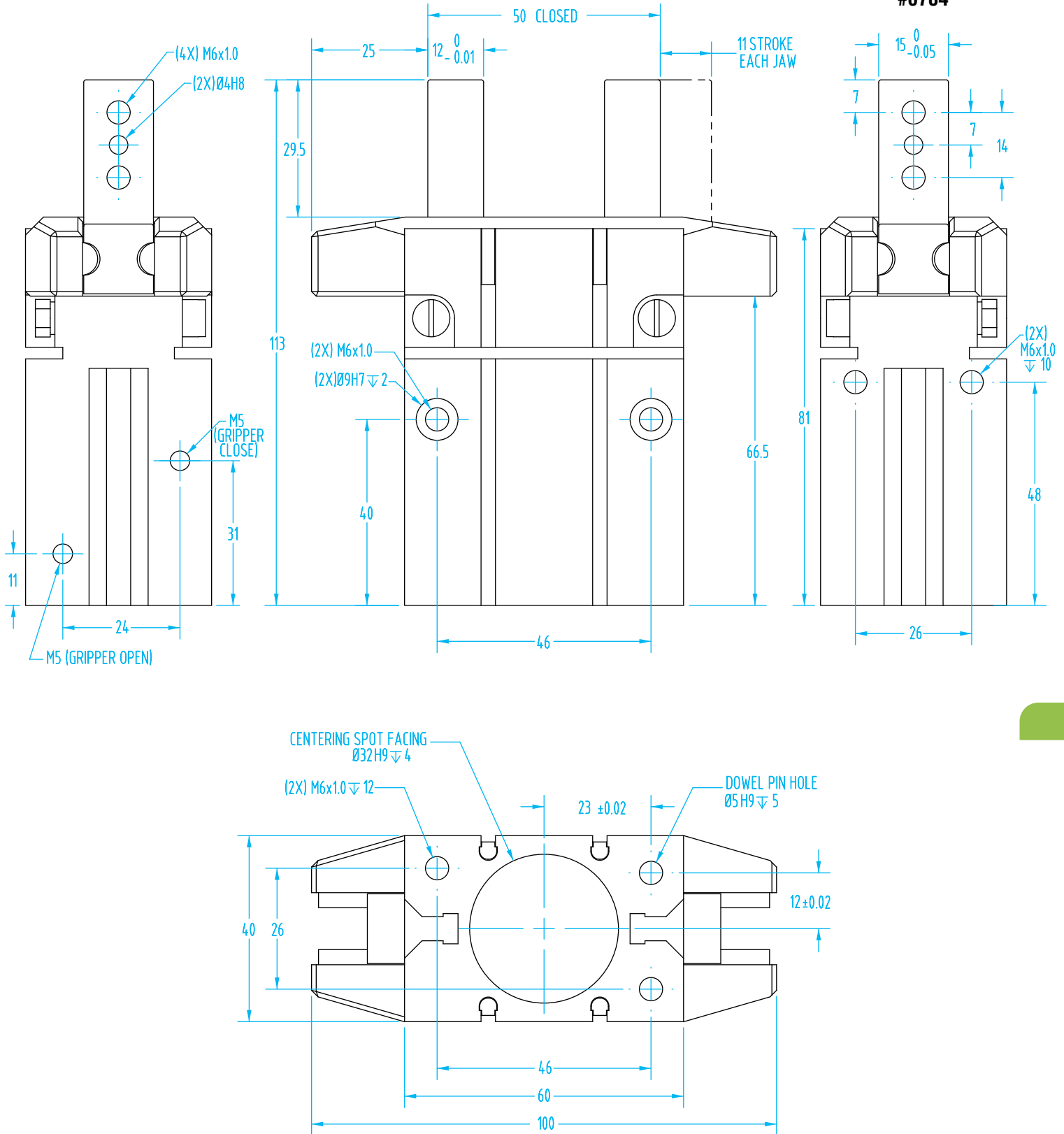
Parallel Gripper – GS

(Dimensioned drawing reduced to fit)

GS-40
#6785
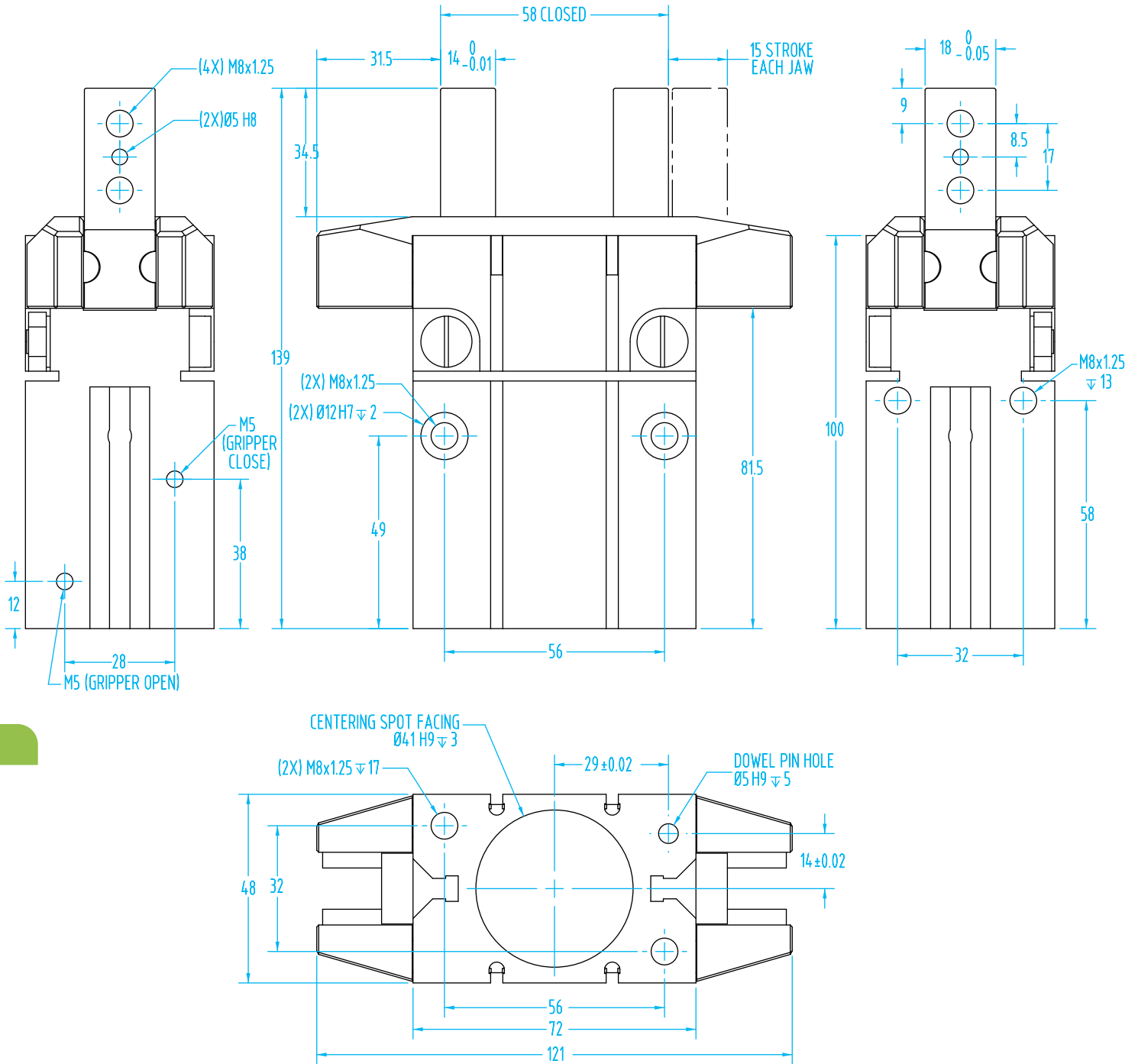
Finger Blanks for GS Grippers

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.

Gripper Fingers shown fully open.
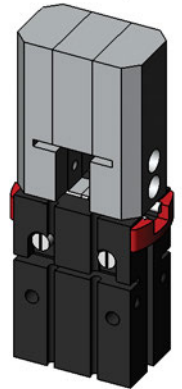
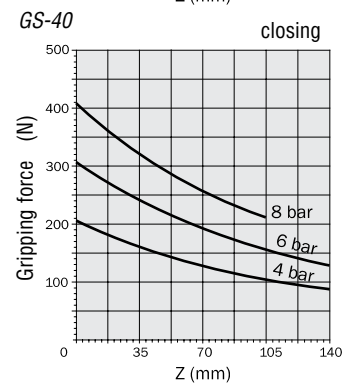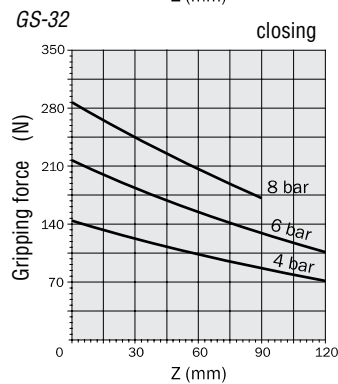*Gripper Fingers shown closed. (fingers overlap) Cut away material to fit your part.*

Quick#	Part#	Material	For:	Wt. (g)	Price
5884	GS-10-FBA	Aluminum	GS-10 & MHZ2-10	68	$25.09
7462	GS-10-FBN	Nylon		3.5	$19.30
5886	GS-16-FBA	Aluminum	GS-16 & MHZ2-16	134	$31.00
7463	GS-16-FBN	Nylon		7	$23.85
5888	GS-20-FBA	Aluminum	GS-20 & MHZ2-20	210	$35.36
7464	GS-20-FBN	Nylon		11	$27.20
5890	GS-25-FBA	Aluminum	GS-25 & MHZ2-25	338	$38.55
7465	GS-25-FBN	Nylon		18	$29.65

Note: Mounting Hardware Included

Dimensions with fingers open:

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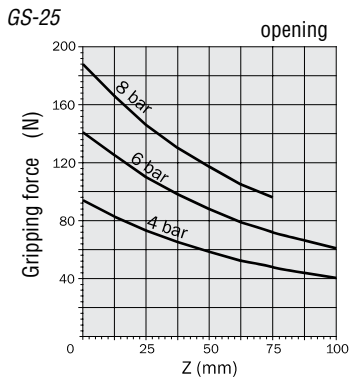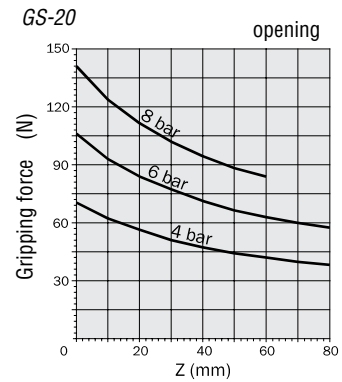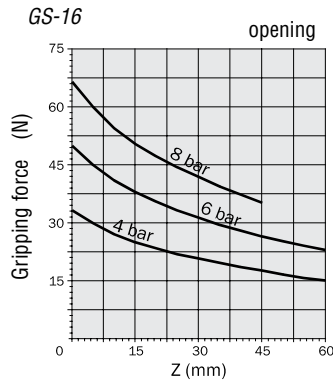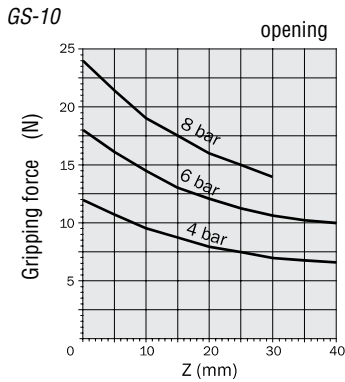
Parallel Gripper – GS

Gripping force

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

The force shown in these graphs refers to one jaw.
The total force is double.
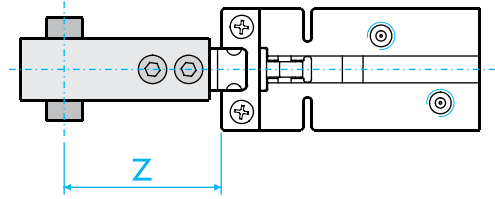
Reference:
Force: N x 0.225 = lbf
Torque: Nm x 8.850 = in-lbf
Torque: Ncm x 0.089 = in-lbf
Pressure: bar x 14.5 = psi

GS-10 — opening

GS-16 — opening

GS-20 — opening

GS-25 — opening

GS-32 — opening

GS-40 — opening

GS-10 — closing

GS-16 — closing

GS-20 — closing

GS-25 — closing
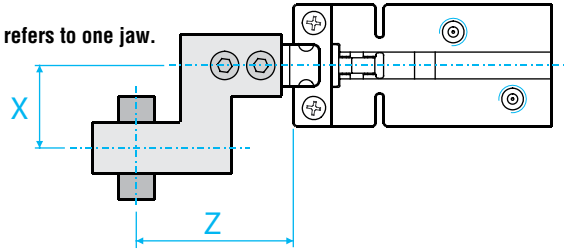
GS-32 — closing

GS-40 — closing
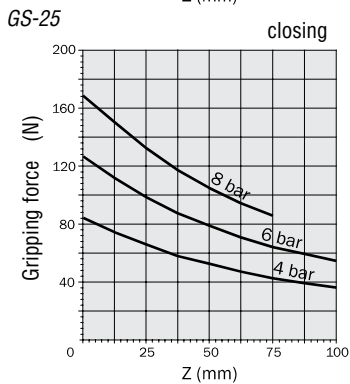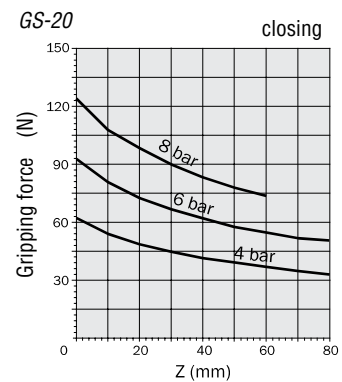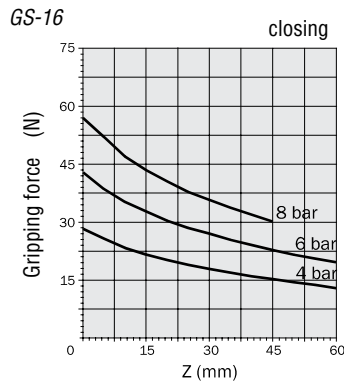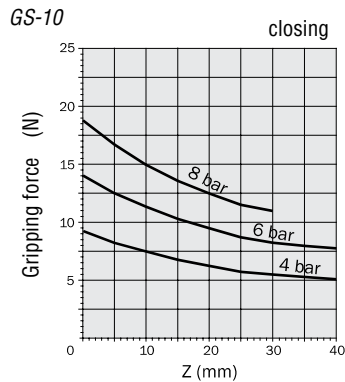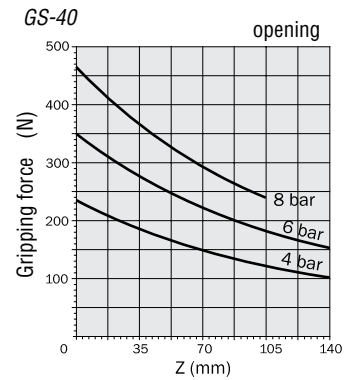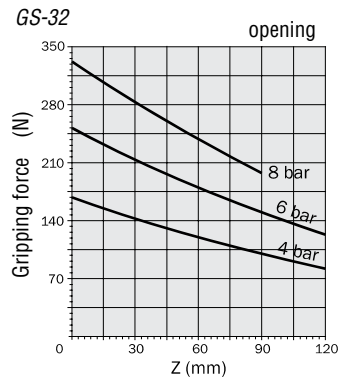
Parallel Gripper – GS

Gripping force

The graphs show the gripping force on each jaw, as a function of the gripping tool length 'Z' and the overhanging 'X' at 6 bar (87psi).

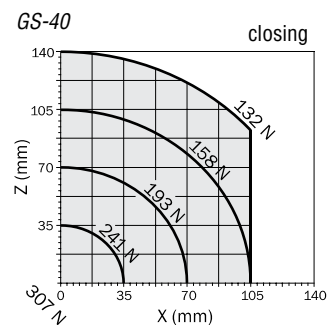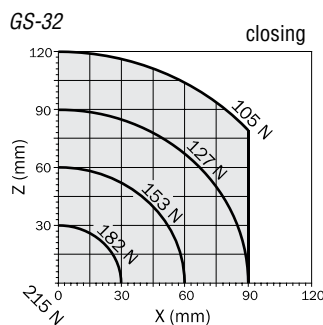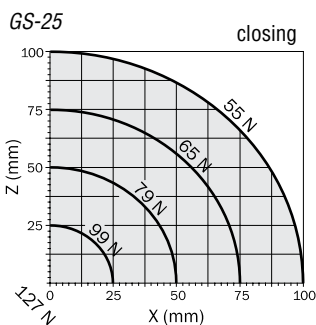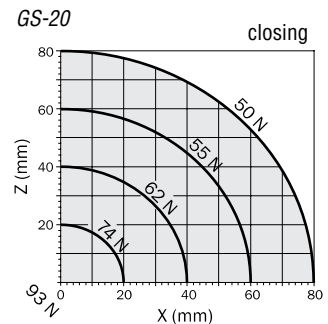**The force shown in these graphs refers to one jaw. The total force is double.**

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

GS-10 opening
GS-16 opening
GS-20 opening
GS-25 opening
GS-32 opening
GS-40 opening
GS-10 closing
GS-16 closing
GS-20 closing
GS-25 closing
GS-32 closing
GS-40 closing
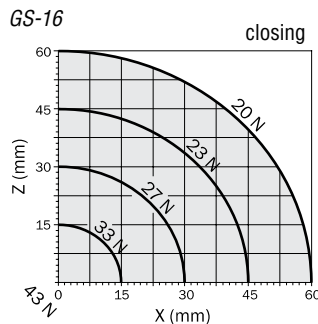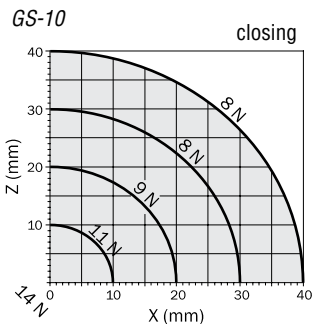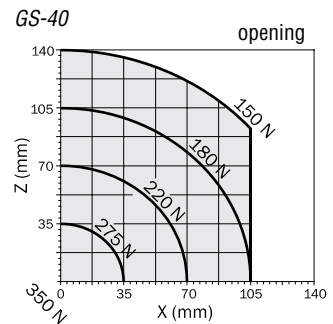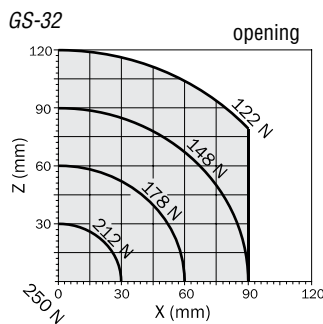
Parallel Gripper – GS

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 wide side, use a plate with two thru-holes and two screws to be screwed on the threaded holes (A) on the gripper housing. Use 2 centering sleeves (J), where available.
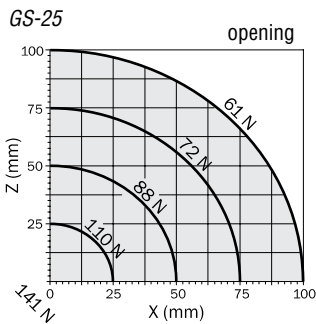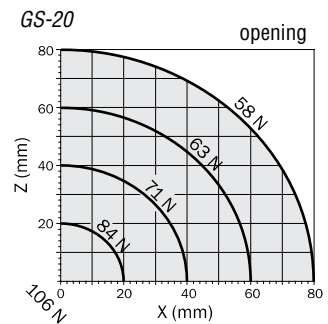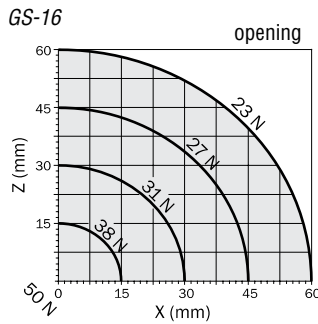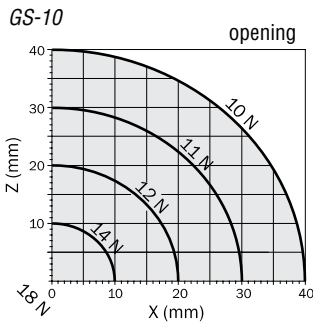
2- It is possible to fasten the gripper on the wider side also with two screws (B) passing through the threaded holes (A). In this case sensors on the T-slot could be unusable. Use 2 centering sleeves (J), where available.

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 centering disc in the spot face (H). In this case the necessary room for sensor must be provided (X and Y).
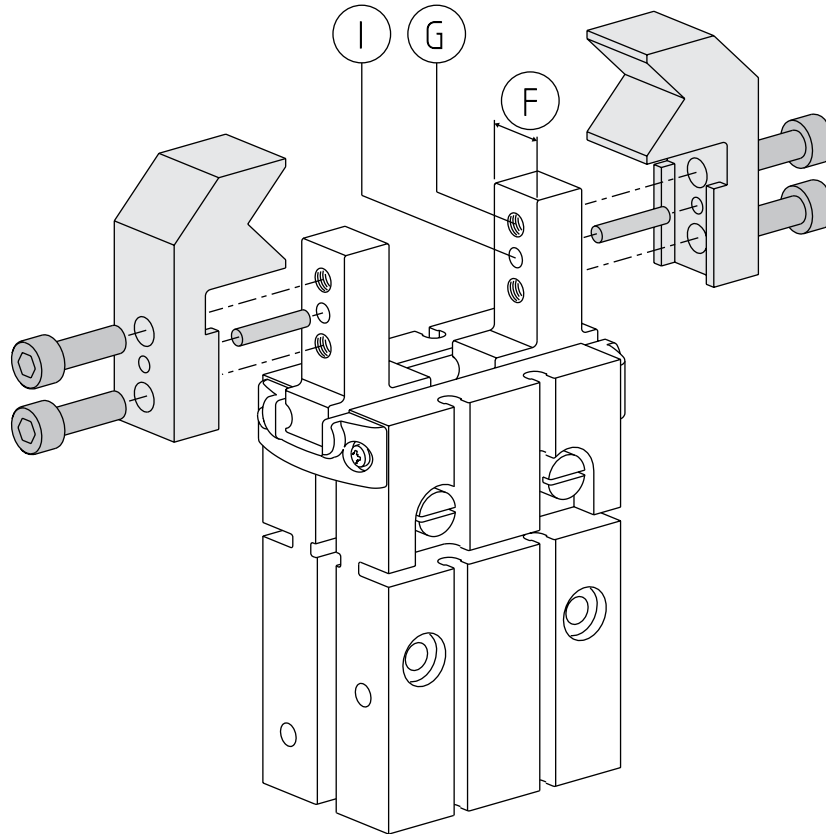

(See 'Sensor Type' chart on next page)
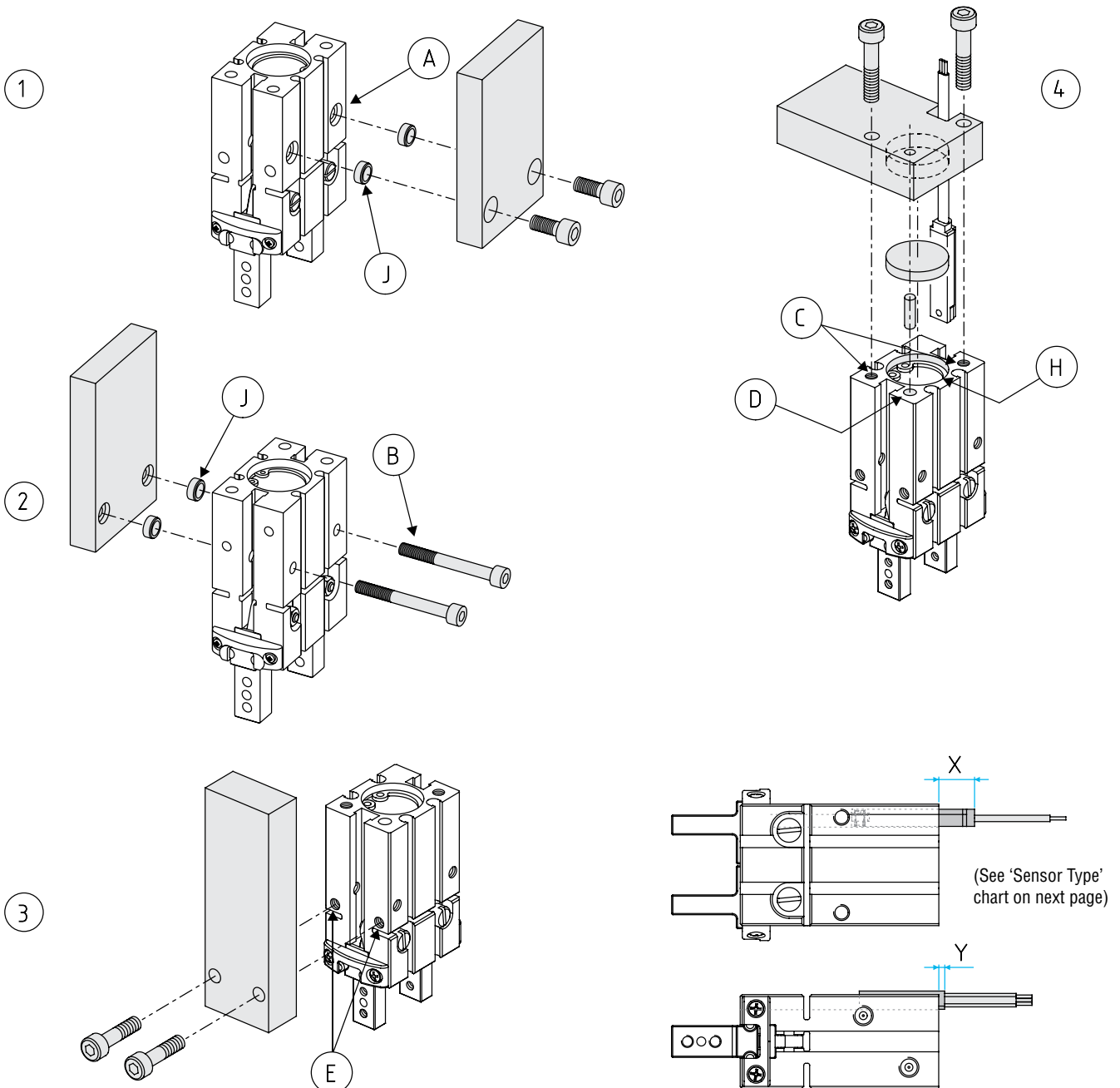
Parallel Gripper – GS

Gripper tool fastening

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	M3 x 5.5mm	M4 x 8mm	M5 x 10mm	M6 x 12mm	M6 x 12mm	M8 x 21mm
B	M2.5 x 22mm	M3 x 30mm	M4 x 35mm	M5 x 45mm	M5 x 50mm	M6 x 60mm
C	M3 x 6mm	M4 x 8mm	M5 x 10mm	M6 x 12mm	M6 x 12mm	M8 x 17mm
D	Ø2H9 x 3mm	Ø3H9 x 3mm	Ø4H9 x 4mm	Ø4H9 x 4mm	Ø5H9 x 5mm	Ø5H9 x 5mm
E	M3 x 6mm	M4 x 4.5mm	M5 x 8mm	M6 x 10mm	M6 x 10mm	M8 x 21mm
F	$5^{-0.05}$mm	$8^{-0.05}$mm	$10^{-0.05}$mm	$12^{-0.05}$mm	$12^{-0.05}$mm	$18^{-0.05}$mm
G	M2.5 x 4mm	M3 x 5mm	M4 x 8mm	M5 x 10mm	M6 x 12mm	M8 x 18mm
H	Ø11H9 x 2mm	Ø17H9 x 2mm	Ø21H9 x 3mm	Ø26H9 x 3.5mm	Ø34H9 x 4mm	$Ø41^{+0.02}_{+0.05}$ x 3mm
I	Ø1.5H8 x 4mm	Ø2H8 x 5mm	Ø2.5H8 x 8mm	Ø3H8 x 10mm	Ø4H8 x 12mm	Ø5H8 x 14mm
J	2.4mm	2.5mm	3mm	4mm	4mm	5mm

Sensor Type		GS-10	GS-16	GS-20	GS-25	GS-32	GS-40
	SC	-	X = 2mm	X = 0mm	X = 0mm	X = 0mm	X = 0mm
	SL	X = 10mm + cable	X = 10mm + cable	X = 9mm + cable	X = 7mm + cable	X = 7mm + cable	X = 7mm + cable
	SN	-	X = 0 mm	X = 0 mm	X = 0 mm	X = 0mm	X = 0mm
	SS	X = 2 mm + cable	X = Y 3 mm + cable	X = Y 1 mm + cable	X = Y 1 mm + cable	cable	cable

Parallel Gripper – GS

Gripping

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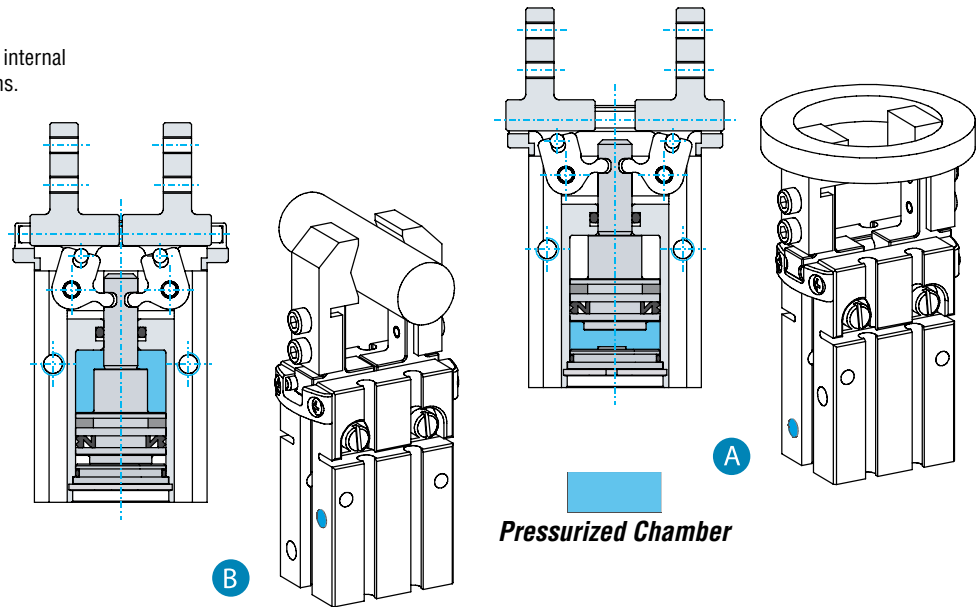The opening force is higher.

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
Call our Engineering Department for assistance

Pressurized Chamber

Ⓐ

Ⓑ

Spring open or Spring close

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 87psi.

NC

NO

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.
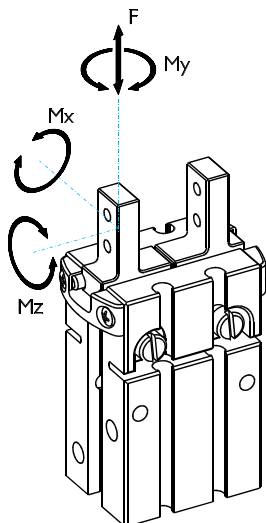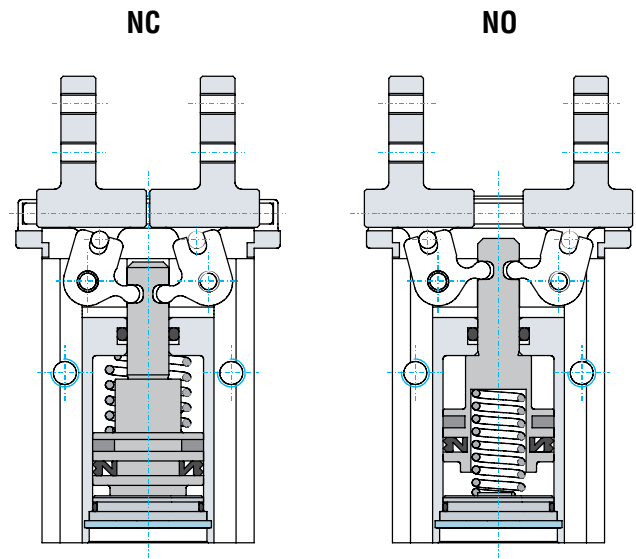
	GS-10	GS-16	GS-20	GS-25	GS-32	GS-40
F s	25N	50N	75N	125N	200N	300N
Mx s	0.4Nm	1.5Nm	5Nm	8Nm	18Nm	30Nm
My s	0.4Nm	1.5Nm	5Nm	8Nm	12Nm	20Nm
Mz s	0.4Nm	1.5Nm	5Nm	8Nm	18Nm	30Nm
F d	0.4N	0.8N	1.5N	2.5N	3.5N	4.5N
Mx d	0.4Ncm	1.5Ncm	5Ncm	8Ncm	18Ncm	30Ncm
My d	0.4Ncm	1.5Ncm	5Ncm	8Ncm	18Ncm	30Ncm
Mz d	0.4Ncm	1.5Ncm	5Ncm	8Ncm	18Ncm	30Ncm
m 0.2s	40g	80g	150g	250g	350g	450g
m 0.12s	35g	65g	125g	200g	250g	300g
m 0.09s	30g	55g	100g	150g	200g	-
m 0.07s	25g	45g	75g	100g	-	-
m 0.05s	20g	35g	50g	-	-	-
m 0.02s	15g	25g	-	-	-	-
m.0.01s	10g	-	-	-	-	-

Parallel Gripper – GS

Sensors

The operating position can be checked by sensors (optional), that detect the magnet on the piston inside.
Proximity near a large mass of ferromagnetic material or intense magnetic fields may cause sensing troubles.

SN...

SS...

#7440

SSQ...

PRO SN...

PRO SS...

Quick#	Part#	Signal	Connection	Price	GS-10	All other GS Grippers	
Gimatic 3-wire Straight SS style magnetoresistive sensors							
1882	SS4N225G	PNP	with lead, 2.5m long	$27.20	☑(*)	☑	☑(*)
1883	SS4M225G	NPN	with lead, 2.5m long	$27.20	☑(*)	☑	☑(*)
6282	SS3N203G	PNP	M8 male connector, 0.3m long	$31.16	☑(*)	☑	☑(*)
1884	SS3M203G	NPN	M8 male connector, 0.3m long	$31.16	☑(*)	☑	☑(*)
Gimatic 3-wire Straight High Precision Sensors for midstroke detection							
7707	SSQ4N225G	PNP	with lead, 2.5m long	$27.20	☑(*)	☑	☑(*)
7709	SSQ4M225G	NPN	with lead, 2.5m long	$27.20	☑(*)	☑	☑(*)
7708	SSQ3N203G	PNP	M8 male connector, 0.3m long	$31.16	☑(*)	☑	☑(*)
7710	SSQ3M203G	NPN	M8 male connector, 0.3m long	$31.16	☑(*)	☑	☑(*)
7440	K-SENS	*Allows 'C' channel sensors to work in 'T' channels	$4.82	(*) Must purchase separately			
Gimatic 90˚ Lead exit, 3-wire SN style magnetoresistive sensors							
6278	SN4N225G	PNP	with lead, 2.5m long	$27.20	☐	☑	☐
6357	SN4M225G	NPN	with lead, 2.5m long	$27.20	☐	☑	☐
6277	SN3N203G	PNP	M8 male connector, 0.3m long	$31.16	☐	☑	☐
6356	SN3M203G	NPN	M8 male connector, 0.3m long	$31.16	☐	☑	☐

Note: M8 Extension cables Quick#'s 2582 & 2583 available on page 985.

Quick#	Part#	Signal	Description	Price	GS10	All other GS Grippers	
Gimatic Programmable "PRO" magnetoresistive sensors for C-Slots							
7521	PRO-SS4N225G	PNP	with lead, 2.5m long	$70.00	☑(*)	☑	☑(*)
7522	PRO-SS4M225G	NPN	with lead, 2.5m long	$70.00	☑(*)	☑	☑(*)
7525	PRO-SS3N215G	PNP	M8 male connector, 0.3m long	$92.00	☑(*)	☑	☑(*)
7625	PRO-SS3M215G	NPN	M8 male connector, 0.3m long	$92.00	☑(*)	☑	☑(*)
7523	PRO-SN4N225G	PNP	with lead, 2.5m long	$70.00	☐	☑	☐
7524	PRO-SN4M225G	NPN	with lead, 2.5m long	$70.00	☐	☑	☐
7526	PRO-SN3N215G	PNP	M8 male connector, 0.3m long	$92.00	☐	☑	☐
7626	PRO-SN3M215G	NPN	M8 male connector, 0.3m long	$92.00	☐	☑	☐
7440	K-SENS	*Allows 'C' channel sensors to work in 'T' channels	$4.82	(*) Must purchase separately			

SMC D-M9 sensors include a sensor bracket for use with Gimatic GS grippers. They can be found on page 1004.

See Sensor Reference Guide on page 1010 for a complete list of sensors for GS Grippers including those that detect midstroke.

Gimatic PRO SS sensor