

Wide Angle Gripper – SZ

- Improved jaw guidance.
- Self-centering.
- Double acting, Normally Open, and Normally Closed models available.
- Different options for fastening and feeding.
- Stainless steel jaws.
- Optional sensors on page 684.
- New sizes 08 & 20.



Double Acting

Quick#	7655	6760	6761	7657	6762	6763	6764
Part#	SZ08	SZ12	SZ16	SZ20	SZ25	SZ32	SZ40
Price	\$172.00	\$181.00	\$192.00	\$194.00	\$218.00	\$268.00	\$297.00
Medium	Filtered, lubricated / non-lubricated compressed air						
Pressure range	29–116 psi			14.5–116 psi			
Opening total gripping force at 87 psi	6.2 lbf	11.2 lbf	20.2 lbf	33.7 lbf	51.7 lbf	85.4 lbf	139.4 lbf
Closing total gripping force at 87 psi	6.2 lbf	11.2 lbf	20.2 lbf	33.7 lbf	51.7 lbf	85.4 lbf	139.4 lbf
Total stroke (± 0.4mm)	7mm	8mm	12mm	16mm	20mm	25mm	30mm
Maximum working frequency	3 Hz	3Hz	3Hz	2 Hz	2Hz	2Hz	2Hz
Mid-stroke detection capability	Yes, see Sensor Reference Guide on page 1010 for details.						
Weight	32g	101g	164g	290g	474g	783g	1135g

Normally Open

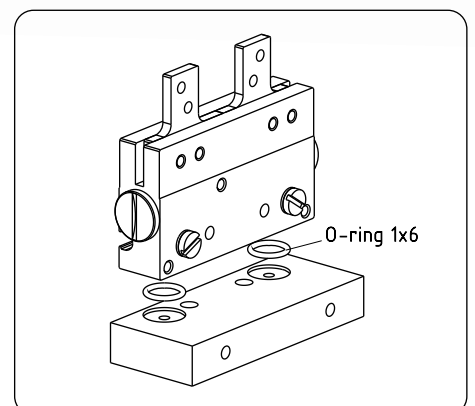
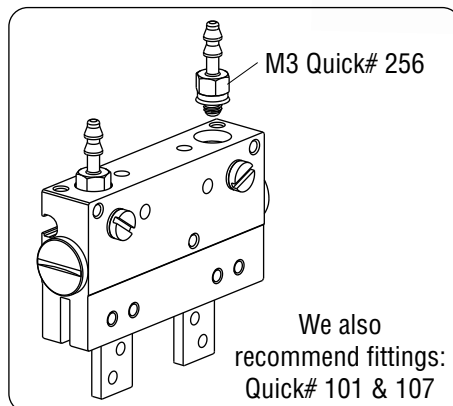
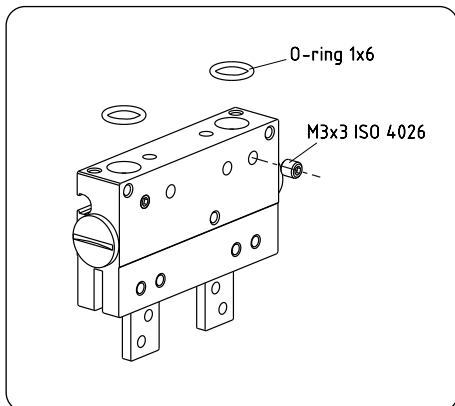
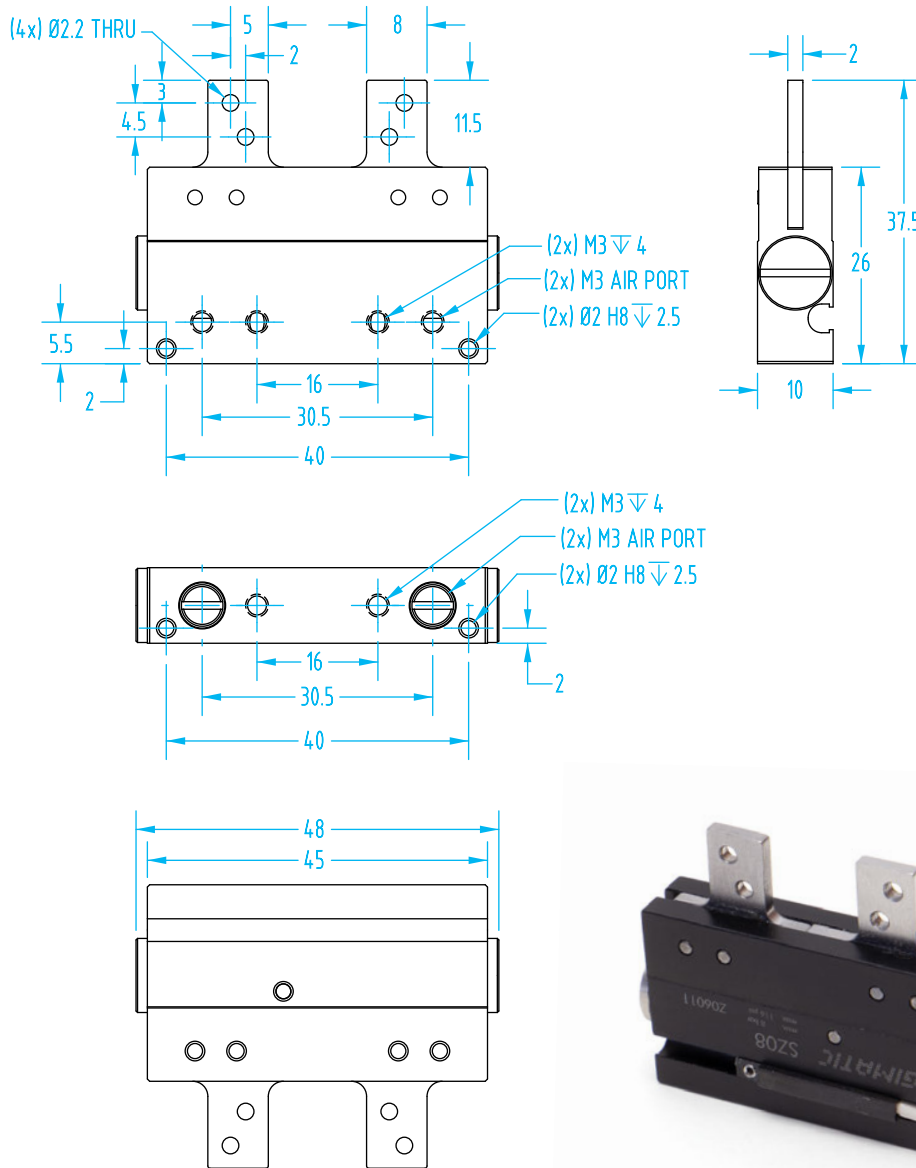
Quick#	7656	7651	7652	7658	7653	7654	Not available
Part#	SZ08-NO	SZ12-NO	SZ16-NO	SZ20-NO	SZ25-NO	SZ32-NO	SZ40-NO
Price	\$180.00	\$189.00	\$201.00	\$210.00	\$228.00	\$278.00	-
Opening total gripping force at 87 psi	8.5 lbf	13.4 lbf	24.2 lbf	41.3 lbf	62.9 lbf	102.1 lbf	-
Closing total gripping force at 87 psi	4 lbf	8.9 lbf	16.1 lbf	26 lbf	40.4 lbf	68.7 lbf	-

See EMI website for more information about SZ Normally Open and Normally Closed grippers

Wide Angle Gripper – SZ

SZ08, SZ08-NO
#7655 , #7656

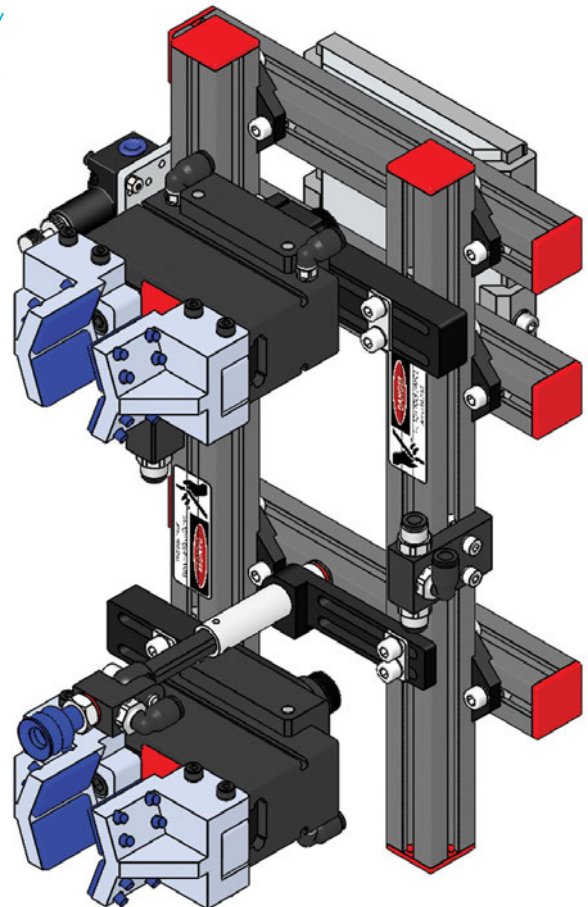
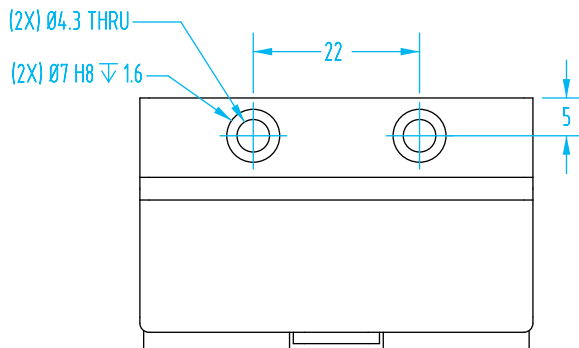
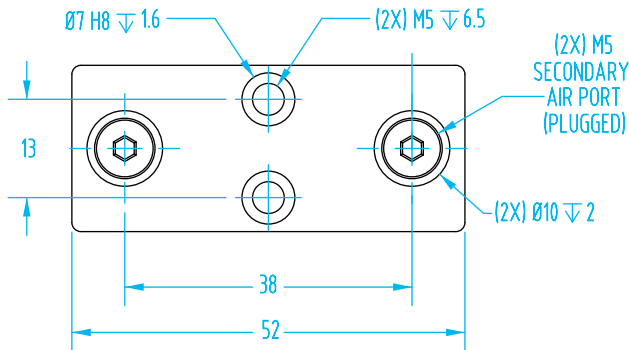
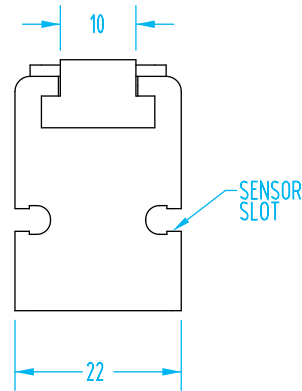
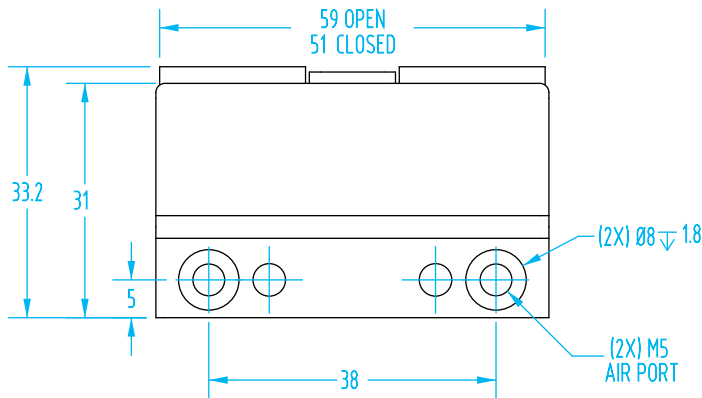
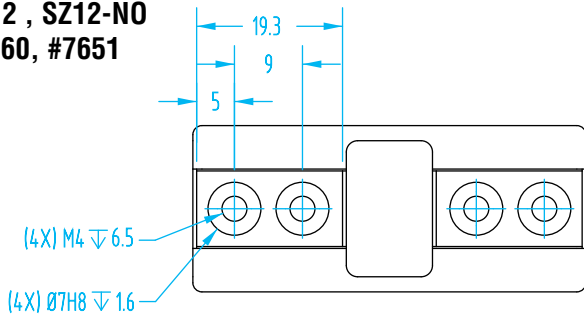
(Dimensioned drawing shown full scale)



Wide Angle Gripper – SZ

(Dimensioned drawing shown full scale)

**SZ12 , SZ12-NO
#6760, #7651**

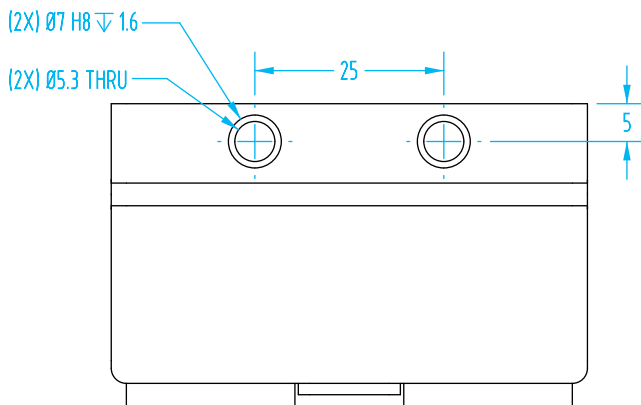
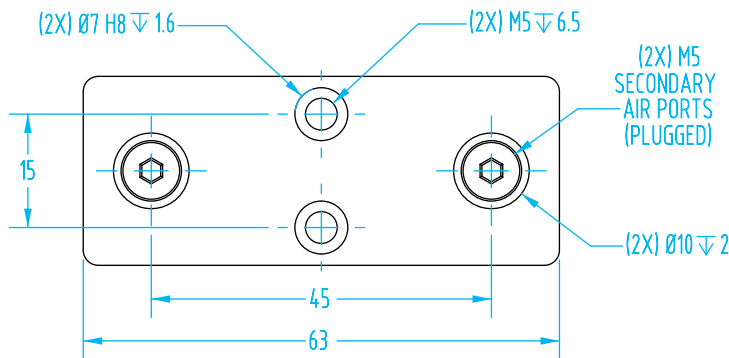
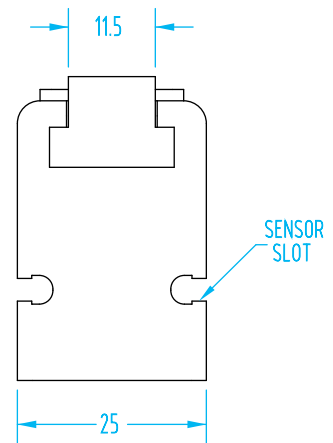
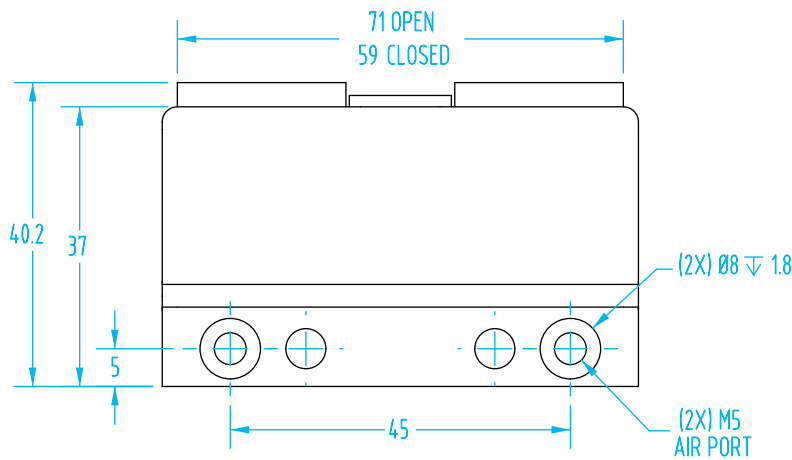
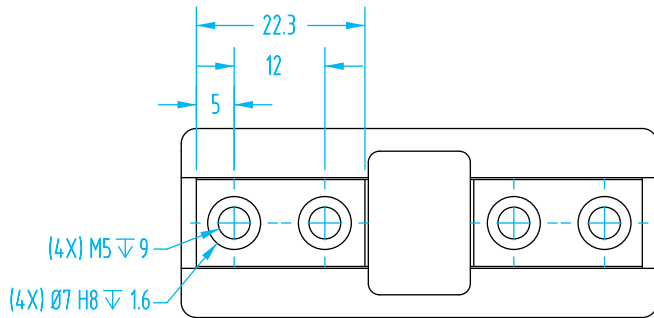


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Wide Angle Gripper – SZ

(Dimensioned drawing shown full scale)

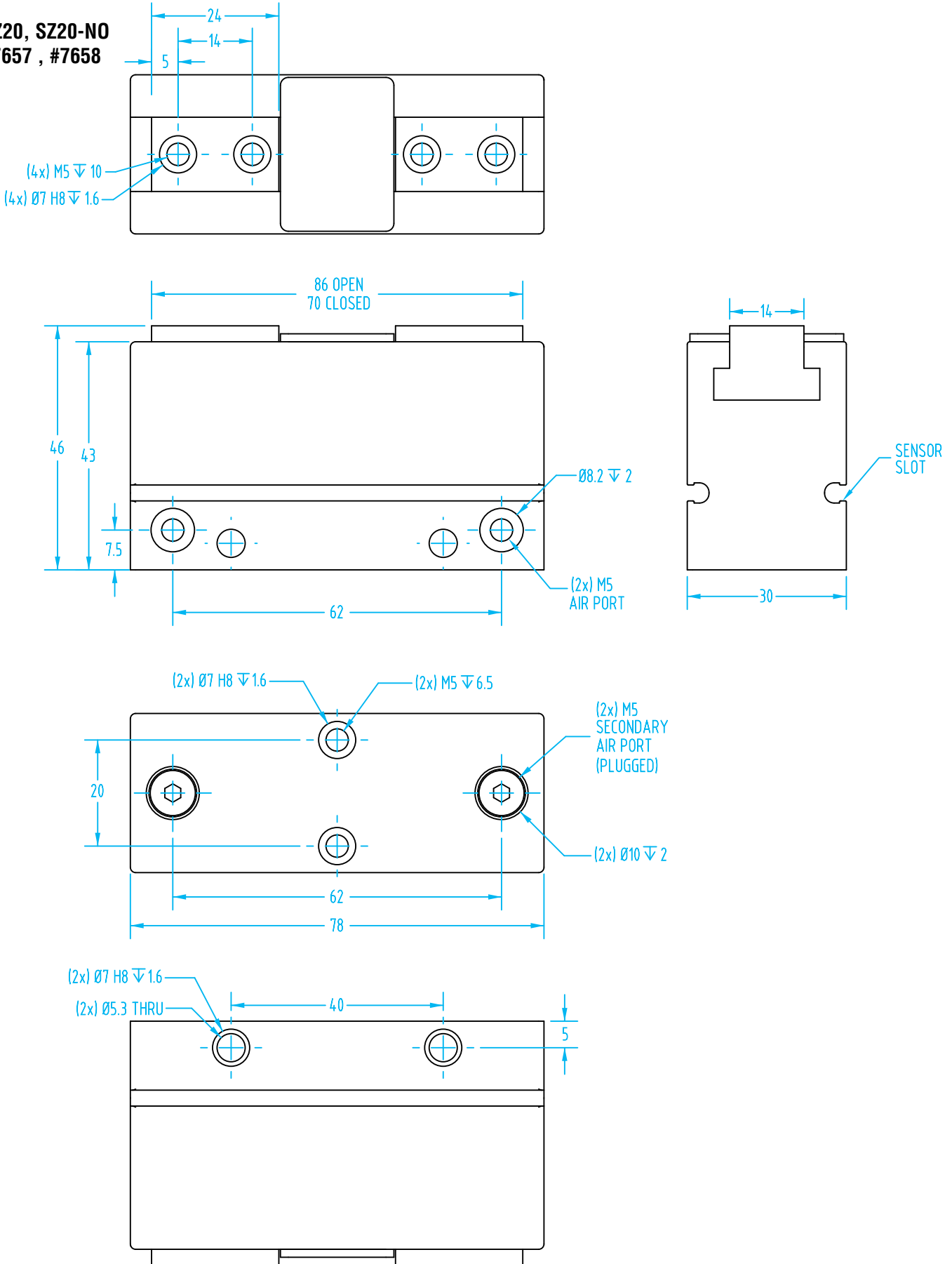
**SZ16, SZ16-NO
#6761, #7652**



Wide Angle Gripper – SZ

(Dimensioned drawing shown full scale)

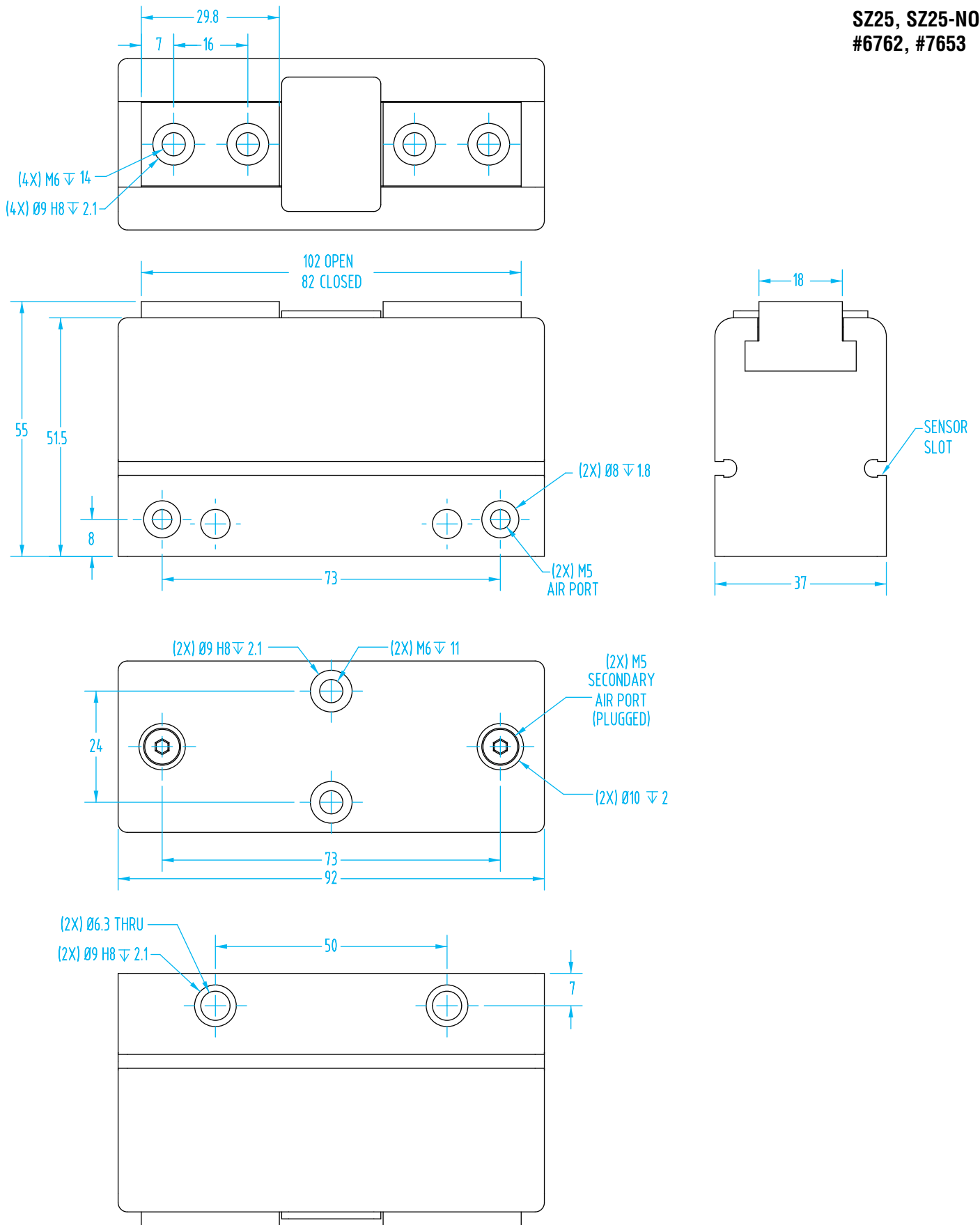
**SZ20, SZ20-N0
#7657, #7658**



Wide Angle Gripper – SZ

(Dimensioned drawing shown at 90% scale)

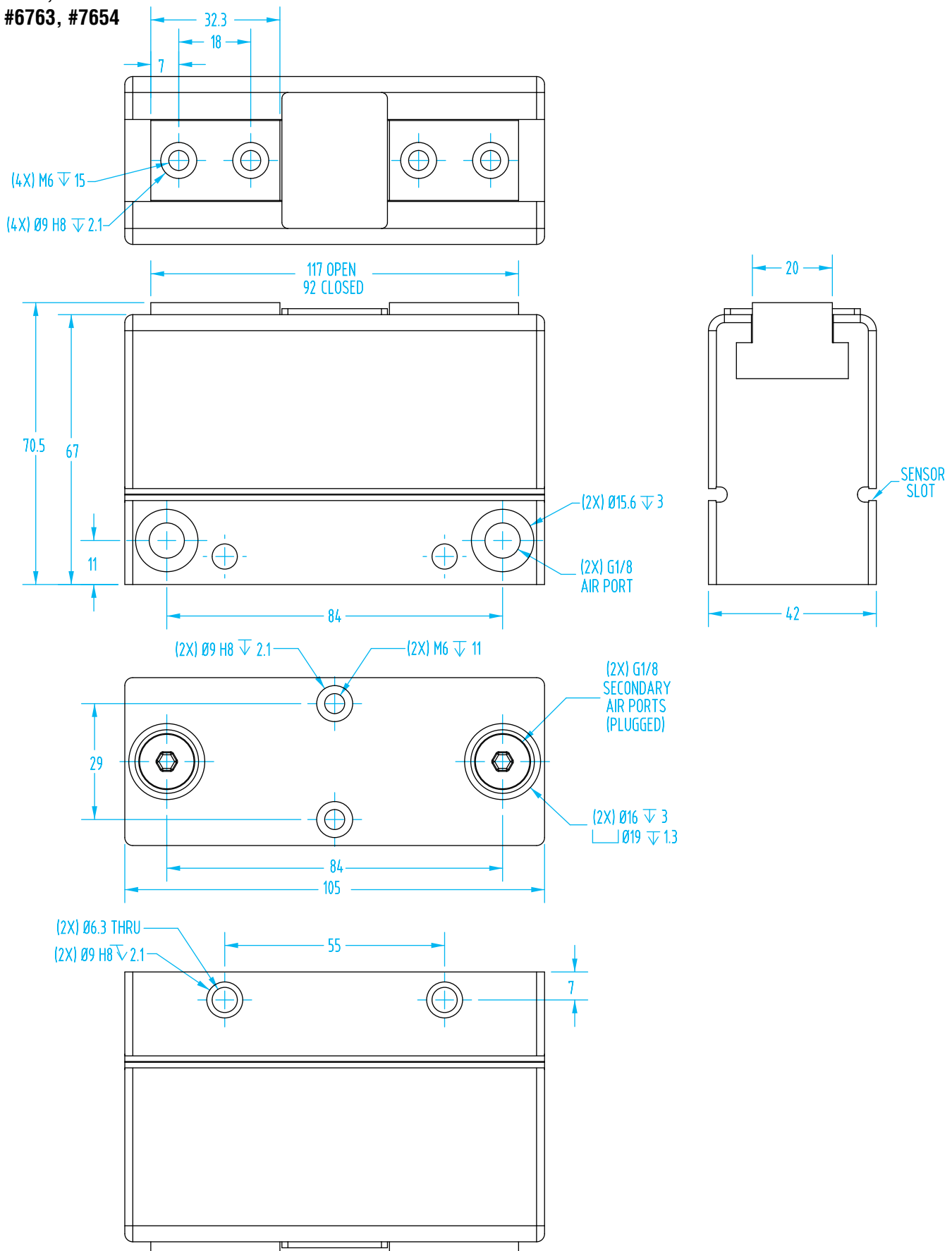
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#6762, #7653**



Wide Angle Gripper – SZ

(Dimensioned drawing shown at 75% scale)

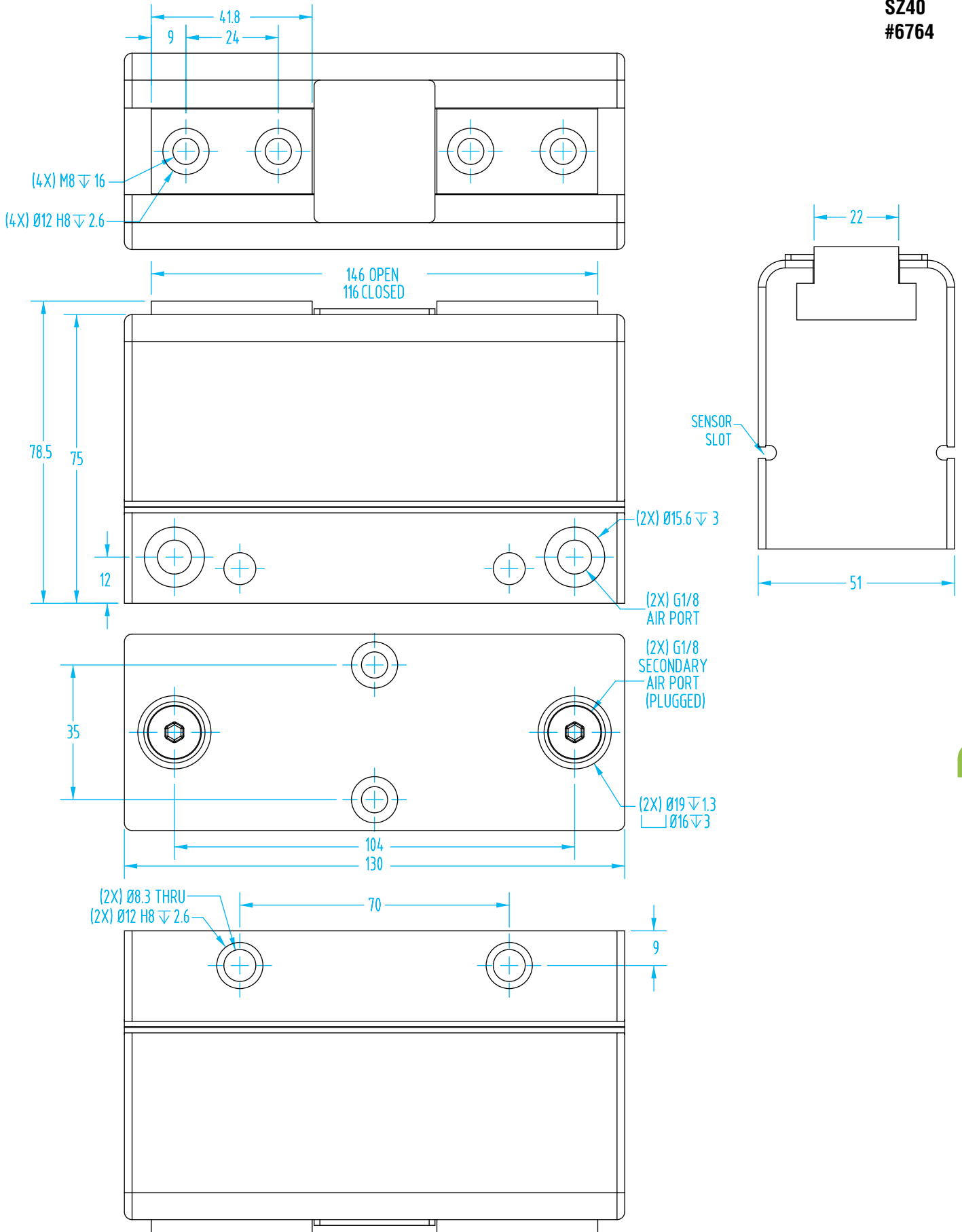
SZ32, SZ32-N0
#6763, #7654



Wide Angle Gripper – SZ

**SZ40
#6764**

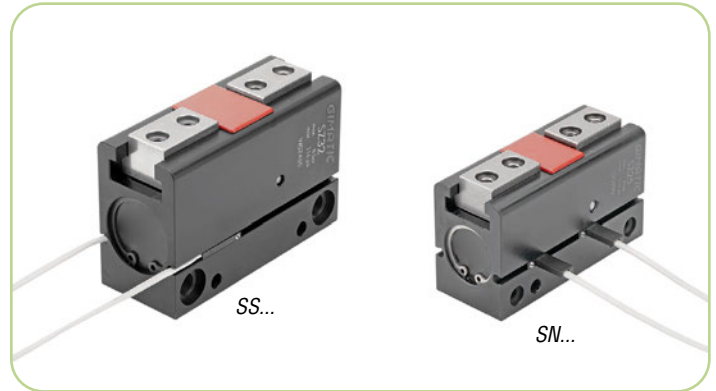
(Dimensioned drawing shown at 75% scale)



Wide Angle Gripper – SZ

Sensors

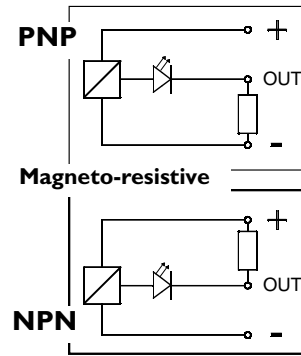
The operating position can be checked by sensors (optional), that detect the magnet on the piston inside. Therefore a nearby big mass of ferromagnetic material or intense magnetic fields may cause sensing troubles.



Quick#	Part#	Type	Connection	Price
3-wire, SS type 'C' slot magnetoresistive sensor				
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
3-wire, 90° Lead exit, SN type 'C' slot magnetoresistive sensor				
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.

See Sensor Reference Guide on page 1010 for a complete list of sensors for SZ Grippers.

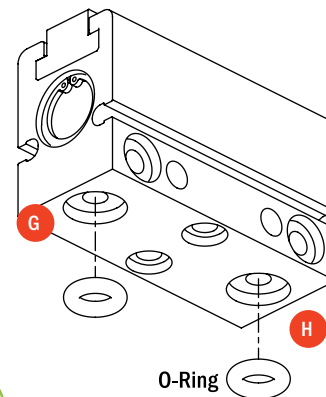


Compressed air feeding

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 through the bottom air ports (G and H) by removing the plugs (E and F).

Compressed air in P - H: gripper opening.
Compressed air in R - G: 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.



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

Wide Angle Gripper – SZ

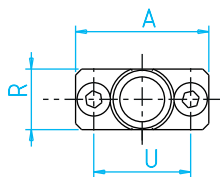
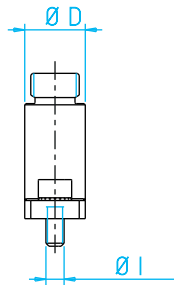
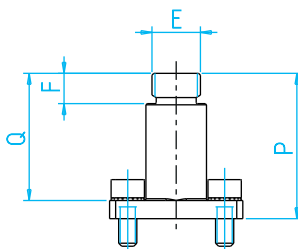
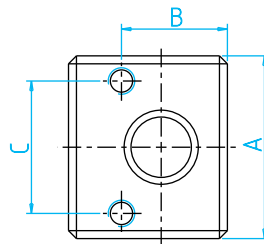
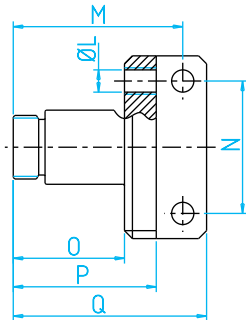
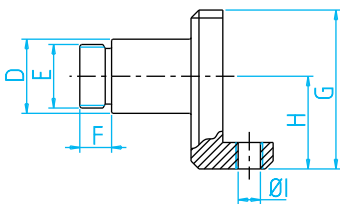


#7322

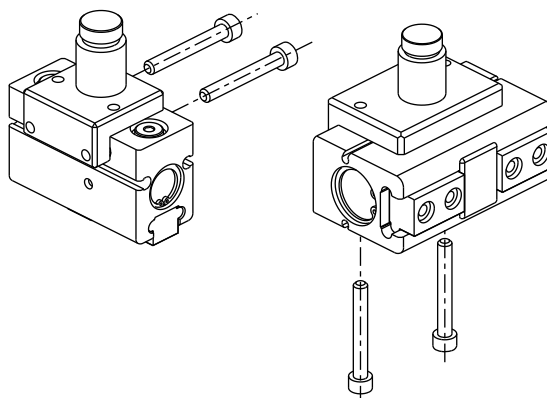
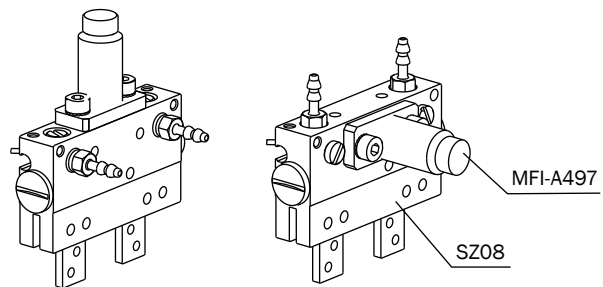
Mounting Brackets for SZ Grippers

Quick#	Part#	Price	Use with:	Wt.
7716	MFI-A497	\$23.04	SZ08..	8g
7321	MFI-A325	\$33.40	SZ12..	33g
7322	MFI-A326	\$34.41	SZ16..	41g
7717	MFI-A499	\$53.88	SZ20..	90g
7323	MFI-A327	\$56.34	SZ25..	140g

Hardware included.



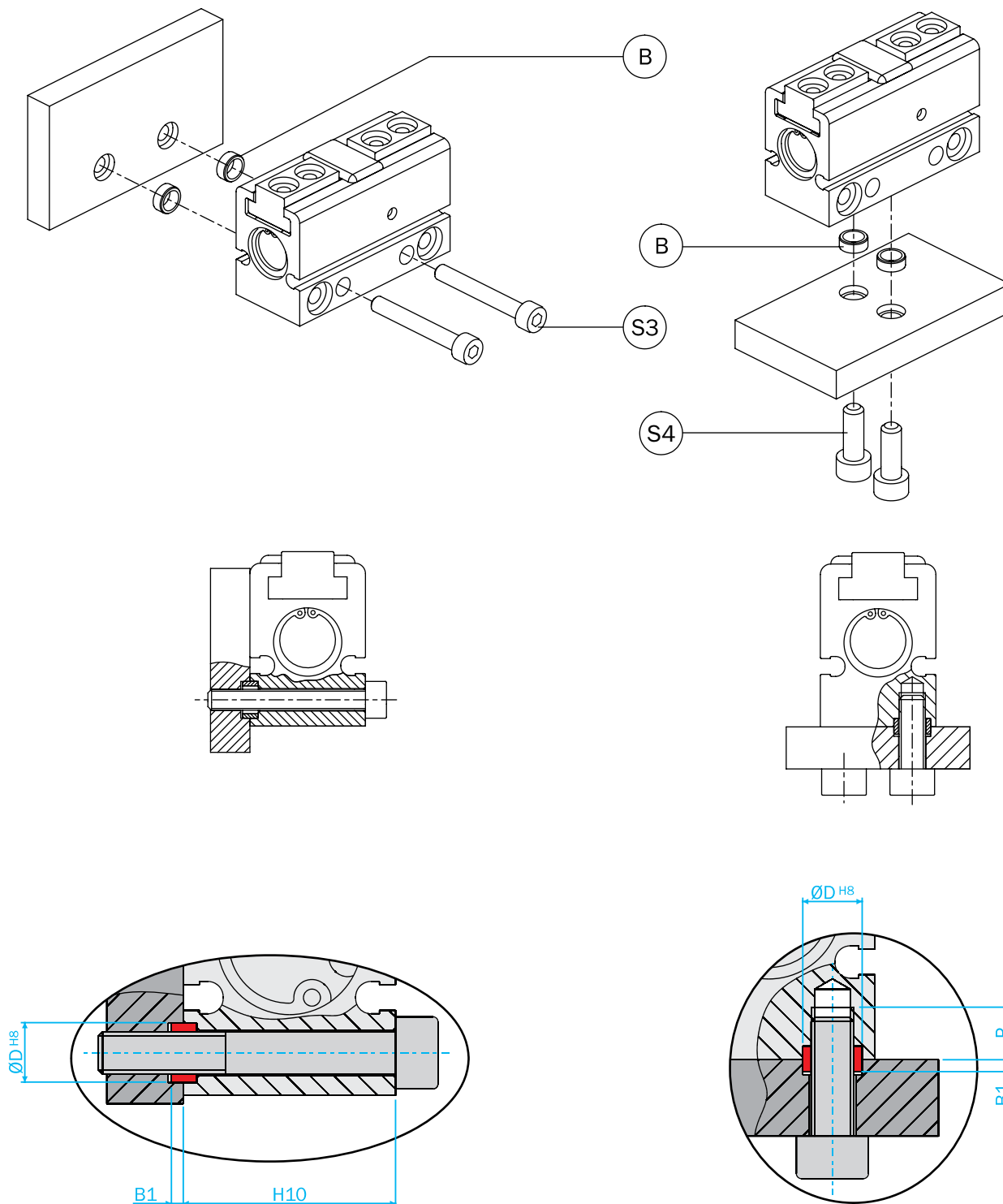
Quick#	7716	7321	7322	7717	7323
For:	SZ08	SZ12	SZ16	SZ20	SZ25
A	22	29	34.5	50	62
B	-	17	20	25	30
C	16	22	25	40	50
D	Ø10	Ø14	Ø14	Ø20	Ø20
E	M8x1	M12x1	M12x1	M17x1	M17x1
F	5	6	6	8	8
G	-	28	30	38	45
H	-	17	17.5	23	26.5
I	M3	M4	M5	M5	M6
L	-	M4	M5	M5	M6
M	-	32	32	42	46
N	-	22	25	40	50
O	-	21	21	29	29
P	24	27	27	37	39
Q	21	35.5	36.5	49	52
R	10	-	-	-	-



Wide Angle Gripper – SZ

Fastening

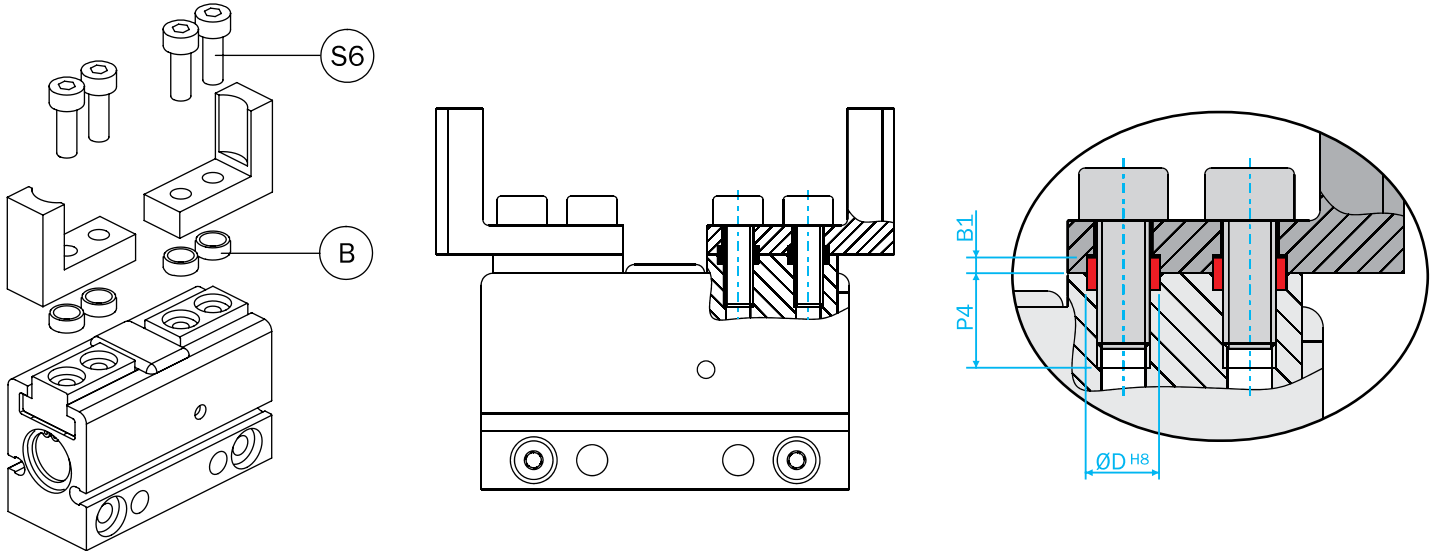
The gripper can be fastened to a static or moving part. When on a moving part, you must pay attention to the forces created by inertia over the gripper and its load. It can be fastened to one side or to the base. Use two(2) screws (S3) and two(2) centering sleeves (B).



Wide Angle Gripper – SZ

Jaw Fastening

The gripping jaws should be as short and light as possible. They must be fastened by two(2) screws (S6) and two(2) centering sleeves (B).



Four (4) centering sleeves (B) for the gripping tools and two (2) centering sleeves (B) for 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=5
B1	-	1.4	1.4	1.4	1.9	1.9	2.4
D	-	Ø7 H ⁸	Ø7 H ⁸	Ø7 H ⁸	Ø9 H ⁸	Ø9 H ⁸	Ø12 H ⁸
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

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See our Material Comparison Charts on page 109 to choose the best material for your application!

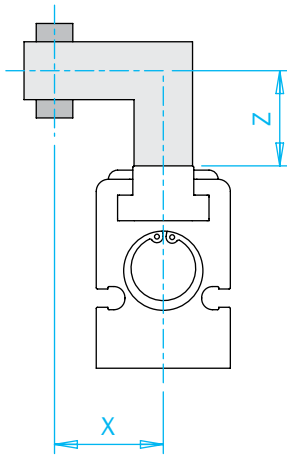


Wide Angle Gripper – SZ

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'.

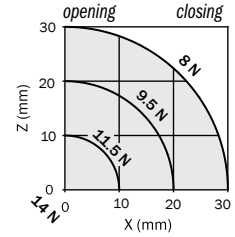
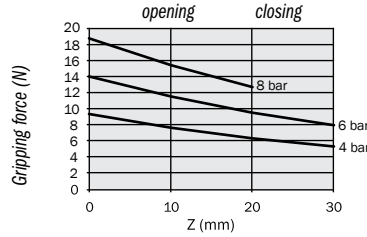
The force shown in these graphs refers to one jaw. The total force is double.



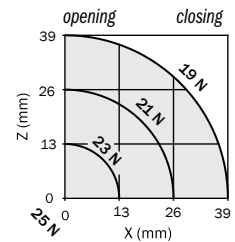
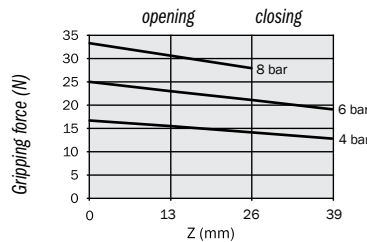
Reference:

- 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

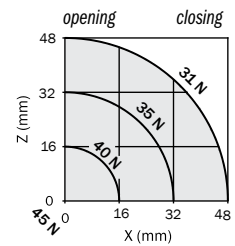
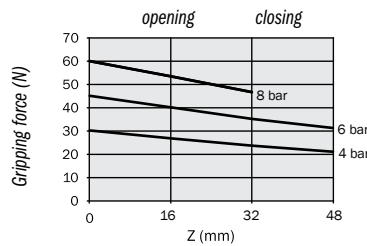
SZ08



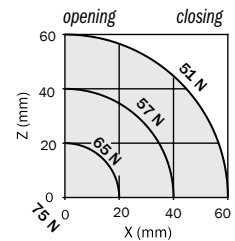
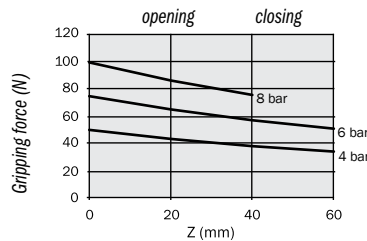
SZ12



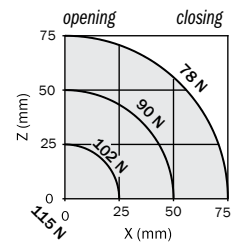
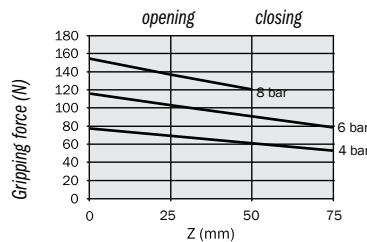
SZ16



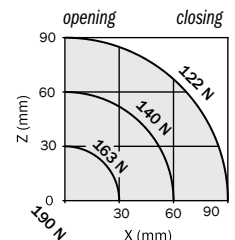
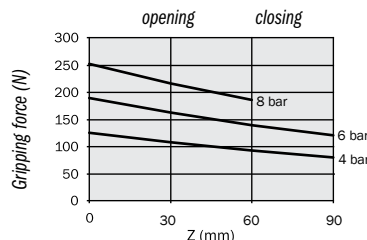
SZ25



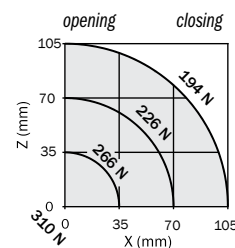
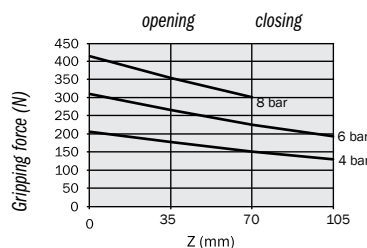
SZ25



SZ32



SZ40



Wide Angle Gripper – SZ

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.

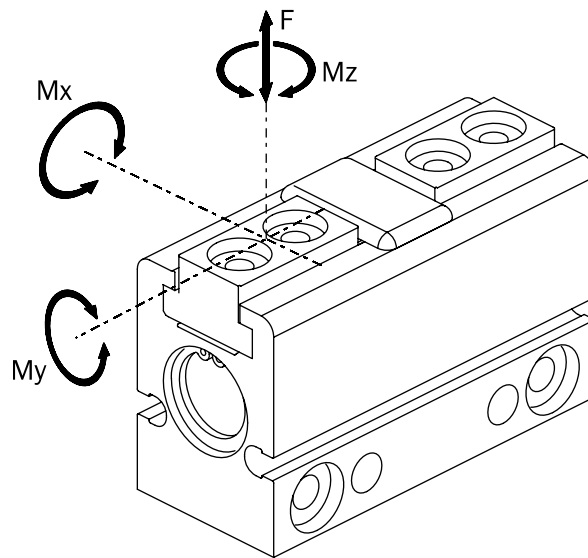
F_s , $M_x s$, $M_y s$, $M_z s$, are maximum permitted static loads.

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.

Fittings Available
on page 1047



Reference:

Force: $N \times 0.225 = \text{lbf}$

Torque: $Nm \times 8.850 = \text{in-lbf}$

Torque: $Ncm \times 0.089 = \text{in-lbf}$

Pressure: $\text{bar} \times 14.5 = \text{psi}$

	SZ08	SZ12	SZ16	SZ20	SZ25	SZ32	SZ40
F s	10 N	50 N	100 N	150 N	200 N	400 N	700 N
Mx s	0.25 Nm	0.5 Nm	2 Nm	4 Nm	6 Nm	18 Nm	36 Nm
My s	0.25 Nm	0.3 Nm	1.5 Nm	3 Nm	4 Nm	12 Nm	24 Nm
Mz 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 Nm
Mx d	0.25 Nm	1Ncm	4 Ncm	8 Ncm	12 Ncm	24 Ncm	36 Ncm
My d	0.25 Nm	0.8 Ncm	3 Ncm	6 Ncm	8 Ncm	16 Ncm	24 Ncm
Mz d	0.25 Nm	1 Ncm	4 Ncm	8 Ncm	12 Ncm	24 Ncm	36 Ncm
m 0.3s	-	-	-	-	-	800g	1200g
m 0.2s	-	-	-	300g	400g	600g	900g
m 0.12s	-	-	200g	250g	320g	400g	600g
m 0.07s	20g	100g	160g	200g	240g	300g	-
m 0.05s	15g	80g	120g	150g	160g	-	-
m 0.04s	10g	60g	80g	-	-	-	-
m 0.02s	8g	40g	-	-	-	-	-