Compact Guide Cylinder: With End Lock

Series MGP

ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

How to Order

Compact Guide Cylinder

MGP | **M** | **32** | **100** | **H** | **N** | **Z73** | |

Compact guide cylinder

Bearing type

M	Slide bearing
L	Ball bushing

Bore size

20	20mm
25	25mm
32	32mm
40	40mm
50	50mm
63	63mm
80	80mm
100	100mm

Cylinder stroke (mm)

Refer to the standard stroke table on page 36.

Lock position

H	Rear lock
R	Front lock

Manual release type

N	Non-locking type
L	Locking type

Auto switch type

Nil	Without auto switch (built-in magnet cylinder)

∗ Refer to the table below for auto switch model numbers.

Number of auto switches

Nil	2 pcs.
S	1 pc.

Applicable auto switches

Type	Special function	Electrical entry	Indicator light	Wiring (output)	Load voltage DC	Load voltage DC	Load voltage AC	Auto switch model: Electrical entry direction: Perpendicular	Auto switch model: Electrical entry direction: In-line	Lead wire length (m) Note 1): 0.5 (Nil)	3 (L)	5 (Z)	Applicable load		Detailed specifications
Reed switch	—	Grommet	Yes	3 wire	—	5V	—	—	**Z76**	●	●	—	IC circuit	—	P. 59
				2 wire	24V	12V	100V	—	**Z73**	●	●	●	—	Relay, PLC	
			No			5V 12V	100V or less	—	**Z80**	●	●	—	IC circuit		
Solid state switch	—	Grommet	Yes	3 wire (NPN)	24V	5V 12V	—	**Y69A**	**Y59A**	●	●	○	IC circuit	Relay, PLC	P. 60
				3 wire (PNP)				**Y7PV**	**Y7P**	●	●	○			
				2 wire		12V		**Y69B**	**Y59B**	●	●	○	—		
	Diagnostic indication (2 color indicator)			3 wire (NPN)		5V 12V		**Y7NWV**	**Y7NW**	●	●	○	IC circuit		P. 61
				3 wire (PNP)				**Y7PWV**	**Y7PW**	●	●	○			
				2 wire		12V		**Y7BWV**	**Y7BW**	●	●	○	—		
	Water resistant (2 color indicator)							—	**Y7BA**	—	●	○			P. 62
	Magnetic field resistant (2 color indicator)					—		—	**P5DW** Note 3)	—	●	●			P. 63

Note 1) Lead wire symbols 0.5m ..... Nil (Example) Y69B
3m ..... L Y69BL
5m ..... Z Y69BZ

Note 2) Solid state auto switches marked with a "○" are produced upon receipt of order.

Note 3) Type D-P5DW cannot be mounted on bore sizes of ø32 or less.

Specifications

Action	Double acting	
Fluid	Air	
Proof pressure	1.5MPa	
Maximum operating pressure	1.0MPa	
Minimum operating pressure	0.15MPa *	
Ambient and fluid temperature	–10 to 60°C (with no freezing)	
Piston speed	ø20 to ø63	50 to 500mm/s
	ø80, ø100	50 to 400mm/s
Cushion	Rubber bumper at both ends	
Lubrication	Non-lube	
Stroke length tolerance	$^{+1.5}_{0}$ mm	

* 0.1MPa except for the lock unit.

Lock Specifications

Lock position	Rear, Front side							
Holding force (max.) N	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
	215	330	550	860	1340	2140	3450	5390
Backlash	2mm or less							
Manual release	Non-locking type, Locking type							

Adjust switch positions for operation at both the stroke end and backlash (2mm) movement positions.

Standard Strokes

Bore size (mm)	Standard stroke (mm)
20, 25, 32, 40, 50, 63, 80, 100	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400

Manufacture of Intermediate Strokes

Modification method	Spacer installation type Spacers are installed in a standard stroke cylinder. Available in 5mm stroke increments
Part number	Refer to page 35 for standard part numbers and ordering procedure.
Applicable stroke (mm)	5 to 395
Example	Part no.: **MGPM50–35–HN** A spacer 15mm in width is installed in a **MGPM50–50–HN.** C dimension is 119mm.

Note 1) The minimum stroke for mounting auto switches is 10mm or more for two switches, and 5mm or more for one switch.

Note 2) Intermediate strokes (in 1mm increments) with a special body are available by special order.

Auto switch mounting bracket part no. for D-P5DW

Bore size (mm)	Mounting bracket part no.	Notes
40, 50, 63, 80, 100	BMG1-040	Switch mounting bracket Hexagon socket head cap screw (M2.5 x 0.45 x 8ℓ) 2 pcs. Hexagon socket head cap screw (M3 x 0.5 x 16ℓ) 2 pcs. Spring washer (nominal size 3)

Theoretical Output

OUT IN

(N)

Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm²)	Operating pressure (MPa)								
				0.2	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
20	10	OUT	314	63	94	126	157	188	220	251	283	314
		IN	236	47	71	94	118	142	165	189	212	236
25	12	OUT	491	98	147	196	246	295	344	393	442	491
		IN	378	76	113	151	189	227	265	302	340	378
32	16	OUT	804	161	241	322	402	482	563	643	724	804
		IN	603	121	181	241	302	362	422	482	543	603
40	16	OUT	1257	251	377	503	629	754	880	1006	1131	1257
		IN	1056	211	317	422	528	634	739	845	950	1056
50	20	OUT	1963	393	589	785	982	1178	1374	1570	1767	1963
		IN	1649	330	495	660	825	990	1154	1319	1484	1649
63	20	OUT	3117	623	935	1247	1559	1870	2182	2494	2805	3117
		IN	2803	561	841	1121	1402	1682	1962	2242	2523	2803
80	25	OUT	5027	1005	1508	2011	2514	3016	3519	4022	4524	5027
		IN	4536	907	1361	1814	2268	2722	3175	3629	4082	4536
100	30	OUT	7854	1571	2356	3142	3927	4712	5498	6283	7069	7854
		IN	7147	1429	2144	2859	3574	4288	5003	5718	6432	7147

Note) Theoretical output (N) = Pressure (MPa) x Piston area (mm²)

Weights

Slide bearing: MGPM20 to 100 (Basic weight)

(kg)

Bore size (mm)	Model	Standard stroke (mm)											
		25	50	75	100	125	150	175	200	250	300	350	400
20	MGPM20	0.86	1.12	1.32	1.52	1.71	1.91	2.11	2.31	2.78	3.18	3.57	3.97
25	MGPM25	1.18	1.56	1.83	2.10	2.38	2.65	2.92	3.19	3.85	4.39	4.94	5.48
32	MGPM32	1.92	2.32	2.70	3.09	3.47	3.85	4.23	4.61	5.56	6.32	7.09	7.85
40	MGPM40	2.20	2.66	3.08	3.51	3.93	4.36	4.78	5.20	6.24	7.10	7.95	8.80
50	MGPM50	3.73	4.46	5.10	5.74	6.38	7.02	7.66	8.30	9.91	11.2	12.5	13.8
63	MGPM63	4.61	5.45	6.21	6.96	7.72	8.47	9.23	9.99	11.8	13.3	14.8	16.3
80	MGPM80	7.88	8.70	9.49	10.3	11.2	12.0	12.8	13.9	15.5	17.2	18.8	20.5
100	MGPM100	12.1	13.2	14.4	15.6	16.8	18.0	19.1	20.6	22.9	25.3	27.6	30.0

Ball bushing: MGPL20 to 100 (Basic weight)

(kg)

Bore size (mm)	Model	Standard stroke (mm)											
		25	50	75	100	125	150	175	200	250	300	350	400
20	MGPL20	0.93	1.10	1.27	1.48	1.65	1.83	2.00	2.17	2.55	2.90	3.25	3.60
25	MGPL25	1.27	1.50	1.74	2.01	2.24	2.47	2.70	2.94	3.44	3.91	4.37	4.83
32	MGPL32	1.74	2.19	2.51	2.88	3.20	3.51	3.83	4.15	4.84	5.47	6.10	6.73
40	MGPL40	2.02	2.51	2.87	3.29	3.65	4.01	4.37	4.73	5.51	6.23	6.95	7.67
50	MGPL50	3.46	4.21	4.76	5.40	5.95	6.50	7.05	7.60	8.83	9.92	11.1	12.2
63	MGPL63	4.33	5.20	5.86	6.62	7.28	7.95	8.61	9.27	10.7	12.1	13.4	14.7
80	MGPL80	8.05	8.87	9.66	10.5	11.4	12.2	13.0	14.1	15.7	17.4	19.0	20.7
100	MGPL100	12.4	13.5	14.7	15.9	17.1	18.3	19.4	20.9	23.2	25.6	27.9	30.3

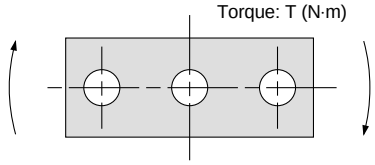
Lock unit additional weight

(kg)

Bore size (mm)	With rear lock		With front lock	
	HN	HL	RN	RL
20	0.05	0.07	0.05	0.06
25	0.06	0.07	0.05	0.07
32	0.09	0.10	0.09	0.10
40	0.15	0.18	0.14	0.18
50	0.24	0.27	0.23	0.27
63	0.36	0.40	0.35	0.39
80	0.90	0.97	1.03	1.10
100	1.52	1.60	1.60	1.68

Calculation (example) MGPM50-100-HN
- Basic weight + Lock unit additional weight
- 5.74 + 0.24 = 5.99kg

Allowable Rotational Torque of Plate

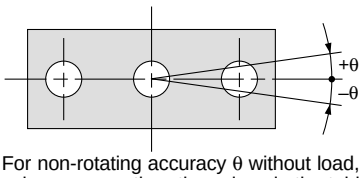


T (N·m)

Bore size (mm)	Bearing type	Stroke (mm)											
		25	50	75	100	125	150	175	200	250	300	350	400
20	MGPM	0.99	0.75	1.88	1.63	1.44	1.28	1.16	1.06	0.90	0.78	0.69	0.62
	MGPL	2.66	1.94	1.52	1.25	1.34	1.17	1.03	0.93	0.76	0.65	0.56	0.49
25	MGPM	1.64	1.25	2.96	2.57	2.26	2.02	1.83	1.67	1.42	1.24	1.09	0.98
	MGPL	4.08	3.02	2.38	1.97	2.05	1.78	1.58	1.41	1.16	0.98	0.85	0.74
32	MGPM	6.35	5.13	5.69	4.97	4.42	3.98	3.61	3.31	2.84	2.48	2.20	1.98
	MGPL	5.95	4.89	5.11	4.51	6.34	5.79	5.33	4.93	4.29	3.78	3.38	3.04
40	MGPM	7.00	5.66	6.27	5.48	4.87	4.38	5.98	3.65	3.13	2.74	2.43	2.19
	MGPL	6.55	5.39	5.62	4.96	6.98	6.38	5.87	5.43	4.72	4.16	3.71	3.35
50	MGPM	13.0	10.8	12.0	10.6	9.50	8.60	7.86	7.24	6.24	5.49	4.90	4.43
	MGPL	9.17	7.62	9.83	8.74	11.6	10.7	9.83	9.12	7.95	7.02	6.26	5.63
63	MGPM	14.7	12.1	13.5	11.9	10.7	9.69	8.86	8.16	7.04	6.19	5.52	4.99
	MGPL	10.2	8.48	11.0	9.74	13.0	11.9	11.0	10.2	8.84	7.80	6.94	6.24
80	MGPM	21.9	18.6	22.9	20.5	18.6	17.0	15.6	14.5	12.6	11.2	10.0	9.11
	MGPL	15.1	23.3	22.7	20.6	18.9	17.3	16.0	14.8	12.9	11.3	10.0	8.94
100	MGPM	38.8	33.5	37.5	33.8	30.9	28.4	26.2	24.4	21.4	19.1	17.2	15.7
	MGPL	27.1	30.6	37.9	34.6	31.8	29.3	27.2	25.3	22.1	19.5	17.3	15.5

Model selection is the same as MGP/Standard.
Refer to page 4.

Non-rotating Accuracy of Plate

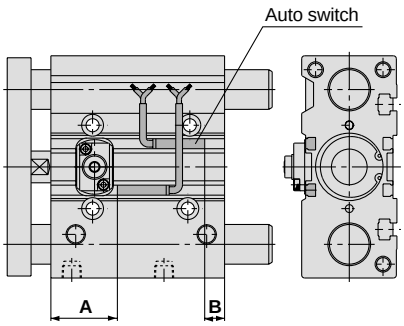


For non-rotating accuracy θ without load, use a value no more than the values in the table as a guide.

Bore size (mm)	Non-rotating accuracy θ	
	MGPM	MGPL
20	±0.07°	±0.09°
25		
32	±0.06°	±0.08°
40		
50	±0.05°	±0.06°
63		
80	±0.04°	±0.05°
100		

Auto Switches/Proper Mounting Position for Stroke End Detection

With front lock

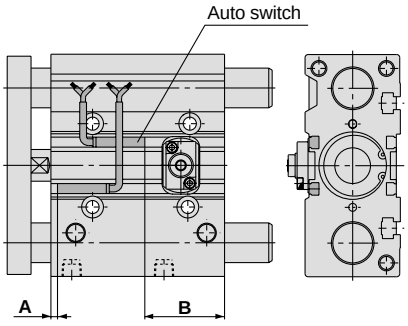


Proper mounting position (mm)

Bore size (mm)	A	B
20	47.5	1.5
25	35.5	1.5
32	32.5	5
40	38.5	5.5
50	38.5	4.5
63	42	7
80	63	18.5
100	67.5	23.5

∗ Minimum mountable strokes for auto switch are 10mm or more for two switches, and 5mm or more for one switch.

With rear lock



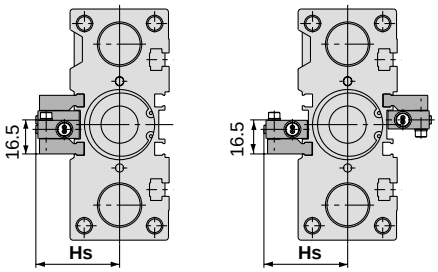
(mm)

Bore size (mm)	A	B
20	4	33
25	5	32.5
32	5.5	32
40	9.5	34.5
50	7.5	36.5
63	10	39
80	13	68.5
100	17.5	73.5

∗ Minimum mountable strokes for auto switch are 10mm or more for two switches, and 5mm or more for one switch.

For D-P5DW (∗ Cannot be mounted on bore sizes ø32 or less.)

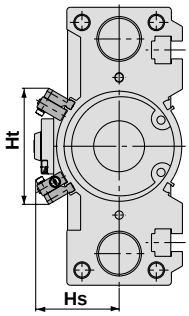
ø40 to **ø63**



For 25mm stroke

∗ For bore sizes ø40 through 63 with two switches, one switch is mounted on each side.

ø80, ø100



(mm)

Bore size (mm)	Hs	Ht
40	44.5	—
50	50	—
63	57	—
80	60.7	84.4
100	70.8	96.1

∗ Minimum mountable strokes for auto switch are 10mm or more for two switches, and 5mm or more for one switch.

Auto Switch Mounting

⚠ Caution

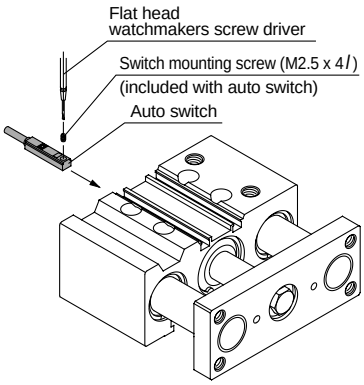
Auto switch mounting tool

- When tightening the auto switch mounting screw (included with auto switch), use a watchmakers screw driver with a handle about 5 to 6mm in diameter

Tightening torque

- Tighten with a torque of 0.05 to 0.1N·m. As a rule, it should be turned about 90° past the point at which tightening can be felt.

When mounting an auto switch on the side with the end lock, insert the auto switch from the rod side for the rear lock, and from the head side for the front lock.



For D-P5DW

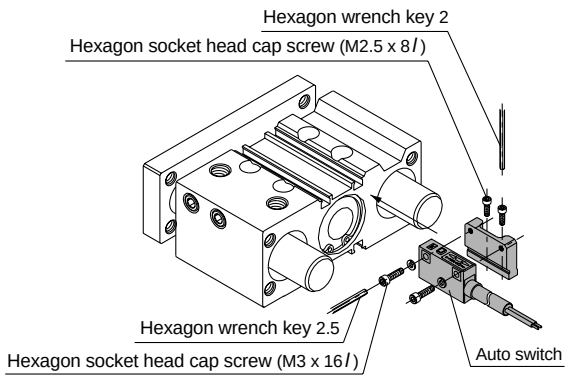
⚠ Caution

Auto switch mounting tool

- When tightening hexagon socket head cap screws of the auto switch, use hexagon wrench key 2 or 2.5 with the appropriate screws.

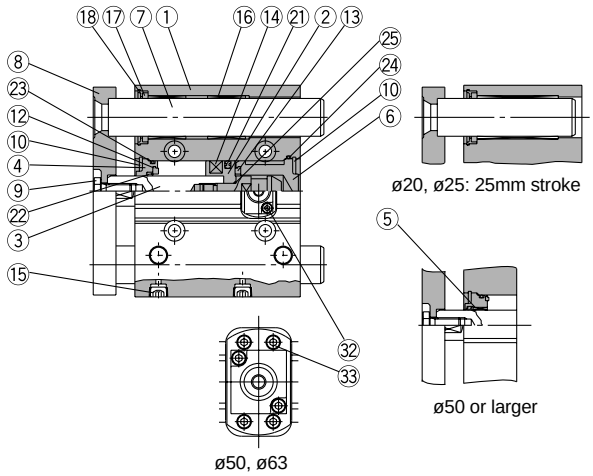
Tightening torque

- Tighten M2.5 screws with a torque of about 0.3 to 0.5N·m, and M3 screws with a torque of about 0.5 to 0.7 N·m.

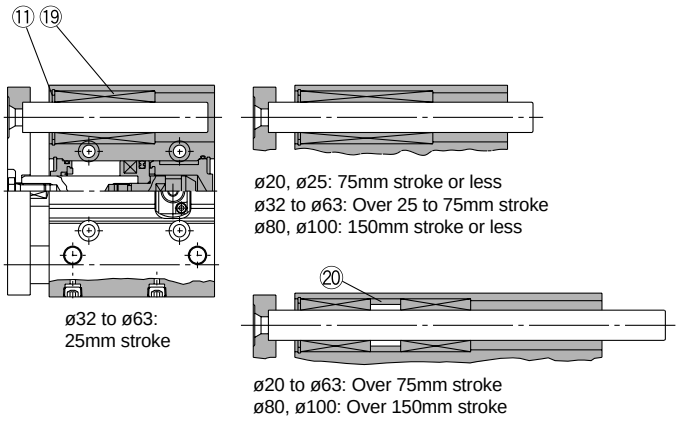


Construction

Series MGPM

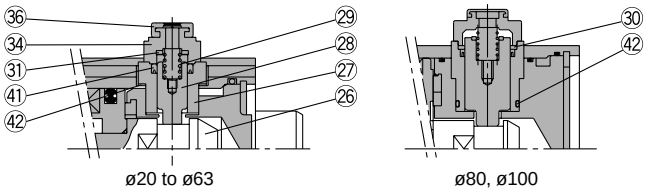


Series MGPL

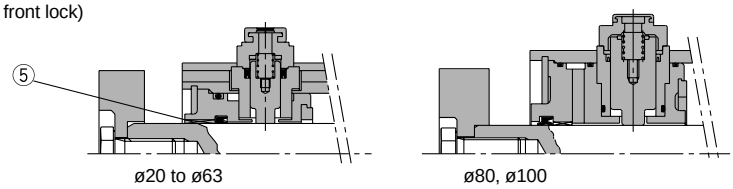


Non-locking type

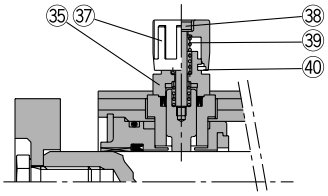
(Rear side lock)



(With front lock)



Locking type



Parts list

No.	Description	Material		Note
1	Body	Aluminum alloy		Hard anodized
2	Piston	Aluminum alloy		Chromated
3	Piston rod	Stainless steel	ø20, ø25	Hard chrome plated with front end lock only
		Carbon steel	ø32 to ø100	Hard chrome plated
4	Collar	Aluminum alloy		Clear anodized
5	Bushing	Lead bronze casting		
6	Head cover	Aluminum alloy		Colorless chromated
7	Guide rod	Carbon steel		Hard chrome plated
8	Plate	Carbon steel		Nickel plated
9	Plate mounting bolt	Carbon steel		Nickel plated
10	Snap ring	Carbon tool steel		Phosphate coated
11	Snap ring	Carbon tool steel		Phosphate coated
12	Bumper A	Urethane		
13	Bumper B	Urethane		
14	Magnet	Synthetic rubber		
15	Hexagon socket head taper plug	Carbon steel		Nickel plated
16	Slide bearing	Lead bronze casting		
17	Felt	Felt		
18	Holder	Resin		
19	Ball bushing			
20	Spacer	Aluminum alloy		
21*	Piston seal	NBR		

Replacement parts: Seal kits

Bore size (mm)	Kit No.	Contents
20	MGP20-B-PS	Kits include items 21, 22, 23, 24, 32, 33, 41 and 42 from the table above.
25	MGP25-B-PS	
32	MGP32-B-PS	
40	MGP40-B-PS	
50	MGP50-B-PS	

* Seal kits are sets consisting of items 21 through 24, 32, 33, 41 and 42 above, and can be ordered using the kit number for each bore size.

Parts list

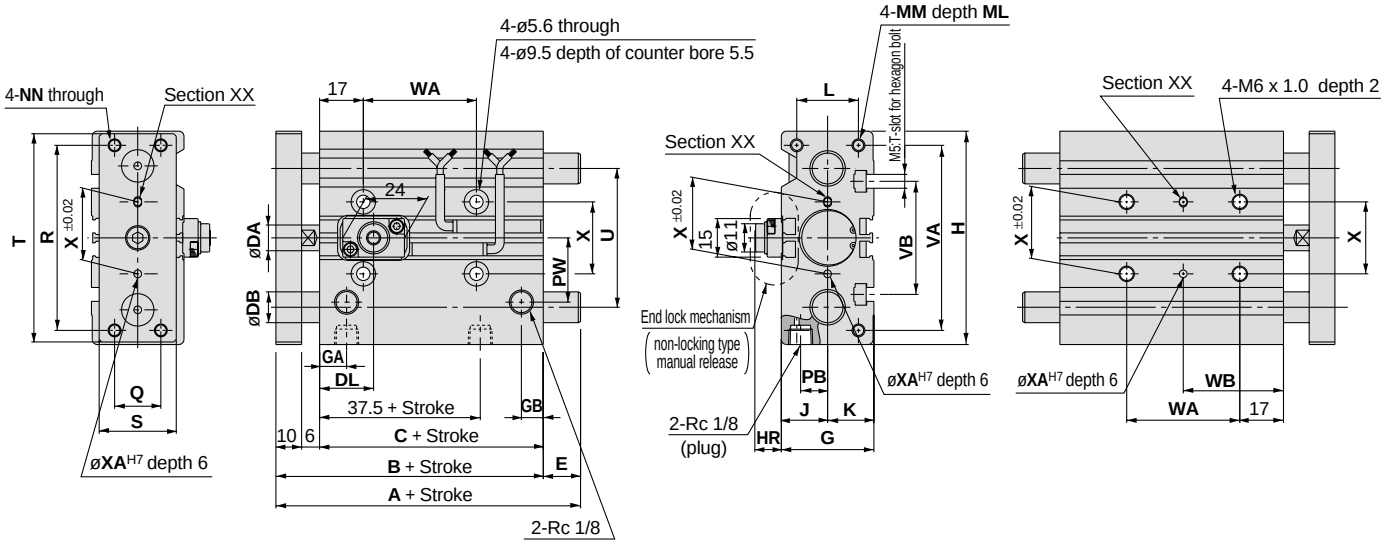
No.	Description	Material	Note
22*	Rod seal	NBR	
23*	Gasket A	NBR	
24*	Gasket B	NBR	
25	Piston gasket	NBR	ø32 to ø100 only
26	Lock bolt	Carbon steel	Zinc chromated
27	Lock holder	Brass	Electroless nickel plated
28	Lock piston	Carbon steel	Nickel plated
29	Lock spring	Stainless steel	
30	Seal retainer	Carbon steel	Zinc chromated (ø80, ø100 only)
31	Bumper	Urethane	
32*	Hexagon socket head cap screw	Carbon steel	Black zinc chromated
33*	Hexagon socket head cap screw	Carbon steel	Nickel plated (ø50, ø63 only)
34	Cap A	Die-cast aluminum	Black coated
35	Cap B	Carbon steel	SQ treated
36	Rubber cap	Synthetic rubber	
37	M/O knob	Die-cast zinc	Black coated
38	M/O bolt	Alloy steel	Black zinc chromated
39	M/O spring	Steel wire	Chromated
40	Stopper ring	Carbon steel	Chromated
41*	Lock piston seal	NBR	
42*	Lock holder gasket	NBR	

Replacement parts: Seal kits

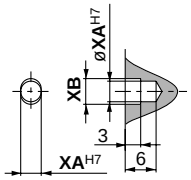
Bore size (mm)	Kit no.	Contents
63	MGP63-B-PS	Kits include items 21, 22, 23, 24, 32, 33, 41 and 42 from the table above.
80	MGP80-B-PS	
100	MGP100-B-PS	

* Items 32 and 33 are not included for bores sizes 80 and 100.

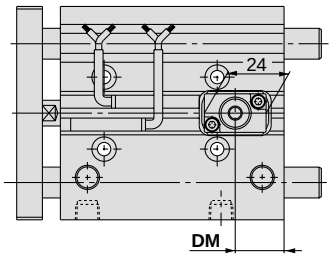
Dimensions/ø20, ø25



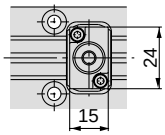
With front lock



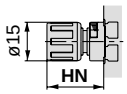
Section XX detail



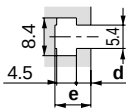
With rear lock



For ø**25**



End lock mechanism (Locking type manual release)



T-slot dimensions (mm)

Bore size (mm)	d	e
20	2.8	7.8
25	3	8.2

Refer to "Manufacture of Intermediate Strokes" on page 36 for intermediate strokes.

(mm)

Bore size (mm)	Standard stroke (mm)	B	C	DA	G	GA	GB	H	J	K	L	MM	ML	NN	PB	PW	Q	R
20	25, 50, 75, 100, 125, 150, 175	78	62	10	36	10.5	8.5	83	18	18	24	M5 x 0.8	13	M5 x 0.8	10.5	25	18	70
25	200, 250, 300, 350, 400	78.5	62.5	12	42	11.5	9	93	21	21	30	M6 x 1.0	15	M6 x 1.0	13.5	28.5	26	78

(mm)

Bore size (mm)	S	T	U	VA	VB	WA				WB				X	XA	XB
						75st or less	Over 75st to 175st	Over 175st to 250st	Over 250st	75st or less	Over 75st to 175st	Over 175st to 250st	Over 250st			
20	30	81	54	72	44	44	120	200	300	39	77	117	167	28	3	3.5
25	38	91	64	82	50	44	120	200	300	39	77	117	167	34	4	4.5

End lock mechanism dimensions (mm)

Bore size (mm)	DL	DM	HR	HN
20	21	19	10.5	22
25	26.5	16	8	19.5

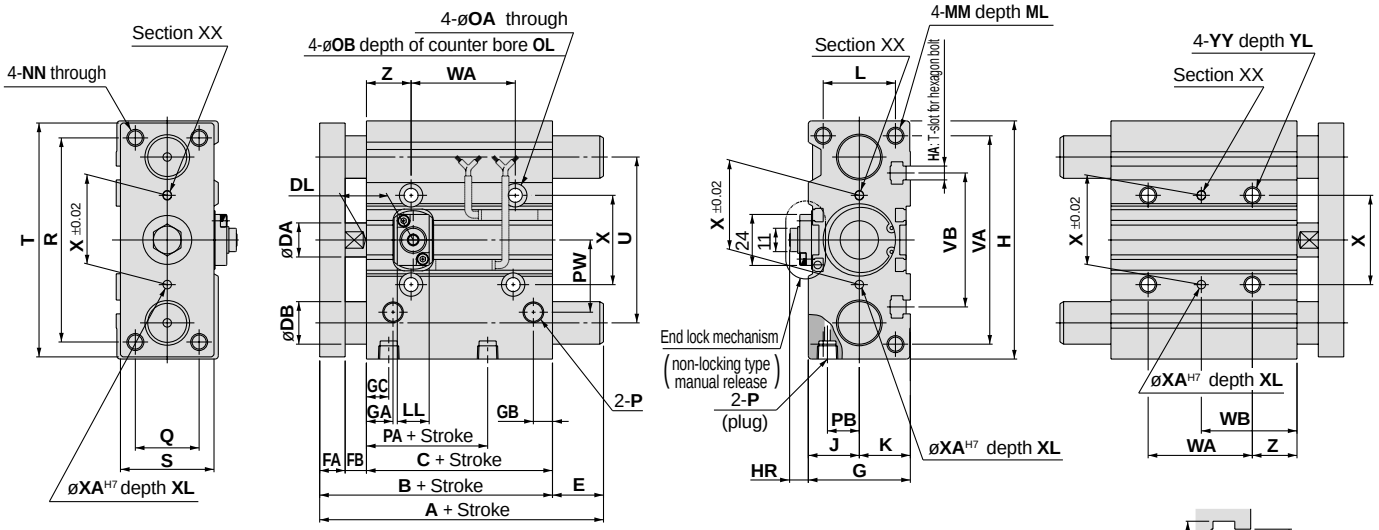
MGPM (slide bearing)/Dimensions A, DB, E (mm)

Bore size (mm)	A			DB	E		
	75st or less	Over 75st to 175st	Over 175st		75st or less	Over 75st to 175st	Over 175st
20	78	84.5	122	12	0	6.5	44
25	78.5	85	122	16	0	6.5	43.5

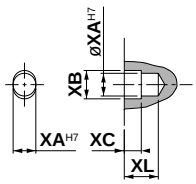
MGPL (ball bushing)/Dimensions A, DB, E (mm)

Bore size (mm)	A			DB	E		
	25st or less	Over 25st to 175st	Over 175st		25st or less	Over 25st to 175st	Over 175st
20	80	104	122	10	2	26	44
25	85.5	104.5	122	13	7	26	43.5

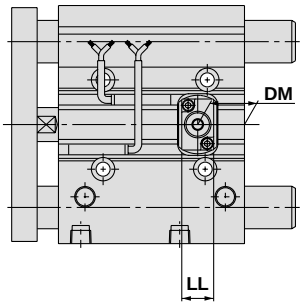
Dimensions/ø32 to ø63



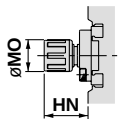
With front lock



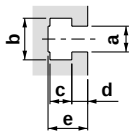
Section XX detail



With rear lock



End lock mechanism
(Locking type manual release)



T-slot dimensions (mm)

Bore size (mm)	a	b	c	d	e
32	6.5	10.5	5.5	3.5	9.5
40	6.5	10.5	5.5	4	11
50	8.5	13.5	7.5	4.5	13.5
63	11	17.8	10	7	18.5

(mm)

Bore size (mm)	Standard stroke (mm)	B	C	DA	FA	FB	G	GA	GB	GC	H	HA	J	K	L	MM	ML	NN	OA
32	25, 50, 75, 100	84.5	62.5	16	12	10	48	12.5	9	12.5	112	M6	24	24	34	M8 x 1.25	20	M8 x 1.25	6.6
40	125, 150, 175	91	69	16	12	10	54	14	10	14	120	M6	27	27	40	M8 x 1.25	20	M8 x 1.25	6.6
50	200, 250, 300	97	69	20	16	12	64	14	11	12	148	M8	32	32	46	M10 x 1.5	22	M10 x 1.5	8.6
63	350, 400	102	74	20	16	12	78	16.5	13.5	16.5	162	M10	39	39	58	M10 x 1.5	22	M10 x 1.5	8.6

(mm)

Bore size (mm	OB	OL	P	PA	PB	PW	Q	R	S	T	U	VA	VB	WA				WB			
														75st or less	Over 75st to 175st	Over 175st to 275 st	Over 275st	75st or less	Over 75st to 175st	Over175st to 275 st	Over 275st
32	11	7.5	Rc 1/8	32	15	34	30	96	44	110	78	98	63	48	124	200	300	45	83	121	171
40	11	7.5	Rc 1/8	38	18	38	30	104	44	118	86	106	72	48	124	200	300	46	84	122	172
50	14	9	Rc 1/4	34	21.5	47	40	130	60	146	110	130	92	48	124	200	300	48	86	124	174
63	14	9	Rc 1/4	39	28	55	50	130	70	158	124	142	110	52	128	200	300	50	88	124	174

(mm)

Bore size (mm)	X	XA	XB	XC	XL	YY	YL	Z
32	42	4	4.5	3	6	M8 x 1.25	16	21
40	50	4	4.5	3	6	M8 x 1.25	16	22
50	66	5	6	4	8	M10 x 1.5	20	24
63	80	5	6	4	8	M10 x 1.5	20	24

MGPM (slide bearing)/Dimensions A, DB, E

(mm)

Bore size (mm)	A			DB	E		
	25st or less	Over 25st to 175st	Over 175st		25st or less	Over 25st to 175st	Over 175st
32	97	102	140	20	12.5	17.5	55.5
40	97	102	140	20	6	11	49
50	106.5	118	161	25	9.5	21	64
63	106.5	118	161	25	4.5	16	59

End lock mechanism

(mm)

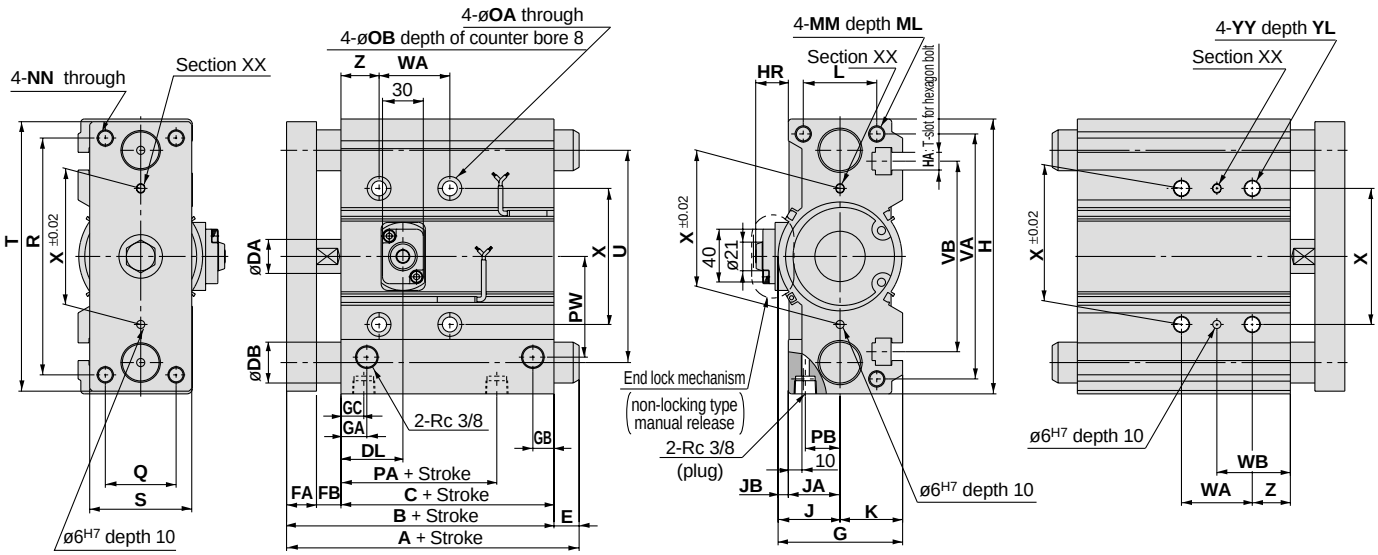
Bore size (mm)	DL	DM	HR	HN (max.)	LL	MO
32	22	22	9.5	21	15	15
40	26	23	11.5	25.5	21	19
50	24	23	13	27	21	19
63	25	25.5	11	25	21	19

MGPL (ball bushing)/Dimensions A, DB, E

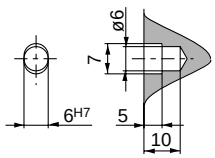
(mm)

Bore size (mm)	A				DB	E			
	25st or less	Over 25st to 75st	Over 75st to 175st	Over 175st		25st or less	Over 25st to 75st	Over 75st to 175st	Over 175st
32	84.5	98	118	140	16	0	13.5	33.5	55.5
40	91	98	118	140	16	0	7	27	49
50	97	114	134	161	20	0	17	37	64
63	102	114	134	161	20	0	12	32	59

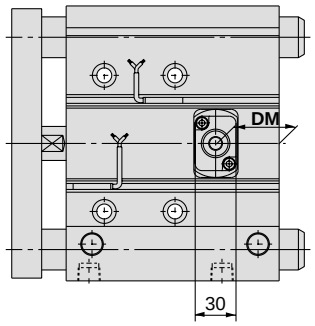
Dimensions/Ø80, Ø100



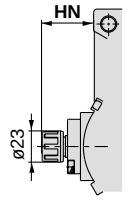
With front lock



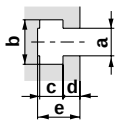
Section XX detail



With rear lock



End lock mechanism (Locking type manual release)



T-slot dimensions

(mm)

Bore size (mm)	a	b	c	d	e
80	13.3	20.3	12	8	22.5
100	15.3	23.3	13.5	10	30

(mm)

Bore size (mm)	Standard stroke (mm)	B	C	DA	FA	FB	G	GA	GB	GC	H	HA	J	JA	JB	K	L
80	25, 50, 75, 100, 125, 150, 175	146.5	106.5	25	22	18	91.5	19	15.5	14.5	202	M12	45.5	38	7.5	46	54
100	200, 250, 300, 350, 400	166	116	30	25	25	111.5	23	19	18	240	M14	55.5	45	10.5	56	62

(mm)

Bore size (mm)	MM	ML	NN	OA	OB	PA	PB	PW	Q	R	S	T	U	VA	VB	WA			
																50st or less	Over 50st to 150st	Over 150st to 250st	Over 250st
80	M12 x 1.75	25	M12 x 1.75	10.6	17.5	64.5	25.5	74	52	174	75	198	156	180	140	52	128	200	300
100	M14 x 2.0	31	M14 x 2.0	12.5	20	67.5	32.5	89	64	210	90	236	188	210	166	72	148	220	320

(mm)

Bore size (mm)	WB				X	YY	YL	Z
	50st or less	Over 50st to 150st	Over 150st to 250st	Over 250st				
80	54	92	128	178	100	M12 x 1.75	24	28
100	47	85	121	171	124	M14 x 2.0	28	11

End lock mechanism dimensions (mm)

Bore size (mm)	DL	DM	HR	HN
80	45.5	40.5	24	38.5
100	49	43.5	26.5	41

MGPM (slide bearing)/Dimensions/A, DB, E (mm)

Bore size (mm)	A		DB	E	
	150st or less	Over 150st		150st or less	Over 150st
80	146.5	193	30	0	46.5
100	166	203	36	0	37

MGPL (ball bushing)/Dimensions A, DB, E (mm)

Bore size (mm)	A		DB	E	
	150st or less	Over 150st		150st or less	Over 150st
80	160	193	25	13.5	46.5
100	180	203	30	14	37