

Compact Guide Cylinder

MGP Series

ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Up to
24%
Weight
reduced!

Weight reduced by up to 24% with
a shorter guide rod and thinner plate



3 types of bearing
can be selected.

● Slide bearing

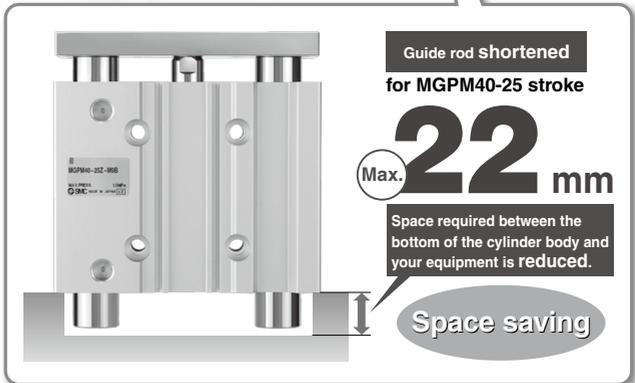
MGPM series

● Ball bushing

MGPL series

● High precision ball bushing

MGPA series



MGJ

JMGP

MGP

MGPW

MGQ

MGG

MGC

MGF

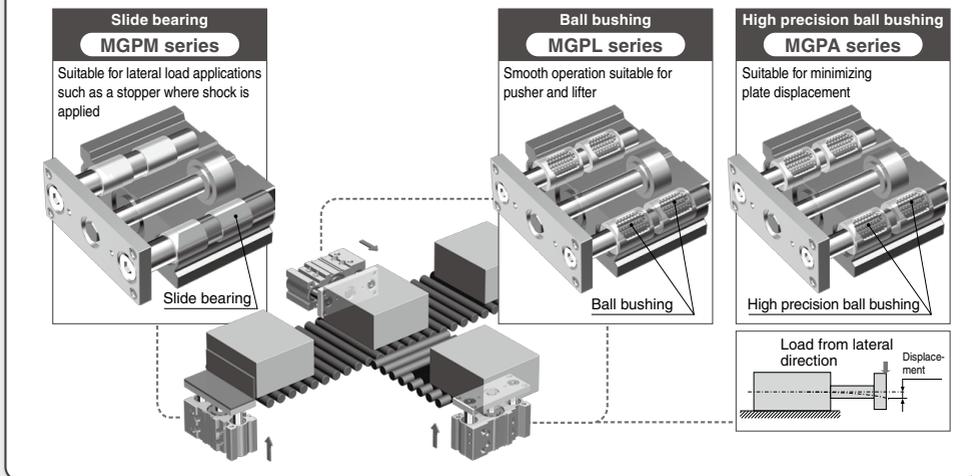
MGZ

MGT

D-□

-X□

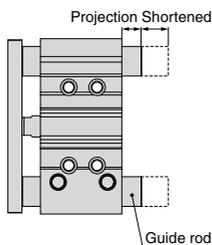
3 types of bearing can be selected.



Basic Type

- Weight reduced by up to 17%
- Guide rod shortened

Bore size [mm]	Reduction rate [%]	Weight [kg]
φ12	11	0.25
φ16	3	0.37
φ20	12	0.59
φ25	12	0.84
φ32	17	1.41
φ40	16	1.64
φ50	17	2.79
φ63	17	3.48
φ80	17	5.41
φ100	13	9.12



Bore size	Guide rod [mm]	
	Shortened by	New dimension
φ32	22	15.5
φ40	22	9
φ50	18	16.5
φ63	18	11.5
φ80	10.5	8
φ100	10.5	10.5

※: Compared with the slide bearing type, 25 stroke (φ32 to φ100)
(No projection for φ12 to φ25-25 stroke)

※: Compared with the slide bearing type, φ12 to φ25-20 stroke
※: Compared with the slide bearing type, φ32 to φ100-25 stroke

- Performance and strength (rigidity) are equivalent to the current MGP series.
- Mounting dimensions are equivalent to the current MGP series.

MGP Series (Basic Type), Stroke Variations

Bearing type	Bore size [mm]	Stroke [mm]																Made to Order	
		10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400		
MGPM Slide bearing	12	●																	-XA□: Change of guide rod end shape -XB6: Heat resistant cylinder (-10 to 150°C) -XB10: Intermediate stroke (Using exclusive body) -XB13: Low speed cylinder (5 to 50 mm/s) -XC6: Made of stainless steel -XC8: Adjustable stroke cylinder/ Adjustable extension type -XC22: Fluororubber seal -XC35: With coil scraper -XC79: Tapped hole, drilled hole and pinned hole machined additionally -XC82: Bottom mounting type -X144: Symmetrical port position -X867: Side porting type (Plug location changed)
	16	●	●																
	20	●	●	●															
	25	●	●	●	●														
MGPL Ball bushing	32			●	●														
	40			●	●	●													
	50			●	●	●	●												
MGPA High precision ball bushing	63			●	●	●	●	●											
	80			●	●	●	●	●	●										
	100			●	●	●	●	●	●	●									

※: For details, refer to pages 491 and 1247 to 1440.

Compact Guide Cylinder

MGP Series

ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

How to Order

MGP M 25 - 30 Z - M9BW

Compact Guide Cylinder

Made to Order
For details, refer to page 433.

Bearing type

M	Slide bearing
L	Ball bushing
A	High precision ball bushing

Number of auto switches

Nil	2 pcs.
S	1 pc.
n	n pcs.

Bore size

12	12 mm	40	40 mm
16	16 mm	50	50 mm
20	20 mm	63	63 mm
25	25 mm	80	80 mm
32	32 mm	100	100 mm

Auto switch

Nil	Without auto switch (Built-in magnet)
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*: For applicable auto switches, refer to the table below.

Port thread type

Nil	M5 x 0.8
	Rc
TN	NPT
TF	G

*: For bore sizes ø12 and ø16, only M5 x 0.8 is available.

Cylinder stroke [mm]

Refer to Standard Strokes on page 433.

Applicable Auto Switches

Refer to pages 1119 to 1245 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length [m]				Pre-wired connector	Applicable load	
					DC	AC	Perpendicular	In-line	0.5 (Nil)	1 (M)	3 (L)	5 (Z)			
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	●	●	○	○	IC circuit	Relay, PLC	
				3-wire (PNP)			M9PV	M9P	●	●	○	○			
	2-wire			12 V	M9BV		M9B	●	●	○	○				
	3-wire (NPN)			5 V, 12 V	M9NVV		M9NW	●	●	○	○				
	3-wire (PNP)			12 V	M9PVV		M9PW	●	●	○	○				
	2-wire			24 V	M9BVV		M9BW	●	●	○	○				
	3-wire (NPN)			5 V, 12 V	M9NAV*1		M9NA*1	○	○	●	●				
	3-wire (PNP)			12 V	M9PAV*1		M9PA*1	○	○	●	●				
	2-wire			12 V	M9BAV*1		M9BA*1	○	○	●	●				
	2-wire (Non-polar)			—	—		P3DWA*2	●	—	●	●	○			
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A96V	A96	●	—	—	—	IC circuit	—
				No	2-wire	24 V	12 V	100 V	A93V*3	A93	●	●	●	●	—
						100 V or less		A90V	A90	●	—	●	—	IC circuit	

*1: Water resistant type auto switches are mountable on the above models, but in such case SMC cannot guarantee water resistance.

A water resistant type cylinder is recommended for use in an environment which requires water resistance.

However, please contact SMC for water resistant products of ø12 and ø16.

*2: The D-P3DWA□ is mountable on bore size ø25 to ø100.

*3: 1 m type lead wire is only applicable to the D-A93.

*: Lead wire length symbols: 0.5 m.....Nil (Example) M9NW
1 m.....M (Example) M9NWM
3 m.....L (Example) M9NWL
5 m.....Z (Example) M9NZZ

*: Solid state auto switches marked with "○" are produced upon receipt of order.

*: Since there are other applicable auto switches than listed above, refer to page 489 for details.

*: For details about auto switches with pre-wired connector, refer to pages 1192 and 1193.

*: Auto switches are shipped together, (but not assembled).



⑤ **With Flange**

Plate side flange type is added.

How to Order

MGP **Bearing type** **F** **Bore size** **Port thread type** — **Stroke** **Z** — **Auto switch**

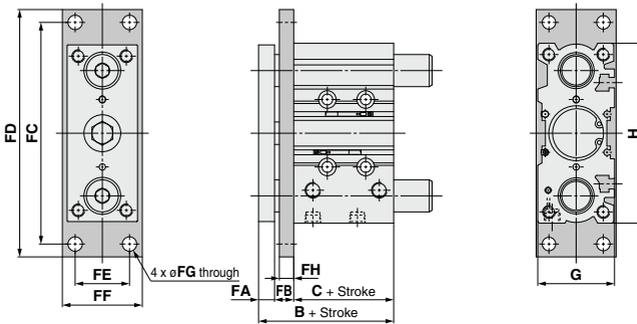
• With flange

⚠ Caution

This product cannot be used as a stopper.

Specifications: Same as standard type

Dimensions (Dimensions other than below are the same as standard type.)



Bore size	B	C	FA	FB	FC	FD	FE	FF	FG	FH	G	H	Flange weight (kg)
12	42	29	7	6	80	89	18	25	4.5	5	26	58	0.08
16	46	33	7	6	88	98	22	32	5.5	5	30	64	0.11
20	53	37	8	8	102	112	24	38	5.5	6	36	83	0.17
25	53.5	37.5	9	7	114	126	30	40	6.6	6	42	93	0.20
32	59.5	37.5	10	12	138	154	34	50	9	9	48	112	0.46
40	66	44	10	12	146	162	40	60	9	9	54	120	0.60
50	72	44	12	16	178	198	46	65	11	10	64	148	0.87
63	77	49	12	16	192	212	58	75	11	10	78	162	1.09
80	96.5	56.5	16	24	238	262	54	90	13.5	16	91.5	202	2.59
100	116	66	19	31	280	308	62	100	15.5	22	111.5	240	4.63

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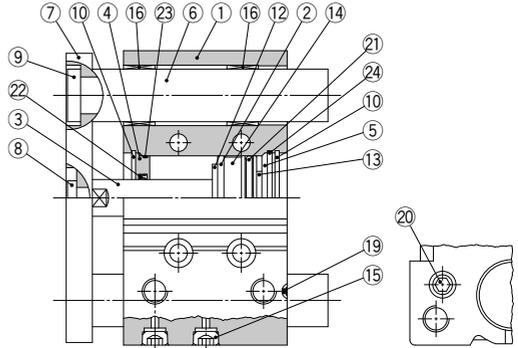
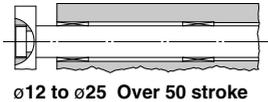
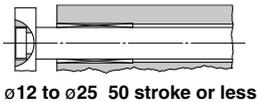
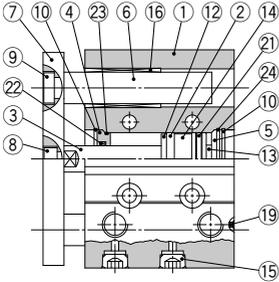
D-□

-X□

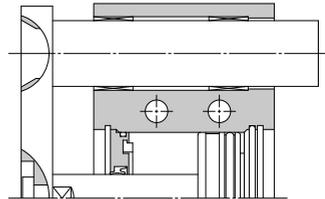
Construction/MGPM Series

MGPM12 to 25

MGPM32 to 100



ø63 or more



Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Hard anodized
2	Piston	Aluminum alloy	
3	Piston rod	Stainless steel	ø12 to ø25
4	Collar	Carbon steel	ø32 to ø100 Hard chrome plating
5	Head cover	Aluminum alloy	Chromated ø12 to ø63 Painted ø80, ø100
6	Guide rod	Carbon steel	Hard chrome plating
7	Plate	Carbon steel	Nickel plating
8	Plate mounting bolt	Carbon steel	Nickel plating
9	Guide bolt	Carbon steel	Nickel plating
10	Retaining ring	Carbon tool steel	Phosphate coated
11	Retaining ring	Carbon tool steel	Phosphate coated
12	Bumper A	Urethane	
13	Bumper B	Urethane	
14	Magnet	—	
15	Plug	Carbon steel	ø12, ø16 ø20 to ø100 Nickel plating
	Hexagon socket head plug		
16	Slide bearing	Bearing alloy	

**: A felt is not installed on the slide bearing.

Component Parts

No.	Description	Material	Note
17	Ball bushing		
18	Spacer	Aluminum alloy	
19	Steel ball	Carbon steel	ø12 to ø50
20	Plug	Carbon steel	ø63 to ø100 Nickel plating
21*	Piston seal	NBR	
22*	Rod seal	NBR	
23*	Gasket A	NBR	
24*	Gasket B	NBR	

Replacement Parts/Seal Kit

Bore size [mm]	Kit no.	Contents	Bore size [mm]	Kit no.	Contents
12	MGP12-Z-PS	Set of nos.	40	MGP40-Z-PS	Set of nos.
16	MGP16-Z-PS		50	MGP50-Z-PS	
20	MGP20-Z-PS	above	63	MGP63-Z-PS	above
25	MGP25-Z-PS	①, ②,	80	MGP80-Z-PS	①, ②,
32	MGP32-Z-PS	③, ④	100	MGP100-Z-PS	③, ④

*: Seal kit includes ① to ④. Order the seal kit, based on each bore size.

*: Since the seal kit does not include a grease pack, order it separately.

Grease pack part number: GR-S-010 (10 g)

MGJ

JMGP

MGP

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