

# 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



Guide rod shortened  
for MGPM40-25 stroke

Max. **22** mm

Space required between the  
bottom of the cylinder body and  
your equipment is reduced.

Space saving



With air cushion

Water resistant cylinder

MGJ

JMGP

MGF

MGPW

MGQ

MGG

MGK

MGF

MGZ

MGT

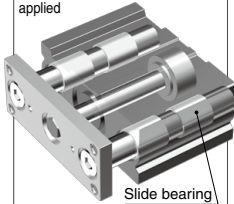
D-□

-X□

### 3 types of bearing can be selected.

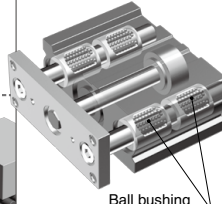
#### Slide bearing MGPM series

Suitable for lateral load applications such as a stopper where shock is applied



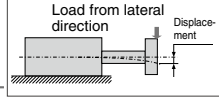
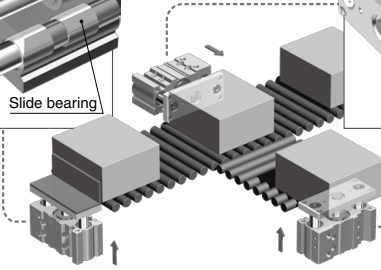
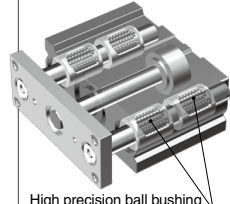
#### Ball bushing MGPL series

Smooth operation suitable for pusher and lifter



#### High precision ball bushing MGPA series

Suitable for minimizing plate displacement

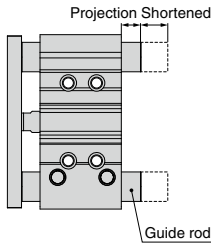


### Basic Type

#### ● Weight reduced by up to 17% ● Guide rod shortened

Bore size [mm]	Reduction rate [%]	Weight [kg]
ø12	11	0.25
ø16	3	0.37
ø20	12	0.59
ø25	12	0.84
ø32	17	1.41
ø40	16	1.64
ø50	17	2.79
ø63	17	3.48
ø80	17	5.41
ø100	13	9.12

※: Compared with the slide bearing type, ø12 to ø25-20 stroke  
※: Compared with the slide bearing type, ø32 to ø100-25 stroke



Bore size	Guide rod [mm]	
	Shortened by	New dimension
ø32	22	15.5
ø40	22	9
ø50	18	16.5
ø63	18	11.5
ø80	10.5	8
ø100	10.5	10.5

※: Compared with the slide bearing type, 25 stroke (ø32 to ø100)  
(No projection for ø12 to ø25-25 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	●	●															<b>-XA□</b> : Change of guide rod end shape <b>-XB6</b> : Heat resistant cylinder (-10 to 150°C) <b>-XB10</b> : Intermediate stroke (Using exclusive body) <b>-XB13</b> : Low speed cylinder (5 to 50 mm/s) <b>-XC6</b> : Made of stainless steel <b>-XC8</b> : Adjustable stroke cylinder/ Adjustable extension type <b>-XC22</b> : Fluororubber seal <b>-XC35</b> : With coil scraper <b>-XC79</b> : Tapped hole, drilled hole and pinned hole machined additionally <b>-XC82</b> : Bottom mounting type <b>-X144</b> : Symmetrical port position <b>-X867</b> : Side porting type (Plug location changed)	
	16	●	●																
	20	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
MGPL Ball bushing	25		●		●										●		●		
	32				●										●		●		
MGPA High precision ball bushing	40					●									●		●		
	50						●								●		●		
	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

Bearing type

M	Slide bearing
L	Ball bushing
A	High precision ball bushing

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

Port thread type

Nil	M5 x 0.8
TC	Rc
TN	NPT
TF	G

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

•Made to Order  
For details, refer to page 433.

•Number of auto switches

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

•Auto switch

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

•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)		Relay, PLC	Relay, PLC	
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	●	●	○	○	—			IC circuit
	3-wire (PNP)			M9PV			M9P	●	●	○	○					
	2-wire			12 V	M9BV		M9B	●	●	○	○	—				
	3-wire (NPN)			5 V, 12 V	M9NVW		M9NW	●	●	○	○					
	3-wire (PNP)			12 V	M9PWV		M9PW	●	●	○	○	—				
	2-wire			5 V, 12 V	M9BWV		M9BW	●	●	○	○					
	3-wire (NPN)			5 V, 12 V	M9NAV*1		M9NA*1	○	○	●	●	—				
	3-wire (PNP)				M9PAV*1		M9PA*1	○	○	●	●					
Magnetic field resistant (2-color indicator)	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 or less	A93V*3	A93	●	●	●	—	—	
								A90V	A90	●	—	●	—	—	IC circuit	Relay, PLC

\*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) M9NWX

\*: 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**

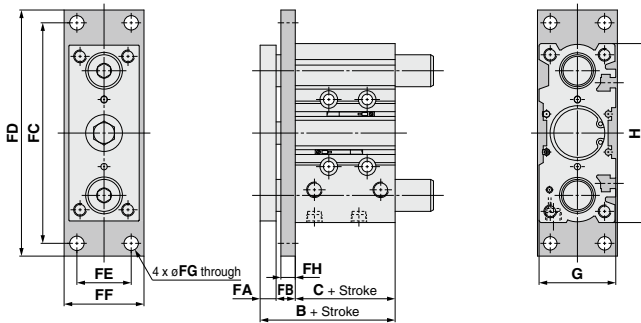
• With flange

### ⚠ 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.)



(mm)													Flange weight (kg)
Bore size	B	C	FA	FB	FC	FD	FE	FF	FG	FH	G	H	
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

MGPJ

JMGP

MGP

MGPW

MGPQ

MGG

MGC

MGF

MGZ

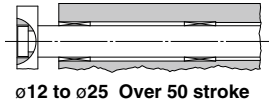
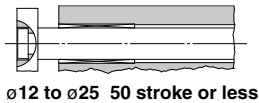
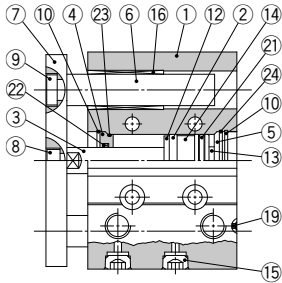
MGT

D-□

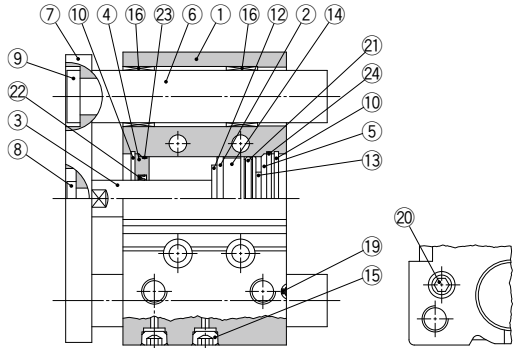
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## Construction/MGPM Series

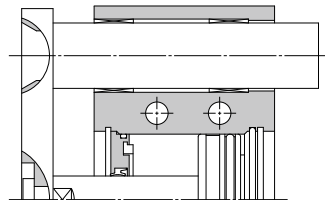
### MGPM12 to 25



### 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   ø80, ø100   Painted
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
16	Hexagon socket head plug	Carbon steel	ø20 to ø100   Nickel plating
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	above	50	MGP50-Z-PS	above
20	MGP20-Z-PS	above	63	MGP63-Z-PS	above
25	MGP25-Z-PS	ø1, ø2, ø3, ø4	80	MGP80-Z-PS	ø1, ø2, ø3, ø4
32	MGP32-Z-PS	ø1, ø2, ø3, ø4	100	MGP100-Z-PS	ø1, ø2, ø3, ø4

\*: Seal kit includes 21 to 24. 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

MGPW

MGQ

MGG

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MGZ

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D-□

-X□