















## MPG Series Plate Cylinder

### Product series

Series	Mounting type				Acting type	Bore size	Collocation of sensor switch	
	Basic	LB	FA	SDB			DS1-H	DS1-HL
Standard type: MPG					Double acting	6 8 10 12 16		
Hinge mounting type: MPGH								
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MPG

### Installation and application

1. When load changes in the work, the cylinder with abundant output capacity shall be selected.
2. Relative cylinder with high temperature resistance or corrosion resistance shall be chosen under the condition of high temperature or corrosion.
3. Necessary protection measure shall be taken in the environment with higher humidity, much dust or water drops, oil dust and welding dregs.
4. Dirty substances in the pipe must be eliminated before cylinder is connected with pipeline to prevent the entrance of particles into the cylinder.
5. The medium used by cylinder shall be filtered to 40  $\mu$  m or below.
6. As both of the front cover and piston of the cylinder are short, typically too large stroke can not be selected.
7. Anti-freezing measure shall be adopted under low temperature environment to prevent moisture freezing.
8. The cylinder shall avoid the influence of side load in operation to maintain the normal work of cylinder and extend the service life.
9. If the cylinder is dismantled and stored for a long time, please conduct anti-rust treatment to the surface. Anti-dust caps shall be added in air inlet and outlet ports. The front and back cover can not be dismantled, which shall be especially noticed.

### Criteria for selection: Cylinder thrust

Unit: Newton(N)

Model	Bore size (mm)	Rod size (mm)	Acting type	Pressure area (mm <sup>2</sup> )	Operating pressure(MPa)							
					0.1	0.2	0.3	0.4	0.5	0.6	0.7	
MPG MPGH	6	3	Double acting	Push side	28.3	2.8	5.7	8.5	11.3	14.2	17.0	19.8
			Double acting	Pull side	21.2	2.1	4.2	6.4	8.5	10.6	12.7	14.8
	8	4	Double acting	Push side	50.3	5.0	10.1	15.1	20.1	25.2	30.2	35.2
			Double acting	Pull side	37.7	3.8	7.5	11.3	15.1	18.9	22.6	26.4
	10	4	Double acting	Push side	78.5	7.9	15.7	23.6	31.4	39.3	47.1	55.0
			Double acting	Pull side	65.9	6.6	13.2	19.8	26.4	33.0	39.5	46.1
	12	6	Double acting	Push side	113.0	11.3	22.6	33.9	45.2	56.5	67.8	79.1
			Double acting	Pull side	84.7	8.5	17.0	25.4	33.9	42.4	50.8	59.3
	16	6	Double acting	Push side	201.0	20.1	40.2	60.3	80.4	100.5	120.6	140.7
			Double acting	Pull side	172.7	17.3	34.5	51.8	69.1	86.4	103.6	120.9



## MPG Series



MPG MPG-S



1. It is compact, small size and light weight. It is easy to install and dismantle.
2. The guide precision of piston rod is high and no additional lubricant is needed.
3. Advanced rubber coating process is applied to the back cover.
4. Mounting accessories with various specifications are optional.
5. With magnet type is of the feature of position sensing.
6. There are magnetic switch slots around the cylinder body, which is convenient to install inducting switch.
7. Cylinders of various specifications are optional.

Bore size(mm)	6	8	10	12	16
Acting type	Double acting				
Fluid	Air(to be filtered by 40 μ m filter element)				
Operating pressure	0.1~0.7MPa(15~100psi)				
Proof pressure	1.05MPa(150psi)				
Mounting type	Basic FA LB SDB				
Temperature °C	-20~80				
Speed range mm/s	30~500				
Stroke tolerance	+1.0 0				
Cushion type	Bumper				
Port size	M3 × 0.5			M5 × 0.8	

Add) Refer to P419~442 for detail of sensor switch.

Bore size (mm)	Standard stroke (mm)	Max. std stroke
6	5 10 15 20 25	25
8	5 10 15 20 25 30 35 40	40
10	5 10 15 20 25 30 35 40	40
12	5 10 15 20 25 30 35 40	40
16	5 10 15 20 25 30 35 40	40

Note) Consult us for non-standard stroke.

**MPG 10 × 30 S N** □

**MPGH 10 × 30 S N** □

- Model**
  - MPG: Standard plate cylinder (double acting)
  - MPGH: Hinge mounting type cylinder (double acting)
- Bore size**
  - 6 8 10 12 16
- Stroke**
  - Refer to stroke table for details
- Magnet**
  - Blank: Without magnet
  - S: With magnet
- Mounting type**

Model	Mounting type
MPG	Blank
	LB
	FA
MPGH	Blank
	SDB
- Rod type**
  - Blank: Male thread
  - N: No thread

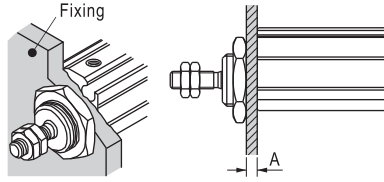
NO.	Item	Material
1	Rod nut	Carbon steel
2	Piston rod	Stainless steel
3	Front cover packing	NBR
4	Front cover nut	Carbon steel
5	Body	Aluminum alloy
6	Bumper	TPU
7	Piston seal	NBR
8	Piston	Brass(Others) Aluminum alloy(Φ 16)
9	clip	Spring steel
10	Back cover	Aluminum alloy & Rubber
11	Magnet holder	Φ 6: Stainless steel Φ 8~ Φ 12: Brass Φ 16: Aluminum alloy
12	Magnet washer	NBR
13	Magnet	Sintered metal (Neodymium-iron-boron)

# Plate Cylinder

## MPG Series

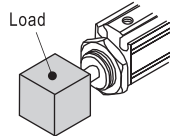
### ■ Installation and application

1. Select the plate width and tightening torque of the front cover thread according to the table below:



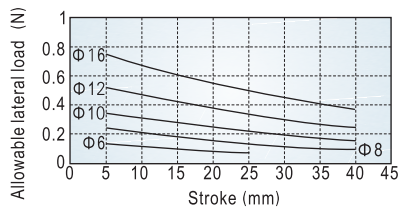
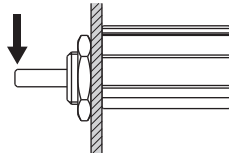
Bore size	Front cover thread	Maximum allowable torque(N.m)	Maximum width(A)
6	M10 × 1.0	12.5	4
8	M12 × 1.0	21.0	4
10	M12 × 1.0	21.0	4
12	M14 × 1.0	34.0	5
16	M14 × 1.0	34.0	5

2. The extra torque produced by the load at the piston rod end cannot exceed the allowable value specified in the table below. Otherwise may cause damage to the cylinder or reduce the service life.



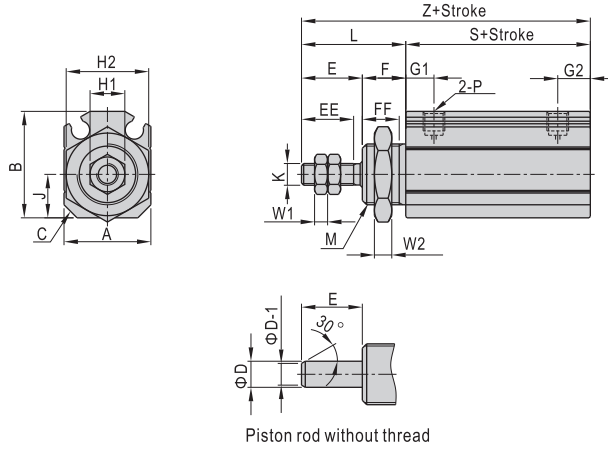
Bore size	Piston rod thread	Maximum allowable torque(N.m)
6	M3 × 0.5	0.3
8	M4 × 0.7	0.8
10	M4 × 0.7	0.8
12	M5 × 0.8	1.6
16	M5 × 0.8	1.6

3. Allowable Rod End Lateral Load



### ■ Dimensions

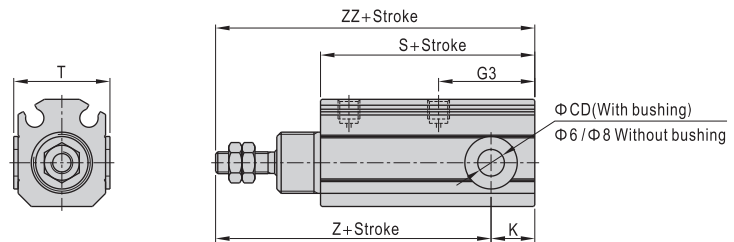
Model: MPG/MPG-S



Bore size\Item	A	B	C	D	E	EE	F	FF	G1	G2	H1	H2	J	K
6	14	16.5	2	3	9	7	8	6.5	5.5	6.5	5.5	13	6	M3 × 0.5
8	14.5	17.5	2	4	12	10	8	6.5	6	7	7	17	7	M4 × 0.7
10	15	19	2.5	4	12	10	8	6.5	6	7	7	17	7	M4 × 0.7
12	17	21.5	2.5	5	14	12	10	8.5	6.5	7.5	8	19	8.5	M5 × 0.8
16	20	24.5	3	6	14	12	10	8.5	6.5	7.5	8	19	10	M5 × 0.8

Bore size\Item	L	M	P	S		W1	W2	Z	
				Without magnet	With magnet			Without magnet	With magnet
6	17	M10 × 1.0	M3 × 0.5	16	21	1.8	3	33	38
8	20	M12 × 1.0	M3 × 0.5	18	23	2.2	3	38	43
10	20	M12 × 1.0	M3 × 0.5	19.5	24.5	2.2	3	39.5	44.5
12	24	M14 × 1.0	M5 × 0.8	19.5	24.5	3	4	43.5	48.5
16	24	M14 × 1.0	M5 × 0.8	19.5	24.5	3	4	43.5	48.5

Model: MPGH/MPGH-S



Bore size\Item	CD	G3	K	T	Without magnet		With magnet	
					S	Z	S	Z
6	3 <sup>+0.05</sup> <sub>0</sub>	11.5	4	—	21	34	26	39
8	4 <sup>+0.05</sup> <sub>0</sub>	15	5	—	26	41	31	46
10	5 <sup>+0.065</sup> <sub>0</sub>	18	6.5	17	30.5	44	35.5	49
12	6 <sup>+0.065</sup> <sub>0</sub>	22	10	19	34	48	39	53
16	6 <sup>+0.065</sup> <sub>0</sub>	22	10	22	34	48	39	53

Remark: The unmarked dimension is the same as MPG standard type.



MPG

# Plate Cylinder

## MPG Series — Accessories



### Ordering code

F-MPG 10 FA			
Accessory	Model	Bore size	Accessory type
			LB: LB type
			FA: FA type
			SDB: SDB type ②
			FC: Rubber bumper (flat head)
			RC: Rubber bumper (ball head)

① Please refer to accessory list for selection and ordering information.

② SDB is attached with relevant PIN.

### Accessory selection

Accessories/Cylinder model		MPG		MPGH	
		Without magnet	With magnet	Without magnet	With magnet
Mounting accessory	LB	●	●	×	×
	FA	●	●	×	×
	SDB	×	×	●	●
Knuckle	FC	●	●	●	●
	RC	●	●	●	●
	I ①	●	●	●	●
	Y	●	●	●	●
Sensor switch ②	DS1-H	×	●	×	●
	DS1-HL	×	●	×	●

① Please refer to P415~416 for I knuckle and Y knuckle detail.

② Please refer to P419~442 for detail of sensor switch.

### Material of accessories

Accessories	Mounting accessories			Knuckle			
Bore size	LB	FA	SDB	FC	RC	I	Y
6~16	△	△	△	□	□	◇	◇

△ — SPCC; □ — POM; ◇ — Cast iron.

### List for ordering code of accessories

Accessories		Mounting accessories		
Bore size		LB	FA	SDB
6		F-MPG6LB	F-MPG6FA	F-MPG6SDB
8				F-MPG8SDB
10		F-MPG10LB	F-MPG10FA	F-MPG10SDB
12				F-MPG12SDB
16		F-MPG16LB	F-MPG16FA	F-MPG16SDB

Accessories		Knuckle	
Bore size		FC: Rubber bumper (flat head)	RC: Rubber bumper (ball head)
6		F-MPG6FC	F-MPG6RC
8			
10		F-MPG10FC	F-MPG10RC
12			
16		F-MPG16FC	F-MPG16RC

Accessories		Knuckle		Sensor switch	
Bore size		I: I Knuckle	Y: Y Knuckle	DS1-H□	DS1-HL□
6		F-M3 × 050I	F-M3 × 050Y		
8					
10		F-M4 × 070I	F-M4 × 070Y	DS1-H□	DS1-HL□
12					
16		F-M05 × 080I	F-M05 × 080Y		

Model: FC/RC									
RC		A	B	C	D	E	M	SR	
		6	6	11	8	5	M3 × 0.5	8	
FC		A	B	C	D	E	M	SR	
		8	8	13	10	6	M4 × 0.7	10	
		10	8	13	10	6	M4 × 0.7	10	
		12	10	10	15	12	M5 × 0.8	12	
		16	10	10	15	12	M5 × 0.8	12	

### Dimensions

Model: LB												
		Bore size\Item	A	B	C	D	E	F	G	H	K	
		6	20	28	11	3.4	6.5	10.5	1.6	19	21.5	
		8	24	33	13	4.5	7	12	1.6	22	23.5	
		10	24	33	13	4.5	7	12	1.6	22	25	
		12	30	43	18	5.5	10	16.5	2.3	29	31	
		16	30	43	18	5.5	10	16.5	2.3	29	32.5	

Model: FA								
		Bore size\Item	A	B	C	D	E	F
		6	24	32	16	3.4	1.6	18.5
		8	28	37	18	4.5	1.6	19.5
		10	28	37	18	4.5	1.6	21
		12	36	49	22	5.5	2.3	24
		16	36	49	22	5.5	2.3	25.5

Model: SDB														
		Bore size\Item	A	AA*	B	BB*	C	D	E	F	G	H	K	T
		6	18.5	55°	21.5	110°	16	3.4	18	26	1.6	20	4	12
		8	19	55°	23	110°	18	4.5	21	30	1.6	23	5	13
		10	20.5	65°	24.1	110°	20	4.5	24	33	1.6	25.5	6.5	13.5
		12	25	55°	29	110°	25	5.5	26	39	2.9	32	10	15
		16	28	55°	32	110°	25	5.5	29	42	2.9	32	10	15

\*Note: AA and BB are for reference only. Specific value depends on the actual situation.