Compendium of MG Series

Criteria for selection: Cylinder thrust

Unit：Newton(N)

Bore size	Rod size	Acting type		Pressure area(mm^2)	Operating pressure(MPa)						
					0.1	0.2	0.3	0.4	0.5	0.6	0.7
20	8	Single acting	Push side	314.0	-	15.7	47.1	78.5	109.9	141.3	172.7
			Pull side	263.8	-	5.7	32.0	58.4	84.8	111.2	137.5
		Double acting	Push side	314.0	31.4	62.8	94.2	125.6	157.0	188.4	219.8
			Pull side	263.8	26.4	52.8	79.1	105.5	131.9	158.3	184.7
25	10	Single acting	Push side	490.6	-	24.6	73.7	122.8	171.8	220.9	269.9
			Pull side	412.1	-	8.9	50.1	91.4	132.6	173.8	215.0
		Double acting	Push side	490.6	49.1	98.1	147.2	196.2	245.3	294.4	343.4
			Pull side	412.1	41.2	82.4	123.6	164.8	206.1	247.3	288.5
32	12	Single acting	Push side	804.3	-	40.2	120.6	200.9	281.3	361.7	442.1
			Pull side	691.2	-	17.6	86.6	155.7	224.8	293.9	363.0
		Double acting	Push side	804.3	80.4	160.9	241.3	321.7	402.2	482.6	563.0
			Pull side	691.2	69.1	138.2	207.4	276.5	345.6	414.7	483.8
40	16	Single acting	Push side	1256.6	-	62.8	188.4	314.0	439.6	565.2	690.8
			Pull side	1055.6	-	22.6	128.1	233.6	339.1	444.6	550.1
		Double acting	Push side	1256.6	125.7	251.3	377.0	502.6	628.3	754.0	879.6
			Pull side	1055.6	105.6	211.1	316.7	422.2	527.8	633.4	738.9
50	20	Double acting	Push side	1962.5	196.3	392.5	588.8	785.0	981.3	1177.5	1373.8
			Pull side	1648.5	164.9	329.7	494.6	659.4	824.3	989.1	1154.0
63	20	Double acting	Push side	3115.7	311.6	623.1	934.7	1246.3	1557.9	1869.4	2181.0
			Pull side	2801.7	280.2	560.3	840.5	1120.7	1400.9	1681.0	1961.2

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 μ m or below.
6. Anti-freezing measure shall be adopted under low temperature environment to prevent moisture freezing.
7. The cylinder shall be carried out test run without load before application. Prior to run, buffer shall be turned to the minimum and gradually released to avoid the damage on cylinder caused by excessive impact.
8. To avoid side load, otherwise, piston rod will be bent and deformed and damage the thread at the end of the rod. Single-acting type can not be added in return.
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.

Mini cylinder(Stainless steel)

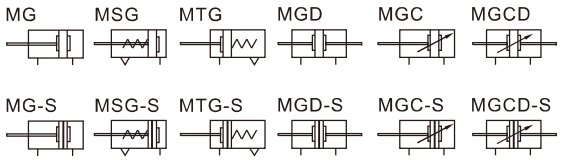
MG Series

Specification

Bore size(mm)		20	25	32	40	50	63
Acting type	MSG/MTG	Single acting				–	
	MG/MGD	Double acting				–	
	MGC/MGCD	Double acting with cushion					
Fluid		Air(to be filtered by 40 μ m filter element)					
Operating pressure	Double acting	0.15~1.0MPa(22~145psi)(1.5~10.0bar)					
	Single acting	0.2~1.0MPa(28~145psi)(2.0~10.0bar)					
Proof pressure		1.5MPa(215psi)(15bar)					
Temperature ℃		-20~70					
Speed range mm/s		Double acting: 30~800 Single acting: 50~800					
Stroke tolerance		0~150 $^{+1.0}_{0}$ >150 $^{+1.5}_{0}$					
Cushion type		Variable cushion、Bumper				Variable cushion	
Port size [Note1]	Variable cushion	M5×0.8	1/8"			1/4"	
	Bumper	1/8"				-	

[Note1] G thread is available.
Add) Refer to P451 for detail of sensor switch.

Symbol



Product feature

1. JIS standard is implemented.
2. Piston adopts heterogeneous two way seal structure.
   It has compact size and has the function of oil reservation.
3. Front cover owns fixed anti-impact pad which can reduce the impact of direction-change of the cylinder.
4. Front and back cover and stainless steel block adopt riveted rolling packed structure to form a reliable connection.
5. The cylinder body has stainless steel pipes with high precision to produce high strength and corrosion resistance.
6. There are cylinders and mounting accessories with several specifications for your choice.

Stroke

Bore size (mm)		stroke (mm) Standard stroke	Longer stroke	Max.std stroke	Max. stroke
MG MGC	20	10 15 20 25 30 40 50 60 75 80 100 125 150 175 200	201~500	500	800
	25	10 15 20 25 30 40 50 60 75 80 100 125 150 175 200 250 300	301~500	500	800
	32	10 15 20 25 30 40 50 60 75 80 100 125 150 175 200 250 300	301~500	500	800
	40	10 15 20 25 30 40 50 60 75 80 100 125 150 175 200 250 300	301~500	500	800
	50	10 15 20 25 30 40 50 60 75 80 100 125 150 175 200 250 300	301~500	500	800
	63	10 15 20 25 30 40 50 60 75 80 100 125 150 175 200 250 300	301~500	500	800
MGD MGCD	20	10 15 20 25 30 40 50 60 75 80 100 125 150 175 200 250 300	-	300	-
	25	10 15 20 25 30 40 50 60 75 80 100 125 150 175 200 250 300	-	300	-
	32	10 15 20 25 30 40 50 60 75 80 100 125 150 175 200 250 300	-	500	-
	40	10 15 20 25 30 40 50 60 75 80 100 125 150 175 200 250 300	-	500	-
	50	10 15 20 25 30 40 50 60 75 80 100 125 150 175 200 250 300	-	500	-
	63	10 15 20 25 30 40 50 60 75 80 100 125 150 175 200 250 300	-	500	-
MSG MTG	20	10 15 20 25 30 40 50 60 75 80 100 125 150	-	-	-
	25	10 15 20 25 30 40 50 60 75 80 100 125 150	-	-	-
	32	10 15 20 25 30 40 50 60 75 80 100 125 150	-	-	-
	40	10 15 20 25 30 40 50 60 75 80 100 125 150	-	-	-

[Note] Consult us for non–standard stroke.

Ordering code

MG 20×100 S FA G

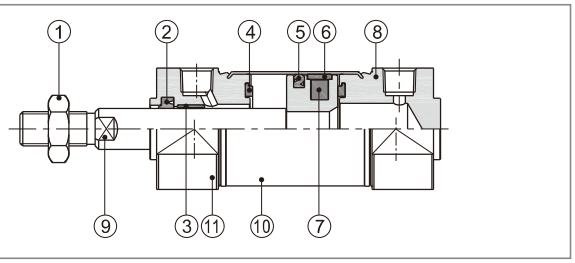
① ② ③ ④ ⑤ ⑥

①Model	②Bore size		③Stroke	④Magnet	⑤Mounting type[Note1]	⑥Thread type [Note2]
MG: Mini cylinder(Double acting) MGC: Mini cylinder (Double acting with cushion) MSG: Mini cylinder (Single acting_push) MTG: Mini cylinder (Single acting_pull)	Model	Bore size	Refer to stroke table for details	Blank: Without magnet S: With magnet	Blank: No accessories FA: FA type LB: LB type CB: CB type SDB: SDB type	G: G
	MG MSG MTG MGD	20 25 32 40				
MGD: Mini cylinder(Double rod) MGCD: Mini cylinder (Double rod with cushion)	MGC MGCD	20 25 32 40 50 63			Blank: No accessories FA: FA type LB: LB type	

[Note1] Please refer to page 241~242 for accessory parts. SDB must be used with CB.
[Note2] Standard thread is blank here.

Inner structure and material of major parts

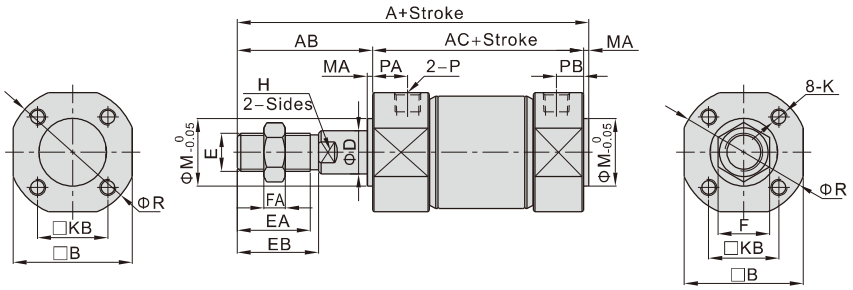
MG



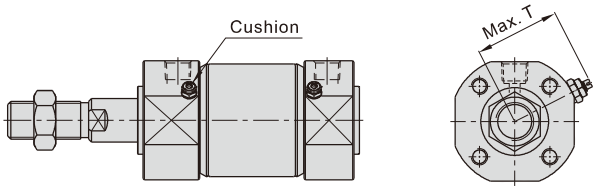
NO.	Item	Material
1	Rod nut	Carbon steel
2	Front cover packing	NBR
3	Bushing	Wear resistant material
4	Bumper	TPU
5	Piston seal	NBR
6	Wear ring	Wear resistant material
7	Magnet	Rubber
8	Back cover	Aluminum alloy
9	Piston rod	Carbon steel with 20 μ m chrome plated
10	Barrel	SUS304
11	Front cover	Aluminum alloy

Dimensions

MG Φ20~Φ40



MGC Φ20~Φ63



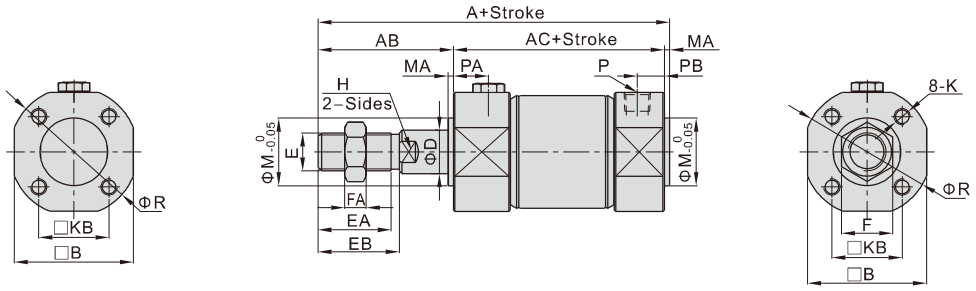
Bore size\Item	Standard stroke	Longer stroke	A	AB	AC	B	D	E	EA	EB	F	FA
20	≤200	201~500	106(114)	35	69(77)	24	8	M8×1.25	15.5	18	13	5
25	≤300	301~500	111(119)	40	69(77)	29	10	M10×1.25	19.5	22	17	6
32	≤300	301~500	113(121)	40	71(79)	35.5	12	M10×1.25	19.5	22	17	6
40	≤300	301~500	130(139)	50	78(87)	44	16	M14×1.5	27	30	19	8
50	≤300	301~500	150(162)	58	90(102)	55	20	M18×1.5	32	35	27	11
63	≤300	301~500	150(162)	58	90(102)	69	20	M18×1.5	32	35	27	11

Bore size\Item	H	K	KB	M	MA	P		PA		PB		R	T
						MG	MGC	MG	MGC	MG	MGC		
20	6	M4×0.7 dp:7	14	12	2	1/8"	M5×0.8	12(15)	15(17.5)	8	10	26.5	22.5
25	8	M5×0.8 dp:7.5	16.5	14	2	1/8"	PT1/8	12.5(15)	12.5(15)	9	9	31.5	24.5
32	10	M5×0.8 dp:7.5	20	18	2	1/8"	PT1/8	13(15)	13(15)	10.5	10.5	38.5	30.5
40	14	M6×1.0 dp:12	26	25	2	1/8"	PT1/8	13(14)	13(14)	12	12	47.5	35
50	18	M8×1.25 dp:16	32	30	2	-	PT1/4	-	15.5(22.5)	-	13	58.5	40.5
63	18	M10×1.5 dp:16	38	32	2	-	PT1/4	-	15.5(22.5)	-	13	72	47.5

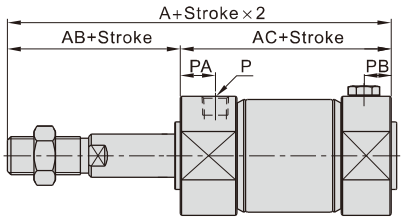
Remark：The dimensions of magnet type cylinder are the same as non-magnet type cylinder. The value in the "()" is longer stroke type's value.

MG Series

MSG Φ20~Φ40



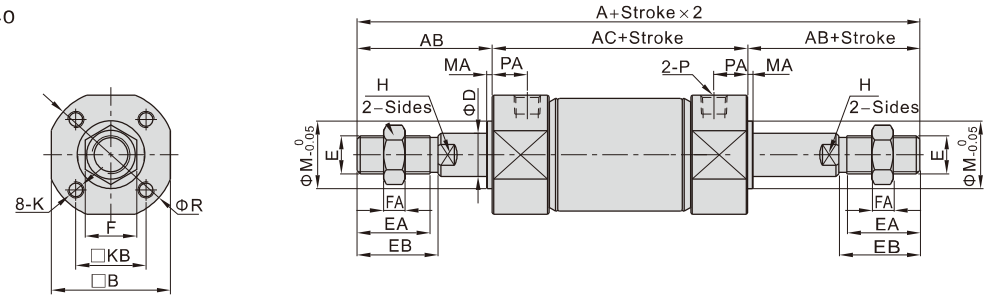
MTG Φ20~Φ40



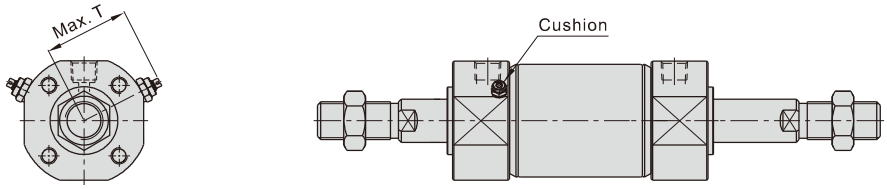
Bore size\Item	A			AB	AC			B	D	E	EA	EB	F	FA	H	K	KB	M	MA	P	PA	PB	R
	1~50	51~100	101~150		1~50	51~100	101~150																
20	131	156	181	35	94	119	144	24	8	M8×1.25	15.5	18	13	5	6	M4×0.7 Dp:7	14	12	2	1/8"	12	8	26.5
25	136	161	186	40	94	119	144	29	10	M10×1.25	19.5	22	17	6	8	M5×0.8 Dp:7.5	16.5	14	2	1/8"	12.5	9	31.5
32	138	163	188	40	96	121	146	35.5	12	M10×1.25	19.5	22	17	6	10	M5×0.8 Dp:7.5	20	18	2	1/8"	13	10.5	38.5
40	155	180	205	50	103	128	153	44	16	M14×1.5	27	30	19	8	14	M6×1.0 Dp:12	26	25	2	1/8"	13	12	47.5

Remark：The dimensions of magnet type cylinder are the same as non-magnet type cylinder.

MGD Φ20~Φ40



MGCD Φ20~Φ63



Bore size\Item	A	AC	AB	B	D	E	EA	EB	F	FA	H	K	KB	M	MA	P		PA		R	T
																MGD	MGCD	MGD	MGCD		
20	147	77	35	24	8	M8×1.25	15.5	18	13	5	6	M4×0.7 Dp:7	14	12	2	1/8"	M5×0.8	12	15	26.5	22.5
25	157	77	40	29	10	M10×1.25	19.5	22	17	6	8	M5×0.8 Dp:7.5	16.5	14	2	1/8"	1/8"	12.5	12.5	31.5	24.5
32	159	79	40	35.5	12	M10×1.25	19.5	22	17	6	10	M5×0.8 Dp:7.5	20	18	2	1/8"	1/8"	13	13	38.5	30.5
40	187	87	50	44	16	M14×1.5	27	30	19	8	14	M6×1.0 Dp:12	26	25	2	1/8"	1/8"	13	13	47.5	35
50	218	102	58	55	20	M18×1.5	32	35	27	11	18	M8×1.25 Dp:16	32	30	2	-	1/4"	-	15.5	58.5	40.5
63	218	102	58	69	20	M18×1.5	32	35	27	11	18	M10×1.5 Dp:16	38	32	2	-	1/4"	-	15.5	72	47.5

Remark：The dimensions of magnet type cylinder are the same as non-magnet type cylinder.