

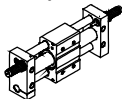


Guided rodless cylinder(Magnetic Coupled/Ball bearing)—RMTL Series

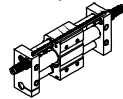
Compendium of RMTL Series

With manget and without magnet are available

Without magnet



With magnet



Magnetic design

This magnetic cylinder is basically a pneumatic rodless cylinder featuring a mobile piston fitted with annular magnets.

Two kinds of cushion type

The non adjustable rubber bumpers and the adjustable pneumatic cushioning on both ends of the cylinder ensure the smooth action. If shock absorber be used, the cushioning effect is more perfection.

Six bore size are available

Bore size: 10, 16, 20, 25, 32, 40

Double guides

Double guides ensure high precision and can endure proper side load or offset load.

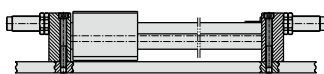
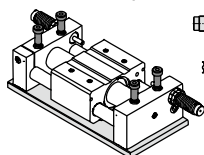
It is compact in space

Can be mounted from top and bottom.

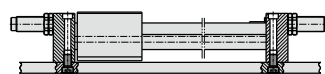
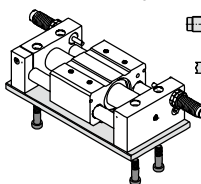
Superiority of airproof

It is dust-proof as the isolation between the carriage and piston.

Top bolt mounting



Bottom bolt mounting



Installation and application

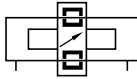
1. Dirty substances in the pipe must be eliminated before cylinder is connected with pipeline to prevent the entrance of impurities into the cylinder.
2. The medium used by cylinder shall be filtered to $40\mu\text{m}$ or below.
3. Anti-freezing measure shall be adopted under low temperature environment to prevent moisture freezing.
4. If the cylinder is dismantled and stored for a long time, pay attention to conduct anti-rust treatment to the surface.
Anti-dust caps shall be added in air inlet and outlet ports.
5. Non-magnetically conductive materials are recommended for workpieces fitted to the cylinder, otherwise the lifetime may be halved if magnetically conductive materials are used.

Guided rodless cylinder(Magnetic Coupled/Ball bearing) **AIRTAC**

RMTL Series



Symbol



Product feature

1. This magnetic cylinder is basically a pneumatic rodless cylinder featuring a mobile piston fitted with annular magnets. The mobile carriage is also equipped with magnets to provide magnetic coupling (carriage/piston). The carriage slide freely along the main tube.
2. It is dust-proof as the isolation between the carriage and piston.
3. It is compact in space.
4. The non adjustable rubber bumpers and the adjustable pneumatic cushioning on both ends of the cylinder ensure the smooth action. If shock absorber be used, the cushioning effect is more perfection.
5. Double guides ensure high precision and can endure proper side load or offset load.

Specification

Bore size(mm)	10	16	20	25	32	40
Acting type	Double acting					
Fluid	Air(to be filtered by 40μm filter element)					
Operating pressure	0.2~0.7MPa(30~100psi)(2.0~7bar)					
Proof pressure	1.2MPa(175psi)(12.0bar)					
Temperature °C	-20~70					
Speed range mm/s	50~500					
Stroke tolerance mm	0~250 ^{+1.0} ₀		251~1000 ^{+1.5} ₀		1001~ ^{+2.0} ₀	
Cushion type	Fixed cushion			Shock absorber(Available)		
Safe holding force N	55	140	220	345	560	880
Port size [Note1]	M5×0.8		1/8"		1/4"	

[Note1] PT thread, G thread and NPT thread are available.

Add) Refer to P362 for detail of sensor switch.

Stroke

Bore size (mm)	Standard stroke (mm)															Max.std stroke	
10	50	100	150	200	250	300										500	
16	50	100	150	200	250	300	350	400	450	500						750	
20	50	100	150	200	250	300	350	400	450	500	600	700	750	800		1000	
25	50	100	150	200	250	300	350	400	450	500	600	700	750	800		1500	
32	50	100	150	200	250	300	350	400	450	500	600	700	750	800		1500	
40	50	100	150	200	250	300	350	400	450	500	600	700	750	800	900	1000	1500

[Note] Consult us for non-standard stroke.

Ordering code

RMTL 20 ×100 S □ □

1 2 3 4 5 6

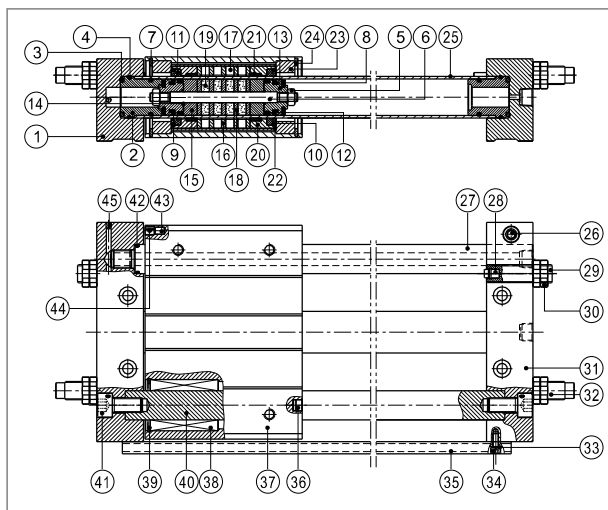
① Model	② Bore size	③ Stroke	④ Magnet	⑤ Cushion type [Note1]	⑥ Thread type
RMTL: Guided rodless cylinder(Magnetic Coupled/Ball bearing)	10 16	Refer to stroke table for details	Blank: Without magnet	Blank: With two adjustable nuts	Blank: M5 Blank: PT G: G T: NPT
	20 25 32 40		S: With magnet	A: With two shock absorbers	

[Note1] When A type is selected, the two adjustable nuts are added too.

Guided rodless cylinder(Magnetic Coupled/Ball bearing) **AirTAC**

RMTL Series

Inner structure and material of major parts



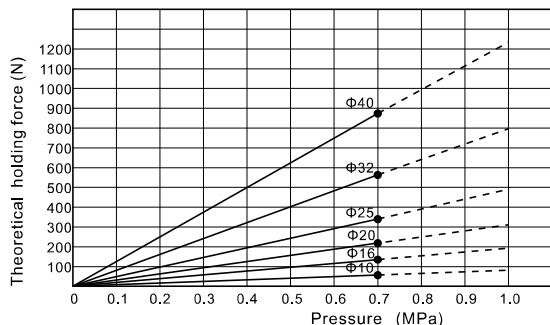
NO.	Item	Material	NO.	Item	Material
1	Fixing plate	Aluminum alloy	24	C clip	Spring steel
2	Washer cover	Aluminum alloy	25	Barrel	Stainless steel
3	O-ring	NBR	26	Countersink screw	Carbon steel
4	O-ring	NBR	27	Guide I	Carbon steel
5	Nut	Carbon steel	28	Bumper	TPU
6	Joint pole	Stainless steel	29	Adjustable screw	Carbon steel
7	O-ring	NBR	30	Nut	Ss41
8	Bumper	NBR	31	Fixing plate	Aluminum alloy
9	Piston seal	TPU	32	Shock absorber	Combination
10	O-ring	NBR	33	Spring washer	Spring steel
11	Scraping dust ring	Plastics	34	Countersink screw	Carbon steel
12	Wearing ring	Wear resistant material	35	Rail	Aluminum alloy
13	Piston	Aluminum alloy	36	Bumper block	Stainless steel
14	O-ring	NBR	37	Body	Aluminum alloy
15	Piston washer	Aluminum alloy	38	Bushing	
16	Magnet washer	Carbon steel	39	C clip	Spring steel
17	Magnet	Rare-earth material	40	Guide II	Carbon steel
18	Magnet washer	Carbon steel	41	Countersink screw	Carbon steel
19	Magnet	Rare-earth material	42	O-ring	NBR
20	Body cover	Aluminum alloy	43	Magnet	Rare-earth material
21	Wearing ring	Wear resistant material	44	Location washer	NBR
22	Mobility iron	Aluminum alloy	45	Steel ball	Stainless steel
23	Washer	Aluminum alloy			

Note: inner structure & material data sheet is based on certain bore size.
Please contact AirTAC if you need inner structure & material data sheet for specific bore size.

Installation and application

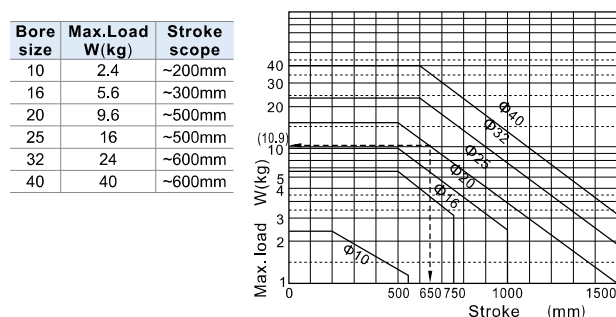
1. How to determine load

The maxi load to move must be less than the theoretical holding force.



The relation between loading and stroke as below

(Loading center and slide table center must be superposition)



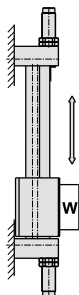
In horizontal movement, please choose proper bore size based on Load-Velocity chart

A. Find required load

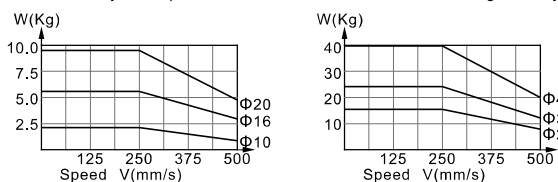
B. Find moving velocity

C. Choose proper spec based on Load-Velocity chart

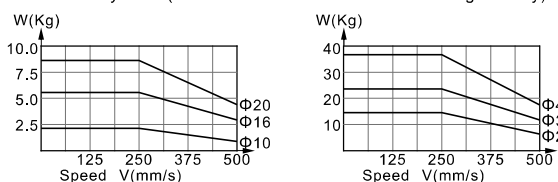
1.3. Load-Velocity chart (Load in vertical movement and moving velocity)



Load-Velocity chart (Load in horizontal movement and moving velocity)



Load-Velocity chart (Load in vertical movement and moving velocity)

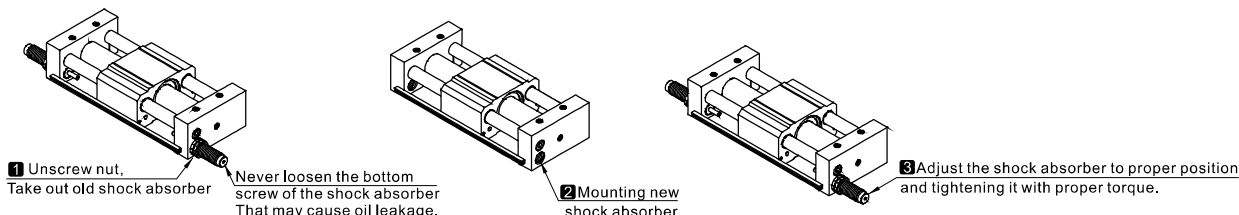


Guided rodless cylinder(Magnetic Coupled/Ball bearing) **AIRTAC**

RMTL Series

2. About shock absorber

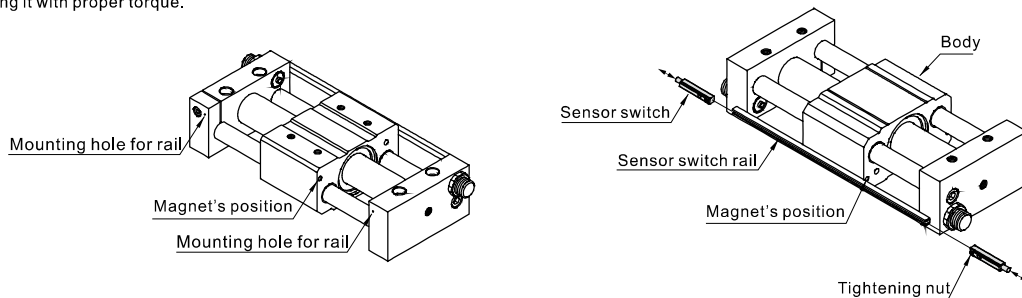
- 2.1) Shock absorbers are consumable parts. When a decrease in energy absorption capacity is noticed, it must be replaced. Refer to the table below for shock absorber type.
- 2.2) Never loosen the bottom screw of the shock absorber. (It is not an adjustment screw.) That may cause oil leakage.
- 2.3) Refer to the table below for tightening torques of the shock absorber setting nut.



Bore size	10	16	20	25	32	40
Shock absorber type	ACA0806-1N	ACA1006-A	ACA1007-1N	ACA1412-1N	ACA2020-1N	ACA2020-1N
Tightening torque(Nm)	1.67	1.67	1.67	3.14	10.80	10.80

3. About sensor switch

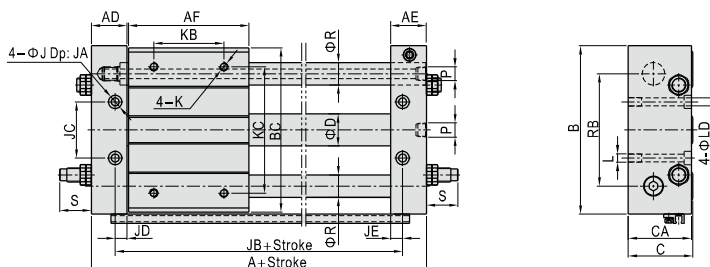
- 3.1) Sensor switch only can be used for the cylinder with magnet. The magnet is located at the four corners of the body (refer below). The cylinder with magnet has both group mounting holes for mounting rails. Please refer to below for ordering sensor switches, mounting them into the rail's groove, adjusting them to the proper position, and tightening them with proper torque.



Cylinder model	RMTL10	RMTL16	RMTL20	RMTL25	RMTL32	RMTL40
Sensor switch	CM5G, DM5G, EM5G					

4. Use an external limit device to stop the load midway: Please refer to RMS series for details.

Dimensions



Model	A	AD	AE	AF	B	BC	C	CA	D	J	JA	JB	JC	JD	JE	K	KB	KC	L	LD	P	R	RB	S
RMTL10	111	20.5	20.5	68	80	77	34	33	12	8	4	85	26	7.5	7.5	M4X0.7Dp:8	30	60	M5X0.8Dp:9.5	4.5	M5X0.8	10	52	17.5
RMTL16	122	22.5	22.5	75	95	92	40	39	18	9.5	5	90	30	6.5	6.5	M5X0.8Dp:10	45	70	M6X1.0Dp:9.5	5.5	M5X0.8	12	65	18.5
RMTL20	139	25.5	25.5	86	120	117	46	45	22.8	9.5	5	105	40	8.5	8.5	M6X1.0Dp:10	50	90	M6X1.0Dp:10	5.5	1/8"	16	80	22.5
RMTL25	139	25.5	25.5	86	130	127	54	53	27.8	11	6.5	105	50	8.5	8.5	M6X1.0Dp:10	60	100	M8X1.25Dp:10	7	1/8"	16	90	40.5
RMTL32	159	28.5	28.5	100	160	157	66	64	35	14	8	121	60	9.5	9.5	M8X1.25Dp:12	70	120	M10X1.5Dp:15	8.5	1/8"	20	110	57.5
RMTL40	209	35.5	35.5	136	190	187	78	74	43	14	8	159	84	10.5	10.5	M8X1.25Dp:12	90	140	M10X1.5Dp:15	8.5	1/4"	25	130	50.5