

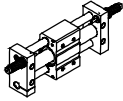


# Guided rodless cylinder(Magnetic Coupled)—RMT Series

## Compendium of RMT 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.

### Double guides

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

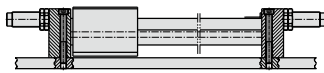
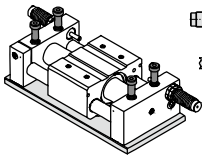
### Five bore size are available

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

### It is compact in space

Can be mounted from top and bottom.

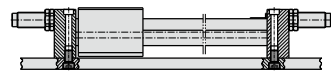
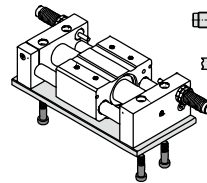
Top bolt mounting



### Superiority of airproof

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

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)

## RMT Series



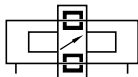
### Specification

| Bore size(mm)        | 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) 0.25~0.7MPa(36~100psi)(2.5~7bar) |                                       |                                    |     |      |
| Proof pressure       | 1.2MPa(175psi)(12.0bar)                                          |                                       |                                    |     |      |
| Temperature °C       | -20~70                                                           |                                       |                                    |     |      |
| Speed range mm/s     | 50~400                                                           |                                       |                                    |     |      |
| Stroke tolerance mm  | 0~250 <sup>+1.0</sup> <sub>0</sub>                               | 251~1000 <sup>+1.5</sup> <sub>0</sub> | 1001~ <sup>+2.0</sup> <sub>0</sub> |     |      |
| Cushion type         | Fixed cushion                                                    |                                       | Shock absorber(Available)          |     |      |
| Safe holding force N | 140                                                              |                                       | 220                                | 345 | 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.

### 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.

### Stroke

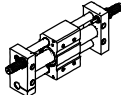
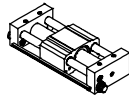
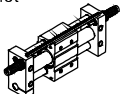
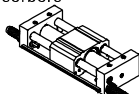
| Bore size (mm) | Standard stroke (mm) |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      | Max.std stroke |
|----------------|----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----------------|
| 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

**RMT 20 ×100 S □ □**

① ② ③ ④ ⑤ ⑥

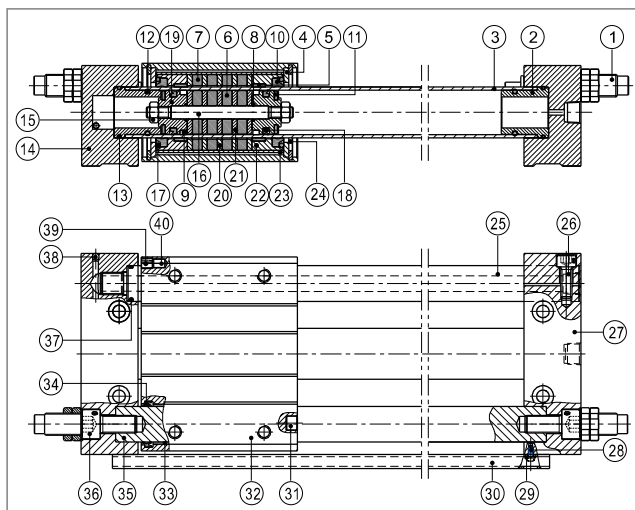
| ① Model                                        | ② Bore size    | ③ Stroke                          | ④ Magnet                                                                                                     | ⑤ Cushion type                                                                       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

[Note1] Blank on thread code means metric M thread. There is only metric thread for Φ16. if G or NPT thread is needed, please consult.

# Guided rodless cylinder(Magnetic Coupled)

## RMT Series

### Inner structure and material of major parts



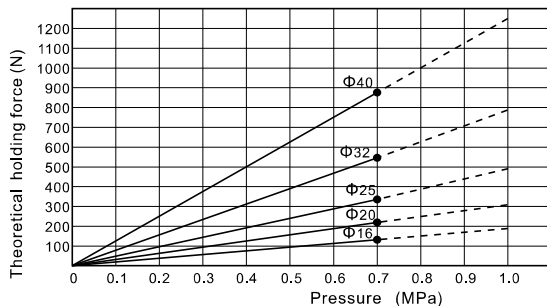
| NO. | Item                   | Material                | NO. | Item              | Material              |
|-----|------------------------|-------------------------|-----|-------------------|-----------------------|
| 1   | Shock absorber         | Combination             | 21  | Magnet washer     | Carbon steel          |
| 2   | Washer cover           | Aluminum alloy          | 22  | End cover         | Aluminum alloy        |
| 3   | Stainless steel barrel | Stainless steel         | 23  | Moveable core     | Aluminum alloy        |
| 4   | Washer                 | Carbon steel            | 24  | C clip            | Spring steel          |
| 5   | Wearing ring           | Wear resistant material | 25  | Guide I           | Carbon steel          |
| 6   | Magnet                 | Rare-earth material     | 26  | Countersink screw | Carbon steel          |
| 7   | Magnet                 | Rare-earth material     | 27  | Fixing plate      | Aluminum alloy        |
| 8   | O-ring                 | NBR                     | 28  | Screw             | Carbon steel          |
| 9   | Wear ring              | Wear resistant material | 29  | Spring washer     | Spring steel          |
| 10  | Scraping dust ring     | Plastics                | 30  | Rail              | Aluminum alloy        |
| 11  | Bumper                 | NBR                     | 31  | Bumper block      | Stainless steel       |
| 12  | O-ring                 | NBR                     | 32  | Barrel            | Aluminum alloy        |
| 13  | O-ring                 | NBR                     | 33  | Bushing           | Bronze+Fill lubricant |
| 14  | Fixing plate           | Aluminum alloy          | 34  | Gasket            | TPU                   |
| 15  | Nut                    | SS41                    | 35  | Guide II          | Carbon steel          |
| 16  | Joint pole             | Stainless steel         | 36  | Countersink screw | Carbon steel          |
| 17  | O-ring                 | NBR                     | 37  | O-ring            | NBR                   |
| 18  | Piston seal            | TPU                     | 38  | Steel ball        | Stainless steel       |
| 19  | Magnet                 | Aluminum alloy          | 39  | Location washer   | NBR                   |
| 20  | Magnet washer          | Carbon steel            | 40  | Magnet            | Rare-earth material   |

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.

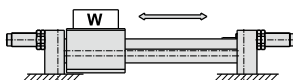
### Installation and application

#### 1. How to determine load :

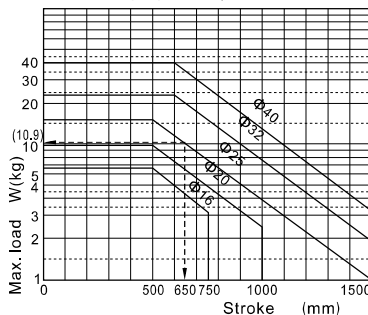
##### 1.1) The maxi load to move must be less than the theoretical holding force.



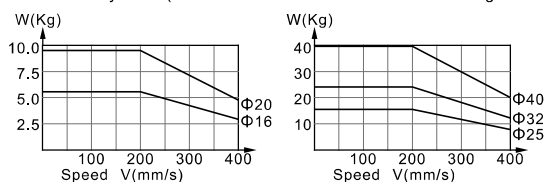
##### 1.2) The relation between loading and stroke as below(Loading center and slide table center must be superposition)



| Bore size | Max.Load W(kg) | Stroke scope |
|-----------|----------------|--------------|
| 16        | 5.6            | ~300mm       |
| 20        | 9.6            | ~500mm       |
| 25        | 16             | ~500mm       |
| 32        | 24             | ~600mm       |
| 40        | 40             | ~600mm       |



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



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

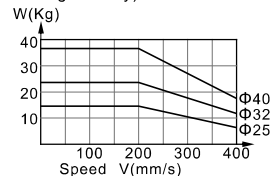
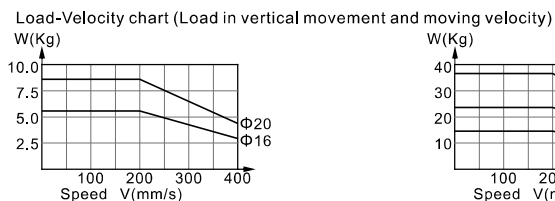
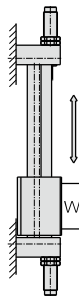
A. Find required load

B. Find moving velocity

C. Choose proper spec based on Load-Velocity chart

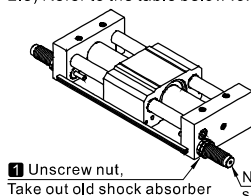
## RMT Series

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



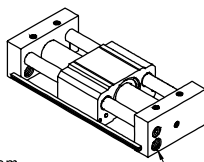
### 2. About shock absorber

- 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.

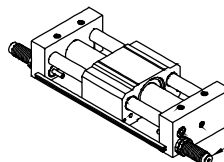


1 Unscrew nut.  
Take out old shock absorber

Never loosen the bottom screw of the shock absorber That may cause oil leakage.



2 Mounting new shock absorber

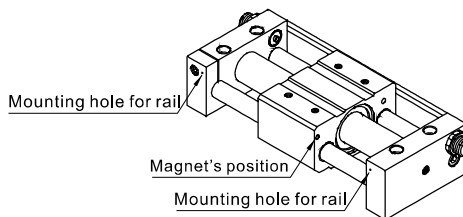
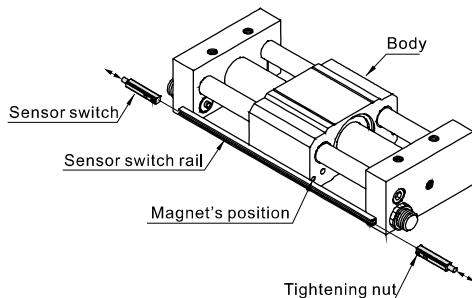


3 Adjust the shock absorber to proper position and tightening it with proper torque.

| Cylinder model        | RMT16     | RMT20      | RMT25      | RMT32      | RMT40      |
|-----------------------|-----------|------------|------------|------------|------------|
| Shock absorber type   | ACA1006-A | ACA1007-1N | ACA1412-1N | ACA2020-1N | ACA2020-1N |
| Tightening torque(Nm) | 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 located the four corner of body's(refer below). The cylinder with magnet have both group mounting hole for mounting rail. please refer to below for ordering sensor switch, mounting it into the rail's groove, adjusting it to proper position, tightening it with proper torque.



| Cylinder model | RMT16             | RMT20 | RMT25 | RMT32 | RMT40 |
|----------------|-------------------|-------|-------|-------|-------|
| Sensor switch  | CMMSG, DMSG, EMSG |       |       |       |       |

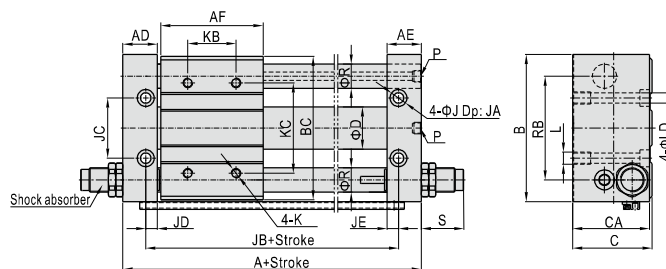
4. Use an external limit device to stop the load midway: Please refer to RMS series for details.

# Guided rodless cylinder(Magnetic Coupled)

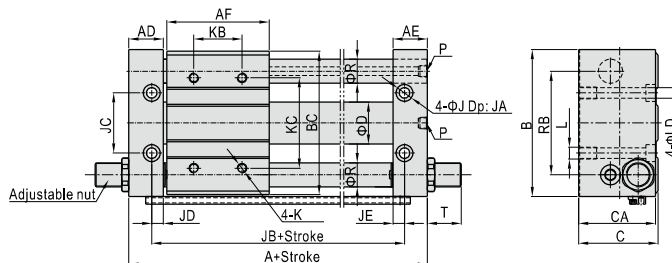
## RMT Series

### Dimensions

#### RMT-A



#### RMT



| Bore size/Item | A   | AD   | AE   | AF | B   | BC  | C  | CA | D    | J   | JA  | JB  | JC | JD   | JE   | K            | KB | KC  | L            | LD  | P      | R  | RB  | S    | T    |
|----------------|-----|------|------|----|-----|-----|----|----|------|-----|-----|-----|----|------|------|--------------|----|-----|--------------|-----|--------|----|-----|------|------|
| 16             | 107 | 22.5 | 22.5 | 60 | 75  | 72  | 40 | 39 | 18   | 9.5 | 5   | 75  | 30 | 6.5  | 6.5  | M5×0.8Dp:10  | 30 | 50  | M6×1.0Dp:9.5 | 5.5 | M5×0.8 | 12 | 52  | 18.5 | 13.5 |
| 20             | 124 | 25.5 | 25.5 | 70 | 90  | 87  | 46 | 45 | 22.8 | 9.5 | 5   | 90  | 38 | 8.5  | 8.5  | M6×1.0Dp:10  | 40 | 70  | M6×1.0Dp:9.5 | 5.5 | 1/8"   | 16 | 63  | 22.5 | 10   |
| 25             | 124 | 25.5 | 25.5 | 70 | 100 | 97  | 54 | 53 | 27.8 | 11  | 6.5 | 90  | 42 | 8.5  | 8.5  | M6×1.0Dp:10  | 40 | 70  | M8×1.25Dp:10 | 7   | 1/8"   | 16 | 70  | 40.5 | 15   |
| 32             | 148 | 28.5 | 28.5 | 85 | 122 | 119 | 66 | 64 | 35   | 14  | 8   | 110 | 50 | 9.5  | 9.5  | M8×1.25Dp:12 | 40 | 75  | M10×1.5Dp:15 | 8.5 | 1/8"   | 20 | 86  | 57.5 | 16   |
| 40             | 170 | 35.5 | 35.5 | 95 | 145 | 142 | 76 | 74 | 43   | 14  | 8   | 120 | 64 | 10.5 | 10.5 | M8×1.25Dp:12 | 65 | 105 | M10×1.5Dp:15 | 8.5 | 1/4"   | 25 | 105 | 50.5 | 10   |