

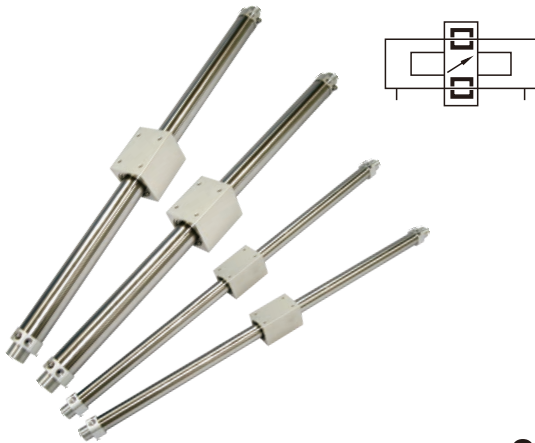


Rodless magnetic cylinder—RMS Series

Bore size: $\Phi 10$, $\Phi 16$, $\Phi 20$, $\Phi 25$, $\Phi 32$, $\Phi 40$

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.



Ordering code

RMS □ **20×200** □ **T**

① ② ③ ④ ⑤ ⑥

① Model

RMS: Rodless magnetic cylinder

② Version

Blank: basic version
P: P size version
F: F size version

③ Bore Size

Bore size	Version
10 16 20 25 32 40	Basic version
16 20 32	P size version
16 20 25 32 40	F size version

④ Stroke [Note1]

Bore size (mm)	Standard stroke (mm)	Max.std stroke
10	50 100 150 200 250 300	1000
16	50 100 150 200 250 300 350 400 450 500	1500
20		2000
25	50 100 150 200 250 300 350 400 450 500	2500
32	600 700 750 800 900 1000	3000
40		3000

⑤ Mounting type [Note2]

Blank: non bracket
LB: LB type
FA: FA type

⑥ Thread type [Note3]

T: NPT

[Note1] Consult us for non-standard stroke.

[Note2] RMSF40 series do not have FA mounting accessories.

[Note3] Blank on thread code means metric M thread. There is only metric thread for $\Phi 10/16$. If NPT thread is needed, please consult.

Specification

Series name	RMS Series	RMS、RMSF Series					RMSP Series		
Bore size(mm)	10	16	20	25	32	40	16	20	32
Acting type	Double acting								
Fluid	Air(to be filtered by 40 μ m filter element)								
Operating pressure	29~100psi (0.2~0.7MPa)		22~100psi(0.15~0.7MPa)[Note 2]						
Proof pressure	175psi(1.2MPa)								
Temperature $^{\circ}$ C	-20~70								
Speed range mm/s	50~400								
Stroke tolerance mm	0~250 ^{+1.0} ₀		251~1000 ^{+1.5} ₀			1001~ ^{+2.0} ₀			
Cushion type	Bumper		Variable cushion+Fixed cushion						
Port size [Note1]	M5×0.8			1/8"		1/4"	M5×0.8		1/8"
Safe holding force N	55	140	220	345	560	880	140	220	560

[Note1] NPT thread is available.

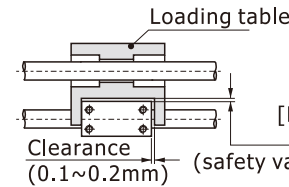
[Note 2] when stopping in the middle, Operating pressure shall not exceed 80psi, and buffer shall be provided when stopping at both ends.



Installation and application

- The maxi load to move must be less than the theoretical holding force.
- How to mount load:
 - Horizontal mounting: the permissible radial load must be lower than the figures in the chart below.

Horizontal oriented device

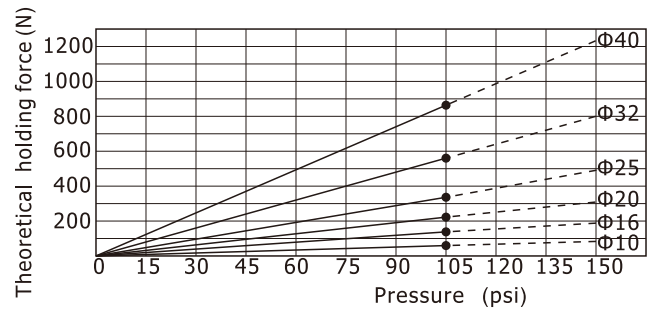


Bore size	10	16	20	25	32	40
Max. Loading table weight(kg)	0.4	1.0	1.1	1.2	1.5	2.0

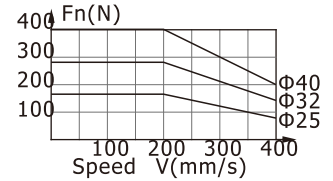
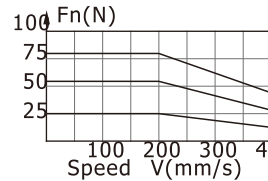
[Note] If Max. load be larger then the value of above table, please conform with our company.

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

- Find required pushing force
- Find moving velocity
- Choose proper spec based on force-Velocity chart

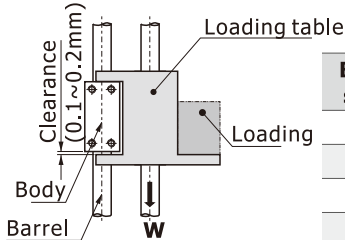


Force-Velocity chart (Pushing force in horizontal movement and moving velocity)



- Vertical mounting: The load guiding method should adopt rolling support (linear guide rail, etc.); if the sliding support is used, the sliding resistance will increase due to the load mass and the torque generated by the load, resulting in poor operation.

Vertical oriented device

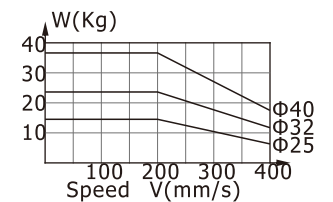
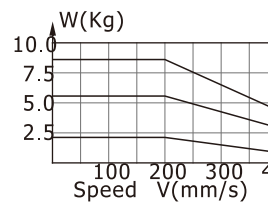


Bore size	Max. Load weight(Load table+Load)(kg)
10	2.2
16	5.6
20	8.8
25	15
32	24
40	37

[Note] If pressure be larger than the max. pressure, magnetic core might disengage.

Load-Velocity chart

(Load in vertical movement and moving velocity)



3. Middle-stop:

- When using stopper mechanism to fulfill middle-stop application, working pressure of cylinder cannot exceeds figures stated in the table on the right. Once working pressure exceeds these figures, energy cannot be absorbed when hitting happens on external stopper and it may cause discouple. Shock absorber is recommended in stopper design. When adjusting the mechanism, observe that if hitting process is done smoothly and there is no bounce happened.
- In designing middle-stop application for pneumatic system, allowable kinetic energy must be within figures shown in the table on the right. (Moving speed needs to be smaller than max velocity)

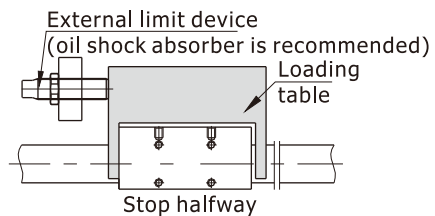
Note : When kinetic energy exceeds allowable figures, discouple will happen, which means body and piston inside the barrel will separate from each other, please be careful when design.

- Dirty substances in the pipe must be eliminated before cylinder is connected with pipeline to prevent the entrance of impurities into the cylinder.

- The medium used by cylinder shall be filtered to $40\mu\text{m}$ or below.

- If the cylinder is dismantled and stored for a long time, pay attention to conduct anti-rust treatment to the surface. Anti-dust jam cap shall be added in air inlet and outlet ports.

- Non-magnetically conductive materials are recommended for workpieces fitted to the cylinder, otherwise the lifetime may be halved if magnetically conductive materials are used.



Bore size	Maximum allowable working pressure for middle-stop
10	0.55MPa
16	0.55MPa
20	0.55MPa
25	0.55MPa
32	0.55MPa
40	0.55MPa

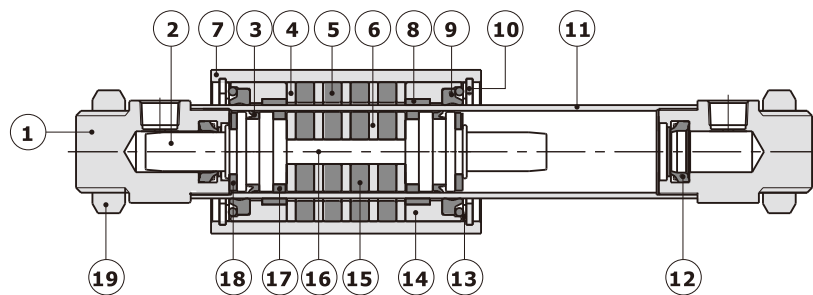
Bore size	Allowable kinetic energy for middle-stop application in pneumatic system(ES)(J)
10	0.03
16	0.13
20	0.24
25	0.45
32	0.88
40	1.53

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Inner structure

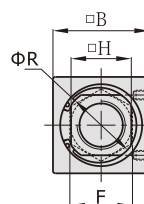
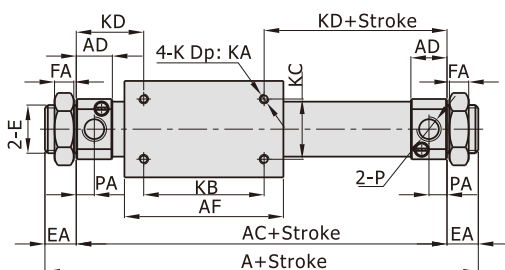


NO.	Item	NO.	Item
1	End cap	11	Barrel
2	Piston	12	Cushion O-ring
3	Piston seal	13	Washer
4	Magnet washer	14	Cover
5	Magnet	15	Magnet
6	Magnet washer	16	Connecting rod
7	Body	17	Wear ring
8	Wear ring	18	Bumper
9	Scraping dust ring	19	Nut
10	C Clip		

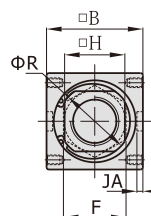
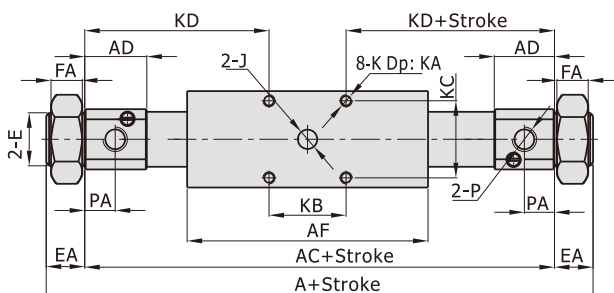
Dimensions

RMS

RMS-P



RMS-F



[Unit: mm]

Model/Item	A	AC	AD	AF	B	E	EA	F	FA	H	J	JA	K	KA	KB	KC	KD	P	PA	R
RMS10	91	73	9.5	48	25	M10×1.0	9	14	4	15	-	-	M3×0.5	4	30	16	21.5	M5×0.8	5	17
RMS16	103	83	10	57	35	M10×1.0	10	14	4	20	-	-	M4×0.7	5	35	19	24	M5×0.8	5.5	22
RMSP16	112	92	14.5	57		M10×1.0	10	14	4		-	-	M4×0.7	7	34	25	29		7.5	
RMSF16	205	181	34	80	40	M16×1.5	12	23	8	25	8	3	M5×0.8	7.5	26	26	77.5	1/8"	20	29
RMS20	132	106	15	66		M20×1.5	13	26	8		-	-	M4×0.7	5.5	50	25	28		7.5	
RMSP20	143	115	19.5	66	46	M20×1.5	14	26	8	30	-	-	M5×0.8	7	40	30	37.5	1/8"	10	33.5
RMSF20	217	185	29.5	90		M22×1.5	16	29	7		8	2.5	M5×0.8	8.5	32	32	76.5		15	
RMS25	137	111	15	70	60	M26×1.5	13	32	8	36	-	-	M5×0.8	7.5	50	30	30.5	1/8"	7.5	39.5
RMSF25	238	206	37.5	90		M22×1.5	16	29	7		10	3	M6×1.0	10	36	36	85		20	
RMS32	156	124	16	80	70	M26×1.5	16	32	8	46	-	-	M6×1.0	8	50	40	37	1/8"	8	49.5
RMSP32	165	133	20.5	80		M26×1.5		32	8		36	-		-			8		41.5	
RMSF32	270	238	48	110	70	M30×1.5	16	36	7	46	10	3.5	M8×1.25	12.5	48	48	95	1/4"	28	49.5
RMS40	182	150	22	92		M32×2.0		41	10		46	-		-	M6×1.0	9	60		40	
RMSF40	327	295	44.5	130	M38×1.5	46	8	46	12	4.5	M8×1.25	16	50	56	122.5	25				

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List for ordering code of accessories

Accessories		Bore size 10		16				20		
		RMS	RMS	RMSP	RMSF		RMS	RMSP	RMSF	
Mounting accessories	LB	F-PB12LB	F-RMS16LB	F-RMSF16LB	F-RMS20LB	F-RMSF20LB				
	FA	F-PB12FA	F-PB12FA	F-MI12FA	F-MF20FA	F-MA20FA				

Accessories		Bore size 25		32			40	
		RMS	RMSF	RMS	RMSP	RMSF	RMS	RMSF
Mounting accessories	LB	F-RMS25LB	F-RMSF25LB	F-RMS32LB	F-RMSF32LB	F-RMS40LB	F-RMSF40LB	
	FA	F-MF32FA	F-MA20FA	F-MF32FA	F-MA40FA	F-MF40FA	-	

Accessory selection

Accessories\Cylinder model		RMS	RMSP	RMSF
Mounting accessories	LB	•	•	•
	FA	•	•	•

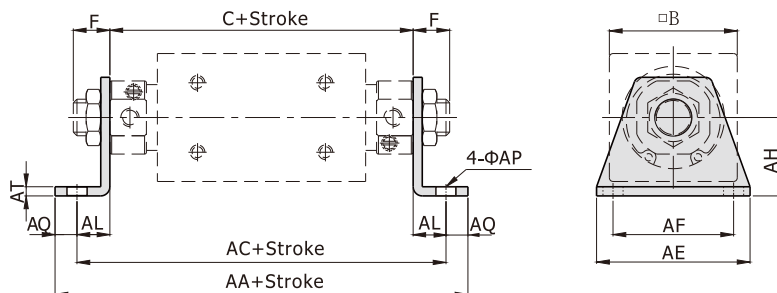
Material of accessories

Accessories\Bore size		10			16			20			25			32			40	
		RMS	RMS	RMSP	RMSF	RMS	RMSP	RMSF	RMS	RMSF	RMS	RMSP	RMSF	RMS	RMSF	RMS	RMSF	
Mounting accessories	LB	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	
	FA	△	△	△	△	△	○	△	○	△	○	△	○	△	-	-	-	

○—Lower carbon steel ; △—SPCC

Dimensions

RMS-LB RMSF-LB



[Unit: mm]

Bore size\Item	AA		AC		C		F		Bore size\Item	AE	AF	AH	AL	AP	AQ	AT	B
	RMS	RMSP	RMS	RMSP	RMS	RMSP	RMS	RMSP		AE	AF	AH	AL	AP	AQ	AT	B
10	103	-	91	-	73	-	9	-	10	42	33	14	9	5.5	6	2.5	25
16	113	122	101	110	83	92	10	10	16	42	33	20	9	5.5	6	2.5	35
20	158	167	142	151	106	115	13	14	20	43	30	23	18	6.5	8	3	40
25	167	-	151	-	111	-	13	-	25	54	40	26	20	6.5	8	4	46
32	184	193	170	179	124	133	16	16	32	62	46	33	23	7	7	4	60
40	216	-	196	-	150	-	16	-	40	75	55	38	23	9	10	5	70

Rodless magnetic cylinder

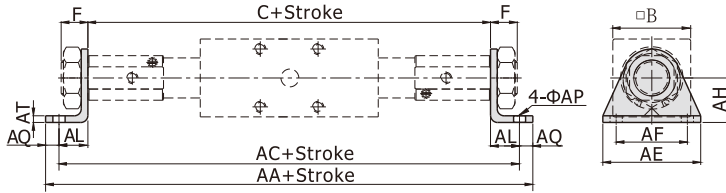
RMS Series

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RMSF-LB

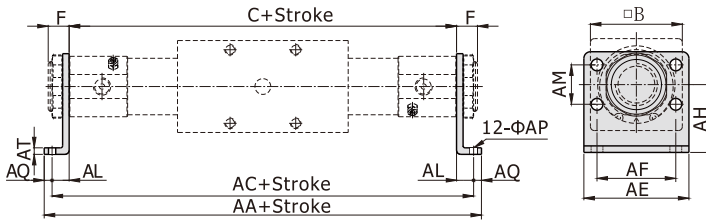
$\Phi 16\sim\Phi 25$

[Unit: mm]



Bore size\Item	AA	AC	AE	AF	AH	AL
16	221	209	44	32	20	14
20	235	219	54	40	23	17
25	256	240	54	40	26	17
32	280	266	66	52	33	14
40	353	333	80	60	38	19

$\Phi 32$, $\Phi 40$

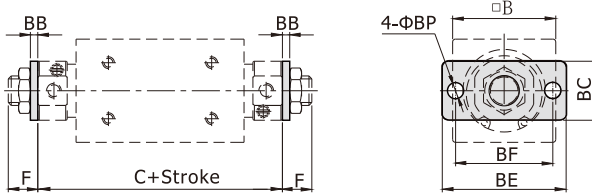


Bore size\Item	AM	AP	AQ	AT	B	C	F
16	-	5.5	6	2.5	35	181	12
20	-	6.5	8	3	40	185	16
25	-	6.5	8	4	46	206	16
32	28	7	7	4	60	238	16
40	30	9	10	5	70	295	16

RMS-FA RMSP-FA

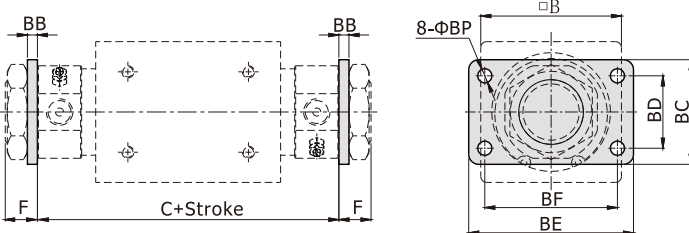
[Unit: mm]

$\Phi 16\sim\Phi 32$



Bore size\Item	B	BB	BC	BD	BE	BF
10	25	3	20	-	42	33
16	35	3	20	-	42	33
20	40	4	34	-	75	60
25	46	4	40	-	75	60
32	60	4	40	-	75	60
40	70	5	52	36	82	66

$\Phi 40$

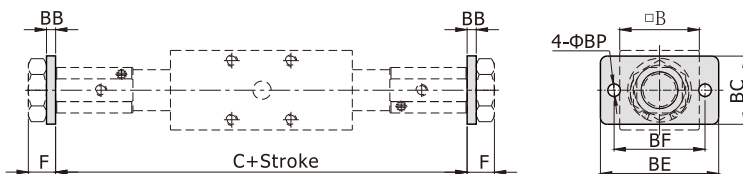


Bore size\Item	BP	C		F	
		RMS	RMSP	RMS	RMSP
10	5.5	73	-	9	-
16	5.5	83	92	10	10
20	7	106	115	13	14
25	7	111	-	13	-
32	7	124	133	16	16
40	7	150	-	16	-

RMSF-FA

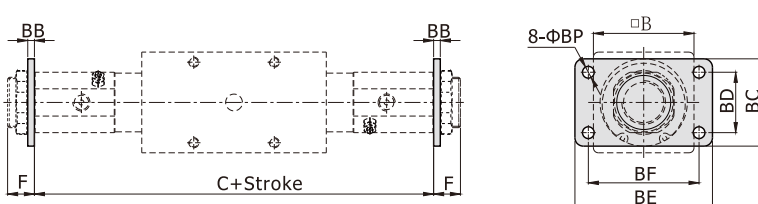
$\Phi 16\sim\Phi 25$

[Unit: mm]



Bore size\Item	B	BB	BC	BD
16	35	4	30	-
20	40	4	38	-
25	46	4	38	-
32	60	4	50	36

$\Phi 32$



Bore size\Item	BE	BF	BP	C	F
16	52	40	5.5	181	12
20	64	50	6.5	185	16
25	64	50	6.5	206	16
32	84	70	6.5	238	16