

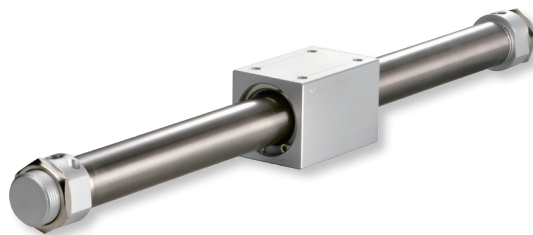
MRD series Magnetically Coupled Rodless Cylinder

Product feature

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Feature

- Stainless steel cylinder tube design, light weight and strong rigidity.
- Magnetic design. The radial magnetic force transmits power to drives the loading by the built-in magnetic ring on the piston and the external magnet inside the body.
- Sensor switch not included



Specification

Item	Bore size (mm)	Ø10	Ø15	Ø20	Ø25	Ø32	Ø40
Action		Double acting					
Fluid		Air					
Pressure range	kgf/cm ² (kPa)	1.5~4.5(150~450)		1.5 ~ 6.0 (150 ~ 600)			
Max. operating pressure	kgf/cm ² (kPa)	5.0 (500)		6.5 (650)			
Ambient and fluid temperature	° c	0 ~ 60					
Piston speed	mm/s	50 ~ 500					
Lubrication		Lubrication free type					
Cushion		Rubber cushion			Air cushion		
Port size		M5			PT1/8		

Standard stroke

Unit: mm

Bore size	Standard stroke
Ø10	100, 200, 300
Ø15	100, 200, 300, 350, 400, 450, 500
Ø20	100, 200, 300, 350, 400, 450, 500, 600, 700, 800
Ø25	100, 200, 300, 350, 400, 450, 500, 600, 700, 800
Ø32	100, 200, 300, 350, 400, 450, 500, 600, 700, 800
Ø40	100, 200, 300, 350, 400, 450, 500, 600, 700

Theoretical output

Unit: kgf

Bore size (mm)	Operating	Piston area (cm ²)	Air pressure (kgf / cm ²)					
			1	2	3	4	5	6
Ø10	Push	0.78	—	1.5	2.3	3.1	3.9	4.7
Ø15	Push	1.76	—	3	5	7	8	10
Ø20	Push	3.14	—	6	9	12	15	18
Ø25	Push	4.90	—	9	14	19	24	29
Ø32	Push	8.04	—	16	24	32	40	48
Ø40	Push	12.5	—	25	38	50	63	75

Note: All of above are theoretical data. Before actual adoption, the frictional resistance and mechanical efficiency shall be taken into consideration (about 70% ~ 80%)

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Code of order

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Code of order **MRD 15 x 100 - C**



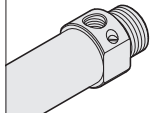
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Mark	Bore size (mm)
10	Ø10
15	Ø15
20	Ø20
25	Ø25
32	Ø32
40	Ø40

2

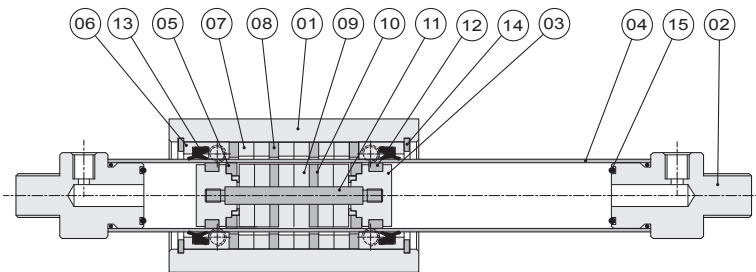
Bore size	Stroke (mm)
Ø10	100 ~ 300
Ø15	100 ~ 500
Ø20	100 ~ 800
Ø25	
Ø32	
Ø40	100 ~ 700

3

Mark	Cushion option
None	Without cushion
C	

● Ø10, Ø15 without cushion

Internal structure



Product weight

Unit: kg

Bore size(mm)	Stroke = 0mm	Additional weight
Ø10	0.28	0.03
Ø15	0.31	0.05
Ø20	0.32	0.07
Ø25	0.33	0.12
Ø32	0.40	0.16
Ø40	0.46	0.18

Note: Additional weight per each 100 mm in ± 5% difference

Components and material list

NO.	Item	Material	NO.	Item	Material
01	Body	Aluminum alloy	09	Piston magnet	Rare earth metal
02	Front cover	Aluminum alloy	10	Piston magnet spacer	Pig iron
03	Piston	Stainless steel	11	Piston rod joiner	Stainless
04	Barrel	Stainless steel	12	Piston packing	NBR
05	Wear ring	Teflon	13	Shaft packing	NBR
06	Shaft packing plate	POM	14	C-clip	Alloy steel
07	Body magnet	Rare earth metal	15	Air cushion O-ring	NBR
08	Magnet spacer	Pig iron			

Packing and O-ring material list

Unit: mm

Item	Piston packing	Shaft packing	Cushion O-ring
Bore size \ Quantity	2	2	2
Ø10	PPY - 10	PDU - 11.5 x 16	Ø6 x Ø1.5
Ø15	DYP - 15	PDU - 17 x 22.4	Ø10 x Ø1.5
Ø20	DYP - 20	PDU - 21 x 28.3	—
Ø25	PPY - 25	PDU - 26 x 34.4	—
Ø32	PPY - 32	PDU - 33.2 x 45.4	—
Ø40	PPY - 40	PDU - 48 x 51	—

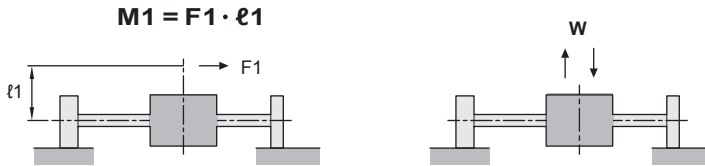
Note: The piston packing and shaft packing are from MITSUBISHI, SAKAGAMI or the same good level of quality material.

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Installation

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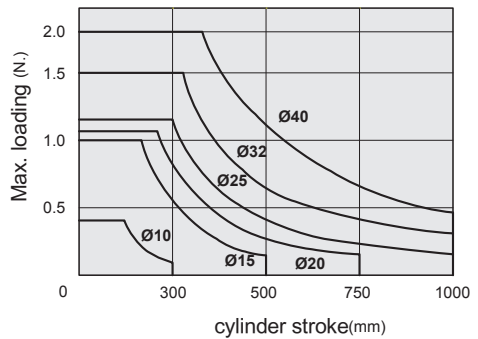
Load and moment allowable



Load and moment allowable

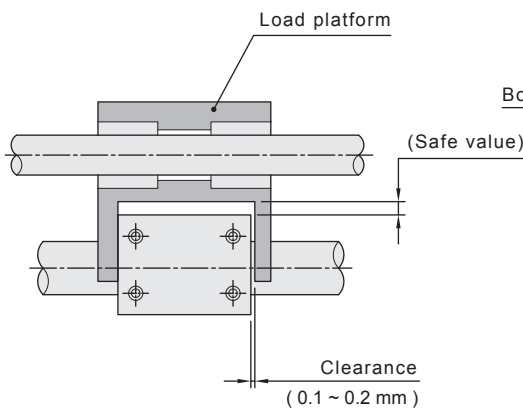
Bore size(mm)	Horizontal load, W (kg)	Moment allowable, M1 (N·m)
Ø10	0.4	0.05
Ø15	1.0	0.15
Ø20	1.1	0.2
Ø25	1.2	0.25
Ø32	1.5	0.4
Ø40	2.0	0.62

Load and stroke characteristic

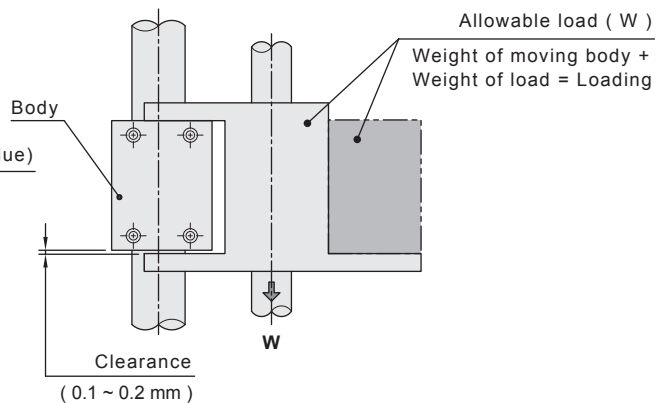


Mounting type

Horizontal load



Vertical load



⚠ Caution

The moving slide block of cylinder should offer indirect load with connector only for moving, avoid direct load to cause cylinder winding and badly operating.

PRE

PRET(P)

PRU(F)2

PRUT2

MRD

MRB

MRBT

MRX

MRU

MRH

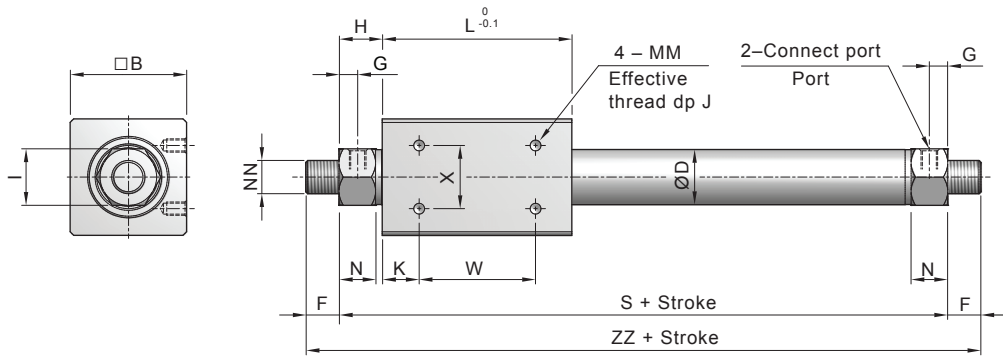
MRY

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Dimensions

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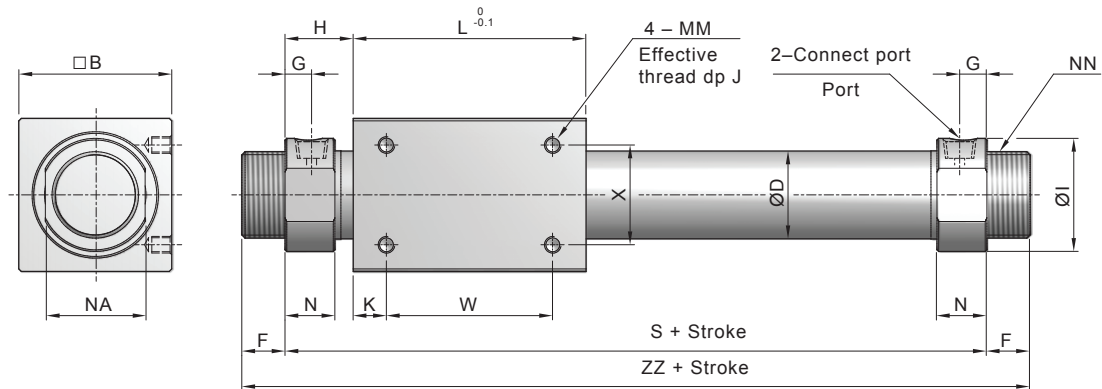
MRD Ø10 ~ Ø15



Unit: mm

Bore size	Stroke adjustment	Connection port	$\square B$	ØD	F	G	H	I	K	L	MM × J	N	NN	S	W	X	ZZ
Ø10	100 ~ 300	M5×0.8P	25	11	9	5	12.5	14	4	38	M3×0.5P×4	11	M10×1.0P	63	30	16	81
Ø15	100 ~ 500	M5×0.8P	35	16.6	10	5.5	13	17	11	57	M4×0.7P×6	11	M10×1.0P	83	35	19	103

MRD Ø20 ~ Ø40



Unit: mm

Bore size	Stroke adjustment	Connection port	$\square B$	ØD	F	G	H	I	K	L	MM × J	N	NA	NN	S	W	X	ZZ
Ø20	100 ~ 900	PT 1/8"	36	21.4	13	8	20	28	8	66	M4×0.7P×6	15	24	M20×1.5P	106	50	25	132
Ø25	100 ~ 900	PT 1/8"	46	26.4	13	8	20.5	34	10	70	M5×0.8P×8	15	30	M26×1.5P	111	50	30	137
Ø32	100 ~ 900	PT 1/8"	60	33.6	16	9	22	40	15	80	M6×1.0P×8	17	36	M26×1.5P	124	50	40	156
Ø40	100 ~ 900	PT 1/8"	70	41.6	16	11	29	50	16	92	M6×1.0P×10	21	46	M32×2.0P	150	50	40	182