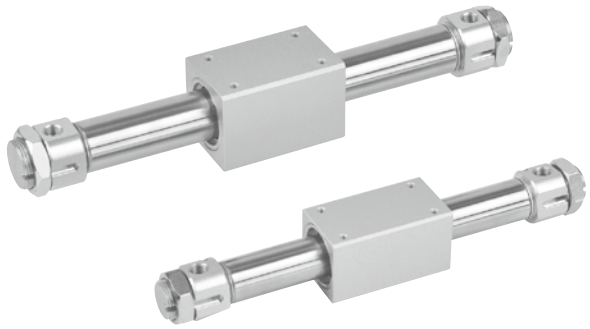
MCRPM series

MAGNETICALLY COUPLED **RODLESS CYLINDER**



Features

- 50% space saving.
- Magnetic transit design. Magnetic force transits the movement with piston side magnet and slider magnet.
- Stainless tube, light weighted and durable.

Specification

Model	MCRPM					
Acting type	Double acting					
Tube I.D. (mm)	10	15	20	25	32	40
Port size	M5×0.8		Rc1/8			Rc1/4
Medium	Air					
Max. operating pressure	0.7 MPa					
Min. operating pressure	0.18 MPa					
Proof pressure	1 MPa					
Ambient temperature	+5°C ~+60°C					
Lubricator	Without lubrication					
Available speed range	Standard grease: 100~500 mm/sec (*1)					
	Slow motion grease: 50~100 mm/sec (*1,2)					
Holding force (N)	53.9	137	231	363	588	922
Sensor switch (*3)	–		RDFE(V)		RDFE	RDFE(V)

*1. The cylinder must be connected to a speed controller and gradually adjusted from fully closed to achieve the desired operating speed within the designed range.
*2. Between the speed range limit the actuator stroke must not exceed to 2m/minute.
*3. RDFE(V) specification, please refer to page 8-20.

Table for standard stroke

Tube I.D.	Stroke (mm)	Max. stroke	
		Cushion pad	Cushion air
ø10	100 ~ 500	500	–
ø15		900	900
ø20	100, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800	1500	1000
ø25		2000	1000
ø32, 40		2000	900

* Minimum stroke unit 1mm.

Order example

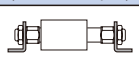
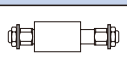
MCRPM — 20 — 100 M — A S — □

- MODEL
- TUBE I.D.
- STROKE
- CUSHION TYPE

Code	Description	Magnet	Tube I.D.
Blank	Cushion pad (Unadjustable)	×	ø10~ø40
A	Cushion air (Adjustable)	×	ø15
M-A		○	ø20~ø40

- GREASE LUBRICATION
  Blank: Standard
  S: Slow motion grease
- PORT THREAD
  Blank: M5×0.8 (for ø10, ø15)
  Blank: Rc thread
  G: G thread
  NPT: NPT thread (for ø20~ø40)

Order example of mounting accessories

Code	LB (Purchase 2 pcs)	FA (Purchase 2 pcs)
Mounting / Tube I.D.		
ø10	**LB-M4-16**	**FA-M4-16**
ø15	**LB-P2-15**	
ø20	**LB-M2-20**	**FA-M2-20**
ø25	**LB-M2-25**	**FA-M2-25**
ø32	**LB-P2-32**	
ø40	**LB-P2-40**	**FA-M2-40**

Weight

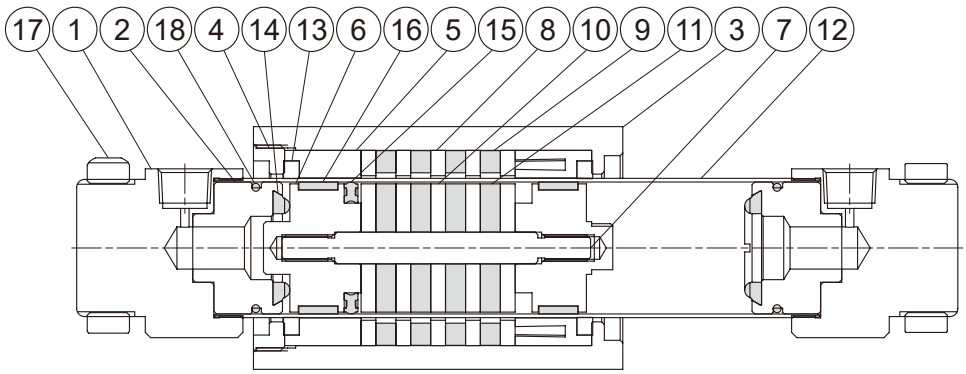
Cylinder

Model	Basic weight **MCRPM**	Stroke 100 mm **MCRPM**
Tube I.D.		
ø10	92	27
ø15	232	32
ø20	413	43
ø25	657	46
ø32	1,177	66
ø40	1,996	83

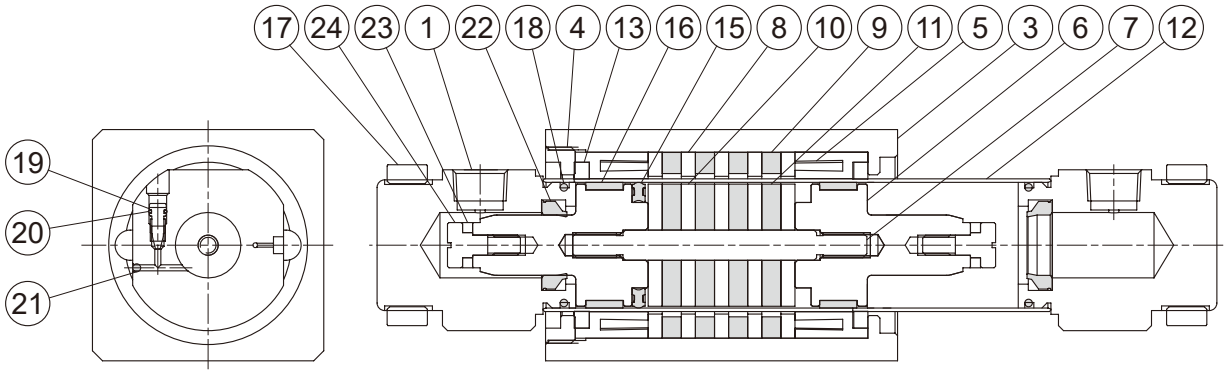
Accessoires Unit: g

LB	FA
	
21	13
27	13
64	68
66	75
108	75
179	129

Cushion pad Unadjustable



Cushion air Adjustable



Material

No.	Cushion		Part name	Material	Note
	Air	Pad			
1	●	●	Cover	Aluminum alloy	Anodized
2		●	End collar *1	Aluminum alloy	
3	●	●	Slider body	Aluminum alloy	Anodized
4	●	●	Body cover	Aluminum alloy	Anodized
5	●	●	Body wear ring	Resin	
6	●	●	Piston	Aluminum alloy	
7	●	●	Shaft	Stainless steel	
8	●	●	Slider side yoke	Carbon steel	Ni plated
9	●	●	Slider side magnet	Magnet material	Ni plated
10	●	●	Piston side yoke	Carbon steel	Ni plated
11	●	●	Piston side magnet	Magnet material	Ni plated

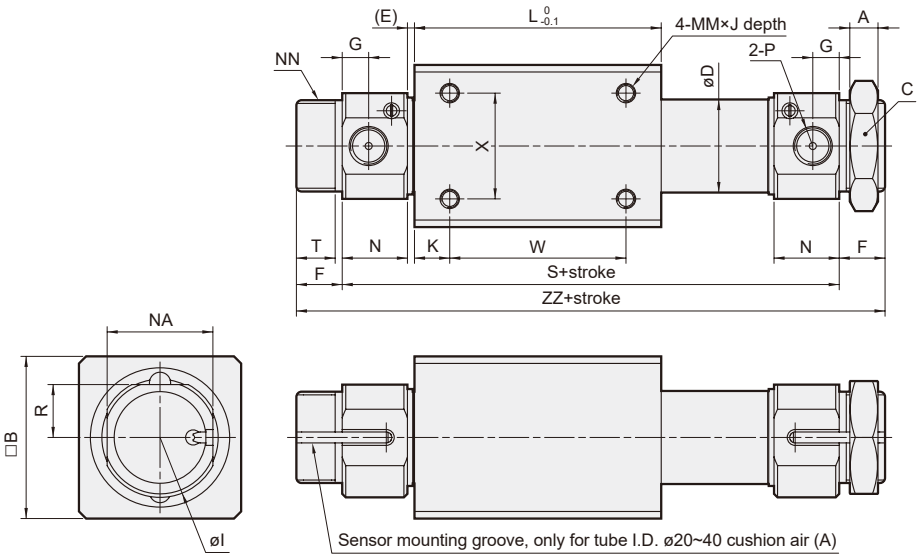
*1. ø10, ø15 without end collar.

No.	Cushion		Part name	Material	Note
	Air	Pad			
12	●	●	Tube	Stainless steel	
13	●	●	Lub-retainer	Special resin	
14		●	Cushion	NBR	
15	●	●	Piston seal	NBR	
16	●	●	Wear ring	Resin	
17	●	●	Cover nut	Carbon steel	Ni plated
18	●	●	O ring	NBR	
19	●		Needle valve	Stainless steel *2	
20	●		O ring	NBR	
21	●		Steel ball	Stainless steel	
22	●		Cushion	NBR	
23	●		Magnet ring	Magnet material	For magnet
24	●		Fixing bolt	Stainless steel	For magnet

*2. Material: ø32,ø40 Carbon steel.

MCRPM Dimensions

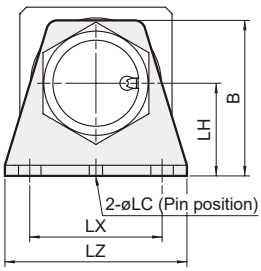
MAGNETICALLY COUPLED **RODLESS CYLINDER**

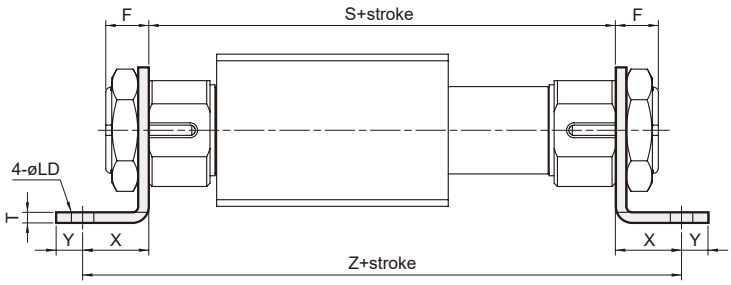


Code / Tube I.D.	A	B	C	D	E	F	G	I	J	K	L	MM	N	NA	NN	R	S	T	W	X	ZZ	P
10	4	25	14	12	1.5	9	5	16	4.5	4	38	M3×0.5	11	14	M10×1.0	7	63	7.5	30	16	81	M5×0.8
15	4	35	14	16.6	2	10	5.5	22	5	11	57	M4×0.7	11	20	M10×1.0	10	83	8.5	35	19	103	M5×0.8
20	8	36	26	21.6	2	13	7.5	28	6	8	66	M4×0.7	18	24	M20×1.5	12	106	10.5	50	25	132	Rc1/8
25	8	46	32	26.4	2	13	7.5	34	8	10	70	M5×0.8	18.5	30	M26×1.5	15	111	10.5	50	30	137	Rc1/8
32	8	60	32	33.6	2	16	8	40	8	15	80	M6×1.0	20	36	M26×1.5	18	124	14	50	40	156	Rc1/8
40	10	70	41	41.6	3	16	11	50	10	16	92	M6×1.0	26	46	M32×2.0	23	150	13	60	40	182	Rc1/4

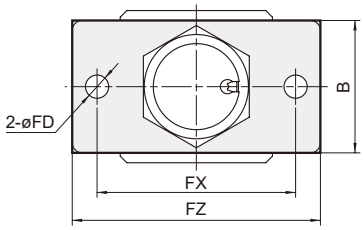
Accessories

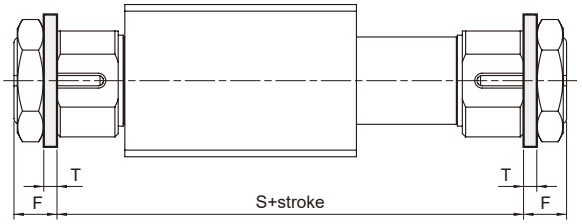
LB



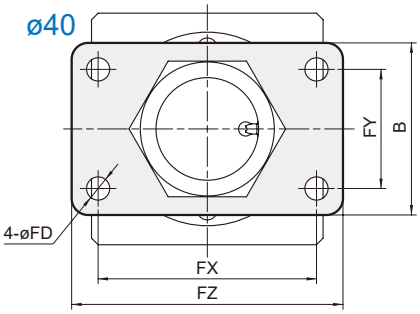


FA ø10~ø32





ø40

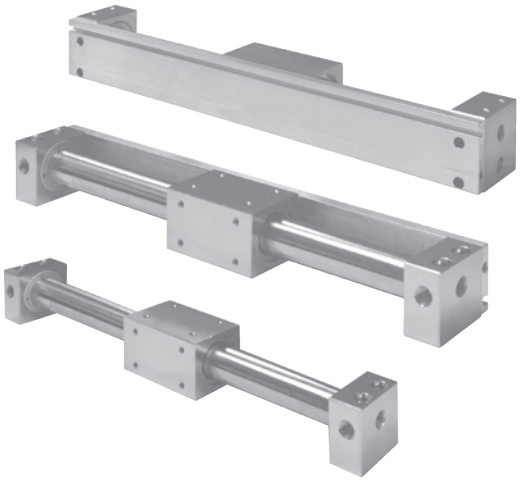


Code / Tube I.D.	B		F	FD	FX	FY	FZ	LC	LD	LH	LX	LZ	S	T		X	Y	Z
	LB	FA												LB	FA			
10	25	20	9	5.5	33	–	42	–	5.5	14	33	42	73	2.3	2.3	9	6	91
15	31	20	10	5.5	33	–	42	4	5.5	20	33	42	83	2.5	2.3	9	6	101
20	40	34	13	7	60	–	75	4	6.8	25	40	55	106	3.2	4	20	8	146
25	47	40	13	7	60	–	75	4	6.8	28	40	55	111	3.2	4	20	8	151
32	52	40	16	7	60	–	75	4	7	33	46	62	124	4	4	23	7	170
40	62	52	16	7	66	36	82	4	9	38	55	75	150	5	5	23	10	196

MCRPMD series

MAGNETICALLY COUPLED **RODLESS CYLINDER**

mindman



Features

- 50 % space saving.
- Magnetic transit design. Magnetic force transits the movement with piston side magnet and slider magnet.
- Stainless tube, light weighted and durable.

Specification

Model	MCRPMD				
Acting type	Double acting				
Tube I.D. (mm)	10	15	20	25	32
Port size	M5×0.8		Rc1/8		
Medium	Air				
Max. operating pressure	0.7 MPa				
Min. operating pressure	0.18 MPa				
Proof pressure	1 MPa				
Ambient temperature	+5°C ~ +60°C				
Lubricator	Without lubrication				
Available speed range	Standard grease: 100~500 mm/sec (*1)				
	Slow motion grease: 60~100 mm/sec (*1,2)				
Holding force	53.9 N	137 N	231 N	363 N	588 N
Sensor switch (*3)	RDFE	RCE, RCE1			

*1. The cylinder must be connected to a speed controller and gradually adjusted from fully closed to achieve the desired operating speed within the designed range.
*2. Between the speed range limit the actuator stroke must not exceed to 2m/minute.
*3. RCE, RCE1, RDFE specifications, please refer to page 8-12, 13, 19.

Table for standard stroke

Type	Tube I.D.	Stroke (mm)	Max. stroke
Standard **G** type	ø10	100, 150, 200, 250, 300, 400, 500	500
	ø15		700
	ø20 ø25 ø32	100, 150, 200, 250, 300, 350, 400 450, 500, 600, 700, 800	1000
N type	ø10	100, 150, 200, 250, 300, 400, 500	500
	ø15		1000
	ø20	100, 150, 200, 250, 300, 350, 400	1500
	ø32	450, 500, 600, 700, 800	2000

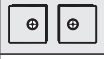
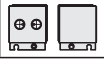
* Minimum stroke unit 1mm.

Order example

MCRPMD — G — 20 — 100 — A S — G

MODEL

TYPE

Code		Port location	Magnets & switch rail
Blank		Standard	○
N		Standard	×
G		Centralized piping	○

TUBE I.D.

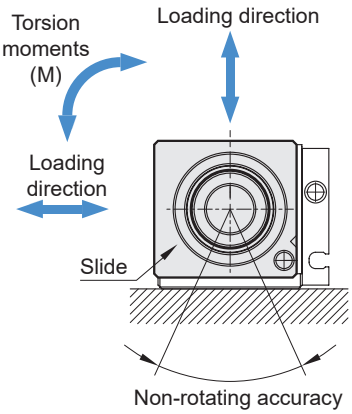
STROKE

GREASE LUBRICATION
Blank: Standard
S: Slow motion grease

Blank: Cushion pad (Unadjustable)
A: Cushion air (Adjustable)
(Only for ø15~ø32 and standard piping)

PORT THREAD
Blank: M5×0.8
(for ø10, 15)
Blank: Rc thread
G: G thread
NPT: NPT thread
(for ø20~ø32)

Maximum allowable directly load



Tube I.D.	Max. allowable load (kg)	Non-rotating accuracy	Max. torsion moments	Non-rotating accuracy Allowable stroke
ø10	0.4	5°	0.05 N.m	100 mm
ø15	0.9	5°	0.18 N.m	200 mm
ø20	1.1	4°	0.23 N.m	300 mm
ø25	1.1	4°	0.40 N.m	300 mm
ø32	1.5	4°	0.12 N.m	400 mm

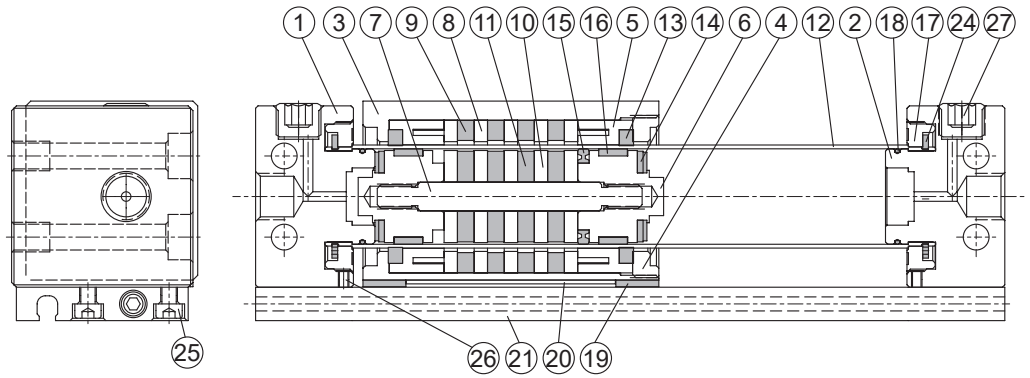
* Non-rotating angle accuracy will be reduced by distortion due to longer stroke and switch rail.

Cylinder weight

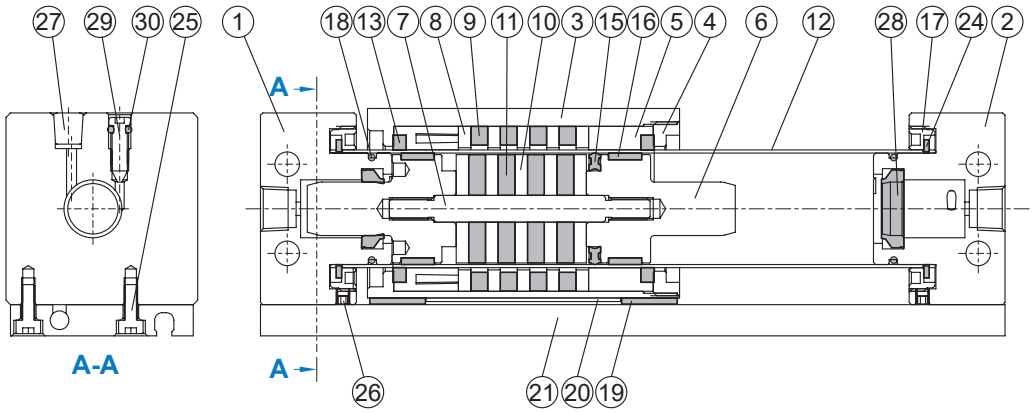
Unit: g

Model	Basic weight **MCRPMD**	Stroke 100 mm **MCRPMD**
Tube I.D.		
ø10	163	67
ø15	302	80
ø20	520	102
ø25	712	115
ø32	1235	150

Cushion pad Unadjustable



Cushion air Adjustable

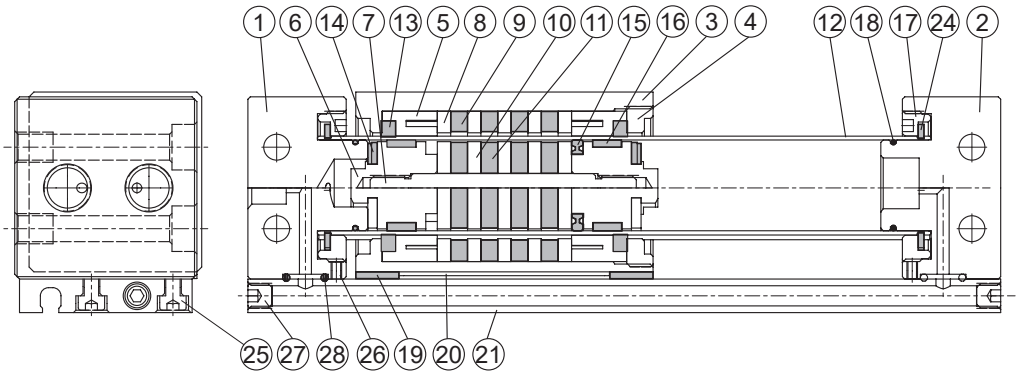


Material

No.	Part name	Material
1	Cover A	Aluminum alloy
2	Cover B	Aluminum alloy
3	Slider body	Aluminum alloy
4	Body cover	Aluminum alloy
5	Body wear ring	Resin
6	Piston	Aluminum alloy
7	Shaft	Stainless steel
8	Slider side yoke	Carbon steel
9	Slider side magnet	Magnet material
10	Piston side yoke	Carbon steel
11	Piston side magnet	Magnet material
12	Tube	Stainless steel
13	Lub-retainer	Special resin
14	Cushion	NBR
15	Piston seal	NBR

No.	Part name	Material
16	Wear ring	Resin
17	Tube fixed nut	Aluminum alloy
18	O-ring	NBR
19	Wear ring	Resin
20	Magnetic shielding plate	Carbon steel
21	Switch rail	Aluminum alloy
22	Magnet	Magnet material
23	Spring	Stainless steel
24	Snap ring	Spring steel
25	Bolt	SCM
26	Screw	SCM
27	Seal screw	Carbon steel
28	Cushion packing	NBR
29	Needle valve	Stainless steel
30	Needle valve packing	NBR

Centralized piping

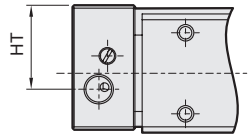


Material

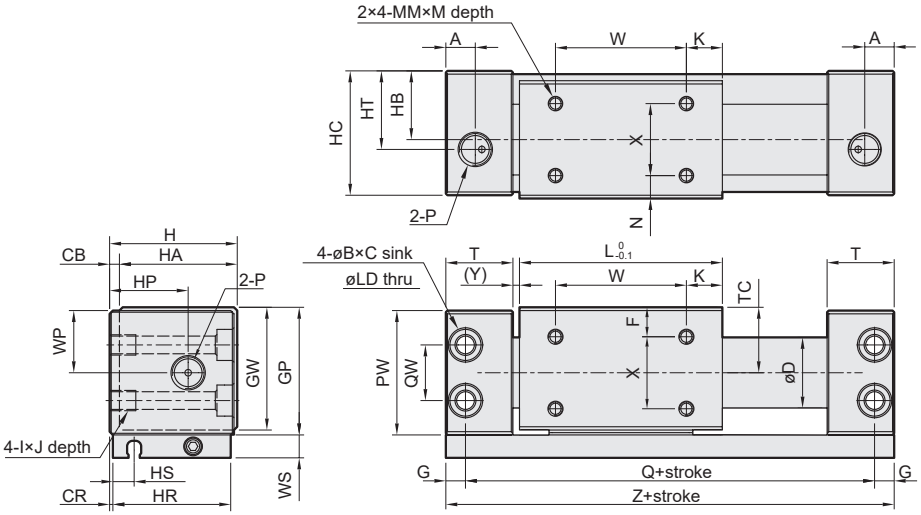
No.	Part name	Material
1	Cover A	Aluminum alloy
2	Cover B	Aluminum alloy
3	Slider body	Aluminum alloy
4	Body cover	Aluminum alloy
5	Body wear ring	Resin
6	Piston	Aluminum alloy
7	Shaft	Stainless steel
8	Slider side yoke	Carbon steel
9	Slider side magnet	Magnet material
10	Piston side yoke	Carbon steel
11	Piston side magnet	Magnet material
12	Tube	Stainless steel
13	Lub-retainer	Special resin
14	Cushion	NBR
15	Piston seal	NBR
16	Wear ring	Resin
17	Tube fixed nut	Aluminum alloy
18	O-ring	NBR
19	Wear ring	Resin
20	Magnetic shielding plate	Carbon steel
21	Switch rail	Aluminum alloy
22	Magnet	Magnet material
23	Spring	Stainless steel
24	Snap ring	Spring steel
25	Bolt	SCM
26	Screw	SCM
27	Screw	SCM
28	O-ring	NBR

Both sides piping

Adjustable cushion



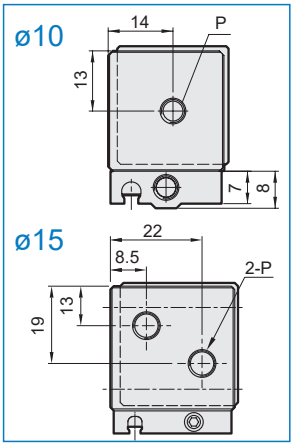
Code / Tube I.D	HT
15	10
20	24
25	29
32	35

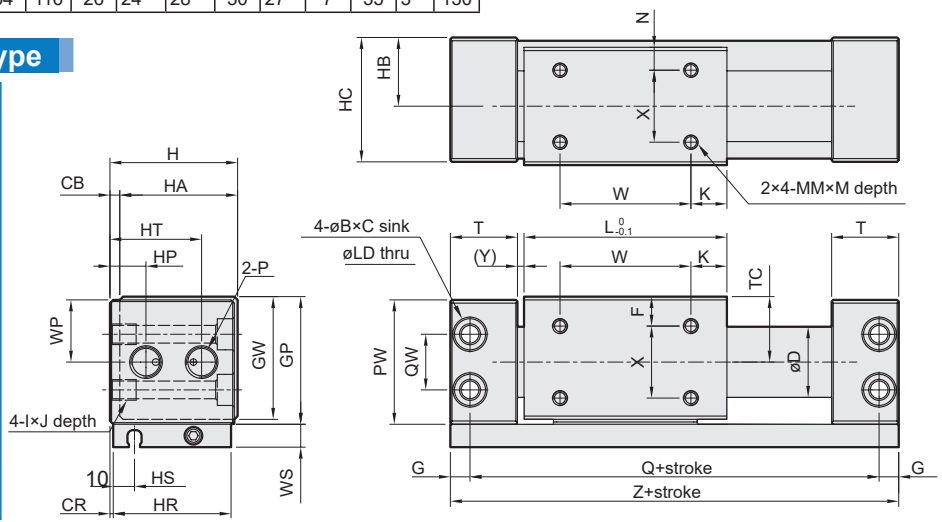


Code / Tube I.D	A	B	C	CB	CR	D	F	G	GP	GW	H	HA	HB	HC	HP	HR	HS	HT	I	J	K	L	LD	M
10	8.5	6.5	3.2	2	0.5	12	6.5	4	27	25.5	26	24	14	25	14	24	4.5	14	M4×0.7	6	9	38	3.3	4.5
15	9.5	8	4.2	2	0.5	16.6	8	5	33	31.5	32	30	17	31	17	30	4.9	17	M5×0.8	7	14	53	4.3	5
20	9	9.5	5.2	3	1	21.6	9	6	39	37.5	39	36	21	38	24	36	6.5	24	M6×1.0	8	11	62	5.4	5
25	9	9.5	5.2	3	1	26.4	8.5	6	44	42.5	44	41	23.5	43	23.5	41	6.5	23.5	M6×1.0	8	15	70	5.4	6
32	10.5	11	6.5	3	1.5	33.6	10.5	7	55	53.5	55	52	29	54	29	51	6	29	M8×1.25	10	13	76	6.8	7

Code / Tube I.D	MM	N	P	PW	Q	QW	T	TC	W	WP	WS	X	Y	Z
10	M3×0.5	4.5	M5×0.8	26	68	14	17.5	14	20	13	7	15	1.5	76
15	M4×0.7	6	M5×0.8	32	84	18	19	17	25	16	7	18	1.5	94
20	M4×0.7	7	Rc1/8	38	95	17	20.5	20	40	19	7	22	2	107
25	M5×0.8	6.5	Rc1/8	43	105	20	21.5	22.5	40	21.5	7	28	2	117
32	M6×1.0	8.5	Rc1/8	54	116	26	24	28	50	27	7	35	3	130

Centralized piping type



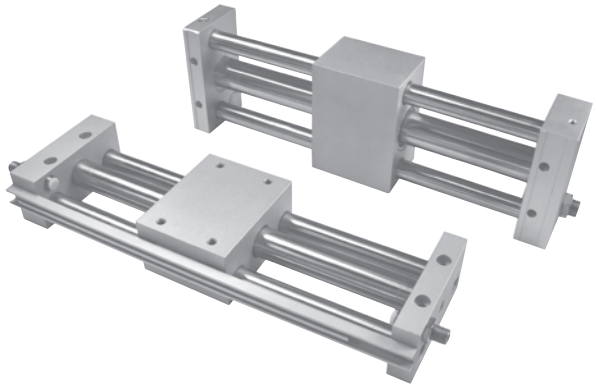


Code / Tube I.D	B	C	CB	CR	D	F	G	GP	GW	H	HA	HB	HC	HP	HR	HS	HT	I	J	K	L	LD	M
10	6.5	3.2	2	0.5	12	6.5	4	27	25.5	26	24	14	25	—	24	4.5	—	M4×0.7	6	9	38	3.3	4.5
15	8	4.2	2	0.5	16.6	8	5	33	31.5	32	30	17	31	—	30	4.9	—	M5×0.8	7	14	53	4.3	5
20	9.5	5.2	3	1	21.6	9	6	39	37.5	39	36	21	38	11	36	6.5	28	M6×1.0	8	11	62	5.4	5
25	9.5	5.2	3	1	26.4	8.5	6	44	42.5	44	41	23.5	43	14.5	41	6.5	33.5	M6×1.0	8	15	70	5.4	6
32	11	6.5	3	1.5	33.6	10.5	7	55	53.5	55	52	29	54	20	51	6	40	M8×1.25	10	13	76	6.8	7

Code / Tube I.D	MM	N	P	PW	Q	QW	T	TC	W	WP	WS	X	Y	Z
10	M3×0.5	4.5	M5×0.8	26	68	14	17.5	14	20	—	7	15	1.5	76
15	M4×0.7	6	M5×0.8	32	84	18	19	17	25	—	7	18	1.5	94
20	M4×0.7	7	Rc1/8	38	95	17	20.5	20	40	19	7	22	2	107
25	M5×0.8	6.5	Rc1/8	43	105	20	21.5	22.5	40	21.5	7	28	2	117
32	M6×1.0	8.5	Rc1/8	54	116	26	24	28	50	27	7	35	3	130

MCRPMS series

MAGNETICALLY COUPLED **RODLESS CYLINDER**



Features

- 50% space saving, centralized piping ease of mounting.
- Magnetic transit design. Magnetic force transits the movement with piston side magnet and slider magnet.
- Stainless tube, light weighted and durable.
- The overall design of the cylinder and guide rods, can direct bear loads.

Specification

Model	MCRPMS				
Acting type	Double acting				
Tube I.D. (mm)	10	15	20	25	32
Port size	M5×0.8		Rc1/8		
Medium	Air				
Operating pressure range	0.2~0.7 MPa				
Proof pressure	1 MPa				
Ambient temperature	+5° ~ +60°C				
Lubricator	Without lubrication				
Available speed range	Standard grease: 150~400 mm/sec (*1)				
	Slow motion grease: 80~150 mm/sec (*1, 2)				
Holding force	53.9 N	137 N	231 N	363 N	588N
Shock absorbers (*3)	MDSC-0806-3-N		MAC-1007-SN	MAC-1412-SN	MAC-2015-SN
Sensor switch	RCD, RDFE (Please refer to page 8-11, 20)				

*1. The cylinder must be connected to a speed controller and gradually adjusted from fully closed to achieve the desired operating speed within the designed range.
*2. Between the speed range limit the actuator stroke must not exceed to 2m/minute.
*3. Standard: bumper bolt, Option: shock absorber (speci. please refer to page 8-24.)

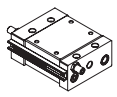
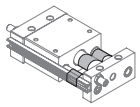
Table for standard stroke

Tube I.D.	Stroke (mm)	Max. stroke
ø10	50, 100, 150, 200, 250, 300	500
ø15	50, 100, 150, 200, 250, 300, 350, 400, 450, 500	750
ø20	100, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800	1000
ø25		1500
ø32		

* Minimum stroke unit 1mm.

Cylinder weight

Unit: g

Tube I.D.	Basic weight **MCRPMS**		Stroke 100 mm **MCRPMS**	
ø10		407		169
ø15		770		222
ø20		1360		342
ø25		1730		346
ø32		2980		520

Order example

MCRPMS — G — 10 — 100M — B S — G

MODEL | TUBE I.D. | STROKE | PORT THREAD | GREASE LUBRICATION

PORT LOCATION
- Blank: Bilateral piping
- **G**: Centralized piping

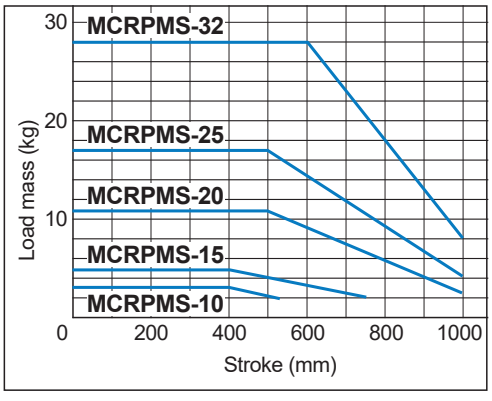
MAGNET
- Blank: Without magnet
- **M**: With magnet
- **MD**: With magnet (for RDFE / for RCD)

CUSHION
- Blank: Bumper bolt
- **B**: Shock absorber
- **C**: Shock absorber + Bumper bolt

PORT THREAD
Blank: M5×0.8 (Only for ø10,15)
Blank: Rc thread
G: G thread
NPT: NPT thread (Only for ø20~32)

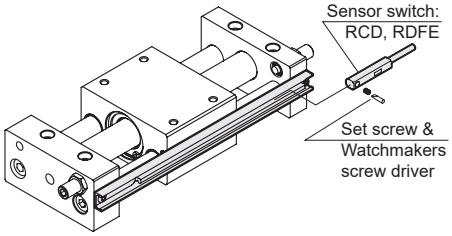
GREASE LUBRICATION
Blank: Standard
S: Slow motion grease

Maximum load mass



* Maximum load mass when horizontal mounting.

Installation of sensor switch



MCRPMS Inside structure & Parts list

MAGNETICALLY COUPLED **RODLESS CYLINDER**

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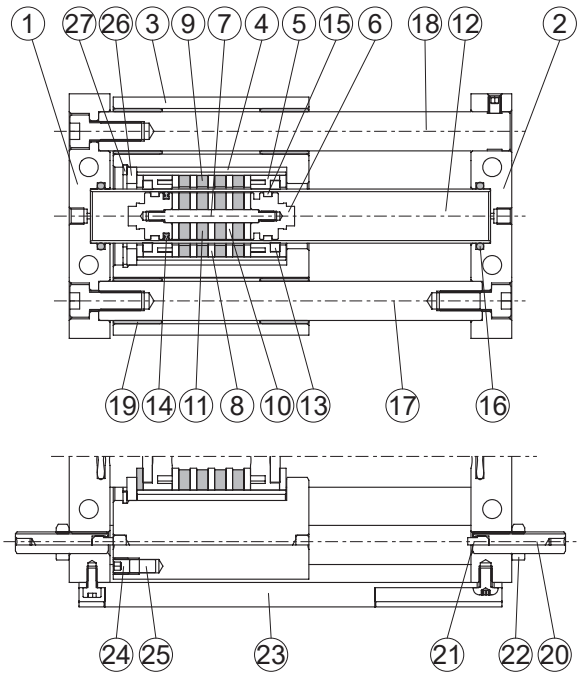
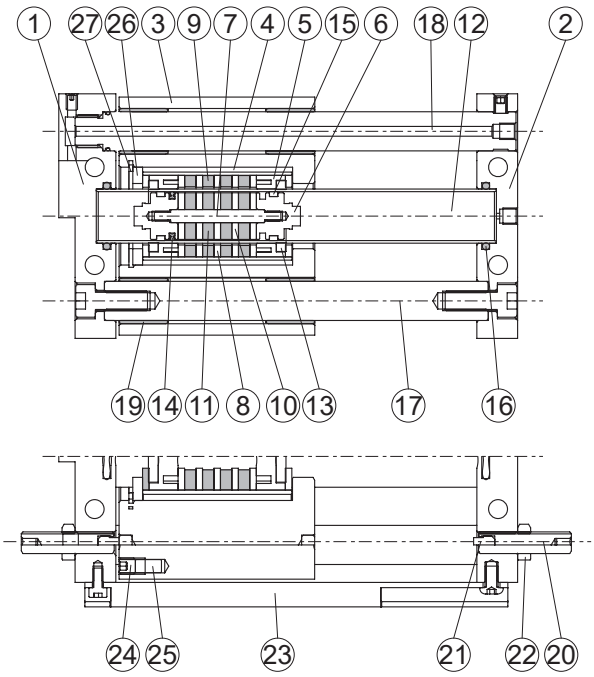
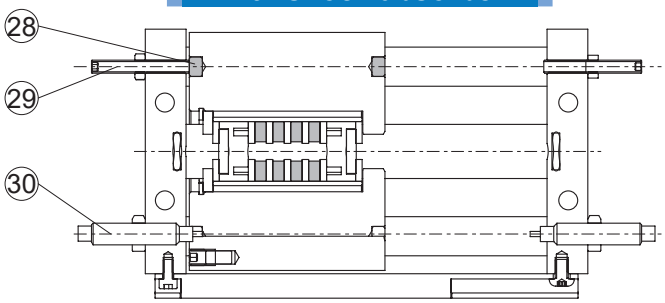
Bilateral piping



Centralized piping



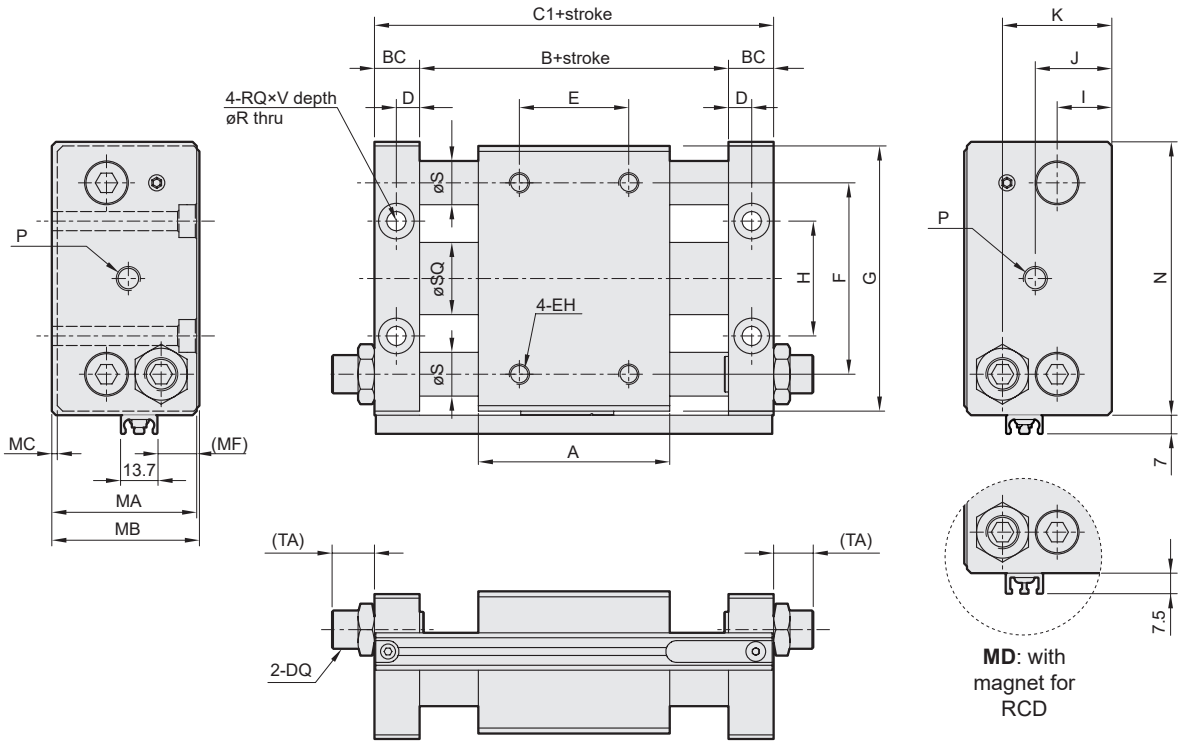
With shock absorber



Material

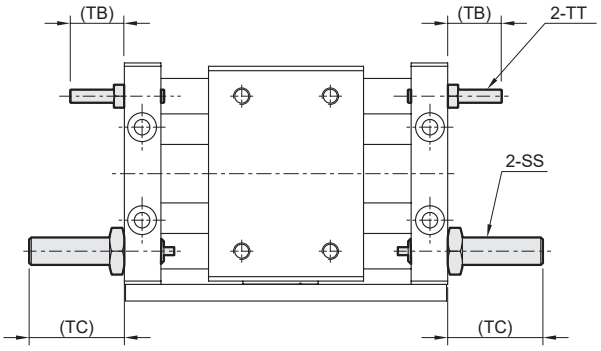
No.	Part name	Material	Note
1	Plate A	Aluminum alloy	Anodized
2	Plate B	Aluminum alloy	Anodized
3	Slider body	Aluminum alloy	Anodized
4	External slider tube	Aluminum alloy	
5	Body wear ring	Resin	
6	Piston	Aluminum alloy	
7	Shaft	Stainless steel	
8	Slider side yoke	Carbon steel	
9	Slider side magnet	Magnet material	
10	Piston side yoke	Carbon steel	
11	Piston side magnet	Magnet material	
12	Tube	Stainless steel	
13	Lub-retainer	Special resin	
14	Piston seal	NBR	
15	Wear ring	Resin	

No.	Part name	Material	Note
16	O-ring	NBR	
17	Guide shaft A	Carbon steel	
18	Guide shaft B	Carbon steel	
19	Bush	Copper	
20	Adjusting bolt	Carbon steel	
21	Cushion	PU	
22	Bolt	Carbon steel	
23	Switch rail	Aluminum alloy	for with magnet
24	Hex socket screws	Stainless steel	for with magnet
25	Magnet	Magnet material	for with magnet
26	Washer	Aluminum alloy	Anodized
27	Snap ring	Spring steel	
28	Cushion block	PU	for with shock absorber
29	Adjustment bolt	Carbon steel	for with shock absorber
30	Shock absorber	Composite material	for with shock absorber



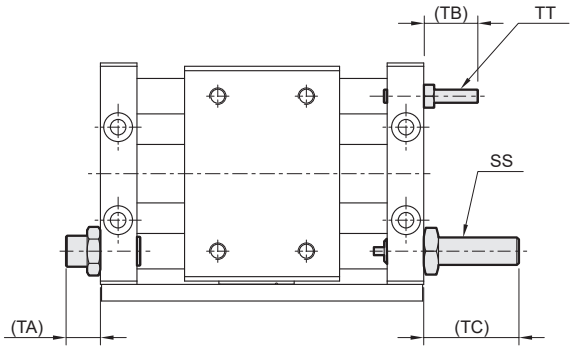
MCRPMS-*-B

With shock absorber



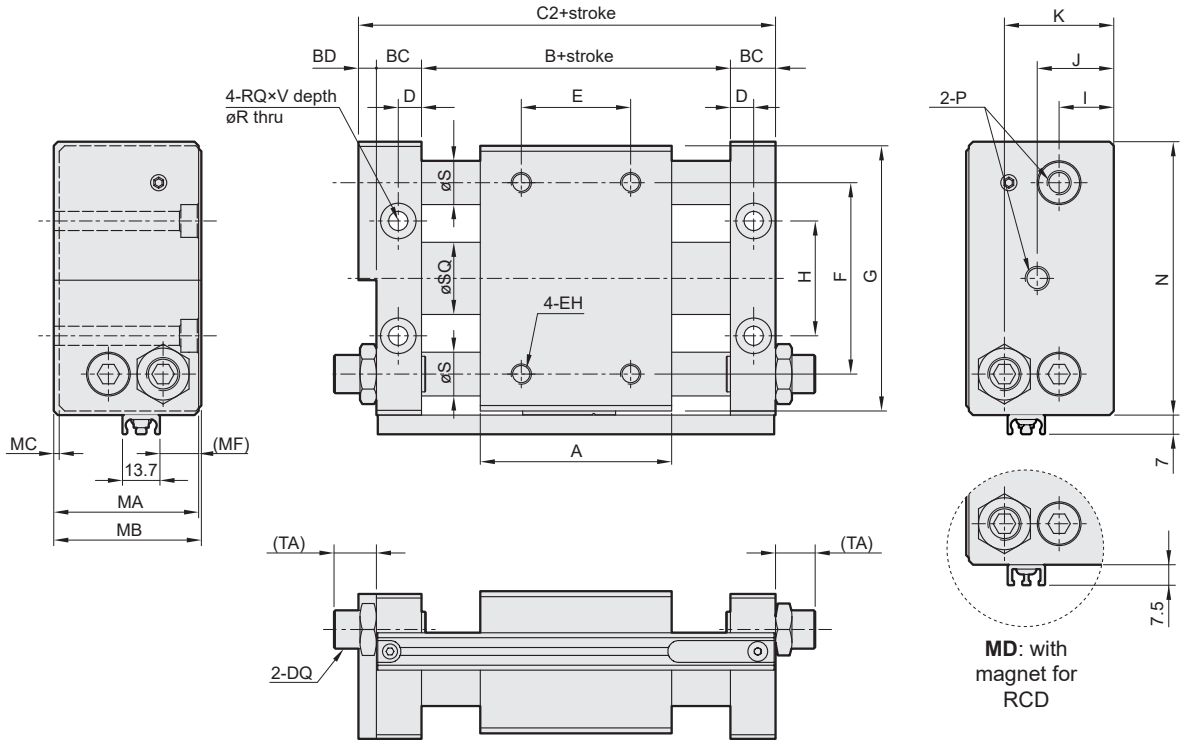
MCRPMS-*-C

With shock absorber + Adjustment bolt



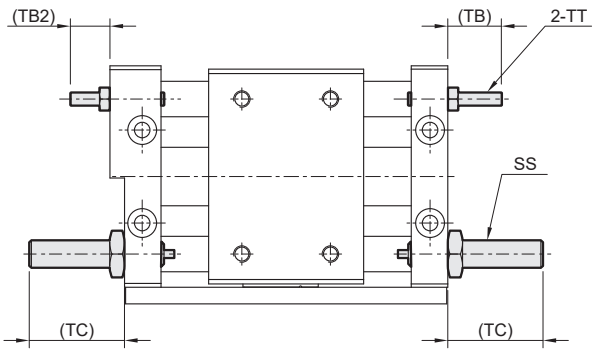
Code / Tube I.D.	A	B	BC	C1	D	DQ	E	EH	F	G	H	I	J	K	MA	MB	MC
10	45	47	12.5	72	6.5	M8×1.0	25	M4×0.7×6 depth	38	58	24	13.5	17	26	33	34	2.5
15	60	62	12.5	87	6.5	M8×1.0	30	M5×0.8×8 depth	50	73	30	15	20.5	29	39	40	2
20	70	73	16.5	106	8.5	M10×1.0	40	M6×1.0×10 depth	70	87	38	19	24	36	45	46	2
25	70	73	16.5	106	8.5	M14×1.5	40	M6×1.0×10 depth	70	96	42	21.5	27.5	40.5	53	54	2
32	85	91	18.5	128	9.5	M20×1.5	40	M8×1.25×12 depth	75	116	50	26	33	50	64	66	2

Code / Tube I.D.	MF	N	P	R	RQ	S	SQ	SS	TA	TB	TC	TT	V
10	4.2	60	M5×0.8	4.5	8	10	12	MDSC-0806-3-N	16.5	16.5	25	M4×0.7	4.4
15	6.1	75	M5×0.8	5.8	9.5	12	16.6	MDSC-0806-3-N	16.5	16.5	25	M4×0.7	5.5
20	8	89	Rc1/8	5.5	9.5	16	21.6	MAC-1007-SN	16.5	22	29	M6×1.0	5.5
25	13	98	Rc1/8	7	12	16	26.4	MAC-1412-SN	14.5	22	49	M6×1.0	6.5
32	18	118	Rc1/8	9	14	20	33.6	MAC-2015-SN	12	23.5	51.5	M8×1.25	8.6



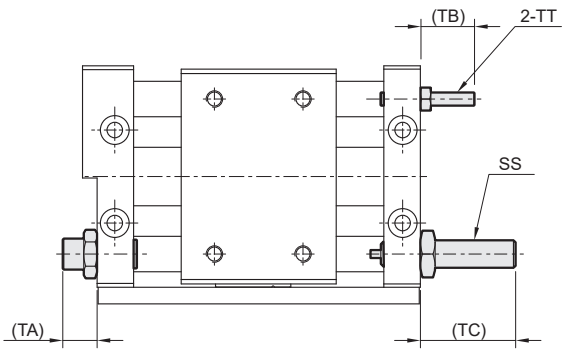
MCRPMS-G-*-B

With shock absorber



MCRPMS-G-*-C

With shock absorber + Adjustment bolt



Code / Tube I.D.	A	B	BC	BD	C2	D	DQ	E	EH	F	G	H	I	J	K	MA	MB	MC
10	45	47	12.5	4	76	6.5	M8×1.0	25	M4×0.7×6 depth	38	58	24	13.5	17	26	33	34	2.5
15	60	62	12.5	5	92	6.5	M8×1.0	30	M5×0.8×8 depth	50	73	30	15	20.5	29	39	40	2
20	70	73	16.5	5	111	8.5	M10×1.0	40	M6×1.0×10 depth	70	87	38	19	24	36	45	46	2
25	70	73	16.5	5	111	8.5	M14×1.5	40	M6×1.0×10 depth	70	96	42	21.5	27.5	40.5	53	54	2
32	85	91	18.5	6	134	9.5	M20×1.5	40	M8×1.25×12 depth	75	116	50	26	33	50	64	66	2

Code / Tube I.D.	MF	N	P	R	RQ	S	SQ	SS	TA	TB	TB2	TC	TT	V
10	4.2	60	M5×0.8	4.5	8	10	12	MDSC-0806-3-N	16.5	16.5	12.5	25	M4×0.7	4.4
15	6.1	75	M5×0.8	5.8	9.5	12	16.6	MDSC-0806-3-N	16.5	16.5	11.5	25	M4×0.7	5.5
20	8	89	Rc1/8	5.5	9.5	16	21.6	MAC-1007-SN	16.5	22	22	29	M6×1.0	5.5
25	13	98	Rc1/8	7	12	16	26.4	MAC-1412-SN	14.5	22	22	49	M6×1.0	6.5
32	18	118	Rc1/8	9	14	20	33.6	MAC-2015-SN	12	23.5	17.5	51.5	M8×1.25	8.6