MCRPLK series

RODLESS CYLINDER WITH LINEAR GUIDE

Mindman

Features

● 50% space saving when compared to conventional cylinders.

● End caps with 3 air connections and adjustable cushioning.

● Load strength is higher than MCRPLF series (about 4 Multiple).

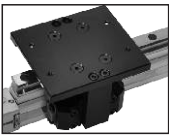● Magnetic as standard.

Specification

Model	MCRPLK			
Acting type	Double acting			
Tube I.D.(mm)	16	25	32	40
Port size	M5	G1/8	G1/4	G1/4
No. of port	3			
Medium	Air			
Operating pressure range	0.1~0.78 MPa			
Ambient Temperature	$-10℃ \sim +80℃$ (No freezing)			
Lubrication	With or Without lubrication			
Cushion	With adjustable cushion at both ends			
Stroke range(※1)	ϕ16：100~3300 mm			
	ϕ25~40：100~3600 mm			
Sensor Switch	RCAL			
Sensor Switch Holder	HPL			

※1: Minimum stroke unit 1mm.
※2: The tube isn't airtight, so the cylinder is allowed little leakage.
     Before the cylinder is sale, it has passed the standard of leakage
   test.

Order example

MCRPLK — D — 25 — 0850 — B V S — 24/2

Model	Slider	Tube I.D.	Stoke	Absorber	Piston seals	Accessory
MCRPLK	— single slider	16	100~3600 mm (4 codes)	— without absorber	— NBR (for piston speeds V≦1 m/s)	※Please refer to S-12 page code
	D dual slider	25		B absorber at both ends	V VITON (for piston speeds V＞1m/s)	
	※ D-type is not suitable for ϕ16	32				
		40				

Grease lubrication	
—	standard
S	slow motion grease

※Speed range for the different greases:

● **Standard grease**:
NBR piston seals: 0.2 m/s≦V＜1 m/s
VITON piston seals: 1 m/s≦V

● **Slow motion grease**:
NBR piston seals: V＜0.2 m/s
VITON piston seals: V＜0.2 m/s

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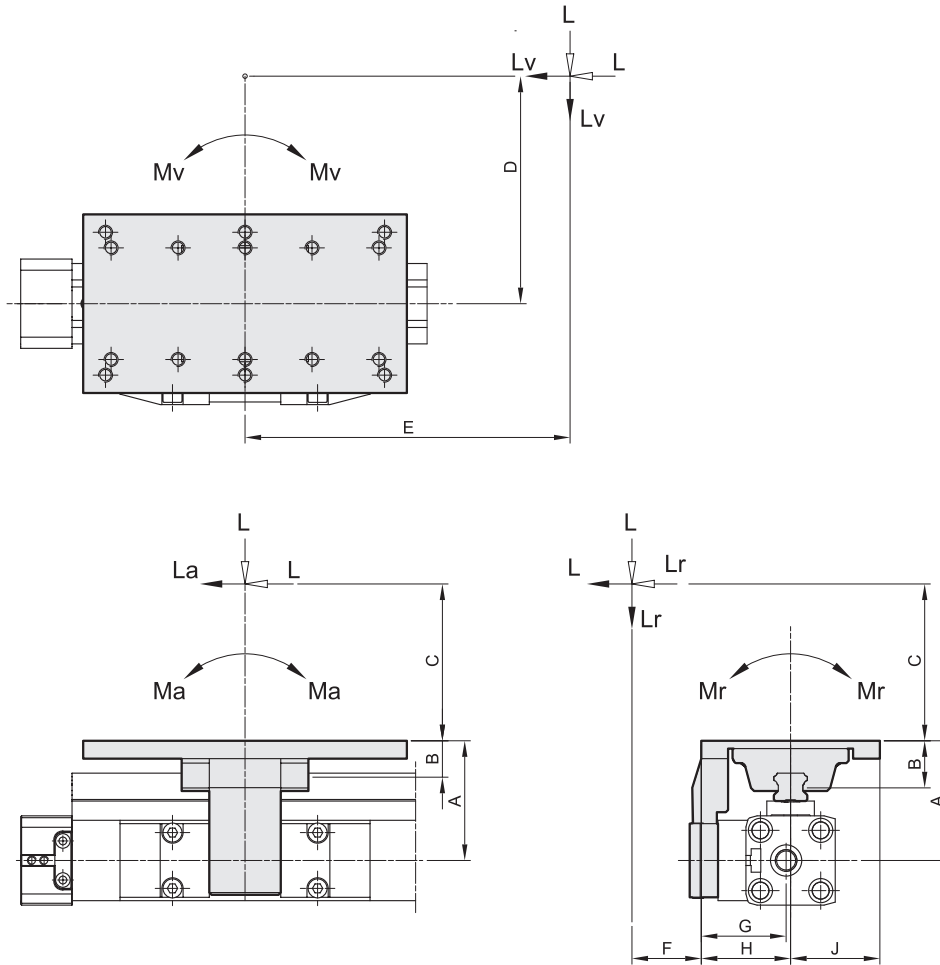
Forces and moments

Tube I.D. Code		16	25	32	40
Effect forces F	(N)	110	250	420	640
Custioning	(mm)	15	21	26	32
A	(mm)	48.2	53.2	64	69
B	(mm)	21	21	24.4	24.4
C / D / E / F	(mm)	Dimensions according			
G	(mm)	38	38	55	54.5
H	(mm)	40	40	57.5	57.5
J	(mm)	40	40	57.5	57.5
Single slider	Load forces L(N)	500	1500	2950	3960
	Moment forces La, Lr, Lv (N)	500	1500	2950	3960
	Axial moments Ma (Nm)	4	40	61	115
	Radial moments Mr (Nm)	6	14	30	52
	Torsion moments Mv (Nm)	11	40	62	70
Dual slider	Load forces L (N)	—	1550	3020	4030
	Moment forces La, Lr, Lv (N)	—	1550	3020	4030
	Axial moments Ma (Nm)	—	85	85	130
	Radial moments Mr (Nm)	—	20	45	65
	Torsion moments Mv (Nm)	—	80	90	100

1. The above mentioned moments (Ma max, Mr max, Mv max) are related to the guide rail centre. The load force (L) is the summary of all single forces related to the common centre of the mass. The centre of the mass can be placed inside or outside the surface area of the carriage.

2. Normally the carriage would experience a dynamic load, which has to be considered with the calculation of needed piston force (F) and capacity of the ballguided system.
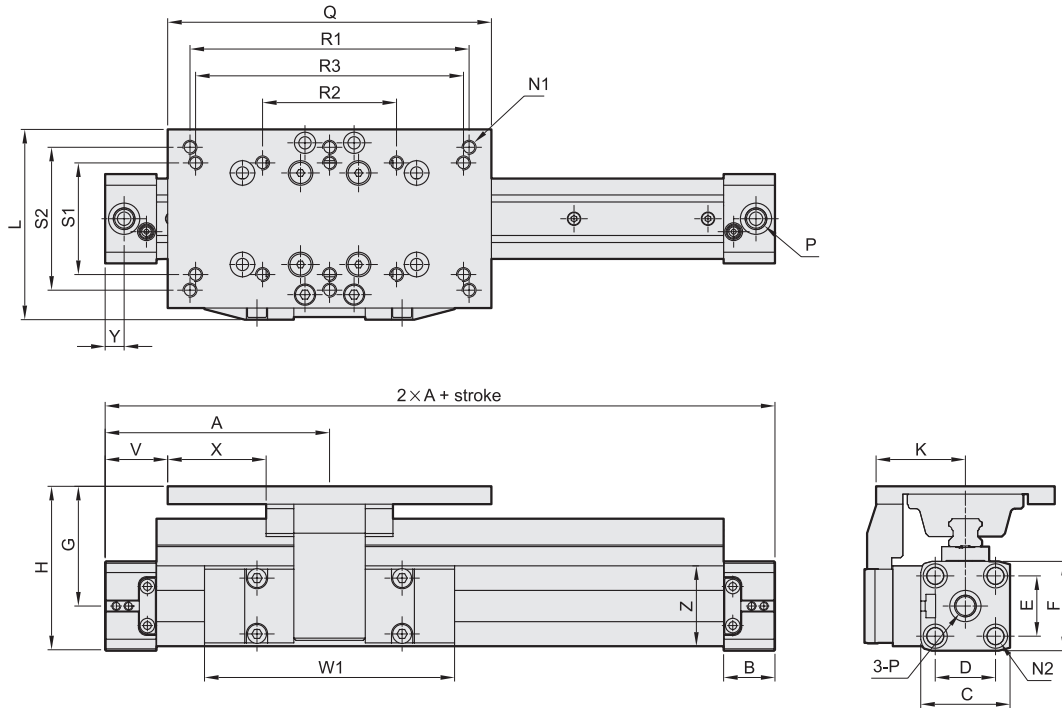
Use the following calculation formular:

$$\frac{Ma}{Ma\ max.} + \frac{Mr}{Mr\ max.} + \frac{Mv}{Mv\ max.} + \frac{L}{L\ max.} \leqq 1$$

2 × A + stroke

2-Shock absorber

Code Tube I.D.	A	B	C	D	E	F	G	H	K	L	N1	N2	P	Q	R1	R2
16	65	15	27	18	18	27	48.2	61.7	40	80	M4×0.7 thru	M3×0.5×7 dp	M5	90	—	—
25	100	23	40	27	27	40	53.2	73.2	40	85	M6×1.0 thru	M5×0.8×12 dp	G1/8	145	125	60
32	125	27	56	40	36	52	64	90.0	57.5	115	M8×1.25×12.5 dp	M6×1.0×15 dp	G1/4	190	164	—
40	150	30	69	54	54	72	69	105.0	57.5	115	M8×1.25×12.5 dp	M6×1.0×15 dp	G1/4	190	164	—

Code Tube I.D.	R3	S1	S2	V	W1	X	Y	Z
16	70	36	—	20	69	16.5	5.5	25×24.5
25	120	50	64	28	112	44.0	8.5	36×36
32	—	—	96	30	152	64.3	10.5	48×52
40	—	—	96	55	152	64.3	16.0	58×58
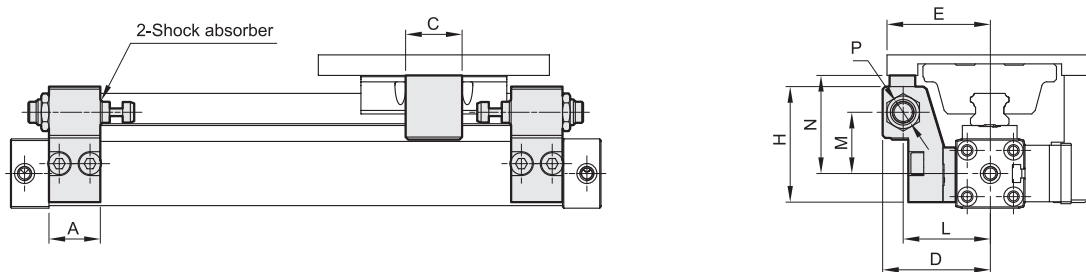
Code Tube I.D.	A	C	D	E	H	L	M	N	P
16	20	22	42	40	45	34	23.8	38.2	M10×1.0
25	35	32	44.7	40	45	33.7	24.35	43.7	M12×1.0
32,40	40	60	54.7	57.5	45	43.7	26.35	41.11	M14×1.5

End cover bracket (foot)

φ16 φ25

φ32※
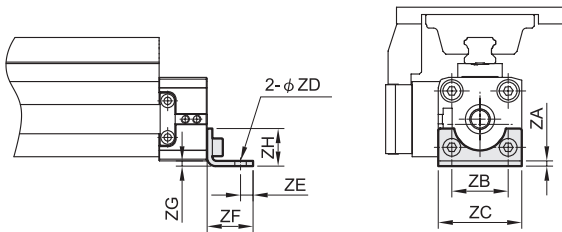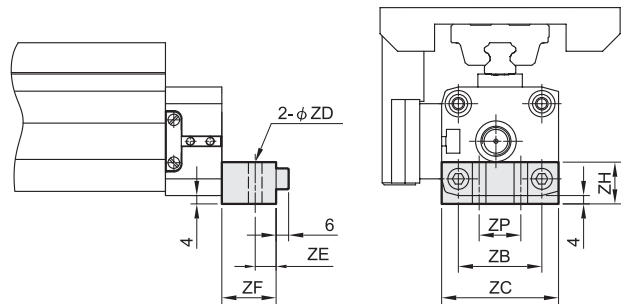
φ32 φ40
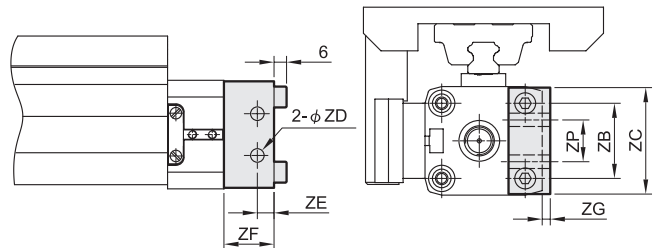
Code Tube I.D.	ZA	ZB	ZC	ZD	ZE	ZF	ZG	ZH	ZP	order number
16	1.6	18	26	3.6	4	14	1.5	12.5	–	PL 24/1
25	2.5	27	40	5.5	6	22	2	18	–	PL 24/2
32	–	36	51	6.5	8	24	4	20	20	PL 24/3
32※	–	40	56	6.5	8	26	4	20	20	PL 24/3.1
40	–	54	71	9	11.5	24	2	20	30	PL 24/4

absorber group

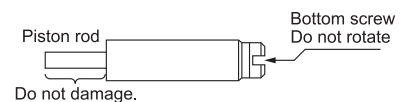### Body fixed group
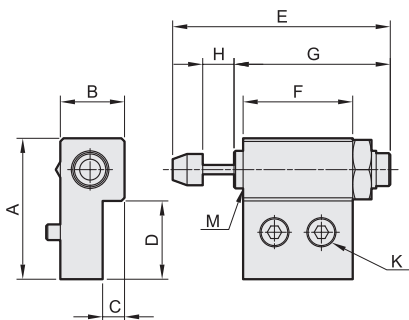
Stop block
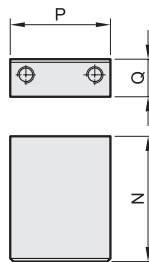
With shock absorber

❶ **Do not rotate the screw set on bottom of shock absorber.**

This is not the screw for adjusting. If this screw is rotated, it may cause oil leakage.

❷ **Do not scratch the exposed portion of the piston rod.**

Decrease in life or malfunction may result.

Piston rod
Bottom screw
Do not rotate
Do not damage.

❸ **Shock absorber is considered a consumable component. When energy absorption is decreased, replace it.**

Code Tube I.D.	Body fixed group									Stop block		
	A	B	C	D	E	F	G	H	K	M	N	P	Q
16	45	23.5	10	25	41.2	20	31.7	5	M5×12L	M10×1.0	25	22	10
25	45	20.5	7	25	69.5	35	49.9	10	M5×12L	M12×1.0	40	32	12
32,40	45	20.5	7	25	98.7	40	76	12	M5×12L	M14×1.5	40	60	20

Model	Part No. of shock absorber
MCRPLK-16	MAC1005-3
MCRPLK-25	MAC1210-3
MCRPLK-32	MAC1412-3
MCRPLK-40	MAC1412-3