MCRPLK2 series

RODLESS CYLINDER WITH LINEAR GUIDE

Technical data

Caution for safety
(Read beforeinstalling)

Features

- 50% space saving when compared to conventional cylinders.
- End caps with 3 air connections and adjustable cushioning.
- Load strength is higher than MCRPLF2 series (about 4 Multiple).
- Magnetic as standard.

Specification

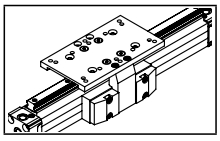
Model	MCRPLK2			
Acting type	Double acting			
Tube I.D.(mm)	16	25	32	40
Port size	M5	G1/8	G1/4	G1/4
No. of port	3			
Medium	Air			
Operating pressure range	0.1~0.78 MPa			
Ambient temperature	-10°C ~ +80°C (No freezing)			
Lubrication	With or without lubrication			
Cushion	With adjustable cushion at both ends			
Stroke range (mm) (*1)	100~2950	100~3600		
Sensor switch	RDT, RQT			
Sensor switch Holder	HPL2	–		

* 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

MCRPLK2 – D – 25 – 0850 – L V S –

Model



Slider

–	Single slider
D	Dual slider *2

Tube I.D.

16
25
32
40

*2. D-type not for ø16.

Stroke

0100~3600 mm (4 digits)

Shock absorber set (*1)

–	Without
L	Light
M	Medium
H	Powerful

Shock absorber *3

*3. It needs to be assembled by the original factory, and we don't suggest that you assemble by yourself.

Piston seals

–	NBR
V	VITON

Grease lubrication

–	Standard
S	Slow motion

Port thread

–	M5×0.8

(for ø16) (*4)

–	G thread
RC	Rc thread
NPT	NPT thread

(for ø25~40)

*4. RC and NPT threads are made to order.

*1. Shock absorber

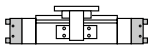
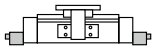
Model	Shock absorber			
	Model	L	M	H
MCRPLK2-16	MAC-1005-	1	2	3
MCRPLK2-25	MAC-1210-	1	2	3
MCRPLK2-32	MAC-1412-	1	2	3
MCRPLK2-40				

Available speed range

Piston seals	Grease lubrication	Available speed range (mm/s)
NBR	Slow motion	50~100
	Standard	within 101~1000
VITON	Slow motion	50~200
	Standard	201~1000 above

* Maximum seal life will be achieved when piston speeds do not exceed 1000mm/s.
* The suitable grease type can be selected according to the actual use.

Order example of mounting accessories

Code	LB (LB×2)	LB1 (LB1×2)
Mounting / Tube I.D.		
ø16	LB-P1-16x2	–
ø25	LB-P1-25x2	–
ø32	LB-P1-32x2	LB1-P1-32x2
ø40	LB-P1-40x2	–

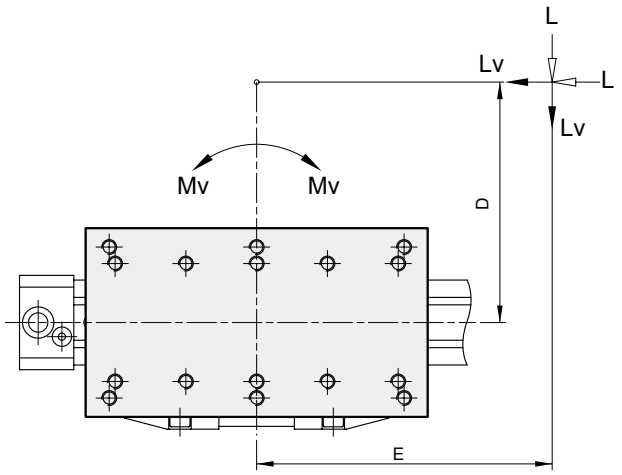
1. The below mentioned moments (Ma max, Mr max, Mv max.) are related to the guide rail center. The load force (L) is the summary of all single forces related to the common center of the mass. The center of the mass can be placed inside or outside the surface area of the carriage.
2. Normally the carriage would experience a dynamic load, which has to be considered with the calculation of needed piston force (F) and capacity of the ball guided system.

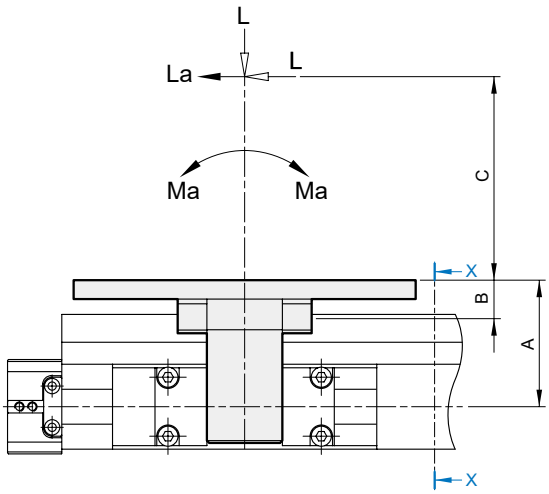
Use the following calculation formula:

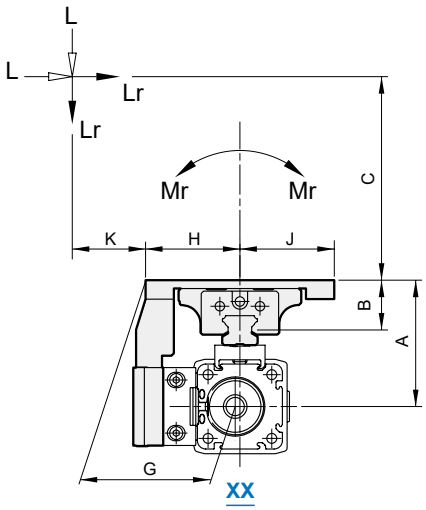
$$\frac{Ma}{Ma\ max.} + \frac{Mr}{Mr\ max.} + \frac{Mv}{Mv\ max.} + \frac{L}{L\ max.} \leq 1$$

Forces and moments

Tube I.D. / Code			16	25	32	40
Effect forces F (0.6 MPa)		(N)	110	250	420	640
Cushioning		(mm)	15	21	26	32
A		(mm)	48	53.5	64.5	68.5
B		(mm)	21	21	24	24
C / D / E / K		(mm)	Dimensions according			
G		(mm)	38.8	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 mom ents	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

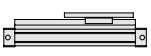
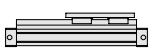
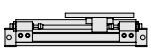
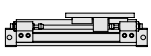
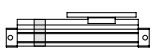


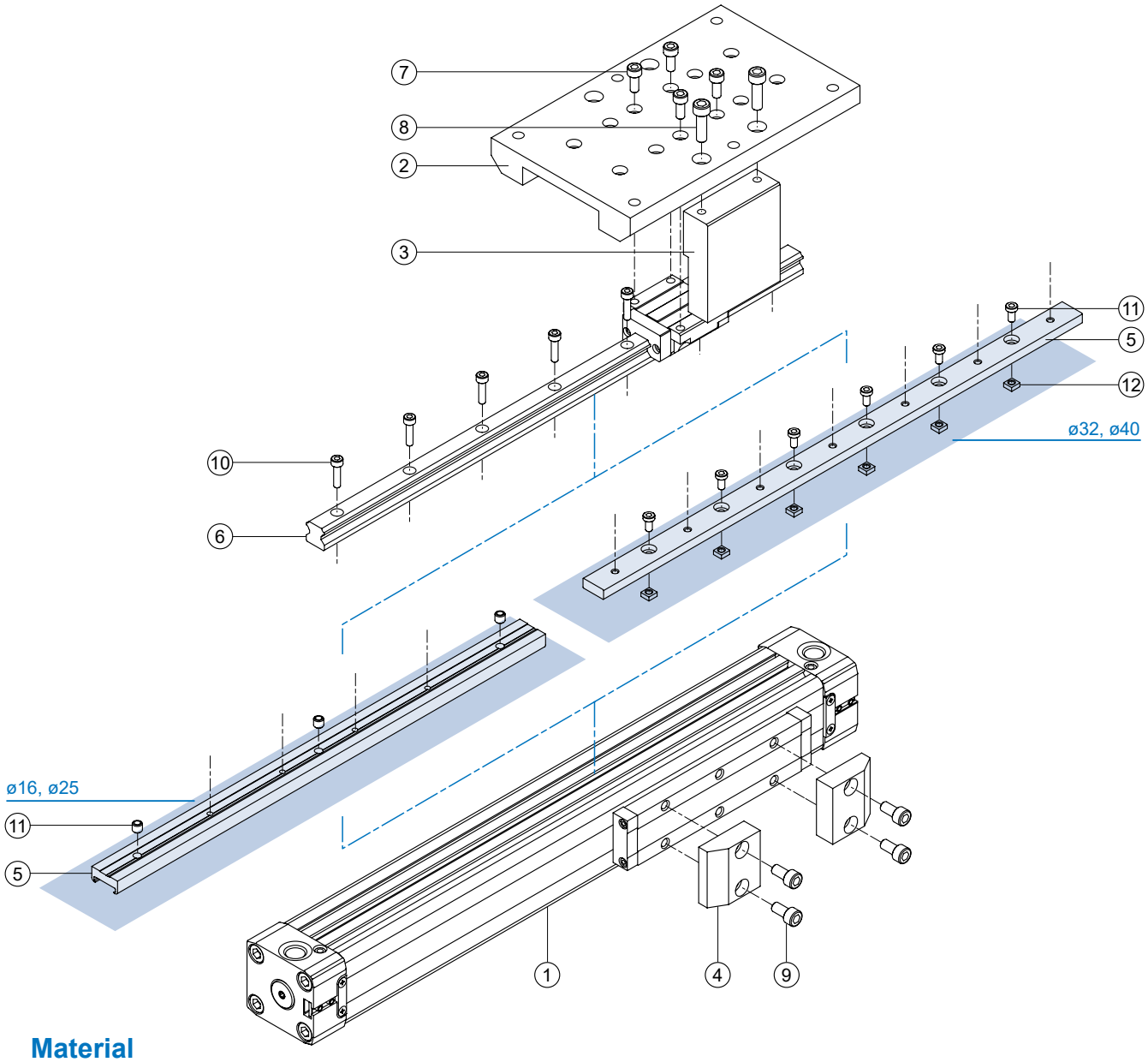




Weight

Unit: g

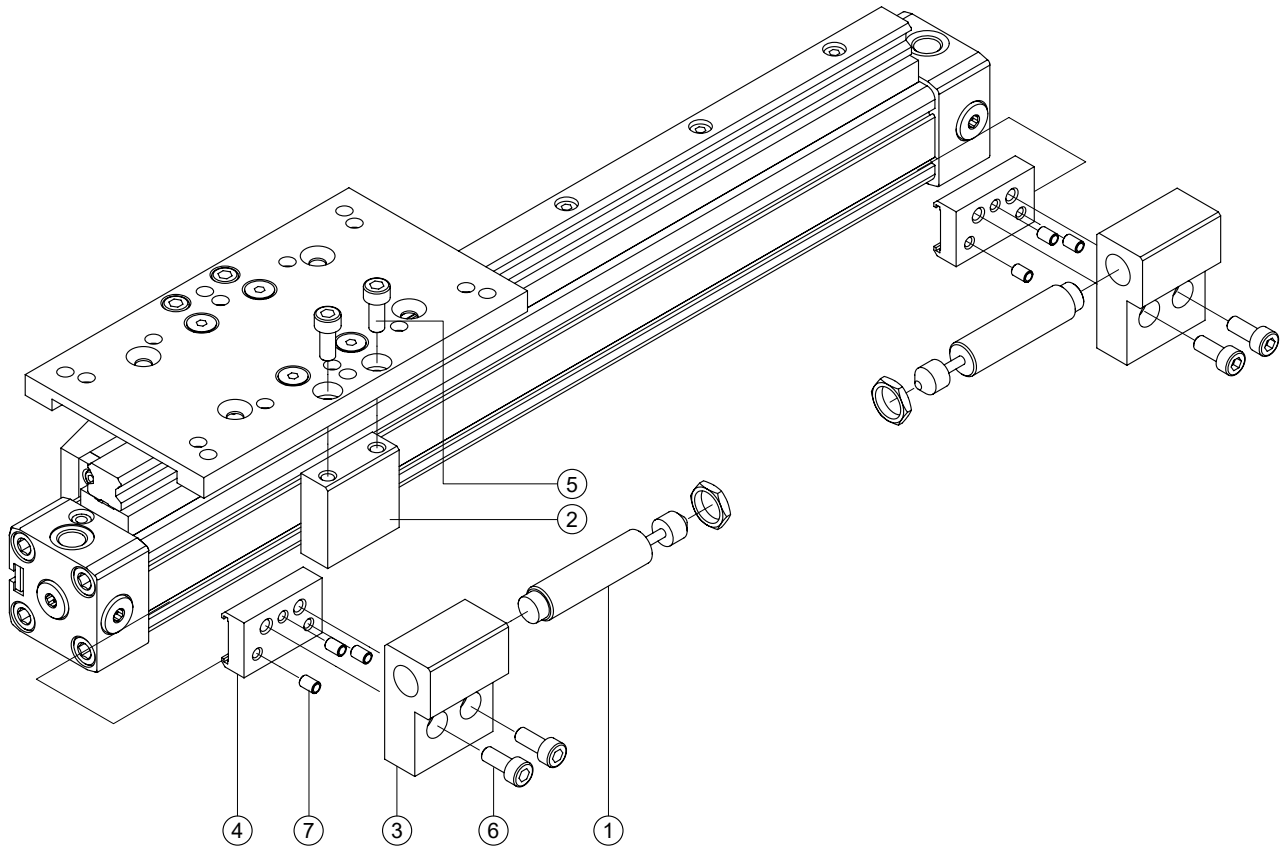
Tube I.D.	Without absorber		With absorber		Stroke 100 mm
	Single slider basic weight	Dual slider basic weight	Single slider basic weight	Dual slider basic weight	
					
16	932	–	1082	–	255
25	1698	1908	2032	2242	457
32	4082	4278	4635	4831	569
40	5709	5905	6260	6456	787



Material

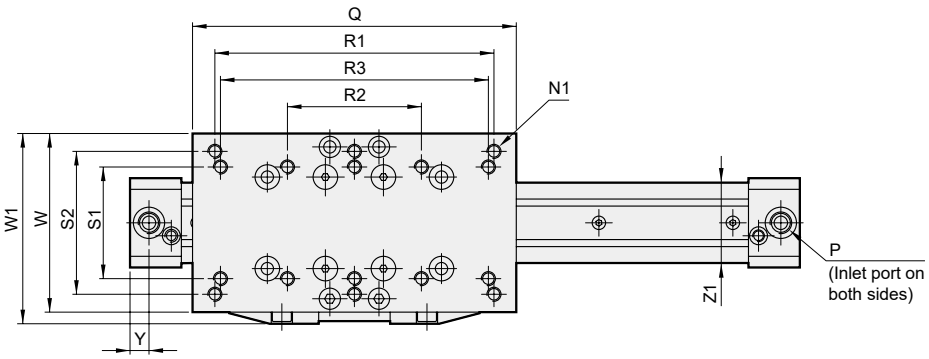
No.	Part name	Material	Q'y			
			16	25	32	40
1	Cylinder	Refer to the **MCRPLF2** series	1			
2	Platform	Carbon steel	1			
3	Platform connecting block	Aluminum alloy	1			
4	Cylinder connecting block	Aluminum alloy	2			
5	Guideway connector	Aluminum alloy	1			
6	Linear guideway	Carbon steel	1			
7	Platform screw	Carbon steel	4			
8	Connecting block screw #1	Carbon steel	2			
9	Connecting block screw #2	Carbon steel	4			
10	Linear guideway screw	Stainless steel	A/60+1, (A=L1+stroke-10)(*1)			
11	Guideway connector screw	Carbon steel	A/150+1		A/60	
12	Square nut	Carbon steel	–		A/60	

* For L1 value, refer to the dimensions. Truncate the calculated value to integer.

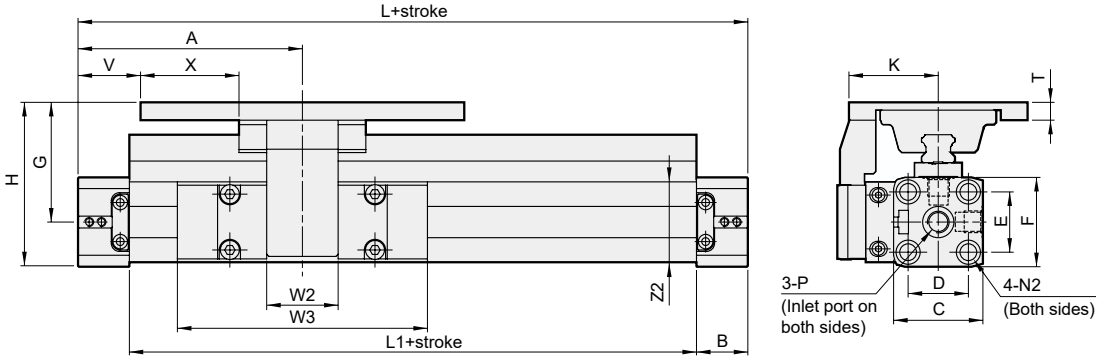


Material

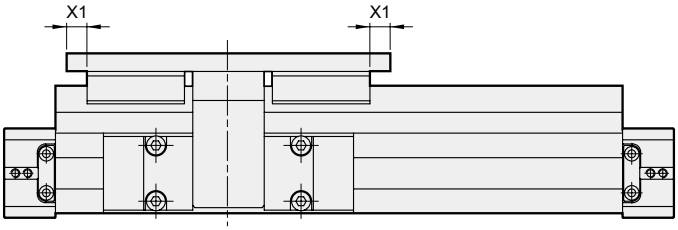
No.	Part name	Material	Q'y
1	Shock absorber	Composite material	2
2	Shock absorber stopper block	Aluminum alloy	1
3	Shock absorber mounting plate	Aluminum alloy	2
4	Mounting plate base ø16, ø25	Carbon steel	2
	Mounting plate base ø32, ø40	Aluminum alloy	2
5	Stopper block screw	Carbon steel	2
6	mounting plate screw	Carbon steel	4
7	Base Plate screw	Carbon steel	6



Single slider



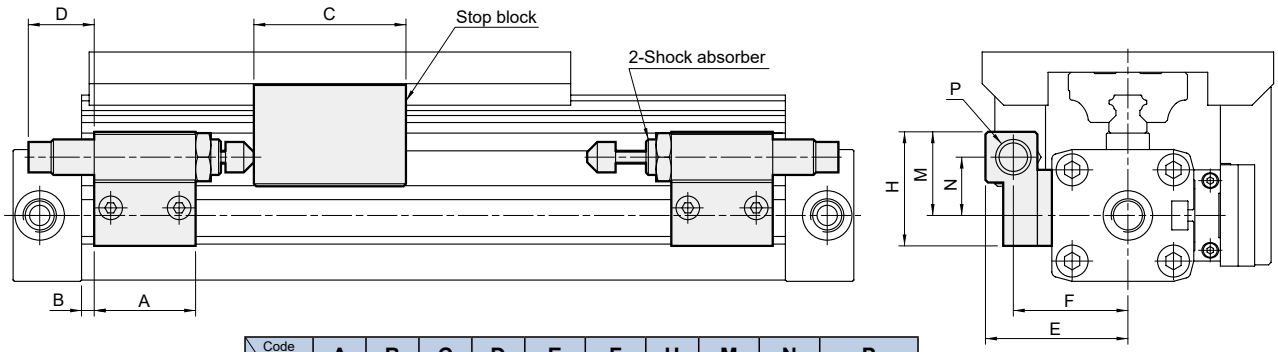
Dual slider



Code / Tube I.D.	A	B	C	D	E	F	G	H	K	L	L1	N1	N2	P	Q
16	65	15	27	18	18	27	48	61.5	40	130	100	4-M4×0.7 thru	M3×0.5×7 dp	M5	90
25	100	23	40	27	27	40	53.5	73.5	40	200	154	16-M6×1.0 thru	M5×0.8×12 dp	G1/8	145
32	125	27	56	40	36	52	64.5	90.5	57.5	250	196	6-M8×1.25×12.5 dp	M6×1.0×15 dp	G1/4	190
40	150	30	69	54	54	72	68.5	104.5	57.5	300	240	6-M8×1.25×12.5 dp	M6×1.0×15 dp	G1/4	190

Code / Tube I.D.	R1	R2	R3	S1	S2	T	V	W	W1	W2	W3	X	X1	Y	Z1×Z2
16	–	–	70	36	–	8	20	80	–	22	69	16.5	–	5.5	24.5×25
25	125	60	120	50	64	8	27.5	80	85.2	32	112	44.0	13.5	8.5	36×36
32	164	–	–	–	96	21	30	115	–	60	152	66.8	16.8	10.5	52×51
40	164	–	–	–	96	21	55	115	–	60	152	66.8	16.8	15.0	58.5×59

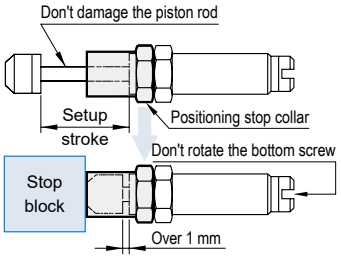
Shock absorber set



Code / Tube I.D.	A	B	C	D	E	F	H	M	N	P
16	20	4	22	–	43.3	35.3	40	32	22	M10×1.0
25	35	–	32	–	46	35	45	34.4	24.4	M12×1.0
32	40	–	60	21	56.2	45.2	45	33	23	M14×1.5
40	40	1	60	–	57.5	46.5	45	24	14	M14×1.5

With shock absorber

1. 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.
2. Do not scratch the exposed portion of the piston rod.
   Decrease in life or malfunction may result.
3. The shock absorber stroke must stop at least 1 mm before the end. For precise stroke adjustment and positioning, use with SC series – stop collars.
4. Shock absorber is considered a consumable component. When energy absorption is decreased, replace it.

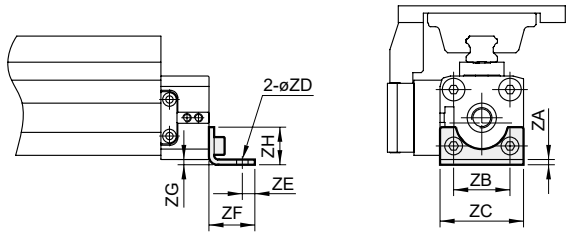


Model	Shock absorber				Stop collar
	Model	L	M	H	
MCRPLK2-16	MAC-1005-	1	2	3	SC-10
MCRPLK2-25	MAC-1210-	1	2	3	SC-12
MCRPLK2-32	MAC-1412-	1	2	3	SC-14
MCRPLK2-40					

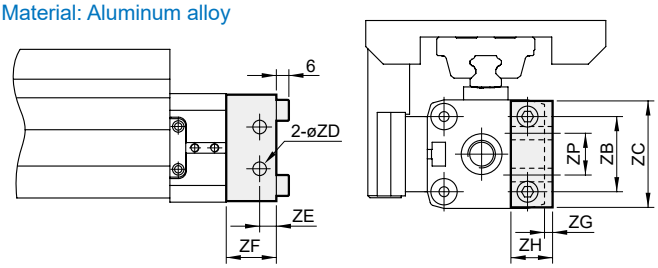
Mounting accessories

LB End cover bracket (foot)

ø16, ø25
Material: Carbon steel

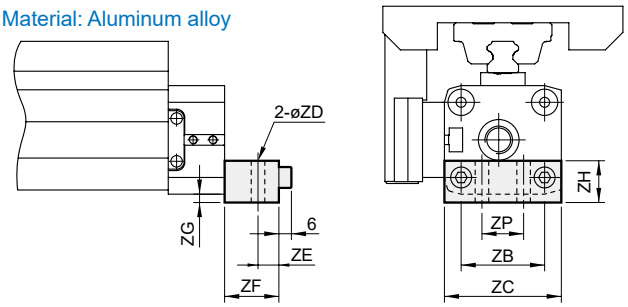


ø32, ø40
Material: Aluminum alloy



LB1 End cover bracket (foot)

ø32*
Material: Aluminum alloy



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