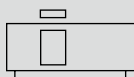


Magnet rodless cylinder with high precision guide

MRG2 Series

● Bore size: $\varnothing 10$, $\varnothing 16$, $\varnothing 25$

JIS symbol



Specifications

Item	MRG2			
Bore size	mm	$\varnothing 10$	$\varnothing 16$	$\varnothing 25$
Actuation		Double acting		
Working fluid		Compressed air		
Max. working pressure	MPa	0.7 (≈ 100 psi, 7 bar)		
Min. working pressure	MPa	0.3 (≈ 44 psi, 3 bar)	0.2 (≈ 29 psi, 2 bar)	
Proof pressure	MPa	1.05 (≈ 150 psi, 10.5 bar)		
Ambient temperature	$^{\circ}\text{C}$	5 (41 $^{\circ}\text{F}$) to 60 (140 $^{\circ}\text{F}$)		
Port size		M5		Rc1/8
Stroke tolerance	mm	+1.5 0		
Working piston speed	mm/s	50 to 1000		
Cushion		Shock absorber		
Lubrication		Not required (use turbine oil ISO VG32 if necessary for lubrication)		
Magnet holding force	N	63	166	350
Allowable absorbed energy	J	2.1	5.3	8.7

*1: Due to resistance of the shock absorber, it will take time to reach the stroke end. Take this into consideration upon use.

*2: Products other than standard stroke length are made-to-order products.

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	Min. stroke with switch (mm)
$\varnothing 10$	50, 100, 150, 200, 300	300	50	50 (with 2 pcs.) *2
$\varnothing 16$	50, 100, 150, 200, 300, 400, 500	500		
$\varnothing 25$	50, 100, 150, 200, 300, 400, 500, 600, 700	700		

*1: Products other than standard stroke length are made-to-order products.

*2: The min. stroke length for T1H, T2YH and T3YH with two switches is 70.

Switch specifications

- 1-color/2-color display

Item	Proximity 2-wire				Proximity 3-wire				Reed 2-wire			
	T1H/T1V	T2H/ T2V	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	TOH/TOV		T5H/T5V	
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay IC circuit (without indicator lamp), serial connection	
Output method	-				NPN output	PNP output	NPN output	NPN output	-			
Pwr. supp. V.	-				10 to 28 VDC				-			
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	110 VAC	5/12/24 VDC	110 VAC
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp	
Leakage current	1 mA or less with 100 VAC, 2 mA or less with 200 VAC	1 mA or less			10 µA or less				0 mA			
Weight g	1 m:33	1 m:18	1 m:33	1 m:18	1 m:18	1 m:33	1 m:18	1 m:18 3 m:49 5 m:80				
	3 m:87	3 m:49	3 m:87	3 m:49	3 m:49	3 m:87	3 m:49					
	5 m:142	5 m:80	5 m:142	5 m:80	5 m:80	5 m:142	5 m:80					

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3: The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

Cylinder weight

Unit (g)

Type	Without switch		Switch weight	Additional weight per full stroke length adjustable bracket
	Product weight when stroke length S = 0 mm	Additional weight per S = 100mm	per 1 grommet	
MRG2-10	610	180	18	75
MRG2-16	1170	280		110
MRG2-25	3270	490		200

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa					
		0.2	0.3	0.4	0.5	0.6	0.7
ø10	Push/Pull	-	23.6	31.4	39.3	47.1	55.0
ø16	Push/Pull	40.2	60.3	80.4	1.01 × 10 ²	1.21 × 10 ²	1.41 × 10 ²
ø25	Push/Pull	98.2	1.47 × 10 ²	1.96 × 10 ²	2.45 × 10 ²	2.95 × 10 ²	3.44 × 10 ²

Specifications for rechargeable battery (Catalog No. CC-1226A)

- Design compatible with rechargeable battery manufacturing process

MRG2 - - P4*

MRG2 Series

How to order

Without switch (built-in magnet for switch)



With switch (built-in magnet for switch)



A Bore size

B Stroke length

C Switch model No.

* indicates the lead wire length.
*3

D Switch quantity

E Option
*4

⚠ Precautions for model No. selection

*1: Refer to the switch mounting position dimensions (page 1771) for the R side and L side.

*2: Refer to page 1772 for the R side and L side stroke adjustment bracket positions.

*3: T type switches other than switch model No. are also available. (Made to order) Refer to Ending Page 1 for details.

*4: The full stroke length adjustable brackets cannot be retrofitted.

[Example of model No.]

MRG2-10-100-T2H-D-A

Model: Rodless cylinder high precision guide

A Bore size : $\phi 10$ mm

B Stroke length : 100 mm

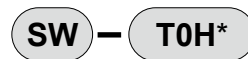
C Switch model No. : Proximity switch T2H

D Switch quantity : 2 pcs. included

E Option : With both sided full stroke length adjustable brackets

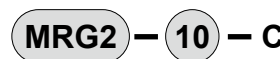
Code	Description					
A Bore size (mm)						
10	$\phi 10$					
16	$\phi 16$					
25	$\phi 25$					
B Stroke length (mm)						
	Bore size ϕ (mm)			10	16	25
50	50			●	●	●
100	100			●	●	●
150	150			●	●	●
200	200			●	●	●
300	300			●	●	●
400	400				●	●
500	500				●	●
600	600					●
700	700					●
C Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Display	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color display Without indicator lamp	2-wire
T5H*	T5V*		●	●		
T1H*	T1V*		●			
T2H*	T2V*	Proximity		●	1-color display	3-wire
T3H*	T3V*			●		
T3PH*	T3PV*		●		1-color display	3-wire
T2WH*	T2WV*			●	2-color display	
T2YH*	T2YV*			●		
T3WH*	T3WV*			●		3-wire
T3YH*	T3YV*		●			
* Lead wire length						
Blank	1 m (standard)					
3	3 m (option)					
5	5 m (option)					
D Switch quantity						
R	1 on R side (*1)					
L	1 on L side (*1)					
D	2					
T	3					
4	4 (when there are more than 4 switches, indicate switch quantity.)					
E Option						
A	With both-sided full stroke length adjustable brackets					
A1	With R side full stroke length adjustable bracket (*2)					
A2	With L side full stroke length adjustable bracket (*2)					

How to order switch



Switch model No.
(Item C above)

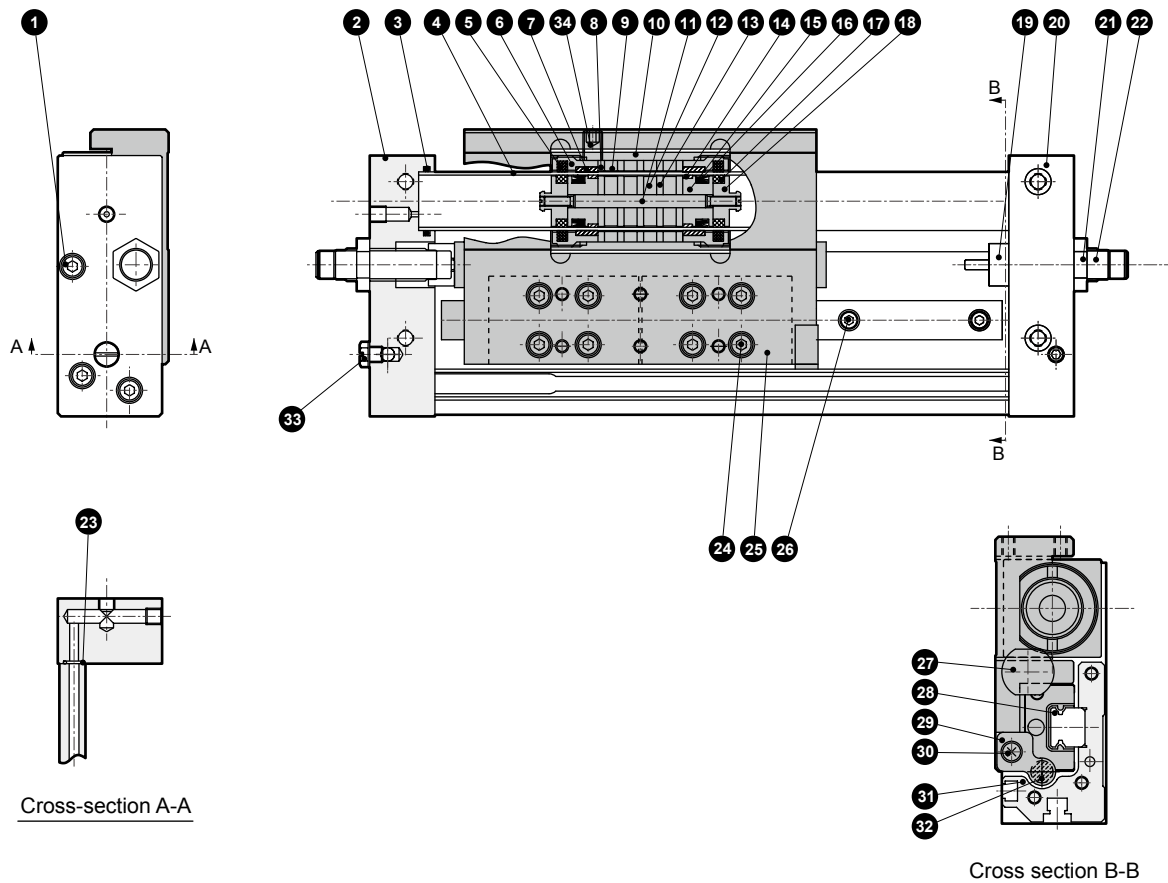
How to order discrete shock absorber



Bore size
(Item A above)

Internal structure and parts list

● MRG2 (High precision guide)



Cannot be disassembled

MRG2 (High precision guide)

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Hexagon socket head cap screw	Stainless steel		18	Piston (2)	Aluminum alloy	Chromate
2	End plate (L)	Aluminum alloy	Alumite	19	Stopper cap	Stainless steel	
3	O-ring	Nitrile rubber		20	End plate (R)	Aluminum alloy	Alumite
4	Cylinder tube	Stainless steel		21	Hexagon nut	Steel	Galvanizing
5	Lube keeping structure (for slider)	Special rubber		22	Shock absorber		
6	Slider cover	Aluminum alloy	Chromate	23	O-ring	Nitrile rubber	
7	Slider wear ring	Polyacetal resin		24	Hexagon socket head cap screw	Stainless steel	
8	Slider yoke	Steel	Galvanizing	25	Table	Aluminum alloy	Alumite
9	Magnet	Special alloy		26	Hexagon socket head cap screw	Stainless steel	
10	Slider	Aluminum alloy	Chromate	27	Rod bearer	Stainless steel	
11	Piston shaft	Stainless steel		28	Linear guide		
12	Magnet	Special alloy		29	Magnet holder	Polyacetal resin	
13	Piston yoke	Steel	Galvanizing	30	Cross-recessed pan head machine screw	Stainless steel	
14	Piston wear ring	Polyacetal resin		31	Base	Aluminum alloy	Alumite
15	Piston (1)	Aluminum alloy	Chromate	32	Magnet	Special alloy	
16	Piston packing	Nitrile rubber		33	Plug	Copper alloy or steel	
17	Lube keeping structure (for piston)	Special rubber		34	Hexagon socket set screw	Stainless steel	ø25 only

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/IN2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

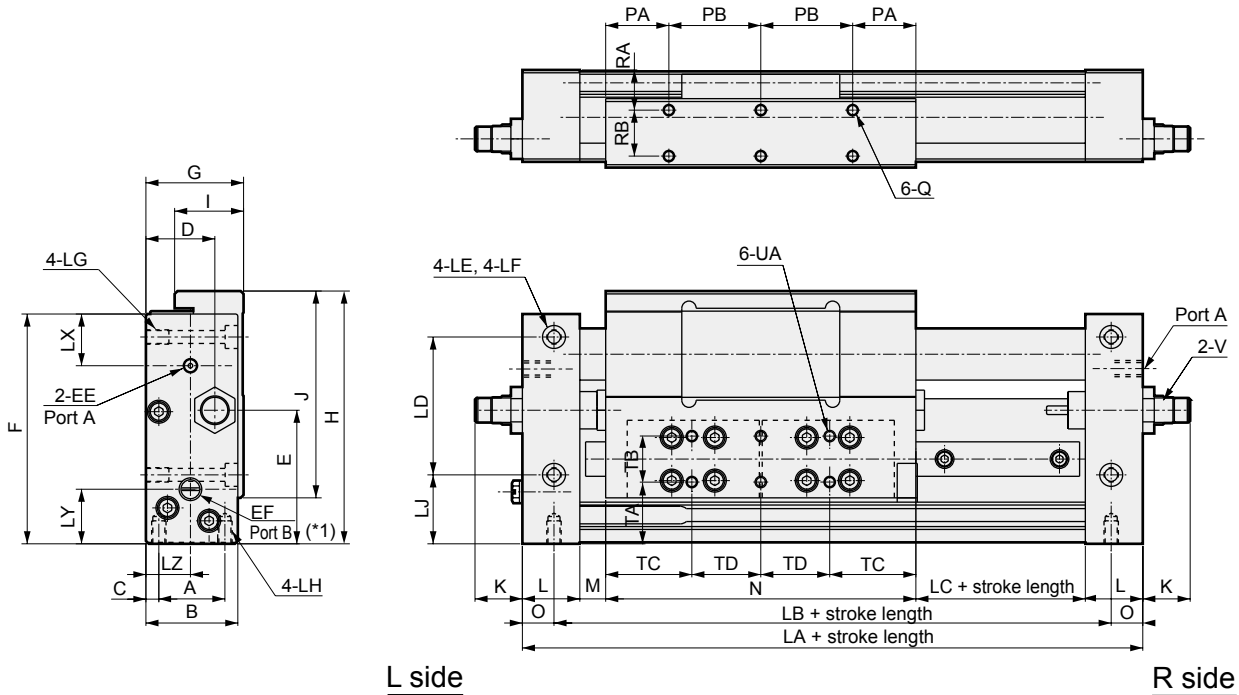
Ending

MRG2 Series

Dimensions



● MRG2 (High precision guide)



L side

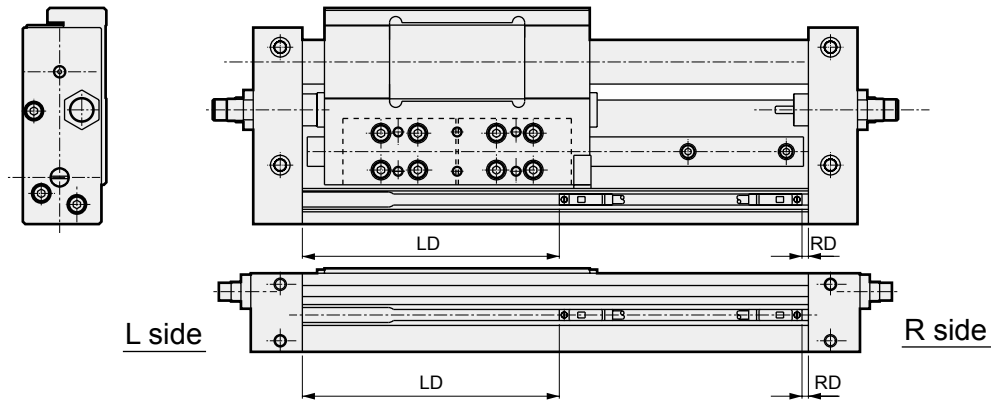
R side

Code	Dimensions					Mounting dimensions										
	Bore size (mm)	LA	B	G	F	H	O	LB	LD	LJ	LE	LF	LG	LH		
SMG	ø10	138	26	28	70	74	11	116	40	22	ø4.5	8 spot face depth 4.4	M5 depth 8	M4 depth 8		
	ø16	166	32	34	80	88	11	144	48	24	ø4.5	8 spot face depth 4.4	M5 depth 8	M5 depth 8		
	ø25	214	44	46	100	114	15	184	62	32	ø5.5	9.5 spot face depth 5.4	M6 depth 12	M6 depth 10		
Code	Mounting dimensions															
	Bore size (mm)	A	C	PA	PB	RA	RB	Q		TA	TB	TC	TD	UA		
STK	ø10	18	4	16	24	12	12	M4 depth 6		19.5	13	24	16	M4 depth 6		
	ø16	23	4.5	22	32	14	16	M4 depth 6		21.5	16	30	24	M4 depth 6		
	ø25	23	5.5	34	40	20	20	M6 depth 8		23	22	38	36	M6 depth 8		
Code	General dimensions															
	Bore size (mm)	D	LX	EE	LY	EF	LZ	E	I	J	K	L	M	N	LC	V
SRL3	ø10	19	18	M5 depth 4	17	M5 depth 4	11.5	38.5	20	58	14	20	9	80	9	MRG2-10-C
	ø16	24	18	M5 depth 4	19	M5 depth 4	15	46.5	24	72	16.5	20	9	108	9	MRG2-16-C
	ø25	32.5	23	Rc1/8	21.5	Rc1/8	23	55	32	98	19	25	8	148	8	MRG2-25-C

*1: When using single surface common piping, use by removing the plug of port B and attaching this plug to port A on the R side.

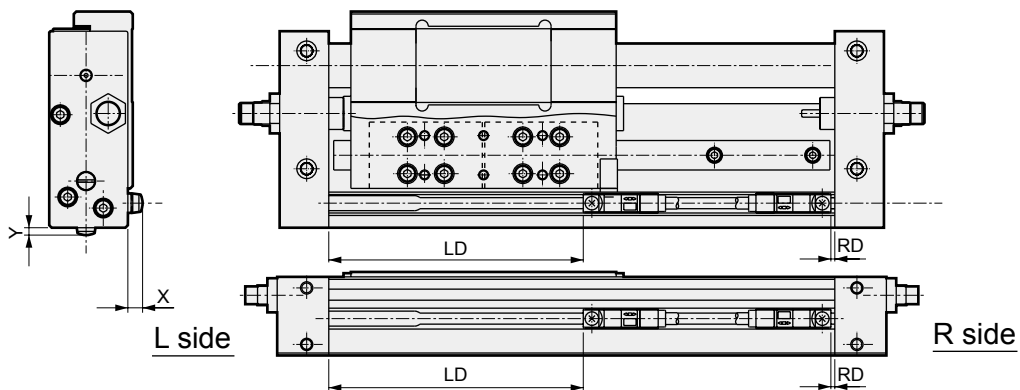
Switch mounting position dimensions

● MRG2- (switch: T0^{H/V}, T5^{H/V}, T2^{H/V}, T3^{H/V}, T2W^{H/V}, T3W^{H/V})



	Code	T0 ^{H/V} , T5 ^{H/V}		T2 ^{H/V} , T3 ^{H/V}		T2W ^{H/V} , T3W ^{H/V}	
	Bore size (mm)	RD	LD	RD	LD	RD	LD
MRG2	ø10	1.5	75.5	2.5	76.5	4.5	78.5
	ø16	1.5	103.5	2.5	104.5	4.5	106.5
	ø25	0.5	142.5	1.5	143.5	3.5	145.5
MRG2*-A	ø10	26.5	100.5	27.5	101.5	29.5	103.5
	ø16	26.5	128.5	27.5	129.5	29.5	131.5
	ø25	50.5	192.5	51.5	193.5	53.5	195.5
MRG2*-A1	ø10	51.5	75.5	52.5	76.5	54.5	78.5
	ø16	51.5	103.5	52.5	104.5	54.5	106.5
	ø25	100.5	142.5	101.5	143.5	103.5	145.5
MRG2*-A2	ø10	1.5	125.5	2.5	126.5	4.5	128.5
	ø16	1.5	153.5	2.5	154.5	4.5	156.5
	ø25	0.5	242.5	1.5	243.5	3.5	245.5

● MRG2- (switch: T1^{H/V}, T2Y^{H/V}, T3Y^{H/V})



	Code	T2Y ^{H/V} , T3Y ^{H/V}			
	Bore size (mm)	RD	LD	X	Y
MRG2	ø10	1.5	75.5	6(11.5)	3(8.5)
	ø16	1.5	103.5	6(11.5)	3(8.5)
	ø25	0.5	142.5	6(11.5)	3(8.5)
MRG2*-A	ø10	26.5	100.5	6(11.5)	3(8.5)
	ø16	26.5	128.5	6(11.5)	3(8.5)
	ø25	50.5	192.5	6(11.5)	3(8.5)
MRG2*-A1	ø10	51.5	75.5	6(11.5)	3(8.5)
	ø16	51.5	103.5	6(11.5)	3(8.5)
	ø25	100.5	142.5	6(11.5)	3(8.5)
MRG2*-A2	ø10	1.5	125.5	6(11.5)	3(8.5)
	ø16	1.5	153.5	6(11.5)	3(8.5)
	ø25	0.5	242.5	6(11.5)	3(8.5)

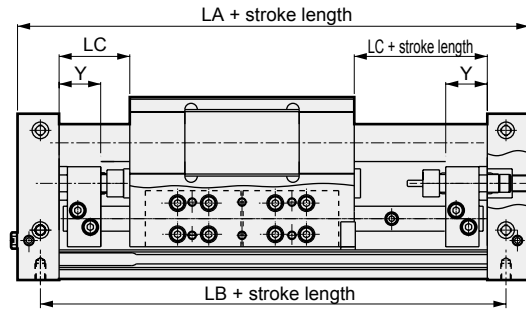
*1: Values in () are for T1^{H/V}.

SCP*3
CMK2
CMA2
SCM
SCG
SCA2
SCS2
CKV2
CAV2/
COVP/N2
SSD2
SSG
SSD
CAT
MDC2
MVC
SMG
MSD/
MSDG
FC*
STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2
SM-25
ShkAbs
FJ
FK
Spd
Contr
Ending

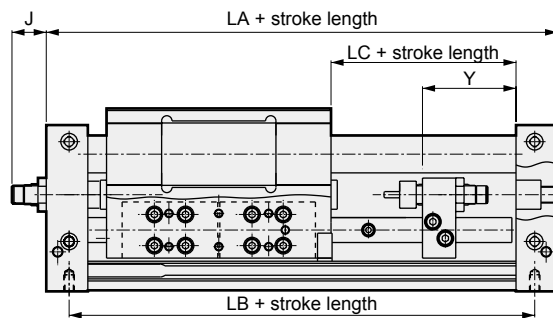
Dimensions



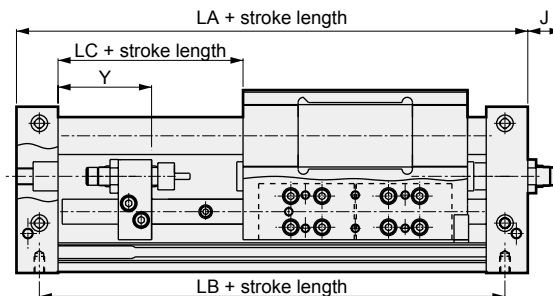
● MRG2*-A (high precision guide, with both sided full stroke length adjustable brackets)



● MRG2*-A1 (high precision guide, with R side full stroke length adjustable brackets)



● MRG2*-A2 (high precision guide, with L side full stroke length adjustable brackets)



Code	LA			LB			LC			Y			J											
	A	A1	A2	A	A1	A2	A	A1	A2	A	A1	A2	A	A1	A2									
Bore size (mm)																								
ø10	188			166			34			59			20			45			-			14		
ø16	216			194			34			59			20			45			-			16.5		
ø25	314			284			58			108			41			91			-			19		