Products Information

CATALOG NO. M2024-03

CSK Motion Technology Co., Ltd.

TEL +86 16653137076 **E-mail** info@cskmotions.com

CSK Motion Technology

CSK Motion Technology Co., Ltd. was established in 2010. CSK is a company which is professionally manufacturing precision linear motion products. CSK possess a strong team which is expertized in aspects of R&D, manufacturing, and QA. CSK own superior and modernized precision facilities to mass-produce the linear guideway with accuracy as higher as UP grade(≦3μ).
Therefore, CSK is one of the few qualified manufacturers producing the super precision linear guideway in the world.
Recently, we are more active in the development of linear motor stage, module, direct drive rotary motor and other products, providing customized solutions in precision transmission system. CSK' s objective is to provide world class quality products and service with favorable price and short delivery time to customers. Base on continuous improvement and innovation of linear motion technologies, CSK' s vision is to become an eternal enterprise and by establishing the key core techniques to achieve the better welfare and environment for our global village.

TEL +86 16653137076 E-mail info@cskmotions.com

Contents

TEL +86 16653137076 **E-mail** info@cskmotions.com

Contents

Contents

TEL +86 16653137076 **E-mail** info@cskmotions.com

Contents

CSK CHINA

CSK Motions Technology Co, Ltd.

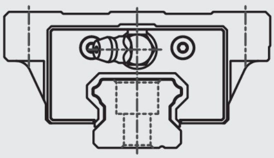
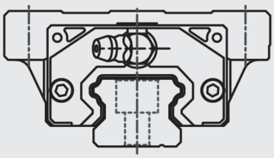
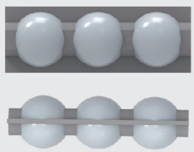
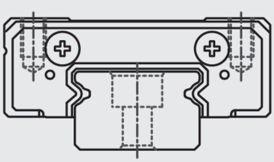
Industrial Zone, Madian Town, Jiaozhou, Qingdao, China

TEL +86 16653137076

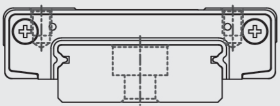
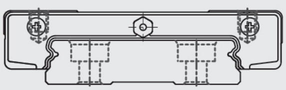
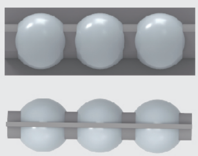
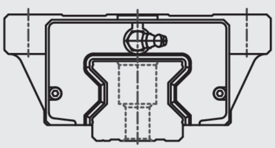
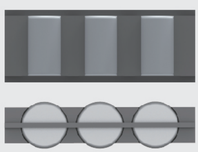
E-mail info@cskmotions.com

www.cskmotions.com

Guide Type

LMG series	Full Ball Type	Page
		A-16
LMGQ series	Ball Linker	Page
		A-28
LMN series	Full Ball Type	Page
		B-01

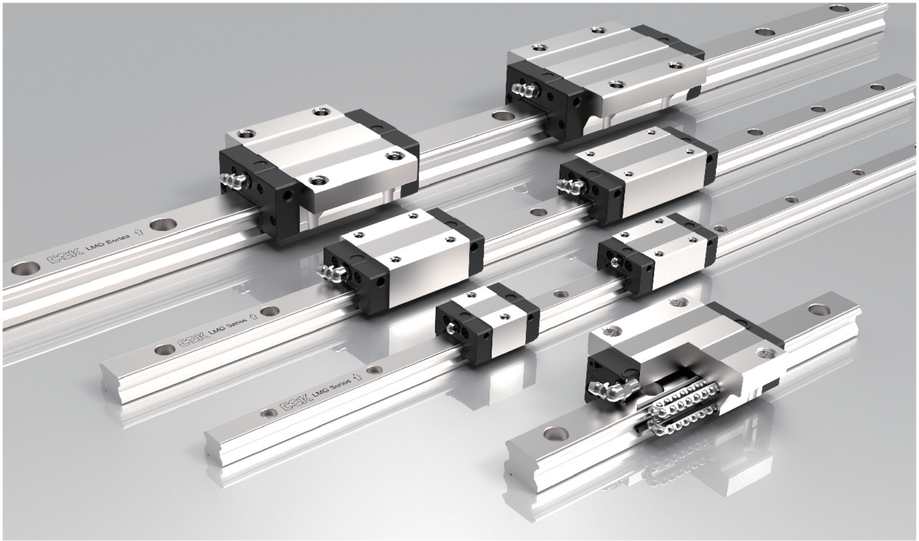
Guide Type

LMNW7/9/12 series	Full Ball Type	Page
		B-01
LMNW15 series	Ball linkage	Page
		B-01
LMR series	Roller Linker	Page
		C-01

MELUCCI TECHNOLOGIES

CSK MOTION TECHNOLOGY

Linear Guideway
LMG/GQ series

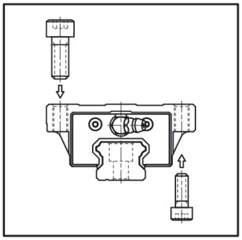


TEL +86 16653137076 E-mail info@cskmotions.com

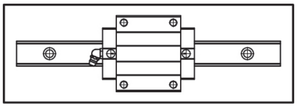
Carriage Type

Contour	Length	Spec. Code

Flange type

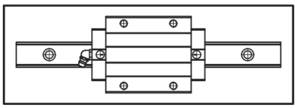


Heavy load



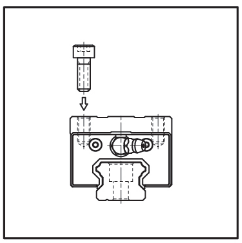
C / TC

Ultra heavy load

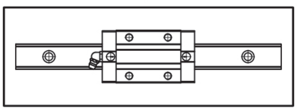


LC

Square high type

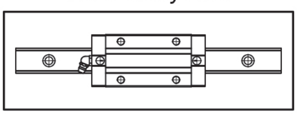


Heavy load



H

Ultra heavy load

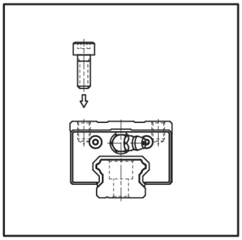


LH

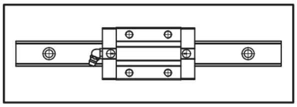
Carriage Type

Contour	Length	Spec. Code

Square medium type

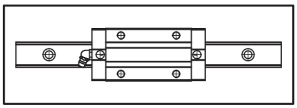


Heavy load



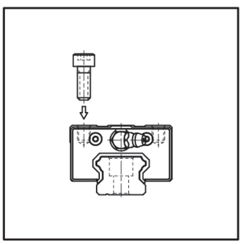
V

Ultra heavy load

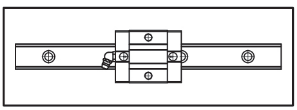


LV

Square compact type

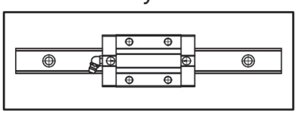


Medium load



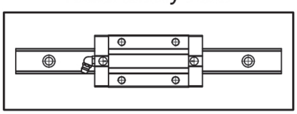
ST

Heavy load



T

Ultra heavy load

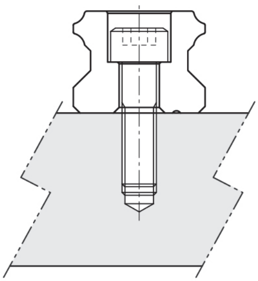


LT

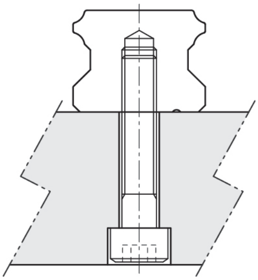
TEL +86 16653137076 E-mail info@cskmotions.com

Rail Type

Counter bore (R, U type)



Tapped hole (T type)



(1) For Butt-joint Rail

When applied length of rail longer than specified max. length, the rails can be connected to one another. For this situation, the joint marks indicate the matching position.
Accuracy may deviate at joints when carriages pass the joint simultaneously. Therefore, the joints should be interlaced for avoiding such accuracy problem.

Butt-Joint

● Dentification of butt-joint rail

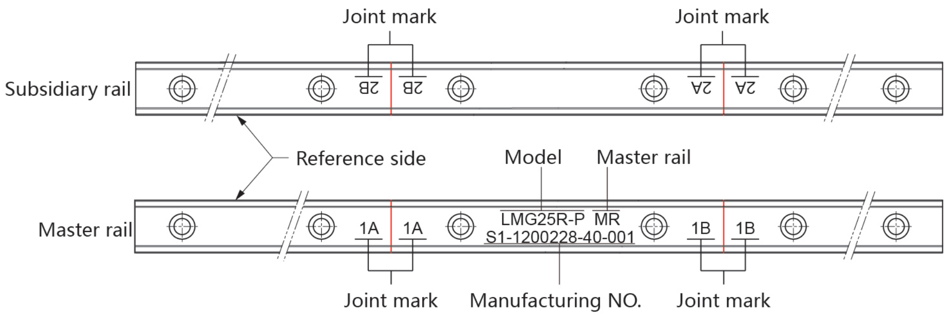


Fig. (A)

●Staggering the joint position

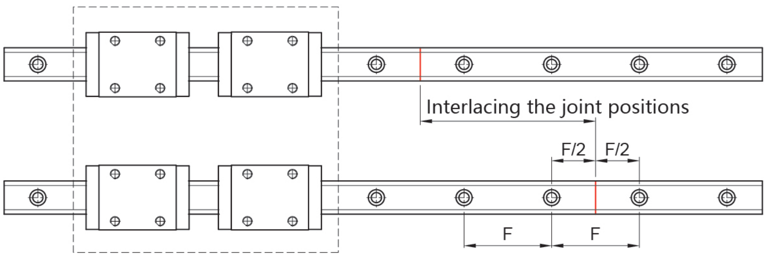


Fig. (B)

TEL +86 16653137076 E-mail info@cskmotions.com

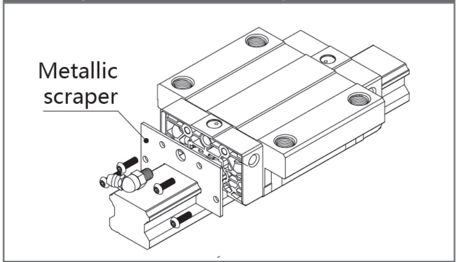
Dust Proof

(1) Code of contamination protection for carriage

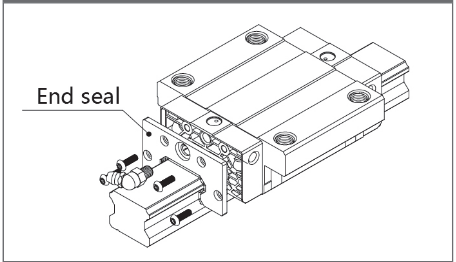
● Contamination protection

LMG series of linear guideway offers various kinds of dust proof accessory to keep the foreign matters from entering into the carriage.

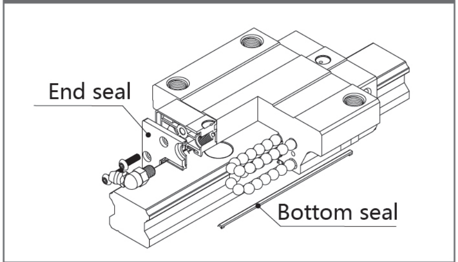
● No symbol Metallic scraper (both ends)



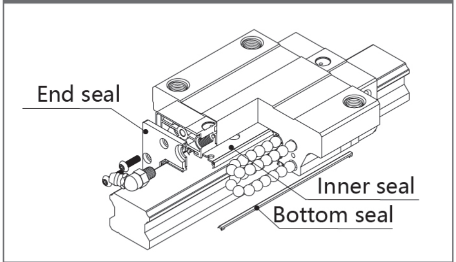
● UU Bidirectional end seal (both ends)



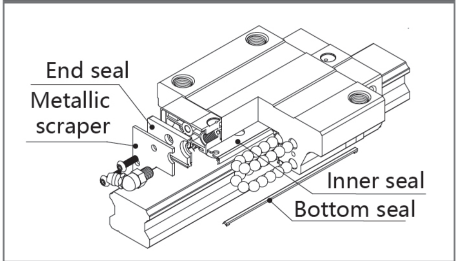
● SS Bidirectional end seal + Bottom seal



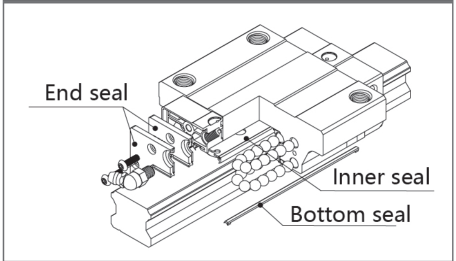
● VV Bidirectional end seal + Bottom seal + Inner seal



● ZZ SS + Metallic scraper

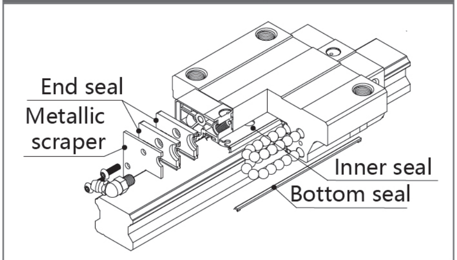


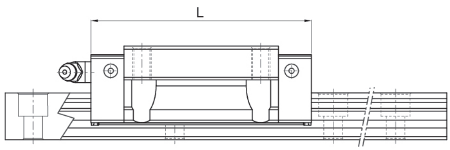
● DD Double bidirectional end seal+ Bottom seal + Inner seal



Dust Proof

● KK DD + Metallic scraper





● Types of Dust Proof accessories, and the increment to be added to the carriage overall length The increment to be added to the length of carriage with different applications of dust proof accessory is shown below.

Model No.	No symbol	UU	SS	VV	ZZ	DD	KK
LMG 15	-	-	-	-	7	6	13
LMG 20	-	-	-	-	7	6	13
LMG 25	-	-	-	-	7	6	13
LMG 30	-	-	-	-	7	6	13
LMG 35	-	-	-	-	7	6	13
LMG 45	-	-	-	-	7	6	13
LMG 55	-	-	-	-	7	6	13

TEL +86 16653137076 E-mail info@cskmotions.com

Dust Proof

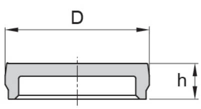
(2) Code of contamination protection for rail

● Caps for rail mounting hole

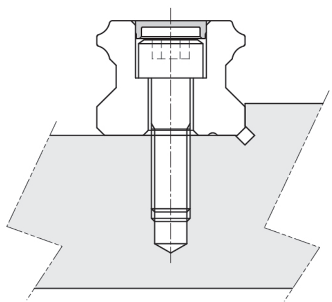
A special designed of cap is used to cover the bolt hole to prevent the foreign matters from entering the carriage.

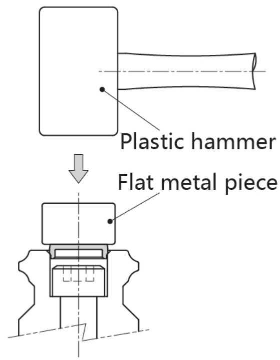
● Installation of plastic cap

Put the plate on the cap,then pound it into the bolt of rail with rubber hammer vertically. Continue pounding the cap until the cap is on the same plane with the top surface of rail.



plastic cap





● Plastic Cap

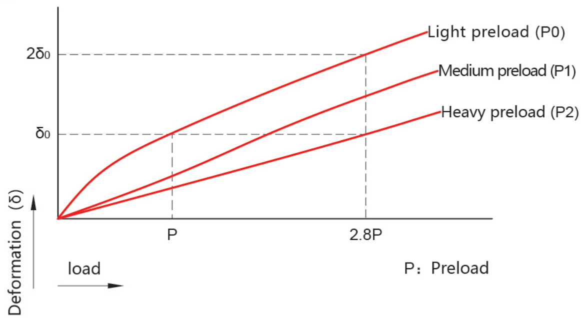
Code of Plastic Cap	Bolt Size	D (mm)	h (mm)	Rail Model
L3	M3	6.2	1.1	LMG/GQ 15U
L4	M4	7.5	1.1	LMG/GQ 15R
L5	M5	9.7	2.4	LMG/GQ 20R
L6	M6	11.2	2.8	LMG/GQ 25R, LMG 30U
L8	M8	14.2	3.3	LMG 30R, LMG 35R
L12	M12	20.2	4.5	LMG 45R
L14	M14	23.2	5.5	LMG 55R

Preload

Since the radial chearance of the linear guideway greatly affects the running accuracy,load carrying capacity and rigidity of the linear guideway, it is important to select an appropriate clearance according to the application. in general,selecting a negative clearance while taking into account possible vibrations and impact generated from reciprocating motion favorably affects the service life and the accuracy.

(1) Preload and Rigidity

Selecting appropriate preload to adapt the rigidity of machiney and equipment.
The rigidity of a linear guideway could be enhanced by increasing he preload. As shown as below figure, the load could be raised up to 2.8 times the preload applied.



(2) Preload and Service life

The preload is represented by negative clearance resulting from the increase of rolling element diameter. Therefore, the preload should be considered in calculation service life.

TEL +86 16653137076 E-mail info@cskmotions.com

Preload Grade

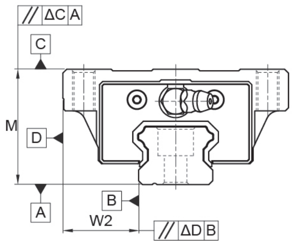
Preload grade	Code	Preload	Operating Condition
Light preload	P0	0~0.02C	● The loading direction is fixed, vibration and impact are light, and two axes are applied in parallel. ● High precision is not required, and the low frictional resistance is needed.
Medium preload	P1	0.04~0.06C	● Overhang application with a moment load. ● Applied in one-axis configuration ● The need of light preload and high precision.
Heavy preload	P2	0.07~0.09C	● Machine is subjected to vibration and impact, and high rigidity required. ● Application of heavy load or heavy cutting.

Note: The preload is the percentage of basic dynamic load rating (C).

MELUCCI TECHNOLOGIES CSK MOTION TECHNOLOGY

Accuracy Grade

The accuracy of LMG series is divided into five classes, Normal grade (N), High accuracy grade (H), Precision grade (P), Super precision grade (SP) and Ultra precision grade (UP).



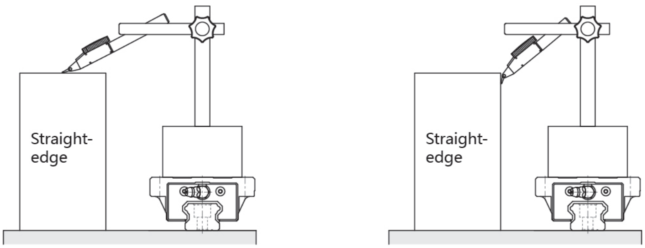
Unit (mm)

Model No.	Item	Accuracy Grade				
		Normal N	High H	Precision P	Super Precision SP	Ultra Precision UP
15 20	Tolerance for height M	±0.1	±0.03	0 -0.03	0 -0.015	0 -0.008
	Height difference ΔM	0.02	0.01	0.006	0.004	0.003
	Tolerance for distance W2	±0.1	±0.03	0 -0.03	0 -0.015	0 -0.008
	Difference in distance W2 (ΔW2)	0.02	0.01	0.006	0.004	0.003
	Running parallelism of surface C with surface A	ΔC (see Running parallelism of carriage)				
	Running parallelism of surface D with surface B	ΔD (see Running parallelism of carriage)				
25 30 35	Tolerance for height M	±0.1	±0.04	0 -0.04	0 -0.02	0 -0.01
	Height difference ΔM	0.02	0.015	0.007	0.005	0.003
	Tolerance for distance W2	±0.1	±0.04	0 -0.04	0 -0.02	0 -0.01
	Difference in distance W2 (ΔW2)	0.03	0.015	0.007	0.005	0.003
	Running parallelism of surface C with surface A	ΔC (see Running parallelism of carriage)				
	Running parallelism of surface D with surface B	ΔD (see Running parallelism of carriage)				
45 55	Tolerance for height M	±0.1	±0.05	0 -0.05	0 -0.03	0 -0.02
	Height difference ΔM	0.03	0.015	0.007	0.005	0.003
	Tolerance for distance W2	±0.1	±0.05	0 -0.05	0 -0.03	0 -0.02
	Difference in distance W2 (ΔW2)	0.03	0.02	0.01	0.007	0.005
	Running parallelism of surface C with surface A	ΔC (see Running parallelism of carriage)				
	Running parallelism of surface D with surface B	ΔD (see Running parallelism of carriage)				

TEL +86 16653137076 E-mail info@cskmotions.com

Running Parallelism

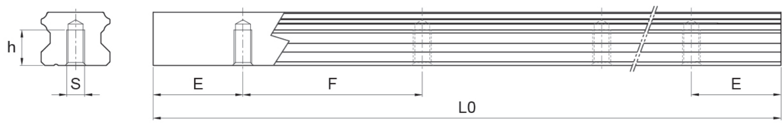
The running accuracy is the deviation of parallelism between the reference surface of carriage and reference surface of rail when carriage moving over the entire length of rail.



Measurement of running parallelism

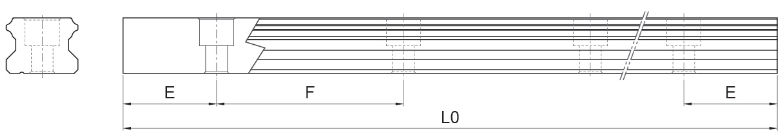
Rail length (mm)		Running Parallelism Values (μm)				
Above	Or less (incl.)	Normal N	High H	Precision P	Super Precision SP	Ultra Precision UP
0	315	9	6	3	2	1.5
315	400	11	8	4	2	1.5
400	500	13	9	5	2	1.5
500	630	16	11	6	2.5	1.5
630	800	18	12	7	3	2
800	1000	20	14	8	4	2
1000	1250	22	16	10	5	2.5
1250	1600	25	18	11	6	3
1600	2000	28	20	13	7	3.5
2000	2500	30	22	15	8	4
2500	3000	32	24	16	9	4.5
3000	3500	33	25	17	11	5
3500	4000	34	26	18	12	6

Tapped Hole Rail Dimensions



Model	S	h (mm)
LMG/GQ 15T	M5	8
LMG/GQ 20T	M6	10
LMG/GQ 25T	M6	12
LMG 30T	M8	15
LMG 35T	M8	17
LMG 45T	M12	24
LMG 55T	M14	24

Rail Maximum Length and Standard



Unit (mm)

Size	LMG/GQ 15	LMG/GQ 20	LMG/GQ 25	LMG 30	LMG 35	LMG 45	LMG 55
Standard Pitch (F)	60	60	60	80	80	105	120
Standard (Estd.)	20	20	20	45	45	22.5	30
Minimum (Emin.)	5	6	7	8	8	11	13
Maximum Length (L0)	4000	4000	4000	4000	4000	4000	4000

TEL +86 16653137076 E-mail info@cskmotions.com

Recommended Torque Value for Fastening Bolts on Linear Guideway

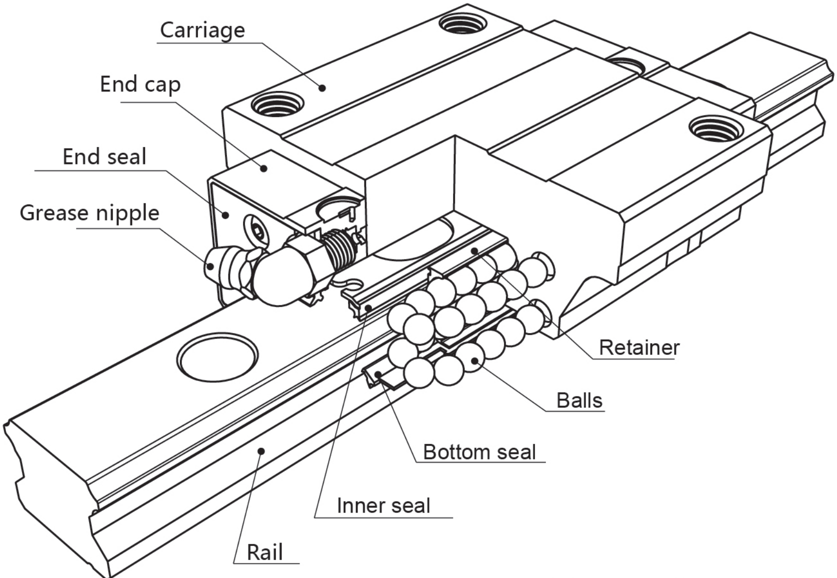
When installing linear guideway, the tightening force of assembly bolts significantly impacts overall assembly precision. Therefore, uniformity in the tightening force is crucial. It is recommended to use a torque wrench to tighten assembly bolts according to the torque values provided in the table below. Keep in mind that the torque values for bolts may vary based on the material of the mounting surface.

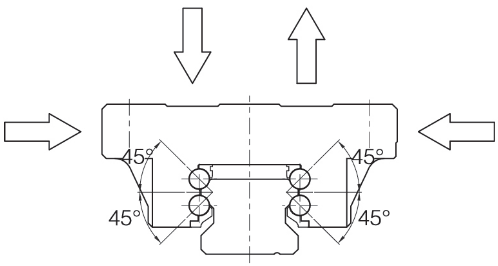
Unit (mm)

Nominal Size of Bolts	Tightening Torque Value		
	Iron components	Cast Components	Aluminum Alloy Components
M3×0.5P	2	1.3	1
M4×0.7P	4	2.7	2
M5×0.8P	8.8	5.9	4.4
M6×1P	13.7	9.2	6.8
M8×1.25P	30	20	15
M10×1.5P	68	45	33
M12×1.75P	120	78	58
M14×2P	157	105	78
M16×2P	196	131	98
M20×2.5P	382	255	191

*1 N-m = 0.738 lbf-ft

LMG series





Note：For reference only.

TEL +86 16653137076 E-mail info@cskmotions.com

Characteristics

The four trains of balls are designed with a contact angle of 45° which enables it not only to bear load equally in radial, reversed radial and lateral directions but also can achieve high rigidity and high loading capacity. Therefore, it is suitable for all directional installation. Furthermore the unique self alignment function of LMG series can compensate the certain error while assembling, and which results in high precision and smooth motion.

- High rigidity
- Four-way equal load
- Self alignment capability
- Complete dust sealing system
- High positioning accuracy
- Smooth movement
- Low noise and high speed application
- Interchangeability
- Carriage common rail design
- International standard

Applications

Machine Tool（CNC、Lathe …）

Industrial Robot

Semiconductor Manufacturing Equipment

Other（Injection Molding Machine …）

Specifications

(1) Non-Interchangeable type

LMG 20 C M 2 SS P1 SR +R 1000 -20 /20 P II

Series: LMG

Size: 15, 20, 25, 30, 35, 45, 55

Carriage type

(1) Heavy load

C: Flange type, mounting either from top or bottom

TC: Flange type, mounting either from top or bottom

H: Square high type

V: Square medium type

T: Square compact type

(2) Ultra heavy load

LC: Flange type, mounting either from top or bottom

LH: Square high type

LV: Square medium type

LT: Square compact type

(3) Medium load

ST: Square compact type

Accessories: No symbol, M (Metal End Cap), E (Electrolyte Resistant)

Number of carriages per rail: 1, 2, 3 ... ..

Dust proof option: No symbol, UU, SS, VV, ZZ, DD, KK

Preload: P0 (Light preload), P1 (Medium preload), P2 (Heavy preload)

Accessories: No symbol, SR (Self-Lubricating Module)

Code of special carriage: A, B ... (Standard rail is no symbol)

Rail type: R, U* (Counter-bore type), T (Tapped hole type)

Rail length (mm)

Rail hole pitch from start side (E1, see Figure below)

Rail hole pitch to the end side (E2, see Figure below)

Accuracy grade: N, H, P, SP, UP

Code of special rail: A, B ... (Standard rail is no symbol)

Number of rails per axis: No symbol, II, III, IV ...

*U type rail is only applicable for LMG15 and LMG30, detail information please see the specification table for the corresponding model number.

TEL +86 16653137076 E-mail info@cskmotions.com

Specifications

(2) Interchangeable type

● Code of Carriage

LMG 20 C M SS P0 SR N __

Series: LMG
Size: 15, 20, 25, 30, 35, 45, 55
Carriage type
(1) Heavy load
C: Flange type, mounting either from top or bottom
TC: Flange type
H: Square high type
V: Square medium type
T: Square compact type
(2) Ultra heavy load
LC: Flange type, mounting either from top or bottom
LH: Square high type
LV: Square medium type
LT: Square compact type
(3) Short type
ST: Square compact type
Accessories: No symbol, M (Metal End Cap) , E (Electrolyte Resistant)
Dust proof option: No symbol, UU, SS, VV, ZZ, DD, KK
Preload: P0 (Light preload)
Accessories: No symbol, SR (Self-Lubricating Module)
Accuracy grade: N, H
Code of special carriage: A, B ... (Standard carriage is no symbol)

● Code of Rail

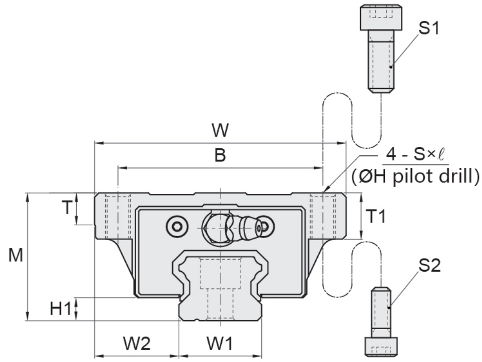
LMG 20 R 1000 -20 /20 N __

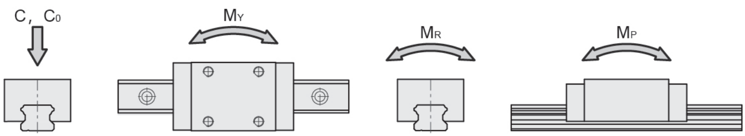
Series: LMG
Size: 15, 20, 25, 30, 35, 45, 55
Rail type: R, U* (Counter-bore type) , T (Tapped hole type)
Rail length (mm)
Rail hole pitch from start side (E1, see Figure below)
Rail hole pitch to the end side (E2, see Figure below)
Accuracy grade: N, H
Code of special rail: A, B ... (Standard rail is no symbol)

*U type rail is only applicable for LMG15 and LMG30, detail information please see the specification table for the corresponding model number.

Dimensions of LMG···C / LC

Model No.	Bolt Size		Pilot drill
	S1	S2	H
LMG15	M5	M4	4.4
LMG20	M6	M5	5.3
LMG25	M8	M6	6.9
LMG30	M10	M8	8.6
LMG35	M10	M8	8.6
LMG45	M12	M10	10.4
LMG55	M14	M12	12.5



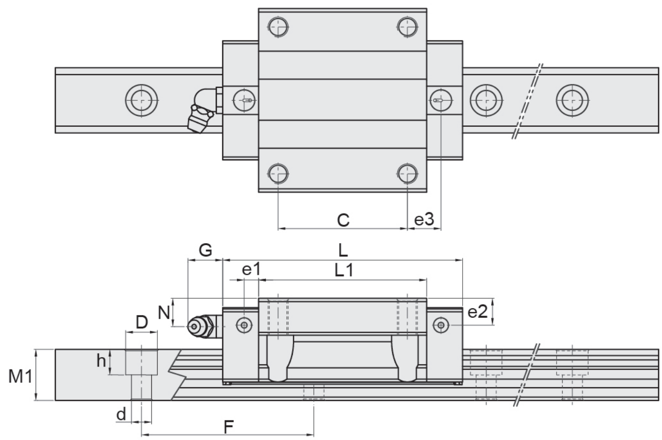


Unit (mm)

Model No.	External dimension			Carriage dimension												
	Height	Width	Length													
	M	W	L	B	C	Mounting hole S×ℓ	L1	T	T1	H1	N	e1	e2	e3	G	Grease nipple
LMG15 C	24	47	58.2	38	30	M5×8	39.5	5.5	8	4.5	5	3.3	4	8.6	5	M4×0.7
LMG20 C	30	63	75	53	40	M6×10	52.5	7	10	4.6	8.5	4.5	7	10.8	12	M6×0.75
LMG20 LC	30	63	87.4	53	40	M6×10	64.9	7	10	4.6	8.5	4.5	7	18	12	M6×0.75
LMG25 C	36	70	83.8	57	45	M8×13	58.8	9	13	6	10	5	9.5	11.8	12	M6×0.75
LMG25 LC	36	70	102.8	57	45	M8×13	77.8	9	13	6	10	5	9.5	21.3	12	M6×0.75
LMG30 C	42	90	98	72	52	M10×15	69.8	10	15	8	8	6	8	14	12	M6×0.75
LMG30 LC	42	90	120.2	72	52	M10×15	92	10	15	8	8	6	8	25.1	12	M6×0.75
LMG35 C	48	100	111.2	82	62	M10×15	80.2	10	15	9.5	8	7.5	8	15.6	12	M6×0.75
LMG35 LC	48	100	136.6	82	62	M10×15	105.6	10	15	9.5	8	7.5	8	28.3	12	M6×0.75
LMG45 C	60	120	137.8	100	80	M12×18	102.2	12	18	11	10	8.5	10	17.6	13.5	PT 1/8
LMG45 LC	60	120	169.5	100	80	M12×18	133.9	12	18	11	10	8.5	10	33.5	13.5	PT 1/8
LMG55 C	70	140	166	116	95	M14×25	126	15	25	13	12	9	10.5	33.5	13.5	PT 1/8
LMG55 LC	70	140	204	116	95	M14×25	164	15	25	13	12	9	10.5	42.5	13.5	PT 1/8

TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of LMG···C / LC

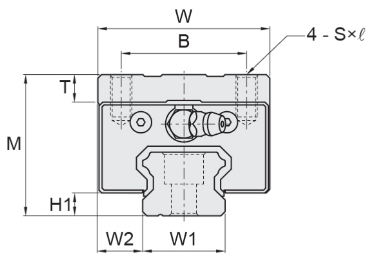


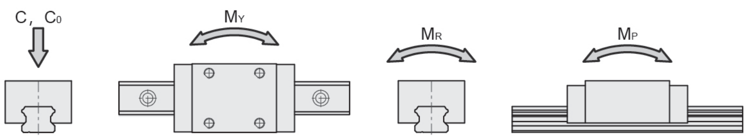
Unit (mm)

Model No.	Rail dimension					Basic load rating		Static moment rating					Weight	
	Width		Height	Pitch	Mounting bolt hole	Dynamic	Static	M_P (KN·m)		M_Y (KN·m)		M_R	Carriage	Rail
	W1	W2	M1	F	D×h×d	C KN	C_0 KN	Single Carriage	Double Carriages	Single Carriage	Double Carriages	KN·m	Kg	Kg/m
LMG15 C	15	16	13	60	7.5×5.3×4.5*	11.8	18.9	0.13	0.76	0.13	0.76	0.15	0.19	1.29
LMG20 C	20	21.5	15	60	9.5×8.5×6	20	32	0.30	1.68	0.30	1.68	0.33	0.42	1.92
LMG20 LC	20	21.5	15	60	9.5×8.5×6	23.2	39.3	0.44	2.36	0.44	2.36	0.41	0.53	1.92
LMG25 C	23	23.5	18	60	11×9×7	27.9	42.5	0.44	2.47	0.44	2.47	0.51	0.62	2.67
LMG25 LC	23	23.5	18	60	11×9×7	34.2	56.6	0.76	3.99	0.76	3.99	0.67	0.81	2.67
LMG30 C	28	31	23	80	14×12×9*	38.8	57.8	0.70	3.88	0.70	3.88	0.83	1.10	4.48
LMG30 LC	28	31	23	80	14×12×9*	47.5	77.1	1.21	6.28	1.21	6.28	1.11	1.43	4.48
LMG35 C	34	33	26	80	14×12×9	51.7	75.5	1.04	5.72	1.04	5.72	1.31	1.50	6.24
LMG35 LC	34	33	26	80	14×12×9	63.2	100.7	1.81	9.29	1.81	9.29	1.75	1.94	6.24
LMG45 C	45	37.5	32	105	20×17×14	83.2	118.0	2.03	10.89	2.03	10.89	2.71	2.83	10.25
LMG45 LC	45	37.5	32	105	20×17×14	101.7	157.3	3.54	17.76	3.54	17.76	3.62	3.68	10.25
LMG55 C	53	43.5	44	120	23×20×16	130	184	2.08	12.35	2.08	12.35	5.12	6.35	15.08
LMG55 LC	53	43.5	44	120	23×20×16	156	241	3.49	19.14	3.49	19.14	6.69	7.67	15.08

*1.Rail mounting hloes for M3 bolt (6×4.5×3.5) and M4 bolt (7.5×5.3×4.5) are available for LMG15 rail.
The codes of rail type are LMG15R for M4 bolt, and LMG15U for M3 bolt.
2.Rail mounting hloes for M6 bolt (11×9×7) and M8 bolt (14×12×9) are available for LMG30 rail.
The codes of rail type are LMG30R for M8 bolt, and LMG30U for M6 bolt.

Dimensions of LMG···H / LH

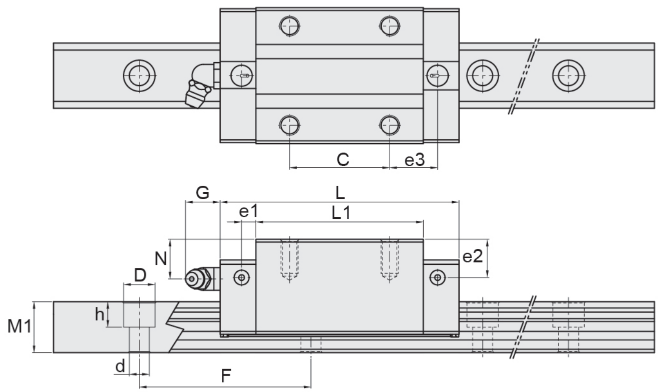




Unit (mm)

Model No.	External dimension			Carriage dimension											
	Height	Width	Length												
	M	W	L	B	C	Mounting hole S×ℓ	L1	T	H1	N	e1	e2	e3	G	Grease nipple
LMG15 H	28	34	58.2	26	26	M4×7	39.5	6	4.5	9	3.3	8	10.6	5	M4×0.7
LMG15 LH	28	34	72.6	26	34	M4×7	53.6	6	4.5	9	3.3	8	13.7	5	M4×0.7
LMG20 H	30	44	75	32	36	M5×8	52.5	6	4.6	8.5	4.5	7	12.8	12	M6×0.75
LMG20 LH	30	44	87.4	32	50	M5×8	64.9	6	4.6	8.5	4.5	7	13	12	M6×0.75
LMG25 H	40	48	83.8	35	35	M6×12	58.8	8	6	14	5	13.5	16.8	12	M6×0.75
LMG25 LH	40	48	102.8	35	50	M6×12	77.8	8	6	14	5	13.5	18.8	12	M6×0.75
LMG30 H	45	60	98	40	40	M8×12	69.8	8	8	11	6	11	20	12	M6×0.75
LMG30 LH	45	60	120.2	40	60	M8×12	92	8	8	11	6	11	21.1	12	M6×0.75
LMG35 H	55	70	111.2	50	50	M8×14	80.2	11	9.5	15	7.5	15	21.6	12	M6×0.75
LMG35 LH	55	70	136.6	50	72	M8×14	105.6	11	9.5	15	7.5	15	23.3	12	M6×0.75
LMG45 H	70	86	137.8	60	60	M10×20	102.2	16	11	20	8.5	20	27.6	13.5	PT 1/8
LMG45 LH	70	86	169.5	60	80	M10×20	133.9	16	11	20	8.5	20	33.5	13.5	PT 1/8
LMG55 H	80	100	166	75	75	M12×18	126	17	13	22	9	20.5	33.5	13.5	PT 1/8
LMG55 LH	80	100	204	75	95	M12×18	164	17	13	22	9	20.5	42.5	13.5	PT 1/8

Dimensions of LMG···H / LH

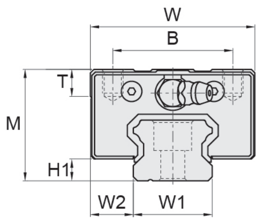


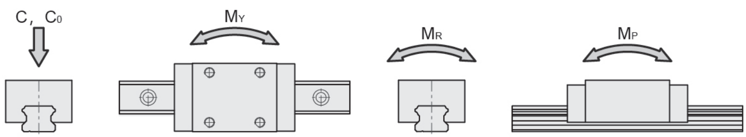
Unit (mm)

Model No.	Rail dimension					Basic load rating		Static moment rating					Weight	
	Width		Height	Pitch	Mounting bolt hole	Dynamic	Static	M_P (KN·m)		M_Y (KN·m)		M_R	Carriage	Rail
	W1	W2	M1	F	D×h×d	C KN	C_0 KN	Single Carriage	Double Carriages	Single Carriage	Double Carriages	KN·m	Kg	Kg/m
LMG15 H	15	9.5	13	60	7.5×5.3×4.5*	11.8	18.9	0.13	0.76	0.13	0.76	0.15	0.19	1.29
LMG15 LH	15	9.5	13	60	7.5×5.3×4.5*	14.4	25.2	0.23	1.29	0.23	1.29	0.2	0.27	1.29
LMG20 H	20	12	15	60	9.5×8.5×6	20	32	0.30	1.68	0.30	1.68	0.33	0.33	1.92
LMG20 LH	20	12	15	60	9.5×8.5×6	23.2	39.3	0.44	2.36	0.44	2.36	0.41	0.41	1.92
LMG25 H	23	12.5	18	60	11×9×7	27.9	42.5	0.44	2.47	0.44	2.47	0.51	0.55	2.67
LMG25 LH	23	12.5	18	60	11×9×7	34.2	56.6	0.76	3.99	0.76	3.99	0.67	0.72	2.67
LMG30 H	28	16	23	80	14×12×9*	38.8	57.8	0.70	3.88	0.70	3.88	0.83	0.87	4.48
LMG30 LH	28	16	23	80	14×12×9*	47.5	77.1	1.21	6.28	1.21	6.28	1.11	1.13	4.48
LMG35 H	34	18	26	80	14×12×9	51.7	75.5	1.04	5.72	1.04	5.72	1.31	1.44	6.24
LMG35 LH	34	18	26	80	14×12×9	63.2	100.7	1.81	9.29	1.81	9.29	1.75	1.88	6.24
LMG45 H	45	20.5	32	105	20×17×14	83.2	118.0	2.03	10.89	2.03	10.89	2.71	2.85	10.25
LMG45 LH	45	20.5	32	105	20×17×14	101.7	157.3	3.54	17.76	3.54	17.76	3.62	3.70	10.25
LMG55 H	53	23.5	44	120	23×20×16	130	184	2.08	12.35	2.08	12.35	5.12	6.18	15.08
LMG55 LH	53	23.5	44	120	23×20×16	156	241	3.49	19.14	3.49	19.14	6.69	7.45	15.08

*1.Rail mounting hloes for M3 bolt (6×4.5×3.5) and M4 bolt (7.5×5.3×4.5) are available for LMG15 rail.
The codes of rail type are LMG15R for M4 bolt, and LMG15U for M3 bolt.
2.Rail mounting hloes for M6 bolt (11×9×7) and M8 bolt (14×12×9) are available for LMG30 rail.
The codes of rail type are LMG30R for M8 bolt, and LMG30U for M6 bolt.

Dimensions of LMG···ST / T / LT / V / LV



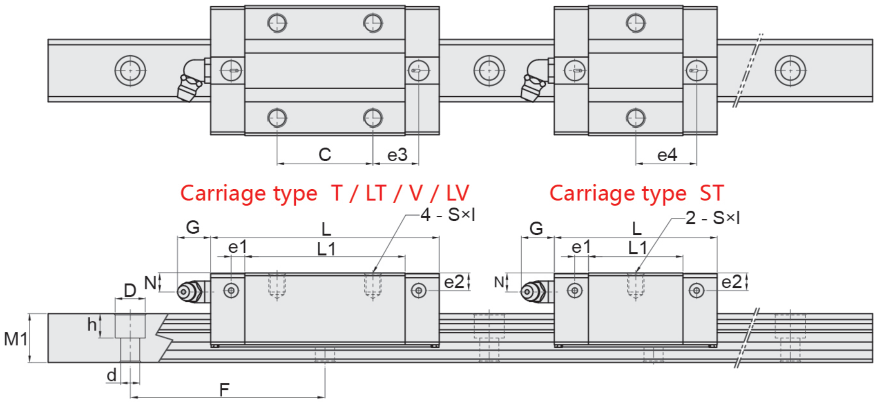


Unit (mm)

Model No.	External dimension			Carriage dimension												
	Height M	Width W	Length L	B	C	Mounting hole S×ℓ	L1	T	H1	N	e1	e2	e3	e4	G	Grease nipple
LMG15 ST	24	34	40.7	26	-	M4×5	22	6	4.5	5	3.3	4	-	14.8	5	M4×0.7
LMG15 T	24	34	58.2	26	26	M4×5	39.5	6	4.5	5	3.3	4	10.6	-	5	M4×0.7
LMG15 LT	24	34	72.6	26	34	M4×5	53.6	6	4.5	5	3.3	4	13.7	-	5	M4×0.7
LMG20 ST	28	42	47.4	32	-	M5×6	24.9	6	4.6	6.5	4.5	5	-	17	12	M6×0.75
LMG20 T	28	42	75	32	32	M5×6	52.5	6	4.6	6.5	4.5	5	14.8	-	12	M6×0.75
LMG25 ST	33	48	59.5	35	-	M6×7	34.5	8	6	7	5	6.5	-	22.3	12	M6×0.75
LMG25 T	33	48	83.8	35	35	M6×7	58.8	8	6	7	5	6.5	16.8	-	12	M6×0.75
LMG25 V	36	48	83.8	35	35	M6×9	58.8	8	6	10	5	9.5	16.8	-	12	M6×0.75
LMG25 LV	36	48	102.8	35	50	M6×9	77.8	8	6	10	5	9.5	16.8	-	12	M6×0.75
LMG30 T	42	60	98	40	40	M8×10	69.8	8	8	8	6	8	20	-	12	M6×0.75
LMG30 LT	42	60	120.2	40	60	M8×10	92	8	8	8	6	8	21.1	-	12	M6×0.75
LMG35 T	48	70	111.2	50	50	M8×12	80.2	10	9.5	8	7.5	8	21.6	-	12	M6×0.75
LMG35 LT	48	70	136.6	50	72	M8×12	105.6	10	9.5	8	7.5	8	23.3	-	12	M6×0.75
LMG45 T	60	86	137.8	60	60	M10×17	102.2	16	11	10	8.5	10	27.6	-	13.5	PT 1/8
LMG45 LT	60	86	169.5	60	80	M10×17	133.9	16	11	10	8.5	10	33.5	-	13.5	PT 1/8
LMG55 T	70	100	166	75	75	M12×18	126	17	13	12	9	10.5	33.5	-	13.5	PT 1/8
LMG55 LT	70	100	204	75	95	M12×18	164	17	13	12	9	10.5	42.5	-	13.5	PT 1/8

TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of LMG···ST / T / LT / V / LV



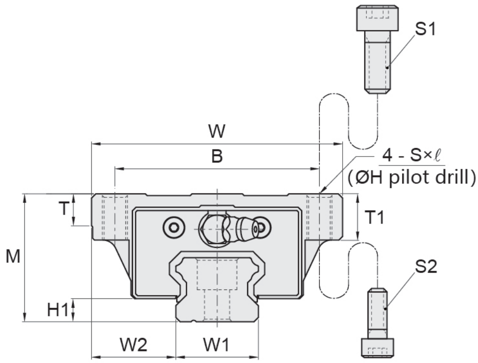
Unit (mm)

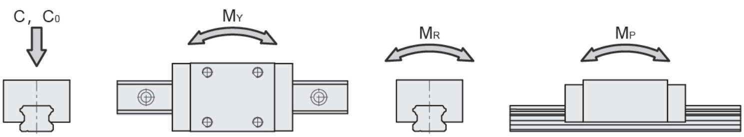
Model No.	Rail dimension					Basic load rating		Static moment rating					Weight	
	Width		Height	Pitch	Mounting bolt hole	Dynamic	Static	M_P (KN·m)		M_Y (KN·m)		M_R	Carriage	Rail
	W1	W2	M1	F	D×h×d	C KN	C_0 KN	Single Carriage	Double Carriages	Single Carriage	Double Carriages	KN·m	Kg	Kg/m
LMG15 ST	15	9.5	13	60	7.5×5.3×4.5*	7.3	9.4	0.03	0.27	0.03	0.27	0.07	0.09	1.29
LMG15 T	15	9.5	13	60	7.5×5.3×4.5*	11.8	18.9	0.13	0.76	0.13	0.76	0.15	0.15	1.29
LMG15 LT	15	9.5	13	60	7.5×5.3×4.5*	14.4	25.2	0.23	1.29	0.23	1.29	0.2	0.21	1.29
LMG20 ST	20	11	15	60	9.5×8.5×6	11.7	14.8	0.07	0.52	0.07	0.52	0.15	0.15	1.92
LMG20 T	20	11	15	60	9.5×8.5×6	20	32	0.30	1.68	0.30	1.68	0.33	0.28	1.92
LMG25 ST	23	12.5	18	60	11×9×7	19.2	24.8	0.16	1.07	0.16	1.07	0.30	0.26	2.67
LMG25 T	23	12.5	18	60	11×9×7	27.9	42.5	0.44	2.47	0.44	2.47	0.51	0.41	2.67
LMG25 V	23	12.5	18	60	11×9×7	27.9	42.5	0.44	2.47	0.44	2.47	0.51	0.47	2.67
LMG25 LV	23	12.5	18	60	11×9×7	34.2	56.6	0.76	3.99	0.76	3.99	0.67	0.61	2.67
LMG30 T	28	16	23	80	14×12×9*	38.8	57.8	0.70	3.88	0.70	3.88	0.83	0.79	4.48
LMG30 LT	28	16	23	80	14×12×9*	47.5	77.1	1.21	6.28	1.21	6.28	1.11	1.02	4.48
LMG35 T	34	18	26	80	14×12×9	51.7	75.5	1.04	5.72	1.04	5.72	1.31	1.14	6.24
LMG35 LT	34	18	26	80	14×12×9	63.2	100.7	1.81	9.29	1.81	9.29	1.75	1.47	6.24
LMG45 T	45	20.5	32	105	20×17×14	83.2	118.0	2.03	10.89	2.03	10.89	2.71	2.17	10.25
LMG45 LT	45	20.5	32	105	20×17×14	101.7	157.3	3.54	17.76	3.54	17.76	3.62	2.81	10.25
LMG55 T	53	23.5	44	120	23×20×16	130	184	2.08	12.35	2.08	12.35	5.12	5.20	15.08
LMG55 LT	53	23.5	44	120	23×20×16	156	241	3.49	19.14	3.49	19.14	6.69	6.17	15.08

*1.Rail mounting hloes for M3 bolt (6×4.5×3.5) and M4 bolt (7.5×5.3×4.5) are available for LMG15 rail.
The codes of rail type are LMG15R for M4 bolt, and LMG15U for M3 bolt.
2.Rail mounting hloes for M6 bolt (11×9×7) and M8 bolt (14×12×9) are available for LMG30 rail.
The codes of rail type are LMG30R for M8 bolt, and LMG30U for M6 bolt.

Dimensions of LMG···TC

Model No.	Bolt Size		Pilot drill
	S1	S2	H
LMG15	M5	M4	4.4
LMG20	M6	M5	5.3
LMG25	M8	M6	6.9
LMG30	M10	M8	8.6
LMG35	M10	M8	8.6



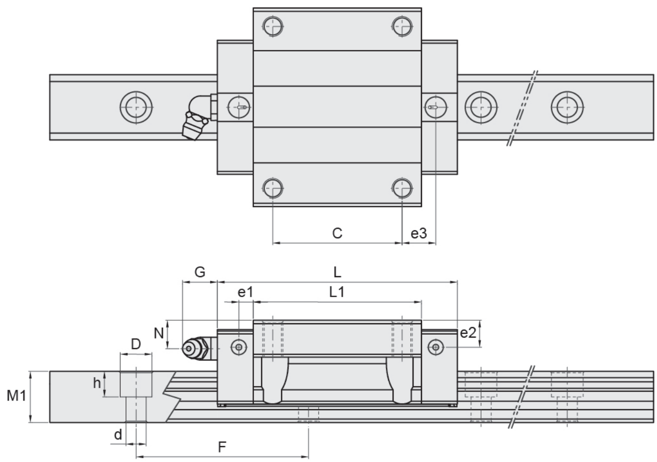


Unit (mm)

Model No.	External dimension			Carriage dimension												
	Height	Width	Length	B	C	Mounting hole S×ℓ	L1	T	T1	H1	N	e1	e2	e3	G	Grease nipple
	M	W	L													
LMG15 TC	24	52	58.2	41	26	M5×7	39.5	5	7	4.5	5	3.3	4	8.6	5	M4×0.7
LMG20 TC	28	59	75	49	32	M6×9	52.5	5	9	4.6	6.5	4.5	7	10.8	12	M6×0.75
LMG25 TC	33	73	83.8	60	35	M8×10	58.8	6	10	6	7	5	9.5	11.8	12	M6×0.75
LMG30 TC	42	90	98	72	40	M10×15	69.8	12	15.2	8	8	6	8	14	12	M6×0.75
LMG35 TC	48	100	111.2	82	50	M10×15	80.2	10	15.3	9.5	8	7.5	8	15.6	12	M6×0.75

TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of LMG···TC

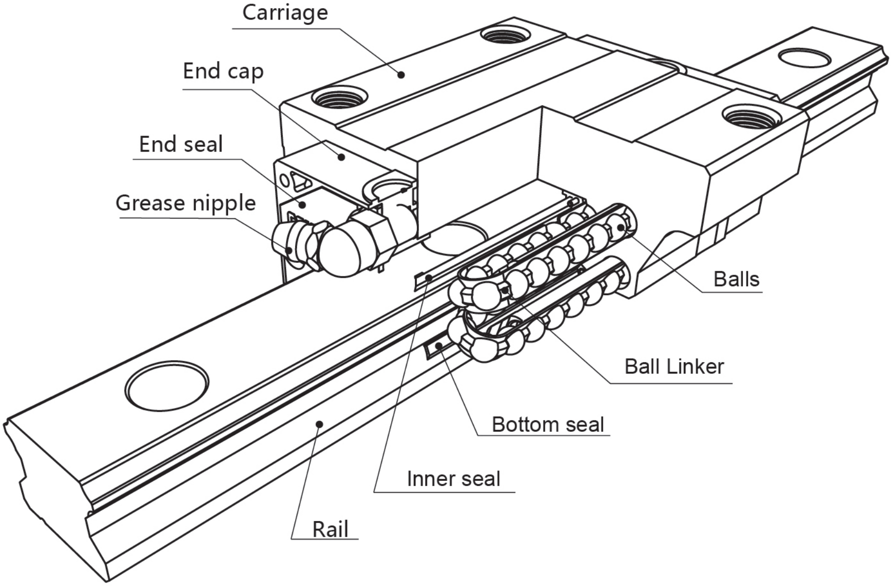


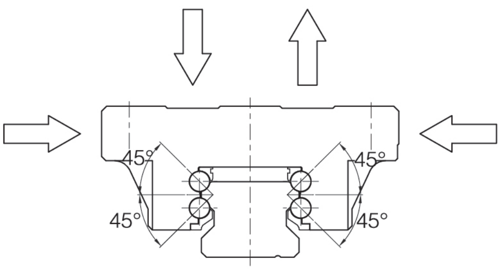
Unit (mm)

Model No.	Rail dimension					Basic load rating		Static moment rating					Weight	
	Width		Height	Pitch	Mounting bolt hole	Dynamic	Static	MP (KN·m)		MY (KN·m)		MR	Carriage	Rail
	W1	W2	M1	F	D×h×d	C KN	C0 KN	Single Carriage	Double Carriages	Single Carriage	Double Carriages	KN·m	Kg	Kg/m
LMG15 TC	15	18.5	13	60	7.5×5.3×4.5*	11.8	18.9	0.13	0.76	0.13	0.76	0.15	0.20	1.29
LMG20 TC	20	19.5	15	60	9.5×8.5×6	20	32	0.30	1.68	0.30	1.68	0.33	0.36	1.92
LMG25 TC	23	25	18	60	11×9×7	27.9	42.5	0.44	2.47	0.44	2.47	0.51	0.58	2.67
LMG30 TC	28	31	23	80	14×12×9*	38.8	57.8	0.70	3.88	0.70	3.88	0.83	1.10	4.48
LMG35 TC	34	33	26	80	14×12×9	51.7	75.5	1.04	5.72	1.04	5.72	1.31	1.50	6.24

*1.Rail mounting hloes for M3 bolt (6×4.5×3.5) and M4 bolt (7.5×5.3×4.5) are available for LMG15 rail.
The codes of rail type are LMG15R for M4 bolt, and LMG15U for M3 bolt.
2.Rail mounting hloes for M6 bolt (11×9×7) and M8 bolt (14×12×9) are available for LMG30 rail.
The codes of rail type are LMG30R for M8 bolt, and LMG30U for M6 bolt.

LMGQ series





Note: For reference only.

TEL +86 16653137076 E-mail info@cskmotions.com

Characteristics

The four trains of balls are designed with a contact angle of 45° which enables it not only to bear load equally in radial, reversed radial and lateral directions but also can achieve high rigidity and high loading capacity. Therefore, it is suitable for all directional installation. Furthermore the unique self alignment function of LMG series can compensate the certain error while assembling, and which results in high precision and smooth motion.

- High rigidity
- Four-way equal load
- Self alignment capability
- Complete dust sealing system
- High positioning accuracy
- Low dust emission
- Smooth movement
- Low noise and high speed application
- Interchangeability
- Carriage common rail design
- International standard

Applications

Machine Tool（CNC、Lathe …)

Industrial Robot

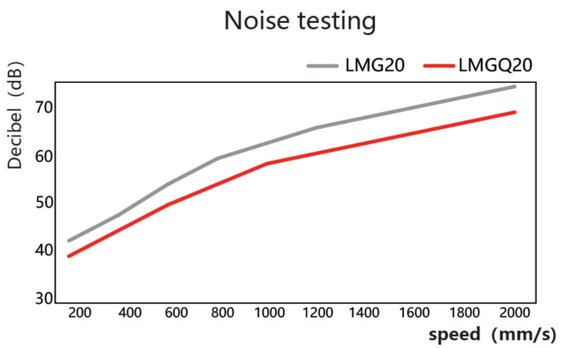
Semiconductor Manufacturing Equipment

Other（Injection Molding Machine …)

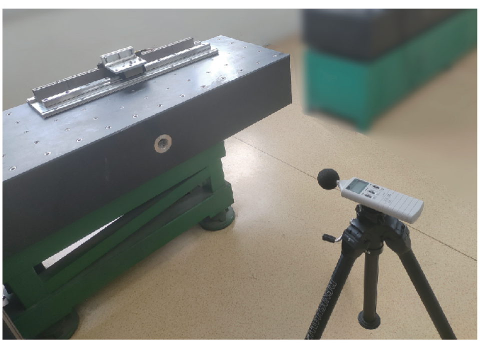
Characteristics

The LMGQ series uses a Ball Linker to eliminate the sharp sound (high audio sound) caused by the collision between the balls. Through experimental measurements, it has been found that under different speed conditions, the overall sound of the LMGQ series is effectively reduced by 5-7 decibels compared to the LMG series.

Model No.	Test conditions
Size	LMG/GQ20H1SSP0+R1200-30/30N
speed	200mm/s-2000mm/s
stroke	1000mm



● Noise testing machine



TEL +86 16653137076 E-mail info@cskmotions.com

Specifications

(1) Non-Interchangeable type

LMGQ 20 C 2 SS P1 _ +R 1000 -20 /20 P _ II

Series：LMGQ

Size：15，20，25

Carriage type

(1) Heavy load

C：Flange type, mounting either from top or bottom

H：Square high type

T：Square compact type

(2) Ultra heavy load

LC：Flange type, mounting either from top or bottom

LH：Square high type

(3) Medium load

ST：Square compact type

Number of carriages per rail：1，2，3 ...

Dust protection option：No symbol，UU，SS，VV，ZZ，DD，KK

Preload：P0（Light preload），P1（Medium preload），P2（Heavy preload）

Code of special carriage：A，B ...（Standard rail is no symbol）

Rail type：R，U*（Counter-bore type），T（Tapped hole type）

Rail length（mm）

Rail hole pitch from start side（E1, see Figure below）

Rail hole pitch to the end side（E2, see Figure below）

Accuracy grade：N，H，P，SP，UP

Code of special rail：A，B ...（Standard rail is no symbol）

Number of rails per axis：No symbol，II，III，IV ...

*U type rail is only applicable for LMGQ15, detail information please see the specification table for the corresponding model number.

Specifications

(2) Interchangeable type

● Code of Carriage

LMGQ 20 C SS P0 N

Series：LMGQ
Size：15，20，25
Carriage type
(1) Heavy load
C：Flange type, mounting either from top or bottom
H：Square high type
T：Square compact type
(2) Ultra heavy load
LC：Flange type, mounting either from top or bottom
LH：Square high type
(3) Medium load
ST：Square compact type
Dust protection option：No symbol，UU，SS，VV
Preload：P0 (Light preload)
Accuracy grade：N，H
Code of special carriage：A，B ... (Standard carriage is no symbol)

TEL +86 16653137076 E-mail info@cskmotions.com

Specifications

Code of Rail

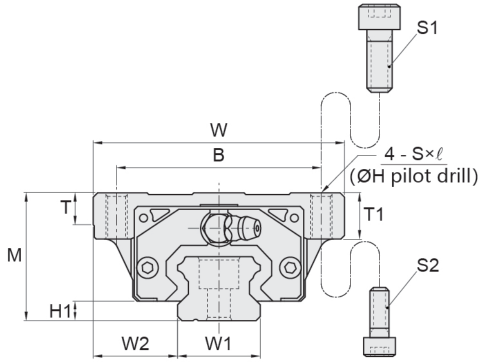
LMG 20 R 1000 -20 /20 N

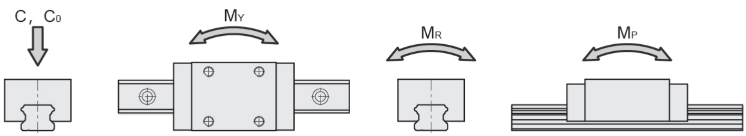
Series: LMG
Size: 15, 20, 25
Rail type: R, U* (Counter-bore type) , T (Tapped hole type)
Rail length (mm)
Rail hole pitch from start side (E1, see Figure below)
Rail hole pitch to the end side (E2, see Figure below)
Accuracy grade: N, H
Code of special rail: A, B ... (Standard rail is no symbol)

*U type rail is only applicable for LMG15, detail information please see the specification table for the corresponding model number.

Dimensions of LMGQ···C / LC

Model No.	Bolt Size		Pilot drill
	S1	S2	H
LMGQ15	M5	-	-
LMGQ20	M6	M5	5.3
LMGQ25	M8	M6	6.9

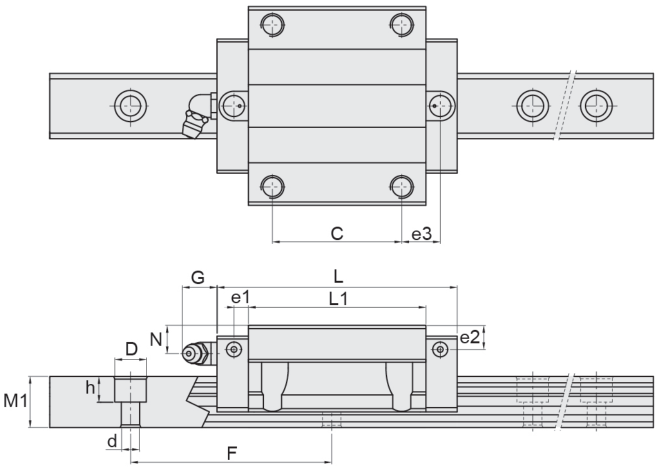




Unit (mm)

Model No.	External dimension			Carriage dimension													
	Height	Width	Length													
	M	W	L	B	C	Mounting hole S×ℓ	L1	T	T1	H1	N	e1	e2	e3	G	Grease nipple
LMGQ15 C	24	47	61.2	38	30	M5×8	43.8	5.5	8	4	5	3.3	4	10.9	5	M4×0.7
LMGQ20 C	30	63	76.1	53	40	M6×10	53.7	7	10.2	4.6	8.5	4.5	7	13.4	12	M6×0.75
LMGQ20 LC	30	63	91.1	53	40	M6×10	68.5	7	10.2	4.6	8.5	4.5	7	18.8	12	M6×0.75
LMGQ25 C	36	70	84.7	57	45	M8×13	62.7	9	13	5.5	10	5	9.5	13.9	12	M6×0.75
LMGQ25 LC	36	70	104.2	57	45	M8×13	83	9	13	5.5	10	5	9.5	23.7	12	M6×0.75

Dimensions of LMGQ···C / LC

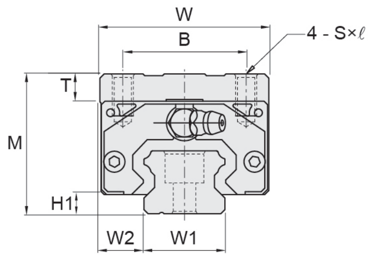


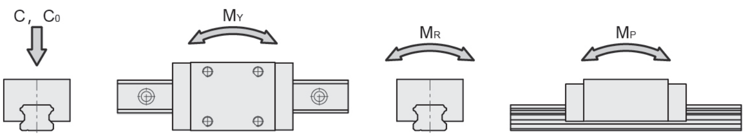
Unit (mm)

Model No.	Rail dimension					Basic load rating		Static moment rating					Weight	
	Width		Height	Pitch	Mounting bolt hole	Dynamic	Static	M_P (KN·m)		M_Y (KN·m)		M_R	Carriage	Rail
	W1	W2	M1	F	D×h×d	C KN	C_0 KN	Single Carriage	Double Carriages	Single Carriage	Double Carriages	KN·m	Kg	Kg/m
LMGQ15 C	15	16	13	60	7.5×5.3×4.5*	11.8	18.9	0.13	0.76	0.13	0.76	0.15	0.18	1.29
LMGQ20 C	20	21.5	15	60	9.5×8.5×6	20	32	0.30	1.68	0.30	1.68	0.33	0.40	1.92
LMGQ20 LC	20	21.5	15	60	9.5×8.5×6	23.2	39.3	0.44	2.36	0.44	2.36	0.41	0.51	1.92
LMGQ25 C	23	23.5	18	60	11×9×7	27.9	42.5	0.44	2.47	0.44	2.47	0.51	0.62	2.67
LMGQ25 LC	23	23.5	18	60	11×9×7	34.2	56.6	0.76	3.99	0.76	3.99	0.67	0.81	2.67

*1.Rail mounting hloes for M3 bolt (6×4.5×3.5) and M4 bolt (7.5×5.3×4.5) are available for LMG15 rail.
The codes of rail type are LMG15R for M4 bolt, and LMG15U for M3 bolt.

Dimensions of LMGQ···H / LH



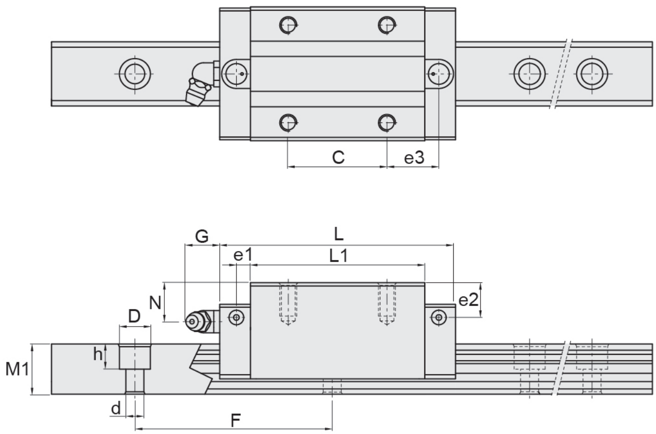


Unit (mm)

Model No.	External dimension			Carriage dimension											
	Height	Width	Length	B	C	Mounting hole S×ℓ	L1	T	H1	N	e1	e2	e3	G	Grease nipple
	M	W	L												
LMGQ15 H	28	34	61.2	26	26	M4×7	43.8	6	4	9	3.3	8	12.9	5	M4×0.7
LMGQ20 H	30	44	76.1	32	36	M5×8	53.7	6	4.6	8.5	4.5	7	13.4	12	M6×0.75
LMGQ20 LH	30	44	91.1	32	50	M5×8	68.5	6	4.6	8.5	4.5	7	13.8	12	M6×0.75
LMGQ25 H	40	48	84.7	35	35	M6×12	62.7	8	5.5	14	5	13.5	18.9	12	M6×0.75
LMGQ25 LH	40	48	104.2	35	50	M6×12	83	8	5.5	14	5	13.5	21.5	12	M6×0.75

TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of LMGQ···H/ LH

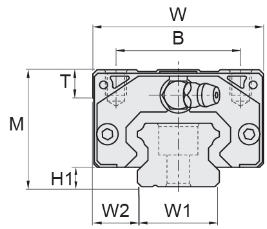


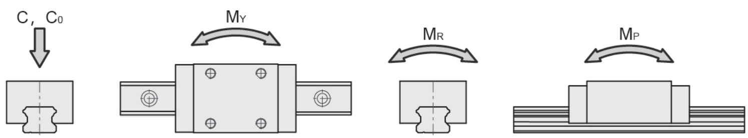
Unit (mm)

Model No.	Rail dimension					Basic load rating		Static moment rating					Weight	
	Width		Height	Pitch	Mounting bolt hole	Dynamic	Static	M_P (KN·m)		M_Y (KN·m)		M_R	Carriage	Rail
	W1	W2	M1	F	D×h×d	C KN	C_0 KN	Single Carriage	Double Carriages	Single Carriage	Double Carriages	KN·m	Kg	Kg/m
LMGQ15 H	15	9.5	13	60	7.5×5.3×4.5*	11.8	18.9	0.13	0.76	0.13	0.76	0.15	0.18	1.29
LMGQ20 H	20	12	15	60	9.5×8.5×6	20	32	0.30	1.68	0.30	1.68	0.33	0.31	1.92
LMGQ20 LH	20	12	15	60	9.5×8.5×6	23.2	39.3	0.44	2.36	0.44	2.36	0.41	0.39	1.92
LMGQ25 H	23	12.5	18	60	11×9×7	27.9	42.5	0.44	2.47	0.44	2.47	0.51	0.55	2.67
LMGQ25 LH	23	12.5	18	60	11×9×7	34.2	56.6	0.76	3.99	0.76	3.99	0.67	0.72	2.67

*1.Rail mounting hloes for M3 bolt (6×4.5×3.5) and M4 bolt (7.5×5.3×4.5) are available for LMG15 rail.
The codes of rail type are LMG15R for M4 bolt, and LMG15U for M3 bolt.

Dimensions of LMGQ···ST / T



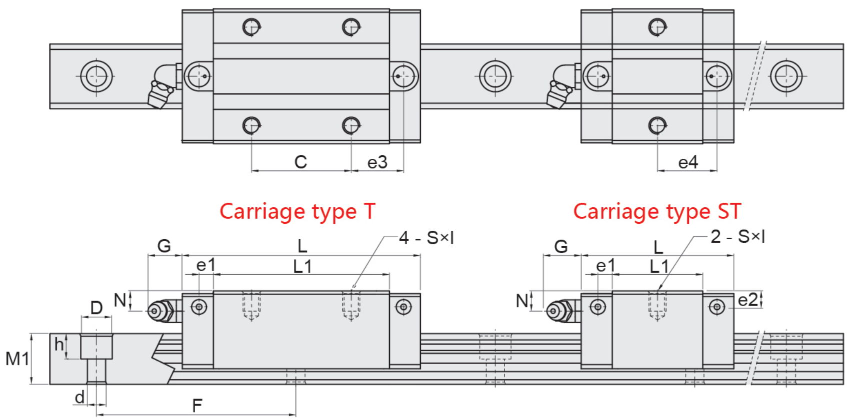


Unit（mm）

Model No.	External dimension			Carriage dimension												
	Height	Width	Length													
	M	W	L	B	C	Mounting hole S×ℓ	L1	T	H1	N	e1	e2	e3	e4	G	Grease nipple
LMGQ15 T	24	34	61.2	26	26	M4×5	43.8	6	4	5	3.3	4	12.9	-	5	M4×0.7
LMGQ20 ST	28	42	50.9	32	-	M5×6	28.3	6	4.6	6.5	4.5	5	-	18.7	12	M6×0.75
LMGQ20 T	28	42	76.1	32	32	M5×6	53.7	6	4.6	6.5	4.5	5	15.4	-	12	M6×0.75
LMGQ25 T	33	48	84.7	35	35	M6×7	62.7	6	5.5	7	5	6.5	18.9	-	12	M6×0.75

TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of LMGQ···ST / T



Unit (mm)

Model No.	Rail dimension					Basic load rating		Static moment rating					Weight	
	Width		Height	Pitch	Mounting bolt hole	Dynamic	Static	M_P (KN·m)		M_Y (KN·m)		M_R	Carriage	Rail
	W1	W2	M1	F	D×h×d	C KN	C_0 KN	Single Carriage	Double Carriages	Single Carriage	Double Carriages	KN·m	Kg	Kg/m
LMGQ15 T	15	9.5	13	60	7.5×5.3×4.5*	11.8	18.9	0.13	0.76	0.13	0.76	0.15	0.14	1.29
LMGQ20 ST	20	11	15	60	9.5×8.5×6	11.7	14.8	0.07	0.52	0.07	0.52	0.15	0.13	1.92
LMGQ20 T	20	11	15	60	9.5×8.5×6	20	32	0.30	1.68	0.30	1.68	0.33	0.26	1.92
LMGQ25 T	23	12.5	18	60	11×9×7	27.9	42.5	0.44	2.47	0.44	2.47	0.51	0.41	2.67

*1.Rail mounting hloes for M3 bolt (6×4.5×3.5) and M4 bolt (7.5×5.3×4.5) are available for LMG15 rail.
The codes of rail type are LMG15R for M4 bolt, and LMG15U for M3 bolt.

Lubrication

A well lubrication is important for maintaining the function of the linear guideway. If the lubrication is not sufficient, the frictional resistance at rolling area will increase and the service life will be shortened as a result of wear of rolling parts.
Two primary lubricants are both grease and oil used for the linear motion system, and the lubrication methods are categorized into manual and forced oiling. The selection of lubricant and its method should be based on the consideration of operating speed and environment requirement.

Grease lubrication

The grease feeding interval will be varied with different operating conditions and environments.Under normal operating condition, the grease should be replenished every 100km of travel.
The standard pre-filled grease is lithium-based grease No.2. Moving the carriage back and forth with minimum stroke length of three carriages after the carriages been greased. To assure the grease is evenly distributed inside of carriage, the mentioned process should be repeated twice at least.

Oil lubrication

The recommended viscosity of oil is 30~150 cst, and the recommended feeding rate per hour. The nstallation other than horizontal may caused the oil unable to reach raceway area, so please specify the installed direction of your linear guideway applied.

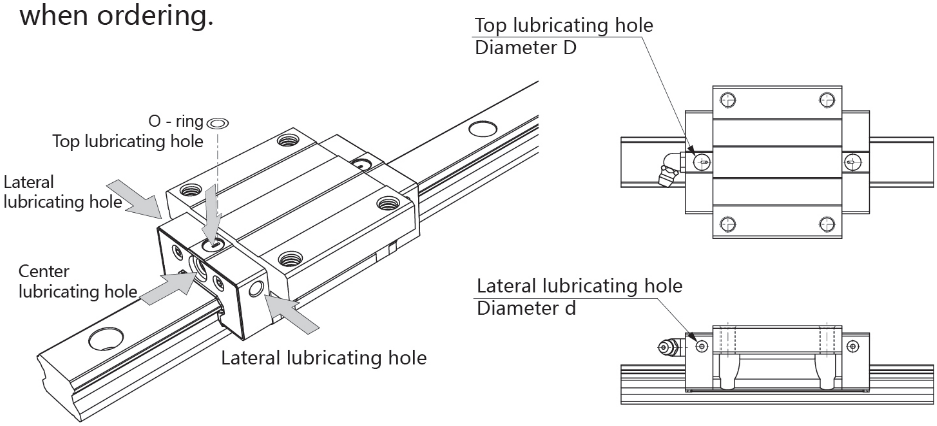
Note:
When the operating stroke length less than the sum of length of two carriages, the lubrication fitting should be applied on both ends of carriage for adequacy. Moreover, if the stroke length less than a half of the length of a carriage, the carriage should be moved back and forth up to the length of two carriages while lubricating.

TEL +86 16653137076 E-mail info@cskmotions.com

Lubrication

Lubrication position

The standard lubricating position of carriage is at the center of both ends, as shown below. As for lateral and top application, please specify when ordering.



Unit (mm)

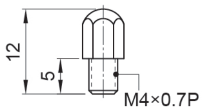
Model No.	Center Lubricating	Lateral Lubricating			Top Lubricating		
	Grease Nipple	Diameter d	Grease Nipple	Drilling size	Diameter D	O - ring	Drilling size
LMG/GQ 15	M4×0.7P	3.3	M4×0.7P	1.5	5.8	P2	1
LMG/GQ 20	M6×0.75P	5.2	M6×0.75P	2	7.4	P4	
LMG/GQ 25							
LMG 30							
LMG 35					10.2	P7	
LMG 45	PT1/8						
LMG 55							1.5

Lubrication

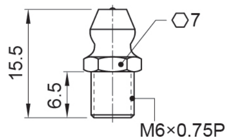
Grease nipples and oil piping joint

(1) Grease nipples

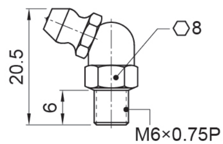
GS - M4



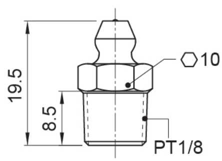
GS - M6



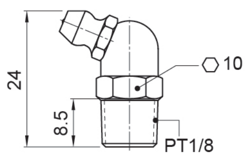
GC - M6



GS - 7



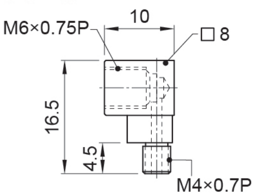
GC - 7



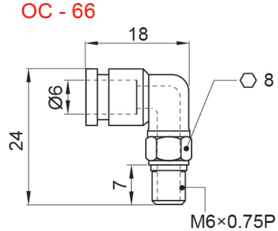
(2) Oil piping joint

- OC Type

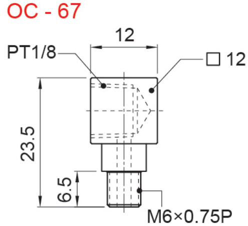
OC - 46



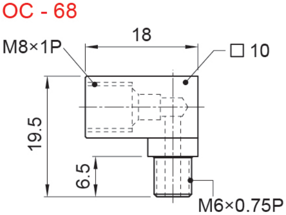
OC - 66



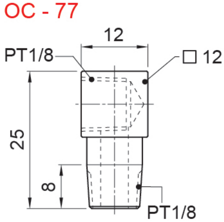
OC - 67



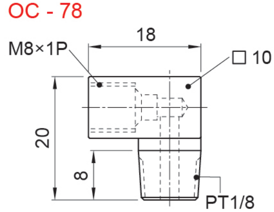
OC - 68



OC - 77



OC - 78

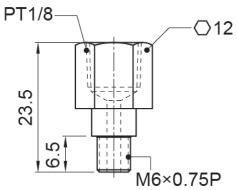


TEL +86 16653137076 E-mail info@cskmotions.com

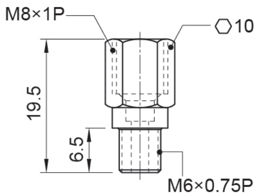
Lubrication

● OS Type

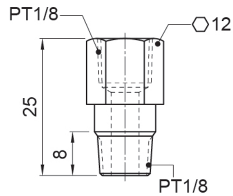
OS - 67



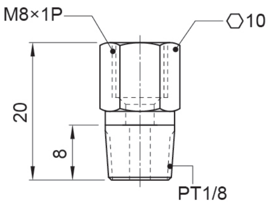
OS - 68



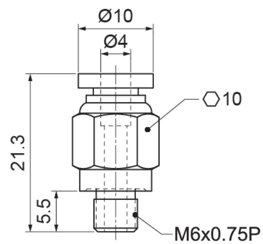
OS - 77



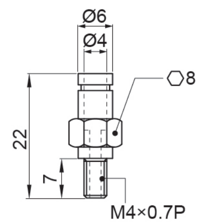
OS - 78



OS - 64 (Fast joint)



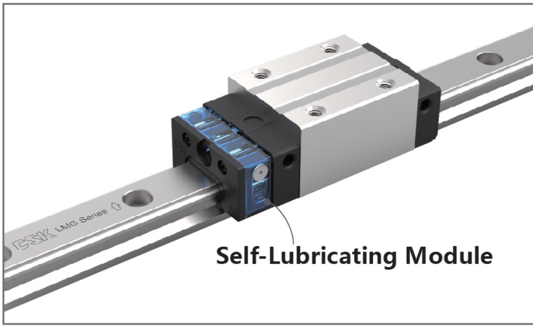
OS - 44 (Fast joint)

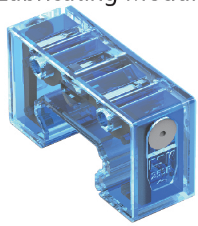


Model No.	Grease Nipples		Oil Piping Joint
	Standard	Option	Option
LMG/GQ 15	GS - M4	-	OC - 46、OS - 44
LMG/GQ 20	GC - M6	GS - M6	OC - 66、OC - 67、OC - 68、OS - 67、OS - 68、OS - 64
LMG/GQ 25			
LMG 30			
LMG 35			
LMG 45	GC - 7	GS - 7	OC - 77、OC - 78、OS - 77、OS - 78
LMG 55			

Linear Guideway - Options

Self-Lubricating Module - SR series

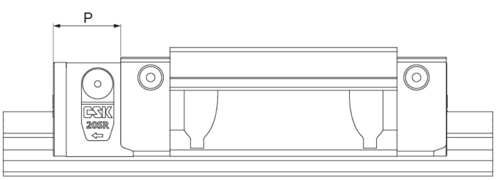




Characteristics

- Can be used with grease
- Wide use of ambient temperature range
- Extend the maintenance cycle and reduce the maintenance cost
- Low consumption and environmentally friendly
- Oil supplement design, low cost
- Improve the service life of guide rail

Dimension parameters



Extended size of Carriage

Model No.	P
LMG 15	12.6
LMG 20	15.6
LMG 25	15.6
LMG 30	15.6
LMGQ 15	15.6
LMGQ 20	18.6
LMGQ 25	18.6

Applications

Automation equipment
Electronic machinery
Industrial machinery
Other

TEL +86 16653137076
E-mail info@cskmotions.com

Specifications

(1) Non-Interchangeable type

LMG/GQ20C2SSP1**SR**+R1000-20/20PII

Self-Lubricating Module: SR

(2) Interchangeable type

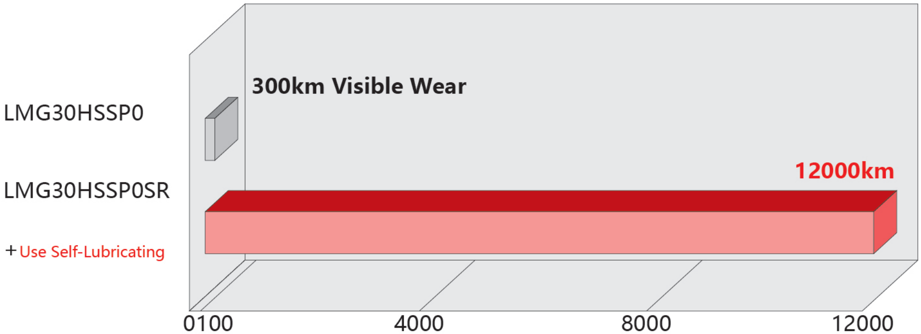
LMG/GQ20CSSP0**SR**N

Self-Lubricating Module: SR

Test conditions

Model No.	Test conditions
Size	LMG30H2SSP0SR+R1200-40/40NII
Speed	60m/min
stroke	1000mm
Payload	300kgf

Test conditions



Normal exercise mileage (km)

Model No.	Need to replenish lubricating oil (km)
LMG/GQ 15 SR	4000
LMG/GQ 20 SR	6000
LMG/GQ 25 SR	9000
LMG 30 SR	12000

Grease for high speed - GS2

Properties

- **NLGI-grade**：2
- **Dropping point**：>180°C
- **Worked penetration(Pw 60)**：
  265~295（1/10mm）
- **Temperature range**：-40°C~140°C
- **Net.**80g

Description

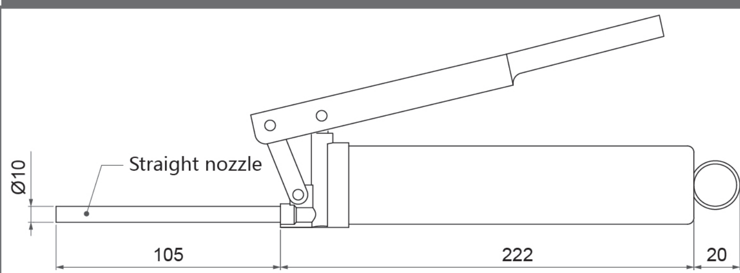
GS2 is an adhesive, lithium soap based lubricating grease designed for long-term application.
Suitable for high speed operation.

Advantages

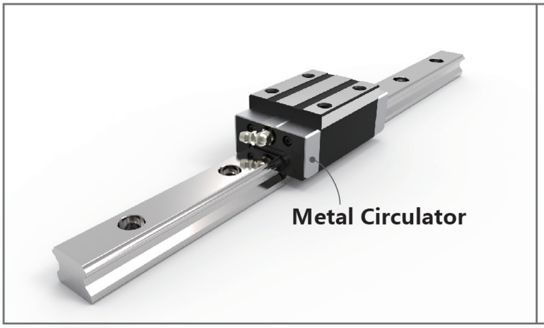
- Suitable for life-time lubricatio
- Water resistant
- Work stable
- Protects from corrosion,even in the presence of salt water
- Suitable for high thermal loads
- Good adhesiveness
- Suitable for low temperatures
- Mechanically high loadable

Grease gun LG80

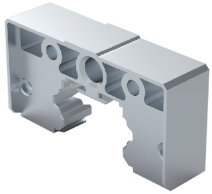
LG80： Grease gun for GS2.

Model No.	
Dimension	
Specifications	1.Discharge pressure：300kg/cm^2 2.Weight（excluding the grease）：0.5kg 3.Grease：80g in a bellows tube

Linear Guideway - Options
Metal Circulator - M series



● Metal Circulator



Specifications

LMG 20 C M 2 SS P1 +R 1000 -20 /20 P II

Series：15，20，25，30，35，45

Metal Circulator：**M**

Characteristics

- Enhanced the strength of the Metal Circulator
- Higher acceleration and deceleration capacity
- Superior impact resistance performance
- Suitable for use in high temperature environment
- Significantly reducing the destructive intrusion of foreign matters arising
- Does not change the total length of the standard block

Applications

Heat treatment equipment

Automation equipment in high temperature environment

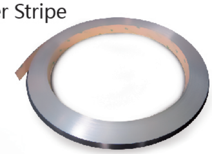
Equipment with low dust emission requirements

Other

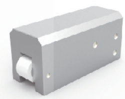
TEL +86 16653137076 **E-mail** info@cskmotions.com

Linear Guideway - Options
Cover Stripe of Rail - CS series

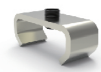
● Cover Stripe



● Strip locator



● Strip retaining clip



Advantages

- **Simple installation and disassembly**
- **Prevent the intrusion of foreign matters**
- **No need to do special processing or individually customized rail**

Specifications

LMG/GQ 20 CS 50

Series：LMG/GQ

Size：20，25

Components

- CS ：Cover Stripe
- CSL ：Strip locator
- CSRC：Strip retaining clip

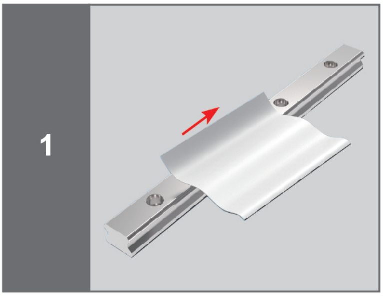
The quantity ordered

- Cover Stripe：m
- Strip locator/Strip retaining clip：pcs

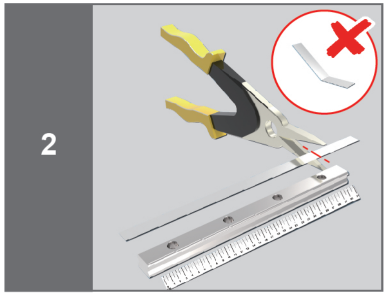
Precautions for use：

- The cover stripe cannot be bent.
- Clean rail surface before installation.
- When installing, please wear gloves to prevent scratches.
- Cut off position, please chamfer processing.
- When cutting，make the cover stripe1~3mm shorter than the guide rail.

Installation

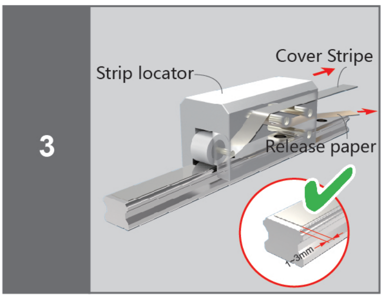


Clean rail surface before installation.



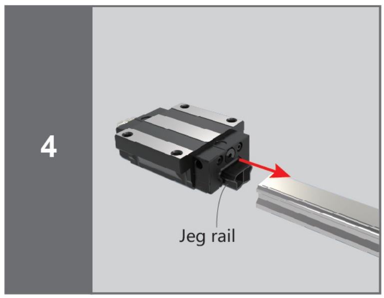
When cutting，make the cover stripe1~3mm shorter than the guide rail.

⚠ The cover stripe cannot be bent.

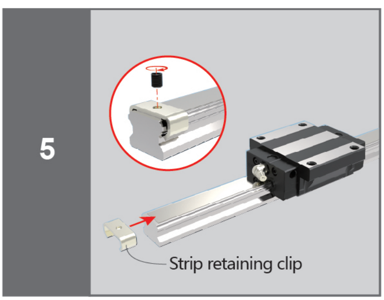


Use the strip locator to install the cover stripe.

⚠ The cover stripe cannot be bent.



Use Jeg rail mounting.

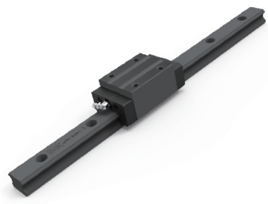
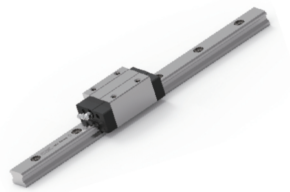


Insert strip retaining clip into the guide rail and bolt it tight.

Complete

TEL +86 16653137076   **E-mail** info@cskmotions.com

Linear Guideway - Surface Treatment

Industrial-grade black chrome coating	Manganese phosphate coating	Primary Chrome Coating
		

Advantages

● Improved corrosion resistance ● Accuracy is not affected

● Change the appearance

Applications

● Chemical industry ● Automation ● Experimental environment

● Humid environment

Specifications

LMG/GQ 20 C 2 SS P1 B +R 1000 -20 /20 P B II

Carriage surface treatment：B

Rail surface treatment：B

The inside of the hole is not guaranteed to be completely treated.

Test conditions

Primary Chrome Coating

CSK-LMG-R Surface treatment

Salt-water spray resistance 24h

CSK-LMG-R Surface treatment

Salt-water spray resistance 72h

Industrial-grade black chrome coating

CSK-LMG-R Surface treatment

Salt-water spray resistance 24h

CSK-LMG-R Surface treatment

Salt-water spray resistance 72h

Manganese phosphate coating

CSK-LMG-R Surface treatment

Salt-water spray resistance 24h

CSK-LMG-R Surface treatment

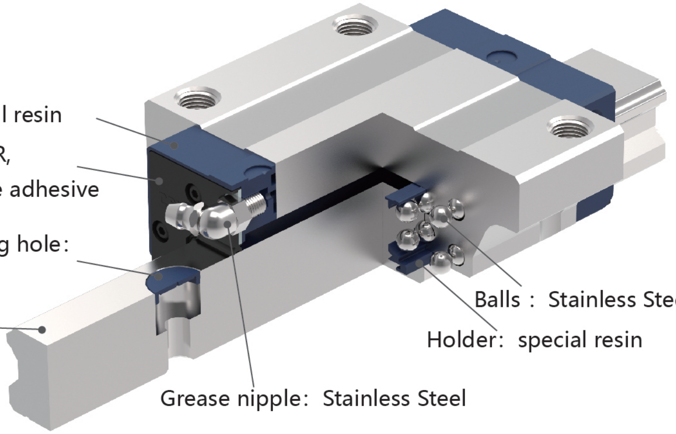
Salt-water spray resistance 72h

Item	Spray liquid	PH	Temperature	Humidity	Placement anglen	Smoke collection volume
Description	5%NaCl solution	6.9	35°	85%RH	20°	1.5ml(80cm²/H)

*Industrial grade low-temperature black chromium surface treatment, commonly known as cold electroplating。

TEL +86 16653137076 E-mail info@cskmotions.com

Anti electrolyte Corrosion



Specifications

LMG 20 C E 2 SS P1 +R 1000 -20 /20 P II

Size: 15, 20, 25, 30

Anti electrolyte Corrosion: E

Anti electrolyte Corrosion - E series

Characteristics

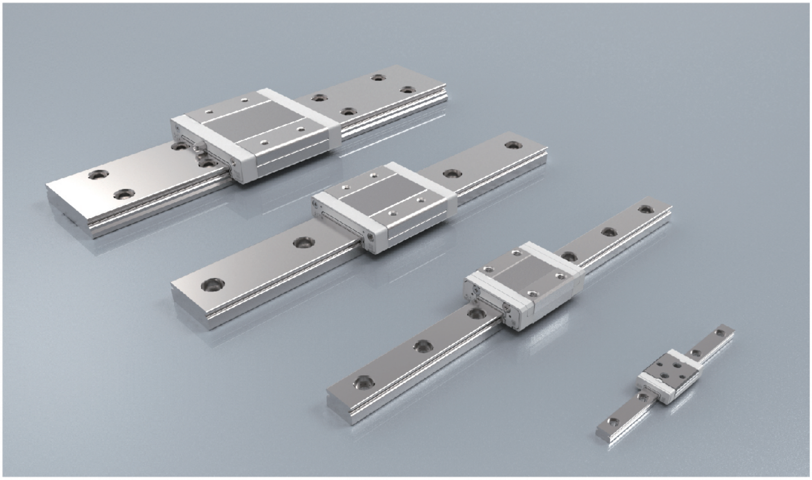
- For the lithium battery industry, this product does not contain copper, zinc, or nickel elements.
- Plastic accessories are made of special materials that can resist the corrosiveness of battery electrolytes.
- The lubricating oil nozzle is made of stainless steel material to prevent the generation of hazardous elements during the battery manufacturing process.
- Replacing steel balls with stainless steel balls enhances the corrosion resistance of their battery electrolyte.

Test conditions

	Standard Part	Anti Corrosion Part
Before testing		
Battery electrolyte immersion After 24 hours		

TEL +86 16653137076 **E-mail** info@cskmotions.com

Miniature Linear Guideway
LMN/NW series



Characteristics

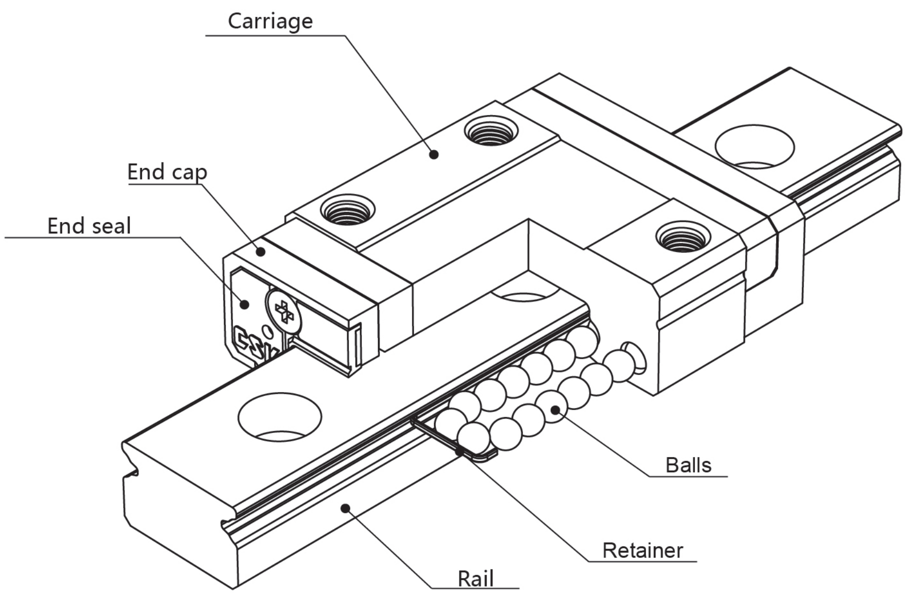
LMN/LMNW The linear guide rail adopts two rows of steel balls and a Gothic four point contact design, which can bear loads in all directions, making it highly efficientCharacteristics such as rigidity and high precision. Micro linear guide rails are suitable for spaces or parts that require small volume and light weight, especially for small self Dynamic equipment; The micro wide linear guide rail adopts a widened design and is suitable for equipment that carries loads from all directions and is used on a single axis. Designed steel ball protection. The holder can be interchangeable with precision.

- High rigidity,High positioning repeatability
- Low friction, smooth walking
- High positioning repeatability and good reproducibility
- Small size, Light weight
- Interchangeability
- International standard

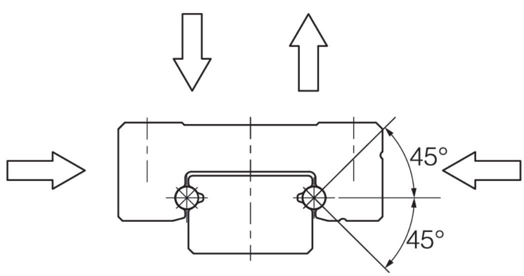
Applications

Semiconductor manufacturing devices, Industrial robots, Medical equipment, Precision testing instruments, Office automation equipment, Other small linear motion devices.

LMN



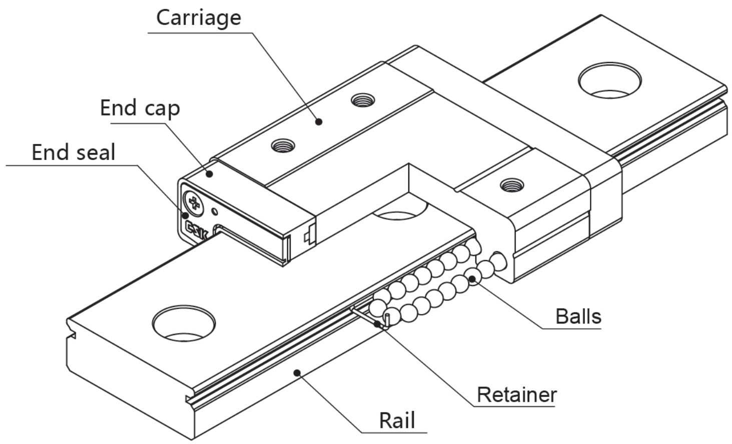
LMN5/7/9/12/15-T/LT



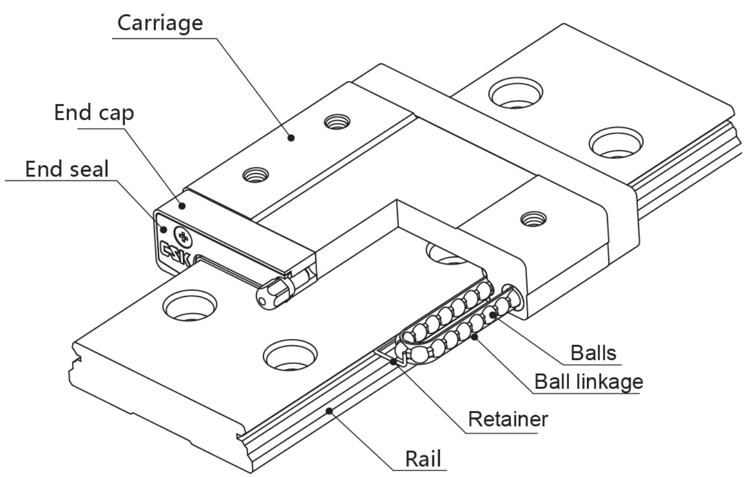
Note: For reference only.

TEL +86 16653137076 E-mail info@cskmotions.com

LMNW



LMNW7/9/12-T/LT



LMNW15-T/LT

Specifications

(1) Non-Interchangeable type

LMN 5 T 2 UU P0 _ +R 100 -5 /5 N M _ II

Series: LMN/LMNW

Size: 5, 7, 9, 12, 15

Carriage type

T: Heavy load

LT: Ultra heavy load

ST: Square compact type

Number of carriages per rail: 1, 2, 3 ...

Dust protection option: UU

Preload: PC (Clearance) , P0 (Light preload) ,
P1 (Medium preload)

Code of special carriage: A, B ...
(Standard rail is no symbol)

Rail type: R

Rail length (mm)

Rail hole pitch from start side (E1, see Figure below)

Rail hole pitch to the end side (E2, see Figure below)

Accuracy grade: N, H, P

Material quality: no symbol , M (stainless steel)

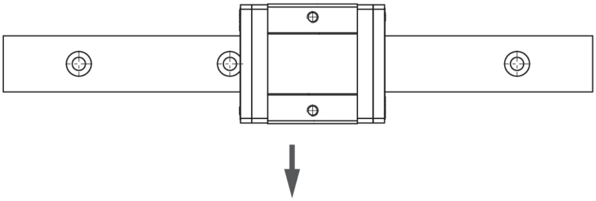
Code of special rail: A, B ... (Standard rail is no symbol)

Number of rails per axis: No symbol, II, III, IV ...

TEL +86 16653137076 E-mail info@cskmotions.com

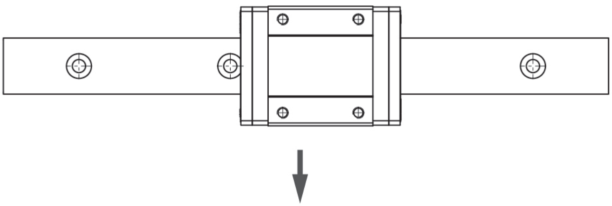
Specifications

Square compact type



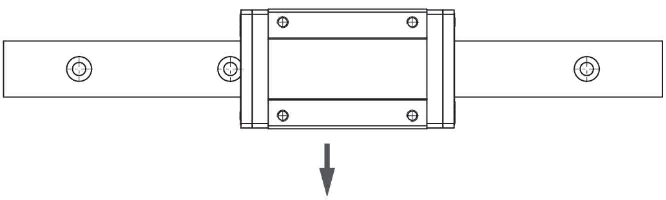
LMN/LMNW ··· ST

Heavy load



LMN/LMNW ··· T

Ultra heavy load



LMN/LMNW ··· LT

Specifications

(2) Interchangeable type

● Code of Carriage

LMN 5 T UU P0 N M

- Series: LMN/LMNW
- Size: 5, 7, 9, 12, 15
- Carriage type
  T: Heavy load
  LT: Ultra heavy load
- Dust protection option: UU
- Preload: P0 (Light preload)
- Accuracy grade: N, H
- Material quality: M (stainless steel)
- Code of special carriage: A, B ... (Standard rail is no symbol)

● Code of Rail

LMN 5 R 100 -5 /5 N M

- Series: LMN/LMNW
- Size: 5, 7, 9, 12, 15
- Rail type: R
- Rail length (mm)
- Rail hole pitch from start side (E1, see Figure below)
- Rail hole pitch to the end side (E2, see Figure below)
- Accuracy grade: N, H
- Material quality: no symbol , M (stainless steel)
- Code of special rail: A, B ... (Standard rail is no symbol)

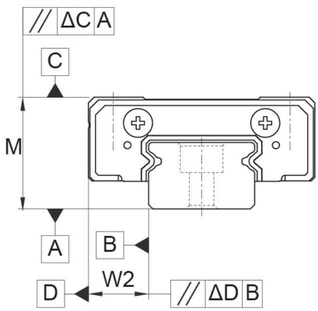
TEL +86 16653137076 E-mail info@cskmotions.com

Preload Grade

Preload grade	Code	Preload (μm)	Operating Condition
Clearance	PC	+3 ~ +8 (Preload 0)	● Starting frictional resistance is required. ● Installation errors to be absorbed.
Light preload	P0	+0 ~ +2 (Preload 0)	● Minute vibration is applied. ● Accurate motion is required. ● Micromoment is applied.
Medium preload	P1	Preload 0.02C	● Light vibration is applied. ● High precision motion is required. ● Moment is applied.

Accuracy Grade

The accuracy of LMN/LMNW series is divided into three classes, Normal grade (N), High accuracy grade (H), Precision grade (P).

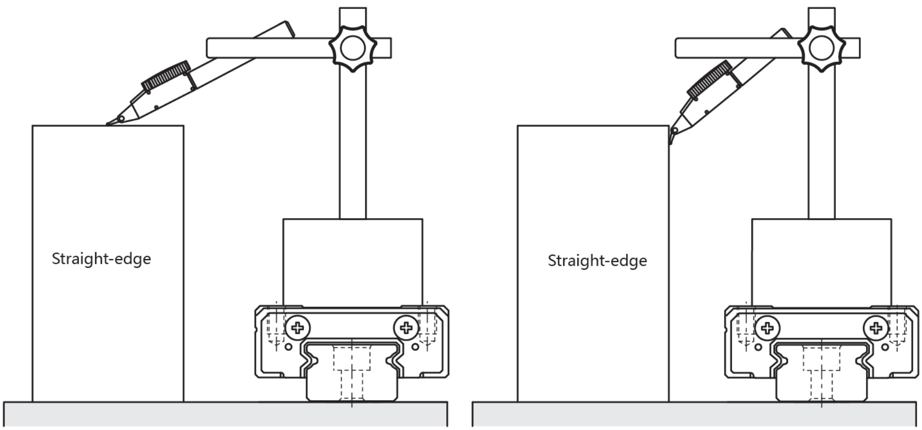


Unit (mm)

Model No.	Item	Accuracy Grade		
		Normal N	High H	Precision P
LMN 5 LMN/NW 7 LMN/NW 9 LMN/NW 12 LMN/NW 15	Tolerance for height M	±0.04	±0.02	±0.01
	Height difference (ΔM)	0.03	0.015	0.007
	Tolerance for distance W2	±0.04	±0.025	±0.015
	Difference in distance W2 (ΔW2)	0.03	0.02	0.01
	Running parallelism of surface C with surface A	ΔC (see Running parallelism of carriage)		
	Running parallelism of surface D with surface B	ΔD (see Running parallelism of carriage)		

Running Parallelism

The running accuracy is the deviation of parallelism between the reference surface of carriage and reference surface of rail when carriage moving over the entire length of rail.

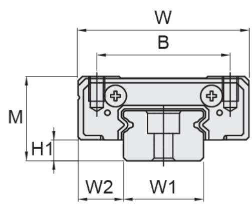


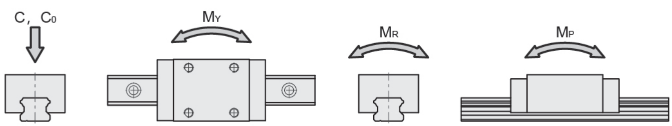
Measurement of running parallelism

Running Parallelism

Rail length (mm)		Running Parallelism Values (μm)		
Above	Or less (incl.)	Normal N	High H	Precision P
0	50	12	6	2
50	80	13	7	3
80	125	14	8	3.5
125	200	15	9	4
200	250	16	10	5
250	315	17	11	5
315	400	18	11	6
400	500	19	12	6
500	630	20	13	7
630	800	22	14	8
800	1000	23	16	9
1000	1200	25	18	11
1200	1300	26	19	12
1300	1400	27	19	12
1400	1500	28	20	13
1500	1600	29	20	14
1600	1700	30	21	14
1700	1800	30	21	15
1800	1900	31	22	15
1900	2000	31	22	16

Dimensions of LMN···T / LT



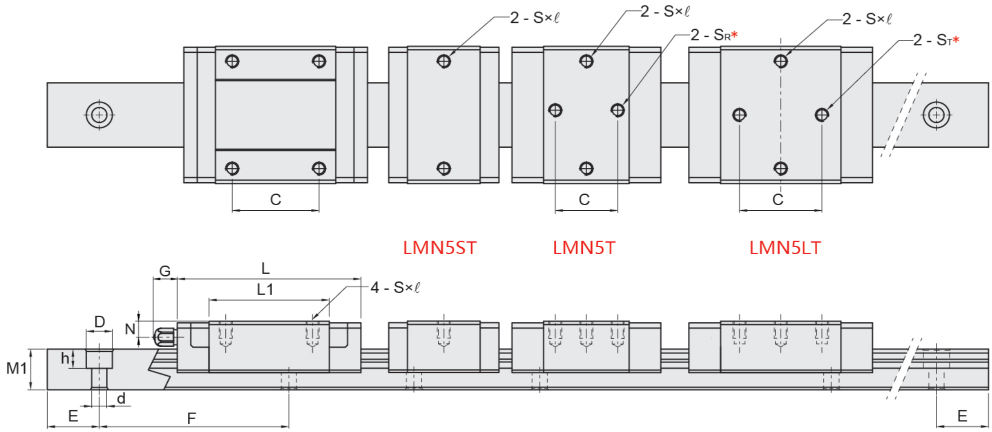


Unit (mm)

Model No.	External dimension			Carriage dimension						
	Height	Width	Length	B	C	Mounting hole	L1	H1	G	N
	M	W	L			S×ℓ				
LMN5 ST	6	12	11.8	8	-	M2×1.5	6.7	1.2	-	-
LMN5 T	6	12	16.3	8	6	M2×1.5	9.7	1.2	-	-
LMN5 LT	6	12	19.3	8	7	M2×1.5	12.7	1.2	-	-
LMN7 T	8	17	23.4	12	8	M2×2.5	13.7	1.5	-	-
LMN7 LT	8	17	29.7	12	13	M2×2.5	20	1.5	-	-
LMN9 ST	10	20	21.9	15	-	M3×3.5	10.6	2	-	-
LMN9 T	10	20	29.9	15	10	M3×3.5	18.6	2	-	-
LMN9 LT	10	20	41	15	16	M3×3.5	29.7	2	-	-
LMN12T	13	27	34.4	20	15	M3×3.5	21.2	3	-	-
LMN12 LT	13	27	46.3	20	20	M3×3.5	33.1	3	-	-
LMN15T	16	32	42.3	25	20	M3×4	27.7	4	5.6	3.4
LMN15 LT	16	32	55.8	25	25	M3×4	41.2	4	5.6	3.4

TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of LMN···T / LT



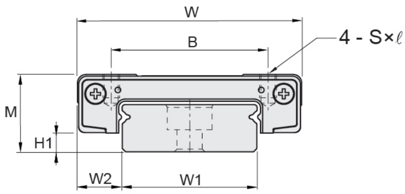
Unit (mm)

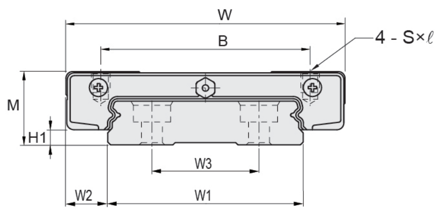
Model No.	Rail dimension						Basic load rating		Static moment rating			Weight	
	Width		Height	Pitch	End	Mounting bolt hole	Dynamic	Static	M_P N·m	M_Y N·m	M_R N·m	Carriage g	Rail g/100mm
	W1	W2	M1	F	E	D×h×d	C KN	C_0 KN					
LMN5 ST	5	3.5	3.6	15	5	3.6×0.8×2.4	0.38	0.5	0.6	0.6	0.8	2.5	13
LMN5 T	5	3.5	3.6	15	5	3.6×0.8×2.4	0.48	0.71	1.1	1.1	1.8	3	13
LMN5 LT	5	3.5	3.6	15	5	3.6×0.8×2.4	0.58	0.93	1.8	1.8	2.4	4	13
LMN7 T	7	5	4.7	15	10	4.2×2.3×2.4	1.21	1.62	3.5	3.5	6	10	21
LMN7 LT	7	5	4.7	15	10	4.2×2.3×2.4	1.56	2.34	7	7	8.6	13	21
LMN9 ST	9	5.5	5.5	20	10	6×3.5×3.5	1.21	1.62	3.5	3.5	6	10	21
LMN9 T	9	5.5	5.5	20	10	6×3.5×3.5	1.85	2.38	6.7	6.7	11.2	20	31
LMN9 LT	9	5.5	5.5	20	10	6×3.5×3.5	2.52	3.7	15.3	15.3	17.4	28	31
LMN12T	12	7.5	7.5	25	15	6×4.5×3.5	3.12	4.05	13.1	13.1	26.3	37	61
LMN12 LT	12	7.5	7.5	25	15	6×4.5×3.5	4.25	6.3	26.1	26.1	38	53	61
LMN15T	15	8.5	9.5	40	15	6×4.5×3.5	4.67	6.13	25.3	25.3	49.5	66	102
LMN15 LT	15	8.5	9.5	40	15	6×4.5×3.5	6.2	9.19	54.2	54.2	74.2	94	102

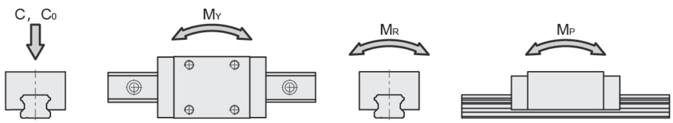
*S_T : M2.6 THRU.

*S_R : M2.0 THRU.

Dimensions of LMNW···T / LT







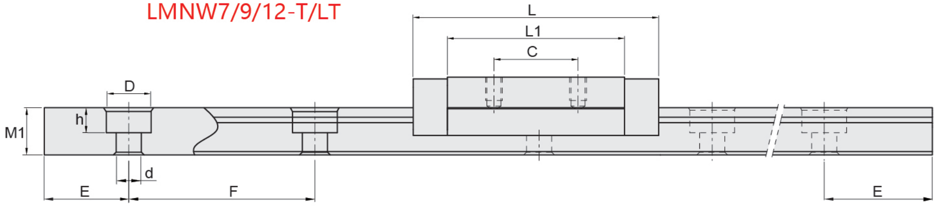
Unit (mm)

Model No.	External dimension			Carriage dimension						
	Height M	Width W	Length L	B	C	Mounting hole S×ℓ	L1	H1	G	N
LMNW7 T	9	25	31.2	19	10	M3×3	21.5	2	-	-
LMNW7 LT	9	25	40.8	19	19	M3×3	31.1	2	-	-
LMNW9 T	12	30	38.5	21	12	M3×3	27.4	3	-	-
LMNW9 LT	12	30	50.4	23	24	M3×3	39.3	3	-	-
LMNW12T	14	40	43.8	28	15	M3×3.8	31.6	3.5	-	-
LMNW12 LT	14	40	58.1	28	28	M3×3.8	45.9	3.5	-	-
LMNW15T	16	60	55	45	20	M4×4.5	39.9	3.3	5.6	3.6
LMNW15 LT	16	60	72.6	45	35	M4×4.5	57.5	3.3	5.6	3.6

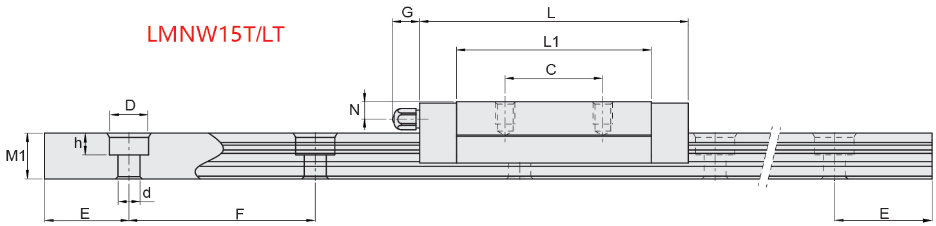
TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of LMNW···T / LT

LMNW7/9/12-T/LT



LMNW15T/LT



Unit (mm)

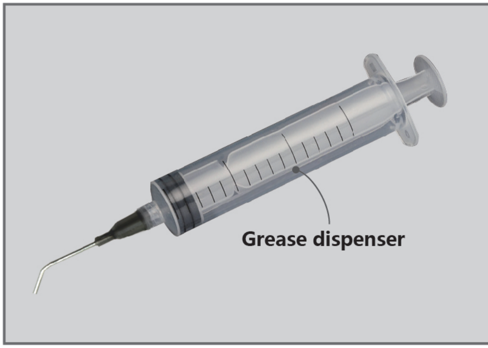
Model No.	Rail dimension							Basic load rating		Static moment rating			Weight	
	Width			Height	Pitch	End	Mounting bolt hole	Dynamic	Static	M_P N·m	M_Y N·m	M_R N·m	Carriage g	Rail g/100mm
	W1	W2	W3	M1	F	E	D×h×d	C KN	C_0 KN					
LMNW7 T	14	5.5	-	5.2	30	10	6×3.2×3.5	1.61	2.3	6.9	6.9	15.4	20	51
LMNW7 LT	14	5.5	-	5.2	30	10	6×3.2×3.5	2.14	3.56	14.7	14.7	25.4	29	51
LMNW9 T	18	6	-	7	30	10	6×4.5×3.5	2.52	3.7	15.3	15.3	33.4	40	91
LMNW9 LT	18	6	-	7	30	10	6×4.5×3.5	3.23	5.28	30.3	30.3	47.7	57	91
LMNW12T	24	8	-	8.5	40	15	8×4.5×4.5	4.04	5.85	26.1	26.1	75.8	71	149
LMNW12 LT	24	8	-	8.5	40	15	8×4.5×4.5	5.27	8.55	53.9	53.9	110.8	103	149
LMNW15T	42	9	23	9.5	40	15	8×4.5×4.5	6.95	9.37	55.4	46.6	192.2	143	286
LMNW15 LT	42	9	23	9.5	40	15	8×4.5×4.5	9.15	13.7	120.3	120.3	293.5	215	286

Lubrication

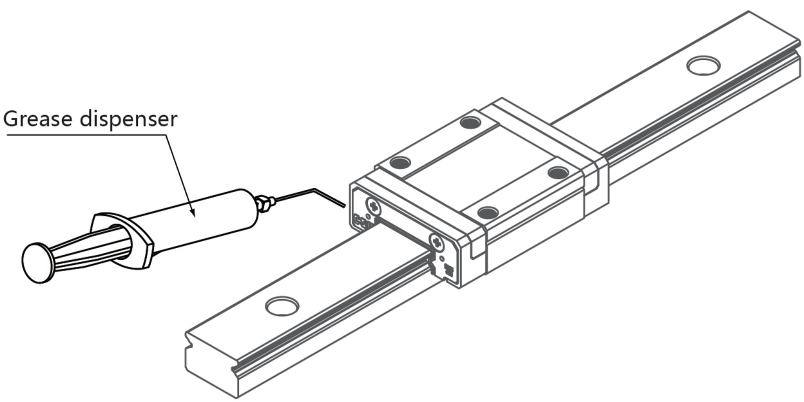
Lubrication position

A high grade lithium soap based grease is applied to the CSK carriages prior to shipment for immediate use. Relubricate timely according to the use.

A special syringe lubricant dispenser is available from CSK as an option.



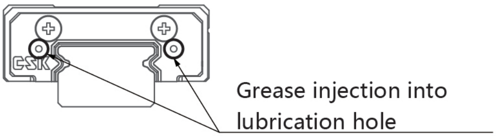
- Special syringe lubricant dispenser
- Scientific greasing method and position
- For technical support,please contact CSK.



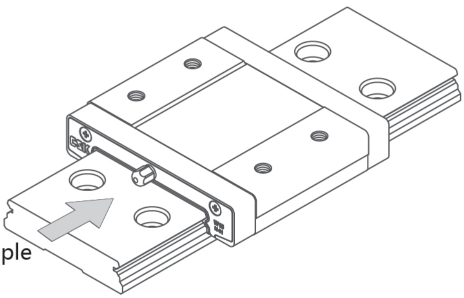
TEL +86 16653137076 E-mail info@cskmotions.com

Lubrication

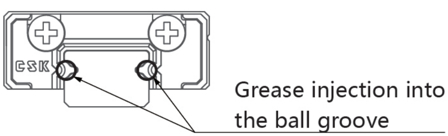
LMN12 LMNW9 LMNW12



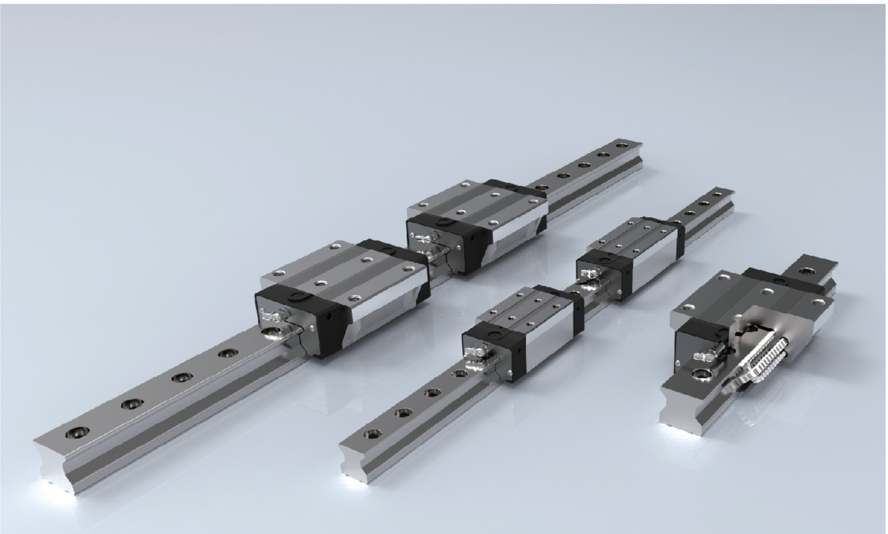
LMN15 LMNW15



LMN5 LMN7 LMN9 LMNW7

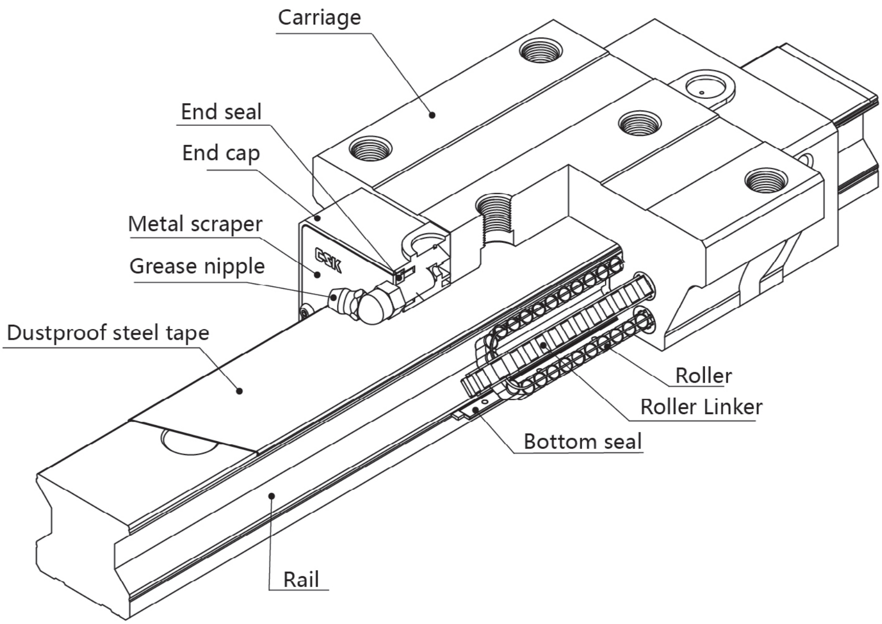


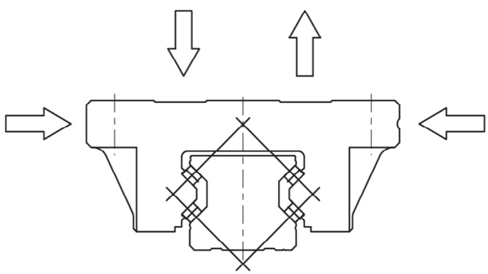
Roller-type Guideway
LMR series



TEL +86 16653137076 E-mail info@cskmotions.com

Roller LMR series





Note: For reference only.

Characteristics

The LMR series linear guides utilize cylindrical rolling elements to replace traditional steel ball rolling elements. The transition from point contact to line contact significantly enhances load capacity. When subjected to high loads, the cylindrical rolling elements exhibit minimal elastic deformation. Additionally, the use of a 45° contact angle DB design across four rolling element rows ensures high rigidity and load-bearing performance. These guides can withstand radial, reverse radial, and lateral loads in all four directions. Furthermore, they feature a specially designed rolling element synchronizer internally, which eliminates gear effects caused by mutual friction during rolling. This greatly reduces travel resistance, improves operational smoothness, and lowers noise levels. Years of validated preload settings have achieved a perfect balance between travel resistance, rigidity, and lifespan. The LMR series fully meets the requirements of high-end precision equipment for high precision, high load capacity, high reliability, low noise, and smooth and stable linear motion.

- Ultra-High Rigidity and Heavy Load Capacity
- DB Design Across Four Rolling Element
- Ultra-High Precision with Optional Grades
- Smooth Travel
- High Speed and Low Noise
- Interchangeable Blocks
- Comprehensive Lubrication Design
- Sealed and Configurable
- Dust-Resistant Steel Belt Design
- Manufactured to International Standards

Applications

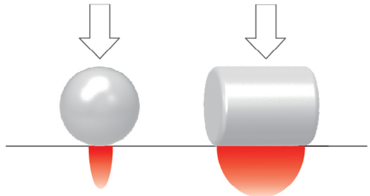
Machine Tool (Machine canter, Large gantry, Precision Lathe)
Industrial Automation (Heavy gantry robot, Cantilever cartesian robot, Robot ground track)

TEL +86 16653137076 E-mail info@cskmotions.com

Characteristics

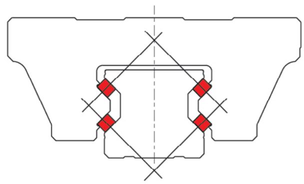
Heavy Load Capacity

The LMR series linear guides utilize cylindrical rolling elements to replace traditional steel ball rolling elements. The transition from point contact to line contact significantly enhances load capacity.



Ultra-High Rigidity

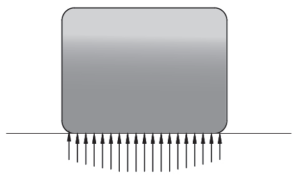
By utilizing modern digital technology, we analyze and optimize the contact position of the rolling column to maximize its resistance torque load capacity.



High Rigidity DB·Contact

Motion Accuracy

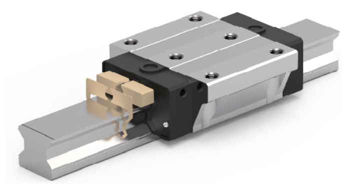
Smooth and precise walking accuracy achieved through exclusive fine control specifically developed for the rolling contact surface of the cylindrical component.



Stress distribution

Creative Lubrication

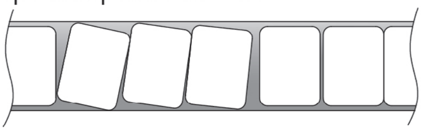
The block features a built-in self-lubri cating module that guides lubricating oil to the surface of the linear guide using engineered fibers. The rolling friction guide requires only an extremely thin oil film for effective lubrication. By incorporating an internally self-built self-lubricating module, the lubrication cycle can be extended to some extent, thereby prolonging the service life.

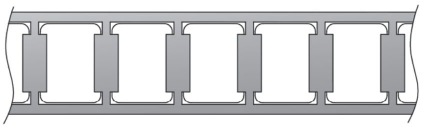


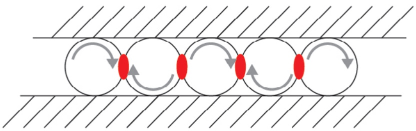
Characteristics

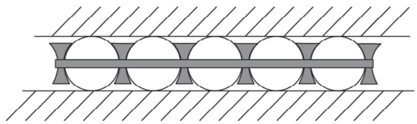
Smooth Motion

Optimization extends to each component, achieving uniform arrangement of cylindrical rolling elements through a rolling element synchronizer. This addresses the inherent rolling tilt issue and eliminates gear effects within the rolling elements, significantly reducing rolling resistance. The result is an optimal operational feel.

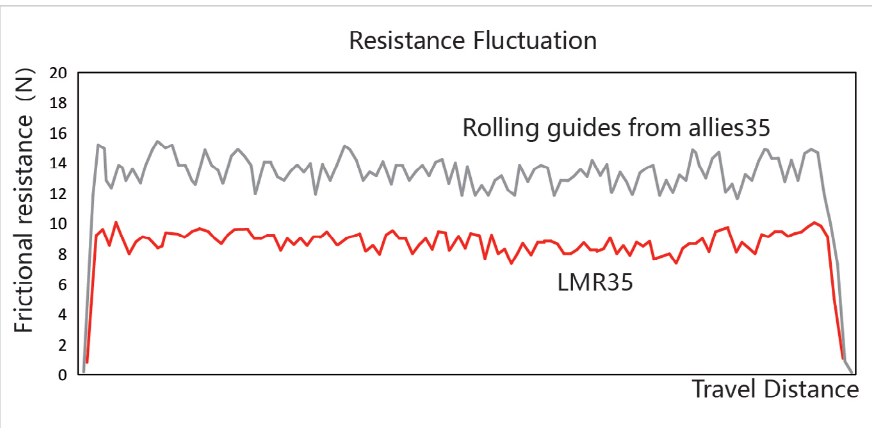

Cylindrical Rolling Element Tilt Illustration


Linker Array of Rolling Elements


Gear Friction Effect Illustration


Linker Structure Illustration

Resistance Fluctuation Test Report

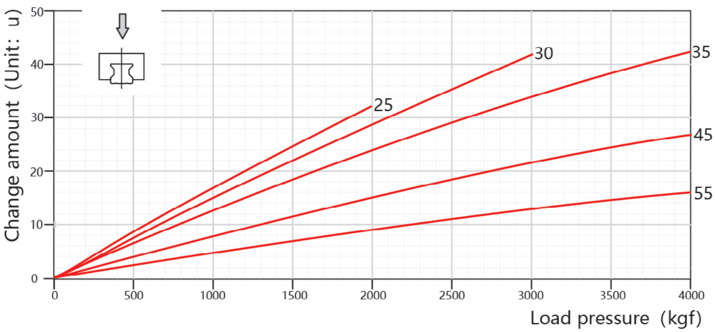


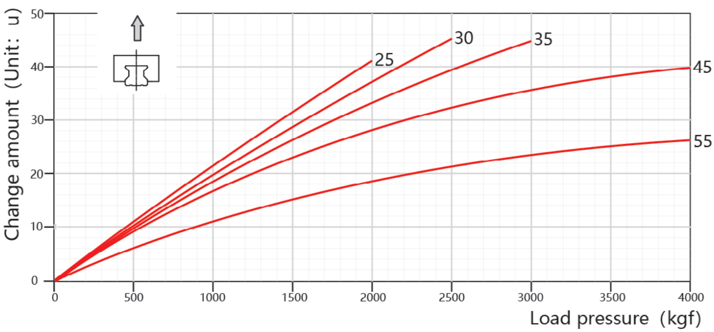
TEL +86 16653137076 E-mail info@cskmotions.com

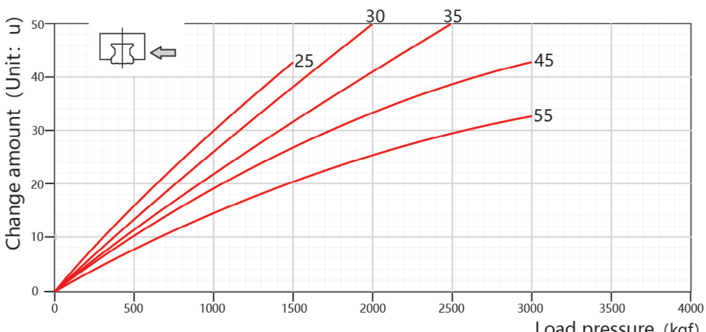
Characteristics

Rigidity

When the preload is P1， Roller guide rail rigidity.



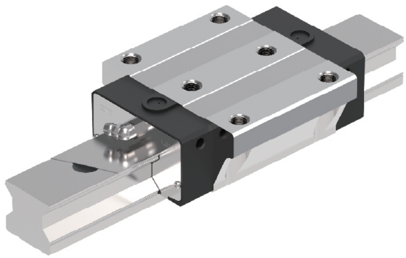




Characteristics

Heavy Load Capacity

In harsh environments, metal scrapers serve as the first layer of protection, effectively protecting the sealing plate from the risk of being damaged by metal debris.
The slide rail is equipped with steel strips for overall rail protection, which not only improves assembly efficiency but also avoids the problem of foreign object intrusion caused by traditional bolt cover wear.



Dust test

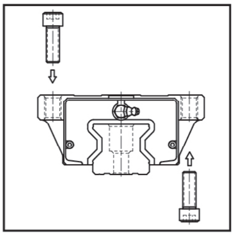
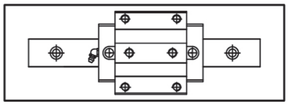
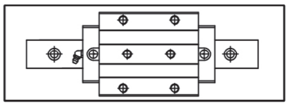
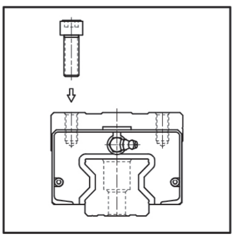
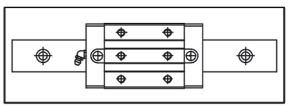
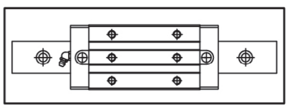
Model No.	Test conditions
specifications	LMR30H1ZZP1+R1000-20/20H
speed	1m/s
Stroke	800mm
Environment	Aluminum chip covering

Dust testing machine	Using bolt caps	Dustproof steel tape
		
		

Dust prevention method for guide rails	Operating mileage	Test result
Bolt cover	10000km	There are aluminum chips inside the slider
Dustproof steel tape	10000km	There is no abnormal inside the slider

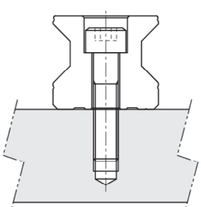
TEL +86 16653137076 E-mail info@cskmotions.com

Carriage Type

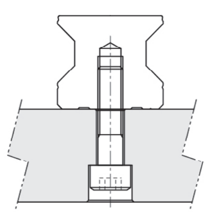
Contour	Length	Spec Code
Flange type 	Standard type 	C
	Extended 	LC
Square high type 	Standard type 	H
	Extended 	LH

Rail Type

Counter bore (R type)



Tapped hole (T type)

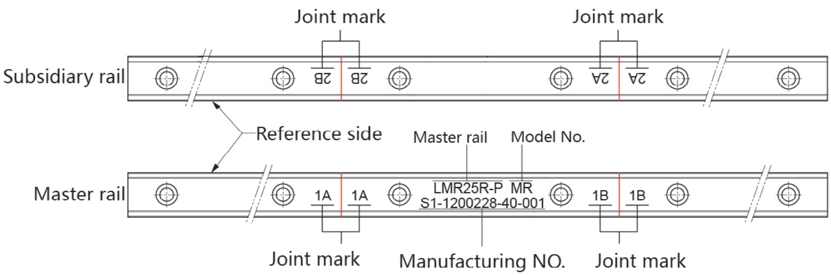


Rail Type

(1) For Butt-joint Rail

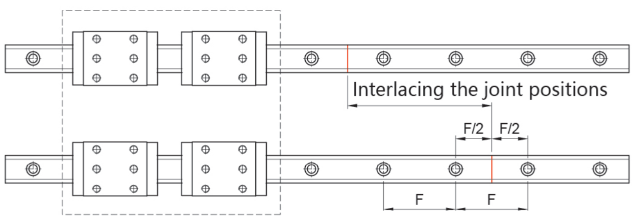
When applied length of rail longer than specified max. length, the rails can be connected to one another. For this situation, the joint marks indicate the matching position.
Accuracy may deviate at joints when carriages pass the joint simultaneously. Therefore, the joints should be interlaced for avoiding such accuracy problem.

● Dentification of butt-joint rail



(A)

● Staggering the joint position



(B)

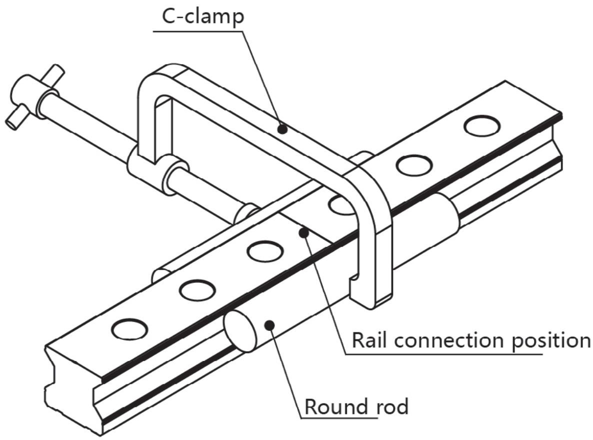
TEL +86 16653137076 E-mail info@cskmotions.com

Rail Type

• Method of continuous installation

As shown in the schematic diagram, connect the two ends of the guide rail to be spliced together, take two standard round rods and press them against the groove of the guide rail, and use C-clamp.

Model No.	Standard round bar size
LMR 25	Ø15
LMR 30	Ø20
LMR 35	Ø22
LMR 45	Ø25
LMR 55	Ø28



Guide rail connection installation diagram

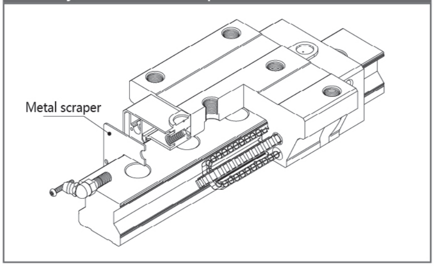
Dust Proof

(1) Code of contamination protection for carriage

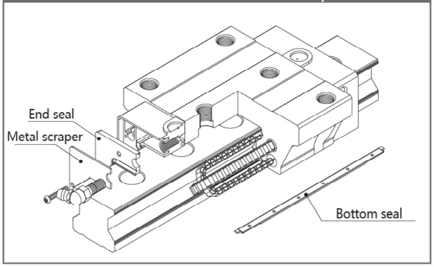
- Contamination protection

LMR series of linear guideway offers various kinds of dust proof accessory to keep the foreign matters from entering into the carriage.

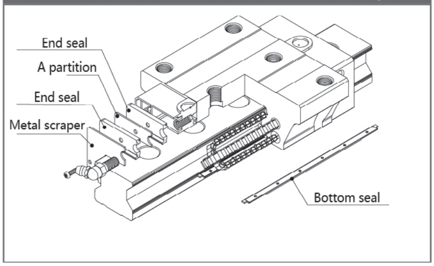
● No symbol Metal scrapers



● ZZ End seals + Bottom seals + metal scrapers

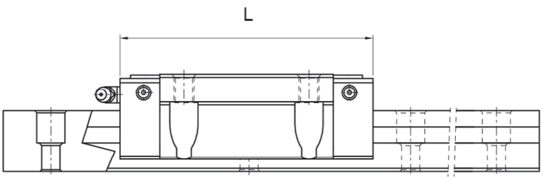


● KK Double End seals + Bottom seals + metal scrapers



- Types of dust proof accessories, and the increment to be added to the carriage overall length The increment to be added to the length of carriage with different applications of dust proof accessory is shown below.

Model No.	No symbol	ZZ	KK
LMR 25	-	-	6
LMR 30	-	-	6
LMR 35	-	-	8
LMR 45	-	-	6
LMR 55	-	-	6



Dust Proof

(2) Code of contamination protection for rail

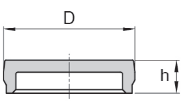
- Caps for rail mounting hole

  A special designed of cap is used to cover the bolt hole to prevent the foreign matters from entering the carriage.

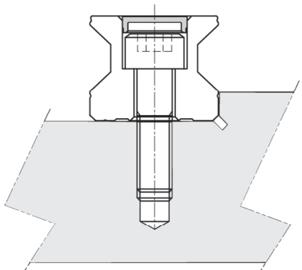
- Installation of plastic cap

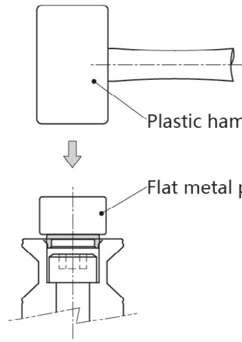
  Put the plate on the cap,then pound it into the bolt of rail with rubber hammer vertically.

  Continue pounding the cap until the cap is on the same plane with the top surface of rail.



plastic cap





- Plastic Cap

Code of Plastic Cap	Bolt Size	D (mm)	h (mm)	Rail Model
L6	M6	11.2	2.8	LMR25R
L8	M8	14.2	3.3	LMR30R, LMR35R
L12	M12	20.2	4.5	LMR45R
L14	M14	23.2	5.5	LMR55R

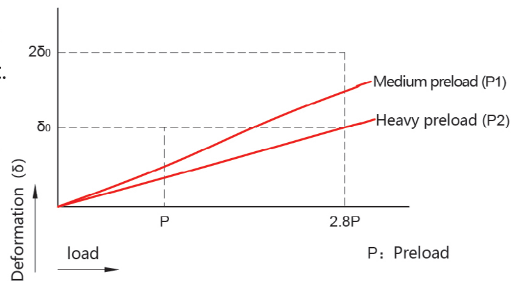
LMR

Preload

Since the radial chearance of the linear guideway greatly affects the running accuracy, load carrying capacity and rigidity of the linear guideway,it is important to select an appropriate clearance according to the application. in general,selecting a negative clearance while taking into account possible vibrations and impact generated from reciprocating motion favorably affects the service life and the accuracy.

Preload and Rigidity

Selecting appropriate preload to adapt the rigidity of machiney and equipment. The rigidity of a linear guideway could be enhanced by increasing the preload. As shown as below figure, the load could be raised up to 2.8 times the preload applied.



Preload and Service life

The preload is represented by negative clearance resulting from the increase of rolling element diameter. Therefore, the preload should be considered in calculation service life.

Preload Grade

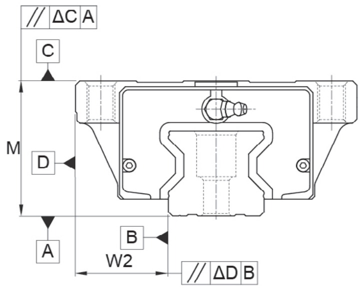
Preload grade	Code	Preload	Operating Condition
Medium preload	P1	0.07~0.09C	● Overhang application with a moment load. ● Applied in one-axis configuration ● The need of light preload and high precision.
Heavy preload	P2	0.12~0.14C	● Machine is subjected to vibration and impact, and high rigidity required. ● Application of heavy load or heavy cutting.

Note: The preload is the percentage of basic dynamic load rating (C).

TEL +86 16653137076 E-mail info@cskmotions.com

Accuracy Grade

The accuracy of LMR series is divided into five classes, High accuracy grade (H), Precision grade (P), Super precision grade (SP) and Ultra precision grade (UP).

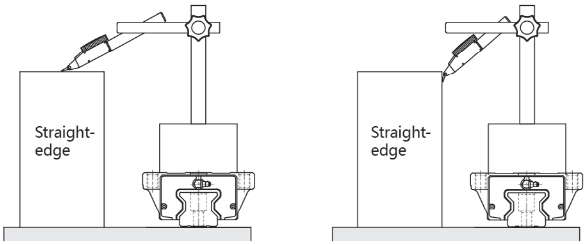


Unit (mm)

Model No.	Item	Accuracy Grade			
		High H	Precision P	Super Precision SP	Ultra Precision UP
LMR 25 LMR 30 LMR 35	Tolerance for height M	±0.04	0 -0.04	0 -0.02	0 -0.01
	Height difference ΔM	0.015	0.007	0.005	0.003
	Tolerance for distance W2	±0.04	0 -0.04	0 -0.02	0 -0.01
	Difference in distance W2 (ΔW2)	0.015	0.007	0.005	0.003
	Running parallelism of surface C with surface A	ΔC (see Running parallelism of carriage)			
	Running parallelism of surface D with surface B	ΔD (see Running parallelism of carriage)			
LMR 45 LMR 55	Tolerance for height M	±0.05	0 -0.05	0 -0.03	0 -0.02
	Height difference ΔM	0.015	0.007	0.005	0.003
	Tolerance for distance W2	±0.05	0 -0.05	0 -0.03	0 -0.02
	Difference in distance W2 (ΔW2)	0.02	0.01	0.007	0.005
	Running parallelism of surface C with surface A	ΔC (see Running parallelism of carriage)			
	Running parallelism of surface D with surface B	ΔD (see Running parallelism of carriage)			

Running Parallelism

The running accuracy is the deviation of parallelism between the reference surface of carriage and reference surface of rail when carriage moving over the entire length of rail.

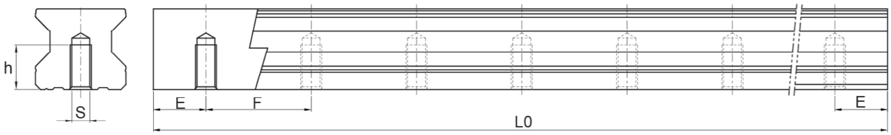


Measurement of running parallelism

Rail length (mm)		Running Parallelism Values (μm)			
Above	Or less (incl.)	High H	Precision P	Super Precision SP	Ultra Precision UP
0	315	6	3	2	1.5
315	400	8	4	2	1.5
400	500	9	5	2	1.5
500	630	11	6	2.5	1.5
630	800	12	7	3	2
800	1000	14	8	4	2
1000	1250	16	10	5	2.5
1250	1600	18	11	6	3
1600	2000	20	13	7	3.5
2000	2500	22	15	8	4
2500	3000	24	16	9	4.5
3000	3500	25	17	11	5
3500	4000	26	18	12	6

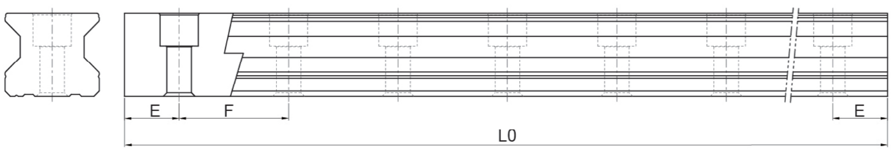
TEL +86 16653137076 E-mail info@cskmotions.com

Tapped Hole Rail Dimensions



Model	S	h (mm)
LMR 25T	M6	12
LMR 30T	M8	15
LMR 35T	M8	17
LMR 45T	M12	24
LMR 55T	M14	24

Rail Maximum Length and Standard



Unit (mm)

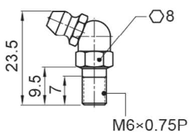
Size	LMR 25	LMR 30	LMR 35	LMR 45	LMR 55
Standard Pitch (F)	30	40	40	52.5	60
Standard (Estd.)	20	40	40	40	30
Minimum (Emin.)	7	8	8	11	12.5
Maximum Length (L0)	4000	4000	4000	4000	4000

Lubrication

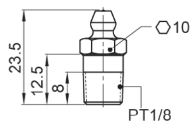
Grease nipples and oil piping joint

(1) Grease nipples

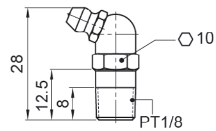
GC - M6M



GS - 7M



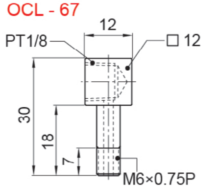
GC - 7M



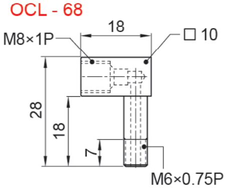
(2) Oil piping joint

● OC

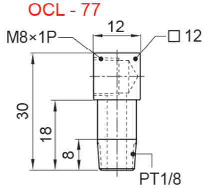
OCL - 67



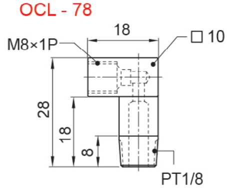
OCL - 68



OCL - 77

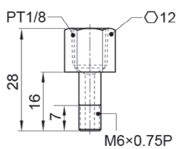


OCL - 78

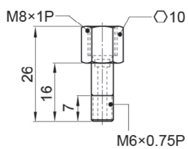


● OS

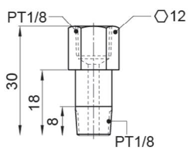
OSL - 67



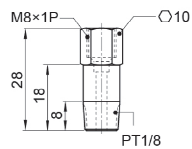
OSL - 68



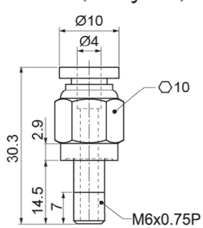
OSL- 77



OSL - 78



OSL - 64 (Fast joint)



Model No.	Grease Nipples		Oil Piping Joint
	Standard	Option	Option
LMR 25	GC - M6M	GS - M6M	OCL - 67、OCL - 68、OSL - 67、OSL- 68、OSL - 64
LMR 30			
LMR 35			
LMR 45	GC - 7M	GS - 7M	OCL - 77、OCL - 78、OSL - 77、OSL - 78
LMR 55			

TEL +86 16653137076 E-mail info@cskmotions.com

Lubrication

A well lubrication is important for maintaining the function of the linear guideway. If the lubrication is not sufficient, the frictional resistance at rolling area will increase and the service life will be shortened as a result of wear of rolling parts.
Two primary lubricants are both grease and oil used for the linear motion system, and the lubrication methods are categorized into manual and forced oiling. The selection of lubricant and its method should be based on the consideration of operating speed and environment requirement.

Grease lubrication

The grease feeding interval will be varied with different operating conditions and environments.Under normal operating condition, the grease should be replenished every 100km of travel.
The standard pre-filled grease is lithium-based grease No.2. Moving the carriage back and forth with minimum stroke length of three carriages after the carriages been greased. To assure the grease is evenly distributed inside of carriage, the mentioned process should be repeated twice at least.

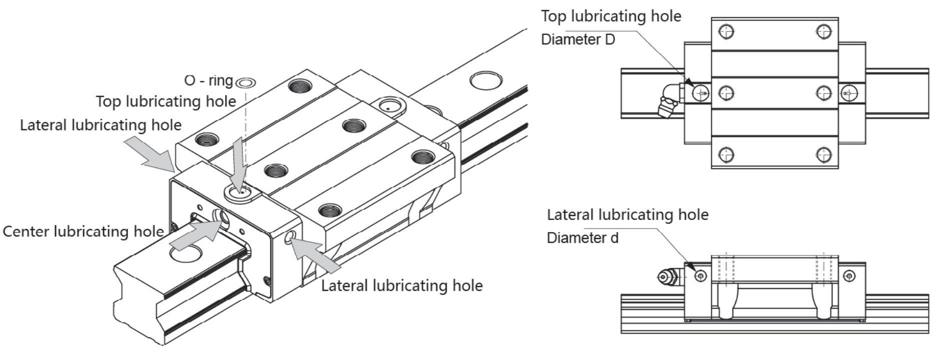
Oil lubrication

The recommended viscosity of oil is 30~150 cst, and the recommended feeding rate per hour. The nstallation other than horizontal may caused the oil unable to reach raceway area, so please specify the installed direction of your linear guideway applied.

Lubrication

Lubrication position

The standard lubricating position of carriage is at the center of both ends, as shown below.
As for lateral and top application, please specify when ordering.



Unit (mm)

<table>
<tr><th rowspan="2">Model No.</th><th>Center Lubricating</th><th colspan="3">Lateral Lubricating</th><th colspan="3">Top Lubricating</th></tr>
<tr><th>Grease Nipple</th><th>Diameter d</th><th>Grease Nipple</th><th>Drilling size</th><th>Diameter D</th><th>O - ring</th><th>Drilling size</th></tr>
<tr><td>LMR 25</td><td rowspan="3">M6×0.75P</td><td rowspan="5">5.2</td><td rowspan="5">M6×0.75P</td><td>2</td><td rowspan="3">7.4</td><td rowspan="3">P4</td><td>1</td></tr>
<tr><td>LMR 30</td><td>2.5</td><td>1.5</td></tr>
<tr><td>LMR 35</td><td>2</td><td>1</td></tr>
<tr><td>LMR 45</td><td rowspan="2">PT1/8</td><td>2.5</td><td rowspan="2">10.2</td><td rowspan="2">P7</td><td rowspan="2">2</td></tr>
<tr><td>LMR 55</td><td>2</td></tr>
</table>

TEL +86 16653137076 E-mail info@cskmotions.com

Specifications

(1) Non-Interchangeable type

LMR 25 C 2 ZZ P1 _ +R C 1000 -20 /20 P _ II

Series：LMR

Size：25，30，35，45，55

Carriage type

(1) Heavy load

C：Flange type, mounting either from top or bottom

H：Square high type

(2) Ultra heavy load

LC：Flange type, mounting either from top or bottom

LH：Square high type

Number of carriages per rail：1，2，3 ...

Dust protection option：No symbol，ZZ，KK

Preload：P1 (Medium preload) ，P2 (Heavy preload)

Code of special carriage：A，B ... (Standard rail is no symbol)

Rail type：R，T (Tapped hole type)

Dustproof steel tape：No symbol，C

Rail length (mm)

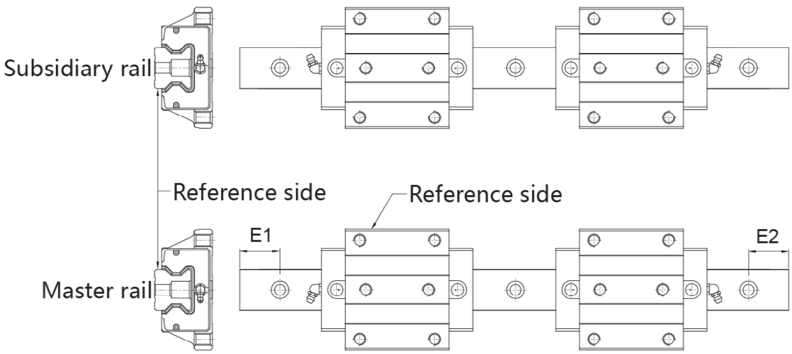
Rail hole pitch from start side (E1, see Figure below)

Rail hole pitch to the end side (E2, see Figure below)

Accuracy grade：H，P，SP，UP

Code of special rail：A，B ... (Standard rail is no symbol)

Number of rails per axis：No symbol，II，III，IV ...



Specifications

(2) Interchangeable type

● Code of Carriage

LMR 25 C ZZ P1 H _

Series：LMR

Size：25，30，35，45，55

Carriage type

(1) Heavy load

C： Flange type, mounting either from top or bottom

H： Square high type

(2) Ultra heavy load

LC：Flange type, mounting either from top or bottom

LH：Square high type

Dust protection option：No symbol，ZZ，KK

Preload：P1 (Medium preload) ，P2 (Heavy preload)

Accuracy grade：H

Code of special carriage：A，B ... (Standard carriage is no symbol)

TEL +86 16653137076 E-mail info@cskmotions.com

Specifications

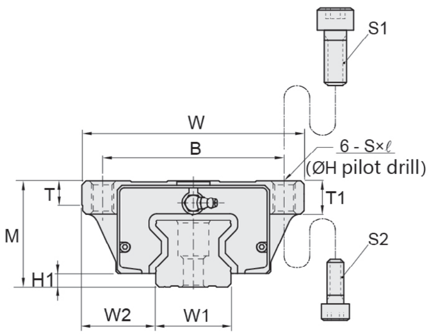
● Code of Rail

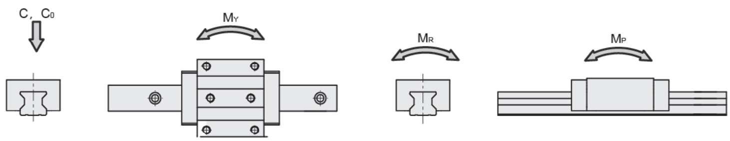
LMR 25 R 1000 -20 /20 H

- Series：LMR
- Size：25，30，35，45，55
- Rail type：R，T（Tapped hole type）
- Rail length（mm）
- Rail hole pitch from start side（E1, see Figure below）
- Rail hole pitch to the end side（E2, see Figure below）
- Accuracy grade：H
- Code of special rail：A，B ...（Standard rail is no symbol）

Dimensions of LMR···C / LC

Model No.	Bolt Size		Pilot drill
	S1	S2	H
LMR25	M8	M6	6.9
LMR30	M10	M8	8.6
LMR35	M10	M8	8.6
LMR45	M12	M10	10.4
LMR55	M14	M12	12.5



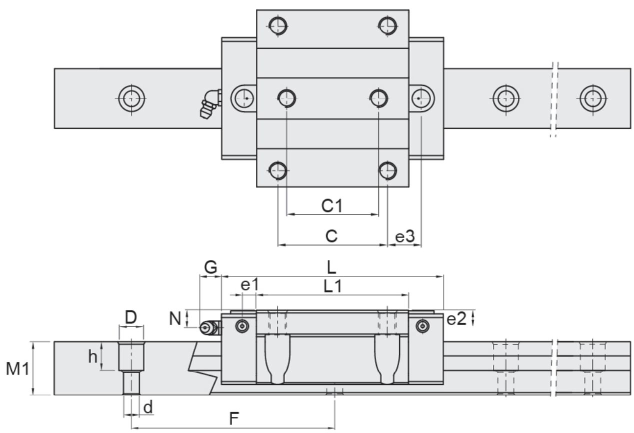


Unit (mm)

Model No.	External dimension			Carriage dimension													
	Height	Width	Length														
	M	W	L	B	C	C1	Mounting hole S×ℓ	L1	T	T1	H1	N	e1	e2	e3	G	Grease nipple
LMR25C	36	70	101.2	57	45	40	M8×10	65.2	8	13	5	6.6	7.5	6.5	17.1	15	M6×0.75
LMR25LC	36	70	117.2	57	45	40	M8X10	81.2	8	13	5	6.6	7.5	6.5	25.15	15	M6X0.75
LMR30 C	42	90	113.1	72	52	44	M10X10	71.5	8	13	5.8	7.2	7.5	7.3	16.75	15	M6×0.75
LMR30LC	42	90	135	72	52	44	M10×10	93.4	8	13	5.8	7.2	7.5	7.3	28	15	M6×0.75
LMR35 C	48	100	129	82	62	52	M10X13	86	10	13.5	6	10	8	9	19	15	M6×0.75
LMR35 LC	48	100	154.8	82	62	52	M10×13	111.8	10	13.5	6	10	8	9	31.9	15	M6×0.75
LMR45 C	60	120	153	100	80	60	M12×15	107	12	15	7.8	10	8.5	10	20.5	16.5	PT 1/8
LMR45 LC	60	120	184.2	100	80	60	M12×15	138.2	12	15	7.8	10	8.5	10	36.1	16.5	PT 1/8
LMR55 C	70	140	182	116	95	70	M14×18	126.4	12	18	10	12	9	10	22.7	16.5	PT 1/8
LMR55 LC	70	140	231.6	116	95	70	M14×18	176	12	18	10	12	9	10	47.5	16.5	PT 1/8

TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of LMR···C / LC

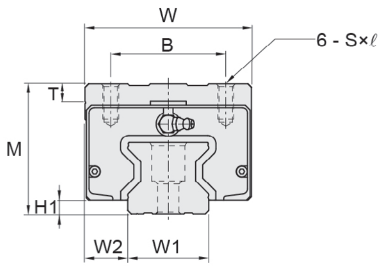


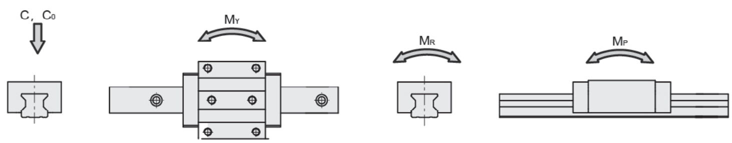
Unit（mm）

Model No.	Rail dimension					Basic load rating		Static moment rating			Weight	
	Width		Height	Pitch	Mounting bolt hole	Dynamic	Static					
	W1	W2	M1	F	D×h×d	C KN	C_0 KN	M_P (KN·m)	M_Y (KN·m)	M_R (KN·m)	Carriage Kg	Rail Kg/m
LMR25C	23	23.5	23.6	30	11×9×7	26.6	60.6	0.59	0.59	0.74	0.68	3.16
LMR25LC	23	23.5	23.6	30	11X9X7	30.9	73.3	0.85	0.85	0.90	0.85	3.16
LMR30 C	28	31	28	40	14×12×9	39.6	82.5	0.85	0.85	1.26	1.19	4.4
LMR30LC	28	31	28	40	14×12×9	51.3	115.5	1.64	1.64	1.76	1.45	4.4
LMR35 C	34	33	30.2	40	14×12×9	49.4	110.0	1.49	1.49	2.01	1.61	6.23
LMR35 LC	34	33	30.2	40	14×12×9	58.8	137.5	2.30	2.30	2.51	2.13	6.23
LMR45 C	45	37.5	38	52.5	20×17×14	88.3	213.5	3.56	3.56	5.00	3.04	10.23
LMR45 LC	45	37.5	38	52.5	20×17×14	109.4	281.4	6.12	6.12	6.59	3.85	10.23
LMR55 C	53	43.5	44	60	23×20×16	120.0	299.9	5.80	5.80	8.25	4.62	14.45
LMR55 LC	53	43.5	44	60	23×20×16	154.6	414.4	10.82	10.82	11.42	6.43	14.45

LMR

Dimensions of LMR···H / LH



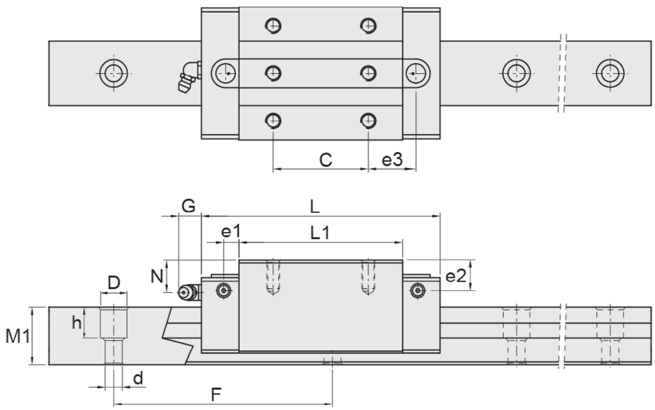


Unit (mm)

Model No.	External dimension Height M	Width W	Length L	Carriage dimension B	C	Mounting hole S×ℓ	L1	T	H1	N	e1	e2	e3	G	Grease nipple
LMR25H	40	48	101.2	35	35	M6×8	65.2	8	5	10.6	7.5	10.5	22.1	15	M6×0.75
LMR25LH	40	48	117.2	35	50	M6X8	81.2	8	5	10.6	7.5	10.5	22.65	15	M6X0.75
LMR30 H	45	60	113.1	40	40	M8X10	71.5	9	5.8	10.2	7.5	10.3	22.75	15	M6×0.75
LMR30LH	45	60	135	40	60	M8×10	93.4	9	5.8	10.2	7.5	10.3	24	15	M6×0.75
LMR35 H	55	70	129	50	50	M8X12	86	15	6	17	8	16	25	15	M6×0.75
LMR35 LH	55	70	154.8	50	72	M8×12	111.8	15	6	17	8	16	26.9	15	M6×0.75
LMR45 H	70	86	153	60	60	M10×17	107	12	7.8	20	8.5	20	30.5	16.5	PT 1/8
LMR45 LH	70	86	184.2	60	80	M10×17	138.2	12	7.8	20	8.5	20	36.1	16.5	PT 1/8
LMR55 H	80	100	182	75	75	M12×18	126.4	17	10	22	9	20	32.7	16.5	PT 1/8
LMR55 LH	80	100	231.6	75	95	M12×18	176	17	10	22	9	20	47.5	16.5	PT 1/8

TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of LMR···H / LH

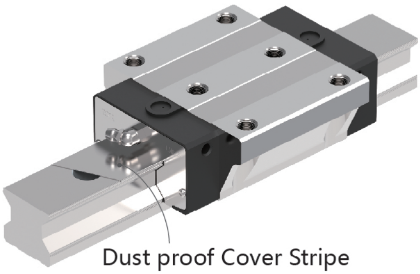


Unit (mm)

Model No.	Rail dimension					Basic load rating		Static moment rating			Weight	
	Width W1	W2	Height M1	Pitch F	Mounting bolt hole D×h×d	Dynamic C KN	Static C_0 KN	M_P (KN·m)	M_Y (KN·m)	M_R (KN·m)	Carriage Kg	Rail Kg/m
LMR25H	23	12.5	23.6	30	11×9×7	26.6	60.6	0.59	0.59	0.74	0.61	3.16
LMR25LH	23	12.5	23.6	30	11X9X7	30.9	73.3	0.85	0.85	0.90	0.76	3.16
LMR30 H	28	16	28	40	14×12×9	39.6	82.5	0.85	0.85	1.26	0.94	4.4
LMR30LH	28	16	28	40	14×12×9	51.3	115.5	1.64	1.64	1.76	1.15	4.4
LMR35 H	34	18	30.2	40	14×12×9	49.4	110.0	1.49	1.49	2.01	1.55	6.23
LMR35 LH	34	18	30.2	40	14×12×9	58.8	137.5	2.30	2.30	2.51	2.07	6.23
LMR45 H	45	20.5	38	52.5	20×17×14	88.3	213.5	3.56	3.56	5.00	3.07	10.23
LMR45 LH	45	20.5	38	52.5	20×17×14	109.4	281.4	6.12	6.12	6.59	3.87	10.23
LMR55 H	53	23.5	44	60	23×20×16	120.0	299.29	5.80	5.80	8.25	4.27	14.45
LMR55 LH	53	23.5	44	60	23×20×16	154.6	414.4	10.82	10.82	11.42	5.94	14.45

Roller Linear Guideway - Options

Dust proof Cover Stripe C



Product characteristics

- **Easy to install and disassemble**

  Quick installation during installation, simple and fast disassembly of the entire strip during disassembly.

- **Prevent foreign object intrusion**

  Effectively prevent the chip or foreign matter damage the bolt hole special cover and then invade the inside of the slider, affecting the life of the linear guide.

- **Strong versatility**

  There is no need for special processing or individual customization of the slide, which greatly saves costs.

Specifications

LMR 25 C 2 ZZ P1 +R C 1000 -20 /20 P

Series：LMR

Size：25，30，35，45，55

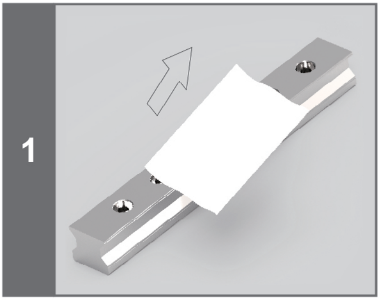
Dust proof Cover Stripe

Note:

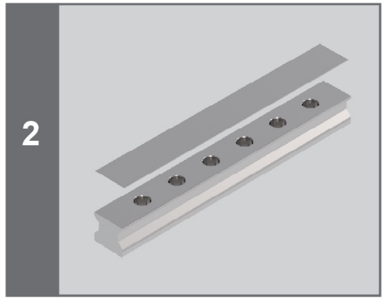
- Dust proof steel belt can not be bent.
- Before installing the dust-proof steel belt, clean the upper surface of the guide rail.
- The edge and both ends of the dust-proof steel belt are sharp. To prevent scratches, please wear gloves when installing.
- Make chamfering at the cut off of the dust-proof steel belt to avoid scratches during installation.

TEL +86 16653137076 E-mail info@cskmotions.com

Installation

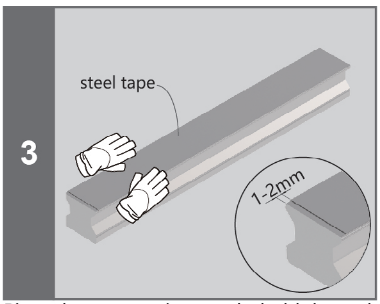


Clean rail surface before installation.



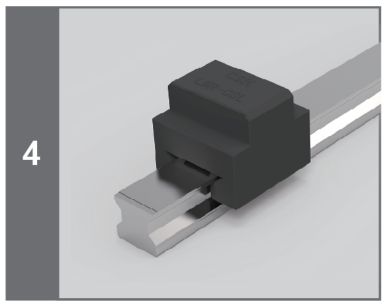
When cutting, make the cover stripe1~2mm shorter than the guideway.

⚠ The cover stripe cannot be bent.

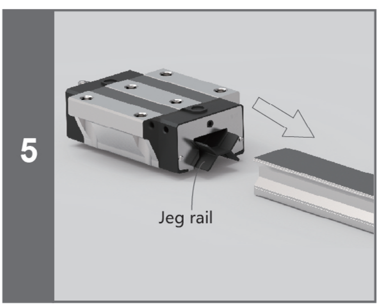


Place the cover stripe neatly, hold down the edge of the cover stripe, and press down to make sure that the end of the cover stripe is closely connected with the end of the guideway.

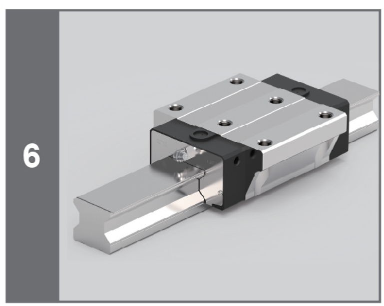
⚠ The cover stripe cannot be bent.



Align the cover stripe with the guideway and push it downward to check whether the cover stripe is in place. Repeat Step 4 until the cover stripe is in place.



After the Jeg rail is aligned with the guideway, push the slide block into the guideway. Take out the slide block, use the Jeg rail.



Complete

Description of slider back hole cove

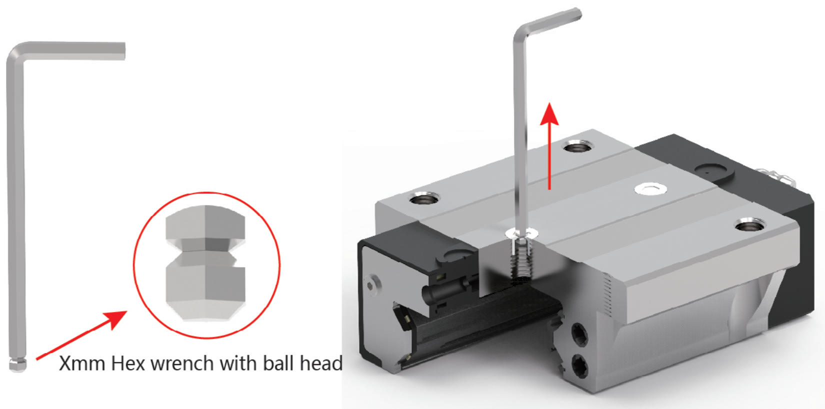
Characteristics

When the LMR series C-type slider is locked down，Prevent foreign objects from entering the interior of the slider through the back hole of the slider，Affects the service life of linear guides.

Disassembly method

When using the middle two holes, remove the dust plug from the back hole of the slider as follows.

1.Insert the ball head of the M4 Allen wrench into the center slot of the dustproof back hole cover. Lift out the dust proof back hole cover with vertical upward force.



TEL +86 16653137076 E-mail info@cskmotions.com

Linear Guideway Basic knowledge

Linear Guideway Service Life

When a linear guide rail operates under load, its rolling surfaces and rolling elements are continuously subjected to repetitive stress from rolling contact. When the fatigue limit is reached, the rolling surfaces can crack due to stress fatigue, leading to flaking that resembles scales on the metal surface. The service life of a linear guide rail is defined as the total operational distance until the onset of surface flaking on the rolling surfaces or rolling elements. This flaking phenomenon is a result of rolling fatigue in the material of the rolling surfaces or rolling elements.

Linear Guideway Rated Life

Even when linear guide rails are manufactured under the same conditions and operated under the same conditions, there can be variations in their actual service life. Therefore, for the purpose of calculating the service life of linear guide rails, the rated life is defined as follows: The rated life refers to the total operational distance achieved by a batch of identical linear guide rails running under the same conditions, until 90% or more of the products do not exhibit surface flaking.

Basic Load Rating

Linear guide rails have two types of basic load ratings: the Basic Dynamic Load Rating (C) , which is used for calculating the service life, and the Basic Static Load Rating (C_0), which defines the limit of the static permissible load.

Basic Dynamic Load Rating

The term "Basic Dynamic Load Rating (C)" refers to a consis tent load condition in terms of direction and magnitude, under which a batch of identical linear guide rails, when operated under the same conditions, will have a rated life (L) of (L = 50) km for those using steel balls.

This load condition is known as the Basic Dynamic Load Rating (C). It is used to calculate the service life of linear guide rails when they are under load, and its value is recorded in the dimension tables for each model.

Basic Static Load Rating

When a linear guide rail is station ary or in motion, if it is subjected to an excessive load or a large impact load, local permanent deformation will occur at the contact area between the rolling surface and the rolling elements. Once this perma nent deformation exceeds a certain limit, it will interfere with the smooth operation of the linear guide rail.

Basic Static Load Rating (C_0) refers to a constant static load, both in direction and magnitude, that causes the total permanent defor mation of the rolling elements and the rolling surface at the maximum stress contact area to reach 0.0001 times the diameter of the rolling elements.

The Basic Static Load Rating (C_0) of linear guide rails is defined in terms of radial load. It is used to calculate the static safety factor relative to the applied load, and its values are listed in the dimension tables for each model.

TEL +86 16653137076 E-mail info@cskmotions.com

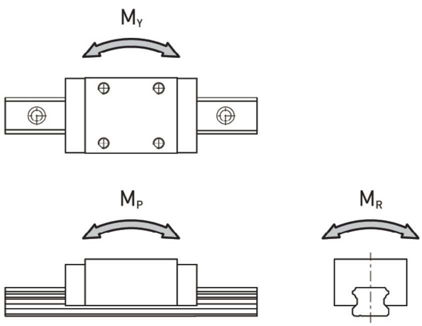
Permissible Static Moment Mo

When a linear guide rail is subjected to torque, the stress distribution on the rolling elements within the guide rail is uneven, resulting in the rolling elements at both ends bearing the maximum stress.

The Permissible Static Moment (Mo) refers to a fixed static moment, both in magnitude and direction, that results in the total permanent deformation of the rolling elements and the rolling surface at the contact area under maximum stress reaching 0.0001 times the diameter of the rolling elements.

The permissible static moments for linear guide rails are defined in three directions: M_P, M_R, and M_Y, and their values are listed in the dimension tables for each model.

Moment in various ditections



Static Safety Factor fs

When linear guide rails are stationary or in operation, they may be subjected to unexpected external forces due to vibration, impact, or the inertial forces generated by starting and stopping. For such load conditions, it is necessary to consider the static safety factor (fs). The static safety factor (fs) is represented by the number of times the actual load applied to the linear guide rail is of the basic static load rating (C_0).

$$f_s = \frac{f_C \times C_0}{P} \quad 或 \quad f_s = \frac{f_C \times M_0}{M}$$

- f_s Static safety factor
- f_c Contact Coefficient
- C_0 Static load rating
- M_0 Permissible static moments (M_P, M_R, and M_Y)
- P Load calculation value
- M Torque calculation value

Please refer to the safety factor shown in the table below as the reference value for the lower limit of operating conditions.

Reference of Static Safety Factor

Industry	Load conditions	Lower limit of fs
General Industry	With vibration and shock	1.0 ～ 3.5
	Without vibration and shock	2.0 ～ 5.0
Machine Tool Industry	With vibration and shock	1.0 ～ 4.0
	Without vibration and shock	2.5 ～ 7.0

Service Life Calculation Formula

The rated life (L) of a linear guide rail can be calculated based on the Basic Dynamic Load Rating (C) and the applied load (P).

In practical use, linear guide rails often operate with vibrations and impacts, resulting in constantly changing applied loads. Additionally, the hardness of the rolling surfaces and the temperature of the operat ing environment greatly affect the service life.

Taking these factors into account, the actual service life calculation for linear guide rails using steel balls is as follows:

Ball screw

$$L = \left(\frac{f_H \times f_T \times f_C}{f_W} \times \frac{C}{P} \right)^{3} \times 50$$

Rolling

$$L = \left(\frac{f_H \times f_T \times f_C}{f_W} \times \frac{C}{P} \right)^{\frac{10}{3}} \times 100$$

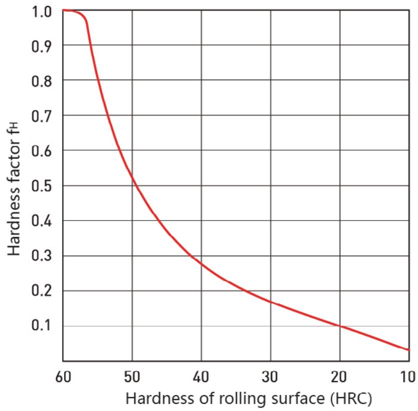
L	Rated life (km)
C	Basic dynamic load rating(N)
P	Load bearing
f_H	Hardness factor
f_T	Temperatre factor
f_C	Contact coefficient
f_W	Load Coefficient

Hardness Factor f_H

To fully utilize the load capacity of linear guideways, the hardness of the rolling surfaces should be between HRC 58 and 64. If the hardness falls below this range, the load capacity of the linear guideways will be reduced. In such cases, the basic dynamic rated load and basic static rate d load should be multiplied by the corre sponding hardness factor (f_H).

(Note) The hardness requirement for the rolling surface of CSK linear guideways is above HRC 58, therefore the hardness factor (f_H)=1.

■ Hardness Factor f_H

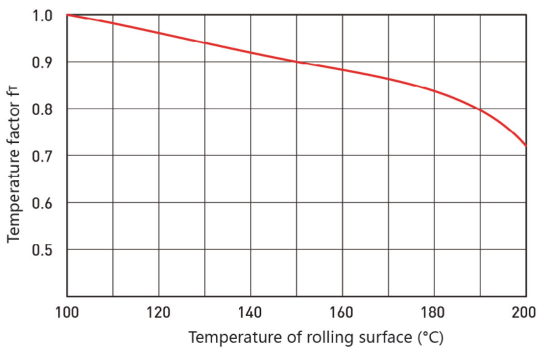


Temperature Factor f_T

When the operating environ ment of linear guideways exceeds 100°C, it is necessary to consider the adverse effects of high temperatures and multiply by the corresponding temperature coefficient from the list below.

(Note)The seal and end cap materials used in CSK linear guideway standard products are recommended for operating environ-ments with temperatures below 90°C.

■ Temperature Factor f_T



Contact Factor fc

When using multiple linear guideway sliders in close contact, the load distribu tion is difficult to even out due to the effects of torque load and installation precision. In such cases, when the sliders are positioned closely together, it is necessary to multiply the basic dynamic rated load (C) and the basic static rated load (C0) by the corresponding contact factor from the list provid ed.

Contact Factor fc

Number of sliders in close contact	Contact Factor
2	0.81
3	0.72
4	0.66
5	0.61
6 or more	0.6
Genaral use case	1

Load Factor fw

Machinery that typically performs reciprocating motion often experiences vibration or shock during operation. It is particularly challenging to accurately calculate the vibrations produced at high speeds and the impact of frequent starts and stops.
At moments when the effects of speed and vibration are significant, please divide the basic dynamic rated load (C) by the load coefficient obtained from experience, as listed in the table below.

Load Factor fw

Operating conditions	Speed	fw
Without vibration and shock	$V \leqq 15$ m/min	1.0~1.2
Light vibration and shock	$15 < V \leqq 60$ m/min	1.2~1.5
Medium vibration and shock	$60 < V \leqq 120$ m/min	1.5~2.0
High vibration and shock	$V \geqq 120$ m/min	2.0~3.5

TEL +86 16653137076 E-mail info@cskmotions.com

Calculation of Life Span

When the stroke length and the number of reciprocations for the use of linear guideways are fixed, the relative lifespan (Lh) can be calculated from the rated life (L) obtained from the aforementioned formula. This conversion allows for the determination of the lifespan in hours based on the specific operational parameters.

Linear motion of steel balls

$$L_h = \frac{L \times 10^3}{2 \times l_S \times n_1 \times 60}$$

L_h Lifespan (hr)

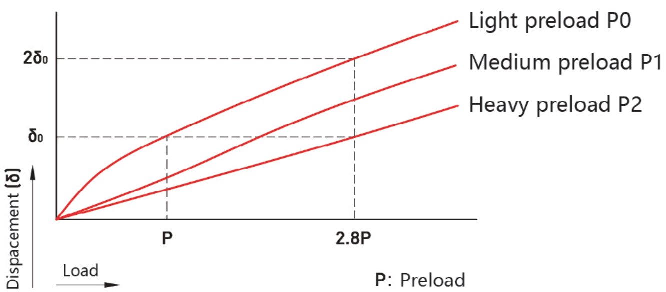
L Rated Life Calculation value (km)

l_S Stroke Length (m)

n_1 Counts Per Minute (min^{-1})

Rigidity and Preload

When selecting linear guideways, it is essential to choose the appropriate preload that meets the operating conditions to achieve the required rigidity for the machinery and equipment. By applying a preload (i.e., preloading), the rigidity of the linear guideways can be increased up to 2.8 times the preload force. This results in a smaller displacement under the same load compared to a non-preloaded condition, significantly enhancing rigidity. The preload in linear guideways is achieved by increasing the diameter of the steel balls, creat ing a negative clearance between the balls and the rolling surface, thus apply ing an internal load. Therefore, this preload force must be taken into account when calculating the lifespan.



Friction Factor

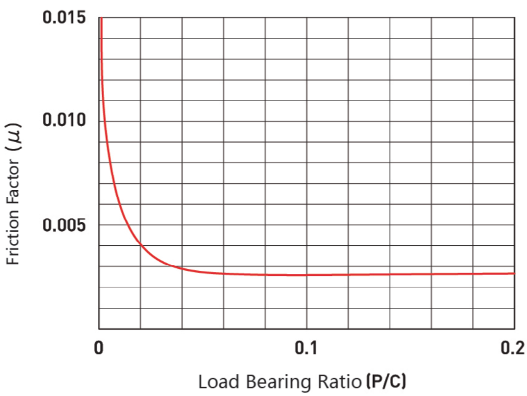
Linear guideways operate by rolling elements moving between rolling surfaces, which results in their frictional resistance being 1/20 to 1/40 of that of sliding guideways. Notably, their static friction is very low, almost identical to dynamic friction, preventing stick-slip motion during operation and enabling feed distances below the micron level. The frictional resistance of linear guideways varies with their type, preload, the viscosity resistance of the lubricant, and the load applied to the guideways. Particularly, when torque is applied or preload is used to increase rigidity, the frictional resistance will rise accordingly. The frictional resistance (thrust value) of linear guideways can be calculated using the following formula, taking into account the load they bear and the resistance of the seals.

Note: Friction factor of LMG series linear guides is 0.002~0.003.

$$F=\mu\times P+f$$

- F Friction Resistance (kgf)
- μ Dynamic Frictional Resistance Factor
- P Load Bearing (kgf)
- f Seal Resistance

■ Load Bearing and Friction Factor Relationship



P: Load Bearing
C: Dynamic Load Rating

TEL +86 16653137076 E-mail info@cskmotions.com

Features of CSK Linear Guideway

High positiong accuracy

Linear guideway facilitate movement through rolling elements between rolling surfaces, resulting in frictional resistance that is 1/20 to 1/40 of that of sliding guideways. Particularly noteworthy is the very low static friction, which is nearly identical to dynamic friction, thus eliminating the occurrence of stick-slip during micro-feed operations. This ensures excellent precision resolution and reproducibility, achieving positioning accuracy at the sub-micron level.

Minimal wear allows for long-term maintance of precision

Traditional sliding guideways, due to the adverse effects of oil film backflow during movement, can lead to poor motion accuracy. Additionally, their challenging lubrication can result in significant wear on the contact surfaces of the guideway, severely affecting precision. In contrast, linear guideways with a rolling motion system have a simple lubrication structure, making lubrication easy and effective. This minimizes wear on the friction contact surfaces, there by maintaining the machine’ s travel accuracy over a long period.

Capable of high load in all four directions

The geometric design of linear guideways enables them to simultaneously withstand loads in radial, reverse radial, and lateral directions while maintaining their travel accuracy. Additionally, rigidity and load capacity can be enhanced by applying preload and increasing the number of sliders.

Suitable for applications requiring high-speed motion

The characteristic of low rolling friction resistance in linear guideways means that they require less power for mechanical equipment, thus saving on electricity consumption. Additionally, their low wear during movement and minimal frictional heat generation allow for the miniaturization of machinery and support the need for high-speed motion.

Easy to assemble and features interchangeability

The installation of linear guideways is straightforward: by following the recom mended assembly steps on a milled or ground mounting surface, the high precision achieved during the manufacturing of the guideways can be replicated. This process reduces the time and cost associated with traditional scraping methods required for the mounting surface. Additionally, the interchangeability feature of the guideways allows for the separate replacement of sliders or rails, or even the entire set of linear guideways, enabling the machinery to regain high-precision guidance. This makes machine assembly the easiest and maintenance the most convenient.

TEL +86 16653137076 E-mail info@cskmotions.com

MELUCCI TECHNOLOGIES

Key Points for Selecting CSK Linear Guideway

Selecting Steps for CSK Linear Guideway

1. Setting service conditions → Set necessary condition of load design *Note 1

· Mounting operation
· Symbol for number of axes

2. Selecting a type → Select a tye that meets the service condition and temporarily decide a rough size.

Change span, number of blocks and number of rails.

Change tyoe and size.

3. Calculating the applied load → Calculate the applied load on the block

· Rated load of the block in all direction
· Calculating the applied load

4. Calculating the equivalent load → Convert the load applied on each block in each direction into an quivalent load.

5. Calculating safety factor
→ Obtain the value of static safety factor from the basic satatic load rating and maximum applid load

Estimating rigidity
· Selecting preload
· Service life with preload considered
· Design guide struture

Dtermining accuracy
· Selection of accuracy grade
· Accuracy of mounting surface

Judgement on the static safety factor

NO

YES

6. Calculating the average load → Average the applied load fluctuating during operation to convert the value to an average load.

7. Calculating the rated life → Calculate the distance traveledbased on the rated life eaution.

Compared with required service life

NO

YES

Selecting of Lucrication and Dustproof
· Type of lubricant
· lubrication method
· Dust prevention

Completed

*Note 1 The necessary conditions for load design :

· Space in the guide section
· Dimensions (span, number of blocks, number of rails, thrust)
· Mounting operation (horizontal, vertical, slant mount, wall mount, suspended)
· Magnitude, direction and position of working load
· Operation frequency (duty cycle)
· Stroke length
· Speed and acceleration
· Required life

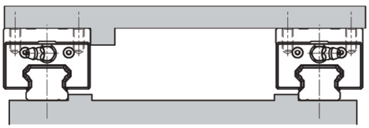
TEL +86 16653137076 E-mail info@cskmotions.com

Mounting Operation

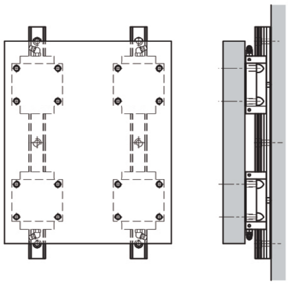
CSK Linear guides can be mounted in following six orientations. If oil is to be used as lubricant, in cases where the installation method is other than horizontal use, there may be difficulties in delivering lubricating oil to the rolling surface. When placing an order, please specify the mounting orientation and the location of the oil nozzle and oil pipe joint on the block.

■ Mounting Orientation

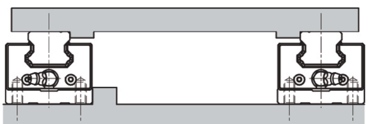
Horizontal (symbol:H)



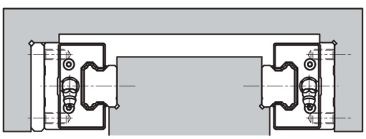
Vertical (symnol:V)



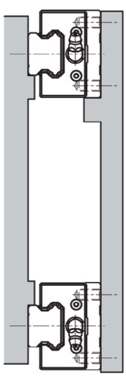
Inverted (symbol:R)



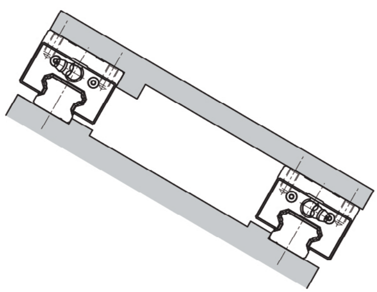
Relative (symbol:F)



Wall mount (symbol:K)



Slant mount (symbol:T)



TEL +86 16653137076 E-mail info@cskmotions.com

Symbol for Number of Axes

When use two or more units of a model of precision or higher accuracy grades,please specify the number of CSK rails (symbol for number of axes) in advance.

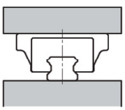
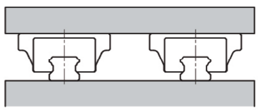
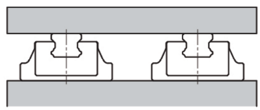
Example of model

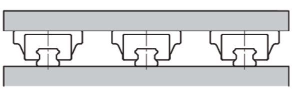
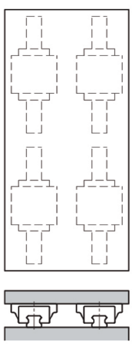
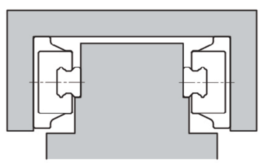
LMG20C2SSP1+R1000-20/20P II

Model number: LMG20C2SSP1+R1000-20/20P

Symbol for number of axes: II
("II" indicates 2 axes. no symbol for a single axis)

Symbol for number of axes

Symbol for number of axes: none	Symbol for number of axes: II	Symbol for number of axes: II
Required number of axes: 1	Required number of axes: 2	Required number of axes: 2
		

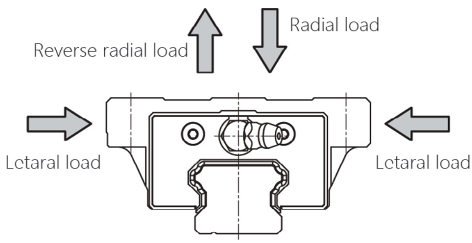
Symbol for number of axes: III	Symbol for number of axes: IV	Other
Required number of axes: 3	Required number of axes: 4	Required number of axes: 2
		

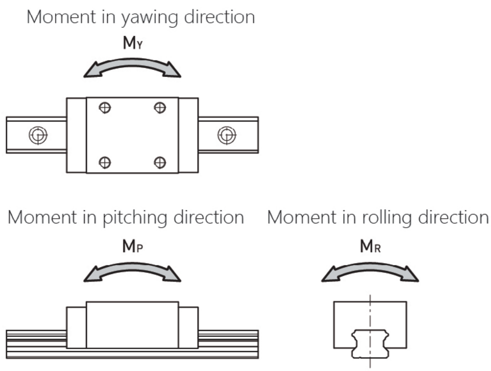
TEL +86 16653137076 E-mail info@cskmotions.com

Calculate Applied Load

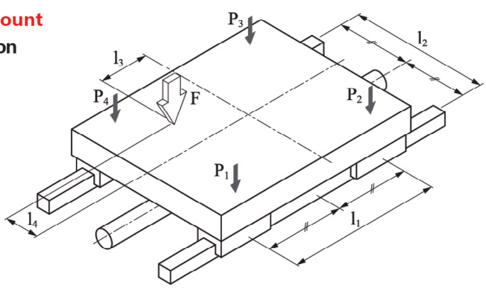
Linear guideway can withstand loads or torques in all directions due to installa tion methods, configurations, the center of gravity of moving objects, thrust positions, acceleration, and cutting resistance. When selecting linear guides, it is essential to consider various usage conditions to calculate the correct load-bearing capacity

Direction of Rated Load



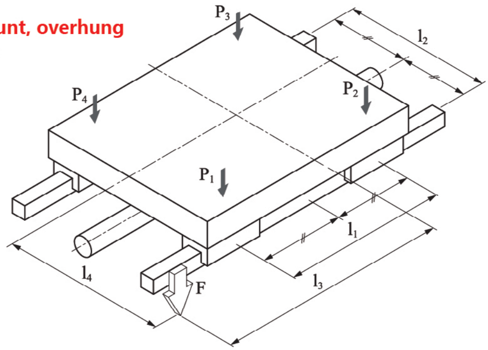
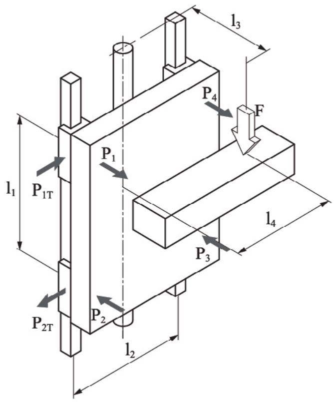


Apllied Load Equation

Type	Service Conditions	Applied load equation
Horizontal mount **Uniform motion or stationary**		$P_1 = \frac{F}{4} + \frac{F \cdot l_3}{2 \cdot l_1} - \frac{F \cdot l_4}{2 \cdot l_2}$ $P_2 = \frac{F}{4} - \frac{F \cdot l_3}{2 \cdot l_1} - \frac{F \cdot l_4}{2 \cdot l_2}$ $P_3 = \frac{F}{4} - \frac{F \cdot l_3}{2 \cdot l_1} + \frac{F \cdot l_4}{2 \cdot l_2}$ $P_4 = \frac{F}{4} + \frac{F \cdot l_3}{2 \cdot l_1} + \frac{F \cdot l_4}{2 \cdot l_2}$

Calculate Applied Load

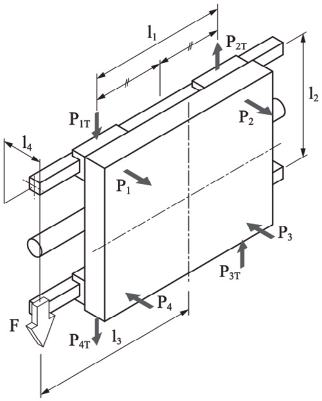
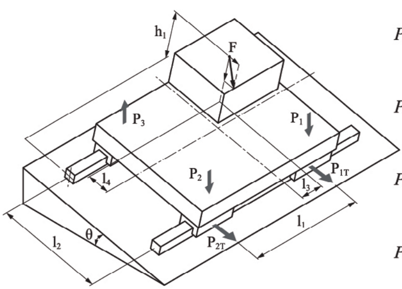
■ Apllied Load Equation

Type	Service Conditions	Applied load equation
Horizontal mount, overhung **Uniform motion or stationary**		$P_1 = \frac{F}{4} + \frac{F \cdot l_3}{2 \cdot l_1} + \frac{F \cdot l_4}{2 \cdot l_2}$ $P_2 = \frac{F}{4} - \frac{F \cdot l_3}{2 \cdot l_1} + \frac{F \cdot l_4}{2 \cdot l_2}$ $P_3 = \frac{F}{4} - \frac{F \cdot l_3}{2 \cdot l_1} - \frac{F \cdot l_4}{2 \cdot l_2}$ $P_4 = \frac{F}{4} + \frac{F \cdot l_3}{2 \cdot l_1} - \frac{F \cdot l_4}{2 \cdot l_2}$
Vertical mount **Uniform motion or stationary**		$P_1 = P_2 = P_3 = P_4 = \frac{F \cdot l_3}{2 \cdot l_1}$ $P_{1T} = P_{2T} = P_{3T} = P_{4T} = \frac{F \cdot l_4}{2 \cdot l_1}$

TEL +86 16653137076 E-mail info@cskmotions.com

Calculate Applied Load

■Apllied Load Equation

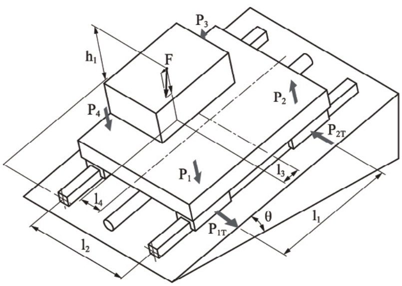
Type	Service Conditions	Applied load equation
Wall mount **Uniform motion or stationary**		$P_1 = P_2 = P_3 = P_4 = \frac{F \cdot l_4}{2 \cdot l_2}$ $P_{1T} = P_{4T} = \frac{F}{4} + \frac{F \cdot l_3}{2 \cdot l_1}$ $P_{2T} = P_{3T} = \frac{F}{4} - \frac{F \cdot l_3}{2 \cdot l_1}$
Laterally tilt mount		$P_1 = \frac{F \cdot \cos\theta}{4} + \frac{F \cdot \cos\theta \cdot l_3}{2 \cdot l_1} - \frac{F \cdot \cos\theta \cdot l_4}{2 \cdot l_2} + \frac{F \cdot \sin\theta \cdot h_1}{2 \cdot l_2}$ $P_2 = \frac{F \cdot \cos\theta}{4} - \frac{F \cdot \cos\theta \cdot l_3}{2 \cdot l_1} - \frac{F \cdot \cos\theta \cdot l_4}{2 \cdot l_2} + \frac{F \cdot \sin\theta \cdot h_1}{2 \cdot l_2}$ $P_3 = \frac{F \cdot \cos\theta}{4} - \frac{F \cdot \cos\theta \cdot l_3}{2 \cdot l_1} + \frac{F \cdot \cos\theta \cdot l_4}{2 \cdot l_2} - \frac{F \cdot \sin\theta \cdot h_1}{2 \cdot l_2}$ $P_4 = \frac{F \cdot \cos\theta}{4} + \frac{F \cdot \cos\theta \cdot l_3}{2 \cdot l_1} + \frac{F \cdot \cos\theta \cdot l_4}{2 \cdot l_2} - \frac{F \cdot \sin\theta \cdot h_1}{2 \cdot l_2}$ $P_{1T} = P_{4T} = \frac{F \cdot \sin\theta}{4} + \frac{F \cdot \sin\theta \cdot l_3}{2 \cdot l_1}$ $P_{2T} = P_{3T} = \frac{F \cdot \sin\theta}{4} - \frac{F \cdot \sin\theta \cdot l_3}{2 \cdot l_1}$

Calculate Applied Load

Apllied Load Equation

Type	Service Conditions	Applied load equation

Longitudinally tilt mount



$$P_1=\frac{F\cdot cos\theta}{4}+\frac{F\cdot cos\theta\cdot l_3}{2\cdot l_1}-\frac{F\cdot cos\theta\cdot l_4}{2\cdot l_2}+\frac{F\cdot sin\theta\cdot h_1}{2\cdot l_1}$$

$$P_2=\frac{F\cdot cos\theta}{4}-\frac{F\cdot cos\theta\cdot l_3}{2\cdot l_1}-\frac{F\cdot cos\theta\cdot l_4}{2\cdot l_2}-\frac{F\cdot sin\theta\cdot h_1}{2\cdot l_1}$$

$$P_3=\frac{F\cdot cos\theta}{4}-\frac{F\cdot cos\theta\cdot l_3}{2\cdot l_1}+\frac{F\cdot cos\theta\cdot l_4}{2\cdot l_2}-\frac{F\cdot sin\theta\cdot h_1}{2\cdot l_1}$$

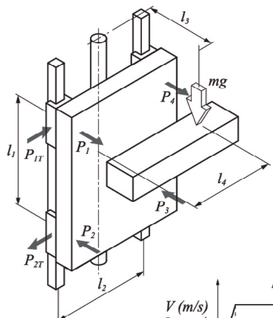
$$P_4=\frac{F\cdot cos\theta}{4}+\frac{F\cdot cos\theta\cdot l_3}{2\cdot l_1}+\frac{F\cdot cos\theta\cdot l_4}{2\cdot l_2}+\frac{F\cdot sin\theta\cdot h_1}{2\cdot l_1}$$

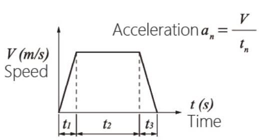
$$P_{1T}=P_{4T}=\frac{F\cdot sin\theta\cdot l_4}{2\cdot l_1}$$

$$P_{2T}=P_{3T}=-\frac{F\cdot sin\theta\cdot l_4}{2\cdot l_1}$$

Vertical mount

with intertia





■ Speed diagram

During acceleration

$$P_1=P_2=P_3=P_4=\frac{m\cdot(g+a_1)\cdot l_3}{2\cdot l_1}$$

$$P_{1T}=P_{2T}=P_{3T}=P_{4T}=\frac{m\cdot(g+a_1)\cdot l_4}{2\cdot l_1}$$

During uniform motion

$$P_1=P_2=P_3=P_4=\frac{m\cdot g\cdot l_3}{2\cdot l_1}$$

$$P_{1T}=P_{2T}=P_{3T}=P_{4T}=\frac{m\cdot g\cdot l_4}{2\cdot l_1}$$

During deceleration

$$P_1=P_2=P_3=P_4=\frac{m\cdot(g-a_3)\cdot l_3}{2\cdot l_1}$$

$$P_{1T}=P_{2T}=P_{3T}=P_{4T}=\frac{m\cdot(g-a_3)\cdot l_4}{2\cdot l_1}$$

TEL +86 16653137076 **E-mail** info@cskmotions.com

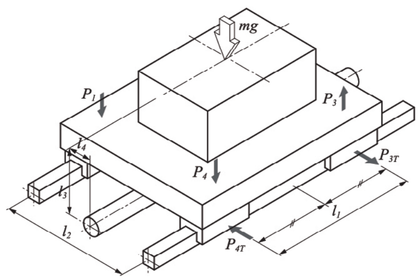
Calculate Applied Load

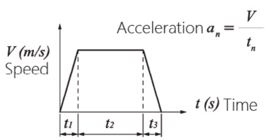
Apllied Load Equation

Type	Service Conditions	Applied load equation

Horizontal mount

with intertia





■ Speed diagram

During acceleration

$$P_1 = P_4 = \frac{mg}{4} - \frac{m \cdot a_1 \cdot l_3}{2 \cdot l_1}$$

$$P_2 = P_3 = \frac{mg}{4} + \frac{m \cdot a_1 \cdot l_3}{2 \cdot l_1}$$

$$P_{1T} = P_{2T} = P_{3T} = P_{4T} = \frac{m \cdot a_1 \cdot l_4}{2 \cdot l_1}$$

During uniform motion

$$P_1 = P_2 = P_3 = P_4 = \frac{mg}{4}$$

During deceleration

$$P_1 = P_4 = \frac{mg}{4} + \frac{m \cdot a_3 \cdot l_3}{2 \cdot l_1}$$

$$P_2 = P_3 = \frac{mg}{4} - \frac{m \cdot a_3 \cdot l_3}{2 \cdot l_1}$$

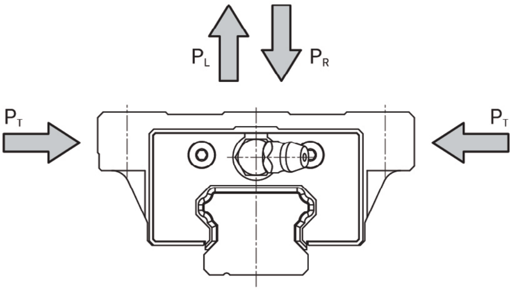
$$P_{1T} = P_{2T} = P_{3T} = P_{4T} = \frac{m \cdot a_3 \cdot l_4}{2 \cdot l_1}$$

Calculate Equivalent Load

The slider of a linear guide can simultaneously withstand loads and torques in various directions, including radial, anti-radial, and lateral forces. When multiple loads act in different directions, it is possible to convert all these loads into equiv alent radial or lateral loads for calculating the service life or static safety factor.

The LMG series linear guides are designed to handle equal loads in four direc tions. For cases where two or more (including two) guide rails are used, the calculation of equivalent load is as follows.

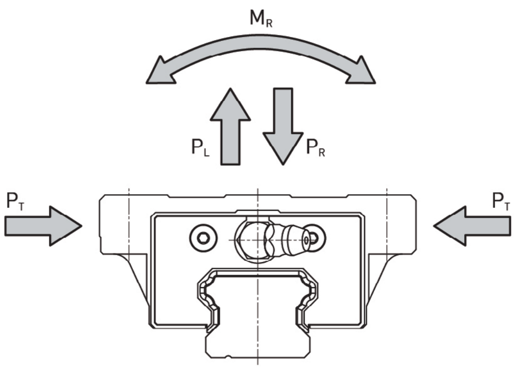
$$P_E = |P_{R(L)}| + |P_T|$$



- P_E Equivalent load (N)
- P_R Radial load (N)
- P_L Reverse-radial load (N)
- P_T Lateral load (N)

In the case of using a single linear guide, the equivalent load must take into account the torque effect. The calculation formula for this is as follows.

$$P_E = |P_{R(L)}| + |P_T| + C_0 \times \frac{|M|}{M_R}$$



- P_E Equivalent load (N)
- P_R Radial load (N)
- P_L Reverse-radial load (N)
- P_T Lateral load (N)
- C_0 Basic static load rating(N)
- M Torque calculation value
- M_R Permissible static moments

Calculate Static Safety Factor

When calculating the load applied to a linear guide, it is essential to determine both the average load required for calculating the service life and the maximum load needed for calculating the static safety factor. Particularly in cases of rapid starts and stops, or when cutting loads are involved, as well as situations where cantilever loads cause significant torque, unexpected high loads may impact the linear guide. When selecting a model, ensure that its maximum load capaci ty is suitable. For calculating the static safety factor, please refer to page D-02.

TEL +86 16653137076 E-mail info@cskmotions.com

Calculate Average Load

In case where the load applied to each block fluctuates under different conditons, such as industrial robot' s arm that grasps a moving workpiece during forward motion and experiences only the arm' s own weight during backward motion, or when a machine tool' s slider encounters changing loads due to various conditions, it is essential to comprehensively consider these dynamic load conditions for service life calculations.

The average load (Pm) refers to a certain load size during slider operation that has the same service life as under these varying load conditions.

The basic formula for calculating the average load is as follows:

$$P_m = \sqrt[i]{\frac{1}{L} \cdot \sum_{n=1}^{n} (P_n^i \cdot L_n)}$$

P_m Average load (N)

P_n Varying load (N)

L Total distance traveled (mm)

L_n Distance traveled under load Pn (mm)

i Constant determined by the rolling elements (when rolling element is steel balls, i=3)

Examples of varying load

1. When the load varies in steps

Rolling element is steel balls, i=3

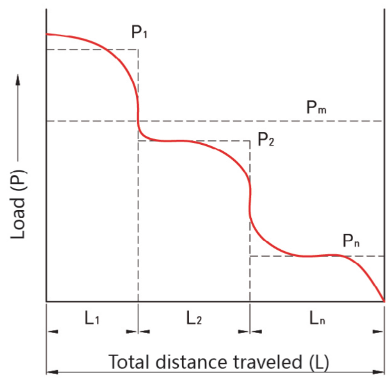
$$P_m = \sqrt[3]{\frac{1}{L} (P_1^3 \cdot L_1 + P_2^3 \cdot L_2 \cdots + P_n^3 \cdot L_n)}$$

P_m Average load (N)

P_n Varying load (N)

L Total distance traveled (mm)

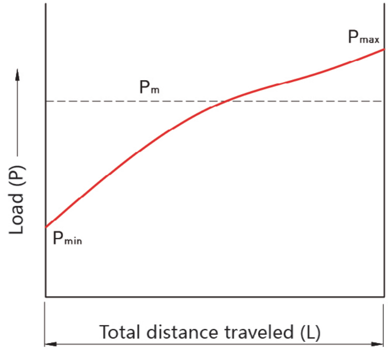
L_n Distance traveled under load Pn (mm)



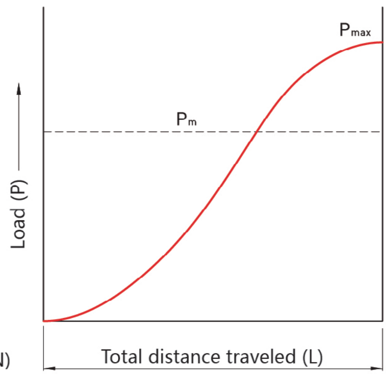
2. When the load varies monotonously

$$P_m \cong \frac{1}{3}(P_{min} + 2 \cdot P_{max})$$

P_m Average load (N)
P_{min} Minimum load (N)
P_{max} Maximum load (N)

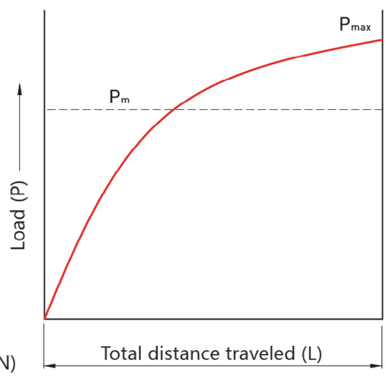


3. When the load varies sinusoidally



$$P_m \cong 0.65P_{max}$$

P_m Average load (N)
P_{max} Maximum load (N)



$$P_m \cong 0.75P_{max}$$

P_m Average load (N)
P_{max} Maximum load (N)

TEL +86 16653137076 E-mail info@cskmotions.com

Calculate Rated Life

The service life of the linear guide is subject to variations even under the same operational conditions. Therefore, it is necessary to use the rated life as a reference value when estimating the service life of linear guides. For the calculation of rated life, please refer page D-03.

Estimate the Rigidity

Select the preload

Preload significantly affects the walking precision, load-bearing capacity, and rigidity of linear guides. In general, applying preload is beneficial for improving the service life and accuracy, especially in cases involving reciprocating motion that may cause vibration and impact.

The following are the reference criteria for preload selection:

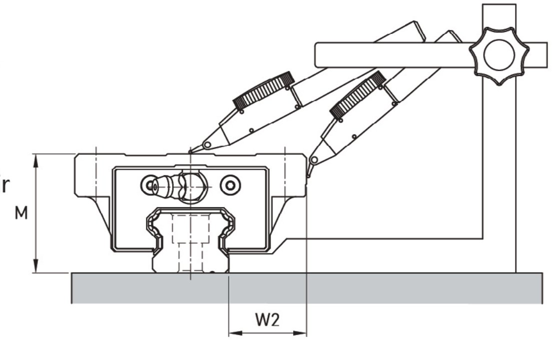
Preload	Service conditions	Sample applications
Light preload (P0)	• Fixed load direction, minimal vibration and impact, and 2 rails are installed in parallel. • Very high precision is not required, and the sliding resisitance must be as low as possible	Beam-welding machine, book-binding machine, automatic packaging machines, general industrial machinery XY axes, automatic sashing-manufacturing machines, flame cutting machine, and tool chanding machine
Medium preload (P1)	• Overhang or moment load is applied • Single axes configuration • Light weight and high accuracy are required	Grinding machine table feed axis, automatic painting machines, industrial robots, high speed machine feeder, grinding machine worktable feed axes, NC lathes, electrical discharge machining machines, measuring instruments, and precision alignment platforms
Heavey preload (P2)	• High rigidity is required and vibrations and impact are applied • Heavy-cutting machine tool	Machine center, NC lathe, grinding wheel feed axes in grinders, milling machine, centers, NC lathes, vertical or horizontal boring machines, and tool guide sections

When considering preload, it is essential to take into account the service life.
When use with medium or heavy preload, it is necessary to calculate the service life based on the preload load.

Determine the accuracy

Accuracy standard

Accuracy is specified in terms of parallelism, dimensional tolerance for height M and width W2, and height and with difference between a pair when 2 or more blocks are used on on rail or when 2 or more rails are mounted on the same plane.



■ Running parallelism

■ Running parallelism

It refers to a parallelism error between the block and rail datum plane when the blovk travels the whole length of the rail with rail secured on the reference datum plane using bolts.

■ Differences in height M (ΔM)

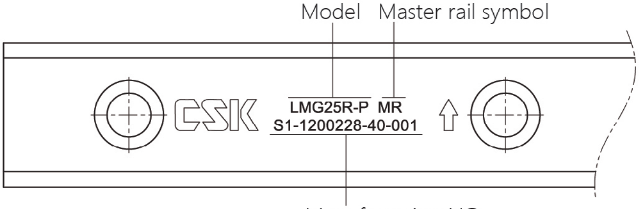
Indicates a difference between the minimum maximum values of height (M) of each of the blocks used on the same plane in combination.

■ Differences in width W2 (ΔW2)

Indicates a difference between the minimum maximum values of width (W2) of each of the blocks, mounted on one rail in combination, and the rail.

Notes:
1. When 2 or more rails are used on the same plane in parallel, only the width (W2) tolerance and the difference on the master rail apply. The master rail is imprinted with "MR" (except for normal grade of accuracy) in the end.
2. Accuracy measurements each represent the average value of the central point or the central area of the block.

■ Master side rail



TEL +86 16653137076 E-mail info@cskmotions.com

Guidelines for accuracy grades

Guidelines for selecting an accuracy grades of Guides Lines according to the machine type.

Type of machine		Acurracy grade				
		Normal N	High H	Precision P	Super Precision SP	Ultra Precision UP
Machine Tool	Machine center			●	●	
	Lathe			●	●	
	Milling machine			●	●	
	Drilling machine			●	●	
	Jig borer				●	●
	Grinder machine				●	●
	Elecric discharge machine			●	●	●
	Punching press		●	●		
	Laser beam machine		●	●	●	
	Woodwoking machine	●	●	●		
	NC drilling machine		●	●		
	Tapping center		●	●		
	Pallet changer	●				
	ATC	●				
	Wire cutting machine			●	●	
	Dressing machine				●	●
Idustrial robot	Cartesian coordinate	●	●	●		
	Cylindrical coordinate	●	●			
Semiconductor manufacturing machine	Wire bonding machine			●	●	
	Prober				●	●
	Electronic component inserter		●	●		
	Printed circuit board drilling machine		●	●	●	
Others	Inject molding machine	●	●			
	3D measuring instrument				●	●
	Office equipment	●	●			
	Conveyance system	●	●			
	XY table		●	●	●	
	Coating machine	●	●			
	Welding machine	●	●			
	Medical equipment	●	●			
	Digitizer		●	●	●	
	Inspection machine			●	●	●

Design Reference Elements

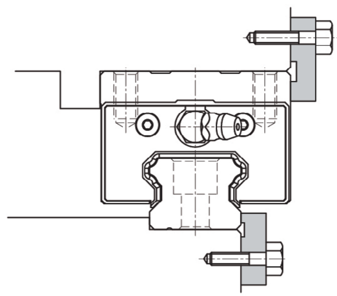
Design of Structure

Linear Guidway Installation Method

When there are vibrations or impacts in the machinery, the linear guide and block may deviate from their original fixed positions, affecting operational precision and lifespan. To prevent this situation, it is recommended to secure the linear guide and slider using the following methods.

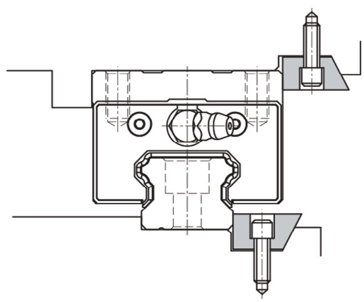
■ Pressure Plate Fixation Method

Ensure that the side surfaces of the guide and slider slightly protrude from the edges of the bed or worktable. The pressure plate should be machined with grooves to avoid interference with the corners of the guide or slider during installation.



■ Tapered Wedge Fixation Method

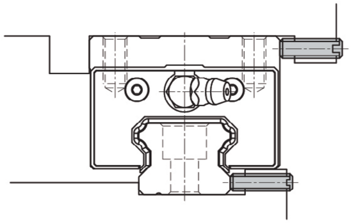
Apply pressure to the tapered wedge for secure fixation. Be cautious not to apply excessive force, as it may cause bending of the guide or deformation of the outer shoulder. Proper attention to the tightening force is essential during installation.



TEL +86 16653137076 E-mail info@cskmotions.com

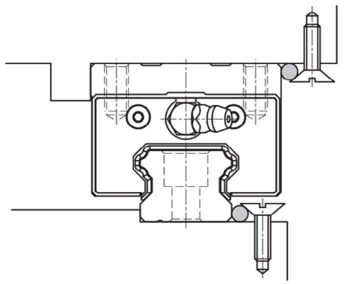
Positioning Bolt Fixation Method

Due to space limitations, avoid using excessively large bolts.



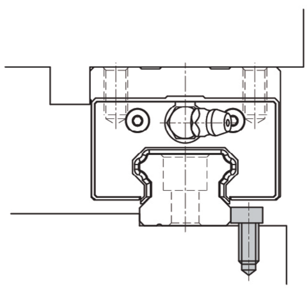
Roller Fixation Method

Use inclined surfaces on the bolt heads to press the rollers. Pay special attention to the position of the bolt heads.



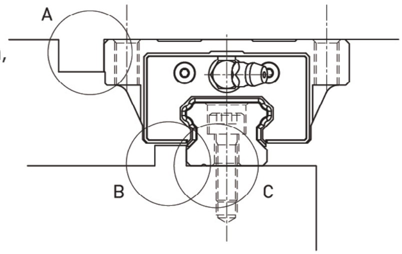
Clamping Bolt with Eccentric Head Fixation Method

After fixing the clamping bolt with eccentric head, apply pressure to the eccentric head of the clamping for secure fixation. When tightened, the eccentric head of the bolt exerts strong clamping force by utilizing the wedge effect, allowing significant clamping force with a small tightening torque.



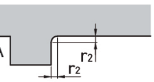
Design of Mounting Surface

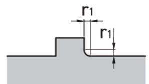
When installing linear guide rails, espe cially in equipment requiring high precision, it is necessary to install the linear tracks with high accuracy. At this time, please pay attention to the following points to design the mounting surface.



Angle Shape

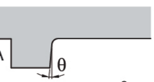
Refers to the shape of the corner on the mounting surface of linear guide rails or blocks. If it is machined with an R shape larger than the chamfer size of the linear guide rail or block, it may not correctly contact reference surface. Therefore, when designing the mounting surface, pay attention to the "angle shape" specified in each item.

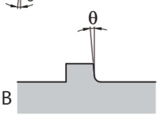
Part A


Part B


Perpendicularity of Reference Surface

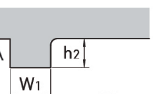
If the perpendicularity accuracy between the mounting surface of linear guide rails or blocks and reference surface cannot be guaranteed, it may not correctly align with reference surface. Therefore, during design, be mindful of the angular deviation between the mounting surface and the reference surface.

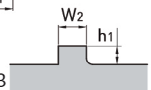
Part A


Part B


Dimension of Reference Surface

When designing the datum surface for linear guides, consider the height and thickness of reference surface. If it is too high, there is a risk of interference; conversely, if it is too low, it may not properly align due to the chamfer of linear guide rails or blocks. Additionally, if the thickness of the linear guide is too low, it may lack of rigidity when subjected to lateral loads or when using lateral thrust bolts for positioning, leading to poor accuracy. Pay close attention to these factors.

Part A


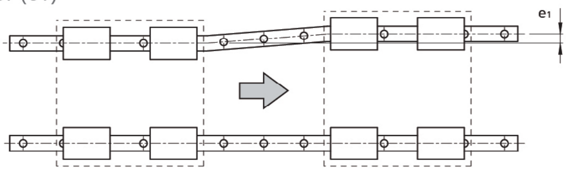
Part B


TEL +86 16653137076 E-mail info@cskmotions.com

Tolerance of Mounting Surface

The linear guide series with self-aligning properties can achieve smooth linear motion even when the mounting surface has slight machining errors. Below are the allowable surface deviation values when there is no impact on rolling resistance or lifespan.

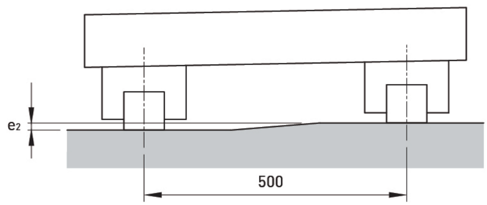
Parallelism error (e1)



Unit: μm

Model	Preload		
	P0	P1	P2
LMG 15	25	18	-
LMG 20	25	20	18
LMG 25	30	22	20
LMG 30	40	30	27
LMG 35	50	35	30
LMG 45	60	40	35

Horizontal error (e2)



Unit: μm

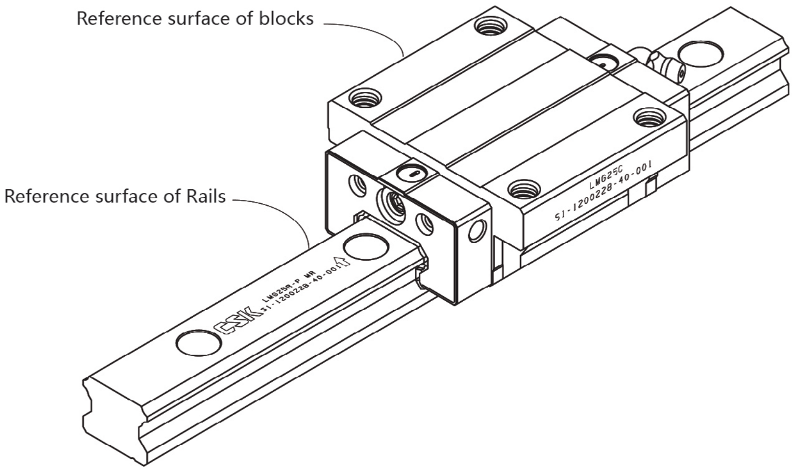
Model	Preload		
	P0	P1	P2
LMG 15	130	85	-
LMG 20	130	85	50
LMG 25	130	85	70
LMG 30	170	110	90
LMG 35	210	150	120
LMG 45	250	170	140

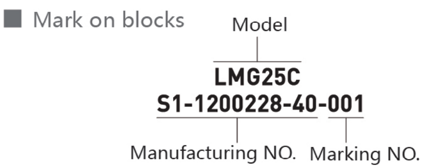
Note: The values in the table represent the permissible limits when the axis spacing is 500 mm, and these limits are proportional to the axis spacing.

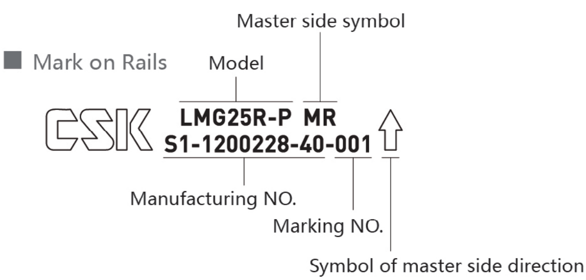
Marking on the Master Guide and Combined Use

Marking on the Reference Surface

On the guide rail, the reference surface direction is indicated by the arrow pointing toward the model and manufacturing number mark. However, on the block, it is on the opposite side of the model and manufacturing number mark, as shown as below.



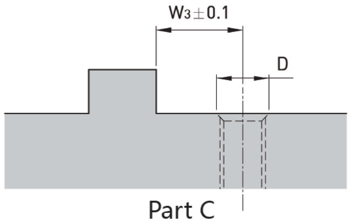




TEL +86 16653137076 E-mail info@cskmotions.com

Tolerance of the Datum hole size

The size tolerance from the reference surface of the guide rail or block to the mounting hole should not be too large, as it may prevent correct positioning during installation. Typically, depend ing on the model, the tolerance should be set within ±0.1 mm.



Part C

Chamfering of threaded holes

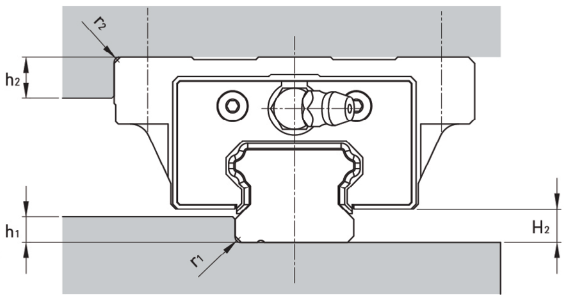
The chamfering of threaded holes during installation is essential for accurate positioning of guide rails. If the chamfer is too large or too small, it can adversely affect precision.

■ Chamfer dimensions

Chamfer inner diameter(D) = bolt nominal dameter + pitch
Eg: M6 (pitch is 1)
Chamfer inner diameter(D) = 6+1=7

Shoulder Height and Coners' Shape of Mounting Surface

Usually, mounting surface of rails and blocks has a reference surface on their side. This is for ease of assembly and precise positioning. The height of this reference surface shoulder varies depending on the model. Additionally, the corner of the installation shoulder should be machined with a recessed section or a radius smaller than the corner angle to prevent interference with the chamfer of the rail or block.



The radius of the corner (denoted as 'r') varies depending on the model. Please refer to the table below.

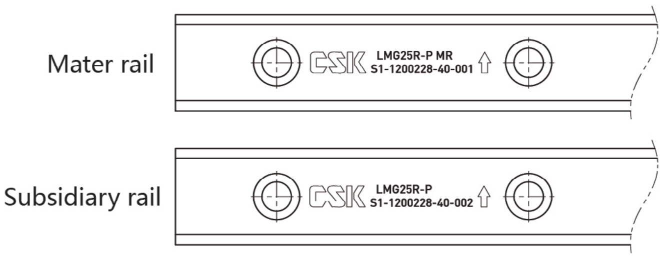
Unit: mm

Model	r1 max.	r2 max.	h1	h2	H2
LMG 15	0.5	0.5	3	4	4.5
LMG 20	0.5	0.5	3.5	5	5
LMG 25	1	1	5	5	6.5
LMG 30	1	1	5	5	8.5
LMG 35	1	1	6	6	9.5
LMG 45	1	1	8	8	11

Marking on the Master Rail

All LM rails mounted on the same plane are marked with the same serial number. The rail marked with "MR" after the serial number is the master rail. The block on the master rail has its reference surface finished to a designated precision, allowing it to serve as the positioning reference for tables. Normal grade linear guides are not marked with "MR." Therefore, any one of the LM rails having the same model number can be used as the master rail.

■ Mark on mater rail



Use of Rails and Carriage

The rail and block(s) used in combination must have the same model number. When removing a block from the rail and reinstalling the block, make sure that they have the same model number and the numbers are oriented in the same direction.

TEL +86 16653137076 E-mail info@cskmotions.com

Use of Jointed Rails

When a long LM rail is ordered, two or more rails will be jointed together to the desired length.
When jointing rails, make sure that the joint match marks shown in Fig.(A) are correctly positioned.
When jointing two rails, it is recommended to stagger the joint positions to avoid recision variations when the blocks passes through the joint. Please refer to Fig.(B) for illustration.

- Use of joint match mark

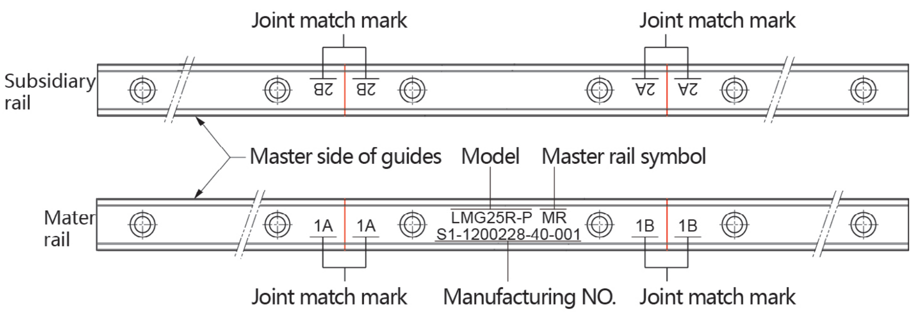


Fig. (A)

- Stagger the joint position

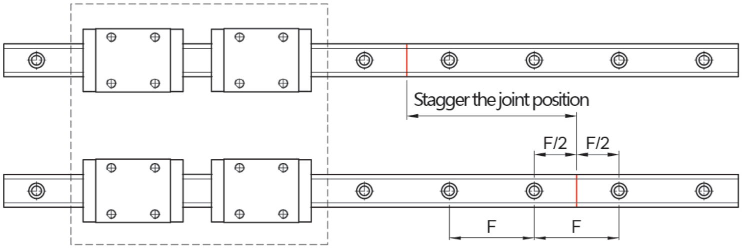
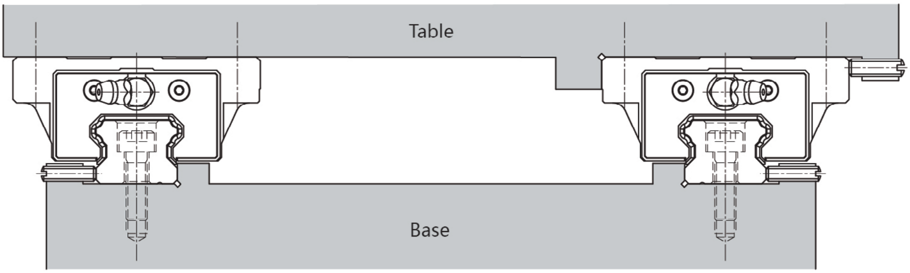


Fig. (B)

Mounting of Linear Guideway

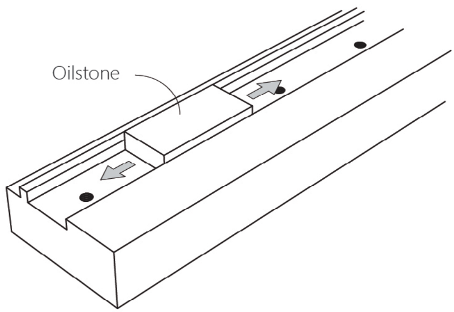
Mounting Procedure

■ When installing in a mechanical system with vibration and impact effects, and when high rigidity and high precision are required.

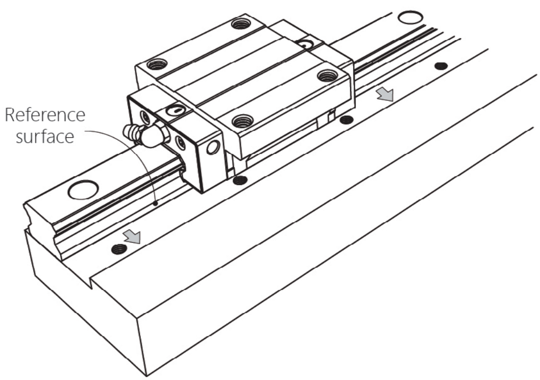


(1) Mounting the Rails

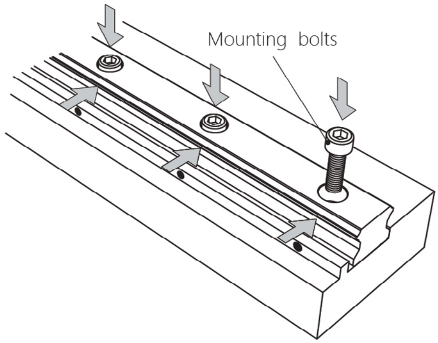
1. Before installation, ensure that any burrs and dusts are removed from the machining surface of the machine bed.



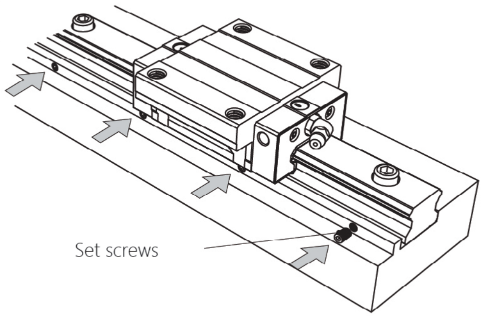
2. Gently place the linear guide on the base , aligning the reference surface of the guide with the lateral mounting surface of the bed. Note that both sides of the guide slider can serve as reference faces.



3. Secure the mounting bolts without fully tightening them. Ensure that the reference face of the linear guide aligns closely with the lateral mounting surface of the machine bed. Before installation, verify that the bolt holes match the assembly bolts.

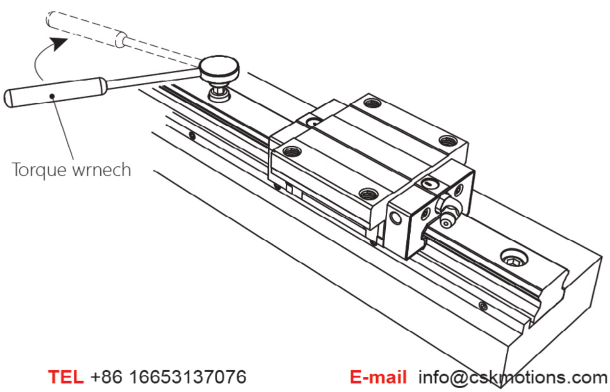


4. Gradually tighten the Set screws to ensure a snug fit between the linear guide and the machine bed' s lateral mounting surface.



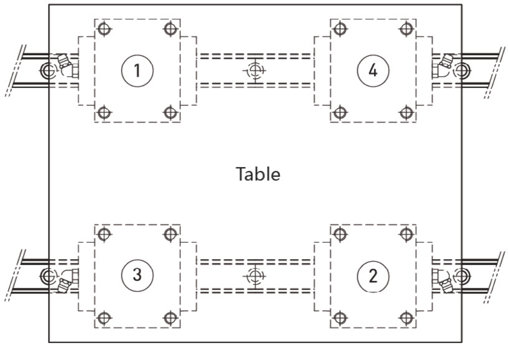
5. Use a torque wrench to tighten the assembly bolts to the specified torque value. Follow a sequence from the center of the guide towards both ends for consistent precision.

6. Install the remaining paired guides following steps 1 to 5.

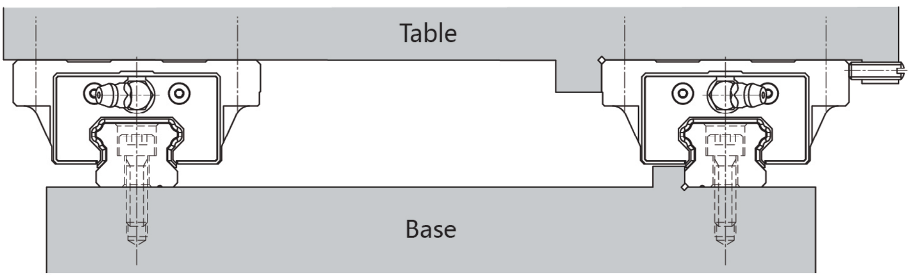


(2) Mounting the blocks

1. Gently place the table on the blocks and temperarily fasten the mounting bolts.
2. Press the master side blocks to the side reference surface of the table using se screws and position the table.
3. Fully fasten the mounting bolts on the master side and subsidiary side to complete the installation.

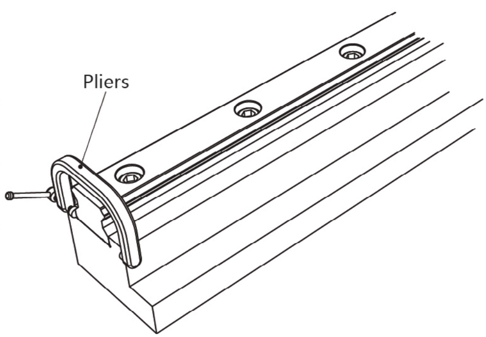


■ Mounting the guide when the master rail is not provided with set screws



(1) Mounting the Master Rail

After temporarily fastening the mounting bolts, firmly press the rail to the side reference surface at the position of each mouting bolt using a small vice and fully fasten the bolts.Perform this in order from either rail end to the other.

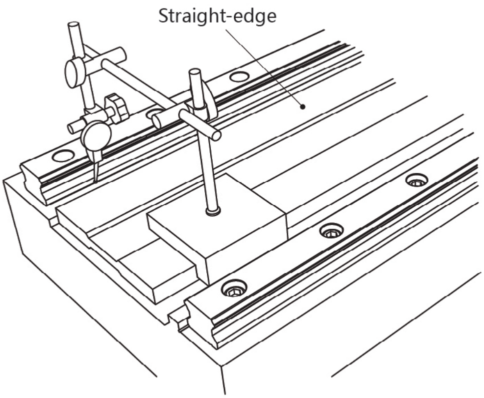


TEL +86 16653137076 E-mail info@cskmotions.com

(2) Mounting the Subsidiary Rail

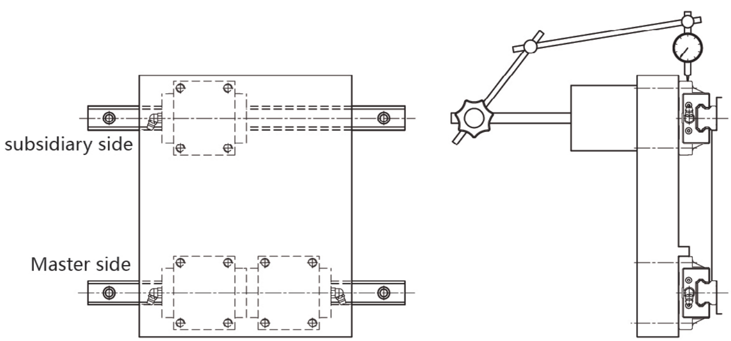
■ Using a Straight-edge

Place straight-edges between two rails, and arrange the straight-edge in parallel with the side reference of the master rail using a dial gauge. Then, secure the mounting bolts in order while achieving straightness of the subsidary rail with the straight-edge as the reference by using the dia gauge.



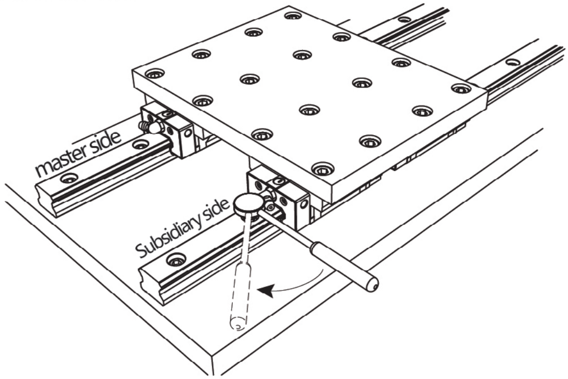
■ Using Pawrallelism of the Table

Secure the two LM blocks on the master rail with the table (or a temporary table for measurement), and temporarily fasten the rail and the block on the subsidiary rail with the table. Place a dial gauge to the side face of the block on the subsidiary rail from the dial stand fixed on the table top, then fasten the bolts in order while achieving parallelism of the subsidiary rail by moving the table from the rail end.



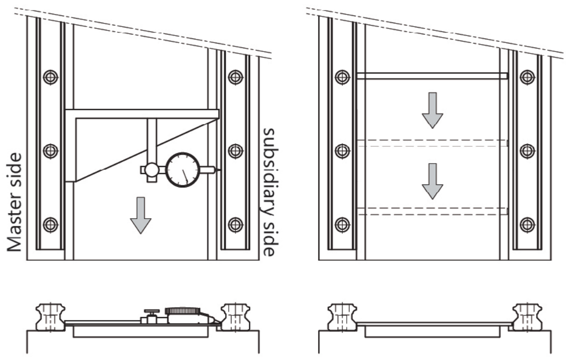
■ Having Subsidiary Rail Follow Master Rail

Place the table on the blocks of the correctly mounted master rail and the temporarily fastened subsidiary rail, and fully fasten the two blocks on the master rail and one of the two blocks on the subsidiary rail with bolts. Fully tighten the mounting bolts on the subsidiary rail in order while temporarily fastening the remaining block on the subsidiary rail.

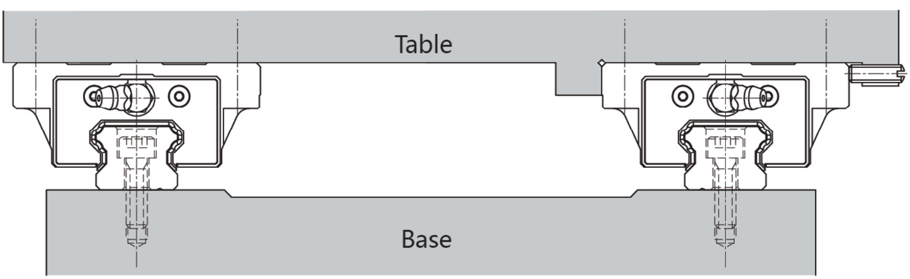


■ Using a Jig

Use a jig to achieve parallelism of the reference surface on the subsidiary side against the side reference surface of the master side from one end of the rail by the mounting pitch, and at the same time, fully fasten the mounting bolts in order.



■ Mounting the guide when the master rail does not have a reference surface

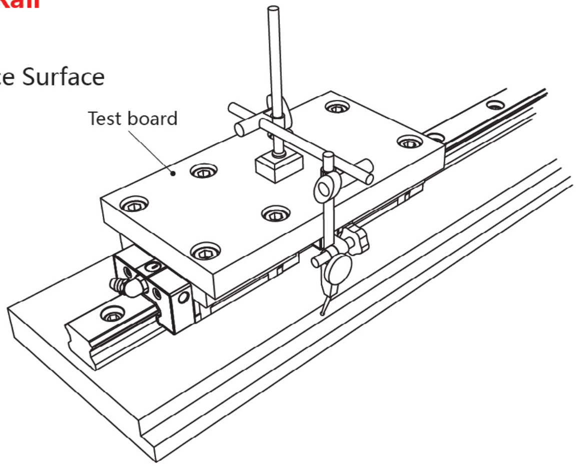


TEL +86 16653137076 E-mail info@cskmotions.com

(1) Mounting the Master Rail

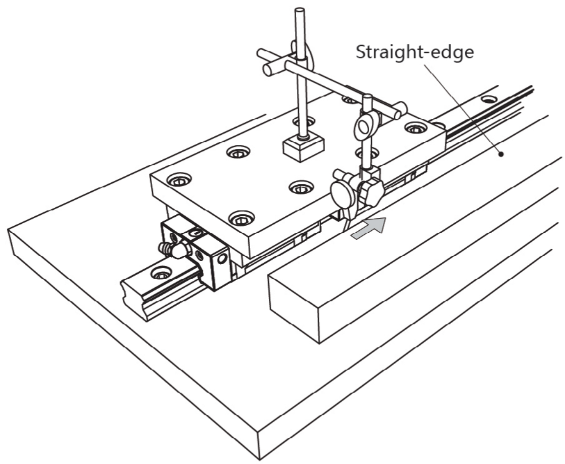
■ Using a Temporary Reference Surface

Temporarily set a reference surface near the rail mounting position on the base to achieve straightness of the rail from the rail end. In this method, two blocks must be joined together and attached to a measurement plate.



■ Using a Straight-edge

After temporarily fastening the mounting bolts, use a dial gauge to check the straightness of the side reference surface of the LM rail from the rail end, and at the same time, fully fasten the mounting bolts.

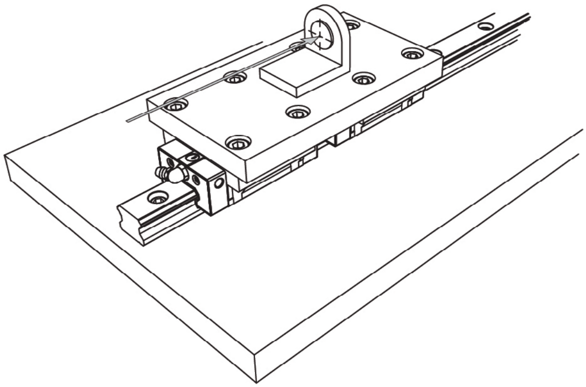


(2) Procedure of Mounting Subsidiary Rail and Block Follows the same specifications as mentioned earlier.

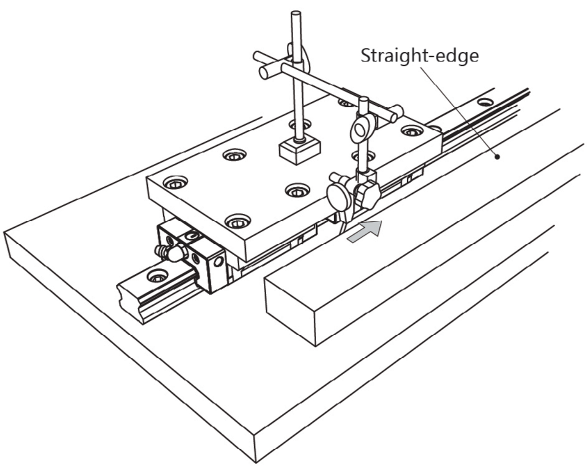
Method for Measuring Accuracy after Installation

When measuring running accuracy of the block, stable accuracy can be obtained by securing two blocks on an inspection plate. When using a dial gauge, we recommend placing the straight-edge as close as possible to the block in order to perform accurate measurement.

■ Measurement method using an auto-collomator



■ Measurement method using a dial gauge



TEL +86 16653137076 E-mail info@cskmotions.com

Notes

Operation

1. After tilting, the slider and guide may slide due to their own weight. Please be vigilant.
2. Do not drop or strike the linear guide, as it may cause scratches or damage. Even if no visible damage is apparent, impact can still impair functionality.
3. Refrain from disassembling the slider on your own, as it could introduce foreign particles or negatively affect assembly precision.
4. Be mindful of preventing foreign objects from entering the slider. Damage to the steel ball circulation components may compromise functionality.
5. Avoid using the linear guide in environments exceeding 80°C (176°F). Instantaneous temperatures should not exceed 100°C (212°F).
6. When disassembling or replacing the slider from the guide, use rail clamps for assistance. Only detach the slider from the guide when necessary.
7. If operating in environments with frequent vibration, high dust, extreme temperatures (hot or cold), or other challenging conditions, please consult CSK.

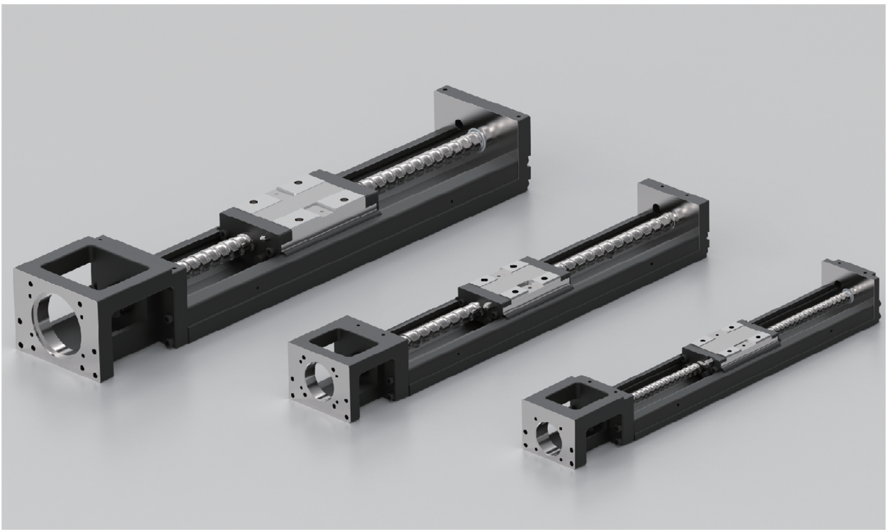
Lubrication

1. Thoroughly remove anti-corrosion oil and feed lubricant before using the product.
2. Refrain from combining lubricants with different properties.
3. When using oil lubricants, be aware that due to installation orientations, lubricating oil maynot reach all internal areas of the blocks, please contact CSK for details.
4. Please apply grease every 100km of travel for reference.

Storage

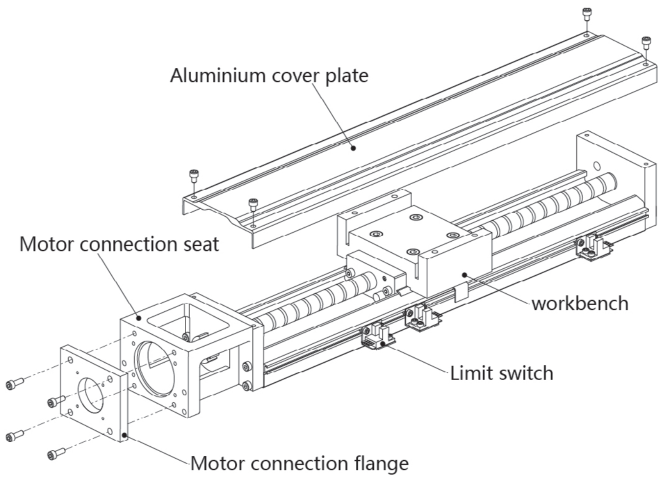
When storing linear guide rails, make sure to apply rust-proof oil and seal them in the specified cover. Place them horizontally and avoid environments with high or low temperatures and excessive humidity. The recommended operating temperature should not exceed 80°C, and avoid sudden temperatures exceeding 100°C.

Single Axis Module
LMK series



TEL +86 16653137076 E-mail info@cskmotions.com

Construction



Note: For reference only.

Characteristics

The LMK single-axis robot is a versatile series of products driven by the motor, integrating ball screws and U-shaped rails,which can provide high positioning accuracy, with fast selection, fast installation, compact volume, high rigidity and other features.

- Easy to design and install
- Small size and light weight
- High precision
- High rigidity
- Fully equipped
- Optimal design

Applications

Precision CNC machine tools, semiconductor manufacturing equipment, automatic loading and unloading equipment, automatic welding machine, dispensing machine, assembling machine, packaging equipment

Specifications

LMK 60D 10 P E - 300 E A 1 E-F0 C S1 M

LMK: Single-axis robot

Size: 40, 50, 60D, 86D

Ball screw lead
LMK40: 2
LMK50: 2
LMK60: 5, 10
LMK86: 10, 20
LMK100: 20

Accuracy grade
P: Precision grade
N: Normal Grade

Special processing of ball screw
E: Special processing of ball screw
No symbol: Ball screw standard type

Rail length
LMK40: 100, 150, 200
LMK50: 150, 200, 250, 300
LMK60: 150, 200, 300, 400, 500, 600
LMK86: 340, 440, 540, 640, 740, 940
LMK100: 980, 1080, 1180, 1280, 1380

special processing of rail
E: special processing of rail
No symbol: Rail standard type

special processing of rail
A: standard type
S: Light load type

Number of slides
1, 2

Special processing of sliding
E: Special processing of sliding No symbol: slide standard type

Motor connection flange specifications
FE: Special processing (refer to E15-18)

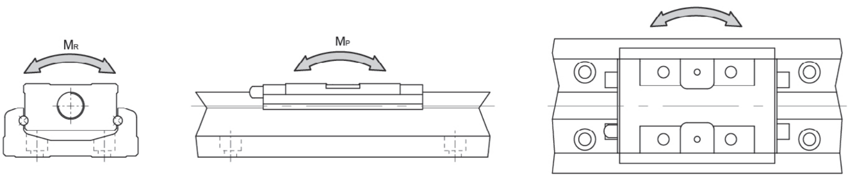
Dust protection option
C: Aluminium cover plate
B: Telescopic sheath
No symbol: No cover plate

Limit switch
S0 : Only limiting orbits
S1 : Three limit switches BS5-L1M (refer to E18)
S2 : Three limit switches BS5-Y1M (refer toE18)
SE:Customer specified limit switches or quantities
No symbol

Motor specification
M:Attached motor (motor connection holes refer to page E15-18)

TEL +86 16653137076 E-mail info@cskmotions.com

Load specification



Unit（mm）

Effective stroke		ball screw				Linear Guideway							
								Static moment rating					
Model No.		Diameter (mm)	lead (mm)	Dynamic (N)	Static (N)	Dynamic (N)	Static (N)	Mp（N-m）		My（N-m）		Mr（N-m）	
						sliderA	sliderA	sliderA1	sliderA2	sliderA1	sliderA2	sliderA1	sliderA2
LMK4002	Precision grade	8	2	735	1538	3920	6468	33	182	33	182	81	162
	Normal Grade			676	1284								
LMK5002	Precision grade	8	2	2136	3468	8007	12916	116	545	116	545	222	444
	Normal Grade			1813	2910								
LMK6005	Precision grade	12	5	3744	6243	13230	21464	152	348	152	348	419	838
	Normal Grade			3377	5625								
LMK6010	Precision grade	12	10	2410	3743	13230	21464	152	348	152	348	419	838
	Normal Grade			2107	3234								
LMK8610	Precision grade	15	10	7144	12644	31548	50674	622	3050	622	3050	1507	3014
	Normal Grade			6429	11387								
LMK8620	Precision grade	15	20	4645	7655	31548	50674	622	3050	622	3050	1507	3014
	Normal Grade			4175	6889								
LMK10020	Precision grade	20	20	7046	12544	39200	63406	960	4763	960	4763	2205	4410
	Normal Grade			4782	9163								

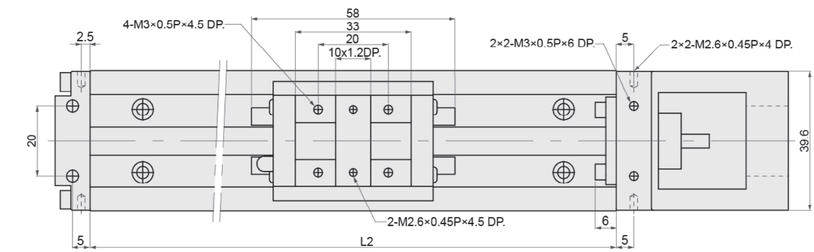
Accuracy Grade

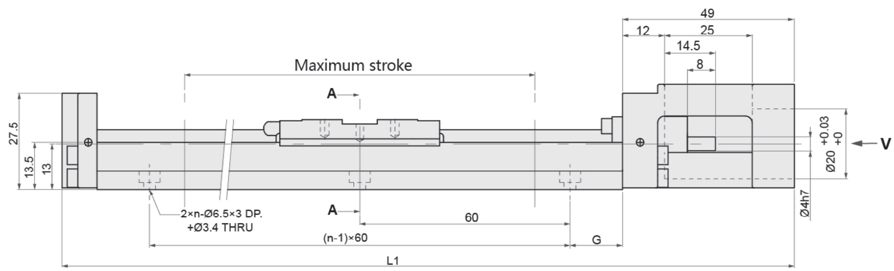
Unit（mm）

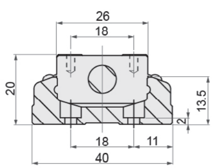
Model No.	Rail length	Location reproducibility		Accuracy		Running Parallelism		Maximum rotational torque(N-cm)	
		Precision	Normal Grade	Precision	Normal Grade	Precision	Normal Grade	Precision	Normal Grade
LMK40	100	±0.003	±0.005	0.020	-	0.010	-	1.2	0.8
	150								
	200								
LMK50	150	±0.003	±0.005	0.020	-	0.010	-	4	2
	200								
	250								
	300								
LMK60	150	±0.003	±0.005	0.025	-	0.010	-	15	7
	200								
	300								
	400								
	500	±0.003	±0.005	0.025	-	0.015	-	15	7
	600								
LMK86	340	±0.003	±0.005	0.030	-	0.015	-	15	10
	440								
	540								
	640								
	740	±0.003	±0.005	0.040	-	0.020	-	17	10
	940	±0.003	±0.005	0.035	-	0.030	-	25	10
LMK100	980	±0.005	±0.01	0.035	-	0.025	-	17	12
	1080								
	1180	±0.005	±0.01	0.04	-	0.03	-	20	12
	1280	±0.005	±0.01	0.045	-	0.035	-	23	15
	1380			0.05	-	0.04	-	25	

TEL +86 16653137076 E-mail info@cskmotions.com

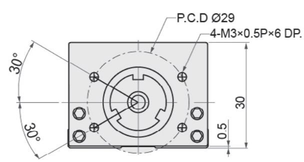
LMK40







SECTION A-A

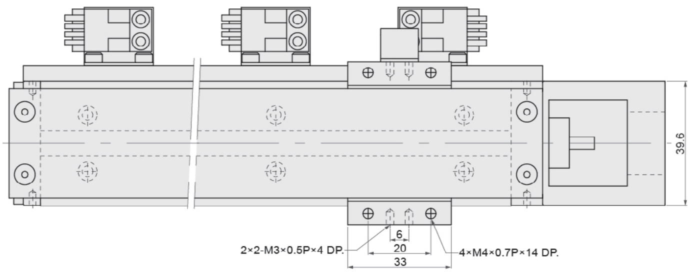


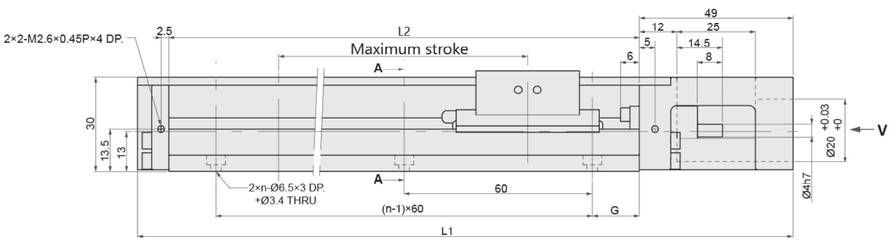
View V

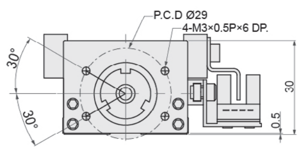
Unit (mm)

Rail lengthL2 (mm)	lengthL1 (mm)	Maximum stroke (mm)		G (mm)	n	Weight (kg)	
		A1slider	A2 slider			A1slider	A2 slider
100	159	36	-	20	2	0.48	-
150	209	86	34	15	3	0.6	0.67
200	259	136	84	40	3	0.72	0.79

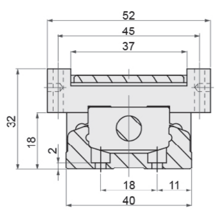
LMK40







View V



SECTION A-A

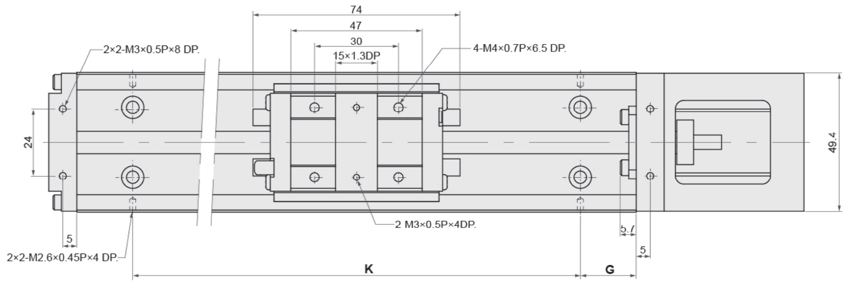
Unit (mm)

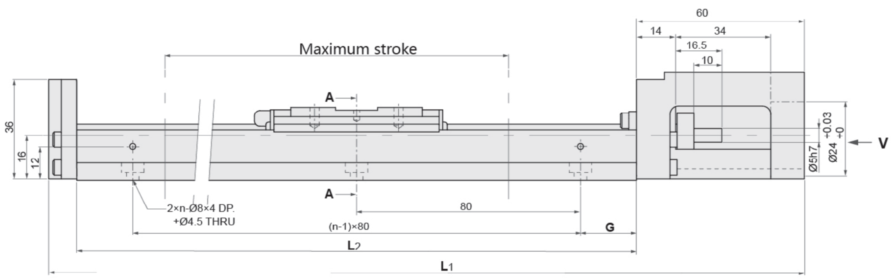
Rail lengthL2 (mm)	lengthL1 (mm)	Maximum stroke (mm)		G (mm)	n	Weight (kg)	
		A1 slider	A2 slider			A1 slider	A2 slider
100	159	36	-	20	2	0.55	-
150	209	86	34	15	3	0.68	0.76
200	259	136	84	40	3	0.82	0.89

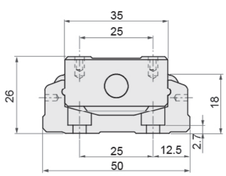
TEL +86 16653137076 E-mail info@cskmotions.com

LMK

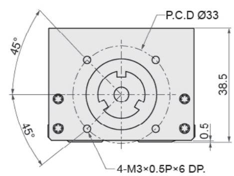
LMK50







SECTION A-A

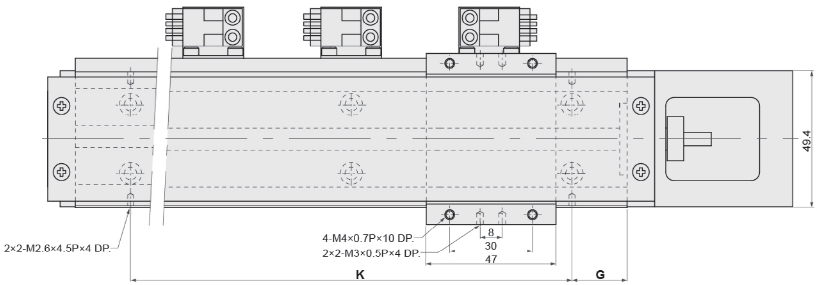


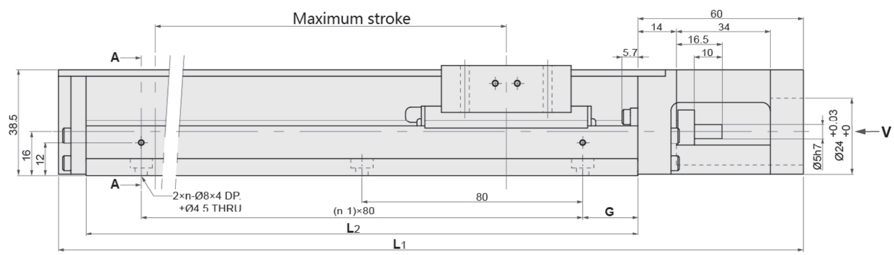
View V

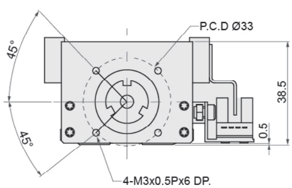
Unit (mm)

Rail lengthL2 (mm)	lengthL1 (mm)	Maximum stroke (mm)		G (mm)	K (mm)	n	Weight (kg)	
		A1 slider	A2 slider				A1 slider	A2 slider
150	220	70	-	35	80	2	1	-
200	270	120	55	20	160	3	1.2	1.4
250	320	170	105	45	160	3	1.4	1.6
300	370	220	155	30	240	4	1.6	1.8

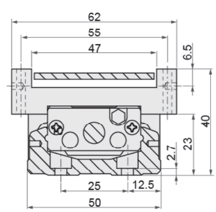
LMK50







View V



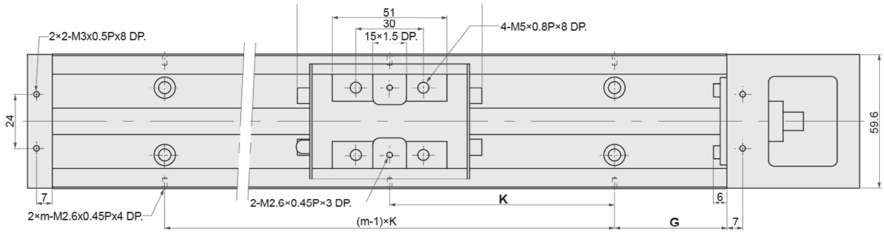
SECTION A-A

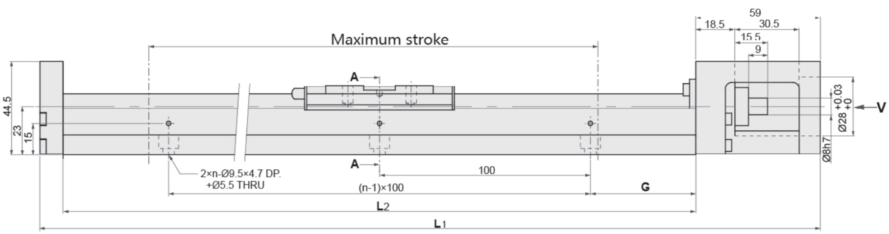
Unit (mm)

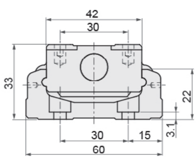
Rail lengthL2 (mm)	lengthL1 (mm)	Maximum stroke (mm)		G (mm)	K (mm)	n	Weight (kg)	
		A1 slider	A2 slider				A1 slider	A2 slider
150	220	70	-	35	80	2	1.1	-
200	270	120	55	20	160	3	1.3	1.5
250	320	170	105	45	160	3	1.6	1.8
300	370	220	155	30	240	4	1.8	2.0

TEL +86 16653137076 E-mail info@cskmotions.com

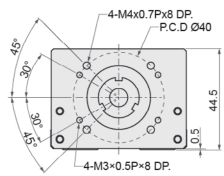
LMK60(D)







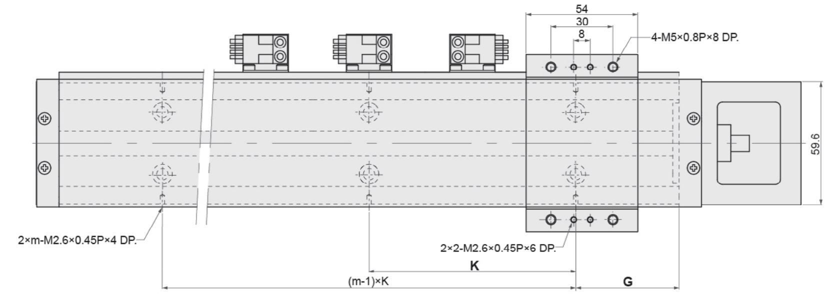
SECTION A-A

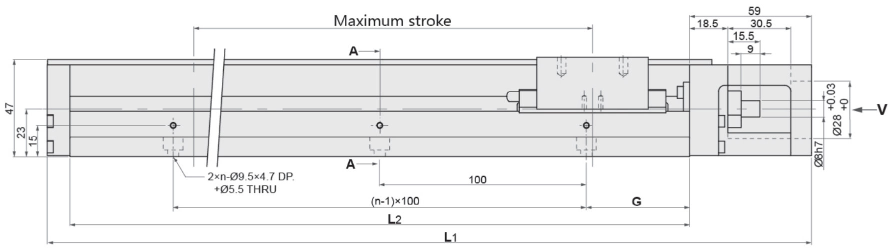


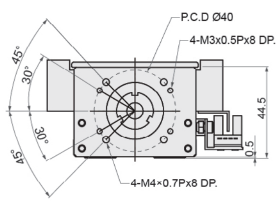
Unit (mm)

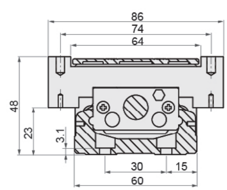
Rail lengthL2 (mm)	lengthL1 (mm)	Maximum stroke (mm)		G (mm)	K (mm)	n	m	Weight (kg)	
		A1 slider	A2 slider					A1 slider	A2 slider
150	220	60	-	25	100	2	2	1.5	-
200	270	110	-	50	100	2	2	1.8	-
300	370	210	135	50	200	3	2	2.4	2.7
400	470	310	235	50	100	4	4	3	3.3
500	570	410	335	50	200	5	3	3.6	3.9
600	670	510	435	50	100	6	6	4.2	4.6

LMK60(D)









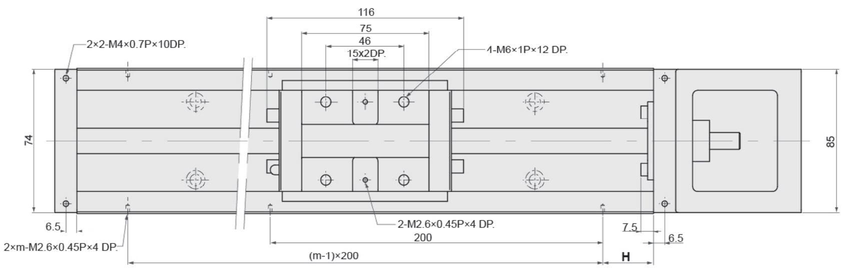
SECTION A-A

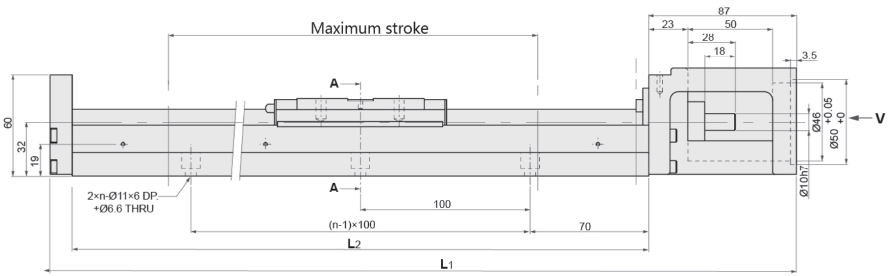
Unit (mm)

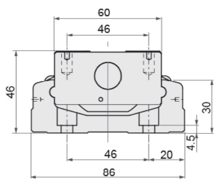
Rail lengthL2 (mm)	lengthL1 (mm)	Maximum stroke (mm)		G (mm)	K (mm)	n	m	Weight (kg)	
		A1 slider	A2 slider					A1 slider	A2 slider
150	220	60	-	25	100	2	2	1.7	-
200	270	110	-	50	100	2	2	2.1	-
300	370	210	135	50	200	3	2	2.7	3
400	470	310	235	50	100	4	4	3.3	3.6
500	570	410	335	50	200	5	3	3.9	4.2
600	670	510	435	50	100	6	6	4.6	5

TEL +86 16653137076 E-mail info@cskmotions.com

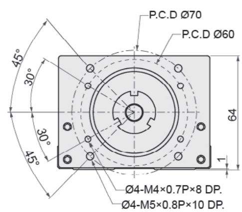
LMK86(D)







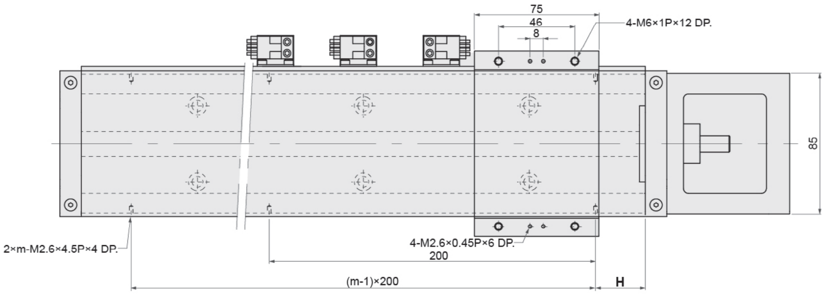
SECTION A-A

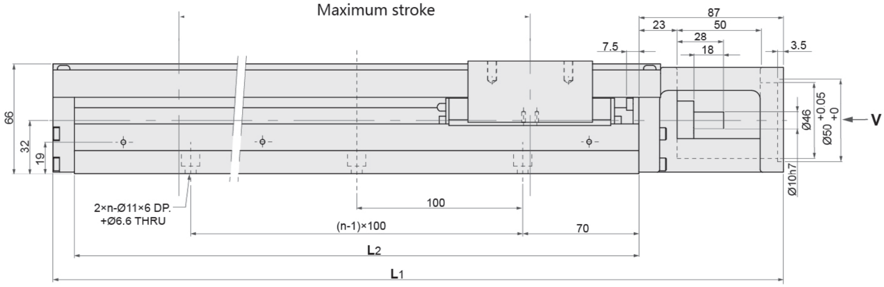


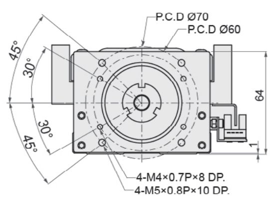
Unit（mm）

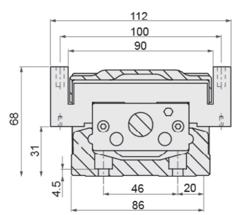
Rail lengthL2（mm)	lengthL1（mm)	Maximum stroke（mm)		H（mm)	n	m	Weight（kg)	
		A1 slider	A2 slider				A1 slider	A2 slider
340	440	216.5	108.5	70	3	2	5.7	6.5
440	540	316.5	208.5	20	4	3	6.9	7.7
540	640	416.5	308.5	70	5	3	8	8.8
640	740	516.5	408.5	20	6	4	9.2	10
740	840	616.5	508.5	70	7	4	10.4	11.2
940	1040	816.5	708.5	70	9	5	11.6	12.4

LMK86(D)









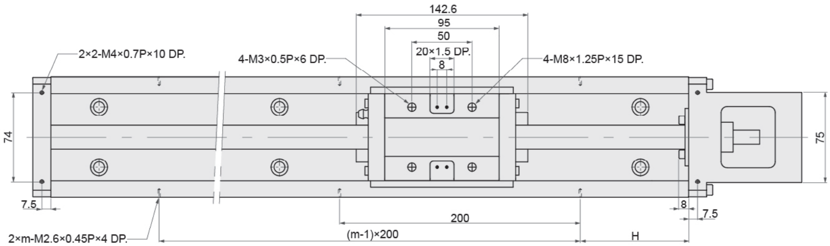
SECTION A-A

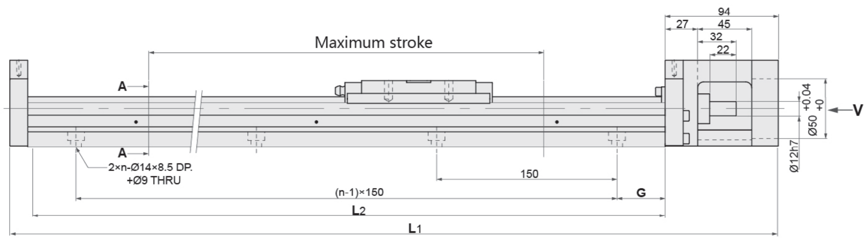
Unit（mm）

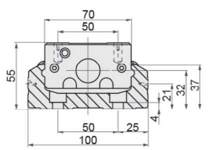
Rail lengthL2（mm）	lengthL1（mm）	Maximum stroke（mm）		H（mm）	n	m	Weight（kg）	
		A1 slider	A2 slider				A1 slider	A2 slider
340	440	216.5	108.5	70	3	2	6.5	7.3
440	540	316.5	208.5	20	4	3	7.8	8.6
540	640	416.5	308.5	70	5	3	9	9.8
640	740	516.5	408.5	20	6	4	10.3	11.3
740	840	616.5	508.5	70	7	4	11.6	12.4
940	1040	816.5	708.5	70	9	5	13	13.8

TEL +86 16653137076 E-mail info@cskmotions.com

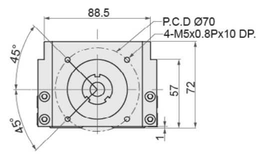
LMK100







View V

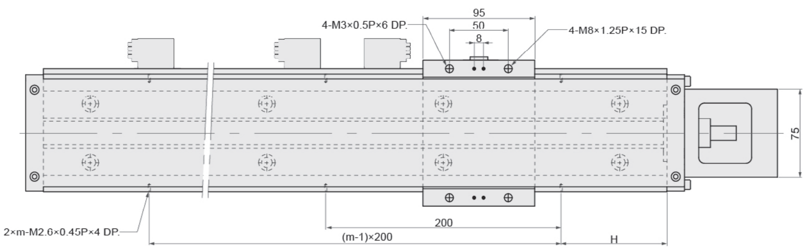


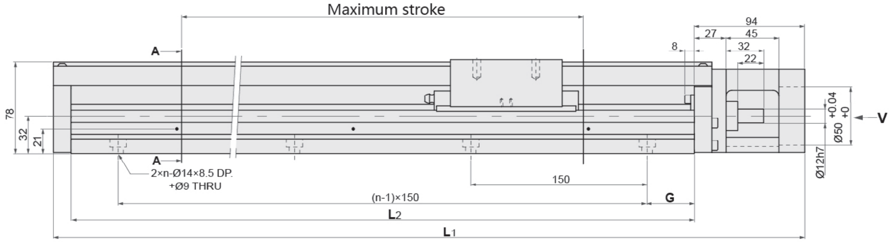
SECTION A-A

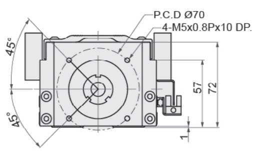
Unit（mm）

Rail lengthL2（mm）	lengthL1（mm）	Maximum stroke（mm）		G（mm）	H（mm）	n	m	Weight（kg）	
		A1 slider	A2 slider					A1 slider	A2 slider
980	1089	828	700	40	90	7	5	18.6	20.3
1080	1189	928	800	15	40	8	6	20.3	22
1180	1289	1028	900	65	90	8	6	22	23.7
1280	1389	1128	1000	40	40	9	7	23.6	25.3
1380	1489	1228	1100	15	90	10	7	25.3	27

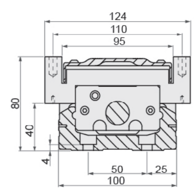
LMK100







View V



SECTION A-A

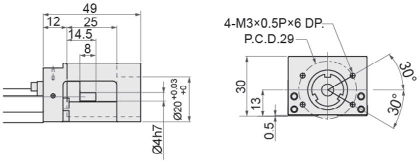
Unit（mm）

Rail lengthL2（mm）	lengthL1（mm）	Maximum stroke（mm）		G（mm）	H（mm）	n	m	Weight（kg）	
		A1 slider	A2 slider					A1 slider	A2 slider
980	1089	828	700	40	90	7	5	20.4	22.1
1080	1189	928	800	15	40	8	6	22.2	23.9
1180	1289	1028	900	65	90	8	6	24	25.7
1280	1389	1128	1000	40	40	9	7	25.7	27.4
1380	1489	1228	1100	15	90	10	7	27.5	29.2

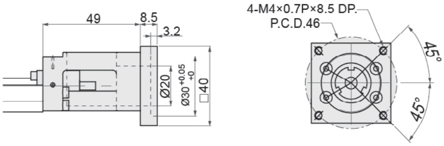
TEL +86 16653137076　E-mail info@cskmotions.com

LMK40 Connection flange

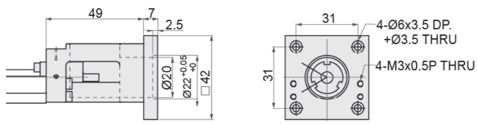
Motor connection seat F0



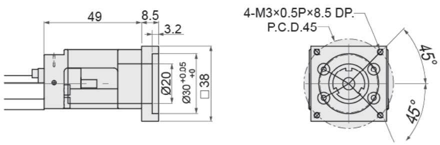
Motor connection flange F1



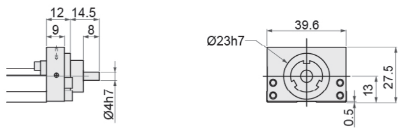
Motor connection flange F3



Motor connection flange F2

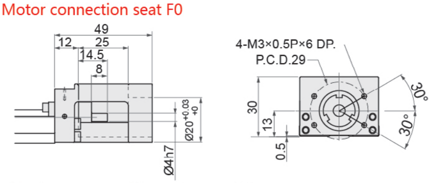


Transfer fixed seat H0

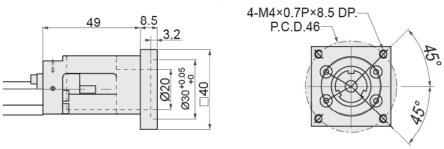


LMK50 Connection flange

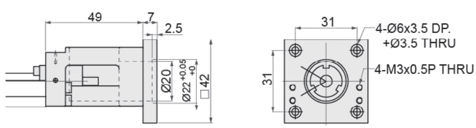
Motor connection seat F0



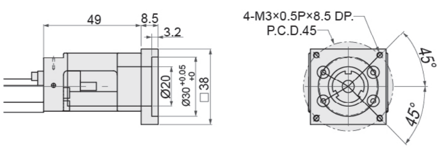
Motor connection flange F1



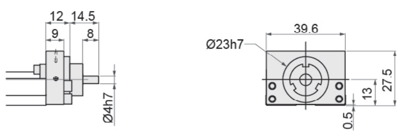
Motor connection flange F3



Motor connection flange F2

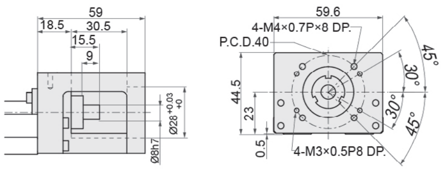


Transfer fixed seat H0

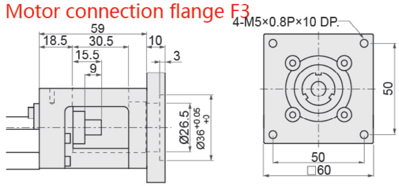


LMK60 Connection flange

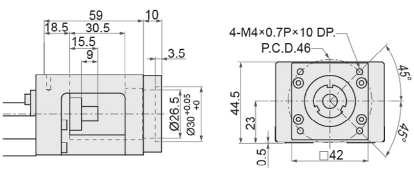
Motor connection seat F0



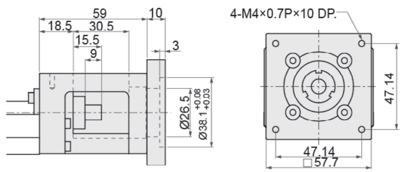
Motor connection flange F3



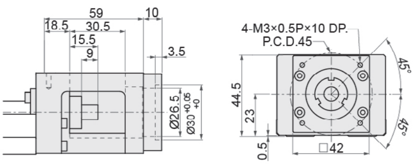
Motor connection flange F1



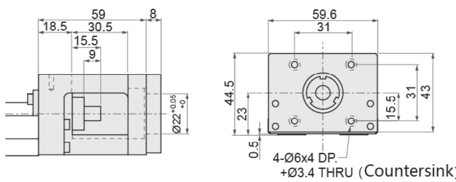
Motor connection flange F4



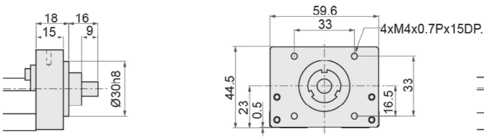
Motor connection flange F2



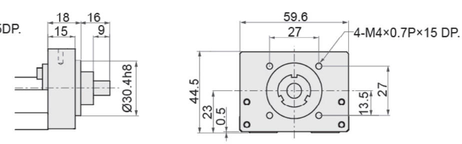
Motor connection flange F5



Transfer fixed seat H0



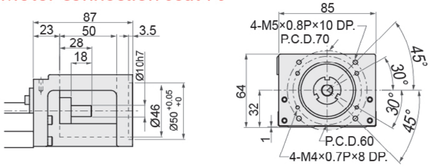
Transfer fixed seat H1



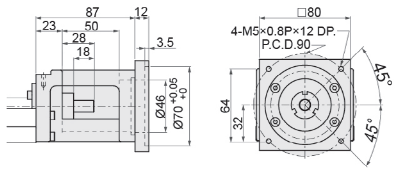
TEL +86 16653137076 E-mail info@cskmotions.com

LMK86 Connection flange

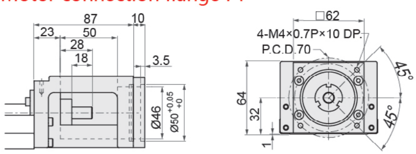
Motor connection seat F0



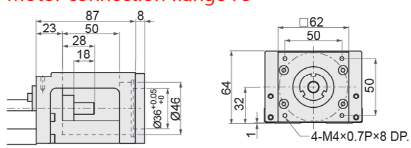
Motor connection flange F4



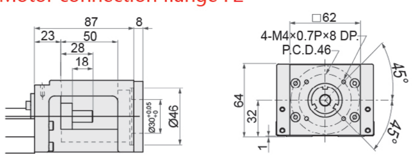
Motor connection flange F1



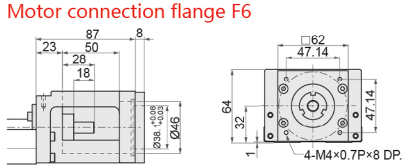
Motor connection flange F5



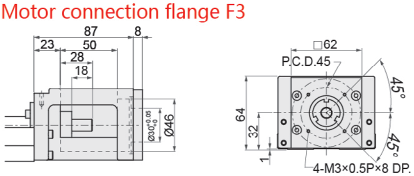
Motor connection flange F2



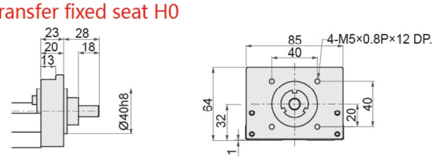
Motor connection flange F6



Motor connection flange F3

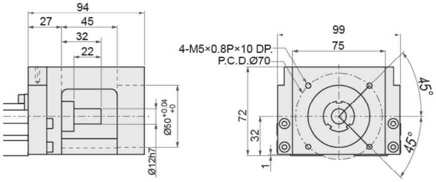


Transfer fixed seat H0

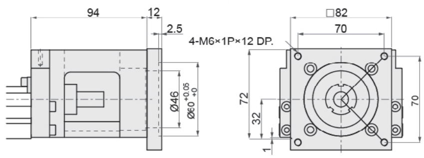


LMK100 Connection flange

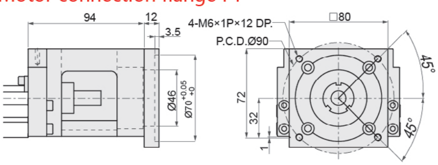
Motor connection seat F0



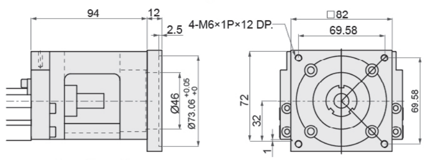
Motor connection flange F3



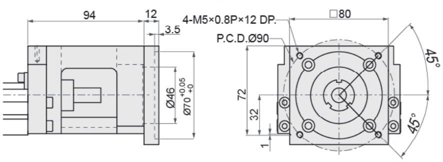
Motor connection flange F1



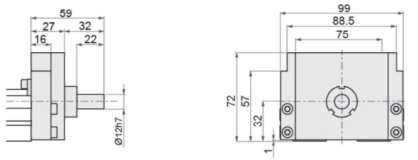
Motor connection flange F4



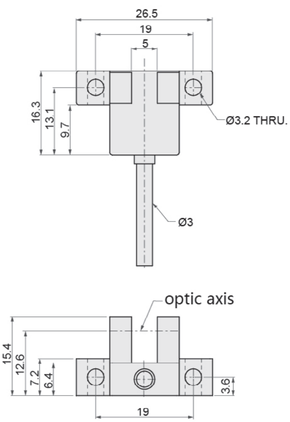
Motor connection flange F2



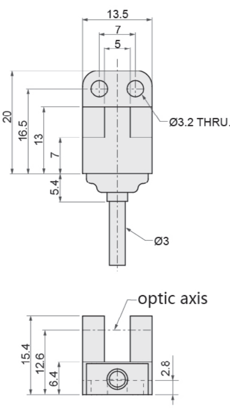
Transfer fixed seat H0



Limit switch



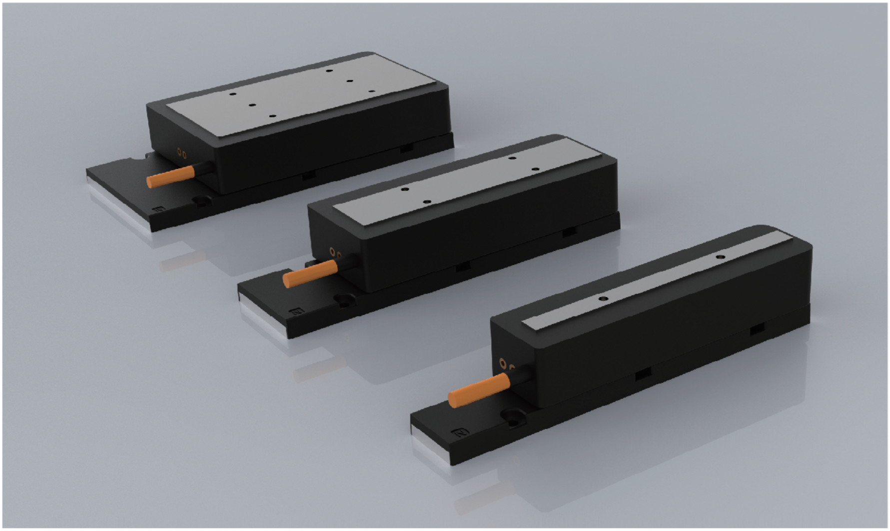
BS5-L1M



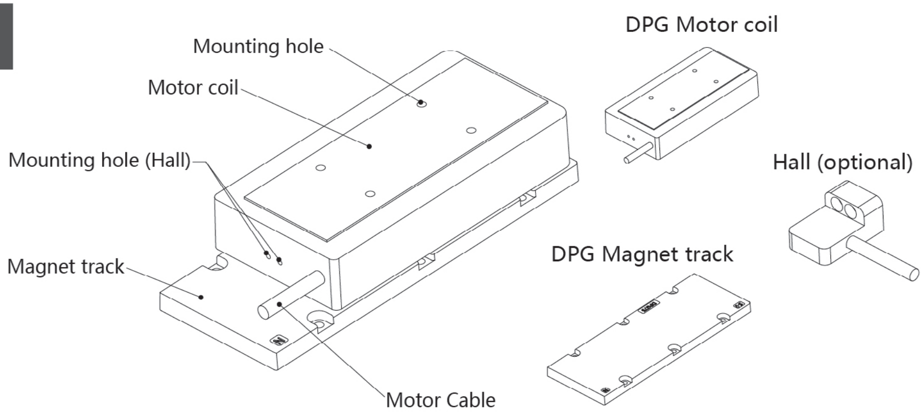
BS5-Y1M

TEL +86 16653137076 **E-mail** info@cskmotions.com

Iron Core Linear Motor
DPG series



Construction



Note: For reference only.

Characteristics

The DPG series belongs to the high-speed, high-thrust linear motors with high magnetic density. The magnetic tracks are integrally encapsulated, which prevents the magnets from performance degradation due to long-term temperature effects and also protects against the dangers of electrostatic sparks, making it more durable and safer.

- High speed up to 5m/s
- High force density
- Low speed fluctuation
- Smooth operation, no obvious frustration
- Provide accurate magnetic attraction
- Peak force: 87.7N~2000N
- Continuous thrust:25.3N~691.6N
- Itinerary be extended indefinitely
- Parameters are accurate and reliable
- Hall sensor is available

Applications

Machine Rools (CNC, etc.)

Semiconductor Manufacturing Equipment

Industrial Robots

Gantry dual drive system

Specifications

(1) Motor coil

DPG 35 C1

Series
DPG

Size
35, 45, 55, 65 , 75 , 95

Number of motor coils
C1, C2, C3, C4

Special symbol
No symbol: Standard
Special: No symbol, A, B ... (For other requirements, please consult CSK)

(2) Magnet track

DPG 35 M128

Series
DPG

Size
35, 45, 55, 65 , 75 , 95

Magnet track length
M128
M192

Special symbol
No symbol: Standard
Special: No symbol, A, B ... (For other requirements, please consult CSK)

(3) Hall sensor

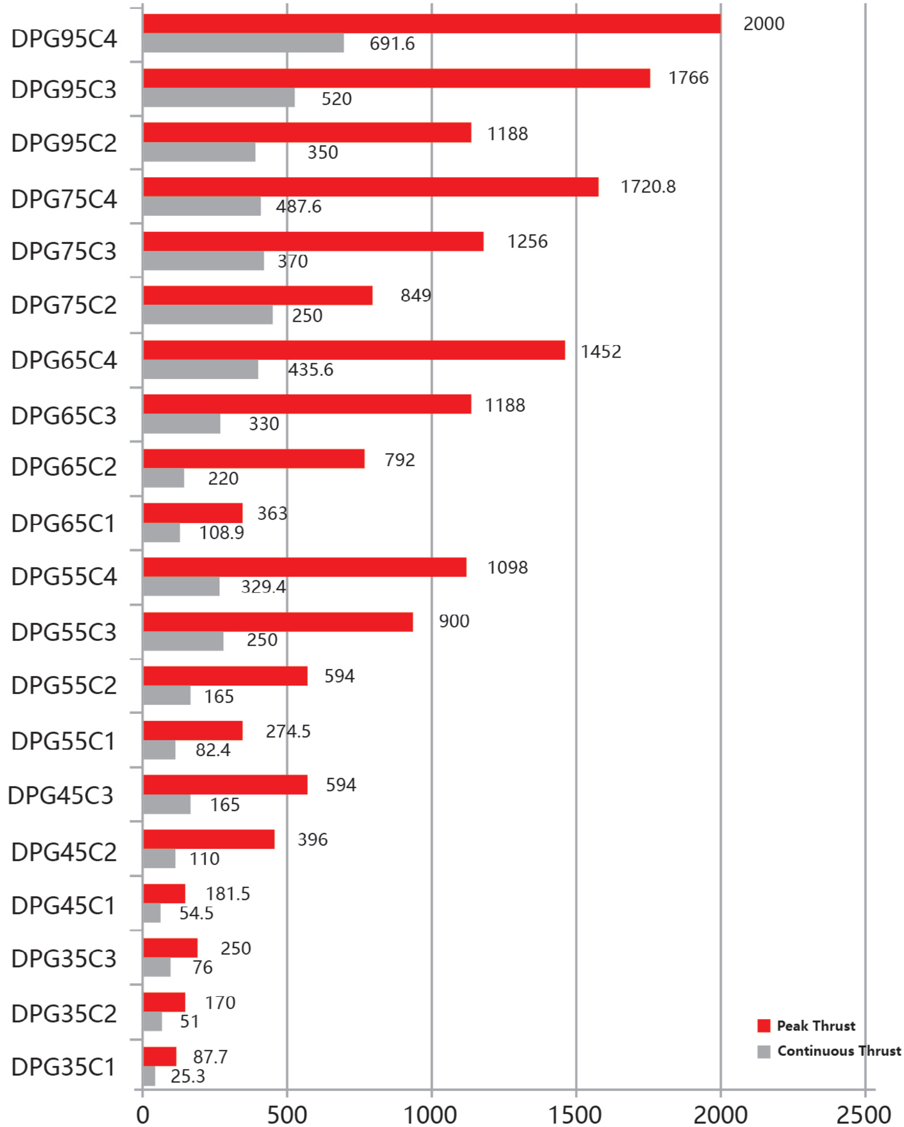
HA D PG

Series
HA: Code of hall

Motor type code
D: Direct drive motor
......

Matching code
PG: DPG series
......

Thrust



TEL +86 16653137076 E-mail info@cskmotions.com

DPG Technical parameters

Performance	Unit	DPG35C1	DPG35C2	DPG35C3	DPG45C1	DPG45C2	DPG45C3	DPG55C1	DPG55C2	DPG55C3	DPG55C4
Peak Force(1 sec.)	N	87.7	170	250	181.5	396	594	274.5	594	900	1098
Continuous Force	N	25.3	51	76	54.5	110	165	82.4	165	250	329.4
Peak Power @25°C (1s)	W	751	1793	2252	935	1870	2805	1202	2283	3424	4566
Continuous Power @25°C	W	62	124	188	84	168	252	108	205	308	411
Electrical											
Peak Current (rms) (1s)	A	10	10	10	15	18	18	18	18	18	18
Continuous Current (rms)	A	3	3	3	5.5	5.5	5.5	5.8	5.8	5.8	5.8
Force Constant	N/A	8.4	17.0	25.0	12.1	22.0	33.0	16.5	33.0	50.0	65.9
Back EMF Constant (L-L)	V_{pk}/(m/s)	4.5	12.5	22.1	8.7	19.6	31.4	14.1	24.6	42.4	59.5
Resistance @25°C ((L-L)	Ohm	1.2	2.3	3.5	1.5	3	4.4	1.9	3.7	5.5	7.3
Inductance @1kHz ((L-L)	mH	4.7	11.2	16.5	5.2	15	24.7	10.6	22.2	32	42.6
Electrical Time Constant	ms	3.9	4.9	4.7	3.6	5.1	5.6	5.6	6.0	5.8	5.8
Max. DC BUS	V_{DC}	330									
Thermal											
Max. Coil Temperature	°C	120									
Thernal Resistance @105°C	°C/W	1.90	2.30	1.58	1.40	1.10	0.73	1.11	0.73	0.34	0.29
Mechanical											
Electrical Cycle Length	mm	32									
Coil Weight	kg	0.3	0.5	0.8	0.4	0.8	1.1	0.6	1.1	1.6	2
Attraction Force	kN	0.2	0.3	0.4	0.3	0.5	0.7	0.5	0.8	1.1	1.4
Track Weight	kg/m	1.6			2.2			2.9			
Cooling Type		Natural ail-cooling									

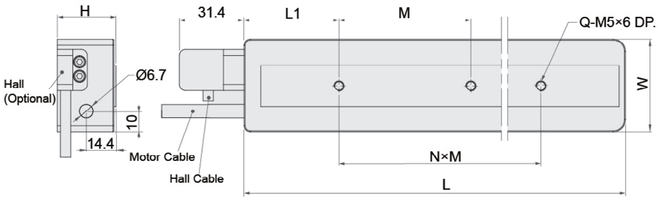
DPG Technical parameters

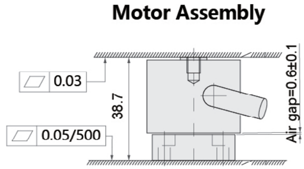
Performance	Unit	DPG65C1	DPG65C2	DPG65C3	DPG65C4	DPG75C2	DPG75C3	DPG75C4	DPG95C2	DPG95C3	DPG95C4
Peak Force(1 sec.)	N	363	792	1188	1452	849	1256	1720.8	1188	1766	2000
Continuous Force	N	108.9	220	330	435.6	250	370	487.6	350	520	691.6
Peak Power @25°C (1s)	W	1445	2600	4765	5200	3188	4782	6376	4038	6058	8077
Continuous Power @25°C	W	130	234	351	468	256	384	512	324	486	648
Electrical											
Peak Current (rms) (1s)	A	18	18	18	18	18	18	18	18	18	18
Continuous Current (rms)	A	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
Force Constant	N/A	21.8	44.0	66	87	47	69.8	95.6	66	98	130.5
Back EMF Constant (L-L)	V_{pk}/(m/s)	15.4	35.8	51.9	78.5	41.2	68.5	97.2	48	72	98
Resistance @25°C ((L-L)	Ohm	2.3	4.6	6.4	8.7	4.9	7.6	9.8	6.4	8.9	12.8
Inductance @1kHz ((L-L)	mH	12.7	27.7	41.3	54	31.5	47.5	62.8	42.9	63.8	80.9
Electrical Time Constant	ms	5.6	6.1	6.4	6.2	6.5	6.2	6.4	6.7	7.2	6.3
Max. DC BUS	V_{DC}	330									
Thermal											
Max. Coil Temperature	°C	120									
Thernal Resistance @105°C	°C/W	0.92	0.55	0.3	0.26	0.41	0.27	0.23	0.32	0.22	0.19
Mechanical											
Electrical Cycle Length	mm	32									
Coil Weight	kg	0.7	1.4	1.9	2.5	1.6	2.3	3	2.1	3.1	4
Attraction Force	kN	0.6	1	1.4	1.8	1.3	1.8	2.3	1.8	2.5	3.2
Track Weight	kg/m	3.5			4.2			5.6			
Cooling Type		**Natural ail-cooling**									

TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of DPG35

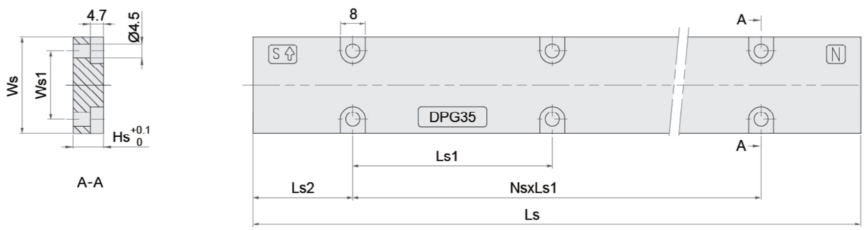
(1) Dimensions of Motor Coil





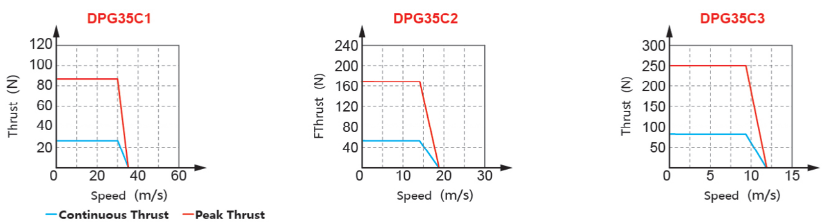
Coil SPC.	L	L1	M	N	Q	W	W1	H
DPG35C1	87	24.7	42.7	1	2	35	10	28.4
DPG35C2	151	46	64	1	2	35	10	28.4
DPG35C3	215	46	64	2	3	35	10	28.4

(2) Dimensions of Magnet Track



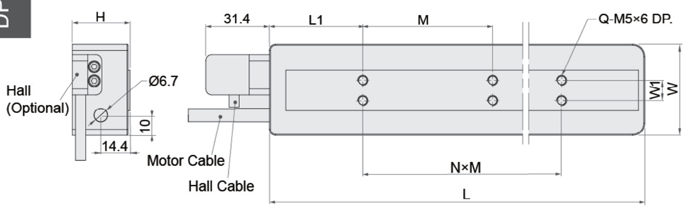
Magnet Track SPC.	Ls	Ls1	Ls2	Ns	Qs	Ws	Ws1	Hs
DPG35M128	128	64	32	1	4	31	22	9.7
DPG35M192	192	64	32	2	6	31	32	9.7

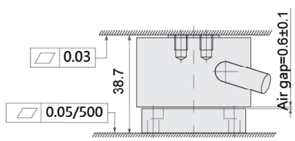
(3) Thrust and speed



Dimensions of DPG45

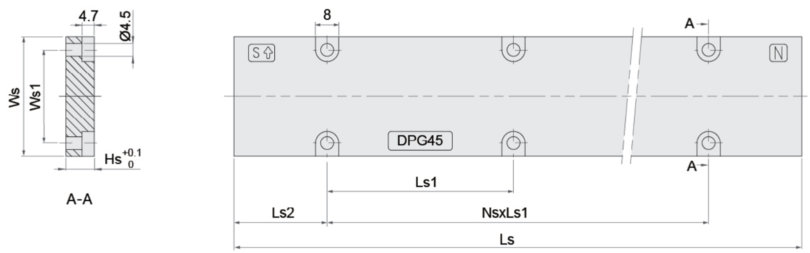
(1) Dimensions of Motor Coil





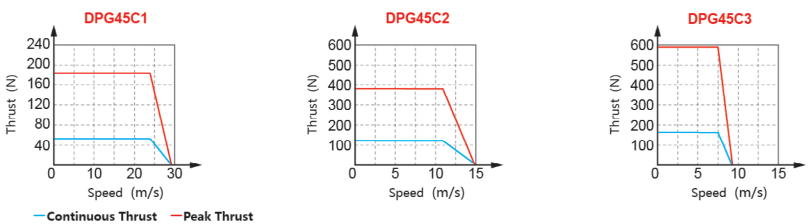
Coil SPC.	L	L1	M	N	Q	W	W1	H
DPG45C1	87	24.7	42.7	1	4	45	10	28.4
DPG45C2	151	46	64	1	4	45	10	28.4
DPG45C3	215	46	64	2	6	45	10	28.4

(2) Dimensions of Magnet Track



Magnet Track SPC.	Ls	Ls1	Ls2	Ns	Qs	Ws	Ws1	Hs
DPG45M128	128	64	32	1	4	41	32	9.7
DPG45M192	192	64	32	2	6	41	32	9.7

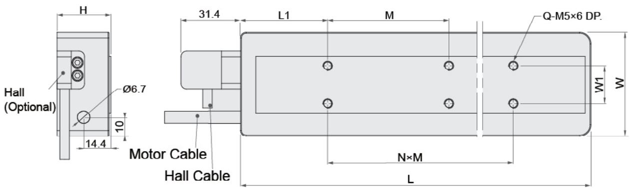
(3) Thrust and speed



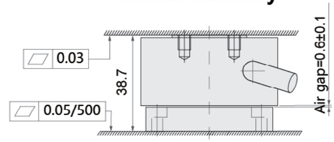
TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of DPG55

(1) Dimensions of Motor Coil

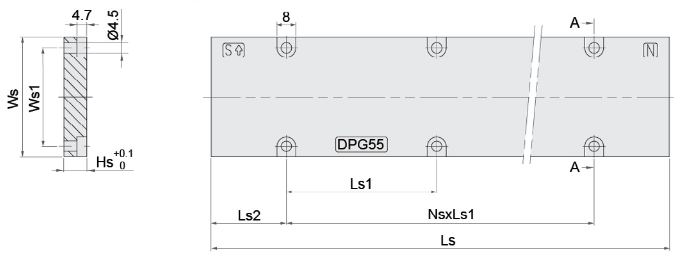


Motor Assembly



Coil SPC.	L	L1	M	N	Q	W	W1	H
DPG55C1	87	24.7	42.7	1	4	55	20	28.4
DPG55C2	151	46	64	1	4	55	20	28.4
DPG55C3	215	46	64	2	6	55	20	28.4
DPG55C4	279	46	64	3	8	55	20	28.4

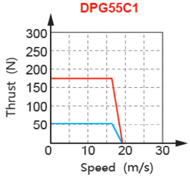
(2) Dimensions of Magnet Track



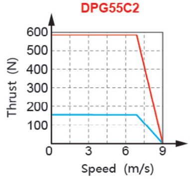
Magnet Track SPC.	Ls	Ls1	Ls2	Ns	Qs	Ws	Ws1	Hs
DPG55M128	128	64	32	1	4	51	42	9.7
DPG55M192	192	64	32	2	6	51	42	9.7

(3) Thrust and speed

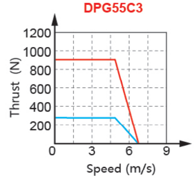
DPG55C1



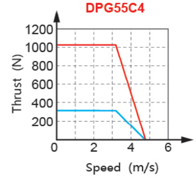
DPG55C2



DPG55C3



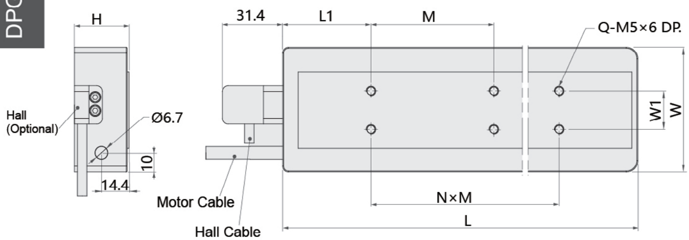
DPG55C4

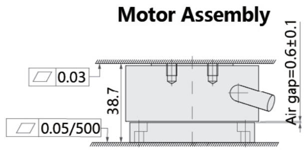


—Continuous Thrust —Peak Thrust

Dimensions of DPG65

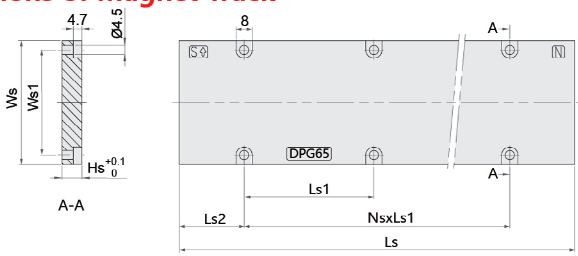
(1) Dimensions of Motor Coil





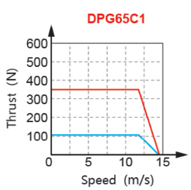
Coil SPC.	L	L1	M	N	Q	W	W1	H
DPG65C1	87	24.7	42.7	1	4	65	20	28.4
DPG65C2	151	46	64	1	4	65	20	28.4
DPG65C3	215	46	64	2	6	65	20	28.4
DPG65C4	279	46	64	3	8	65	20	28.4

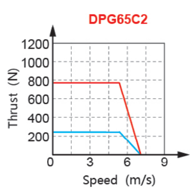
(2) Dimensions of Magnet Track

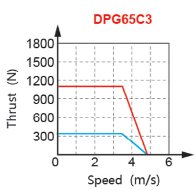


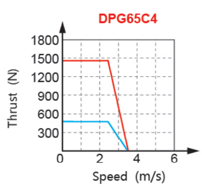
Magnet Track SPC.	Ls	Ls1	Ls2	Ns	Qs	Ws	Ws1	Hs
DPG65M128	128	64	32	1	4	61	52	9.7
DPG65M192	192	64	32	2	6	61	52	9.7

(3) Thrust and speed







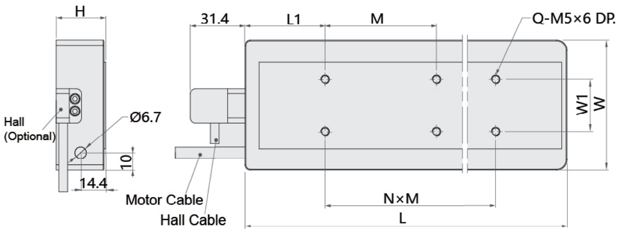


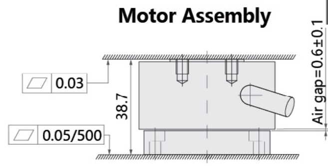
—Continuous Thrust —Peak Thrust

TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of DPG75

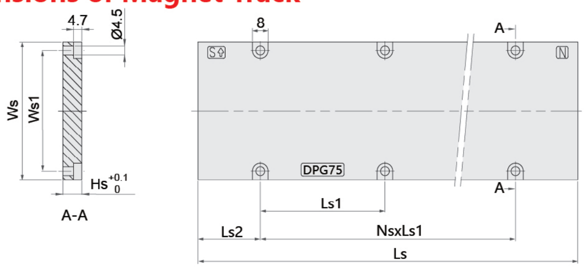
(1) Dimensions of Motor Coil





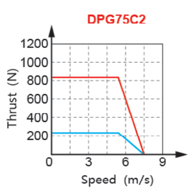
Coil SPC.	L	L1	M	N	Q	W	W1	H
DPG75C2	151	46	64	1	4	75	30	28.4
DPG75C3	215	46	64	2	6	75	30	28.4
DPG75C4	279	46	64	3	8	75	30	28.4

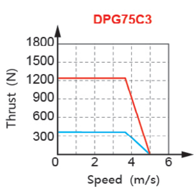
(2) Dimensions of Magnet Track

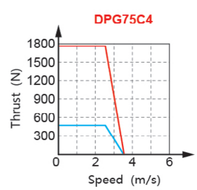


Magnet Track SPC.	Ls	Ls1	Ls2	Ns	Qs	Ws	Ws1	Hs
DPG75M128	128	64	32	1	4	71	62	9.7
DPG75M192	192	64	32	2	6	71	62	9.7

(3) Thrust and speed





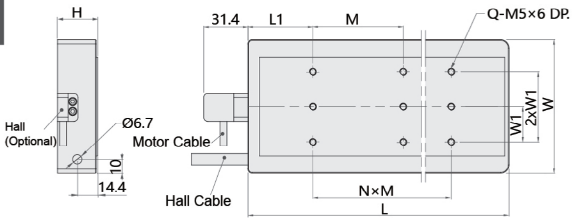


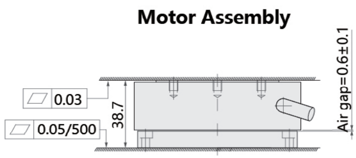
—Continuous Thrust —Peak Thrust

DPG

Dimensions of DPG95

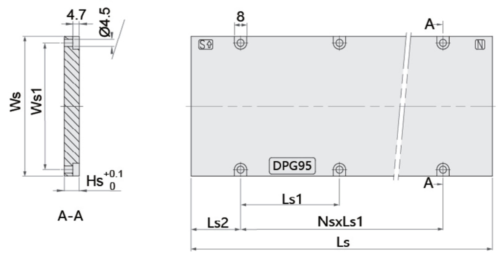
(1) Dimensions of Motor Coil





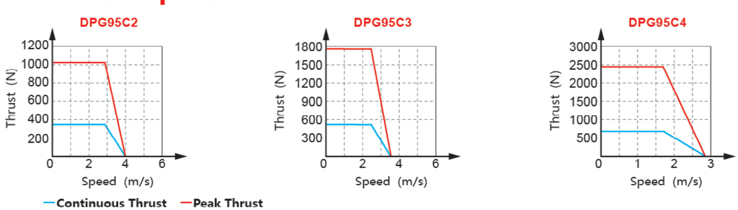
Coil SPC.	L	L1	M	N	Q	W	W1	H
DPG95C2	151	46	64	1	4	95	25	28.4
DPG95C3	215	46	64	2	6	95	25	28.4
DPG95C4	279	46	64	3	8	95	25	28.4

(2) Dimensions of Magnet Track



Magnet Track SPC.	Ls	Ls1	Ls2	Ns	Qs	Ws	Ws1	Hs
DPG95M128	128	64	32	1	4	91	82	9.7
DPG95M192	192	64	32	2	6	91	82	9.7

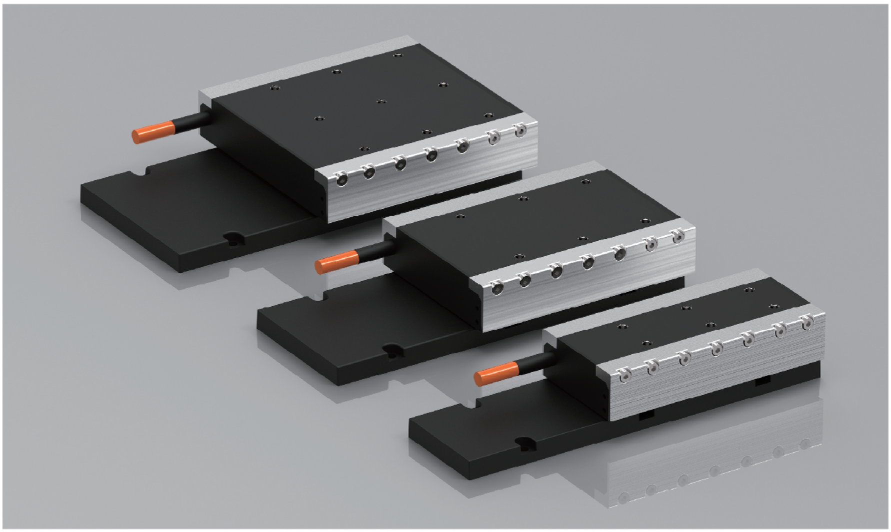
(3) Thrust and speed



TEL +86 16653137076 E-mail info@cskmotions.com

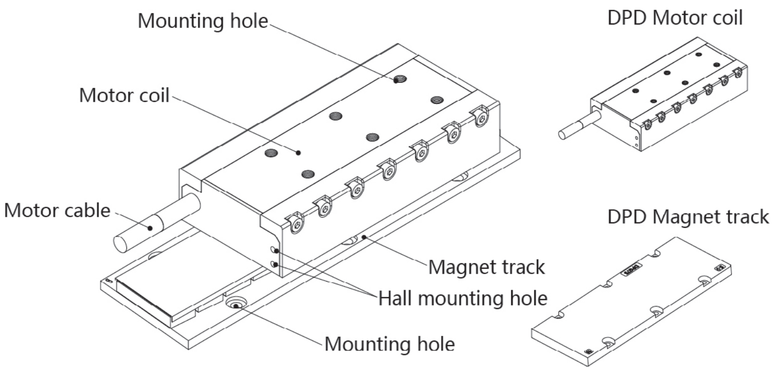
Iron Core Linear Motor

DPD series (Standard)



TEL +86 16653137076 E-mail info@cskmotions.com

Construction



Note: For reference only.

Characteristics

DPD series motors are ultra-thin linear motors with high force density and low cogging force. The linear motor of this series consists of motor coil and magnetic track. The motor coil can be combined to form a new ultra-thin high force motor. The length of magnetic track can be customized and the stroke can be selected.

- Ultra-thin
- High response
- Small end effects
- Low cogging force
- Precise magnetic attraction
- Peak force: 285N~2496N
- Continuous force: 95N~832N
- Maximum speed up to 8m/s
- Customization
- Hall sensor optional

Applications

Machine Tool (CNC, Lathe …)
Semiconductor Manufacturing Equipment
Industrial Robot
Other (Injection Molding Machine …)

Specifications

(1) Motor coil

DPD 56 C2 _

Series
DPD：Standard

Size
56：The width of the motor coil is 56mm
86
116

Number of motor coils
C2：2
C4
C6

Special symbol
No symbol：Standard
Special：No symbol，A，B ... (For other requirements, please consult CSK)

(2) Magnet track

DPD 56 M120 _

Series
DPD：Standard

Size
56：The width of the motor coil is 56mm
86
116

Magnet track length
M120：120mm
M180
M300

Special symbol
No symbol：Standard
Special：No symbol，A，B ... (For other requirements, please consult CSK)

(3) Hall sensor

HA D PD

Series
HA：Code of hall

Motor type code
D：Direct drive motor
......

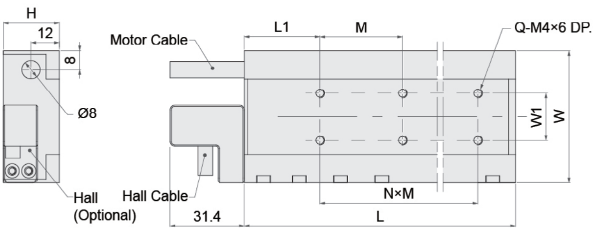
Matching code
PD：DPD series
......

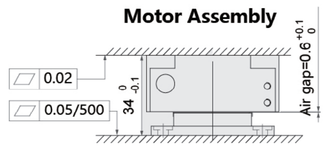
DPD Technical parameters

Performance	Unit	DPD56C2	DPD56C4	DPD56C6	DPD86C2	DPD86C4	DPD86C6	DPD116C2	DPD116C4	DPD116C6
Peak Force(1 sec.)	N	285	576	858	588	1092	1677	690	1620	2496
Continuous Force	N	95	192	286	196	364	559	230	540	832
Peak Power @25°C (1s)	W	285	576	858	588	1092	1677	690	1620	2496
Continuous Power @25°C	W	95	192	286	196	364	559	230	540	832
Electrical										
Peak Current (rms) (1s)	A	6.6	12.6	18.9	6.6	12.2	19.2	6.6	12.1	19.2
Continuous Current (rms)	A	2.2	4.2	6.3	2.2	4	6.4	2.2	4	6.4
Force Constant	N/A	43.2	45.7	45.4	89.1	91	87.3	104.5	135	130
Back EMF Constant (L-L)	V_{pk}/(m/s)	38.6	38.3	36.9	74.8	74.1	71.4	113.6	106.2	105.9
Resistance @25°C ((L-L)	Ohm	4.53	2.6	1.7	7.86	4.08	3.2	10.5	5.7	3.5
Inductance @1kHz ((L-L)	mH	21	11.46	7.4	41	20.1	13.5	65.46	29	21.87
Electrical Time Constant	ms	4.64	4.41	4.35	5.22	4.93	4.22	6.23	5.09	6.25
Max. DC BUS	V_{DC}	330								
Thermal										
Max. Coil Temperature	°C	120								
Thernal Resistance @105°C	°C/W	1.3	0.6	0.4	0.6	0.3	0.2	0.5	0.2	0.1
Mechanical										
Electrical Cycle Length	mm	30								
Coil Weight	kg	0.82	1.44	2.1	1.18	2.4	3.51	1.79	3.35	4.92
Attraction Force	kN	0.75	1.47	2.17	1.45	2.85	4.19	2.15	4.2	6.28
Track Weight	kg/m	3			5.3			9.5		
Cooling Type		Natural ail-cooling								

Dimensions of DPD56

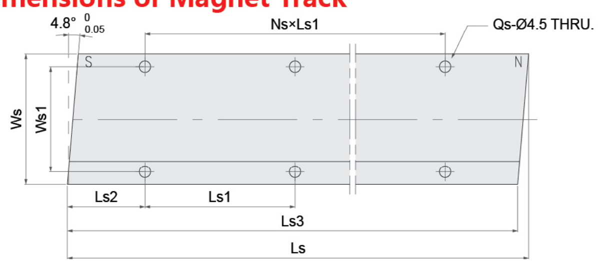
(1) Dimensions of Motor Coil

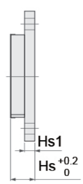




Coil SPC.	L	L1	M	N	Q	W	W1	H
DPD56C2	118	32	35	2	6	56	20	23.7
DPD56C4	223	32	35	5	12	56	20	23.7
DPD56C6	328	32	35	8	18	56	20	23.7

(2) Dimensions of Magnet Track

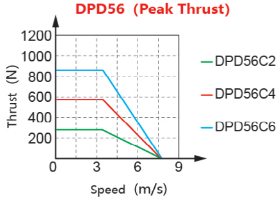




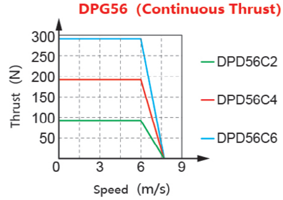
Magnet Track SPC.	Ls	Ls1	Ls2	Ls3	Ns	Qs	Ws	Ws1	Hs	Hs1
DPD56M120	124.4	60	31	120	1	4	52	42	9.6	4
DPD56M180	184.4	60	31	180	2	6	52	42	9.6	4
DPD56M300	304.4	60	31	300	4	10	52	42	9.6	4

(3) Thrust and speed

DPD56 (Peak Thrust)



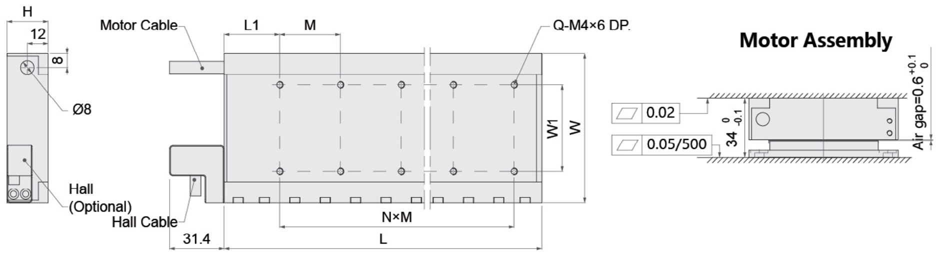
DPG56 (Continuous Thrust)



TEL +86 16653137076 **E-mail** info@cskmotions.com

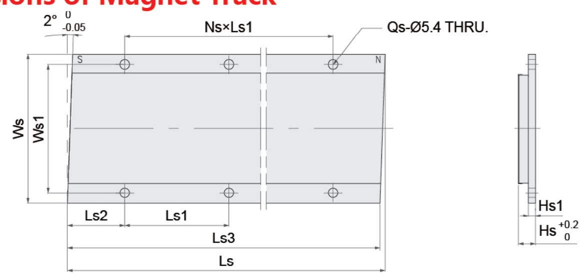
Dimensions of DPN86

(1) Dimensions of Motor Coil



Coil SPC.	L	L1	M	N	Q	W	W1	H
DPD86C2	118	32	35	2	6	86	50	23.7
DPD86C4	223	32	35	5	12	86	50	23.7
DPD86C6	328	32	35	8	18	86	50	23.7

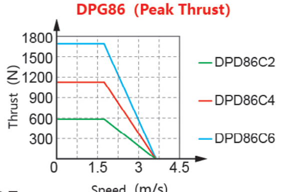
(2) Dimensions of Magnet Track



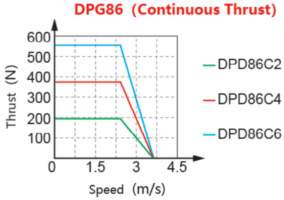
Magnet Track SPC.	Ls	Ls1	Ls2	Ls3	Ns	Qs	Ws	Ws1	Hs	Hs1
DPD86M120	123	60	31	120	1	4	86	74	9.6	4
DPD86M180	183	60	31	180	2	6	86	74	9.6	4
DPD86M300	303	60	31	300	4	10	86	74	9.6	4

(3) Thrust and speed

DPG86 (Peak Thrust)



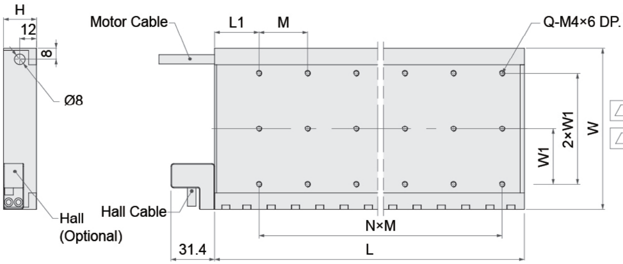
DPG86 (Continuous Thrust)



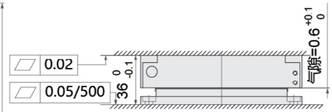
TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of DPN116

(1) Dimensions of Motor Coil

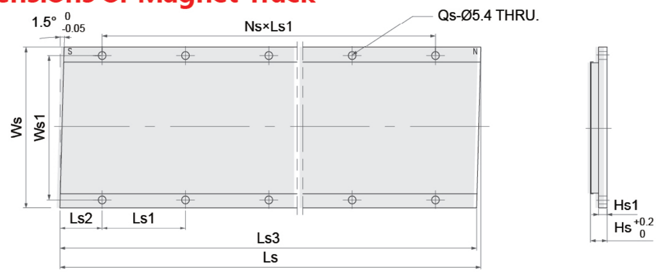


Motor Assembly



Coil SPC.	L	L1	M	N	Q	W	W1	H
DPD116C2	118	32	35	2	9	116	40	23.7
DPD116C4	223	32	35	5	18	116	40	23.7
DPD116C6	328	32	35	8	27	116	40	23.7

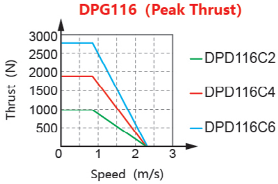
(2) Dimensions of Magnet Track



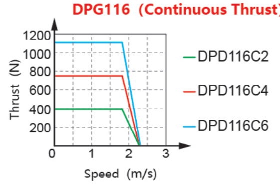
Magnet Track SPC.	Ls	Ls1	Ls2	Ls3	Ns	Qs	Ws	Ws1	Hs	Hs1
DPD116M120	123	60	30.4	120	1	4	116	104	11.6	6
DPD116M180	183	60	30.4	180	2	6	116	104	11.6	6
DPD116M300	303	60	30.4	300	4	10	116	104	11.6	6

(3) Thrust and speed

DPG116 (Peak Thrust)



DPG116 (Continuous Thrust)

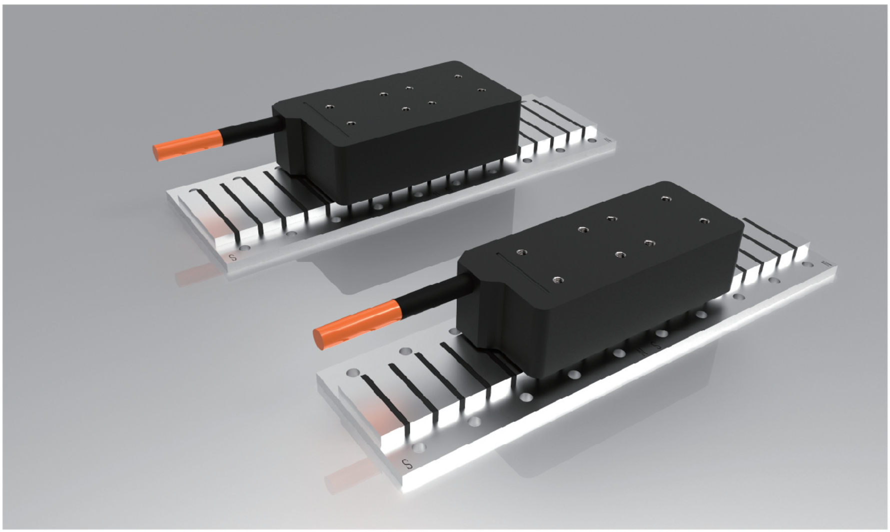


TEL +86 16653137076 E-mail info@cskmotions.com

DPN

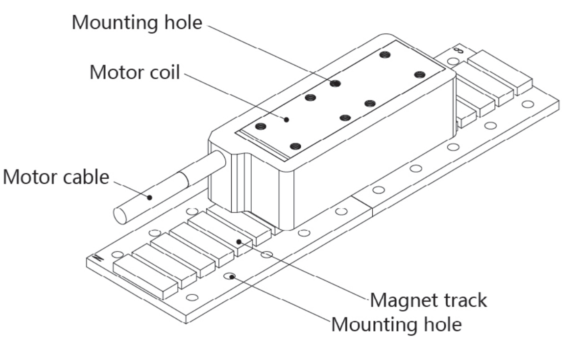
Iron Core Linear Motor

DPN series (Small size)

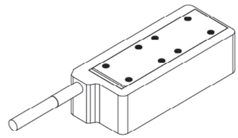


TEL +86 16653137076 E-mail info@cskmotions.com

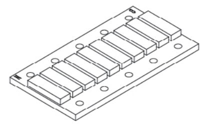
Construction



DPN Motor coil



DPN Magnet track



Note: For reference only.

Characteristics

DPN series motors are small linear motors with small size, high force and small magnetic attraction. The linear motor of this series consists of motor coil and magnetic track. The moving part can be a motor coil or a magnetic track, suitable for short stroke. These motors have the characteristics of high acceleration and high speed, which are suitable for testing industry.

- Small size
- High response
- Small end effects
- Low cogging force
- Precise magnetic attraction
- Peak force: 75N~240N
- Continuous force: 25N~80N
- Maximum speed up to 8m/s
- Customization
- Hall sensor optional

Applications

Machine Tool (CNC, Lathe ···)

Semiconductor Manufacturing Equipment

Industrial Robot

Other (Injection Molding Machine ···)

Specifications

(1) Motor coil

DPN 30 C2 _

Series
DPN: Small size

Size
30: The width of the motor coil is 30mm
40

Number of motor coils
C2: 2
C4

Special symbol
No symbol: Standard
Special: No symbol, A, B ... (For other requirements, please consult CSK)

(2) Magnet track

DPN 30 M75 _

Series
DPN: Small size

Size
30: The width of the motor coil is 30mm
40

Magnet track length
M75: 75mm

Special symbol
No symbol: Standard
Special: No symbol, A, B ... (For other requirements, please consult CSK)

TEL +86 16653137076 E-mail info@cskmotions.com

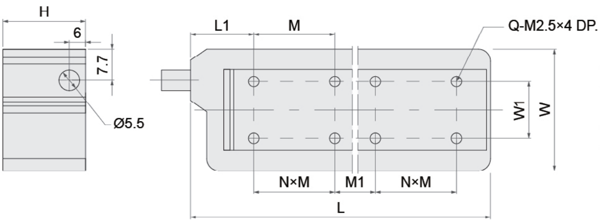
DPN Technical parameters

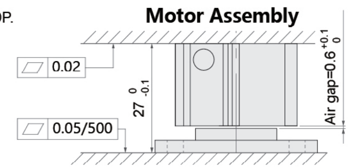
Performance	Unit	DPN30C2	DPN30C4	DPN40C2	DPN40C4
Peak Force (1s)	N	75	150	120	240
Continuous Force	N	25	50	40	80
Peak Power @25°C (1s)	W	56.3	112.5	90	180
Continuous Power @25°C	W	18.8	37.5	30	60
Electrical					
Peak Current (rms) (1s)	A	4.5	4.5	4.5	4.5
Continuous Current (rms)	A	1.5	1.5	1.5	1.5
Force Constant	N/A	16.67	33.33	26.67	53.33
Back EMF Constant (L-L)	V_{pk}/(m/s)	29.13	58.26	43.5	86.8
Resistance @25°C (L-L)	Ohm	14.71	29.41	20.5	36
Inductance @1kHz (L-L)	mH	22.06	60.47	47.9	86.8
Electrical Time Constant	ms	1.5	2.06	2.34	2.41
Max. DC BUS	V_{DC}	300			
Thermal					
Max. Coil Temperature	°C	120			
Thernal Resistance @105°C	°C/W	6.4	3.2	4	2
Mechanical					
Electrical Cycle Length	mm	15			
Coil Weight	kg	0.09	0.18	0.12	0.24
Attraction Force	kN	0.2	0.4	0.3	0.56
Track Weight	kg/m	1.35		1.68	
Cooling Type		Natural ail-cooling			

DPN

Dimensions of DPN30

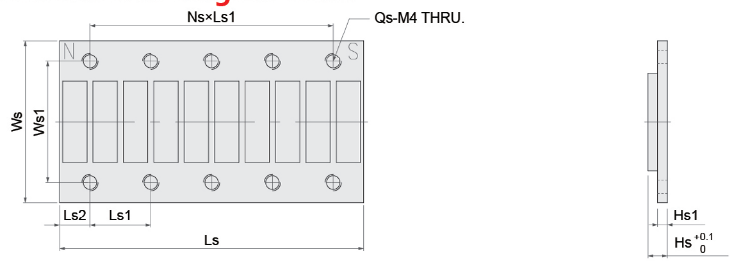
(1) Dimensions of Motor Coil





Coil SPC.	L	L1	M	M1	N	Q	W	W1	H
DPN30C2	74	15.6	20	10	1	8	30	14	20.4
DPN30C4	134	15.6	20	30	2	12	30	14	20.4

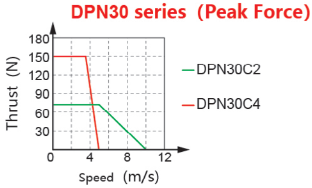
(2) Dimensions of Magnet Track



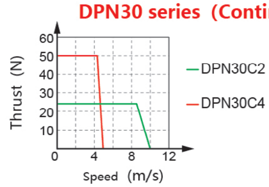
Magnet Track SPC.	Ls	Ls1	Ls2	Ns	Qs	Ws	Ws1	Hs	Hs1
DPN30M60	60	15	7.5	3	8	40	30	6	3
DPN30M75	75	15	7.5	4	10	40	30	6	3
DPN30M120	120	15	7.5	7	16	40	30	6	3
DPN30M180	180	15	7.5	11	24	40	30	6	3
DPN30M240	240	15	7.5	15	32	40	30	6	3
DPN30M300	300	15	7.5	19	40	40	30	6	3

(3) Thrust and speed

DPN30 series (Peak Force)



DPN30 series (Continuous Thrust)

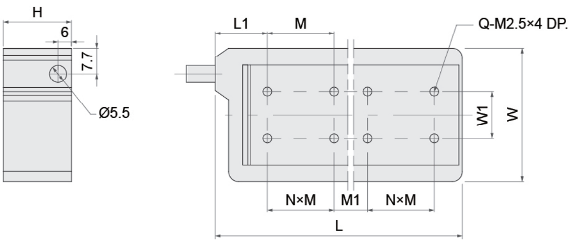


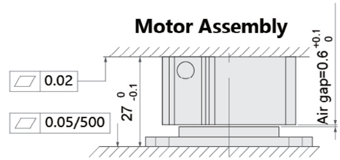
TEL +86 16653137076

E-mail info@cskmotions.com

Dimensions of DPN40

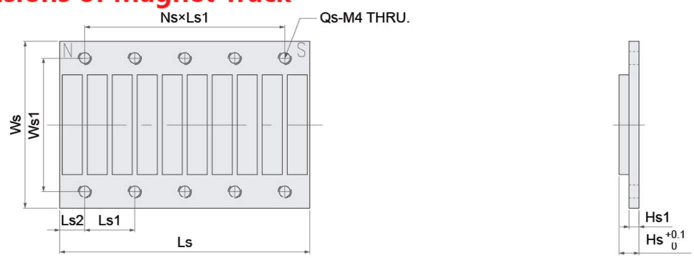
(1) Dimensions of Motor Coil





Coil SPC.	L	L1	M	M1	N	Q	W	W1	H
DPN40C2	74	15.6	20	10	1	8	40	14	20.4
DPN40C4	134	15.6	20	30	2	12	40	14	20.4

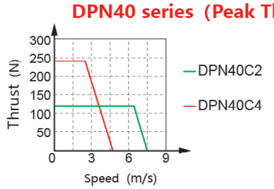
(2) Dimensions of Magnet Track



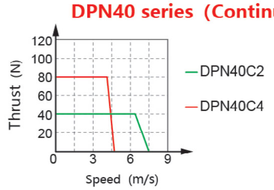
Magnet Track SPC.	Ls	Ls1	Ls2	Ns	Qs	Ws	Ws1	Hs	Hs1
DPN40M60	60	15	7.5	3	8	50	40	6	3
DPN40M75	75	15	7.5	4	10	50	40	6	3
DPN40M120	120	15	7.5	7	16	50	40	6	3
DPN40M180	180	15	7.5	11	24	50	40	6	3
DPN40M240	240	15	7.5	15	32	50	40	6	3
DPN40M300	300	15	7.5	19	40	50	40	6	3

(3) Thrust and speed

DPN40 series (Peak Thrust)



DPN40 series (Continuous Thrust)

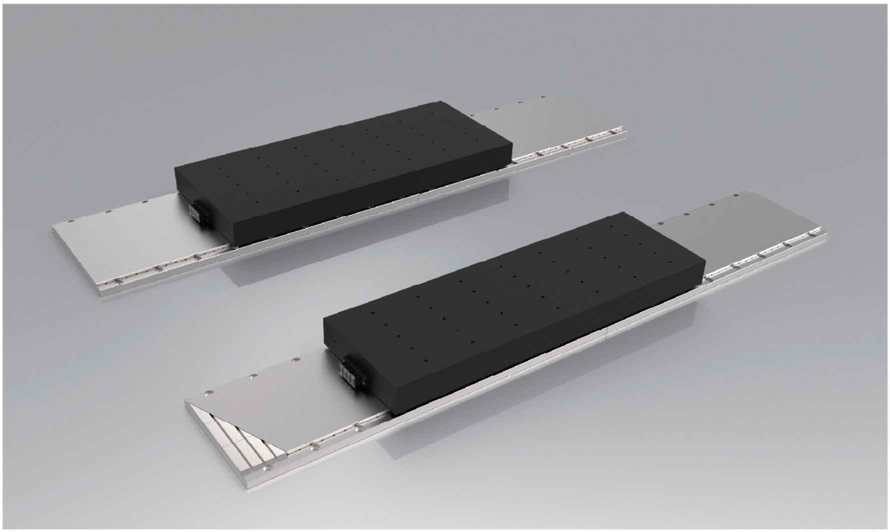


TEL +86 16653137076 E-mail info@cskmotions.com

Iron Core Linear Motor

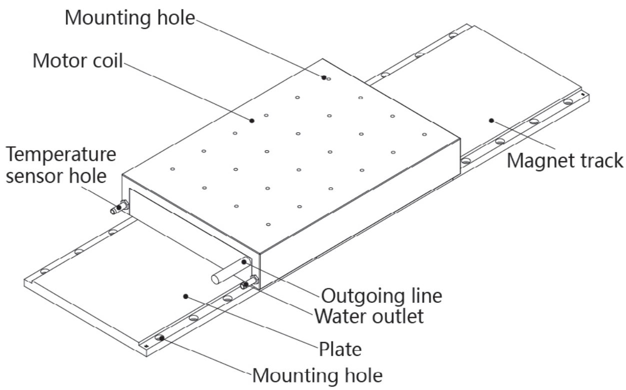
DPW-F series　(Heavy load water cooling)

DPW

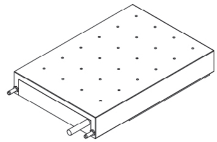


TEL +86 16653137076　E-mail info@cskmotions.com

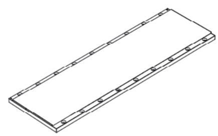
Construction



DPW Motor coil



DPW Magnet track



Note: For reference only.

Characteristics

DPWF series motors are high force flat plate linear motors with high load, more than 1KN of force. The linear motor of this series consists of motor coil and magnetic track. These motors have the characteristics of low speed, high force and high load, which are suitable for large equipment and high load conditions.

- The force is more than 1KN
- High load capacity
- Suitable for low speed operation
- Peak force: 1960.4N~7861N
- Continuous force: 1023.6N~3931.2N
- Customization

Applications

Machine Tool (CNC, EDM ···)

Laser industry

Logistics handling

Other (Gantry double drive system ···)

Specifications

(1) Motor coil

DPW 180 C4 F

Series
DPW: High force

Size
180: The width of the motor coil is 180mm
230

Number of motor coils
C4: 4
C8
C12
C16

water cooling

Special symbol
No symbol: Standard
Special: No symbol, A, B ... (For other requirements, please consult CSK)

(2) Magnet track

DPW 180 M256

Series
DPW: High force

Size
180: The width of the motor coil is 180mm
230

Magnet track length
M256: 256mm
M320
M512
M576

Special symbol
No symbol: Standard
Special: No symbol, A, B ... (For other requirements, please consult CSK)

TEL +86 16653137076 E-mail info@cskmotions.com

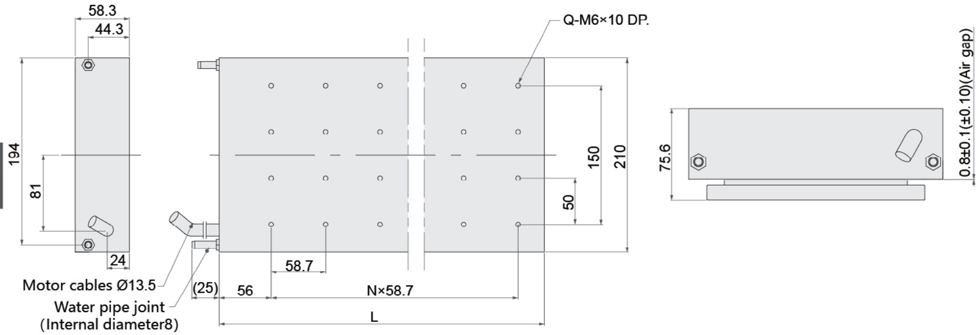
DPW Technical parameters

Performance	Unit	DPW180C4F	DPW180C8F	DPW180C12F	DPW180C16F	DPW230C4F	DPW230C8F	DPW230C12F	DPW230C16F
Peak Force(1 sec.)	N	3040	5416	6912	9031	4121	7250	8743	10621
Continuous Force	N	1580	2844	3595	4511	2060	3816	4670	5556
Electrical									
Peak Current (rms) (1s)	A	16	32	48	64	16	32	48	64
Continuous Current (rms)	A	8	16	24	32	8	16	24	32
Force Constant	N/A	197.5	177.8	149.8	141	257.5	238.5	194.6	173.6
Back EMF Constant (L-L)	V_{pk}/(m/s)	190	120.2	153.5	122	251.1	160.7	203	162.7
Resistance @25°C (L-L)	Ohm	7.78	3.89	2.9	1	10.1	5.04	3.36	2.52
Inductance @1kHz (L-L)	mH	100.5	51.25	33.1	15.3	134	68.4	50.2	29.8
Electrical Time Constant	ms	12.9	13.2	11.4	15.3	13.3	13.6	14.9	11.8
Max. DC BUS	V_{DC}	330							
Thermal									
Max. Coil Temperature	°C	120							
Thernal Resistance @105°C	°C/W	0.11	0.04	0.04	0.03	0.1	0.04	0.03	0.02
Mechanical									
Electrical Cycle Length	mm	32							
Coil Weight	kg	6.8	13.5	20.2	27	8.5	16.9	25.3	33.7
Attraction Force	kN	4.93	9.98	14.97	19.9	6.5	13.3	19.95	26.5
Track Weight	kg/m	20.9				26.3			
Cooling Type		Natural ail-cooling							

MELUCCI TECHNOLOGIES CSK MOTION TECHNOLOGY

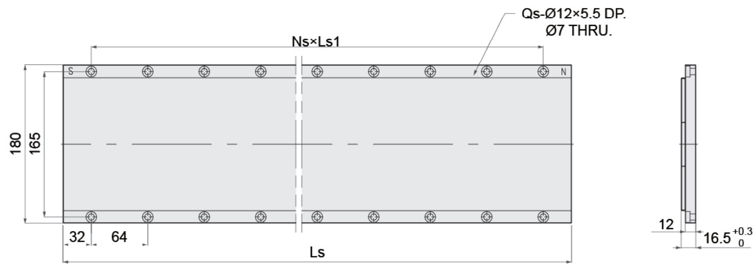
Dimensions of DPW180

(1) Dimensions of Motor Coil



Coil SPC.	L	N	Q
DPW180C4F	202	2	12
DPW180C8F	378	5	24
DPW180C12F	554	8	36
DPW180C16F	730	11	48

(2) Dimensions of Magnet Track

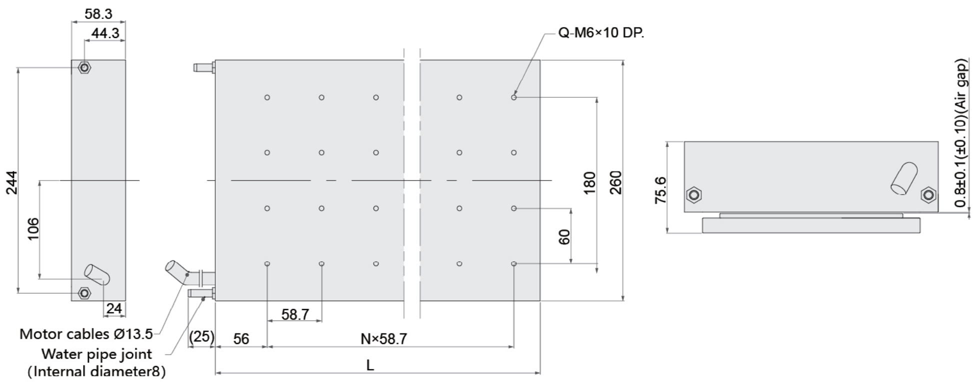


Magnet Track SPC.	Ls	Ns	Qs
DPW180M256	256	3	8
DPW180M320	320	4	10
DPW180M512	512	7	16

DPW

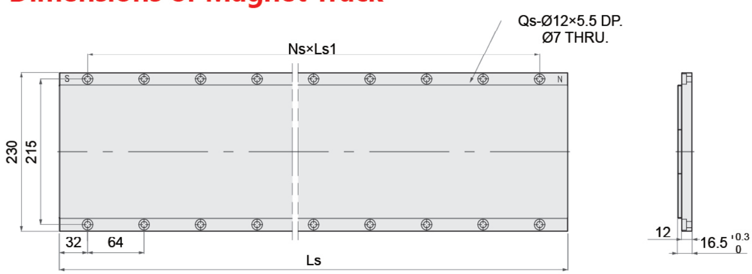
Dimensions of DPW230

(1) Dimensions of Motor Coil



Coil SPC.	L	N	Q
DPW230C4F	202	2	12
DPW230C8F	378	5	24
DPW230C12F	554	8	36
DPW230C16F	730	11	48

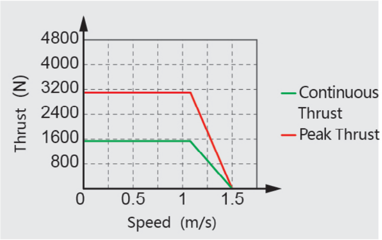
(2) Dimensions of Magnet Track



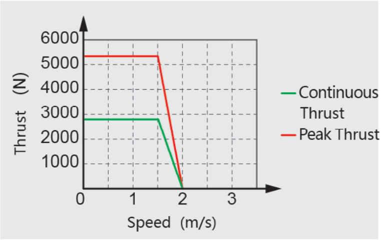
Magnet Track SPC.	Ls	Ns	Qs
DPW230M256	256	3	8
DPW230M320	320	4	10
DPW230M512	512	7	16

DPW series technical analysis

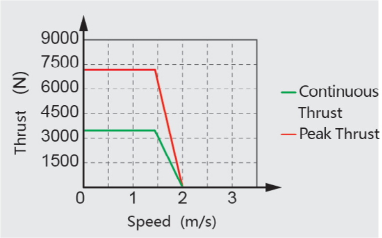
DPW180C4



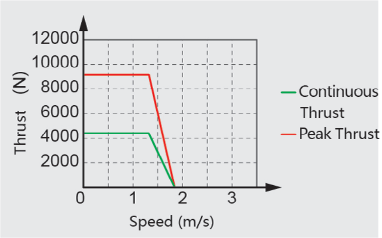
DPW180C8



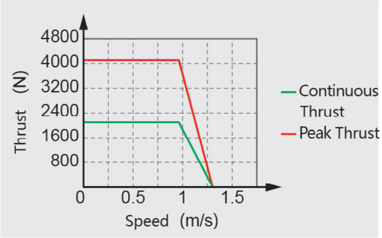
DPW180C12



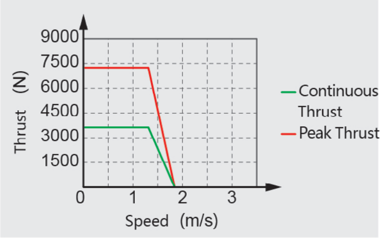
DPW180C16



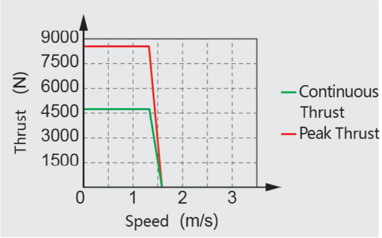
DPW230C4



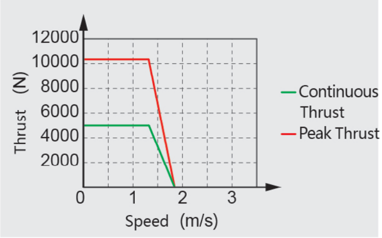
DPW230C8



DPW230C12

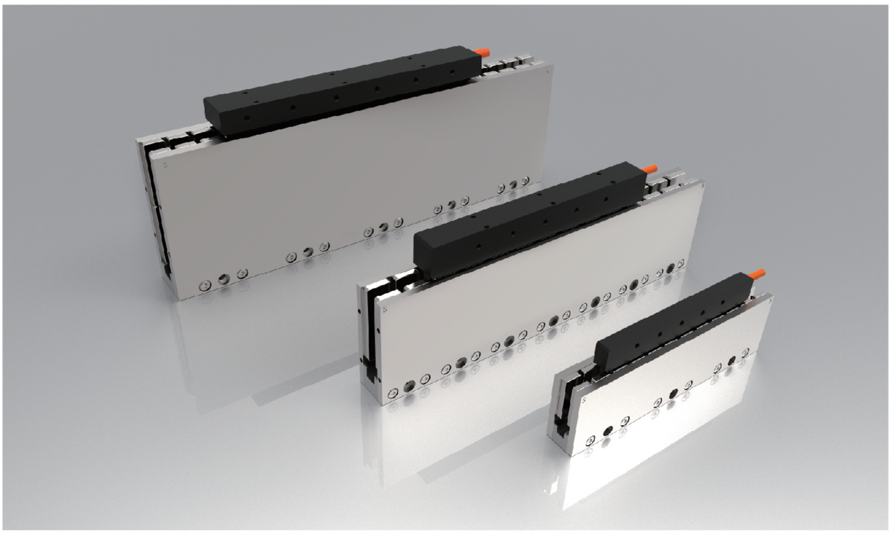


DPW230C16



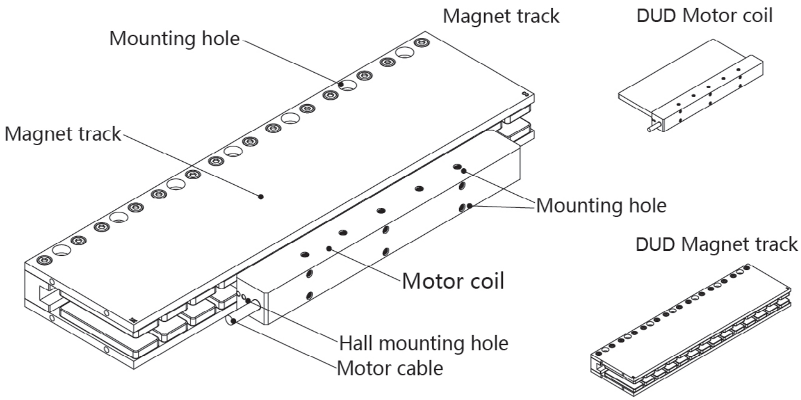
TEL +86 16653137076 E-mail info@cskmotions.com

Ironless Linear Motor
DUD series



DUD

Construction



Note：For reference only.

Characteristics

DUD series motors are ironless linear motors with no cogging force and low speed fluctuation .The linear motor of this series consists of motor coil and magnetic track. There is no attractive force between motor coil and magnet track during assembly. Without cogging force, they have excellent dynamic performance and can meet the demand of low speed fluctuation.

- No attractive force
- No cogging force
- Low speed fluctuation
- High response
- Small end effects
- Peak force：198N~1152N
- Continuous force：54.5N~384N
- Customization
- Hall sensor optional

Applications

Machine Tool（CNC, Lathe …）

Semiconductor Manufacturing Equipment

Industrial Robot

Other（Injection Molding Machine …）

TEL +86 16653137076 E-mail info@cskmotions.com

DUD

Specifications

(1) Motor coil

DUD 50 C2 _

Series
DUD: Ironless Linear Motor

Size
50: The width of the motor coil is 50mm
80
120

Number of motor coils
C2: 2
C3
C4

Special symbol
No symbol: Standard
Special: No symbol, A, B ... (For other requirements, please consult CSK)

(2) Magnet track

DUD 50 M120 _

Series
DUD: Ironless Linear Motor

Size
50: The width of the motor coil is 50mm
80
120

Magnet track length
M120: 120mm
M180
......

Special symbol
No symbol: Standard
Special: No symbol, A, B ... (For other requirements, please consult CSK)

(3) Hall sensor

HA D UD50

Series
HA: Code of hall

Motor type code
D: Direct drive motor
......

Matching code
UD50: DUD50 series
......

DUD

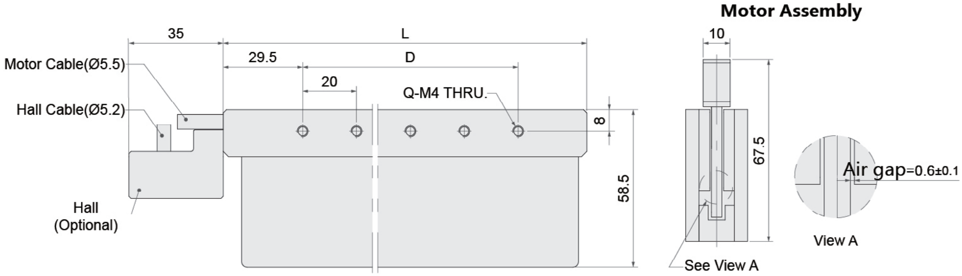
DUD Technical parameters

Performance	Unit	DUD50C2	DUD50C3	DUD50C4	DUD80C2	DUD80C3	DUD80C4	DUD120C2	DUD120C3	DUD120C4
Peak Force(1 sec.)	N	198	297	396	486	722	964	576	870	1152
Continuous Force	N	54.5	81.8	109	143.5	203.4	283.4	192	290	384
Peak Power @25°C (1s)	W	297	445.5	594	729	939	1253.2	921.6	1392	1843.2
Continuous Power @25°C	W	81.8	122.7	163.5	215.3	264	368.4	307.2	464	614.4
Electrical										
Peak Current (rms)(1s)	A	5.5	8.5	11	5.1	7.5	10.2	14	14	14
Continuous Current (rms)	A	1.6	2.4	3.2	1.5	2.2	3	4	4	4
Force Constant	N/A	48	71	95	95.7	92.5	94.5	72	72.5	72.5
Back EMF Constant (L-L)	V_{pk}/(m/s)	29.5	29.5	29.5	87.2	86.3	89.8	66	66.8	66.8
Resistance @25°C (L-L)	Ohm	18.8	12.6	9.4	25.4	17	12.7	10.8	15.9	21.2
Inductance @1kHz (L-L)	mH	6	4	3	25.3	17	12.8	6.8	10.3	13.5
Electrical Time Constant	ms	0.3	0.3	0.3	1	1	1	0.6	0.6	0.6
Max. DC BUS	V_{DC}	300			330			330		
Thermal										
Max. Coil Temperature	°C	100								
Thernal Resistance @105°C	°C/W	1.22	0.81	0.61	0.46	0.38	0.27	0.33	0.22	0.16
Mechanical										
Electrical Cycle Length	mm	30			42			36		
Coil Weight	kg	0.2	0.3	0.4	0.6	1	1.2	0.9	1.3	1.8
Attraction Force	kN	0								
Track Weight	kg/m	5.6			10.4			23.5		
Cooling Type		Natural ail-cooling								

TEL +86 16653137076 E-mail info@cskmotions.com

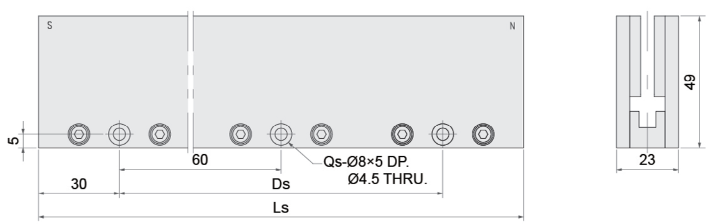
Dimensions of DUD50

(1) Dimensions of Motor Coil



Coil SPC.	L	D	Q
DUD50C2	135	80	5
DUD50C3	195	140	8
DUD50C4	255	200	11

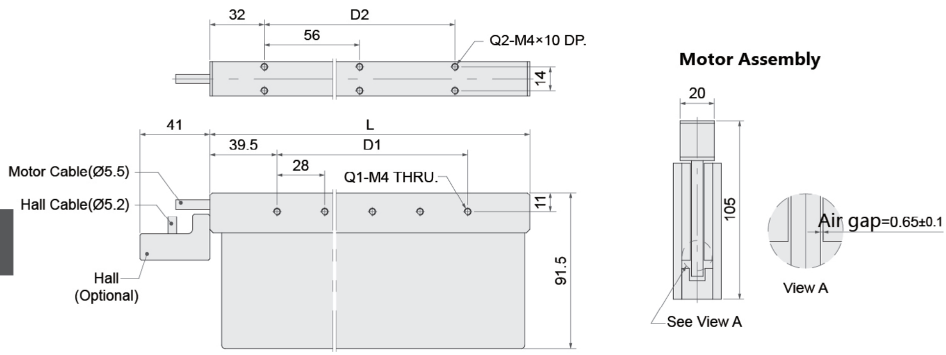
(2) Dimensions of Magnet Track



Magnet Track SPC.	Ls	Ds	Qs
DUD50M120	120	60	2
DUD50M180	180	120	3
DUD50M300	300	240	5

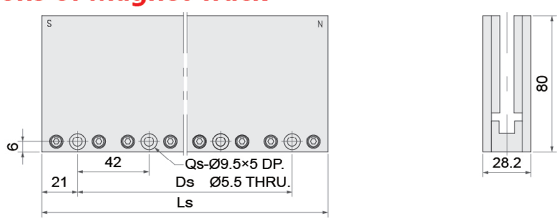
Dimensions of DUD80

(1) Dimensions of Motor Coil



Coil SPC.	L	D1	Q1	D2	Q2
DUD80C2	188	112	5	112	6
DUD80C3	272	196	8	224	10
DUD80C4	356	280	11	280	12

(2) Dimensions of Magnet Track

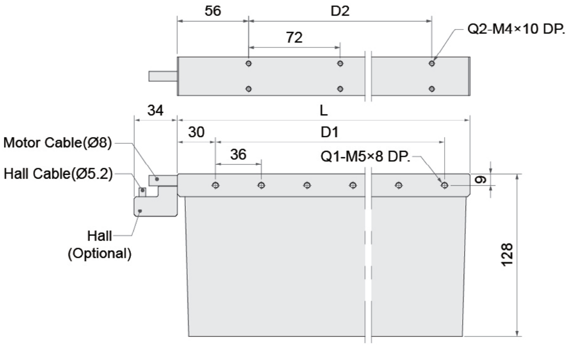


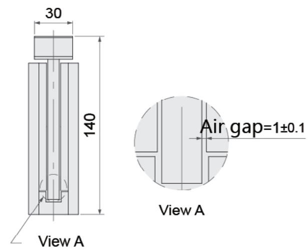
Magnet Track SPC.	Ls	Ds	Qs
DUD80M126	126	84	3
DUD80M168	168	126	4
DUD80M294	294	252	7

TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of DUD120

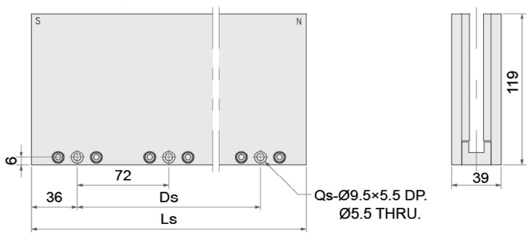
(1) Dimensions of Motor Coil





Coil SPC.	L	D1	Q1	D2	Q2
DUD120C2	158	108	4	72	4
DUD120C3	230	180	6	144	6
DUD120C4	302	252	8	216	8

(2) Dimensions of Magnet Track



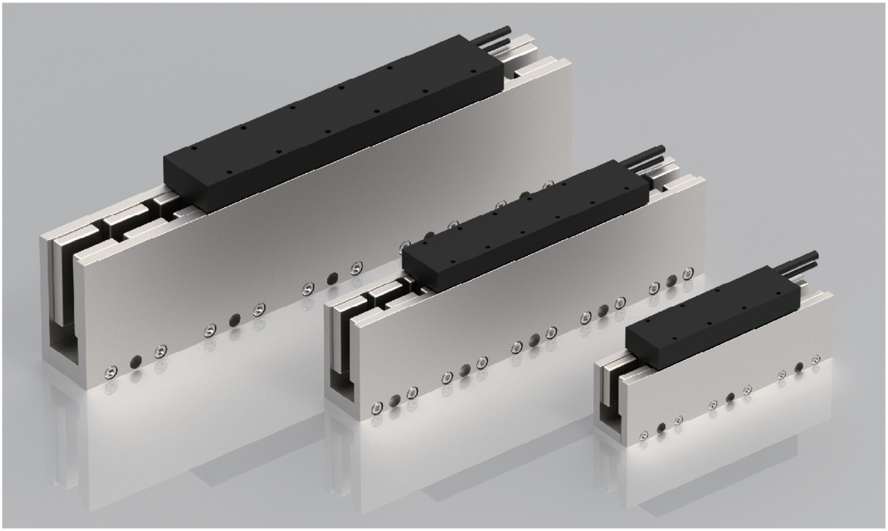
Magnet Track SPC.	Ls	Ds	Qs
DUD120M144	144	72	2
DUD120M216	216	144	3
DUD120M288	288	216	4

TEL +86 16653137076 E-mail info@cskmotions.com

Ironless Linear Motor

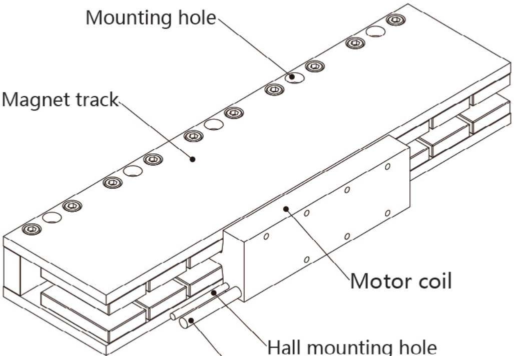
DUF series

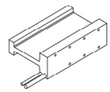
DUF

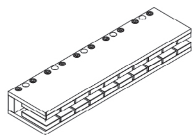


TEL +86 16653137076 E-mail info@cskmotions.com

Construction







Note：For reference only.

Characteristics

DUF series motors are ironless linear motors with no cogging force and low speed fluctuation .The linear motor of this series consists of motor coil and magnetic track. There is no attractive force between motor coil and magnet track during assembly. Without cogging force, they have excellent dynamic performance and can meet the demand of low speed fluctuation.

- No attractive force
- No cogging force
- Low speed fluctuation
- High response
- Small end effects
- Peak force：226.4N~10510N
- Continuous force：41.2N~1501N
- Customization

Applications

Machine Tool（CNC, Lathe …）

Semiconductor Manufacturing Equipment

Industrial Robot

Other（Injection Molding Machine …）

Specifications

(1) Motor coil

DUF 3 C2 P

Series
DUD: Ironless Linear Motor

Size
3: 35.5mm
4: 39mm
5: 50mm
6: 64.5mm

Number of motor coils
C1-C6

Special symbol
No symbol: series
P: parallel
Special: No symbol, A, B ... (For other requirements, please consult CSK)

(2) Magnet track

DUF 3 M120

Series
DUD: Ironless Linear Motor

Size
he width of the motor coil

Magnet track length
M120: 120mm
M180
……

Special symbol
No symbol: Standard
Special: No symbol, A, B ... (For other requirements, please consult CSK)

TEL +86 16653137076 E-mail info@cskmotions.com

DUF Technical parameters

Performance	Unit	DUF3C1	DUF3C2	DUF3C3	DUF4C1	DUF4C2	DUF4C3	DUF4C4	DUF4C4P	DUF4C5	DUF4C5P	DUF4C6P
Peak Force(1 sec.)	N	226.4	452.8	679	333.2	666.4	999.6	1332.8	1332.8	1666	1666	1999
Continuous Force	N	41.2	82.3	123.5	66.6	133.3	199.9	266.6	266.6	333.2	333.2	399.8
Electrical												
Peak Current (rms) (1s)	A	11.55	11.55	11.55	14	14	14	14	28	14	28	28
Continuous Current (rms)	A	2.1	2.1	2.1	2.8	2.8	2.8	2.8	5.6	2.8	5.6	5.6
Force Constant	N/A	19.6	39.2	58.8	23.8	47.6	71.4	95.2	47.6	119	59.5	71.4
Back EMF Constant (L-L)	V_{pk}/(m/s)	15.99	31.99	47.98	19.42	38.84	58.26	77.68	38.84	97.1	48.55	58.26
Resistance @25°C ((L-L)	Ohm	3.7	7.4	11.1	5.03	10.07	15.1	20.13	5.03	25.17	6.04	7.55
Inductance @1kHz ((L-L)	mH	2.3	4.6	6.9	5.18	10.37	15.55	20.74	4.93	25.92	5.92	7.78
Electrical Time Constant	ms	0.62	0.62	0.62	1.03	1.03	1.03	1.03	0.98	1.03	0.98	1.03
Max. DC BUS	V_{DC}	330										
Thermal												
Max. Coil Temperature	°C	100										
Thernal Resistance @105°C	°C/W	2.37	1.18	0.79	0.98	0.49	0.33	0.24	0.24	0.2	0.2	0.16
Mechanical												
Electrical Cycle Length	mm	60										
Coil Weight	kg	0.34	0.45	0.68	0.34	0.65	0.95	1.3	1.3	1.58	1.58	1.75
Attraction Force	kN	0										
Track Weight	kg/m	8.75			14.72							
Cooling Type		**Natural ail-cooling**										

DUF

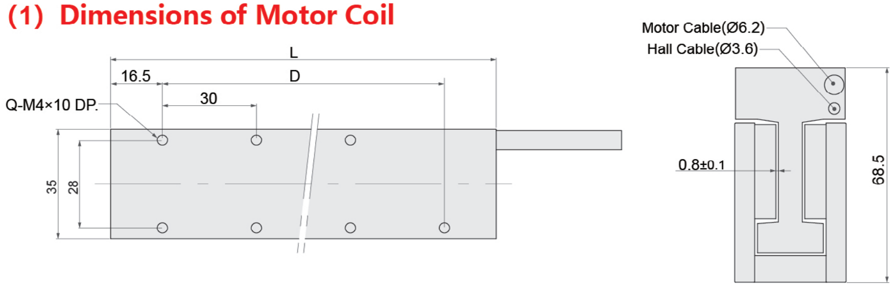
DUF Technical parameters

Performance	Unit	DUF5C2	DUF5C2P	DUF5C3	DUF5C3P	DUF5C4	DUF5C4P	DUF5C5	DUF5C5P	DUF6C4	DUF6C8
Peak Force(1 sec.)	N	1825.2	1825.2	2737.8	2737.8	3650.4	3650.4	4563	4563	5040	10510
Continuous Force	N	280.8	280.8	421.2	421.2	561.6	561.6	702	702	720	1501
Electrical											
Peak Current (rms) (1s)	A	19.5	39	19.5	39	19.5	39	19.5	39	72.8	72.8
Continuous Current (rms)	A	3	6	3	6	3	6	3	6	10.4	10.4
Force Constant	N/A	93.6	46.8	140.4	70.2	187.2	93.6	234	117	69.3	144.38
Back EMF Constant (L-L)	V_{pk}/(m/s)	76.38	38.17	114.57	57.28	152.76	76.38	190.94	97.47	56.55	117.81
Resistance @25°C ((L-L)	Ohm	7.4	2	11.1	3	14.8	4	18.5	5	1.08	2.3
Inductance @1kHz ((L-L)	mH	15.4	3.76	23.1	5.64	30.78	7.51	38.5	9.39	1.38	5
Electrical Time Constant	ms	2.08	1.88	2.08	1.88	2.08	1.88	2.08	1.88	1.53	2.17
Max. DC BUS	V_{DC}	330									
Thermal											
Max. Coil Temperature	°C	100									
Thernal Resistance @105°C	°C/W	0.58	0.54	0.39	0.36	0.48	0.53	0.48	0.53	1.4	2.98
Mechanical											
Electrical Cycle Length	mm	84									
Coil Weight	kg	0.8	0.8	1.6	2.4	3.2	3.2	4	4	4.25	9.5
Attraction Force	kN	0									
Track Weight	kg/m	25.08								66.7	
Cooling Type		**Natural ail-cooling**									

TEL +86 16653137076 E-mail info@cskmotions.com

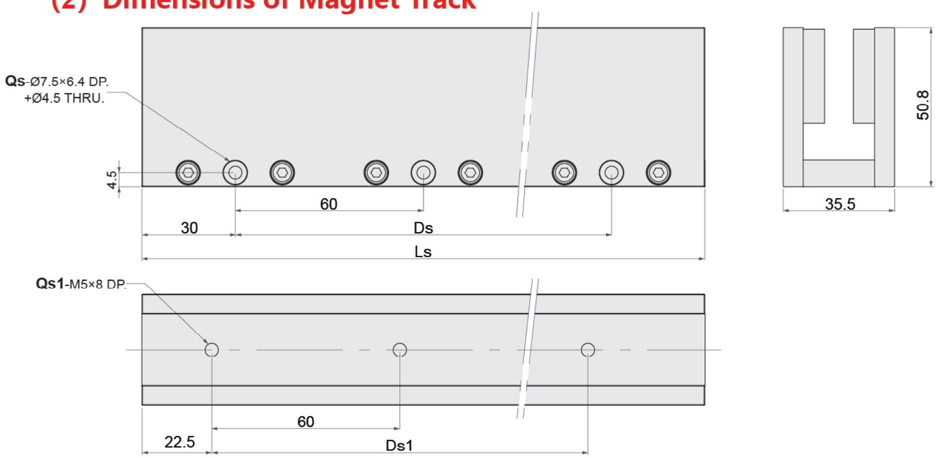
Dimensions of DUF3

(1) Dimensions of Motor Coil



Coil SPC.	L	D	Q
DUF3C1	63	30	3
DUF3C2	123	90	7
DUF3C3	183	150	11

(2) Dimensions of Magnet Track

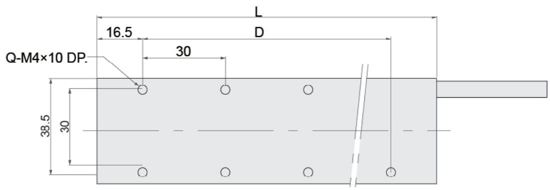


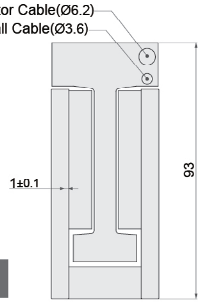
Magnet Track SPC.	Ls	Ds	Qs	Ds1	Qs1
DUF3M120	120	60	2	60	2
DUF3M180	180	120	3	120	3
DUF3M300	240	180	4	180	4

TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of DUF4

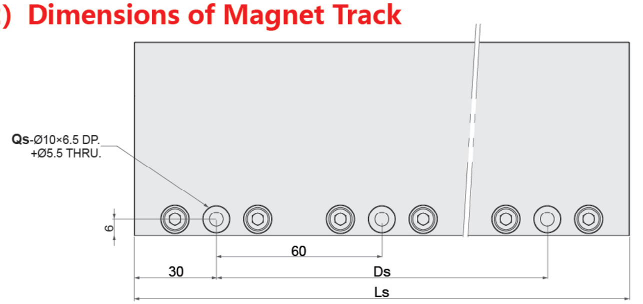
(1) Dimensions of Motor Coil

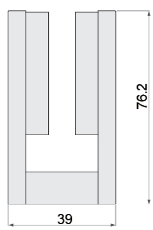


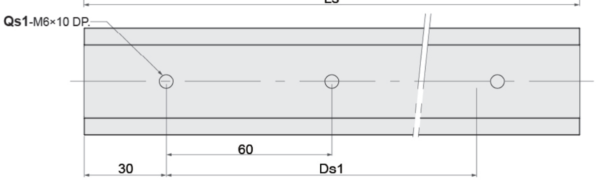


Coil SPC.	L	D	Q
DUF4C1	63	30	3
DUF4C2	123	90	7
DUF4C3	183	150	11
DUF4C4	243	210	15
DUF4C5	303	270	19
DUF4C6	363	330	23

(2) Dimensions of Magnet Track





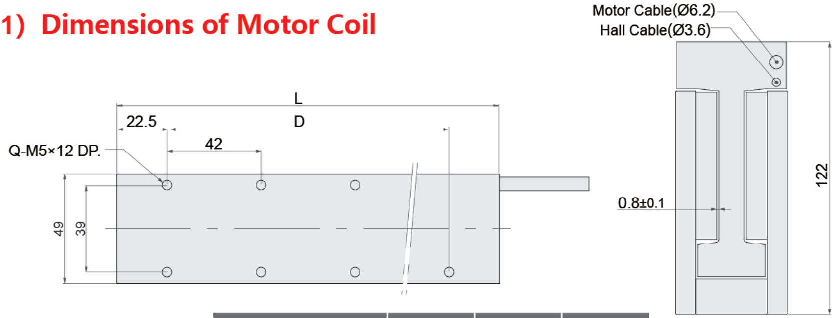


Magnet Track SPC.	Ls	Ds	Qs	Ds1	Qs1
DUF4M120	120	60	2	60	2
DUF4M180	180	120	3	120	3
DUF4M240	240	180	4	180	4

TEL +86 16653137076 E-mail info@cskmotions.com

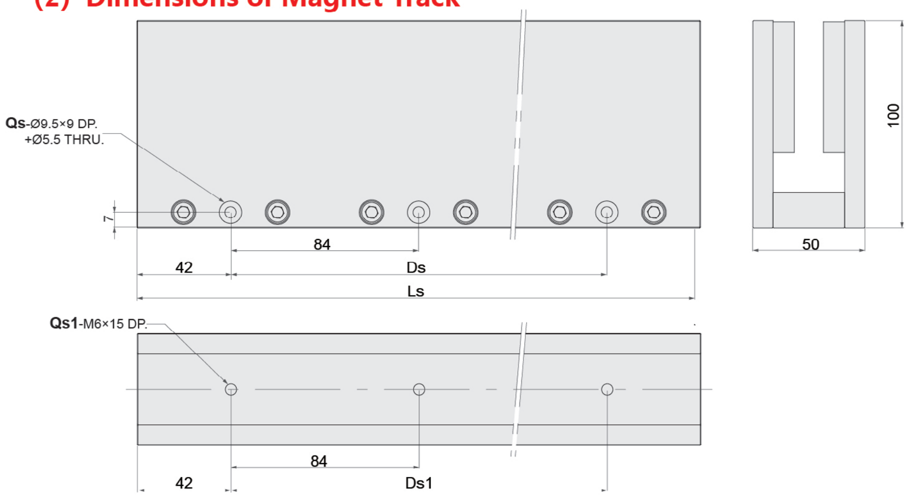
Dimensions of DUF5

(1) Dimensions of Motor Coil



Coil SPC.	L	D	Q
DUF5C2	171	126	7
DUF5C3	255	150	11
DUF5C4	339	294	15
DUF5C5	423	378	19

(2) Dimensions of Magnet Track

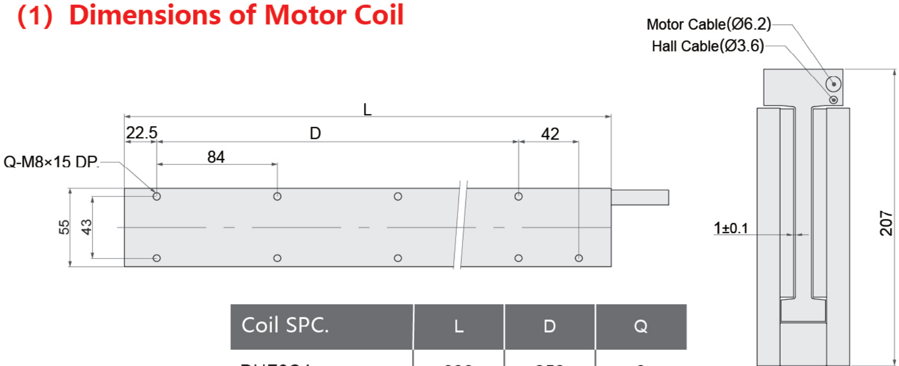


Magnet Track SPC.	Ls	Ds	Qs	Ds1	Qs1
DUF5M168	168	84	2	84	2
DUD5M252	252	168	3	168	3
DUD5M420	420	336	5	336	5

TEL +86 16653137076 E-mail info@cskmotions.com

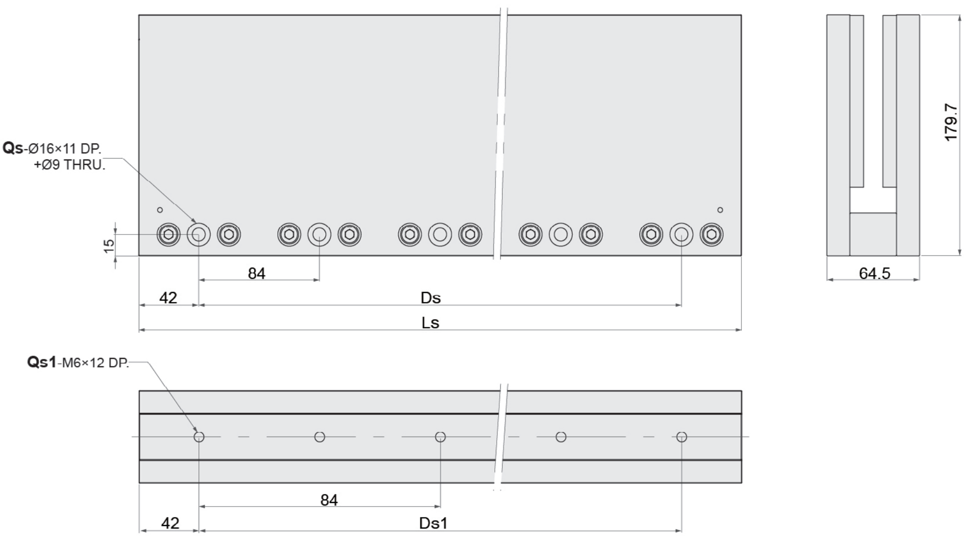
Dimensions of DUF6

(1) Dimensions of Motor Coil



Coil SPC.	L	D	Q
DUF6C4	339	252	9
DUF6C8	675	588	17

(2) Dimensions of Magnet Track



Magnet Track SPC.	Ls	Ds	Qs	Ds1	Qs1
DUF6M168	168	84	2	84	2
DUF6M252	252	168	3	168	3
DUF6M420	420	336	5	336	5

TEL +86 16653137076 E-mail info@cskmotions.com

Precautions for use

1. Precautions before purchase

1.1 When purchasing, please check the scope of the use environment with our sales staff. Please do not use in the corrosive environment such as sulfur and sulphide gas, which may lead to line breakage or poor contact.

1.2 When selecting the model, please check the use requirements and motor parameters with our sales staff to ensure the scientific use.

2. Matters needing attention in operation

2.1 This product is manufactured as a precision mechanical part and is widely used in the mechanical industry. Technical personnel with professional knowledge and experience are required to operate it.

2.2 When operating, please be sure to use according to the operating specifications of the product.

2.3 In the application, if you have special requirements on the use environment of cable and motor installation, please contact our sales staff for confirmation to prevent accidents.

2.4 All terminals of the equipment are not allowed to be plugged and unplugged with live power to prevent damage to the motor and driver.

2.5 The ground wire of the motor must be grounded.

2.6 Do not place the control signal line and power line (main power line, motor power line, etc.) of the equipment in the same line tube or wrap them into a bundle.

2.7 During motor operation, do not touch the moving parts of the motor.

3. Matters needing attention for follow-up maintenance

3.1 Precautions for storage equipment: temperature shall be controlled within -20℃ to +60℃. Humidity: less than 85%, placed in a dust-free, clean, non-corrosive gas, no grinding fluid, no metal powder, no oil environment.

3.2 In the case of movement, wiring, maintenance and inspection, please cut off the power for more than 3 minutes before operating. Cut off the power for about 2~3 minutes, the power line still has voltage residue, do not touch the equipment carelessly.

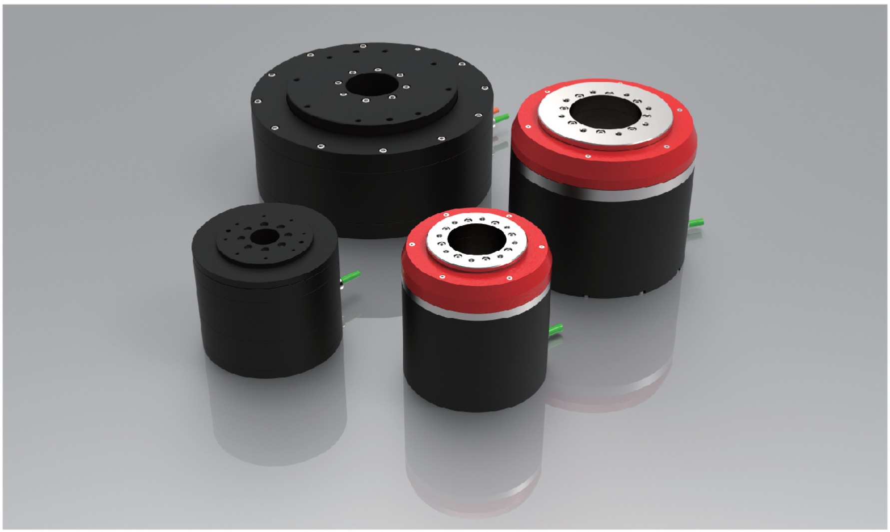
3.3 Frequent power on or off will lead to deterioration of main circuit components. After power off, please wait for more than 1 minute to power on again. The frequency of power on and off is limited to less than 2 times every 3 minutes.

MELUCCI TECHNOLOGIES

CSK MOTION TECHNOLOGY

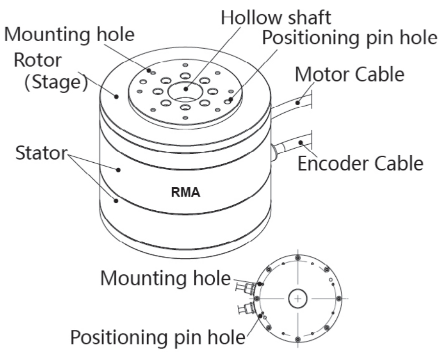
Direct Drive Torque Motor
RMA series

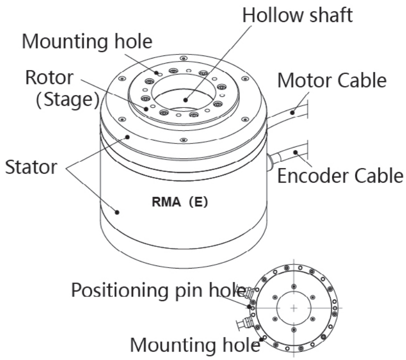
RMA



TEL +86 16653137076 E-mail info@cskmotions.com

Construction





Note：For reference only.

RMA

Characteristics

RMA series torque motors are directly connected to the load, saving the connection mechanism such as reducer, gearbox and so on. This series is equipped with high resolution optical encoder, so that it has the advantages of high precision, high response, accurate positioning, etc., which is widely used in detection, machine tool and other industries.

- High resolution optical encoder
- Hollow shaft
- Stable structure, High load capacity
- Compact structure
- High precision
- Peak torque：18~269N·m
- Continuous torque：5~75N·m
- Low torque fluctuation, less than 0.2%
- Repeatability：±2arc-sec
- Hall sensor optional

Applications

Machine Tool（CNC ···）

Semiconductor Manufacturing Equipment

Industrial Robot

Other（Laser manufacturing equipment ···）

Clean room environment

Specifications

RMA 150 - 1 H - IE - N

Series
RMA

Size
150：Outer diameter is 150mm
150E
200
200E：Outer diameter is 208mm
300

Height code
1, 2, 3 (Please refer to the corresponding form for details)

Hall sensor
H：With Hall sensor
No symbol：Without Hall sensor

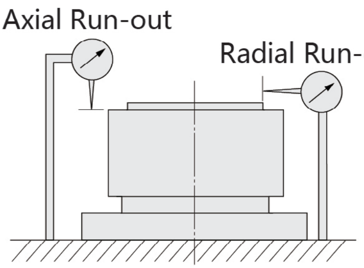
Encoder
AE：Absolute Encoder
I E：Incremental Encoder

Accuracy grade
N：High accuracy grade
P：Precision grade

Special symbol
No symbol：Standard
Special：No symbol，A，B ... (For other requirements, please consult CSK)

Notice：
1.The length of motor cable and encoder cable is 0.4 meters, and the length of extension cable needs to be confirmed by customers.
2.This series supports customization.

Run-out measurement



TEL +86 16653137076 E-mail info@cskmotions.com

Technical parameters

Performance	Unit	RMA150-1	RMA150-2	RMA150-3	RMA200-1	RMA200-2	RMA200-3	RMA300-1	RMA300-2
Peak Torque(1 sec.)	N·m	18	44	56	51	110	187	200	269
Continuous Torque	N·m	5	11	18	13	29	55	50	75
Max.Speed	rpm	600	500	400	400	300	230	210	130
Electrical									
Peak Current (rms)(1s)	A	18	24	19	18	18	14	18	16
Continuous Current (rms)	A	4	4	4	3	3.1	3	3	3
Torque Constant	N·m/A	1.3	2.5	3.8	3.3	6.5	13.3	16.7	25
Back EMF Constant (L-L)	V/rpm	0.07	0.15	0.22	0.26	0.51	1.02	1.46	2.19
Resistance @25℃ (L-L)	Ohm	4	6.2	8.7	8.9	13	20.1	11.53	15.8
Inductance @1kHz (L-L)	mH	8	15	20	34.3	58	106.3	34.7	52.1
Electrical Time Constant	ms	2	2.4	2.3	3.9	4.5	5.3	3	3.3
Max. DC BUS	V_{DC}	330							
Thermal									
Max. Coil Temperature	°C	120							
Mechanical									
Number of Poles		22			22			44	
Rotor Inertia	kg·m²	0.006	0.0065	0.007	0.014	0.02	0.026	0.06	0.08
Weight	kg	6.4	7.6	8.7	18.2	20.5	25	25	31
Max. Axial Load	N	1700			3000			5000	
Encoder Type		Incremental optical encoder							
Resolution	p/rev	33554432*							
Repeatability	arc-sec	±2							
Accuracy	arc-sec	±30							
Cooling Type		Natural ail-cooling							

*Resolution: The display value is the highest value and the parameter changes with the setting of the drive.
Due to different working conditions, some performance parameters are different. Please consult CSK.

RMA

Technical parameters

Performance	Unit	RMA150E-1	RMA150E-2	RMA150E-3	RMA200E-1	RMA200E-2	RMA200E-3
Peak Torque(1 sec.)	N·m	18	44	56	51	110	187
Continuous Torque	N·m	5	11	18	13	29	55
Max.Speed	rpm	600	500	400	400	300	230
Electrical							
Peak Current (rms)(1s)	A	18	24	19	18	18	14
Continuous Current (rms)	A	4	4	4	3	3.1	3
Torque Constant	N·m/A	1.3	2.5	3.8	3.3	6.5	13.3
Back EMF Constant (L-L)	V/rpm	0.07	0.15	0.22	0.26	0.51	1.02
Resistance @25℃ (L-L)	Ohm	4	6.2	8.7	8.9	13	20.1
Inductance @1kHz (L-L)	mH	8	15	20	34.3	58	106.3
Electrical Time Constant	ms	2	2.4	2.3	3.9	4.5	5.3
Max. DC BUS	V_{DC}	330					
Thermal							
Max. Coil Temperature	°C	120					
Mechanical							
Number of Poles		22			22		
Rotor Inertia	kg·m²	0.006	0.0065	0.007	0.014	0.02	0.026
Weight	kg	6.4	7.6	8.7	18.2	20.5	25
Max. Axial Load	N	1700			3000		
Encoder Type		Incremental optical encoder					
Resolution	p/rev	33554432*					
Repeatability	arc-sec	±2					
Accuracy	arc-sec	±30					
Cooling Type		Natural ail-cooling					

*Resolution：The display value is the highest value and the parameter changes with the setting of the drive.
Due to different working conditions, some performance parameters are different. Please consult CSK.

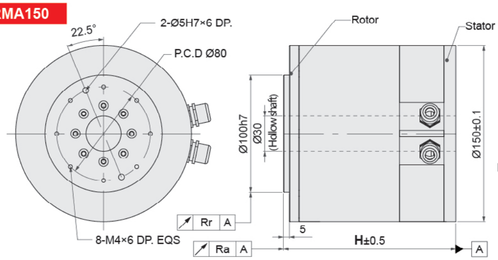
RMA

TEL +86 16653137076 E-mail info@cskmotions.com

MELUCCI TECHNOLOGIES CSK MOTION TECHNOLOGY

Dimensions of RMA

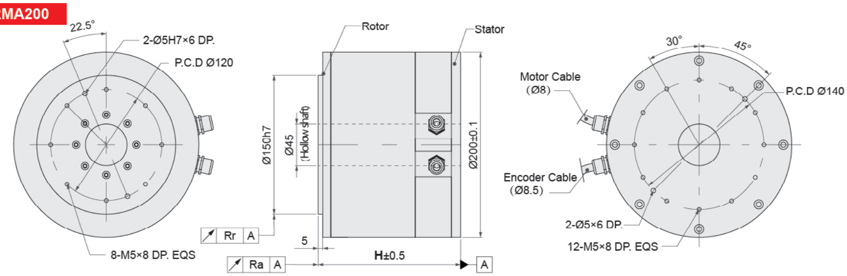
RMA150



Height (mm)	RMA150-1	RMA150-2	RMA150-3
H	127	147	167

Run-out(mm) \ Accuracy grade	High accuracy grade	Precision grade
Ra	0.02	0.005
Rr	0.02	0.005

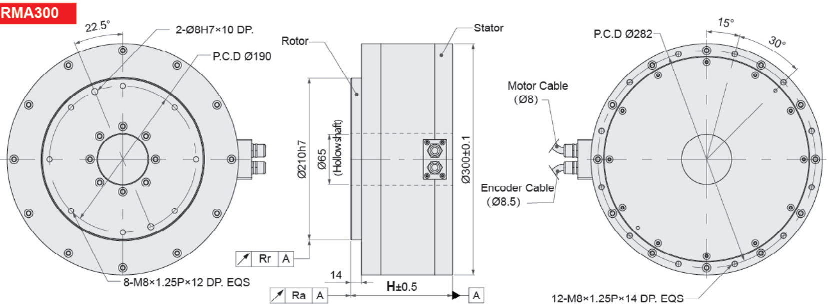
RMA200



Height (mm)	RMA200-1	RMA200-2	RMA200-3
H	134	154	194

Run-out(mm) \ Accuracy grade	High accuracy grade	Precision grade
Ra	0.02	0.005
Rr	0.02	0.005

RMA300



Height (mm)	RMA300-1	RMA300-2
H	132	152

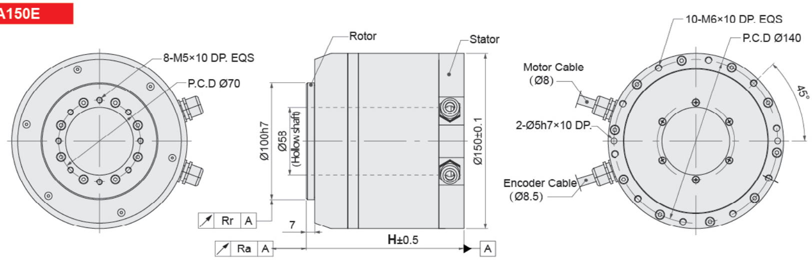
Run-out(mm) \ Accuracy grade	High accuracy grade	Precision grade
Ra	0.02	0.005
Rr	0.02	0.005

RMA

TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of RMA

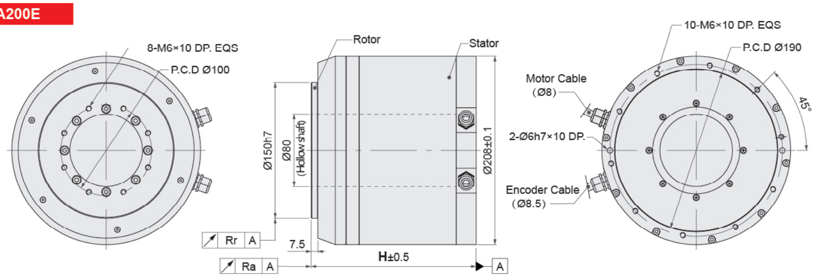
RMA150E



Height (mm)	RMA150E-1	RMA150E-2	RMA150E-3
H	125	145	165

Accuracy grade / Run-out(mm)	High accuracy grade	Precision grade
Ra	0.02	0.005
Rr	0.02	0.005

RMA200E



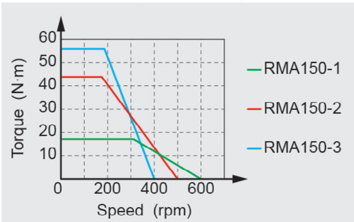
Height (mm)	RMA200E-1	RMA200E-2	RMA200E-3
H	122	142	182

Accuracy grade / Run-out(mm)	High accuracy grade	Precision grade
Ra	0.02	0.005
Rr	0.02	0.005

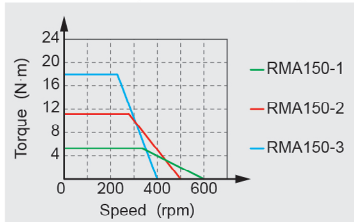
TEL +86 16653137076 E-mail info@cskmotions.com

RMA series technical analysis

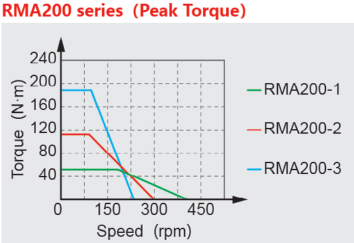
RMA150 series (Peak Torque)



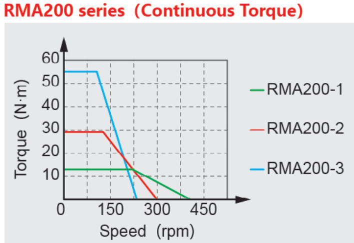
RMA150 series (Continuous Torque)



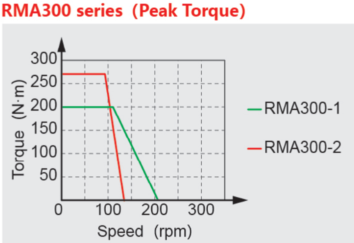
RMA200 series (Peak Torque)



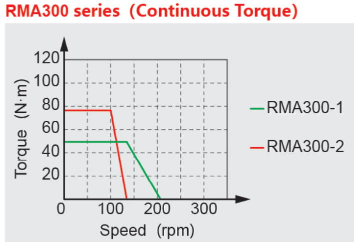
RMA200 series (Continuous Torque)



RMA300 series (Peak Torque)



RMA300 series (Continuous Torque)



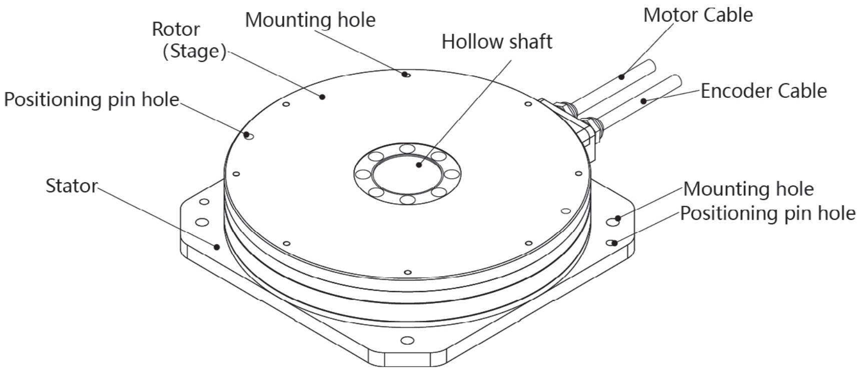
Direct Drive Torque Motor

RMB series

RMB

TEL +86 16653137076 E-mail info@cskmotions.com

Construction



Note: For reference only.

Characteristics

RMB series is an ultra-thin direct drive torque motor, which has the characteristics of large torque, low height, light weight, large hollow shaft and so on. This series is equipped with high resolution optical encoder, so that it has the advantages of high precision, high response, accurate positioning, etc., which is widely used in detection, machine tool and other industries.

- High resolution optical encoder
- Hollow shaft
- Ultra thin structure, low combination height
- Compact structure
- High precision
- Peak torque: 1.9~42N·m
- Continuous torque: 0.6~14N·m
- Low run-out, less than 10μm (optional)
- Repeatability: ±2.5arc-sec
- No hall sensor

Applications

Machine Tool (CNC ···)

Industrial Robot

Clean room environment

Semiconductor Manufacturing Equipment

Other (Laser manufacturing equipment ···)

Specifications

RMB 80 - 1 IE - N

Series
RMB

Size
80: Outer diameter is 80mm
110
180
240

Height code
1 (Please refer to the corresponding form for details)

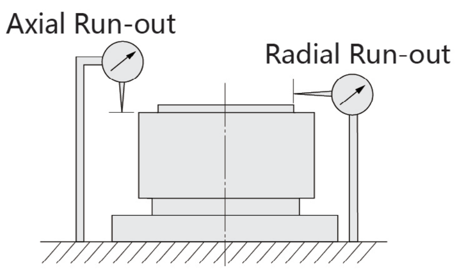
Encoder
AE: Absolute Encoder
I E: Incremental Encoder

Accuracy grade
N: High accuracy grade
P: Precision grade

Special symbol
No symbol: Standard
Special: No symbol, A, B ... (For other requirements, please consult CSK)

Notice:
1.The length of motor cable and encoder cable is 0.4 meters, and the length of extension cable needs to be confirmed by customers.
2.This series supports customization.

Run-out measurement



TEL +86 16653137076 E-mail info@cskmotions.com

Technical parameters

Performance	Unit	RMB80-1	RMB110-1	RMB110-2	RMB180-1	RMB240-1
Peak Torque(1 sec.)	N·m	1.9	3.3	7.2	11.1	42
Continuous Torque	N·m	0.6	1.1	2.4	3.7	14
Max.Speed	rpm	1000	1000	500	600	400
Electrical						
Peak Current (rms)(1s)	A	3.6	3.8	4.2	10.2	10.2
Continuous Current (rms)	A	1.2	1.2	1.4	3.4	3.4
Torque Constant	N·m/A	0.5	0.92	2	1.1	5.2
Back EMF Constant (L-L)	V/rpm	0.043	0.09	0.173	0.105	0.51
Resistance @25℃ (L-L)	Ohm	7.8	10	13.8	3.1	5.1
Inductance @1kHz (L-L)	mH	5.1	15	26.5	5.7	24.6
Electrical Time Constant	ms	0.65	1.5	1.9	1.8	4.9
Max. DC BUS	V_{DC}	330				
Thermal						
	°C	120				
Mechanical						
Number of Poles		10	10	10	16	22
Rotor Inertia	kg·m²	0.00098	0.0016	0.003	0.01	0.034
Weight	kg	1.6	2.8	4	6.4	13.8
Max. Axial Load	N	500	500	500	2090	2430
Encoder Type		Incremental optical encoder			Absolute optical encoder	
Resolution	p/rev	10240000*	14745600*		16777216*	
Repeatability	arc-sec	±2				
Accuracy	arc-sec	±30			±10*	
Cooling Type		Natural ail-cooling				

*Resolution：The display value is the highest value and the parameter changes with the setting of the drive.

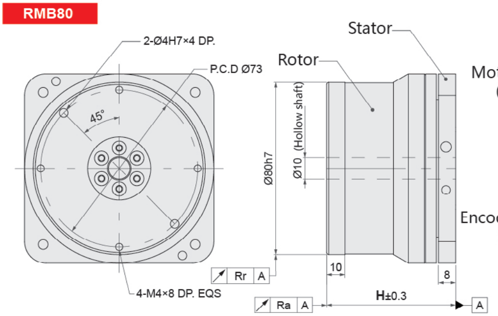
Accuracy：After the compensation.

Due to different working conditions, some performance parameters are different. Please consult CSK.

RMB

Dimensions of RMB

RMB80

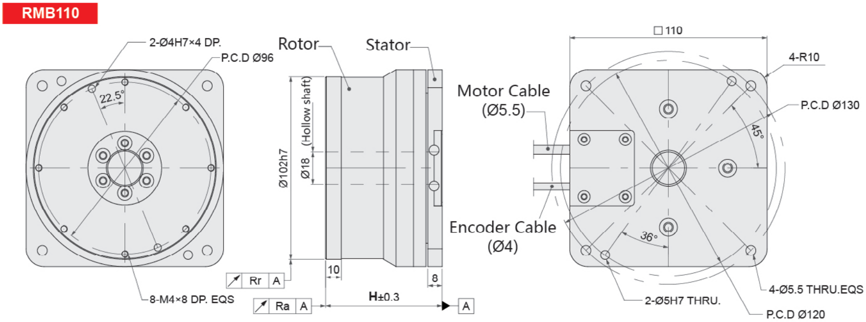


Height (mm)	RMB80-1
H	60

Accuracy grade / Run-out(mm)	High accuracy grade	Precision grade
Ra	0.015	0.005
Rr	0.015	0.005

RMB

RMB110



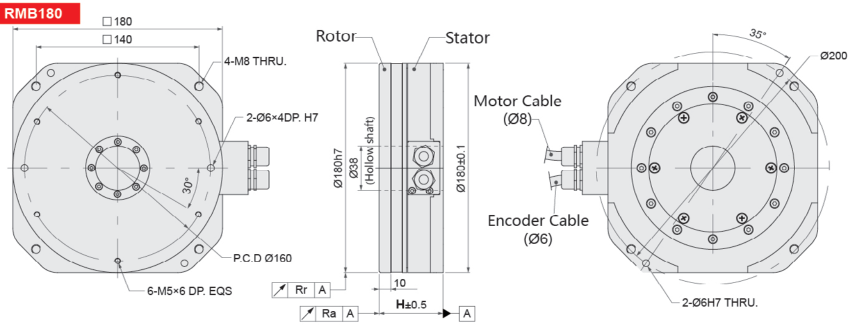
Height (mm)	RMB110-1	RMB110-2
H	65	80

Accuracy grade / Run-out(mm)	High accuracy grade	Precision grade
Ra	0.015	0.005
Rr	0.015	0.005

TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of RMB

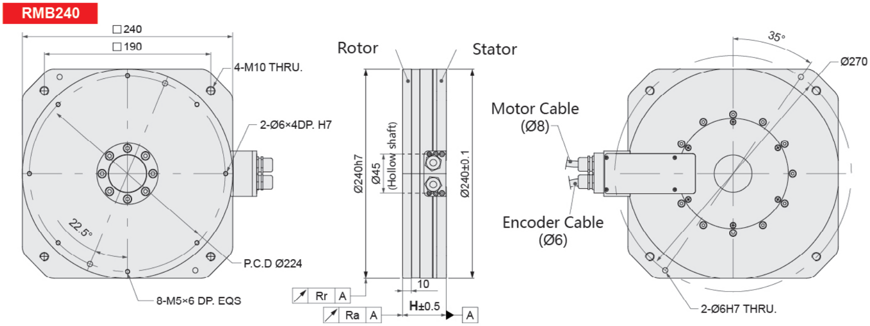
RMB180



Height (mm)	RMB180-1
H	55

Run-out(mm) \ Accuracy grade	High accuracy grade	Precision grade
Ra	0.015	0.008
Rr	0.015	0.008

RMB240

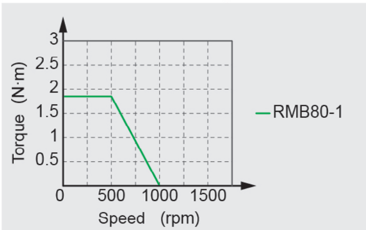


Height (mm)	RMB240-1
H	50

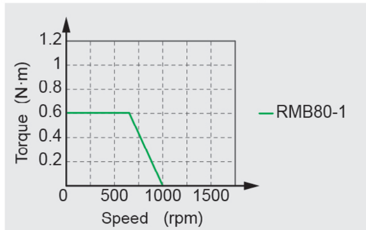
Run-out(mm) \ Accuracy grade	High accuracy grade	Precision grade
Ra	0.015	0.008
Rr	0.015	0.008

RMB series technical analysis

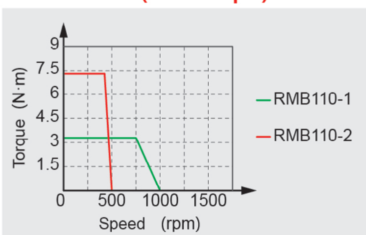
RMB80 series (Peak Torque)



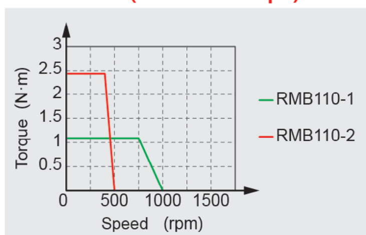
RMB80 series (Continuous Torque)



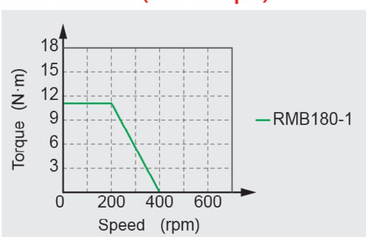
RMB110 series (Peak Torque)



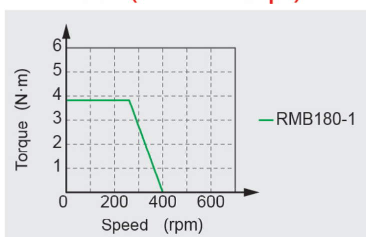
RMB110 series (Continuous Torque)



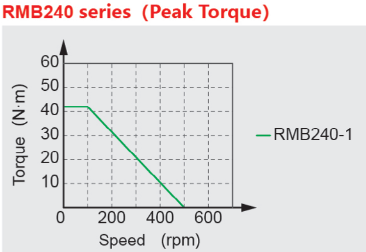
RMB180 series (Peak Torque)



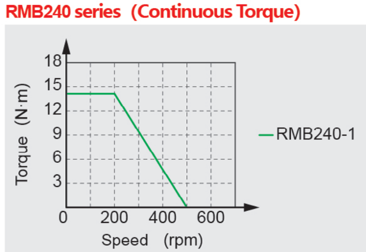
RMB180 series (Continuous Torque)



RMB240 series (Peak Torque)



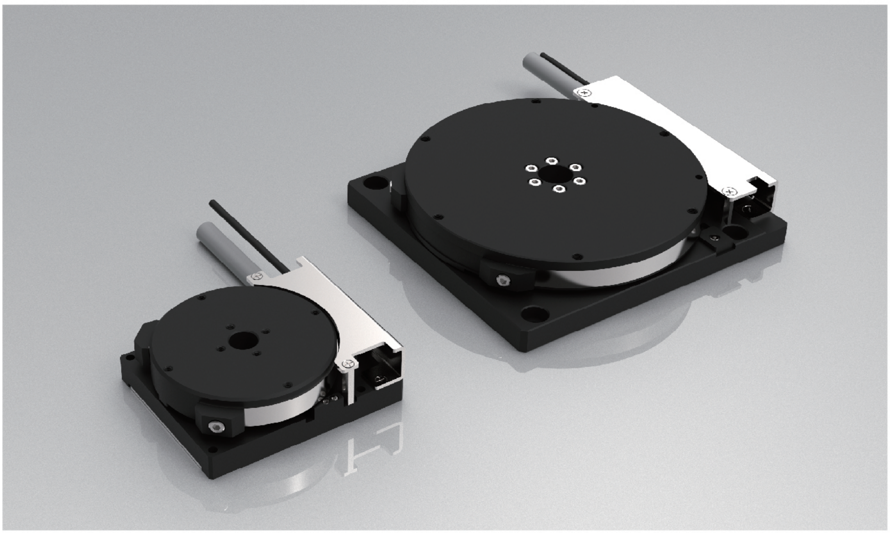
RMB240 series (Continuous Torque)



TEL +86 16653137076 **E-mail** info@cskmotions.com

Direct Drive Torque Motor

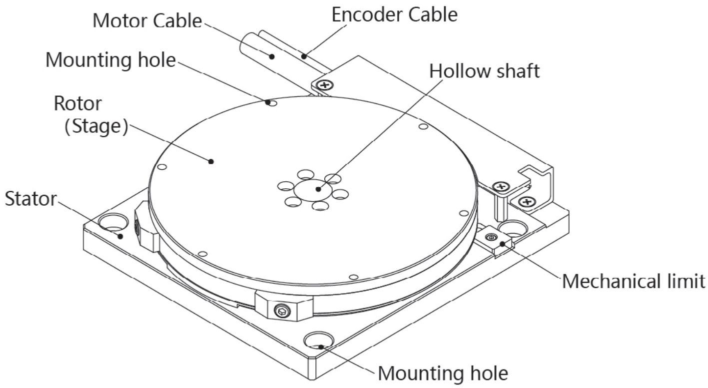
RMC series



RMC

TEL +86 16653137076 E-mail info@cskmotions.com

Construction



Note：For reference only.

Characteristics

RMC series adopts coreless motor with small cogging force and fast response. It is equipped with high resolution linear encoder, photoelectric switch and mechanical limit. It has a variety of feedback and protection. The product is suitable for the automation industry with constant rotation angle, high response and light load.

- High resolution linear encoder
- Hollow shaft
- Ultra thin structure, low combination height
- Compact structure
- High precision
- Peak torque：0.32~1.6N·m
- Continuous torque：0.05~0.4N·m
- Repeatability：±2.5arc-sec
- Constant rotation angle

Applications

Machine Tool（CNC ···）

Semiconductor Manufacturing Equipment

Industrial Robot

Other（Laser manufacturing equipment ···）

Clean room environment

TEL +86 16653137076 E-mail info@cskmotions.com

Specifications

RMC 65 - 1

Series
RMC

Size
65：Outer diameter is 65mm
120

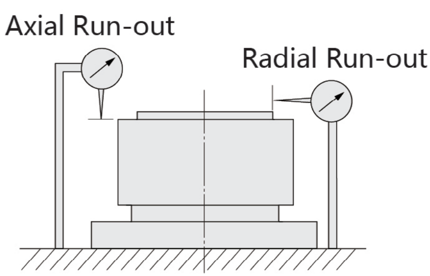
Height code
1 (Please refer to the corresponding form for details)

Special symbol
No symbol：Standard
Special：No symbol，A，B ... (For other requirements, please consult CSK)

Notice：
1.The length of motor cable is 0.4 meters and encoder cable is 2.95 meters, and the length of extension cable needs to be confirmed by customers.
2.This series supports customization.

RMC

Run-out measurement



Technical parameters

Performance	Unit	RMC65-1	RMC120-1
Peak Torque(1 sec.)	N·m	0.32	1.6
Continuous Torque	N·m	0.05	0.4
Max.Speed	°/s	600	400
Electrical			
Peak Current (rms)(1s)	A	5	5
Continuous Current (rms)	A	1.5	1.4
Thermal			
Max. Coil Temperature	°C	120	
Mechanical			
Rotor Inertia	kg·m²	0.00013	0.005
Max. Transportable Load	kg	1.8	5
Weight	kg	0.65	1.8
Effective rotation angle	°	±95	±90
Encoder Type		Incremental optical encoder	
Repeatability	arc-sec	±2.5	
Accuracy	arc-sec	±10*	
Cooling Type		Natural ail-cooling	

*Accuracy: After the compensation.

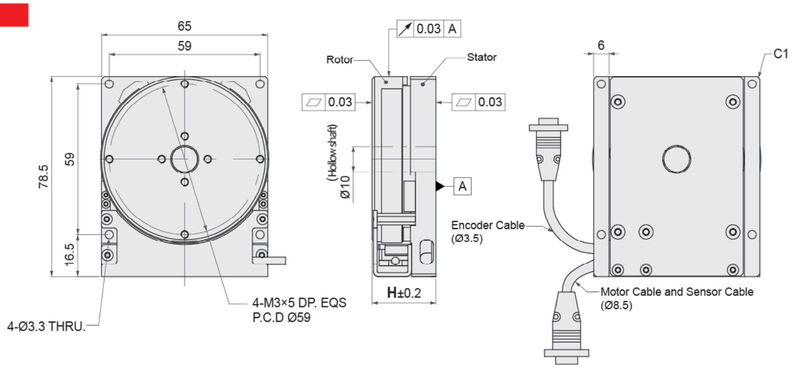
Due to different working conditions, some performance parameters are different. Please consult CSK.

RMC

TEL +86 16653137076 E-mail info@cskmotions.com

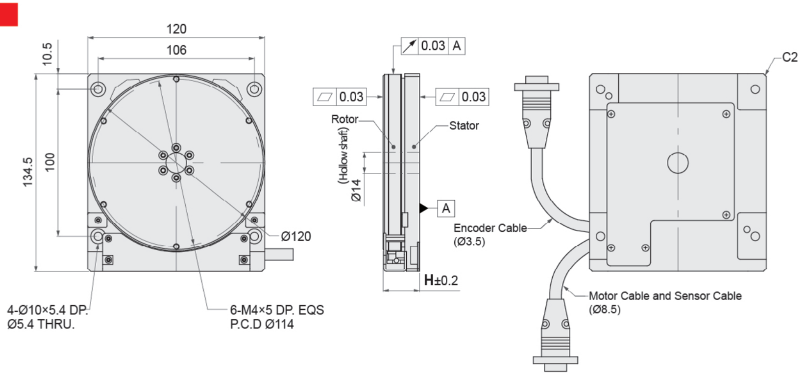
Dimensions of RMC

RMC65



Height (mm)	RMC65-1
H	25

RMC120



Height (mm)	RMC120-1
H	25.7

Precautions for use

1. Precautions before purchase
1.1 When purchasing, please check the scope of the use environment with our sales staff. Please do not use in the corrosive environment such as sulfur and sulphide gas, which may lead to line breakage or poor contact.
1.2 When selecting the model, please check the use requirements and motor parameters with our sales staff to ensure the scientific use.

2. Matters needing attention in operation
2.1 This product is manufactured as a precision mechanical part and is widely used in the mechanical industry. Technical personnel with professional knowledge and experience are required to operate it.
2.2 When operating, please be sure to use according to the operating specifications of the product.
2.3 In the application, if you have special requirements on the use environment of cable and motor installation, please contact our sales staff for confirmation to prevent accidents.
2.4 All terminals of the equipment are not allowed to be plugged and unplugged with live power to prevent damage to the motor and driver.
2.5 The ground wire of the motor must be grounded.
2.6 Do not place the control signal line and power line (main power line, motor power line, etc.) of the equipment in the same line tube or wrap them into a bundle.
2.7 During motor operation, do not touch the moving parts of the motor.

3. Matters needing attention for follow-up maintenance
3.1 Precautions for storage equipment: temperature shall be controlled within -20℃ to +60℃. Humidity: less than 85%, placed in a dust-free, clean, non-corrosive gas, no grinding fluid, no metal powder, no oil environment.
3.2 In the case of movement, wiring, maintenance and inspection, please cut off the power for more than 3 minutes before operating. Cut off the power for about 2~3 minutes, the power line still has voltage residue, do not touch the equipment carelessly.
3.3 Frequent power on or off will lead to deterioration of main circuit components. After power off, please wait for more than 1 minute to power on again. The frequency of power on and off is limited to less than 2 times every 3 minutes.

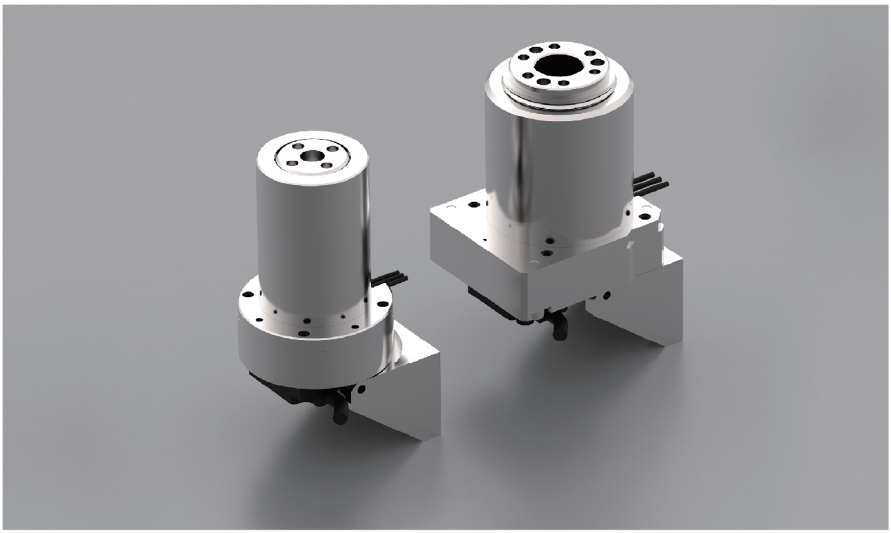
TEL +86 16653137076 E-mail info@cskmotions.com

MELUCCI TECHNOLOGIES

CSK MOTION TECHNOLOGY

Direct Drive Torque Motor

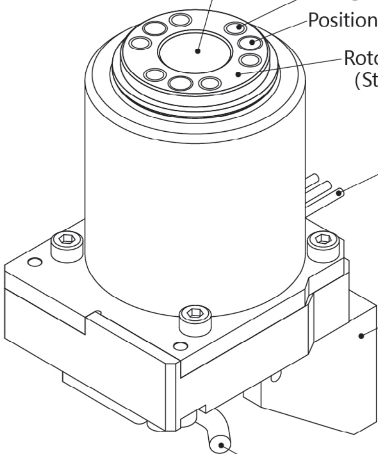
RMD series



RMD

TEL +86 16653137076 E-mail info@cskmotions.com

Construction



Note：For reference only.

Characteristics

The RMD series motors feature a steel structure, with a smaller size that allows for quicker response during operation. To achieve higher precision, the rotating part of the motor is equipped with a high-resolution linear encoder. This product is widely used in high-response, light-load automation industries.

- High resolution optical encoder
- Extremely small size, customizable
- Compact structure
- High accuracy
- Peak torque: 0.02~0.45N·m
- Continuous torque: 0.013~0.15N·m

Applications

LCD panel manufacturing equipment

High speed placement machine

Semiconductor Manufacturing Equipment

Other（Laser manufacturing equipment …）

TEL +86 16653137076 E-mail info@cskmotions.com

Specifications

RMD 20 - 1

Series
RMD Series

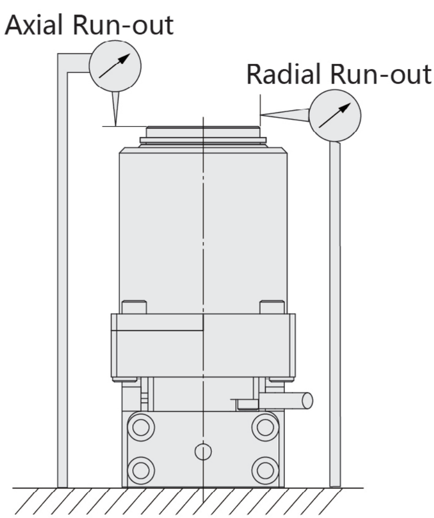
Size
20: Outer diameter is 36mm
30: Outer diameter is 43mm

Height code
1 (Please refer the coresponding form for details)

Special symbol
No symbol: CSK standard
Special: No symbol, A, B ... (Please contact us, if customize.)

Note
1. The length of motor cable and encoder cable is 0.4 meters, and the length of extension cable needs to be confirmed by customers.
2. This series supports customization.

Run-out measurement



TEL +86 16653137076 E-mail info@cskmotions.com

Technical parameters

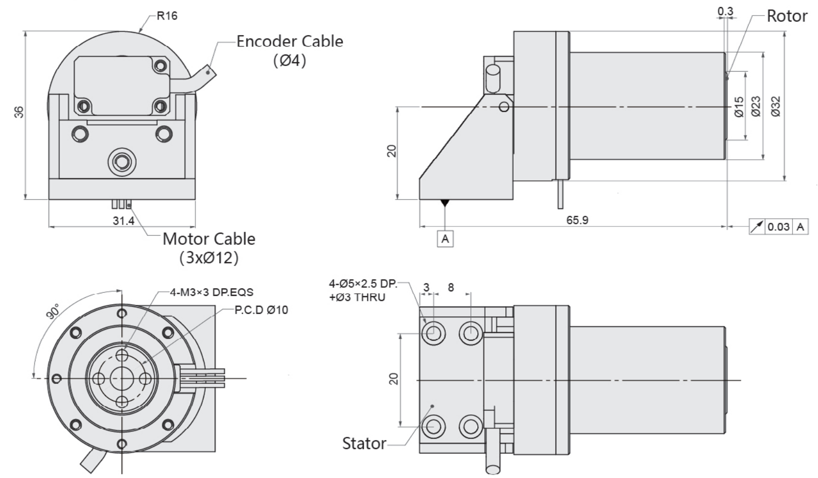
Performance	Unit	RMD20-1	RMD30-1
Peak Torque(1 sec.)	N·m	0.02	0.45
Continuous Torque	N·m	0.013	0.15
Electrical			
Peak Current (rms)(1s)	A	1	1.5
Continuous Current (rms)	A	0.5	5
Resistance	Ohm	10.6	0.5
Inductance	mA	0.3	11.5
Back EMF Constant	V/rpm	0.002	0.54
Thermal			
Max. Coil Temperature	°C	120	
Mechanical			
Encoder line count	sin cos	1024	2048
Encoder Type		Incremental optical encoder	
Number of Poles	/	8	
Weight	Kg	0.3	
Cooling Type		Natural ail-cooling	

Due to different operating conditions, some performance parameters may vary.
Please consult CSK for details .

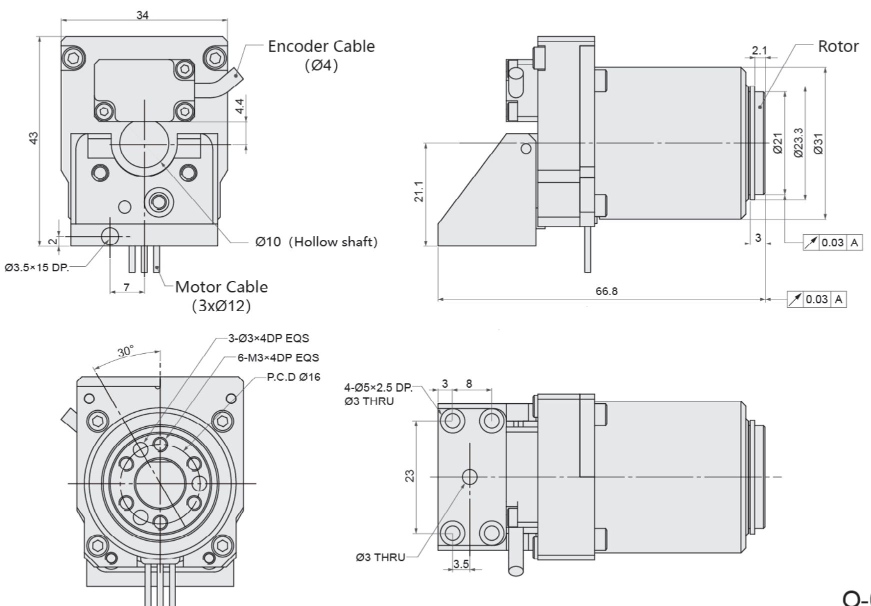
TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of RMD

RMD20 Series

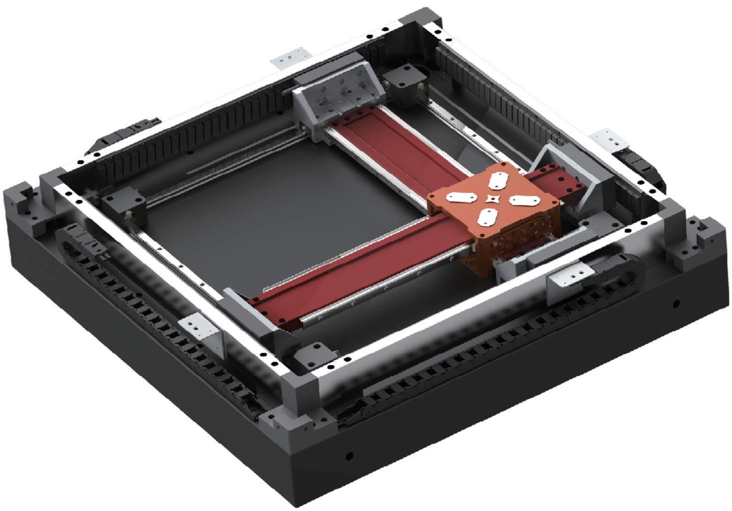


RMD30 Series



Linear Motor Stage

LMA series

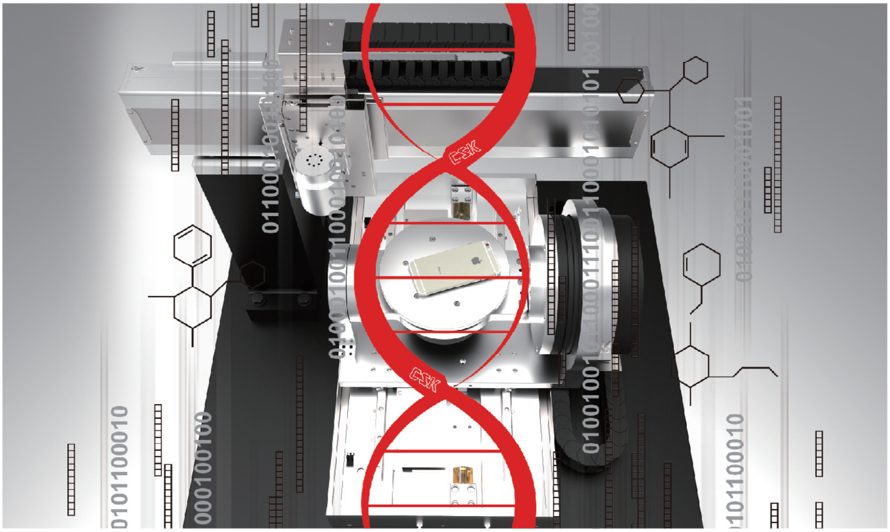


LMA

TEL +86 16653137076 E-mail info@cskmotions.com

MELUCCI TECHNOLOGIES
CSK MOTION TECHNOLOGY

Construction



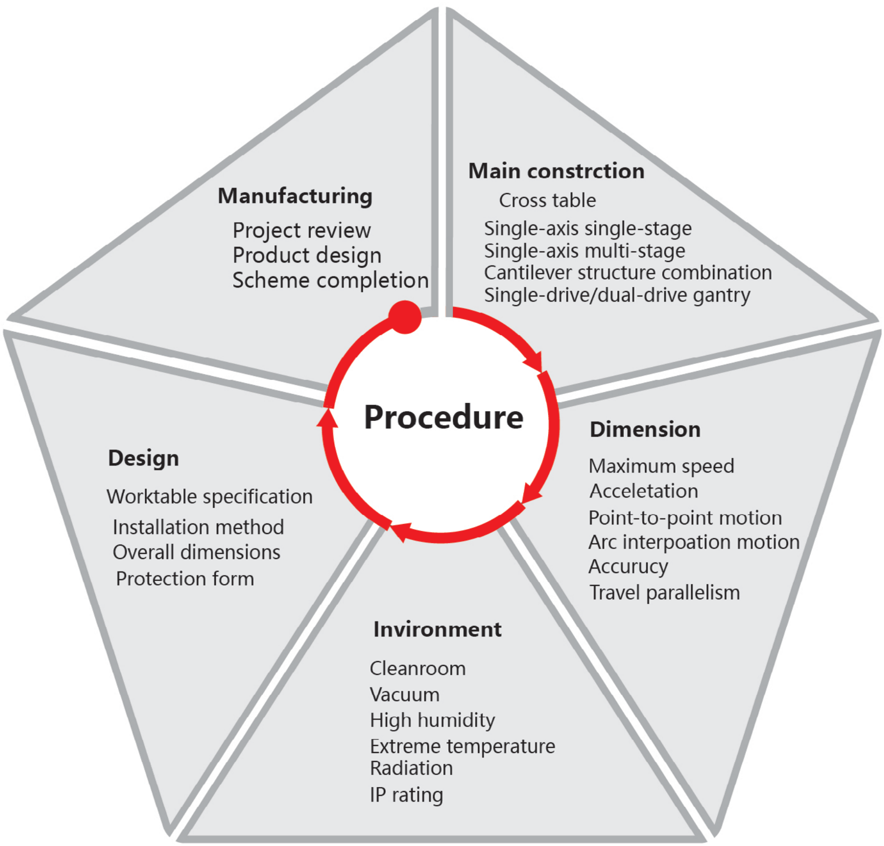
Characteristics

LMA series is a customized series， the main body of this stage is the linear motor stage. In order to ensure the quality of products, components are well-known brand products. In addition, the products have been designed and tested by a team of professional designers. Single product manufacturing and batch manufacturing are allowed.

- Customization
- Multiple structural types
- Multiple motor types
- Multiple dustproof configurations
- Multiple accuracy grades
- Multiple control modes
- Multiple product combinations
- Multiple appearance treatments
- Original design
- Cooperation

LMA

Procedures for Constructing Motor Stage



Customized and Original

CSK specializes in providing professional products and services in the field of linear motors. Contact our research and development team during the initial design phase to discuss your requirements. We will assist you in finding the right solutions and shorten your design and product cycles.

LMA

Construction

(1) Motor coil

LMA 2 L 2R - 200 × 200 × 200 A

Series
LMA: Linear Motor Stage

Number of straight axes
2: 2 straight axes

Structure type
S: Single axis with single slider
D: Single axis with multiple sliders
C: Cantilever type
L : Cross type
G: Gantry type (contains the coaxial dual drive)

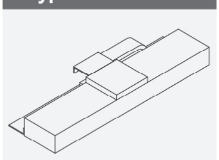
Number of rotation axes
2R: 2 rotation axes
No symbol : There is no axis of rotation

Stroke (mm)

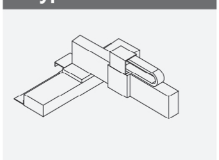
Special symbol
No symbol: Standard
Special: No symbol, A, B ... (For other requirements, please consult CSK)

Structure type

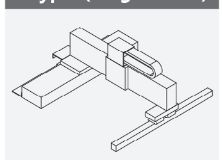
S type



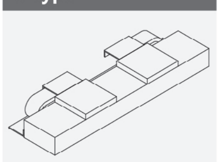
C type



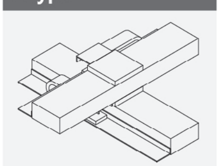
G type (Single drive)



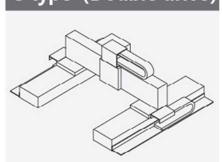
D type



L type



G type (Double drive)

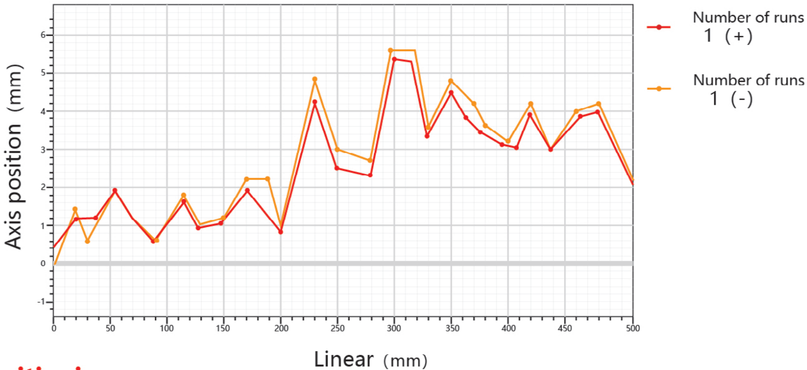


Accuracy

The precision of the module varies depending on the model (according to measurement method using Renishaw XL80 laser interferometer), and it an be tested under equivalent conditions according to customer requirements. Please consult CSK.

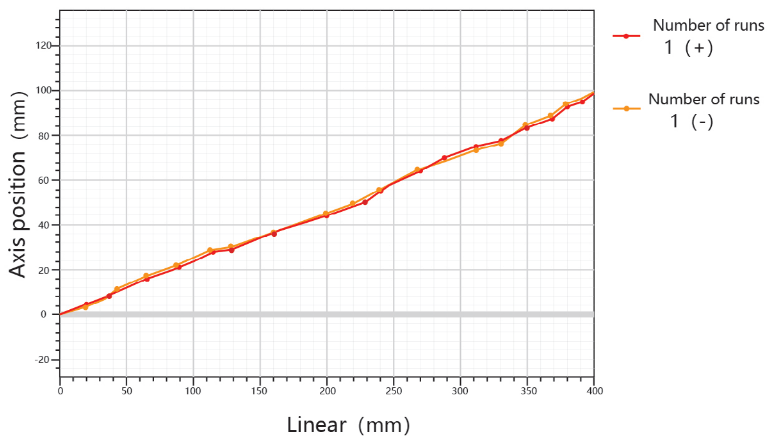
(1) Repetition accuracy

Repeat positioning from the same direction to any point 7 times and determine the maximum deviation.



(2) Positioning accuracy

From the reference position, sequentially position to specific points in a certain direction. Measure the difference between the actual displacement and the desired displacement at each position.
Express the maximum deviation within each stroke length in absolute value.



TEL +86 16653137076 E-mail info@cskmotions.com

Accuracy

Pitch

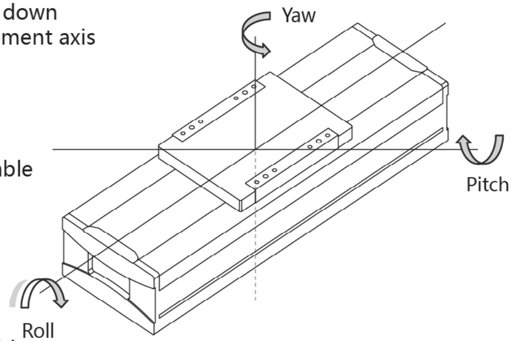
The angle change in the up and down direction of the worktable movement axis

Roll

Changes in axial angle of worktable movement axis

Yaw

The angle change of the worktable movement axis in the left and right directions



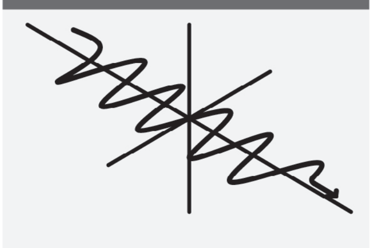
Running Parallelism

Deviation from the baseline

The movement along the horizontal axis

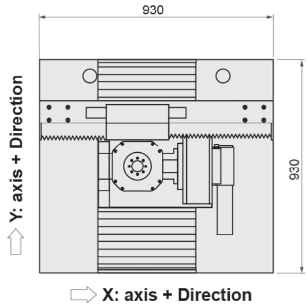
The movement along the vertical axis

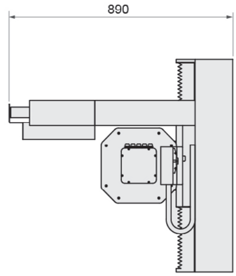
Horizontal straightness

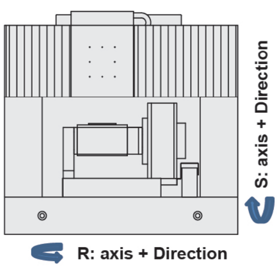


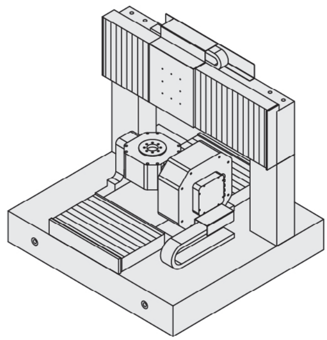
Vertical straightness

LMA2L2R-PP-300×300A (L) DA0000683A









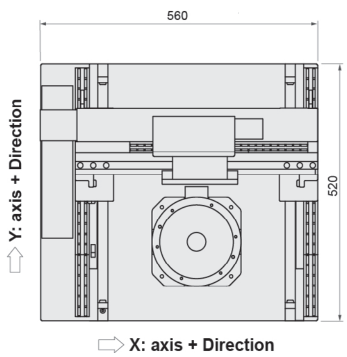
LMA

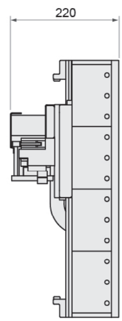
LMA2L2R-PP-300×300A			
Peak force (N)	X: 486 Y: 1108	**Max. acceleration (m/s2)**	9.8 (Rated load)
Continuous force (N)	X: 143.5 Y: 277	**Encoder (Magnetic/Optical)**	Optical 0.1um
Peak Torque (N.m)	R: 11.1	**Limit switch**	Y1M-BS5
Continuous Torque (N.m)	R: 3.7	**Appearance**	Black
Effective stroke (mm)	X/Y: 300	**Placement method**	Horizontal
Payload (kg)	X: 15 R: 10	**Lubrication**	Lithium base grease
Maximum speed (m/s)	0.5 (Rated load)		
Repeatability (μm)	X/Y: ±2; R/S: ±2arc-sec (RenishawXL80 measurement method)		
Accuracy (μm)	X/Y: ±5; R/S: ±30arc-sec (compensatory)		

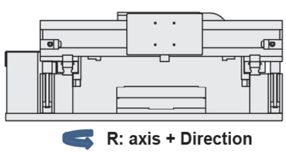
TEL +86 16653137076 E-mail info@cskmotions.com

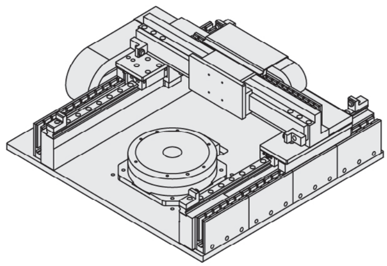
LMA3G1R-240×240 (G)

DA0000588A





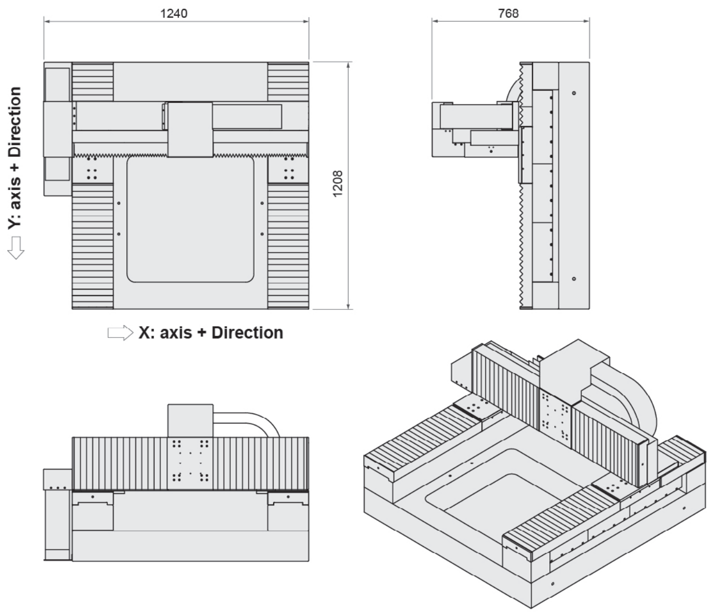




LMA3G1R-240X240			
Peak force (N)	X: 198 Y: 486	**Max. acceleration** (m/s^2)	9.8 (Rated load)
Continuous force (N)	X: 54.5 Y: 143.5	**Encoder (Magnetic/Optical)**	Optical 0.5um
Peak Torque (N.m)	R: 42	**Limit switch**	Y1M-BS5
Peak Torque (N.m)	R: 14	**Appearance**	Silvery
Effective stroke (mm)	X/Y: 240	**Placement method**	Horizontal
Payload (kg)	X: 3 R: 10	**Lubrication**	Lithium base grease
Maximum speed (m/s)	0.8 (Rated load)		
Repeatability (μm)	X/Y: ±2; R/S: ±2arc-sec (RenishawXL80 measurement method)		
Accuracy (μm)	X/Y: ±5; R/S: ±30arc-sec (compensatory)		

LMA3G-600×600A (G)

DA0000572A

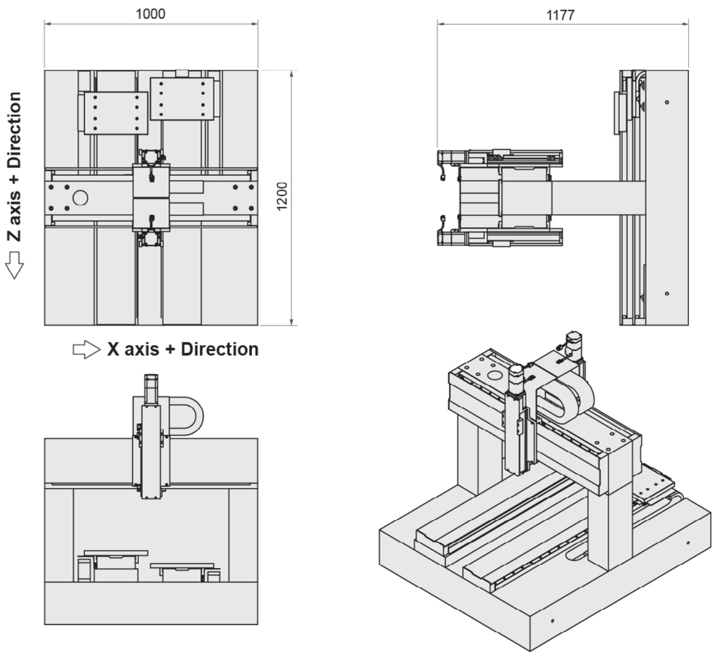


LMA3G-600×600A			
Peak force (N)	X：486；Y：1015	**Limit switch**	BS5-Y1M
Continuous force (N)	X：143；Y：290	**Appearance**	Black/Silvery
Effective stroke (mm)	X：600；Y：600	**Base material**	Granite
Payload (kg)	10	**Placement method**	Horizontal
Maximum speed (m/s)	0.5（Rated load）	**Lubrication**	Lithium base grease
Max.acceleration (m/s^2)	9.8（Rated load）		
Encoder (Magnetic/Optical)	Optical 0.5um		
Repeatability (μm)	X/Y：±1（RenishawXL80 measurement method）		
Accuracy (μm)	X/Y：±3（compensatory）		

TEL +86 16653137076
E-mail info@cskmotions.com

LMA6G-700×900×200A (G)

DA0000466A

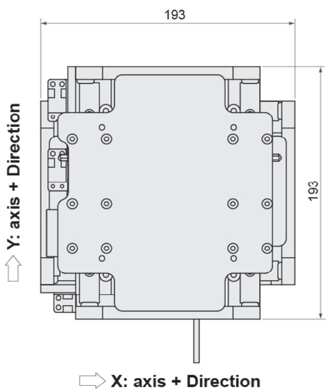


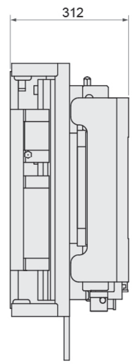
LMA

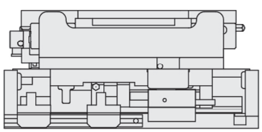
LMA6G-700×900×200A			
Peak force (N)	X：588；Y：285	**Limit switch**	BS5-Y1M
Continuous force (N)	X：196；Y：95	**Appearance**	Black
Effective stroke (mm)	X：700；Y：900；Z：200	**Base material**	Granite
Payload (kg)	Z：25；Y：10	**Placement method**	Horizontal
Maximum speed (m/s)	0.1（Rated load）	**Lubrication**	Lithium base grease
Max.acceleration (m/s^2)	-		
Encoder (Magnetic/Optical)	Optical 0.5um		
Repeatability (μm)	X/Y：±1.5；Z：±3（RenishawXL80）		
Accuracy (μm)	X/Y：±5；Z:25（compensatory）		

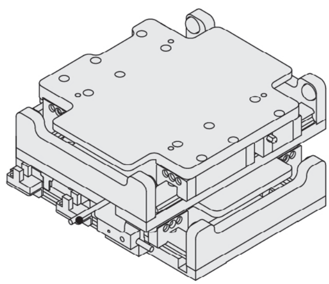
LMA2L-40×40 (L)

DA0000600A







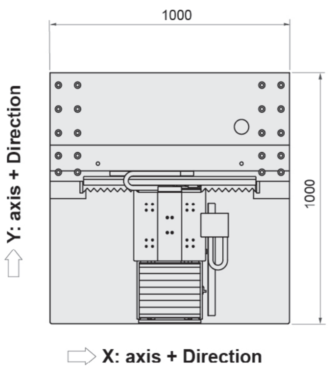


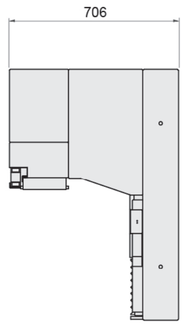
LMA2L-40×40			
Peak force (N)	X/Y：588	**Limit switch**	Y1M-BS5
Continuous force (N)	X/Y：196	**Appearance**	Silvery
Effective stroke (mm)	X/Y：40	**Placement method**	Hanging upside down
Payload (kg)	15	**Lubrication**	Lithium base grease
Maximum speed (m/s)	0.2 (Rated load)		
Max.acceleration (m/s^2)	6 (Rated load)		
Encoder (Magnetic/Optical)	Optical 0.5um		
Repeatability (μm)	X/Y：±2 (RenishawXL80 measurement method)		
Accuracy (μm)	X/Y：±2 (compensatory)		

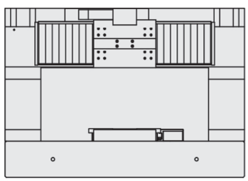
TEL +86 16653137076 E-mail info@cskmotions.com

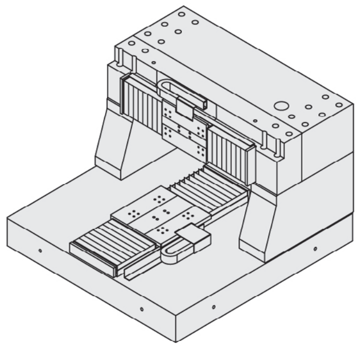
LMA2G-300×300A (G)

DA0000185H





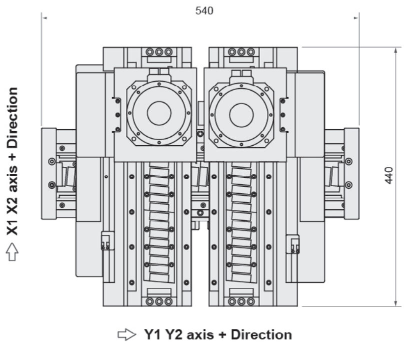


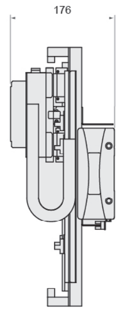


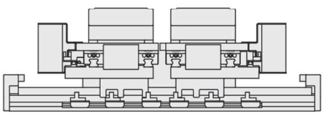
LMA2G-300×300A			
Peak force (N)	X: 360 Y: 540	**Limit switch**	EE-SX674
Continuous force (N)	X: 120 Y: 180	**Appearance**	Silvery
Effective stroke (mm)	X/Y：300	**Placement method**	Horizontal
Payload (kg)	X: 10 Y: 15	**Lubrication**	Lithium base grease
Maximum speed (m/s)	1（Rated load）		
Max.acceleration (m/s^2)	9.8（Rated load）		
Encoder (Magnetic/Optical)	Optical 0.5um		
Repeatability (μm)	X/Y：±2（RenishawXL80 measurement method）		
Accuracy (μm)	X/Y：±5（compensatory）		

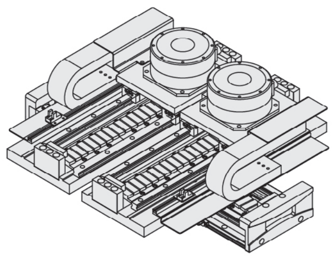
LMA4L2R-210×40A (L)

DA0000310H







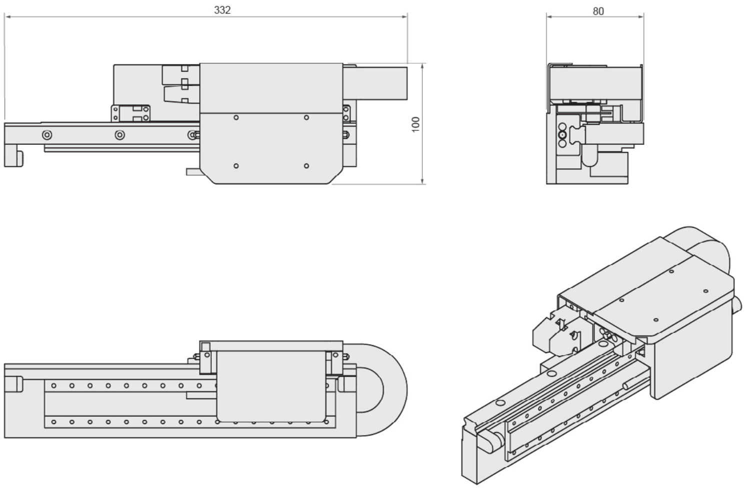


LMA4L2R-210×40A			
Peak force (N)	X：360；Y：540	**Encoder (Magnetic/Optical)**	Optical 0.5um
Continuous force (N)	X：120；Y：180	**Repeatability** (μm)	X/Y：±1（RenishawXL80 measurement method)
Peak Torque (N·m)	A：3.9	**Repeatability** (arc-sec)	A：±3
Continuous Torque (N·m)	A：1.3	**Limit switch**	EE-SX674
Effective stroke (mm)	X：210；Y：40；A：360°	**Appearance**	Silvery
Payload (kg)	A：5	**Base material**	aluminium alloy
Maximum speed (m/s)	1（Rated load）	**Placement method**	Horizontal
Max.acceleration (m/s^2)	-	**Lubrication**	Lithium base grease
No-load speed (rpm)	300		

TEL +86 16653137076 E-mail info@cskmotions.com

LMA1S-150A (S)

DA0000647A

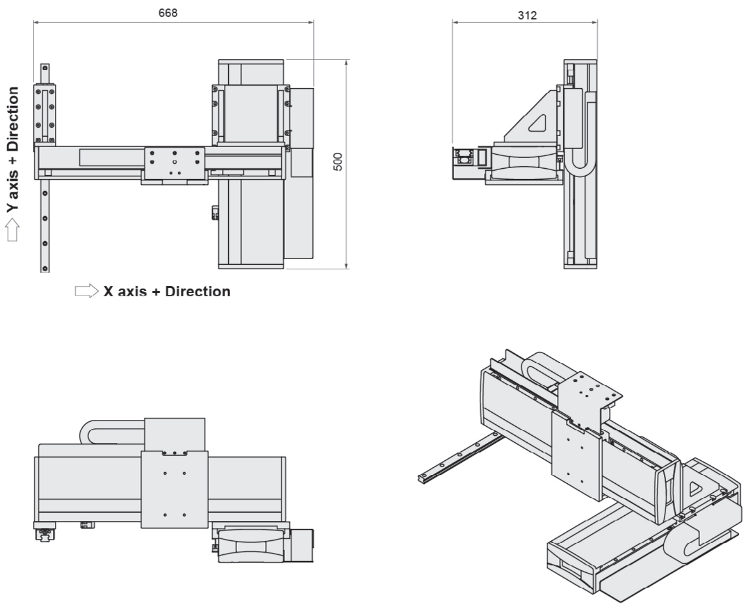


LMA1S-150A			
Peak force (N)	75	**Limit switch**	Y1M-BS5
Continuous force (N)	25	**Appearance**	Silvery
Effective stroke (mm)	150	**Placement method**	Horizontal
Payload (kg)	1	**Lubrication**	Lithium base grease
Maximum speed (m/s)	0.9 (Rated load)		
Max.acceleration (m/s^2)	9.8 (Rated load)		
Encoder (Magnetic/Optical)	Magnetic1um		
Repeatability (μm)	±5 (RenishawXL80 measurement method)		
Accuracy (μm)	±15 (compensatory)		

LMA

LMA2G-200×200A (G)

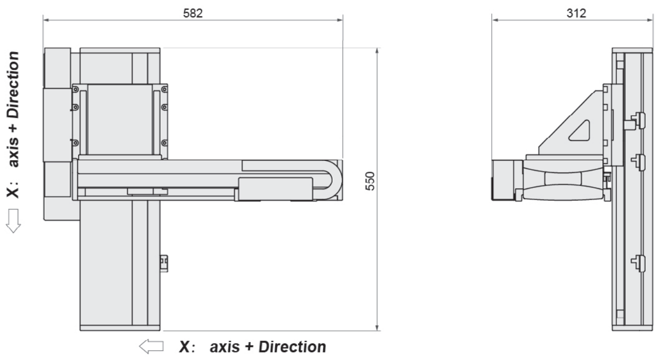
DA0000444B

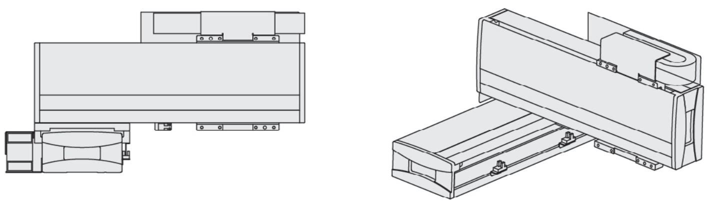


LMA2G-200×200A			
Peak force (N)	X/Y：390	**Limit switch**	BS5-Y1M
Continuous force (N)	X/Y：130	**Appearance**	Black/Silvery
Effective stroke (mm)	X/Y：200	**Base material**	Granite
Payload (kg)	10	**Placement method**	Horizontal
Maximum speed (m/s)	0.2（Rated load）	**Lubrication**	Lithium base grease
Max.acceleration (m/s²)	5（Rated load）		
Encoder (Magnetic/Optical)	Optical1um		
Repeatability (μm)	X/Y：±5（RenishawXL80 measurement method）		
Accuracy (μm)	X/Y：±15（compensatory）		

TEL +86 16653137076 E-mail info@cskmotions.com

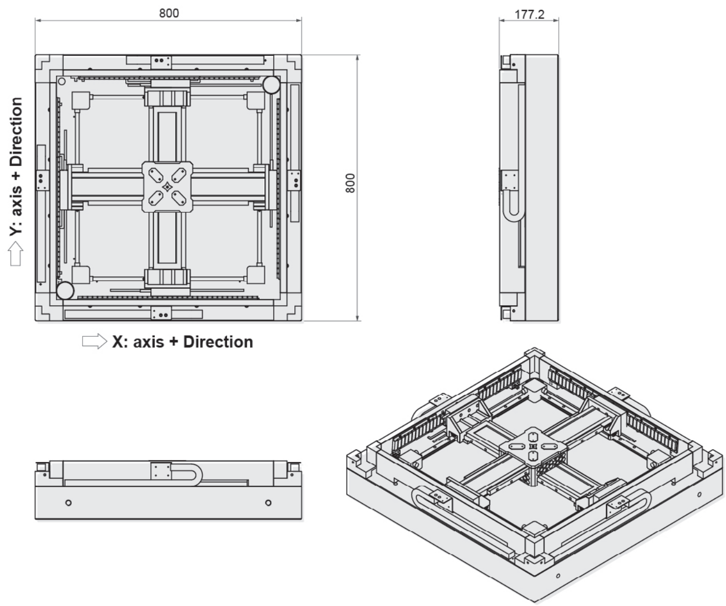
LMA2C-120×250A (C) DA0000322C





LMA2C-120×250A			
Peak force (N)	X/Y：390	**Limit switch**	EE-SX674
Continuous force (N)	X/Y：130	**Appearance**	Silvery
Effective stroke (mm)	X：120；Y：250	**Base material**	Aluminium alloy
Payload (kg)	20	**Placement method**	Horizontal
Maximum speed (m/s)	X：0.2；Y：0.3（Rated load）	**Lubrication**	Lithium base grease
Max.acceleration (m/s^2)	2（Rated load）		
Encoder (Magnetic/Optical)	Magnetic1um		
Repeatability (μm)	X/Y：±30（RenishawXL80 measurement method）		
Accuracy (μm)	X/Y：±90（compensatory）		

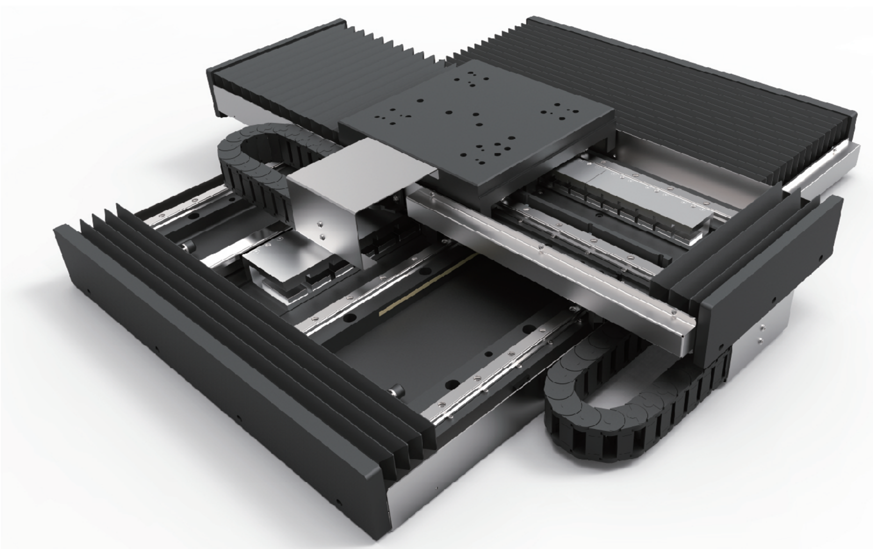
LMA2L-300×300A（L） DA0000680A



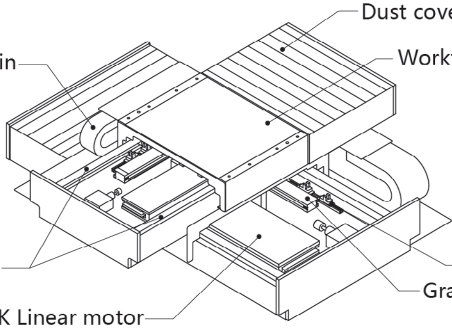
LMA2L-300×300A			
Peak force（N）	X/Y：285	**Limit switch**	BS5-Y1M
Continuous force（N）	X/Y：95	**Appearance**	Black/silvery
Effective stroke（mm）	X/Y：300	**Base material**	Granite
Payload（kg）	10	**Placement method**	Horizontal
Maximum speed（m/s）	1.5（Rated load）	**Lubrication**	Lithium base grease
Max.acceleration（m/s^2）	2.8（Rated load）		
Encoder (Magnetic/Optical)	Optical 0.1um		
Repeatability（μm）	X/Y：±1（RenishawXL80 measurement method）		
Accuracy（μm）	X/Y：±3（compensatory）		

Linear Motor Stage

LMA-CS series



Construction



Note: Only for reference

Characteristics

LMA-CS series is designed and developed to meet the high-precision requirements of the motion platform market. Notably, this series features full linear motor drive and is constructed with an industrial-grade marble theme. All components are sourced from internationally renowned brands, ensuring product excellence. Leveraging years of experience in motion platform manufacturing, the overall architecture has been reanalyzed to achieve optimal balance design. Rigorous data validation using professional instruments ensures the scientific and rational performance of the motion platform, all while maintaining cost-effectiveness. The LMA-CS series offers both personalized single-unit production and batch supply options.

- High speed and accuracy
- Speed fluctuation < 0.1%
- Multiple precision options
- Labyrinth structure dust pretection
- No toothless force
- Axis orthogonality < 5μm
- Meet arc interpolation requirements

LMA

Specifications

LMA-CS - U - 300 × 300 A

LMA-CS

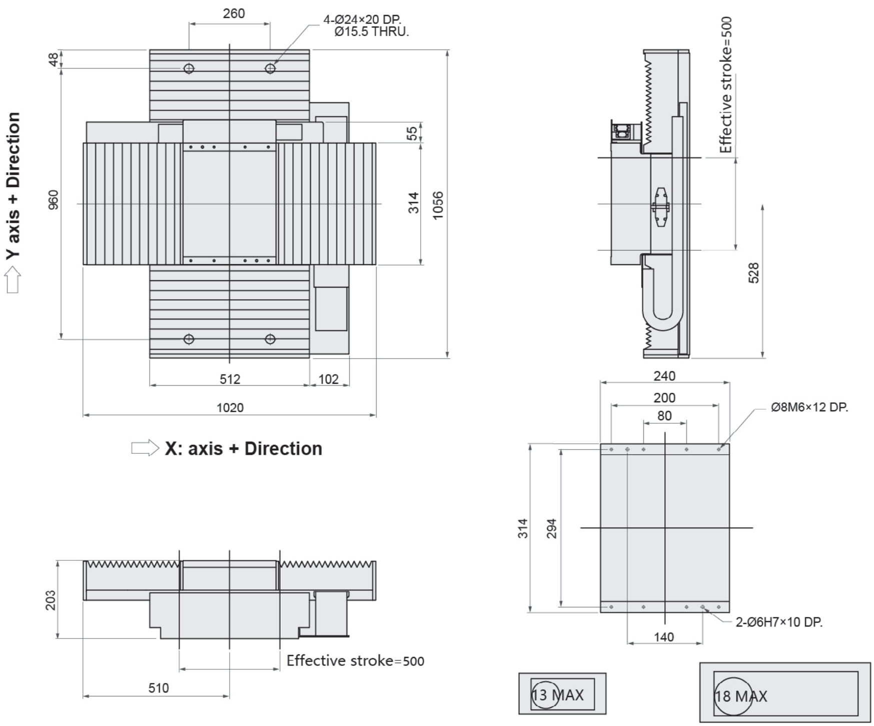
motor
U：DUD Ironless Linear Motor
P：DPD Iron Core Linear Motor

Effective stroke (mm)

Special symbol
No symbol：Standard
Special：No symbol，A，B ... (For other requirements, please consult CSK)

TEL +86 16653137076 E-mail info@cskmotions.com

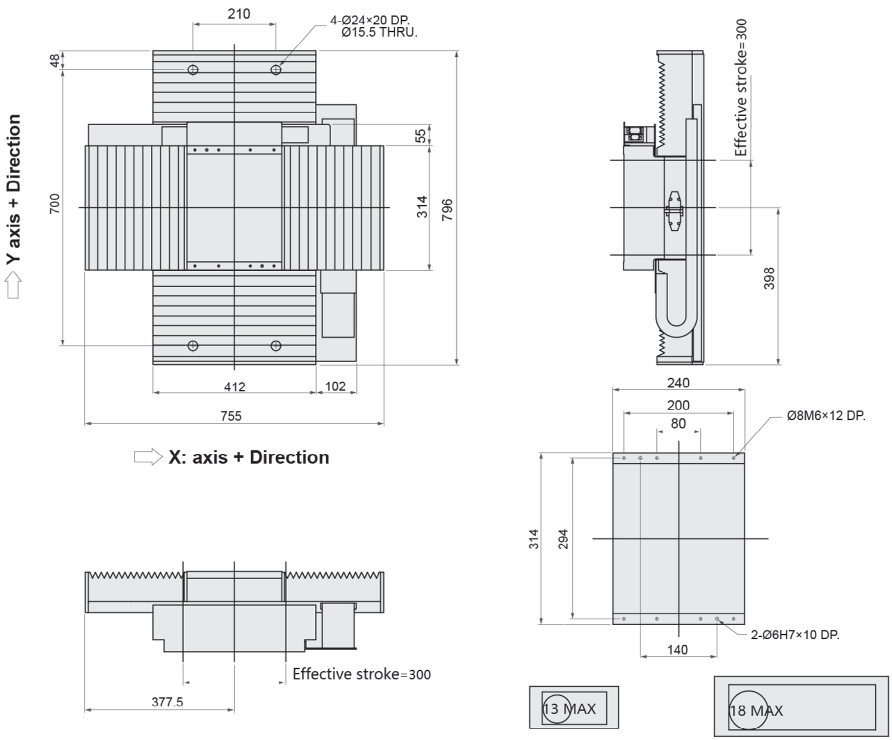
LMA-CS-U-500×500



LMA-CS-U-500×500			
Peak force (N)	X：486 Y：870	**Limit switch**	Optional
Continuous force (N)	X：143. 5 Y：290	**Appearance**	Black
Effective stroke (mm)	X/Y：500	**Placement method**	Horizontal
Payload (kg)	20	**Lubrication**	Lithium base grease
Maximum speed (m/s)	1（no-load）		
Max.acceleration (m/s^2)	9.8（no-load）		
Encoder (Magnetic/Optical)	Optional		
Repeatability (μm)	X/Y：±2（RenishawXL80 measurement method）		
Accuracy (μm)	X/Y：±4（compensatory）		

LMA

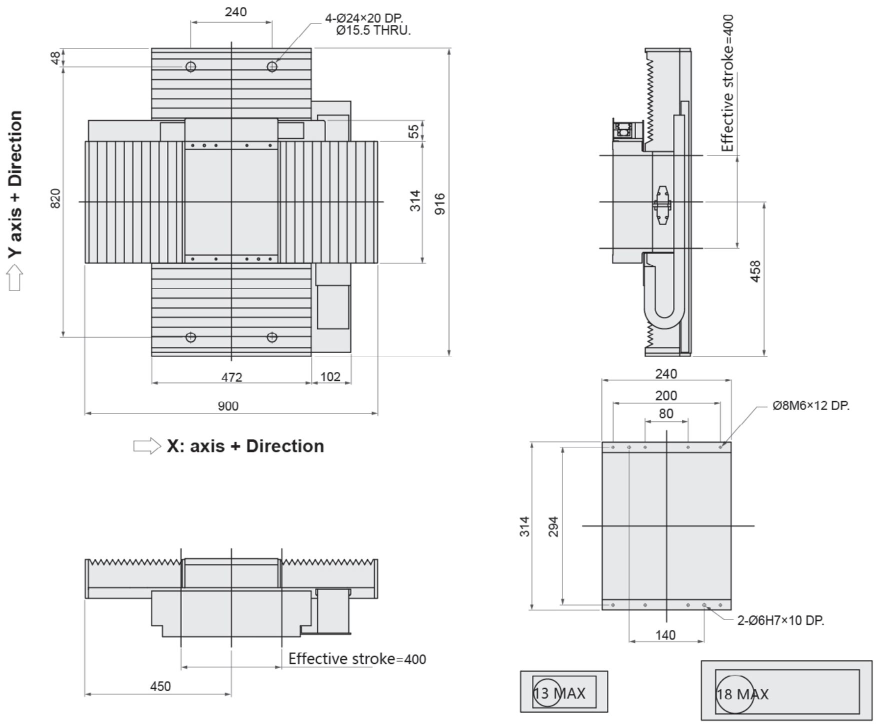
LMA-CS-U-300×300



LMA-CS-U-300×300			
Peak force (N)	X：486　Y：870	**Limit switch**	Optional
Continuous force (N)	X：143. 5　Y：290	**Appearance**	Black
Effective stroke (mm)	X/Y：300	**Placement method**	Horizontal
Payload (kg)	20	**Lubrication**	Lithium base grease
Maximum speed (m/s)	1 (no-load)		
Max.acceleration (m/s^2)	9.8 (no-load)		
Encoder (Magnetic/Optical)	Optional		
Repeatability (μm)	X/Y：±2 (RenishawXL80 measurement method)		
Accuracy (μm)	X/Y：±4 (compensatory)		

TEL +86 16653137076　E-mail info@cskmotions.com

LMA-CS-U-400×400



LMA-CS-U-400×400			
Peak force (N)	X：486 Y：870	**Limit switch**	Optional
Continuous force (N)	X：143.5 Y：290	**Appearance**	Black
Effective stroke (mm)	X/Y：400	**Placement method**	Horizontal
Payload (kg)	20	**Lubrication**	Lithium base grease
Maximum speed (m/s)	1 (no-load)		
Max.acceleration (m/s^2)	9.8 (no-load)		
Encoder (Magnetic/Optical)	Optional		
Repeatability (μm)	X/Y：±2 (RenishawXL80 measurement method)		
Accuracy (μm)	X/Y：±4 (compensatory)		

LMA

Precautions for use

1. Precautions before purchase

1.1 When purchasing, please check the scope of the use environment with our sales staff. Please do not use in the corrosive environment such as sulfur and sulphide gas, which may lead to line breakage or poor contact.

1.2 When selecting the model, please check the use requirements and motor parameters with our sales staff to ensure the scientific use.

2. Matters needing attention in operation

2.1 This product is manufactured as a precision mechanical part and is widely used in the mechanical industry. Technical personnel with professional knowledge and experience are required to operate it.

2.2 When operating, please be sure to use according to the operating specifications of the product.

2.3 In the application, if you have special requirements on the use environment of cable and motor installation, please contact our sales staff for confirmation to prevent accidents.

2.4 All terminals of the equipment are not allowed to be plugged and unplugged with live power to prevent damage to the motor and driver.

2.5 The ground wire of the motor must be grounded.

2.6 Do not place the control signal line and power line (main power line, motor power line, etc.) of the equipment in the same line tube or wrap them into a bundle.

2.7 During motor operation, do not touch the moving parts of the motor.

3. Matters needing attention for follow-up maintenance

3.1 Precautions for storage equipment: temperature shall be controlled within -20℃ to +60℃. Humidity: less than 85%, placed in a dust-free, clean, non-corrosive gas, no grinding fluid, no metal powder, no oil environment.

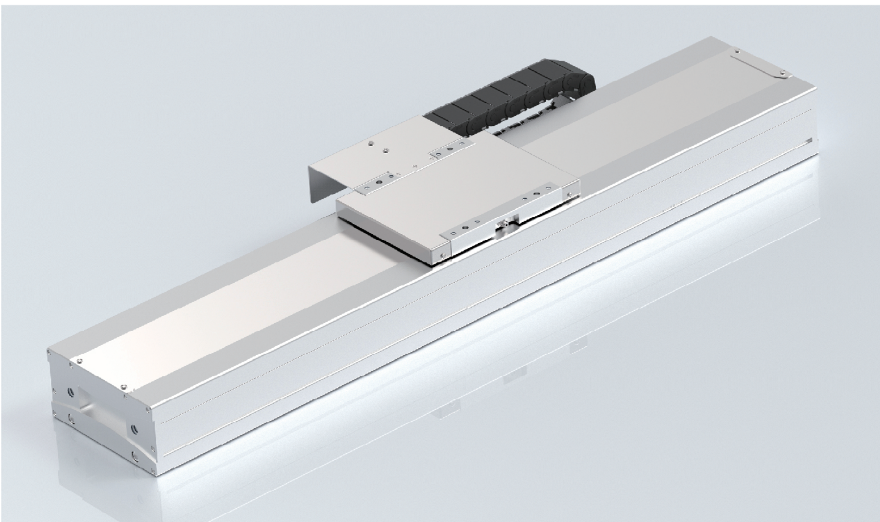
3.2 In the case of movement, wiring, maintenance and inspection, please cut off the power for more than 3 minutes before operating. Cut off the power for about 2~3 minutes, the power line still has voltage residue, do not touch the equipment carelessly.

3.3 Frequent power on or off will lead to deterioration of main circuit components. After power off, please wait for more than 1 minute to power on again. The frequency of power on and off is limited to less than 2 times every 3 minutes.

TEL +86 16653137076 E-mail info@cskmotions.com

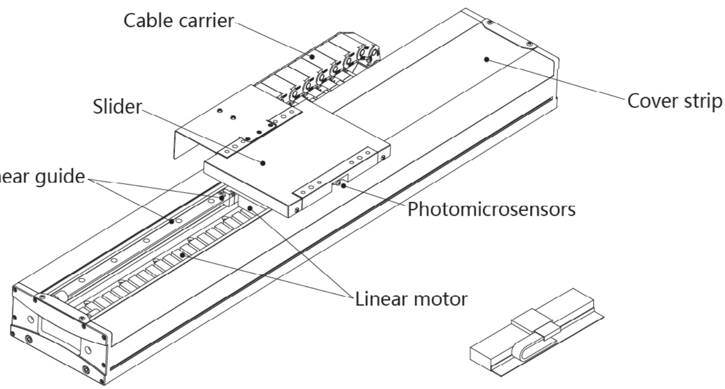
Linear Motor Module

LMB series



LMB

Construction



Note: For reference only.

Characteristics

LMB series linear motor modules are specially designed for environments wiht high dust level and low dust emission. Completely dustpreventive structure is adopted to effectively prevent foreign bodies from invading the module body, so that it can withstand harsh environment . It can be connected with a special device to achieve low dust emission, can meet part of clean room use requirements.

- Completely dust preventive structure
- Low dust emission
- Rapid acceleration/deceleration
- Precision optional
- Multi-slider
- Long stroke
- Use precision linear guideway
- Modularization
- High quality appearance
- Customization

Applications

Machine Tool (CNC, Lathe …)
Industrial Robot
Clean room environment
Semiconductor Manufacturing Equipment
Other (Injection Molding Machine …)

TEL +86 16653137076 E-mail info@cskmotions.com

Specifications

LMB 150 F1 D2 - S700 LH P2 3K 3M

Series
LMB: Completely dust preventive structure series

Size
150: The width of the module is 150mm
180
200

Thrust specifications
F1:
F2:

Number of slider
D1: 1 slider (Standard)
D2: 2 sliders

Effective stroke
S700: Each slider effective stroke is 700mm
200mm, 300mm, 400mm......, 2000mm

Cable carrier entry location
RH : Horizontally, right
LH : Horizontally, left (Standard)
RW: Wall hanging, right
LW : Wall hanging, left
No symbol : There is no cable carrier

Resolution
P1: Magnetic encoders
P2: Optical encoders 1μm (Standard)
P3: Optical encoders 0.5μm
Note: For other requirements, please consult CSK.

Limit switch
3K: 3 Photomicrosensors (Optional)
N : There is no limit switch
Note: For other requirements, please consult CSK.

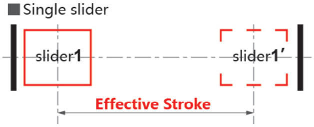
Motor/encoder extension cable
3M: 3 meters (Standard) , 5 meters, 10 meters

Special symbol
No symbol: Standard
Special: No symbol, A, B ... (For other requirements, please consult CSK)

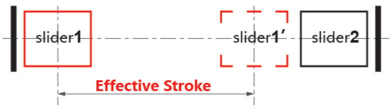
LMB series technical analysis

Effective stroke

■ Single slider



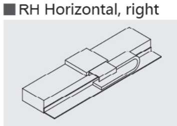
■ Double slider



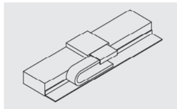
※Note：For other requirements,please consult CSK.

Cable carrier entry location

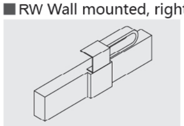
■ RH Horizontal, right



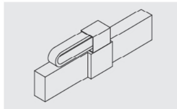
■ LH Horizontal, left



■ RW Wall mounted, right



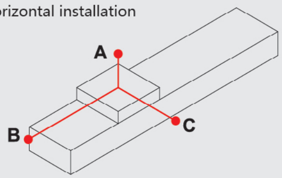
■ LW Wall mounted, left



※Be sure to install in the direction as specified individually. Installation in any other way will cause a failure.

Allowable overhang

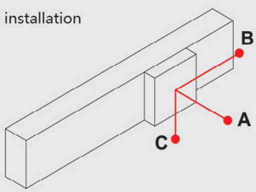
■ Horizontal installation



Unit（mm）

Payload	A	B	C
10kg	2525	1397	956
15kg	2248	940	706
20kg	2143	712	573
25kg	1752	576	404
30kg	1464	484	296
35kg	1264	420	220
40kg	1112	372	180

■ Wall installation



Unit（mm）

Payload	A	B	C
10kg	976	1056	2032
15kg	696	680	1760
20kg	536	488	1624
25kg	388	320	1024
30kg	224	260	840
35kg	212	216	712
40kg	188	184	612

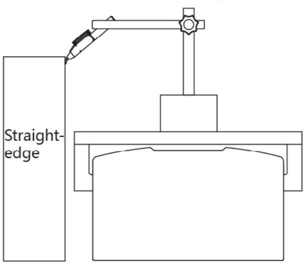
TEL +86 16653137076
E-mail info@cskmotions.com

Construction

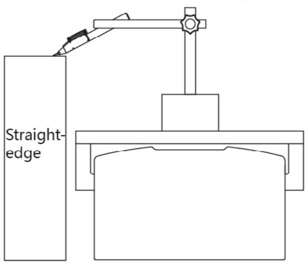
Model	LMB150		LMB180		LMB200
	LMB150F1	LMB150F2	LMB180F1	LMB180F2	LMB200F1
Peak Force (N)	792	1188	849	1256	1766
Continuous Force (N)	220	330	250	370	520
Effective stroke (mm)	100-4000				
Encoder resolution	Optical: 1、0.5、0.1μm ; 1vpp sincos/ Magnetic: 1μm、0.2μm				
Repeatability (μm)	±2μm/±3μm				
Accuracy (μm)	±6μm/±9μm (compensatory)				
Horizontal straightness	±2.5μm/500mm				
Vertical straightness	±5μm/500mm				
Appearance	Colorless oxidation				
Maximum speed (m/s)	5	5	5	5	5
Max. acceleration ((m/s^2)	27.5	33.6	28.7	34.2	41.9
Workbench weight (kg)	4.5	6.3	5.2	7.3	8.9
Height (mm)	95				

Running Parallelism

Vertical straightness



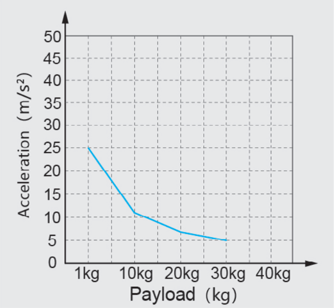
Horizontal straightness



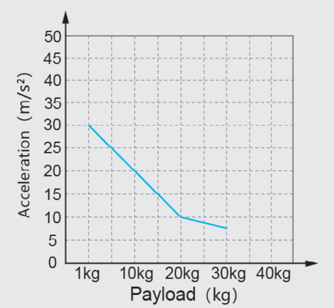
LMB

Selection auxiliary diagram(acceleration)

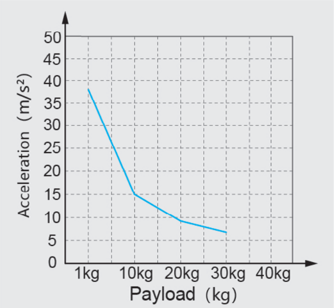
LMB150F1



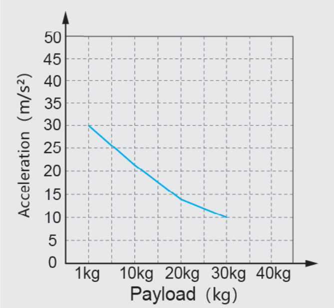
LMB150F2



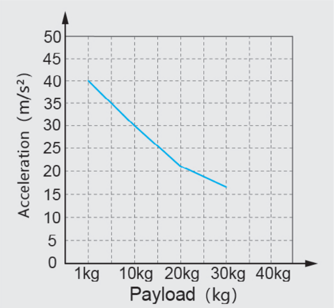
LMB180F1



LMB180F2



LMB200F1

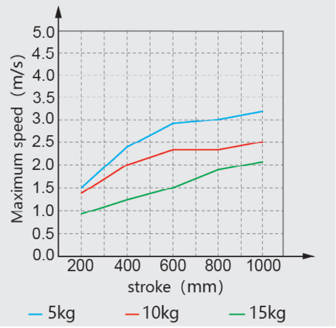


LMB

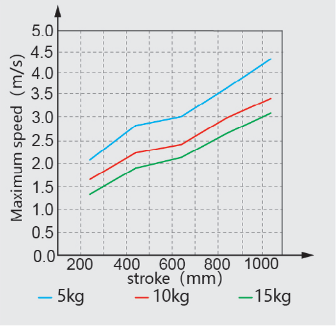
TEL +86 16653137076 E-mail info@cskmotions.com

Selection auxiliary diagram (Maximum speed)

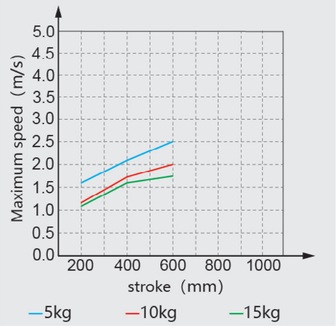
LMB150F1



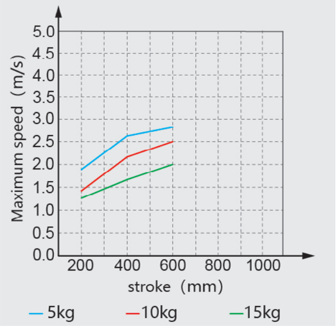
LMB150F2



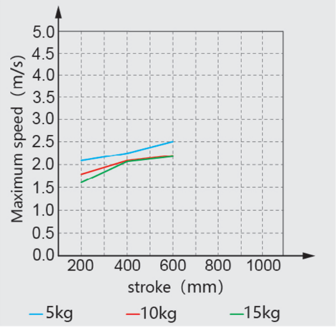
LMB180F1



LMB180F2

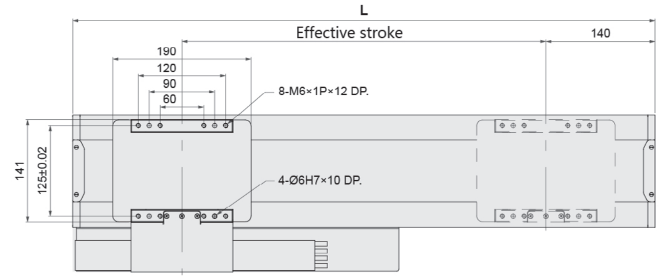


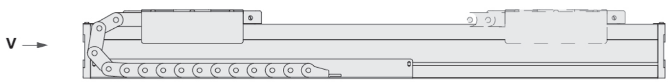
LMB200F1

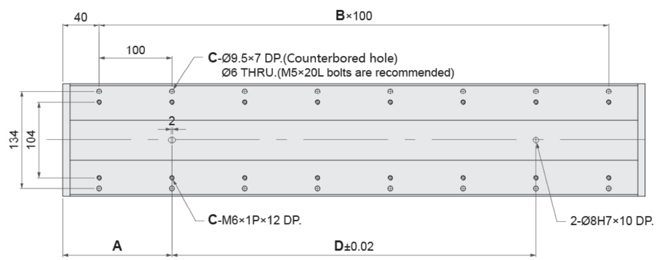


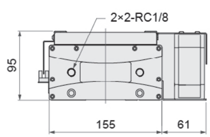
LMB

Construction

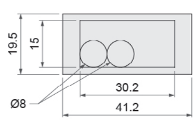








View V



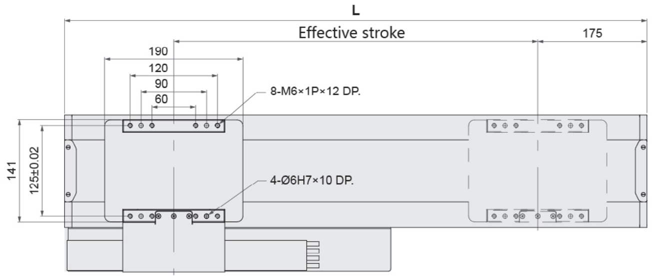
Cable carrier size Note: The maximum diameter of the cable is 13 millimeter.

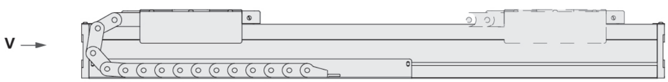
Unit (mm)

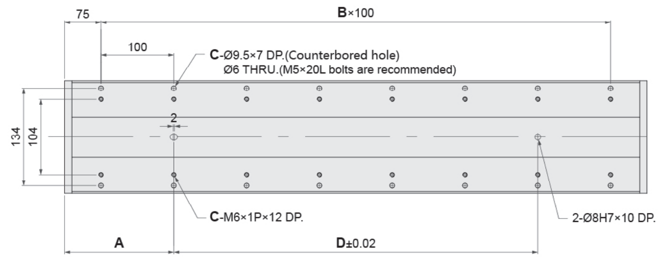
Effective stroke	200	300	400	500	600	700	800	1000	1200	1400	1600	1800	2000
L	480	580	680	780	880	980	1080	1280	1480	1680	1880	2080	2280
A	140								240	340	440	540	640
B	4	5	6	7	8	9	10	12	14	16	18	20	22
C	10	12	14	16	18	20	22	26	30	34	38	42	46
D	200	300	400	500	600	700	800	1000					
Weight (kg)	13	14.6	16.3	17.9	19.5	21.2	22.8	26.1	29.3	32.6	35.9	39.1	42.4

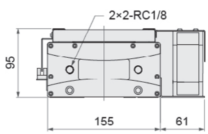
TEL +86 16653137076 E-mail info@cskmotions.com

Construction

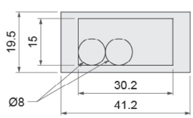








View V



Cable carrier size

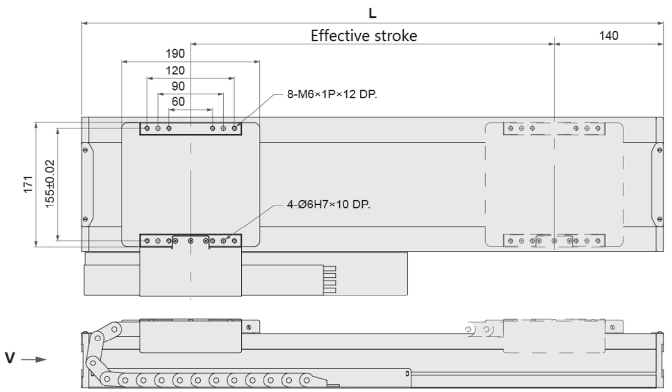
Note: The maximum diameter of the cable is 13 millimeter.

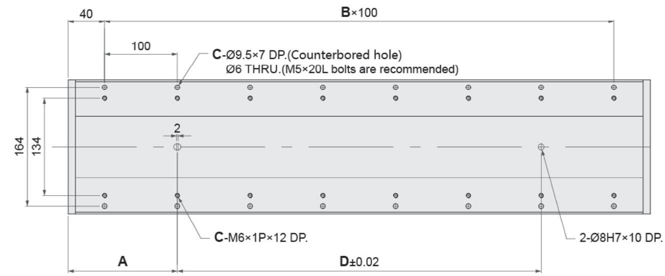
Unit (mm)

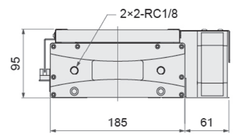
<table>
<tr><th>Effective stroke</th><th>200</th><th>300</th><th>400</th><th>500</th><th>600</th><th>700</th><th>800</th><th>1000</th><th>1200</th><th>1400</th><th>1600</th><th>1800</th><th>2000</th></tr>
<tr><td>L</td><td>550</td><td>650</td><td>750</td><td>850</td><td>950</td><td>1050</td><td>1150</td><td>1350</td><td>1550</td><td>1750</td><td>1950</td><td>2150</td><td>2350</td></tr>
<tr><td>A</td><td colspan="8">175</td><td>275</td><td>375</td><td>475</td><td>575</td><td>675</td></tr>
<tr><td>B</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>12</td><td>14</td><td>16</td><td>18</td><td>20</td><td>22</td></tr>
<tr><td>C</td><td>10</td><td>12</td><td>14</td><td>16</td><td>18</td><td>20</td><td>22</td><td>26</td><td>30</td><td>34</td><td>38</td><td>42</td><td>46</td></tr>
<tr><td>D</td><td>200</td><td>300</td><td>400</td><td>500</td><td>600</td><td>700</td><td>800</td><td colspan="6">1000</td></tr>
<tr><td>Weight (kg)</td><td>14</td><td>15.6</td><td>17.3</td><td>18.9</td><td>20.5</td><td>22.2</td><td>23.8</td><td>27.1</td><td>30.3</td><td>33.6</td><td>36.9</td><td>40.1</td><td>43.4</td></tr>
</table>

LMB

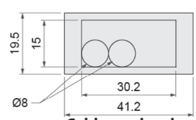
Construction







View V



Cable carrier size

Note: The maximum diameter of the cable is 13 millimeter.

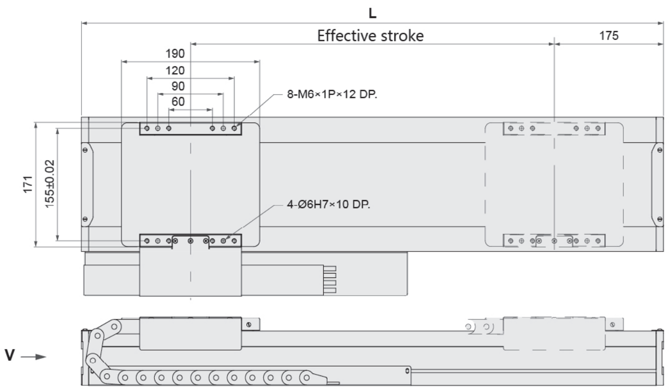
Unit (mm)

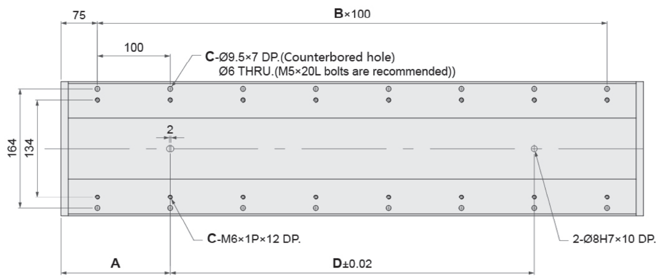
Effective stroke	200	300	400	500	600	700	800	1000	1200	1400	1600	1800	2000
L	480	580	680	780	880	980	1080	1280	1480	1680	1880	2080	2280
A	140								240	340	440	540	640
B	4	5	6	7	8	9	10	12	14	16	18	20	22
C	10	12	14	16	18	20	22	26	30	34	38	42	46
D	200	300	400	500	600	700	800	1000					
Weight (kg)	13.9	15.8	17.7	19.6	21.5	23.4	25.2	29	32.8	36.5	40.3	44.1	47.8

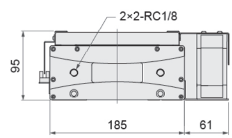
LMB

TEL +86 16653137076 **E-mail** info@cskmotions.com

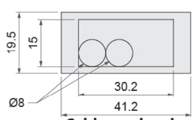
Construction







View V



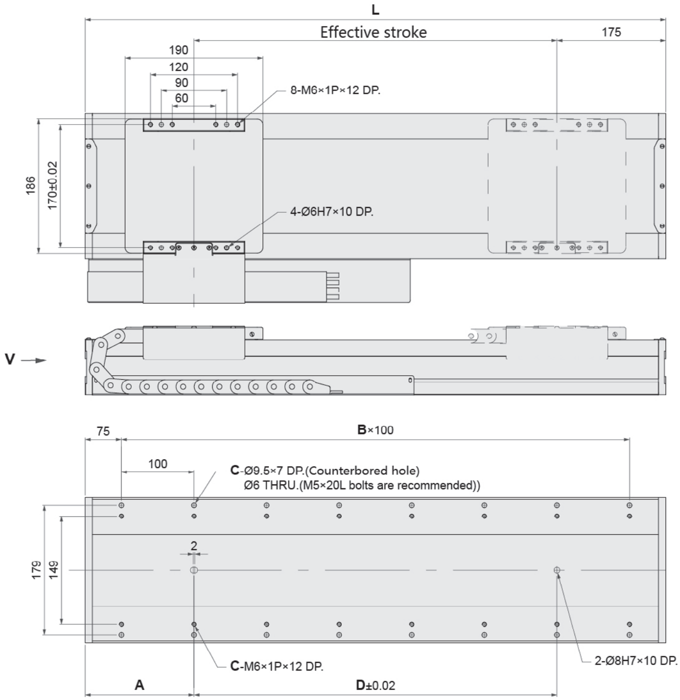
Cable carrier size

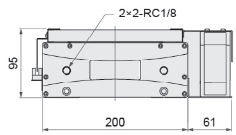
Note: The maximum diameter of the cable is 13 millimeter.

Unit (mm)

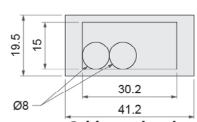
Effective stroke	200	300	400	500	600	700	800	1000	1200	1400	1600	1800	2000
L	550	650	750	850	950	1050	1150	1350	1550	1750	1950	2150	2350
A	175								275	375	475	575	675
B	4	5	6	7	8	9	10	12	14	16	18	20	22
C	10	12	14	16	18	20	22	26	30	34	38	42	46
D	200	300	400	500	600	700	800	1000					
Weight (kg)	15.1	17	18.9	20.8	22.7	24.6	26.4	30.2	34	37.7	41.5	45.3	49

Construction





View V



Cable carrier size

Note: The maximum diameter of the cable is 13 millimeter.

Unit (mm)

Effective stroke	200	300	400	500	600	700	800	1000	1200	1400	1600	1800	2000
L	550	650	750	850	950	1050	1150	1350	1550	1750	1950	2150	2350
A	175								275	375	475	575	675
B	4	5	6	7	8	9	10	12	14	16	18	20	22
C	10	12	14	16	18	20	22	26	30	34	38	42	46
D	200	300	400	500	600	700	800	1000					
Weight (kg)	16.8	18.9	20.9	25.2	27.4	29.3	33.5	37.6	41.8	46	50.2	54.5	58.7

LMB

TEL +86 16653137076 E-mail info@cskmotions.com

MELUCCI TECHNOLOGIES

CSK MOTION TECHNOLOGY

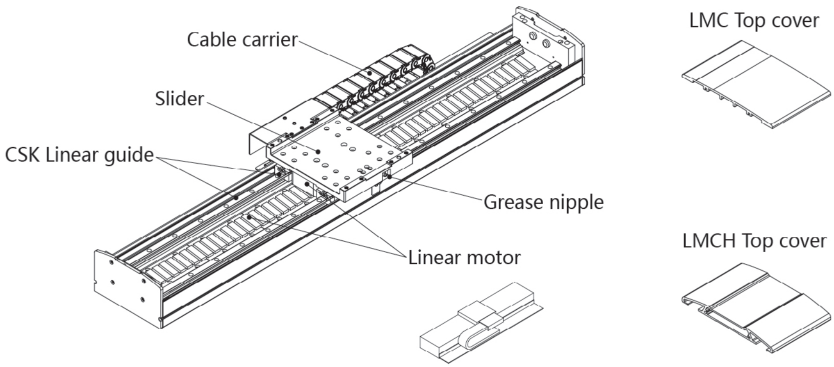
Linear Motor Module

LMC (H) series

LMC

TEL +86 16653137076 E-mail info@cskmotions.com

Construction



Note：For reference only.

Characteristics

LMC（H）series linear motor module is a universal series,suitable for automatic applications as moving or driving units. Modular design is economical and practical. Different structures can meet different stroke ,and can be used together when the accuracy is not high.The cover plate can be removed under special circumstance.

- Semi enclosed structure
- Long stroke
- Efficient heat dissipation
- Use precision linear guideway
- Rapid acceleration/deceleration
- Modularization
- Precision optional
- High quality appearance
- Multi-slider
- Customization

Applications

Machine Tool（CNC, Lathe ···）

Semiconductor Manufacturing Equipment

Industrial Robot

Other（Injection Molding Machine ···）

TEL +86 16653137076 E-mail info@cskmotions.com

Specifications

LMC 100 F1 D2 - S700 LH P2 3K 3M _

Series
LMC: Semi enclosed structure series
LMCH: Semi enclosed structure series (High type)

Size
100: The width of the module is 100mm
135
180
200

Thrust specifications
F1:
F2:

Number of slider
D1: 1 slider (Standard)
D2: 2 sliders

Effective stroke
S700: Each slider effective stroke is 700mm
200mm, 300mm, 400mm......, 2000mm

Cable carrier entry location
RH : Horizontally, right
LH : Horizontally, left (Standard)
RW: Wall hanging, right
LW : Wall hanging, left
No symbol : There is no cable carrier

Resolution
P1: Magnetic encoders
P2: Optical encoders 1μm (Standard)
P3: Optical encoders 0.5μm
Note: For other requirements, please consult CSK.

Limit switch
3K: 3 Photomicrosensors (Optional)
N : There is no limit switch
Note: For other requirements, please consult CSK.

Motor/encoder extension cable
3M: 3 meters (Standard) , 5 meters, 10 meters

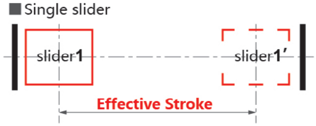
Special symbol
No symbol: Standard
Special: No symbol, A, B ... (For other requirements, please consult CSK)

LMC

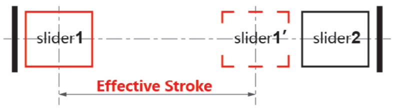
LMC series technical analysis

Effective stroke

■ Single slider



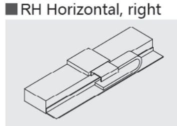
■ Double slider



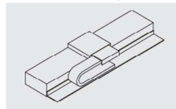
※Note: For other requirements,please consult CSK.

Cable carrier entry location

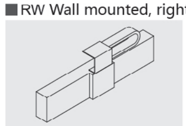
■ RH Horizontal, right



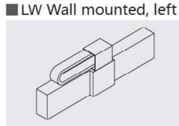
■ LH Horizontal, left



■ RW Wall mounted, right



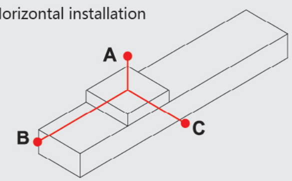
■ LW Wall mounted, left



※Be sure to install in the direction as specified individually.
Installation in any other way will cause a failure.

Allowable overhang

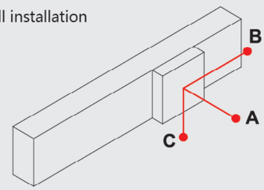
■ Horizontal installation



Unit (mm)

Payload	A	B	C
10kg	2525	1397	956
15kg	2248	940	706
20kg	2143	712	573
25kg	1752	576	404
30kg	1464	484	296
35kg	1264	420	220
40kg	1112	372	180

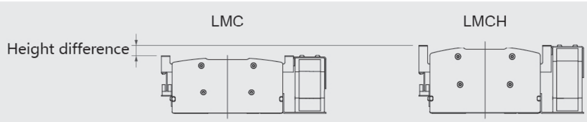
■ Wall installation



Unit (mm)

Payload	A	B	C
10kg	976	1056	2032
15kg	696	680	1760
20kg	536	488	1624
25kg	388	320	1024
30kg	224	260	840
35kg	212	216	712
40kg	188	184	612

Height difference



LMC Characteristics:
After installation,the assembly height is low.

LMCH Characteristics:
After installation,long stroke can be realized.

LMC

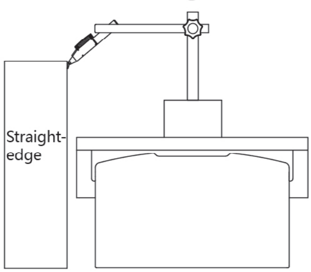
TEL +86 16653137076
E-mail info@cskmotions.com

Construction

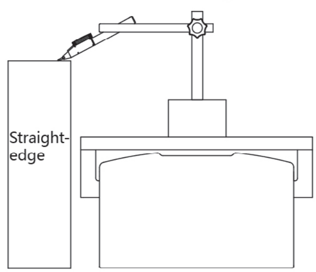
Model	LMC100		LMC135	LMC150/LMCH150		LMC180/LMCH180		LMC200/LMCH200	
	LMC100F1	LMC100F2	LMC135F1	LMC150F1	LMC150F2	LMC180F1	LMC180F2	LMC200F1	LMC200F2
Peak Force (N)	240	170	396	792	1188	849	1256	1188	1766
Continuous force (N)	80	51	110	220	330	250	370	350	520
Effective stroke (mm)	100-1000		100-4000						
Encoder resolution			Optical：1、0.5、0.1μm ; 1vpp sincos/ Magnetic：1μm、0.2μm						
Repeatability (μm)			±2μm/±3μm						
Accuracy (μm)			±6μm/±9μm（compensatory）						
Horizontal straightnes			±2.5μm/500mm						
Vertical straightness			±5μm/500mm						
Appearance			Colorless oxidation						
Maximum speed (m/s)	5	5	5	5	5	5	5	5	5
Max. acceleration (m/s²)	20	11	25	30	36	31	37	38	44
Workbench weight (kg)	1.5	1.8	2.6	3.7	5.5	4.4	6.5	5.7	8.1
Height (mm)	70		85	80/95					

Running Parallelism

Vertical straightness



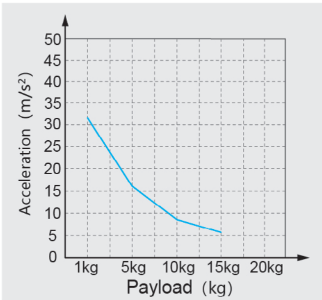
Horizontal straightness



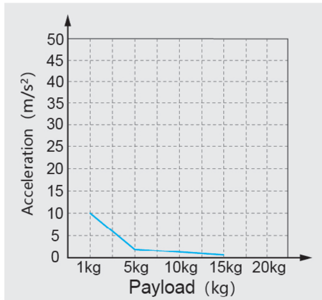
LMC

Selection auxiliary diagram(acceleration)

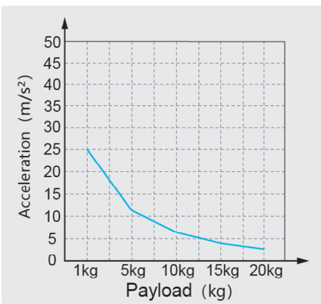
LMC100F1



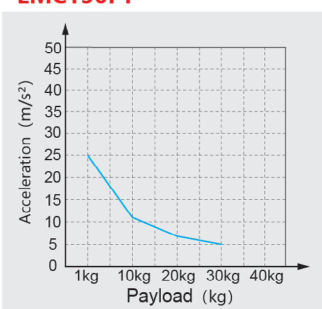
LMC100F2



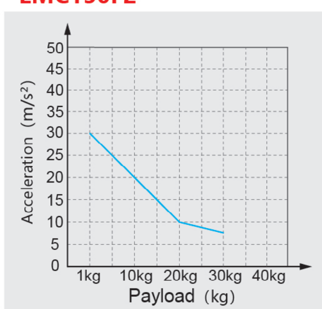
LMC135F1



LMC150F1



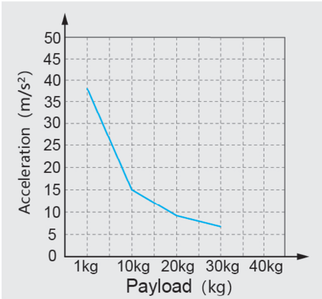
LMC150F2



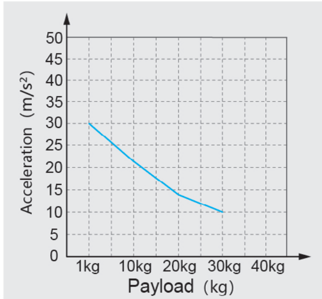
TEL +86 16653137076 E-mail info@cskmotions.com

Selection auxiliary diagram(acceleration)

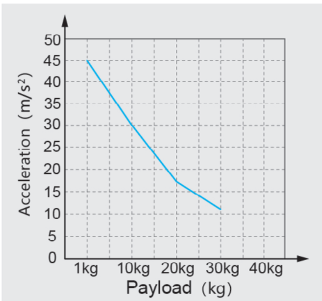
LMC180F1



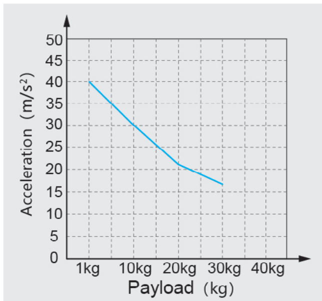
LMC180F2



LMC200F1

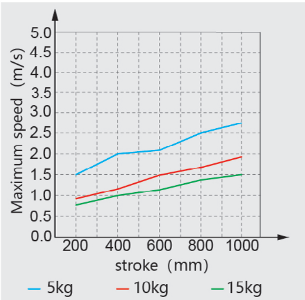


LMC200F2

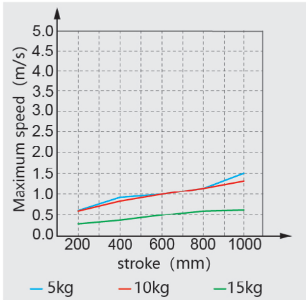


Selection auxiliary diagram (Maximum speed)

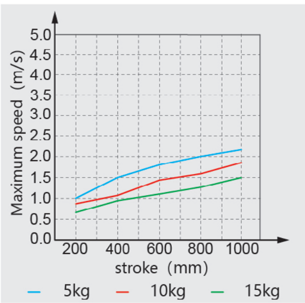
LMC100F1



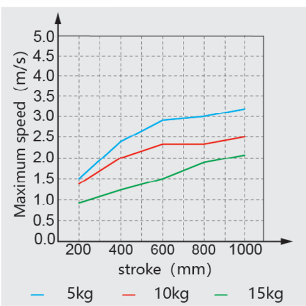
LMC100F2



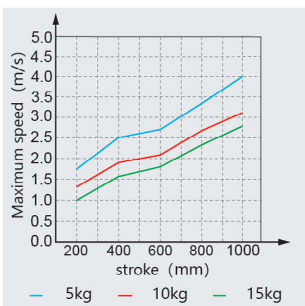
LMC135F1



LMC150F1



LMC150F2

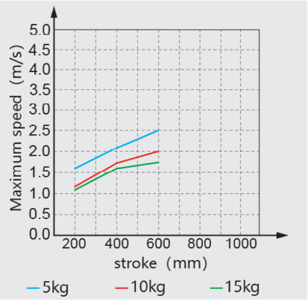


LMC

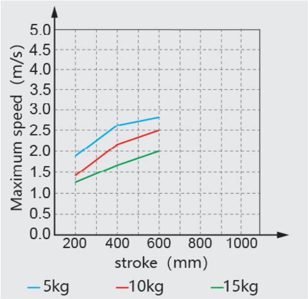
TEL +86 16653137076 E-mail info@cskmotions.com

Selection auxiliary diagram (Maximum speed)

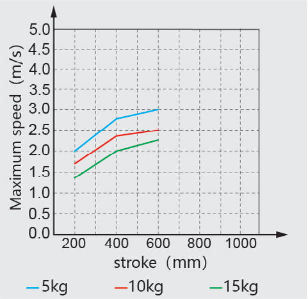
LMC180F1



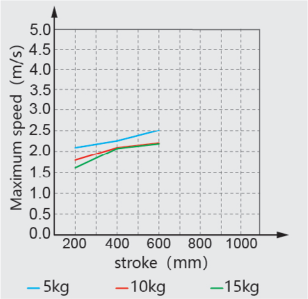
LMC180F2



LMC200F1

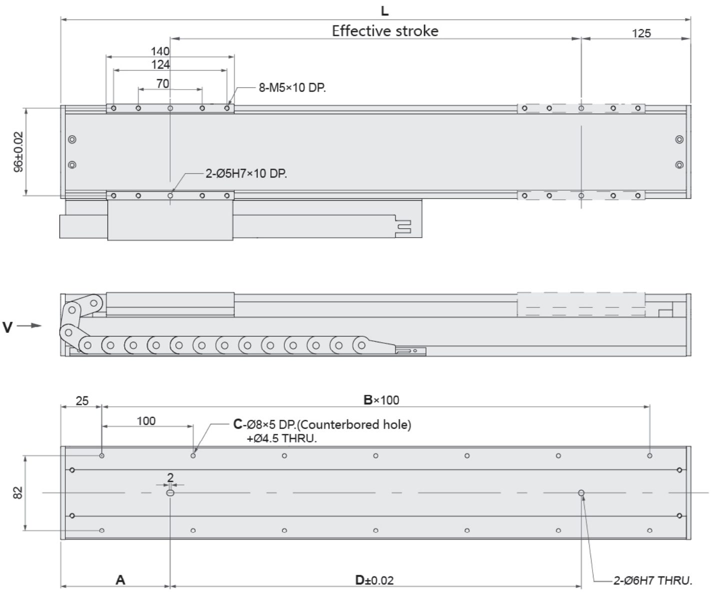


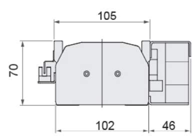
LMC200F2



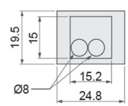
LMC

LMC100F1





View V



Cable carrier size

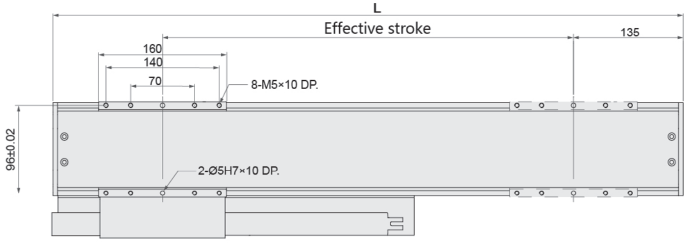
Note: The maximum diameter of the cable is 13 millimeter.

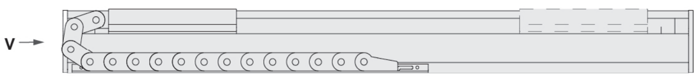
Unit (mm)

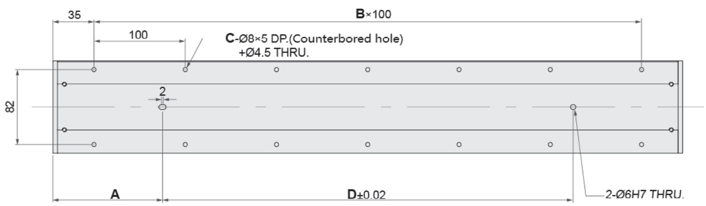
Effective stroke	100	200	300	400	500	600	700	800	900	1000
L	350	450	550	650	750	850	950	1050	1150	1250
A	125									
B	3	4	5	6	7	8	9	10	11	12
C	8	10	12	14	16	18	20	22	24	26
D	100	200	300	400	500	600	700	800	900	1000
Weight (kg)	4.7	5.4	6	6.7	7.3	8	8.7	9.3	10	10.6

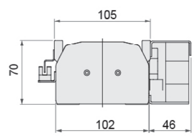
TEL +86 16653137076 E-mail info@cskmotions.com

LMC100F2

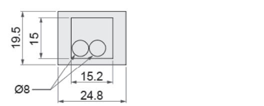








View V



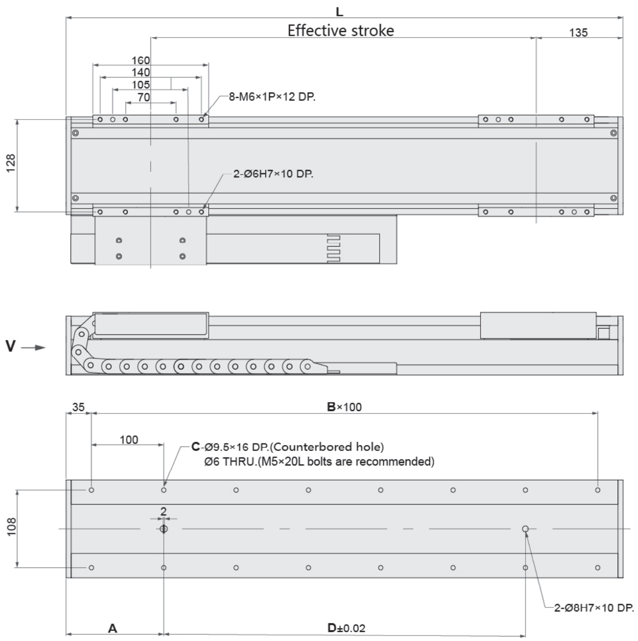
Cable carrier size

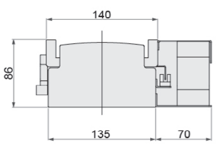
Note: The maximum diameter of the cable is 13 millimeter.

Unit (mm)

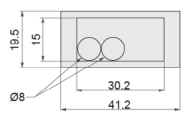
Effective stroke	100	200	300	400	500	600	700	800	900	1000
L	370	470	570	670	770	870	970	1070	1170	1270
A	135									
B	3	4	5	6	7	8	9	10	11	12
C	8	10	12	14	16	18	20	22	24	26
D	100	200	300	400	500	600	700	800	900	1000
Weight (kg)	5.6	6.3	7	7.6	8.3	9	9.7	10.3	11	11.7

LMC135





View V



Cable carrier size

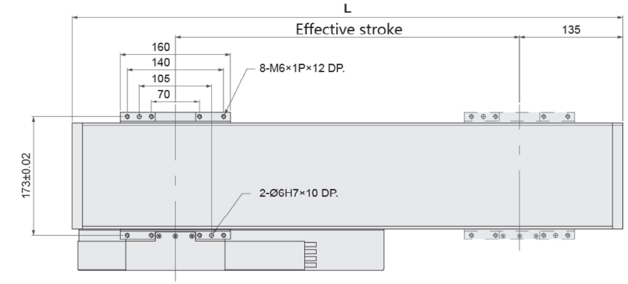
Note: The maximum diameter of the cable is 13 millimeter.

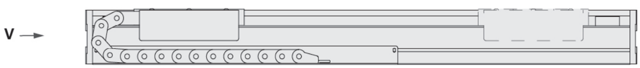
Unit (mm)

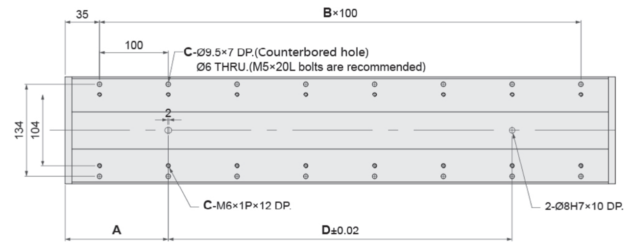
Effective stroke	200	300	400	500	600	700	800	1000	1200	1400	1600	1800	2000
L	470	570	670	770	870	970	1070	1270	1470	1670	1870	2070	2270
A	135								235	335	435	535	635
B	4	5	6	7	8	9	10	12	14	16	18	20	22
C	10	12	14	16	18	20	22	26	30	34	38	42	46
D	200	300	400	500	600	700	800	1000					
Weight (kg)	8.9	10.1	11.3	12.6	13.8	15.1	16.3	18.8	21.2	23.7	26.2	28.7	31.2

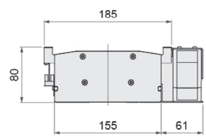
TEL +86 16653137076 **E-mail** info@cskmotions.com

LMC150F1

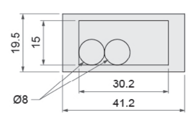








View V



Cable carrier size

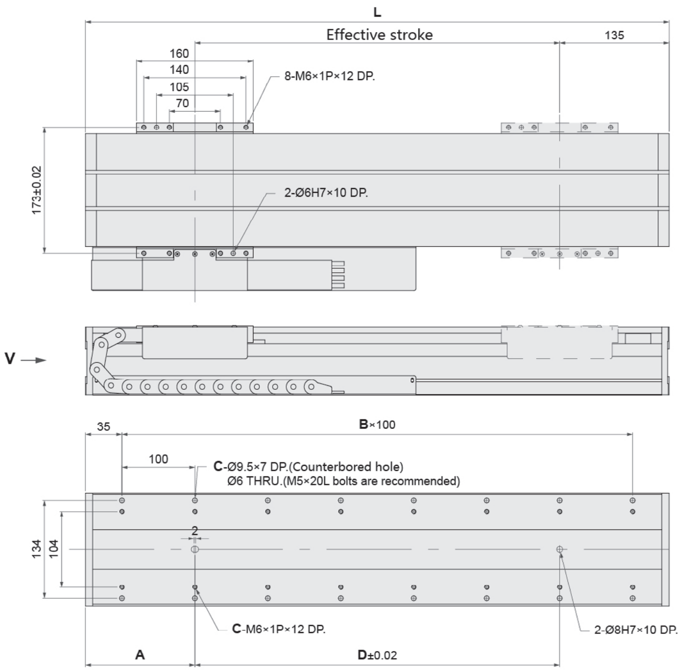
Note: The maximum diameter of the cable is 13 millimeter.

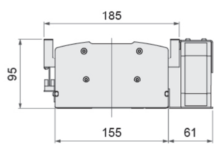
Unit (mm)

Effective stroke	200	300	400	500	600	700
L	470	570	670	770	870	970
A	135					
B	4	5	6	7	8	9
C	10	12	14	16	18	20
D	200	300	400	500	600	700
Weight (kg)	13.2	15	16.7	18.5	20.2	22

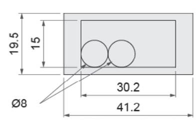
TEL +86 16653137076 **E-mail** info@cskmotions.com

LMCH150F1





View V



Cable carrier size

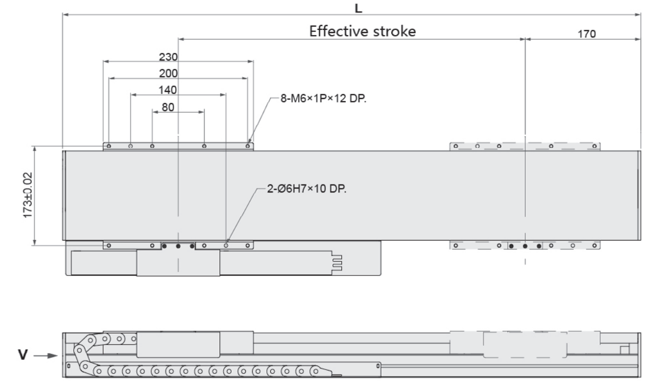
Note: The maximum diameter of the cable is 13 millimeter.

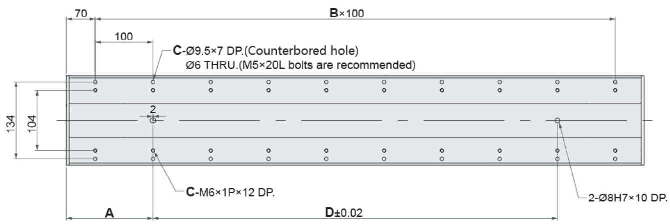
Unit (mm)

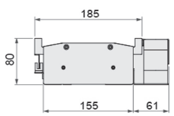
Effective stroke	200	300	400	500	600	700	800	1000	1200	1400	1600	1800	2000
L	470	570	670	770	870	970	1070	1270	1470	1670	1870	2070	2270
A	135								235	335	435	535	635
B	4	5	6	7	8	9	10	12	14	16	18	20	22
C	10	12	14	16	18	20	22	26	30	34	38	42	46
D	200	300	400	500	600	700	800	1000					
Weight (kg)	13.7	15.5	17.2	19	20.7	22.5	24.2	27.7	31.2	34.7	38.2	41.7	45.2

TEL +86 16653137076 **E-mail** info@cskmotions.com

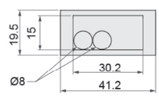
LMC150F2







View V



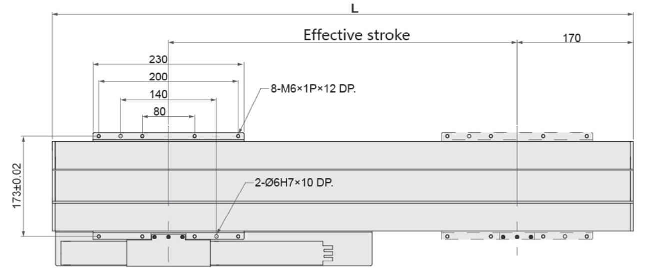
Cable carrier size

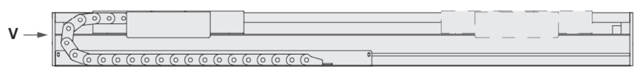
Note: The maximum diameter of the cable is 13 millimeter.

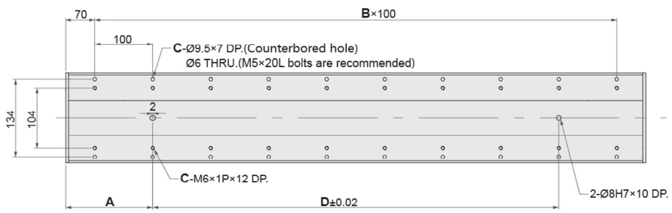
Unit (mm)

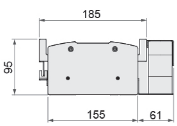
Effective stroke	200	300	400	500	600	700
L	540	640	740	840	940	1040
A	170					
B	4	5	6	7	8	9
C	10	12	14	16	18	20
D	200	300	400	500	600	700
Weight (kg)	15	16.8	18.5	20.3	22	23.8

LMCH150F2

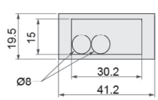








View V



Cable carrier size

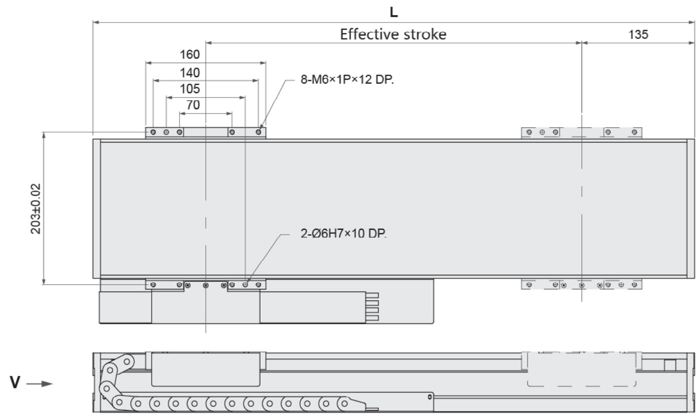
Note: The maximum diameter of the cable is 13 millimeter.

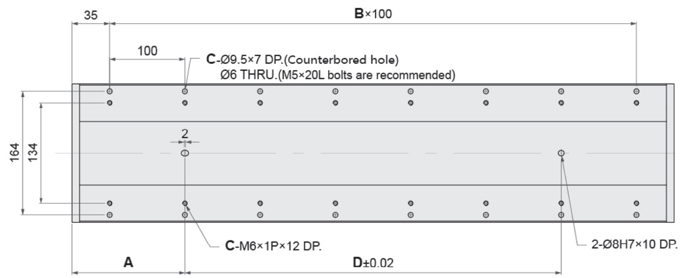
Unit (mm)

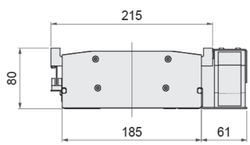
Effective stroke	200	300	400	500	600	700	800	1000	1200	1400	1600	1800	2000
L	540	640	740	840	940	1040	1140	1340	1540	1740	1940	2140	2340
A	170								270	370	470	570	670
B	4	5	6	7	8	9	10	12	14	16	18	20	22
C	10	12	14	16	18	20	22	26	30	34	38	42	46
D	200	300	400	500	600	700	800	1000					
Weight (kg)	15.6	17.4	19.1	20.9	22.6	24.4	26.1	29.6	33.1	36.6	40.1	43.6	47.1

TEL +86 16653137076 E-mail info@cskmotions.com

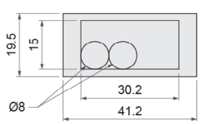
LMC180F1







View V



Cable carrier size

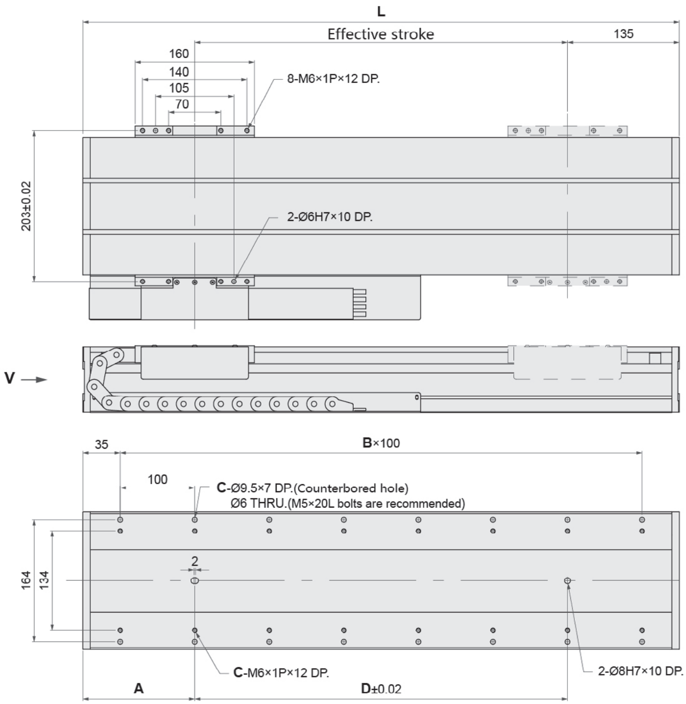
Note: The maximum diameter of the cable is 13 millimeter.

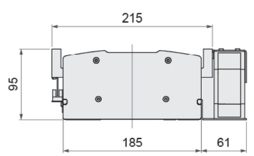
Unit (mm)

Effective stroke	200	300	400	500	600	700
L	470	570	670	770	870	970
A	135					
B	4	5	6	7	8	9
C	10	12	14	16	18	20
D	200	300	400	500	600	700
Weight (kg)	15.7	17.7	19.7	21.6	23.6	25.6

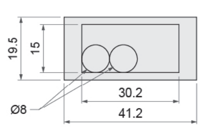
LMC

LMCH180F1





View V



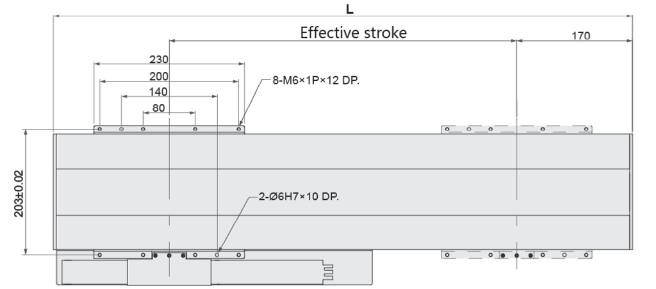
Cable carrier size Note: The maximum diameter of the cable is 13 millimeter.

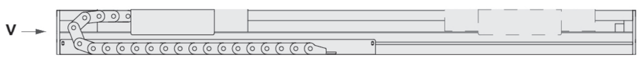
Unit (mm)

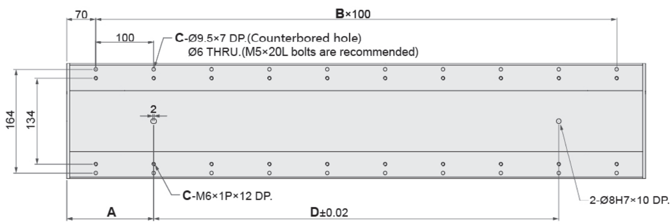
Effective stroke	200	300	400	500	600	700	800	1000	1200	1400	1600	1800	2000
L	470	570	670	770	870	970	1070	1270	1470	1670	1870	2070	2270
A	135								235	335	435	535	635
B	4	5	6	7	8	9	10	12	14	16	18	20	22
C	10	12	14	16	18	20	22	26	30	34	38	42	46
D	200	300	400	500	600	700	800	1000					
Weight (kg)	16.2	18.2	20.2	22.1	24.1	26.1	28.1	32	36	40	39.9	47.9	51.8

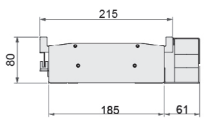
TEL +86 16653137076 **E-mail** info@cskmotions.com

LMC180F2

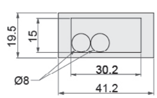








View V

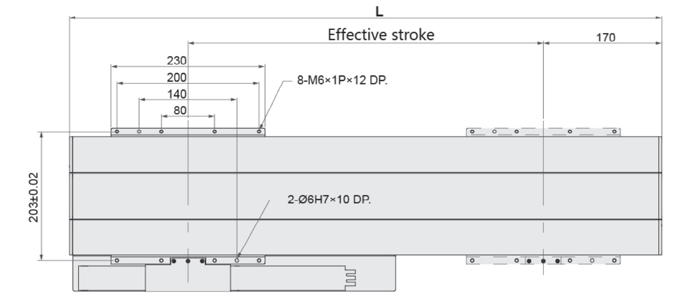


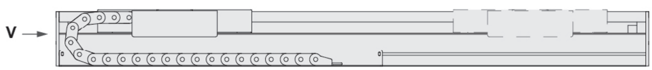
Cable carrier size Note: The maximum diameter of the cable is 13 millimeter.

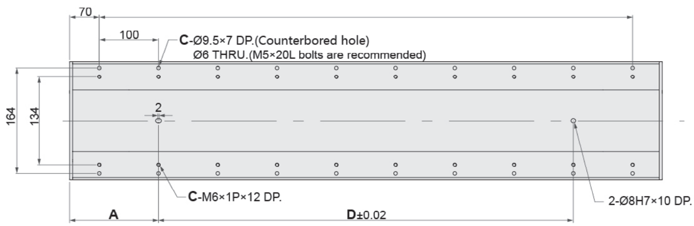
Unit (mm)

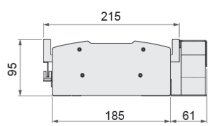
Effective stroke	200	300	400	500	600	700
L	540	640	740	840	940	1040
A	170					
B	4	5	6	7	8	9
C	10	12	14	16	18	20
D	200	300	400	500	600	700
Weight (kg)	17.8	19.8	21.8	23.7	25.7	27.7

LMCH180F2

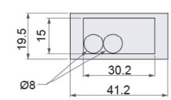








View V



Cable carrier size

Note: The maximum diameter of the cable is 13 millimeter.

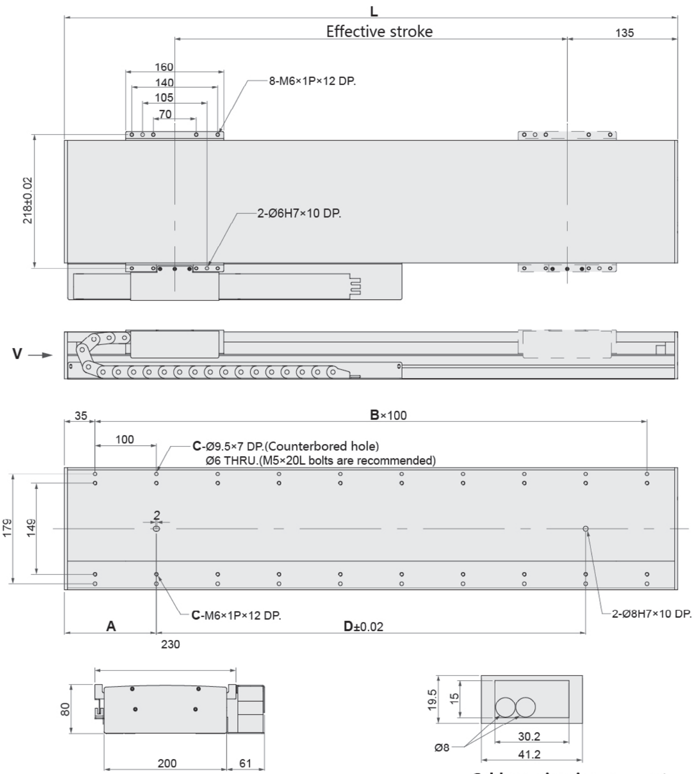
Unit (mm)

Effective stroke	200	300	400	500	600	700	800	1000	1200	1400	1600	1800	2000
L	540	640	740	840	940	1040	1140	1340	1540	1740	1940	2140	2340
A	170								270	370	470	570	670
B	4	5	6	7	8	9	10	12	14	16	18	20	22
C	10	12	14	16	18	20	22	26	30	34	38	42	46
D	200	300	400	500	600	700	800	1000					
Weight (kg)	18.5	20.5	22.5	24.4	26.4	28.4	30.4	34.3	38.3	42.3	46.2	50.2	54.1

TEL +86 16653137076 E-mail info@cskmotions.com

MELUCCI TECHNOLOGIES
CSK MOTION TECHNOLOGY

LMC200F1



View V

Cable carrier size

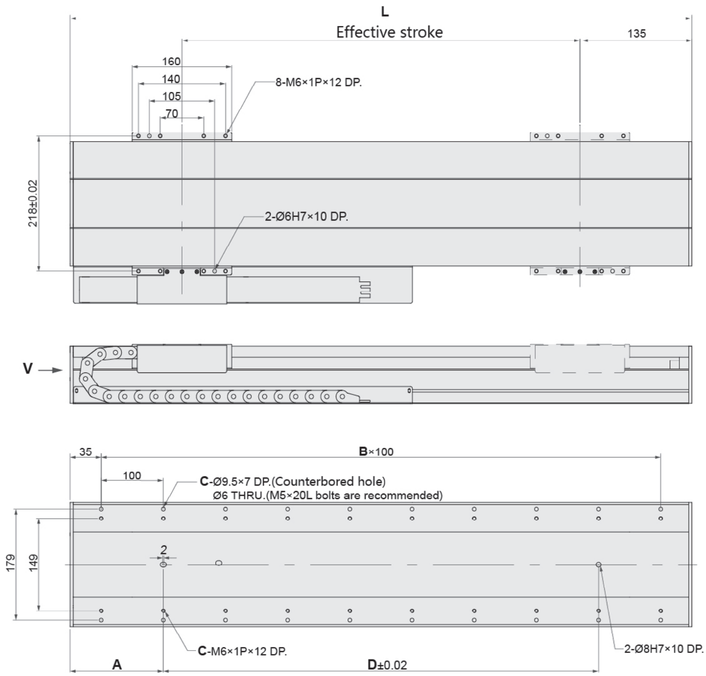
Note: The maximum diameter of the cable is 13 millimeter.

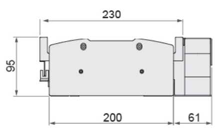
Unit (mm)

Effective stroke	200	300	400	500	600
L	470	570	670	770	870
A	135				
B	4	5	6	7	8
C	10	12	14	16	18
D	200	300	400	500	600
Weight (kg)	17.5	20.5	22.6	24.6	26.7

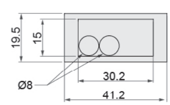
TEL +86 16653137076 E-mail info@cskmotions.com

LMCH200F1





View V



Cable carrier size

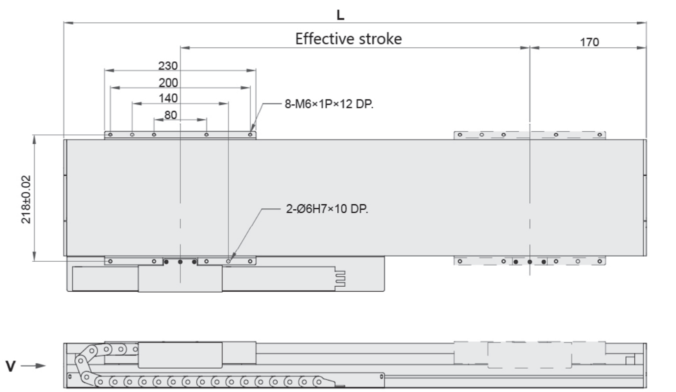
Note: The maximum diameter of the cable is 13 millimeter.

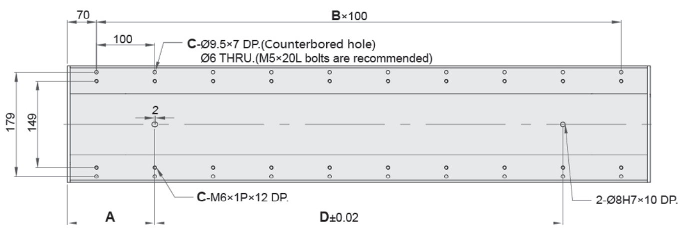
Unit (mm)

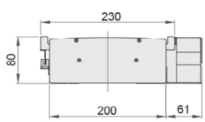
Effective stroke	200	300	400	500	600	700	800	1000	1200	1400	1600	1800	2000
L	470	570	670	770	870	970	1070	1270	1470	1670	1870	2070	2270
A	135								235	335	435	535	635
B	4	5	6	7	8	9	10	12	14	16	18	20	22
C	10	12	14	16	18	20	22	26	30	34	38	42	46
D	200	300	400	500	600	700	800	1000					
Weight (kg)	19.6	21.6	23.7	25.7	27.8	29.8	31.9	36	40.1	44.2	48.3	52.4	56.5

TEL +86 16653137076 E-mail info@cskmotions.com

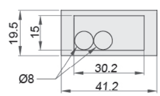
LMC200F2







View V



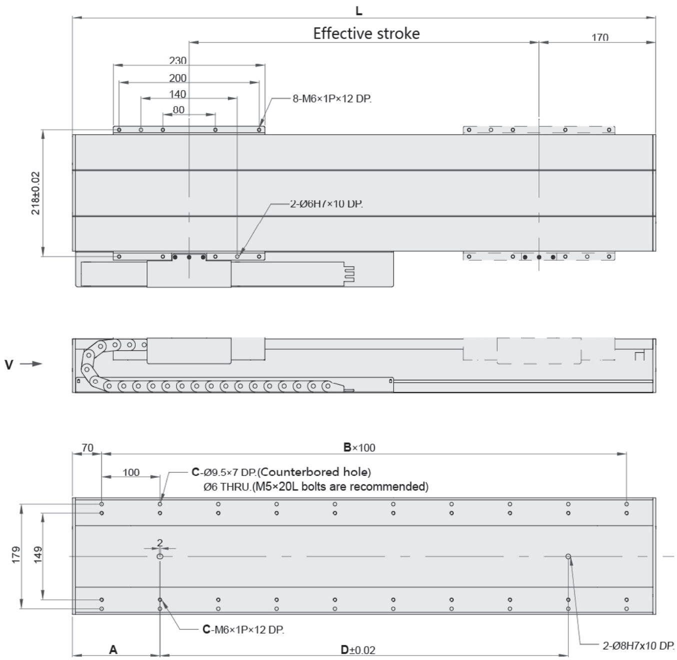
Cable carrier size

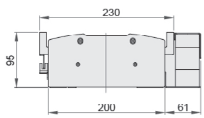
Note: The maximum diameter of the cable is 13 millimeter.

Unit (mm)

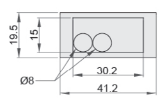
Effective stroke	200	300	400	500	600
L	540	640	740	840	940
A	170				
B	4	5	6	7	8
C	10	12	14	16	18
D	200	300	400	500	600
Weight (kg)	18.5	21.5	23.6	25.6	27.7

LMCH200F2





View V



Cable carrier size Note: The maximum diameter of the cable is 13 millimeter.

Unit (mm)

Effective stroke	200	300	400	500	600	700	800	1000	1200	1400	1600	1800	2000
L	540	640	740	840	940	1040	1140	1340	1540	1740	1940	2140	2340
A	170								270	370	470	570	670
B	4	5	6	7	8	9	10	12	14	16	18	20	22
C	10	12	14	16	18	20	22	26	30	34	38	42	46
D	200	300	400	500	600	700	800	1000					
Weight (kg)	21.8	23.8	25.9	27.9	30	32	34.1	38.2	42.3	46.4	50.5	54.6	58.7

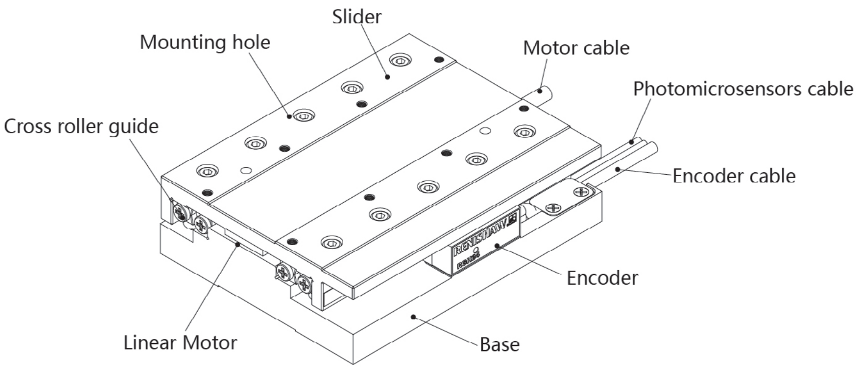
TEL +86 16653137076 E-mail info@cskmotions.com

Micro Linear Motor Module

LMD series

LMD

Construction



Note: For reference only.

Characteristics

The concept of LMD series is to design a direct drive micro module with extremely low cross-section height, small volume and high force by matching with high-resolution linear encoder and using high-precision roller guide rail, it realizes high-precision and extremely low dust emission, which can be used in clean room environment.

- High positioning accuracy
- High acceleration, high response
- Compact structure and space saving
- Excellent stability
- Multiple configurations available

Applications

Precision motion in measurement, metrology, photonics, semiconductor, display, etc.

TEL +86 16653137076 E-mail info@cskmotions.com

Specifications

LMD 100 - S60 P2 2K 3M

Series
LMD: Micro Linear Motor Module series

Size
100: The width of the module is 100mm
120: The width of the module is 118mm

Effective stroke
S60: Each slider effective stroke is 60mm

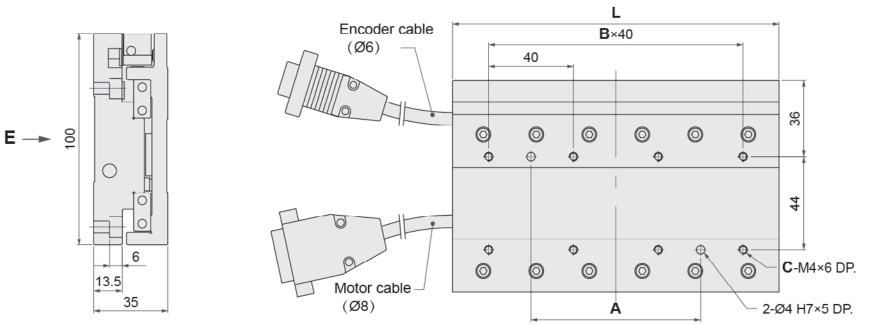
Resolution
P1: Magnetic encoders 1μm
P2: Optical encoders 1μm (Standard)
P3: Optical encoders 0.5μm
Note: For other requirements, please consult CSK.

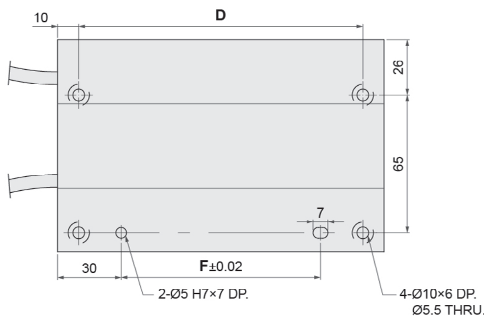
Limit switch
2K: 2 Photomicrosensors (Standard)
N : There is no limit switch
Note: For other requirements, please consult CSK.

Motor/encoder extension cable
3M: 3 meters (Standard), 5 meters, 10 meters

Special symbol
No symbol: Standard
Special: No symbol, A, B ... (For other requirements, please consult CSK)

Dimensions of LMD100





View E

Unit (mm)

Effective stroke	40	60	80
L	129	154	179
A	80	80	120
B	3	3	4
C	8	8	10
D	109	134	159
F	69	94	119
Weight (kg)	2.1	3.2	4.3

LMD

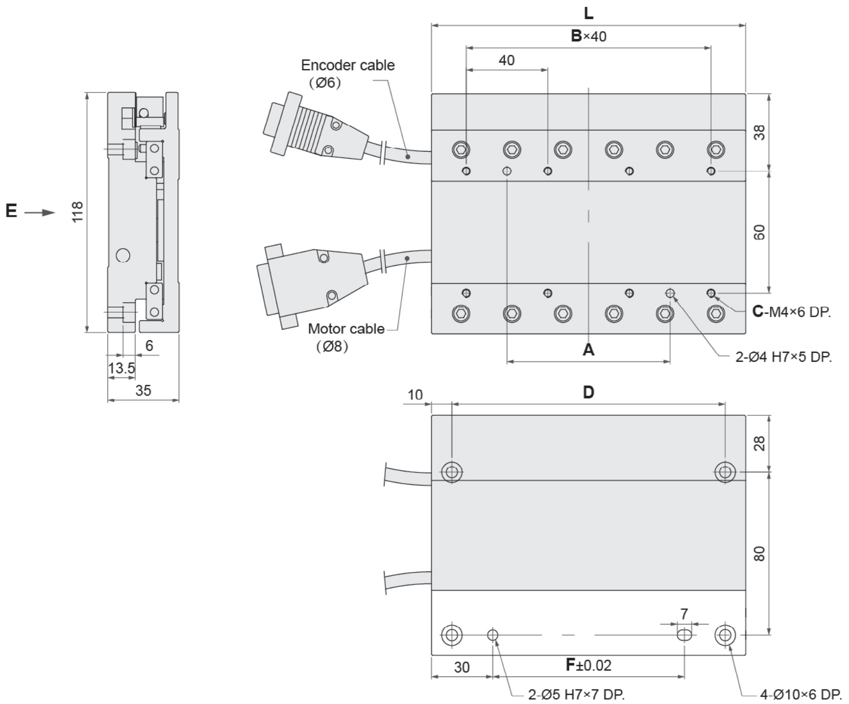
TEL +86 16653137076 E-mail info@cskmotions.com

Technical parameters

Model：LMD100			
Driving method	Iron core linear motor	**Limit switch**	Optional
Peak force（1s）（N）	75	**Peak current（A）**	4.5
Continuous force（@120℃）（N）	25	**Continuous current（A）**	1.5
Effective stroke（mm）	Optional	**Appearance**	Black
Payload（kg）	3	**Lubrication**	Lithium-based grease
Max.acceleration（no-load）(G)	3		
Encoder（Magnetic/Optical）	Optional		
Repeatability（μm）	±1		
Accuracy（μm）	±3（After the compensation）		

LMD

Dimensions of LMD120



View E

Unit (mm)

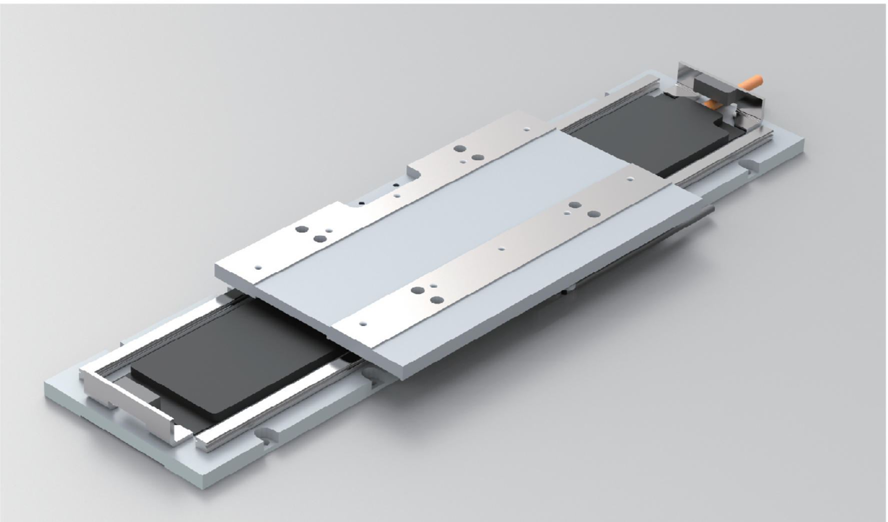
Effective stroke	40	60	80	100
L	129	154	179	204
A	80	80	120	120
B	3	3	4	4
C	8	8	10	10
D	109	134	159	184
F	69	94	119	144
Weight (kg)	2.2	3.3	4.4	5.5

TEL +86 16653137076 E-mail info@cskmotions.com

Technical parameters

Model: LMD120			
Driving method	Iron core linear motor	**Limit switch**	Optional
Peak force (1s) (N)	120	**Peak current (A)**	4.5
Continuous force (@120°C) (N)	40	**Continuous current (A)**	1.5
Effective stroke (mm)	Optional	**Appearance**	Black
Payload (kg)	5	**Lubrication**	Lithium-based grease
Max.acceleration (no-load) (G)	6		
Encoder (Magnetic/Optical)	Optional		
Repeatability (μm)	±1		
Accuracy (μm)	±3 (After the compensation)		

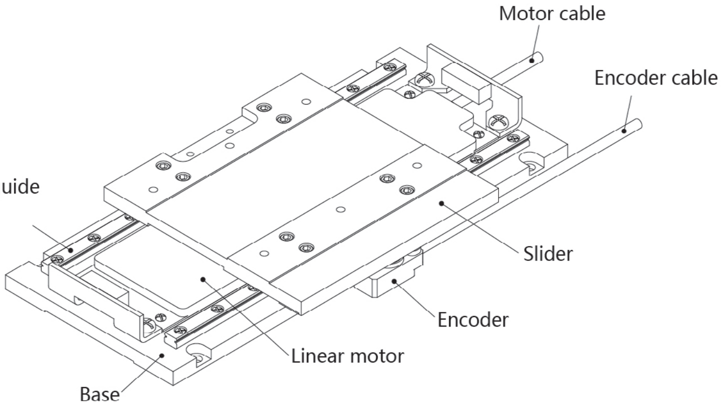
Miniature Linear Motor Module
LME series



LME

TEL +86 16653137076 **E-mail** info@cskmotions.com

Construction



Note：For reference only.

Characteristics

The LME series is designed with the concept of creating an ultra-low-profile ironless core direct-drive micro module. It achieves high speed, rapid response, minimal speed fluctuations, and precise positioning by combining it with a high-resolution linear encoder and utilizing micro linear guides.

- High Positioning Accuracy
- High Acceleration and Responsiveness
- Compact Strcture and Space-Saving
- Exellent Stability
- Low Speed Fluctuations

Applications

Precision scanning in metrology, photonics, semiconductor, display, etc.

Specifications

LME 80 - S60 3M

Series
LME: Miniature Ironless Linear Motor

Size
80: The width of the module is 80mm

Effective stroke
S60: Each slider effective stroke is 60mm
S120:

Motor/encoder extension cable
3M: 3 meters (Standard), 5 meters, 10 meters

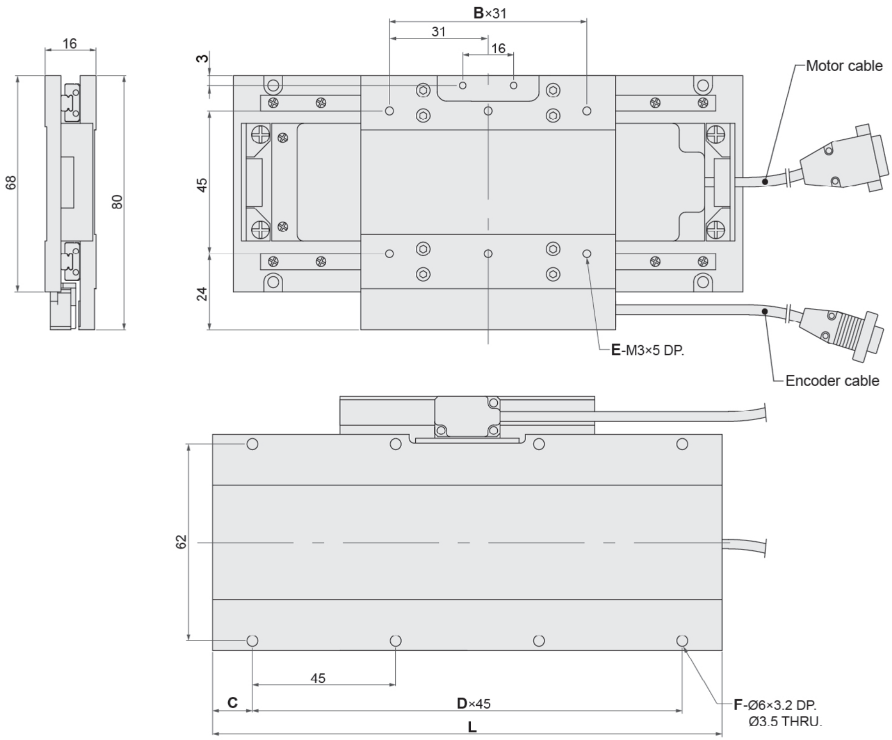
Special symbol
No symbol: Standard
Special: No symbol, A, B ... (For other requirements, please consult CSK)

Technical parameters

Model	LME80-S603M	LME80-S1203M
Specifications	Ironless Linear Motor	
Peak force (N)	36	72
Continuous force (@120°C) (N)	8	15
Max.acceleration (300Vno-load) (m/s)	1.3	0.8
Encoder	Optical	
Repeatability (μm)	±1	±1
Accuracy (μm)	±3	±3
Peak current (A)	1.52	1.52
Continuous current (A)	0.38	0.38
Base material	Electroless nickel plating	Electroless nickel plating
Lubrication	Lithium-based grease	Lithium-based grease

TEL +86 16653137076 E-mail info@cskmotions.com

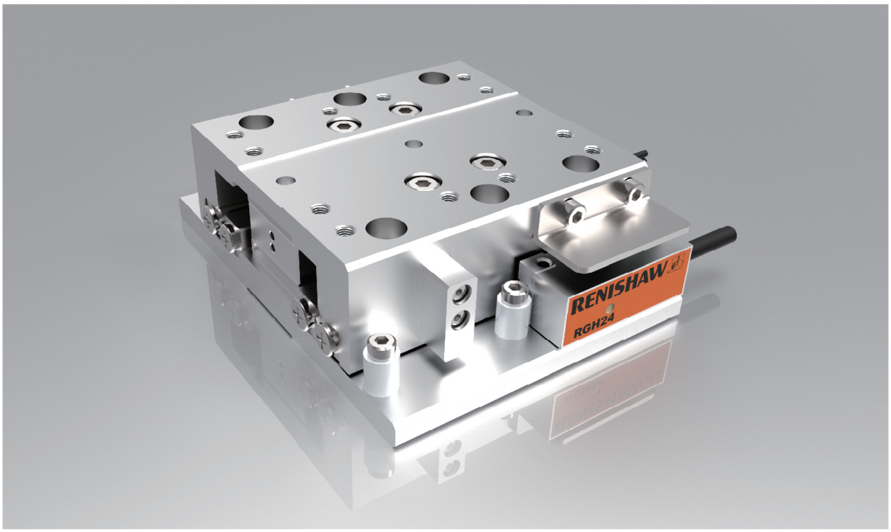
Dimensions of LME



Unit (mm)

Effective stroke	60	120
L	160	280
A	80	140
B	2	4
C	12.5	8
D	3	5
E	6	10
F	8	12
Weight (kg)	1.2	2.1

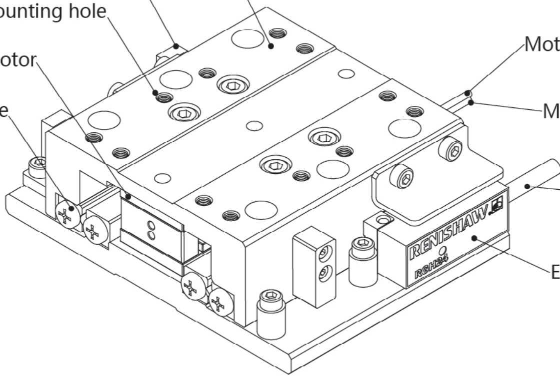
Voice Coil Motor Module
LMV series



LMV

TEL +86 16653137076 E-mail info@cskmotions.com

Construction



Note：For reference only.

Characteristics

LMV series voice coil motor module，reduces mechanical parts of the transmission system by means of direct drive technology. Cross roller guide is installed to achieve high motion accuracy and longer service life. Compact design is easy to modularize and integrate. According to the characteristics of voice coil motor, this module is more suitable for high frequency motion.

- High frequency motion
- High precision
- High response
- High rigidity
- Compact structure, low mass
- Micro-motion
- Customization

Applications

Precision scanning in metrology, photonics, semiconductor, display, etc.

TEL +86 16653137076 E-mail info@cskmotions.com

Specifications

LMV 100 S16 2K 3M

Series
LMV: Voice Coil Motor series

Size
100: The width of the module is 100mm
130

Effective stroke
S16: Each slider effective stroke is 16mm

Limit switch
2K: 2 Photomicrosensors (Standard)

Motor/encoder extension cable
3M: 3 meters (Standard) , 5 meters, 10 meters

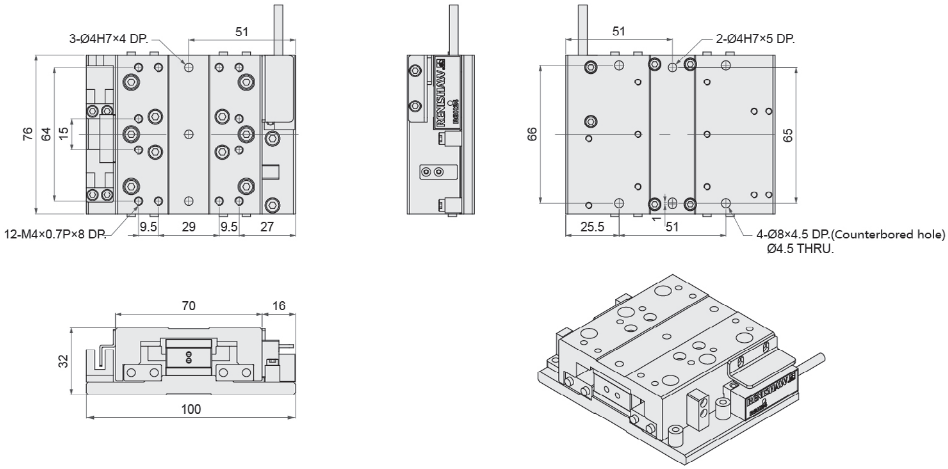
Special symbol
No symbol: Standard
Special: No symbol, A, B ... (For other requirements, please consult CSK)

Technical parameters

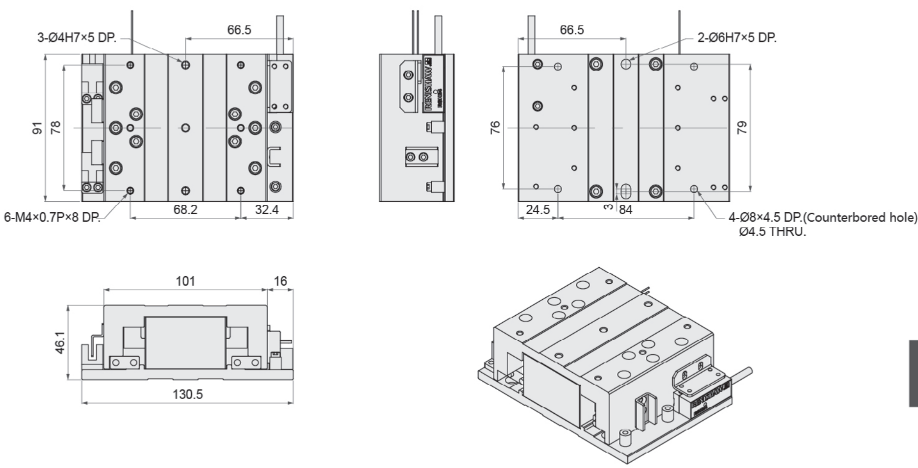
Model	Unit	LMV100S16	LMV130S16	Model	Unit	LMV100S16	LMV130S16
Specifications		DVB25C1	DVB50C1	**Motor constant**	N/SqRt (W)	1.24	6.48
Peak force (1s)	N	9	79	**Maximum payload**	Kg	0.5	5
Continuous force (@100°C)	N	3	26.3	**Module mass**	Kg	0.63	1.98
Peak current (rms) (1s)	A	4.2	8.6	**Maximum acceleration (no load)**	G	2	6.5
Continuous current (rms)	A	1.4	2.8	**Effective stroke**	mm	16	16
Force constant	N/A	2.14	9.39	**Bi-repetition accuracy**	μm	±1	±1
Back EMF constant	V/ (m/s)	2.54	9.4	**Encoder resolution**	μm	0.5	0.5
Resistance (@25°C)	Ohm	3	2.1	**Appearance**		Colorless oxidation	Colorless oxidation
Inductance (@1kHz)	mH	1.84	1.68	**Base material**		Aluminum alloy	Aluminum alloy
Voltage	V	24	24	**Lubrication**		Lithium-based grease	Lithium-based grease
Electrical time constant	ms	0.61	0.8				

TEL +86 16653137076 E-mail info@cskmotions.com

Dimensions of LMV100S16



Dimensions of LMV130S16



Precautions for use

1. Precautions before purchase
1.1 When purchasing, please check the scope of the use environment with our sales staff. Please do not use in the corrosive environment such as sulfur and sulphide gas, which may lead to line breakage or poor contact.
1.2 When selecting the model, please check the use requirements and motor parameters with our sales staff to ensure the scientific use.

2. Matters needing attention in operation
2.1 This product is manufactured as a precision mechanical part and is widely used in the mechanical industry. Technical personnel with professional knowledge and experience are required to operate it.
2.2 When operating, please be sure to use according to the operating specifications of the product.
2.3 In the application, if you have special requirements on the use environment of cable and motor installation, please contact our sales staff for confirmation to prevent accidents.
2.4 All terminals of the equipment are not allowed to be plugged and unplugged with live power to prevent damage to the motor and driver.
2.5 The ground wire of the motor must be grounded.
2.6 Do not place the control signal line and power line (main power line, motor power line, etc.)
of the equipment in the same line tube or wrap them into a bundle.
2.7 During motor operation, do not touch the moving parts of the motor.

3. Matters needing attention for follow-up maintenance
3.1 Precautions for storage equipment: temperature shall be controlled within -20℃ to +60℃.
Humidity: less than 85%, placed in a dust-free, clean, non-corrosive gas, no grinding fluid, no metal powder, no oil environment.
3.2 In the case of movement, wiring, maintenance and inspection, please cut off the power for more than 3 minutes before operating. Cut off the power for about 2~3 minutes, the power line still has voltage residue, do not touch the equipment carelessly.
3.3 Frequent power on or off will lead to deterioration of main circuit components. After power off, please wait for more than 1 minute to power on again. The frequency of power on and off is limited to less than 2 times every 3 minutes.
3.4 When in use, please lubricate and maintain the linear guide rail regularly.

TEL +86 16653137076 E-mail info@cskmotions.com

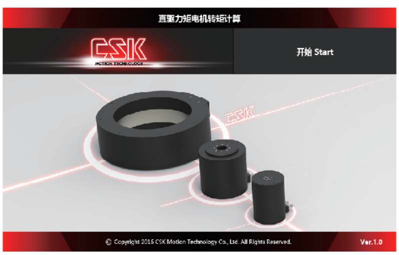
Theoretical Calculation Software

Precision Linear Guide Life Calculation Software

Applicable products: CSK LMG series linear guideway
In order to provide customers with scientific data reference, CSK specially produces this theoretical calculation software, which is convenient for users to select products and evaluate schemes.
The software is based on the theoretical calculation, and there is deviation between the calculation result and the actual value, which is only for reference.
The software copyright belongs to CSK Motion Technology Co., Ltd.
please consult CSK for more technical support.

Linear Motor Force Calculation Software

Applicable products: CSK Iron Core Linear Motor and Ironless Linear Motor
In order to provide customers with scientific data reference, CSK specially produces this theoretical calculation software, which is convenient for users to select products and evaluate schemes.
The software is based on the theoretical calculation, and there is deviation between the calculation result and the actual value, which is only for reference.
The software copyright belongs to CSK Motion Technology Co., Ltd.
please consult CSK for more technical support.



Direct Drive Torque Motor Torque Calculation Software

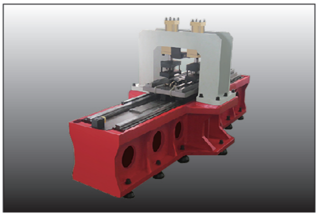
Applicable products: CSK Direct Drive Torque Motor
In order to provide customers with scientific data reference, CSK specially produces this theoretical calculation software, which is convenient for users to select products and evaluate schemes.
The software is based on the theoretical calculation, and there is deviation between the calculation result and the actual value, which is only for reference.
The software copyright belongs to CSK Motion Technology Co., Ltd.
please consult CSK for more technical support.

Notice：
CSK calculation software is a theoretical calculation software, which is only for reference. When using, please ask professional personnel to operate or operate under the guidance of professional personnel. If incorrect operation is used to output results, the consequences will be borne by the operator.

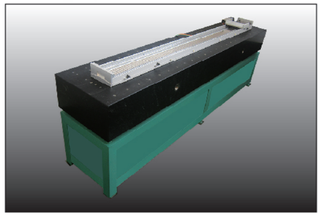
Product performance verification equipment

In CSK' s product development process, products are rigorously tested and strive to provide the best products to customers.

Guide life testing machine



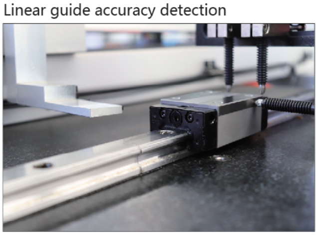
Guide high speed testing machine



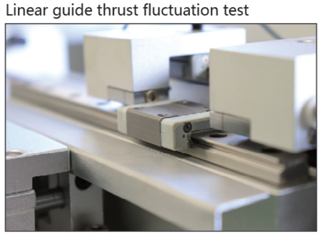
Guide dustproof testing machine

Salt spray testing machine

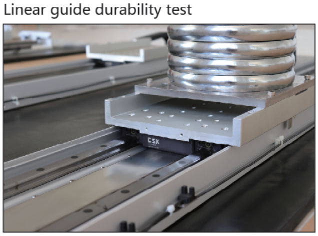
Linear guide accuracy detection



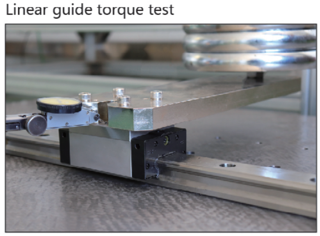
Linear guide thrust fluctuation test



Linear guide durability test



Linear guide torque test



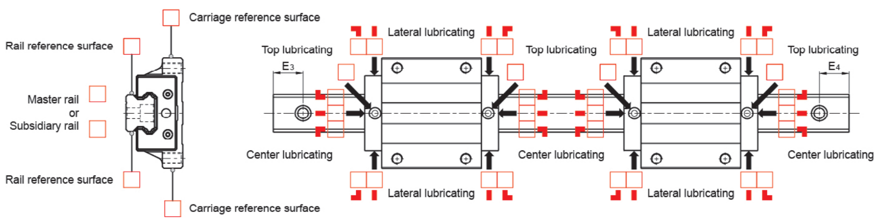
Linear Guideway Request Form

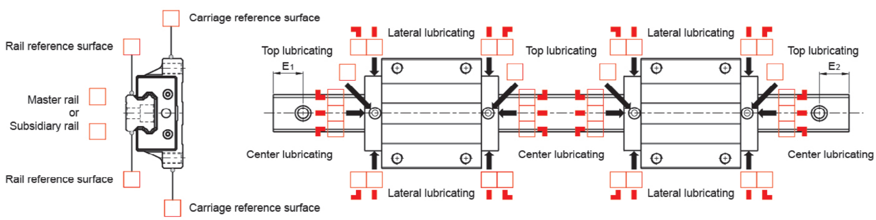
Date:

Customer Name:	Address:
TEL:	Model:
FAX:	Number:
Contact Person:	Application:

Installation Direction	☐ H type	☐ R type	or ☐ V type	☐ K type	☐ T type	☐ RV type	☐ Others
Carriage Type	☐ C ☐ LC ☐ H ☐ LH ☐ T ☐ ST						
Size	☐ 15 ☐ 20 ☐ 25 ☐ 30 ☐ 35 ☐ 45						
No. of Carriages	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ Others:						
Dust Protection	☐ 无 ☐ UU ☐ SS ☐ ZZ ☐ DD ☐ KK						
Preload Grade	☐ P0 ☐ P1 ☐ P2						
Rail Type	☐ Counter-bore (R Type) ☐ Tapped hole (T Type) ☐ Counter-bore (U Type)						
Rail Length & Pitch	L0: E1: E2: E3: E4:						
Accuracy Grade	☐ N ☐ H ☐ P ☐ SP ☐ UP						
Rail per Axis	☐ 1 ☐ 2 ☐ 3 ☐ Others:						
Lubrication Type	☐ Grease ☐ Oil						
Lubrication Fitting	☐ Grease nipple（Code: ） ☐ Oil piping joint（Code: ）						
Full Code of Spec.							
Required Quantity							

Reference surface, Lubricating location and direction





Note : Non-specified cases followed by CSK standards. For other special requirements, please contact us.

CSK MOTION TECHNOLOGY

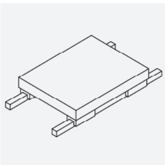
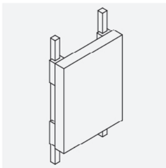
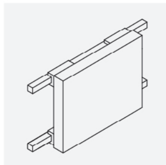
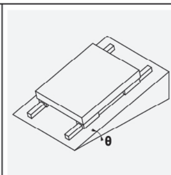
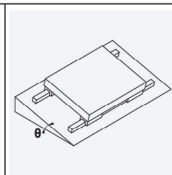
MELUCCI TECHNOLOGIES

Linear Guideway Selection Request Form

Date:

Customer Name:	Address:
TEL:	Model:
FAX:	Number:
Contact Person:	Application:

Installation:

				
☐ Horizontal mount	☐ Vertical mount	☐ Wall mount	☐ Front tilt mount	☐ Laterally tilt mount

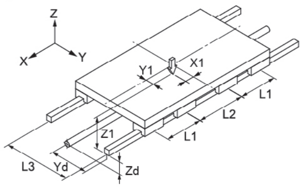
Note: please draw a schematic drawing for other requirements.

Parameters:

Preselection conditions			
Series		Preload	
Size		Accuracy grade	
Installation			
Speed conditions			
Max. speed	m/s	Stroke	mm
Acceleration time	sec	No. of reciprocations	1/min

Service conditions			
Driving original position		Carriage distance	
Yd	mm	L1	mm
Zd	mm	Middle distance	
Load	kg	L2	mm
Load position		Rail distance	
X1	mm	L3	mm
Y1	mm	Tilt angle	
Z1	mm	θ	°

Figure:



Schematic drawing:

Demand:

Note : Non-specified cases followed by CSK standards. For other special requirements, please contact us.

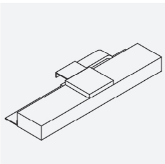
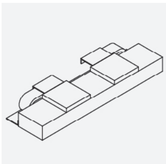
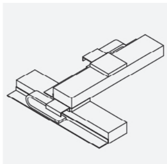
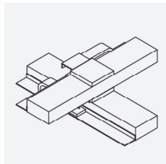
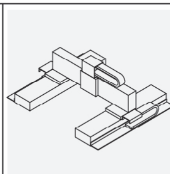
TEL +86 16653137076 E-mail info@cskmotions.com

Linear Motor Module/Stage Selection Request Form

Date:

Customer Name:	Address:
TEL:	Model:
FAX:	Number:
Contact Person:	Application:

Structure Type:

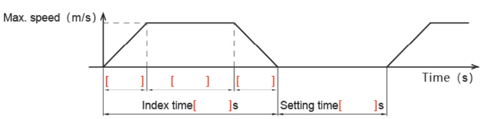
				
☐ S type	☐ D type	☐ C type	☐ L type	☐ G type

Note: please draw a schematic drawing for other requirements.

Parameters:

Single axis				**Schematic drawing:**
Stroke	mm	Load	kg	
Max. speed	m/s	Accuracy	±μm	
Acceleration	m/s^2	Repeatability	±μm	
X axis				
Stroke	mm	Load	kg	
Max. speed	m/s	Accuracy	±μm	
Acceleration	m/s^2	Repeatability	±μm	
Y axis				
Stroke	mm	Load	kg	
Max. speed	m/s	Accuracy	±μm	
Acceleration	m/s^2	Repeatability	±μm	

Cycle pattern



Installation

☐ Horizontal mount ☐ Wall mount

☐ Others [ ]

Dust Proof

Demand:

Note : Non-specified cases followed by CSK standards. For other special requirements, please contact us.

TEL +86 16653137076 **E-mail** info@cskmotions.com

CSK MOTION TECHNOLOGY

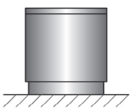
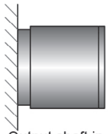
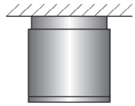
MELUCCI TECHNOLOGIES

Direct Drive Torque Motor Selection Request Form

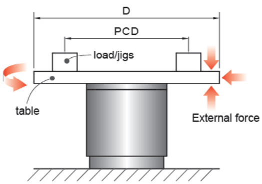
Date:

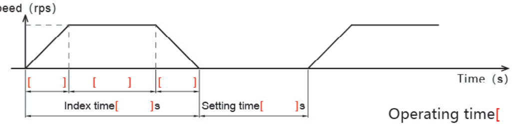
Customer Name:	Address:
TEL:	Model:
FAX:	Number:
Contact Person:	Application:

Installation:

☐ Horizontal mount	☐ Wall mount	☐ Inverted mount	☐ Others
 Output shaft in a vertical direction	 Output shaft in a transverse direction	 Output shaft in a downward direction	

Parameters:

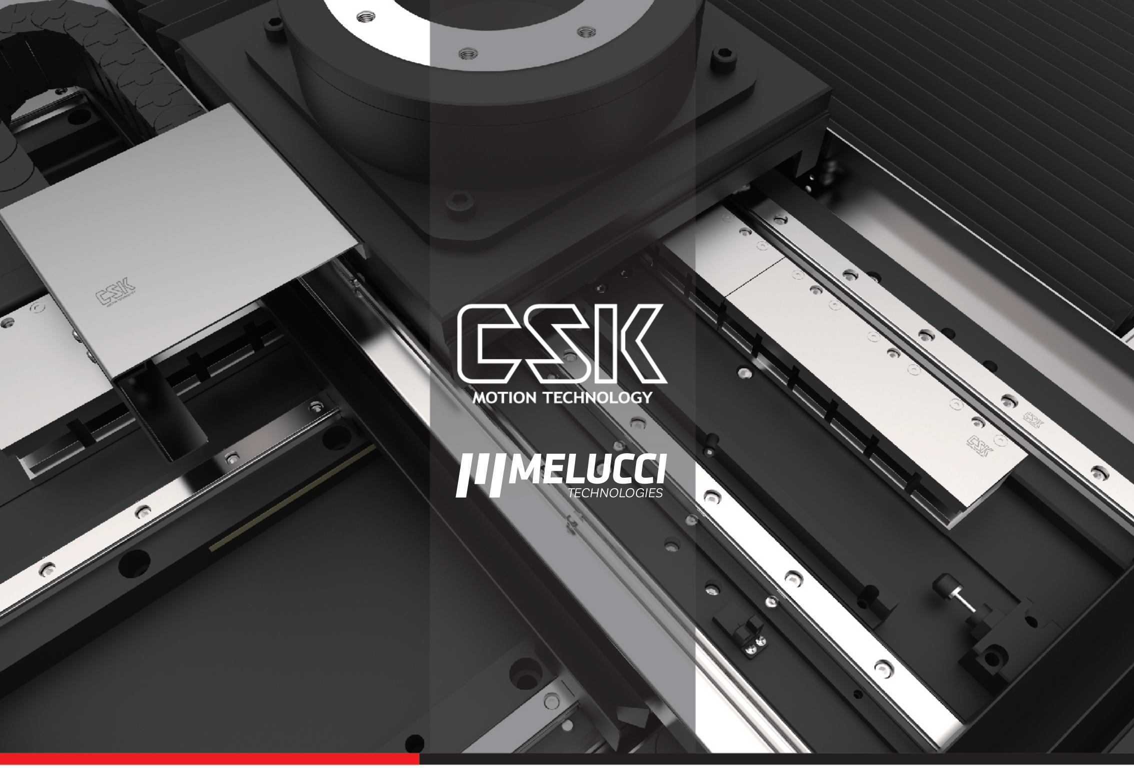
Load conditions		Figure	Schematic drawing
Shape of table			
Diameter of table(D)	mm		
Mass of table(m1)	kg		
Material of table			
Dimensions of load/jigs	mm		
Mass of load/jigs	kg		
Number of load/jigs	pcs		
PCD (distance between the load/jigs)	mm		

External force Way of external force	[ ]N / ☐ None ☐ At startup ☐ During rotating ☐ Rotational direction ☐ At settling (Clockwise is the direction of rotation)
Position of external force Direction of external force	
Positioning command system	☐ Internal program system ☐ Pulse train input operation ☐ CANopen ☐ EtherCAT ☐ PROFINET
Index angle/Number of points	Settle at[ ]°, Number of points[ ]
Repeatability(±)	±[ ]arc-sec (±[ ]mm at[ ]mm from the motor center)
Cycle pattern ●Index time ●Setting time	 Operating time[ ]hours/days
Environmental conditions	Operating environment ☐ Clean ☐ General environment (IP30) ☐ Chips and dust ☐ Oil, water, and chemical
Motor cable Length	Length: [ ]m

Demand:

Note : Non-specified cases followed by CSK standards. For other special requirements, please contact us.

TEL +86 16653137076 E-mail info@cskmotions.com



CSK CHINA

CSK Motions Technology Co, Ltd.

Industrial Zone, Madian Town, Jiaozhou, Qingdao, China

TEL +86 16653137076

E-mail info@cskmotions.com

www.cskmotions.com

Distributor

MELUCCI
TECHNOLOGIES

www.melucci.it
vendite@melucci.it
Tel. 0541 775768
Via Emilia 78-80 - 47921 Rimini (RN)