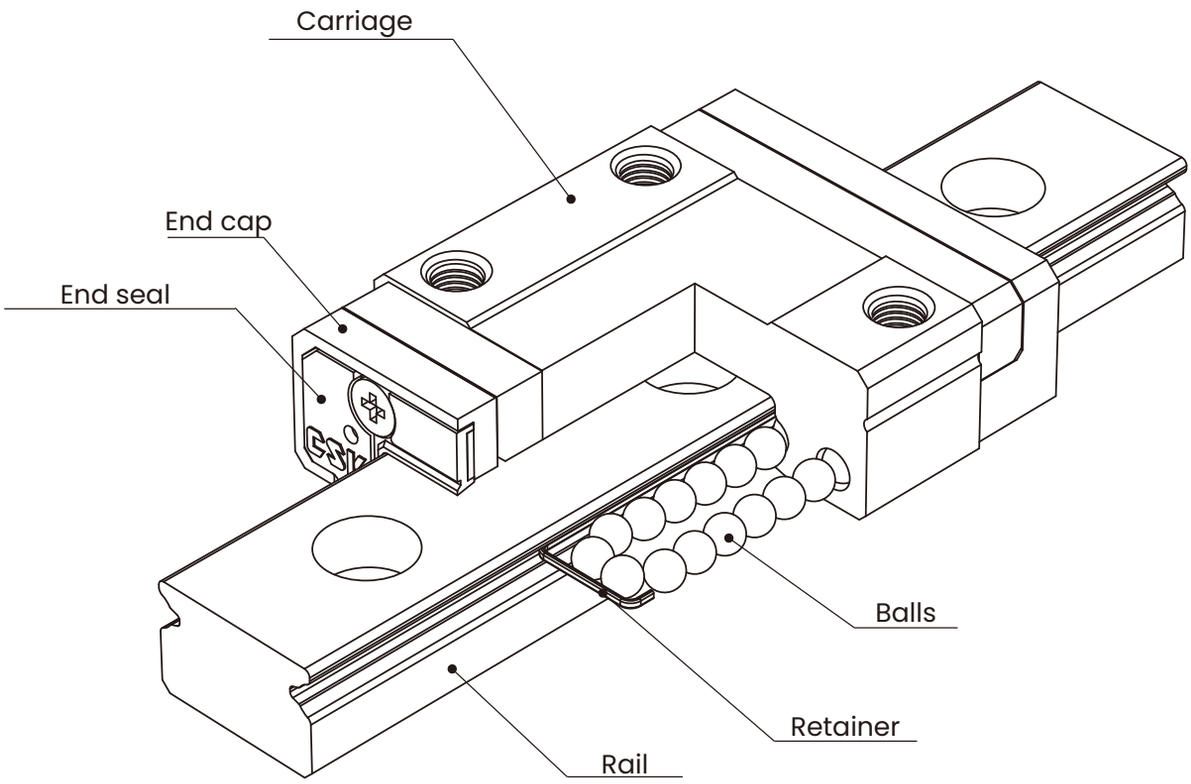
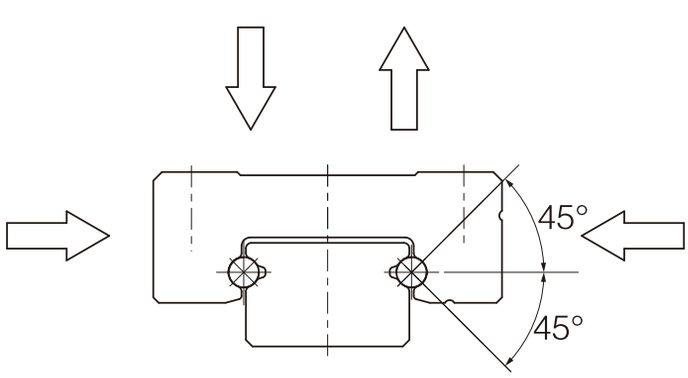
Miniature Linear Guide

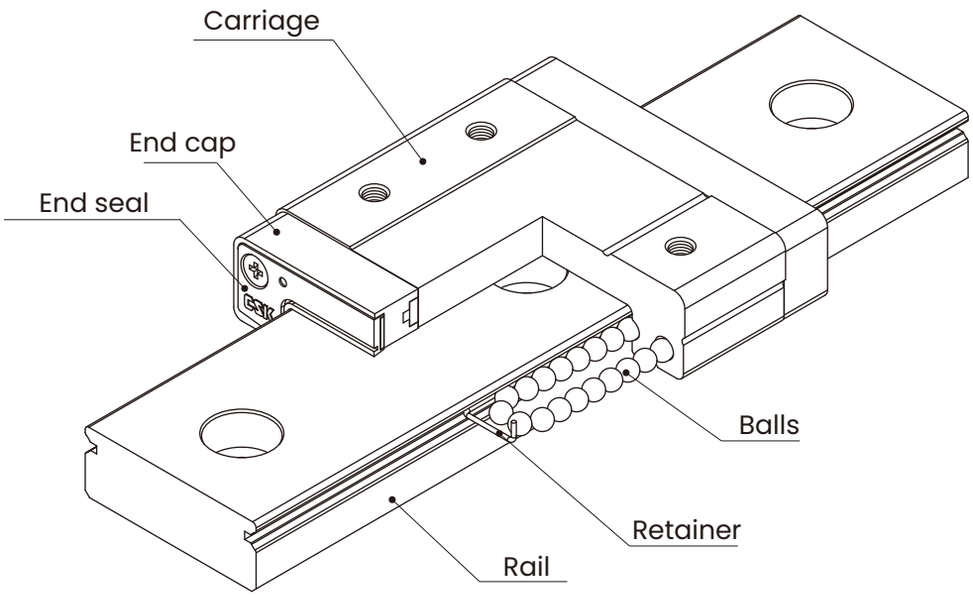
LMN/NW series



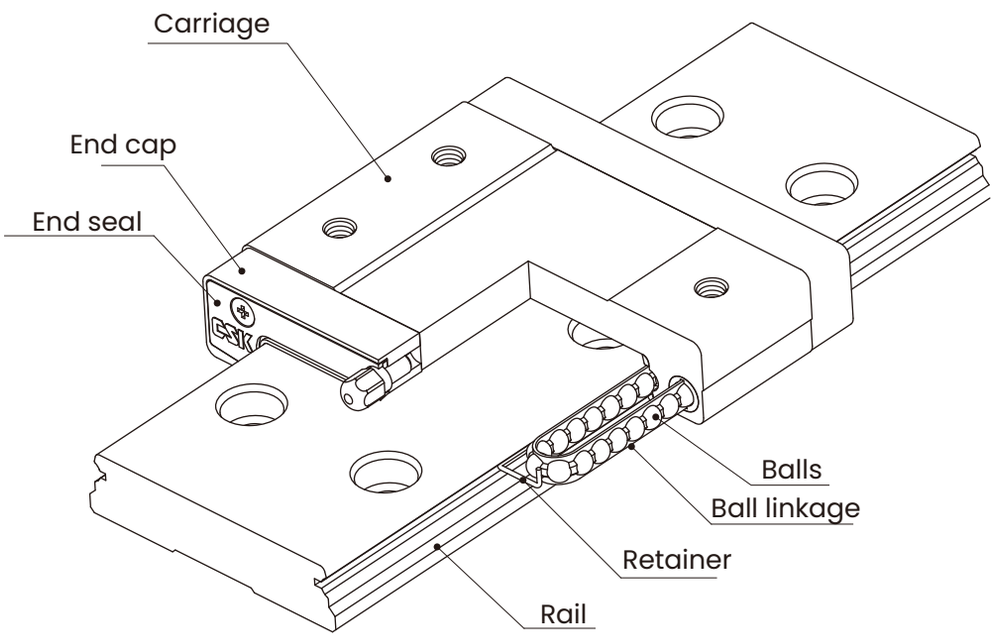
LMN5/7/9/12/15-T/LT



Note：For reference only.



LMNW7/9/12-T/LT



LMNW15-T/LT

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

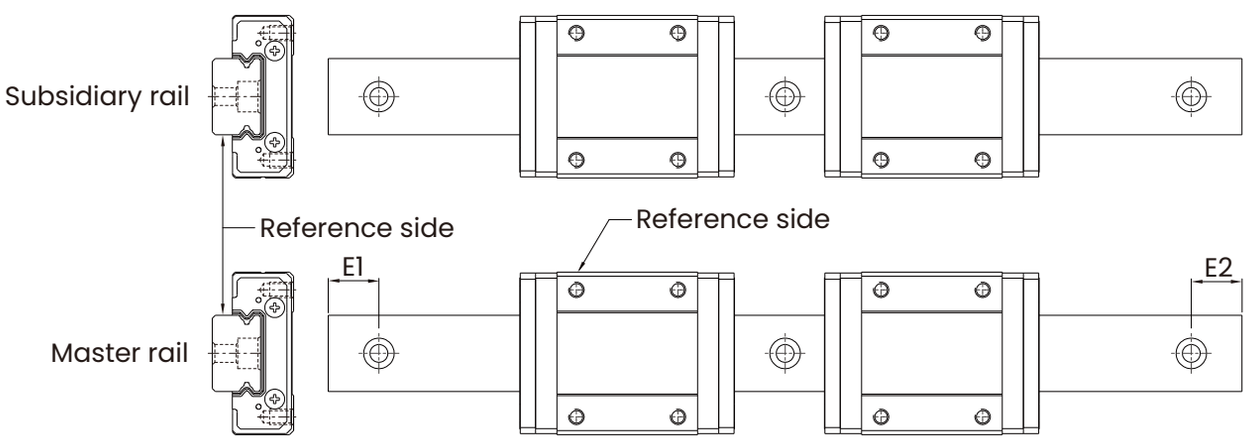
Semiconductor manufacturing devices, Industrial r obots, Medical equipment, Precision testing instruments, Office aut omation equipment, Other small linear mot ion devices.

Specifications

(1) Non-Interchangeable type

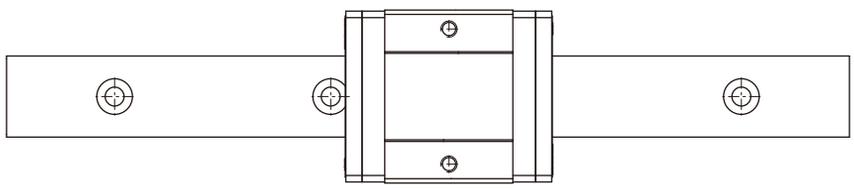
LMN 5 T 2 UU P0 M +R 100 -5 /5 N M II

Series：LMN/LMNW
Size：5，7，9，12，15
Carriage type
ST：Short Type
T：Standard Type
LT：Extended Type
Number of carriages per rail：1，2，3 ...
Dust protection option：UU
Preload：PC（Clearance），P0（Light preload），
P1（Medium preload）
Carriage Material：No symbol（carbon steel）
M（stainless steel）
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
Rail Material：No symbol（carbon steel），M（stainless steel）
Code of special rail：A，B ...（Standard rail is no symbol）
Number of rails per axis：No symbol，II，III，IV ...



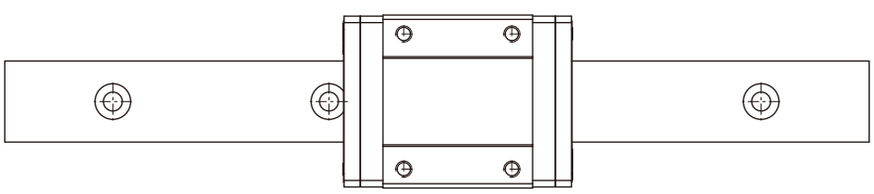
Specifications

Square compact type



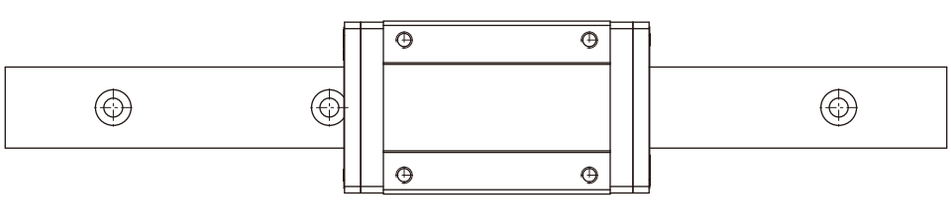
LMN/LMNW ··· ST

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
ST：Short Type
T：Standard Type
LT：Extended Type
Dust protection option：UU
Preload：P0（Light preload）
Accuracy grade：N，H
Material quality：No symbol（carbon steel），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

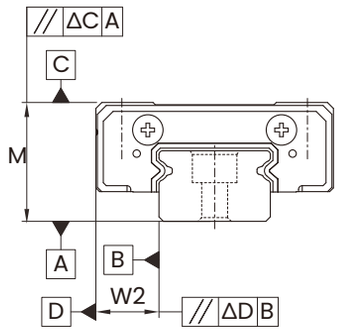
Series：LMN/LMNW
Size：5，7，9，12，15
Rail type：R
Rail length（mm）
Rail hole pitch from start side（E1, Refer to Figure C-04）
Rail hole pitch to the end side（E2, Refer to Figure C-04）
Accuracy grade：N，H
Material quality：No symbol（carbon steel），M（stainless steel）
Code of special rail：A，B…（Standard rail is no symbol）

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).

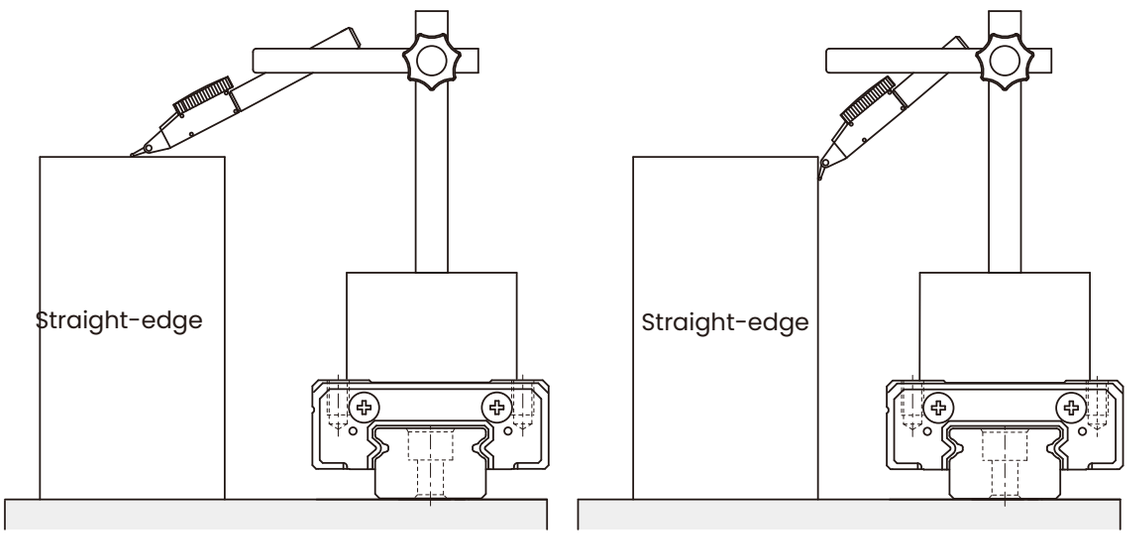


Unit (mm)

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.

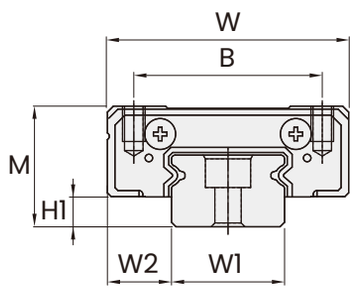


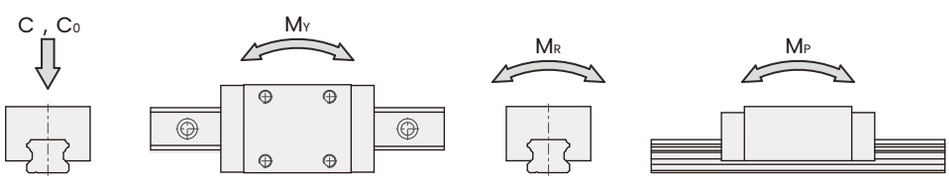
Measurement of running parallelism

Running Parallelism

Rail length (mm)		Running Parallelism Values (μm)		
Above (incl.)	Or less	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

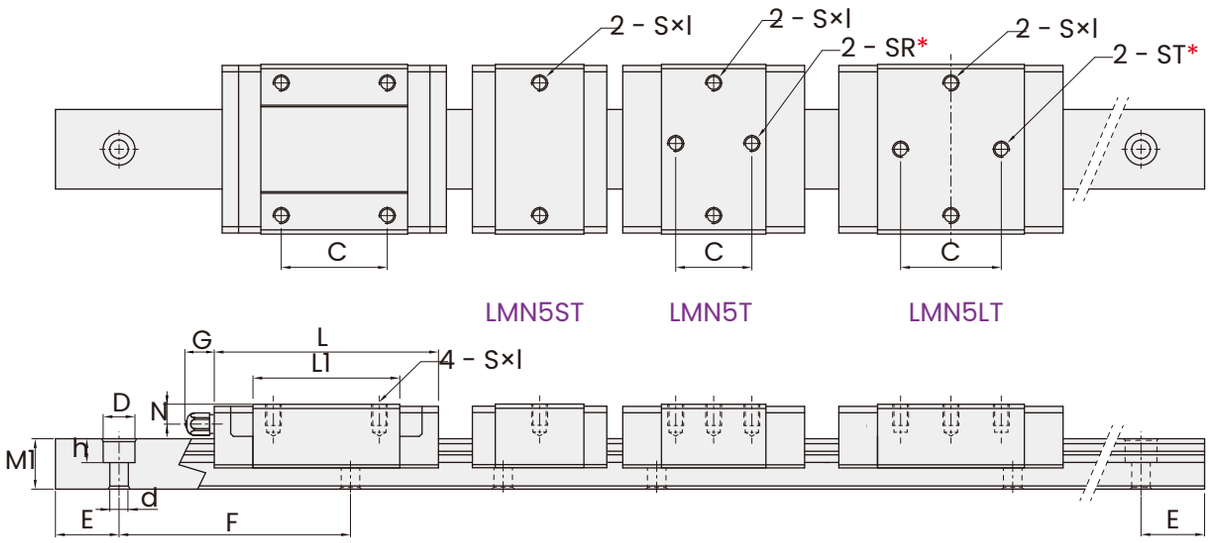




Unit (mm)

Model No.	External dimension			Carriage dimension						
	Height	Width	Length	B	C	Mounting hole S×l	L1	H1	G	N
	M	W	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

Dimensions of LMN···T / LT



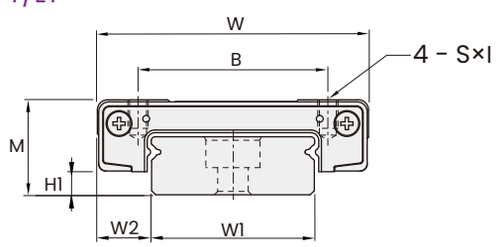
Unit (mm)

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	C0 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	7.5	4.2×2.3×2.4	1.21	1.62	3.5	3.5	6	10	21
LMN7 LT	**7**	5	4.7	15	7.5	**4.2×2.3×2.4**	1.56	**2.34**	7	7	8.6	13	21
LMN9 ST	9	5.5	5.5	20	15	6×3.5×3.5	1.21	1.62	3.5	3.5	6	10	21
LMN9 T	**9**	**5.5**	5.5	20	15	**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	15	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	20	**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	20	6×4.5×3.5	6.2	9.19	54.2	54.2	74.2	94	102

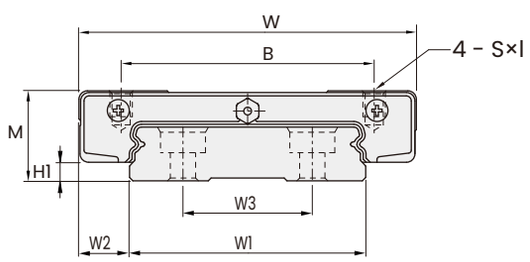
*ST : M2.6 THRU.
*Sr : M2.0 THRU.

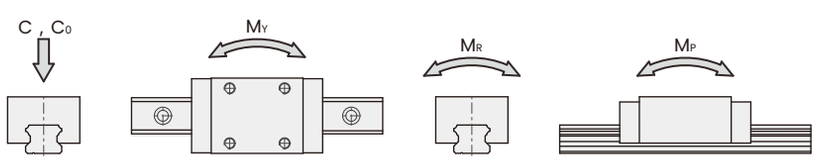
Dimensions of LMN···T / LT

LMNW7/9/12-T/LT



LMNW15T/LT



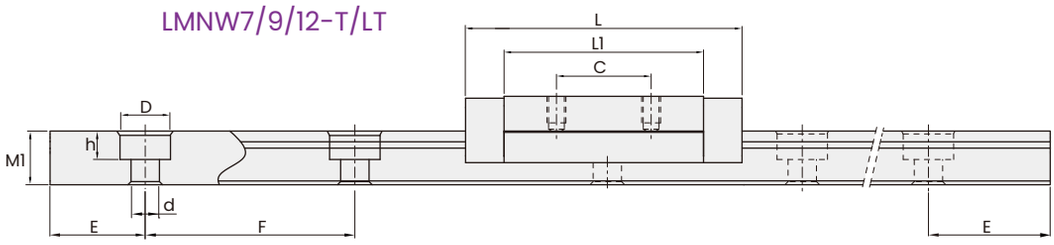


Unit (mm)

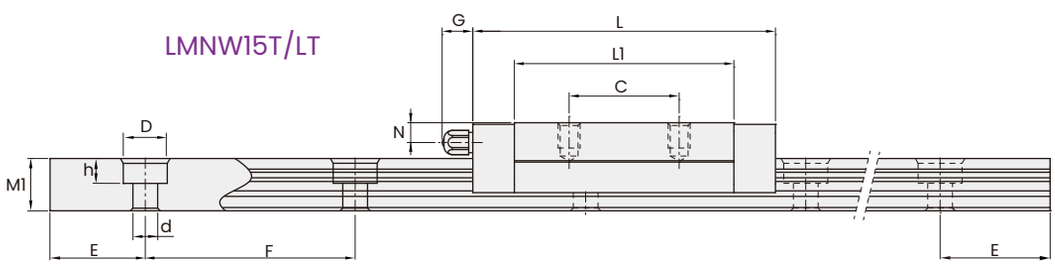
Model No.	External dimension			Carriage dimension						
	Height	Width	Length	B	C	Mounting hole S×l	L1	H1	G	N
	M	W	L							
LMNW7 T	9	25	31.2	19	10	M3×3	21.5	2	-	-
LMNW7 LT	9	25	40.8	19	19	M3×3	31.1	2	-	-
LMNW9 T	12	30	38.5	21	12	M3×3	27.4	3	-	-
LMNW9 LT	12	30	50.4	23	24	M3×3	39.3	3	-	-
LMNW12T	14	40	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

Dimensions of LMN···T / LT

LMNW7/9/12-T/LT



LMNW15T/LT



Unit (mm)

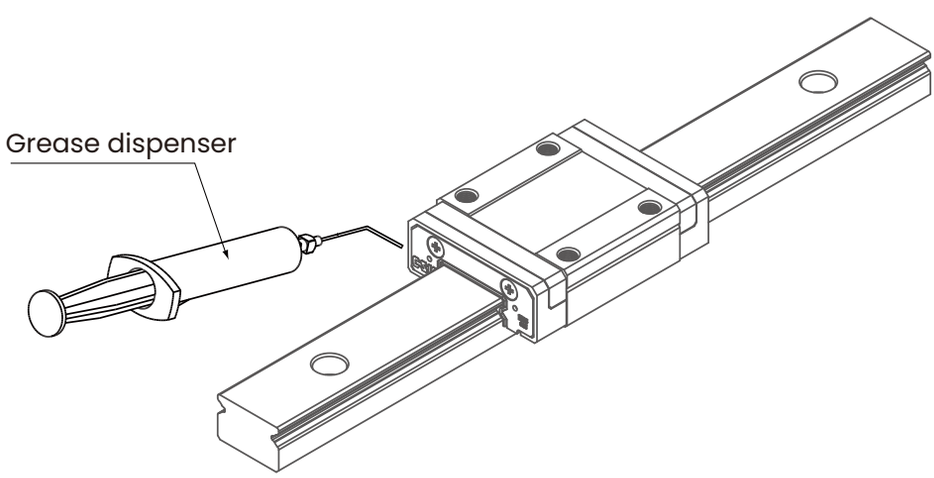
Model No.	Rail dimension							Basic load rating		Static moment rating			Weight	
	Width			Height	Pitch	End	Mounting bolt hole	Dynamic	Static	M_P N·m	M_Y N·m	M_R N·m	Carriage g	Rail g/100mm
	W1	W2	W3	M1	F	E	D×h×d	C KN	C0 KN					
LMNW7 T	14	5.5	-	5.2	30	10	6×3.2×3.5	1.61	2.3	6.9	6.9	15.4	20	51
LMNW7 LT	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	20	8×4.5×4.5	4.04	5.85	26.1	26.1	75.8	71	149
LMNW12 LT	24	8	-	8.5	40	20	8×4.5×4.5	5.27	8.55	53.9	53.9	110.8	103	149
LMNW15T	42	9	23	9.5	40	20	8×4.5×4.5	6.95	9.37	55.4	55.4	192.2	143	286
LMNW15 LT	42	9	23	9.5	40	20	8×4.5×4.5	9.15	13.7	120.3	120.3	293.5	215	286

Lubrication

Lubrication position

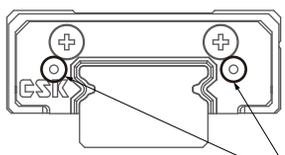
A high grade lithium soap based grease is applied to the CSK carriages prior to shipment for immediate use. Relubricate timely according to the use. A special syringe lubricant dispenser is available from CSK as an option.

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



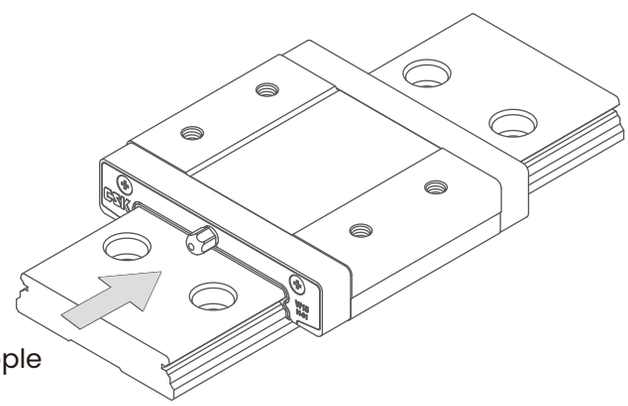
Lubrication

LMN12 LMNW9 LMNW12



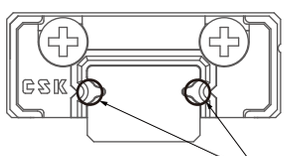
Grease injection into lubrication hole

LMN15 LMNW15



Grease nipple

LMN5 LMN7 LMN9 LMNW7



Grease injection into the ball groove

Characteristics

- Can be used simultaneously with lubricating grease
- Wide range of applicable environmental temperatures
- Effectively extends maintenance cycles and reduces maintenance costs
- Only a small amount of oil is required to achieve lubrication, making it environmentally friendly
- Designed for easy oil replenishment, resulting in low operating costs
- Comprehensively extends the service life of guide rails

Applications

Automation equipment
Electronic machinery
Industrial machinery
Other

Specifications

(1) Non-Interchangeable type

LMN9T2UUP0GR+R1000-10/10NII

Self-Lubricating Module：GR

(2) Interchangeable type

LMN9TUUP0GRN

Self-Lubricating Module：GR

Dimension parameters

Slider Total Length

Model No.	L
LMN7T	25.4
LMN7LT	31.7
LMN9ST	23.9
LMN9T	31.9
LMN9LT	43
LMN12T	36.4
LMN12LT	48.3
LMN15T	46.3
LMN15LT	59.8