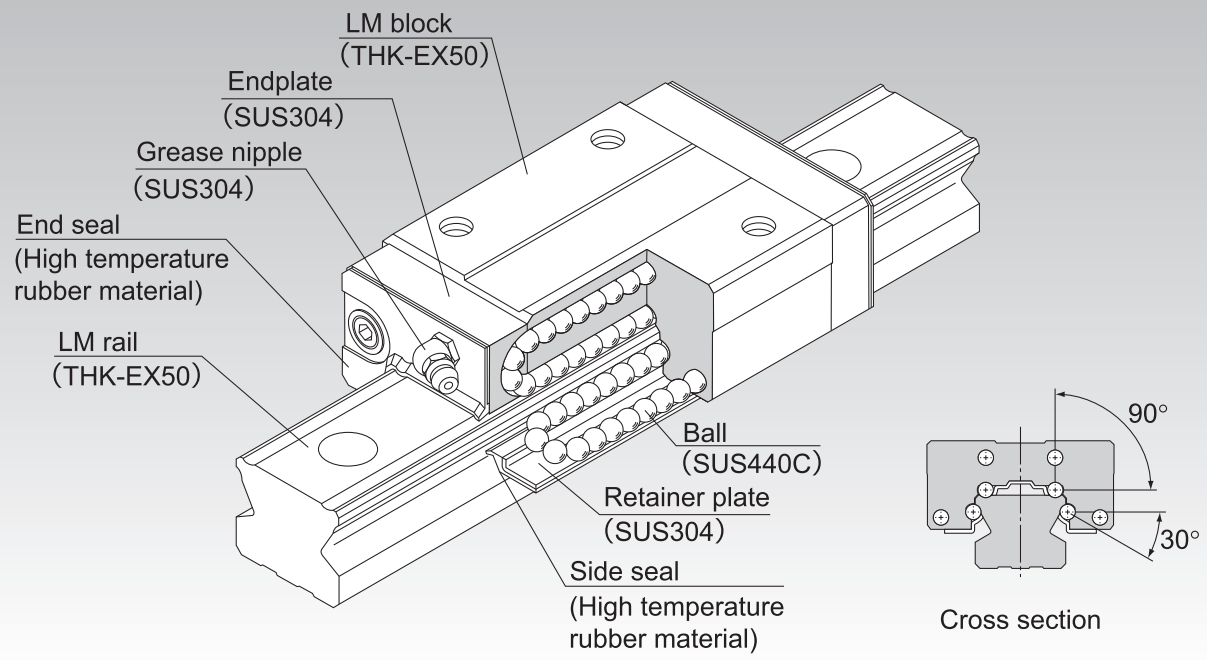
SR-M1

LM Guide High Temperature Type Model SR-M1



Structure and Features

Balls roll in four rows of raceways precision-ground on an LM rail and an LM block, and endplates incorporated in the LM block allow the balls to circulate.
Since it is a compactly designed model that has a low sectional height and a ball contact structure rigid in the radial direction, this model is optimal for horizontal guide units.
High temperature type LM Guide model SR-M1 is capable of being used at service temperature up to 150℃ thanks to THK's unique technologies in material, heat treatment and lubrication.

[Maximum Service Temperature: 150℃]
Use of stainless steel in the endplates and high temperature rubber in the end seals achieves the maximum service temperature of 150℃.

[Dimensional Stability]
Since it is dimensionally stabilized, it demonstrates superb dimensional stability after being heated or cooled (note that it shows linear expansion at high temperature).

[Highly Corrosion Resistant]
Since the LM block, LM rail and balls use stainless steel, which is highly corrosion resistant, this model is optimal for clean room applications.

[High Temperature Grease]
This model uses high temperature grease that shows little grease-based fluctuation in rolling resistance even if temperature changes from low to high levels.

Thermal Characteristics of LM Rail and LM Block Materials

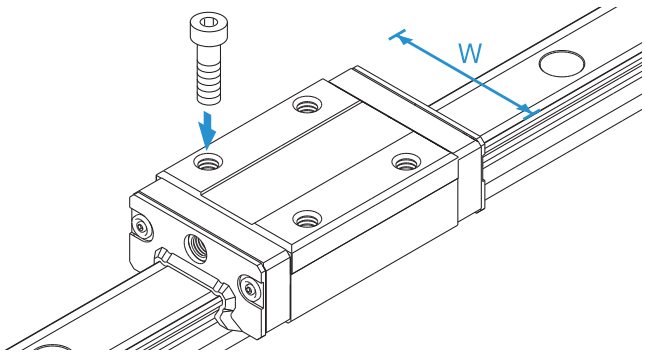
- Specific heat capacity: 0.481 J/(g•K)
- Thermal conductivity: 20.67 W/(m•K)
- Average coefficient of linear expansion: 11.8×10^{-6}/℃

Types and Features

Model SR-M1W

Specification Table⇒A1-374

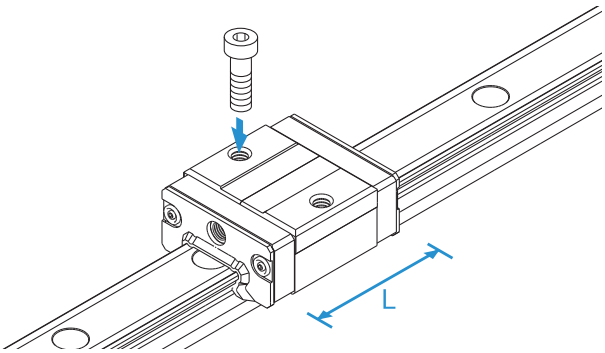
With this type, the LM block has a smaller width (W) and tapped holes.



Model SR-M1V

Specification Table⇒A1-374

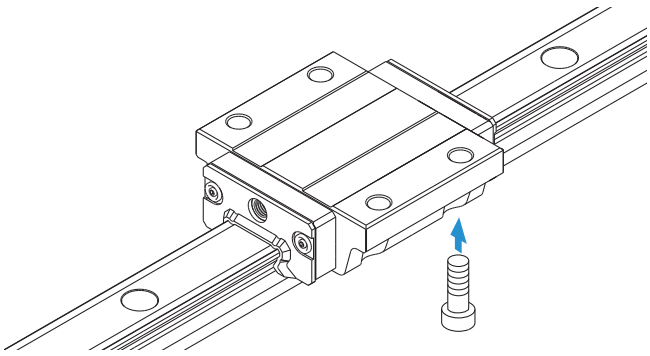
A space-saving type whose LM block has the same cross-sectional shape as model SR-M1W, but has a smaller overall LM block length (L).



Model SR-M1TB

Specification Table⇒A1-376

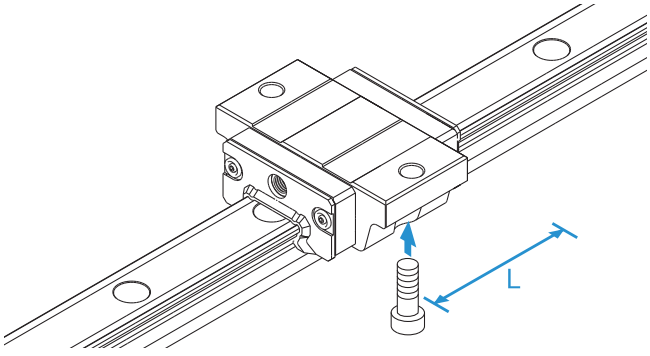
The LM block has the same height as model SR-M1W and can be mounted from the bottom.



Model SR- M1SB

Specification Table⇒A1-376

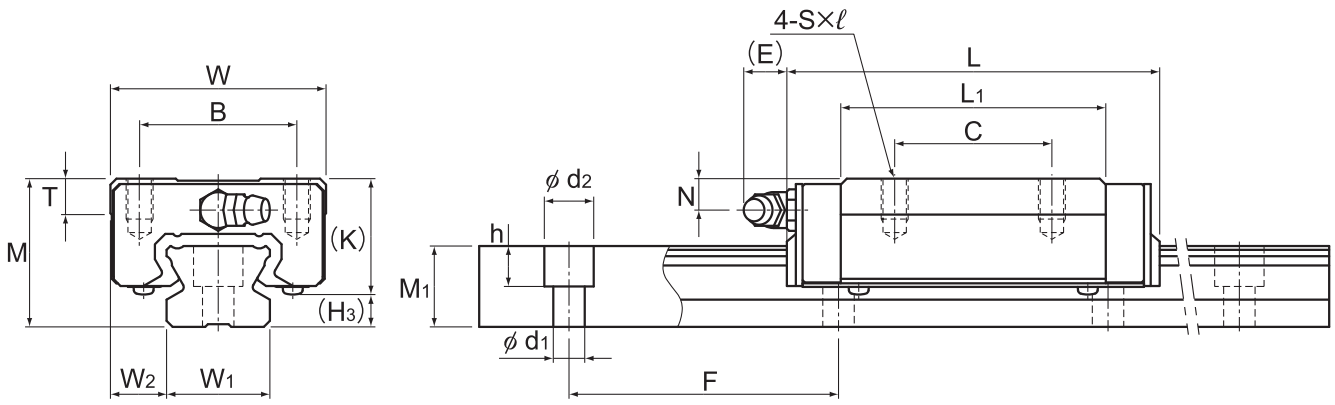
A space-saving type whose LM block has the same sectional shape as model SR-M1TB, but has a smaller overall LM block length (L).



Service Life

When using this product in temperatures higher than 100°C, always multiply the basic dynamic load rating by the temperature coefficient when calculating the rated service life. See A1-66 for details.

Models SR-M1W and SR-M1V



Model SR-M1W

Model No.	Outer dimensions			LM block dimensions									Grease nipple	H_3
	Height M	Width W	Length L	B	C	S×ℓ	L_1	T	K	N	E			
SR 15M1V SR 15M1W	24	34	40.4 57	26	— 26	M4×7	22.9 39.5	6	19.5	6	5.5	PB1021B	4.5
SR 20M1V SR 20M1W	28	42	47.3 66.2	32	— 32	M5×8	27.8 46.7	7.5	22	6	12	B-M6F	6
SR 25M1V SR 25M1W	33	48	59.2 83	35	— 35	M6×9	35.2 59	8	26	7	12	B-M6F	7
SR 30M1V SR 30M1W	42	60	67.9 96.8	40	— 40	M8×12	40.4 69.3	9	32.5	8	12	B-M6F	9.5
SR 35M1V SR 35M1W	48	70	77.6 111	50	— 50	M8×12	45.7 79	13	36.5	8.5	12	B-M6F	11.5

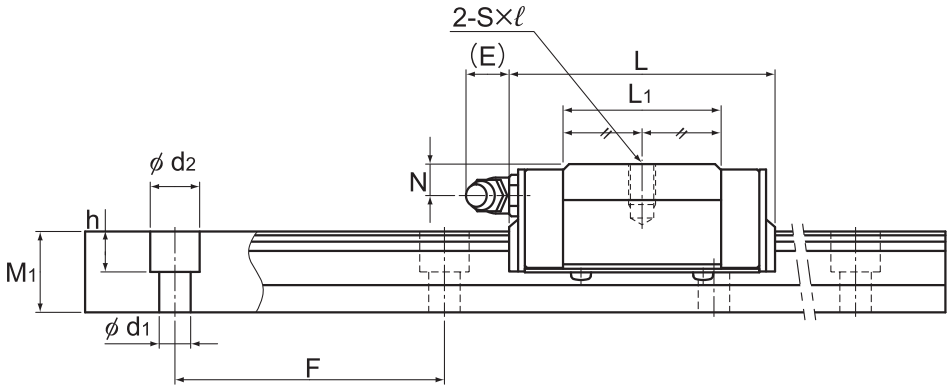
Model number coding

SR30 M1 W 2 UU C0 +1160L Y P T -II

- SR30: Model number
- M1: Symbol for high temperature type LM Guide
- W: Type of LM block
- 2: No. of LM blocks used on the same rail
- UU: Contamination protection accessory symbol (*1)
- C0: Radial clearance symbol (*2) Normal (No symbol) Light preload (C1) Medium preload (C0)
- +1160L: LM rail length (in mm)
- Y: Applied to only 15 and 25
- P: Accuracy symbol (*3) Normal grade (No Symbol)/High accuracy grade (H) Precision grade (P)/Super precision grade (SP) Ultra precision grade (UP)
- T: Symbol for LM rail jointed use
- -II: Symbol for No. of rails used on the same plane (*4)

(*1) See contamination protection accessory on A1-524. (*2) See A1-73. (*3) See A1-78. (*4) See A1-13.

Note) This model number indicates that a single-rail unit constitutes one set. (i.e., required number of sets when 2 rails are used in parallel is 2 at a minimum.)



Model SR-M1V

Unit: mm

	LM rail dimensions						Basic load rating		Static permissible moment kN·m*					Mass	
	Width		Height	Pitch		Length*	C	C_0	M_A		M_B		M_C	LM block	LM rail
	W_1 ±0.05	W_2	M_1	F	$d_1 \times d_2 \times h$	Max	kN	kN	1 block	Double blocks	1 block	Double blocks	1 block	kg	kg/m
	15	9.5	12.5	60	3.5×6×4.5	1240	9.1 13.8	11.7 20.5	0.0344 0.0984	0.234 0.551	0.0215 0.0604	0.149 0.343	0.0694 0.122	0.12 0.2	1.2
	20	11	15.5	60	6×9.5×8.5	1500	13.4 19.2	17.2 28.6	0.064 0.167	0.396 0.887	0.0397 0.102	0.25 0.55	0.135 0.224	0.2 0.3	2.1
	23	12.5	18	60	7×11×9	1500	21.6 30.9	26.8 44.7	0.125 0.326	0.773 1.74	0.0774 0.2	0.488 1.08	0.245 0.408	0.3 0.4	2.7
	28	16	23	80	7×11×9	1500	29.5 45.6	34.4 64.4	0.173 0.564	1.15 2.92	0.108 0.346	0.735 1.8	0.376 0.703	0.5 0.8	4.3
	34	18	27.5	80	9×14×12	1500	40.9 60.4	46.7 81.8	0.275 0.785	1.79 4.27	0.171 0.482	1.14 2.65	0.615 1.08	0.8 1.2	6.4

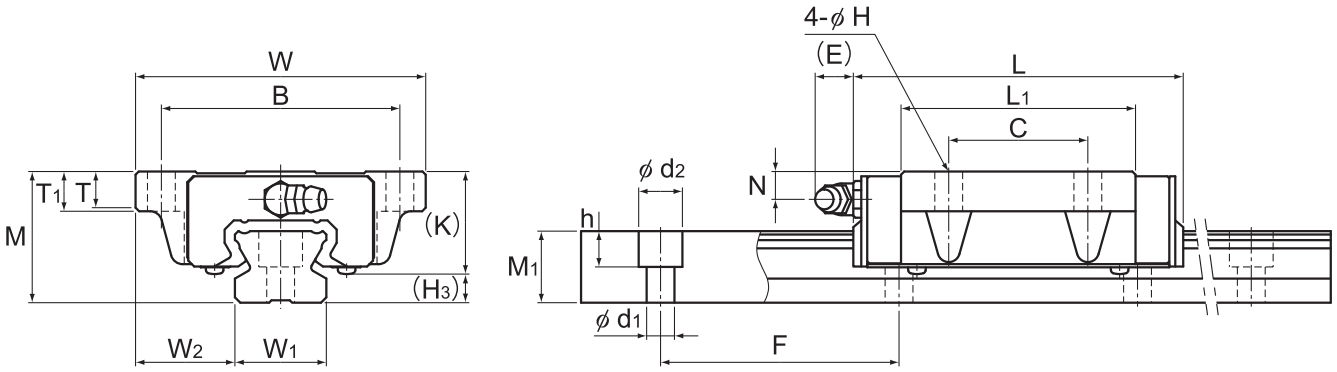
Note1) The maximum length under "Length*" indicates the standard maximum length of an LM rail. (See **A1-378**.)
Static permissible moment* 1 block: the static permissible moment with one LM block
Double blocks: static permissible moment when two LM blocks are in close contact with each other
Total block length L : The total block length L shown in the table is the length with the dust proof parts, code UU or SS.
Note2) For models SR15 and 25, two types of rails with different mounting hole dimensions are offered (see Table1). When, replacing this model with model SSR, pay attention to the mounting hole dimension of the LM rail. Contact THK for details.
Note3) The basic load rating in the dimension table is for a load in the radial direction. Use Table7 on **A1-60** to calculate the load rating for loads in the reverse radial direction or lateral direction.

Table1 The dimension of the rail mounting hole

Model No.	Standard rail	Semi-Standard rail
SR 15	For M3 (No symbol)	For M4 (Symbol Y)
SR 25	For M6 (Symbol Y)	For M5 (No symbol)

Options⇒A1-485

Models SR-M1TB and SR-M1SB



Model SR-M1TB

Model No.	Outer dimensions			LM block dimensions										H_3
	Height M	Width W	Length L	B	C	H	L_1	T	T_1	K	N	E	Grease nipple	
SR 15M1SB SR 15M1TB	24	52	40.4 57	41	— 26	4.5	22.9 39.5	6.1	7	19.5	6	5.5	PB1021B	4.5
SR 20M1SB SR 20M1TB	28	59	47.3 66.2	49	— 32	5.5	27.8 46.7	8	9	22	6	12	B-M6F	6
SR 25M1SB SR 25M1TB	33	73	59.2 83	60	— 35	7	35.2 59	9	10	26	7	12	B-M6F	7
SR 30M1SB SR 30M1TB	42	90	67.9 96.8	72	— 40	9	40.4 69.3	8.7	10	32.5	8	12	B-M6F	9.5
SR 35M1SB SR 35M1TB	48	100	77.6 111	82	— 50	9	45.7 79	11.2	13	36.5	8.5	12	B-M6F	11.5

Model number coding

SR30 M1 W 2 UU C0 +1000L Y P T -II

- SR30: Model number
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- +1000L: LM rail length (in mm)
- Y: Applied to only 15 and 25
- P: Accuracy symbol (*3)
  Normal grade (No Symbol)/High accuracy grade (H)
  Precision grade (P)/Super precision grade (SP)
  Ultra precision grade (UP)
- T: Symbol for LM rail jointed use
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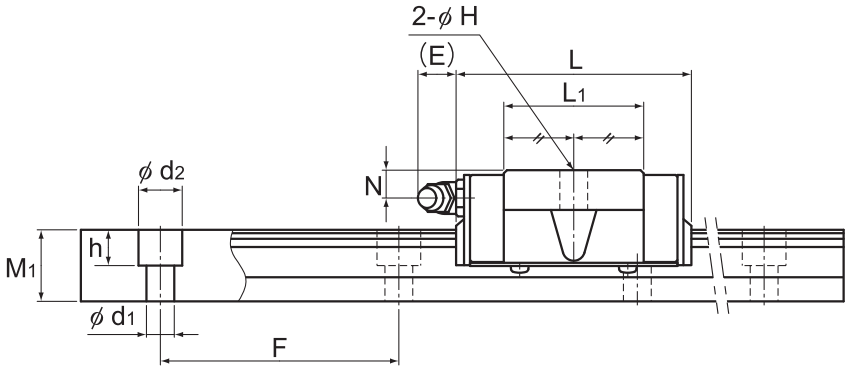
(*1) See contamination protection accessory on A1-524. (*2) See A1-73. (*3) See A1-78. (*4) See A1-13.

Note) This model number indicates that a single-rail unit constitutes one set. (i.e., required number of sets when 2 rails are used in parallel is 2 at a minimum.)



Model SR-M1SB

Unit: mm

	LM rail dimensions						Basic load rating		Static permissible moment kN·m*					Mass	
	Width		Height	Pitch		Length*	C	C_0	M_A		M_B		M_C	LM block	LM rail
	W_1 ±0.05	W_2	M_1	F	$d_1 \times d_2 \times h$	Max	kN	kN	1 block	Double blocks	1 block	Double blocks	1 block	kg	kg/m
	15	18.5	12.5	60	3.5×6×4.5	1240	9.1 13.8	11.7 20.5	0.0344 0.0984	0.234 0.551	0.0215 0.0604	0.149 0.343	0.0694 0.122	0.12 0.2	1.2
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	28	31	23	80	7×11×9	1500	29.5 45.6	34.4 64.4	0.173 0.564	1.15 2.92	0.108 0.346	0.735 1.8	0.376 0.703	0.5 0.8	4.3
	34	33	27.5	80	9×14×12	1500	40.9 60.4	46.7 81.8	0.275 0.785	1.79 4.27	0.171 0.482	1.14 2.65	0.615 1.08	0.8 1.2	6.4

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Note3) The basic load rating in the dimension table is for a load in the radial direction. Use Table7 on **A1-60** to calculate the load rating for loads in the reverse radial direction or lateral direction.

Table1 The dimension of the rail mounting hole

Model No.	Standard rail	Semi-Standard rail
SR 15	For M3 (No symbol)	For M4 (Symbol Y)
SR 25	For M6 (Symbol Y)	For M5 (No symbol)

Options⇒A1-485

Standard Length and Maximum Length of the LM Rail

Table1 shows the standard lengths and the maximum lengths of model SR-M1 variations. If the maximum length of the desired LM rail exceeds them, jointed rails will be used. Contact THK for details.
For special rail lengths, it is recommended to use a value corresponding to the G,g dimension from the table. As the G,g dimension increases, this portion becomes less stable, and the accuracy performance is severely impacted.

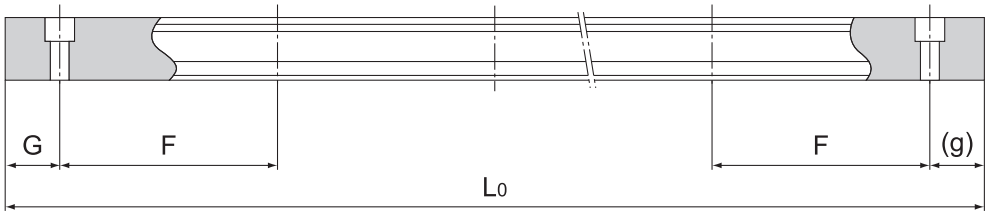

Table1 Standard Length and Maximum Length of the LM Rail for Model SR-M1

Unit: mm

Model No.	SR 15M1	SR 20M1	SR 25M1	SR 30M1	SR 35M1
LM rail standard length (L_o)	160 220 280 340 400 460 520 580 640 700 760 820 940 1000 1060 1120 1180 1240	220 280 340 400 460 520 580 640 700 760 820 940 1000 1060 1120 1180 1240 1300 1360 1420	220 280 340 400 460 520 580 640 700 760 820 940 1000 1060 1120 1240 1300 1360 1420 1480	280 360 440 520 600 680 760 840 920 1000 1080 1160 1240 1320 1400 1480	280 360 440 520 600 680 760 840 920 1000 1080 1160 1240 1320 1400 1480
Standard pitch F	60	60	60	80	80
G,g	20	20	20	20	20
Max length	1240	1500	1500	1500	1500

Note1) The maximum length varies with accuracy grades. Contact THK for details.
Note2) If jointed rails are not allowed and a greater length than the maximum values above is required, contact THK.