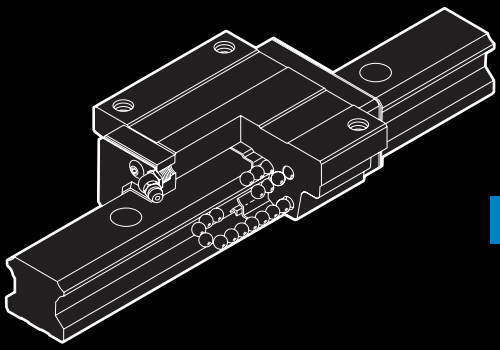


HSR-M1

LM Guide

B Product Specifications

Dimensional Drawing, Dimensional Table
Models HSR-M1A and HSR-M1LA ... B-182
Models HSR-M1B and HSR-M1LB ... B-184
Models HSR-M1R and HSR-M1LR ... B-186
Model HSR-M1YR ... B-188

Standard Length and Maximum Length of the LM Rail ... B-190

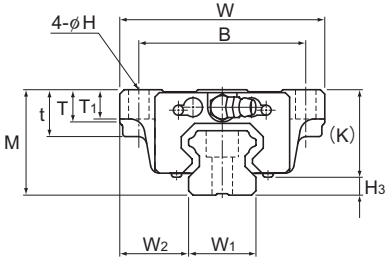
Options ... B-223
The LM Block Dimension (Dimension L) with LaCS and Seals Attached ... B-229

A Technical Descriptions of the Products (Separate)

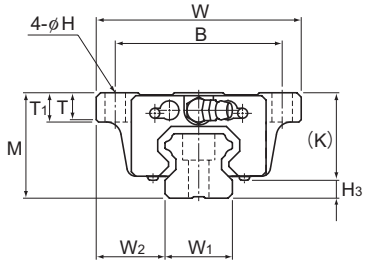
Technical Descriptions
Structure and features ... A-273
Types and Features ... A-275
Rated Loads in All Directions ... A-277
Equivalent Load ... A-277
Service Life ... A-100
Radial Clearance Standard ... A-114
Accuracy Standards ... A-119
Shoulder Height of the Mounting Base and the Corner Radius ... A-328
Error Allowance in the Parallelism between Two Rails ... A-333
Error Allowance in Vertical Level between Two Rails ... A-336

* Please see the separate "A Technical Descriptions of the Products".

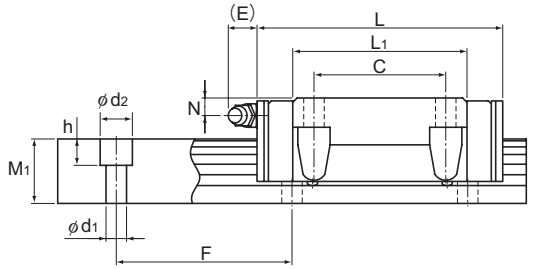
Models HSR-M1B and HSR-M1LB



Models HSR15, 25 to 35M1B/M1LB



Models HSR20M1B/M1LB



Unit: mm

Model No.	Outer dimensions			LM block dimensions											LM rail dimensions						Basic load rating		Static permissible moment kN-m*					Mass	
	Height	Width	Length											Grease nipple		Width			Height	Pitch		Length*	C	C0	MA		MB		MC	LM block	LM rail
	M	W	L	B	C	H	L1	t	T	T1	K	N	E		H3	W1 ±0.05	W2		M1	F	d1×d2×h	Max	kN	kN	1 block	Double blocks	1 block	Double blocks	1 block	kg	kg/m
HSR 15M1B	24	47	59.6	38	30	4.5	38.8	11	6.5	7	19.3	4.3	5.5	PB1021B	3.5	15	16		15	60	4.5×7.5×5.3	1240	8.33	13.5	0.0805	0.457	0.0805	0.457	0.0844	0.2	1.5
HSR 20M1B HSR 20M1LB	30	63	76 92	53	40	6	50.8 66.8	—	9.5	10	26	5	12	B-M6F	4	20	21.5		18	60	6×9.5×8.5	1500	13.8 21.3	23.8 31.8	0.19 0.323	1.04 1.66	0.19 0.323	1.04 1.66	0.201 0.27	0.35 0.47	2.3
HSR 25M1B HSR 25M1LB	36	70	83.9 103	57	45	7	59.5 78.6	16	11	10	30.5	6	12	B-M6F	5.5	23	23.5		22	60	7×11×9	1500	19.9 27.2	34.4 45.9	0.307 0.529	1.71 2.74	0.307 0.529	1.71 2.74	0.344 0.459	0.59 0.75	3.3
HSR 30M1B HSR 30M1LB	42	90	98.8 121.4	72	52	9	70.4 93	18	9	10	35	7	12	B-M6F	7	28	31		26	80	9×14×12	1500	28 37.3	46.8 62.5	0.524 0.889	2.7 4.37	0.524 0.889	2.7 4.37	0.562 0.751	1.1 1.3	4.8
HSR 35M1B HSR 35M1LB	48	100	112 137.4	82	62	9	80.4 105.8	21	12	13	40.5	8	12	B-M6F	7.5	34	33		29	80	9×14×12	1500	37.3 50.2	61.1 81.5	0.782 1.32	3.93 6.35	0.782 1.32	3.93 6.35	0.905 1.2	1.6 2	6.6

Note) The length L of the high temperature type LM Guide model HSR is longer than normal type of model HSR. (Dimension L_1 is the same.)

Note) The maximum length under "Length*" indicates the standard maximum length of an LM rail. (See B-190.)
Static permissible moment*: 1 block: static permissible moment value with 1 LM block
Double blocks: static permissible moment value with 2 blocks closely contacting with each other

Model number coding

HSR20 M1 LB 2 UU C0 +1000L P T -II

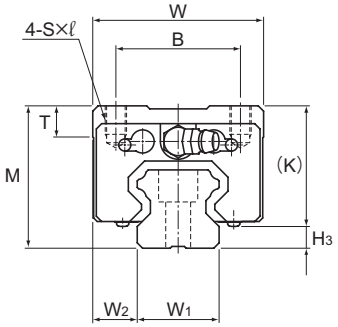
- HSR20: Model number
- M1: Type of LM block
- LB: Symbol for high temperature type LM Guide
- 2: No. of LM blocks used on the same rail
- UU: Contamination protection accessory symbol (*1)
- C0: Radial clearance symbol (*2) Normal (No symbol) Light preload (C1) Medium preload (C0)
- +1000L: LM rail length (in mm)
- 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)

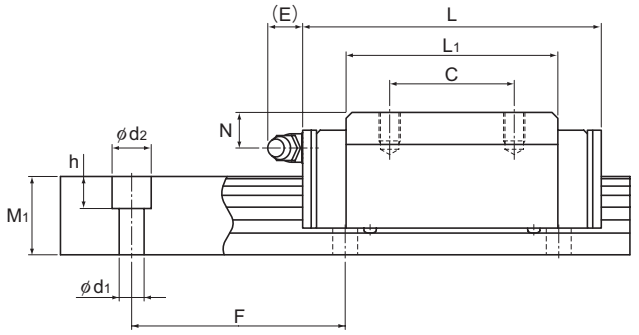
(*1) See contamination protection accessory on A-368. (*2) See A-114. (*3) See A-119. (*4) See A-59.

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.)

Description of Each Option ⇒A-351 Dimensions⇒B-223

Models HSR-M1R and HSR-M1LR





Unit: mm

Model No.	Outer dimensions			LM block dimensions									LM rail dimensions						Basic load rating		Static permissible moment kN-m*					Mass	
	Height	Width	Length										Width		Height	Pitch		Length*	C	C0	MA		MB		MC	LM block	LM rail
	M	W	L	B	C	S×ℓ	L1	T	K	N	E	Grease nipple	H3	W1 ±0.05	W2	M1	F	d1×d2×h	Max	kN	kN	1 block	Double blocks	1 block	Double blocks	1 block	kg	kg/m
HSR 15M1R	28	34	59.6	26	26	M4×5	38.8	6	23.3	8.3	5.5	PB1021B	3.5	15	9.5	15	60	4.5×7.5×5.3	1240	8.33	13.5	0.0805	0.457	0.0805	0.457	0.0844	0.2	1.5
HSR 20M1R HSR 20M1LR	30	44	76 92	32	36 50	M5×6	50.8 66.8	8	26	5	12	B-M6F	4	20	12	18	60	6×9.5×8.5	1500	13.8 21.3	23.8 31.8	0.19 0.323	1.04 1.66	0.19 0.323	1.04 1.66	0.201 0.27	0.35 0.47	2.3
HSR 25M1R HSR 25M1LR	40	48	83.9 103	35	35 50	M6×8	59.5 78.6	8	34.5	10	12	B-M6F	5.5	23	12.5	22	60	7×11×9	1500	19.9 27.2	34.4 45.9	0.307 0.529	1.71 2.74	0.307 0.529	1.71 2.74	0.344 0.459	0.59 0.75	3.3
HSR 30M1R HSR 30M1LR	45	60	98.8 121.4	40	40 60	M8×10	70.4 93	8	38	10	12	B-M6F	7	28	16	26	80	9×14×12	1500	28 37.3	46.8 62.5	0.524 0.889	2.7 4.37	0.524 0.889	2.7 4.37	0.562 0.751	1.1 1.3	4.8
HSR 35M1R HSR 35M1LR	55	70	112 137.4	50	50 72	M8×12	80.4 105.8	10	47.5	15	12	B-M6F	7.5	34	18	29	80	9×14×12	1500	37.3 50.2	61.1 81.5	0.782 1.32	3.93 6.35	0.782 1.32	3.93 6.35	0.905 1.2	1.6 2	6.6

Note) The length L of the high temperature type LM Guide model HSR is longer than normal type of model HSR. (Dimension L_1 is the same.)

Note) The maximum length under "Length*" indicates the standard maximum length of an LM rail. (See B-190.)
Static permissible moment*: 1 block: static permissible moment value with 1 LM block
Double blocks: static permissible moment value with 2 blocks closely contacting with each other

Model number coding

HSR35 M1 R 2 UU C0 +1080L P T -II

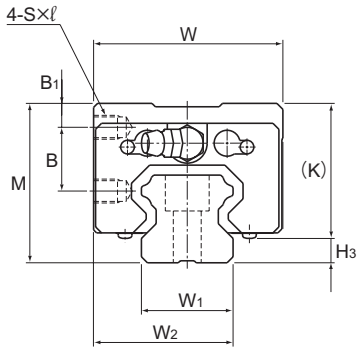
- HSR35: Model number
- M1: Type of LM block
- R: Symbol for high temperature type LM Guide
- 2: No. of LM blocks used on the same rail
- UU: Contamination protection accessory symbol (*1)
- C0: Radial clearance symbol (*2) Normal (No symbol) Light preload (C1) Medium preload (C0)
- +1080L: LM rail length (in mm)
- 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)

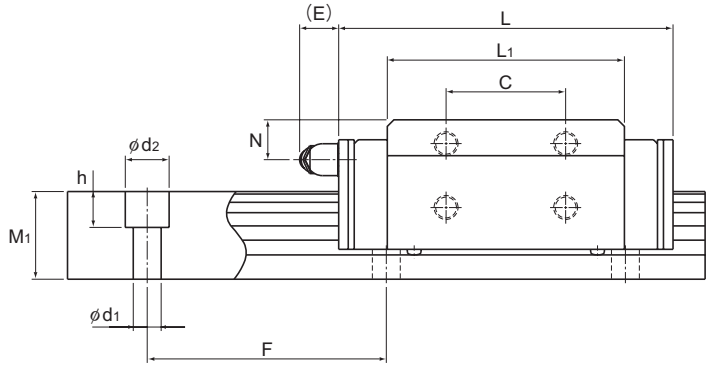
(*1) See contamination protection accessory on A-368. (*2) See A-114. (*3) See A-119. (*4) See A-59.

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.)

Description of Each Option ⇒A-351 Dimensions⇒B-223

Model HSR-M1YR





Unit: mm

Model No.	Outer dimensions			LM block dimensions									LM rail dimensions						Basic load rating		Static permissible moment kN-m*						Mass	
	Height	Width	Length									Grease nipple		Width		Height	Pitch		Length*	C	C0	MA		MB		MC	LM block	LM rail
	M	W	L	B1	B	C	S×ℓ	L1	K	N	E		H3	W1 ±0.05	W2	M1	F	d1×d2×h	Max	kN	kN	1 block	Double blocks	1 block	Double blocks	1 block	kg	kg/m
HSR 15M1YR	28	33.5	59.6	4.3	11.5	18	M4×5	38.8	23.3	8.3	5.5	PB1021B	3.5	15	24	15	60	4.5×7.5×5.3	1240	8.33	13.5	0.0805	0.457	0.0805	0.457	0.0844	0.2	1.5
HSR 20M1YR	30	43.5	76	4	11.5	25	M5×6	50.8	26	5	12	B-M6F	4	20	31.5	18	60	6×9.5×8.5	1500	13.8	23.8	0.19	1.04	0.19	1.04	0.201	0.35	2.3
HSR 25M1YR	40	47.5	83.9	6	16	30	M6×6	59.5	34.5	10	12	B-M6F	5.5	23	35	22	60	7×11×9	1500	19.9	34.4	0.307	1.71	0.307	1.71	0.344	0.59	3.3
HSR 30M1YR	45	59.5	98.8	8	16	40	M6×9	70.4	38	10	12	B-M6F	7	28	43.5	26	80	9×14×12	1500	37.3	62.5	0.524	2.7	0.524	2.7	0.562	1.3	4.8
HSR 35M1YR	55	69.5	112	8	23	43	M8×10	80.4	47	15	12	B-M6F	7.5	34	51.5	29	80	9×14×12	1500	37.3	61.1	0.782	3.93	0.782	3.93	0.905	1.6	6.6

Note) The length L of the high temperature type LM Guide model HSR-YR is longer than normal type of model HSR-YR. (Dimension L_1 is the same.)

Note) The maximum length under "Length*" indicates the standard maximum length of an LM rail. (See B-190.)
Static permissible moment*: 1 block: static permissible moment value with 1 LM block
Double blocks: static permissible moment value with 2 blocks closely contacting with each other

Model number coding

HSR25 M1 YR 2 UU C0 +1200L P T -II

- HSR25: Model number
- M1: Symbol for high temperature type LM Guide
- YR: 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)
- +1200L: LM rail length (in mm)
- 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 A-368. (*2) See A-114. (*3) See A-119. (*4) See A-59.

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.)

Description of Each Option ⇒A-351 Dimensions⇒B-223

Standard Length and Maximum Length of the LM Rail

Table1 shows the standard lengths and the maximum lengths of model HSR-M1 variations. If the maximum length of the desired LM rail exceeds them, jointed rails will be used. Contact THK for details.
For the G dimension when a special length is required, we recommend selecting the corresponding G value from the table. The longer the G dimension is, the less stable the G area may become after installation, thus causing an adverse impact to accuracy.

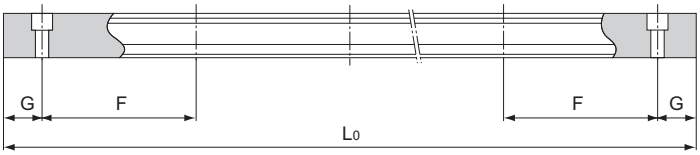


Table1 Standard Length and Maximum Length of the LM Rail for Model HSR-M1 Unit: mm

Model No.	HSR 15M1	HSR 20M1	HSR 25M1	HSR 30M1	HSR 35M1
LM rail standard length (L_0)	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 1360 1480	220 280 340 400 460 520 580 640 700 760 820 940 1000 1060 1120 1180 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	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.
Note3) The values for HSR-M1 also apply to HSR-M1YR.