

High Corrosion Resistance Type LM Guide Model HSR-M2

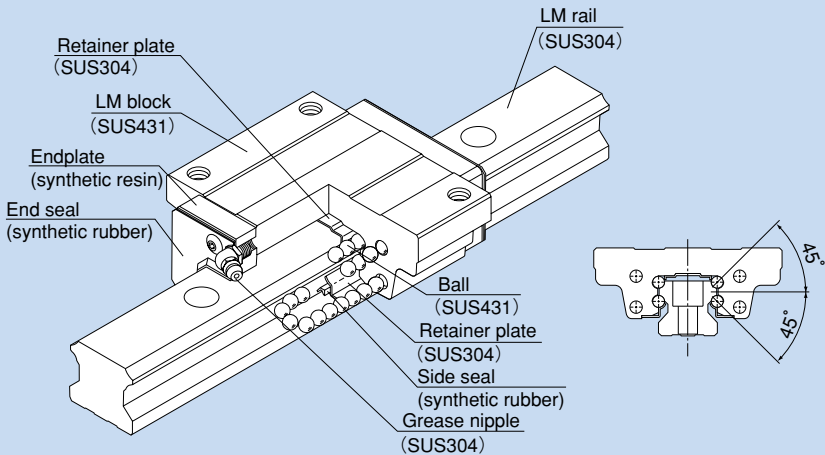


Fig. 1 Structure of Model HSR-M2A

Structure and Features

Balls roll in four rows of raceways precision-ground on an LM rail and an LM block, and end-plates incorporated in the LM block allow the balls to circulate.

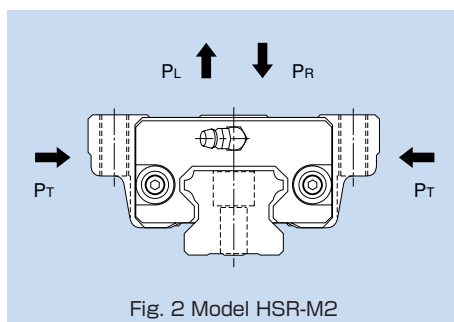
Each row of balls is placed at a contact angle of 45° so that the rated loads applied to the LM block are uniform in the four directions (radial, reverse-radial and lateral directions), enabling the LM Guide to be used in all orientations.

The LM rail, LM block and balls are made of highly corrosion resistant stainless steel and the other metal parts are made of stainless steel, allowing superb corrosion resistance to be achieved. As a result, the need for surface treatment is eliminated.

Rated Loads in All Directions

Model HSR-M2 is capable of receiving loads in all four directions: radial, reverse-radial and lateral directions.

The basic load ratings are uniform in the four directions (radial, reverse-radial and lateral directions), and their actual values are provided in the dimensional table for HSR-M2.



Equivalent Load

When the LM block of model HSR-M2 receives loads in all directions simultaneously, the equivalent load is obtained from the equation below.

$$P_E = P_R (P_L) + P_T$$

where

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

Options

Dust Prevention Accessories

THK offers various dust prevention accessories for model HSR-M2.

When a dust prevention accessory is required, specify the desired item with the corresponding symbol provided in table 1 (for details of dust prevention accessories, see page a-24).

For supported model numbers for dust prevention accessories and overall LM block length with dust prevention accessories attached (dimension L), see page a-334.

Table 1 Symbols of Dust Prevention Accessories for Model HSR-M2

Symbol	Dust prevention accessory
UU	With end seal
SS	With end seal + side seal

Seal resistance value


For the maximum seal resistance value per LM block when a lubricant is applied on seals HSR-M2...UU, refer to the corresponding value provided in table 2.

Table 2 Maximum Seal Resistance Value of Seals HSR-M2...UU

Unit: N

Model No.	Seal resistance value
HSR 15M2	2.0
HSR 20M2	2.5
HSR 25M2	3.9
HSR 30M2	7.8
HSR 35M2	11.8

Standard Length and Maximum Length of the LM Rail

Table 3 shows the standard lengths and the maximum lengths of model HSR-M2 variations. If the maximum length of the desired LM rail exceeds them, connected rails will be used. Contact  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.

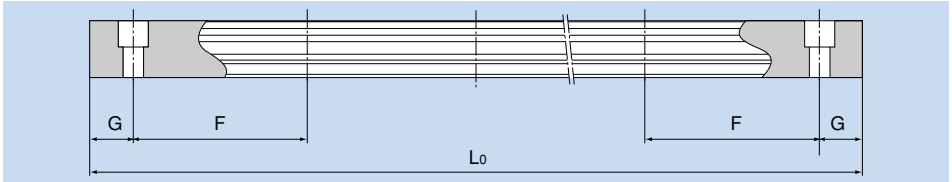

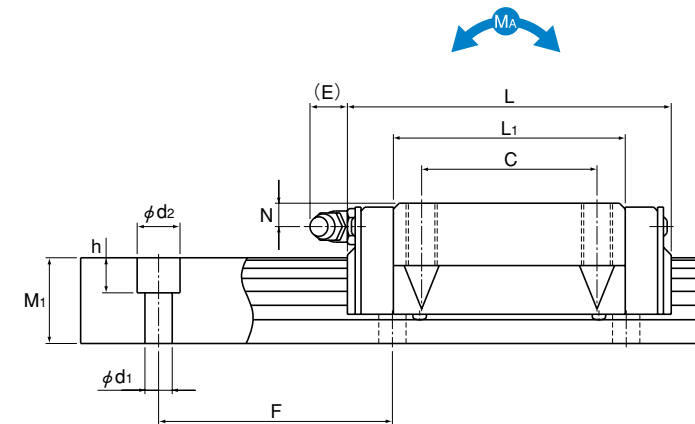
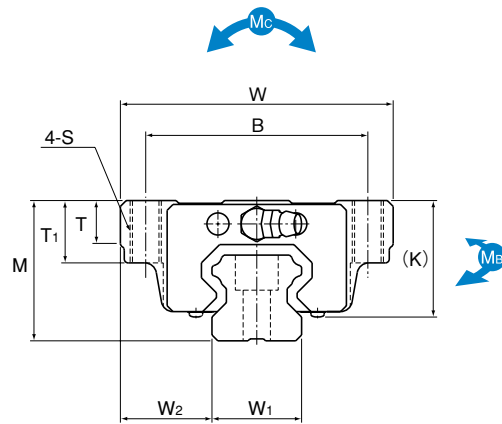


Table 3 Standard Length and Maximum Length of the LM Rail for Model HSR-M2 Unit: mm

Model No.	HSR 15M2	HSR 20M2	HSR 25M2
Standard LM rail length (L_0)	160	280	280
	280	460	460
	460	640	640
	640	820	820
			1000
Standard pitch F	60	60	60
G	20	20	20
Max length	1000	1000	1000

Note 1: The maximum length varies with accuracy grades. Contact  for details.

Note 2: If connected rails are not allowed and a greater length than the maximum values above is required, contact .



Unit: mm

Model No.	External dimensions			LM block dimensions									Grease nipple	LM rail dimensions				Basic load rating		Static permissible moment kN-m*					Mass		
	Height M	Width W	Length L	B	C	S	L ₁	T	T ₁	K	N	E		Width W ₁ ±0.05	W ₂	Height M ₁	Pitch F	d ₁ × d ₂ × h	C	C ₀	M _A 1 block	M _A 2 blocks in close contact	M _B 1 block	M _B 2 blocks in close contact	M _C 1 block	LM block kg	LM rail kg/m
HSR 15M2A	24	47	56.6	38	30	M5	38.8	6.5	11	19.3	4.5	5.5	PB1021B	15	16	15	60	4.5×7.5×5.3	2.33	2.03	12.3	70.3	12.3	70.3	10.8	0.2	1.5
HSR 20M2A	30	63	74	53	40	M6	50.8	9.5	10	26	5	12	B-M6F	20	21.5	18	60	6×9.5×8.5	3.86	3.57	29	160	29	160	26.5	0.35	2.3
HSR 25M2A	36	70	83.1	57	45	M8	59.5	11	16	30.5	6	12	B-M6F	23	23.5	22	60	7×11×9	5.57	5.16	46.9	261	46.9	261	45.1	0.59	3.3

Note For the high corrosion resistance type LM Guide, a stainless steel end plate is optionally available.(symbol···I)

Note The basic load rating of the high corrosion resistance type LM Guide is smaller than ordinary stainless steel LM Guides.

Static permissible moment* 1 block: static permissible moment value with 1 LM block
2 blocks: static permissible moment value with 2 blocks closely contacting with each other

Model number coding

HSR20M2 A 2 UU C1 I +820L P- II

1 2 3 4 5 6 7 8 9

- 1 Model number (high corrosion resistance type LM Guide)
- 2 Type of LM block
- 3 No. of LM blocks used on the same rail
- 4 Dust prevention accessory symbol (see page a-330)
- 5 Radial clearance symbol (see page a-34)
- 6 End plate is made of stainless steel
- 7 LM rail length (in mm)
- 8 Accuracy symbol (see page a-38)
- 9 No. of rails used on the same plane

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).