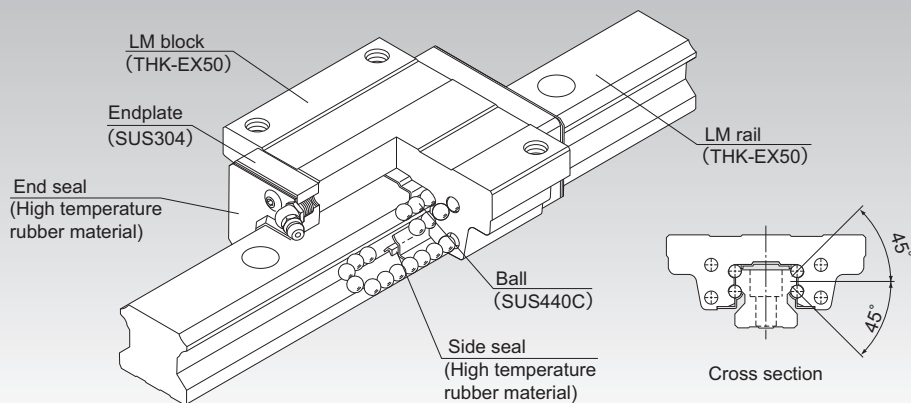


# HSR-M1

## LM Guide High Temperature Type Model HSR-M1



**Point of Selection** **A1-10**

**Point of Design** **A1-450**

**Options** **A1-473**

**Model No.** **A1-537**

**Precautions on Use** **A1-542**

**Accessories for Lubrication** **A24-1**

**Mounting Procedure and Maintenance** **B1-89**

Equivalent moment factor **A1-43**

Rated Loads in All Directions **A1-58**

Equivalent factor in each direction **A1-60**

Radial Clearance **A1-71**

Accuracy Standards **A1-77**

Shoulder Height of the Mounting Base and the Corner Radius **A1-461**

Permissible Error of the Mounting Surface **A1-466**

Dimensions of Each Model with an Option Attached **A1-484**

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## Structure and Features

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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.

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 high temperature type LM Guide is capable of being used at service temperature up to 150°C thanks to THK's unique technologies in material, heat treatment and lubrication.

### [Maximum Service Temperature: 150°C]

Use of stainless steel in the endplates and high temperature rubber in the end seals achieves the maximum service temperature of 150°C.

### [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]

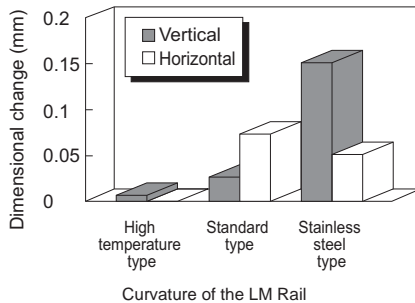
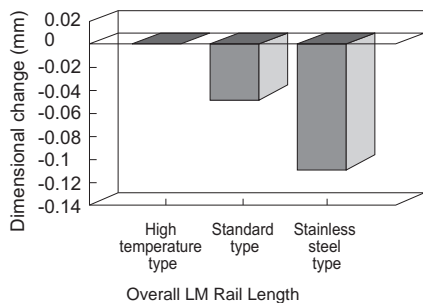
Since the LM block, LM rail and balls use stainless steel, which is highly corrosion resistant, this model is optimal for clean room applications.

### [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.

## ● Dimensional Stability Data

Since this model has been treated for dimensional stability, its dimensional change after being cooled or heated is only minimal.

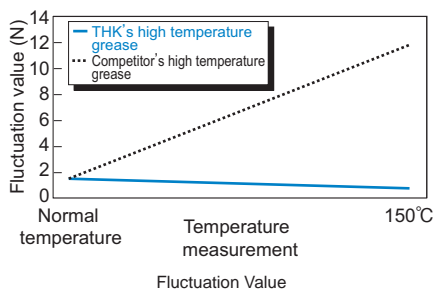
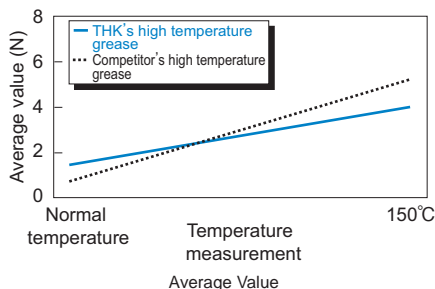


Note1) The above data on overall length and curvature indicate dimensional change when the LM rail is cooled to normal temperature after being heated at 150°C for 100 hours.

Note2) The samples consist of high temperature, standard and stainless steel types of model HSR25 + 580L.

## ● Rolling Resistance Data in Relation to Grease

Use a high temperature grease with which the rolling resistance of the LM system little fluctuates even temperature changes from a normal to high range.



For the measurements above, model HSR25M1R1C1 is used.

## ● Thermal Characteristics of LM Rail and LM Block Materials

Specific heat capacity: 0.481 J/(g•K)

Thermal conductivity: 20.67 W/(m•K)

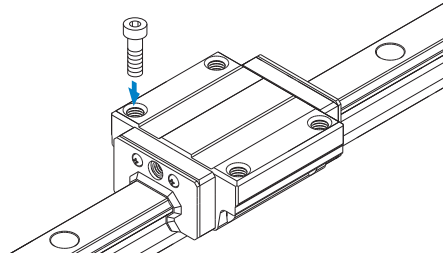
Average coefficient of linear expansion:  $11.8 \times 10^{-6}/^{\circ}\text{C}$

## Types and Features

### Model HSR-M1A

The flange of its LM block has tapped holes.

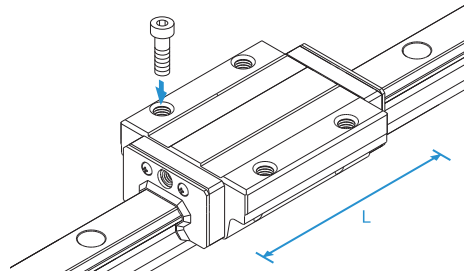
Specification Table⇒ **A1-360**



### Model HSR-M1LA

The LM block has the same cross-sectional shape as model HSR-M1A, but has a longer overall LM block length (L) and a greater rated load.

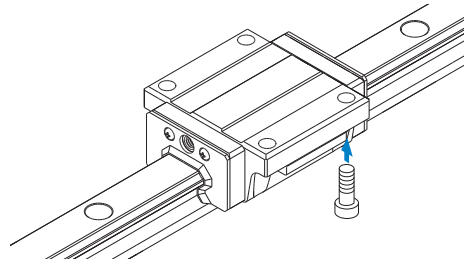
Specification Table⇒ **A1-360**



### Model HSR-M1B

The flange of the LM block has through holes. Used in places where the table cannot have through holes for mounting bolts.

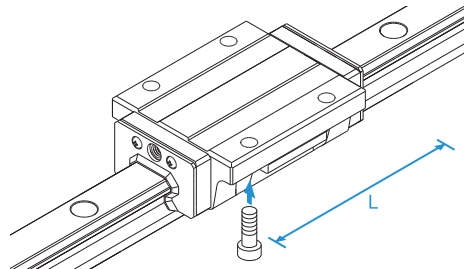
Specification Table⇒ **A1-362**



### Model HSR-M1LB

The LM block has the same sectional shape as model HSR-M1B, but has a longer overall LM block length (L) and a greater rated load.

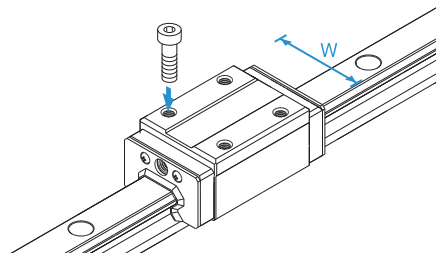
Specification Table⇒ **A1-362**



## Model HSR-M1R

With this type, the LM block has a smaller width (W) and tapped holes. Used in places where the space for table width is limited.

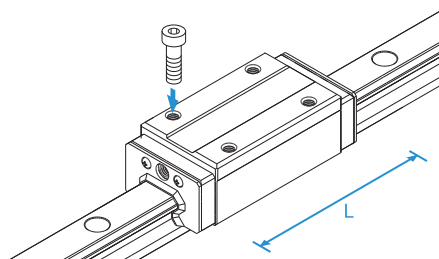
Specification Table⇒[A1-364](#)



## Model HSR-M1LR

The LM block has the same sectional shape as model HSR-M1R, but has a longer overall LM block length (L) and a greater rated load.

Specification Table⇒[A1-364](#)



## Model HSR-M1YR

When using two units of LM Guide facing each other, the previous model required much time in machining the table and had difficulty achieving the desired accuracy and adjusting the clearance. Since model HSR-M1YR has tapped holes on the side of the LM block, a simpler structure is gained and significant man-hour cutting and accuracy increase can be achieved.

Specification Table⇒[A1-366](#)

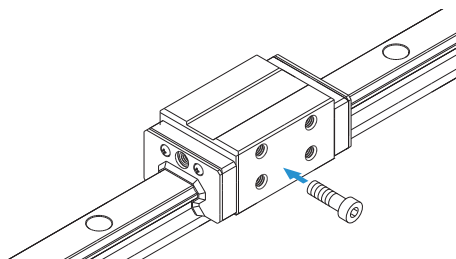


Fig.1 Conventional Structure



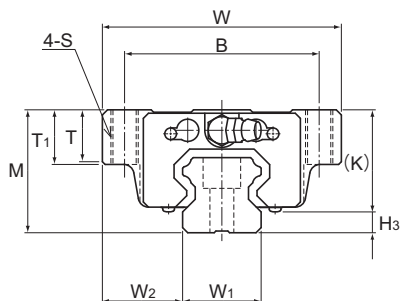
Fig.2 Mounting Structure for Model HSR-M1YR

## 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 [A1-64](#) for details.



## Models HSR-M1A and HSR-M1LA



| Model No.               | Outer dimensions |       |               | LM block dimensions |    |     |                |     |                |      |     |     |         | Grease nipple | H <sub>3</sub> |
|-------------------------|------------------|-------|---------------|---------------------|----|-----|----------------|-----|----------------|------|-----|-----|---------|---------------|----------------|
|                         | Height           | Width | Length        | B                   | C  | S   | L <sub>1</sub> | T   | T <sub>1</sub> | K    | N   | E   |         |               |                |
|                         | M                | W     | L             | B                   | C  | S   | L <sub>1</sub> | T   | T <sub>1</sub> | K    | N   | E   |         |               |                |
| HSR 15M1A               | 24               | 47    | 59.6          | 38                  | 30 | M5  | 38.8           | 6.5 | 11             | 19.3 | 4.3 | 5.5 | PB1021B | 4.7           |                |
| HSR 20M1A<br>HSR 20M1LA | 30               | 63    | 76<br>92      | 53                  | 40 | M6  | 50.8<br>66.8   | 9.5 | 10             | 26   | 5   | 12  | B-M6F   | 4             |                |
| HSR 25M1A<br>HSR 25M1LA | 36               | 70    | 83.9<br>103   | 57                  | 45 | M8  | 59.5<br>78.6   | 11  | 16             | 30.5 | 6   | 12  | B-M6F   | 5.5           |                |
| HSR 30M1A<br>HSR 30M1LA | 42               | 90    | 98.8<br>121.4 | 72                  | 52 | M10 | 70.4<br>93     | 9   | 18             | 35   | 7   | 12  | B-M6F   | 7             |                |
| HSR 35M1A<br>HSR 35M1LA | 48               | 100   | 112<br>137.4  | 82                  | 62 | M10 | 80.4<br>105.8  | 12  | 21             | 40.5 | 8   | 12  | B-M6F   | 7.5           |                |

Note) The length L of the high temperature type LM Guide model HSR is longer than normal type of model HSR. (Dimension L<sub>1</sub> is the same.)

### Model number coding

**HSR25 M1 A 2 UU C1 +1240L P T - II**

Model number

Type of LM block

Contamination protection accessory symbol (\*1)

LM rail length (in mm)

Symbol for LM rail jointed use

Symbol for No. of rails used on the same plane (\*4)

Symbol for high temperature type LM Guide

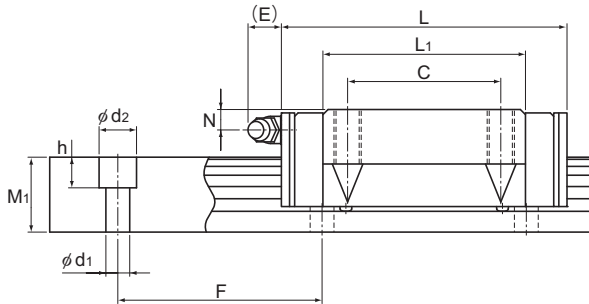
No. of LM blocks used on the same rail

Radial clearance symbol (\*2)  
Normal (No symbol)  
Light preload (C1)  
Medium preload (C0)

Accuracy symbol (\*3)  
Normal grade (No Symbol)/High accuracy grade (H)  
Precision grade (P)/Super precision grade (SP)  
Ultra precision grade (UP)

(\*1) See contamination protection accessory on **A1-510**. (\*2) See **A1-71**. (\*3) See **A1-77**. (\*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.)



Unit: mm

| LM rail dimensions           |                |                 |              |                                             |              | Basic load rating |                | Static permissible moment kN-m* |                |                  |                |                   | Mass               |  |
|------------------------------|----------------|-----------------|--------------|---------------------------------------------|--------------|-------------------|----------------|---------------------------------|----------------|------------------|----------------|-------------------|--------------------|--|
| Width<br>$W_1$<br>$\pm 0.05$ | Width<br>$W_2$ | Height<br>$M_1$ | Pitch<br>$F$ | Length*<br>$d_1 \times d_2 \times h$<br>Max | C<br>kN      | $C_0$<br>kN       | $M_A$          |                                 | $M_B$          |                  | $M_C$          | LM<br>block<br>kg | LM<br>rail<br>kg/m |  |
|                              |                |                 |              |                                             |              |                   | 1<br>block     | Double<br>blocks                | 1<br>block     | Double<br>blocks | 1<br>block     |                   |                    |  |
| 15                           | 16             | 15              | 60           | $4.5 \times 7.5 \times 5.3$<br>1240         | 8.33         | 13.5              | 0.0805         | 0.457                           | 0.0805         | 0.457            | 0.0844         | 0.2               | 1.5                |  |
| 20                           | 21.5           | 18              | 60           | $6 \times 9.5 \times 8.5$<br>1500           | 13.8<br>21.3 | 23.8<br>31.8      | 0.19<br>0.323  | 1.04<br>1.66                    | 0.19<br>0.323  | 1.04<br>1.66     | 0.201<br>0.27  | 0.35<br>0.47      | 2.3                |  |
| 23                           | 23.5           | 22              | 60           | $7 \times 11 \times 9$<br>1500              | 19.9<br>27.2 | 34.4<br>45.9      | 0.307<br>0.529 | 1.71<br>2.74                    | 0.307<br>0.529 | 1.71<br>2.74     | 0.344<br>0.459 | 0.59<br>0.75      | 3.3                |  |
| 28                           | 31             | 26              | 80           | $9 \times 14 \times 12$<br>1500             | 28<br>37.3   | 46.8<br>62.5      | 0.524<br>0.889 | 2.7<br>4.37                     | 0.524<br>0.889 | 2.7<br>4.37      | 0.562<br>0.751 | 1.1<br>1.3        | 4.8                |  |
| 34                           | 33             | 29              | 80           | $9 \times 14 \times 12$<br>1500             | 37.3<br>50.2 | 61.1<br>81.5      | 0.782<br>1.32  | 3.93<br>6.35                    | 0.782<br>1.32  | 3.93<br>6.35     | 0.905<br>1.2   | 1.6<br>2          | 6.6                |  |

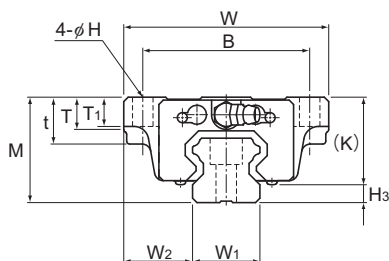
Note) The maximum length under "Length\*" indicates the standard maximum length of an LM rail. (See **A1-368**.)

Static permissible moment\*: 1 block: static permissible moment value with 1 LM block

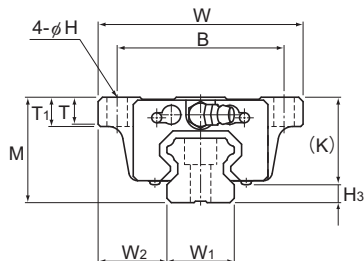
Double blocks: static permissible moment value with 2 blocks closely contacting with each other



## Models HSR-M1B and HSR-M1LB



Models HSR15, 25 to 35M1B/M1LB



Models HSR20M1B/M1LB

| Model No.               | Outer dimensions |       |               | LM block dimensions |    |     |                |    |     |                |      |     |     |         | Grease nipple | H <sub>3</sub> |
|-------------------------|------------------|-------|---------------|---------------------|----|-----|----------------|----|-----|----------------|------|-----|-----|---------|---------------|----------------|
|                         | Height           | Width | Length        | B                   | C  | H   | L <sub>1</sub> | t  | T   | T <sub>1</sub> | K    | N   | E   |         |               |                |
|                         | M                | W     | L             |                     |    |     |                |    |     |                |      |     |     |         |               |                |
| HSR 15M1B               | 24               | 47    | 59.6          | 38                  | 30 | 4.5 | 38.8           | 11 | 6.5 | 7              | 19.3 | 4.3 | 5.5 | PB1021B | 4.7           |                |
| HSR 20M1B<br>HSR 20M1LB | 30               | 63    | 76<br>92      | 53                  | 40 | 6   | 50.8<br>66.8   | —  | 9.5 | 10             | 26   | 5   | 12  | B-M6F   | 4             |                |
| HSR 25M1B<br>HSR 25M1LB | 36               | 70    | 83.9<br>103   | 57                  | 45 | 7   | 59.5<br>78.6   | 16 | 11  | 10             | 30.5 | 6   | 12  | B-M6F   | 5.5           |                |
| HSR 30M1B<br>HSR 30M1LB | 42               | 90    | 98.8<br>121.4 | 72                  | 52 | 9   | 70.4<br>93     | 18 | 9   | 10             | 35   | 7   | 12  | B-M6F   | 7             |                |
| HSR 35M1B<br>HSR 35M1LB | 48               | 100   | 112<br>137.4  | 82                  | 62 | 9   | 80.4<br>105.8  | 21 | 12  | 13             | 40.5 | 8   | 12  | B-M6F   | 7.5           |                |

Note) The length L of the high temperature type LM Guide model HSR is longer than normal type of model HSR. (Dimension L<sub>1</sub> is the same.)

### Model number coding

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

Model number

Type of LM block

Contamination protection accessory symbol (\*1)

LM rail length (in mm)

Symbol for LM rail jointed use

Symbol for No. of rails used on the same plane (\*4)

Symbol for high temperature type LM Guide

No. of LM blocks used on the same rail

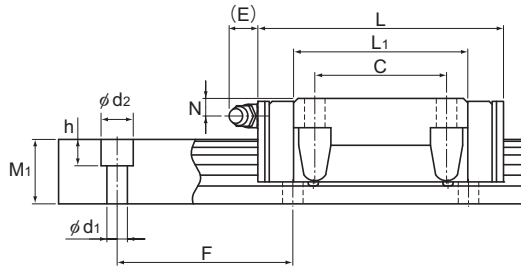
Radial clearance symbol (\*2)  
Normal (No symbol)  
Light preload (C1)  
Medium preload (C0)

Accuracy symbol (\*3)

Normal grade (No Symbol)/High accuracy grade (H)  
Precision grade (P)/Super precision grade (SP)  
Ultra precision grade (UP)

(\*1) See contamination protection accessory on **A1-510**. (\*2) See **A1-71**. (\*3) See **A1-77**. (\*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.)



Unit: mm

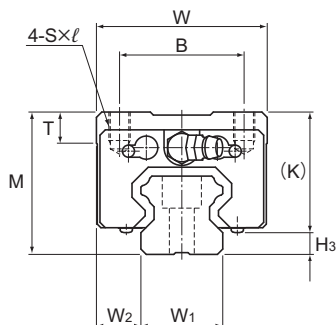
| LM rail dimensions           |                |                 |              |                                             |              | Basic load rating |                | Static permissible moment kN·m* |                |                  |                |                   | Mass               |  |
|------------------------------|----------------|-----------------|--------------|---------------------------------------------|--------------|-------------------|----------------|---------------------------------|----------------|------------------|----------------|-------------------|--------------------|--|
| Width<br>$W_1$<br>$\pm 0.05$ | Width<br>$W_2$ | Height<br>$M_1$ | Pitch<br>$F$ | Length*<br>$d_1 \times d_2 \times h$<br>Max | C<br>kN      | $C_0$<br>kN       | $M_A$          |                                 | $M_B$          |                  | $M_C$          | LM<br>block<br>kg | LM<br>rail<br>kg/m |  |
|                              |                |                 |              |                                             |              |                   | 1<br>block     | Double<br>blocks                | 1<br>block     | Double<br>blocks | 1<br>block     |                   |                    |  |
| 15                           | 16             | 15              | 60           | $4.5 \times 7.5 \times 5.3$<br>1240         | 8.33         | 13.5              | 0.0805         | 0.457                           | 0.0805         | 0.457            | 0.0844         | 0.2               | 1.5                |  |
| 20                           | 21.5           | 18              | 60           | $6 \times 9.5 \times 8.5$<br>1500           | 13.8<br>21.3 | 23.8<br>31.8      | 0.19<br>0.323  | 1.04<br>1.66                    | 0.19<br>0.323  | 1.04<br>1.66     | 0.201<br>0.27  | 0.35<br>0.47      | 2.3                |  |
| 23                           | 23.5           | 22              | 60           | $7 \times 11 \times 9$<br>1500              | 19.9<br>27.2 | 34.4<br>45.9      | 0.307<br>0.529 | 1.71<br>2.74                    | 0.307<br>0.529 | 1.71<br>2.74     | 0.344<br>0.459 | 0.59<br>0.75      | 3.3                |  |
| 28                           | 31             | 26              | 80           | $9 \times 14 \times 12$<br>1500             | 28<br>37.3   | 46.8<br>62.5      | 0.524<br>0.889 | 2.7<br>4.37                     | 0.524<br>0.889 | 2.7<br>4.37      | 0.562<br>0.751 | 1.1<br>1.3        | 4.8                |  |
| 34                           | 33             | 29              | 80           | $9 \times 14 \times 12$<br>1500             | 37.3<br>50.2 | 61.1<br>81.5      | 0.782<br>1.32  | 3.93<br>6.35                    | 0.782<br>1.32  | 3.93<br>6.35     | 0.905<br>1.2   | 1.6<br>2          | 6.6                |  |

Note) The maximum length under "Length\*" indicates the standard maximum length of an LM rail. (See **A1-368**.)

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

## Models HSR-M1R and HSR-M1LR



| Model No.               | Outer dimensions |       |               | LM block dimensions |          |       |                |    |      |     |     |               |     | H <sub>3</sub> |
|-------------------------|------------------|-------|---------------|---------------------|----------|-------|----------------|----|------|-----|-----|---------------|-----|----------------|
|                         | Height           | Width | Length        | B                   | C        | S×ℓ   | L <sub>1</sub> | T  | K    | N   | E   | Grease nipple |     |                |
|                         | M                | W     | L             |                     |          |       |                |    |      |     |     |               |     |                |
| HSR 15M1R               | 28               | 34    | 59.6          | 26                  | 26       | M4×5  | 38.8           | 6  | 23.3 | 8.3 | 5.5 | PB1021B       | 4.7 |                |
| HSR 20M1R<br>HSR 20M1LR | 30               | 44    | 76<br>92      | 32                  | 36<br>50 | M5×6  | 50.8<br>66.8   | 8  | 26   | 5   | 12  | B-M6F         | 4   |                |
| HSR 25M1R<br>HSR 25M1LR | 40               | 48    | 83.9<br>103   | 35                  | 35<br>50 | M6×8  | 59.5<br>78.6   | 8  | 34.5 | 10  | 12  | B-M6F         | 5.5 |                |
| HSR 30M1R<br>HSR 30M1LR | 45               | 60    | 98.8<br>121.4 | 40                  | 40<br>60 | M8×10 | 70.4<br>93     | 8  | 38   | 10  | 12  | B-M6F         | 7   |                |
| HSR 35M1R<br>HSR 35M1LR | 55               | 70    | 112<br>137.4  | 50                  | 50<br>72 | M8×12 | 80.4<br>105.8  | 10 | 47.5 | 15  | 12  | B-M6F         | 7.5 |                |

Note) The length L of the high temperature type LM Guide model HSR is longer than normal type of model HSR. (Dimension L<sub>1</sub> is the same.)

### Model number coding

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

Model number

Type of LM block

Contamination protection accessory symbol (\*1)

LM rail length (in mm)

Symbol for LM rail jointed use

Symbol for No. of rails used on the same plane (\*4)

Symbol for high temperature type LM Guide

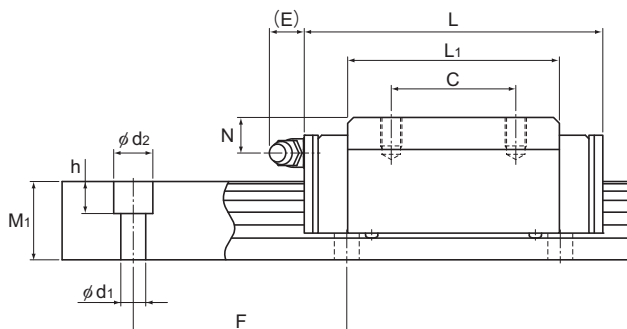
No. of LM blocks used on the same rail

Radial clearance symbol (\*2)  
Normal (No symbol)  
Light preload (C1)  
Medium preload (C0)

Accuracy symbol (\*3)  
Normal grade (No Symbol)/High accuracy grade (H)  
Precision grade (P)/Super precision grade (SP)  
Ultra precision grade (UP)

(\*1) See contamination protection accessory on **A1-510**. (\*2) See **A1-71**. (\*3) See **A1-77**. (\*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.)



Unit: mm

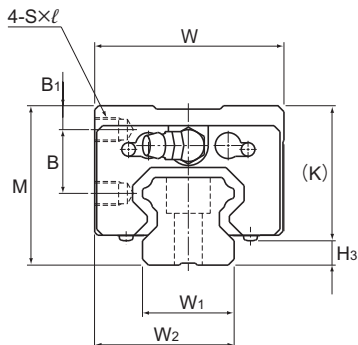
| LM rail dimensions           |                 |              |                |                           |      | Basic load rating |              | Static permissible moment<br>kN-m* |              |                |              |                | Mass            |     |
|------------------------------|-----------------|--------------|----------------|---------------------------|------|-------------------|--------------|------------------------------------|--------------|----------------|--------------|----------------|-----------------|-----|
| Width<br>$W_1$<br>$\pm 0.05$ | Height<br>$M_1$ | Pitch<br>$F$ | Length*<br>Max | $d_1 \times d_2 \times h$ | C    | $C_0$             | $M_A$        |                                    | $M_B$        |                | $M_C$        | LM block<br>kg | LM rail<br>kg/m |     |
|                              |                 |              |                |                           |      |                   | 1 block      | Double blocks                      | 1 block      | Double blocks  | 1 block      |                |                 |     |
| 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 |
| 20                           | 12              | 18           | 60             | 6×9.5×8.5                 | 1500 | 13.8<br>21.3      | 23.8<br>31.8 | 0.19<br>0.323                      | 1.04<br>1.66 | 0.19<br>0.323  | 1.04<br>1.66 | 0.201<br>0.27  | 0.35<br>0.47    | 2.3 |
| 23                           | 12.5            | 22           | 60             | 7×11×9                    | 1500 | 19.9<br>27.2      | 34.4<br>45.9 | 0.307<br>0.529                     | 1.71<br>2.74 | 0.307<br>0.529 | 1.71<br>2.74 | 0.344<br>0.459 | 0.59<br>0.75    | 3.3 |
| 28                           | 16              | 26           | 80             | 9×14×12                   | 1500 | 28<br>37.3        | 46.8<br>62.5 | 0.524<br>0.889                     | 2.7<br>4.37  | 0.524<br>0.889 | 2.7<br>4.37  | 0.562<br>0.751 | 1.1<br>1.3      | 4.8 |
| 34                           | 18              | 29           | 80             | 9×14×12                   | 1500 | 37.3<br>50.2      | 61.1<br>81.5 | 0.782<br>1.32                      | 3.93<br>6.35 | 0.782<br>1.32  | 3.93<br>6.35 | 0.905<br>1.2   | 1.6<br>2        | 6.6 |

Note) The maximum length under "Length\*" indicates the standard maximum length of an LM rail. (See **A1-368**.)

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 HSR-M1YR



| Model No.  | Outer dimensions |       |        | LM block dimensions |      |    |         |                |      |     |     |         | Grease nipple | H <sub>3</sub> |
|------------|------------------|-------|--------|---------------------|------|----|---------|----------------|------|-----|-----|---------|---------------|----------------|
|            | Height           | Width | Length | B <sub>1</sub>      | B    | C  | S × l   | L <sub>1</sub> | K    | N   | E   |         |               |                |
|            | M                | W     | L      |                     |      |    |         |                |      |     |     |         |               |                |
| HSR 15M1YR | 28               | 33.5  | 59.6   | 4.3                 | 11.5 | 18 | M4 × 5  | 38.8           | 23.3 | 8.3 | 5.5 | PB1021B | 4.7           |                |
| HSR 20M1YR | 30               | 43.5  | 76     | 4                   | 11.5 | 25 | M5 × 6  | 50.8           | 26   | 5   | 12  | B-M6F   | 4             |                |
| HSR 25M1YR | 40               | 47.5  | 83.9   | 6                   | 16   | 30 | M6 × 6  | 59.5           | 34.5 | 10  | 12  | B-M6F   | 5.5           |                |
| HSR 30M1YR | 45               | 59.5  | 98.8   | 8                   | 16   | 40 | M6 × 9  | 70.4           | 38   | 10  | 12  | B-M6F   | 7             |                |
| HSR 35M1YR | 55               | 69.5  | 112    | 8                   | 23   | 43 | M8 × 10 | 80.4           | 47.5 | 15  | 12  | B-M6F   | 7.5           |                |

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<sub>1</sub> is the same.)

## Model number coding

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

Model number

Type of LM block

Contamination protection accessory symbol (\*1)

LM rail length (in mm)

Symbol for LM rail jointed use

Symbol for No. of rails used on the same plane (\*4)

Symbol for high temperature type LM Guide

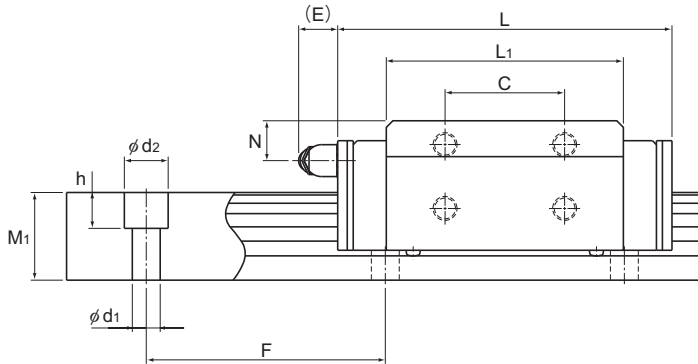
No. of LM blocks used on the same rail

Radial clearance symbol (\*2)  
Normal (No symbol)  
Light preload (C1)  
Medium preload (C0)

Accuracy symbol (\*3)  
Normal grade (No Symbol)/High accuracy grade (H)  
Precision grade (P)/Super precision grade (SP)  
Ultra precision grade (UP)

(\*1) See contamination protection accessory on **A1-510**. (\*2) See **A1-71**. (\*3) See **A1-77**. (\*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.)



Unit: mm

|  | LM rail dimensions      |        |       |         |             | Basic load rating |                |      | Static permissible moment kN-m* |       |                |          |         | Mass          |         |
|--|-------------------------|--------|-------|---------|-------------|-------------------|----------------|------|---------------------------------|-------|----------------|----------|---------|---------------|---------|
|  | Width                   | Height | Pitch | Length* | C           | C <sub>0</sub>    | M <sub>A</sub> |      | M <sub>B</sub>                  |       | M <sub>C</sub> | LM block | LM rail |               |         |
|  | W <sub>1</sub><br>±0.05 |        |       |         |             |                   | W <sub>2</sub> | Max  | kN                              | kN    | 1 block        |          |         | Double blocks | 1 block |
|  | 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     |
|  | 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     |
|  | 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     |
|  | 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     |
|  | 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 maximum length under "Length\*" indicates the standard maximum length of an LM rail. (See **A1-368**.)

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

## 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.

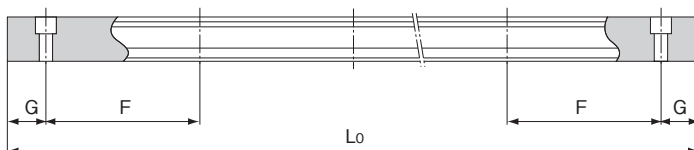


Table1 Standard Length and Maximum Length of the LM Rail for Model HSR-M1

Unit: mm

| Model No.                         | HSR 15M1 | HSR 20M1 | HSR 25M1 | HSR 30M1 | HSR 35M1 |
|-----------------------------------|----------|----------|----------|----------|----------|
| LM rail standard length ( $L_0$ ) | 160      | 220      | 220      | 280      | 280      |
|                                   | 220      | 280      | 280      | 360      | 360      |
|                                   | 280      | 340      | 340      | 440      | 440      |
|                                   | 340      | 400      | 400      | 520      | 520      |
|                                   | 400      | 460      | 460      | 600      | 600      |
|                                   | 460      | 520      | 520      | 680      | 680      |
|                                   | 520      | 580      | 580      | 760      | 760      |
|                                   | 580      | 640      | 640      | 840      | 840      |
|                                   | 640      | 700      | 700      | 920      | 920      |
|                                   | 700      | 760      | 760      | 1000     | 1000     |
|                                   | 760      | 820      | 820      | 1080     | 1080     |
|                                   | 820      | 940      | 940      | 1160     | 1160     |
|                                   | 940      | 1000     | 1000     | 1240     | 1240     |
|                                   | 1000     | 1060     | 1060     | 1320     | 1320     |
|                                   | 1060     | 1120     | 1120     | 1400     | 1400     |
|                                   | 1120     | 1180     | 1180     | 1480     | 1480     |
| 1180                              | 1240     | 1240     |          |          |          |
| 1240                              | 1360     | 1300     |          |          |          |
|                                   | 1480     | 1360     |          |          |          |
|                                   |          | 1420     |          |          |          |
|                                   |          | 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.

