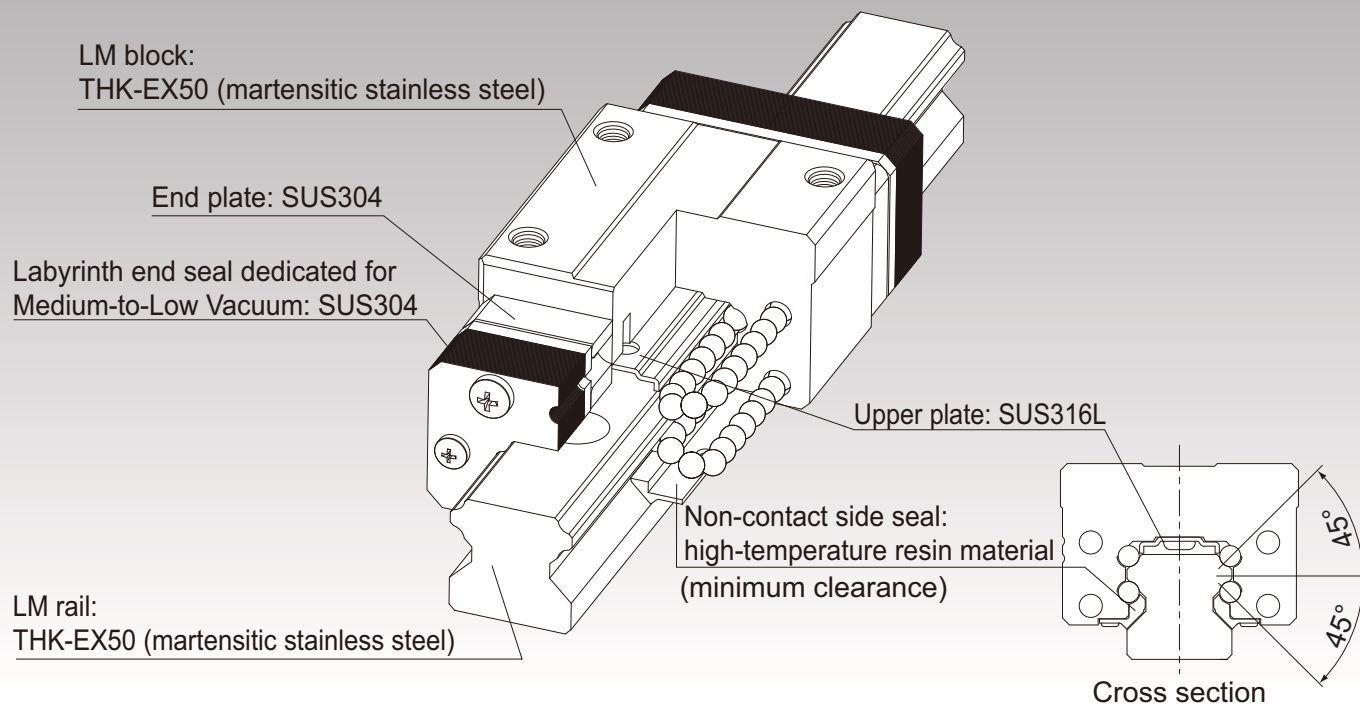


HSR-M1VV

LM Guide Medium-to-low Vacuum Type Model HSR-M1VV



Structure and Features

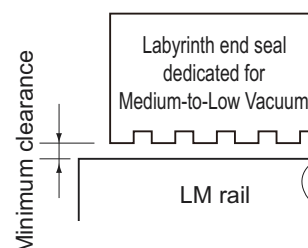
[Features]

- Operable in various environments at pressure between atmospheric pressure and vacuum (10^{-3} [Pa]).
- Capable of withstanding baking temperature up to 200°C *
- Use of a newly developed labyrinth end seal dedicated for Medium-to-Low Vacuum increases grease retention and allows extended use in vacuum.
- Use of grease designed for Medium-to-Low Vacuum achieves a stable rolling resistance.

* If the baking temperature exceeds 100°C, multiply the basic load rating with the temperature coefficient.

Structure of the labyrinth end seal dedicated for Medium-to-Low Vacuum

The labyrinth end seal dedicated for Medium-to-Low Vacuum forms a multi-stage space as shown in the figure on the right to minimize the pressure difference between adjacent stages. This reduces the out-flow velocity of the oil inside the LM block to a minimum. In addition, the seal will not affect the rolling resistance since it does not contact the LM rail.

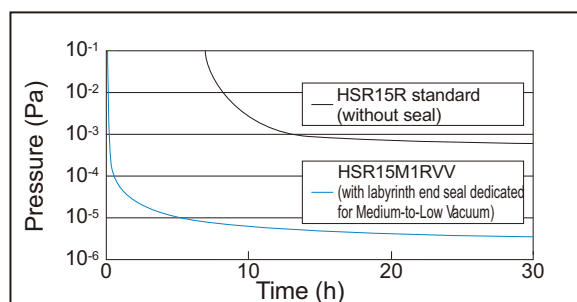


[Achievable vacuum level]

The LM Guide for Medium-to-Low Vacuum demonstrates an excellent achievable vacuum level.

[Test conditions] Temperature: 25°C ($\pm 5^\circ\text{C}$)

	HSR15M1RVV	HSR15R (for reference)
Grease	Grease for Medium-to-Low Vacuum	AFB-LF Grease
Seal	Labyrinth end seal dedicated for Medium-to-Low Vacuum	None
Endplate	Stainless steel	Resin



Achievable vacuum level

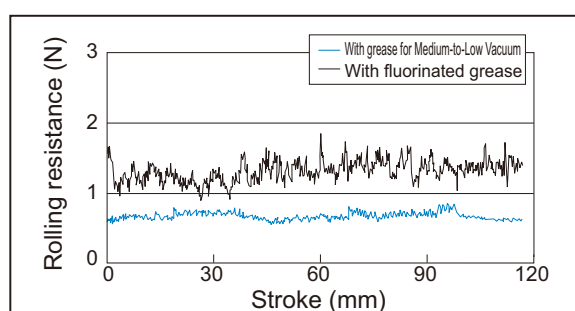
[Rolling resistance]

The grease used in the LM Guide for Medium-to-Low Vacuum has a smaller rolling resistance than conventional fluorine grease and ensures stable rolling motion.

Specimen: HSR15M1RVV

Temperature: 25°C ($\pm 5^\circ\text{C}$)

Pressure: atmospheric pressure



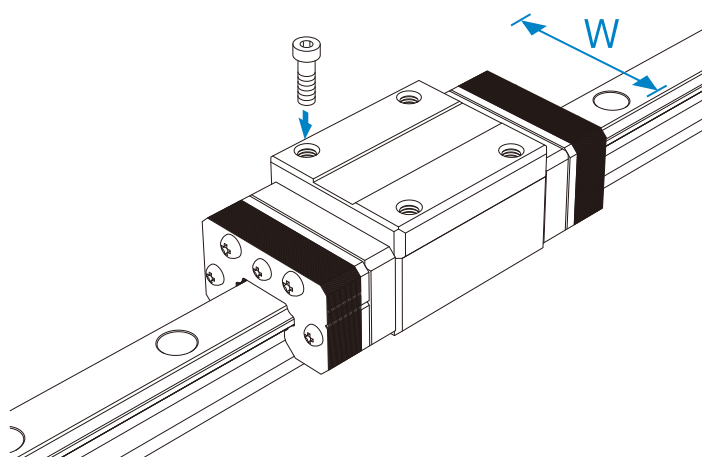
Rolling resistance fluctuation

Types and Features

Model HSR-M1RVV

Specification Table⇒A1-382

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.

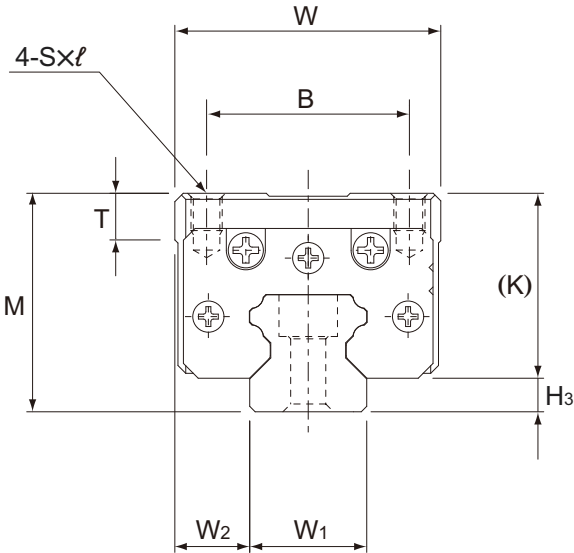


Precautions on Design

If a large moment is applied to a system consisting of one LM rail or one LM block per shaft, the labyrinth end seal may contact the LM rail, which could affect the system's motion.

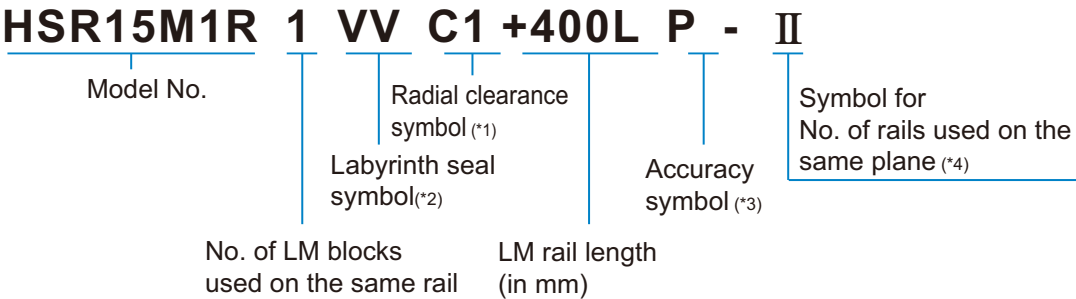
If a moment is applied, it is recommended to use two rails with two LM blocks per rail. Contact THK for details.

Model HSR-M1VV



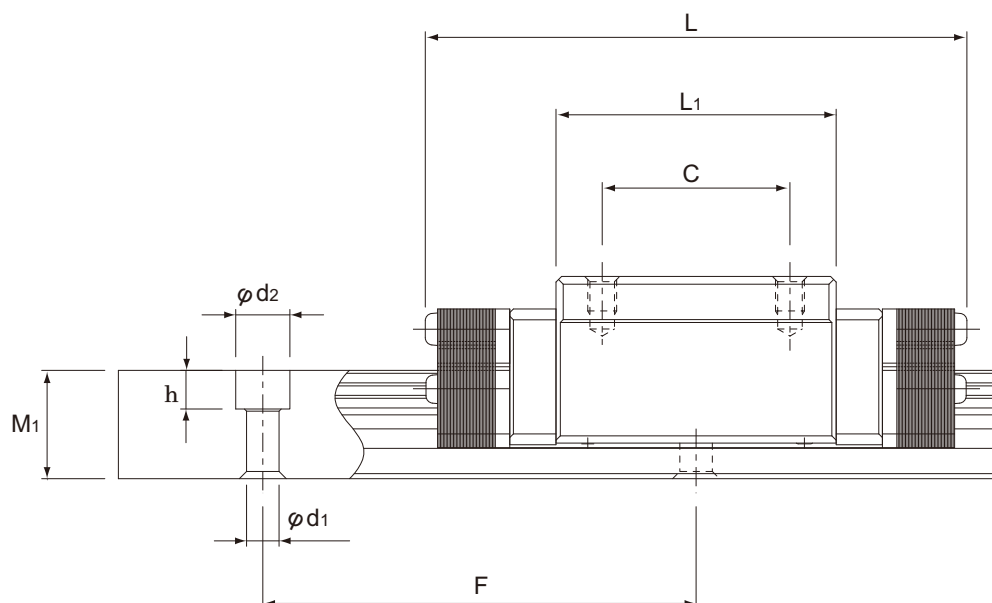
Model No.	Outer dimensions			LM block dimensions						
	Height	Width	Length							
	M	W	L	B	C	S×ℓ	L ₁	T	K	H ₃
HSR15M1R-VV	28	34	75	26	26	M4×5	38.8	6	23.7	4.3

Model number coding



(*1) See A1-71 . (*2) See A1-379 . (*3) See A1-76 . (*4) See A1-13 .

Note1) The radial clearance, maximum LM rail length and accuracy class are equal to that of model HSR.
Note2) With this model, a single-rail unit constitutes one set (i.e., the required number of sets when 2 rails are used in parallel is 2).



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
$W_1 \pm 0.05$	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	15	60	4.5×7.5×5.3	1240	10.9	15.7	0.0945	0.527	0.0945	0.527	0.0998	0.27	1.5

Note) The maximum length under "Length*" indicates the standard maximum length of an LM rail. (See A1-384 .)

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: VV, with labyrinth end seal).

If a large moment is applied to a system consisting of one LM rail or one LM block per shaft, the labyrinth end seal may contact the LM rail, which could affect the system's motion.

If a moment is applied, it is recommended to use two rails with two LM blocks per rail.

Contact THK for details.

Standard Length and Maximum Length of the LM Rail

Table1 shows the standard and maximum lengths for Model HSR-M1VV rails. If the maximum length of the desired LM rail exceeds these values, contact THK.

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.

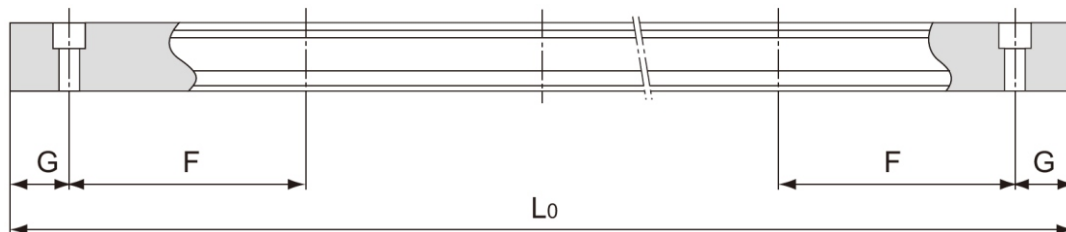


Table1 Standard Length and Maximum Length of the LM Rail for Model HSR-M1VV

Unit: mm

Model No.	HSR15M1R-VV
LM rail standard length (L_0)	160
	220
	280
	340
	400
	460
	520
	580
	640
	700
	760
	820
	940
	1000
	1060
	1120
	1180
	1240
Standard pitch F	60
G	20
Max length	1240

Note1) The maximum length varies with accuracy grades. Contact THK for details.

Note2) If a length greater than the above maximum is required, contact THK.

Pełny katalog: <http://alb.eco/THKKatalog>



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