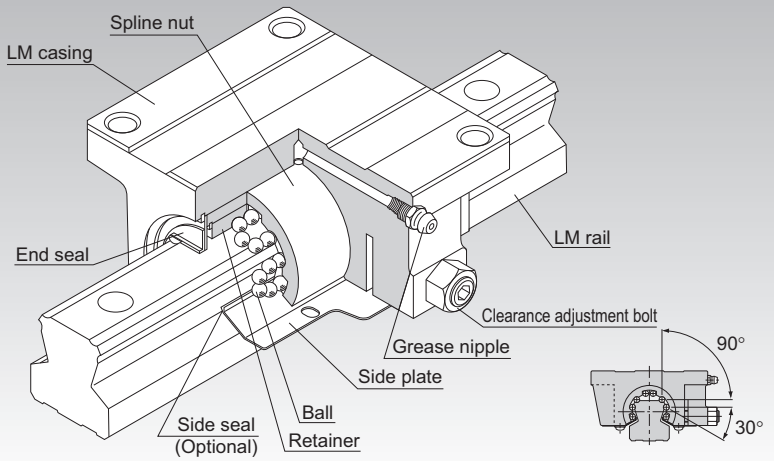
NSR-TBC

LM Guide Self-aligning Type Model NSR-TBC



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Structure and Features

Model NSR-TBC is the only LM Guide whose casing consists of two pieces instead of a single-piece LM block. The rigid, cast iron casing contains a cylindrical spline nut that is partially cut at an angle of 120°. This enables the model to self-aligning on the fitting surface with the casing, thus to permit rough installation.

[Capable of Receiving Loads in All Directions]
NSR-TBC has four rows of balls. The balls are arranged in two rows on each shoulder of the LM rail, and can receive loads in all four directions: upward, downward and lateral directions. Due to the self-aligning structure, however, a rotational moment (M_C) cannot be applied in a single-rail configuration.

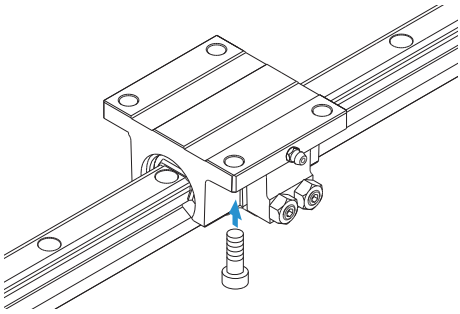
[Easy Installation and Accuracy Establishment]
Model NSR-TBC is highly capable of performing self-adjustment and self-alignment. As a result, even if two rails are not mounted with accuracy, the LM casing absorbs the error and it does not affect the traveling performance. Accordingly, the machine performance will not be deteriorated.

Types and Features

Model NSR-TBC

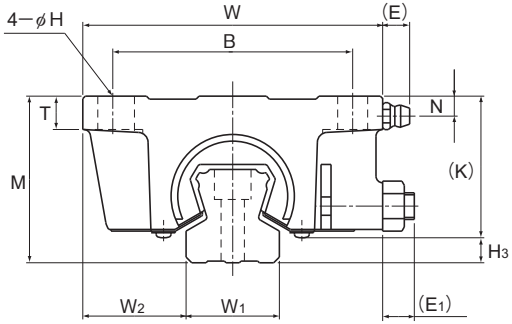
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The flange of the LM casing has through holes, allowing the LM Guide to be mounted from the bottom.



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Model NSR-TBC



Model No.	Outer dimensions			LM casing dimensiones									
	Height	Width	Length								Grease nipple	
	M	W	L	B	C	H	T	K	N	E	E_1		H_3
NSR 20TBC	40	70	67	55	50	6.6	8	34.5	5.5	8.5	7	A-M6F	5.5
NSR 25TBC	50	90	78	72	60	9	10	43.5	6	8.5	7.5	A-M6F	6.5
NSR 30TBC	60	100	90	82	72	9	12	51	8	8.5	9.5	A-M6F	9
NSR 40TBC	75	120	110	100	80	11	13	64	10	8.5	12	A-M6F	10.5
NSR 50TBC	82	140	123	116	95	14	15	74	9	15	15	A-PT1/8	8
NSR 70TBC	105	175	150	150	110	14	18	95.5	10	15	16.5	A-PT1/8	9.5

Model number coding

NSR50TBC 2 UU C1 +1200L P T -II

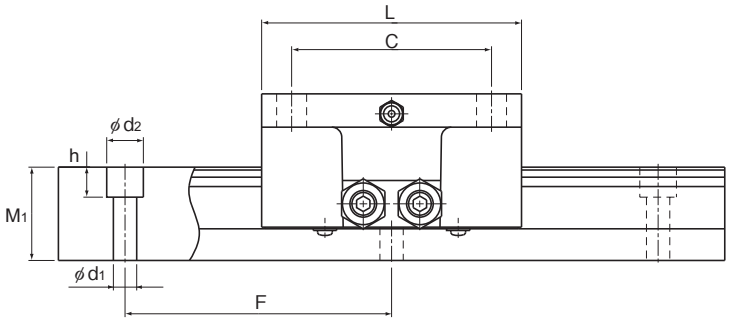
- NSR50TBC: Model number
- 2: No. of LM cases used on the same rail
- UU: Contamination protection accessory symbol (*1)
- C1: Radial clearance symbol (*2) Normal (No symbol) Light preload (C1) Medium preload (C0)
- +1200L: LM rail length (in mm)
- P: Accuracy symbol (*3) Normal grade (No Symbol)/High 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 A1-496. (*2) See A1-72. (*3) See A1-76. (*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.)

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Download data by searching for the corresponding model number on the Technical Support site. https://tech.thk.com



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	LM casing	LM rail
	W_1 ±0.05	W_2	M_1	F	$d_1 \times d_2 \times h$	Max	kN	kN	Double casings	Double casings	kg	kg/m
	23	23.5	23	60	6×9.5×8.5	2200	9.41	18.6	0.31	0.27	0.62	3.1
	28	31	28	80	7×11×9	3000	14.9	26.7	0.53	0.46	1.13	4.7
	34	33	34.5	80	7×11×9	3000	22.5	38.3	0.85	0.74	1.8	7.2
	45	37.5	44.5	105	9×14×12	3000	37.1	62.2	1.7	1.5	3.5	12.2
	48	46	47.5	120	11×17.5×14	3000	55.1	87.4	2.7	2.4	5.2	14.3
	63	56	62	150	14×20×17	3000	90.8	152	9.8	4.9	9.4	27.6

Note1) The maximum length under "Length*" indicates the standard maximum length of an LM rail. (See A1-334.)
Static permissible moment* Double casings: the static permissible moment when two LM casings 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) The basic load rating in the dimension table is for a load in the radial direction. Use Table7 on A1-58 to calculate the load rating for loads in the reverse radial direction or lateral direction.

Options⇒A1-459

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Standard Length and Maximum Length of the LM Rail

Table1 shows the standard lengths and the maximum lengths of model NSR-TBC 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.

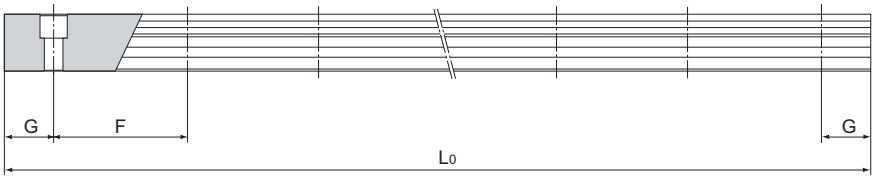


Table1 Standard Length and Maximum Length of the LM Rail for Model NSR-TBC

Unit: mm

Model No.	NSR 20TBC	NSR 25TBC	NSR 30TBC	NSR 40TBC	NSR 50TBC	NSR 70TBC
LM rail standard length (L_0)	220 280 340 460 640 820 1000 1240 1600	280 440 600 760 1000 1240 1640 2040 2520 3000	280 440 600 760 1000 1240 1640 2040 2520 3000	570 885 1200 1620 2040 2460 2985	780 1020 1260 1500 1980 2580 2940	1270 1570 2020 2620
Standard pitch F	60	80	80	105	120	150
G	20	20	20	22.5	30	35
Max length	2200	3000	3000	3000	3000	3000

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.

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