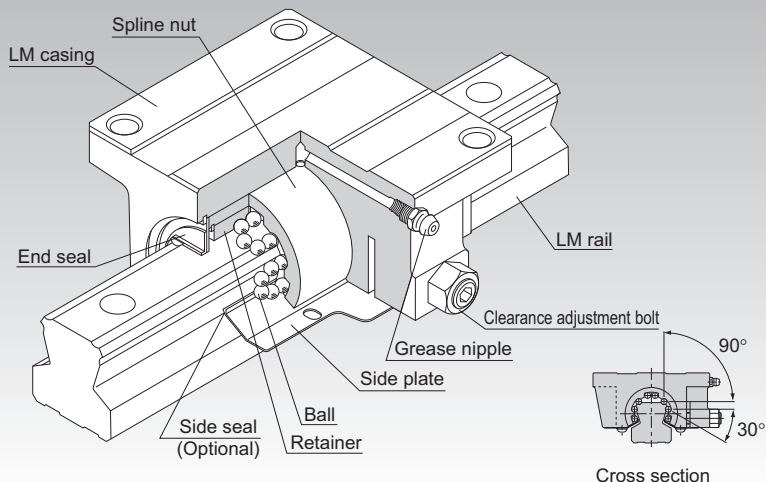


NSR-TBC

LM Guide Self-aligning Type Model NSR-TBC



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 **A1-72**

Accuracy Standards **A1-77**

Shoulder Height of the Mounting Base and the Corner Radius **A1-459**

Permissible Error of the Mounting Surface **A1-467**

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

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]

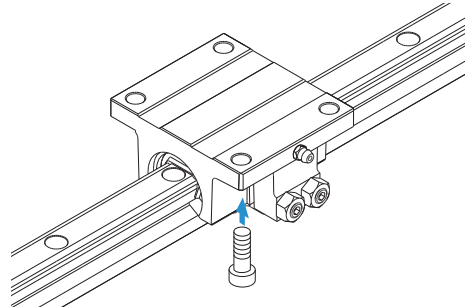
Model NSR-TBC is highly capable of performing self-adjustment and self-alignment. As a result, even if two rails are not mounted with accuracy, the LM casing absorbs the error and it does not affect the traveling performance. Accordingly, the machine performance will not be deteriorated.

Types and Features

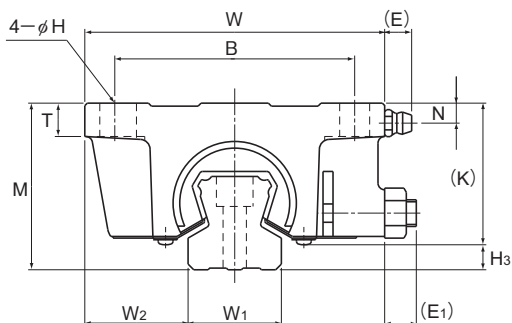
Model NSR-TBC

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

Specification Table⇒ **A1-350**



Model NSR-TBC



Model No.	Outer dimensions			LM casing dimensions									H ₃
	Height	Width	Length	B	C	H	T	K	N	E	E ₁	Grease nipple	
	M	W	L										
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

Model number

No. of LM cases
used on the same
rail

Contamination
protection
accessory
symbol (*1)

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

LM rail length
(in mm)

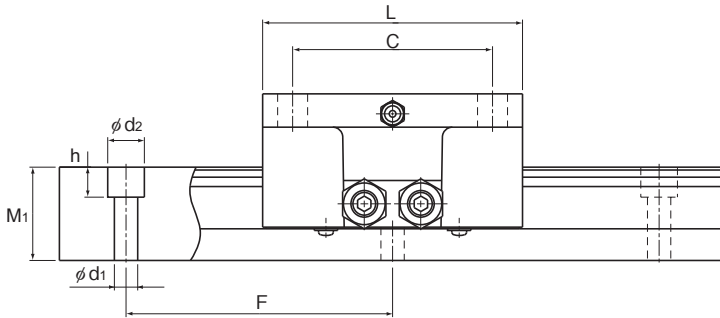
Symbol for
LM rail
jointed use

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



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

(*1) See contamination protection accessory on **A1-510**. (*2) See **A1-72**. (*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*		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 × d ₂ × 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

Note) The maximum length under "Length*" indicates the standard maximum length of an LM rail. (See **A1-352**.)

Static permissible moment*: Double casings: static permissible moment value with 2 casings 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 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.

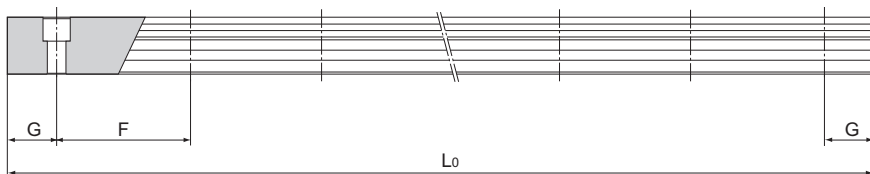


Table1 Standard Length and Maximum Length of the LM Rail for Model NSR-TBC

Unit: mm

Model No.	NSR 20TBC	NSR 25TBC	NSR 30TBC	NSR 40TBC	NSR 50TBC	NSR 70TBC
LM rail standard length (L_0)	220	280	280	570	780	1270
	280	440	440	885	1020	1570
	340	600	600	1200	1260	2020
	460	760	760	1620	1500	2620
	640	1000	1000	2040	1980	
	820	1240	1240	2460	2580	
	1000	1640	1640	2985	2940	
	1240	2040	2040			
	1600	2520	2520			
	3000	3000				
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.

