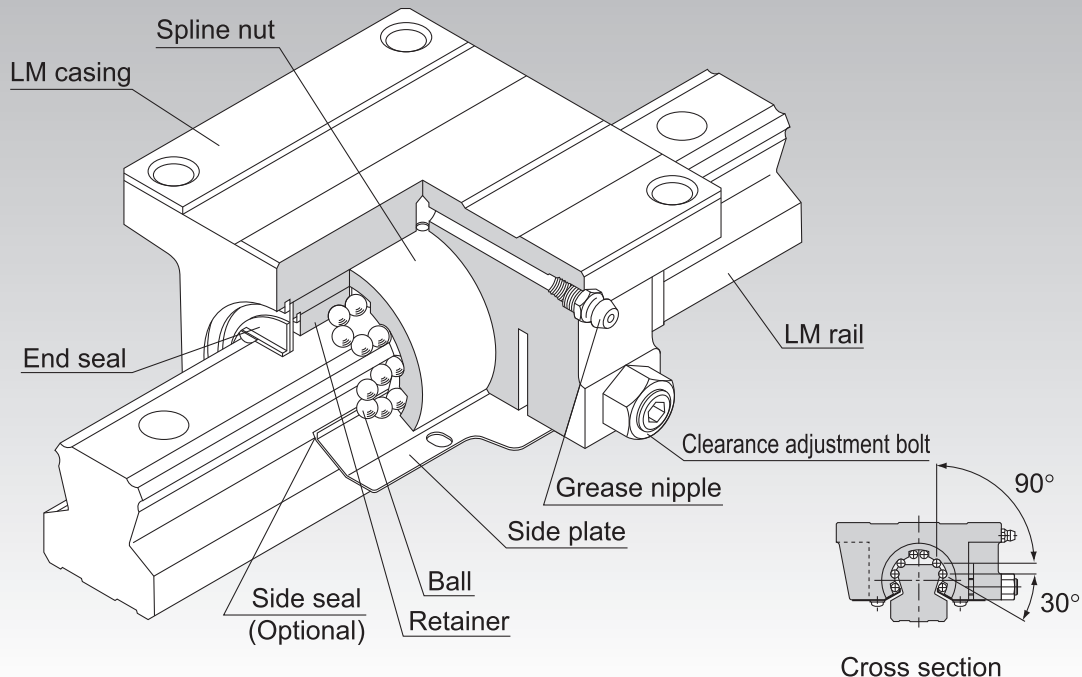


NSR-TBC

LM Guide Self-aligning Type Model NSR-TBC



Point of Selection	A1-10
Point of Design	A1-460
Options	A1-485
Model No.	A1-551
Precautions on Use	A1-557
Accessories for Lubrication	A24-1
Mounting Procedure and Maintenance	B1-89
Equivalent Moment Factor	A1-43
Rated Loads in All Directions	A1-60
Equivalent Factor in Each Direction	A1-62
Radial Clearance	A1-74
Accuracy Standards	A1-78
Shoulder Height of the Mounting Base and the Corner Radius	A1-469
Reference Error Tolerance for the Mounting Surface	A1-477
Dimensions of Each Model with Options Attached	A1-499

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 a Load in Any Direction]

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]

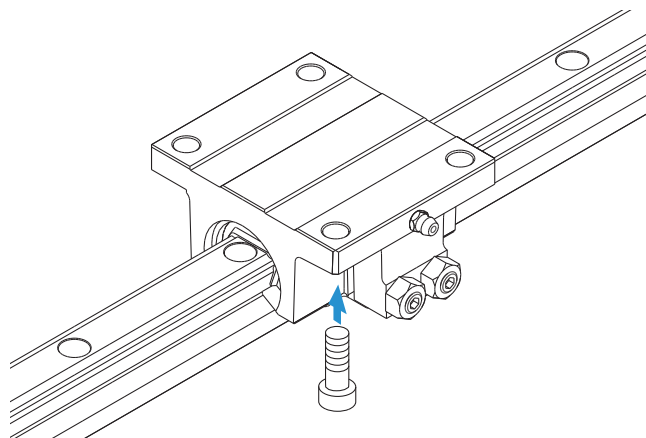
Model NSR-TBC is highly capable of performing self-adjustment and self-alignment. As a result, even if two rails are not mounted with accuracy, the LM casing absorbs the error and it does not affect the traveling performance. Accordingly, the machine performance will not be deteriorated.

Types and Features

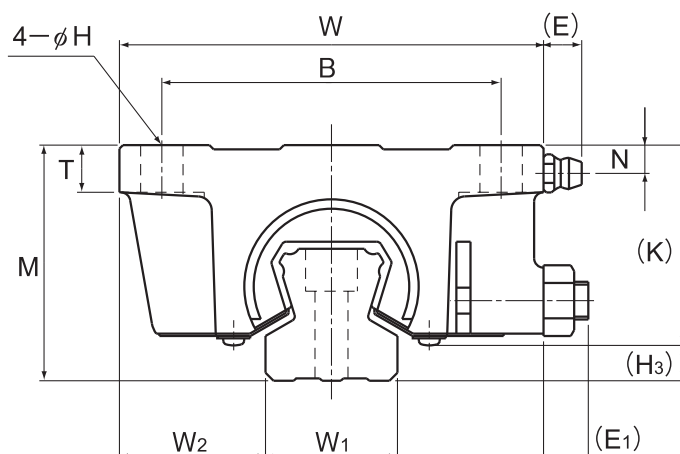
Model NSR-TBC

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									Grease nipple	H ₃
	Height	Width	Length	B	C	H	T	K	N	E	E ₁			
	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

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)

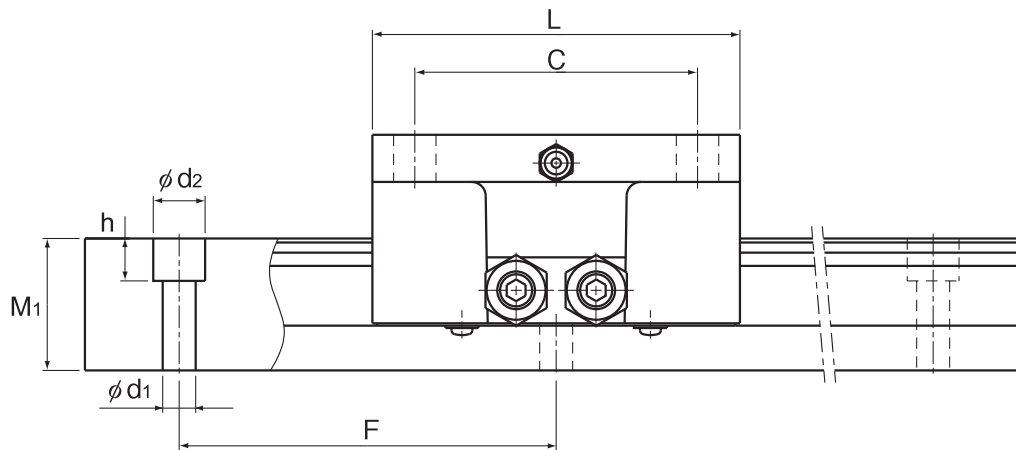
Symbol for LM rail jointed use

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 **A1-524**. (*2) See **A1-74**. (*3) See **A1-78**. (*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 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

Note1) The maximum length under "Length*" indicates the standard maximum length of an LM rail. (See **A1-352**.)

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 **A1-60** to calculate the load rating for loads in the reverse radial direction or lateral direction.

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 special rail lengths, it is recommended to use a value corresponding to the G,g dimension from the table. As the G,g dimension increases, this portion becomes less stable, and the accuracy performance is severely impacted.

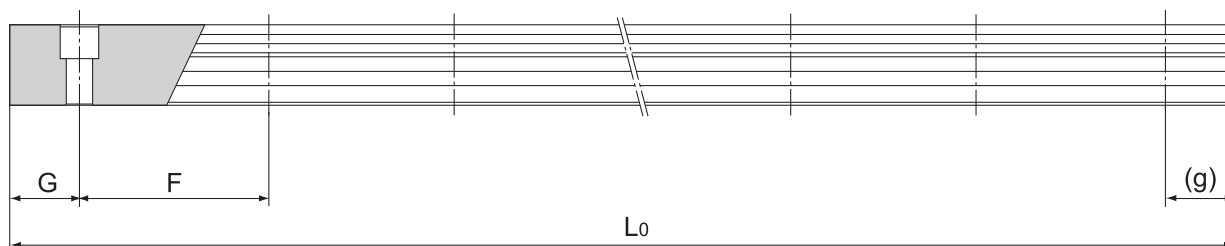


Table1 Standard Length and Maximum Length of the LM Rail for Model NSR-TBC

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,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.

