

## A-III -7 New Type of Rolling Element Linear Motion Bearing Translide™

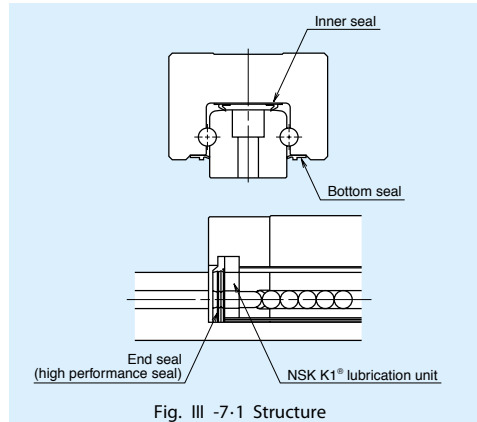
Translide™, a new type of rolling element linear motion bearing, is well suited to transportation equipment; for example, manufacturing lines of automobiles, automobile parts, and the like. It defies all traditional understanding within the industry in every aspect, and is surely a landmark in the progress of linear motion bearing technology.

### (1) Features

- A Inexpensive ..... Newly developed manufacturing process of rail, and design review of ball slide contribute to substantial cost reductions.
- A High capacity ..... Optimum ball diameter for higher capacity design.
- A High dust proof capability ..... Dust-tight high performance end seals, bottom seals, and inner seals are built-in as a standard feature. (Optional protector is available for protection against hot debris such as welding spatters or hard contamination.)
- A Maintenance free ..... NSK K1® lubrication unit is equipped as a standard specification for long-term maintenance-free operation.
- A Rust prevention ..... NSK provides a lineup of products with antirust surface treatment for corrosive environments.
- A Interchangeable rails and ball slides (New product) ..... Launched interchangeable type of rails and ball slides for random matching.

### (2) Structure

Enhanced dustproof design and simple structure has contributed toward longer life. (Refer to Fig. III -7-1)



Balls are glued to the tracks in order to take this picture.

### (3) Accuracy and Clearance

- A Accuracy grade: Normal grade for transportation
- A Clearance: 60 μm or less
- A Running parallelism: 100 μm or less

### (4) Application

- Suitable for transporting equipment ..... Automobile manufacturing, machine tools (loader/un-loader), tire manufacturing equipment, woodworking machines, automatic doors, and the like.

### (5) Reference Number

Reference numbers are assigned to identify a Translide after finalizing all specifications. These reference numbers will be shown on a specification drawing. Please specify the reference number to identify the product when ordering.

#### a Assembled Type

Example: **TS 30 2400 AN P 2 - \*\* KL S**

Translide	Model number	Rail length (mm)	Shape code of ball slide	Number of ball sliders assembled to a rail	Preload code S: Clearance of 60 μm or less	Accuracy grade KL: Normal grade for transportation	Design serial number
Surface treatment/Rails design code							
P: No surface treatment/Counterbores on a rail top face (Type I)							
V: No surface treatment/Tapped holes on a rail bottom face (Type II)							
R: Fluoride low temperature chrome plating/Counterbores on the top face of rail (Type I)							
W: Fluoride low temperature chrome plating/Tapped holes on the bottom face of rail (Type II)							

#### b Interchangeable

##### b -1 Interchangeable ball slide

Example: **TAS 30 AN -F**

Translide: Interchangeable ball slide	Model number	Shape code of ball slide	No code: No surface treatment + AS2 Grease	F: Fluoride low temperature chrome plating + AS2 Grease	F50: Fluoride low temperature chrome plating + LG2 Grease
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##### b -2 Interchangeable rail

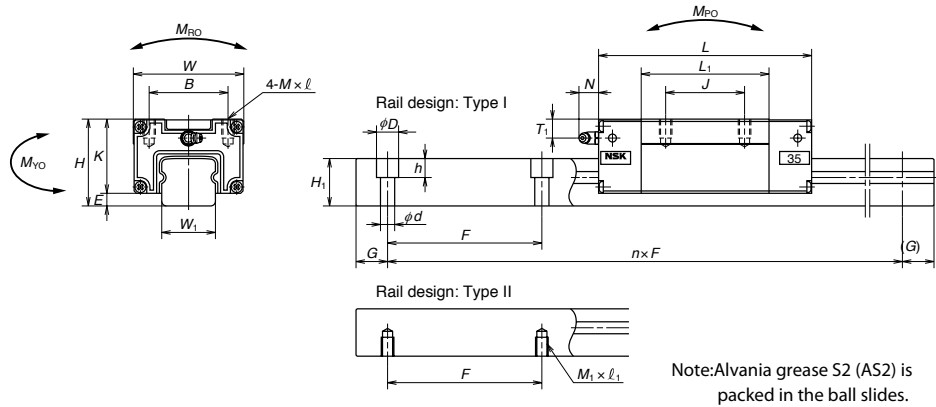
Example: **T1S 30 2400 L P N T \*\* PL S**

Translide: Interchangeable rail	Rail length (mm)	Model number	Surface treatment/Rails design code	Clearance code	Accuracy grade PL: Normal grade for transportation	Design serial number
P: No surface treatment/Counterbores on a rail top face (Type I)				S: Clearance of 60 μm or less		
V: No surface treatment/Tapped holes on a rail bottom face (Type II)						
R: Fluoride low temperature chrome plating/Counterbores on the top face of rail (Type I)						
W: Fluoride low temperature chrome plating/Tapped holes on the bottom face of rail (Type II)						
Butting rail code						
N: No butting						
L: Rail for butting						



(6) Dimensions  
Assembled Type

Dimensions are shown in Table III -7.1



Interchangeable Type  
Interchangeable ball slide

Refer to Table III -7.1 for details of dimensions.

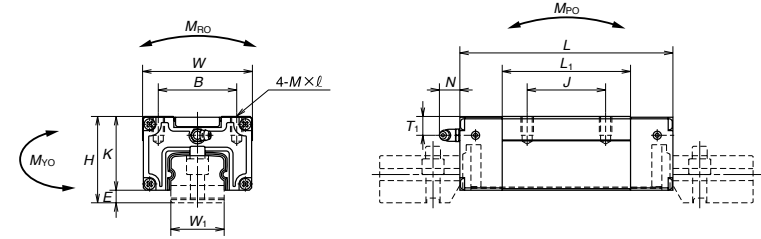


Table III -7.1

Model number	Assembly		Ball slide											Width	Height	Pitch
	Height	E	Width	Length	Tapped hole					Grease fitting						
					B	J	M x Pitch x l	L1	K	Screw size	T1	N	W1			
TS15AN	28	3	34	72.2	26	26	M4 x0.7 x6	39	25	φ 3	6.5	(5)	15	14	120	
TS20AN	30	3	44	87	32	36	M5 x0.8 x8	50	27	M6 x0.75	6.5	(14)	20	15	120	
TS25AN	40	4	48	100	35	35	M6 x1 x9	58	36	M6 x0.75	9.5	(14)	23	20	120	
TS30AN	45	6.5	60	115	40	40	M8 x1.25 x10	70	38.5	M6 x0.75	9.5	(14)	28	25	160	
TS35AN	55	8	70	135.8	50	50	M8 x1.25 x12	81.8	47	M6 x0.75	12	(14)	34	30	160	

\* Please consult with NSK for butting rail specification when the required stroke length is longer than rail length L.  
\*\* The maximum rail length of fluoride low temperature chrome plating is 4000mm (G=80).

Unit: mm

Rail				Basic load rating					Ball diameter	Mass	
Type I	Type II	G	Max. length	Dynamic	Static	Allowable static moment load (N · m)			Dw	Ball slide	Rail
d x D x h	M1 x Pitch x l1	(Recommended)	L0max**	C (N)	C0 (N)	MRO	MPO	MVO		(kg)	(kg/m)
4.5 x 7.5 x 5.3	M4 x 0.7 x 6	20	1 960	9 800	11 800	92	64	64	3.968	0.21	1.5
6 x 9.5 x 8.5	M5 x 0.8 x 8	20	2 920	15 700	19 100	196	137	137	4.762	0.37	2.1
7 x 11 x 9	M6 x 1 x 9	20	4 000	21 800	26 000	320	217	217	5.556	0.47	3.4
9 x 14 x 12	M8 x 1.25 x 12	20	4 040**	31 000	37 500	565	395	395	6.350	0.77	5.3
9 x 14 x 12	M8 x 1.25 x 12	20	4 040**	46 500	53 000	970	635	635	7.937	1.3	7.7

The basic dynamic load rating is a load that furnishes 50 km rating fatigue life; it is a vertical and constant load to the ball slide mounting surface. When converting the basic dynamic load rating C to the dynamic load rating C100 for 100 km rating fatigue life, divide the C by 1.26.



(7) Result of Endurance Test

Deterioration in surface roughness is not observed on ball tracks of a rail after running the distance of the estimated life. (Refer to Fig. III -7-2)



Ball track testing point

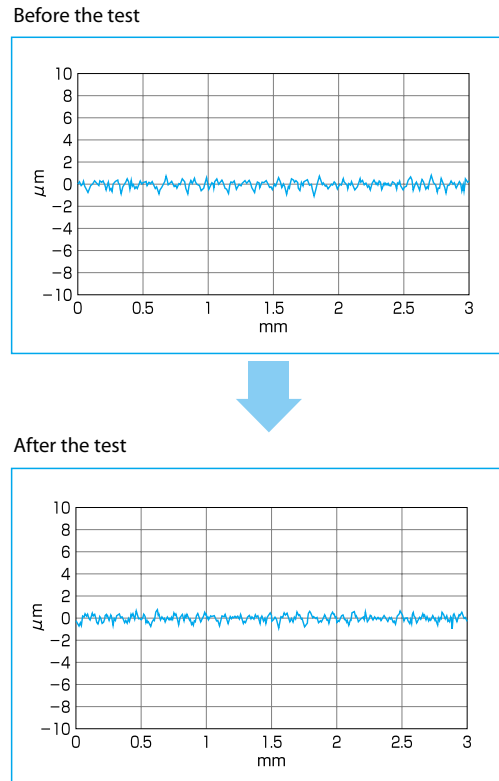


Fig. III -7-2 Comparison of surface roughness before and after the test

Precautions for using Translide™

Please follow the precautions below for your safety.

- A Ambient temperature: 50 °C maximum (80 °C, instantaneous), Maximum speed: 200 m/min.
- A Allowable mounting accuracy: Parallelism of two sets: 100 μm, Height variation of two sets: 500 μm/500 mm.
- A Please consult NSK if the slider unit will be exposed to large moment loads.
- A Be sure to take safety measures against falling loads if you mount a Translide upside down.
- A Never use in an environment where degreasing solvents are present.
- A Balls fall out if a ball slide is removed from a rail. Use a provisional rail if you need to dismount a ball slide from a rail. NSK assembles interchangeable ball slides on provisional rails for shipping. Take great care when fitting a ball slide to a rail.

A-III -7.1 Butting Rail Specification

- When the overall length of a rail exceeds the maximum length for manufacturing capacity, multiple rails will come in butting specification.
- The rails with butting specification are marked with arrows on the opposite side of the mounting datum. When mounting the rails, follow the procedure shown in Fig. III -7-3.
- The pitch of the rail mounting holes on a butting section should be as F/2 shown in Fig. III -7-4. When these rails are used in a parallel arrangement, the butted sections should not align to avoid change in the running accuracy of the table at these sections.

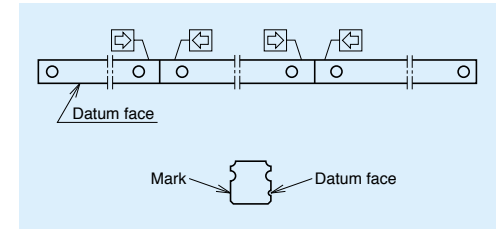


Fig. III -7-3

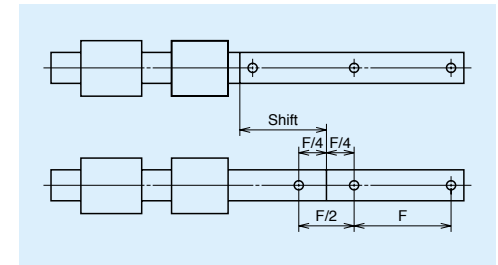


Fig. III -7-4

