



Utility Slide

NEW

Advanced Wheel Guide



Utility slide that uses wheels in the raceway,
designed for the railway and logistics industries



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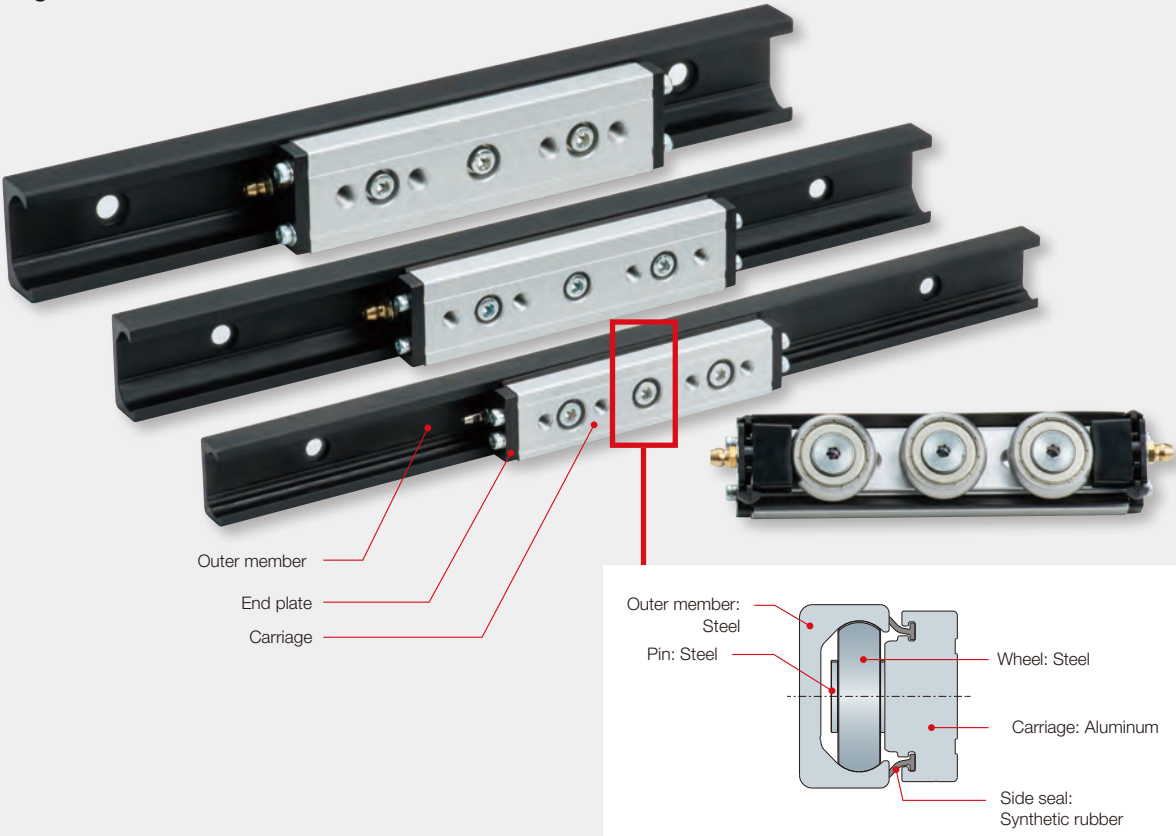
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This utility slide is made of an outer member and a carriage with mounted wheels.



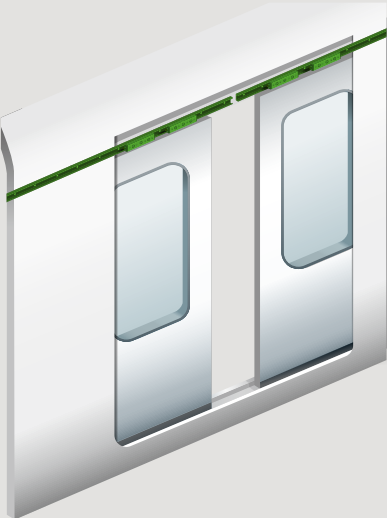
Example Applications

Railways

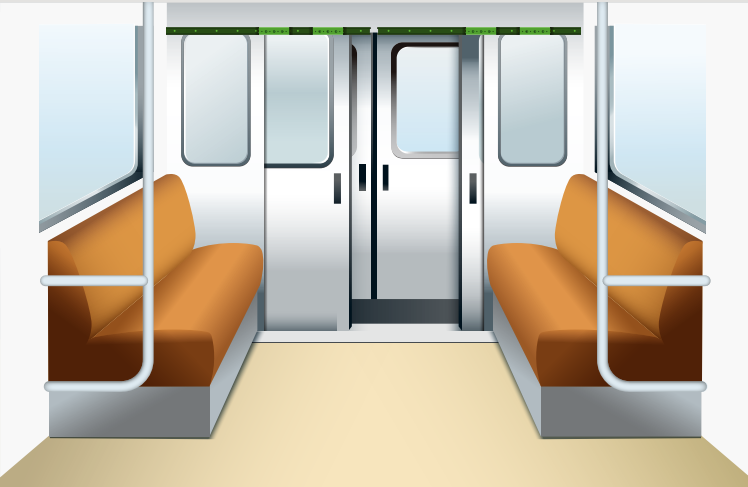
THK will contribute to the railway and logistics industries through expertise honed in the field of machinery.

Railway Vehicle Doors

Exterior doors



Gangway doors



Utility Slide Advanced Wheel Guide

Feature 1 Smooth Sliding Mechanism

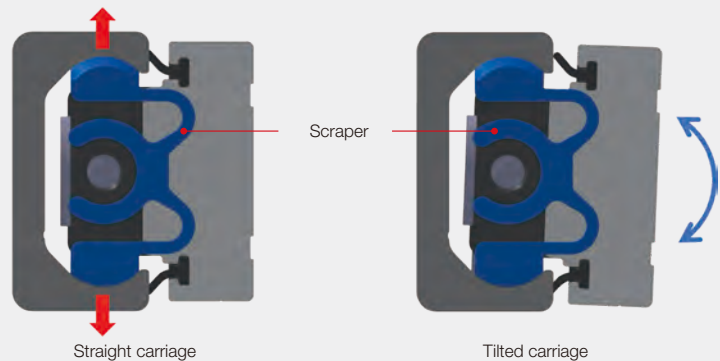
Adopting the circular arc groove technology developed with THK's LM Guide enables smooth sliding motion even for mounting surfaces with low accuracy thanks to the product's self-adjustment capability.

Feature 2 Superior Contamination Protection

The newly developed scrapers on the ends of the carriage are capable of maintaining contact with the raceway surface for a long time, which grants superior contamination protection compared to slide rails.

The pressing force exerted from the elasticity of the resin enables contact at constant pressure for a long time.

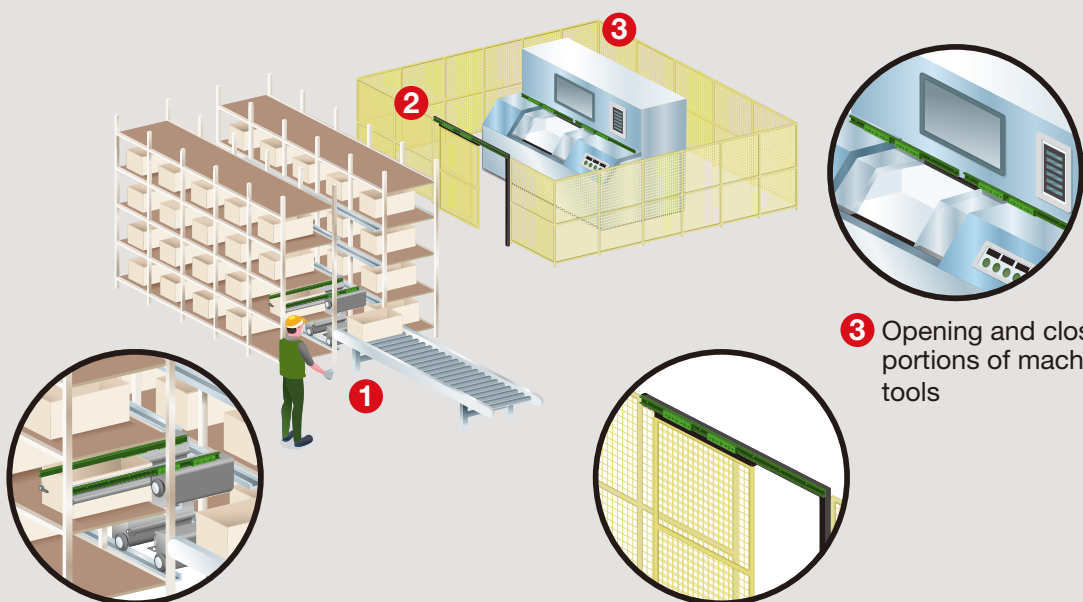
The scrapers do not tilt even if the carriage does, so they are able to maintain contact with the raceway surface.



Feature 3 Environmentally Friendly

The newly developed grease tank structure creates an eco-friendly lubrication system that does not contaminate the surrounding area, since the right amount of grease is applied to the raceway.

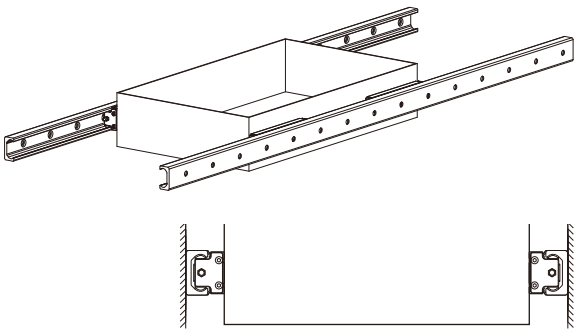
Logistics and Other



Mounting Orientation

① Wall-mounting two units facing each other

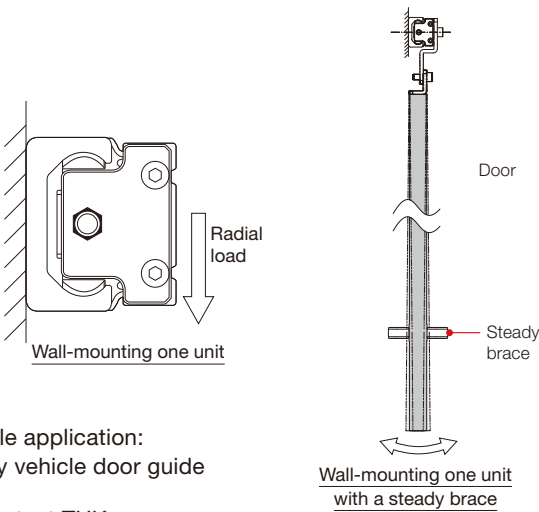
This product is typically wall-mounted with two units facing each other. It is possible for either the outer members to be fixed so the carriages move, or for the carriages to be fixed so the outer members move.



Example application: Automated warehouse rack

② Wall-mounting one unit

It is also possible to mount a single unit to a wall. Make the center of gravity be straight down from the center of the outer member's grooves and prepare a steady brace so that the moment load is not borne in a rolling direction. We recommend using at least two carriages per outer member.

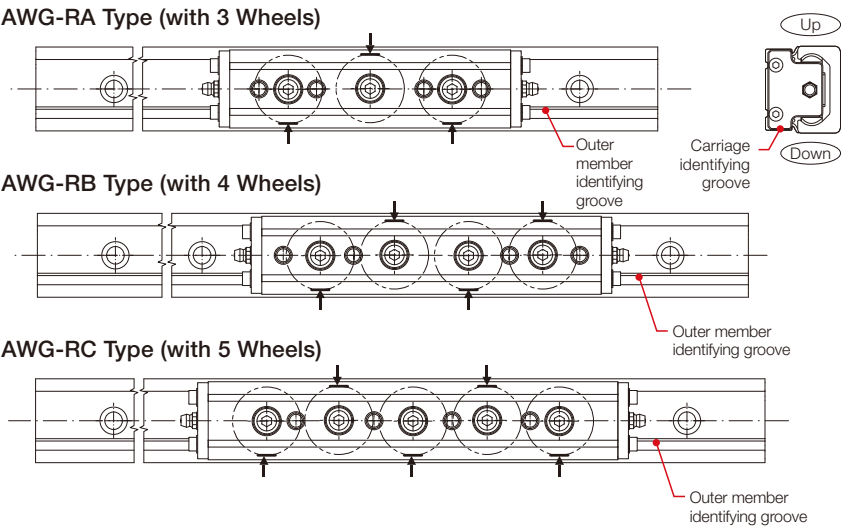


Example application: Railway vehicle door guide

If a mounting orientation other than method ① or ② above is required, contact THK.

Wheel Contact Position

It is recommended that this product be mounted on a wall. The permissible load will vary based on the load borne by each wheel and the surface pressure occurring in the raceways. Therefore, the wheel contact position is as given in the figures to the right. When mounting, confirm the direction of the load and the position of the identifying grooves. For details about calculating the permissible load, please contact THK.



Product Specifications

Static Safety Factor

When this product is stationary or in motion, an unexpected external force may be applied due to vibrations, impacts, or inertia caused by starting and stopping.
It is necessary to take a safety factor into account with regard to this type of applied load.

$$f_s = \frac{P_o}{P_c}$$

f_s: Safety factor (fs) **P_o**: Permissible load (N) **P_c**: Applied load (N)

Standard Values for the Static Safety Factor (fs)

Machine type	Load conditions	Lower limit of fs
General industrial machinery (Automated warehouses, doors, etc.)	Without vibrations or impacts	1.0 to 3.5
	With vibrations or impacts	2.0 to 5.0

* For details, contact THK.

Radial Clearance

This product is only available with a radial clearance of 0 mm to 0.04 mm.
Contact THK if you want to use a product with a radial clearance outside of this range.

Contamination Protection and Heat Treatment

As a countermeasure for use in environments with debris and foreign objects, such as railway vehicle doors, we provide newly developed scrapers that apply constant pressure to protect against contamination.
This means that this product demonstrates superior performance when compared to conventional slide rails when used in poor environmental conditions.
In addition, we respond to the needs of the market by applying heat treatment and anti-corrosive surface treatment to boost its hardness, wear resistance, and durability.

Lubrication

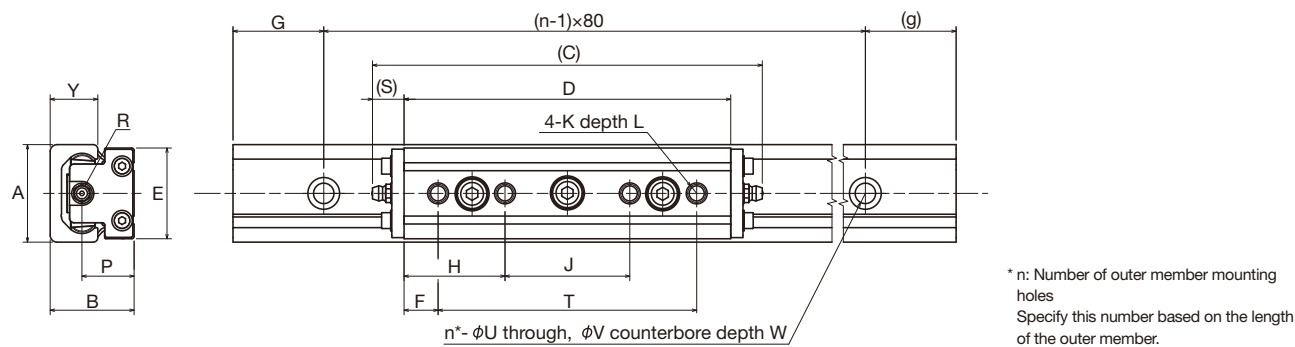
With standard lubrication specifications, this product is lubricated with grease and comes filled with THK AFB-LF Grease.
AFB-LF Grease is a general-purpose grease that provides excellent extreme pressure and mechanical stability properties through the use of a refined mineral oil base oil and a lithium-based consistency enhancer.
* Non-standard greases are also available.
Contact THK for details.

AFB-LF Representative Physical Properties

Item		Representative property	Test method
Consistency enhancer		Lithium-based	
Base oil		Refined mineral oil	
Base oil kinematic viscosity: mm²/s (40°C)		170	JIS K 2220 23
Worked penetration (25°C, 60 W)		275	JIS K 2220 7
Mixing stability (100,000 W)		345	JIS K 2220 15
Dropping point: °C		193	JIS K 2220 8
Evaporation amount: mass% (99°C, 22 h)		0.4	JIS K 2220 10
Oil separation rate: mass% (100°C, 24 h)		0.6	JIS K 2220 11
Copper plate corrosion (B method, 100°C, 24 h)		Passed	JIS K 2220 9
Low-temperature torque: mN·m (-20°C)	Starting	130	JIS K 2220 18
	Rotating	51	
4-ball testing (welding load): N		3089	ASTM D2596
Operating temperature range: °C		-15 to 100	
Color		Yellowish brown	

Dimensional Tables

AWG-RA Type (with 3 Wheels)

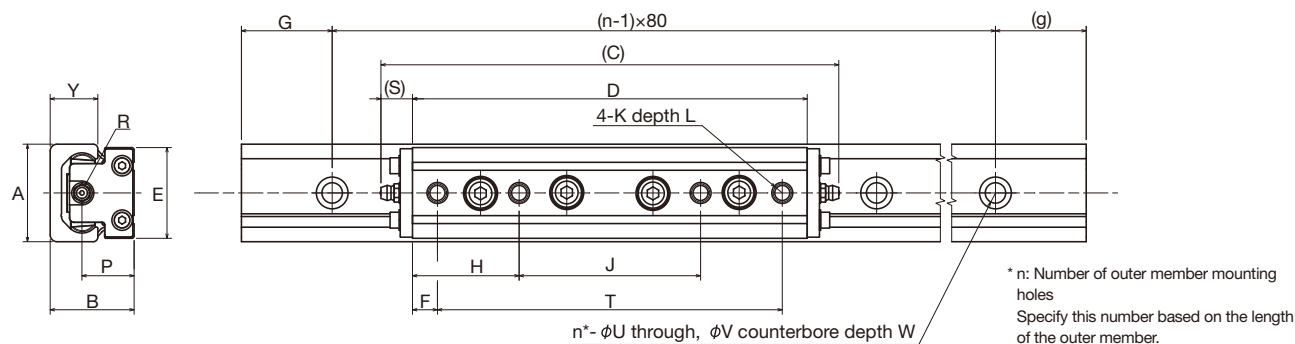


Unit: mm

Model No.	Outer dimensions			Carriage dimensions											Outer member dimensions					Basic static load rating (N)	Mass	
	A	B	C	D	S	E	F	T	H	J	K	L	P	Grease nipple R	U	V	W	Y	G,g		Carriage (kg)	Outer member (kg/m)
AWG28	28	24	123.4	98	12.7	25	10	78	31.5	35	M5	11	15	A-M4 ×0.7	6	9.5	2.1	12.5	40	2100	0.120	1.17
AWG35	35	30	146.6	120	13.3	32	10	100	37.5	45	M6	14	18.9	A-M6F	7	11	2.5	16	40	3900	0.241	1.83
AWG43	43	37	171.8	144	13.9	40	15	114	44.5	55	M8	15	23	A-M6F	9	14	3.7	21	40	6100	0.453	2.94

* It is typical for this product to be wall-mounted with two units facing each other. However, the basic static load rating and mass given are the values for one carriage and one outer member.

AWG-RB Type (with 4 Wheels)

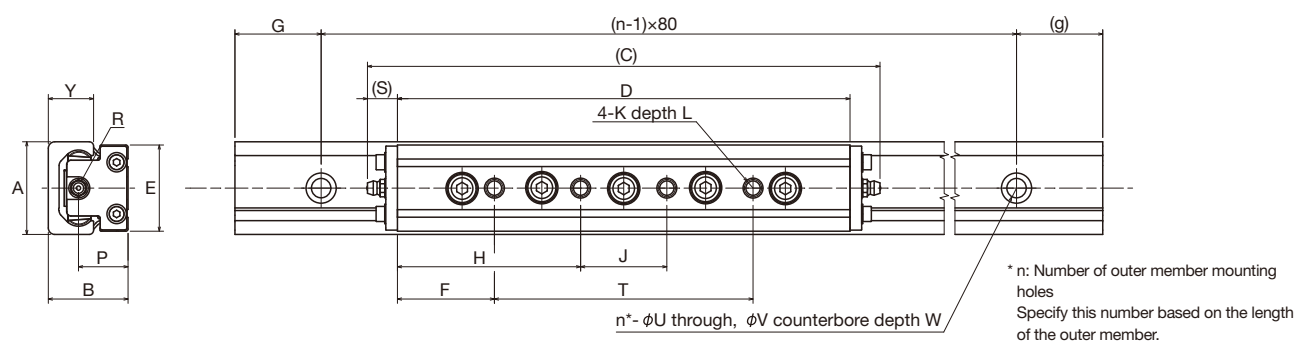


Unit: mm

Model No.	Outer dimensions			Carriage dimensions											Outer member dimensions					Basic static load rating (N)	Mass	
	A	B	C	D	S	E	F	T	H	J	K	L	P	Grease nipple R	U	V	W	Y	G,g		Carriage (kg)	Outer member (kg/m)
AWG28	28	24	142.4	117	12.7	25	10	97	33.5	50	M5	11	15	A-M4 ×0.7	6	9.5	2.1	12.5	40	2100	0.151	1.17
AWG35	35	30	165.6	139	13.3	32	9	121	39.5	60	M6	14	18.9	A-M6F	7	11	2.5	16	40	3900	0.290	1.83
AWG43	43	37	201.8	174	13.9	40	11	152	47	80	M8	15	23	A-M6F	9	14	3.7	21	40	6100	0.566	2.94

* It is typical for this product to be wall-mounted with two units facing each other. However, the basic static load rating and mass given are the values for one carriage and one outer member.

AWG-RC Type (with 5 Wheels)



Model No.	Outer dimensions			Carriage dimensions											Outer member dimensions					Basic static load rating (N)	Mass	
	A	B	C	D	S	E	F	T	H	J	K	L	P	Grease nipple R	U	V	W	Y	G,g		Carriage (kg)	Outer member (kg/m)
AWG28	28	24	167.4	142	12.7	25	33.5	75	58.5	25	M5	11	15	A-M4 x0.7	6	9.5	2.1	12.5	40	3150	0.183	1.17
AWG35	35	30	195.6	169	13.3	32	39.5	90	69.5	30	M6	14	18.9	A-M6F	7	11	2.5	16	40	5850	0.353	1.83
AWG43	43	37	237.8	210	13.9	40	45	120	85	40	M8	15	23	A-M6F	9	14	3.7	21	40	9150	0.687	2.94

* It is typical for this product to be wall-mounted with two units facing each other. However, the basic static load rating and mass given are the values for one carriage and one outer member.

Standard and Maximum Lengths of the Outer Member

The standard and maximum lengths of the outer members for this product are shown in the table to the right. For each standard length, the number of outer member mounting holes (n) is 6, 9, 12, and 15. We can also provide non-standard lengths, so in that instance, please specify the number of outer member mounting holes (n). When specifying a non-standard length, please consider the distance between the mounting holes and the end surfaces when setting the G and g dimensions. Be aware that as the G and g dimensions increase, that portion becomes less stable, and the accuracy may be negatively affected. If a length in excess of the maximum length is desired, joint rails will be used. Contact THK for details.

Model No.	Unit: mm		
	AWG28	AWG35	AWG43
Outer member standard length		480 720 960 1200	
Standard pitch		80	
G, g		40	
Maximum length		1200	

Model Number Coding Select an option

AWG43

Model No.
AWG28
AWG35
AWG43

RA

Type of carriage
RA: With 3 wheels
RB: With 4 wheels
RC: With 5 wheels

2

Number of carriages used per outer member

SS

Seal symbol
No symbol: Without seal
SS: Side seals + scrapers

+ 1200L

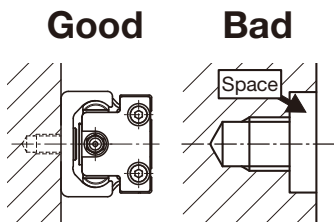
Outer member length (in mm)

Handling

- (1) Tilting a carriage or outer member may cause it to fall by its own weight.
- (2) Please use at least two people to move any product weighing 20 kg or more, or use a cart or another method of conveyance.
- (3) Do not disassemble the parts. This may result in loss of functionality.
- (4) Placing a hand inside the outer member's mounting holes may lead to the hand being caught between the carriage and outer member and cause injury.

Use


- (1) When installing this product, wall-mount two units facing each other. It is possible to mount a single unit on a wall, but please prepare a steady brace. If a mounting orientation other than the aforementioned is required, contact THK.
- (2) Do not apply a load that exceeds the permissible load.
- (3) When using joint products, confirm that the sliding resistance of the joint portion will not fluctuate before mounting.
- (4) Do not forcibly drive a pin, key, or other positioning device into the product. This could create indentations on the raceway and impair the product's function.
- (5) Prevent foreign materials, such as cutting chips or coolant, from entering the product. Failure to do so could damage the product.
- (6) If foreign materials such as cutting chips adhere to the product, replenish the lubricant after cleaning the product.
- (7) Do not use the product at temperatures above 80°C. If used above this temperature, there is a risk that the resin and rubber parts may deform or become damaged.
- (8) Wear appropriate safety gear, such as protective gloves and safety shoes, when handling the product.
- (9) Do not stand on this product or its packaging. Do not apply a strong impact to this product.
- (10) If this product breaks due to an accident or other cause, the carriage may come off of the outer member and fall.
For the safe use of this product, take precautions such as adding a mechanism to prevent the carriage from falling.
Please consider a mechanism that is structured in a way that it does not touch the product directly, because if an impact load is applied to the end plate or grease nipple of this product, it may break and cause a malfunction.
- (11) When considering bolts for mounting, select a length that will leave a clearance at the bolt tip in relation to the effective tap depth.
- (12) If the mounting material lacks sufficient rigidity or accuracy, the wheel load may be focused in one area, and functionality will dramatically decrease. Carefully consider the rigidity and accuracy of the base and the strength of the securing bolts.
- (13) If the product will be used in a location with a lot of vibration, we recommend using a locking agent on the mounting bolts.
- (14) If significant sliding resistance occurs along the stroke, it may be a result of how rough the mounting surface is, so it may be necessary to reexamine its machining accuracy.
- (15) If this product is used with a large displacement in the rolling direction, it may not seal as well.
If you want to improve its ability to form a seal, please contact THK.
- (16) Make sure there is no open space near the mounting holes on the mounting surface side of the outer member. Otherwise, the axial force of the bolts may cause damage to the bolt seating surface. See the figure to the right for details.



Lubrication

- (1) How often lubricant should be replenished varies depending on the operating conditions and environment. We recommend lubricating the system approximately every 100 km traveled (3 to 6 months). The final lubrication interval/amount should be set at the actual machine.
- (2) Do not mix different lubricants. Even lubricants containing the same type of thickening agent may, if mixed, interact negatively due to disparate additives or other ingredients.
- (3) The consistency of lubricant changes according to the temperature. Please keep in mind that the product's sliding resistance may be affected by changes in viscosity.
- (4) After lubrication, the sliding resistance of the product may increase due to the stirring resistance of the lubricant. Be sure to perform a warming-up operation and allow the lubricant to break in sufficiently before operating the machinery.
- (5) Excess lubricant may spatter after lubrication. Wipe off spattered lubricant as necessary.
- (6) Lubricant deteriorates over time, which decreases its lubricity, so perform regular inspections and replenish lubricant based on frequency of use.
- (7) When storing the product, pack it as designated by THK and store it indoors in a horizontal position away from high or low temperatures and high humidity. Please note that if the product has been kept in storage for an extended period, the lubricant inside may have deteriorated. Please ensure that you replenish the lubricant before use.

Utility Slide Advanced Wheel Guide

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