

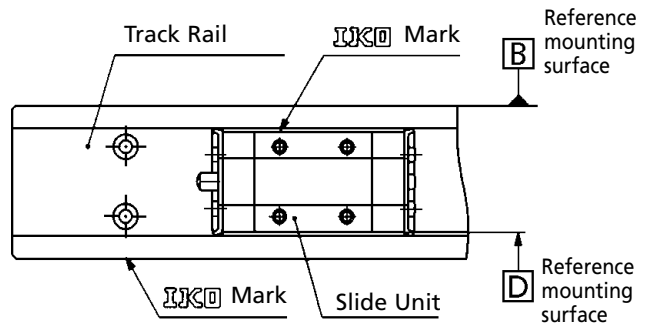
# LINEAR MOTION

## Precision Linear Slides (Structural)

U-Series (Non Ball Retained 2 Row 4 Ball Point Contact)

### LOAD RATING

**Basic dynamic load rating (C)** is defined as a constant load both in direction and magnitude under which a group of identical Linear Way U are individually operated and 90% of the units in the group can travel over the distance of  $50 \times 10^3 \text{m}$  without material damage due to rolling contact fatigue. The basic dynamic load rating of Linear Way U is equal in upward, downward and lateral directions.



**Basic static load rating (Co)** is defined as a static load that gives a prescribed contact stress at the centre of contact area between rolling elements and raceways receiving the maximum load.

**Static rated moment (To, Tx, Ty)** is defined as a static moment load that gives a prescribed contact stress at the centre of contact area between rolling elements and raceways receiving the maximum load when a moment is applied. It is the maximum allowable moment under which a rolling element rolls normally. It is generally used in combination with a static safety factor.

### LUBRICATION

A quality lithium-soap base grease containing extreme pressure additives (Shell Albania EP Grease 2) is supplied in Linear Way U on delivery. However, the quality of any grease will gradually deteriorate as operating time passes. Therefore, periodic relubrication is necessary. It is generally recommended that the grease is relubricated every six months under general usage and every three months for the daily operation consisting of many cycles and long strokes. A grease nipple is attached to the slide unit. Grease injector nozzles matching each of these are also available.

### MOUNTING

#### Assembly of a slide unit and track rail

The steel balls of IKO Linear Way U will drop off, if the slide unit is separated from the track rail. Therefore, do not separate the slide unit from the track rail. If it is needed to separate it for handling etc. please consult our technical department.

#### Reference mounting surface

The reference mounting surfaces of the slide unit and track rail of IKO Linear Way U are the side surfaces opposite to the IKO mark. See diagram above.

#### Corner radius and shoulder height of the reference mounting surface

It is recommended to make a relieved fillet at the corner of the mating reference mounting surface of the machine or equipment, on which LWU is assembled. A round corner can also be used. The table on the previous page shows recommended values for shoulder height and corner radius of the mating reference mounting surface.

#### Multiple slide units mounted in close distance

When using multiple slide units in close distance to each other, the actual load may be greater than the calculated load depending on the accuracy of the mounting surface and the reference mounting surface of the machine. It is suggested in such cases to assume a greater actual load than the calculated load.

#### Tightening torque of fastening screws

The table right shows the tightening torque for mounting IKO Linear Way U on a steel part in general application. The torque values 1.2 to 1.5 times higher than the ones in the table are recommended, when subjected to large vibration, impact, fluctuating load or moment load. If the mating part is made of cast iron or aluminium, reduce the tightening torque considering the strength properties of the material.

Bolt Size	Tightening Torque N·m
	Carbon Steel made bolt (strength division 12.9)
M3 x 0.5	1.7
M4 x 0.7	4.0
M5 x 0.8	7.9
M6 x 1.0	13.3

#### Operating temperature

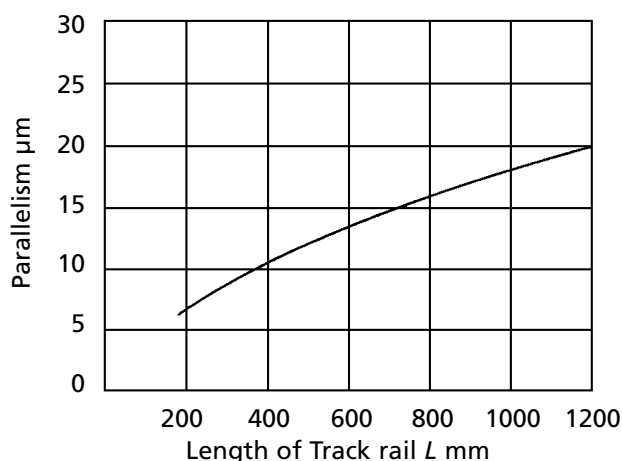
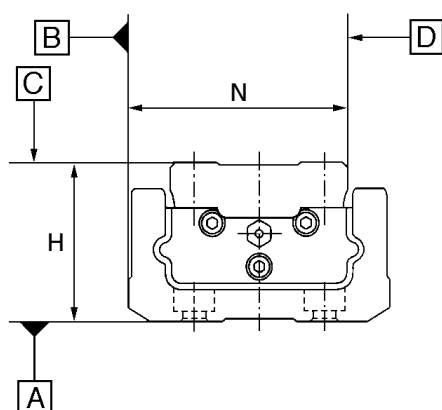
The maximum operating temperature is 120°C and a continuous operation is possible at temperatures up to 100°C. If the temperature in operation is higher than 100°C please contact our technical department.

T  
E  
C  
H  
N  
I  
C  
A  
L

# LINEAR MOTION

## Precision Linear Slides (Structural)

U-Series (Non Ball Retained 2 Row 4 Ball Point Contact)

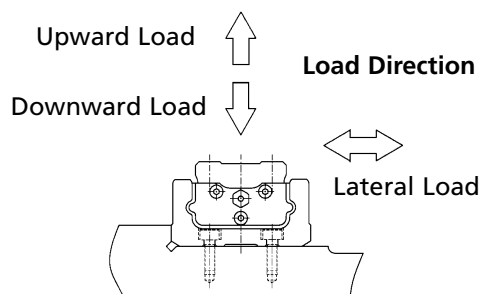


### ACCURACY

Accuracies for Linear Ways U series are shown in the above graph and the table below.

Item	Classification (Symbol)	
	Normal (no symbol)	High (H)
Dim. $H$ tolerance	$\pm 0.100$	$\pm 0.050$
Dim. $N$ tolerance	$\pm 0.100$	$\pm 0.050$
Dim. variation of $H$ (1)	0.050	0.040
Dim. variation of $N$ (1)	0.050	0.040
Parallelism in operation of C to A	See Preload table below	
Parallelism in operation of D to B	See Preload table below	

**Note:** (1) The size variation between slide units mounted on the same track rail is indicated.



### PRELOAD

Average amount of preload for Linear Way U series are shown below.

Preload Class	Symbol	Preload amount (kgf)	Application
Standard Preload	(no symbol)	0 (1)	<ul style="list-style-type: none"> <li>• Smooth and precise motion</li> </ul>
Light Preload	T1	0.02 Co	<ul style="list-style-type: none"> <li>• Minimum vibration</li> <li>• Evenly balanced load.</li> <li>• Smooth and precise motion</li> </ul>

**Note:** (1) Zero or minimal amount of preload. **Remark:** Co means basic static load rating.

LINEAR MOTION