

# LH Series

## Identification Number Ball Slide

Ball Slide (Stocked item)

**LAH 25 AN Z - K**

Ball Slide Type

Size No.

- AN: Square - Standard
- AL: Square - Short height standard
- BN: Square - Long
- BL: Square - Short height long
- EM: Flanged (Tapped & Thru hole) Standard
- GM: Flanged (Tapped & Thru hole) Long

Style

Material Code

- No Code: Standard Carbon Steel (May also be C)
- S: Stainless Steel (Standard for LU and LE Series)
- D: Carbon Steel + Fluoride Coating
- H: Stainless Steel + Fluoride Coating
- A: Carbon Steel + Armoloy Coating
- B: Stainless Steel + Armoloy Coating

- No Code: No special accessories and fluoride black chrome plating
- K: One K1™ Lubrication Unit each side
- K2: Two K1™ Lubrication Units each side
- D: Double Seals each side
- P: Protector Plate each side

- No Code: Clearance Type
- Z: Preloaded Type



Fig.-1 LH-AN, LH-BN TYPE

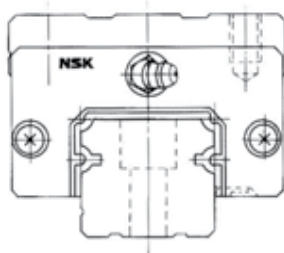
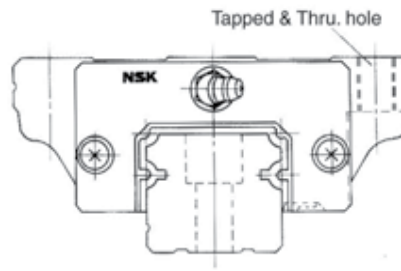


Fig.-2 LH-EM, LH-GM TYPE



### Internal Clearance and Preload

The internal clearance refers to the amount of movement of the ball slide, when moved up and down with the rail fixed. The amount of preload is specified by size as follows.

Size	#15	#20 #25	#30 #35 #45	#55 #65
Clearance	15~-4	15~-5		
Preloaded	0~-4	0~-5	0~-7	0~-9

## Accuracy Standard

The accuracy standard of the NSK “High Load Capacity LH-Series” is shown in Table 1. With high-accuracy control of individual rail size and interchangeability, the accuracy of Table 1 can be maintained sufficiently even after addition or replacement of the ball slide.

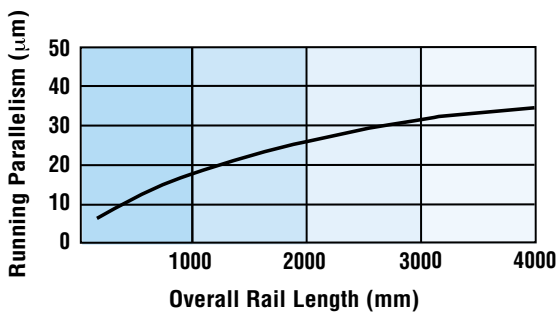
**Table 1 Tolerances** Unit :  $\mu\text{m}$   
(For Clearance Preload Type)

Tolerances (See Fig. 4 for Symbols)	Model No. LH	
	15, 20, 25, 30, 35	45, 55, 65
Mounting Height $H$	$\pm 20$	$\pm 30$
Variation of Mounting Height $H$	15 <sup>(1)</sup> 30 <sup>(2)</sup>	20 <sup>(1)</sup> 35 <sup>(2)</sup>
Mounting Width $W_2$ or $W_2$	$\pm 30$	$\pm 30$
Variation of Mounting Width $W_2$ or $W_2$	$\pm 25$	$\pm 30$
Running Parallelism of Face C to Face A Running Parallelism of Face D to Face B	Refer to Fig. 3	

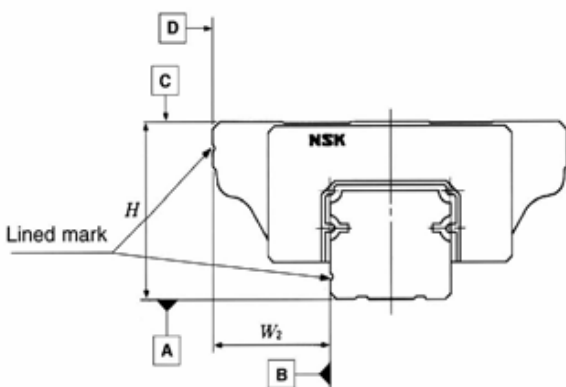
$W_2$  is applicable to the reference side only. Note: during installation the reference side is indicated by a line provided on the side of ball slide and rail. (See Fig. 4)

1. Variation on the same rail.
2. Variation on multiple rails.

**Fig.-3 Running Parallelism**



**Fig.-4 Accuracy Standard**



## Load Rating and Life

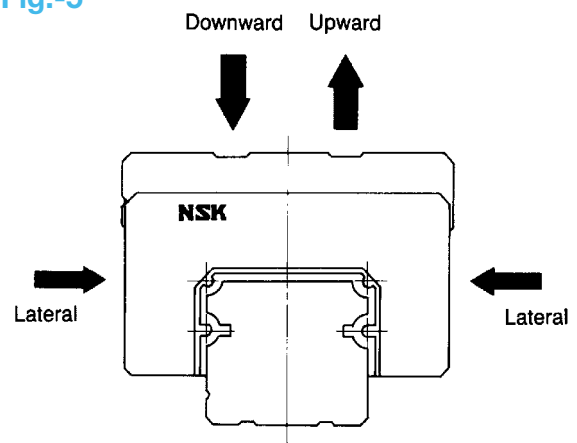
The LH-Series is based on a design applying load from above. Therefore the dimension table shows the basic dynamic load rating  $C$  and basic static load rating  $C_0$  for the downward direction. If the load is applied laterally or upward refer to values in Table 2.

**Table 2 Basic Load Rating Correction for Direction**

Load Direction	Basic Dynamic Load Rating	Basic Static Load Rating
Downward	$C$	$C_0$
Upward	$C$	$0.75C_0$
Laterally	$0.88C$	$0.63C_0$

Estimate the life of linear guides using the equation below.

**Fig.-5**



$$L = 50 \left( \frac{C}{f_w \cdot F} \right)^3$$

where,

- $L$  : Rated fatigue life (km)
- $C$  : Basic dynamic load rating (N)
- $F$  : Load to a ball slide (N)  
(Dynamic equivalent load)

$f_w$  : Load factor

$f_w = 1.0 \sim 1.2$  (Smooth condition)

$f_w = 1.2 \sim 1.5$  (Normal condition)

$f_w = 1.5 \sim 3.0$  (With shock or vibration)