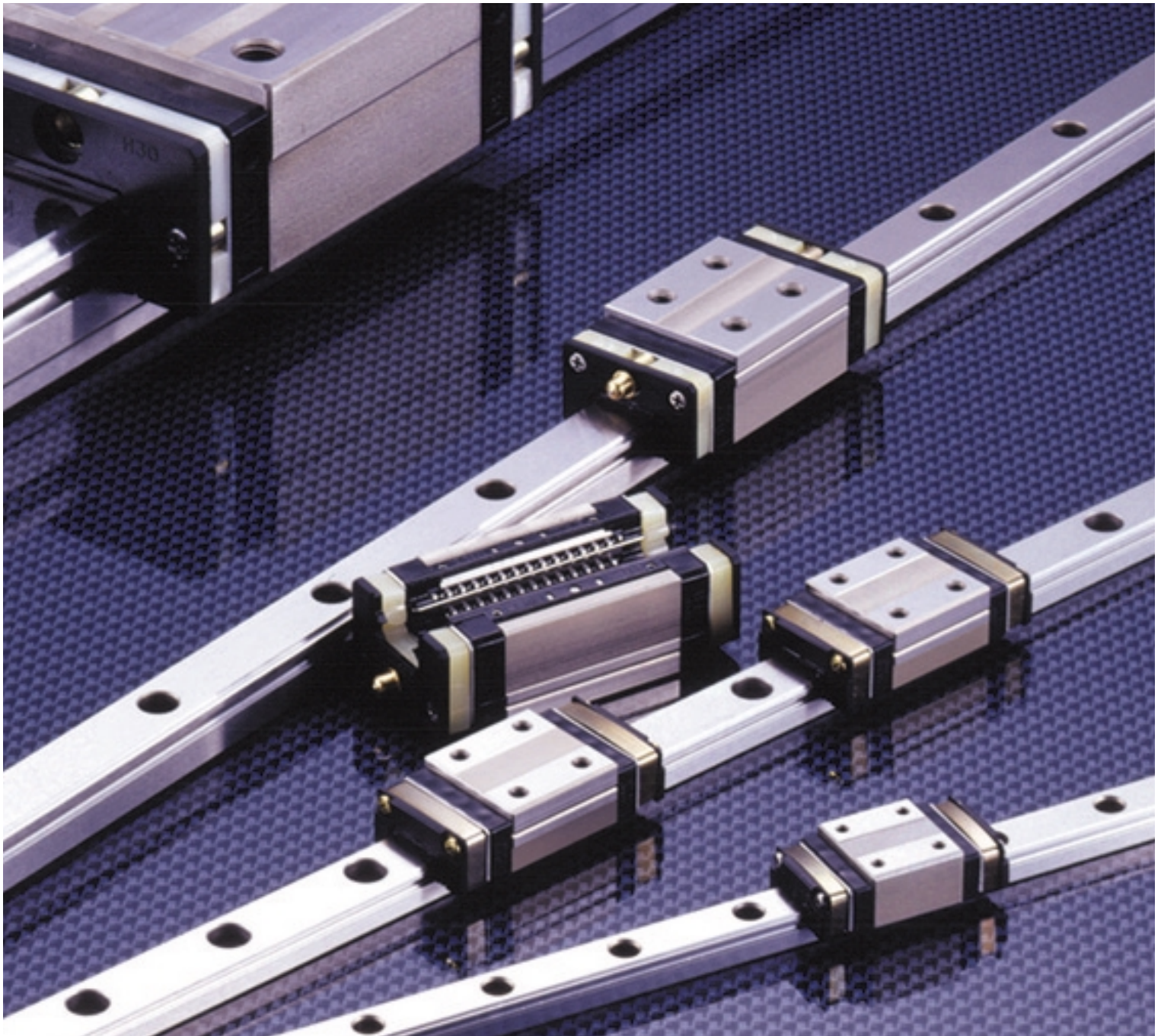


NSK Linear Guides

Miniature LH Series

Miniature size, high load capacity, and high rigidity—
perfect for all the challenging environments
of the 21st century



NSK Linear Guides Miniature LH Series

1. Features

Large self-aligning property

Capable of high mounting error absorption.

High vertical load capacity

50° contact angle enlarges vertical load capacity and rigidity.

Withstands high impact load

Offset Gothic arch groove enables high impact resistance.

High corrosion resistance

High corrosion resistant martensitic stainless steel is used as standard material.

Easy handling

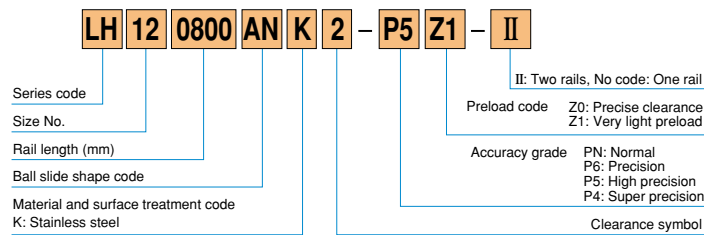
Ball cage prevents balls from falling off the ball slide, even if a bearing is taken out from the rail (#10 and 12).

Long term, maintenance

Optional NSK K1™ lubrication unit supports long term, maintenance-free operation.

2. Specification Number

The specification number indicates the main specifications through numbers and codes, and is used until the final bearing nomenclature (indicated in a specification drawing) is assigned upon confirming specifications with the user. The bearing nomenclature is the specification number added to the design serial number and other additional information.



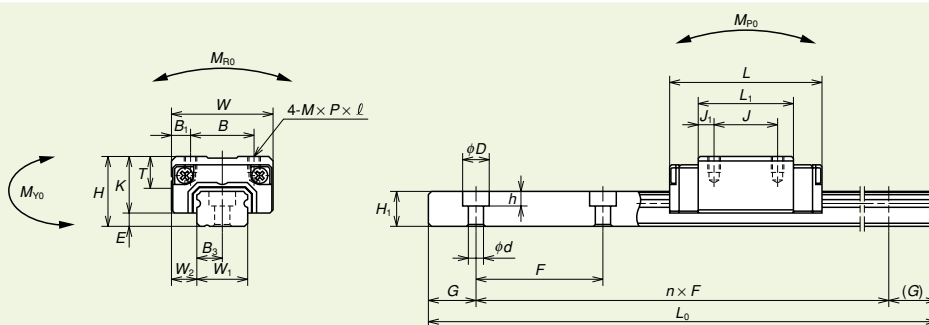
3. Rail Length

The maximum single rail length is shown in the following table. Two rails must be connected for longer lengths.

Table 1 Maximum rail length

Unit: mm

Size No.	08	10	12
Maximum rail length	375	600	800



LH08, LH10

Unit: mm

Model No.	Assembly dimension			Ball slide dimension												
	Height <i>H</i>	<i>E</i>	<i>W</i> ₂	Width <i>W</i>	Length <i>L</i>	Tapped hole			<i>B</i> ₁	<i>L</i> ₁	<i>J</i> ₁	<i>K</i>	<i>T</i>	Grease nipple		
						<i>B</i>	<i>J</i>	<i>M</i> × Pitch × <i>l</i>						Mounting hole	<i>T</i> ₁	<i>N</i>
LH08AN	11	2.1	4	16	24	10	10	M2 × 0.4 × 2.5	3	15	2.5	8.9	—	—	—	
LH10AN	13	2.4	5	20	31	13	12	M2.6 × 0.45 × 3	3.5	20.2	4.1	10.6	6	—	—	
LH12AN	20	3.2	7.5	27	45	15	15	M4 × 0.7 × 5	6	31	8	16.8	6	φ3	5	4

Note : LH10 and LH12 are constructed with a ball cage which prevents balls from falling out even if the bearing is taken out from the rail.

4. Accuracy Standard

Four accuracy grades are available: super precision P4, high precision P5, precision P6, and normal PN.

Table 2 Accuracy standard

Unit: μm

Items	Accuracy grade			
	Super precision P4	High precision P5	Precision P6	Normal PN
Assembly height H	± 10	± 20	± 40	± 80
Variation of assembly height H (All slides on a pair of rails)	3	5	7	15
Assembly width dimension W_2 or W_3	± 10	± 15	± 25	± 50
Variation of assembly width dimension W_2 or W_3 (All slides on datum rails)	5	7	10	20
Running parallelism of face C against face A	Shown in Table 3, Fig. 1, and Fig. 2			
Running parallelism of face D against face B				

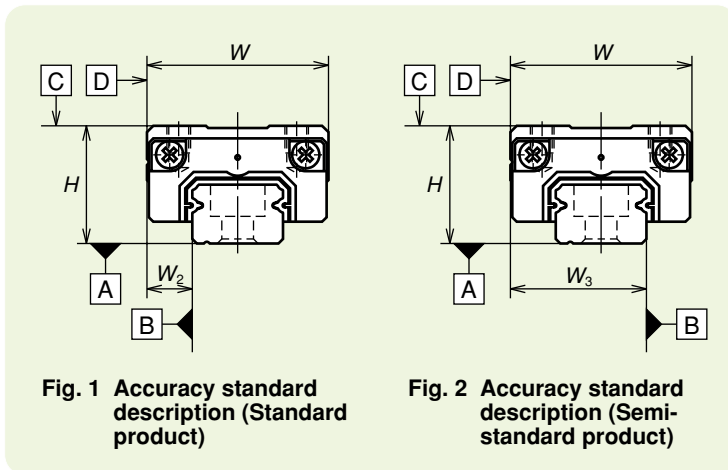


Table 3 Running parallelism tolerance

Unit: μm

Total rail length (mm)	Accuracy grade			
	P4	P5	P6	PN
Over ~ below 50	2	2	6	12
50 ~ 80	2	3	7	13
80 ~ 125	2	3.5	8	14
125 ~ 200	2	4	9	15
200 ~ 250	2.5	5	10	17
250 ~ 315	2.5	5	11	17
315 ~ 400	3	6	11	18
400 ~ 500	3	6	12	19
500 ~ 630	3.5	7	13	20
630 ~ 800	4.5	8	14	22

5. Preload and Clearance

Slight preload Z1 and fine clearance Z0 are provided for preload.

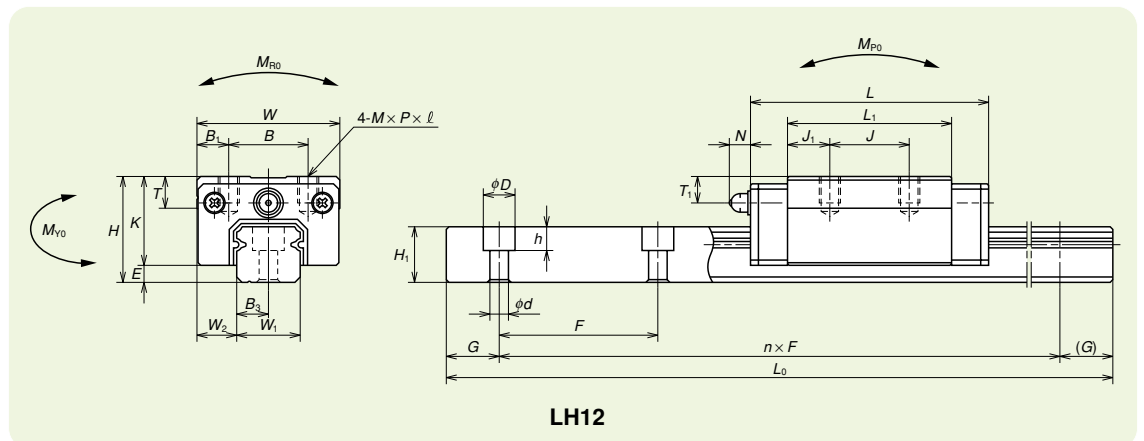
Table 4 Dimension of linear guides equipped with NSK K1™

Unit: mm

Model No.	Ball slide length equipped with two NSK K1s
LH08	31
LH10	40
LH12	54

6. Option

The NSK K1™ lubrication unit is available as an option. Refer to Table 4 for dimension of linear guides equipped with the NSK K1™.



Unit: mm

Rail dimension							Basic load rating					Ball diameter	Weight	
Rail width W_1	Rail height H_1	Bolt pitch F	Bolt hole $d \times D \times h$	B_3	G (std.)	Maximum length L_{max}	Dynamic C (N)	Static C_0 (N)	Static moment (N·m)			D_v	Bearing (g)	Rail (g/100mm)
								M_{R0}	M_{P0}	M_{V0}				
8	5.5	20	2.4 × 4.2 × 2.3	4	7.5	375	980	2 260	7	4	4	1.2000	13	31
10	6.5	25	3.5 × 6 × 3.5	5	10	600	1 860	3 920	16	10	10	1.5875	26	44
12	10.5	40	3.5 × 6 × 4.5	6	15	800	4 310	9 020	42	34	32	2.3812	82	88