(2) Reference number coding for interchangeable ball slide

LA H 35 AN S Z - K

- LA: Interchangeable ball slide code
- H: Series
- 35: Size
- AN: Ball slide shape code (See Table I-2•2)
- S: Material code — Default Standard material; S: Stainless steel
- Z: Preload code — Default: Fine clearance; Z: Slight preload
- K: Option code — -K: Equipped with standard NSK K1; -F: Fluoride low temperature chrome platin + standard grease; -F50: Fluoride low temperature chrome platin + LG2 grease

(3) Reference number coding for interchangeable rail

L1 H 30 1200 L C NT ** PC Z

- L1: Interchangeable rail code
- H: Series
- 30: Size
- 1200: Rail length (mm)
- L: Shape code — L: standard; R: LU09, LU12 and LE standard equipped with ball retainer; S: LU09 and LU12 M3 with ball retainer and bolt holes for M3; T: LS15 with bolt holes for M4
- C: Material/surface treatment code (See Table I-4•1)
- NT: *Design serial number — T: Domestic standard; K: Domestic semi-standard; B: International user standard
- **: *Butting rail specification — N: Non-butting; L: Butting specification
- PC: Accuracy code: PC (PC grade is only available)
- Z: Preload code — T: Fine clearance; Z: Slight preload

* Please consult with NSK for butting rail specification.

Table I-4•1 Material/surface treatment code

Code	Description
P	Special high carbon steel + high performance seal
R	Special high carbon steel + surface treatment + high performance seal
T	Stainless steel + high performance seal
U	Stainless steel + surface treatment + high performance seal
C	Special high carbon steel (NSK standard)
K	Stainless steel
D	Special high carbon steel with surface treatment
H	Stainless steel with surface treatment
Z	Other, special

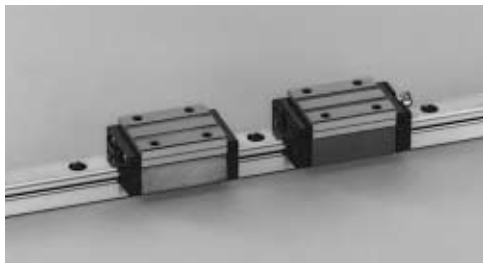
Table I-4•2 Accuracy code

accuracy	Non NSK K1	with NSK K1
Ultra precision grade	P3	K3
Super precision grade	P4	K4
High precision grade	P5	K5
Precision grade	P6	K6
Normal grade	PN	KN
Normal interchan geade	PC	KC

Note: Refer to Page A125 for NSK K1® lubrication unit.

A-I-5 Model Number and Dimension Table of NSK Linear Guides

A-I-5.1 LH Series



(1) High self-aligning capability (rolling direction)

Same as the DF combination in angular contact bearings, self-aligning capability is high because the cross point of the contact lines of balls and grooves comes inside, reducing moment rigidity.

This increases the capacity to absorb the error of installation.

(2) High load carrying capacity to vertical direction

The contact angle is set at 50 degrees, increasing load carrying capacity as well as rigidity in vertical direction.

(3) High resistance against impact load

The bottom ball groove is formed in gothic-arch and the center of the top and bottom grooves are offset as shown in Fig.I-5•2. The vertical load is generally carried by the top rows, at where balls are contacting at two points. Because of this design, the bottom rows will carry load when a large impact load is applied vertically as shown in Fig.I-5•3. This assures high resistance to the impact load.

(4) Highly accurate as shown in Fig.

I-5.4, fixing the master rollers is easy thanks to the gothic-arch groove. This makes easy and accurate measuring of ball grooves.

(5) Easy to handle, and designed with safety in mind.

Balls are retained in the retainer, therefore they do not fall out when the ball slider is withdrawn from the rail.

(6) Abundant models and sizes

Each series has various models of ball slides, rendering the linear guide available for numerous uses.

(7) Interchangeable series is available (prompt delivery)

The series enables random matching of rails and ball slides (interchangeability) for prompt delivery.

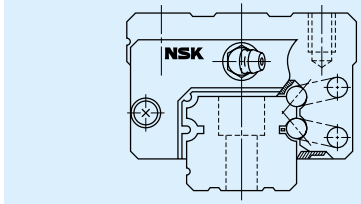


Fig. I-5.1 LH Series

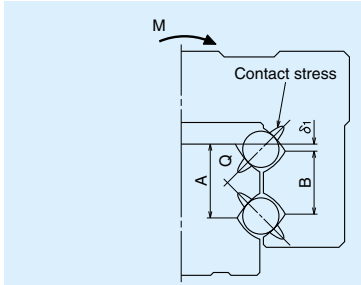


Fig. I-5.2 Enlarged illustration of the offset gothic-arch groove

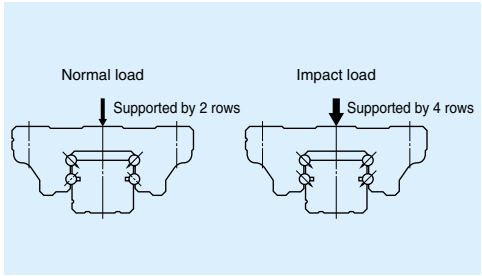


Fig. I-5.3 When load is applied

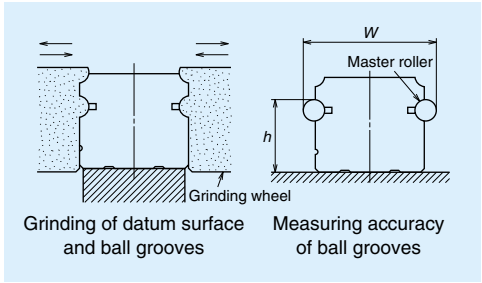


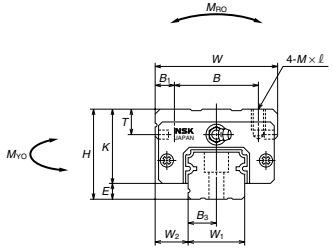
Fig. I-5.4 Rail grinding and measuring

Dimensions of LH Series (Preloaded assembly)

LH-AL, AN (High load type)
LH-BL, BN (Super high load type)

LH 35 0840 AN C 2 – PN 0 –Ⅱ**

- **Series**
- **Size**
- **Rail length (mm)**
- **Ball slide shape code**
- **Material/surface treatment code (See Page A26)**
  C: Standard (Special high carbon steel)
  K: Stainless steel (Applicable only LH15-30)
- **Number of ball slides per rail**
- *** Design serial number**
- **Accuracy code (See table Ⅰ-3·1 and Ⅰ-4·2)**
- **Preload code 0: Z0, 1: Z1, 3: Z3(See page A23)**
- ***-Ⅱ: Use two rails as a set. Default: One rail use**

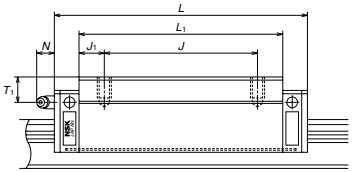


* Please note that we assign the design number, and omit the last code (Ⅱ) that indicates a use of two rails as a set to finalize the reference number as product identification.

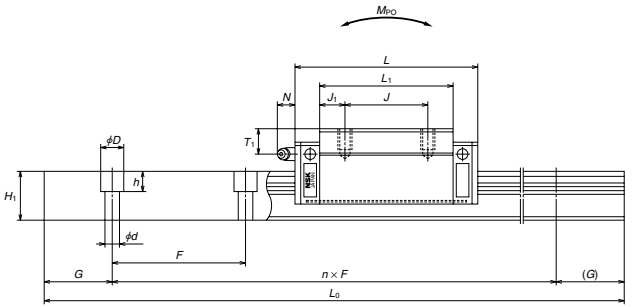
Table. Ⅰ-5·1

Model No.	Assembly Height H	E	W2	Ball slide Width W	Length L	Mounting tap hole B	J	M × pitch × ℓ	B1	L1	J1	K	T	Grease fitting Hole size	T1	N
LH15AN	28	4.6	9.5	34	55	26	26	M4×0.7×6	4	39	6.5	23.4	8	ϕ3	8.5	3.3
LH15BN					74					58	16					
LH20AN	30	5	12	44	69.8	32	36	M5×0.8×6	6	50	7	25	12	M6×0.75	5	11
LH20BN					91.8		50			72	11					
LH25AL	36	7	12.5	48	79	35	35	M6×1×6	6.5	58	11.5	29	12	M6×0.75	6	11
LH25AN	40							M6×1×9				33			10	
LH25BL	36				107		50	M6×1×6		86	18	29			6	
LH25BN	40							M6×1×9				33			10	
LH30AL	42	9	16	60	85.6	40	40	M8×1.25×8	10	59	9.5	33	14	M6×0.75	7	11
LH30AN	45							M8×1.25×10				36			10	
LH30BL	42				124.6		60	M8×1.25×8		98	19	33			7	
LH30BN	45							M8×1.25×10				36			10	
LH35AL	48	9.5	18	70	109	50	50	M8×1.25×8	10	80	15	38.5	15	M6×0.75	8	11
LH35AN	55							M8×1.25×12				45.5			15	
LH35BL	48				143		72	M8×1.25×8		114	21	38.5			8	
LH35BN	55							M8×1.25×12				45.5			15	
LH45AN	70	14	20.5	86	139	60	60	M10×1.5×17	13	105	22.5	56	17	Rc1/8	20	13
LH45BN					171		80			137	28.5					
LH55AN	80	15	23.5	100	163	75	75	M12×1.75×18	12.5	126	25.5	65	18	Rc1/8	21	13
LH55BN					201		95			164	34.5					
LH65AN	90	16	31.5	126	193	76	70	M16×2×20	25	147	38.5	74	23	Rc1/8	19	13
LH65BN					253		120			207	43.5					

BN type



AN type



Unit: mm

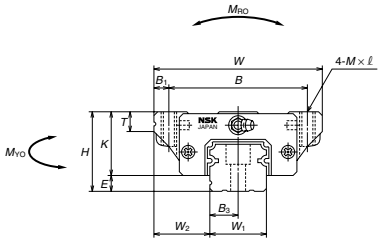
Rail Width W1	Height H1	Pitch F	Mounting bolt hole d × D × h	B3	G (recommended)	Max. length L0max. ( ) for stainless	Basic load rating Dynamic C (N)	Static C0 (N)	Static moment MRO (N·m)	MPO (N·m)	MYO (N·m)	Ball dia. DW	Weight Ball slide (kg)	Rail (kg/m)
15	15	60	4.5×7.5×5.3	7.5	20	2000 (1800)	10800	20700	108	95	80	3.175	0.18	1.6
							14600	32000	166	216	181		0.26	
20	18	60	6×9.5×8.5	10	20	3960 (3500)	17400	32500	219	185	155	3.968	0.33	2.6
							23500	50500	340	420	355		0.48	
23	22	60	7×11×9	11.5	20	3960 (3500)	25600	46000	360	320	267	4.762	0.46 0.55	3.6
							34500	71000	555	725	610		0.69 0.82	
28	26	80	9×14×12	14	20	4000 (3500)	31000	51500	490	350	292	5.556	0.69 0.77	5.2
							46000	91500	870	1030	865		1.16 1.3	
34	29	80	9×14×12	17	20	4000	47500	80500	950	755	630	6.350	1.2 1.5	7.2
							61500	117000	1380	1530	1280		1.7 2.1	
45	38	105	14×20×17	22.5	22.5	3990	81000	140000	2140	1740	1460	7.937	3.0	12.3
							99000	187000	2860	3000	2520		3.9	
53	44	120	16×23×20	26.5	30	3960	119000	198000	3600	3000	2510	9.525	4.7	16.9
							146000	264000	4850	5150	4350		6.1	
63	53	150	18×26×22	31.5	35	3900	181000	281000	6150	4950	4150	11.906	7.7	24.3
							235000	410000	8950	10100	8450		10.8	

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 C_{100} for 100 km rating fatigue life, divide the C by 1.26

LH-EL (High load type)
LH-GL (Super high load type)

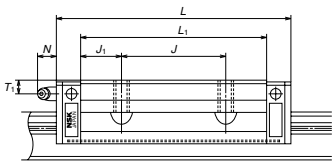
LH 35 0840 EL C 2 –** PN 0 –Ⅱ

- Series
- Size
- Rail length (mm)
- Ball slide shape code
- Material/surface treatment code (See Page A26)
  C: Standard (Special high carbon steel)
  K: Stainless steel (Applicable only LH15-30)
- Number of ball slides per rail
- * Design serial number
- Accuracy code (See table Ⅰ-3·1 and Ⅰ-4·2)
- Preload code 0: Z0, 1: Z1, 3: Z3(See page A23)
- *-Ⅱ: Use two rails as a set. Default: One rail use



* Please note that we assign the design number, and omit the last code (Ⅱ) that indicates a use of two rails as a set to finalize the reference number as product identification.

GL type



EL type

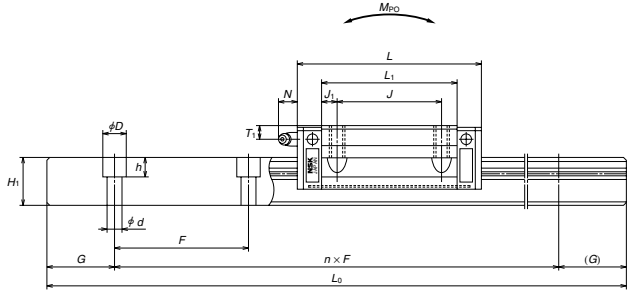


Table. Ⅰ-5•2

Unit: mm

Model No.	Assembly			Ball slide												Rail						Basic load rating					Ball dia.	Weight	
	Height			Width	Length	Mounting tap hole							Grease fitting			Width	Height	Pitch	Mounting bolt hole		G	Max. length	Dynamic	Static	Static moment				Ball slide	Rail
	H	E	W_2	W	L	B	J	M × pitch × ℓ	B_1	L_1	J_1	K	T	Hole size	T_1	N	W_1	H_1	F	d × D × h	B_3	(recommended)	L_{0max} ( ) for stainless	C	C_0	M_{RO}	M_{PO}	M_{YO}	D_W		
																							(N)		(N·m)				(kg)	(kg/m)
LH15EL	24	4.6	16	47	55	38	30	M5×0.8×8	4.5	39	4.5	19.4	8	φ3	4.5	3.3	15	15	60	4.5×7.5×5.3	7.5	20	2000 (1800)	10800	20700	108	95	80	3.175	0.17	1.6
LH15GL					74					58	14													14600	32000	166	216	181		0.25	
LH20EL	30	5	21.5	63	69.8	53	40	M6×1×10	5	50	5	25	10	M6×0.75	5	11	20	18	60	6×9.5×8.5	10	20	3960 (3500)	17400	32500	219	185	155	3.968	0.45	2.6
LH20GL					91.8					72	16													23500	50500	340	420	355		0.65	
LH25EL	36	7	23.5	70	79	57	45	M8×1.25×16	6.5	58	6.5	29	11	M6×0.75	6	11	23	22	60	7×11×9	11.5	20	3960 (3500)	25600	46000	360	320	267	4.762	0.63	3.6
LH25GL					107			(M8×1.25×12)		86	20.5		(12)											34500	71000	555	725	610		0.93	
LH30EL	42	9	31	90	98.6	72	52	M10×1.5×18	9	72	10	33	11	M6×0.75	7	11	28	26	80	9×14×12	14	20	4000 (3500)	35500	63000	600	505	425	5.556	1.2	5.2
LH30GL					124.6			(M10×1.5×15)		98	23		(15)											46000	91500	870	1030	865		1.6	
LH35EL	48	9.5	33	100	109	82	62	M10×1.5×20	9	80	9	38.5	12	M6×0.75	8	11	34	29	80	9×14×12	17	20	4000	47500	80500	950	755	630	6.350	1.7	7.2
LH35GL					143					114	26													61500	117000	1380	1530	1280		2.4	
LH45EL	60	14	37.5	120	139	100	80	M12×1.75×24	10	105	12.5	46	13	Rc1/8	10	13	45	38	105	14×20×17	22.5	22.5	3990	81000	140000	2140	1740	1460	7.937	3.0	12.3
LH45GL					171					137	28.5													99000	187000	2860	3000	2520		3.9	
LH55EL	70	15	43.5	140	163	116	95	M14×2×28	12	126	15.5	55	15	Rc1/8	11	13	53	44	120	16×23×20	26.5	30	3960	119000	198000	3600	3000	2510	9.525	5.0	16.9
LH55GL					201					164	34.5													146000	264000	4850	5150	4350		6.5	
LH65EL	90	16	53.5	170	193	142	110	M16×2×24	14	147	18.5	74	23	Rc1/8	19	13	63	53	150	18×26×22	31.5	35	3900	181000	281000	6150	4950	4150	11.906	10.0	24.3
LH65GL					253					207	48.5													235000	410000	8950	10100	8450		14.1	
LH85GL	110	18	65	215	303	185	140	M20×2.5×30	15	243	51.5	92	30	Rc1/8	23	13	85	65	180	24×35×28	42.5	45	2520	345000	585000	17300	17400	14600	14.287	24.5	38.3

Dimensions in parenthesis are for items made of stainless steel.
LH85 is the item on order.

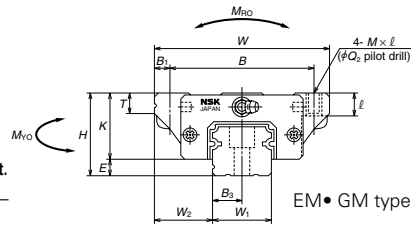
The basic dynamic load rating is a load that furnishes 50 km rating fatigue life; it is a vertical and constant load to the ball slide mounting surface.
When converting the basic dynamic load rating C to the dynamic load rating C_{100} for 100 km rating fatigue life, divide the C by 1.26

LH-EM (High load type)
LH-FL
LH-GM (Super high load type)
LH-HL

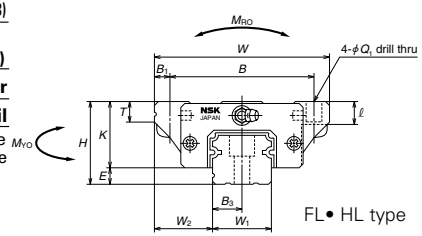
LH 35 0840 FL C 2 – PN 0 –Ⅱ**

- **Series**
- **Size**
- **Rail length (mm)**
- **Ball slide shape code**
- **Material/surface treatment code (See Page A26)**
  C: Standard (Special high carbon steel)
  K: Stainless steel (Applicable only LH15-30)
- **Number of ball slides per rail**
- *** Design serial number**
- **Accuracy code (See table Ⅰ-3·1 and Ⅰ-4·2)**
- **Preload code 0: Z0, 1: Z1, 3: Z3(See page A23)**
- ***-Ⅱ: Use two rails as a set. Default: One rail use**

* Please note that we assign the design number, and omit the last code (Ⅱ) that indicates a use of two rails as a set to finalize the reference number as product identification.



EM• GM type



FL• HL type

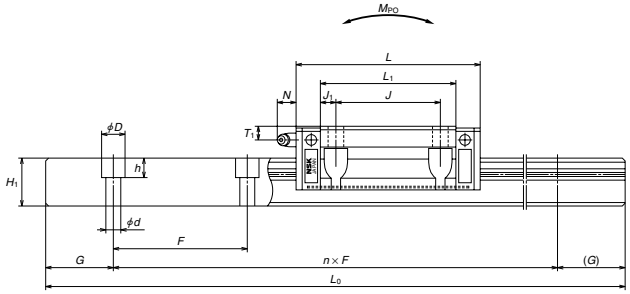


Table. Ⅰ-5·3

Unit: mm

Model No.	Assembly Height H	E	W_2	Ball slide Width W	Length L	Mounting hole B	J	$Q_1 \times \ell$ M × pitch × ℓ	Q_2	B_1	L_1	J_1	K	T	Grease fitting Hole size	T_1	N
LH15FL	24	4.6	16	47	55	38	30	4.5×7	—	4.5	39	4.5	19.4	8	ϕ3	4.5	3.3
LH15EM								M5×0.8×7	4.4								
LH15HL					74			4.5×7	—		58	14					
LH15GM								M5×0.8×7	4.4								
LH20FL	30	5	21.5	63	69.8	53	40	6×9.5	—	5	50	5	25	10	M6×0.75	5	11
LH20EM								M6×1.0×9.5	5.3								
LH20HL					91.8			6×9.5	—		72	16					
LH20GM								M6×1×9.5	5.3								
LH25FL	36	7	23.5	70	79	57	45	7×10 (7×11.5)	—	6.5	58	6.5	29	11 (12)	M6×0.75	6	11
LH25EM								M8×1.25×10 (M8×1.25×11.5)	6.8								
LH25HL								7×10 (7×11.5)	—								
LH25GM					107			M8×1.25×10 (M8×1.25×11.5)	6.8		86	20.5					
LH30FL	42	9	31	90	98.6	72	52	9×12 (9×14.5)	—	9	72	10	33	11 (15)	M6×0.75	7	11
LH30EM								M10×1.5×12 (M10×1.5×14.5)	8.6								
LH30HL								9×12(9×14.5)	—								
LH30GM					124.6			M10×1.5×12 (M10×1.5×14.5	8.6		98	23					
LH35FL	48	9.5	33	100	109	82	62	9×13	—	9	80	9	38.5	12	M6×0.75	8	11
LH35EM								M10×1.5×13	8.6								
LH35HL					143			9×13	—		114	26					
LH35GM								M10×1.5×13	8.6								
LH45FL	60	14	37.5	120	139	100	80	11×15	—	10	105	12.5	46	13	Rc1/8	10	13
LH45EM								M12×1.75×15	10.5								
LH45HL					171			11×15	—		137	28.5					
LH45GM								M12×1.75×15	10.5								
LH55FL	70	15	43.5	140	163	116	95	14×18	—	12	126	15.5	55	15	Rc1/8	11	13
LH55EM								M14×2×18	12.5								
LH55HL					201			14×18	—		164	34.5					
LH55GM								M14×2×18	12.5								
LH65FL	90	16	53.5	170	193	142	110	16×24	—	14	147	18.5	74	23	Rc1/8	19	13
LH65EM								M16×2×24	146								
LH65HL					253			16×24	—		207	48.5					
LH65GM								M16×2×24	14.6								
LH85HL	110	18	65	215	303	185	140	18×30	—	15	243	51.5	92	30	Rc1/8	23	13

Rail Width W_1	Height H_1	Pitch F	Mounting bolt hole d × D × h	B_3	G (recommended)	aMax. length L_{0max}. ( ) for stainless	Basic load rating Dynamic C (N)	Static C_0 (N)	Static moment M_{RO} (N·m)	M_{PO} (N·m)	M_{YO} (N·m)	Ball dia. D_W	Weight Ball slide (kg)	Rail (kg/m)
15	15	60	4.5×7.5×5.3	7.5	20	2000 (1800)	10800	20700	108	95	80	3.175	0.17	1.6
							14600	32000	166	216	181		0.25	
20	18	60	6×9.5×8.5	10	20	3960 (3500)	17400	32500	219	185	155	3.968	0.45	2.6
							23500	50500	340	420	355		0.65	
23	22	60	7×11×9	11.5	20	3960 (3500)	25600	46000	360	320	267	4.762	0.63	3.6
							34500	71000	555	725	610		0.93	
28	26	80	9×14×12	14	20	4000 (3500)	35500	63000	600	505	425	5.556	1.2	5.2
							46000	91500	870	1030	865		1.6	
34	29	80	9×14×12	17	20	4000	47500	80500	950	755	630	6.35	1.7	7.2
							61500	117000	1380	1530	1280		2.4	
45	38	105	14×20×17	22.5	22.5	3990	81000	140000	2140	1740	1460	7.937	3	12.3
							99000	187000	2860	3000	2520		3.9	
53	44	120	16×23×20	26.5	30	3990	119000	198000	3600	3000	2510	9.525	5	16.9
							146000	264000	4850	5150	4350		6.5	
63	53	150	18×26×22	31.5	35	3900	181000	281000	6150	4950	4150	11.906	10	24.3
							235000	410000	8950	10100	8450		14.1	
85	65	180	24×35×28	42.5	45	2520	345000	585000	17300	17400	14600	14.287	24.5	38.3

Dimensions in parenthesis are for items made of stainless steel.
LH85 is the item on order.

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 C_{100} for 100 km rating fatigue life, divide the C by 1.26

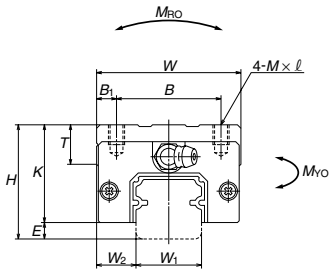
Dimensions of LH Series (Interchangeable ball slide)

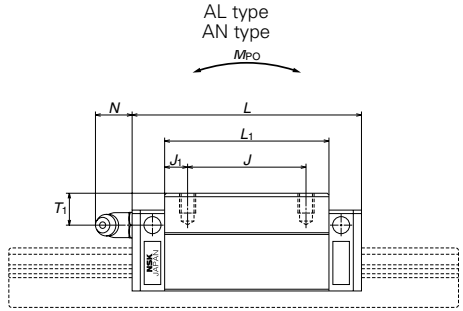
LAH-AN (High load type)
LAH-BN (Super high load type)

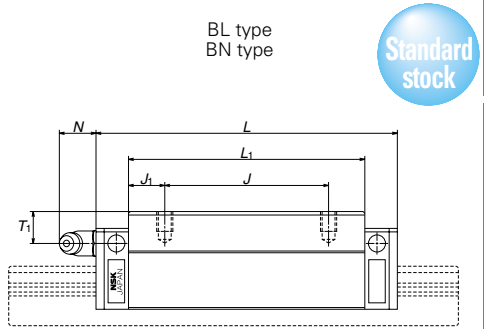
• See Page A27 Reference Number of each interchangeable part.

LA H 30 AN S Z – K

- LA H: Interchangeable ball slide code
- 30: Size
- AN: Ball slide shape code (See Table I-2•2)
- S: Material code — Default Standard material; S: Stainless steel
- Z: Preload code — Default: Fine clearance; Z: Slight preload
- K: Option code — -K: Equipped with standard NSK K1; -F: Fluoride low temperature chrome platin + standard grease; -F50: Fluoride low temperature chrome platin + LG2 grease







Standard stock

Table. I-5•4

Unit: mm

Model No.	Assembly Height H	Assembly E	Assembly W_2	Ball slide Width W	Ball slide Length L	Mounting tap hole B	Mounting tap hole J	Mounting tap hole M × pitch × ℓ	Ball slide B_1	Ball slide L_1	Ball slide J_1	Ball slide K	Ball slide T
LAH15AN	28	4.6	9.5	34	55	26	26	M4×0.7×6	4	39	6.5	23.4	8
LAH15BN					74					58	16		
LAH20AN	30	5	12	44	69.8	32	36	M5×0.8×6	6	50	7	25	12
LAH20BN					91.8		50			72	11		
LAH25AL	36	7	12.5	48	79	35	35	M6×1×6	6.5	58	11.5	29	12
LAH25AN	40							M6×1×9				33	
LAH25BL	36				107		50	M6×1×6		86	18	29	
LAH25BN	40							M6×1×9				33	
LAH30AL	42	9	16	60	85.6	40	40	M8×1.25×8	10	59	9.5	33	14
LAH30AN	45							M8×1.25×10				36	
LAH30BL	42				124.6		60	M8×1.25×8		98	19	33	
LAH30BN	45							M8×1.25×10				36	
LAH35AL	48	9.5	18	70	109	50	50	M8×1.25×8	10	80	15	38.5	15
LAH35AN	55							M8×1.25×12				45.5	
LAH35BL	48				143		72	M8×1.25×8		114	21	38.5	
LAH35BN	55							M8×1.25×12				45.5	
LAH45AN	70	14	20.5	86	139	60	60	M10×1.5×17	13	105	22.5	56	17
LAH45BN					171		80			137	28.5		
LAH55AN	80	15	23.5	100	163	75	75	M12×1.75×18	12.5	126	25.5	65	18
LAH55BN					201		95			164	34.5		
LAH65AN	90	16	31.5	126	193	76	70	M16×2×20	25	147	38.5	74	23
LAH65BN					253		120			207	43.5		

Grease fitting Hole size	Grease fitting T_1	Grease fitting N	Basic load rating Dynamic C (N)	Basic load rating Static C_0 (N)	Static moment M_{RO} (N·m)	Static moment M_{PO} (N·m)	Static moment M_{YO} (N·m)	Ball dia. D_W	Weight Ball slide (kg)
ϕ3	8.5	3.3	10800	20700	108	95	80	3.175	0.18
			14600	32000	166	216	181		0.26
M6×0.75	5	11	17400	32500	219	185	155	3.968	0.33
			23500	50500	340	420	355		0.48
M6×0.75	6	11	25600	46000	360	320	267	4.762	0.46
	10								0.55
	6								0.69
	10		34500	71000	555	725	610		0.82
M6×0.75	7	11	31000	51500	490	350	292	5.556	0.69
	10								0.77
	7								1.16
	10		46000	91500	870	1030	865		1.3
M6×0.75	8	11	47500	80500	950	755	630	6.350	1.2
	15								1.5
	8								1.7
	15		61500	117000	1380	1530	1280		2.1
Rc1/8	20	13	81000	140000	2140	1740	1460	7.937	3.0
			99000	187000	2860	3000	2520		3.9
Rc1/8	21	13	119000	198000	3600	3000	2510	9.525	4.7
			146000	264000	4850	5150	4350		6.1
Rc1/8	19	13	181000	281000	6150	4950	4150	11.906	7.7
			235000	410000	8950	10100	8450		10.8

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 C_{100} for 100 km rating fatigue life, divide the C by 1.26

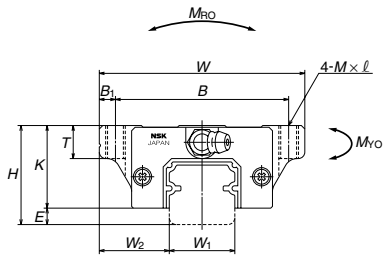
Standard stock

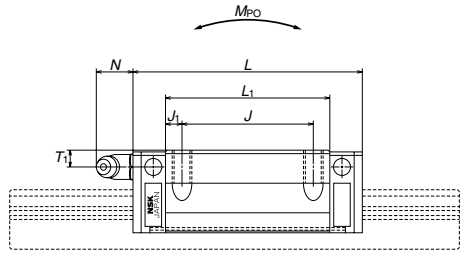
LAH-EL (High load type)
LAH-GL (Super high load type)

• See Page A27 Reference Number of each interchangeable part.

LA H 30 EL S Z – K

- LA H: Interchangeable ball slide code
- 30: Size
- EL: Ball slide shape code (See Table I-2•2)
- S: Material code — Default Standard material; S: Stainless steel
- Z: Preload code — Default: Fine clearance; Z: Slight preload
- K: Option code
  - -K: Equipped with standard NSK K1
  - -F: Fluoride low temperature chrome platin + standard grease
  - -F50: Fluoride low temperature chrome platin + LG2 grease





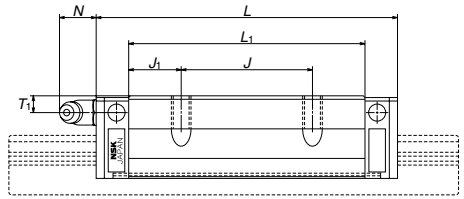


Table. I-5•5

Unit: mm

Model No.	Assembly			Ball slide										Grease fitting			Basic load rating		Static moment			Ball dia.	Weight
	Height			Width	Length	Mounting tap hole											Dynamic	Static					Ball slide
	H	E	W_2	W	L	B	J	M × pitch × ℓ	B_1	L_1	J_1	K	T	Hole size	T_1	N	C	C_0	M_{RO}	M_{PO}	M_{YO}	D_W	
																	(N)		(N·m)				(kg)
LAH15EL	24	4.6	16	47	55	38	30	M5×0.8×8	4.5	39	4.5	19.4	8	ϕ3	4.5	3.3	10800	20700	108	95	80	3.175	0.17
LAH15GL					74					58	14						14600	32000	166	216	181		0.25
LAH20EL	30	5	21.5	63	69.8	53	40	M6×1×10	5	50	5	25	10	M6×0.75	5	11	17400	32500	219	185	155	3.968	0.45
LAH20GL					91.8					72	16						23500	50500	340	420	355		0.65
LAH25EL	36	7	23.5	70	79	57	45	M8×1.25×16	6.5	58	6.5	29	11	M6×0.75	6	11	25600	46000	360	320	267	4.762	0.63
LAH25GL					107			(M8×1.25×12)		86	20.5		(12)				34500	71000	555	725	610		0.93
LAH30EL	42	9	31	90	98.6	72	52	M10×1.5×18	9	72	10	33	11	M6×0.75	7	11	35500	63000	490	505	425	5.556	1.2
LAH30GL					124.6			(M10×1.5×15)		98	23		(15)				46000	91500	870	1030	865		1.6
LAH35EL	48	9.5	33	100	109	82	62	M10×1.5×20	9	80	9	38.5	12	M6×0.75	8	11	47500	80500	950	755	630	6.350	1.7
LAH35GL					143					114	26						61500	117000	1380	1530	1280		2.4
LAH45EL	60	14	37.5	120	139	100	80	M12×1.75×24	10	105	12.5	46	13	Rc1/8	10	13	81000	140000	2140	1740	1460	7.937	3.0
LAH45GL					171					137	28.5						99000	187000	2860	3000	2520		3.9
LAH55EL	70	15	43.5	140	163	116	95	M14×2×28	12	126	15.5	55	15	Rc1/8	11	13	119000	198000	3600	3000	2510	9.525	5.0
LAH55GL					201					164	34.5						146000	264000	4850	5150	4350		6.5
LAH65EL	90	16	53.5	170	193	142	110	M16×2×24	14	147	18.5	74	23	Rc1/8	19	13	181000	281000	6150	4950	4150	11.906	10.0
LAH65GL					253					207	48.5						235000	410000	8950	10100	8450		14.1

Dimensions in parenthesis are for items made of stainless steel.

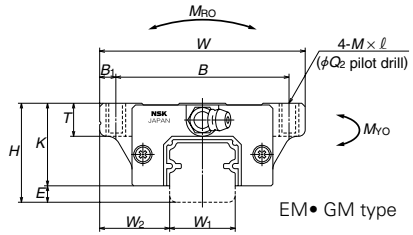
The basic dynamic load rating is a load that furnishes 50 km rating fatigue life; it is a vertical and constant load to the ball slide mounting surface.
When converting the basic dynamic load rating C to the dynamic load rating C_{100} for 100 km rating fatigue life, divide the C by 1.26

LAH-EM **(High load type)**
LAH-FL
LAH-HL
LAH-GM **(Super high load type)**

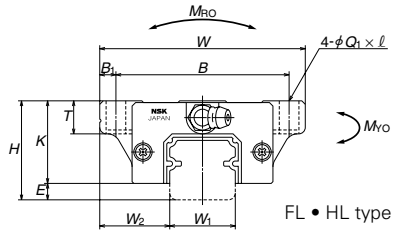
• See Page A27 Reference Number of each interchangeable part.

LA H 30 FL S Z – K

- **LA**: Interchangeable ball slide code
- **H**: Series
- **30**: Size
- **FL**: Ball slide shape code (See Table I-2•2)
- **S**: Material code — Default Standard material; S: Stainless steel
- **Z**: Preload code — Default: Fine clearance; Z: Slight preload
- **K**: Option code
  - -K: Equipped with standard NSK K1
  - -F: Fluoride low temperature chrome platin + standard grease
  - -F50: Fluoride low temperature chrome platin + LG2 grease



EM• GM type



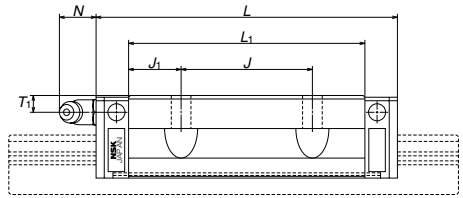
FL • HL type

Table. I-5•6

Unit: mm

Model No.	Assembly Height H	E	W_2	Ball slide Width W	Length L	Mounting hole B	J	$Q_1 \times \ell$ M × pitch × ℓ	Q_2	B_1	L_1	J_1	K	T
LAH15FL	24	4.6	16	47	55	38	30	4.5×7 M5×0.8×7	— 4.4	4.5	39	4.5	19.4	8
LAH15EM														
LAH15HL					74			4.5×7 M5×0.8×7	— 4.4		58	14		
LAH15GM														
LAH20FL	30	5	21.5	63	69.8	53	40	6×9.5 M6×1×9.5	— 5.3	5	50	5	25	10
LAH20EM														
LAH20HL					91.8			6×9.5 M6×1×9.5	— 5.3		72	16		
LAH20GM														
LAH25FL	36	7	23.5	70	79	57	45	7×10 (7×11.5) M8×1.25×10 (M8×1.25×11.5)	— 6.8	6.5	58	6.5	29	11 (12)
LAH25EM														
LAH25HL					107			7×10 (7×11.5) M8×1.25×10 (M8×1.25×11.5)	— 6.8		86	20.5		
LAH25GM														
LAH30FL	42	9	31	90	98.6	72	52	9×12 (9×14.5) M10×1.5×12 (M10×1.5×14.5)	— 8.6	9	72	10	33	11 (15)
LAH30EM														
LAH30HL					124.6			9×12 (9×14.5) M10×1.5×12 (M10×1.5×14.5)	— 8.6		98	23		
LAH30GM														
LAH35FL	48	9.5	33	100	109	82	62	9×13 M10×1.5×13	— 8.6	9	80	9	38.5	12
LAH35EM														
LAH35HL					143			9×13 M10×1.5×13	— 8.6		114	26		
LAH35GM														
LAH45FL	60	14	37.5	120	139	100	80	11×15 M12×1.75×15	— 10.5	10	105	12.5	46	13
LAH45EM														
LAH45HL					171			11×15 M12×1.75×15	— 10.5		137	28.5		
LAH45GM														
LAH55FL	70	15	43.5	140	163	116	95	14×18 M14×2×18	— 12.5	12	126	15.5	55	15
LAH55EM														
LAH55HL					201			14×18 M14×2×18	— 12.5		164	34.5		
LAH55GM														
LAH65FL	90	16	53.5	170	193	142	110	16×24 M16×2×24	— 146	14	147	18.5	74	23
LAH65EM														
LAH65HL					253			16×24 M16×2×24	— 14.6		207	48.5		
LAH65GM														
LAH85HL	110	18	65	215	303	185	140	18×30	—	15	243	51.5	92	30

Dimensions in parenthesis are for items made of stainless steel.



Grease fitting Hole size	T_1	N	Basic load rating Dynamic C (N)	Static C_0 (N)	Static moment M_{RO} (N·m)	M_{PO} (N·m)	M_{YO} (N·m)	Ball dia. D_W	Weight Ball slide (kg)
ϕ3	4.5	3.3	10800	20700	108	95	80	3.175	0.17
			14600	32000	166	216	181		0.25
M6×0.75	5	11	17400	32500	219	185	155	3.968	0.45
			23500	50500	340	420	355		0.65
M6×0.75	6	11	25600	46000	360	320	267	4.762	0.63
			34500	71000	555	725	610		0.93
M6×0.75	7	11	35500	63000	600	505	425	5.556	1.2
			46000	91500	870	1030	865		1.6
M6×0.75	8	11	47500	80500	950	755	630	6.35	1.7
			61500	117000	1380	1530	1280		2.4
Rc1/8	10	13	81000	140000	2140	1740	1460	7.937	3
			99000	187000	2860	3000	2520		3.9
Rc1/8	11	13	119000	198000	3600	3000	2510	9.525	5
			146000	264000	4850	5150	4350		6.5
Rc1/8	19	13	181000	281000	6150	4950	4150	11.906	10
			235000	410000	8950	10100	8450		14.1
Rc1/8	23	13	345000	585000	17300	17400	14600	14.287	24.5

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 C_{100} for 100 km rating fatigue life, divide the C by 1.26

Dimensions of LH Series (Interchangeable rail)

Standard stock

Example of reference number

Regular rail (non-butting rail)

L1 H 30 1200 L C N T** PC Z

- interchangeable rail code
- Series code
- Size code
- Rail length (mm)
- Shape code (L: Standard)
- Material/surface treatment code (See Table I-4•1)
- *Butting rail specification
  N: Non-butting
  L: Butting specification
- *Design serial number
  T: Domestic standard
  K: Domestic semi-standard
  B: International user standard
- Accuracy code: PC
  (PC grade is only available)
- Preload code
  T: Fine clearance
  Z: Slight preload

* Please consult with NSK for butting rail specification.

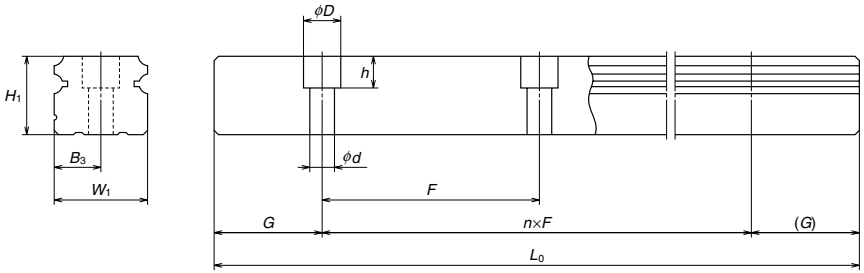


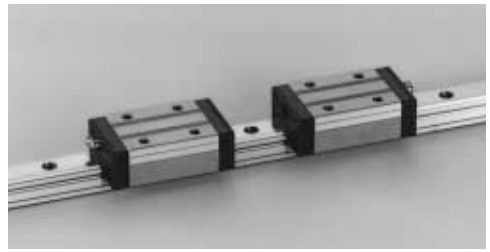
Table I-5•7

Unit: mm

Model No.	Rail							Weight
	Width W_1	Height H_1	Pitch F	Mounting bolt hole $d \times D \times h$	B_3	G Recommended	Max. length L_{0MAX} ( )for stainless	Rail (Kg / m)
L1H15	15	15	60	4.5×7.5×5.3	7.5	20	2000 (1800)	1.6
L1H20	20	18	60	6×9.5×8.5	10	20	3960 (3500)	2.6
L1H25	23	22	60	7×11×9	11.5	20	3960 (3500)	3.6
L1H30	28	26	80	9×14×12	14	20	4000 (3500)	5.2
L1H35	34	29	80	9×14×12	17	20	4000	7.2
L1H45	45	38	105	14×20×17	22.5	22.5	3990	12.3
L1H55	53	44	120	16×23×20	26.5	30	3960	16.9
L1H65	63	53	150	18×26×22	31.5	35	3900	24.3

G dimension is $1/2F^{0}_{-0.5}$ for butting rail.

A-I-5.2 LS Series



(1) High self aligning capability (rolling direction)

Same as the DF combination in angular contact bearings, self-aligning capability is high because the cross point of the contact lines of balls and grooves comes inside, reducing moment rigidity. This increases the capacity to absorb the error of installation.

(2) High load carrying capacity to vertical direction

The contact angle is set at 50 degrees, increasing load carrying capacity as well as rigidity against the load in vertical direction.

(3) High resistance against impact load

The bottom ball groove is formed in gothic-arch and the center of the top and bottom grooves are offset as shown in Fig. I-5•6. The vertical load is usually carried by top 2 rows at where balls are contacting at two points. Because of this design, the bottom rows will carry the load when a large impact load is applied as shown in Fig. I-5•7. This assures high resistance to the impact load.

(4) Highly accurate

As shown in Fig. I-5•8, fixing the measuring rollers is simple thanks to the gothic-arch groove. This makes easy and accurate measuring of ball- grooves.

(5) Easy to handle, and designed with safety in mind.

Balls are retained in the retainer and do not fall out when the ball slide is withdrawn from the rail.

(6) Abundant models and sizes come in series.

Each series have several ball slide models, rendering the linear guide available for numerous uses. The LS Series also has standardized long stainless- steel rail (maximum: 3 500 mm).

(7) Interchangeable series is available (short delivery time)

The series enables random matching of rails and ball slides (interchangeability) for prompt delivery.

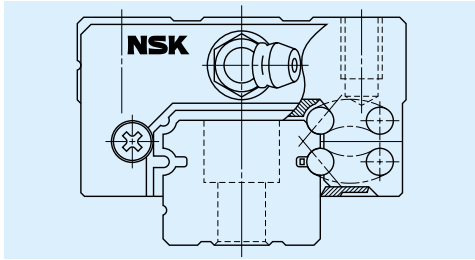


Fig. I-5•5 LS Series

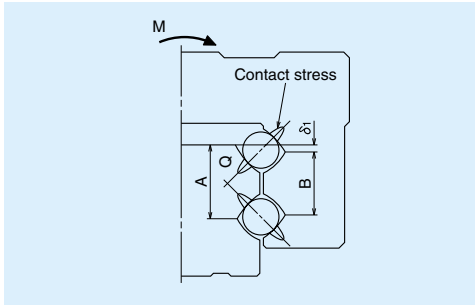


Fig. I-5•6 Enlarged illustration: Offset gothic-arch

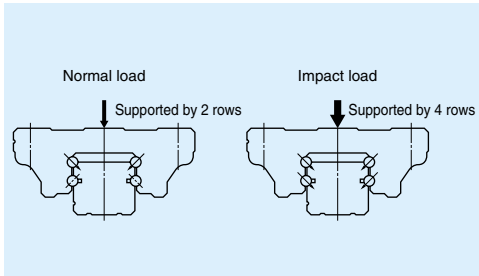


Fig. I-5•7 When load is applied

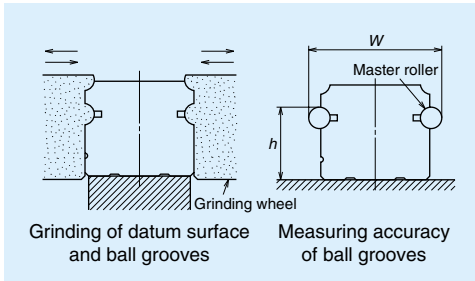


Fig. I-5•8 Rail-grinding and measuring