MOTION & CONTROL™

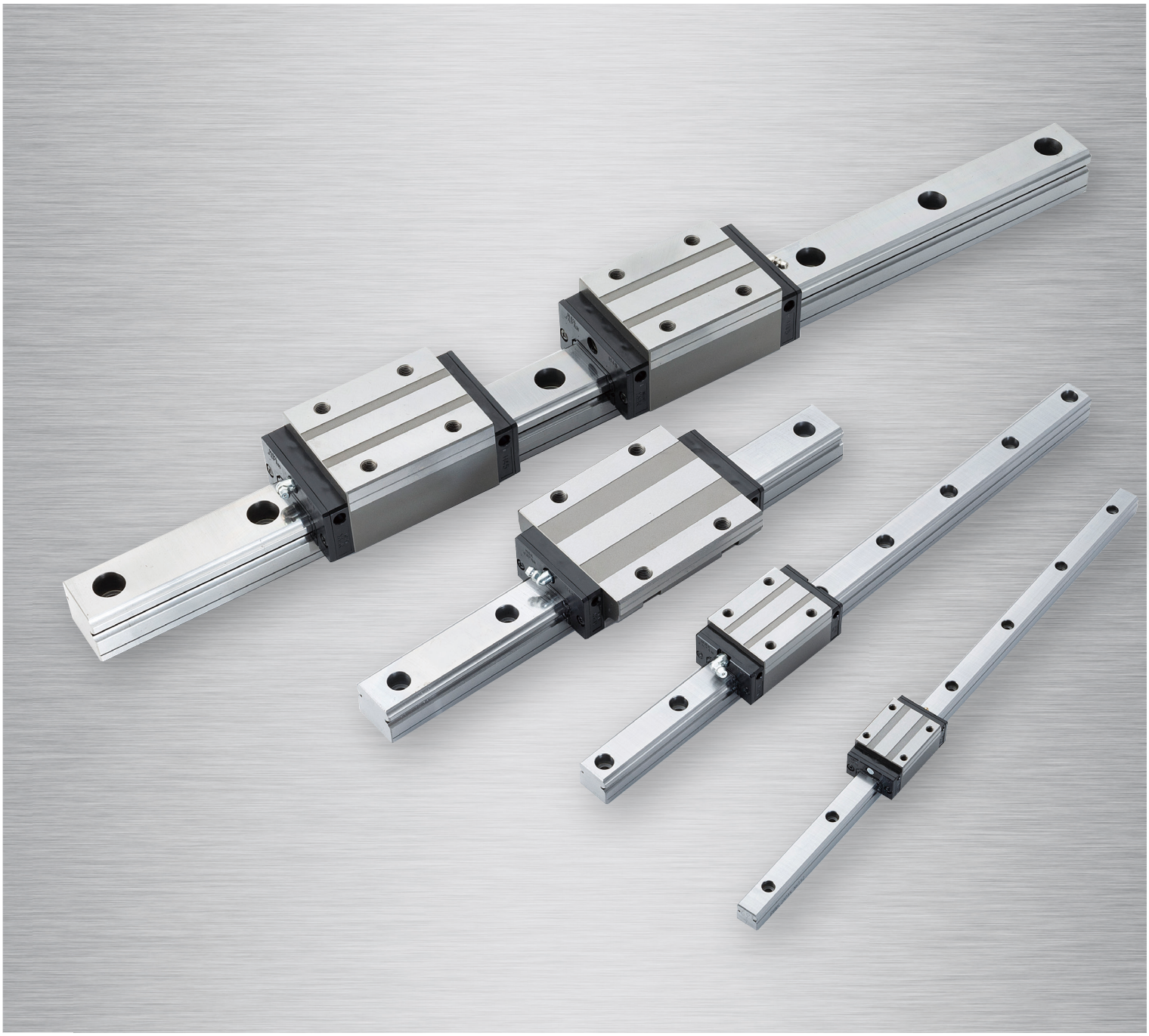
NSK

NSK Linear Guides™
Long-Life Series: DH/DS Models

Thanks to NSK's exclusive heat treatment technology, DH/DS linear guides build upon our proven, highly reliable standard NH/NS models to realize an even higher level of reliability. Options to further maximize life include highly dust-resistant end seals (included on the DV model) and the NSK K1-L™ lubrication unit.

New!

Patent pending



NSK's latest technologies combine to realize long-life linear guides with top-class reliability.

DH/DS linear guides combine NSK's exclusive TF heat treatment technology with the proven standard of our NH/NS models to significantly improve durability. For even longer maintenance-free performance, DH/DS models are compatible with the NSK K1-L™ lubrication unit, while DV models offer highly dust-resistant end seals that contribute to improved machine reliability.

Features of long-life DH/DS models

1. Excellent durability

Double the life of standard linear guides

DH/DS models are based on our proven, highly reliable standard NH/NS models that feature an optimized groove shape. Applying our special TF heat treatment achieves even longer life, expanding design possibilities for more compact and longer-lasting machines.

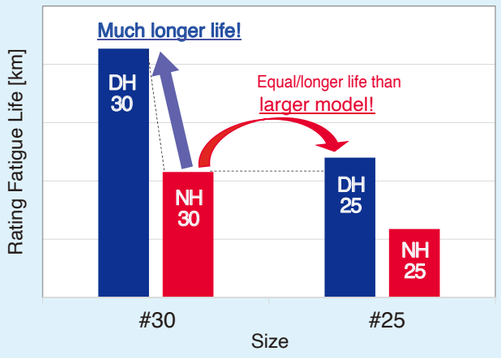
What is TF (Tough) Technology?

NSK's TF technology is an exclusive heat treatment developed and cultivated over years of experience with rolling bearings and materials. TF technology helps suppress surface flaking on the raceway. Deploying this technology in linear guides achieves double the life of standard models.

Advantages of DH/DS models

Load ratings are 1.25 times higher and service life is doubled compared to conventional NH/NS models*1. DH/DS linear guides offer greatly improved life at the same size and equal or longer life to the next smallest conventional model, allowing for equipment downsizing.

*1: Representative values for model.



DH model

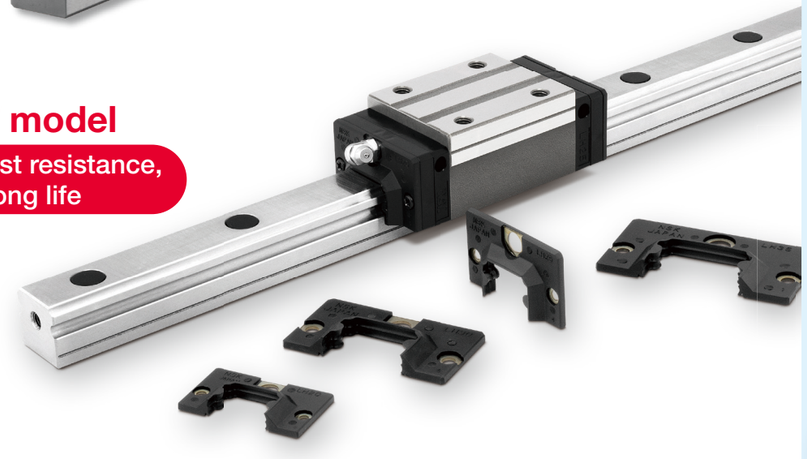
Larger ball diameter Higher load rating capacity

DS model

Compact, low-profile shape

DV model

High dust resistance, long life



The DV model features highly dust-resistant end seals with a multi-lip structure that dramatically reduces the amount of foreign matter entry.
(Mounting dimensions match those of DH models.)

2. Fully compatible with standard NH/NS models

Identical mounting dimensions

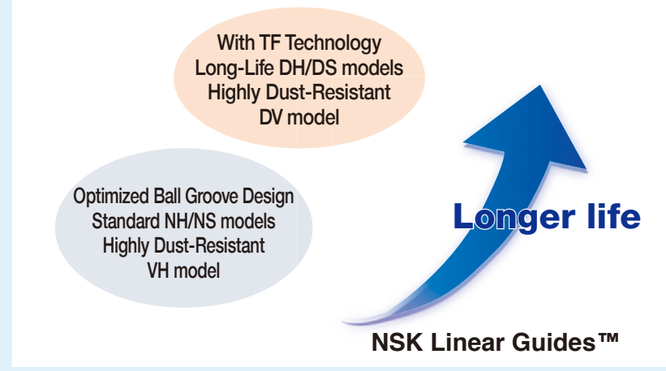
Mounting dimensions (assembled dimensions), such as height, width, mounting hole screw diameter/pitch, etc. are the same as those of conventional NH/NS models. As such, DH/DS models can easily be used in existing machines without making design changes.

Robust design that absorbs mounting errors

Thanks to a similar contact structure as DF arrangements of rolling bearings, the contact lines converge inward to reduce moment rigidity. This increases the capacity of the guides to compensate for errors in installation and makes it easy for users to mount the guides for best performance.

Extensive lineup

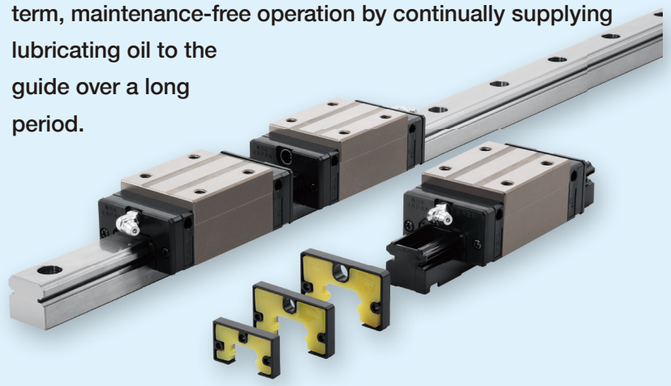
Since release, we've expanded our lineup of long-life DH/DS models alongside the growing achievements of standard NH/NS models in the field.



3. Abundant options

A wide variety of options are available to suit your needs and specifications, including the NSK K1-L lubrication unit, highly dust-resistant end seals, double seals, protectors, and surface treatments.

The NSK K1-L lubrication unit offers large improvements over our revolutionary K1 unit. NSK K1-L units support long-term, maintenance-free operation by continually supplying lubricating oil to the guide over a long period.



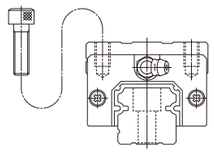
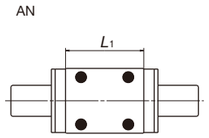
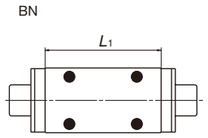
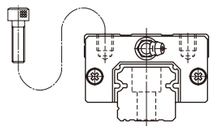
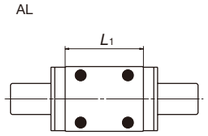
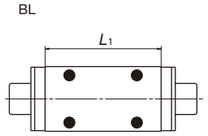
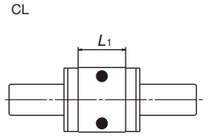
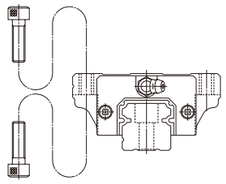
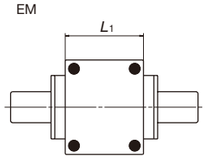
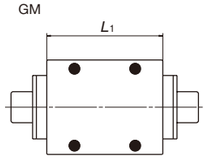
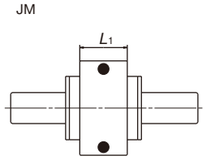
NSK K1-L is being rolled out sequentially. Please contact NSK for details.

Specifications

1. Ball Slide Shape

- Two types of ball slides are available: A square type with tapped holes and a flanged type for mounting.
- A compact, low-profile square model is also available.
- Flanged types with mounting holes may be mounted from either the top or bottom. The holes consist of a tapped section used for fixing the ball slide from the top and a tapped section for bolt hole mounting from the bottom.
- Three ball slide lengths are available: standard/high-load, long/super-high load, and short/medium-load. The ball slide length you can use differs depending on the type. Please refer to the dimension tables for details.

Fig. 1 Ball slide shape

Ball slide shape code	Shape/installation method	Type (upper row: rating; lower row: ball slide length)		
		High load	Super-high load	Medium load
		Standard	Long	Short
AN BN		AN 	BN 	
AL BL CL		AL 	BL 	CL 
EM GM JM		EM 	GM 	JM 

2. Maximum Rail Length

- Table 1 shows limitations for rail length (maximum length).
- Depending on the required accuracy grade, the available maximum rail length may be shorter than shown in Table 1.

Table 1 Length limitations for rails — Unit : mm

Model \ Size	15	20	25	30	35	45	55	65
DH	2 980	3 960	3 960	4 000	4 000	3 990	3 960	3 900
DS	2 920	3 960	3 960	4 000	4 000			

Note: Rails can be butted if user requirements exceed the rail length shown in the table. Please consult NSK for details.

3. Accuracy

Five accuracy grades are available:
Ultra precision P3, Super precision P4, High precision P5, Precision P6, and Normal PN.

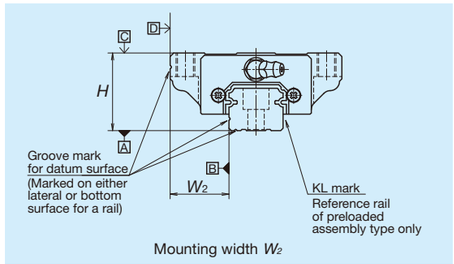
Table 2 Tolerance of preloaded assembly — Unit : μm

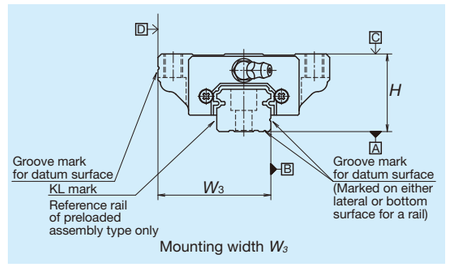
Characteristics \ Accuracy grade	Ultra precision P3	Super precision P4	High precision P5	Precision grade P6	Normal grade PN
Mounting height H Variation of H (All ball slides on a set of rails)	±8 3	±10 5	±20 7	±40 15	±80 25
Mounting width W_2 or W_3 Variation of W_2 or W_3 (All ball slides on reference rail)	±10 3	±15 7	±25 10	±50 20	±100 30
Running parallelism of surface C to surface A Running parallelism of surface D to surface B	Refer to Fig. 2 and Table 3.				

Table 3 Running parallelism of ball slide — Unit : μm

Rail length (mm)	Preload assembly				
	Ultra precision P3	Super precision P4	High precision P5	Precision grade P6	Normal grade PN
Over - 50 or less	2	2	2	4	5
50～80	2	2	4	4	5
80～125	2	2	3	4	5
125～200	2	2	3.5	5	6
200～250	2	2.5	4.5	6	7.5
250～315	2	2.5	5	6.5	8.5
315～400	2	3	5.5	7	9.5
400～500	2	3	6	7.5	11
500～630	2	3.5	6.5	8.5	12
630～800	2	4	7	9.5	13
800～1 000	2.5	4.5	7.5	10	15
1 000～1 250	3	5	8.5	12	16
1 250～1 600	3.5	5.5	9.5	13	17
1 600～2 000	4	6.5	11	14	19
2 000～2 500	4.5	7.5	12	16	21
2 500～3 150	5.5	8.5	13	18	23
3 150～4 000	6	9.5	14	19	25

Fig. 2 Accuracy specifications





4. Preload and Rigidity

- The following preloads are available: Medium preload Z3, Slight preload Z1, and Fine clearance Z0.
- Possible combinations of accuracy and preload are shown in Table 6.

Table 4 Preload and rigidity
(1) DH Model

Model No.	Preload (N)		Rigidity (N/μm)			
			Vertical direction		Lateral direction	
	Slight preload Z1	Medium preload Z3	Slight preload Z1	Medium preload Z3	Slight preload Z1	Medium preload Z3
DH15 AN、EM	78	490	137	226	98	186
DH20 AN、EM	147	835	186	335	137	245
DH25 AL、AN、EM	196	1 270	206	380	147	284
DH30 AL、AN	245	1 570	216	400	157	294
DH30 EM	294	1 770	265	480	186	355
DH35 AL、AN、EM	390	2 350	305	560	216	390
DH45 AL、AN、EM	635	3 900	400	745	284	540
DH55 AL、AN、EM	980	5 900	490	910	345	645
DH65 AN、EM	1 470	8 900	580	1 070	400	755
DH15 BN、GM	98	685	196	345	137	284
DH20 BN、GM	196	1 080	265	480	196	355
DH25 BL、BN、GM	245	1 570	294	560	216	400
DH30 BL、BN、GM	390	2 260	360	665	265	480
DH35 BL、BN、GM	490	2 940	430	795	305	570
DH45 BL、BN、GM	785	4 800	520	960	370	695
DH55 BL、BN、GM	1 180	7 050	635	1 170	440	835
DH65 BN、GM	1 860	11 300	805	1 480	550	1 040

Note: Clearance for Fine clearance Z0 is 0 to 3 μm, Therefore, preload is zero.
However, Z0 of PN grade is 0 to 15 μm.

Table 5 Preload and rigidity
(2) DS Model

Model No.	Preload (N)		Rigidity (N/μm)			
			Vertical direction		Lateral direction	
	Slight preload Z1	Medium preload Z3	Slight preload Z1	Medium preload Z3	Slight preload Z1	Medium preload Z3
DS15 AL、EM	69	390	127	226	88	167
DS20 AL、EM	88	540	147	284	108	206
DS25 AL、EM	147	880	206	370	147	275
DS30 AL、EM	245	1 370	255	460	186	345
DS35 AL、EM	345	1 960	305	550	216	400
DS15 CL、JM	49	294	78	147	59	108
DS20 CL、JM	69	390	108	186	78	137
DS25 CL、JM	98	635	127	235	88	177
DS30 CL、JM	147	980	147	275	108	206
DS35 CL、JM	245	1 370	186	335	137	245

Note: Clearance for Fine clearance Z0 is 0 to 3 μm, Therefore, preload is zero.
However, Z0 of PN grade is 0 to 15 μm.

Table 6 Combinations of accuracy and preload

		Accuracy grade				
		Ultra precision	Super precision	High precision	Precision grade	Normal grade
Without NSK K1-L lubrication unit		P3	P4	P5	P6	PN
With NSK K1-L lubrication unit		L3	L4	L5	L6	LN
Preload	Fine clearance Z0	○	○	○	○	○
	Slight preload Z1	○	○	○	○	○
	Medium preload Z3	○	○	○	○	—

Notes
1) NSK K1-L is being rolled out sequentially. Please contact NSK for details.
2) NSK K1-L comes standard with DV models.

5. Basic Load Ratings and Rated Life

The basic load rating used to express the load capacity of linear guides is determined by ISO standards (ISO 14728-1, 14728-2). For long-life DH/DS models, the rated load is multiplied by a coefficient that reflects the effect of life improvement technologies based on these ISO standards.
The basic dynamic load rating refers to a non-fluctuating load that acts on the center of the ball slide from above so that the rated fatigue life is 100 km or 50 km. When the ball slide receives only load F in a vertical direction, the slide's rated fatigue life L can be calculated using the following equation where C_{100} refers to the basic dynamic load rating for 100 km rated fatigue life and C_{50} refers to the basic dynamic load rating for 50 km rated fatigue life.
The basic static load rating refers to a static load that generates a contact stress of 4 200 MPa at the center of the contact area between the rolling element subjected to the maximum stress and the raceway surface. In this most heavily stressed contact area, the sum of the permanent deformation of the rolling element and that of the raceway is nearly 0.0001 times the rolling element's diameter.
Basic load rating values are described in the dimension tables. In DH/DS models, the contact angle is set at 50 degrees, thus increasing load carrying capacity in the upward direction. Basic load ratings by direction are shown at Table 8.

- Please note that the equation used here for calculating life differs from that used for linear guides with rollers as the rolling elements.
- The load factor is expressed as f_w. Select the most suitable load factor from the values given in Table 7 according to potential vibration or impact loads on the machine onto which the linear guide will be mounted.

$$L = 100 \times \left(\frac{C_{100}}{f_w \cdot F}\right)^3 \quad \text{or} \quad L = 50 \times \left(\frac{C_{50}}{f_w \cdot F}\right)^3 \quad [\text{km}]$$

Various loads may be applied to the linear guide (i.e., ball slide loads), including vertical loads , lateral loads, and moment loads. Sometimes, more than one type of load will be applied simultaneously or the volume and direction of the load may vary. Variable loads cannot be used for life calculations of linear guides as they are. Therefore, it is necessary to use an applied hypothetical constant load that would generate a fatigue life equivalent to the actual fatigue life. This is called the dynamic equivalent load. To calculate dynamic equivalent load, use the values provided in Table 9.

Table 7 Load factor f_w

Impact/vibration	Load factor
No external impact/vibration	1.0 ~ 1.5
There is impact/vibration from outside.	1.5 ~ 2.0
There is significant impact/vibration.	2.0 ~ 3.0

Table 8 Basic load rating by load direction

Load rating \ Direction	Downward	Upward	Lateral
Basic dynamic load rating	C	C	$0.84C$
Basic static load rating	C_0	$0.78C_0$	$0.65C_0$

Fig. 3 Load directions

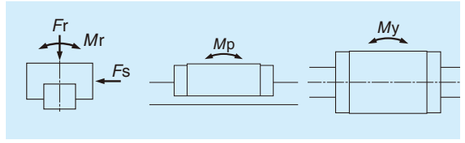
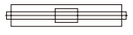
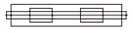
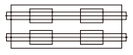


Table 9 Loads by linear guide arrangement

Pattern	Arrangement of linear guide	Loads necessary to calculate dynamic equivalent load					Dynamic equivalent load
		Load		Moment load			
		Up/down (vertical)	Right/left (lateral)	Rolling	Pitching	Yawing	
1		F_r	F_s	M_r	M_p	M_y	$F_r = F_r$ $F_{se} = F_s \cdot \tan\alpha$ $F_{re} = \varepsilon_r \cdot M_r$ $F_{pe} = \varepsilon_p \cdot M_p$ $F_{ye} = \varepsilon_y \cdot M_y$ $\alpha\alpha$: Contact angle (=50°) Dynamic equivalent coefficients ε_r : Rolling direction ε_p : Pitching direction ε_y : Yawing direction
2		F_r	F_s	M_r			
3		F_r	F_s		M_p	M_y	
4		F_r	F_s				

The formula is determined by the relationship of loads in terms of volume. A full dynamic equivalent load can be easily obtained by using each coefficient.
After obtaining the dynamic equivalent coefficient in Table 9, the full dynamic equivalent load can be obtained using the appropriate equation below as determined by the magnitude of the load:
· When F_r is the largest load: $F_e = F_r + 0.5F_{se} + 0.5F_{re} + 0.5F_{pe} + 0.5F_{ye}$
· When F_{se} is the largest load: $F_e = 0.5F_r + F_{se} + 0.5F_{re} + 0.5F_{pe} + 0.5F_{ye}$
· When F_{re} is the largest load: $F_e = 0.5F_r + 0.5F_{se} + F_{re} + 0.5F_{pe} + 0.5F_{ye}$
· When F_{pe} is the largest load: $F_e = 0.5F_r + 0.5F_{se} + 0.5F_{re} + F_{pe} + 0.5F_{ye}$
· When F_{ye} is the largest load: $F_e = 0.5F_r + 0.5F_{se} + 0.5F_{re} + 0.5F_{pe} + F_{ye}$
The values for dynamic equivalent load in the formulas above should be absolute values that disregard load directions.

Table 10 Dynamic equivalent coefficients

Model	Dynamic equivalent coefficients (1/m)		
	ε_r	ε_p	ε_y
DH15AN、EM	188	111	132
DH15BN、GM	188	72	86
DH20AN、EM	142	81	97
DH20BN、GM	142	57	68
DH25AL、AN、EM	123	68	81
DH25BL、BN、GM	123	51	61
DH30AL、AN	98	70	83
DH30EM	98	58	69
DH30BL、BN、GM	98	44	52
DH35AL、AN、EM	78	51	61
DH35BL、BN、GM	78	36	43
DH45AL、AN、EM	60	38	45
DH45BL、BN、GM	60	30	36
DH55AL、AN、EM	51	31	37
DH55BL、BN、GM	51	25	30
DH65AN、EM	43	27	32
DH65BN、GM	43	20	24
DS15AL、EM	177	116	138
DS15CL、JM	177	174	208
DS20AL、EM	127	94	112
DS20CL、JM	127	136	162
DS25AL、EM	111	70	83
DS25CL、JM	111	108	129
DS30AL、EM	94	63	75
DS30CL、JM	94	102	121
DS35AL、EM	76	54	64
DS35CL、JM	76	87	104

6. Dust-Resistant parts and Lubrication accessories

(1) Standard specifications

- DH/DS linear guides can be used as is in normal operating conditions thanks to standard specifications that prevent the entry of foreign matter. The ball slides feature end seals on both ends, and bottom seals as standard.
- Table 11 shows available options for higher dust resistance. Select the options that best suit your operation environment.

Table 11 Optional parts for dust resistance

Name	Purpose
NSK K1-L lubrication unit	A lubrication device that combines oil and resin in a single unt. Enhances lubricating functions.
Double seal	Combines two end seals for enhanced seal effectiveness.
Protector	Protects the end seal from hot and hard contaminants.
Rail cap	Prevents foreign matters, such as swarf generated in cutting operation from clogging the rail-mounting holes.
Inner seal	Installed inside the slide to prevent foreign matter from entering and affecting the rolling contact surface.
Bellows	Covers the linear guide.

Note: Inner seals can be selected for DH20-65 and DS20-35.

(2) Mounting position for lubrication accessories

- The standard position for grease fittings is at the end face of the ball slide. We can mount them on the side of the end cap as an option (Fig. 5).
- Please consult NSK for the installation of grease or tube fittings to the ball slide body or side of end cap.

Fig. 4

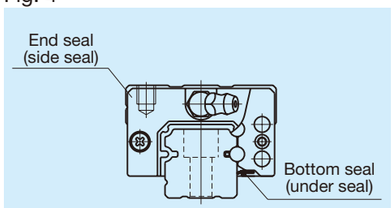
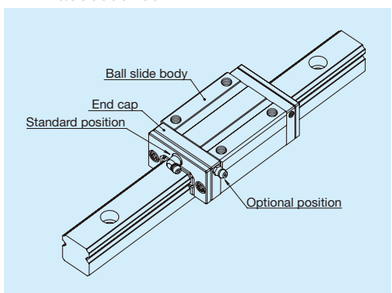


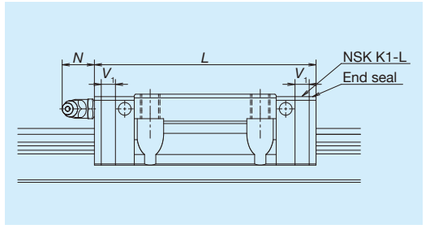
Fig. 5 Mounting position of lubrication accessories



(3) NSK K1-L™ lubrication unit

Table 12 shows the dimensions of linear guides equipped with the NSK K1-L lubrication unit.

Fig. 6



7. Rust Prevention

Surface treatments

NSK recommends low- temperature chrome plating or fluoride low-temperature chrome plating as the surface treatment. Please consult NSK regarding other surface treatments.

Table 13 Material/surface treatment codes

Code	Description
C	Special high carbon steel (TF treatment)
D	Special high carbon steel (TF treatment) + surface treatment
Z	Other, special

Table 12 Unit : mm

Model No.		Standard ball slide length	Ball slide length with two NSK K1-L installed L	Thickness of single NSK K1-L V_1	Protrusion of grease fitting N
DH15	AN、EM	55	65.6	5.3	(5)
	BN、GM	74	84.6		
DH20	AN、EM	69.8	80.4	5.3	(14)
	BN、GM	91.8	102.4		
DH25	AL、AN、EM	79	90.6	5.8	(14)
	BL、BN、GM	107	118.6		
DH30	AL、AN	85.6	97.6	6	(14)
	EM	98.6	110.6		
	BL、BN、GM	124.6	136.6		
DH35	AL、AN、EM	109	122	6.5	(14)
	BL、BN、GM	143	156		
DH45	AL、AN、EM	139	154	7.5	(15)
	BL、BN、GM	171	186		
DH55	AL、AN、EM	163	178	7.5	(15)
	BL、BN、GM	201	216		
DH65	AN、EM	193	211	9	(16)
	BN、GM	253	271		
DS15	AL、EM	56.8	66.4	4.8	(5)
	CL、JM	40.4	50		
DS20	AL、EM	65.2	75.8	5.3	(14)
	CL、JM	47.2	57.8		
DS25	AL、EM	81.6	92.2	5.3	(14)
	CL、JM	59.6	70.2		
DS30	AL、EM	96.4	108.4	6	(14)
	CL、JM	67.4	79.4		
DS35	AL、EM	108	121	6.5	(14)
	CL、JM	77	90		

Notes:
1) Slide length when equipped with NSK K1-L = (standard ball slide length) + (V_1 thickness of single NSK K1-L unit) × (number of K1-L units).
2) NSK K1-L comes standard with DV models.
3) NSK K1-L is being rolled out sequentially. Please contact NSK for details.

8. Installation

(1) Permissible values for mounting error

Mounting errors may result in harmful effects, such as shortened operating life, deteriorated motion accuracy, and/or friction variation. Tables 14 and 15 show mounting tolerances, with representative errors shown in Figs 7 and 8.

Fig. 7

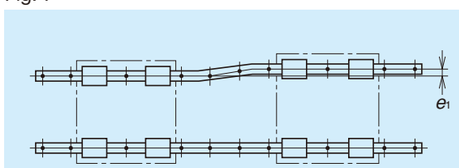


Fig. 8

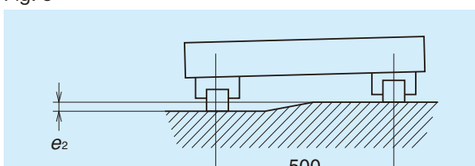


Table 14 Unit : μm

Value	Preload	Model No. DH15	DH20	DH25	DH30	DH35	DH45	DH55	DH65
Permissible values for parallelism error of two rails e_1	Z0	22	30	40	45	55	65	80	110
	Z1	18	20	25	30	35	45	55	70
	Z3	13	15	20	25	30	40	45	60
Permissible values for height error of two rails e_2	Z0	375μm/500mm							
	Z1, ZZ, Z3	330μm/500mm							

Table 15 Unit : μm

Value	Preload	Model No. DS15	DS20	DS25	DS30	DS35
Permissible values for parallelism error of two rails e_1	Z0	20	22	30	35	40
	Z1	15	17	20	25	30
	Z3	12	15	15	20	25
Permissible values for height error of two rails e_2	Z0	375μm/500mm				
	Z1, ZZ, Z3	330μm/500mm				

(2) Shoulder height and corner radius of the mounting surface

When horizontally fixing a rail or ball slide by pushing it onto the shoulder (the risen portion of the mounting surface) of the bed or table, refer to the shoulder height and corner radius specified in Figs. 9 and 10 and Table 16.

Shoulder height of the mounting surface and corner radius r

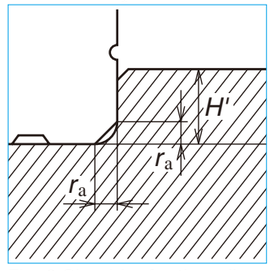


Fig. 9 Shoulder for the rail datum surface

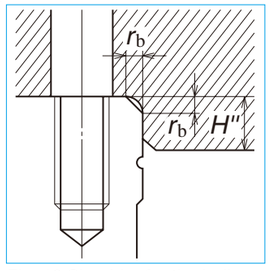


Fig. 10 Shoulder for the ball slide datum surface

Table 16 Unit : mm

Model No.	Corner radius(maximum) r_a	r_b	Shoulder height H'	H''
DH15	0.5	0.5	4	4
DH20	0.5	0.5	4.5	5
DH25	0.5	0.5	5	5
DH30	0.5	0.5	6	6
DH35	0.5	0.5	6	6
DH45	0.7	0.7	8	8
DH55	0.7	0.7	10	10
DH65	1	1	11	11
DS15	0.5	0.5	4	4
DS20	0.5	0.5	4.5	5
DS25	0.5	0.5	5	5
DS30	0.5	0.5	6	6
DS35	0.5	0.5	6	6

9. Maximum allowable speed

Table 17 shows the standard maximum allowable speed for 10 000 km operation under normal conditions. However, the maximum allowable speed can be affected by the accuracy of the installation, operating temperature, external load, etc. If operation will exceed the permissible distance and speed, please contact NSK.

Table 17 Maximum allowable speed Unit : m/min

Model \ Size	15	20	25	30	35	45	55	65
DH	300					200		150
DS	300					—		—

10. Handling Precautions

(1) Bumping or hitting the slide may cause damage.
(2) Operating temperature should be less than 80℃. If this temperature is exceeded, the plastic parts may be damaged.
(3) If using NSK K1-L, the maximum operating temperature is 50℃ (momentary maximum temperature: 80℃). Do not expose the NSK K1-L lubrication unit to organic solvents that remove oil such as hexane and do not leave it in contact with white kerosene or rust preventive oils that contain white kerosene.

11. Dimensions

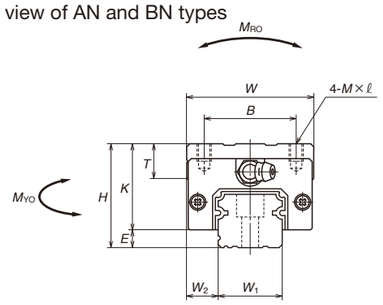
DH - AN (High load/standard, square type)
DH - BN (Super-high load/long, square type)

Reference number

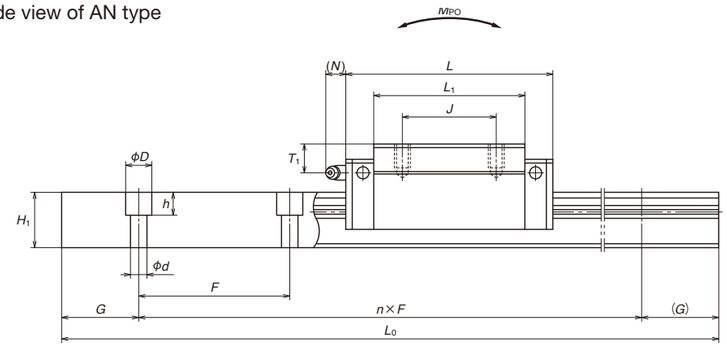
DH 30 1200 AN C 2 - ** P5 3**

- Model
- Size
- Rail length (mm)
- Ball slide shape code (refer to Fig. 1 on page 3)
- Material/surface treatment code (refer to Table 13 on page 7)
  C: Special high-carbon steel, D: Special high-carbon steel + surface treatment
- Number of ball slides per rail
- Design serial number
  Added to the reference number
- Accuracy code
  (refer to Table 6 on page 5)
- Preload code
  (refer to Table 6 on page 5)
  0 : Z0.1 : Z1.3 : Z3

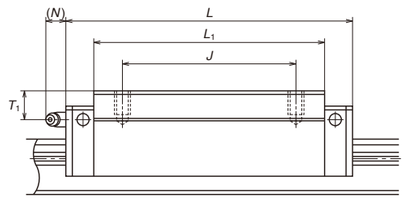
Front view of AN and BN types



Side view of AN type



Side view of BN type



Unit : mm

Model No.	Assembly Height H	E	W_2	Ball slide Width W	Length L	Mounting hole B	J	M×Pitch×ℓ	L_1	K	T	Grease fitting Hole size	T_1	N	Width W_1	Height H_1
DH15AN	28	4.6	9.5	34	55	26	26	M4×0.7×6	39	23.4	8	ϕ3	8.5	3.3	15	15
DH15BN					74				58							
DH20AN	30	5	12	44	69.8	32	36	M5×0.8×6	50	25	12	M6×0.75	5	11	20	18
DH20BN					91.8		50		72							
DH25AN	40	7	12.5	48	79	35	35	M6×1×9	58	33	12	M6×0.75	10	11	23	22
DH25BN					107		50		86							
DH30AN	45	9	16	60	85.6	40	40	M8×1.25×10	59	36	14	M6×0.75	10	11	28	26
DH30BN					124.6		60		98							
DH35AN	55	9.5	18	70	109	50	50	M8×1.25×12	80	45.5	15	M6×0.75	15	11	34	29
DH35BN					143		72		114							
DH45AN	70	14	20.5	86	139	60	60	M10×1.5×17	105	56	17	Rc1/8	20	13	45	38
DH45BN					171		80		137							
DH55AN	80	15	23.5	100	163	75	75	M12×1.75×18	126	65	18	Rc1/8	21	13	53	44
DH55BN					201		95		164							
DH65AN	90	16	31.5	126	193	76	70	M16×2×20	147	74	23	Rc1/8	19	13	63	53
DH65BN					253		120		207							

Model No.	Rail Pitch F	Mounting bolt hole d×D×h	G (reference)	Max. length L_{0max}	Basic load ratings 1) Dynamic [50km] C_{50}(N)	[100km] C_{100}(N)	Static C_0 (N)	Static moment (N·m) M_{RO}	M_{PO} (One slide)	M_{PO} (Two slides)	M_{YO} (One slide)	M_{YO} (Two slides)	Weight Ball slide (kg)	Rail (kg/m)
DH15AN	60	4.5×7.5×5.3	20	2 980	17 800	14 200	20 700	108	94.5	575	79.5	480	0.18	1.6
DH15BN					22 800	18 100	32 000	166	216	1 150	181	965	0.26	
DH20AN	60	6×9.5×8.5	20	3 960	29 800	23 700	32 500	219	185	1 140	155	955	0.33	2.6
DH20BN					38 000	30 000	50 500	340	420	2 230	355	1 870	0.48	
DH25AN	60	7×11×9	20	3 960	42 500	33 500	46 000	360	320	1 840	267	1 540	0.55	3.6
DH25BN					57 500	45 500	71 000	555	725	3 700	610	3 100	0.82	
DH30AN	80	9×14×12	20	4 000	51 500	41 000	51 500	490	350	2 290	292	1 920	0.77	5.2
DH30BN					77 000	61 000	91 500	870	1 030	5 600	865	4 700	1.3	
DH35AN	80	9×14×12	20	4 000	78 500	62 500	80 500	950	755	4 500	630	3 800	1.5	7.2
DH35BN					102 000	81 000	117 000	1 380	1 530	8 350	1 280	7 000	2.1	
DH45AN	105	14×20×17	22.5	3 990	135 000	107 000	140 000	2 140	1 740	9 750	1 460	8 150	3.0	12.3
DH45BN					164 000	131 000	187 000	2 860	3 000	15 600	2 520	13 100	3.9	
DH55AN	120	16×23×20	30	3 960	199 000	158 000	198 000	3 600	3 000	16 300	2 510	13 700	4.7	16.9
DH55BN					243 000	193 000	264 000	4 850	5 150	26 300	4 350	22 100	6.1	
DH65AN	150	18×26×22	35	3 900	300 000	239 000	281 000	6 150	4 950	27 900	4 150	23 400	7.7	24.3
DH65BN					390 000	310 000	410 000	8 950	10 100	51 500	8 450	43 500	10.8	

Note 1) For details on basic load ratings, refer to "5. Basic Load Ratings and Rated Life" on page 6.

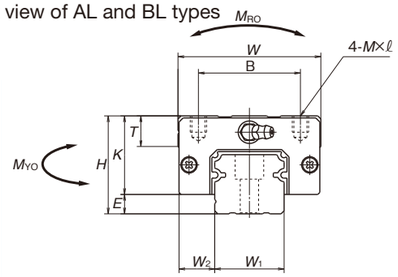
DH - AL (High load/standard, square low-profile type)
DH - BL (Super-high load/long, square low-profile type)

Reference number

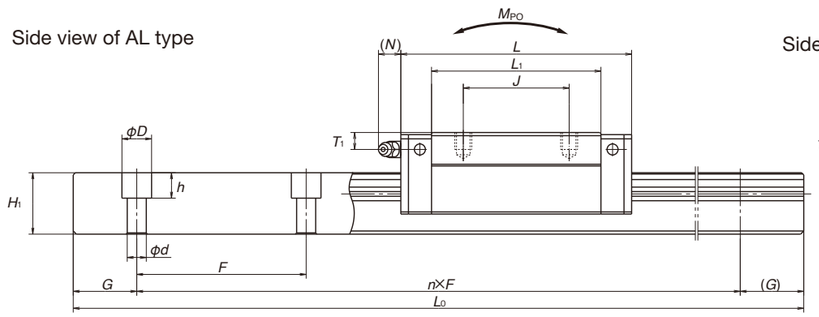
DH 30 1200 AL C 2 - ** P5 3**

- Model
- Size
- Rail length (mm)
- Ball slide shape code (refer to Fig. 1 on page 3)
- Material/surface treatment code (refer to Table 13 on page 7)
  C: Special high-carbon steel, D: Special high-carbon steel + surface treatment
- Number of ball slides per rail
- Design serial number
  Added to the reference number
- Accuracy code
  (refer to Table 6 on page 5)
- Preload code
  (refer to Table 6 on page 5)
  0 : Z0.1 : Z1.3 : Z3

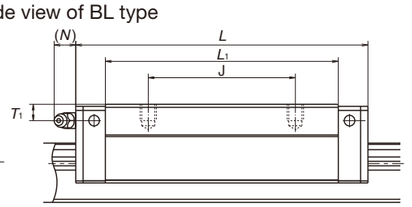
Front view of AL and BL types



Side view of AL type



Side view of BL type



Unit : mm

Model No.	Assembly Height H	E	W_2	Ball slide Width W	Length L	Mounting hole B	J	M×Pitch×ℓ	L_1	K	T	Grease fitting Hole size	T_1	N	Width W_1	Height H_1
DH25AL	36	7	12.5	48	79	35	35	M6×1×6	58	29	12	M6×0.75	6	11	23	22
DH25BL					107		50		86							
DH30AL	42	9	16	60	85.6	40	40	M8×1.25×8	59	33	14	M6×0.75	7	11	28	26
DH30BL					124.6		60		98							
DH35AL	48	9.5	18	70	109	50	50	M8×1.25×8	80	38.5	15	M6×0.75	8	11	34	29
DH35BL					143		72		114							
DH45AL	60	14	20.5	86	139	60	60	M10×1.5×10	105	46	17	Rc1/8	10	13	45	38
DH45BL					171		80		137							
DH55AL	70	15	23.5	100	163	75	75	M12×1.75×13	126	55	15	Rc1/8	11	13	53	44
DH55BL					201		95		164							

Model No.	Rail Pitch F	Mounting bolt hole d×D×h	G (reference)	Max. length L_{0max}	Basic load ratings 1) Dynamic [50km] C_{50}(N)	[100km] C_{100}(N)	Static C_0 (N)	Static moment (N·m) M_{RO}	M_{PO} (One slide)	M_{PO} (Two slides)	M_{YO} (One slide)	M_{YO} (Two slides)	Weight Ball slide (kg)	Rail (kg/m)
DH25AL	60	7×11×9	20	3 960	42 500	33 500	46 000	360	320	1 840	267	1 540	0.46	3.6
DH25BL					57 500	45 500	71 000	555	725	3 700	610	3 100	0.69	
DH30AL	80	9×14×12	20	4 000	51 500	41 000	51 500	490	350	2 290	292	1 920	0.69	5.2
DH30BL					77 000	61 000	91 500	870	1 030	5 600	865	4 700	1.16	
DH35AL	80	9×14×12	20	4 000	78 500	62 500	80 500	950	755	4 500	630	3 800	1.2	7.2
DH35BL					102 000	81 000	117 000	1 380	1 530	8 350	1 280	7 000	1.7	
DH45AL	105	14×20×17	22.5	3 990	135 000	107 000	140 000	2 140	1 740	9 750	1 460	8 150	2.2	12.3
DH45BL					164 000	131 000	187 000	2 860	3 000	15 600	2 520	13 100	2.9	
DH55AL	120	16×23×20	30	3 960	199 000	158 000	198 000	3 600	3 000	16 300	2 510	13 700	3.7	16.9
DH55BL					243 000	193 000	264 000	4 850	5 150	26 300	4 350	22 100	4.7	

Note 1) For details on basic load ratings, refer to "5. Basic Load Ratings and Rated Life" on page 6.

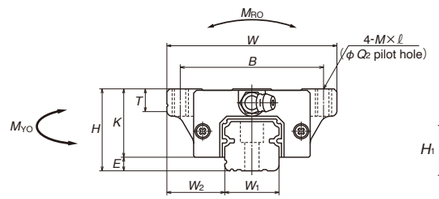
DH - EM (High load/standard, flanged type)
DH - GM (Super-high load/long, flanged type)

Reference number

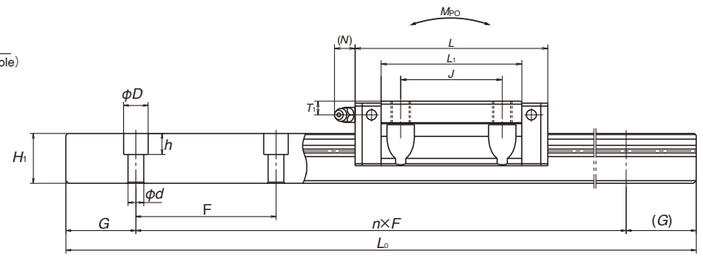
DH 30 1200 EM C 2 - ** **P5 3**

- Model
- Size
- Rail length (mm)
- Ball slide shape code (refer to Fig. 1 on page 3)
- Material/surface treatment code (refer to Table 13 on page 7)
  C: Special high-carbon steel, D: Special high-carbon steel + surface treatment
- Number of ball slides per rail
- Design serial number
  Added to the reference number
- Accuracy code (refer to Table 6 on page 5)
- Preload code (refer to Table 6 on page 5)
  0 : Z0、1 : Z1、3 : Z3

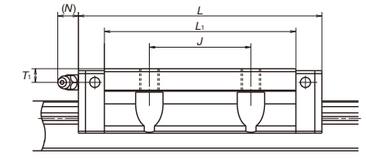
Front view of EM and GM types



Side view of EM type



Side view of GM type



Unit : mm

Model No.	Assembly			Ball slide												Width	Height
	Height			Width	Length	Mounting hole				L_1	K	T	Grease fitting				
	H	E	W_2	W	L	B	J	M×Pitch×ℓ	Q_2				Hole size	T_1	N	W_1	H_1
DH15EM	24	4.6	16	47	55	38	30	M5×0.8×7	4.4	39	19.4	8	φ3	4.5	3.3	15	15
DH15GM					74					58							
DH20EM	30	5	21.5	63	69.8	53	40	M6×1×9.5	5.3	50	25	10	M6×0.75	5	11	20	18
DH20GM					91.8					72							
DH25EM	36	7	23.5	70	79	57	45	M8×1.25×10	6.8	58	29	11	M6×0.75	6	11	23	22
DH25GM					107					86							
DH30EM	42	9	31	90	98.6	72	52	M10×1.5×12	8.6	72	33	11	M6×0.75	7	11	28	26
DH30GM					124.6					98							
DH35EM	48	9.5	33	100	109	82	62	M10×1.5×13	8.6	80	38.5	12	M6×0.75	8	11	34	29
DH35GM					143					114							
DH45EM	60	14	37.5	120	139	100	80	M12×1.75×15	10.5	105	46	13	Rc1/8	10	13	45	38
DH45GM					171					137							
DH55EM	70	15	43.5	140	163	116	95	M14×2×18	12.5	126	55	15	Rc1/8	11	13	53	44
DH55GM					201					164							
DH65EM	90	16	53.5	170	193	142	110	M16×2×24	14.6	147	74	23	Rc1/8	19	13	63	53
DH65GM					253					207							

Rail				Basic load ratings							Weight	
Pitch	Mounting bolt hole	G	Max. length	1) Dynamic		Static	Static moment (N·m)				Ball slide	Rail
				[50km]	[100km]			M_{PO}		M_{YO}		
F	d×D×h	(reference)	L_{0max}	C_{50}(N)	C_{100}(N)	C_0 (N)	M_{RO}	(One slide)	(Two slides)	(One slide)	(Two slides)	(kg)	(kg/m)
60	4.5×7.5×5.3	20	2 980	17 800	14 200	20 700	108	94.5	575	79.5	480	0.17	1.6
				22 800	18 100	32 000	166	216	1 150	181	965	0.25	
60	6×9.5×8.5	20	3 960	29 800	23 600	32 500	219	185	1 140	155	955	0.45	2.6
				38 000	30 000	50 500	340	420	2 230	355	1 870	0.65	
60	7×11×9	20	3 960	42 500	33 500	46 000	360	320	1 840	267	1 540	0.63	3.6
				57 500	45 500	71 000	555	725	3 700	610	3 100	0.93	
80	9×14×12	20	4 000	59 000	47 000	63 000	600	505	3 150	425	2 650	1.2	5.2
				77 000	61 000	91 500	870	1 030	5 600	865	4 700	1.6	
80	9×14×12	20	4 000	78 500	62 500	80 500	950	755	4 500	630	3 800	1.7	7.2
				102 000	81 000	117 000	1 380	1 530	8 350	1 280	7 000	2.4	
105	14×20×17	22.5	3 990	135 000	107 000	140 000	2 140	1 740	9 750	1 460	8 150	3	12.3
				164 000	131 000	187 000	2 860	3 000	15 600	2 520	13 100	3.9	
120	16×23×20	30	3 960	199 000	158 000	198 000	3 600	3 000	16 300	2 510	13 700	5	16.9
				243 000	193 000	264 000	4 850	5 150	26 300	4 350	22 100	6.5	
150	18×26×22	35	3 900	300 000	239 000	281 000	6 150	4 950	27 900	4 150	23 400	10	24.3
				390 000	310 000	410 000	8 950	10 100	51 500	8 450	43 500	14.1	

Note 1) For details on basic load ratings, refer to "5. Basic Load Ratings and Rated Life" on page 6.

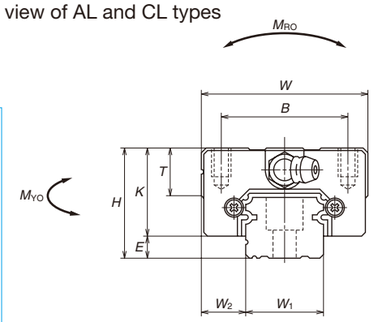
DH - CL (Medium load/short, square low-profile type)
DH - AL (High load/standard, square low-profile type)

Reference number

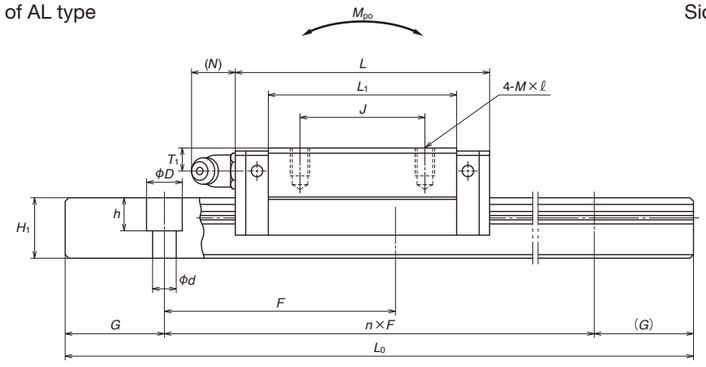
DS 30 1200 AL C 2 - P5 3**

- Model
- Size
- Rail length (mm)
- Ball slide shape code (refer to Fig. 1 on page 3)
- Material/surface treatment code (refer to Table 13 on page 7)
  C: Special high-carbon steel, D: Special high-carbon steel + surface treatment
- Number of ball slides per rail
- Design serial number
  Added to the reference number
- Accuracy code
  (refer to Table 6 on page 5)
- Preload code
  (refer to Table 6 on page 5)
  0 : Z0.1 : Z1.3 : Z3

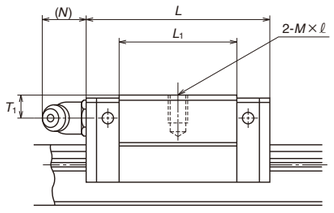
Front view of AL and CL types



Side view of AL type



Side view of CL type



Unit : mm

Model No.	Assembly Height H	E	W_2	Ball slide Width W	Length L	Mounting hole B	J	M×Pitch×ℓ	L_1	K	T	Grease fitting Hole size	T_1	N	Width W_1	Height H_1
DS15CL	24	4.6	9.5	34	40.4	26	—	M4×0.7×6	23.6	19.4	10	ϕ 3	6	3	15	12.5
DS15AL					56.8		26		40							
DS20CL	28	6	11	42	47.2	32	—	M5×0.8×7	30	22	12	M6×0.75	5.5	11	20	15.5
DS20AL					65.2		32		48							
DS25CL	33	7	12.5	48	59.6	35	—	M6×1×9	38	26	12	M6×0.75	7	11	23	18
DS25AL					81.6		35		60							
DS30CL	42	9	16	60	67.4	40	—	M8×1.25×12	42	33	13	M6×0.75	8	11	28	23
DS30AL					96.4		40		71							
DS35CL	48	10.5	18	70	77	50	—	M8×1.25×12	49	37.5	14	M6×0.75	8.5	11	34	27.5
DS35AL					108		50		80							

Rail Pitch F	Mounting bolt hole d×D×h	G (reference)	Max. length L_{0max}	Basic load ratings 1) Dynamic [50km] C_{50}(N)	[100km] C_{100}(N)	Static C_0 (N)	Static moment (N·m) M_{RO}	M_{PO} (One slide)	M_{PO} (Two slides)	M_{YO} (One slide)	M_{YO} (Two slides)	Weight Ball slide (kg)	Rail (kg/m)
60	*4.5×7.5×5.3 3.5×6×4.5	20	2 920	9 150 14 100	7 250 11 200	9 100 16 900	45.5 84.5	24.5 77	196 470	20.5 64.5	165 395	0.14 0.20	1.4
60	6×9.5×8.5	20	3 960	13 400 19 700	10 600 15 600	13 400 23 500	91.5 160	46.5 133	330 755	39 111	279 630	0.19 0.28	2.3
60	7×11×9	20	3 960	22 300 33 000	17 700 26 100	20 800 36 500	164 286	91 258	655 1 470	76 217	550 1 230	0.34 0.51	3.1
80	7×11×9	20	4 000	31 000 48 000	24 700 38 000	29 600 55 000	282 520	139 435	1 080 2 650	116 365	905 2 220	0.58 0.85	4.8
80	9×14×12	20	4 000	43 000 66 500	34 500 52 500	40 000 74 500	465 865	220 695	1 670 4 000	185 580	1 400 3 350	0.86 1.3	7.0

Notes 1) For details on basic load ratings, refer to "5. Basic Load Ratings and Rated Life" on page 6.
*) Standard rail mounting bolt holes for DS15 are specified as M4 (4.5 x 7.5 x 5.3).
Please contact NSK to request M3 holes (3.5 x 6 x 4.5).

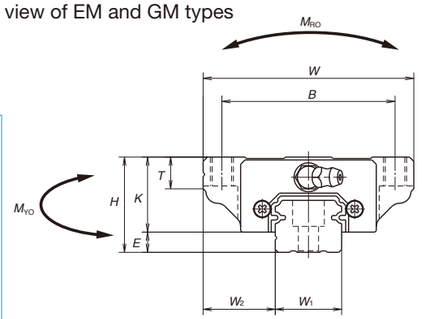
DH - JM (Medium load/short, flanged type)
DH - EM (High load/standard, flanged type)

Reference number

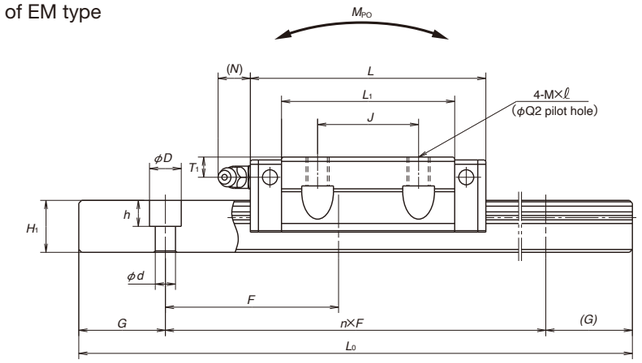
DS 30 1200 EM C 2 - P5 3**

- Model
- Size
- Rail length (mm)
- Ball slide shape code (refer to Fig. 1 on page 3)
- Material/surface treatment code (refer to Table 13 on page 7)
  C: Special high-carbon steel, D: Special high-carbon steel + surface treatment
- Number of ball slides per rail
- Design serial number
  Added to the reference number
- Accuracy code
  (refer to Table 6 on page 5)
- Preload code
  (refer to Table 6 on page 5)
  0 : Z0.1 : Z1.3 : Z3

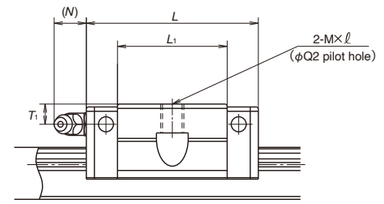
Front view of EM and GM types



Side view of EM type



Side view of JM type



Unit : mm

Model No.	Assembly Height H	E	W_2	Ball slide Width W	Length L	Mounting hole B	J	M×Pitch×ℓ	Q_2	L_1	K	T	Grease fitting Hole size	T_1	N	Width W_1	Height H_1
DS15JM	24	4.6	18.5	52	40.4	41	—	M5×0.8×7	4.4	23.6	19.4	8	ϕ 3	6	3	15	12.5
DS15EM					56.8		26			40							
DS20JM	28	6	19.5	59	47.2	49	—	M6×1×9	5.3	30	22	10	M6×0.75	5.5	11	20	15.5
DS20EM					65.2		32			48							
DS25JM	33	7	25	73	59.6	60	—	M8×1.25×10	6.8	38	26	11	M6×0.75	7	11	23	18
DS25EM					81.6		35			60							
DS30JM	42	9	31	90	67.4	72	—	M10×1.5×12	8.6	42	33	11	M6×0.75	8	11	28	23
DS30EM					96.4		40			71							
DS35JM	48	10.5	33	100	77	82	—	M10×1.5×13	8.6	49	37.5	12	M6×0.75	8.5	11	34	27.5
DS35EM					108		50			80							

Rail Pitch F	Mounting bolt hole d×D×h	G (reference)	Max. length L_{0max}	Basic load ratings 1) Dynamic [50km] C_{50}(N)	[100km] C_{100}(N)	Static C_0 (N)	Static moment (N·m) M_{RO}	M_{PO} (One slide)	M_{PO} (Two slides)	M_{YO} (One slide)	M_{YO} (Two slides)	Weight Ball slide (kg)	Rail (kg/m)
60	*4.5×7.5×5.3 3.5×6×4.5	20	2 920	9 150 14 100	7 250 11 200	9 100 16 900	45.5 84.5	24.5 77	196 470	20.5 64.5	165 395	0.17 0.26	1.4
60	6×9.5×8.5	20	3 960	13 400 19 700	10 600 15 600	13 400 23 500	91.5 160	46.5 133	330 755	39 111	279 630	0.24 0.35	2.3
60	7×11×9	20	3 960	22 300 33 000	17 700 26 100	20 800 36 500	164 286	91 258	655 1 470	76 217	550 1 230	0.44 0.66	3.1
80	7×11×9	20	4 000	31 000 48 000	24 700 38 000	29 600 55 000	282 520	139 435	1 080 2 650	116 365	905 2 220	0.76 1.2	4.8
80	9×14×12	20	4 000	43 000 66 500	34 500 52 500	40 000 74 500	465 865	220 695	1 670 4 000	185 580	1 400 3 350	1.2 1.7	7

Notes 1) For details on basic load ratings, refer to "5. Basic Load Ratings and Rated Life" on page 6.
*) Standard rail mounting bolt holes for DS15 are specified as M4 (4.5 x 7.5 x 5.3).
Please contact NSK to request M3 holes (3.5 x 6 x 4.5).

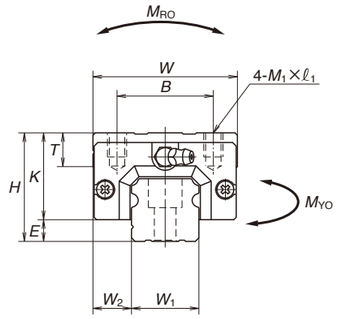
DV - AN (High load/standard, square type)
DV - BN (Super-high load/long, square type)

Reference number

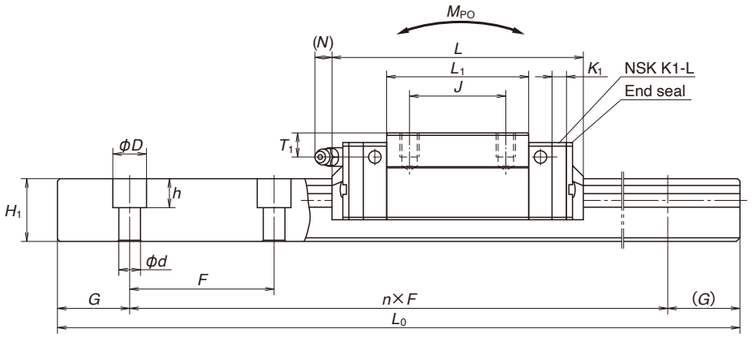
DV 30 1200 AN C 2 - ** **L5 3**

- Model
- Size
- Rail length (mm)
- Ball slide shape code (refer to Fig. 1 on page 3)
- Material/surface treatment code (refer to Table 13 on page 7)
  C: Special high-carbon steel, D: Special high-carbon steel + surface treatment
  V: C spec. + tapped holes on rail bottom face, W: D spec. + tapped holes on rail bottom face
- Number of ball slides per rail
- Design serial number
  Added to the reference number
- Accuracy code (refer to Table 6 on page 5)
- Preload code (refer to Table 6 on page 5)
  0 : Z0.1 : Z1.3 : Z3

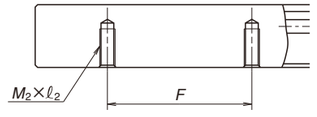
Front view of AN and BN types



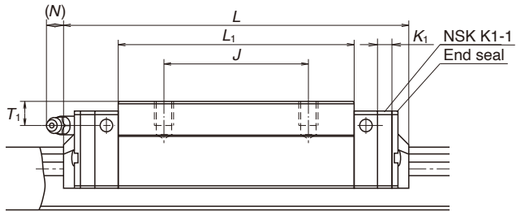
Side view of AN type



Specification for tapped holes on rail bottom face



Side view of BN type



Unit : mm

Model No.	Assembly			Ball slide												Width	Height
	Height			Width	Length	Mounting hole							Grease fitting				
	H	E	W_2	W	L	B	J	M×Pitch×ℓ	L_1	K	T	K_1	Hole size	T_1	N	W_1	H_1
DV15AN	28	4.6	9.5	34	70.6〈 77 〉	26	26	M4×0.7×6	39	23.4	8	5.3	ϕ3	8.5	1 〈8.2〉	15	15
DV15BN					89.6〈 96 〉				58								
DV20AN	30	5	12	44	87.4〈 94.2〉	32	36	M5×0.8×6	50	25	12	5.3	M6×0.75	5	11.1〈12.3〉	20	18
DV20BN					109.4〈116.2〉		50		72								
DV25AN	40	7	12.5	48	97 〈104.4〉	35	35	M6×1×9	58	33	12	5.8	M6×0.75	10	9.6〈12.9〉	23	22
DV25BN					125 〈132.4〉		50		86								
DV30AN	45	9	16	60	104.4〈114.8〉	40	40	M8×1.25×10	59	36	14	6	M6×0.75	10	11.4〈14.2〉	28	26
DV30BN					143.4〈153.8〉		60		98								
DV35AN	55	9.5	18	70	128.8〈139.2〉	50	50	M8×1.25×12	80	45.5	15	6.5	M6×0.75	15	10.9〈13.7〉	34	29
DV35BN					162.8〈173.2〉		72		114								
DV45AN	70	14	20.5	86	161.4〈174.2〉	60	60	M10×1.5×17	105	56	17	7.5	Rc1/8	20	12.5〈14.1〉	45	38
DV45BN					193.4〈206.2〉		80		137								
DV55AN	80	15	23.5	100	185.4〈198.2〉	75	75	M12×1.75×18	126	65	18	7.5	Rc1/8	21	12.5〈14.1〉	53	44
DV55BN					223.4〈236.2〉		95		164								

Notes
1) Specifications for DV models are the same as those for DH models as described on pages 3 to 8.
2) If the linear guide will be used in a contaminated environment, please fill out the Technical Data Sheet for the operating conditions and contact NSK for details.
3) DV models do not have a ball retainer. Note that balls will fall out when the ball slide is removed from the rail.
4) Values inside < > refer to dimensions when equipped with a protector.

Rail					Basic load ratings							Weight	
Pitch	Mounting bolt hole	Tapped hole	G	Max. length	5) Dynamic		Static	Static moment (N·m)				Ball slide	Rail
					[50km]	[100km]			M_{PO}		M_{YO}		
F	d×D×h	M_2×Pitch×ℓ_2	(reference)	L_{0max}	C_{50}(N)	C_{100}(N)	C_0 (N)	M_{RO}	(One slide)	(Two slides)	(One slide)	(Two slides)	(kg)	(kg/m)
60	4.5×7.5×5.3	M5×0.8×8	20	2 000	17 800	14 200	20 700	108	94.5	575	79.5	480	0.18	1.6
					22 800	18 100	32 000	166	216	1 150	181	965	0.26	
60	6×9.5×8.5	M6×1×10	20	3 960	29 800	23 700	32 500	219	185	1 140	155	955	0.33	2.6
					38 000	30 000	50 500	340	420	2 230	355	1 870	0.48	
60	7×11×9	M6×1×12	20	3 960	42 500	33 500	46 000	360	320	1 840	267	1 540	0.55	3.6
					57 500	45 500	71 000	555	725	3 700	610	3 100	0.82	
80	9×14×12	M8×1.25×15	20	4 000	51 500	41 000	51 500	490	350	2 290	292	1 920	0.77	5.2
					77 000	61 000	91 500	870	1 030	5 600	865	4 700	1.3	
80	9×14×12	M8×1.25×17	20	4 000	78 500	62 500	80 500	950	755	4 500	630	3 800	1.5	7.2
					102 000	81 000	117 000	1 380	1 530	8 350	1 280	7 000	2.1	
105	14×20×17	M12×1.75×24	22.5	3 990	135 000	107 000	140 000	2 140	1 740	9 750	1 460	8 150	3.0	12.3
					164 000	131 000	187 000	2 860	3 000	15 600	2 520	13 100	3.9	
120	16×23×20	M14×2×24	30	3 960	199 000	158 000	198 000	3 600	3 000	16 300	2 510	13 700	4.7	16.9
					243 000	193 000	264 000	4 850	5 150	26 300	4 350	22 100	6.1	

5) For details on basic load ratings, refer to "5. Basic Load Ratings and Rated Life" on page 6.

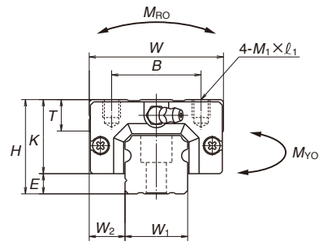
DV - AL (High load/standard, square low-profile type)
DV - BL (Super-high load/long, square low-profile type)

Reference number

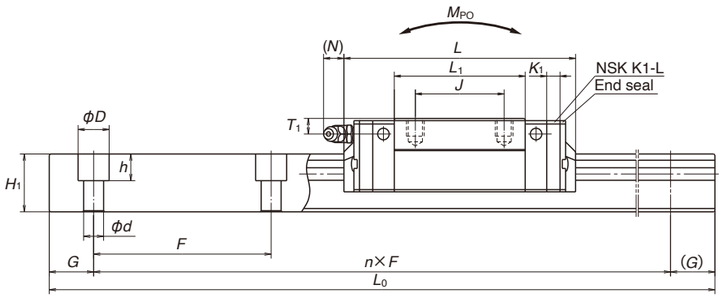
DV 30 1200 AL C 2 - L5 3**

- Model
- Size
- Rail length (mm)
- Ball slide shape code (refer to Fig. 1 on page 3)
- Material/surface treatment code (refer to Table 13 on page 7)
  C: Special high-carbon steel, D: Special high-carbon steel + surface treatment
  V: C spec. + tapped holes on rail bottom face, W: D spec. + tapped holes on rail bottom face
- Number of ball slides per rail
- Design serial number
  Added to the reference number
- Accuracy code (refer to Table 6 on page 5)
- Preload code (refer to Table 6 on page 5)
  0 : Z0.1 : Z1.3 : Z3

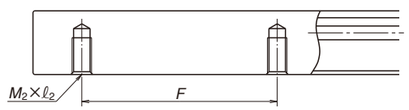
Front view of AL and BL types



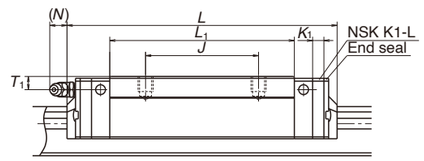
Side view of AL type



Specification for tapped holes on rail bottom face



Side view of BL type



Unit : mm

Model No.	Assembly			Ball slide											Width	Height
	Height			Width	Length	Mounting hole							Grease fitting				
	H	*E*	W_2	*W*	*L*	*B*	*J*	*M*×Pitch×*ℓ*	L_1	*K*	*T*	K_1	Hole size	T_1	*N*	W_1	H_1
DV25AL	36	7	12.5	48	97 〈104.4〉	35	35	M6×1×6	58	29	12	5.8	M6×0.75	6	9.6〈12.9〉	23	22
DV25BL					125 〈132.4〉		50		86								
DV30AL	42	9	16	60	104.4〈114.8〉	40	40	M8×1.25×8	59	33	14	6	M6×0.75	7	11.4〈14.2〉	28	26
DV30BL					143.4〈153.8〉		60		98								
DV35AL	48	9.5	18	70	128.8〈139.2〉	50	50	M8×1.25×8	80	38.5	15	6.5	M6×0.75	8	10.9〈13.7〉	34	29
DV35BL					162.8〈173.2〉		72		114								
DV45AL	60	14	20.5	86	161.4〈174.2〉	60	60	M10×1.5×10	105	46	17	7.5	Rc1/8	10	12.5〈14.1〉	45	38
DV45BL					193.4〈206.2〉		80		137								
DV55AL	70	15	23.5	100	185.4〈198.2〉	75	75	M12×1.75×13	126	55	15	7.5	Rc1/8	11	12.5〈14.1〉	53	44
DV55BL					223.4〈236.2〉		95		164								

Notes
1) Specifications for DV models are the same as those for DH models as described on pages 3 to 8.
2) If the linear guide will be used in a contaminated environment, please fill out the Technical Data Sheet for the operating conditions and contact NSK for details.
3) DV models do not have a ball retainer. Note that balls will fall out when the ball slide is removed from the rail.
4) Values inside < > refer to dimensions when equipped with a protector.

Rail					Basic load ratings								Weight	
Pitch	Mounting bolt hole	Tapped hole	*G*	Max. length	5) Dynamic		Static	Static moment (N·m)					Ball slide	Rail
					[50km]	[100km]			M_{PO}		M_{YO}			
F	*d*×*D*×*h*	M_2×Pitch×ℓ_2	(reference)	L_{0max}	C_{50}(N)	C_{100}(N)	C_0 (N)	M_{RO}	(One slide)	(Two slides)	(One slide)	(Two slides)	(kg)	(kg/m)
60	7×11×9	M6×1×12	20	3 960	42 500	33 500	46 000	360	320	1 840	267	1 540	0.46	3.6
					57 500	45 500	71 000	555	725	3 700	610	3 100	0.69	
80	9×14×12	M8×1.25×15	20	4 000	51 500	41 000	51 500	490	350	2 290	292	1 920	0.69	5.2
					77 000	61 000	91 500	870	1 030	5 600	865	4 700	1.16	
80	9×14×12	M8×1.25×17	20	4 000	78 500	62 500	80 500	950	755	4 500	630	3 800	1.2	7.2
					102 000	81 000	117 000	1 380	1 530	8 350	1 280	7 000	1.7	
105	14×20×17	M12×1.75×24	22.5	3 990	135 000	107 000	140 000	2 140	1 740	9 750	1 460	8 150	2.2	12.3
					164 000	131 000	187 000	2 860	3 000	15 600	2 520	13 100	2.9	
120	16×23×20	M14×2×24	30	3 960	199 000	158 000	198 000	3 600	3 000	16 300	2 510	13 700	3.7	16.9
					243 000	193 000	264 000	4 850	5 150	26 300	4 350	22 100	4.7	

5) For details on basic load ratings, refer to "5. Basic Load Ratings and Rated Life" on page 6.

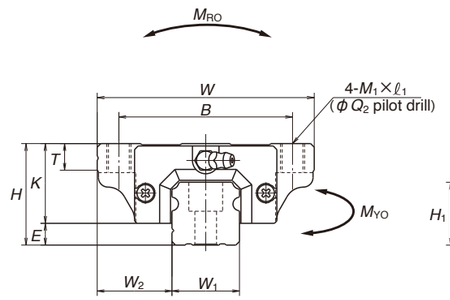
DV - EM (High load/standard, flanged type)
DV - GM (Super-high load/long, flanged type)

Reference number

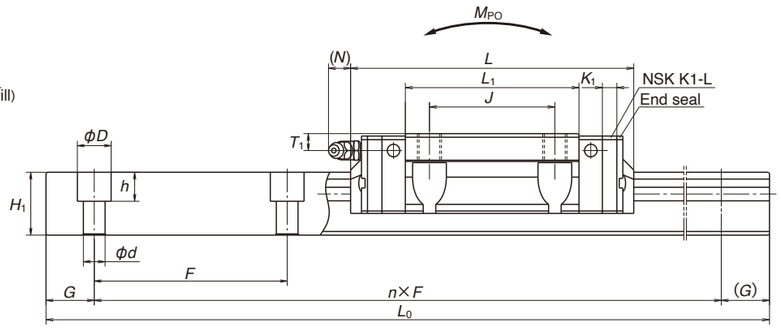
DV 30 1200 EM C 2 - L5 3**

- Model
- Size
- Rail length (mm)
- Ball slide shape code (refer to Fig. 1 on page 3)
- Material/surface treatment code (refer to Table 13 on page 7)
  C: Special high-carbon steel, D: Special high-carbon steel + surface treatment
  V: C spec. + tapped holes on rail bottom face, W: D spec. + tapped holes on rail bottom face
- Number of ball slides per rail
- Design serial number
  Added to the reference number
- Accuracy code (refer to Table 6 on page 5)
- Preload code (refer to Table 6 on page 5)
  0 : Z0.1 : Z1.3 : Z3

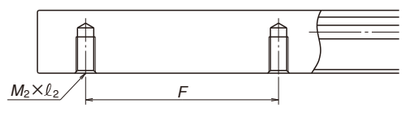
Front view of EM and GM types



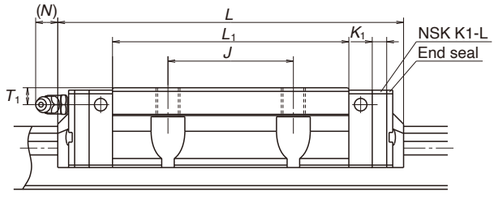
Side view of EM type



Specification for tapped holes on rail bottom face



Side view of GM type



Unit : mm

Model No.	Assembly			Ball slide													Width	Height
	Height			Width	Length	Mounting hole		$Q_1 \times \ell_1$						Grease fitting				
	H	E	W_2	W	L	B	J	$M_1 \times$Pitch$\times \ell_1$	Q_2	L_1	K	T	K_1	Hole size	T_1	N	W_1	H_1
DV15EM	24	4.6	16	47	70.6〈 77 〉	38	30	M5×0.8×7	4.4	39	19.4	8	5.3	ϕ3	4.5	1 〈 8.2〉	15	15
DV15GM					89.6〈 96 〉					58								
DV20EM	30	5	21.5	63	87.4〈 94.2〉	53	40	M6×1×9.5	5.3	50	25	10	5.3	M6×0.75	5	11.1〈12.3〉	20	18
DV20GM					109.4〈116.2〉					72								
DV25EM	36	7	23.5	70	97 〈104.4〉	57	45	M8×1.25×10	6.8	58	29	11	5.8	M6×0.75	6	9.6〈12.9〉	23	22
DV25GM					125 〈132.4〉					86								
DV30EM	42	9	31	90	117.4〈127.8〉	72	52	M10×1.5×12	8.6	72	33	11	6	M6×0.75	7	11.4〈14.2〉	28	26
DV30GM					143.4〈153.8〉					98								
DV35EM	48	9.5	33	100	128.8〈139.2〉	82	62	M10×1.5×13	8.6	80	38.5	12	6.5	M6×0.75	8	10.9〈13.7〉	34	29
DV35GM					162.8〈173.2〉					114								
DV45EM	60	14	37.5	120	161.4〈174.2〉	100	80	M12×1.75×15	10.5	105	46	13	7.5	Rc1/8	10	12.5〈14.1〉	45	38
DV45GM					193.4〈206.2〉					137								
DV55EM	70	15	43.5	140	185.4〈198.2〉	116	95	M14×2×18	12.5	126	55	15	7.5	Rc1/8	11	12.5〈14.1〉	53	44
DV55GM					223.4〈236.2〉					164								

Notes
1) Specifications for DV models are the same as those for DH models as described on pages 3 to 8.
2) If the linear guide will be used in a contaminated environment, please fill out the Technical Data Sheet for the operating conditions and contact NSK for details.
3) DV models do not have a ball retainer. Note that balls will fall out when the ball slide is removed from the rail.
4) Values inside < > refer to dimensions when equipped with a protector.

Rail					Basic load ratings							Weight	
Pitch	Mounting bolt hole	Tapped hole	G	Max. length	[5] Dynamic		Static	Static moment (N·m)				Ball slide	Rail
					[50km]	[100km]			M_{PO}		M_{YO}		
F	$d \times D \times h$	$M_2 \times$Pitch$\times \ell_2$	(reference)	L_{0max}	C_{50}(N)	C_{100}(N)	C_0 (N)	M_{RO}	(One slide)	(Two slides)	(One slide)	(Two slides)	(kg)	(kg/m)
60	4.5×7.5×5.3	M5×0.8×8	20	2 000	17 800	14 200	20 700	108	94.5	575	79.5	480	0.17	1.6
					22 800	18 100	32 000	166	216	1 150	181	965	0.25	
60	6×9.5×8.5	M6×1×10	20	3 960	29 800	23 600	32 500	219	185	1 140	155	955	0.45	2.6
					38 000	30 000	50 500	340	420	2 230	355	1 870	0.65	
60	7×11×9	M6×1×12	20	3 960	42 500	33 500	46 000	360	320	1 840	267	1 540	0.63	3.6
					57 500	45 500	71 000	555	725	3 700	610	3 100	0.93	
80	9×14×12	M8×1.25×15	20	4 000	59 000	47 000	63 000	600	505	3 150	425	2 650	1.2	5.2
					77 000	61 000	91 500	870	1 030	5 600	865	4 700	1.6	
80	9×14×12	M8×1.25×17	20	4 000	78 500	62 500	80 500	950	755	4 500	630	3 800	1.7	7.2
					102 000	81 000	117 000	1 380	1 530	8 350	1 280	7 000	2.4	
105	14×20×17	M12×1.75×24	22.5	3 990	135 000	107 000	140 000	2 140	1 740	9 750	1 460	8 150	3.0	12.3
					164 000	131 000	187 000	2 860	3 000	15 600	2 520	13 100	3.9	
120	16×23×20	M14×2×24	30	3 960	199 000	158 000	198 000	3 600	3 000	16 300	2 510	13 700	5.0	16.9
					243 000	193 000	264 000	4 850	5 150	26 300	4 350	22 100	6.5	

5) For details on basic load ratings, refer to "5. Basic Load Ratings and Rated Life" on page 6.

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