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NIPPON KODO
AUTOMATION TECHNOLOGY

日本高導オートメーションテクノロジー株式会社
会社法人等番号　１３０９ー０１ー００１３３２

SINCE 2002

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General Index

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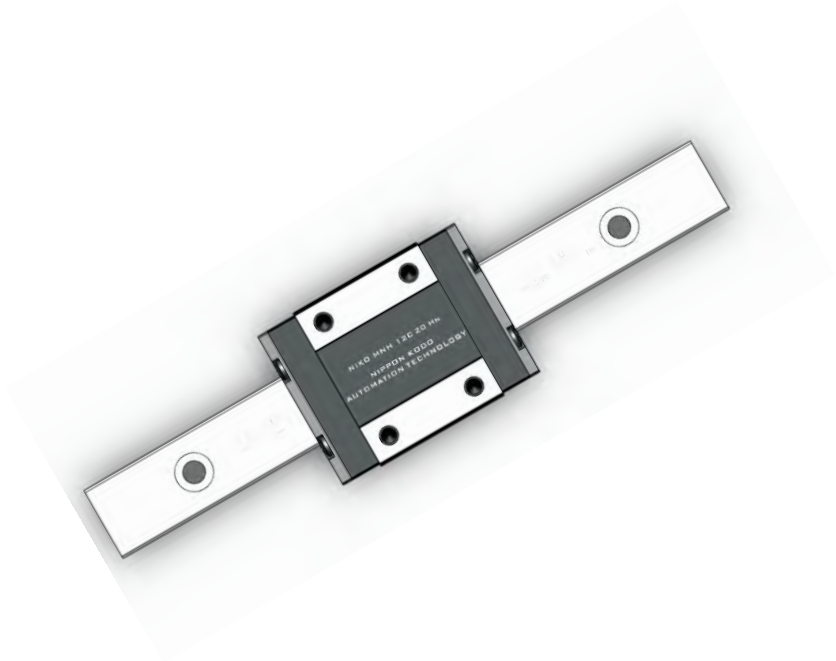
Miniature Linear Guide

Technical Tables



MN Series - Miniature Type Linear Guideways

(1) Non-Interchangeable type

MNW	12	C	E	2	R	1600	E	Z0	H	n	II	U/RC
Series	Models					Rail Length(mm)		Preload				Accessories
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬

(2) Interchangeable type

MNW	12	C	E						Z0	H	n		U		
Series	Models								Preload				Accessories		
①	②	③	④						⑨	⑩	⑪	⑫	⑬		

MNW					R	1000	E			H	n				RC
Series						Rail Length(mm)							Accessories		
①					⑥	⑦	⑧			⑩	⑪	⑫	⑬		

Remarks:

③
Load Types
C: Standard
H: Long

⑥
Rail Length(mm)

⑪
Materials: No symbol,n,HC

④
E: Special Block
None:Standard Block

⑧
E: Special Block
None:Standard Block

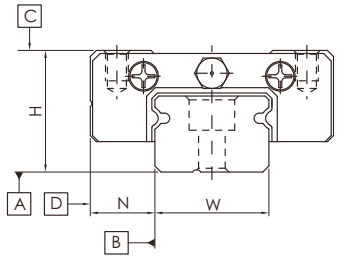
⑫
Nos. of rails per Axis

⑤
No. of Blocks per Rail

⑩
Precision Codes:C, Hn, P

Accuracy Classes

The accuracy of MNH/MNW series can be classified into three classes: normal (C), high (H), precision (P).Choices for different accuracy classes are available according to various requirements.



(1) Accuracy of non-interchangeable guideways

Table 1 Accuracy Standard of Non-interchangeable Type

Unit: mm

Accuracy Classes	Normal (C)	High (H)	Precision (P)
Dimensional tolerance of height H	± 0.04	± 0.02	± 0.01
Dimensional tolerance of width N	± 0.04	± 0.025	± 0.015
Pair Variation of height H	0.03	0.015	0.007
Pair Variation of width N (Master Rail)	0.03	0.02	0.01
Running parallelism of block surface C to surface A	See Table 2-4-5		
Running parallelism of block surface D to surface B	See Table 2-4-5		

(2) Accuracy of interchangeable guideways

Table 2 Accuracy Standard of Interchangeable Type

Unit: mm

Accuracy Classes		Normal (C)	High (H)	Precision (P)
Dimensional tolerance of height H		± 0.04	± 0.02	± 0.01
Dimensional tolerance of width N		± 0.04	± 0.025	± 0.015
One Set	Pair Variation of height H	0.03	0.015	0.007
	Pair Variation of width N	0.03	0.02	0.01
Pair Variation of width N (Master Rail)		0.07	0.04	0.02
Running parallelism of block surface C to surface A			See Table 2-4-5	
Running parallelism of block surface D to surface B			See Table 2-4-5	

(3) Accuracy of running parallelism

The running parallelism C to A and D to B are related to the rail length.

Table 3 Accuracy of Running Parallelism

Rail Length (mm)	Accuracy (μm) (C)	(H)	(P)	Rail Length (mm)	Accuracy (μm) (C)	(H)	(P)
~ 50	12	6	2	1,000 ~ 1,200	25	18	11
50 ~ 80	13	7	3	1,200 ~ 1,300	25	18	11
80 ~ 125	14	8	3. 5	1,300 ~ 1,400	26	19	12
125 ~ 200	15	9	4	1,400 ~ 1,500	27	19	12
200 ~ 250	16	10	5	1,500 ~ 1,600	28	20	13
250 ~ 315	17	11	5	1,600 ~ 1,700	29	20	14
315 ~ 400	18	11	6	1,700 ~ 1,800	30	21	14
400 ~ 500	19	12	6	1,800 ~ 1,900	30	21	15
500 ~ 630	20	13	7	1,900 ~ 2,000	31	22	15
630 ~ 800	22	14	8	2,000 ~	31	22	16
800 ~ 1,000	23	16	9				

(4) Preload

Table 4 MNH/MNW series provides three different preload levels for various applications.

Class	Code	Preload	Accuracy
Light Clearance	ZF	Clearance 4~10μm	C
Very Light Preload	Z0	0	C~P
Light Preload	Z1	0. 02C	C~P

Note: “C” in column preload means basic dynamic load rating. Preload Classes

(5) Stiffness performance

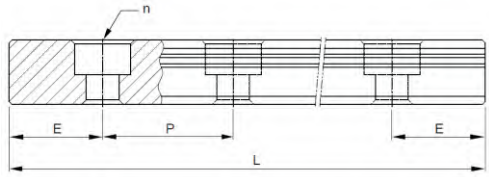
Stiffness depends on preload. The following table shows stiffness value of each size.

Table 2-4-7 Radial stifness for MG Series

Load type	Series / Size	Stiffness (N/μm) Z0	Z1	Series / Size	Stiffness (N/μm) Z0	Z1
Standard	MNH5C-O	20	61	MNW5C-O	32	85
	MNH7C	26	73	MNW7C	44	112
	MNH9C	38	102	MNW9C	62	140
	MNH12C	44	105	MNW12C	72	148
	MNH15C	58	126	MNW15C	85	154
Long	MNH5H-O	26	79	-	-	-
	MNH7H	42	122	MNW7H	64	168
	MNH9H	56	153	MNW9H	81	190
	MNH12H	70	175	MNW12H	102	217
	MNH15H	89	202	MNW15H	122	235

(6) Standard and Maximum Lengths of Rail

NIKO offers standard lengths of rail for instant requirements. For non-standard rail lengths, it's recommended that the E value is no greater than 1/2 of the pitch(P) to prevent instability at the end of the rail, and the E value should be no less than Emin to avoid a broken mounting hole.



L =(n-1) xP + 2 x E
L : Total length of rail (mm)
n : Number of mounting holes
P : Distance between any two holes (mm)
E : Distance from the center of the last hole to the edge (mm)

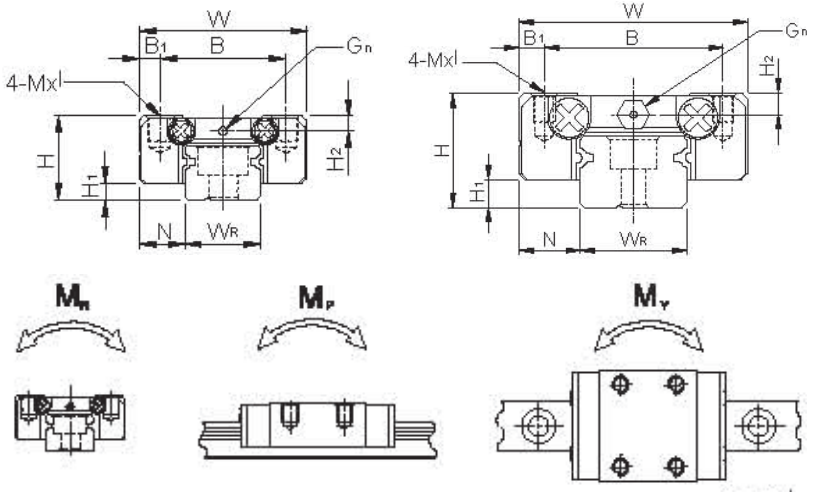
Items	MNHR7	MNHR9	MNHR12	MNHR15	MNWR7	MNWR9	MNWR12	MNWR15
Standard Length L(n)	40(3)	55(3)	70(3)	70(2)	80(3)	80(3)	110(3)	110(3)
	55(4)	75(4)	95(4)	110(3)	110(4)	110(4)	150(4)	150(4)
	70(5)	95(5)	120(5)	150(4)	140(5)	140(5)	190(5)	190(5)
	85(6)	115(6)	145(6)	190(5)	170(6)	170(6)	230(6)	230(6)
	100(7)	135(7)	170(7)	230(6)	200(7)	200(7)	270(7)	270(7)
	130(9)	155(8)	195(8)	270(7)	260(9)	230(8)	310(8)	310(8)
		175(9)	220(9)	310(8)		260(9)	350(9)	350(9)
		195(10)	245(10)	350(9)		290(10)	390(10)	390(10)
		275(14)	270(11)	390(10)		350(14)	430(11)	430(11)
		375(19)	320(13)	430(11)		500(19)	510(13)	510(13)
			370(15)	470(12)		710(24)	590(15)	590(15)
			470(19)	550(14)		860(29)	750(19)	750(19)
			570(23)	670(17)			910(23)	910(23)
			695(28)	870(22)			1070(27)	1070(27)
Pitch (P)	15	20	25	40	30	30	40	40
Distance to End (Es)	5	7.5	10	15	10	10	15	15
Max. Standard Length	595(40)	1195(60)	1995(80)	1990(50)	590(20)	1970(66)	1990(50)	1990(50)
Max. Length	600	1200	2000	2000	600	2000	2000	2000

Note: 1. Tolerance of E value for standard rail is 0.5~-0.5 mm. Tolerance of E value for jointed rail is 0~-0.3 mm.
2. Maximum standard length indicates the max. rail length with standard E value on both sides.
3. If smaller E value is needed, please contact NIKO.

MINIATURE LINEAR GUIDES - BLOCKS

SERIES **MNH-C / MNH-H**

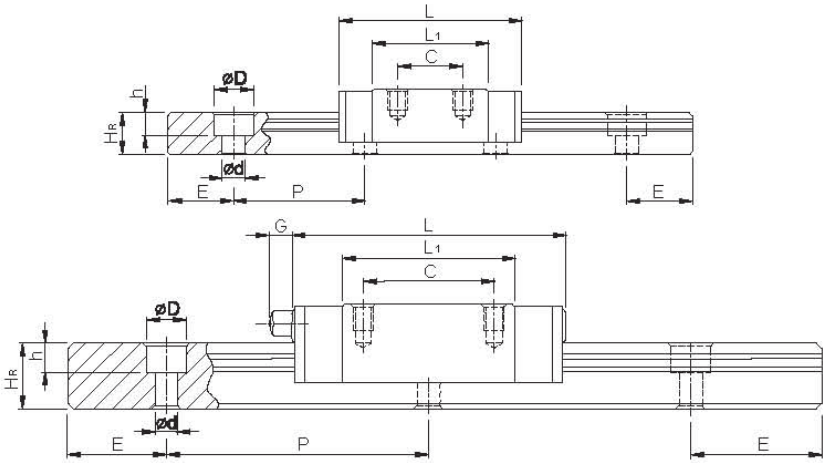
MINIATURE
LINEAR GUIDE



Model No.	Dimensions of Assembly (mm)			Dimensions of Block (mm)									
	H	*H1*	*N*	*W*	*B*	*B1*	*C*	*L1*	*L*	*G*	*Gn*	*MxL*	*H2*
MNH 7 C	8	1.5	5	17	12	2.5	8	13.5	22.5	-	Φ1.2	M2x2.5	1.5
MNH 7 H	8	1.5	5	17	12	2.5	13	21.8	30.8	-	Φ1.2	M2x2.5	1.5
MNH 9 C	10	2	5.5	20	15	2.5	10	18.9	28.9	-	Φ1.4	M3x3	1.8
MNH 9 H	10	2	5.5	20	15	2.5	16	29.9	39.9	-	Φ1.4	M3x3	1.8
MNH 12 C	13	3	7.5	27	20	3.5	15	21.7	24.7	-	Φ2	M3x3.5	2.5
MNH 12 H	13	3	7.5	27	20	3.5	20	32.4	45.4	-	Φ2	M3x3.5	2.5
MNH 15 C	16	4	8.5	32	25	3.5	20	26.7	42.1	4.5	M3	M3x4	3
MNH 15 H	16	4	8.5	32	25	3.5	25	43.4	58.8	4.5	M3	M3x4	3

Note: Material: stainless steel SUS 440 C, suffix : n.
If you have more inquiry of technical, please inquire **NIKO** web-site: Http://www.nipponkodobearings.com

MINIATURE LINEAR GUIDES - BLOCKS
SERIES MNH-C / MNH-H

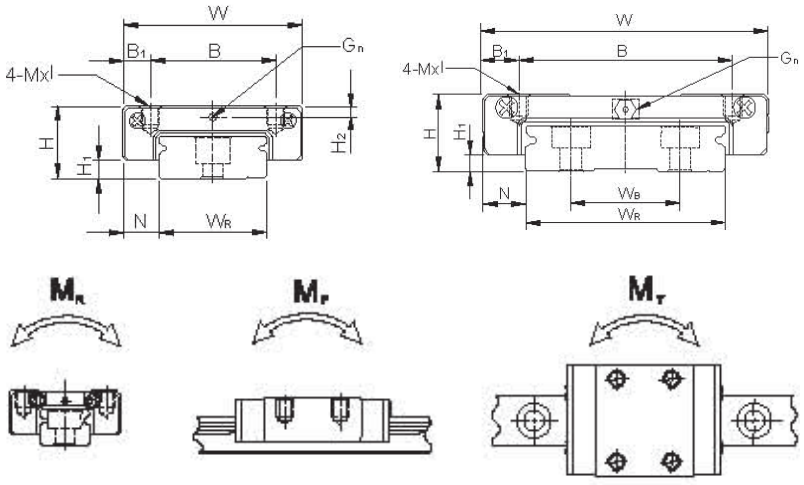


MINIATURE LINEAR GUIDE

Dimensions of Rail (mm)							Mounting Bolt for Rail	Basic Dynamic Load Rating	Basic Static Load Rating	Static Rated Moment(kfg.m)			Weight	
										MR	MP	MY	Block	Rail
WR	HR	D	h	d	P	E	(mm)	C(KN)	CO(KN)	KN-m	KN-m	KN-m	kg	kg/m
7	4.8	4.2	2.3	2.4	15	5	M2x6	0.98	1.24	4.70	2.84	2.84	0.010	0.22
7	4.8	4.2	2.3	2.4	15	5	M2x6	1.37	1.96	7.64	4.80	4.80	0.015	0.22
9	6.5	6	3.5	3.5	20	7.5	M3x8	1.86	2.55	11.76	7.35	7.35	0.016	0.38
9	6.5	6	3.5	3.5	20	7.5	M3x8	2.55	4.02	19.60	18.62	18.62	0.026	0.38
12	8	6	4.5	3.5	25	10	M3x8	2.84	3.92	25.48	13.72	13.72	0.034	0.65
12	8	6	4.5	3.5	25	10	M3x8	3.72	5.88	38.22	36.26	36.26	0.054	0.65
15	10	6	4.5	3.5	40	15	M3x10	4.61	5.59	45.08	21.56	21.56	0.059	1.06
15	10	6	4.5	3.5	40	15	M3x10	6.37	9.11	73.50	57.82	57.82	0.092	1.06

MINIATURE LINEAR GUIDES - BLOCKS

SERIES **MNW-C / MNW-H**

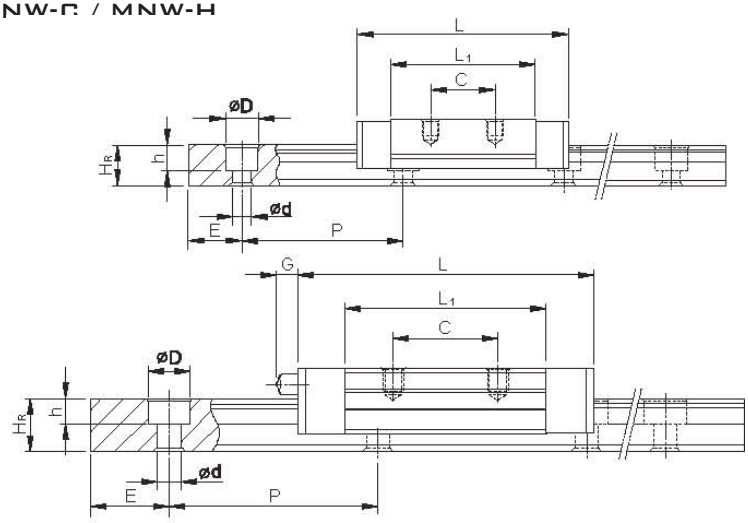


MINIATURE LINEAR GUIDE

Model No.	Dimensions of Assembly (mm)			Dimensions of Block (mm)									
	H	*H1*	*N*	*W*	*B*	*B1*	*C*	*L1*	*L*	*G*	*Gn*	*MxL*	*H2*
MNW 7 C	9	1.9	5.5	25	19	3	10	21	31.2	-	Φ1.2	M3x3	1.85
MNW 7 H	9	1.9	5.5	25	19	3	19	30.8	41	-	Φ1.2	M3x3	1.85
MNW 9 C	12	2.9	6	30	21	4.5	12	27.5	39.3	-	Φ1.2	M3x3	2.4
MNW 9 H	12	2.9	6	30	23	3.5	24	38.5	50.7	-	Φ1.2	M3x3	2.4
MNW 12 C	14	3.4	8	40	28	6	15	21.3	46.1	-	Φ1. 2	M3x3.6	2.8
MNW 12 H	14	3.4	8	40	28	6	28	45.6	60.4	-	Φ1. 2	M3x3.6	2.8
MNW 15 C	16	3.4	9	60	45	7.5	20	38	54.8	5.2	M3	M4x4.2	3.2
MNW 15 H	16	3.4	9	60	45	7.5	35	57	73.8	5.2	M3	M4x4.2	3.2

Note: Material: stainless steel SUS 440 C, suffix : n.
If you have more inquiry of technical, please inquire **NIKO** web-site: Http://www.nipponkodobearings.com

Miniature Linear Guides - Blocks
Series MNW-R / MNW-H



Miniature Linear Guide

Dimensions of Rail (mm)								Mounting Bolt for Rail	Basic Dynamic Load Rating	Basic Static Load Rating	Static Rated Moment(kfg.m)			Weight	
											MR	MP	MY	Block	Rail
WR	*WB*	*HR*	*D*	*h*	*d*	*P*	*E*	(mm)	*C*(KN)	*CO*(KN)	KN-m	KN-m	KN-m	kg	kg/m
14	-	5.2	6	3.2	3.5	30	10	M3x6	1.37	2.06	15.70	7.14	7.14	0.020	0.51
14	-	5.2	6	3.2	3.5	30	10	M3x6	1.77	3.14	23.45	15.53	15.53	0.029	0.51
18	-	7	6	4.5	3.5	30	10	M3x8	2.75	4.12	40.12	18.96	18.96	0.040	0.91
18	-	7	6	4.5	3.5	30	10	M3x8	3.43	5.89	54.54	34.00	34.00	0.057	0.91
24	-	8.5	8	4.5	4.5	40	15	M4x8	3.92	5.59	70.34	27.80	27.80	0.071	1.49
24	-	8.5	8	4.5	4.5	40	15	M4x8	5.10	8.24	102.70	57.37	57.37	0.103	1.49
42	23	9.5	8	4.5	4.5	40	15	M4x10	6.77	9.22	199.34	56.66	56.66	0.143	2.86
42	23	9.5	8	4.5	4.5	40	15	M4x10	8.93	13.38	299.01	122.60	122.60	0.215	2.86

Industrial Packing

Miniature
Linear Guide

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Linear Guideways

Technical
Table

Linear Guideways

(1) Interchangeable type

E	N	W	2	0	C	A							E	Z	A	H	Z	Z	/	E	2
Series			Models											Preload		Class	Accessories				
①			②		③	④							⑧	⑨		⑩	⑫				

H	N	R	2	0				R	1	6	0	0	E			H					R	C
Series			Models						Rail Length(mm)					Preload				Accessories					
①			②					⑥	⑦				⑧			⑩		⑫				

(2) Non-Interchangeable type

H	N	W	2	0	C	A	2	R	2	0	0	0		Z	A	H	II	D	D	/	E	2
Series			Models						Rail Length(mm)					Preload				Accessories					
①			②		③	④	⑤	⑥	⑦				⑧	⑨		⑩	⑪	⑫				

Remarks:

③
Load Types
C: Heavy Load
H: Super Heavy Load

⑥
Rail Mounting Type
R: Mounting Type
T: Bottom

④
Block Mounting Type
A: Mounting From Top
B: Bottom
C: Top or Bottom

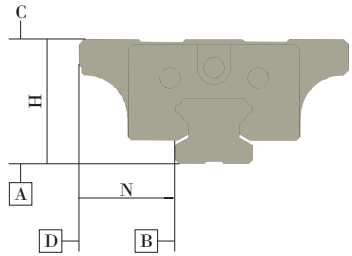
⑧
E: Special Block
None: Standard Block

⑤
No. of Blocks per Rail

⑪
Nos. of rails per axis set 1

Accuracy Classes

The accurcy of HN series can be classified into normal (N), high (H), precision (H), three classes. Please choose the class by referring the accuracy of applied equipment.



(1) Accuracy of non-interchangeable guideways

Table 1.1.1 Accuracy Standards

Unit: mm

Items / Accuracy Classes	HN - 15, 20 Normal (N)	High (H)	Precision (P)
Dimensional tolerance of height H	± 0.1	± 0.03	0 / − 0.03
Dimensional tolerance of Width N	± 0.1	± 0.03	0 / − 0.03
Variation of height H	0.02	0.01	0.006
Variation of width N	0.02	0.01	0.006
Running parallelism of block surface C to Surface A	See Table		
Running parallelism of block surface D to Surface B	See Table		

Table 1.1.2 Accuracy Standards

Unit: mm

Items / Accuracy Classes	HN - 25, 30, 35 Normal (N)	High (H)	Precision (P)
Dimensional tolerance of height H	± 0.1	± 0.04	0 / −0.04
Dimensional tolerance of Width N	± 0.1	± 0.04	0 / −0.04
Variation of height H	0.02	0.015	0.007
Variation of width N	0.03	0.015	0.007
Running parallelism of block surface C to Surface A	See Table		
Running parallelism of block surface D to Surface B	See Table		

Table 1.1.3 Accuracy Standards

Unit: mm

Items / Accuracy Classes	HN - 45 Normal (N)	High (H)	Precision (P)
Dimensional tolerance of height H	± 0.1	± 0.05	0 / − 0.05
Dimensional tolerance of Width N	± 0.1	± 0.05	0 / − 0.05
Variation of height H	0.03	0.015	0.007
Variation of width N	0.03	0.02	0.01
Running parallelism of block surface C to Surface A	See Table		
Running parallelism of block surface D to Surface B	See Table		

(2) Accuracy of interchangeable guideways

Table 2.2.1 Accuracy Standards

Unit: mm

Items / Accuracy Classes	HN - 15, 20 Normal (N)	High (H)	Precision (P)
Dimensional tolerance of height H	± 0.1	± 0.03	± 0.015
Dimensional tolerance of Width N	± 0.1	± 0.03	± 0.015
Variation of height H	0.02	0.01	0.006
Variation of width N	0.02	0.01	0.006
Running parallelism of block surface C to Surface A	See Table		
Running parallelism of block surface D to Surface B	See Table		

Table 2.2.2 Accuracy Standards

Unit: mm

Items / Accuracy Classes	HN - 25, 30, 35 Normal (N)	High (H)	Precision (P)
Dimensional tolerance of height H	± 0.1	± 0.04	± 0.02
Dimensional tolerance of Width N	± 0.1	± 0.04	± 0.02
Variation of height H	0.02	0.015	0.007
Variation of width N	0.03	0.015	0.007
Running parallelism of block surface C to Surface A		See Table	
Running parallelism of block surface D to Surface B		See Table	

TECHNICAL TABLES

Table 2.2.3 Accuracy Standards

Unit: mm

Items / Accuracy Classes	HN - 45 Normal (N)	High (H)	Precision (P)
Dimensional tolerance of height H	± 0.1	± 0.05	± 0.025
Dimensional tolerance of Width N	± 0.1	± 0.05	± 0.025
Variation of height H	0.03	0.015	0.007
Variation of width N	0.03	0.02	0.01
Running parallelism of block surface C to Surface A		See Table	
Running parallelism of block surface D to Surface B		See Table	

(3) Accuracy of running parallelism

Table 2.3.1 Accuracy of Running Parallelism

Rail Length (mm)	Accuracy (μm) N	H	P
0 ~100	12	7	3
100 ~ 200	14	9	4
200 ~ 300	15	10	5
300 ~ 500	17	12	6
500 ~ 700	20	13	7
700 ~ 900	22	15	8
900 ~1100	24	16	9
1100 ~ 1500	26	18	11
1500 ~ 1900	28	20	13
1900 ~ 2500	31	22	15
2500 ~ 3100	33	25	18
3100 ~ 3600	36	27	20
3600 ~ 4000	37	28	21

3. Preload

3.1 Definition

A preload can be applied to each guideways. Oversized balls are used. Generally, a linear motion guideways has a negative clearance between groove and balls in order to improve stiffness and maintain high precision. The figure shows the load is multiplied by the preload, the rigidity is doubled and the deflection is reduced by one half. The preload not larger than ZA would be recommended for the model size under HN20 to avoid an over-preload affecting the guideways's life.

3.2 Preload classes

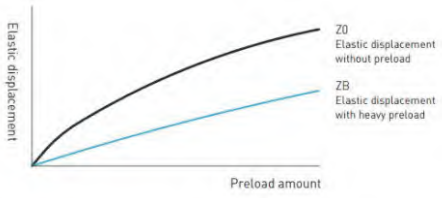
NIKO offers three classes of standard preload for various applications and conditions.

Table 3.1 Preload Types

Class	Code	Preload	Conditon	Examples of Application
Light Preload	Z0	0~0.02C	Certain load direction, low impact,low precision required	Transportation devices, auto-packing machines, X-Y axi for general industrial machines, welding machines, welders
Medium Preload	ZA	0.05C~0.07C	High precision required	Machining centers, Z axis for general industrial, machines, EDM, NC lathes, Precision X-Y tables, measuring equipment
Heavy Preload	ZB	0.10C~0.12C	High rigidity required, with vibration and impact	Machining centers, grinding machines, NC lathes, horizontal and vertical milling machines, Z axis of machine tools,Heavy cutting machines

Class	Interchangeable guideways	Non-Interchangeable guideways
Preload Classes	Z0, ZA	Z0, ZA,ZB

Note: The "C" in the preload column denotes basic dynamic load rating.



3.3 Rigidity

Rigidity depends on preload, below formula can be used to determine deformation depending on rigidity.

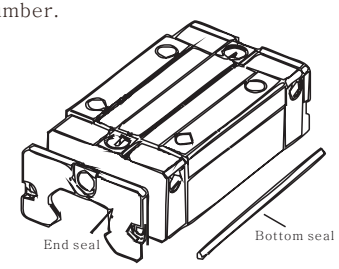
$$\delta = \frac{p}{k}$$

δ Deformation (μm)
p Operating load (N)
k Rigidity (N/μm)

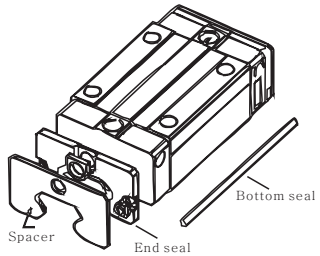
Load Class	Series/size	Rigidity depending on preload		
		Z0	ZA	ZB
Average load	HN_20 S	130	170	190
Heavy load	HN_15 C	200	260	290
	HN_20 C	250	320	360
	HN_25 C	300	390	440
	HN_30 C	370	480	550
	HN_35 C	410	530	610
	HN_45 C	510	660	750
Super heavy load	HN_20 H	310	400	460
	HN_25 H	390	510	580
	HN_30 H	480	620	710
	HN_35 H	530	690	790
	HN_45 H	650	850	970

4. Dust Proof Accessories

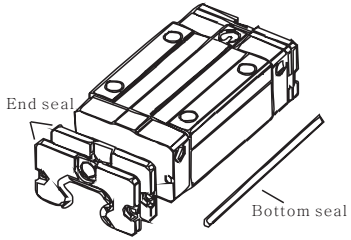
(1) Codes of standard dust proof accessories
If the following accessories are needed, please add the code followed by the model number.



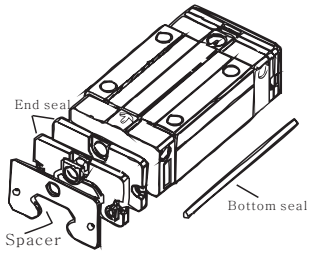
No symbol: Standard Protection
(End seal + Bottom Seal)



ZZ (End seal + Spacer + Bottom Seal)



DD (Double End seal + Bottom Seal)



KK (Double End seal + Spacer + Bottom Seal)

4.2 End seal and bottom seal

To prevent life reduction caused by iron chips or dust entering the block.

4.3 Double seals

Enhances the wiping effect, foreign matter can be completely wiped off.

Table 4.3.1 Dimensions of end seal

Size	Thickness (t1) (mm)
HN 15 ES	3
HN 20 ES	3.5
HN 25 ES	3.5
HN 30 ES	3.2
HN 35 ES	3.2
HN 45 ES	4.5

(4) Scraper

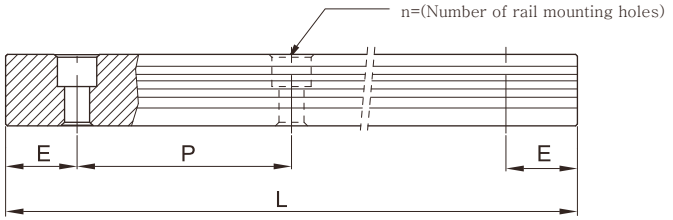
The scraper removes high-temperature iron chips and larger foreign objects.

Table 4.3.2 Dimensions of scraper

Size	Thickness (t2) (mm)
HN 15 SC	1.5
HN 20 SC	1.5
HN 25 SC	1.5
HN 30 SC	1.5
HN 35 SC	1.5
HN 45 SC	1.5

5. Standard and Maximum Lengths of Rail

HIWIN offers standard rail lengths for customer needs. For non-standard E-values, the recommended dimension should no greater than 1/2 of the pitch (P) dimension. This will prevent an unstable rail end.



$$L=(n-1)xP+2xE \quad \text{Eq. 5}$$

L : Total length of rail (mm)
n : Number of mounting holes
P : Distance between any two holes (mm)
E : Distance from the center of the last hole to the edge (mm)

Table 5-1 Rail Standard Length and Max. Length

unit: mm

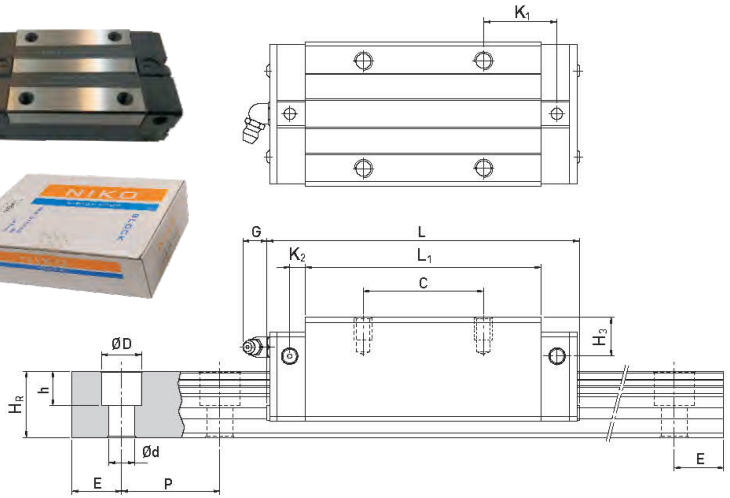
Item	15	20	25	30	35	45	55	65
	160 (3)	220 (4)	220 (4)	280 (4)	280 (4)	570 (6)	780 (7)	1,270 (9)
	220 (4)	280 (5)	280 (5)	440 (6)	440 (6)	885 (9)	1,020 (9)	1,570 (11)
	280 (5)	340 (6)	340 (6)	600 (8)	600 (8)	1,200 (12)	1,260 (11)	2,020 (14)
	340 (6)	460 (8)	460 (8)	760 (10)	760 (10)	1,620 (16)	1,500 (13)	2,620 (18)
Standard Length L(n)	460 (8)	640 (11)	640 (11)	1,000 (13)	1,000 (13)	2,040 (20)	1,980 (17)	
	640 (11)	820 (14)	820 (14)	1,640 (21)	1,640 (21)	2,460 (24)	2,580 (22)	
	820 (14)	1,000 (17)	1,000 (17)	2,040 (26)	2,040 (26)	2,985 (29)	2,940 (25)	
		1,240 (21)	1,240 (21)	2,520 (32)	2,520 (32)			
			1,600 (27)	3,000 (38)	3,000 (38)			
Pitch (P)	60	60	60	80	80	105	120	150
Distance to End (E)	20	20	20	20	20	22.5	30	35
Max. Standard Length	4,000 (67)	4,000 (67)	4,000 (67)	3,960 (50)	3,960 (50)	3,930 (38)	3,900 (33)	3,970 (27)
Max. Length	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000

Note : 1. Tolerance of E value for standard rail is 0.5 ~ -0.5 mm. Tolerance of E value for jointed rail is 0 ~ -0.3 mm.
2. Maximum standard length means the max. rail length with standard E value on both sides.
3. If different E value is needed, please contact NIKO.

Technical Table

LINEAR GUIDES - BLOCKS

SERIES HNH-CA / HNH-HA



Model No.	Dimensions of Assembly (mm)			Dimensions of Block (mm)											
	H	H1	N	W	B	B1	C	L1	L	K1	G	MxL	T	H2	H3
HNH 15 CA	28	4.3	9.5	34	26	4	26	39.4	61.4	10	5.3	M4x5	6	7.95	7.7
HNH 20 CA	30	4.4	12	44	32	6	36	50.5	77.5	12.25	12	M5x6	8	6	6
HNH 20 HA	30	4.4	12	44	32	6	50	65.2	92.2	12.6	12	M5x6	8	6	6
HNH 25 CA	40	5.4	12.5	48	35	6.5	35	58	84	15.7	12	M6x8	8	10	9
HNH 25 HA	40	5.4	12.5	48	35	6.5	50	78.6	104.6	18.5	12	M6x8	8	10	9
HNH 30 CA	45	5.5	16	60	40	10	40	70	97.4	20.25	12	M8x10	8.5	9.5	13.8
HNH 30 HA	45	5.5	16	60	40	10	60	93	120.4	21.75	12	M8x10	8.5	9.5	13.8
HNH 35 CA	55	7.5	18	70	50	10	50	80	112.4	20.6	12	M8x12	10.2	16	19.6
HNH 35 HA	55	7.5	18	70	50	10	72	105.8	138.2	22.5	12	M8x12	10.2	16	19.6
HNH 45 CA	70	9.5	20.5	86	60	13	60	97	139.4	23	12.9	M10x17	16	18.5	30.5
HNH 45 HA	70	9.5	20.5	86	60	13	80	128.8	171.2	28.9	12.9	M10x17	16	18.5	30.5

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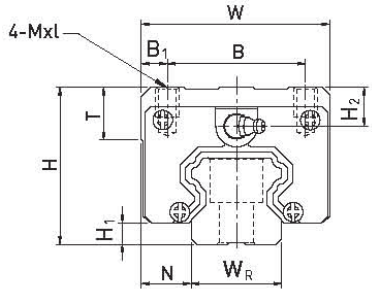
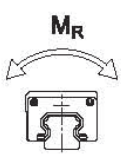
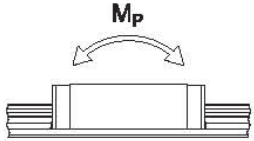
LINEAR GUIDEWAYS

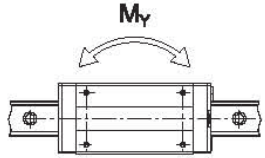
LINEAR GUIDES - BLOCKS

SERIES **HNH-CA / HNH-HA**









Dimensions of Rail (mm)							Mounting Bolt for Rail	Basic Dynamic Load Rating	Basic Static Load Rating	Static Rated Moment(kfg.m)			Weight	
										MR	MP	MY	Block	Rail
WR	HR	D	h	d	P	E	(mm)	C(KN)	C0(KN)	KN-m	KN-m	KN-m	kg	kg/m
15	15	7.5	5.3	4.5	60	20	M4x16	11.38	25.31	0.17	0.15	0.15	0.18	1.45
20	17.5	9.5	8.5	6	60	20	M5x16	17.75	37.84	0.38	0.27	0.27	0.30	2.21
20	17.5	9.5	8.5	6	60	20	M5x16	21.18	48.84	0.48	0.47	0.47	0.39	2.21
23	22	11	9	7	60	20	M6x20	26.48	56.19	0.64	0.51	0.51	0.51	3.21
23	22	11	9	7	60	20	M6x20	32.75	76.00	0.87	0.88	0.88	0.69	3.21
28	26	14	12	9	80	20	M8x25	38.74	83.06	1.06	0.85	0.85	0.88	4.47
28	26	14	12	9	80	20	M8x25	47.27	110.13	1.40	1.47	1.47	1.16	4.47
34	29	14	12	9	80	20	M8x25	49.52	102.87	1.73	1.20	1.20	1.45	6.30
34	29	14	12	9	80	20	M8x25	60.21	136.31	2.29	2.08	2.08	1.92	6.30
45	38	20	17	14	105	22.5	M12x35	77.57	155.93	3.01	2.35	2.35	2.73	10.41
45	38	20	17	14	105	22.5	M12x35	94.54	207.12	4.00	4.07	4.07	3.61	10.41

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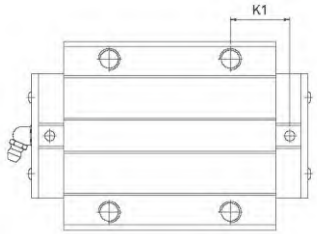
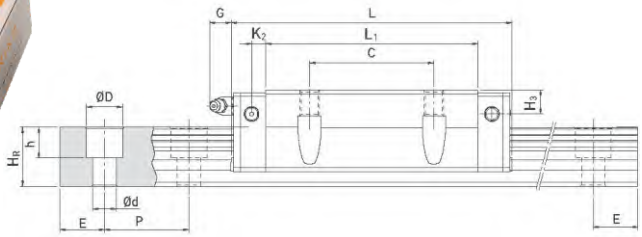
Linear Guides - Blocks
Series HNW-CC / HNW-HC





Model No.	Dimensions of Assembly (mm)			Dimensions of Block (mm)												
	H	H1	N	W	B	B1	C	L1	L	K1	G	M	T	T1	H2	H3
HNW 15 CC	24	4.3	16	47	38	4.5	30	39.4	61.4	10	5.3	M5	6	8.9	3.95	3.7
HNW 20 CC	30	4.4	21.5	63	53	5	40	50.5	77.5	12.25	12	M6	8	10	6	6
HNW 20 HC	30	4.4	21.5	63	53	5	40	65.2	92.2	12.6	12	M6	8	10	6	6
HNW 25 CC	36	5.4	23.5	70	57	6.5	45	58	84	15.7	12	M8	8	14	6	5
HNW 25 HC	36	5.4	23.5	70	57	6.5	45	78.6	104.6	18.5	12	M8	8	14	6	5
HNW 30 CC	42	5.5	31	90	72	9	52	70	97.4	20.25	12	M10	8.5	16	6.5	10.8
HNW 30 HC	42	5.5	31	90	72	9	52	93	120.4	21.75	12	M10	8.5	16	6.5	10.8
HNW 35 CC	48	7.5	33	100	82	9	62	80	112.4	20.6	12	M10	10.1	18	9	12.6
HNW 35 HC	48	7.5	33	100	82	9	62	105.8	138.2	22.5	12	M10	10.1	18	9	12.6
HNW 45 CC	60	9.5	37.5	120	100	10	80	97	139.4	23	12.9	M12	15.1	22	8.5	20.5
HNW 45 HC	60	9.5	37.5	120	100	10	80	128.8	171.2	28.9	12.9	M12	15.1	22	8.5	20.5

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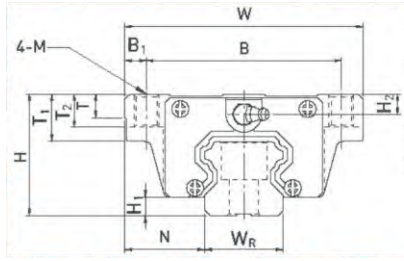
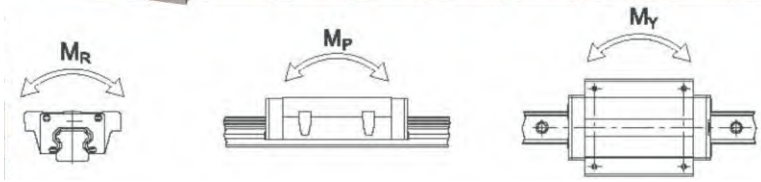
Linear Guideways

LINEAR GUIDES - BLOCKS

SERIES HNW-CC / HNW-HC

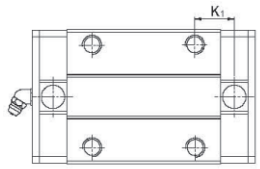


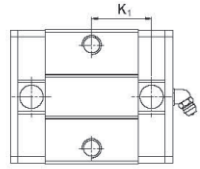


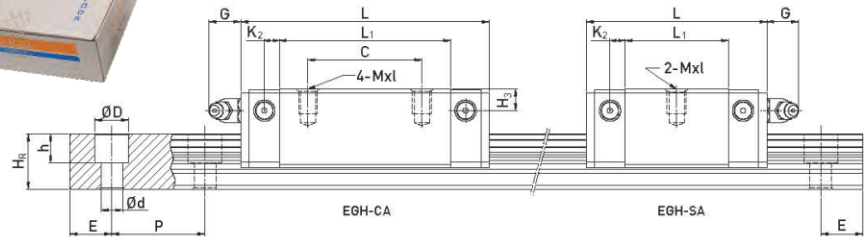
Dimensions of Rail (mm)							Mounting Bolt for Rail	Basic Dynamic Load Rating	Basic Static Load Rating	Static Rated Moment(kfg.m)			Weight	
										MR	MP	MY	Block	Rail
WR	HR	D	h	d	P	E	(mm)	C(KN)	C0(KN)	KN-m	KN-m	KN-m	kg	kg/m
15	15	7.5	5.3	4.5	60	20	M4x16	11.38	25.31	0.17	0.15	0.15	0.17	1.45
20	17.5	9.5	8.5	6	60	20	M5x16	17.75	37.84	0.38	0.27	0.27	0.40	2.21
20	17.5	9.5	8.5	6	60	20	M5x16	21.18	48.84	0.48	0.47	0.47	0.52	2.21
23	22	11	9	7	60	20	M6x20	26.48	56.19	0.64	0.51	0.51	0.59	3.21
23	22	11	9	7	60	20	M6x20	32.75	76.00	0.87	0.88	0.88	0.80	3.21
28	26	14	12	9	80	20	M8x25	38.74	83.06	1.06	0.85	0.85	1.09	4.47
28	26	14	12	9	80	20	M8x25	47.27	110.13	1.40	1.47	1.47	1.44	4.47
34	29	14	12	9	80	20	M8x25	49.52	102.87	1.73	1.20	1.20	1.56	6.30
34	29	14	12	9	80	20	M8x25	60.21	136.31	2.29	2.08	2.08	2.06	6.30
45	38	20	17	14	105	22.5	M12x35	77.57	155.93	3.01	2.35	2.35	2.79	10.41
45	38	20	17	14	105	22.5	M12x35	94.54	207.12	4.00	4.07	4.07	3.69	10.41

LINEAR GUIDES - BLOCKS

SERIES ENH-CA / ENH-SA







Model No.	Dimensions of Assembly (mm)			Dimensions of Block (mm)											
	H	H1	N	W	B	B1	C	L1	L	K1	G	MxL	T	H2	H3
ENH 15 SA	24	4.5	9.5	34	26	4	-	23.1	40.1	14.8	5.7	M4x6	6	5.5	6
ENH 15 CA	24	4.5	9.5	34	26	4	26	39.8	56.8	10.15	5.7	M4x6	6	5.5	6
ENH 20 SA	28	6	11	44	32	6	-	29	50	18.75	12	M5x7	7.5	6	6
ENH 20 CA	28	6	11	44	32	6	32	48.1	69.1	12.3	12	M5x7	7.5	6	6
ENH 25 SA	33	7	12.5	48	35	6.5	-	35.5	59.1	21.9	12	M6x9	8	8	8
ENH 25 CA	33	7	12.5	48	35	6.5	35	59	82.6	16.15	12	M6x9	8	8	8
ENH 30 SA	42	10	16	60	40	10	-	41.5	69.5	26.75	12	M8x12	9	8	9
ENH 30 CA	42	10	16	60	40	10	40	70.1	98.1	21.05	12	M8x12	9	8	9

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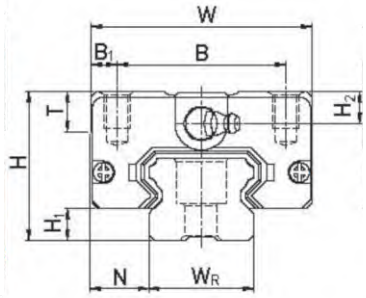
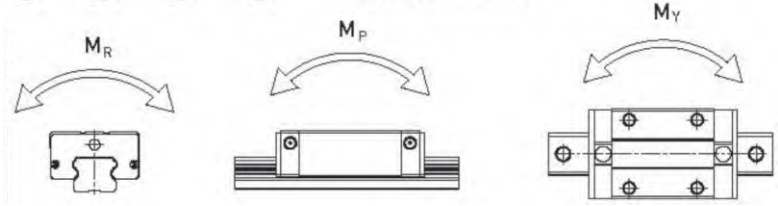
LINEAR GUIDEWAYS

LINEAR GUIDES - BLOCKS

SERIES **ENH-CA / ENH-SA**

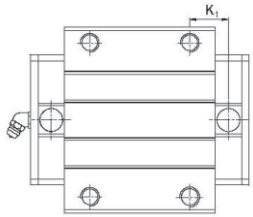


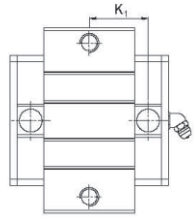


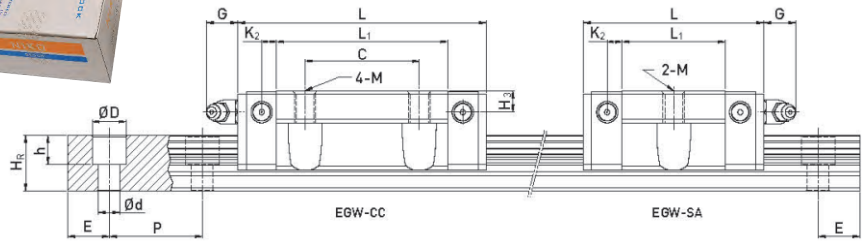
Dimensions of Rail (mm)							Mounting Bolt for Rail	Basic Dynamic Load Rating	Basic Static Load Rating	Static Rated Moment(kfg.m)			Weight	
										MR	MP	MY	Block	Rail
WR	HR	D	h	d	P	E	(mm)	C(KN)	C0(KN)	KN-m	KN-m	KN-m	kg	kg/m
15	12.5	7.5	5.3	4.5	60	20	M4x16	5.35	9.40	0.08	0.04	0.04	0.09	1.25
15	12.5	7.5	5.3	4.5	60	20	M4x16	7.83	16.19	0.13	0.10	0.10	0.15	1.25
20	15.5	9.5	8.5	6	60	20	M5x16	7.23	12.74	0.13	0.06	0.06	0.15	2.08
20	15.5	9.5	8.5	6	60	20	M5x16	10.31	21.13	0.22	0.16	0.16	0.24	2.08
23	18	11	9	7	60	20	M6x20	11.40	19.50	0.23	0.12	0.12	0.25	2.67
23	18	11	9	7	80	20	M6x20	16.27	32.40	0.38	0.32	0.32	0.41	2.67
28	23	14	12	9	80	20	M8x25	16.42	28.10	0.40	0.21	0.21	0.45	4.35
28	23	14	12	9	80	20	M8x25	23.70	47.46	0.68	0.55	0.55	0.76	4.35

Linear Guides - Blocks

Series ENW-CC / ENW-SC





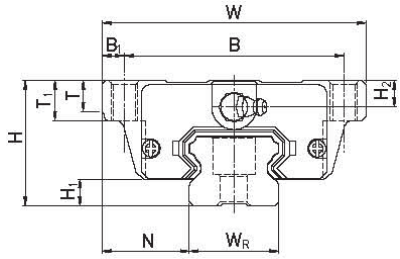


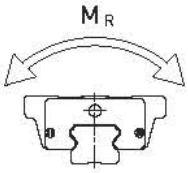
Model No.	Dimensions of Assembly (mm)			Dimensions of Block (mm)												
	H	H1	N	W	B	B1	C	L1	L	K1	G	M	T	T1	H2	H3
ENW 15 SC	24	4.5	18.5	52	41	5.5	-	23.1	40.1	14.8	5.7	M5	5	7	5.5	6
ENW 15 CC	24	4.5	18.5	52	41	5.5	26	39.8	56.8	10.15	5.7	M5	5	7	5.5	6
ENW 20 SC	28	6	19.5	59	49	5	-	29	50	18.75	12	M6	7	9	6	6
ENW 20 CC	28	6	19.5	59	49	5	32	48.1	69.1	12.3	12	M6	7	9	6	6
ENW 25 SC	33	7	25	73	60	6.5	-	35.5	59.1	21.9	12	M8	7.5	10	8	8
ENW 25 CC	33	7	25	73	60	6.5	35	59	82.6	16.15	12	M8	7.5	10	8	8
ENW 30 SC	42	10	31	90	72	9	-	41.5	69.5	26.75	12	M10	7	10	8	9
ENW 30 CC	42	10	31	90	72	9	40	70.1	98.1	21.05	12	M10	7	10	8	9

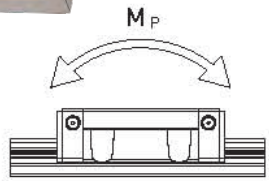
If you have more inquiry of technical, please inquire NIKO web-site: Http://www.nipponkodobearings.com

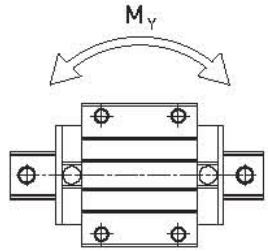
Linear Guideways

Linear Guides - Blocks
Series ENW-CC / ENW-SC









Dimensions of Rail (mm)							Mounting Bolt for Rail	Basic Dynamic Load Rating	Basic Static Load Rating	Static Rated Moment(kfg.m)			Weight	
										MR	MP	MY	Block	Rail
WR	HR	D	h	d	P	E	(mm)	C(KN)	C0(KN)	KN-m	KN-m	KN-m	kg	kg/m
15	12.5	7.5	5.3	4.5	60	20	M4x16	5.35	9.40	0.08	0.04	0.04	0.12	1.25
15	12.5	7.5	5.3	4.5	60	20	M4x16	7.83	16.19	0.13	0.10	0.10	0.21	1.25
20	15.5	9.5	8.5	6	60	20	M5x16	7.23	12.74	0.13	0.06	0.06	0.19	2.08
20	15.5	9.5	8.5	6	60	20	M5x16	10.31	21.13	0.22	0.16	0.16	0.32	2.08
23	18	11	9	7	60	20	M6x20	11.40	19.50	0.23	0.12	0.12	0.35	2.67
23	18	11	9	7	60	20	M6x20	16.27	23.40	0.38	0.32	0.32	0.59	2.67
28	23	14	12	9	80	20	M8x25	16.42	28.10	0.40	0.21	0.21	0.62	4.35
28	23	14	12	9	80	20	M8x25	23.70	47.46	0.68	0.55	0.55	1.04	4.35

Fully Interchangable

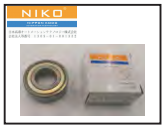
Type	NIKO	HIWIN
 HNH Series	HNH15CA	HGH15CA
	HNH20CA	HGH20CA
	HNH20HA	HGH20HA
	HNH25CA	HGH25CA
	HNH25HA	HGH25HA
	HNH30CA	HGH30CA
	HNH30HA	HGH30HA
	HNH35CA	HGH35CA
	HNH35HA	HGH35HA
	HNH45CA	HGH45CA
	HNH45HA	HGH45HA
 HNW Series	HNW15CC	HGW15CC
	HNW20CC	HGW20CC
	HNW20HC	HGW20HC
	HNW25CC	HGW25CC
	HNW25HC	HGW25HC
	HNW30CC	HGW30CC
	HNW30HC	HGW30HC
	HNW35CC	HGW35CC
	HNW45CC	HGW45CC
 ENH Series	ENH15SA ENH15CA	EGH15SA EGH15CA
	ENH20SA ENH20CA	EGH20SA EGH20CA
	ENH25SA ENH25CA	EGH25SA EGH25CA
	ENH30SA ENH30CA	EGH30SA EGH30CA
 ENW Series	ENW15SC ENW15CC	EGW15SA EGW15CC
	ENW20SC ENW20CC	EGW20SA EGW20CC
	ENW25SC ENW25CC	EGW25SA EGW25CC
	ENW30SC ENW30CC	EGW30SA EGW30CC

LINEAR GUIDEWAYS

Type Comparison Table For The Linear Guide

Type	NIKO	THK	PMI	TBI	ABBA	STAF	CPC
 HNH Series	HNH15CA	HSR15R	MSA15S	TRH15VL	BRC15RO	BGXH15BN	HRC15MN
	HNH20CA	HSR20R	MSA20S	TRH20VL	BRC20RO	BGXH25BN	HRC20MN
	HNH20HA	HSR20LR	MSA20LS	TRH20VE	BRC20LR	BGXH20BL	HRC20ML
	HNH25CA	HSR25R	MSA25S	TRH25VN	BRC25RO	BGXH25BN	HRC25MN
	HNH25HA	HSR25LR	MSA25LS	TRH25VE	BRC25LR	BGXH25BL	HRC25ML
	HNH30CA	HSR30R	MSA30S	TRH30VN	BRC30RO	BGXH30BN	HRC30MN
	HNH30HA	HSR30LR	MSA30LS	TRH30VE	BRC30LR	BGXH30BL	HRC30ML
	HNH35CA	HSR35R	MSA35S	TRH35VN	BRC35RO	BGXH35BN	HRC35MN
	HNH35HA	HSR45LR	MSA35LS	TRH35VE	BRC35LR	BGXH35BL	HRC35ML
	HNH45CA	HSR45SR	MSA45S	TRH45VN	BRC45RO	BGXH45BN	HRC45MN
	HNH45HA	HSR45LR	MSA45LS	TRH45VE	BRC45LR	BGXH45BL	HRC45ML
 HNW Series	HNW15CA/C	/	MSA15E/A	TRH15FN	BRC15AO	BGXH15FN	HRC15FN
	HNW20CA/C	HSR20CA	MSA20E/A	TRH20FN	BRC20AO	BGXH20FN	HRC20FN
	HNW20HA/C	HSR20HA/HB	MSA20LE/LA	TRH20FE	BRC20LA	BGXH20FL	HRC20FL
	HNW25CA/C	HSR25CA	MSA25E/A	TRH25FN	BRC25AO	BGXH25FN	HRC25FN
	HNW25HA/C	HSR25HA/HB	MSA25LE/LA	TRH25FE	BRC25LA	BGXH25FL	HRC25FL
	HNW30CA/C	HSR30CA	MSA30E/A	TRH30FN	BRC30AO	BGXH30FN	HRC30FN
	HNW30HA/C	HSR30HA/HB	MSA30LE/LA	TRH30FE	BRC30LA	BGXH30FL	HRC30FL
	HNW35CA/C	HSR35CA	MSA35E/A	TRH35FN	BRC35AO	BGXH35FN	HRC35FN
	HNW45CA/C	HSR45CA	MSA45E/A	TRH45FN	BRC45AO	BGXH45FN	HRC45FN
 ENH Series	ENH15SA/CA	SSR15WY/WMY,SR15W/WM	MSB15S	TRS15VN	BRC15UO	BGXS15BN	ARC15MN
	ENH20SA/CA	SSR20WY/WMY,SR20W/WM	MSB10S	TRS20VN	BRC20UO	BGXS20BN	ARC20MN
	ENH25SA/CA	SSR25WY/WMY,SR25W/WM	MSB25S	TRS25VN	BRC25UO	BGXS25BN	ARC25MN
	ENH30SA/CA	SSR30WY/WMY,SR30W/WM	MSB30S	TRS30VN	BRC30UO	BGXS30BN	ARC30MN
 ENW Series	ENW15SC/CC	SR15TB/TBM	MSB15E	TRS15FN	/	BGXS15FN	ARC15FN
	ENW20SC/CC	SR20TB/TBM	MSB20E	TRS20FN	/	BGXS20FN	ARC20FN
	ENW25SC/CC	SR25TB/TBM	MSB25E	TRS25FN	/	BGXS25FN	ARC25FN
	ENW30SC/CC	SR30TB/TBM	MSB30E	TRS30FN	/	BGXS30FN	ARC30FN

Products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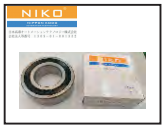
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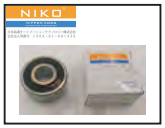
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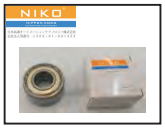
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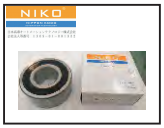
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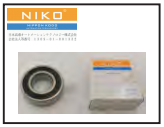
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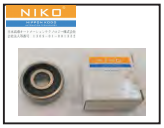
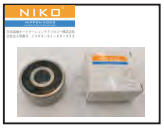

62.. Series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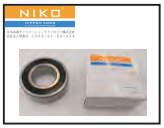
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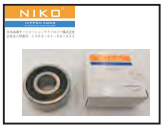
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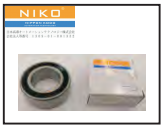
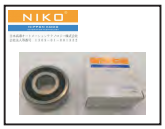

630.. Series


R.. Series


RLS.. Series


RMS.. Series


68.. Series


69.. Series


Needle Roller Bearings

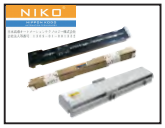

Track Roller Bearings

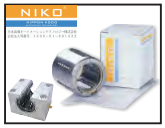

Linear Guides


Miniature Linear Guides


Ball Screws


Support Units

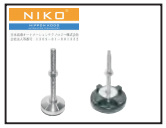

Linear Modules

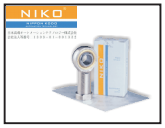

Linear Bearings


Linear Guideways

Drag Chains

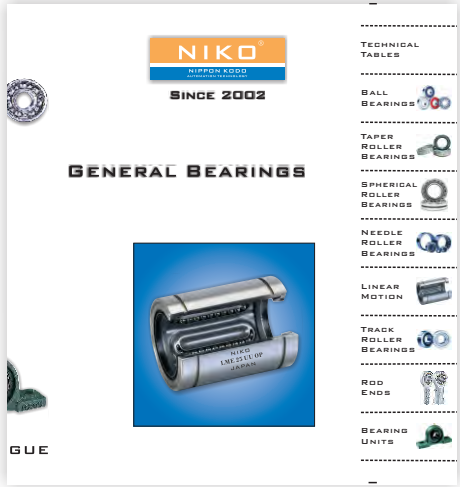

Castors


Leveling Mounts


Rod Ends


Plain Bearings

Bearing Units (3-Lips)



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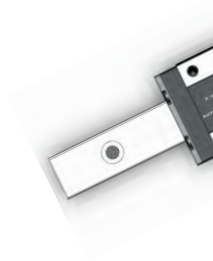

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