

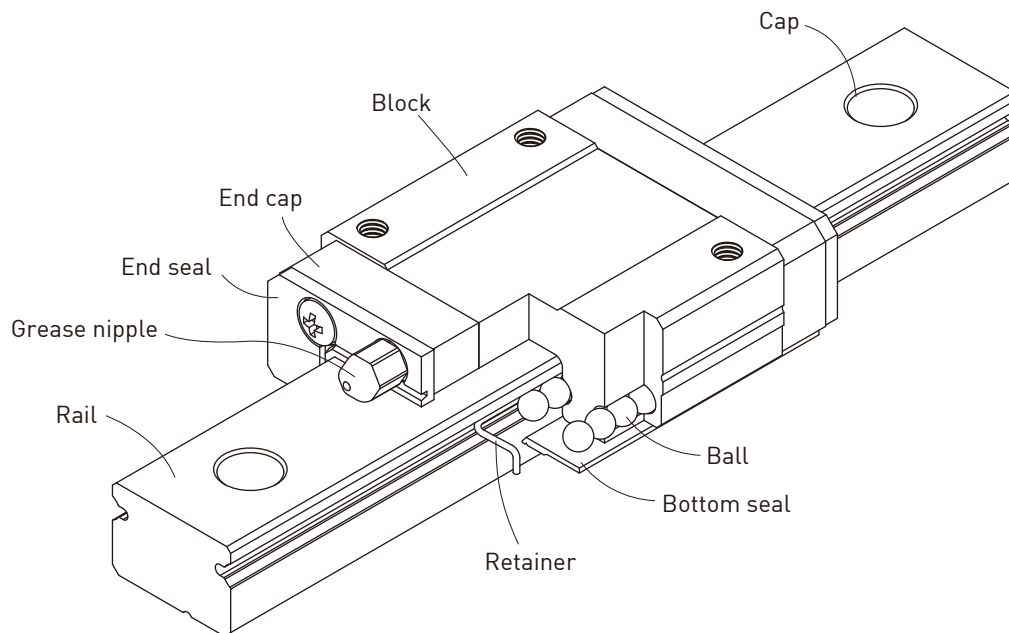
2-4 MG Series - Miniature Linear Guideway

2-4-1 Features of MGN Series

Design features of narrow type miniature guideways- MGN:

1. Tiny and light weight, suitable for miniature equipment.
2. Gothic arch contact design can sustain loads from all directions and offer high rigidity and high accuracy.
3. Specification with ball retainers would avoid ball falling when the blocks are removed from rails.
4. Interchangeable types are available in certain sizes and precision grades.

2-4-2 Construction of MGN Series



- Rolling circulation system: Block, rail, ball, end cap and retainer (except size 3)
- Lubrication system: Grease nipple is available for MGN15, lubricated by grease gun. MGN7, 9, 12 are lubricated by the hole at the side of the end cap.
- Dust protection system: End seal (optional size 3), bottom seal (optional size 9,12,15), cap (size12,15)

MG Series

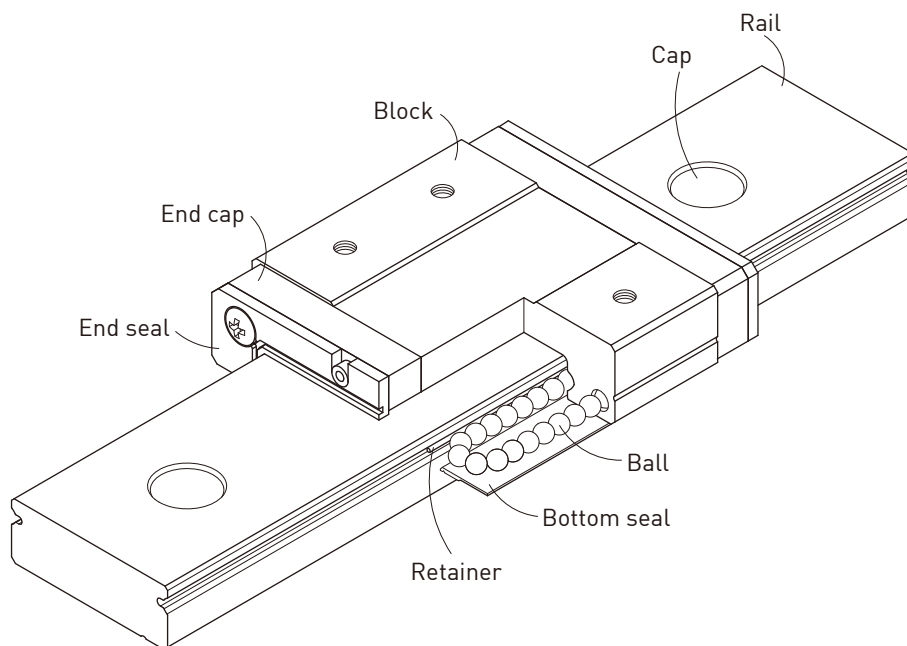
Miniature Type

2-4-3 Features of MGW Series

Design features of wide type miniature guideways- MGW:

1. The enlarged width design increases the capacity of moment loading.
2. Gothic arch contact design has high rigidity characteristic in all directions.
3. Specification with ball retainers would avoid ball falling when the blocks are removed from rails.
4. Interchangeable types are available in certain sizes and precision grades.

2-4-4 Construction of MGW Series



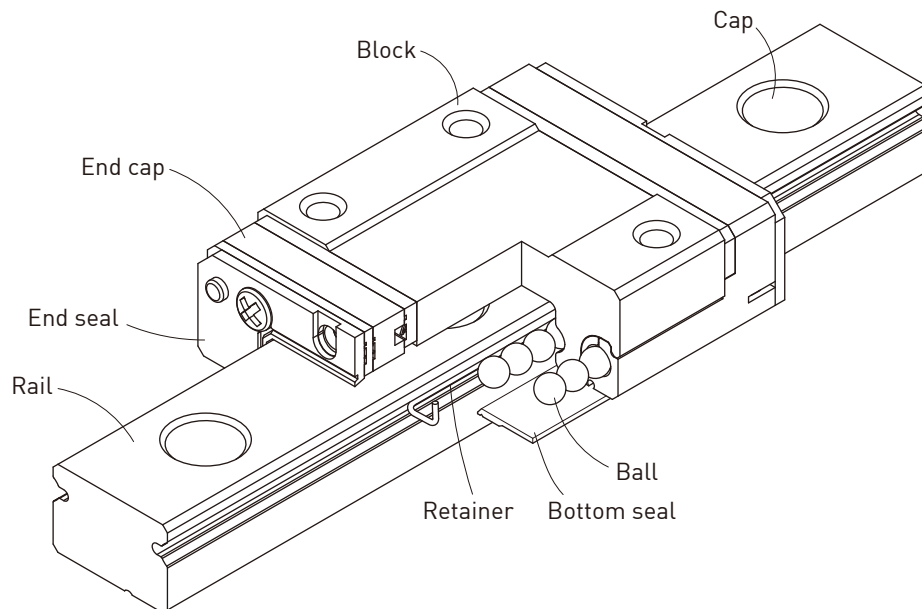
- Rolling circulation system: Block, rail, ball, end cap and retainer
- Lubrication system: Grease nipple is available for MGW14, 15, lubricated by grease gun. MGW3, 7, 9, 12 are lubricated by the hole at the side of the end cap.
- Dust protection system: End seal, bottom seal (optional size 9,12,14,15), cap (size12,14,15)

2-4-5 Features of MGN-0 Series

Design features of narrow type miniature guideways- MGN-0:

1. Reduce 20% weight of block by using resin in the recirculation unit. The compact size and light weight is suitable for miniturized machinery.
2. Gothic arch contact design can sustain loads from all directions and offer high rigidity and high accuracy.
3. Interchangeable types are available in certain precision grades.
4. The design of resin recirculation unit which is able to eliminate the collision with the metal block.
5. Integrated design for recirculation system.

2-4-6 Construction of MGN-0 Series



- Rolling circulation system: Block, rail, ball, end cap and retainer
- Lubrication system: Grease nipple is available for MGN15-0, lubricated by grease gun. MGN5-0, MGN7-0, MGN9-0, MGN12-0 are lubricated by the hole at the side of the end cap.
- Dust protection system: End seal, bottom seal (optional size 9,12,15), cap (size12,15)

MG Series

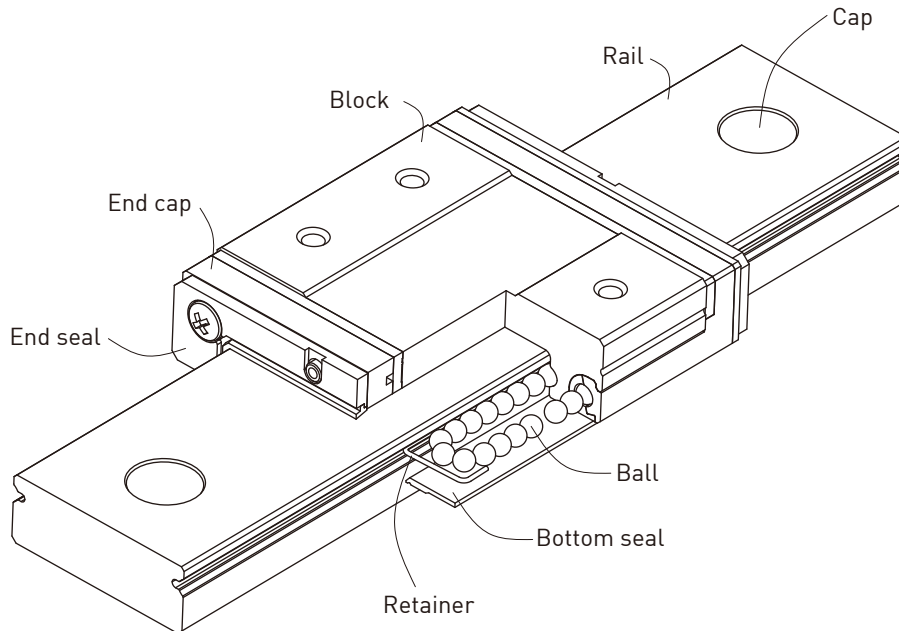
Miniature Type

2-4-7 Features of MGW-0 Series

Design features of wide type miniature guideways- MGW-0:

1. The enlarged width design increases the capacity of moment loading.
2. Gothic arch contact design has high rigidity characteristic in all directions.
3. Steel balls are held by a miniature retainer to keep balls from falling out, even when the blocks are removed from the rail.
4. Integrated design for recirculation system, which reduce 20% weight of block by using resin in the recirculation unit.

2-4-8 Construction of MGW-0 Series



- Rolling circulation system: Block, rail, ball, end cap and retainer
- Lubrication system: Grease nipple is available for MGW15-0, lubricated by grease gun. MGW5-0, MGW7-0, MGW9-0, MGW12-0 are lubricated by the hole at the side of the end cap.
- Dust protection system: End seal, bottom seal (optional size 9, 12, 15), cap (size12, 15)

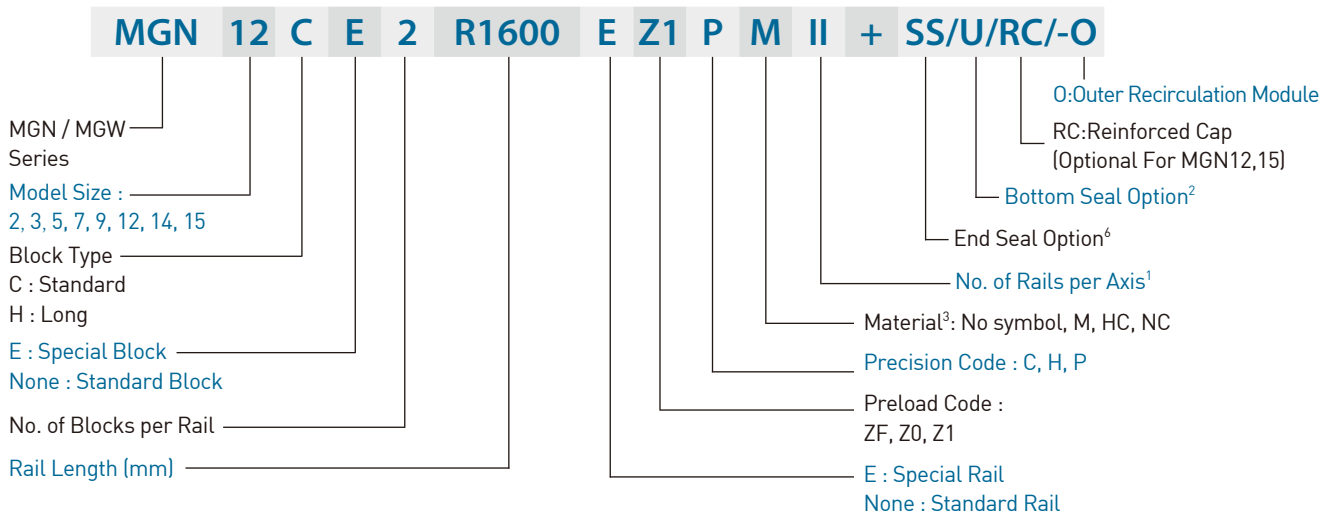
2-4-9 Application

MGN/MGW series can be used in various applications, such as semiconductor equipment, PCB /IC equipment, medical, robotics, measuring equipment, automation equipment, and other miniature sliding machinery.

2-4-10 Model Number of MG Series

MG Series linear guideway can be classified into non-interchangeable and interchangeable types, which are the same size. The interchangeable type is more convenient due to replaceable rails; however, the precision is less than non-interchangeable type. With strict dimension and quality control, the interchangeable type linear guideways are a suitable choice for customers when rails don't need to be paired. The model number contains information for the size, type, accuracy, preload, and so on.

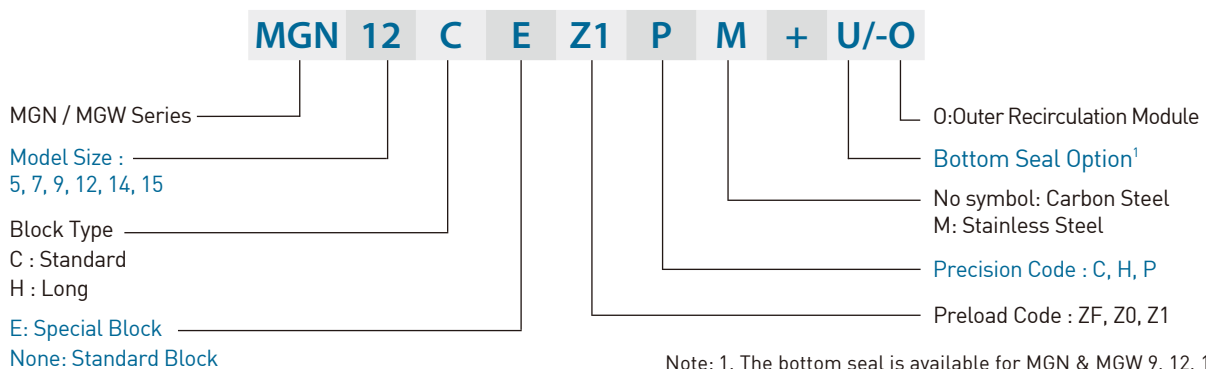
(1) Non-interchangeable type



- Note: 1. Symbol for No. of rails used on the same plane.
 No symbol indicates single rail in a axis.
 2. The bottom seal is available for MGN & MGW 9, 12, 14, 15.
 3. No symbol: Carbon Steel
 M: Stainless Steel
 HC: Carbon Steel+Hard Chrome Treatment
 NC: Carbon Steel+hicoating Treatment
 4. MG5 is only supplied with outer recirculation module.
 5. MGW2, MG3 and MGW14 are only supplied without outer recirculation module.
 6. The end seal is optional for MGN3, and it's available for SS symbol.

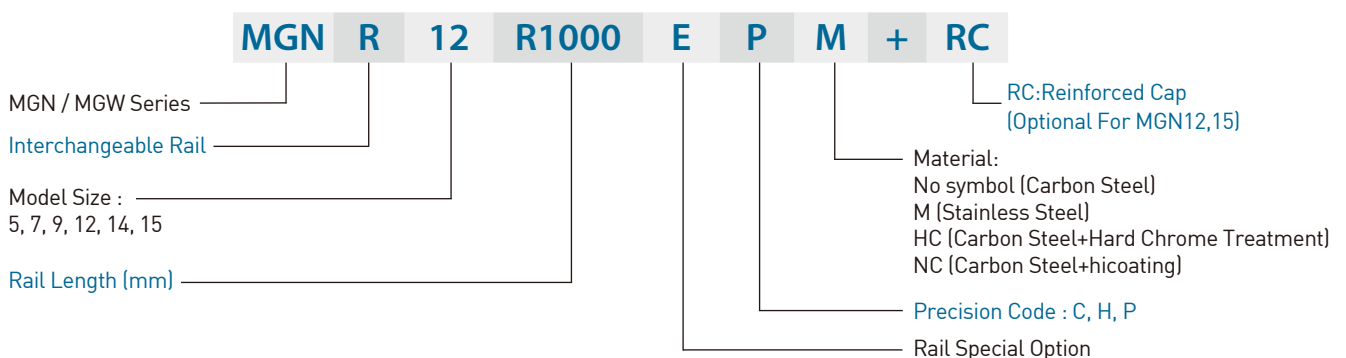
(2) Interchangeable type

○ Interchangeable Block



- Note: 1. The bottom seal is available for MGN & MGW 9, 12, 14, 15.
 2. MG5 is only supplied with outer recirculation module.
 3. No interchangeable offer of MG2 and MG3.
 4. MGW14 is only supplied without outer recirculation module.

○ Interchangeable Rail



MG Series

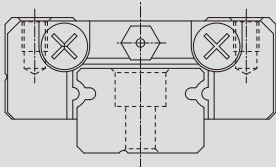
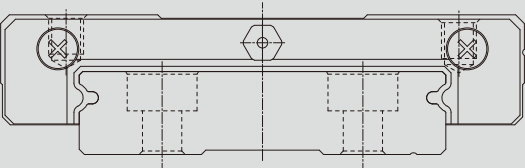
Miniature Type

2-4-11 Types

(1) Block types

HIWIN offers two types of linear guideways, flange and square types.

Table 2-4-1 Block Types

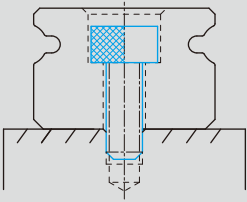
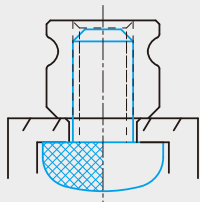
Type	Model	Shape	Height (mm)	Rail Length (mm)	Main Applications
Square	MGN-C MGN-H		4	30	<ul style="list-style-type: none"> ○ Printer ○ Robotics ○ Precision measure equipment ○ Semiconductor equipment
			↓	↓	
16	2000				
↓	↓				
Flange	MGW-C MGW-H		4	40	
			↓	↓	
16	2000				
↓	↓				

*Please refer to the chapter 2-4-14 for the dimensional detail.

(2) Rail types

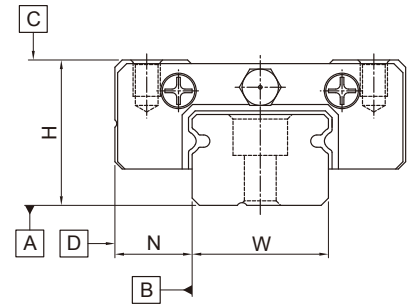
HIWIN offers standard top mounting and bottom mounting type.

Table 2-4-2 Rail Types

Mounting from Top	Mounting from bottom (MGN3)
	

2-4-12 Accuracy Classes

The accuracy of MGN/MGW 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 2-4-3 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 2-4-4 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
	Pair Variation of width N	0.03	0.02
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 2-4-5 Accuracy of Running Parallelism

Rail Length (mm)	Accuracy (μm)			Rail Length (mm)	Accuracy (μm)		
	(C)	(H)	(P)		(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				

2-4-13 Preload

MGN/MGW series provides three different preload levels for various applications.

Table 2-4-6 Preload Classes

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.

○ Stiffness performance

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

Table 2-4-7 Radial stiffness for MG Series

Load type	Series / Size	Stiffness (N/µm)		Series / Size	Stiffness (N/µm)	
		Z0	Z1		Z0	Z1
Standard	MGN5C-0	20	61	MGW5C-0	32	85
	MGN7C	26	73	MGW7C	44	112
	MGN9C	38	102	MGW9C	62	140
	MGN12C	44	105	MGW12C	72	148
	MGN15C	58	126	MGW15C	85	154
Long	MGN5H-0	26	79	-	-	-
	MGN7H	42	122	MGW7H	64	168
	MGN9H	56	153	MGW9H	81	190
	MGN12H	70	175	MGW12H	102	217
	MGN15H	89	202	MGW15H	122	235

2-4-14 Dust Proof Accessories

End seals on both sides of the block can prevent dust from entering the block and maintain the accuracy and service life of a linear guideway. End seals for MGN3 are optional, customers can order it by adding the mark "+SS" followed by the model number. For other size of MG series, end seals are standard accessories. Bottom seals are fixed under the skirt portion of the block to prevent dust from entering. Customers can order bottom seals by adding the mark "+U" followed by the model number. Sizes 9, 12, 14 and 15 provide bottom seals as an option, but size 2, 3, 5, 7 do not offer the option due to the space limit of H₁. Note that "H₁" would be reduced if bottom seals are attached, be aware of possible interference between block and mounting surface.

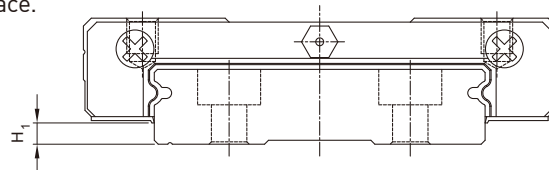


Table 2-4-8

Size	Bottom seal	H ₁ , mm	Size	Bottom seal	H ₁ , mm
-	-	-	MGW2	-	-
MGN3	-	-	MGW3	-	-
MGN7	-	-	MGW7	-	-
MGN9	●	1	MGW9	●	1.9
MGN12	●	2	MGW12	●	2.4
-	-	-	MGW14	●	2.4
MGN15	●	3	MGW15	●	2.4
MGN5-0	-	-	MGW5-0	-	-
MGN7-0	-	-	MGW7-0	-	-
MGN9-0	●	1.2	MGW9-0	●	1.95
MGN12-0	●	2	MGW12-0	●	2.45
MGN15-0	●	3	MGW15-0	●	2.45

● Bolt caps for rail mounting holes

Rail mounting hole caps prevent foreign matter from accumulating in the mounting holes. Caps are included with the rail package.

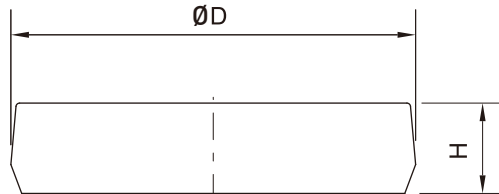


Table 2-4-9 Dimensions of Bolt Caps for Rail Mounting Holes

Rail size	Bolt size	Diameter(D) (mm)	Thickness(H) (mm)
MGN12	M3	6.15	1.2
MGN15	M3	6.15	1.2
MGW12	M4	8.15	2.2
MGW15	M4	8.15	2.2

2-4-15 Mounting Surface Accuracy Tolerance

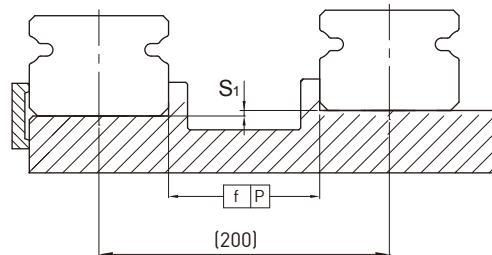


Table 2-4-10 Max. Parallelism Tolerance (P)

unit: μm

Size	Preload classes			Size	Preload classes		
	ZF	Z0	Z1		ZF	Z0	Z1
MG2	2	2	2	MG9	4	4	3
MG3	2	2	2	MG12	9	9	5
MG5	2	2	2	MG14	10	10	6
MG7	3	3	3	MG15	10	10	6

Table 2-4-11 Max. Tolerance of Reference Surface Height (S₁)

unit: μm

Size	Preload classes			Size	Preload classes		
	ZF	Z0	Z1		ZF	Z0	Z1
MG2	15	15	2	MG9	35	35	6
MG3	15	15	2	MG12	50	50	12
MG5	20	20	2	MG14	60	60	20
MG7	25	25	3	MG15	60	60	20

Table 2-4-12 Permissible Error of Mounting Surface

unit: mm

Size	Flatness of the Mounting Surface	Size	Flatness of the Mounting Surface
MG2	0.012/200	MG9	0.035/200
MG3	0.012/200	MG12	0.050/200
MG5	0.015/200	MG14	0.060/200
MG7	0.025/200	MG15	0.060/200

Note: The values above are suitable for preload of ZF/Z0. For preload of Z1 or using two(or more) rails on the same plane, 50% or less of the values above are recommended.

MG Series

Miniature Type

2-4-16 Cautions for Installation

- Shoulder heights and fillets

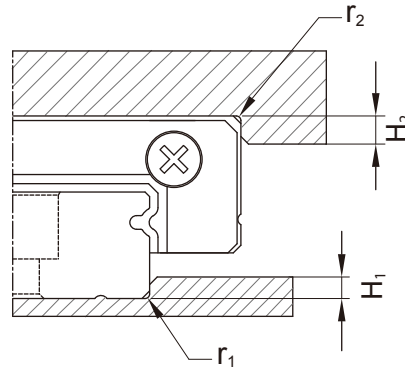


Table 2-4-13 Shoulder Heights and Fillets

Size	Max. radius of fillets r_1 (mm)	Max. radius of fillets r_2 (mm)	Shoulder height H_1 (mm)	Shoulder height H_2 (mm)
MGN3	0.1	0.2	0.6	1.5
MGN5	0.1	0.2	1.2	2
MGN7	0.2	0.2	1.2	3
MGN9	0.2	0.3	1.7	3
MGN12	0.3	0.4	1.7	4
MGN15	0.5	0.5	2.5	5
MGW2	0.1	0.2	0.6	1.5
MGW3	0.1	0.2	0.6	2
MGW5	0.1	0.2	1.2	2
MGW7	0.2	0.2	1.7	3
MGW9	0.3	0.3	2.5	3
MGW12	0.4	0.4	3	4
MGW14	0.4	0.4	3	5
MGW15	0.4	0.8	3	5

- Tightening torque of bolts for installation

Improper tightening of rail mounting bolts will seriously affect the accuracy of the linear guideway. The following table lists the recommended tightening torque for the specific bolt sizes.

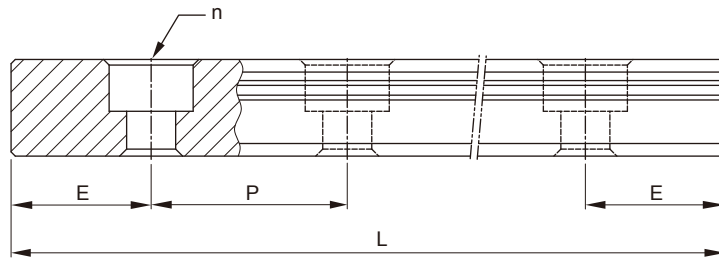
Table 2-4-14 Tightening Torque

Size	Bolt size	Torque, N-cm (kgf-cm)		
		Iron	Casting	Aluminum
MGN5	M2×0.4P×6L	57(5.9)	39.2(4)	29.4(3)
MGN7	M2×0.4P×6L	57(5.9)	39.2(4)	29.4(3)
MGN9	M3×0.5P×8L	186(19)	127(13)	98(10)
MGN12	M3×0.5P×8L	186(19)	127(13)	98(10)
MGN15	M3×0.5P×10L	186(19)	127(13)	98(10)
MGW3	M2×0.4P×6L	57(5.9)	39.2(4)	29.4(3)
MGW5	M2.5×0.45P×7L	118(12)	78.4(8)	58.8(6)
MGW7	M3×0.5P×6L	186(19)	127(13)	98(10)
MGW9	M3×0.5P×8L	186(19)	127(13)	98(10)
MGW12	M4×0.7P×8L	392(40)	274(28)	206(21)
MGW14	M4×0.7P×8L	392(40)	274(28)	206(21)
MGW15	M4×0.7P×10L	392(40)	274(28)	206(21)

Note : 1 kgf = 9.81 N

2-4-17 Standard and Maximum Lengths of Rail

Hiwin 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.



$$L = (n - 1) \times P + 2 \times E \quad \text{Eq.2.4}$$

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 2-4-15

unit: mm

Item	MGNR3	MGNR5	MGNR7	MGNR9	MGNR12	MGNR15	MGWR2	MGWR3	MGWR5	MGWR7	MGWR9	MGWR12	MGWR14	MGWR15
Standard Length L (n)	30(3)	40(3)	40(3)	55(3)	70(3)	70(2)	40(4)	40(3)	50(3)	50(2)	80(3)	110(3)	110(3)	110(3)
	40(4)	55(4)	55(4)	75(4)	95(4)	110(3)	60(6)	55(4)	70(4)	80(3)	110(4)	150(4)	150(4)	150(4)
	50(5)	70(5)	70(5)	95(5)	120(5)	150(4)	70(7)	70(5)	90(5)	110(4)	140(5)	190(5)	190(5)	190(5)
	60(6)	100(7)	85(6)	115(6)	145(6)	190(5)	80(8)	100(7)	110(6)	140(5)	170(6)	230(6)	230(6)	230(6)
	80(8)	130(9)	100(7)	135(7)	170(7)	230(6)	100(10)	130(9)	130(7)	170(6)	200(7)	270(7)	270(7)	270(7)
	100(10)	160(11)	130(9)	155(8)	195(8)	270(7)		160(11)	150(8)	200(7)	230(8)	310(8)	310(8)	310(8)
				175(9)	220(9)	310(8)			170(9)	260(9)	260(9)	350(9)	350(9)	350(9)
				195(10)	245(10)	350(9)				290(10)	290(10)	390(10)	390(10)	390(10)
				275(14)	270(11)	390(10)					350(14)	430(11)	430(11)	430(11)
				375(19)	320(13)	430(11)					500(19)	510(13)	510(13)	510(13)
					370(15)	470(12)					710(24)	590(15)	590(15)	590(15)
					470(19)	550(14)					860(29)	750(19)	750(19)	750(19)
				570(23)	670(17)						910(23)	910(23)	910(23)	
				695(28)	870(22)						1070(27)	1070(27)	1070(27)	
Pitch (P)	10	15	15	20	25	40	10	15	20	30	30	40	40	40
Distance to End (E _s)	5	5	5	7.5	10	15	5	5	5	10	10	15	15	15
Max. Standard Length	250(24)	250(17)	595(40)	1195(60)	1995(80)	1990(50)	250(24)	250(17)	250(13)	590(20)	1970(66)	1990(50)	1790(45)	1990(50)
Max. Length	250 ⁶	250 ⁶	600	1200 ⁷	2000	2000	250 ⁶	250 ⁶	250 ⁶	600 ⁸	2000	2000	1800	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. Fixing screws for MGN5's mounting holes are appended.

4. If smaller E value is needed, please contact HIWIN.

5. MGWR14 is only supplied with carbon steel.

6. MGWR2, MGNR3, MGWR3, MGNR5, MGWR5 are only supplied with stainless steel.

7. MGNR9 of stainless steel is supplied with the maximum length of 1200mm; MGNR9 of carbon steel is supplied with the maximum length of 1000mm.

8. MGWR7 of stainless steel is supplied with the maximum length of 600mm; MGWR7 of carbon steel is supplied with the maximum length of 2000mm.

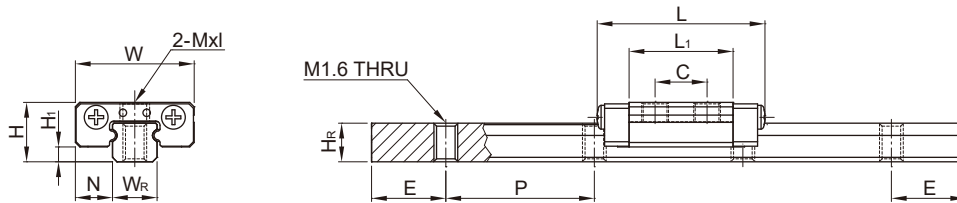
MG Series

Miniature Type

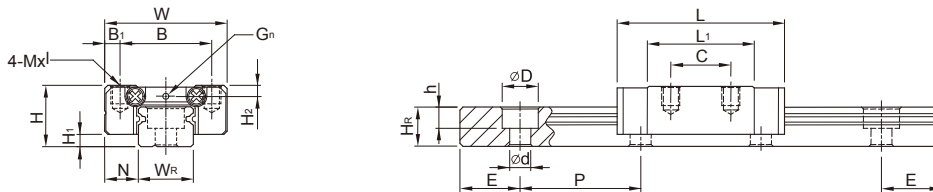
2-4-18 Dimensions for MGN/MGW Series

(1) MGN-C / MGN-H

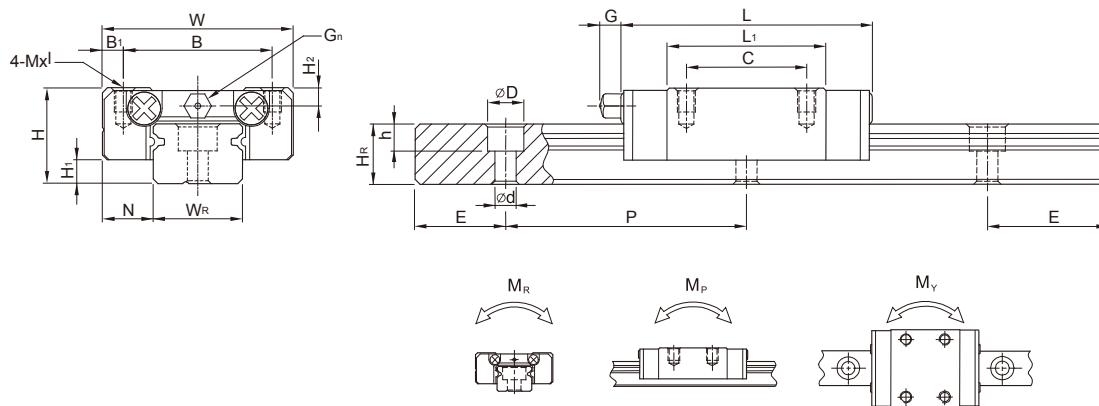
MGN3



MGN7, MGN9, MGN12



MGN15



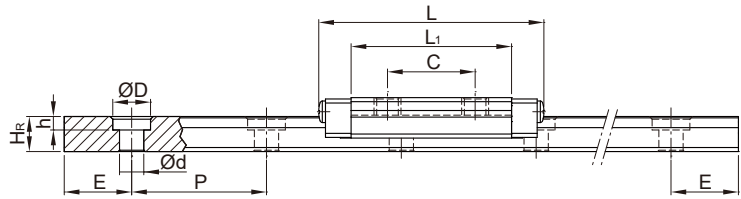
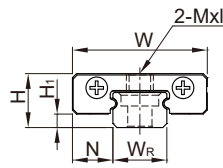
Model No.	Dimensions of Assembly (mm)		Dimensions of Block (mm)										Dimensions of Rail (mm)					Mounting Bolt for Rail (mm)	Basic Dynamic Load Rating C (kN)	Basic Static Load Rating C ₀ (kN)	Static Rated Moment			Weight		
	H	H ₁	N	W	B	B ₁	C	L ₁	L	G	G _n	MxI	H ₂	W _R	H _R	D	h				d	P	E	M _R (N-m)	M _P (N-m)	M _Y (N-m)
MGN 3C	4	1	2.5	8	-	-	3.5	7	11.3	-	-	M1.6x1.3	-	3	2.6	M1.6 THRU	10	5	5	5	5	0.001	0.05			
MGN 3H							5.5	11	15.3			M2x1.3										0.002				
MGN 7C	8	1.5	5	17	12	2.5	8	13.5	22.5	-	Ø1.2	M2x2.5	1.5	7	4.8	4.2	2.3	2.4	15	5	0.010	0.22				
MGN 7H							13	21.8	30.8													0.015				
MGN 9C	10	2	5.5	20	15	2.5	10	18.9	28.9	-	Ø1.4	M3x3	1.8	9	6.5	6	3.5	3.5	20	7.5	0.016	0.38				
MGN 9H							16	29.9	39.9													0.026				
MGN 12C	13	3	7.5	27	20	3.5	15	21.7	34.7	-	Ø2	M3x3.5	2.5	12	8	6	4.5	3.5	25	10	0.034	0.65				
MGN 12H							20	32.4	45.4													0.054				
MGN 15C	16	4	8.5	32	25	3.5	20	26.7	42.1	4.5	M3	M3x4	3	15	10	6	4.5	3.5	40	15	0.059	1.06				
MGN 15H							25	43.4	58.8													0.092				

Note : 1. 1 kgf = 9.81N

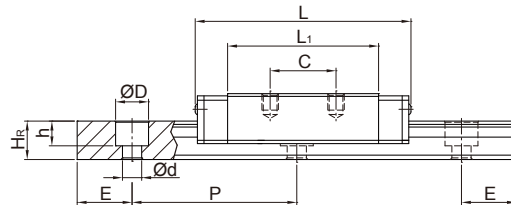
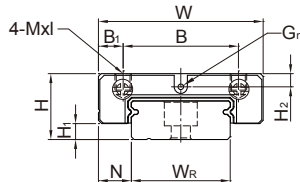
2. MG3 blocks should not be removed from the rail. If removing the blocks is necessary, the blocks should be kept on the block inserts.

(2) MGW-C / MGW-H

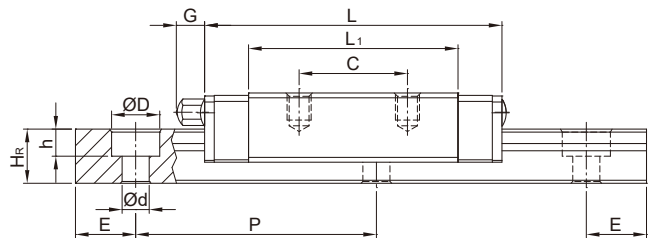
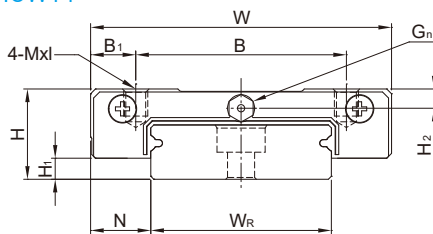
MGW2



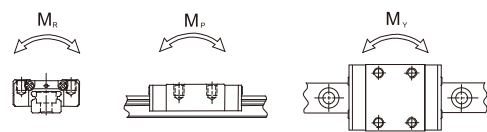
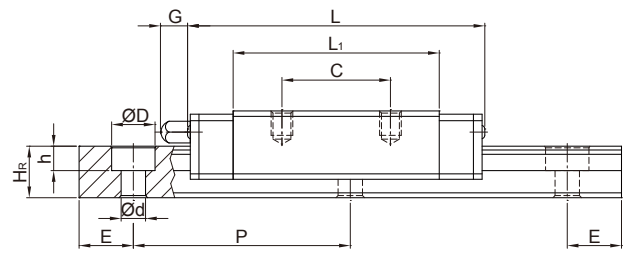
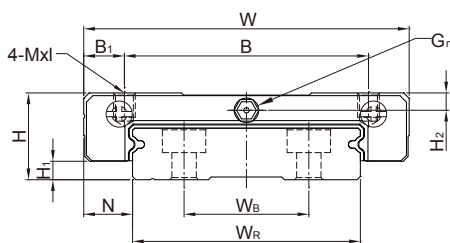
MGW3, MGW7, MGW9, MGW12



MGW14



MGW15



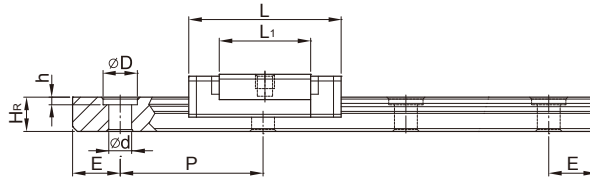
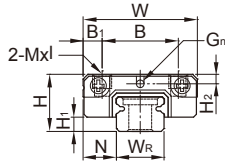
Model No.	Dimensions of Assembly (mm)		Dimensions of Block (mm)											Dimensions of Rail (mm)							Mounting Bolt for Rail (mm)	Basic Dynamic Load Rating C (kN)	Basic Static Load Rating C ₀ (kN)	Static Rated Moment			Weight		
	H	H ₁	N	W	B	B ₁	C	L ₁	L	G	G _n	Mxl	H ₂	W _R	W _B	H _R	D	h	d	P				E	M _R	M _P	M _Y	Block kg	Rail kg/m
																										N-m	N-m	N-m	
MGW 2C	4	1	3	10	-	-	6.5	11.9	16.7	-	-	M2x1.3	-	4	-	2.6	2.8	1	1.8	10	5	M1.6	0.41	0.73	1.1	2.2	2.2	0.002	0.07
MGW 3C	4.5	1	3	12	-	6	4.5	9.6	15	-	Ø0.5	M2-THRU	0.65	6	-	2.9	3.6	1.5	2.4	15	5	M2	0.54	0.84	2.3	1.3	1.3	0.003	0.13
MGW 3H							8	14.2	19.6														0.68	1.18	3.3	2.7	2.7	0.004	
MGW 7C	9	1.9	5.5	25	19	3	10	21	31.2	-	Ø1.2	M3x3	1.85	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
MGW 7H							19	30.8	41														1.77	3.14	23.45	15.53	15.53	0.029	
MGW 9C	12	2.9	6	30	21	4.5	12	27.5	39.3	-	Ø1.2	M3x3	2.4	18	-	7	6	4.5	3.5	30	10	M3x8	2.75	4.12	40.12	18.96	18.96	0.040	0.91
MGW 9H							23	3.5	24														38.5	50.7	3.43	5.89	54.54	34.00	
MGW 12C	14	3.4	8	40	28	6	15	31.3	46.1	-	Ø1.2	M3x3.6	2.8	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
MGW 12H							28	45.6	60.4														5.10	8.24	102.70	57.37	57.37	0.103	
MGW 14C	15	3.5	10	50	35	7.5	18	34.8	49.4	4.7	M3	M4x4.5	3.2	30	-	9	8	4.5	4.5	40	15	M4	5.90	8.44	116.96	48.91	48.91	0.110	1.98
MGW 14H							35	53	67.6														7.70	12.33	170.94	102.12	102.12	0.162	
MGW 15C	16	3.4	9	60	45	7.5	20	38	54.8	5.2	M3	M4x4.2	3.2	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
MGW 15H							35	57	73.8														8.93	13.38	299.01	122.60	122.60	0.215	

Note : 1. 1 kgf = 9.81N

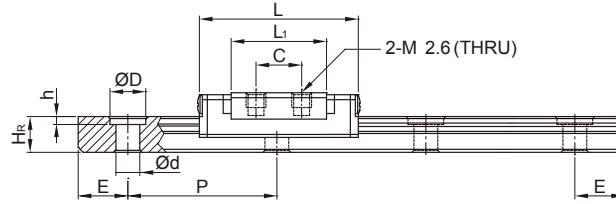
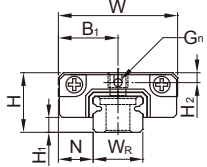
2. MG2 and MG3 blocks should not be removed from the rail. If removing the blocks is necessary, the blocks should be kept on the block inserts.

(3) MGN-C-0 / MGN-H-0

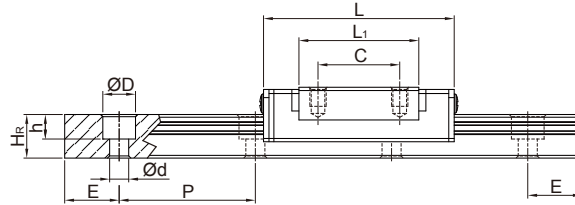
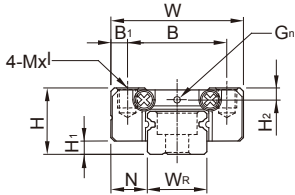
MGN5-0



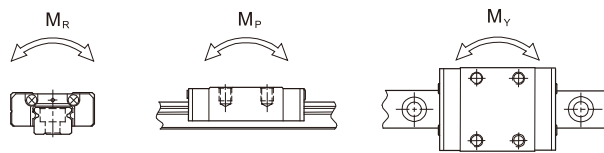
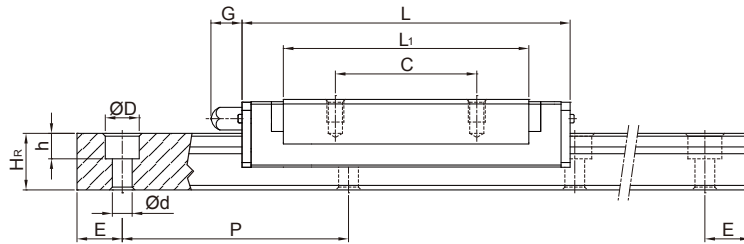
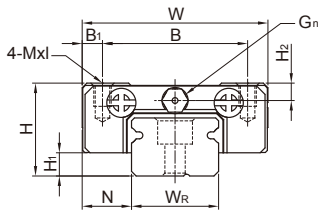
MGN5HL-0



MGN7-0, MGN9-0, MGN12-0



MGN15-0

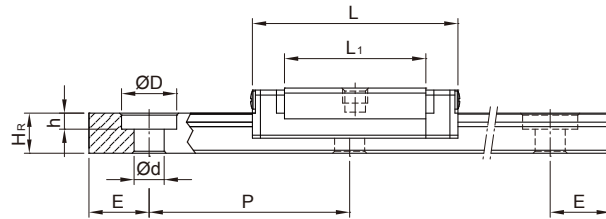
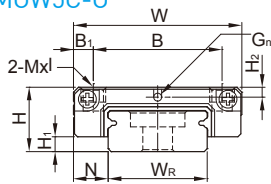


Model No.	Dimensions of Assembly (mm)		Dimensions of Block (mm)											Dimensions of Rail (mm)					Mounting Bolt for Rail (mm)	Basic Dynamic Load Rating C (kN)	Basic Static Load Rating C ₀ (kN)	Static Rated Moment			Weight								
	H	H ₁	N	W	B	B ₁	C	L ₁	L	G	G _n	Mxl	H ₂	W _R	H _R	D	h	d				P	E	M _R	M _P	M _Y	Block kg	Rail kg/m					
																									N-m	N-m	N-m						
MGN 5C-0					8	2	-	9.6	16			M2x1.5															0.54	0.84	2	1.3	1.3	0.003	
MGN 5H-0	6	1.5	3.5	12	8	2	-	12.6	19		0.8	M2x1.5	1	5	3.6	3.6	0.8	2.4	15	5	M2x6						0.67	1.08	2.6	2.3	2.3	0.004	0.15
MGN 5HL-0					-	6	7	12.6	19			M2.6-THRU															0.67	1.08	2.6	2.3	2.3	0.004	
MGN7C-0					12	2.5	8	13.5	22.5			M2x2.5															0.98	1.24	4.70	2.84	2.84	0.008	
MGN7H-0	8	1.5	5	17	12	2.5	13	21.8	30.8		Ø1.2	M2x2.5	1.5	7	4.8	4.2	2.3	2.4	15	5	M2x6						1.37	1.96	7.64	4.80	4.80	0.012	0.22
MGN 9C-0					15	2.5	10	19.4	30			M3x3															2.01	2.84	13.05	8.97	8.97	0.012	
MGN9H-0	10	2.2	5.5	20	15	2.5	16	29.3	39.9		Ø1.4	M3x3	1.8	9	6.5	6	3.5	3.5	20	7.5	M3x8						2.5	3.93	19.71	21.47	21.47	0.02	0.38
MGN 12C-0					20	3.5	15	22	35			M3x3.5															2.84	3.92	25.48	13.72	13.72	0.025	
MGN12H-0	13	3	7.5	27	20	3.5	20	34.6	47.6		Ø2	M3x3.5	2.5	12	8	6	4.5	3.5	25	10	M3x8						4.27	5.9	38.4	37.49	37.49	0.047	0.65
MGN 15C-0					25	3.5	20	26.7	41.3			M3x4															4.61	5.59	45.08	21.56	21.56	0.057	
MGN 15H-0	16	4	8.5	32	25	3.5	25	43.4	58	4.50	M3	M3x4	3	15	10	6	4.5	3.5	40	15	M3x10						6.37	9.11	73.5	57.82	57.82	0.088	1.06

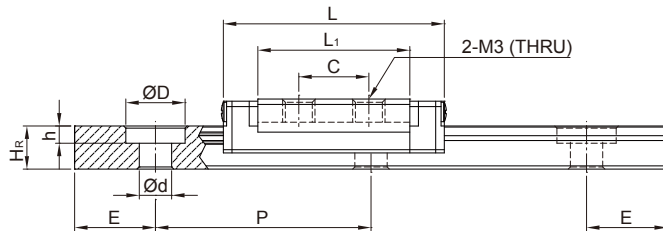
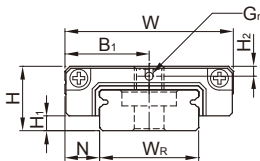
Note : 1 kgf = 9.81 N

[4] MGW-C-0 / MGW-H-0

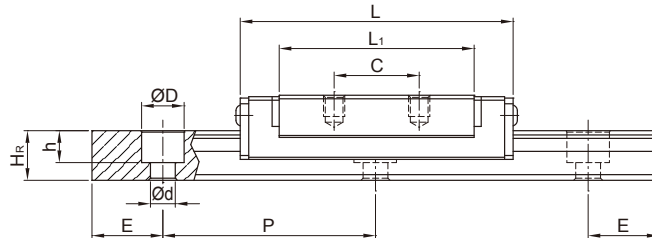
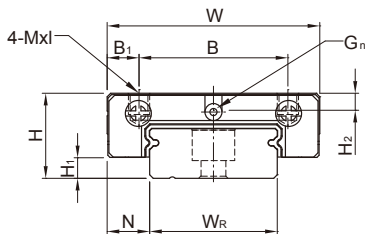
MGW5C-0



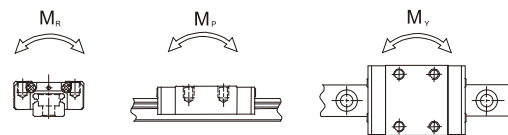
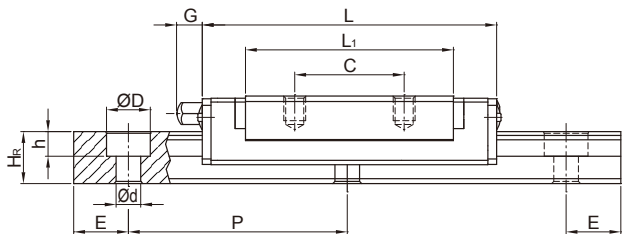
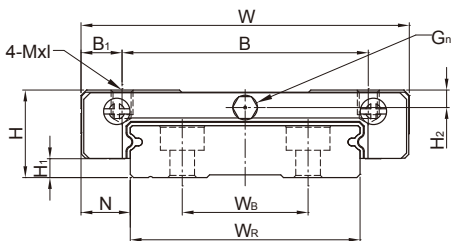
MGW5CL-0



MGW7-0, MGW9-0, MGW12-0



MGW15-0



Model No.	Dimensions of Assembly (mm)			Dimensions of Block (mm)										Dimensions of Rail (mm)					Mounting Bolt for Rail (mm)	Basic Dynamic Load Rating C ₀ (kN)	Basic Static Load Rating C ₀ (kN)	Static Rated Moment			Weight				
	H	H ₁	N	W	B	B ₁	C	L ₁	L	G	G _n	Mxl	H ₂	W _R	W _B	H _R	D	h				d	P	E	M _R N-m	M _P N-m	M _Y N-m	Block kg	Rail kg/m
MGW 5C-0	6.5	1.5	3.5	17	13	2	-	14.1	20.5	-	Ø0.8	M2.5x1.5	1	10	-	4	5.5	1.6	3	20	5	M2.5X7	0.68	1.18	5.5	2.7	2.7	0.006	0.34
MGW 5CL-0					-	8.5	6.5	14.1	20.5	M3-THRU																			
MGW 7C-0	9	1.9	5.5	25	19	3	10	21	31.2	-	Ø1.2	M3x3	1.85	14	-	5.2	6	3.2	3.5	30	10	M3x6	1.37	2.06	15.70	7.14	7.14	0.018	0.51
MGW 7H-0					19	3	19	30.8	41	M3x3																			
MGW 9C-0	12	2.95	6	30	21	4.5	12	27.5	39.7	-	Ø1.2	M3x3	2.65	18	-	7	6	4.5	3.5	30	10	M3x8	2.75	4.12	40.12	18.96	18.96	0.038	0.91
MGW 9H-0					23	3.5	24	38.5	50.7	M3x3																			
MGW 12C-0	14	3.45	8	40	28	6	15	31.3	45.1	-	Ø1.2	M3x3.6	2.8	24	-	8.5	8	4.5	4.5	40	15	M4x8	3.92	5.59	70.34	27.8	27.8	0.066	1.49
MGW 12H-0					28	6	28	45.6	59.4	M3x3.6																			
MGW 15C-0	16	3.45	9	60	45	7.5	20	38	53.8	5.2	M3	M4x4.2	3.2	42	23	9.5	8	4.5	4.5	40	15	M4x10	6.77	9.22	199.34	56.66	56.66	0.138	2.86
MGW 15H-0					45	7.5	35	57	72.8			M4x4.2																	

Note : 1 kgf = 9.81 N