

CRG Series

High Rigidity Roller Type with Cover Strip

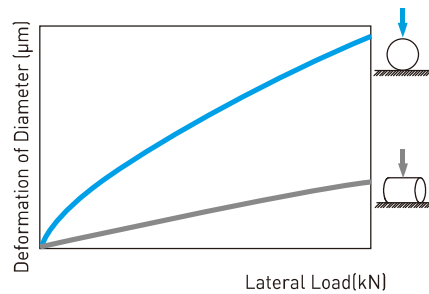
2-10 CRG Series - High Rigidity Roller Type Linear Guideway with Cover Strip

2-10-1 Advantages and features

CRG series linear guideways are a cover strip type,featuring high rigidity,high load.It also has four-way load characteristics.This specification can be matched with the latest slide dustproof accessories.

(1) Super high rigidity

The CRG series is a type of linear guideway that uses rollers as the rolling elements. Rollers have a greater contact area than balls so that the roller guideway features higher load capacity and greater rigidity. The figure shows the rigidity of a roller and a ball with equal volume.



(2) Operating life increased

Compare with the ball element, the contact pressure of rolling element is distributed on the line region. Therefore, stress concentration was reduced significantly and the CRG series offers longer running life.

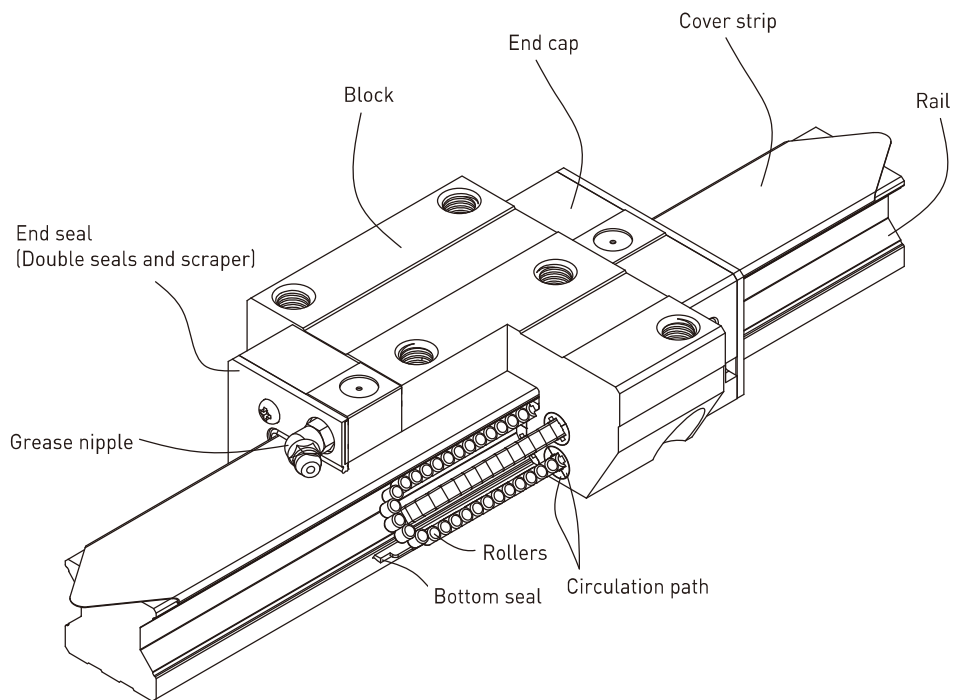
(3) Latest dustproof accessory for rail

The CRG series offers a special stainless cover strip.



Cover strip

2-10-2 Construction of CRG Series



- Rolling circulation system: Block, Rail, End cap, Circulation path, Rollers
- Lubrication system: Grease nipple and piping joint
- Dust protection system: End seal, Bottom seal, without CAP, Cover Strip, Double seals and Scraper

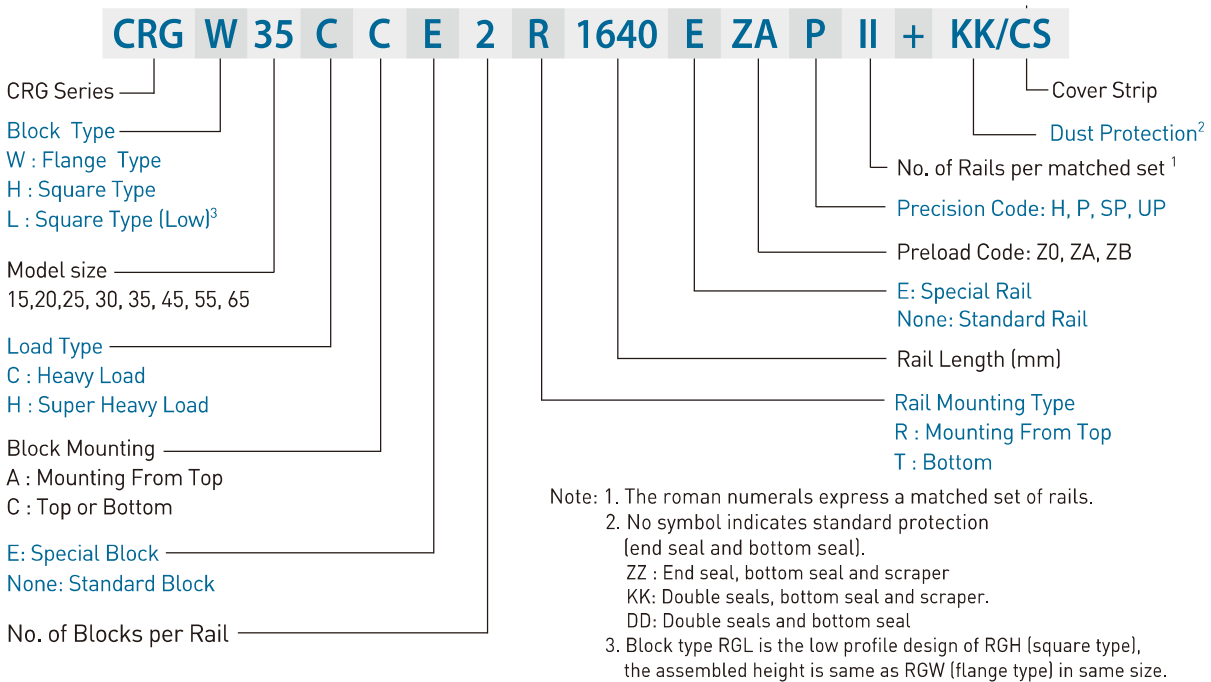
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2-10-3 Model Number of CRG series

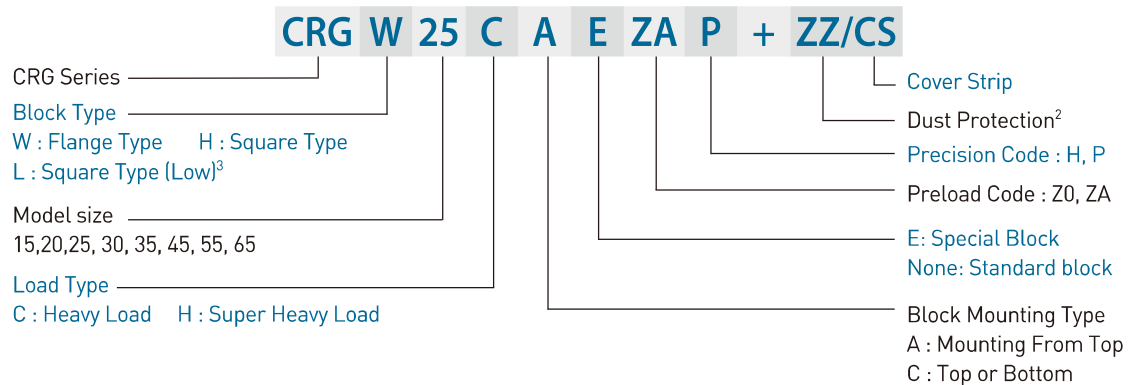
CRG series linear guideways are classified into non-interchangeable and interchangeable types. The sizes of these two types are the same as one another. The main difference is that the interchangeable type of blocks and rails can be freely exchanged and they can maintain P-class accuracy. Because of strict dimensional control, the interchangeable type linear guideways are a wise choice for customers when rails do not need to be matched for an axis. The model number of the CRG series identifies the size, type, accuracy class, preload class, etc.

[1] Non-interchangeable type

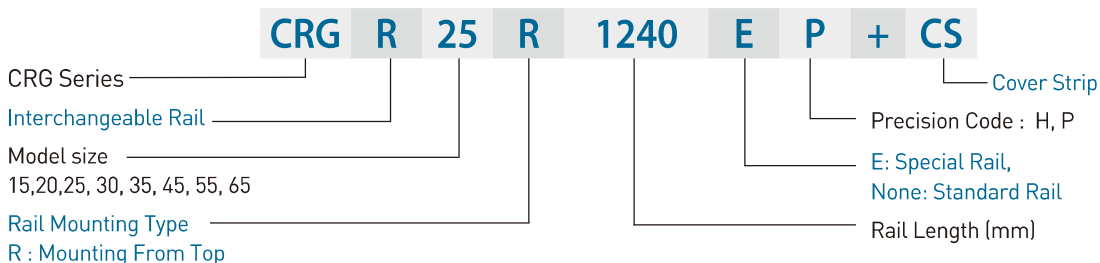


[2] Interchangeable type

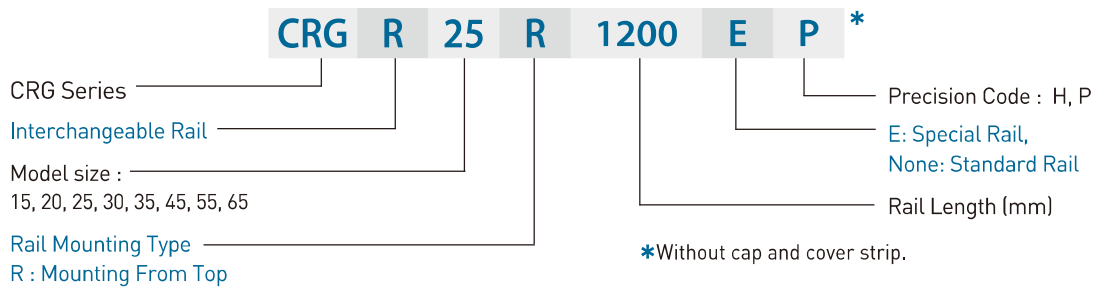
Model Number of CRG Block



Model Number of CRG Rail



○ Model Number of CRG Rail



2-10-4 Types

(1) Block types

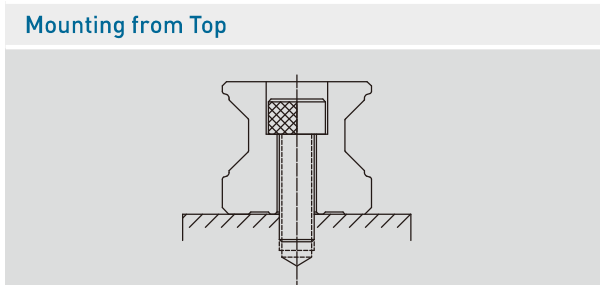
HIWIN offers two types of guide blocks, flange and square type. Because of the low assembly height and large mounting surface, the flange type is excellent for heavy moment load applications.

Table 2-10-1 Block Types

Type	Model	Shape	Height (mm)	Rail Length (mm)	Main Applications
Square	CRGH-CA CRGH-HA		28	100	<ul style="list-style-type: none"> ○ Automation Systems ○ Transportation equipment ○ CNC machining centers ○ Heavy duty cutting machines
			↓	↓	
Square (low)	CRGL-CA CRGL-HA		24	100	<ul style="list-style-type: none"> ○ CNC grinding machines ○ Injection molding machines ○ Plano millers ○ Devices requiring high rigidity ○ Devices requiring high load capacity
			↓	↓	
Flange	CRGW-CC CRGW-HC		24	100	<ul style="list-style-type: none"> ○ Electric discharge machines
			↓	↓	
			90	4000	

(2) Rail types

Table 2-10-2 Rail Types



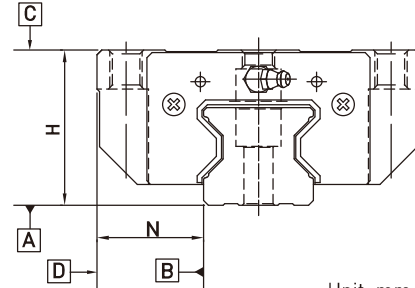
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2-10-5 Accuracy Classes

The accuracy of the CRG series can be classified into four classes: high (H), precision (P), super precision (SP) and ultra precision (UP). Customers may choose the class by referencing the accuracy requirements of the applied equipment.

(1) Accuracy of non-interchangeable



Unit: mm

Table 2-10-3 Accuracy Standards

Item	CRG - 15, 20			
	High (H)	Precision (P)	Super Precision (SP)	Ultra Precision (UP)
Dimensional tolerance of height H	± 0.03	0 - 0.03	0 - 0.015	0 - 0.008
Dimensional tolerance of width N	± 0.03	0 - 0.03	0 - 0.015	0 - 0.008
Variation of height H	0.01	0.006	0.004	0.003
Variation of width N	0.01	0.006	0.004	0.003
Running parallelism of block surface C to surface A	See Table 2-10-11			
Running parallelism of block surface D to surface B	See Table 2-10-11			

Table 2-10-4 Accuracy Standards

Unit: mm

Item	CRG - 25, 30, 35			
	High (H)	Precision (P)	Super Precision (SP)	Ultra Precision (UP)
Dimensional tolerance of height H	± 0.04	0 - 0.04	0 - 0.02	0 - 0.01
Dimensional tolerance of width N	± 0.04	0 - 0.04	0 - 0.02	0 - 0.01
Variation of height H	0.015	0.007	0.005	0.003
Variation of width N	0.015	0.007	0.005	0.003
Running parallelism of block surface C to surface A	See Table 2-10-11			
Running parallelism of block surface D to surface B	See Table 2-10-11			

Table 2-10-5 Accuracy Standards

Unit: mm

Item	CRG - 45, 55			
	High (H)	Precision (P)	Super Precision (SP)	Ultra Precision (UP)
Dimensional tolerance of height H	± 0.05	0 - 0.05	0 - 0.03	0 - 0.02
Dimensional tolerance of width N	± 0.05	0 - 0.05	0 - 0.03	0 - 0.02
Variation of height H	0.015	0.007	0.005	0.003
Variation of width N	0.02	0.01	0.007	0.005
Running parallelism of block surface C to surface A	See Table 2-10-11			
Running parallelism of block surface D to surface B	See Table 2-10-11			

Table 2-10-6 Accuracy Standards

Unit: mm

Item	CRG - 65			
	High (H)	Precision (P)	Super Precision (SP)	Ultra Precision (UP)
Dimensional tolerance of height H	± 0.07	0 - 0.07	0 - 0.05	0 - 0.03
Dimensional tolerance of width N	± 0.07	0 - 0.07	0 - 0.05	0 - 0.03
Variation of height H	0.02	0.01	0.007	0.005
Variation of width N	0.025	0.015	0.01	0.007
Running parallelism of block surface C to surface A	See Table 2-10-11			
Running parallelism of block surface D to surface B	See Table 2-10-11			

(2) Accuracy of interchangeable

Table 2-10-7 Accuracy Standards

Unit: mm

Item	CRG - 15, 20	
	High (H)	Precision (P)
Dimensional tolerance of height H	± 0.03	± 0.015
Dimensional tolerance of width N	± 0.03	± 0.015
Variation of height H	0.01	0.006
Variation of width N	0.01	0.006
Running parallelism of block surface C to surface A	See Table 2-10-11	
Running parallelism of block surface D to surface B	See Table 2-10-11	

Table 2-10-8 Accuracy Standards

Unit: mm

Item	CRG - 25, 30, 35	
	High (H)	Precision (P)
Dimensional tolerance of height H	± 0.04	± 0.02
Dimensional tolerance of width N	± 0.04	± 0.02
Variation of height H	0.015	0.007
Variation of width N	0.015	0.007
Running parallelism of block surface C to surface A	See Table 2-10-11	
Running parallelism of block surface D to surface B	See Table 2-10-11	

Table 2-10-9 Accuracy Standards

Unit: mm

Item	CRG - 45, 55	
	High (H)	Precision (P)
Dimensional tolerance of height H	± 0.05	± 0.025
Dimensional tolerance of width N	± 0.05	± 0.025
Variation of height H	0.015	0.007
Variation of width N	0.02	0.01
Running parallelism of block surface C to surface A	See Table 2-10-11	
Running parallelism of block surface D to surface B	See Table 2-10-11	

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Table 2-10-10 Accuracy Standards

Unit: mm

Item	CRG - 65	
	High (H)	Precision (P)
Dimensional tolerance of height H	± 0.07	± 0.035
Dimensional tolerance of width N	± 0.07	± 0.035
Variation of height H	0.02	0.01
Variation of width N	0.025	0.015
Running parallelism of block surface C to surface A	See Table 2-10-11	
Running parallelism of block surface D to surface B	See Table 2-10-11	

(3) Accuracy of running parallelism

Table 2-10-11 Accuracy of Running Parallelism

Rail Length (mm)	Accuracy (µm)			
	H	P	SP	UP
~ 100	7	3	2	2
100 ~ 200	9	4	2	2
200 ~ 300	10	5	3	2
300 ~ 500	12	6	3	2
500 ~ 700	13	7	4	2
700 ~ 900	15	8	5	3
900 ~ 1,100	16	9	6	3
1,100 ~ 1,500	18	11	7	4
1,500 ~ 1,900	20	13	8	4
1,900 ~ 2,500	22	15	10	5
2,500 ~ 3,100	25	18	11	6
3,100 ~ 3,600	27	20	14	7
3,600 ~ 4,000	28	21	15	7

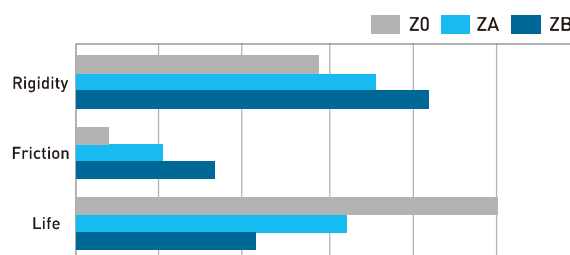
2-10-6 Preload

A preload can be applied to each guideway using oversized rollers. Generally, a linear motion guideway has negative clearance between the raceway and rollers to improve stiffness and maintain high precision. The CRG series linear guideway offers three standard preloads for various applications and conditions.

Table 2-10-12

Class	Code	Preload	Condition
Light Preload	Z0	0.02C~ 0.04C	Certain load direction, low impact, low precision required
Medium Preload	ZA	0.07C~0.09C	High rigidity required, high precision required
Heavy Preload	ZB	0.12C~ 0.14C	Super high rigidity required, with vibration and impact

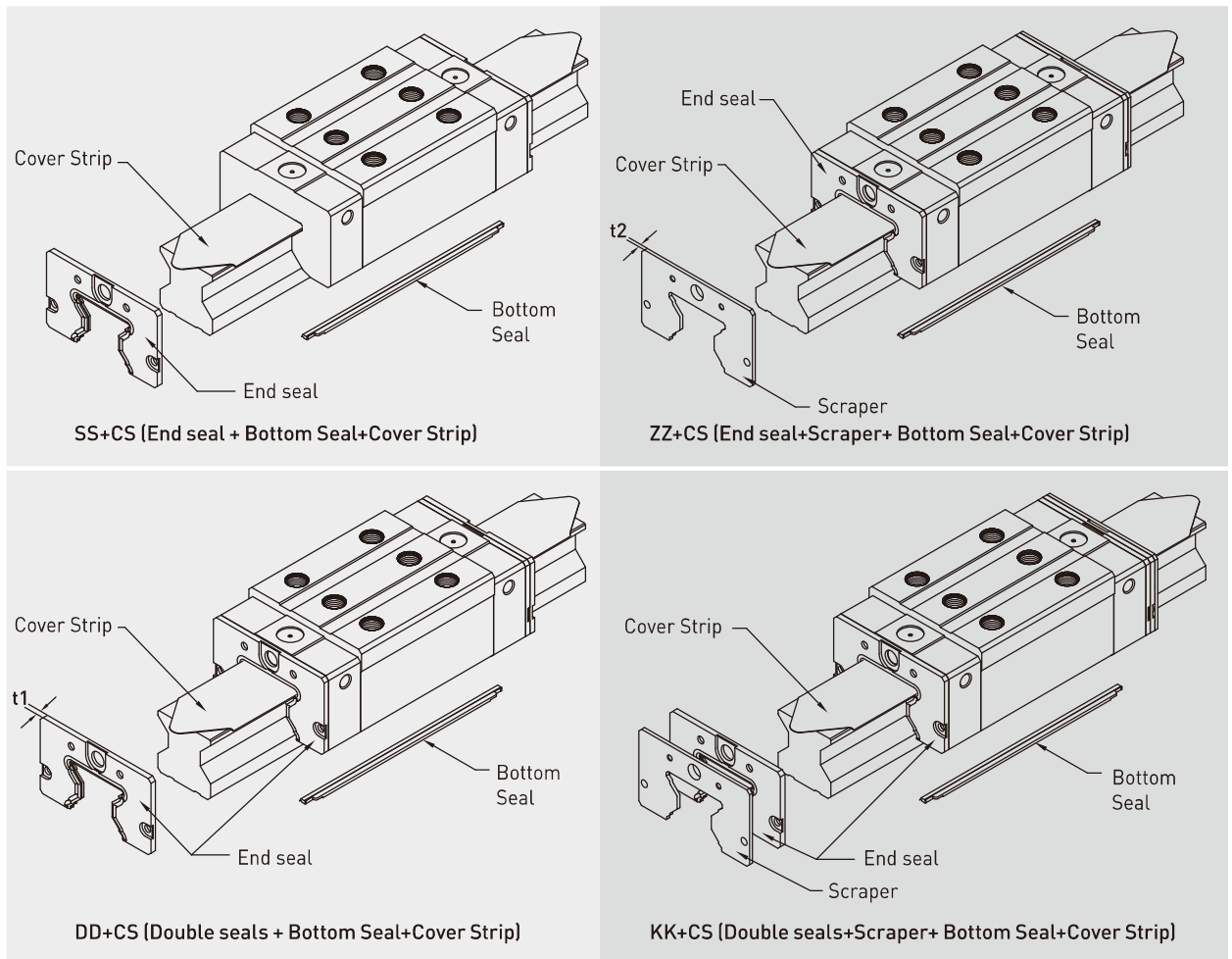
The figure shows the relationship between the rigidity, friction and nominal life. A preload no larger than ZA would be recommended for smaller model sizes to avoid over-preload affecting the life of the guideway.



2-10-7 Dust Proof Accessories

(1) Codes of accessories

Table 2-10-13



(2) End seal and bottom seal

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

(3) Double seals

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

Table 2-10-14 Dimensions of end seal

Size	Thickness (t1) (mm)	Size	Thickness (t1) (mm)
CRG15 ES	2.2	CRG35 ES	2.5
CRG20 ES	2.2	CRG45 ES	3.6
CRG25 ES	2.2	CRG55 ES	3.6
CRG30 ES	2.4	CRG65 ES	4.4

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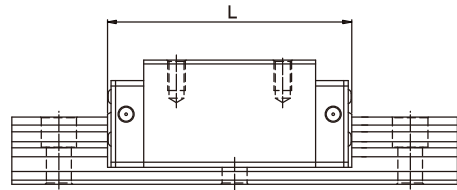
(4) Scraper

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

Table 2-10-15 Dimensions of scraper

Size	Thickness (t2) (mm)	Size	Thickness (t2) (mm)
CRG15 SC	1.0	CRG35 SC	1.5
CRG20 SC	1.0	CRG45 SC	1.5
CRG25 SC	1.0	CRG55 SC	1.5
CRG30 SC	1.5	CRG65 SC	1.5

(5) Dimensions of block equipped with the dustproof parts



unit: mm

Table 2-10-16 Overall block length

Size	Overall block length (L)			
	SS	ZZ	DD	KK
CRG15C	68.0 (70.4)	70.0 (74.4)	72.4 (74.8)	74.4 (78.8)
CRG20C	86.0 (88.4)	88.0 (92.4)	90.4 (92.8)	92.4 (96.8)
CRG20H	106.0 (108.4)	108.0 (112.4)	110.4 (112.8)	112.4 (116.8)
CRG25C	97.9 (101.5)	99.9 (105.9)	102.3 (105.9)	104.3 (110.3)
CRG25H	114.4 (118)	116.4 (122.4)	118.8 (122.4)	120.8 (126.8)
CRG30C	109.8 (113.4)	112.8 (118.8)	114.6 (118.2)	117.6 (123.6)
CRG30H	131.8 (135.4)	134.8 (140.8)	136.6 (140.2)	139.6 (145.6)
CRG35C	124.0 (129.4)	127.0 (135.0)	129.0 (134.4)	132.0 (140.0)
CRG35H	151.5 (156.9)	154.5 (162.5)	156.5 (161.9)	159.5 (167.5)
CRG45C	153.2 (156.4)	156.2 (164.2)	160.4 (163.6)	163.4 (171.4)
CRG45H	187.0 (190.2)	190.0 (198.0)	194.2 (197.4)	197.2 (205.2)
CRG55C	183.7 (186.9)	186.7 (194.7)	190.9 (194.1)	193.9 (201.9)
CRG55H	232.0 (235.2)	235.0 (243.0)	239.2 (242.4)	242.2 (250.2)
CRG65C	232.0 (236.0)	235.0 (245.0)	240.8 (244.8)	243.8 (253.8)
CRG65H	295.0 (299.0)	298.0 (308.0)	303.8 (307.8)	306.8 (316.8)

Note : The marking of “()” denotes the maximum block length with screws, lips of end seals, etc.

2-10-8 Friction

The maximum value of resistance per end seal are as shown in the table.

Table 2-10-17 Seal Resistance

Size	Resistance N (kgf)	Size	Resistance N (kgf)
CRG15	1.96 [0.2]	CRG35	3.53 [0.36]
CRG20	2.45 [0.25]	CRG45	4.21 [0.43]
CRG25	2.74 [0.28]	CRG55	5.09 [0.52]
CRG30	3.31 [0.31]	CRG65	6.66 [0.68]

2-10-9 The Accuracy Tolerance of Mounting Surface

(1) The accuracy tolerance of rail-mounting surface

As long as the accuracy requirements of the mounting surfaces shown in the following tables are met, the high accuracy, high rigidity and long life of the CRG series linear guideway will be maintained without any difficulty.

- The parallelism tolerance of reference surface (P)

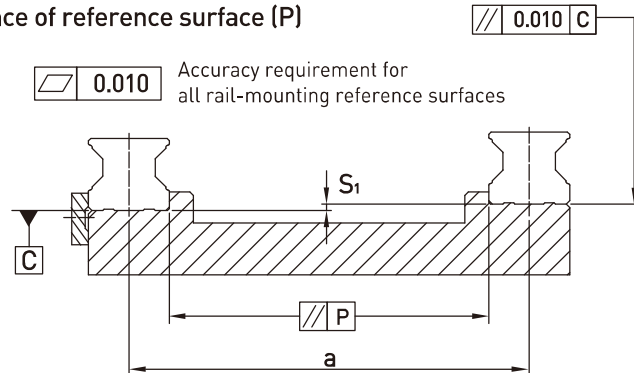


Table 2-10-18 Max. Parallelism Tolerance (P)

unit: μm

Size	Preload classes		
	Light Preload (Z0)	Medium Preload (ZA)	Heavy Preload (ZB)
CRG15	5	3	3
CRG20	8	6	4
CRG25	9	7	5
CRG30	11	8	6
CRG35	14	10	7
CRG45	17	13	9
CRG55	21	14	11
CRG65	27	18	14

- The accuracy tolerance of reference surface height (S_1)

$$S_1 = a \times K$$

S_1 : Max. tolerance of height

a : Distance between paired rails

K : Coefficient of tolerance of height

Table 2-10-19 Coefficient of tolerance of height

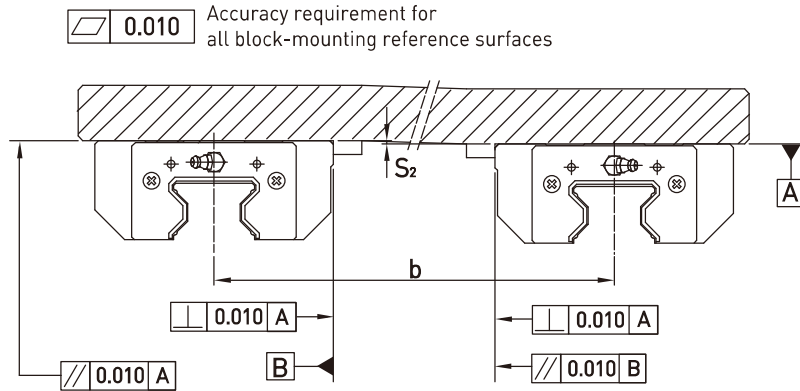
Size	Preload classes		
	Light Preload (Z0)	Medium Preload (ZA)	Heavy Preload (ZB)
K	2.2×10^{-4}	1.7×10^{-4}	1.2×10^{-4}

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(2) The accuracy tolerance of block-mounting surface

- The tolerance of the height of reference surface when two or more pieces are used in parallel (S_2)

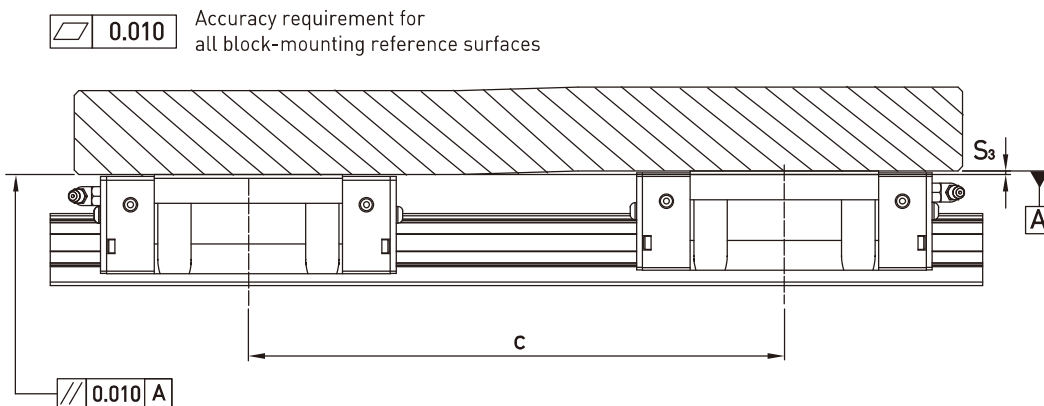


$$S_2 = b \times 4.2 \times 10^{-5}$$

S_2 : Max. tolerance of height

b : Distance between paired blocks

- The tolerance of the height of reference surface when two or more pieces are used in parallel (S_3)



$$S_3 = c \times 4.2 \times 10^{-5}$$

S_3 : Max. tolerance of height

c : Distance between paired blocks

2-10-10 Cautions for Installation

(1) Shoulder heights and fillets

Improper shoulder heights and fillets of mounting surfaces will cause a deviation in accuracy and interference with the chamfered part of the rail or block.

By following the recommended shoulder heights and fillets, accuracy problems in installation can be eliminated.

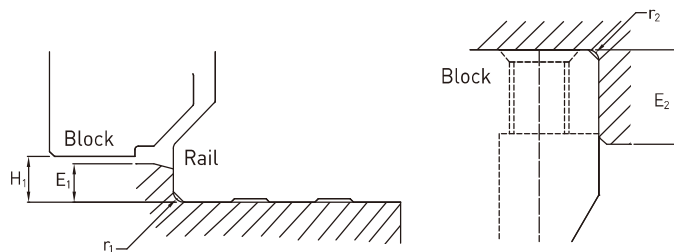


Table 2-10-20

Size	Max. radius of fillets r_1 (mm)	Max. radius of fillets r_2 (mm)	Shoulder height of the rail E_1 (mm)	Shoulder height of the block E_2 (mm)	Clearance under block H_1 (mm)
CRG15	0.5	0.5	3	4	4
CRG20	0.5	0.5	3.5	5	5
CRG25	1.0	1.0	5	5	5.5
CRG30	1.0	1.0	5	5	6
CRG35	1.0	1.0	6	6	6.5
CRG45	1.0	1.0	7	8	8
CRG55	1.5	1.5	9	10	10
CRG65	1.5	1.5	10	10	12

(2) Tightening Torque of Mounting Bolts

Improper tightening of mounting bolts will seriously influence the accuracy of a linear guideway. The following tightening torque for the different sizes of bolt is recommended.

Table 2-10-21

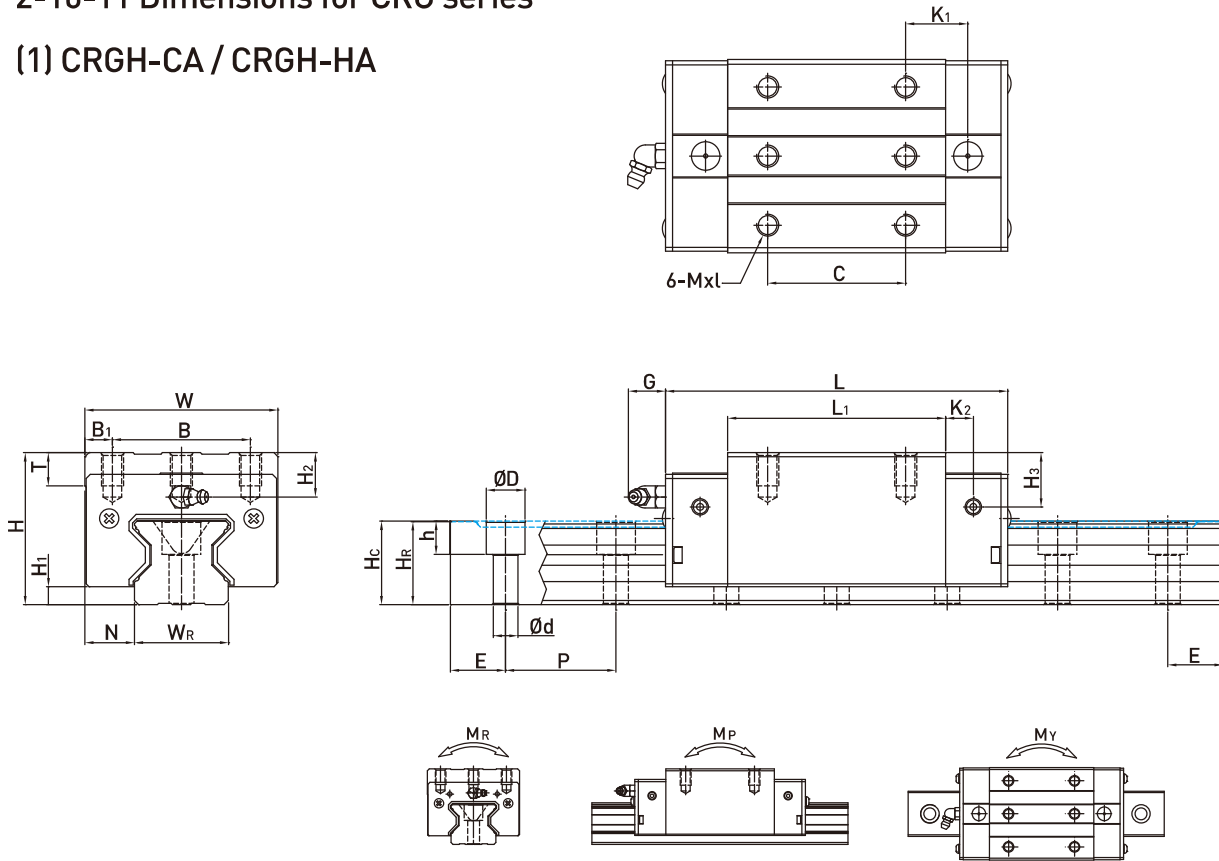
Size	Bolt size	Torque N-cm(kgf-cm)		
		Iron	Casting	Aluminum
CRG15	M4×0.7P×16L	392 (40)	274 (28)	206 (21)
CRG20	M5×0.8P×20L	883 (90)	588 (60)	441 (45)
CRG25	M6×1P×20L	1373 (140)	921 (94)	686 (70)
CRG30	M8×1.25P×25L	3041 (310)	2010 (205)	1470 (150)
CRG35	M8×1.25P×25L	3041 (310)	2010 (205)	1470 (150)
CRG45	M12×1.75P×35L	11772 (1200)	7840 (800)	5880 (600)
CRG55	M14×2P×45L	15696 (1600)	10500 (1100)	7840 (800)
CRG65	M16×2P×50L	19620 (2000)	13100 (1350)	9800 (1000)

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2-10-11 Dimensions for CRG series

(1) CRGH-CA / CRGH-HA



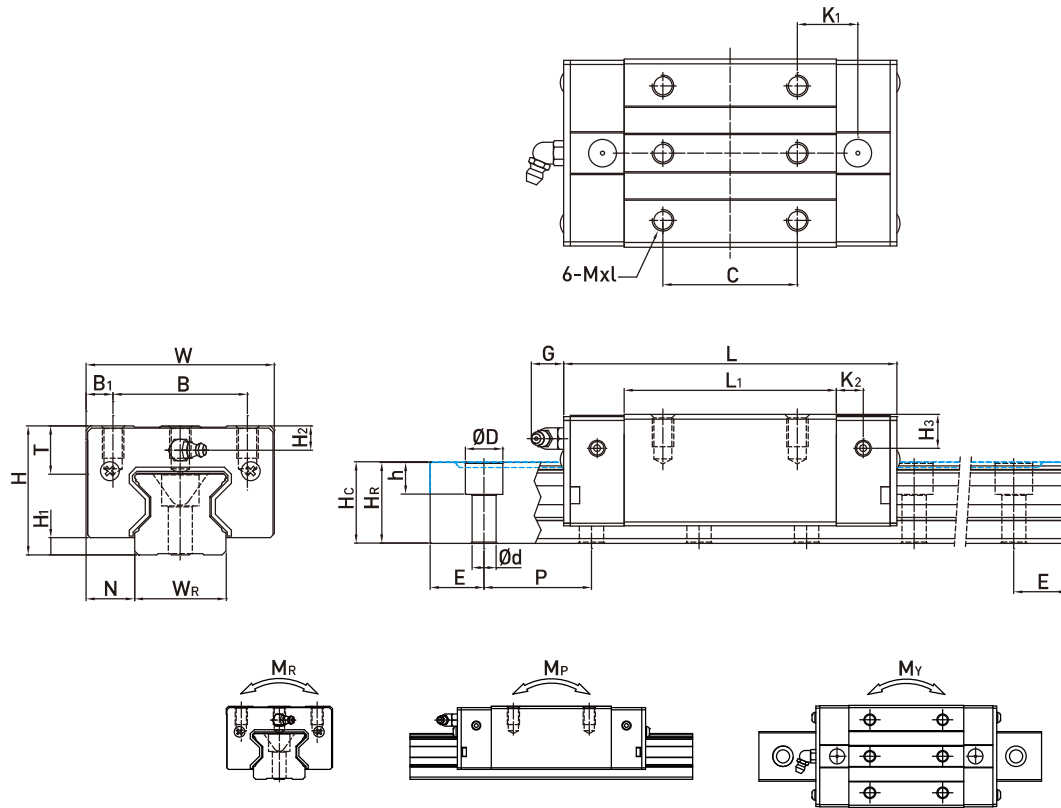
Model No.	Dimensions of Assembly (mm)			Dimensions of Block (mm)											Dimensions of Rail (mm)							Mounting Bolt for Rail (mm)	Basic Dynamic Load Rating C (kN)	Basic Static Load Rating C ₀ (kN)	Static Rated Moment			Weight				
	H	H ₁	N	W	B	B ₁	C	L ₁	L	K ₁	K ₂	G	Mxl	T	H ₂	H ₃	W _R	H _R	H _c ³	D	h				d	P	E	M _R	M _P	M _Y	Block kg	Rail kg/m
																													kN-m	kN-m	kN-m	kg
CRGH15CA	28	4	9.5	34	26	4	26	45	68	13.4	4.7	5.3	M4 x 8	6	7.6	10.1	15	16.5	16.7	7.5	5.7	4.5	30	20	M4 x 16	11.3	24	0.311	0.173	0.173	0.20	1.8
CRGH20CA	34	5	12	44	32	6	36	57.5	86	15.8	6	5.3	M5 x 8	8	8.3	8.3	20	21	21.2	9.5	8.5	6	30	20	M5 x 20	21.3	46.7	0.647	0.46	0.46	0.40	2.76
CRGH20HA							50	77.5	106	18.8																26.9	63	0.872	0.837	0.837	0.53	
CRGH25CA	40	5.5	12.5	48	35	6.5	35	64.5	97.9	20.75	7.25	12	M6 x 8	9.5	10.2	10	23	23.6	23.8	11	9	7	30	20	M6 x 20	27.7	57.1	0.758	0.605	0.605	0.61	3.08
CRGH25HA							50	81	114.4	21.5																33.9	73.4	0.975	0.991	0.991	0.75	
CRGH30CA	45	6	16	60	40	10	40	71	109.8	23.5	8	12	M8 x 10	9.5	9.5	10.3	28	28	28.2	14	12	9	40	20	M8 x 25	39.1	82.1	1.445	1.06	1.06	0.90	4.41
CRGH30HA							60	93	131.8	24.5																48.1	105	1.846	1.712	1.712	1.16	
CRGH35CA	55	6.5	18	70	50	10	50	79	124	22.5	10	12	M8 x 12	12	16	19.6	34	30.2	30.4	14	12	9	40	20	M8 x 25	57.9	105.2	2.17	1.44	1.44	1.57	6.06
CRGH35HA							72	106.5	151.5	25.25																73.1	142	2.93	2.6	2.6	2.06	
CRGH45CA	70	8	20.5	86	60	13	60	106	153.2	31	10	12.9	M10 x 17	16	20	24	45	38	38.2	20	17	14	52.5	22.5	M12 x 35	92.6	178.8	4.52	3.05	3.05	3.18	9.97
CRGH45HA							80	139.8	187	37.9																116	230.9	6.33	5.47	5.47	4.13	
CRGH55CA	80	10	23.5	100	75	12.5	75	125.5	183.7	37.75	12.5	12.9	M12 x 18	17.5	22	27.5	53	44	44.2	23	20	16	60	30	M14 x 45	130.5	252	8.01	5.4	5.4	4.89	13.98
CRGH55HA							95	173.8	232	51.9																167.8	348	11.15	10.25	10.25	6.68	
CRGH65CA	90	12	31.5	126	76	25	70	160	232	60.8	15.8	12.9	M16 x 20	25	15	15	63	53	53.2	26	22	18	75	35	M16 x 50	213	411.6	16.20	11.59	11.59	8.89	20.22
CRGH65HA							120	223	295	67.3																275.3	572.7	22.55	22.17	22.17	12.13	

Note : 1. 1 kgf = 9.81 N

2. The theoretical dynamic rated load is C_{100R}, if necessary C_{50R} conversion formula is as follows : C_{50R} = 1.23 x C_{100R}

3. Dimension H_c with cover strip.

(2) CRGL-CA / CRGL-HA



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	K ₁	K ₂	G	M	T	H ₂	H ₃	W _R	H _R	H _C ³	D	h				d	P	E	M _R kN-m	M _P kN-m	M _Y kN-m	Block kg	Rail kg/m
	CRGL15CA	24	4	9.5	34	26	4	26	45	68	13.4	4.7	5.3	M4x5.5	6	3.6	6.1	15	16.5	16.7	7.5	5.7	4.5	30	20	M4x16	11.3	24	0.311	0.173	0.173	0.15
CRGL20CA	30	5	12	44	32	6	36	57.5	86	15.8	6	5.3	M5x6	8	4.3	4.3	20	21	21.2	9.5	8.5	6	30	20	M5x20	21.3	46.7	0.647	0.46	0.46	0.32	2.76
CRGL20HA							50	77.5	106	18.8																26.9	63	0.872	0.837	0.837	0.42	
CRGL25CA	36	5.5	12.5	48	35	6.5	35	64.5	97.9	20.75	7.25	12	M6x8	9.5	6.2	6	23	23.6	23.8	11	9	7	30	20	M6x20	27.7	57.1	0.758	0.605	0.605	0.51	3.08
CRGL25HA							50	81	114.4	21.5																33.9	73.4	0.975	0.991	0.991	0.63	
CRGL30CA	42	6	16	60	40	10	40	71	109.8	23.5	8	12	M8x10	9.5	6.5	7.3	28	28	28.2	14	12	9	40	20	M8x25	39.1	82.1	1.445	1.06	1.06	0.80	4.41
CRGL30HA							60	93	131.8	24.5																48.1	105	1.846	1.712	1.712	1.03	
CRGL35CA	48	6.5	18	70	50	10	50	79	124	22.5	10	12	M8x12	12	9	12.6	34	30.2	30.4	14	12	9	40	20	M8x25	57.9	105.2	2.17	1.44	1.44	1.27	6.06
CRGL35HA							72	106.5	151.5	25.25																73.1	142	2.93	2.6	2.6	1.65	
CRGL45CA	60	8	20.5	86	60	13	60	106	153.2	31	10	12.9	M10x17	16	10	14	45	38	38.2	20	17	14	52.5	22.5	M12x35	92.6	178.8	4.52	3.05	3.05	2.47	9.97
CRGL45HA							80	139.8	187	37.9																116	230.9	6.33	5.47	5.47	3.20	
CRGL55CA	70	10	23.5	100	75	12.5	75	125.5	183.7	37.75	12.5	12.9	M12x18	17.5	12	17.5	53	44	44.2	23	20	16	60	30	M14x45	130.5	252	8.01	5.4	5.4	3.91	13.98
CRGL55HA							95	173.8	232	51.9																167.8	348	11.15	10.25	10.25	5.32	

Note : 1. 1 kgf = 9.81 N

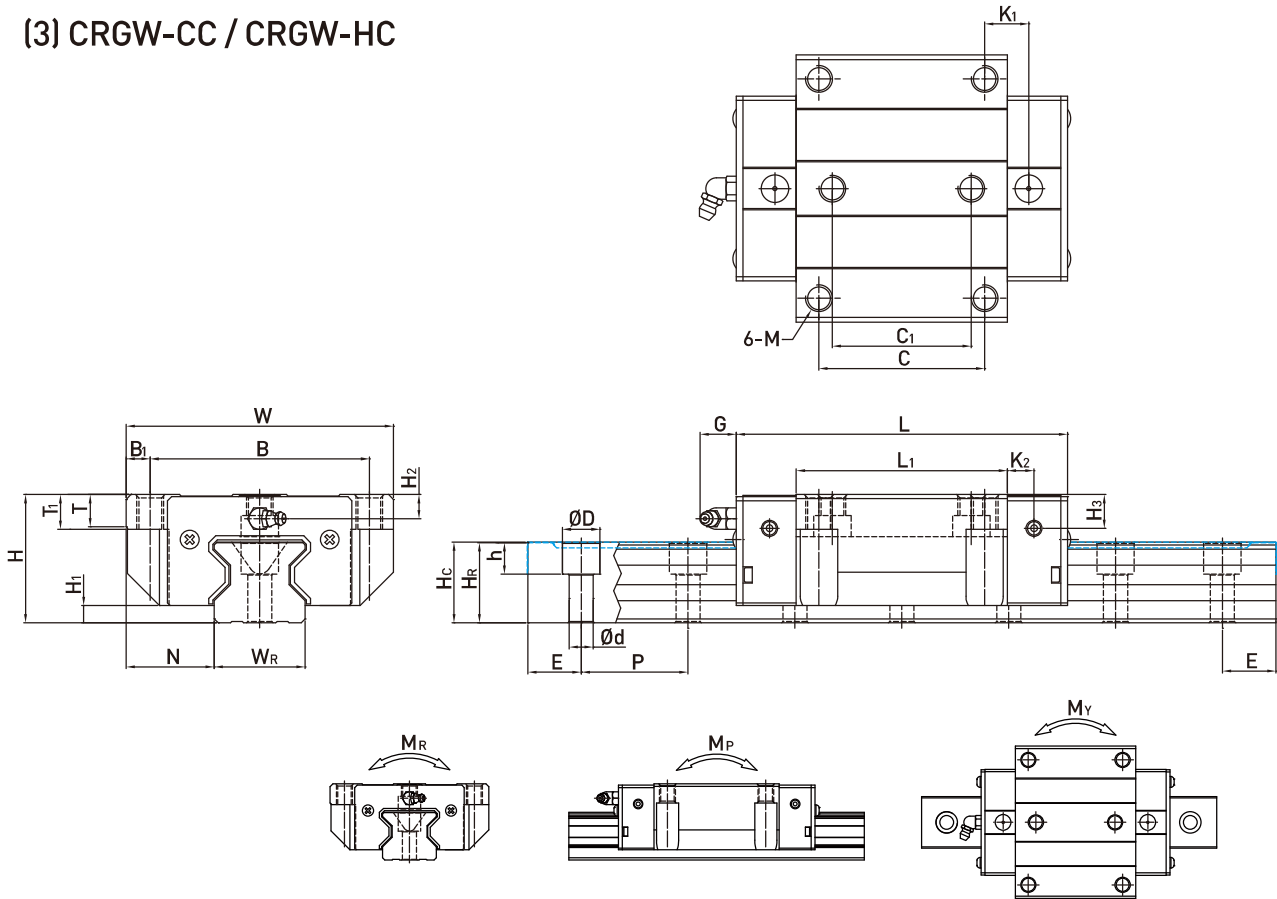
2. The theoretical dynamic rated load is C_{100R}, if necessary C_{50R} conversion formula is as follows : C_{50R} = 1.23 x C_{100R}

3. Dimension H_c with cover strip.

CRG Series

High Rigidity Roller Type with Cover Strip

(3) CRGW-CC / CRGW-HC



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	C ₁	L ₁	L	K ₁	K ₂	G	M	T	T ₁	H ₂	H ₃	W _R	H _R	H _C				D	h	d	P	E	M _R	M _P	M _Y	Block	Rail
	kgf	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm				mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
CRGW15CC	24	4	16	47	38	4.5	30	26	45	68	11.4	4.7	5.3	M5	6	6.95	3.6	6.1	15	16.5	16.7	7.5	5.7	4.5	30	20	M4x16	11.3	24	0.311	0.173	0.173	0.22	1.8
CRGW20CC	30	5	21.5	63	53	5	40	35	57.5	86	13.8	6	5.3	M6	8	10	4.3	4.3	20	21	21.2	9.5	8.5	6	30	20	M5x20	21.3	46.7	0.647	0.46	0.46	0.47	2.76
CRGW20HC																												26.9	63	0.872	0.837	0.837	0.63	
CRGW25CC	36	5.5	23.5	70	57	6.5	45	40	64.5	97.9	15.75	7.25	12	M8	9.5	10	6.2	6	23	23.6	23.8	11	9	7	30	20	M6x20	27.7	57.1	0.758	0.605	0.605	0.72	3.08
CRGW25HC																												33.9	73.4	0.975	0.991	0.991	0.91	
CRGW30CC	42	6	31	90	72	9	52	44	71	109.8	17.5	8	12	M10	9.5	10	6.5	7.3	28	28	28.2	14	12	9	40	20	M8x25	39.1	82.1	1.445	1.06	1.06	1.16	4.41
CRGW30HC																												48.1	105	1.846	1.712	1.712	1.52	
CRGW35CC	48	6.5	33	100	82	9	62	52	79	124	16.5	10	12	M10	12	13	9	12.6	34	30.2	30.4	14	12	9	40	20	M8x25	57.9	105.2	2.17	1.44	1.44	1.75	6.06
CRGW35HC																												73.1	142	2.93	2.6	2.6	2.40	
CRGW45CC	60	8	37.5	120	100	10	80	60	106	153.2	21	10	12.9	M12	14	15	10	14	45	38	38.2	20	17	14	52.5	22.5	M12x35	92.6	178.8	4.52	3.05	3.05	3.43	9.97
CRGW45HC																												116	230.9	6.33	5.47	5.47	4.57	
CRGW55CC	70	10	43.5	140	116	12	95	70	125.5	183.7	27.75	12.5	12.9	M14	16	17	12	17.5	53	44	44.2	23	20	16	60	30	M14x45	130.5	252	8.01	5.4	5.4	5.43	13.98
CRGW55HC																												167.8	348	11.15	10.25	10.25	7.61	
CRGW65CC	90	12	53.5	170	142	14	110	82	160	232	40.8	15.8	12.9	M16	22	23	15	15	63	53	53.2	26	22	18	75	35	M16x50	213	411.6	16.20	11.59	11.59	11.63	20.22
CRGW65HC																												275.3	572.7	22.55	22.17	22.17	16.58	

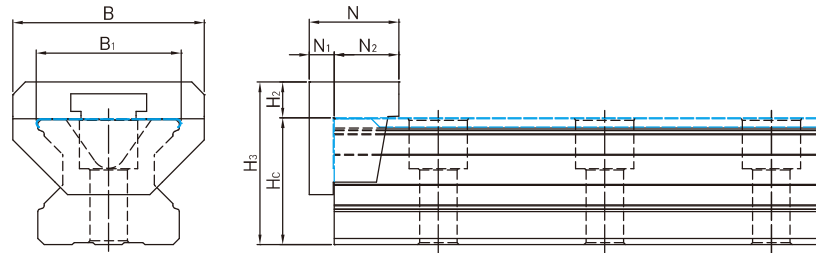
Note : 1. 1 kgf = 9.81 N

2. The theoretical dynamic rated load is C_{100R}, if necessary C_{50R} conversion formula is as follows : C_{50R} = 1.23 x C_{100R}

3. Dimension H_c with cover strip.

(4) Dimension of cover strip and plastic end jig

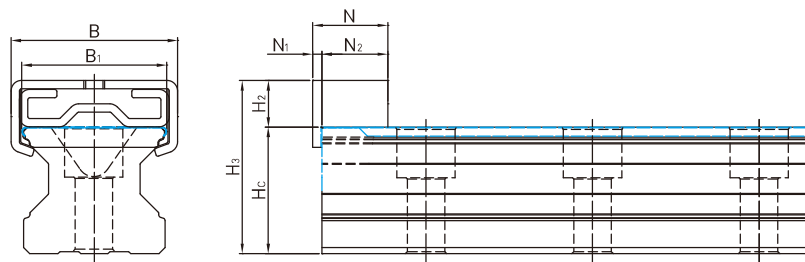
○ plastic end jig (standard)



Model No.	H ₃	H _c ¹	H ₂	N	N ₁	N ₂	B	B ₁
CRG15	21.2	16.7	4.5	13.0	3.7	9.3	20.0	16.0
CRG20	26.1	21.2	4.9	13.0	4	9.0	27.0	21.0
CRG25	28.9	23.8	5.1	15.0	4	11.0	31.5	24.0
CRG30	35.1	28.2	6.9	21.0	6	15.0	40.0	29.0
CRG35	39.1	30.4	8.7	21.5	6	15.5	46.0	35.0
CRG45	46.6	38.2	8.4	22.0	5.2	16.8	51.6	46.0
CRG55	54.3	44.2	10.1	22.5	7.7	14.8	62.0	54.0
CRG65	64.4	53.2	11.2	30.0	9.2	20.8	70.0	64.0

Note : 1. Dimension H_c with cover strip

○ Metal end jig (optional)



Model No.	H ₃	H _c ¹	H ₂	N	N ₁	N ₂	B	B ₁
CRG15	20.5	16.7	3.8	15	2.2	12.8	21	15.8
CRG20	28.4	21.2	7.2	13	2.2	10.8	28	20.7
CRG25	33.8	23.8	10	15	2.2	12.8	30.7	23.9
CRG30	37.4	28.2	9.2	12	2.2	9.8	34	28.9
CRG35	41.6	30.4	11.2	18	2.2	15.8	40	34.8
CRG45	50.2	38.2	12	18	2.2	15.8	53.58	45.6
CRG55	55.4	44.2	11.2	18	2.2	15.8	58.6	53.7
CRG65	65.2	53.2	12	18	2.2	15.8	71.8	63.6

Note : 1. Dimension H_c with cover strip