

Linear Guideways

HG Series

2-1 HG Series - Heavy Load Ball Type Linear Guideway

HG series linear guideways are designed with load capacity and rigidity higher than other similar products with circular-arc groove and structure optimization. It features equal load ratings in the radial, reverse radial and lateral directions, and self-aligning to absorb installation-error. Thus, HIWIN HG series linear guideways can achieve a long life with high speed, high accuracy and smooth linear motion.

2-1-1 Features of HG Series

(1) Self-aligning capability

By design, the circular-arc groove has contact points at 45 degrees. HG series can absorb most installation errors due to surface irregularities and provide smooth linear motion through the elastic deformation of rolling elements and the shift of contact points. Self-aligning capability, high accuracy and smooth operation can be obtained with an easy installation.

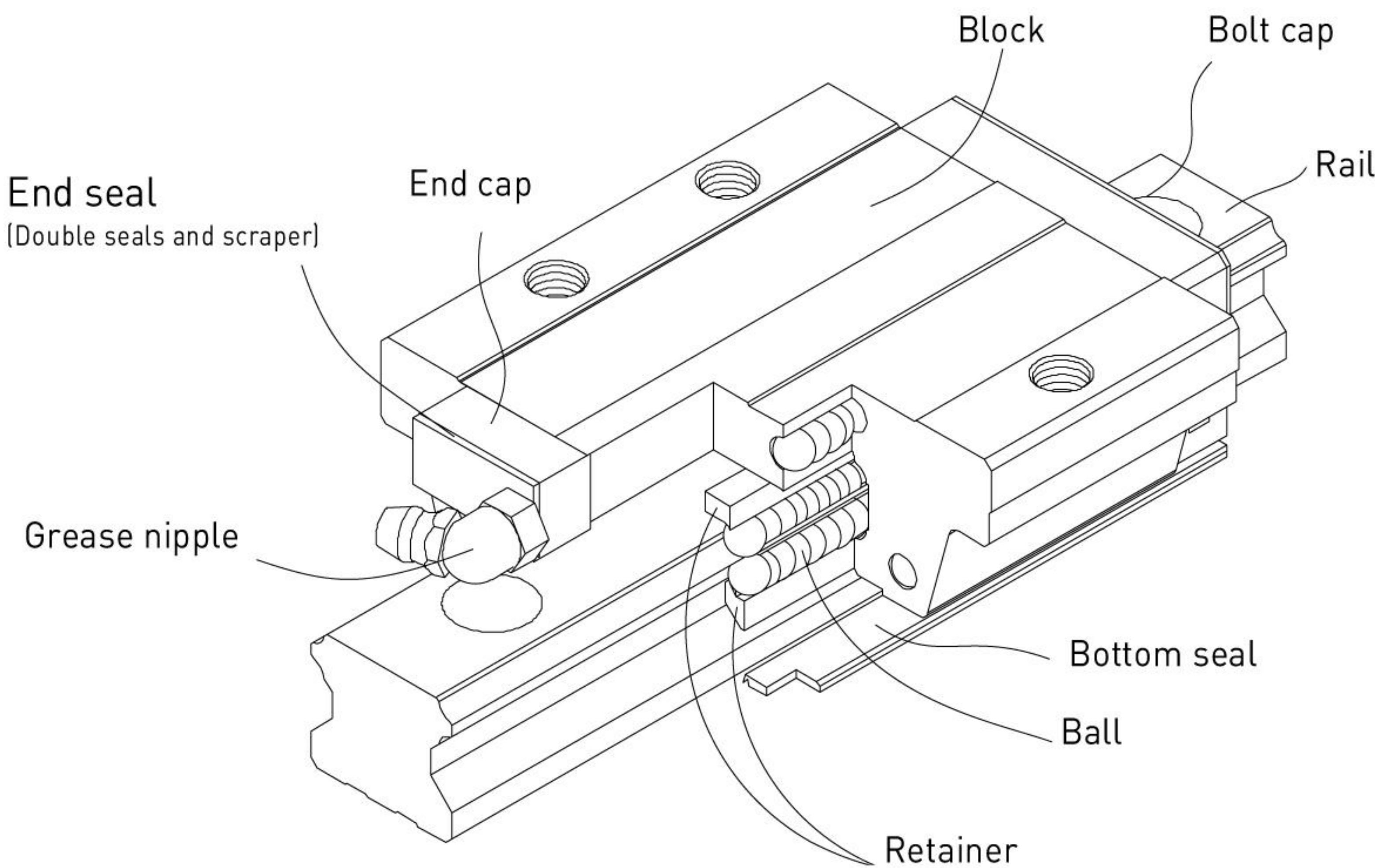
(2) Interchangeability

Because of precision dimensional control, the dimensional tolerance of HG series can be kept in a reasonable range, which means that any blocks and any rails in a specific series can be used together while maintaining dimensional tolerance. And a retainer is added to prevent the balls from falling out when the blocks are removed from the rail.

(3) High rigidity in all four directions

Because of the four-row design, the HG series linear guideway has equal load ratings in the radial, reverse radial and lateral directions. Furthermore, the circular-arc groove provides a wide-contact width between the balls and the groove raceway allowing large permissible loads and high rigidity.

2-1-2 Construction of HG Series



- Rolling circulation system: Block, Rail, End Cap and Retainer
- Lubrication system: Grease Nipple and Piping Joint
- Dust protection system: End seal, Bottom Seal, Bolt Cap, Double Seals and Scraper

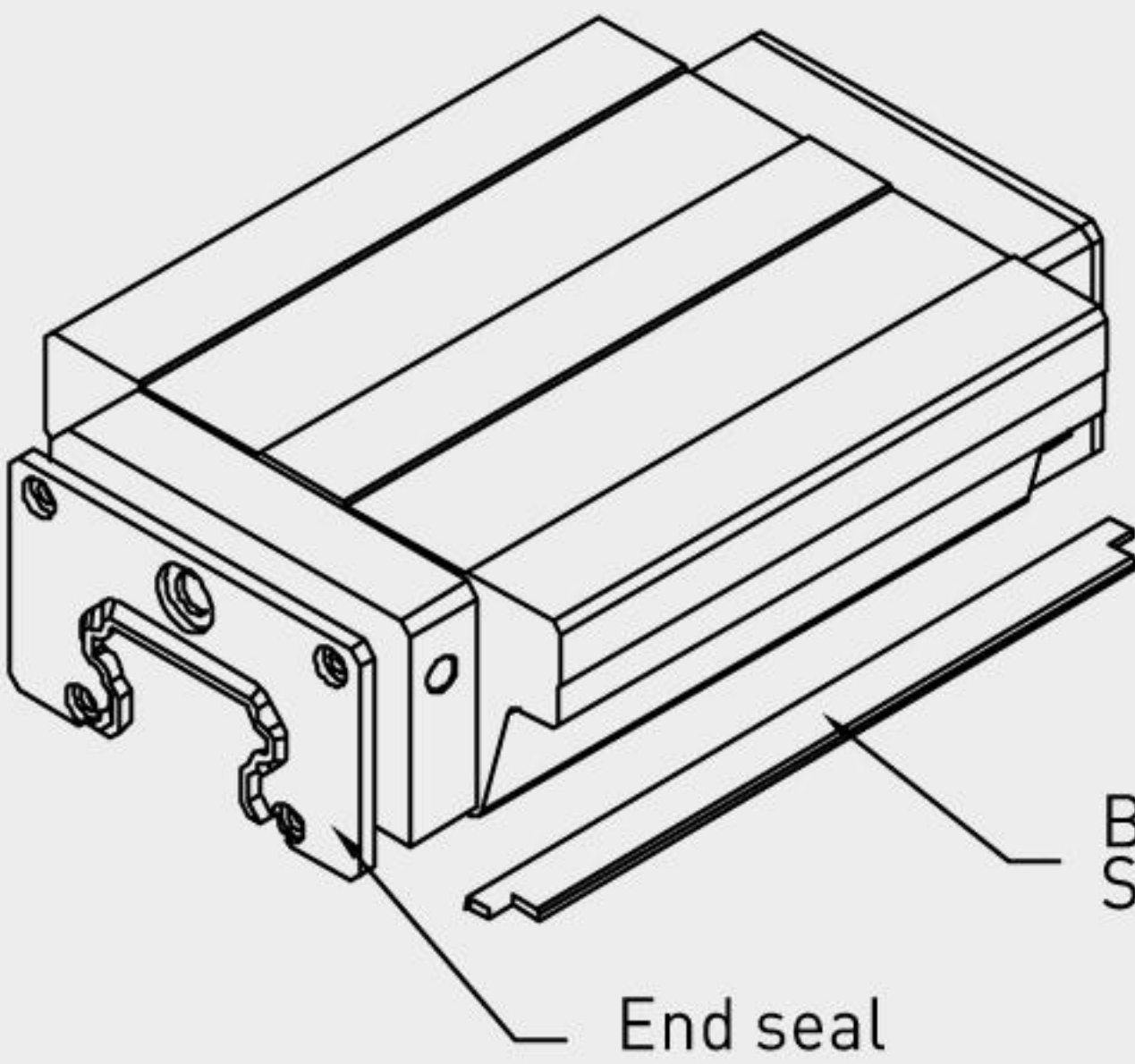
2-1-3 Model Number of HG Series

HG series guideways can be classified into non-interchangeable and interchangeable types. The sizes are identical. The only difference between the two types is that the interchangeable type of blocks and rails can be freely exchanged, and their accuracy can reach up to P class. The model number of HG series contains the size, type, accuracy class, preload class, etc..

2-1-8 Dust Proof Accessories

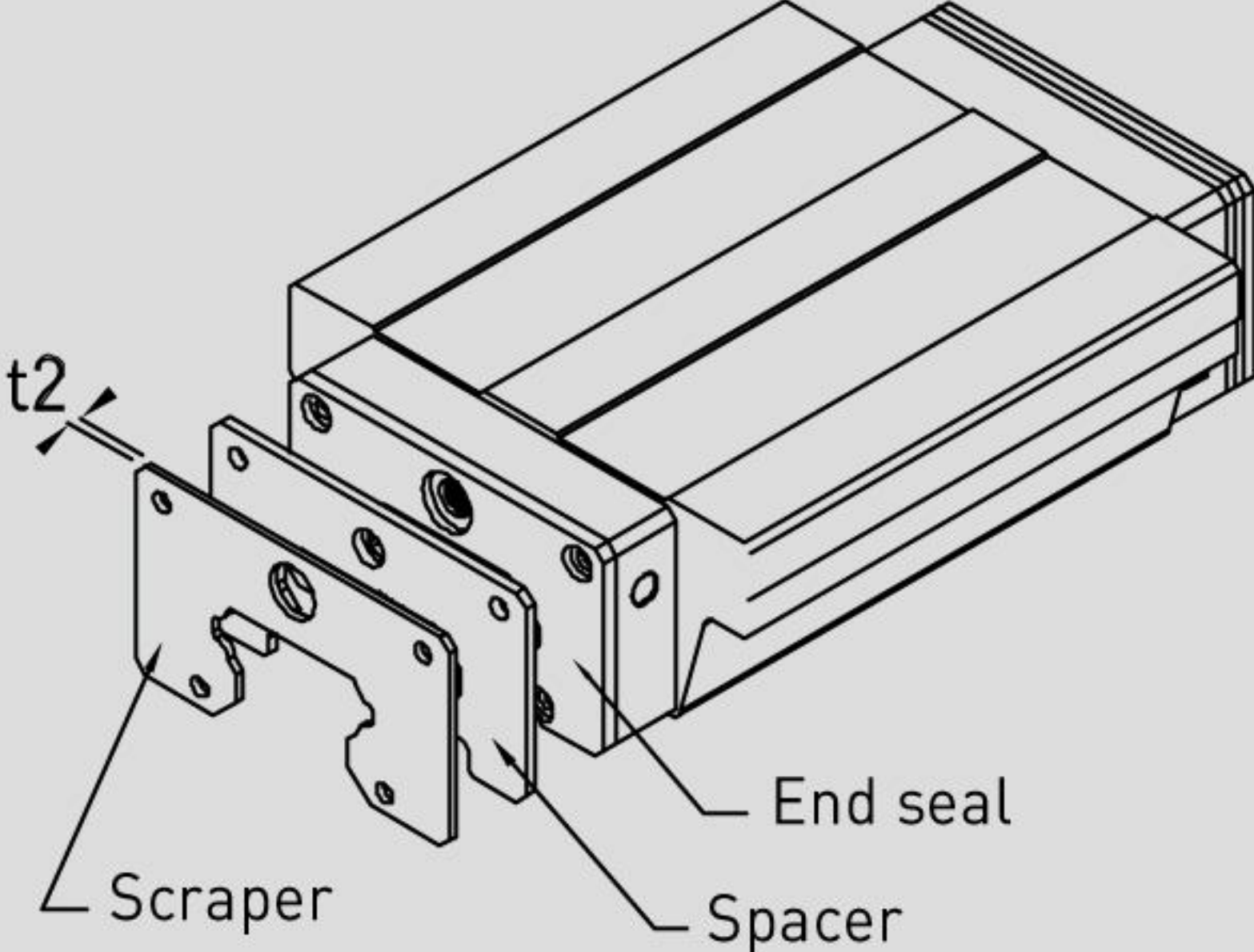
(1) Codes of accessories

If the following accessories are needed, please add the code followed by the model number.



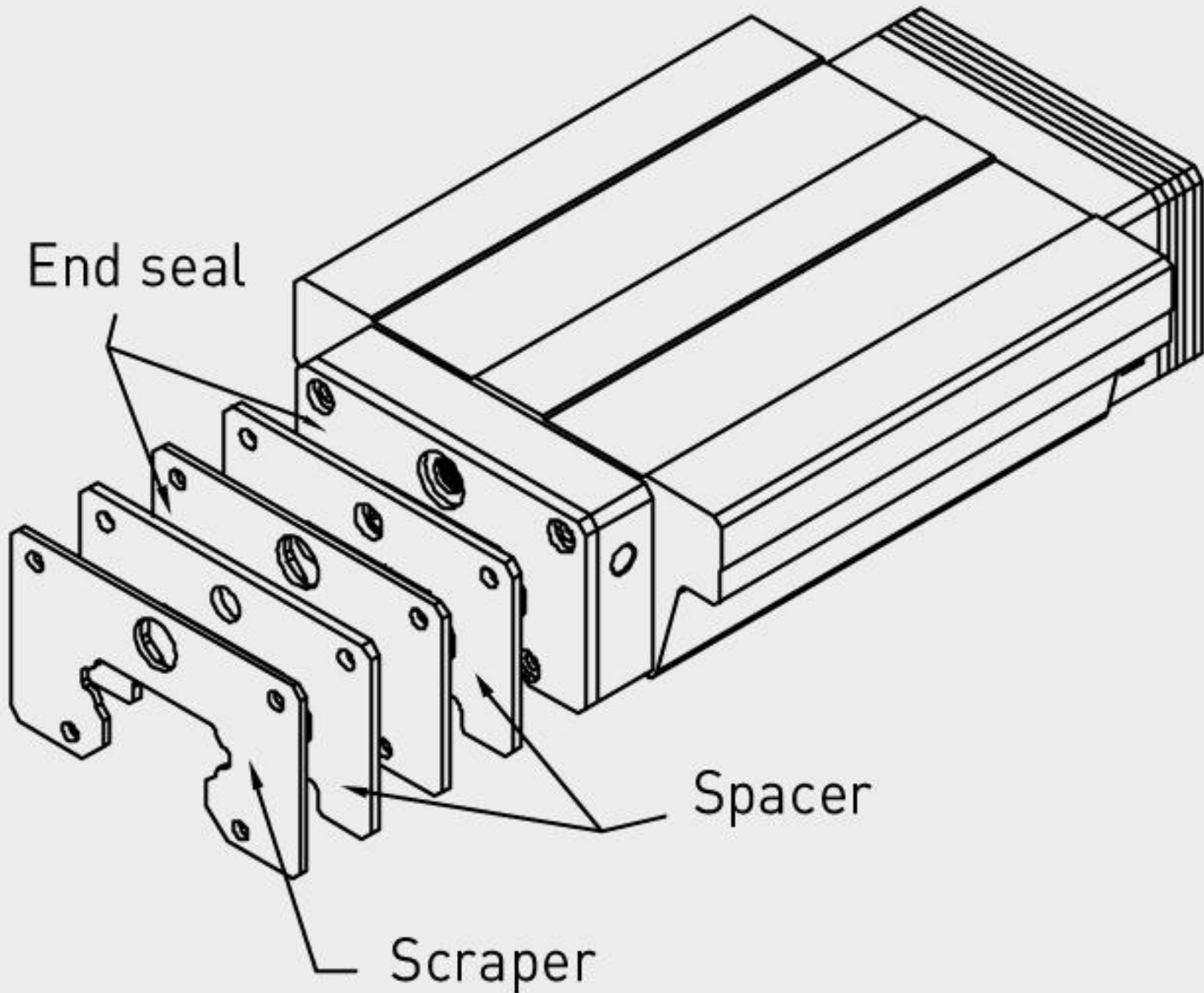
Bottom Seal
End seal

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



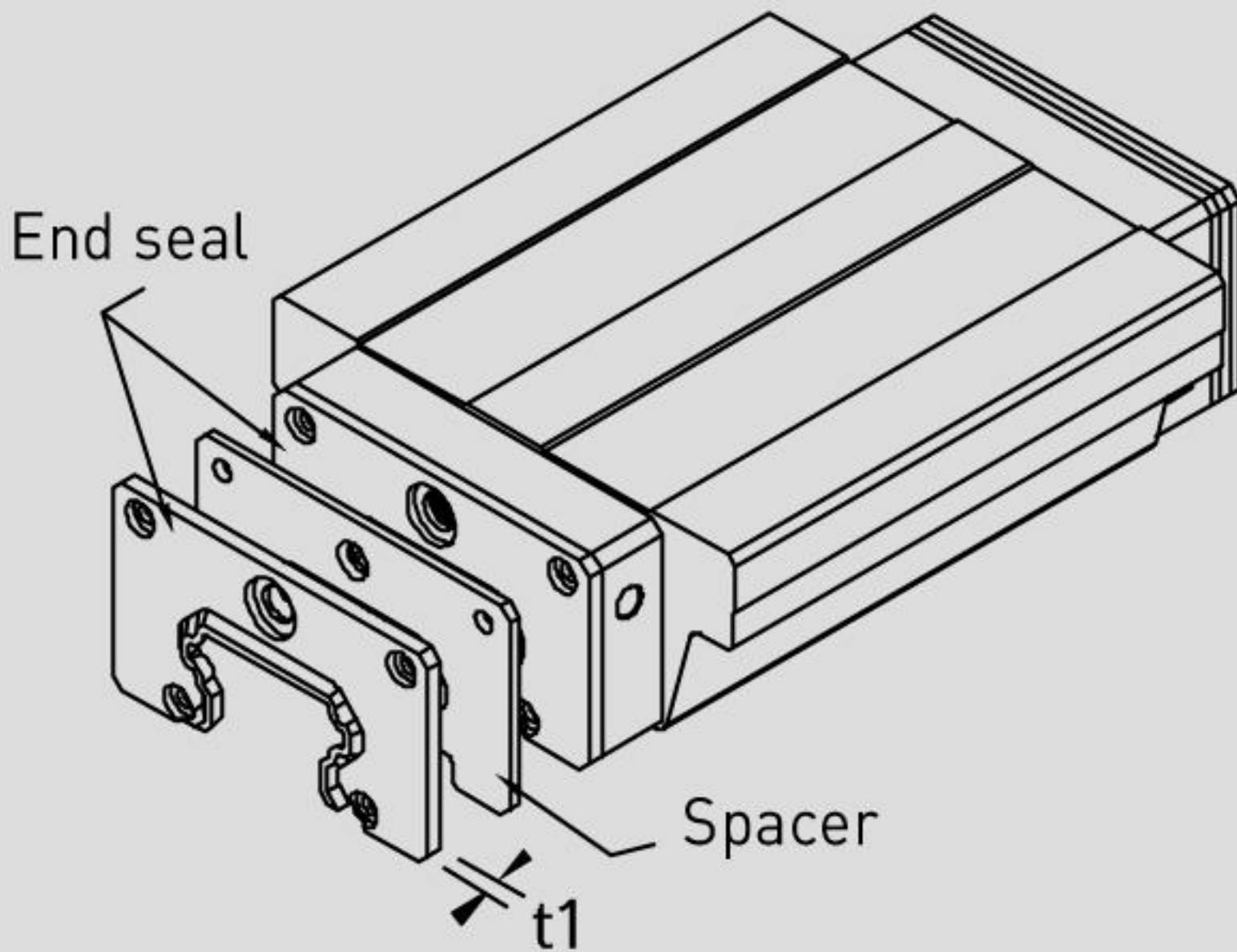
End seal
Scraper
Spacer
t2

ZZ (End seal + Bottom Seal + Scraper)



End seal
Scraper
Spacer
t1

KK (Double seals + Bottom Seal + Scraper)



End seal
Spacer
t1

DD (Double seals + Bottom Seal)

(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 2.18 Dimensions of end seal

Size	Thickness (t1) (mm)	Size	Thickness (t1) (mm)
HG 15 ES	3	HG 35 ES	3.2
HG 20 ES	3	HG 45 ES	4.5
HG 25 ES	3	HG 55 ES	5
HG 30 ES	3.2	HG 65 ES	5

(4) Scraper

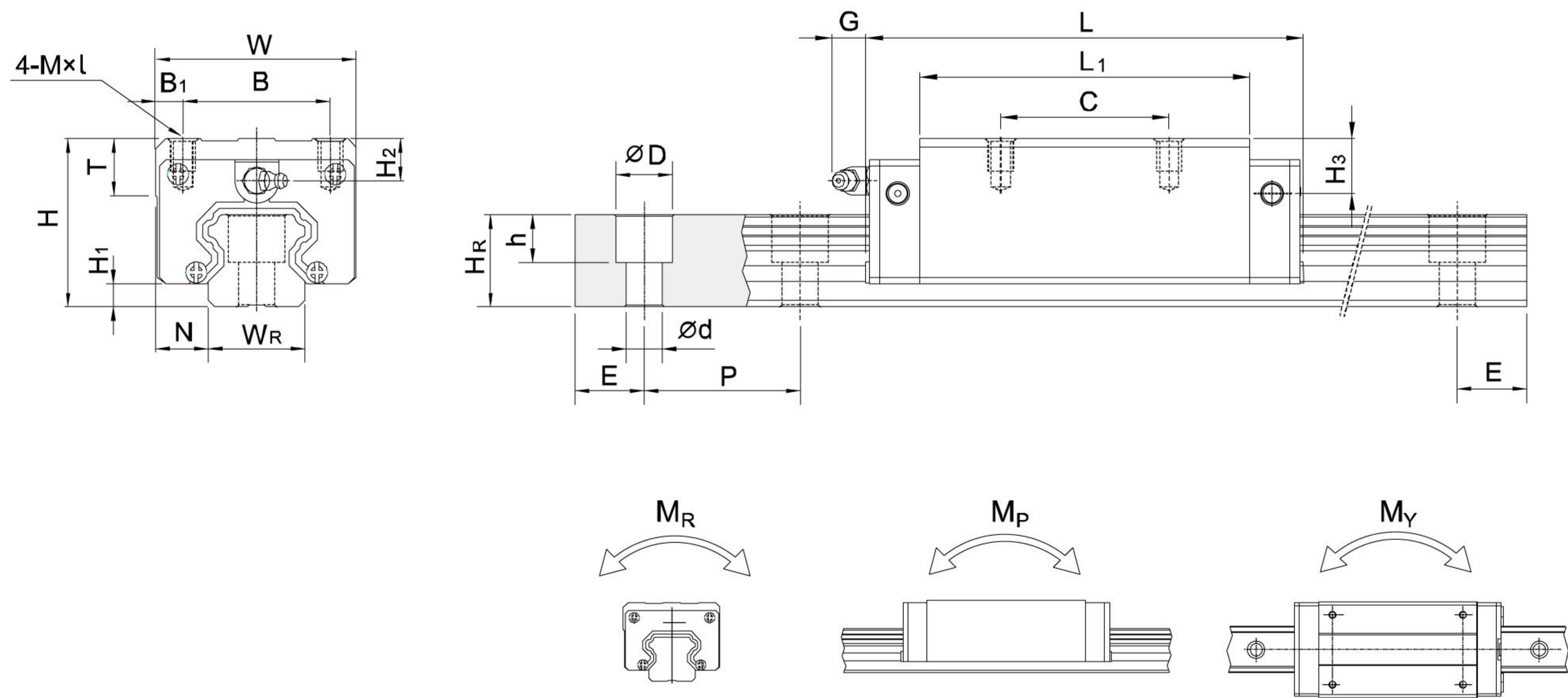
The scraper removes high-temperature iron chips and larger foreign objects.

Table 2.19 Dimensions of scraper

Size	Thickness (t2) (mm)	Size	Thickness (t2) (mm)
HG 15 SC	1.5	HG 35 SC	1.5
HG 20 SC	1.5	HG 45 SC	1.5
HG 25 SC	1.5	HG 55 SC	1.7
HG 30 SC	1.5	HG 65 SC	1.7

2-1-13 Dimensions for HIWIN HG Series

(1) HGH-CA / HGH-HA



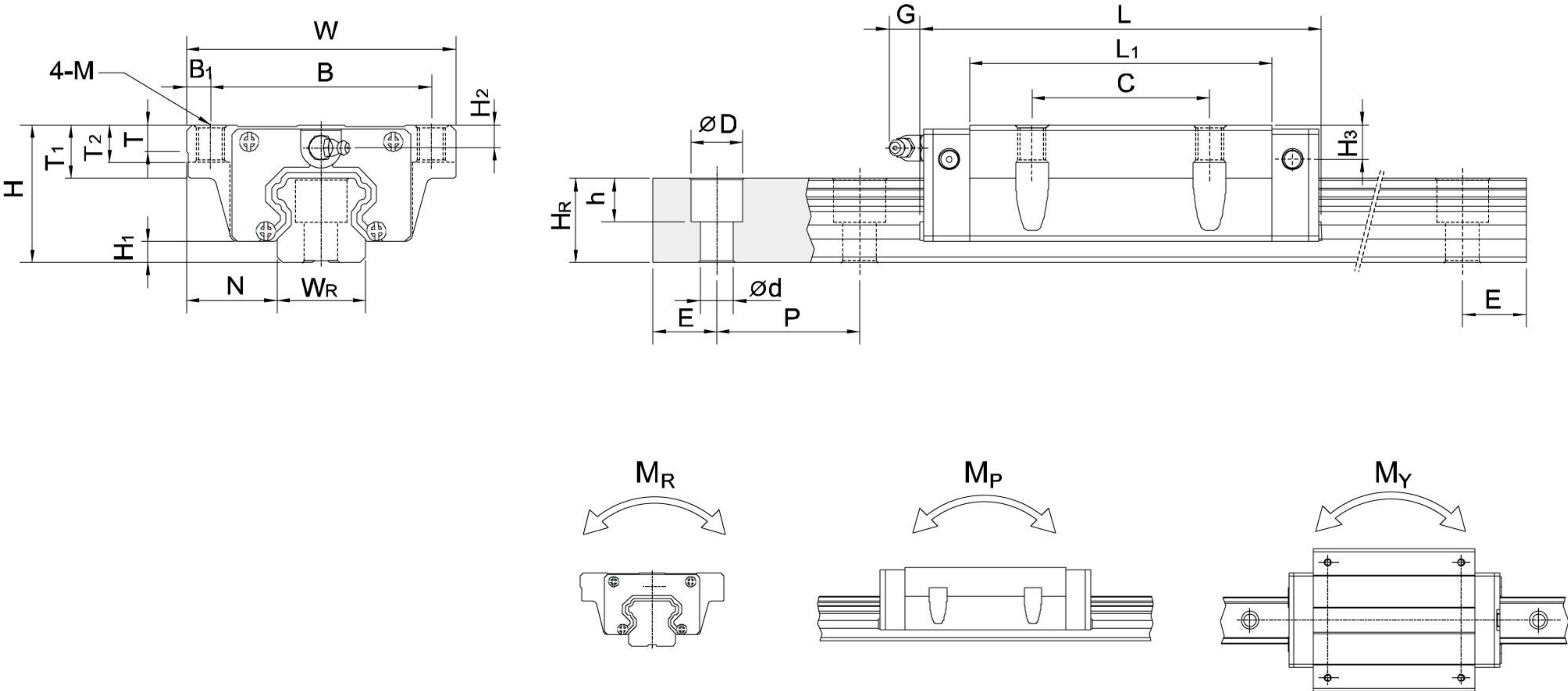
Model No.	Dimensions of Assembly (mm)			Dimensions of Block (mm)												Dimensions of Rail (mm)								Mounting Bolt for Rail	Basic Dynamic Load Rating	Basic Static Load Rating	Static Rated Moment			Weight	
	H	H ₁	N	W	B	B ₁	C	L ₁	L	G	MxI	T	H ₂	H ₃	W _R	H _R	D	h	d	P	E	(mm)	C(kN)				C ₀ (kN)	M _R kN-m	M _P kN-m	M _Y kN-m	Block kg
HGH 15CA	28	4.3	9.5	34	26	4	26	39.4	61.4	5.3	M4x5	6	8.5	9.5	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		
HGH 20CA	30	4.6	12	44	32	6	36	50.5	77.5	12	M5x6	8	6	7	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		
HGH 20HA							50	65.2	92.2														21.18	48.84	0.48	0.47	0.47	0.39			
HGH 25CA	40	5.5	12.5	48	35	6.5	35	58	84	12	M6x8	8	10	13	23	22	11	9	7	60	20	M6x20	26.48	56.19	0.64	0.51	0.51	0.51	3.21		
HGH 25HA							50	78.6	104.6														32.75	76.00	0.87	0.88	0.88	0.69			
HGH 30CA	45	6	16	60	40	10	40	70	97.4	12	M8x10	8.5	9.5	13.8	28	26	14	12	9	80	20	M8x25	38.74	83.06	1.06	0.85	0.85	0.88	4.47		
HGH 30HA							60	93	120.4														47.27	110.13	1.40	1.47	1.47	1.16			
HGH 35CA	55	7.5	18	70	50	10	50	80	112.4	12	M8x12	10.2	16	19.6	34	29	14	12	9	80	20	M8x25	49.52	102.87	1.73	1.20	1.20	1.45	6.30		
HGH 35HA							72	105.8	138.2														60.21	136.31	2.29	2.08	2.08	1.92			
HGH 45CA	70	9.5	20.5	86	60	13	60	97	139.4	12.9	M10x17	16	18.5	30.5	45	38	20	17	14	105	22.5	M12x35	77.57	155.93	3.01	2.35	2.35	2.73	10.41		
HGH 45HA							80	128.8	171.2														94.54	207.12	4.00	4.07	4.07	3.61			
HGH 55CA	80	13	23.5	100	75	12.5	75	117.7	166.7	12.9	M12x18	17.5	22	29	53	44	23	20	16	120	30	M14x45	114.44	227.81	5.66	4.06	4.06	4.17	15.08		
HGH 55HA							95	155.8	204.8														139.35	301.26	7.49	7.01	7.01	5.49			
HGH 65CA	90	15	31.5	126	76	25	70	144.2	200.2	12.9	M16x20	25	15	15	63	53	26	22	18	150	35	M16x50	163.63	324.71	10.02	6.44	6.44	7.00	21.18		
HGH 65HA							120	203.6	259.6														208.36	457.15	14.15	11.12	11.12	9.82			

Note : 1 kgf = 9.81 N

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(4) HGW-CC / HGW-HC



Model No.	Dimensions of Assembly (mm)			Dimensions of Block (mm)														Dimensions of Rail (mm)								Mounting Bolt for Rail	Basic Dynamic Load Rating	Basic Static Load Rating	Static Rated Moment			Weight	
	H	H ₁	N	W	B	B ₁	C	L ₁	L	G	M	T	T ₁	T ₂	H ₂	H ₃	W _R	H _R	D	h	d	P	E	(mm)	C(kN)	C ₀ (kN)	M _R kN-m	M _P kN-m	M _Y kN-m	Block kg	Rail kg/m		
HGW 15CC	24	4.3	16	47	38	4.5	30	39.4	61.4	5.3	M5	6	8.9	6.95	4.5	5.5	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		
HGW 20CC	30	4.6	21.5	63	53	5	40	50.5	77.5	12	M6	8	10	9.5	6	7	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		
HGW 20HC								65.2	92.2																21.18	48.84	0.48	0.47	0.47	0.52			
HGW 25CC	36	5.5	23.5	70	57	6.5	45	58	84	12	M8	8	14	10	6	9	23	22	11	9	7	60	20	M6x20	26.48	56.19	0.64	0.51	0.51	0.59	3.21		
HGW 25HC								78.6	104.6																32.75	76.00	0.87	0.88	0.88	0.80			
HGW 30CC	42	6	31	90	72	9	52	70	97.4	12	M10	8.5	16	10	6.5	10.8	28	26	14	12	9	80	20	M8x25	38.74	83.06	1.06	0.85	0.85	1.09	4.47		
HGW 30HC								93	120.4																47.27	110.13	1.40	1.47	1.47	1.44			
HGW 35CC	48	7.5	33	100	82	9	62	80	112.4	12	M10	10.1	18	13	9	12.6	34	29	14	12	9	80	20	M8x25	49.52	102.87	1.73	1.20	1.20	1.56	6.30		
HGW 35HC								105.8	138.2																60.21	136.31	2.29	2.08	2.08	2.06			
HGW 45CC	60	9.5	37.5	120	100	10	80	97	139.4	12.9	M12	15.1	22	15	8.5	20.5	45	38	20	17	14	105	22.5	M12x35	77.57	155.93	3.01	2.35	2.35	2.79	10.41		
HGW 45HC								128.8	171.2																94.54	207.12	4.00	4.07	4.07	3.69			
HGW 55CC	70	13	43.5	140	116	12	95	117.7	166.7	12.9	M14	17.5	26.5	17	12	19	53	44	23	20	16	120	30	M14x45	114.44	227.81	5.66	4.06	4.06	4.52	15.08		
HGW 55HC								155.8	204.8																139.35	301.26	7.49	7.01	7.01	5.96			
HGW 65CC	90	15	53.5	170	142	14	110	144.2	200.2	12.9	M16	25	37.5	23	15	15	63	53	26	22	18	150	35	M16x50	163.63	324.71	10.02	6.44	6.44	9.17	21.18		
HGW 65HC								203.6	259.6																208.36	457.15	14.15	11.12	11.12	12.89			

Note : 1 kgf = 9.81 N