

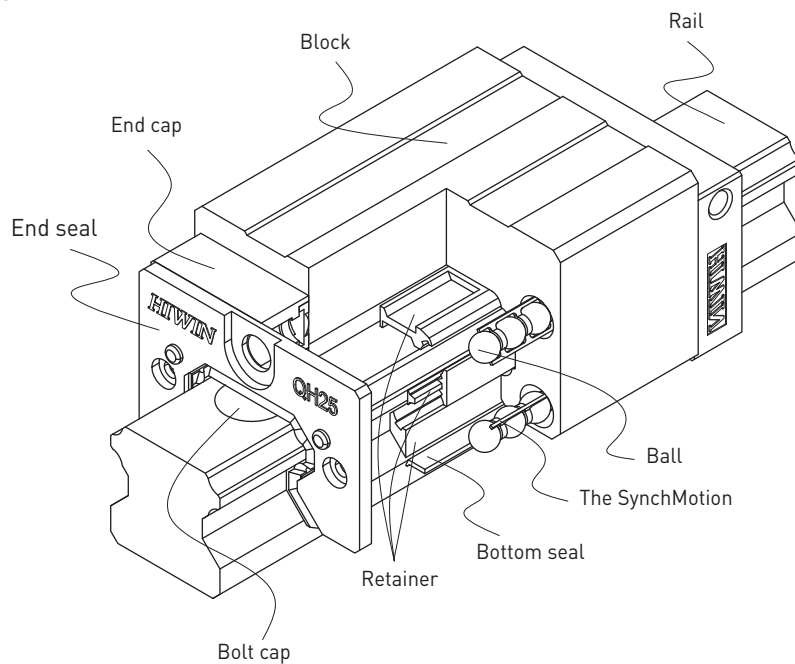
# Linear Guideways

## Q1 Type

### 2-8 Q1 Type – Quiet Linear Guideway, with SynchMotion™ Technology

The development of HIWIN-Q1 linear guideway is based on a four-row circular-arc contact. The HIWIN-Q1 series linear guideway with SynchMotion™ Technology possesses all the advantages of the HIWIN-HG series, and also offers smooth movement, superior lubrication, quieter operation and longer running life. Therefore the HIWIN-Q1 linear guideway has broad industrial applicability. In the high-tech industry where high speed, low noise, and reduced dust generation is required, the HIWIN-Q1 series is interchangeable with the HIWIN-HG series. Please refer to 2-8-3 for detailed specifications.

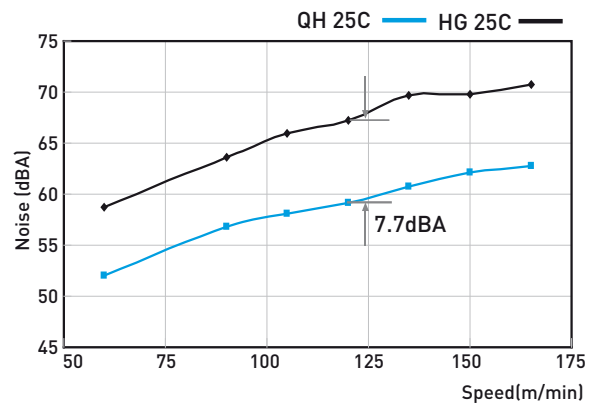
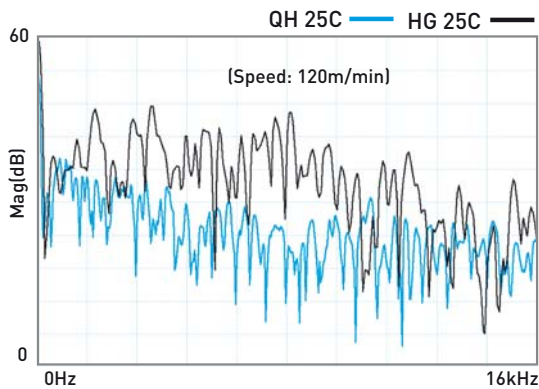
#### 2-8-1 Construction



## 2-8-2 Features

### (1) Low Noise Design

With SynchMotion™ technology, rolling elements are interposed between the partitions of SynchMotion™ to provide improved circulation. Due to the elimination of contact between the rolling elements, collision noise and sound levels are drastically reduced.



### (2) Self-Lubricant Design

The partition is a grouping of hollow ring-like structures formed with a through hole to facilitate circulation of the lubricant. Because of the special lubrication path design, the lubricant of the partition storage space can be refilled. Therefore, the frequency of lubricant refilling can be decreased.

The QH-series linear guideway is pre-lubricated. Performance testing at a 0.2C (basic dynamic load) shows that after running 2,500km no damage was apparent to either the rolling elements or the raceway.

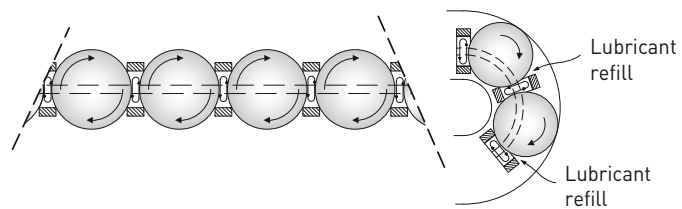


Table 2.72 Load Test

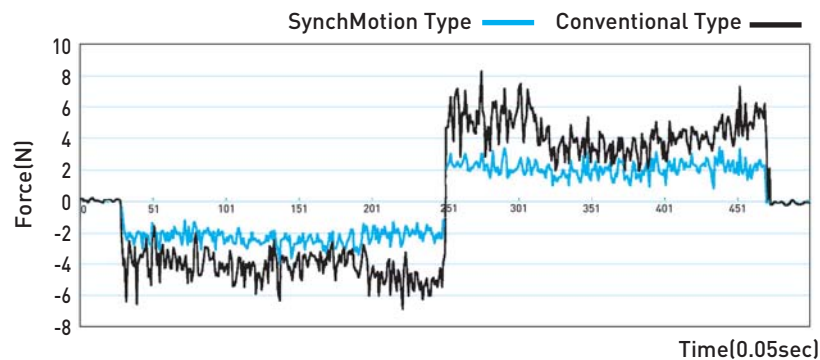
Test Sample	QHH25CAZAH	Load Test
Speed	24m/min	<p>Load=5,000N After 2,700km</p>
Lubricant	lithium soap base grease (initial lubrication only)	
Load	5kN	
Test times	6,800,000 cycles	
Distance travel	2,700km (continue testing)	

# Linear Guideways

## Q1 Type

### (3) Smooth Movement

In standard linear guideways, rolling elements on the load side of the guide block begin rolling and push their way through the raceway. When they contact other rolling elements they create counter-rotational friction. This results in a great variation of rolling resistance. The QH linear guideway, with SynchMotion™ technology prevents this condition. As the block starts to move, the rolling elements begin rolling consecutively and remain separated to prevent contact with one another thus keeping the element's kinetic energy extremely stable in order to effectively reduce fluctuations in rolling resistance.



### (4) High Speed Performance

The Hiwin-QH series offers excellent high-speed performance due to the partitions of the SynchMotion™ structure. They are employed to separate the adjacent balls thereby resulting in low rolling traction and the metallic friction between adjacent balls is eliminated.

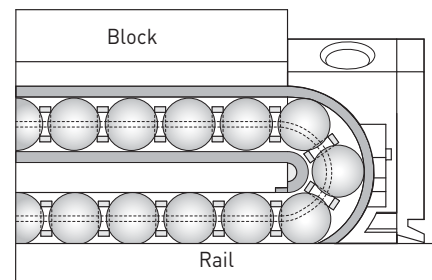


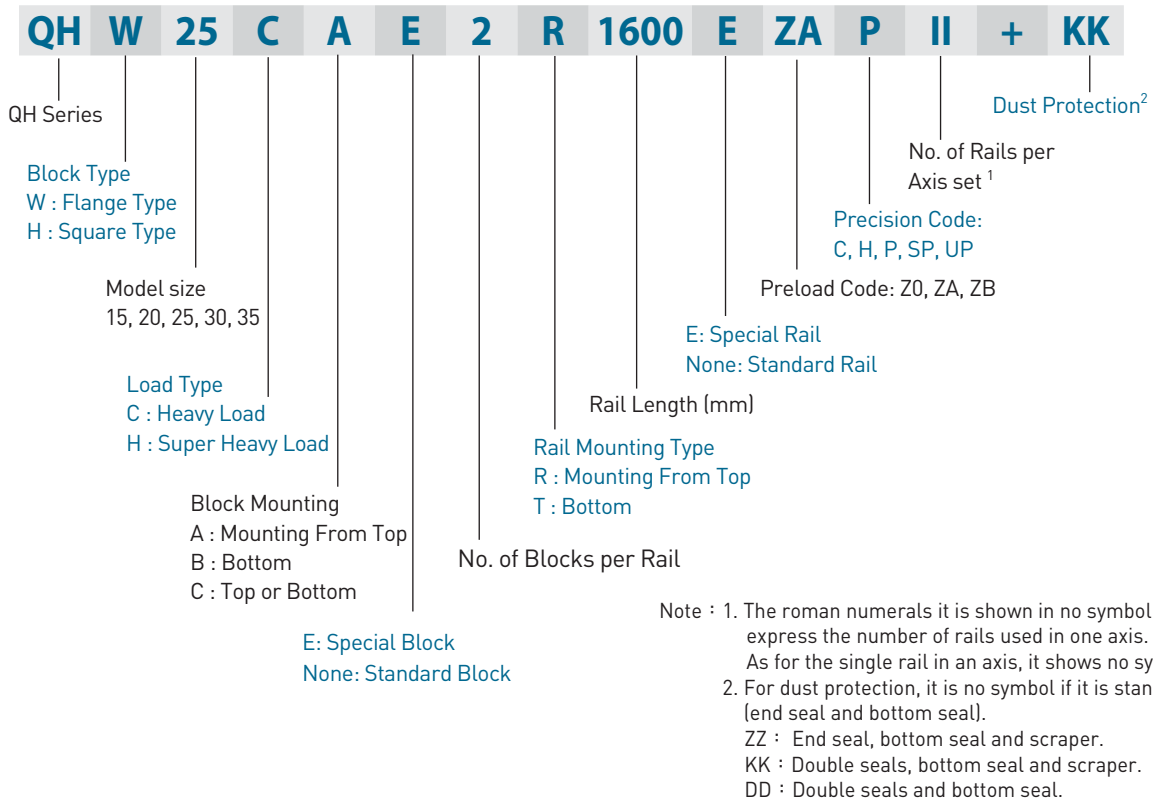
Table 2.73

Test Sample	QHW25CAZAH	High Speed Test
Speed	130m/min	<p>High Speed Test V=130m/min After 4,500km</p>
Lubricant	lithium soap base grease (initial lubrication only)	
Distance travel	4,500km (continue testing)	

### 2-8-3 Model Number of QH Series

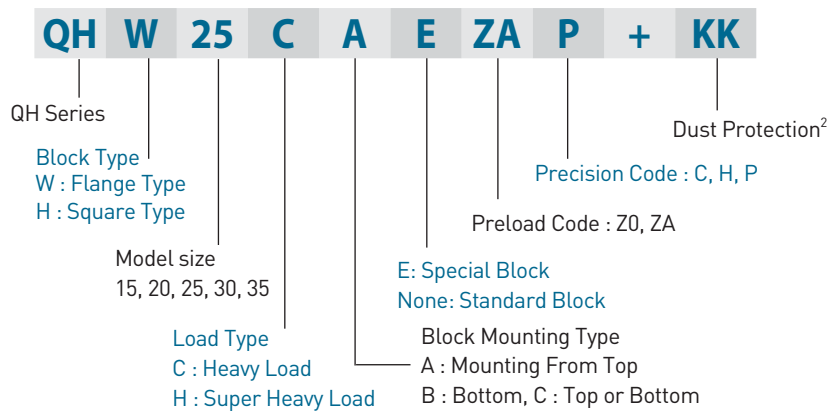
HIWIN-QH series guideway can be classified into non-interchangeable and interchangeable types. The sizes are identical. The main difference is that the interchangeable blocks and rails can be freely exchanged. Because of dimensional control, the interchangeable type linear guideway is a perfect choice for the client when rails do not need to be paired for an axis. And since the QH and HG share the identical rails, the customer does not need to redesign when choosing the QH series. Therefore the HIWIN-QH linear guideway has increased applicability.

(1) Non-interchangeable type

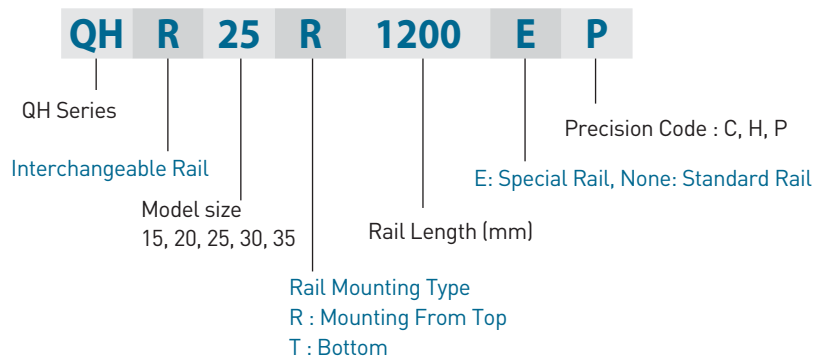


(2) Interchangeable type

○ Model Number of QH Block



○ Model Number of QH Rail

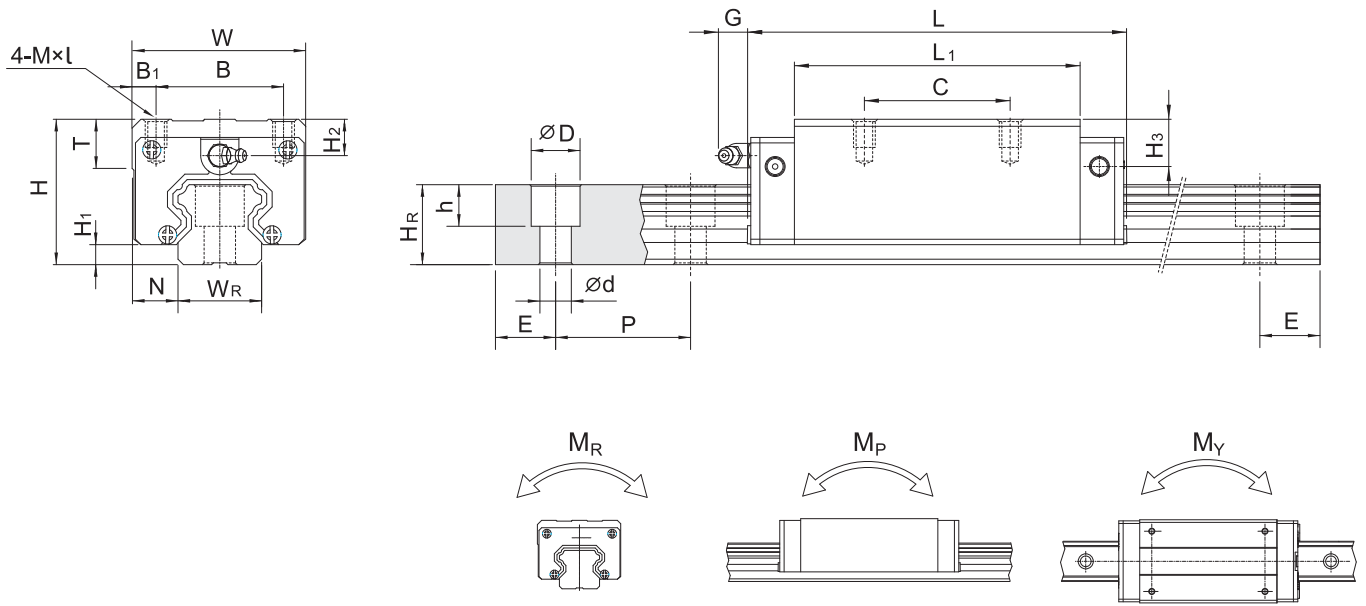


# Linear Guideways

## Q1 Type

### 2-8-4 Dimensions for HIWIN QH Series

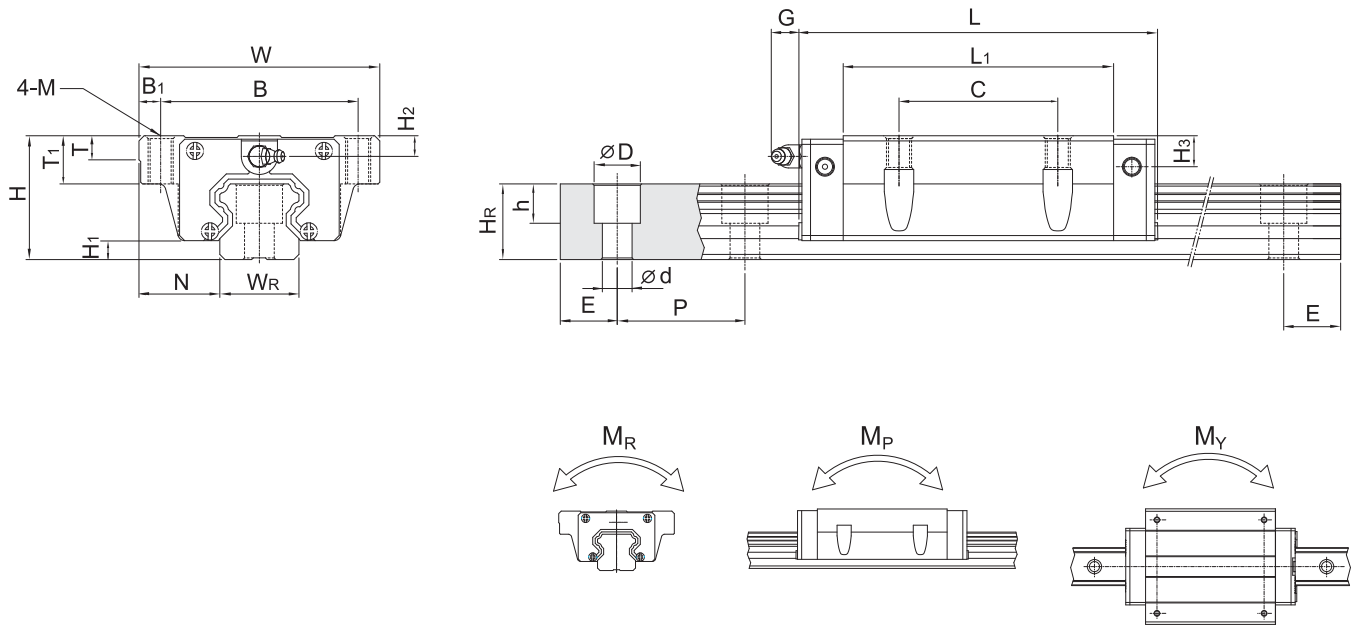
#### (1) QHH-CA / QHH-HA



Model No.	Dimensions of Assembly (mm)			Dimensions of Block (mm)													Mounting Bolt for Rail (mm)	Basic Dynamic Load Rating C(kN)	Basic Static Load Rating C <sub>0</sub> (kN)	Static Rated Moment			Weight						
	H	H <sub>1</sub>	N	W	B	B <sub>1</sub>	C	L <sub>1</sub>	L	G	MxL	T	H <sub>2</sub>	H <sub>3</sub>	W <sub>R</sub>	H <sub>R</sub>				D	h	d	P	E	M <sub>R</sub>	M <sub>P</sub>	M <sub>Y</sub>	Block	Rail
	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg				kg	kg	kg	kg	kg	kg	kg	kg	kg	kg
QHH15CA	28	4	9.5	34	26	4	26	39.4	61.4	5.3	M4 x 5	6	8.5	9.75	15	15	7.5	5.3	4.5	60	20	M4x16	10.18	21.42	0.14	0.12	0.12	0.18	1.45
QHH20CA	30	4.6	12	44	32	6	36	50.5	77.5	12	M5 x 6	8	6	7	20	17.5	9.5	8.5	6	60	20	M5x16	16.83	34.93	0.35	0.26	0.26	0.29	2.21
QHH20HA								65.2	92.2														19.49	43.09	0.42	0.30	0.30	0.38	
QHH25CA	40	5.5	12.5	48	35	6.5	35	58	85	12	M6 x 8	8	10	12.5	23	22	11	9	7	60	20	M6x20	25.10	51.87	0.59	0.48	0.48	0.50	3.21
QHH25HA								78.6	105.6														30.13	67.06	0.77	0.58	0.58	0.68	
QHH30CA	45	6	16	60	40	10	40	70	97.4	12	M8x10	8.5	9.5	9	28	26	14	12	9	80	20	M8x25	36.72	76.67	0.97	0.81	0.81	0.87	4.47
QHH30HA								93	120.4														45.40	103.65	1.32	1.12	1.12	1.15	
QHH35CA	55	7.5	18	70	50	10	50	80	112.4	12	M8x12	10.2	16	13.5	34	29	14	12	9	80	20	M8x25	46.95	94.96	1.60	1.13	1.13	1.44	6.30
QHH35HA								105.8	138.2														57.83	128.29	2.15	1.56	1.56	1.90	

Note : 1 kgf = 9.81 N

(2) QHW-CA / QHW-HA



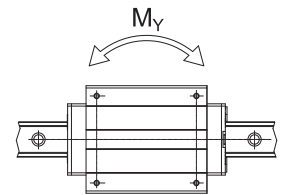
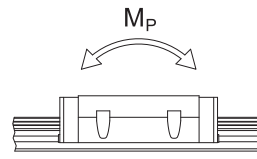
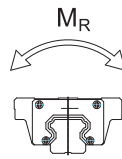
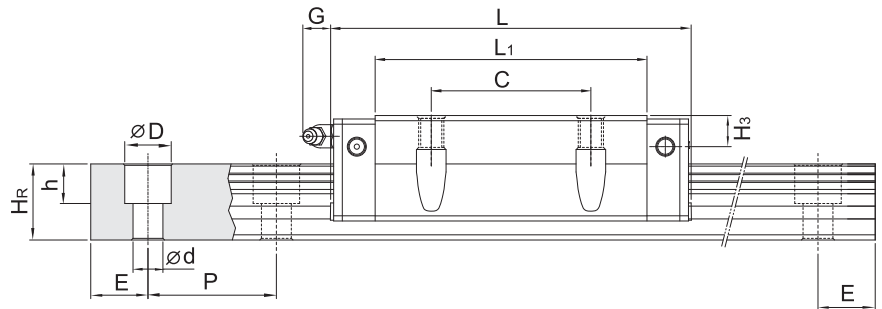
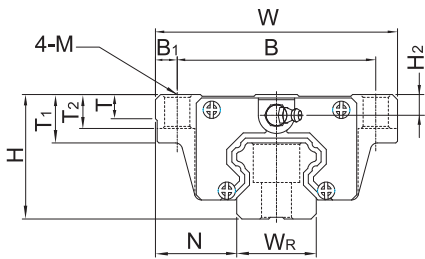
Model No.	Dimensions of Assembly (mm)			Dimensions of Block (mm)													Dimensions of Rail (mm)					Mounting Bolt for Rail (mm)	Basic Dynamic Load Rating C (kN)	Basic Static Load Rating C <sub>0</sub> (kN)	Static Rated Moment			Weight		
	H	H <sub>1</sub>	N	W	B	B <sub>1</sub>	C	L <sub>1</sub>	L	G	M	T	T <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	W <sub>R</sub>	H <sub>R</sub>	D	h	d	P				E	M <sub>R</sub>	M <sub>P</sub>	M <sub>Y</sub>	Block	Rail
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm				mm	mm	kN-m	kN-m	kN-m	kg
QHW15CA	24	4	16	47	38	4.5	30	39.4	61.4	5.3	M5	6	8.9	4.5	5.8	15	15	7.5	5.3	4.5	60	20	M4x16	10.18	21.42	0.14	0.12	0.12	0.17	1.45
QHW20CA	30	4.6	21.5	63	53	5	40	50.5	77.5	12	M6	8	10	6	7	20	18	9.5	8.5	6	60	20	M5x16	16.83	34.93	0.38	0.26	0.26	0.40	2.21
QHW20HA								65.2	92.2															19.49	43.09	0.42	0.30	0.30	0.52	
QHW25CA	36	5.5	23.5	70	57	6.5	45	58	85	12	M8	8	14	6	8.5	23	22	11	9	7	60	20	M6x20	25.10	51.87	0.59	0.48	0.48	0.59	3.21
QHW25HA								78.6	105.6															30.13	67.06	0.77	0.58	0.58	0.80	
QHW30CA	42	6	31	90	72	9	52	70	97.4	12	M10	8.5	16	6.5	6	28	26	14	12	9	80	20	M8x25	36.72	76.67	0.97	0.81	0.81	1.09	4.47
QHW30HA								93	120.4															45.40	103.65	1.32	1.12	1.12	1.44	
QHW35CA	48	7.5	33	100	82	9	62	80	112.4	12	M10	10.1	18	9	6.5	34	29	14	12	9	80	20	M8x25	46.95	94.96	1.60	1.13	1.13	1.56	6.30
QHW35HA								105.8	138.2															57.83	128.29	2.15	1.56	1.56	2.06	

Note : 1 kgf = 9.81 N

# Linear Guideways

## Q1 Type

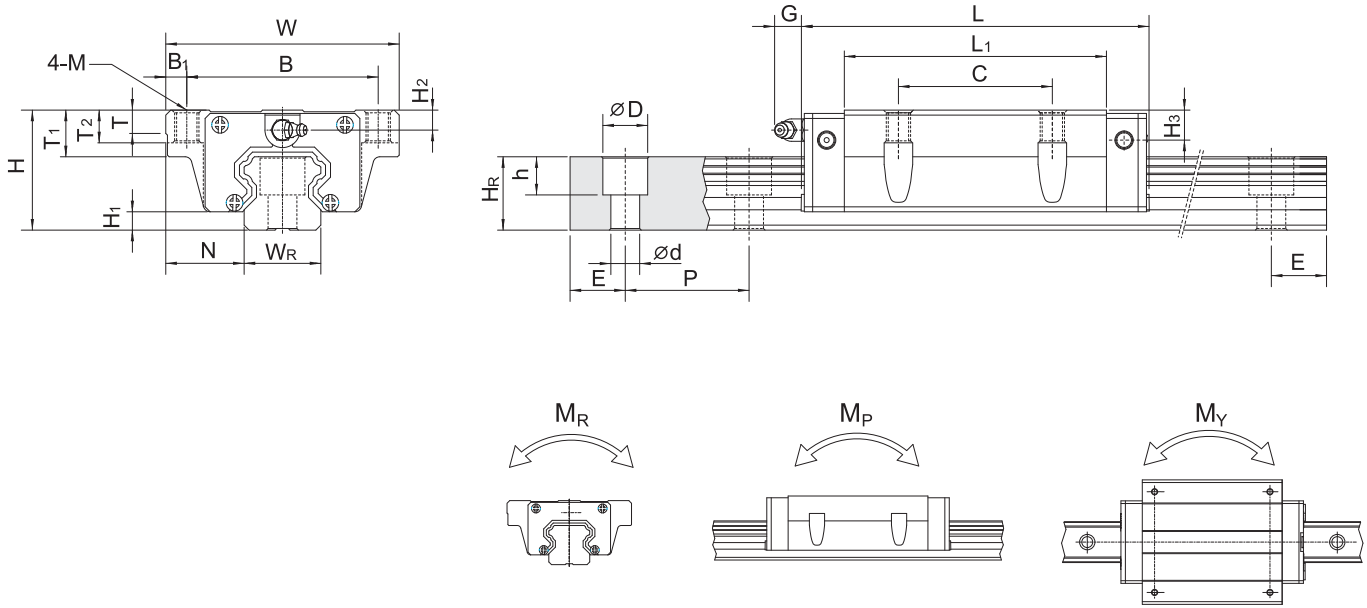
### (3) QHW-CB / QHW-HB



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 <sub>0</sub> (kN)	Static Rated Moment			Weight	
	H	H <sub>1</sub>	N	W	B	B <sub>1</sub>	C	L <sub>1</sub>	L	G	M	T	T <sub>1</sub>	T <sub>2</sub>	H <sub>2</sub>	H <sub>3</sub>	W <sub>R</sub>	H <sub>R</sub>	D	h	d	P	E	M <sub>R</sub>	M <sub>P</sub>	M <sub>Y</sub>	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	kN-m	kN-m	kN-m				kg	kg/m			
QHW15CB	24	4	16	47	38	4.5	30	39.4	61.4	5.3	∅4.5	6	8.9	6.95	4.5	5.75	15	15	7.5	5.3	4.5	60	20	M4x16	10.18	21.42	0.14	0.12	0.12	0.17	1.45				
QHW20CB	30	4.6	21.5	63	53	5	40	50.5	77.5	12	∅6	8	10	9.5	6	7	20	17.5	9.5	8.5	6	60	20	M5x16	16.83	34.93	0.35	0.26	0.26	0.40	2.21				
QHW20HB								65.2	92.2																19.49	43.09	0.42	0.30	0.30	0.52					
QHW25CB	36	5.5	23.5	70	57	6.5	45	58	85	12	∅7	8	14	13	6	8.5	23	22	11	9	7	60	20	M6x20	25.10	51.87	0.59	0.48	0.48	0.59	3.21				
QHW25HB								78.6	105.6																30.13	67.06	0.77	0.58	0.58	0.80					
QHW30CB	42	6	31	90	72	9	52	70	97.4	12	∅9	8.5	16	15	6.5	6	28	26	14	12	9	80	20	M8x25	36.72	76.67	0.97	0.81	0.81	1.09	4.47				
QHW30HB								93	120.4																45.40	103.65	1.32	1.12	1.12	1.44					
QHW35CB	48	7.5	33	100	82	9	62	80	112.4	12	∅9	10.1	18	17	9	6.5	34	29	14	12	9	80	30	M8x25	46.95	94.96	1.60	1.13	1.13	1.56	6.30				
QHW35HB								105.8	138.2																57.83	128.29	2.15	1.56	1.56	2.06					

Note : 1 kgf = 9.81 N

(4) QHW-CC / QHW-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 <sub>0</sub> (kN)	Static Rated Moment			Weight			
	H	H <sub>1</sub>	N	W	B	B <sub>1</sub>	C	L <sub>1</sub>	L	G	M	T	T <sub>1</sub>	T <sub>2</sub>	H <sub>2</sub>	H <sub>3</sub>	W <sub>R</sub>	H <sub>R</sub>	D	h	d				P	E	M <sub>R</sub>	M <sub>P</sub>	M <sub>Y</sub>	Block	Rail
	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg				kg	kg	kg	kg	kg	kg	kg
QHW15CC	24	4	16	47	38	4.5	30	39.4	61.4	5.3	M5	6	8.9	6.95	4.5	5.75	15	15	7.5	5.3	4.5	60	20	M4x16	10.18	21.42	0.14	0.12	0.12	0.17	1.45
QHW20CC	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	16.83	34.93	0.35	0.26	0.26	0.40	2.21
QHW20HC								65.2	92.2																19.49	43.09	0.42	0.30	0.30	0.52	
QHW25CC	36	5.5	23.5	70	57	6.5	45	58	85	12	M8	8	14	10	6	8.5	23	22	11	9	7	60	20	M6x20	25.10	51.87	0.59	0.48	0.48	0.59	3.21
QHW25HC								78.6	105.6																30.13	67.06	0.77	0.58	0.58	0.80	
QHW30CC	42	6	31	90	72	9	52	70	97.4	12	M10	8.5	16	10	6.5	6	28	26	14	12	9	80	20	M8x25	36.72	76.67	0.97	0.81	0.81	1.09	4.47
QHW30HC								93	120.4																45.40	103.65	1.32	1.12	1.12	1.44	
QHW35CC	48	7.5	33	100	82	9	62	80	112.4	12	M10	10.1	18	13	9	6.5	34	29	14	12	9	80	30	M8x25	46.95	94.96	1.60	1.13	1.13	1.56	6.30
QHW35HC								105.8	138.2																57.83	128.29	2.15	1.56	1.56	2.06	

Note : 1 kgf = 9.81 N