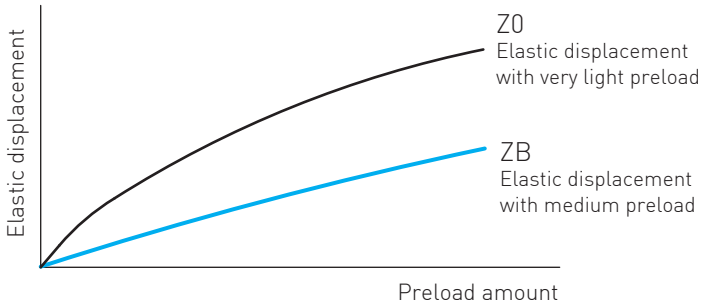
2-6-5 Preload

(1) Definition

A preload can be applied to each guideway. Generally, a linear motion guideway has a negative clearance between the groove and balls in order to improve stiffness and maintain high precision. The figure shows that adding a preload can improve stiffness of the linear guideway. A preload no greater than ZA would be recommended for model sizes smaller than QE20. This will avoid an over-loaded condition that would affect guideway life.



(2) Preload classes

HIWIN offers three standard preloads for various applications and conditions.

Table 2-6-8 **Preload Classes**

Class	Code	Preload	Condition
Very Light Preload	Z0	0~ 0.02C	Certain load direction,low impact, low precision required
Light Preload	ZA	0.03C~0.05C	low load and high precision required
Medium Preload	ZB	0.06C~ 0.08C	High rigidity required, with vibration and impact

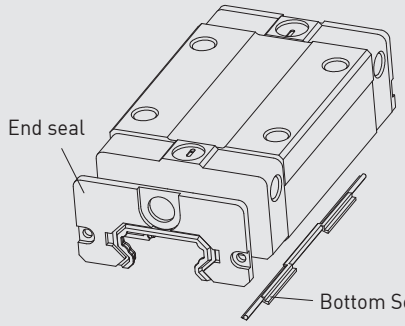
Class	Interchangeable Guideway	Non-Interchangeable Guideway
Preload classes	Z0, ZA	Z0, ZA, ZB

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

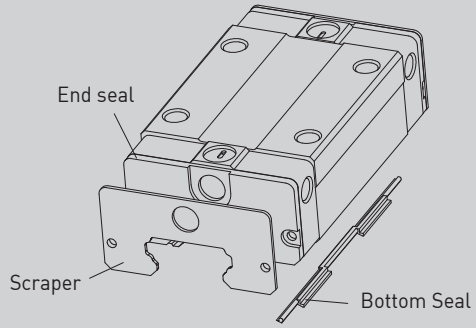
2-6-6 Dust Protection Equipment

(1) Codes of equipment

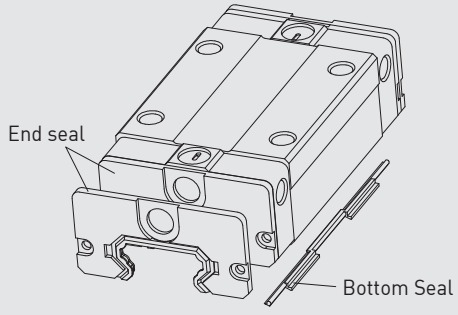
If the following equipment is needed, please indicate the code followed by the model number.



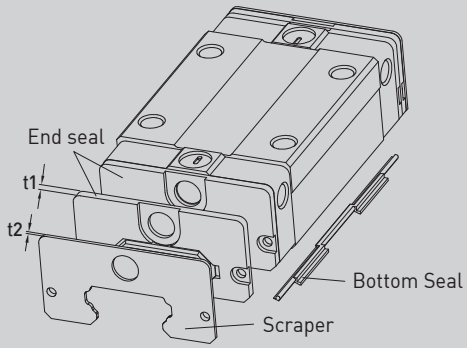
No symbol: Standard Protection (End seal + Bottom seal)



ZZ(End seal + Bottom seal + Scraper)



DD (Double seals + Bottom Seal)



KK (Double seals + Bottom Seal + Scraper)

QE Series

Low Profile

(2) End seal and bottom seal

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

(3) Double seals

Removes foreign matter from the rail preventing contaminants from entering the block.

Table 2-6-9 **Dimensions of end seal**

Size	Thickness (t1) (mm)	Size	Thickness (t1) (mm)
QE15 ES	2	QE30 ES	2.5
QE20 ES	2	QE35 ES	2
QE25 ES	2.5		

(4) Scraper

Clears larger contaminants, such as weld spatter and metal cuttings, from the rail. Metal scraper protects end seals from excessive damage.

Table 2-6-10 **Dimensions of Scraper**

Size	Thickness (t2) (mm)
QE15 SC	1
QE20 SC	1
QE25 SC	1
QE30 SC	1
QE35 SC	1.5

(5) Dimensions of block equipped with the dustproof parts

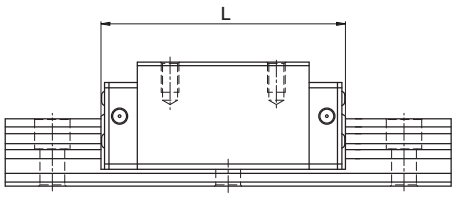


Table 2-6-11 **Overall block length**

unit: mm

Size	Overall block length (L)			
	SS	ZZ	DD	KK
QE15S	40.1 (42.9)	42.1 (46.5)	44.1 (46.9)	46.1 (50.5)
QE15C	56.8 (59.6)	58.8 (63.2)	60.8 (63.6)	62.8 (67.2)
QE20S	50.0 (54.0)	52.0 (58.0)	54.0 (58.0)	56.0 (62.0)
QE20C	69.1 (73.1)	71.1 (77.1)	73.1 (77.1)	75.1 (81.1)
QE25S	60.1 (63.5)	62.1 (68.1)	65.1 (68.5)	67.1 (73.1)
QE25C	83.6 (87.0)	85.6 (91.6)	88.6 (92.0)	90.6 (96.6)
QE30S	67.5 (71.3)	69.5 (75.5)	72.5 (76.3)	74.5 (80.5)
QE30C	96.1 (99.9)	98.1 (104.1)	101.1 (104.9)	103.1 (109.1)
QE35S	76.0 (80.0)	79.0 (84.0)	80.0 (84.0)	83.0 (88.0)
QE35C	108.0 (112)	111.0 (116.0)	112.0 (116.0)	115.0 (120.0)

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