

## EG Series

### Low Profile Ball Type

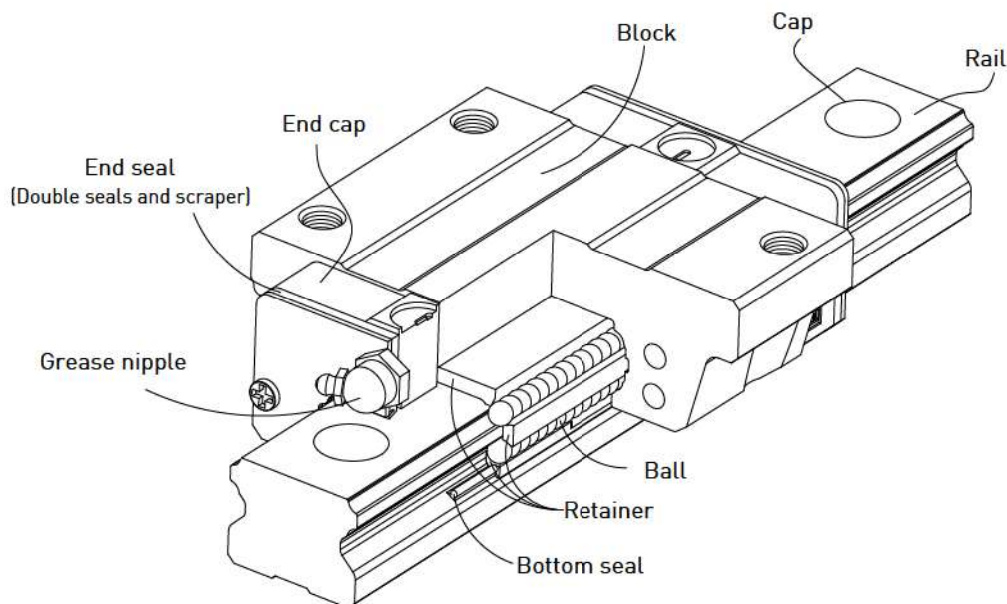
## 2-2 EG Series - Low Profile Ball Type Linear Guideway

### 2-2-1 Features of the EG Series Linear Guideway

The design of the EG series offers a low profile, high load capacity, and high rigidity. It also features an equal load rating in all four directions and self-aligning capability to absorb installation-error, allowing for higher accuracies. Additionally, the lower assembly height and the shorter length make the EG series more suitable for high-speed, automation machines and applications where space is limited.

The retainer is designed to hold the balls in the block even when it is removed from the rail.

### 2-2-2 Construction of EG Series

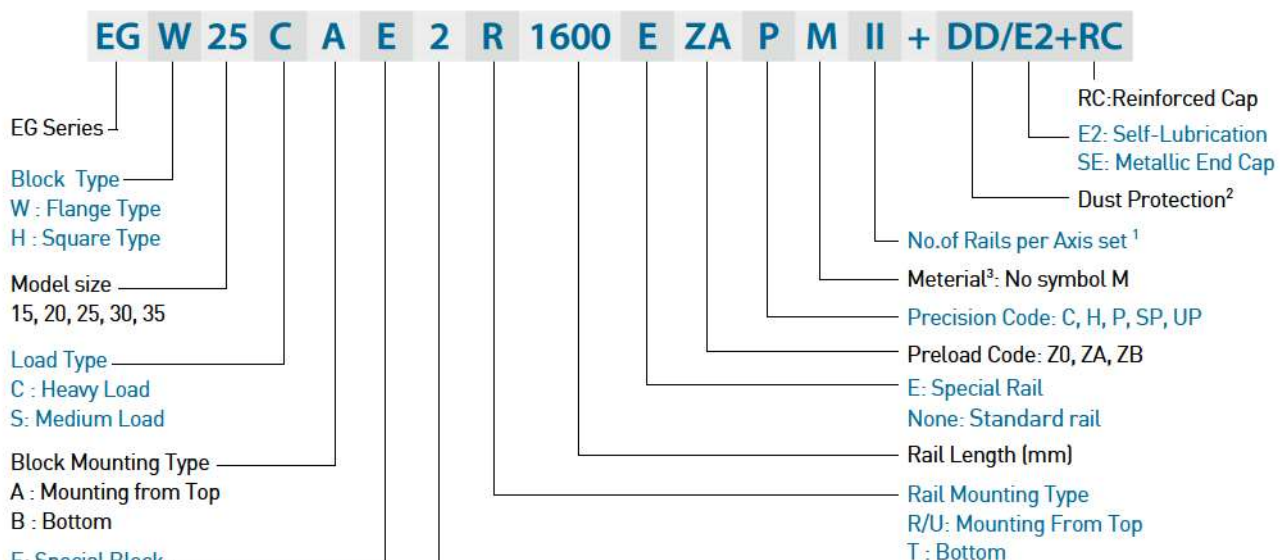


- Rolling circulation system: Block, rail, end cap and retainer
- Lubrication system: Grease nipple and piping Joint
- Dust protection system: End seal, bottom seal, cap and scraper

### 2-2-3 Model Number of EG Series

EG 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 EG series identifies the size, type, accuracy class, preload class, etc.

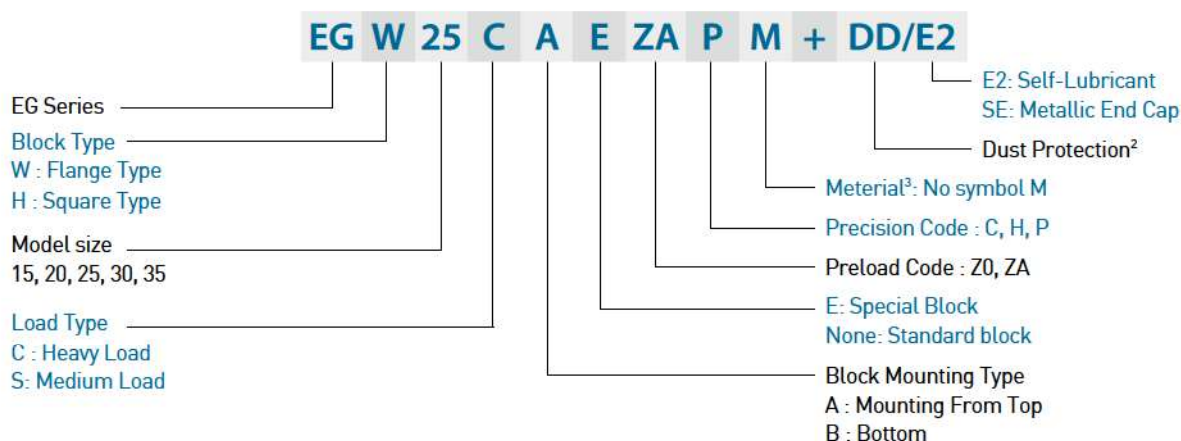
## (1) Non-interchangeable type



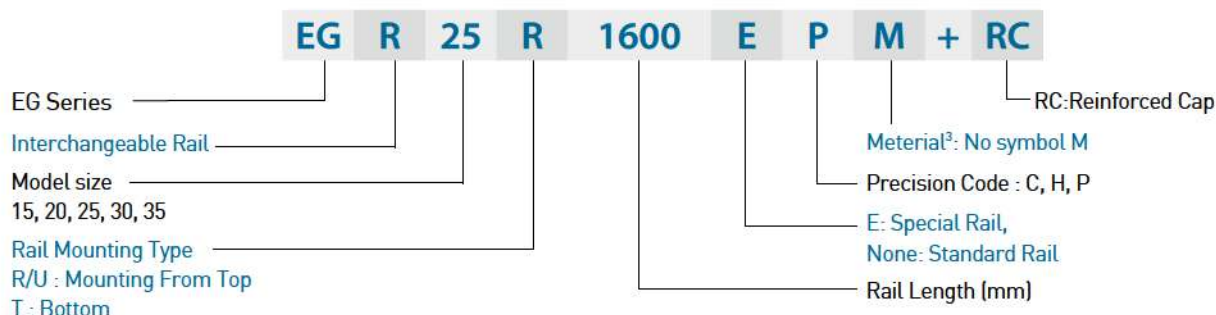
- Note: 1. The roman numerals are used to express the number of matched rails used in one axis. When a single rail is used in an axis, no symbol is indicated.  
 2. No symbol indicates standard protection (end seal and bottom seal).  
 ZZ : End seal, bottom seal and scraper  
 KK: Double seals, bottom seal and scraper.  
 DD: Double seals and bottom seal  
 3. No symbol: Carbon Steel, M: Stainless Steel  
 4. The stainless steel is available for EG15C.

## (2) Interchangeable type

### Model Number of EG Block



### Model Number of EG Rail



EG Series

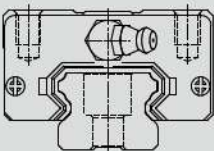
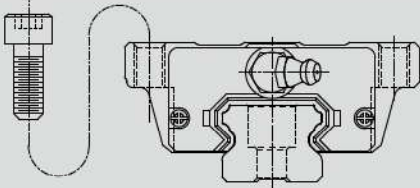
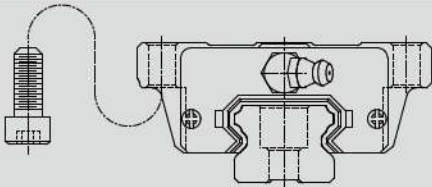
Low Profile Ball Type

2-2-4 Types

(1) Block types

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

Table 2-2-1 Block Types

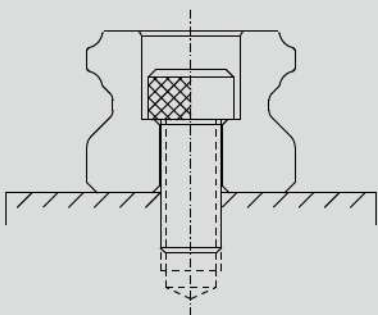
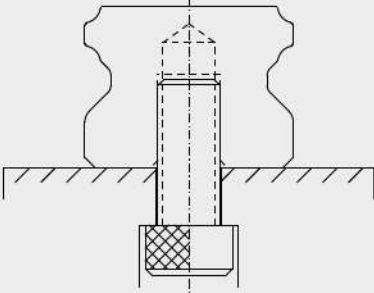
| Type   | Model            | Shape                                                                               | Height<br>(mm) | Rail<br>Length<br>(mm) | Main Applications                                                                                                                                                                                  |
|--------|------------------|-------------------------------------------------------------------------------------|----------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Square | EGH-SA<br>EGH-CA |    | 24             | 100                    | <ul style="list-style-type: none"><li>Automation devices</li><li>High-speed transportation equipment</li><li>Precision measuring equipment</li><li>Semiconductor manufacturing equipment</li></ul> |
|        |                  |                                                                                     | ↓              | ↓                      |                                                                                                                                                                                                    |
| Flange | EGW-SA<br>EGW-CA |   | 24             | 100                    |                                                                                                                                                                                                    |
|        |                  |                                                                                     | ↓              | ↓                      |                                                                                                                                                                                                    |
|        | EGW-SB<br>EGW-CB |  | 24             | 100                    |                                                                                                                                                                                                    |
|        |                  |                                                                                     | ↓              | ↓                      |                                                                                                                                                                                                    |
|        |                  |                                                                                     | 48             | 4000                   |                                                                                                                                                                                                    |
|        |                  |                                                                                     | 48             | 4000                   |                                                                                                                                                                                                    |

\*Please refer to the chapter 2-2-13 for the dimensional detail.

(2) Rail types

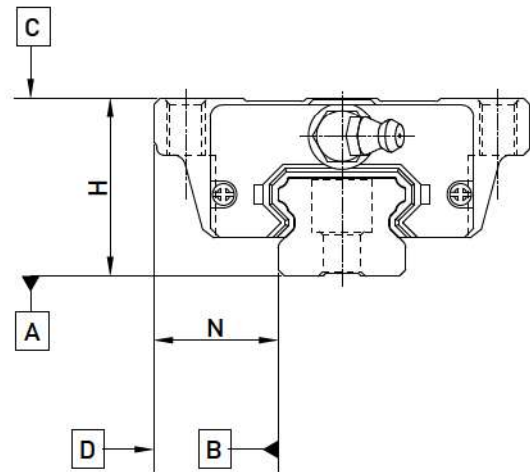
Besides the standard top mounting type, HIWIN also offers bottom mounting type rails.

Table 2-2-2 Rail Types

| Mounting from Top                                                                   | Mounting from Bottom                                                                 |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |

## 2-2-5 Accuracy

The accuracy of the EG series can be classified into 5 classes: normal(C), high(H), precision(P), super precision(SP), and ultra precision(UP). Choose the class by referencing the accuracy of selected equipment.



### [1] Accuracy of non-interchangeable guideways

Table 2-2-3 Accuracy Standards

Unit: mm

| Item                                                | EG - 15, 20     |             |                  |                            |                            |
|-----------------------------------------------------|-----------------|-------------|------------------|----------------------------|----------------------------|
| Accuracy Classes                                    | Normal<br>(C)   | High<br>(H) | Precision<br>(P) | Super<br>Precision<br>(SP) | Ultra<br>Precision<br>(UP) |
| Dimensional tolerance of height H                   | ± 0.1           | ± 0.03      | 0<br>- 0.03      | 0<br>- 0.015               | 0<br>- 0.008               |
| Dimensional tolerance of width N                    | ± 0.1           | ± 0.03      | 0<br>- 0.03      | 0<br>- 0.015               | 0<br>- 0.008               |
| Variation of height H                               | 0.02            | 0.01        | 0.006            | 0.004                      | 0.003                      |
| Variation of width N                                | 0.02            | 0.01        | 0.006            | 0.004                      | 0.003                      |
| Running parallelism of block surface C to surface A | See Table 2-2-7 |             |                  |                            |                            |
| Running parallelism of block surface D to surface B | See Table 2-2-7 |             |                  |                            |                            |

Table 2-2-4 Accuracy Standards

Unit: mm

| Item                                                | EG - 25, 30, 35 |             |                  |                            |                            |
|-----------------------------------------------------|-----------------|-------------|------------------|----------------------------|----------------------------|
| Accuracy Classes                                    | Normal<br>(C)   | High<br>(H) | Precision<br>(P) | Super<br>Precision<br>(SP) | Ultra<br>Precision<br>(UP) |
| Dimensional tolerance of height H                   | ± 0.1           | ± 0.04      | 0<br>- 0.04      | 0<br>- 0.02                | 0<br>- 0.01                |
| Dimensional tolerance of width N                    | ± 0.1           | ± 0.04      | 0<br>- 0.04      | 0<br>- 0.02                | 0<br>- 0.01                |
| Variation of height H                               | 0.02            | 0.015       | 0.007            | 0.005                      | 0.003                      |
| Variation of width N                                | 0.03            | 0.015       | 0.007            | 0.005                      | 0.003                      |
| Running parallelism of block surface C to surface A | See Table 2-2-7 |             |                  |                            |                            |
| Running parallelism of block surface D to surface B | See Table 2-2-7 |             |                  |                            |                            |

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#### (2) Accuracy of interchangeable guideways

Table 2-2-5 Accuracy Standards

Unit: mm

| Item                                                | EG - 15, 20     |             |                  |
|-----------------------------------------------------|-----------------|-------------|------------------|
| Accuracy Classes                                    | Normal<br>(C)   | High<br>(H) | Precision<br>(P) |
| Dimensional tolerance of height H                   | ± 0.1           | ± 0.03      | ± 0.015          |
| Dimensional tolerance of width N                    | ± 0.1           | ± 0.03      | ± 0.015          |
| Variation of height H                               | 0.02            | 0.01        | 0.006            |
| Variation of width N                                | 0.02            | 0.01        | 0.006            |
| Running parallelism of block surface C to surface A | See Table 2-2-7 |             |                  |
| Running parallelism of block surface D to surface B | See Table 2-2-7 |             |                  |

Table 2-2-6 Accuracy Standards

Unit: mm

| Item                                                | EG - 25, 30, 35 |             |                  |
|-----------------------------------------------------|-----------------|-------------|------------------|
| Accuracy Classes                                    | Normal<br>(C)   | High<br>(H) | Precision<br>(P) |
| Dimensional tolerance of height H                   | ± 0.1           | ± 0.04      | ± 0.02           |
| Dimensional tolerance of width N                    | ± 0.1           | ± 0.04      | ± 0.02           |
| Variation of height H                               | 0.02            | 0.015       | 0.007            |
| Variation of width N                                | 0.03            | 0.015       | 0.007            |
| Running parallelism of block surface C to surface A | See Table 2-2-7 |             |                  |
| Running parallelism of block surface D to surface B | See Table 2-2-7 |             |                  |

#### (3) Accuracy of running parallelism

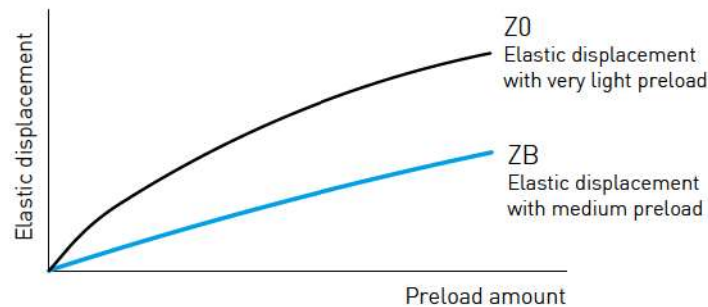
Table 2-2-7 Accuracy of Running Parallelism

| Rail Length (mm) | Accuracy (μm) |    |    |    |    |
|------------------|---------------|----|----|----|----|
|                  | C             | H  | P  | SP | UP |
| ~ 100            | 12            | 7  | 3  | 2  | 2  |
| 100 ~ 200        | 14            | 9  | 4  | 2  | 2  |
| 200 ~ 300        | 15            | 10 | 5  | 3  | 2  |
| 300 ~ 500        | 17            | 12 | 6  | 3  | 2  |
| 500 ~ 700        | 20            | 13 | 7  | 4  | 2  |
| 700 ~ 900        | 22            | 15 | 8  | 5  | 3  |
| 900 ~ 1,100      | 24            | 16 | 9  | 6  | 3  |
| 1,100 ~ 1,500    | 26            | 18 | 11 | 7  | 4  |
| 1,500 ~ 1,900    | 28            | 20 | 13 | 8  | 4  |
| 1,900 ~ 2,500    | 31            | 22 | 15 | 10 | 5  |
| 2,500 ~ 3,100    | 33            | 25 | 18 | 11 | 6  |
| 3,100 ~ 3,600    | 36            | 27 | 20 | 14 | 7  |
| 3,600 ~ 4,000    | 37            | 28 | 21 | 15 | 7  |

## 2-2-6 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 EG20. 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 2-2-8 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.

### (3) Stiffness performance

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

Table 2-2-9 Radial stiffness for EG Series

| Load type   | Series / Size | Stiffness (N/μm) |     |     |
|-------------|---------------|------------------|-----|-----|
|             |               | Z0               | ZA  | ZB  |
| Medium load | EG 15S        | 87               | 186 | 246 |
|             | EG 20S        | 114              | 267 | 369 |
|             | EG 25S        | 138              | 307 | 415 |
|             | EG 30S        | 166              | 335 | 447 |
|             | EG 35S        | 189              | 369 | 492 |
| Heavy load  | EG 15C        | 141              | 323 | 429 |
|             | EG 20C        | 181              | 444 | 615 |
|             | EG 25C        | 219              | 510 | 668 |
|             | EG 30C        | 265              | 555 | 745 |
|             | EG 35C        | 307              | 615 | 816 |

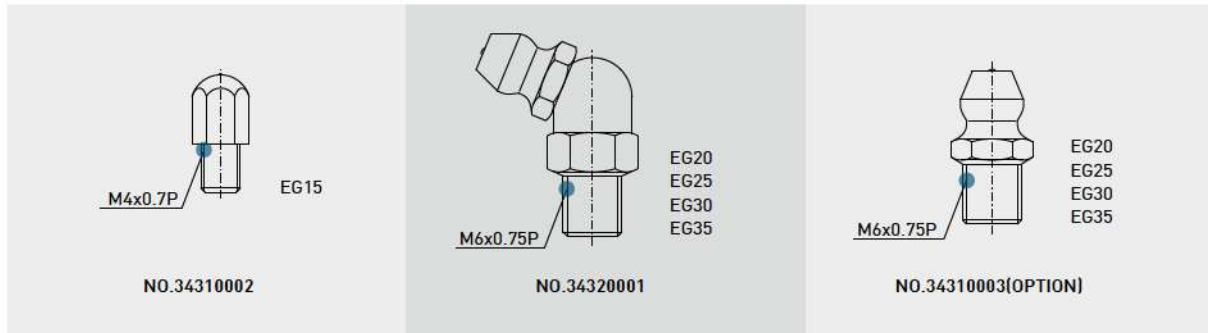
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#### 2-2-7 Lubrication

##### (1) Grease

###### ○ Grease nipple



###### ○ Mounting location

The standard location of the grease fitting is at both ends of the block, the nipple may be mounted in the side or top of the block. For lateral installation, we recommend that the nipple be mounted to the non-reference side, otherwise please contact us. When lubricating from above, in the recess for the O-ring, a smaller, preformed recess can be found. Preheat the 0.8 mm diameter metal tip. Carefully open the small recess with the metal tip and pierce through it. Insert a round sealing ring into the recess. (The round sealing ring is not supplied with the block) Do not open the small recess with a drill bit this may introduce the danger of contamination. It is possible to carry out the lubrication by using the oil-piping joint.

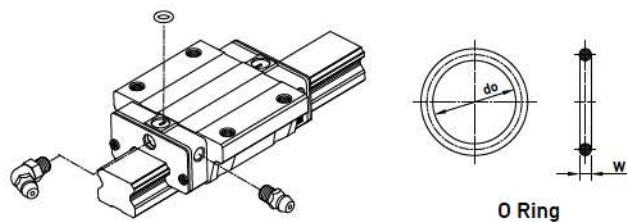
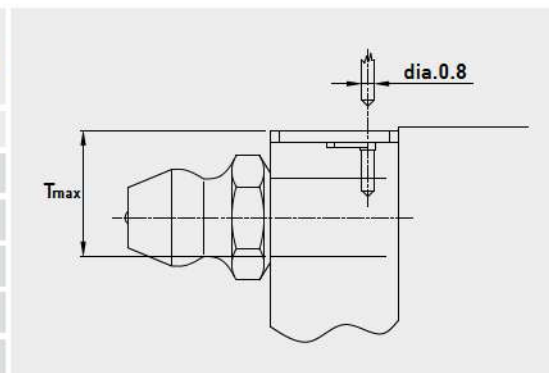


Table 2-2-10 O-Ring size and max. permissible depth for piercing

| Size | O-Ring         |                | Lube hole at top:<br>max. permissible depth<br>for piercing |
|------|----------------|----------------|-------------------------------------------------------------|
|      | $d_o$ (mm)     | $W$ (mm)       |                                                             |
| EG15 | $2.5 \pm 0.15$ | $1.5 \pm 0.15$ | 6.9                                                         |
| EG20 | $4.5 \pm 0.15$ | $1.5 \pm 0.15$ | 8.4                                                         |
| EG25 | $4.5 \pm 0.15$ | $1.5 \pm 0.15$ | 10.4                                                        |
| EG30 | $4.5 \pm 0.15$ | $1.5 \pm 0.15$ | 10.4                                                        |
| EG35 | $4.5 \pm 0.15$ | $1.5 \pm 0.15$ | 10.8                                                        |



○ The oil amount for a block filled with grease

Table 2-2-11 The oil amount for a block filled with grease

| Size | Medium Load<br>(cm <sup>3</sup> ) | Heavy Load<br>(cm <sup>3</sup> ) |
|------|-----------------------------------|----------------------------------|
| EG15 | 0.8                               | 1.4                              |
| EG20 | 1.5                               | 2.4                              |
| EG25 | 2.8                               | 4.6                              |
| EG30 | 3.7                               | 6.3                              |
| EG35 | 5.6                               | 6.6                              |

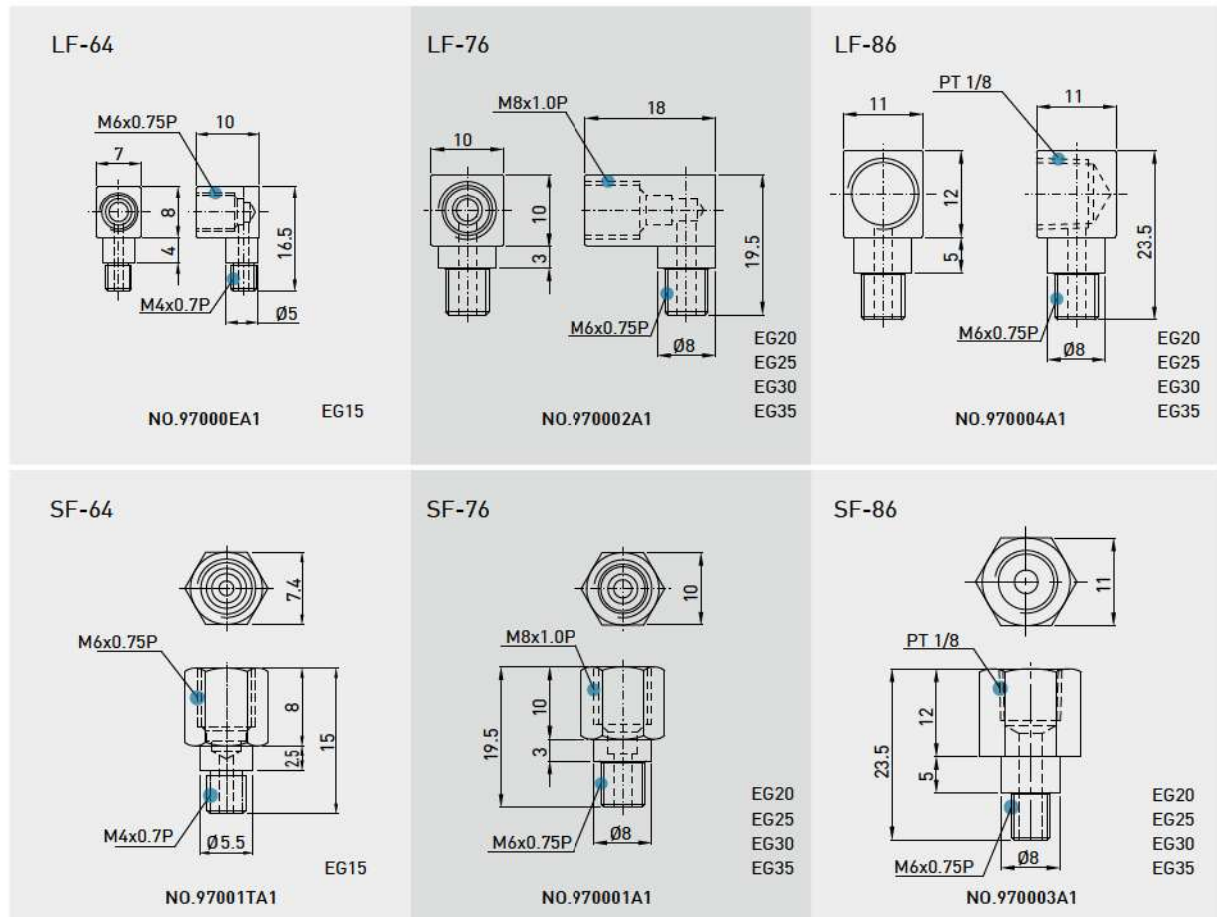
○ Frequency of replenishment

Check the grease every 100 km, or every 3-6 months.

[2] Oil

The recommended viscosity of oil is about 32~150cSt. If you need to use oil-type lubrication, please inform us.

○ Types of oil piping joint



○ Oil feeding rate

Table 2-2-12 oil feed rate

| Size | feed rate<br>(cm <sup>3</sup> /hr) | Size | feed rate<br>(cm <sup>3</sup> /hr) |
|------|------------------------------------|------|------------------------------------|
| EG15 | 0.1                                | EG30 | 0.2                                |
| EG20 | 0.133                              | EG35 | 0.233                              |
| EG25 | 0.167                              |      |                                    |

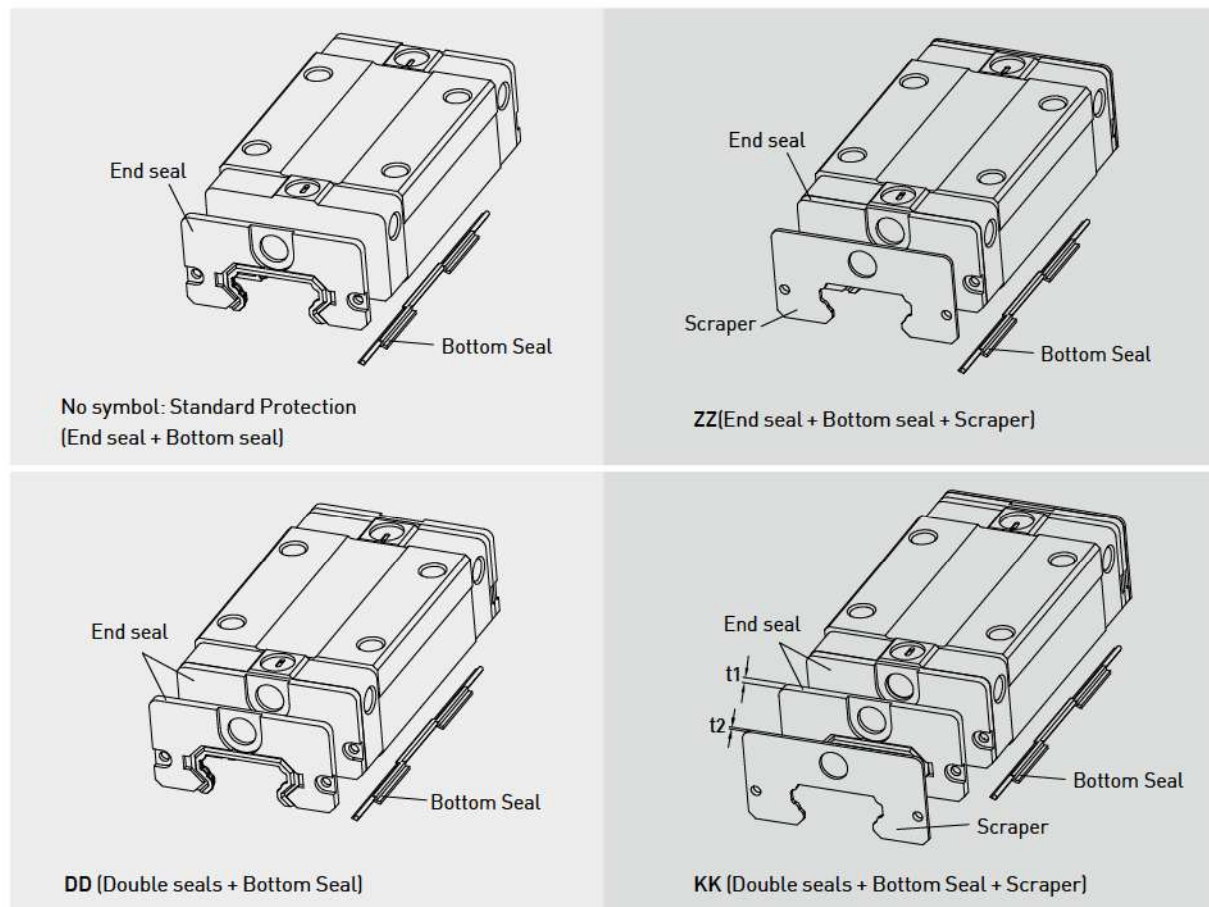
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#### 2-2-8 Dust Protection Equipment

##### (1) Codes of equipment

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



##### (2) End seal and bottom seal

Protects against contaminants entering the block. Reduces potential for groove damage resulting in a reduction of life ratings.

##### (3) Double seals

Removing foreign matters from the rail to prevent contaminants from entering the block.

Table 2-2-13 Dimensions of end seal

| Size    | Thickness (t1)<br>(mm) | Size    | Thickness (t1)<br>(mm) |
|---------|------------------------|---------|------------------------|
| EG15 ES | 2                      | EG30 ES | 2                      |
| EG20 ES | 2                      | EG35 ES | 2                      |
| EG25 ES | 2                      |         |                        |

#### (4) Scraper

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

Table 2-2-14 Dimensions of Scraper

| Size    | Thickness (t2)<br>(mm) | Size    | Thickness (t2)<br>(mm) |
|---------|------------------------|---------|------------------------|
| EG15 SC | 0.8                    | EG30 SC | 1                      |
| EG20 SC | 0.8                    | EG35 SC | 1.5                    |
| EG25 SC | 1                      |         |                        |

#### (5) 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.

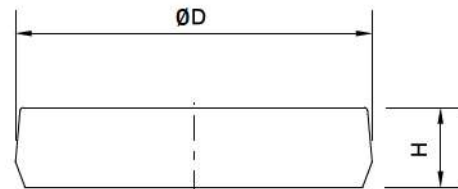


Table 2-2-15 Dimensions of Bolt Caps for Rail Mounting Holes

| Rail size | Bolt size | Diameter(D)<br>(mm) | Thickness(H)<br>(mm) |
|-----------|-----------|---------------------|----------------------|
| EGR15R    | M3        | 6.15                | 1.2                  |
| EGR20R    | M5        | 9.65                | 2.5                  |
| EGR25R    | M6        | 11.15               | 2.5                  |
| EGR30R    | M6        | 11.15               | 2.5                  |
| EGR35R    | M8        | 14.20               | 3.5                  |
| EGR15U    | M4        | 7.65                | 1.1                  |
| EGR30U    | M8        | 14.20               | 3.5                  |

#### (6) Dimensions of block equipped with the dustproof parts

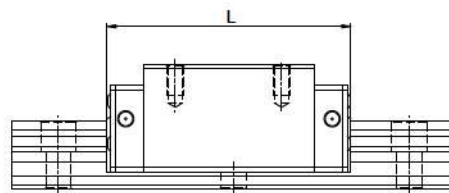


Table 2-2-16 Overall block length

unit: mm

| Size  | Overall block length (L) |               |               |               |
|-------|--------------------------|---------------|---------------|---------------|
|       | SS                       | ZZ            | DD            | KK            |
| EG15S | 40.1 (42.5)              | 41.7 (46.1)   | 44.1 (46.5)   | 45.7 (50.1)   |
| EG15C | 56.8 (59.2)              | 58.4 (62.8)   | 60.8 (63.2)   | 62.4 (66.8)   |
| EG20S | 50.0 (54.0)              | 51.6 (57.6)   | 54.0 (58.0)   | 55.6 (61.6)   |
| EG20C | 69.1 (73.1)              | 70.7 (76.7)   | 73.1 (77.1)   | 74.7 (80.7)   |
| EG25S | 59.1 (63.1)              | 61.1 (67.1)   | 63.1 (67.1)   | 65.1 (71.1)   |
| EG25C | 82.6 (86.6)              | 84.6 (90.6)   | 86.6 (90.6)   | 88.6 (94.6)   |
| EG30S | 69.5 (73.5)              | 71.5 (77.5)   | 73.5 (77.5)   | 75.5 (81.5)   |
| EG30C | 98.1 (102.1)             | 100.1 (106.1) | 102.1 (106.1) | 104.1 (110.1) |
| EG35S | 75.0 (79.0)              | 78.0 (84.0)   | 79.0 (83.0)   | 82.0 (88.0)   |
| EG35C | 108.0 (112.0)            | 111.0 (117.0) | 112.0 (116.0) | 115.0 (121.0) |

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

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#### 2-2-9 Friction

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

Table 2-2-17 Seal Resistance

| Size | Resistance N (kgf) |
|------|--------------------|
| EG15 | 1.47 [0.15]        |
| EG20 | 1.96 [0.2]         |
| EG25 | 1.96 [0.2]         |
| EG30 | 2.45 [0.25]        |
| EG35 | 1.96 [0.2]         |

Note: 1. 1kgf=9.81N

2. Please inform HIWIN if low friction request is required.

#### 2-2-10 Mounting Surface Accuracy Tolerance

Because of the circular-arc contact design, the EG linear guideway can withstand surface-error installation and deliver smooth linear motion. When the mounting surface meets the accuracy requirements of the installation, the high accuracy and rigidity of the guideway will be obtained without any difficulty. For faster installation and smoother movement, HIWIN offers a preload with normal clearance because of its ability to absorb higher deviations in mounting surface inaccuracies.

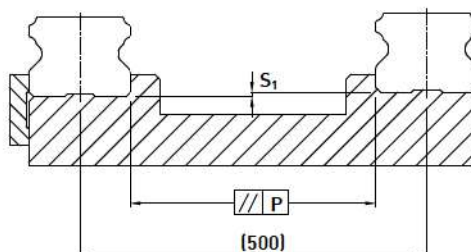


Table 2-2-18 Max. Parallelism Tolerance (P)

unit:  $\mu\text{m}$

| Size | Preload classes |    |    |
|------|-----------------|----|----|
|      | Z0              | ZA | ZB |
| EG15 | 25              | 18 | -  |
| EG20 | 25              | 20 | 18 |
| EG25 | 30              | 22 | 20 |
| EG30 | 40              | 30 | 27 |
| EG35 | 50              | 35 | 30 |

Table 2-2-19 Max. Tolerance of Reference Surface Height ( $S_1$ )

unit:  $\mu\text{m}$

| Size | Preload classes |     |     |
|------|-----------------|-----|-----|
|      | Z0              | ZA  | ZB  |
| EG15 | 130             | 85  | -   |
| EG20 | 130             | 85  | 50  |
| EG25 | 130             | 85  | 70  |
| EG30 | 170             | 110 | 90  |
| EG35 | 210             | 150 | 120 |

Note : Permissible value is proportional to the axial distance

## 2-2-11 Cautions for Installation

### (1) Shoulder heights and chamfers

Improper shoulder heights and fillets of mounting surfaces will cause a deviation in accuracy and the interference with the rail or block. As long as the recommended shoulder heights and fillets are followed, installation inaccuracies should be eliminated.

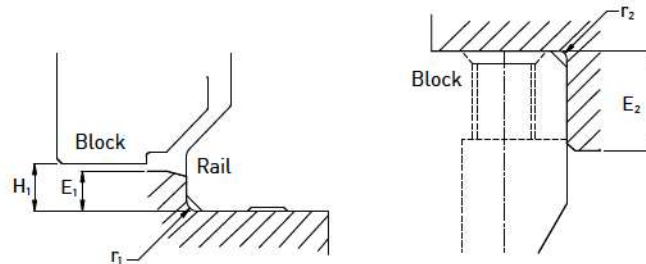


Table 2-2-20 Shoulder Heights and Chamfers

unit: mm

| Size | Max. radius of fillets<br>$r_1$ (mm) | Max. radius of fillets<br>$r_2$ (mm) | Shoulder height beside the rail<br>$E_1$ (mm) | Shoulder height beside the block<br>$E_2$ (mm) | Clearance under block<br>$H_1$ (mm) |
|------|--------------------------------------|--------------------------------------|-----------------------------------------------|------------------------------------------------|-------------------------------------|
| EG15 | 0.5                                  | 0.5                                  | 2.7                                           | 5.0                                            | 4.5                                 |
| EG20 | 0.5                                  | 0.5                                  | 5.0                                           | 7.0                                            | 6.0                                 |
| EG25 | 1.0                                  | 1.0                                  | 5.0                                           | 7.5                                            | 7.0                                 |
| EG30 | 1.0                                  | 1.0                                  | 7.0                                           | 7.0                                            | 10.0                                |
| EG35 | 1.0                                  | 1.0                                  | 7.5                                           | 9.5                                            | 11.0                                |

### (2) Tightening Torque of Bolts for Installation

Improperly tightened mounting bolts will seriously affect the accuracy of linear guide installations. The following tightening torques for different sizes of bolts are recommended.

Table 2-2-21 Tightening Torque

| Size  | Bolt size    | Torque N-cm(kgf-cm) |            |            |
|-------|--------------|---------------------|------------|------------|
|       |              | Iron                | Casting    | Aluminum   |
| EG 15 | M3×0.5P×16L  | 186 (19)            | 127 (13)   | 98 (10)    |
| EG 20 | M5×0.8P×16L  | 883 (90)            | 588 (60)   | 441 (45)   |
| EG 25 | M6×1P×20L    | 1373 (140)          | 921 (94)   | 686 (70)   |
| EG 30 | M6×1P×25L    | 1373 (140)          | 921 (94)   | 686 (70)   |
| EG 35 | M8×1.25P×25L | 3041 (310)          | 2010 (205) | 1470 (150) |

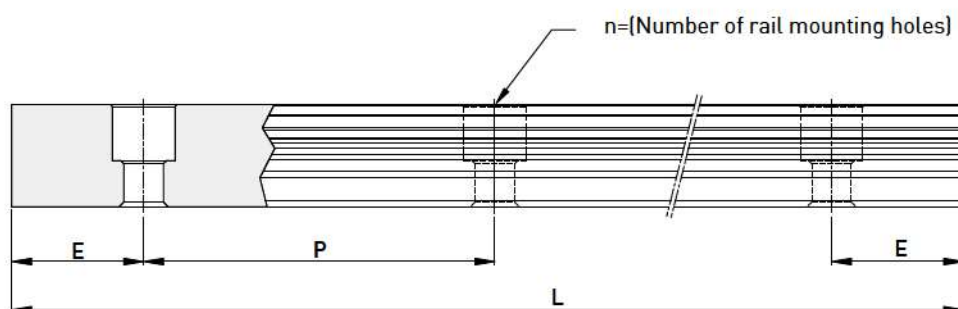
Note: 1 kgf = 9.81 N

## EG Series

### Low Profile Ball Type

#### 2-2-12 Standard and Maximum Lengths of Rail

HIWIN offers a number of standard rail lengths. Standard rail lengths feature end mounting hole placements set to predetermined values (E). For non-standard rail lengths, be sure to specify the E-value to be no greater than 1/2 the pitch (P) dimension. An E-value greater than this will result in unstable rail ends.



$$L = (n-1) \times P + 2 \times E \quad \text{Eq.2.2}$$

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 2-2-22 Rail Standard Length and Max. Length

unit: mm

| Item                              | EGR15     | EGR20      | EGR25      | EGR30      | EGR35      |
|-----------------------------------|-----------|------------|------------|------------|------------|
| Standard Length L(n)              | 160 (3)   | 220 (4)    | 220 (4)    | 280 (4)    | 280 (4)    |
|                                   | 220 (4)   | 280 (5)    | 280 (5)    | 440 (6)    | 440 (6)    |
|                                   | 280 (5)   | 340 (6)    | 340 (6)    | 600 (8)    | 600 (8)    |
|                                   | 340 (6)   | 460 (8)    | 460 (8)    | 760 (10)   | 760 (10)   |
|                                   | 460 (8)   | 640 (11)   | 640 (11)   | 1,000 (13) | 1,000 (13) |
|                                   | 640 (11)  | 820 (14)   | 820 (14)   | 1,640 (21) | 1,640 (21) |
|                                   | 820 (14)  | 1,000 (17) | 1,000 (17) | 2,040 (26) | 2,040 (26) |
|                                   |           | 1,240 (21) | 1,240 (21) | 2,520 (32) | 2,520 (32) |
|                                   |           | 1,600 (27) | 1,600 (27) | 3,000 (38) | 3,000 (38) |
| Pitch (P)                         | 60        | 60         | 60         | 80         | 80         |
| Distance to End (E <sub>s</sub> ) | 20        | 20         | 20         | 20         | 20         |
| Max. Standard Length              | 4,000(67) | 4,000 (67) | 4,000 (67) | 3,960 (50) | 3,960 (50) |
| Max. Length                       | 4,000     | 4,000      | 4,000      | 4,000      | 4,000      |

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 means the max. rail length with standard E value on both sides.

3. If different E value is needed, please contact HIWIN.

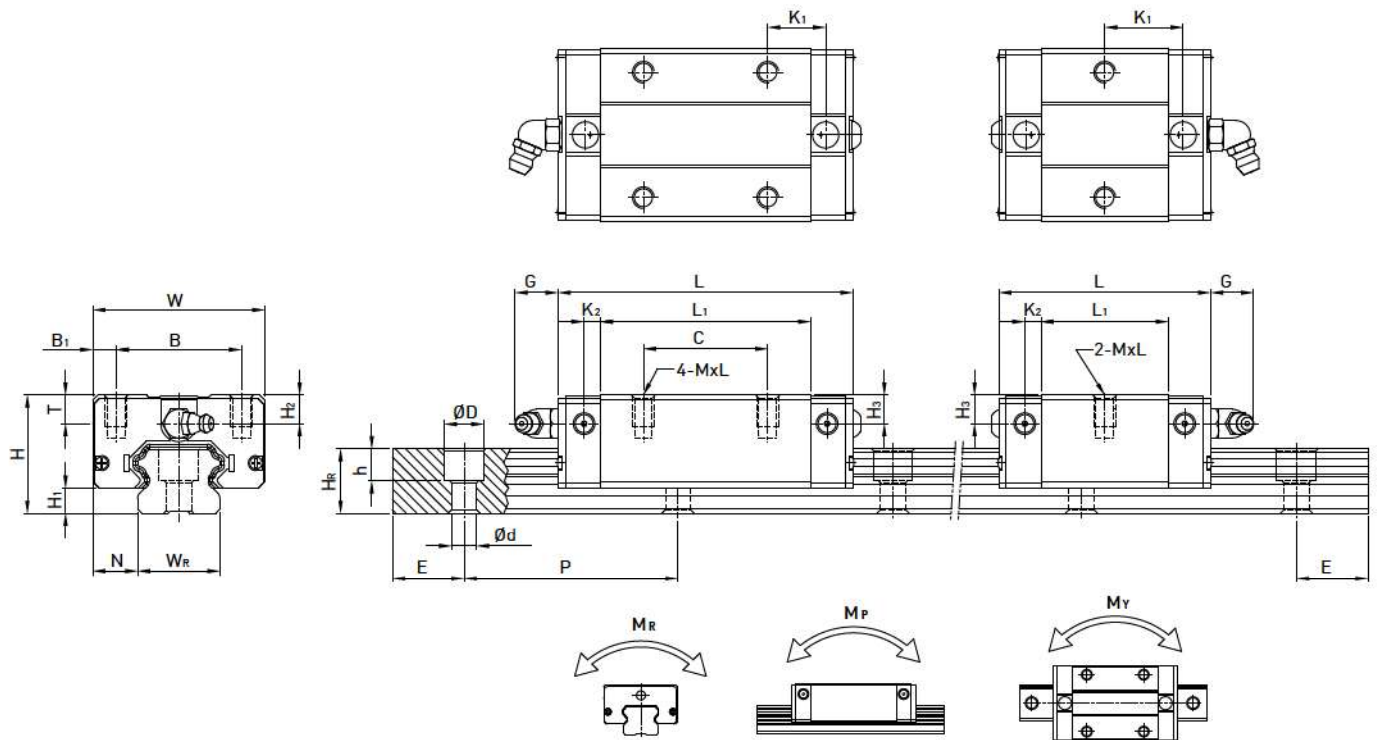
4. EGR15 of stainless steel is supplied with the maximum length of 2000mm.

## 2-2-13 Dimensions for HIWIN EG Series

### (1) EGH-SA / EGH-CA

#### EGH-CA

#### EGH-SA



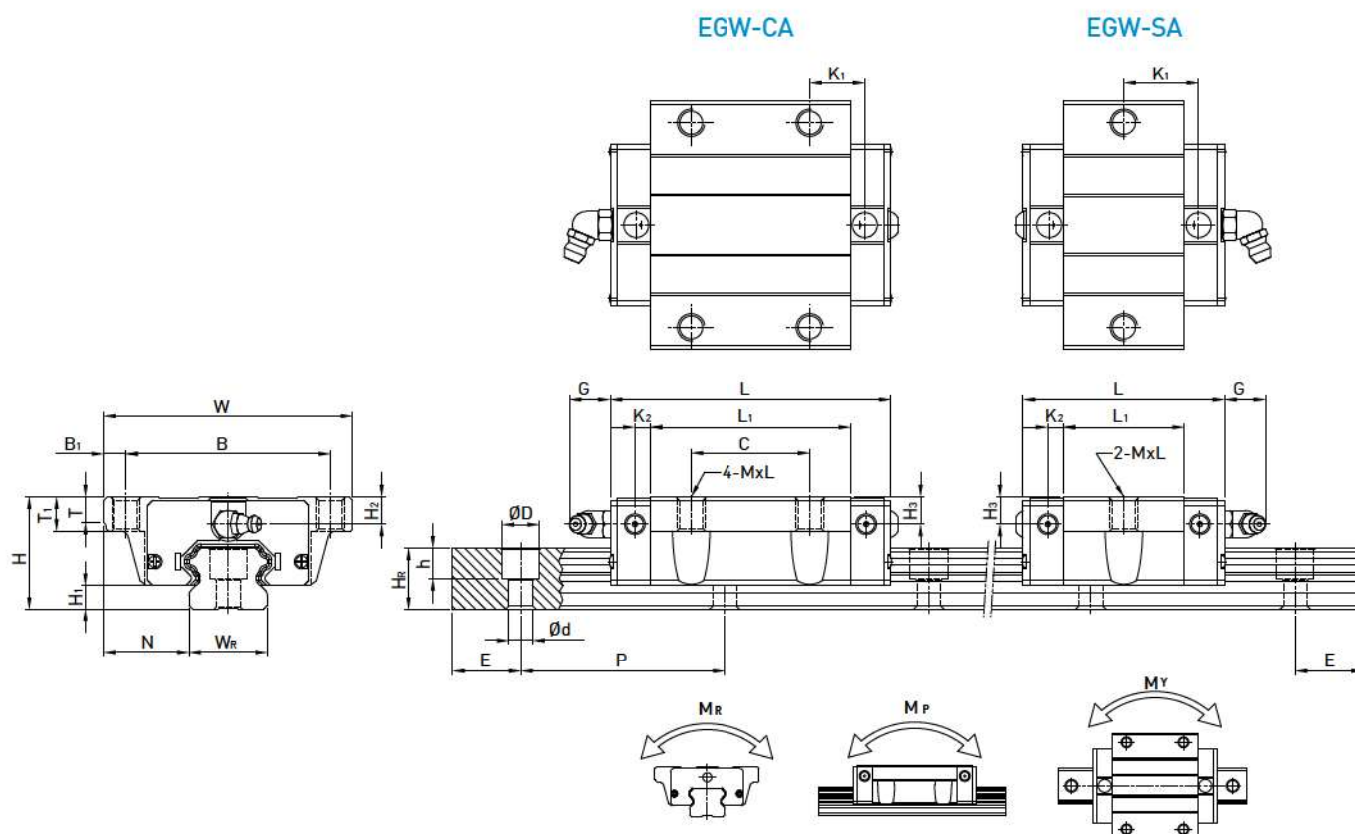
| Model No. | Dimensions of Assembly (mm) |                |      | Dimensions of Block (mm) |    |                |    |                |      |                |                |     |       |     |                |                |                | Dimensions of Rail (mm) |     |     |     |    |    |      | Mounting Bolt for Rail | Basic Dynamic Load Rating | Basic Static Load Rating | Static Rated Moment |                |                | Weight |      |
|-----------|-----------------------------|----------------|------|--------------------------|----|----------------|----|----------------|------|----------------|----------------|-----|-------|-----|----------------|----------------|----------------|-------------------------|-----|-----|-----|----|----|------|------------------------|---------------------------|--------------------------|---------------------|----------------|----------------|--------|------|
|           |                             |                |      |                          |    |                |    |                |      |                |                |     |       |     |                |                |                |                         |     |     |     |    |    |      |                        |                           |                          | M <sub>R</sub>      | M <sub>P</sub> | M <sub>Y</sub> | Block  | Rail |
|           | H                           | H <sub>1</sub> | N    | W                        | B  | B <sub>1</sub> | C  | L <sub>1</sub> | L    | K <sub>1</sub> | K <sub>2</sub> | G   | MxL   | T   | H <sub>2</sub> | H <sub>3</sub> | W <sub>R</sub> | H <sub>R</sub>          | D   | h   | d   | P  | E  | (mm) | C(kN)                  | C <sub>0</sub> (kN)       | kN-m                     | kN-m                | kN-m           | kg             | kg/m   |      |
| EGH15SA   | 24                          | 4.5            | 9.5  | 34                       | 26 | 4              | -  | 23.1           | 40.1 | 14.8           | -              | -   | -     | -   | -              | -              | -              | -                       | -   | -   | -   | -  | -  | -    | M3x16                  | 5.35                      | 9.40                     | 0.08                | 0.04           | 0.04           | 0.09   | 1.25 |
| EGH15CA   | -                           | -              | -    | -                        | -  | -              | 26 | 39.8           | 56.8 | 10.15          | 3.5            | 5.7 | M4x6  | 6   | 5.5            | 6              | 15             | 12.5                    | 6   | 4.5 | 3.5 | 60 | 20 | -    | 7.83                   | 16.19                     | 0.13                     | 0.10                | 0.10           | 0.15           |        |      |
| EGH20SA   | 28                          | 6              | 11   | 42                       | 32 | 5              | -  | 29             | 50   | 18.75          | -              | -   | -     | -   | -              | -              | -              | -                       | -   | -   | -   | -  | -  | -    | M5x16                  | 7.23                      | 12.74                    | 0.13                | 0.06           | 0.06           | 0.15   | 2.08 |
| EGH20CA   |                             |                |      |                          |    |                | 32 | 48.1           | 69.1 | 12.3           | 4.15           | 12  | M5x7  | 7.5 | 6              | 6              | 20             | 15.5                    | 9.5 | 8.5 | 6   | 60 | 20 | -    | 10.31                  | 21.13                     | 0.22                     | 0.16                | 0.16           | 0.24           |        |      |
| EGH25SA   | 33                          | 7              | 12.5 | 48                       | 35 | 6.5            | -  | 35.5           | 59.1 | 21.9           | -              | -   | -     | -   | -              | -              | -              | -                       | -   | -   | -   | -  | -  | -    | M6x20                  | 11.40                     | 19.50                    | 0.23                | 0.12           | 0.12           | 0.25   | 2.67 |
| EGH25CA   |                             |                |      |                          |    |                | 35 | 59             | 82.6 | 16.15          | 4.55           | 12  | M6x9  | 8   | 8              | 8              | 23             | 18                      | 11  | 9   | 7   | 60 | 20 | -    | 16.27                  | 32.40                     | 0.38                     | 0.32                | 0.32           | 0.41           |        |      |
| EGH30SA   | 42                          | 10             | 16   | 60                       | 40 | 10             | -  | 41.5           | 69.5 | 26.75          | -              | -   | -     | -   | -              | -              | -              | -                       | -   | -   | -   | -  | -  | -    | M6x25                  | 16.42                     | 28.10                    | 0.40                | 0.21           | 0.21           | 0.45   | 4.35 |
| EGH30CA   |                             |                |      |                          |    |                | 40 | 70.1           | 98.1 | 21.05          | 6              | 12  | M8x12 | 9   | 8              | 9              | 28             | 23                      | 11  | 9   | 7   | 80 | 20 | -    | 23.70                  | 47.46                     | 0.68                     | 0.55                | 0.55           | 0.76           |        |      |
| EGH35SA   | 48                          | 11             | 18   | 70                       | 50 | 10             | -  | 45             | 75   | 28.5           | -              | -   | -     | -   | -              | -              | -              | -                       | -   | -   | -   | -  | -  | -    | M8x25                  | 22.66                     | 37.38                    | 0.56                | 0.31           | 0.31           | 0.74   | 6.14 |
| EGH35CA   |                             |                |      |                          |    |                | 50 | 78             | 108  | 20             | 7              | 12  | M8x12 | 10  | 8.5            | 8.5            | 34             | 27.5                    | 14  | 12  | 9   | 80 | 20 | -    | 33.35                  | 64.84                     | 0.98                     | 0.69                | 0.69           | 1.10           |        |      |

Note : 1 kgf = 9.81 N

## EG Series

### Low Profile Ball Type

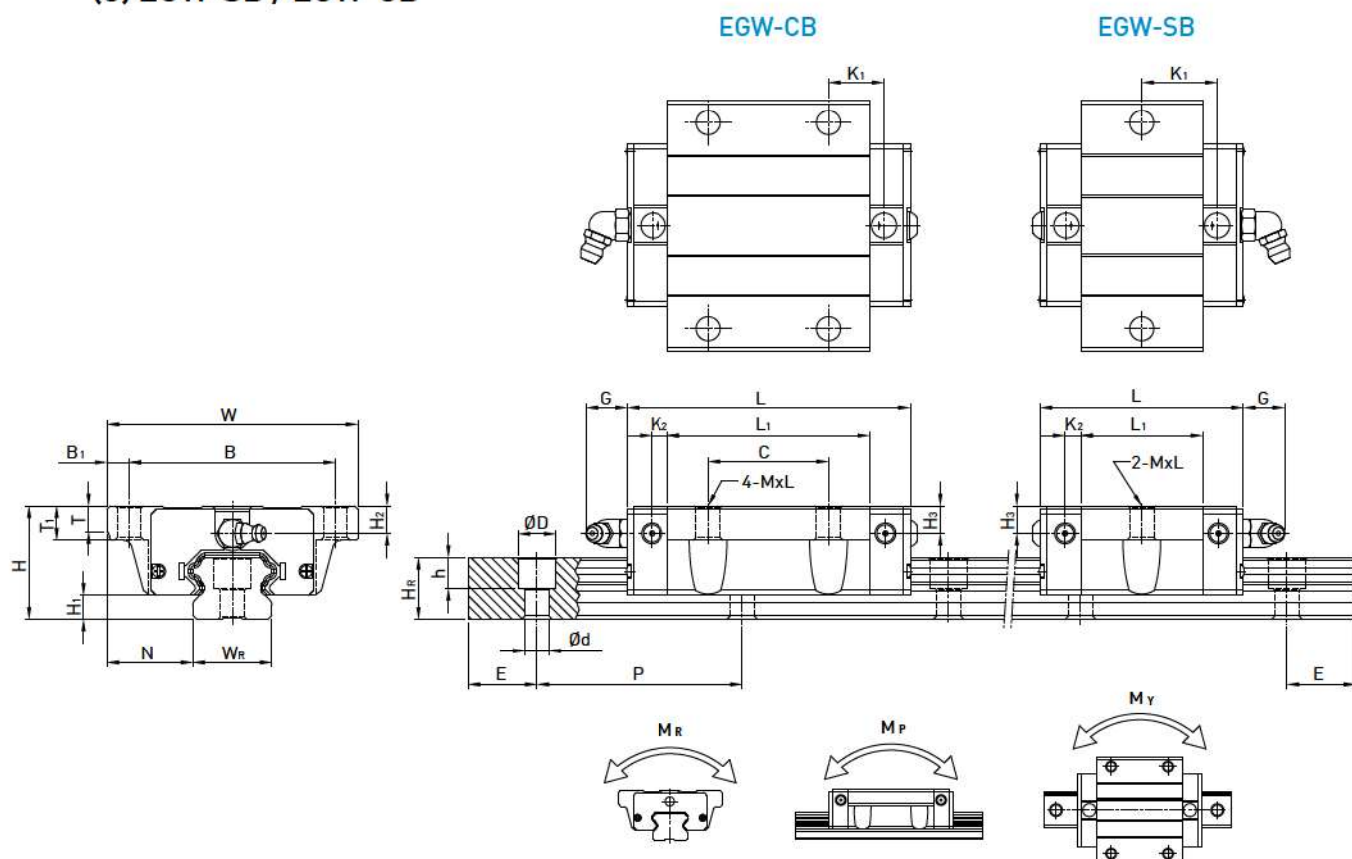
#### (2) EGW-SA / EGW-CA



| 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                           | H1  | N    | W   | B                        | B1  | C  | L1   | L    | K1    | K2   | G   | M   | T   | T1 | H2  | H3  | Wb | Hb   | D   | h                       | d   | P  | E  | (mm)                   | C(kN)                     | C0(kN)                   | MR                  | MP   | MY   | Block  | Rail |
| EGW15SA   | 24                          | 4.5 | 18.5 | 52  | 41                       | 5.5 | -  | 23.1 | 40.1 | 14.8  | -    | -   | -   | -   | -  | -   | -   | -  | -    | -   | -                       | -   | -  | -  | M3x16                  | 5.35                      | 9.40                     | 0.08                | 0.04 | 0.04 | 0.12   | 1.25 |
| EGW15CA   |                             |     |      |     |                          |     | 26 | 39.8 | 56.8 | 10.15 | 3.5  | 5.7 | M5  | 5   | 7  | 5.5 | 6   | 15 | 12.5 | 6   | 4.5                     | 3.5 | 60 | 20 |                        | 7.83                      | 16.19                    | 0.13                | 0.10 | 0.10 | 0.21   |      |
| EGW20SA   | 28                          | 6   | 19.5 | 59  | 49                       | 5   | -  | 29   | 50   | 18.75 | -    | -   | -   | -   | -  | -   | -   | -  | -    | -   | -                       | -   | -  | -  | M5x16                  | 7.23                      | 12.74                    | 0.13                | 0.06 | 0.06 | 0.19   | 2.08 |
| EGW20CA   |                             |     |      |     |                          |     | 32 | 48.1 | 69.1 | 12.3  | 4.15 | 12  | M6  | 7   | 9  | 6   | 6   | 20 | 15.5 | 9.5 | 8.5                     | 6   | 60 | 20 |                        | 10.31                     | 21.13                    | 0.22                | 0.16 | 0.16 | 0.32   |      |
| EGW25SA   | 33                          | 7   | 25   | 73  | 60                       | 6.5 | -  | 35.5 | 59.1 | 21.9  | -    | -   | -   | -   | -  | -   | -   | -  | -    | -   | -                       | -   | -  | -  | M6x20                  | 11.40                     | 19.50                    | 0.23                | 0.12 | 0.12 | 0.35   | 2.67 |
| EGW25CA   |                             |     |      |     |                          |     | 35 | 59   | 82.6 | 16.15 | 4.55 | 12  | M8  | 7.5 | 10 | 8   | 8   | 23 | 18   | 11  | 9                       | 7   | 60 | 20 |                        | 16.27                     | 32.40                    | 0.38                | 0.32 | 0.32 | 0.59   |      |
| EGW30SA   | 42                          | 10  | 31   | 90  | 72                       | 9   | -  | 41.5 | 69.5 | 26.75 | -    | -   | -   | -   | -  | -   | -   | -  | -    | -   | -                       | -   | -  | -  | M6x25                  | 16.42                     | 28.10                    | 0.40                | 0.21 | 0.21 | 0.62   | 4.35 |
| EGW30CA   |                             |     |      |     |                          |     | 40 | 70.1 | 98.1 | 21.05 | 6    | 12  | M10 | 7   | 10 | 8   | 9   | 23 | 23   | 11  | 9                       | 7   | 80 | 20 |                        | 23.70                     | 47.46                    | 0.68                | 0.55 | 0.55 | 1.04   |      |
| EGW35SA   | 48                          | 11  | 33   | 100 | 82                       | 9   | -  | 45   | 75   | 28.5  | -    | -   | -   | -   | -  | -   | -   | -  | -    | -   | -                       | -   | -  | -  | M8x25                  | 22.66                     | 37.38                    | 0.56                | 0.31 | 0.31 | 0.84   | 6.14 |
| EGW35CA   |                             |     |      |     |                          |     | 50 | 78   | 108  | 20    | 7    | 12  | M10 | 10  | 13 | 8.5 | 8.5 | 34 | 27.5 | 14  | 12                      | 9   | 80 | 20 |                        | 33.35                     | 64.84                    | 0.98                | 0.69 | 0.69 | 1.45   |      |

Note : 1 kgf = 9.81 N

### [3] EGW-SB / EGW-CB



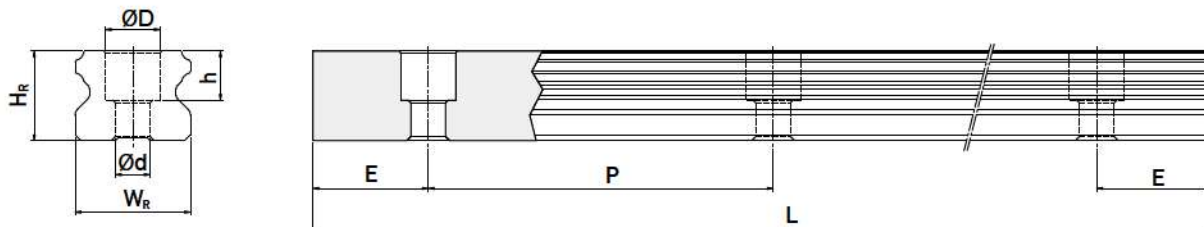
| Model No. | Dimensions of Assembly (mm) |                |      | Dimensions of Block (mm) |    |                |    |                |      |                |                |     |      |     |                |                |                | Dimensions of Rail (mm) |                |     |     |     |    |    |       |       |                     | Mounting Bolt for Rail | Basic Dynamic Load Rating | Basic Static Load Rating | Static Rated Moment |                |                | Weight |      |
|-----------|-----------------------------|----------------|------|--------------------------|----|----------------|----|----------------|------|----------------|----------------|-----|------|-----|----------------|----------------|----------------|-------------------------|----------------|-----|-----|-----|----|----|-------|-------|---------------------|------------------------|---------------------------|--------------------------|---------------------|----------------|----------------|--------|------|
|           |                             |                |      |                          |    |                |    |                |      |                |                |     |      |     |                |                |                |                         |                |     |     |     |    |    |       |       |                     |                        |                           |                          | M <sub>R</sub>      | M <sub>P</sub> | M <sub>Y</sub> | Block  | Rail |
|           | H                           | H <sub>1</sub> | N    | W                        | B  | B <sub>1</sub> | C  | L <sub>1</sub> | L    | K <sub>1</sub> | K <sub>2</sub> | 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  | (mm)  | C(kN) | C <sub>s</sub> (kN) | kN-m                   | kN-m                      | kN-m                     | kg                  | kg/m           |                |        |      |
| EGW15SB   | 24                          | 4.5            | 18.5 | 52                       | 41 | 5.5            | -  | 23.1           | 40.1 | 14.8           | 3.5            | 5.7 | Ø4.5 | 5   | 7              | 5.5            | 6              | 15                      | 12.5           | 6   | 4.5 | 3.5 | 60 | 20 | M3x16 | 5.35  | 9.40                | 0.08                   | 0.04                      | 0.04                     | 0.12                | 1.25           |                |        |      |
| EGW15CB   |                             |                |      |                          |    |                | 26 | 39.8           | 56.8 | 10.15          |                |     |      |     |                |                |                |                         |                |     |     |     |    |    |       | 0.13  | 0.10                | 0.10                   | 0.21                      |                          |                     |                |                |        |      |
| EGW20SB   | 28                          | 6              | 19.5 | 59                       | 49 | 5              | -  | 29             | 50   | 18.75          | 4.15           | 12  | Ø5.5 | 7   | 9              | 6              | 6              | 20                      | 15.5           | 9.5 | 8.5 | 6   | 60 | 20 | M5x16 | 7.23  | 12.74               | 0.13                   | 0.06                      | 0.06                     | 0.19                | 2.08           |                |        |      |
| EGW20CB   |                             |                |      |                          |    |                | 32 | 48.1           | 69.1 | 12.3           |                |     |      |     |                |                |                |                         |                |     |     |     |    |    |       | 0.22  | 0.16                | 0.16                   | 0.32                      |                          |                     |                |                |        |      |
| EGW25SB   | 33                          | 7              | 25   | 73                       | 60 | 6.5            | -  | 35.5           | 59.1 | 21.9           | 4.55           | 12  | Ø7   | 7.5 | 10             | 8              | 8              | 23                      | 18             | 11  | 9   | 7   | 60 | 20 | M6x20 | 11.40 | 19.50               | 0.23                   | 0.12                      | 0.12                     | 0.35                | 2.67           |                |        |      |
| EGW25CB   |                             |                |      |                          |    |                | 35 | 59             | 82.6 | 16.15          |                |     |      |     |                |                |                |                         |                |     |     |     |    |    |       | 0.38  | 0.32                | 0.32                   | 0.59                      |                          |                     |                |                |        |      |
| EGW30SB   | 42                          | 10             | 31   | 90                       | 72 | 9              | -  | 41.5           | 69.5 | 26.75          | 6              | 12  | Ø9   | 7   | 10             | 8              | 9              | 28                      | 23             | 11  | 9   | 7   | 80 | 20 | M6x25 | 16.42 | 28.10               | 0.40                   | 0.21                      | 0.21                     | 0.62                | 4.35           |                |        |      |
| EGW30CB   |                             |                |      |                          |    |                | 40 | 70.1           | 98.1 | 21.05          |                |     |      |     |                |                |                |                         |                |     |     |     |    |    |       | 0.68  | 0.55                | 0.55                   | 1.04                      |                          |                     |                |                |        |      |
| EGW35SB   | 48                          | 11             | 33   | 100                      | 82 | 9              | -  | 45             | 75   | 28.5           | 7              | 12  | Ø9   | 10  | 13             | 8.5            | 8.5            | 34                      | 27.5           | 14  | 12  | 9   | 80 | 20 | M8x25 | 22.66 | 37.38               | 0.56                   | 0.31                      | 0.31                     | 0.84                | 6.14           |                |        |      |
| EGW 35CB  |                             |                |      |                          |    |                | 50 | 78             | 108  | 20             |                |     |      |     |                |                |                |                         |                |     |     |     |    |    |       | 0.98  | 0.69                | 0.69                   | 1.45                      |                          |                     |                |                |        |      |

Note : 1 kgf = 9.81 N

## EG Series

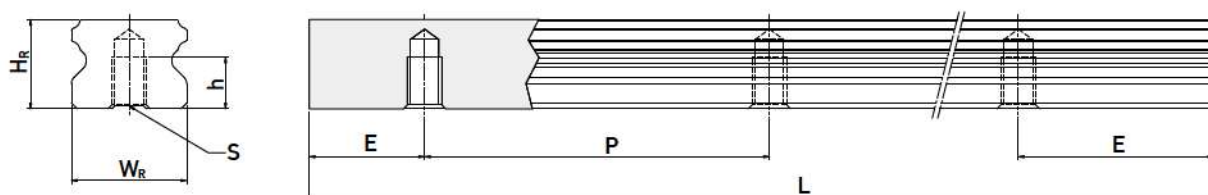
### Low Profile Ball Type

#### (4) Dimensions for EGR-U (large mounting hole, rail mounting from top)



| Model No. | Mounting Bolt<br>for Rail(mm) | Dimensions of Rail (mm) |       |     |     |     |     |     | Weight<br>(kg/m) |
|-----------|-------------------------------|-------------------------|-------|-----|-----|-----|-----|-----|------------------|
|           |                               | $W_R$                   | $H_R$ | $D$ | $h$ | $d$ | $P$ | $E$ |                  |
| EGR15U    | M4x16                         | 15                      | 12.5  | 7.5 | 5.3 | 4.5 | 60  | 20  | 1.23             |
| EGR30U    | M8x25                         | 28                      | 23    | 14  | 12  | 9   | 80  | 20  | 4.23             |

#### (5) Dimensions for EGR-T (rail mounting from bottom)



| Model No. | Dimensions of Rail (mm) |       |            |     |     |     | Weight<br>(kg/m) |
|-----------|-------------------------|-------|------------|-----|-----|-----|------------------|
|           | $W_R$                   | $H_R$ | $S$        | $h$ | $P$ | $E$ |                  |
| EGR15T    | 15                      | 12.5  | M5 x 0.8P  | 7   | 60  | 20  | 1.26             |
| EGR20T    | 20                      | 15.5  | M6 x 1P    | 9   | 60  | 20  | 2.15             |
| EGR25T    | 23                      | 18    | M6 x 1P    | 10  | 60  | 20  | 2.79             |
| EGR30T    | 28                      | 23    | M8 x 1.25P | 14  | 80  | 20  | 4.42             |
| EGR35T    | 34                      | 27.5  | M8 x 1.25P | 17  | 80  | 20  | 6.34             |