

Linear Guideways

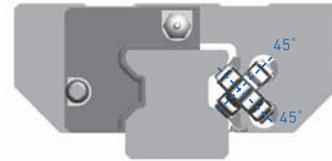
QR Series

2-10 QR series - Quiet Roller Type Linear Guideway

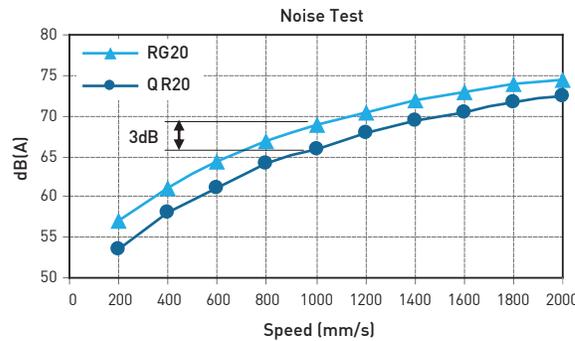
HIWIN-QR series offers super high rigidity and very high load capacities. The HIWIN-QR series with SynchMotion™ Technology offers low friction, smooth movement, quieter operation and longer running life. In the industry where high accuracy, low noise and high rigidity is required, the QR series is interchangeable with the RG series.

2-10-1 Advantages and features

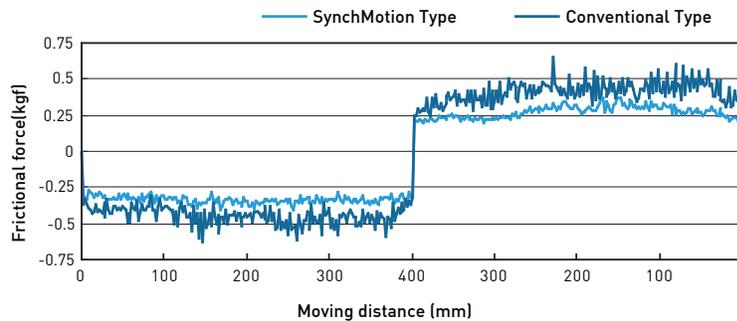
(1) Super high load capacity in linear guideway, with the four rows of rollers arranged at a contact angle of 45-degrees, the QR series linear guideway has equal load ratings in the radial, reverse radial and lateral directions. The QR series has a higher load capacity in a smaller size than conventional, ball-type linear guideways.



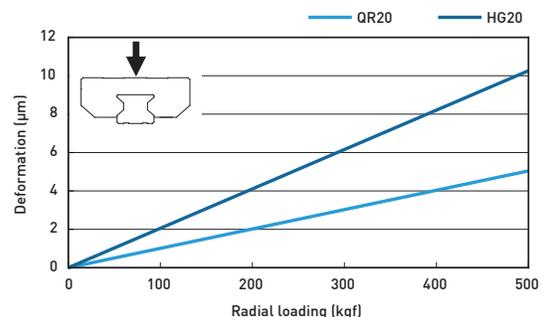
(2) Low Noise Design With SynchMotion™ technology, rolling elements are interposed between the partitions of SynchMotion™ to provide improved circulation. Due to the elimination of contact between the rolling elements, collision noise and sound levels are drastically reduced.



(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 QR linear guideway, with SynchMotion™ technology prevents this condition.



(4) The QR series is a type of linear guideway that uses rollers as the rolling elements. Elastic deformation of the linear contact surface, during load, is greatly reduced thereby offering greater rigidity and higher load capacities in all 4 load directions.



(5) Sample test
1. Nominal life test

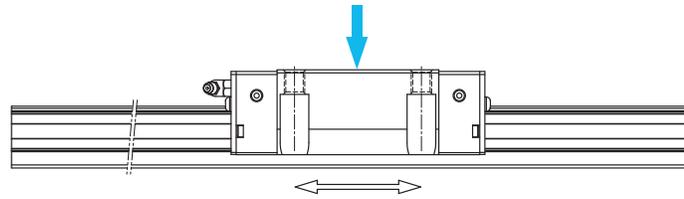
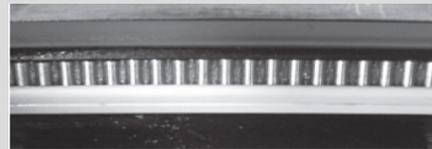


Table 2-10-1

Tested model 1: QRW20CC
Preload: ZA class
Max speed: 60m/min
Acceleration: 1G Stroke: 0.2m
Lubrication: grease held every 100 km
External: 8.6 kN
Traveling distance: 1024km

Test results:

The nominal life of QRW20 is 1000km. After traveling 1024km, fatigue flaking did not appear on the surface of the raceway or rollers. And roller chain is not broken in this case.



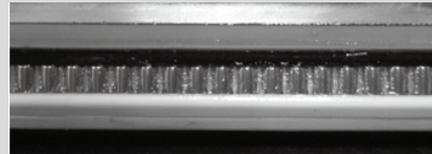
2. Durability Test

Table 2-10-2

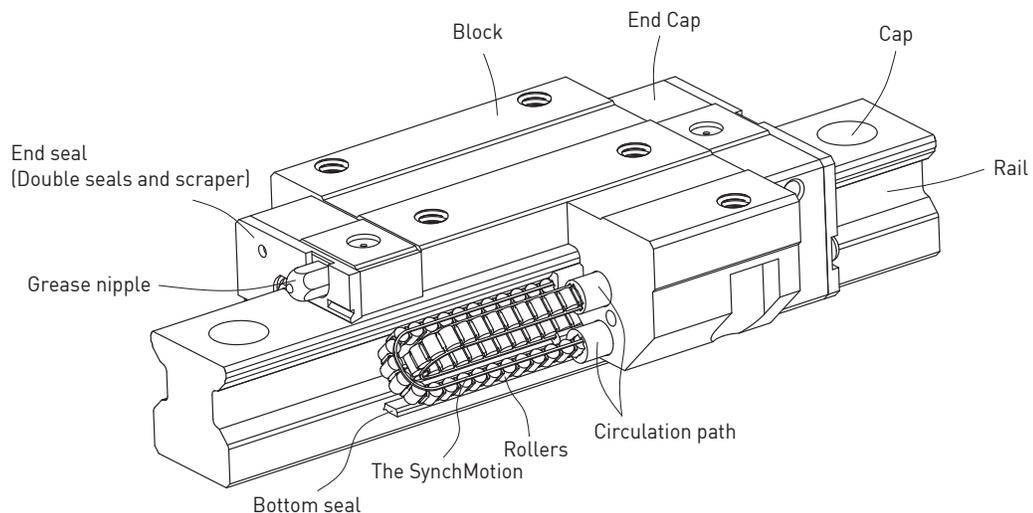
Tested model 2: QRH20CC
Preload: Z0 class
Max speed: 180m/min
Acceleration: 3G Stroke: 0.23m
Oil feed rate: 0.3cm³/hr
External: 0km (No loading)
Traveling distance: 10586km

Test results:

After traveling 10586km, fatigue flaking did not appear on the surface of the raceway or rollers. And roller chain is not broken in this case.



2-10-2 Construction of QR Series



- Rolling circulation system: Block, Rail, End cap, Circulation path, rollers and the SynchMotion.
- Lubrication system: Grease nipple and piping joint
- Dust protection system: End seal, Bottom seal, Cap, Double seals and Scraper

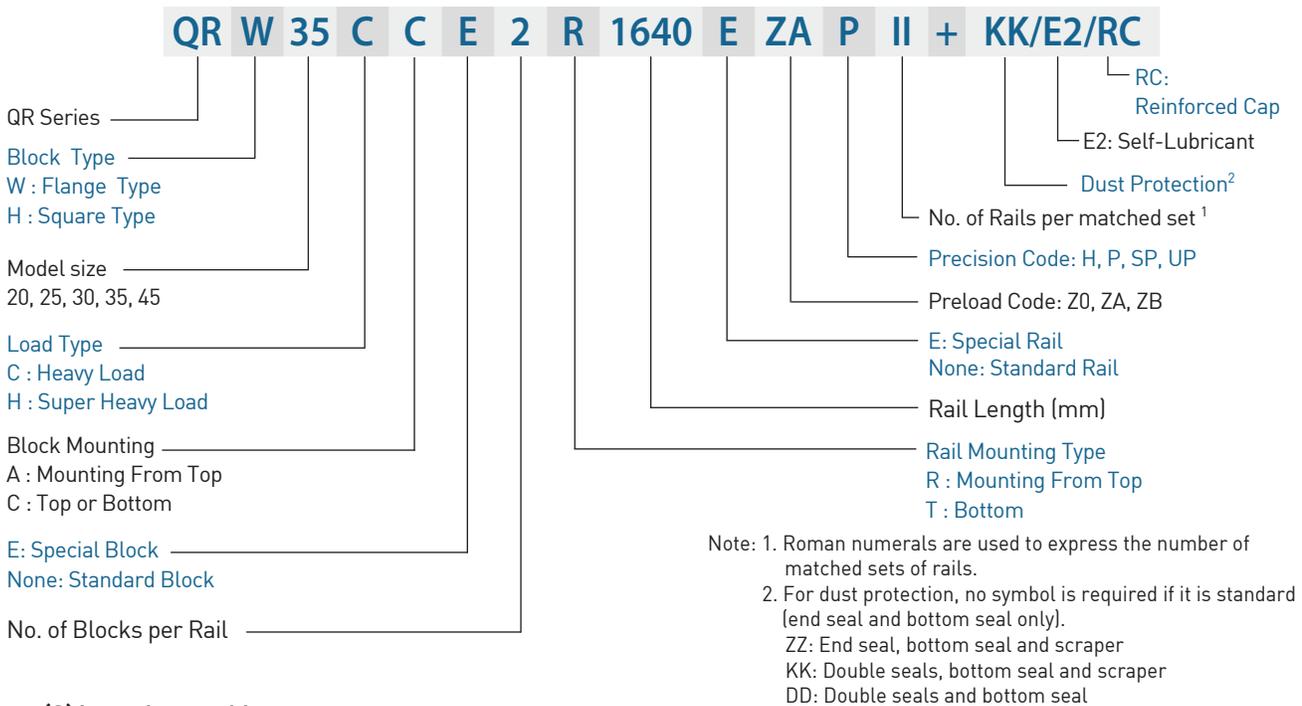
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2-10-3 Model Number of QR series

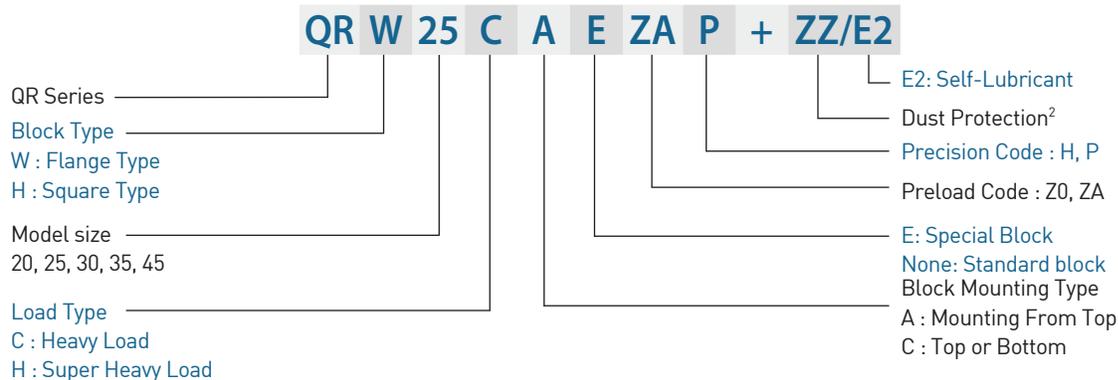
QR series linear guideways are classified into non-interchangeable and interchangeable types. The sizes of these two types are the same as one another. The main difference is that the interchangeable type of blocks and rails can be freely exchanged and they can maintain p-class accuracy. Because of strict 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 QR series identifies the size, type, accuracy class, preload class, etc.

(1) Non-interchangeable type

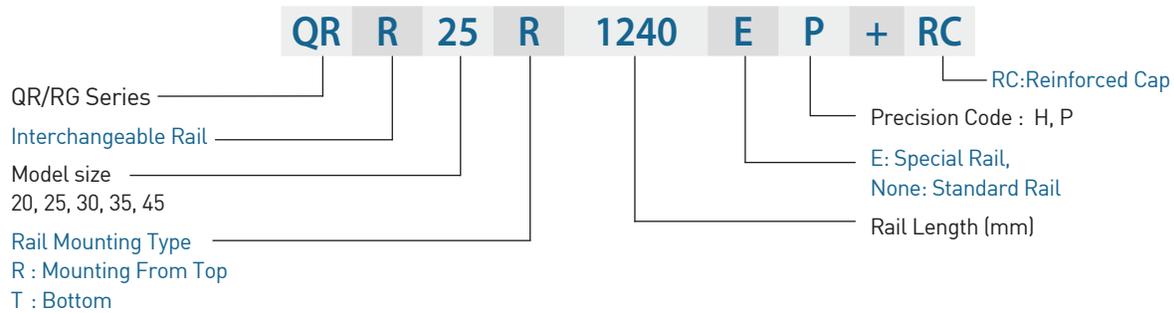


(2) Interchangeable type

Model Number of RG Block



Model Number of QR Rail (QR and RG share the identical rails)

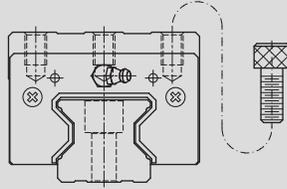
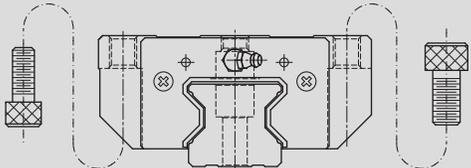


2-10-4 Types

(1) Block types

HIWIN QR series 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 2-10-3 Block Types

| Type | Model | Shape | Height (mm) | Rail Length (mm) | Main Applications |
|--------|------------------|--|-------------|------------------|--|
| Square | QRH-CA QRH-HA |  | 34 | 100 | <ul style="list-style-type: none"> ○ Automation Systems ○ Transportation equipment ○ CNC machining centers ○ Heavy duty cutting machines ○ CNC grinding machines ○ Injection molding machines ○ Plano millers ○ Devices requiring high rigidity ○ Devices requiring high load capacity ○ Electric discharge machines |
| | | | ↓ | ↓ | |
| 70 | 4000 | | | | |
| ↓ | ↓ | | | | |
| Flange | QRW-CC QRW-HC |  | 30 | 100 | |
| | | | ↓ | ↓ | |
| 60 | 4000 | | | | |
| ↓ | ↓ | | | | |

(2) Rail types

In addition to the standard top mounting type, HIWIN also offers the bottom mounting type of rails.

Table 2-10-4 Rail Types

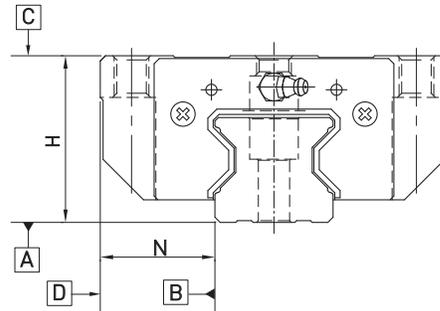


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2-10-5 Accuracy Classes

The accuracy of the QR 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

Table 2-10-5 Accuracy Standards

Unit: mm

| Item | QR - 20 | | | |
|---|-------------------|---------------|----------------------|----------------------|
| Accuracy Classes | 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 2-10-6 Accuracy Standards

Unit: mm

| Item | QR- 25, 30, 35 | | | |
|---|-------------------|---------------|----------------------|----------------------|
| Accuracy Classes | 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 2-10-7 Accuracy Standards

Unit: mm

| Item | QR - 45 | | | |
|---|-------------------|---------------|----------------------|----------------------|
| Accuracy Classes | 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 | | | |

(2) Accuracy of interchangeable

Table 2-10-8 Accuracy Standards

Unit: mm

| Item | QR - 20 | |
|---|-------------------|---------------|
| Accuracy Classes | 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 2-10-9 Accuracy Standards

Unit: mm

| Item | QR- 25, 30, 35 | |
|---|-------------------|---------------|
| Accuracy Classes | 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 2-10-10 Accuracy Standards

Unit: mm

| Item | QR - 45 | |
|---|-------------------|---------------|
| Accuracy Classes | 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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(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 |

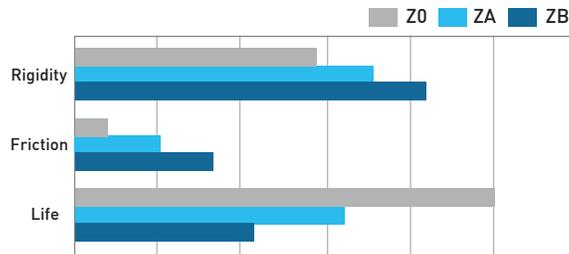
2-10-6 Preload

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 QR 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.

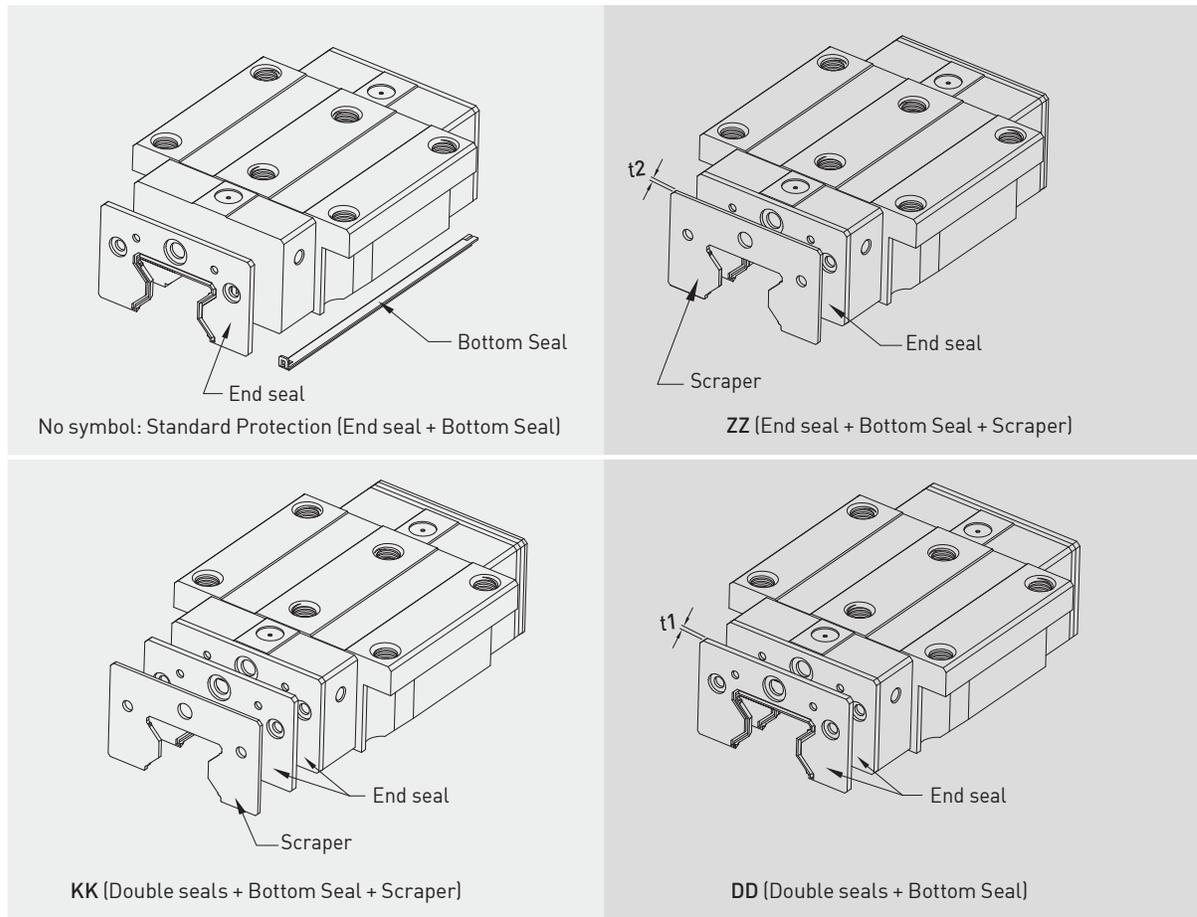


2-10-7 Dust Proof Accessories

(1) Codes of accessories

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

Table 2-10-13



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(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) |
|---------|------------------------|---------|------------------------|
| QR20 ES | 2.2 | QR35 ES | 2.5 |
| QR25 ES | 2.2 | QR45 ES | 3.6 |
| QR30 ES | 2.4 | | |

(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) |
|---------|------------------------|---------|------------------------|
| QR20 SC | 1.0 | QR35 SC | 1.5 |
| QR25 SC | 1.0 | QR45 SC | 1.5 |
| QR30 SC | 1.5 | | |

(5) Dimensions of block equipped with the dustproof parts

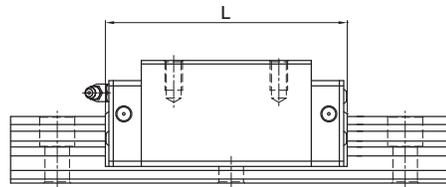


Table 2-10-16 Overall block length

unit: mm

| Size | Overall block length (L) | | | |
|-------|--------------------------|-------|-------|-------|
| | SS | ZZ | DD | KK |
| QR20C | 86 | 88 | 90.4 | 92.4 |
| QR25C | 97.7 | 99.9 | 102.3 | 104.3 |
| QR25H | 112.9 | 114.9 | 117.3 | 119.3 |
| QR30C | 109.8 | 112.8 | 114.6 | 117.6 |
| QR30H | 131.8 | 134.8 | 136.6 | 139.6 |
| QR35C | 124 | 127 | 129 | 132 |
| QR35H | 151.5 | 154.5 | 156.5 | 159.5 |
| QR45C | 153.2 | 156.2 | 160.4 | 163.4 |
| QR45H | 187 | 190 | 194.2 | 197.2 |

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) |
|----------|--------------------|----------|--------------------|
| QR 20 ES | 2.45 (0.25) | QR 35 ES | 3.53 (0.36) |
| QR 25 ES | 2.74 (0.28) | QR 45 ES | 4.21 (0.43) |
| QR 30 ES | 3.31 (0.31) | | |

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 QR series linear guideway will be maintained without any difficulty.

- The parallelism tolerance of reference surface (P)

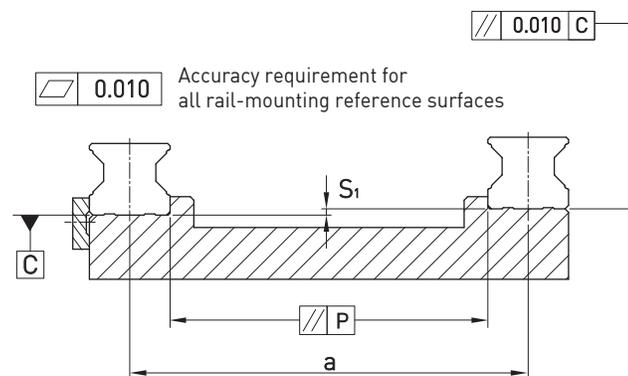


Table 2-10-18 Max. Parallelism Tolerance (P)

unit: μm

| Size | Preload classes | | |
|------|--------------------|---------------------|--------------------|
| | Light Preload (Z0) | Medium Preload (ZA) | Heavy Preload (ZB) |
| QR20 | 8 | 6 | 4 |
| QR25 | 9 | 7 | 5 |
| QR30 | 11 | 8 | 6 |
| QR35 | 14 | 10 | 7 |
| QR45 | 17 | 13 | 9 |

- 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

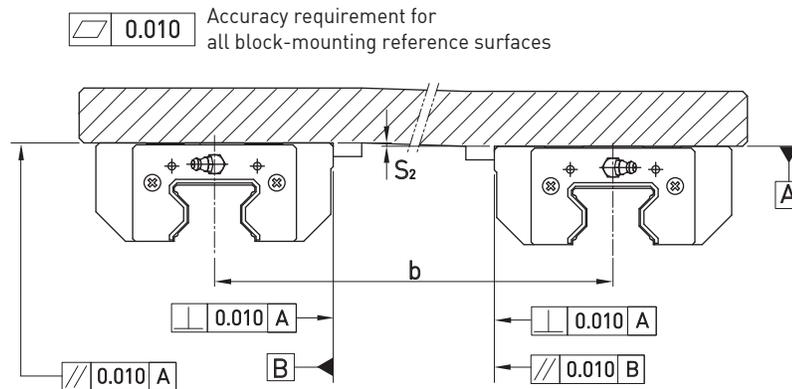
| Size | Preload classes | | |
|------|----------------------|----------------------|----------------------|
| | Light Preload (Z0) | Medium Preload (ZA) | Heavy Preload (ZB) |
| K | 2.2×10^{-4} | 1.7×10^{-4} | 1.2×10^{-4} |

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(2) The accuracy tolerance of block-mounting surface

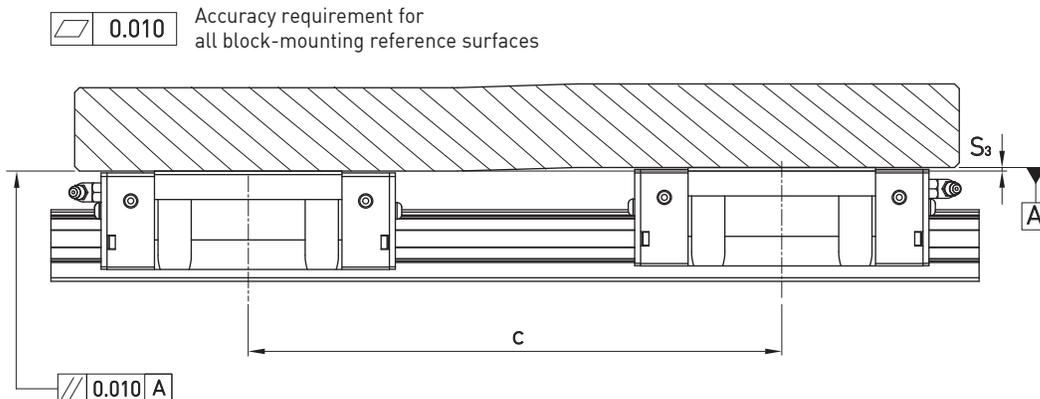
- The tolerance of the height of reference surface when two or more pieces are used in parallel (S_2)



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

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.

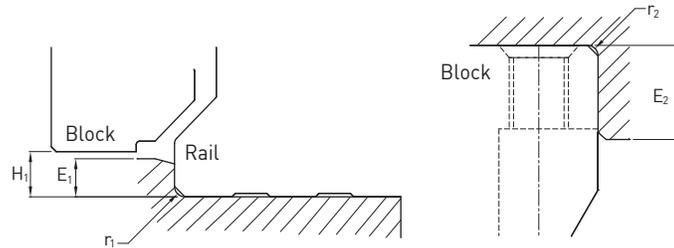


Table 2-10-20

| 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) |
|------|--------------------------------------|--------------------------------------|---|--|-------------------------------------|
| QR20 | 0.5 | 0.5 | 5 | 5 | 5 |
| QR25 | 1.0 | 1.0 | 5 | 5 | 5.5 |
| QR30 | 1.0 | 1.0 | 5 | 5 | 6 |
| QR35 | 1.0 | 1.0 | 6 | 6 | 6.5 |
| QR45 | 1.0 | 1.0 | 7 | 8 | 8 |

(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

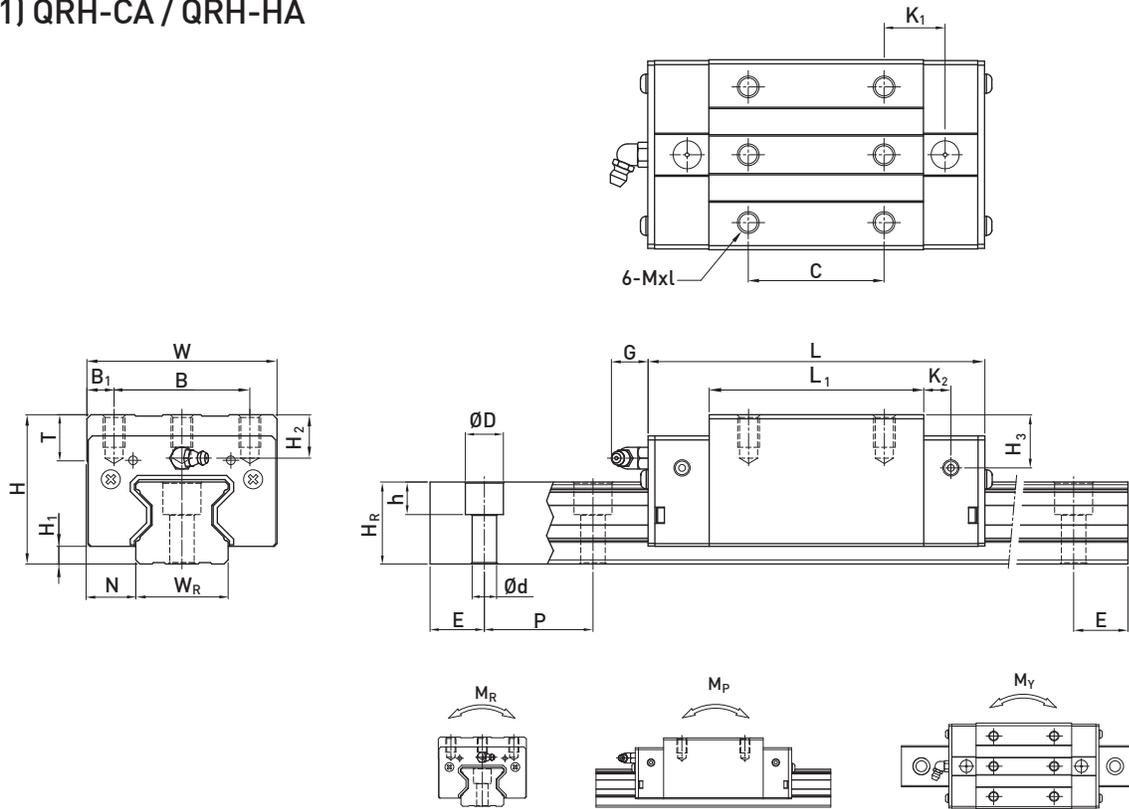
| Size | Bolt size | Torque N-cm(kgf-cm) | | |
|------|---------------|---------------------|------------|------------|
| | | Iron | Casting | Aluminum |
| QR20 | M5×0.8P×20L | 883 (90) | 588 (60) | 441 (45) |
| QR25 | M6×1P×20L | 1373 (140) | 921 (94) | 686 (70) |
| QR30 | M8×1.25P×25L | 3041 (310) | 2010 (205) | 1470 (150) |
| QR35 | M8×1.25P×25L | 3041 (310) | 2010 (205) | 1470 (150) |
| QR45 | M12×1.75P×35L | 11772 (1200) | 7840 (800) | 5880 (600) |

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2-10-11 Dimensions for QR series

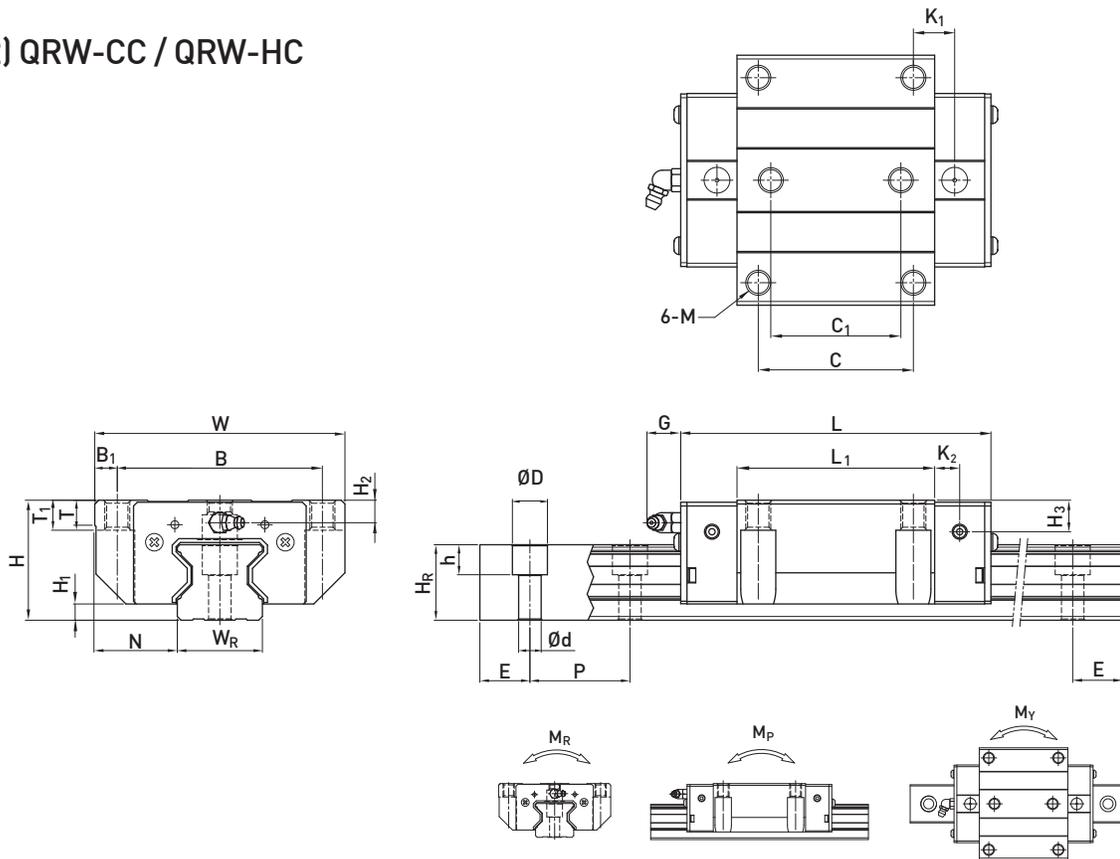
(1) QRH-CA / QRH-HA



| 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 | 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 | kN-m | kN-m | kN-m | kg |
| QRH20CA | 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 | 9.5 | 8.5 | 6 | 30 | 20 | M5 x 20 | 26.3 | 38.9 | 0.591 | 0.453 | 0.453 | 0.40 | 2.66 |
| QRH25CA | 40 | 5.5 | 12.5 | 48 | 35 | 6.5 | 35 | 66 | 97.9 | 20.75 | 7.25 | 12 | M6 x 8 | 9.5 | 10.2 | 10 | 23 | 23.6 | 11 | 9 | 7 | 30 | 20 | M6 x 20 | 38.5 | 54.4 | 0.722 | 0.627 | 0.627 | 0.60 | 3.08 |
| QRH25HA | | | | | | | 50 | 81 | 112.9 | 21.5 | | | | | | | | | | | | | | | 8 | 12 | M8 x 10 | 9.5 | 9.5 | 10.3 | 28 |
| QRH30CA | 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 | 14 | 12 | 9 | 40 | 20 | M8 x 25 | 51.5 | 73.0 | 1.284 | 0.945 | 0.945 | 0.89 | 4.41 |
| QRH30HA | | | | | | | 60 | 93 | 131.8 | 24.5 | | | | | | | | | | | | | | | 10 | 12 | M8 x 12 | 12 | 16 | 19.6 | 34 |
| QRH35CA | 55 | 6.5 | 18 | 70 | 50 | 10 | 50 | 79 | 124 | 22.5 | 10 | 12 | M8 x 12 | 12 | 16 | 19.6 | 34 | 30.2 | 14 | 12 | 9 | 40 | 20 | M8 x 25 | 77.0 | 94.7 | 1.955 | 1.331 | 1.331 | 1.56 | 6.06 |
| QRH35HA | | | | | | | 72 | 106.5 | 151.5 | 25.25 | | | | | | | | | | | | | | | 10 | 12 | M10 x 17 | 16 | 20 | 24 | 45 |
| QRH45CA | 70 | 8 | 20.5 | 86 | 60 | 13 | 60 | 106 | 153.2 | 31 | 10 | 12.9 | M10 x 17 | 16 | 20 | 24 | 45 | 38 | 20 | 17 | 14 | 52.5 | 22.5 | M12 x 35 | 123.2 | 156.4 | 3.959 | 2.666 | 2.666 | 3.16 | 9.97 |
| QRH45HA | | | | | | | 80 | 139.8 | 187 | 37.9 | | | | | | | | | | | | | | | 10 | 12.9 | M10 x 17 | 16 | 20 | 24 | 45 |

Note : 1 kgf = 9.81 N

(2) QRW-CC / QRW-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 _R | L | K ₁ | K ₂ | G | M | T | T ₁ | H ₂ | H ₃ | W _R | H _R | D | h | | | | d | P | E | M _R | M _P | M _Y | Block | Rail |
| | kg | 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 |
| QRW20CC | 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 | 9.5 | 8.5 | 6 | 30 | 20 | M5x20 | 26.3 | 38.9 | 0.591 | 0.453 | 0.453 | 0.47 | 2.66 |
| QRW25CC | 36 | 5.5 | 23.5 | 70 | 57 | 6.5 | 45 | 40 | 66 | 97.9 | 15.75 | 7.25 | 12 | M8 | 9.5 | 10 | 6.2 | 6 | 23 | 23.6 | 11 | 9 | 7 | 30 | 20 | M6x20 | 38.5 | 54.4 | 0.722 | 0.627 | 0.627 | 0.71 | 3.08 |
| QRW25HC | | | | | | | | | 81 | 112.9 | 24 | | | | | | | | 23 | 23.6 | 11 | 9 | 7 | 30 | 20 | M6x20 | 44.7 | 65.3 | 0.867 | 0.907 | 0.907 | 0.90 | 3.08 |
| QRW30CC | 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 | 14 | 12 | 9 | 40 | 20 | M8x25 | 51.5 | 73.0 | 1.284 | 0.945 | 0.945 | 1.15 | 4.41 |
| QRW30HC | | | | | | | | | 93 | 131.8 | 28.5 | | | | | | | | 28 | 28 | 14 | 12 | 9 | 40 | 20 | M8x25 | 64.7 | 95.8 | 1.685 | 1.63 | 1.63 | 1.51 | 4.41 |
| QRW35CC | 48 | 6.5 | 33 | 100 | 82 | 9 | 62 | 52 | 79 | 124 | 16.5 | 10 | 12 | M10 | 12 | 13 | 9 | 12.6 | 34 | 30.2 | 14 | 12 | 9 | 40 | 20 | M8x25 | 77.0 | 94.7 | 1.955 | 1.331 | 1.331 | 1.74 | 6.06 |
| QRW35HC | | | | | | | | | 106.5 | 151.5 | 30.25 | | | | | | | | 34 | 30.2 | 14 | 12 | 9 | 40 | 20 | M8x25 | 95.7 | 126.3 | 2.606 | 2.335 | 2.335 | 2.38 | 6.06 |
| QRW45CC | 60 | 8 | 37.5 | 120 | 100 | 10 | 80 | 60 | 106 | 153.2 | 21 | 10 | 12.9 | M12 | 14 | 15 | 10 | 14 | 45 | 38 | 20 | 17 | 14 | 52.5 | 22.5 | M12x35 | 123.2 | 156.4 | 3.959 | 2.666 | 2.666 | 3.41 | 9.97 |
| QRW45HC | | | | | | | | | 139.8 | 187 | 37.9 | | | | | | | | 45 | 38 | 20 | 17 | 14 | 52.5 | 22.5 | M12x35 | 150.8 | 208.6 | 5.278 | 4.694 | 4.694 | 4.54 | 9.97 |

Note : 1 kgf = 9.81 N