

# CAM FOLLOWERS

- Standard Type Cam Followers
- Solid Eccentric Stud Type Cam Followers
- Eccentric Type Cam Followers
- Thrust Disk Type Cam Followers
- Centralized Lubrication Type Cam Followers
- Easy Mounting Type Cam Followers
- Heavy Duty Type Cam Followers
- Miniature Type Cam Followers
- Thrust Disk Type Miniature Cam Followers



## Structure and Features

IKO Cam Followers are bearings with a stud incorporating needle rollers in a thick walled outer ring. These bearings are designed for outer ring rotation, and have superior rotational performance with a small coefficient of friction.

Also, they are designed to have minimal radial internal clearance to increase the loading zone, and thus reduce the effect of shock loads and ensure stable long life.

As studs already have threads or steps, they are easy to mount.

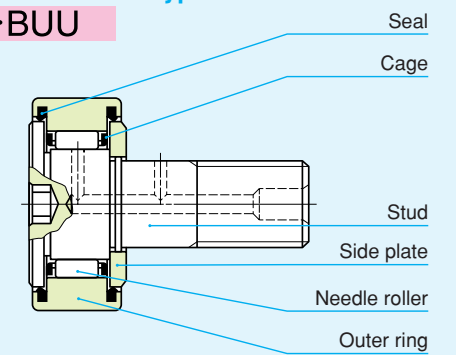
Cam Followers are follower bearings for cam mechanisms and linear motions and have high rigidity and high accuracy. They are, therefore, used widely for machine tools, industrial robots, electronic devices, and OA equipment.

Stainless steel made Cam Followers are superior in corrosion resistance and suitable for applications in environments where oil cannot be used or water splashed, and in clean rooms.

### Structures of Cam Followers

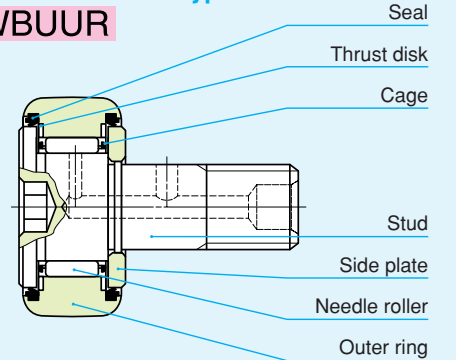
#### Structure of Standard Type Cam Follower

CF...BUU



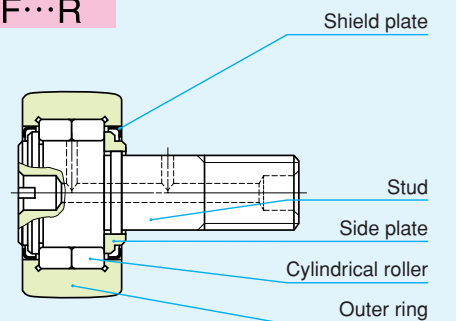
#### Structure of Thrust Disk Type Cam Follower

CF...WBUUR



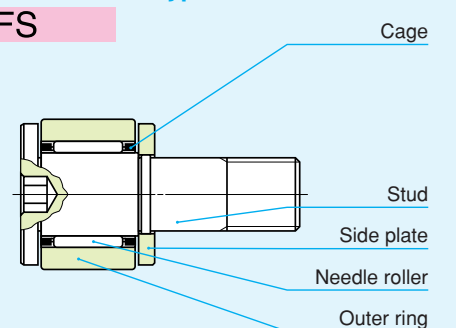
#### Structure of Heavy Duty Type Cam Follower

NUCF...R



#### Structure of Miniature Type Cam Follower

CFS



CF  
NUCF  
CFS  
CR

For Cam Followers, the types shown in Table 1 are available.

Table 1 Type of Cam Followers

| Type   |   |  |                        | With cage          |                        | Full complement    |                        |              |             |
|--|---|--|------------------------|--------------------|------------------------|--------------------|------------------------|--------------|-------------|
|  |   |  |                        | Crowned outer ring | Cylindrical outer ring | Crowned outer ring | Cylindrical outer ring |              |             |
| Metric CF series   | Standard Type Cam Follower CF                   | High carbon steel made                         | With hexagon hole      | Shield type        | CF ... B R             | CF ... B           | CF ...VB R             | CF ...VB     |             |
|  |   |  |                        | Sealed type        | CF ... BUUR            | CF ... BUU         | CF ...VBUUR            | CF ...VBUU   |             |
|  |   | Stainless steel made                           | With screwdriver slot  | Shield type        | CF ... R               | CF ...             | CF ...V R              | CF ...V      |             |
|  |   |  |                        | Sealed type        | CF ... UUR             | CF ... UU          | CF ...V UUR            | CF ...V UU   |             |
|  |   | High carbon steel made                         | With hexagon hole      | Shield type        | CFES... B R            | CFES... B          | —                      | —            |             |
|  |   |  |                        | Sealed type        | CFES... BUUR           | CFES... BUU        | —                      | —            |             |
|  | Stainless steel made                            | With screwdriver slot                          | Shield type            | CFES... R          | CFES                   | —                  | —                      |              |             |
|  |   |  | Sealed type            | CFES... UUR        | CFES... UU             | —                  | —                      |              |             |
|  | Solid Eccentric Stud Type Cam Follower CFES     | High carbon steel made                         | With hexagon hole      | Shield type        | CFES... B R            | CFES... B          | —                      | —            |             |
|  |   |  |                        | Sealed type        | CFES... BUUR           | CFES... BUU        | —                      | —            |             |
|  |   | Stainless steel made                           | With screwdriver slot  | Shield type        | CFES... R              | CFES               | —                      | —            |             |
|  |   |  |                        | Sealed type        | CFES... UUR            | CFES... UU         | —                      | —            |             |
|  |   | Eccentric Type Cam Follower CFE                | High carbon steel made | With hexagon hole  | Shield type            | CFE ... B R        | CFE ... B              | CFE ...VB R  | CFE ...VB   |
|  |   |  |                        |                    | Sealed type            | CFE ... BUUR       | CFE ... BUU            | CFE ...VBUUR | CFE ...VBUU |
|  | Stainless steel made                            |  | With screwdriver slot  | Shield type        | CFE ... R              | CFE ...            | CFE ...V R             | CFE ...V     |             |
|  |   |  |                        | Sealed type        | CFE ... UUR            | CFE ... UU         | CFE ...V UUR           | CFE ...V UU  |             |
|  | Thrust Disk Type Cam Follower CF...W            | High carbon steel made                         | With hexagon hole      | Shield type        | CF ...WB R             | —                  | —                      | —            |             |
|  |   |  |                        | Sealed type        | CF ...WBUUR            | —                  | —                      | —            |             |
| Stainless steel made                                     |   | With hexagon hole                              | Shield type            | CF ...FWB R        | —                      | —                  | —                      |              |             |
|  |   |  | Sealed type            | CF ...FWBUUR       | —                      | —                  | —                      |              |             |
| Centralized Lubrication Type Cam Follower CF-RU1, CF-FU1 | High carbon steel made                          | With screwdriver slot                          | Sealed type            | CF-RU1             | CF-FU1                 | —                  | —                      |              |             |
| Easy Mounting Type Cam Follower CF-SFU                   | High carbon steel made                          | With screwdriver slot                          | Sealed type            | —                  | CF-SFU                 | —                  | —                      |              |             |
| Heavy Duty Type Cam Follower NUCF                        | High carbon steel made                          | With screwdriver slot                          | Shield type            | —                  | —                      | NUCF... R          | —                      |              |             |
| Miniature CFS series                                     | Miniature Type Cam Follower CFS                 | High carbon steel made<br>Stainless steel made | With hexagon hole      | Shield type        | —                      | CFS                | —                      | CFS ... V    |             |
|  |   |  |                        | Shield type        | —                      | CFS ... F          | —                      | CFS ... FV   |             |
|  | Thrust Disk Type Miniature Cam Follower CFS...W | High carbon steel made<br>Stainless steel made | With hexagon hole      | Shield type        | —                      | CFS ... W          | —                      | —            |             |
|  |   |  |                        | Shield type        | —                      | CFS ... FW         | —                      | —            |             |
| Inch series  | Inch series Cam Follower CR                     | High carbon steel made                         | With hexagon hole      | Shield type        | CR ... B R             | CR ... B           | CR ...VB R             | CR ...VB     |             |
|  |   |  |                        | Sealed type        | CR ... BUUR            | CR ... BUU         | CR ...VBUUR            | CR ...VBUU   |             |
|  |   | Stainless steel made                           | With screwdriver slot  | Shield type        | CR ... R               | CR ...             | CR ...V R              | CR ...V      |             |
|  |   |  |                        | Sealed type        | CR ... UUR             | CR ... UU          | CR ...V UUR            | CR ...V UU   |             |
|  | Inch series Cam Follower CRH                    | High carbon steel made                         | With hexagon hole      | Shield type        | —                      | —                  | —                      | CRH ...VB    |             |
|  |   |  |                        | Sealed type        | —                      | —                  | —                      | CRH ...VBUU  |             |
|  |   | Stainless steel made                           | With screwdriver slot  | Shield type        | —                      | —                  | —                      | CRH ...V     |             |
|  |   |  |                        | Sealed type        | —                      | —                  | —                      | CRH ...V UU  |             |

**Standard Type Cam Followers**

These are the basic type bearings in IKO Cam Follower series. Models with stud diameters ranging from 3 to 30 mm are prepared, and are suitable for a wide range of applications.

**Solid Eccentric Stud Type Cam Followers**

The stud of these bearings is eccentric to the center axis of the outer ring. Thus, the position of the outer ring in the radial direction in relation to the mating track surface can easily be adjusted by turning the stud, and the load distribution on a number of cam follower outer rings used on the same track surface can be made uniform.

These are eccentric cam followers with a one-piece stud that can be mounted in the same mounting holes as those for Standard Type Cam Followers.

Eccentricity is 0.25 mm ~ 0.6 mm.

**Eccentric Type Cam Followers**

In these bearings, an eccentric collar is assembled with the Cam Follower stud, enabling the outer ring to be positioned easily in the radial direction against the mating track surface.

Eccentricity is 0.4 ~ 1.5 mm.

**Thrust Disk Type Cam Followers**

These bearings have special resin thrust disk washers superior in wear and heat resistance between the sliding surfaces of outer ring shoulders, stud head and side plate. These disk washers reduce friction and wear due to axial loads caused by misalignment, etc.

**Centralized Lubrication Type Cam Followers**

These bearings have one or two pipe-threaded holes in the stud. Thus, this series is suitable when centralized lubrication is required.

**Easy Mounting Type Cam Followers**

These bearings have a stepped tapered portion on the stud. When mounting the Cam Follower, it is easy to fix its location by tightening a set screw to the stepped portion. Thus, this type is suitable when a large number of Cam Followers are used in a machine such as a pallet changer.

**Heavy Duty Type Cam Followers**

These bearings are full complement type bearings incorporating double rows of full complement cylindrical rollers in the outer ring, and can withstand large radial loads and some axial loads.

**Miniature Type Cam Followers**

These are compactly designed bearings, incorporating very thin needle rollers in an outer ring with a small outside diameter. They are used in electronic devices, OA equipment, small index devices, etc.

**Inch series Cam Followers**

Two types, CR and CRH, are available in the Inch series Cam Followers. Black oxide film treatment is made on CRH models.

CF  
NUCF  
CFS  
CR

## Internal Structures and Shapes

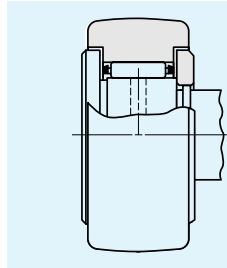
Various types are lined up in Cam Follower series, including the caged type, full complement type, shield type, sealed type, type with crowned outer ring, type

with cylindrical outer ring, type with hexagonal hole, etc.

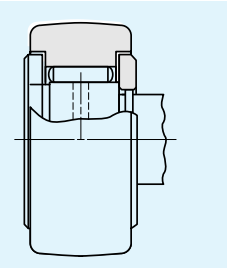
### Roller guide method

Cam Followers include the caged type and the full complement type. The caged type has a small coefficient of friction and is suitable for high speed rotations, while the full complement type is suitable for heavy loads at low speed rotations.

《With cage》



《Full complement》

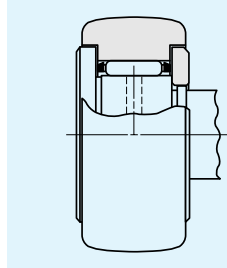


### Seal structure

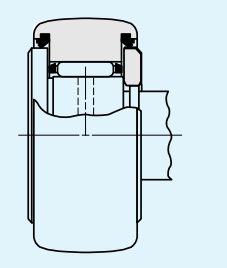
Cam Followers include the shield type and the sealed type. In the shield type, the narrow clearances between the outer ring and the stud flange and between the outer ring and the side plate form labyrinths.

The sealed type incorporates seals in the narrow clearances to prevent the penetration of foreign particles.

《Shield type》



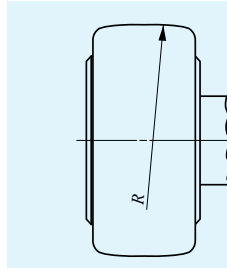
《Sealed type》



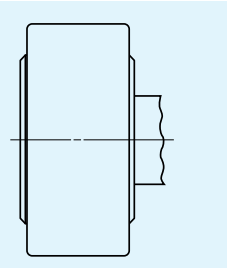
### Shape of outer ring outside surface

The outside surface of the outer ring of Cam Followers, which makes direct contact with the mating track surface, is either crowned or cylindrical. The crowned outer rings are effective in moderating the edge load due to mounting errors. The cylindrical outer rings have a large contact area with the mating track surface, and are suitable for applications in which the applied load is large or the track surface hardness is low.

《Crowned outer ring》



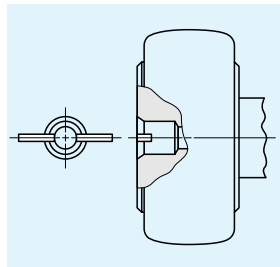
《Cylindrical outer ring》



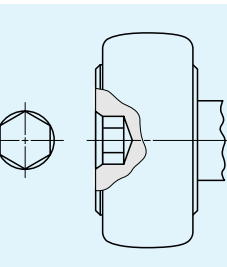
### Shape of stud head

Cam Followers are available in two stud head shape types, namely, the type with screwdriver slot and the type with hexagon hole for hexagon bar wrench.

《With screwdriver slot》



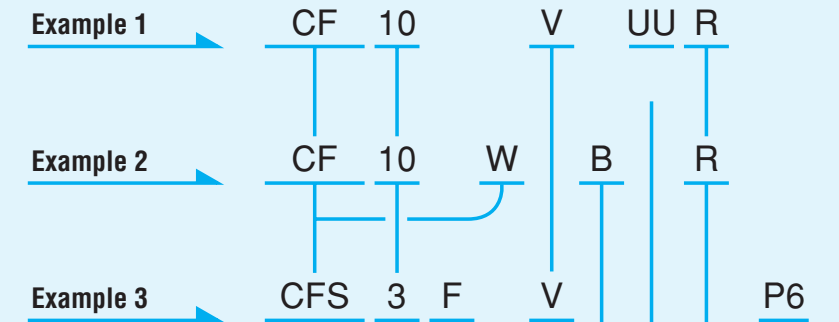
《With hexagon hole》



## Identification number

Some examples of the identification number of Cam Followers are shown below.

### Examples of identification number



| Model code              |         |  |
|-------------------------|---------|--|
| Metric<br>CF series     | CF      | Standard Type Cam Follower   |
|                         | CFES    | Solid Eccentric Stud Type Cam Follower                                     |
|                         | CFE     | Eccentric Type Cam Follower  |
|                         | CF...W  | Thrust Disk Type Cam Follower  |
|                         | CF-RU1  | Centralized Lubrication Type Cam Follower<br>(With crowned outer ring)     |
|                         | CF-FU1  | Centralized Lubrication Type Cam Follower<br>(With cylindrical outer ring) |
|                         | CF-SFU  | Easy Mounting Type Cam Follower  |
| Miniature<br>CFS series | NUCF    | Heavy Duty Type Cam Follower   |
|                         | CFS     | Miniature Type Cam Follower  |
| Inch<br>series          | CFS...W | Thrust Disk Type Miniature Cam Follower                                    |
|                         | CR      | Inch series Cam Follower   |
| CRH                     |         |  |

| Size   |  |
|--|--|
| The value indicates a stud diameter. (unit: mm)                              |  |
| In the inch series, the outside diameter in units of 1/16 inch is indicated. |  |

| Material  |                        |
|-----------|------------------------|
| No symbol | High carbon steel made |
| F         | Stainless steel made   |

| Roller guide method |                      |
|---------------------|----------------------|
| No symbol           | With cage type       |
| V                   | Full complement type |

| Shape of stud head |                       |
|--------------------|-----------------------|
| B                  | With hexagon hole     |
| No symbol          | With screwdriver slot |

| Seal structure |             |
|----------------|-------------|
| No symbol      | Shield type |
| UU             | Sealed type |

| Shape of outer ring outside surface |                             |
|-------------------------------------|-----------------------------|
| R                                   | With crowned outer ring     |
| No symbol                           | With cylindrical outer ring |

| Classification symbol |         |  |
|-----------------------|---------|--|
| No symbol             | Class 0 | Applicable to<br>Miniature CFS<br>series |
| P6                    | Class 6 |  |
| P5                    | Class 5 |  |
| P4                    | Class 4 |  |

CF  
NUCF  
CFS  
CR

## Accuracy

The accuracy of Cam Followers is shown in Table 2, Table 3.1, and Table 3.2. Cam Followers with special accuracy are also available. When they are required, please contact IKO.

**Table 2 Tolerances**

unit:  $\mu\text{m}$

| Series                         | Metric CF series <sup>(1)</sup> |                        | Miniature CFS series | Inch series        |                        |
|--------------------------------|---------------------------------|------------------------|----------------------|--------------------|------------------------|
|                                | Crowned outer ring              | Cylindrical outer ring |                      | Crowned outer ring | Cylindrical outer ring |
| Dimensions and symbols         |                                 |                        |                      |                    |                        |
| Outside dia. of outer ring $D$ | 0~-50                           | See Table 3.1.         | See Table 3.2.       | 0~-50              | 0~-25                  |
| Stud dia. $d_1$                | h7                              |                        | h6                   | +25~0              |                        |
| Width of outer ring $C$        | 0~-120                          |                        | 0~-120               | 0~-130             |                        |

Note<sup>(1)</sup> Also applicable to Heavy Duty Type Cam Followers.

**Table 3.1 Tolerances and allowable values of outer rings (Metric CF series cylindrical outer rings)**

unit:  $\mu\text{m}$

| $D$<br>Nominal outside dia. of outer ring<br>mm |       | $\Delta_{Dmp}$<br>Single plane mean outside dia. deviation |     | $V_{Dp}$<br>Outside dia.<br>variation in a single<br>radial plane (Max.) | $V_{Dmp}$<br>Mean outside dia.<br>variation<br>(Max.) | $K_{ca}$<br>Radial runout of<br>assembled bearing<br>outer ring (Max.) |
|---|-------|--|-----|--|---|--|
| Over  | Incl. | High   | Low |  |   |  |
| 6   | 18    | 0  | - 8 | 10   | 6   | 15   |
| 18  | 30    | 0  | - 9 | 12   | 7   | 15   |
| 30  | 50    | 0  | -11 | 14   | 8   | 20   |
| 50  | 80    | 0  | -13 | 16   | 10  | 25   |
| 80  | 120   | 0  | -15 | 19   | 11  | 35   |

**Table 3.2 Tolerances and allowable values of outer rings (Miniature CFS series)**

unit:  $\mu\text{m}$

| $\Delta_{Dmp}$<br>Single plane mean outside dia. deviation |     |         |     |         |     |         |     | $K_{ca}$<br>Radial runout of assembled bearing outer ring<br>(Max.) |         |         |         |
|--|-----|---------|-----|---------|-----|---------|-----|---|---------|---------|---------|
| Class 0  |     | Class 6 |     | Class 5 |     | Class 4 |     | Class 0   | Class 6 | Class 5 | Class 4 |
| High   | Low | High    | Low | High    | Low | High    | Low |   |         |         |         |
| 0  | -8  | 0       | -7  | 0       | -5  | 0       | -4  | 15  | 8       | 5       | 4       |

## Clearance

The radial internal clearances of Cam Followers are shown in Table 4.

**Table 4 Radial internal clearance**

unit:  $\mu\text{m}$

| Metric CF series <sup>(2)</sup> | Identification number <sup>(1)</sup>  |                                     |                              | Radial internal clearance |      |
|---------------------------------|---------------------------------------|-------------------------------------|------------------------------|---------------------------|------|
|                                 | Heavy Duty Type Cam Followers<br>NUCF | Miniature CFS series <sup>(3)</sup> | Inch series                  | Min.                      | Max. |
| CF 3 ~ CF 5                     | —                                     | CFS2 ~ CFS5                         | CR 8, CR 8-1, CRH 8-1, CRH 9 | 3                         | 17   |
| CF 6                            | —                                     | CFS6                                | CR10, CR10-1, CRH10-1, CRH11 | 5                         | 20   |
| CF 8 ~ CF12-1                   | —                                     | —                                   | CR12 ~ CR22, CRH12 ~ CRH22   | 5                         | 25   |
| CF16 ~ CF20-1                   | —                                     | —                                   | CR24 ~ CR36, CRH24 ~ CRH36   | 10                        | 30   |
| CF24 ~ CF30-2                   | —                                     | —                                   | CRH40 ~ CRH44                | 10                        | 40   |
| —                               | NUCF10 R ~ NUCF24 R                   | —                                   | —                            | 20                        | 45   |
| —                               | NUCF24-1R ~ NUCF30-2R                 | —                                   | —                            | 25                        | 50   |
| —                               | —                                     | —                                   | CRH64                        | 15                        | 50   |

Notes<sup>(1)</sup> Also applicable to the full complement type, crowned outer ring type, sealed type, and type with hexagon hole.

<sup>(2)</sup> Only representative types are shown in the table, but this table is applicable to the entire metric CF series.

<sup>(3)</sup> Only representative types are shown in the table, but this table is applicable to the entire miniature CFS series.

## Fit

Tables 5 and 6 show recommended tolerances of mounting holes for Cam Follower studs. Since the Cam Follower is supported in a cantilever position, the mounting hole diameter should be prepared without play between the stud and the hole especially when heavy shock loads are applied.

**Table 5 Recommended fit**

| Type                 | Tolerance class of mounting hole for stud |
|----------------------|---|
| Metric CF series     | H7  |
| Heavy Duty Type      | H7  |
| Miniature CFS series | H6  |
| Inch series          | F7  |

**Table 6 Dimensional tolerances of mounting hole**

unit:  $\mu\text{m}$

| Nominal outside dia. of stud<br>mm |       | F7   |     | H6   |     | H7   |     |
|------------------------------------|-------|------|-----|------|-----|------|-----|
| Over                               | Incl. | High | Low | High | Low | High | Low |
| —                                  | 3     | +16  | + 6 | + 6  | 0   | +10  | 0   |
| 3                                  | 6     | +22  | +10 | + 8  | 0   | +12  | 0   |
| 6                                  | 10    | +28  | +13 | + 9  | 0   | +15  | 0   |
| 10                                 | 18    | +34  | +16 | +11  | 0   | +18  | 0   |
| 18                                 | 30    | +41  | +20 | +13  | 0   | +21  | 0   |
| 30                                 | 40    | +50  | +25 | +16  | 0   | +25  | 0   |
| 40                                 | 50    |      |     |      |     |      |     |

CF  
NUCF  
CFS  
CR

### Maximum Allowable Static Load

The applicable load on Cam Followers is, in some cases, limited by the bending strength and shear strength of the stud and the strength of the outer ring instead of the load rating of the needle roller bearing. Therefore, the maximum allowable static load that is limited by these strengths is specified.

### Track Capacity

Track capacity is defined as a load which can be continuously applied on a Cam Follower placed on a steel track surface without causing any deformation or indentation on the track surface when the outer ring of

the Cam Follower makes contact with the mating track surface (plane). The track capacities shown in Tables 7.1 and 7.2 are applicable when the hardness of the mating track surface is 40HRC (Tensile strength 1250N/mm<sup>2</sup>). When the hardness of the mating track surface differs from 40HRC, the track capacity is obtained by multiplying the value by the track capacity factor shown in Table 8.

If lubrication between the outer ring and the mating track surface is insufficient, seizure and/or wear may occur depending on the application. Therefore, attention must be paid to lubrication and surface roughness of the mating track especially for high-speed rotations such as cam mechanisms.

Table 7.1 Track capacity

unit: N

| Type                                   | Identification number With crowned outer ring | Track capacity | Identification number With cylindrical outer ring | Track capacity |
|--|---|----------------|---|----------------|
| Metric<br>CF series <sup>(1)</sup>     | CF 3 R  | 542            | CF 3  | 1 360          |
|  | CF 4 R  | 712            | CF 4  | 1 790          |
|  | CF 5 R  | 794            | CF 5  | 2 210          |
|  | CF 6 R  | 1 040          | CF 6  | 3 400          |
|  | CF 8 R  | 1 330          | CF 8  | 4 040          |
|  | CF10 R  | 1 610          | CF10  | 4 680          |
|  | CF10-1R                                       | 2 030          | CF10-1  | 5 530          |
|  | CF12 R  | 2 470          | CF12  | 7 010          |
|  | CF12-1R                                       | 2 710          | CF12-1  | 7 480          |
|  | CF16 R  | 3 060          | CF16  | 11 200         |
|  | CF18 R  | 3 660          | CF18  | 14 500         |
|  | CF20 R  | 5 190          | CF20  | 23 200         |
|  | CF20-1R                                       | 4 530          | CF20-1  | 21 000         |
|  | CF24 R  | 6 580          | CF24  | 34 300         |
|  | CF24-1R                                       | 8 020          | CF24-1  | 39 800         |
|  | CF30 R  | 9 220          | CF30  | 52 700         |
|  | CF30-1R                                       | 9 990          | CF30-1  | 56 000         |
| CF30-2R                                | 10 800  | CF30-2         | 59 300  |                |
| Miniature<br>CFS series <sup>(2)</sup> | —   | —              | CFS2  | 220            |
|  | —   | —              | CFS2.5  | 298            |
|  | —   | —              | CFS3  | 485            |
|  | —   | —              | CFS4  | 799            |
|  | —   | —              | CFS5  | 1 210          |
|  | —   | —              | CFS6  | 1 680          |

Notes<sup>(1)</sup> Only representative types are shown in the table, but this table is applicable to the entire metric CF series, and also to Heavy Duty Type Cam Followers.

<sup>(2)</sup> Only representative types are shown in the table, but this table is applicable to the entire miniature CFS series.

Table 7.2 Track capacity

unit: N

| Type                       | Identification number With crowned outer ring | Track capacity | Identification number With cylindrical outer ring | Track capacity | Identification number With cylindrical outer ring | Track capacity |
|----------------------------|---|----------------|---|----------------|---|----------------|
| Inch series <sup>(1)</sup> | CR 8 R  | 770            | CR 8  | 2 140          | —   | —              |
|                            | CR 8-1R                                       | 770            | CR 8-1  | 2 360          | CRH 8-1   | 2 360          |
|                            | —   | —              | —   | —              | CRH 9   | 2 650          |
|                            | CR10 R  | 1 030          | CR10  | 3 210          | —   | —              |
|                            | CR10-1R                                       | 1 030          | CR10-1  | 3 480          | CRH10-1   | 3 480          |
|                            | —   | —              | —   | —              | CRH11   | 3 830          |
|                            | CR12 R  | 1 340          | CR12  | 4 500          | CRH12   | 4 500          |
|                            | CR14 R  | 1 630          | CR14  | 5 250          | CRH14   | 5 250          |
|                            | CR16 R  | 1 970          | CR16  | 7 280          | CRH16   | 7 280          |
|                            | CR18 R  | 2 300          | CR18  | 7 710          | CRH18   | 7 710          |
|                            | CR20 R  | 2 680          | CR20  | 10 700         | CRH20   | 10 700         |
|                            | CR22 R  | 3 050          | CR22  | 11 800         | CRH22   | 11 800         |
|                            | CR24 R  | 3 410          | CR24  | 15 400         | CRH24   | 15 400         |
|                            | CR26 R  | 3 820          | CR26  | 16 700         | CRH26   | 16 700         |
|                            | CR28 R  | 4 210          | CR28  | 21 000         | CRH28   | 21 000         |
|                            | CR30 R  | 4 610          | CR30  | 22 500         | CRH30   | 22 500         |
|                            | CR32 R  | 5 050          | CR32  | 30 900         | CRH32   | 30 900         |
|                            | CR36 R  | 5 900          | CR36  | 34 700         | CRH36   | 34 700         |
|                            | —   | —              | —   | —              | CRH40   | 45 000         |
|                            | —   | —              | —   | —              | CRH44   | 49 500         |
| —                          | —   | —              | —   | CRH48          | 64 300  |                |
| —                          | —   | —              | —   | CRH52          | 69 600  |                |
| —                          | —   | —              | —   | CRH56          | 87 000  |                |
| —                          | —   | —              | —   | CRH64          | 113 000   |                |

Note<sup>(1)</sup> Only representative types are shown in the table, but this table is applicable to the entire inch series.

Table 8 Track capacity factor

| Hardness HRC | Tensile strength N/mm <sup>2</sup> | Track capacity factor   |                             |
|--------------|------------------------------------|-------------------------|-----------------------------|
|              |                                    | With crowned outer ring | With cylindrical outer ring |
| 20           | 760                                | 0.22                    | 0.37                        |
| 25           | 840                                | 0.31                    | 0.46                        |
| 30           | 950                                | 0.45                    | 0.58                        |
| 35           | 1 080                              | 0.65                    | 0.75                        |
| 38           | 1 180                              | 0.85                    | 0.89                        |
| 40           | 1 250                              | 1.00                    | 1.00                        |
| 42           | 1 340                              | 1.23                    | 1.15                        |
| 44           | 1 435                              | 1.52                    | 1.32                        |
| 46           | 1 530                              | 1.85                    | 1.51                        |
| 48           | 1 635                              | 2.27                    | 1.73                        |
| 50           | 1 760                              | 2.80                    | 1.99                        |
| 52           | 1 880                              | 3.46                    | 2.29                        |
| 54           | 2 015                              | 4.21                    | 2.61                        |
| 56           | 2 150                              | 5.13                    | 2.97                        |
| 58           | 2 290                              | 6.26                    | 3.39                        |

### Allowable Rotational Speed

The allowable rotational speed of Cam Followers is affected by mounting and operating conditions. For reference, Table 9 shows  $d_1n$  values when only pure radial loads are applied. Considering that axial loads also act under actual operating conditions, the recommended  $d_1n$  value is 1/10 of the value shown in the table.

Table 9  $d_1n$  values of Cam Followers<sup>(1)</sup>

| Type                         | Lubricant |         |
|------------------------------|-----------|---------|
|                              | Grease    | Oil     |
| Caged type                   | 84 000    | 140 000 |
| Full complement type         | 42 000    | 70 000  |
| Heavy Duty Type Cam Follower | 66 000    | 110 000 |

Note<sup>(1)</sup>  $d_1n$  value =  $d_1 \times n$   
 where,  $d_1$ : Stud diameter mm  
 $n$ : Rotational speed rpm

### Lubrication

Grease-prepacked Cam Followers are shown in Table 10. The lubricating grease prepacked in these bearings is ALVANIA GREASE 2 (SHELL).

For Cam Followers without prepacked grease, grease should be packed through the oil hole in the stud for use. If they are used without grease, wear of rolling contact surfaces may take place, leading to a short bearing life.

**Table 10 Grease-prepacked Cam Followers**

○ : With prepacked grease × : Without prepacked grease

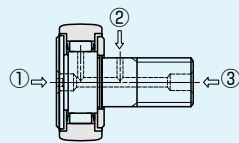
| Series<br>Size of stud dia. $d_1$ (1) mm | Type                        | With cage         |                       |                   |                       | Full complement type |
|--|-----------------------------|-------------------|-----------------------|-------------------|-----------------------|----------------------|
|  |                             | Shield type       |                       | Sealed type       |                       |                      |
|  |                             | With hexagon hole | With screwdriver slot | With hexagon hole | With screwdriver slot |                      |
| Metric<br>CF series                      | CF<br>CFES<br>CFE<br>CF...W | 3~5               | ○                     | ○                 | ○                     | ○                    |
|  |                             | 6~10              | ○                     | ○                 | ○                     | ○                    |
|  |                             | 12~30             | ×                     | ×                 | ○                     | ○                    |
|  | CF-RU1, CF-FU1<br>CF-SFU    | —                 | —                     | —                 | ○                     | —                    |
| Heavy Duty Type Cam Followers NUCF       |                             | —                 | —                     | —                 | —                     | ○                    |
| Miniature<br>CFS series                  | CFS<br>CFS...W              | —                 | —                     | —                 | —                     | ○                    |
|  | CR<br>CRH                   | ○                 | ○                     | ○                 | ○                     | ○                    |

Note(1) For Eccentric Type Cam Followers (CFE), thread diameter  $G$  shown in the table of dimensions is applicable.

**Table 11 Position of oil hole**

○ : Oil hole is prepared.

| Series<br>Size of stud dia. $d_1$ (1) mm | Position of oil hole         | ①                    | ②                    | ③        |
|--|------------------------------|----------------------|----------------------|----------|
|  |                              | Stud head            | Stud outside surface | Stud end |
| Metric<br>CF series                      | With hexagon hole            | $d_1 \leq 10$        | —                    | —        |
|  |                              | $10 < d_1$           | —                    | ○        |
|  | With screwdriver slot        | $d_1 < 5$            | —                    | —        |
|  |                              | $5 \leq d_1 \leq 10$ | ○                    | —        |
|  | CF-RU1, CF-FU1 (2)<br>CF-SFU | $10 < d_1$           | ○                    | ○        |
|  |                              | $d_1 \leq 12$        | ○                    | ○        |
| Heavy Duty Type Cam Followers NUCF       |                              | $d_1 \leq 10$        | ○                    | —        |
|  |                              | $10 < d_1$           | ○                    | ○        |
| Miniature<br>CFS series                  | CFS<br>CFS...W               | —                    | —                    | —        |
|  | Inch<br>series               | With hexagon hole    | $d_1 \leq 6.35$      | —        |
| $6.35 < d_1$                             |                              |                      | —                    | ○        |
| With screwdriver slot                    |                              | $d_1 \leq 6.35$      | ○                    | —        |
|  |                              | $6.35 < d_1$         | ○                    | ○        |
| CRH                                      | With hexagon hole            | $d_1 \leq 7.938$     | —                    | —        |
|  |                              | $7.938 < d_1$        | —                    | ○        |
|  | With screwdriver slot        | $d_1 \leq 7.938$     | ○                    | —        |
|  |                              | $7.938 < d_1$        | ○                    | ○        |



Notes(1) In case of Eccentric Type Cam Followers (CFE), thread diameter  $G$  shown in the table of dimensions is applicable in place of stud dia. and the oil hole on the outer surface of the stud cannot be used for lubrication.

(2) The stud head and stud end are provided with a tapped hole for piping.

### Oil Hole

The position of the oil hole is shown in Table 11. Oil holes are not provided on CF3 and CF4 models, the models with a hexagon hole with stud diameter of 10 mm or less, the easy mounting type models, and the miniature CFS models. Re-greasing cannot be made for these models.

Grease should be supplied gently with a straight type grease gun as specified by JIS B 9808:1991, which is applied carefully to the nipple head from the front.

### Accessories

Cam Follower accessories are shown in Table 12. Grease nipple dimensions are shown in Table 13. Dimensions of plug for unused oil hole and dimensions of plug inserter are shown in Table 14.

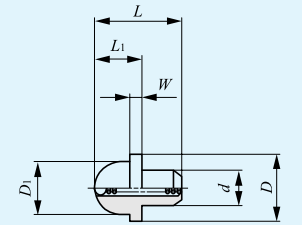
**Table 12 Accessories**

○ : Attached

| Series<br>Size of stud dia. $d_1$ mm |                          |                       | Accessories       |                 |     |               |
|--------------------------------------|--------------------------|-----------------------|-------------------|-----------------|-----|---------------|
|                                      |                          |                       | Grease nipple     | Plug            | Nut | Spring washer |
| Metric<br>CF series                  | CF<br>CFES<br>CF...W     | With hexagon hole     | $d_1 \leq 10$     | —               | —   | ○             |
|                                      |                          |                       | $10 < d_1$        | ○               | ○   | ○             |
|                                      |                          | With screwdriver slot | $d_1 < 5$         | —               | —   | ○             |
|                                      |                          |                       | $5 \leq d_1$      | ○               | ○   | ○             |
|                                      | CFE                      |                       |                   | ○               | ○   | ○             |
|                                      | CF-RU1, CF-FU1<br>CF-SFU |                       |                   | —               | —   | ○             |
| Heavy Duty Type Cam Followers NUCF   |                          |                       | ○                 | ○               | ○   |               |
| Miniature<br>CFS series              | CFS<br>CFS...W           |                       | —                 | —               | ○   |               |
|                                      | Inch<br>series           | CR                    | With hexagon hole | $d_1 \leq 6.35$ | —   | ○             |
|                                      |                          |                       | $6.35 < d_1$      | ○               | ○   |               |
|                                      |                          | With screwdriver slot | —                 | ○               | ○   |               |
|                                      |                          |                       |                   | —               | ○   |               |
| CRH                                  | With hexagon hole        | $d_1 \leq 7.938$      | —                 | —               | ○   |               |
|                                      |                          |                       | $7.938 < d_1$     | ○               | ○   |               |
|                                      | With screwdriver slot    | —                     | ○                 | ○               | ○   |               |
|                                      |                          |                       | —                 | ○               | ○   |               |

**Table 13 Dimensions of grease nipple**

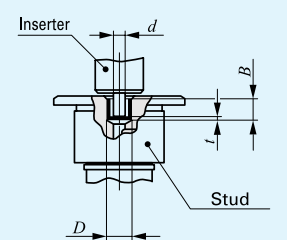
| Code number | Dimensions of grease nipple mm |     |       |      |       |      | Applicable Cam Followers (1)  |
|-------------|--------------------------------|-----|-------|------|-------|------|-------------------------------|
|             | $d$                            | $D$ | $D_1$ | $L$  | $L_1$ | $W$  |                               |
| NPT4        | 4                              | 7.5 | 6     | 10   | 5.5   | 1.5  | CF 6~CF10-1                   |
| NPT6        | 6                              | 8   | 6     | 11   | 6     | 2    | CF12~CF18                     |
| NPT8        | 8                              | 10  | 6     | 16   | 7     | 3    | CF20~CF30-2                   |
| NPB2        | 3.18                           | 7.5 | 6     | 9    | 5.5   | 1.5  | CF5, CR8~CR10-1, CRH8-1~CRH11 |
| NPB3        | 4.76                           | 7.5 | 6     | 10   | 5.5   | 1.5  | CR12~CR22, CRH12~CRH22        |
| NPB3-1      | 4.76                           | 7.5 | 6     | 12.5 | 5.5   | 1.55 | CR24~CR36, CRH24~CRH44        |



Note(1) Only representative types are shown in the table. This table is also applicable to Heavy Duty Type Cam Followers.

**Table 14 Dimensions of plug**

| Code number | Dimensions of plug mm |     |     | Dimension of inserter mm | Applicable Cam Followers (1) |
|-------------|-----------------------|-----|-----|--------------------------|------------------------------|
|             | $D$                   | $t$ | $B$ |                          |                              |
| UST4F       | 4                     | 0.4 | 3.3 | $d - 0.1$                | CF 6~CF10-1                  |
| UST6F       | 6                     | 0.4 | 4   | 5                        | CF12~CF18                    |
| UST8F       | 8                     | 0.4 | 5.8 | 7                        | CF20~CF30-2                  |
| USB2F       | 3.18                  | 0.3 | 3.3 | 2.3                      | CF5, CR8~CR10-1              |
| USB3F       | 4.76                  | 0.4 | 4.3 | 3.7                      | CR12~CR36, CRH12~CRH44       |



Note(1) Only representative types are shown in the table. This table is also applicable to Heavy Duty Type Cam Followers.

## Operating Temperature Range

The operating temperature range for IKO Cam Followers is  $-20^{\circ}\text{C} \sim +120^{\circ}\text{C}$ . However, the maximum allowable temperature for the following types is different.

The maximum allowable temperature for the Metric CF series with a stud diameter  $d_1$  of 4 mm or less and CFS2 is  $+110^{\circ}\text{C}$ , and  $+100^{\circ}\text{C}$  when they are continuously operated.

The maximum allowable temperature for the sealed type with a stud diameter  $d_1$  of 5 mm or less is  $+80^{\circ}\text{C}$ .

## Mounting

① Make the center axis of the mounting hole perpendicular to the moving direction of the Cam Follower and match the side shoulder accurately with the seating surface indicated by dimension  $f$  in the table of dimensions. (See Fig. 1.) Then, fix the Cam Follower with the nut. Do not hit the flange head of the Cam Follower directly with a hammer, etc. This may lead to a bearing failure such as irregular rotation or cracking.

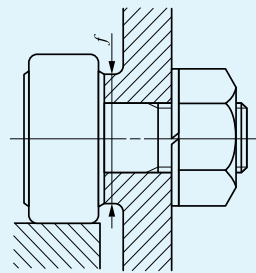


Fig. 1 Seating surface

② The IKO mark on the flange head of the stud indicates the position of the oil hole on the raceway. Avoid locating the oil hole within the loading zone. This may lead to a short bearing life. (See Fig. 2.) The hole located in the middle part of the stud perpendicular to the stud center axis is used for greasing or locking.

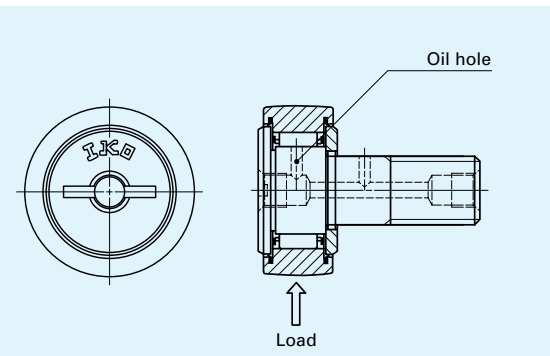


Fig. 2 Oil hole position and loading direction

③ When tightening the nut, the tightening torque should not exceed the values shown in the table of dimensions. If the tightening torque is too large, it is possible that the threaded portion of the stud will be broken. When there is a possibility of loosening, a special nut such as a lock nut, spring washer, or self-locking nut should be used.

④ In the case of Solid Eccentric Stud Type Cam Followers and Eccentric Type Cam Followers, the outer ring position can be adjusted appropriately by turning the stud with a screwdriver or hexagon bar wrench using the screwdriver slot or hexagon hole of the stud head. The stud is fixed with a nut and a spring washer, etc. The tightening torque should not exceed the values of maximum tightening torque shown in the table of dimensions.

When shock loads are applied and the adjusted eccentricity has to be ensured, it is recommended to make holes in the housing, stud and eccentric collar, and fix the stud with a dowel pin as shown in Fig. 3. However, when the stud diameter is less than 8 mm (Eccentric collar diameter 11 mm), it is difficult to make a hole in the stud because the stud is through-hardened.

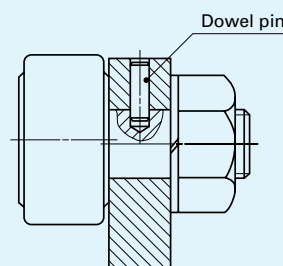


Fig. 3 Mounting example of Solid Eccentric Stud Type Cam Follower

⑤ In case of Eccentric Type Cam Followers (CFE), the length of the mounting hole should be more than 0.5 mm longer than the dimension  $B_3$  (Eccentric collar width) shown in the table of dimensions. (See Fig. 4.)

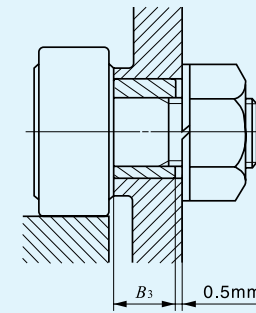


Fig. 4 Length of the mounting hole of Eccentric Type Cam Follower

⑥ For mounting Easy Mounting Type Cam Followers, it is recommended to fix the fixing screw from the upper side to the stepped portion of the stud. (See Fig. 5.)

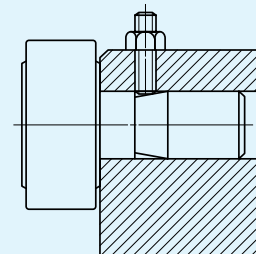
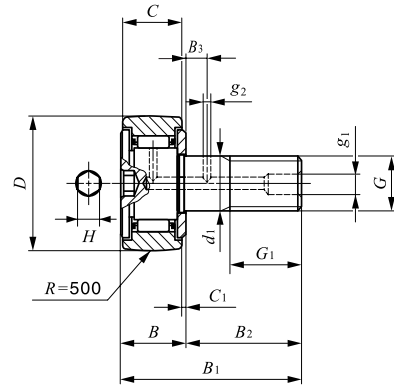
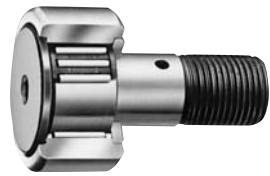


Fig. 5 Mounting example of Easy Mounting Type Cam Follower

**CAM FOLLOWERS**

Standard Type Cam Followers **With Cage/With Hexagon Hole**



CF...BR

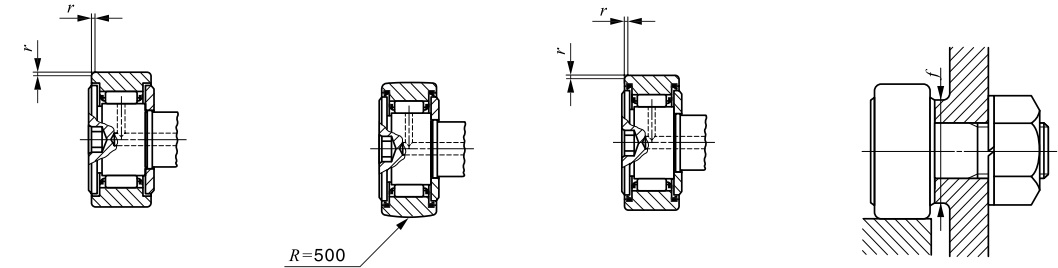
Stud dia. 3–30 mm

| Stud dia.<br>mm | Identification number   |                             |                         |                             | Mass (Ref.)<br>g | D  | C  | d <sub>1</sub> | G        |
|-----------------|-------------------------|-----------------------------|-------------------------|-----------------------------|------------------|----|----|----------------|----------|
|                 | Shield type             |                             | Sealed type             |                             |                  |    |    |                |          |
|                 | With crowned outer ring | With cylindrical outer ring | With crowned outer ring | With cylindrical outer ring |                  |    |    |                |          |
| 3               | CF 3 BR                 | CF 3 B                      | CF 3 BUUR               | CF 3 BUU                    | 4.3              | 10 | 7  | 3              | M 3×0.5  |
| 4               | CF 4 BR                 | CF 4 B                      | CF 4 BUUR               | CF 4 BUU                    | 7.4              | 12 | 8  | 4              | M 4×0.7  |
| 5               | CF 5 BR                 | CF 5 B                      | CF 5 BUUR               | CF 5 BUU                    | 10.3             | 13 | 9  | 5              | M 5×0.8  |
| 6               | CF 6 BR                 | CF 6 B                      | CF 6 BUUR               | CF 6 BUU                    | 18.5             | 16 | 11 | 6              | M 6×1    |
| 8               | CF 8 BR                 | CF 8 B                      | CF 8 BUUR               | CF 8 BUU                    | 28.5             | 19 | 11 | 8              | M 8×1.25 |
|                 | CF 8 BRM                | CF 8 BM                     | CF 8 BUURM              | CF 8 BUUM                   | 28.5             | 19 | 11 | 8              | M 8×1    |
| 10              | CF 10 BR                | CF 10 B                     | CF 10 BUUR              | CF 10 BUU                   | 45               | 22 | 12 | 10             | M10×1.25 |
|                 | CF 10 BRM               | CF 10 BM                    | CF 10 BUURM             | CF 10 BUUM                  | 45               | 22 | 12 | 10             | M10×1    |
|                 | CF 10-1 BR              | CF 10-1 B                   | CF 10-1 BUUR            | CF 10-1 BUU                 | 60               | 26 | 12 | 10             | M10×1.25 |
|                 | CF 10-1 BRM             | CF 10-1 BM                  | CF 10-1 BUURM           | CF 10-1 BUUM                | 60               | 26 | 12 | 10             | M10×1    |
| 12              | CF 12 BR                | CF 12 B                     | CF 12 BUUR              | CF 12 BUU                   | 95               | 30 | 14 | 12             | M12×1.5  |
|                 | CF 12-1 BR              | CF 12-1 B                   | CF 12-1 BUUR            | CF 12-1 BUU                 | 105              | 32 | 14 | 12             | M12×1.5  |
| 16              | CF 16 BR                | CF 16 B                     | CF 16 BUUR              | CF 16 BUU                   | 170              | 35 | 18 | 16             | M16×1.5  |
| 18              | CF 18 BR                | CF 18 B                     | CF 18 BUUR              | CF 18 BUU                   | 250              | 40 | 20 | 18             | M18×1.5  |
| 20              | CF 20 BR                | CF 20 B                     | CF 20 BUUR              | CF 20 BUU                   | 460              | 52 | 24 | 20             | M20×1.5  |
|                 | CF 20-1 BR              | CF 20-1 B                   | CF 20-1 BUUR            | CF 20-1 BUU                 | 385              | 47 | 24 | 20             | M20×1.5  |
| 24              | CF 24 BR                | CF 24 B                     | CF 24 BUUR              | CF 24 BUU                   | 815              | 62 | 29 | 24             | M24×1.5  |
|                 | CF 24-1 BR              | CF 24-1 B                   | CF 24-1 BUUR            | CF 24-1 BUU                 | 1 140            | 72 | 29 | 24             | M24×1.5  |
| 30              | CF 30 BR                | CF 30 B                     | CF 30 BUUR              | CF 30 BUU                   | 1 870            | 80 | 35 | 30             | M30×1.5  |
|                 | CF 30-1 BR              | CF 30-1 B                   | CF 30-1 BUUR            | CF 30-1 BUU                 | 2 030            | 85 | 35 | 30             | M30×1.5  |
|                 | CF 30-2 BR              | CF 30-2 B                   | CF 30-2 BUUR            | CF 30-2 BUU                 | 2 220            | 90 | 35 | 30             | M30×1.5  |

Note<sup>(1)</sup> Minimum allowable value of chamfer dimension *r*

Remarks1. Models with a stud diameter *d*<sub>1</sub> of 10 mm or less have no oil hole. Other models are provided with one oil hole each on the outside surface and end surface of the stud.

2. Shield type models with a stud diameter *d*<sub>1</sub> of 10mm or less and the sealed type models are provided with prepacked grease. Other models are not provided with prepacked grease. Perform proper lubrication for use.



CF...B

CF...BUUR

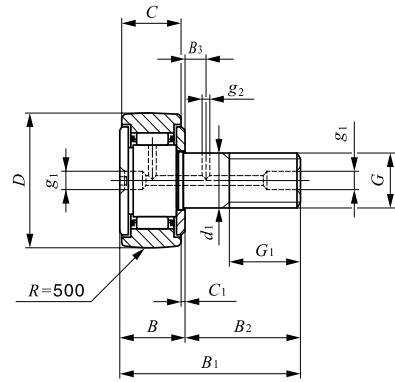
CF...BUU

| Boundary dimensions mm |          |                       |                       |                       |                       |                       |                       |          |  | Mounting dimension<br><i>f</i><br>Min. mm | Maximum tightening torque<br>N·m | Basic dynamic load rating<br><i>C</i><br>N | Basic static load rating<br><i>C</i> <sub>0</sub><br>N | Maximum allowable static load<br>N |
|------------------------|----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------|--|---|----------------------------------|--|--|------------------------------------|
| <i>G</i> <sub>1</sub>  | <i>B</i> | <i>B</i> <sub>1</sub> | <i>B</i> <sub>2</sub> | <i>B</i> <sub>3</sub> | <i>C</i> <sub>1</sub> | <i>g</i> <sub>1</sub> | <i>g</i> <sub>2</sub> | <i>H</i> | <i>r</i> <sub>s min</sub> <sup>(1)</sup> |   |                                  |  |  |                                    |
| 5                      | 8        | 17                    | 9                     | —                     | 0.5                   | —                     | —                     | 2        | 0.2                                      | 6.8                                       | 0.34                             | 1 500                                      | 1 020  | 384                                |
| 6                      | 9        | 20                    | 11                    | —                     | 0.5                   | —                     | —                     | 2.5      | 0.3                                      | 8.3                                       | 0.78                             | 2 070                                      | 1 590  | 834                                |
| 7.5                    | 10       | 23                    | 13                    | —                     | 0.5                   | —                     | —                     | 3        | 0.3                                      | 9.3                                       | 1.6                              | 2 520                                      | 2 140  | 1 260                              |
| 8                      | 12.2max  | 28.2max               | 16                    | —                     | 0.6                   | —                     | —                     | 3        | 0.3                                      | 11  | 2.7                              | 3 660                                      | 3 650  | 1 950                              |
| 10                     | 12.2max  | 32.2max               | 20                    | —                     | 0.6                   | —                     | —                     | 4        | 0.3                                      | 13  | 6.5                              | 4 250                                      | 4 740  | 4 620                              |
| 10                     | 12.2max  | 32.2max               | 20                    | —                     | 0.6                   | —                     | —                     | 4        | 0.3                                      | 13  | 7.1                              | 4 250                                      | 4 740  | 4 620                              |
| 12                     | 13.2max  | 36.2max               | 23                    | —                     | 0.6                   | —                     | —                     | 4        | 0.3                                      | 16  | 13.8                             | 5 430                                      | 6 890  | 6 890                              |
| 12                     | 13.2max  | 36.2max               | 23                    | —                     | 0.6                   | —                     | —                     | 4        | 0.3                                      | 16  | 14.7                             | 5 430                                      | 6 890  | 6 890                              |
| 12                     | 13.2max  | 36.2max               | 23                    | —                     | 0.6                   | —                     | —                     | 4        | 0.3                                      | 16  | 13.8                             | 5 430                                      | 6 890  | 6 890                              |
| 12                     | 13.2max  | 36.2max               | 23                    | —                     | 0.6                   | —                     | —                     | 4        | 0.3                                      | 16  | 14.7                             | 5 430                                      | 6 890  | 6 890                              |
| 13                     | 15.2max  | 40.2max               | 25                    | 6                     | 0.6                   | 6                     | 3                     | 6        | 0.6                                      | 21  | 21.9                             | 7 910                                      | 9 790  | 9 790                              |
| 13                     | 15.2max  | 40.2max               | 25                    | 6                     | 0.6                   | 6                     | 3                     | 6        | 0.6                                      | 21  | 21.9                             | 7 910                                      | 9 790  | 9 790                              |
| 17                     | 19.6max  | 52.1max               | 32.5                  | 8                     | 0.8                   | 6                     | 3                     | 6        | 0.6                                      | 26  | 58.5                             | 12 000                                     | 18 300   | 18 300                             |
| 19                     | 21.6max  | 58.1max               | 36.5                  | 8                     | 0.8                   | 6                     | 3                     | 8        | 1  | 29  | 86.2                             | 14 800                                     | 25 200   | 25 200                             |
| 21                     | 25.6max  | 66.1max               | 40.5                  | 9                     | 0.8                   | 8                     | 4                     | 8        | 1  | 34  | 119                              | 20 700                                     | 34 600   | 34 600                             |
| 21                     | 25.6max  | 66.1max               | 40.5                  | 9                     | 0.8                   | 8                     | 4                     | 8        | 1  | 34  | 119                              | 20 700                                     | 34 600   | 34 600                             |
| 25                     | 30.6max  | 80.1max               | 49.5                  | 11                    | 0.8                   | 8                     | 4                     | 12       | 1  | 40  | 215                              | 30 500                                     | 52 600   | 52 000                             |
| 25                     | 30.6max  | 80.1max               | 49.5                  | 11                    | 0.8                   | 8                     | 4                     | 12       | 1  | 40  | 215                              | 30 500                                     | 52 600   | 52 000                             |
| 32                     | 37 max   | 100 max               | 63                    | 15                    | 1                     | 8                     | 4                     | 17       | 1  | 49  | 438                              | 45 400                                     | 85 100   | 85 100                             |
| 32                     | 37 max   | 100 max               | 63                    | 15                    | 1                     | 8                     | 4                     | 17       | 1  | 49  | 438                              | 45 400                                     | 85 100   | 85 100                             |
| 32                     | 37 max   | 100 max               | 63                    | 15                    | 1                     | 8                     | 4                     | 17       | 1  | 49  | 438                              | 45 400                                     | 85 100   | 85 100                             |

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**CAM FOLLOWERS**

Standard Type Cam Followers **With Cage/With Screwdriver Slot**

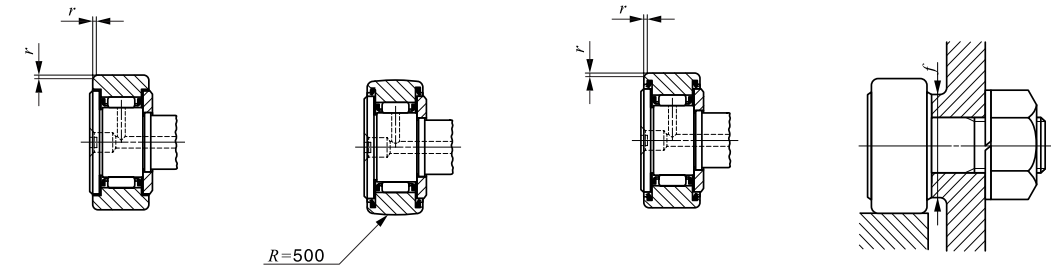


CF...R

Stud dia. 3—30 mm

| Stud dia.<br>mm | Identification number   |                             |                         |                             | Mass (Ref.)<br>g | D  | C  | d <sub>1</sub> | G        |
|-----------------|-------------------------|-----------------------------|-------------------------|-----------------------------|------------------|----|----|----------------|----------|
|                 | Shield type             |                             | Sealed type             |                             |                  |    |    |                |          |
|                 | With crowned outer ring | With cylindrical outer ring | With crowned outer ring | With cylindrical outer ring |                  |    |    |                |          |
| 3               | CF 3 R                  | CF 3                        | CF 3 UUR                | CF 3 UU                     | 4.3              | 10 | 7  | 3              | M 3×0.5  |
| 4               | CF 4 R                  | CF 4                        | CF 4 UUR                | CF 4 UU                     | 7.4              | 12 | 8  | 4              | M 4×0.7  |
| 5               | CF 5 R                  | CF 5                        | CF 5 UUR                | CF 5 UU                     | 10.3             | 13 | 9  | 5              | M 5×0.8  |
| 6               | CF 6 R                  | CF 6                        | CF 6 UUR                | CF 6 UU                     | 18.5             | 16 | 11 | 6              | M 6×1    |
| 8               | CF 8 R                  | CF 8                        | CF 8 UUR                | CF 8 UU                     | 28.5             | 19 | 11 | 8              | M 8×1.25 |
|                 | CF 8 RM                 | CF 8 M                      | CF 8 UURM               | CF 8 UUM                    | 28.5             | 19 | 11 | 8              | M 8×1    |
| 10              | CF 10 R                 | CF 10                       | CF 10 UUR               | CF 10 UU                    | 45               | 22 | 12 | 10             | M10×1.25 |
|                 | CF 10 RM                | CF 10 M                     | CF 10 UURM              | CF 10 UUM                   | 45               | 22 | 12 | 10             | M10×1    |
|                 | CF 10-1 R               | CF 10-1                     | CF 10-1 UUR             | CF 10-1 UU                  | 60               | 26 | 12 | 10             | M10×1.25 |
|                 | CF 10-1 RM              | CF 10-1 M                   | CF 10-1 UURM            | CF 10-1 UUM                 | 60               | 26 | 12 | 10             | M10×1    |
| 12              | CF 12 R                 | CF 12                       | CF 12 UUR               | CF 12 UU                    | 95               | 30 | 14 | 12             | M12×1.5  |
|                 | CF 12-1 R               | CF 12-1                     | CF 12-1 UUR             | CF 12-1 UU                  | 105              | 32 | 14 | 12             | M12×1.5  |
| 16              | CF 16 R                 | CF 16                       | CF 16 UUR               | CF 16 UU                    | 170              | 35 | 18 | 16             | M16×1.5  |
| 18              | CF 18 R                 | CF 18                       | CF 18 UUR               | CF 18 UU                    | 250              | 40 | 20 | 18             | M18×1.5  |
| 20              | CF 20 R                 | CF 20                       | CF 20 UUR               | CF 20 UU                    | 460              | 52 | 24 | 20             | M20×1.5  |
|                 | CF 20-1 R               | CF 20-1                     | CF 20-1 UUR             | CF 20-1 UU                  | 385              | 47 | 24 | 20             | M20×1.5  |
| 24              | CF 24 R                 | CF 24                       | CF 24 UUR               | CF 24 UU                    | 815              | 62 | 29 | 24             | M24×1.5  |
|                 | CF 24-1 R               | CF 24-1                     | CF 24-1 UUR             | CF 24-1 UU                  | 1 140            | 72 | 29 | 24             | M24×1.5  |
| 30              | CF 30 R                 | CF 30                       | CF 30 UUR               | CF 30 UU                    | 1 870            | 80 | 35 | 30             | M30×1.5  |
|                 | CF 30-1 R               | CF 30-1                     | CF 30-1 UUR             | CF 30-1 UU                  | 2 030            | 85 | 35 | 30             | M30×1.5  |
|                 | CF 30-2 R               | CF 30-2                     | CF 30-2 UUR             | CF 30-2 UU                  | 2 220            | 90 | 35 | 30             | M30×1.5  |

Note<sup>(1)</sup> Minimum allowable value of chamfer dimension *r*  
 Remarks1. Models with a stud diameter *d*<sub>1</sub> of 4 mm or less have no oil hole. Models with a stud diameter of more than 5 mm and up to 10 mm (marked \*) are provided with an oil hole on the stud head only. Other models are provided with one oil hole each on the head, outside surface and end surface of the stud.  
 2. Shield type models with a stud diameter *d*<sub>1</sub> of 5 mm or less and the sealed type models are provided with prepacked grease. Other models are not provided with prepacked grease. Perform proper lubrication for use.



CF

CF...UUR

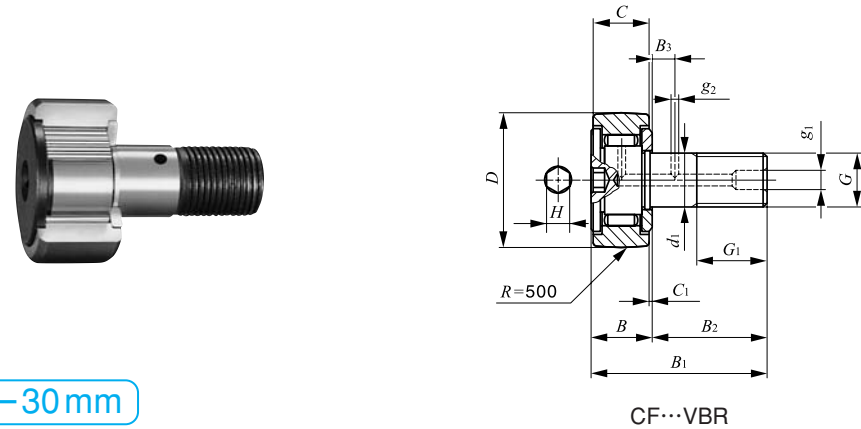
CF...UU

| Boundary dimensions mm |          |                       |                       |                       |                       |                       |                       |  | Mounting dimension<br><i>f</i><br>Min. mm | Maximum tightening torque<br>N-m | Basic dynamic load rating<br><i>C</i><br>N | Basic static load rating<br><i>C</i> <sub>0</sub><br>N | Maximum allowable static load<br>N |
|------------------------|----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--|---|----------------------------------|--|--|------------------------------------|
| <i>G</i> <sub>1</sub>  | <i>B</i> | <i>B</i> <sub>1</sub> | <i>B</i> <sub>2</sub> | <i>B</i> <sub>3</sub> | <i>C</i> <sub>1</sub> | <i>g</i> <sub>1</sub> | <i>g</i> <sub>2</sub> | <i>r</i> <sub>s min</sub> <sup>(1)</sup> |   |                                  |  |  |                                    |
| 5                      | 8        | 17                    | 9                     | —                     | 0.5                   | —                     | —                     | 0.2                                      | 6.8                                       | 0.34                             | 1 500                                      | 1 020  | 384                                |
| 6                      | 9        | 20                    | 11                    | —                     | 0.5                   | —                     | —                     | 0.3                                      | 8.3                                       | 0.78                             | 2 070                                      | 1 590  | 834                                |
| 7.5                    | 10       | 23                    | 13                    | —                     | 0.5                   | *3.1                  | —                     | 0.3                                      | 9.3                                       | 1.6                              | 2 520                                      | 2 140  | 1 260                              |
| 8                      | 12.2max  | 28.2max               | 16                    | —                     | 0.6                   | *4                    | —                     | 0.3                                      | 11  | 2.7                              | 3 660                                      | 3 650  | 1 950                              |
| 10                     | 12.2max  | 32.2max               | 20                    | —                     | 0.6                   | *4                    | —                     | 0.3                                      | 13  | 6.5                              | 4 250                                      | 4 740  | 4 620                              |
| 10                     | 12.2max  | 32.2max               | 20                    | —                     | 0.6                   | *4                    | —                     | 0.3                                      | 13  | 7.1                              | 4 250                                      | 4 740  | 4 620                              |
| 12                     | 13.2max  | 36.2max               | 23                    | —                     | 0.6                   | *4                    | —                     | 0.3                                      | 16  | 13.8                             | 5 430                                      | 6 890  | 6 890                              |
| 12                     | 13.2max  | 36.2max               | 23                    | —                     | 0.6                   | *4                    | —                     | 0.3                                      | 16  | 14.7                             | 5 430                                      | 6 890  | 6 890                              |
| 12                     | 13.2max  | 36.2max               | 23                    | —                     | 0.6                   | *4                    | —                     | 0.3                                      | 16  | 13.8                             | 5 430                                      | 6 890  | 6 890                              |
| 12                     | 13.2max  | 36.2max               | 23                    | —                     | 0.6                   | *4                    | —                     | 0.3                                      | 16  | 14.7                             | 5 430                                      | 6 890  | 6 890                              |
| 13                     | 15.2max  | 40.2max               | 25                    | 6                     | 0.6                   | 6                     | 3                     | 0.6                                      | 21  | 21.9                             | 7 910                                      | 9 790  | 9 790                              |
| 13                     | 15.2max  | 40.2max               | 25                    | 6                     | 0.6                   | 6                     | 3                     | 0.6                                      | 21  | 21.9                             | 7 910                                      | 9 790  | 9 790                              |
| 17                     | 19.6max  | 52.1max               | 32.5                  | 8                     | 0.8                   | 6                     | 3                     | 0.6                                      | 26  | 58.5                             | 12 000                                     | 18 300   | 18 300                             |
| 19                     | 21.6max  | 58.1max               | 36.5                  | 8                     | 0.8                   | 6                     | 3                     | 1  | 29  | 86.2                             | 14 800                                     | 25 200   | 25 200                             |
| 21                     | 25.6max  | 66.1max               | 40.5                  | 9                     | 0.8                   | 8                     | 4                     | 1  | 34  | 119                              | 20 700                                     | 34 600   | 34 600                             |
| 21                     | 25.6max  | 66.1max               | 40.5                  | 9                     | 0.8                   | 8                     | 4                     | 1  | 34  | 119                              | 20 700                                     | 34 600   | 34 600                             |
| 25                     | 30.6max  | 80.1max               | 49.5                  | 11                    | 0.8                   | 8                     | 4                     | 1  | 40  | 215                              | 30 500                                     | 52 600   | 52 000                             |
| 25                     | 30.6max  | 80.1max               | 49.5                  | 11                    | 0.8                   | 8                     | 4                     | 1  | 40  | 215                              | 30 500                                     | 52 600   | 52 000                             |
| 32                     | 37 max   | 100 max               | 63                    | 15                    | 1                     | 8                     | 4                     | 1  | 49  | 438                              | 45 400                                     | 85 100   | 85 100                             |
| 32                     | 37 max   | 100 max               | 63                    | 15                    | 1                     | 8                     | 4                     | 1  | 49  | 438                              | 45 400                                     | 85 100   | 85 100                             |
| 32                     | 37 max   | 100 max               | 63                    | 15                    | 1                     | 8                     | 4                     | 1  | 49  | 438                              | 45 400                                     | 85 100   | 85 100                             |

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**CAM FOLLOWERS**

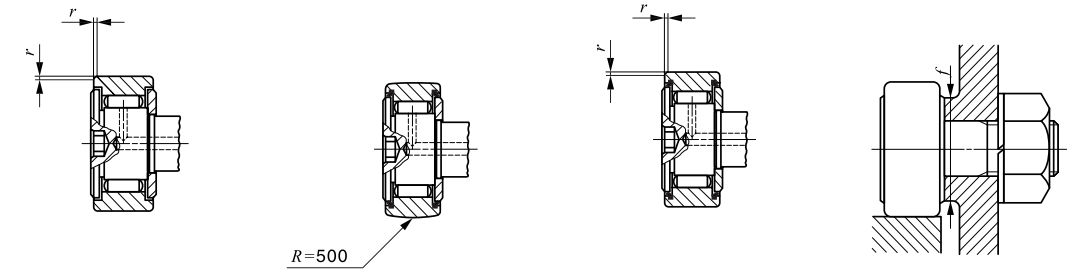
Standard Type Cam Followers **Full Complement Type/With Hexagon Hole**



Stud dia. 6—30 mm

| Stud dia.<br>mm | Identification number      |                                |                            |                                | Mass<br>(Ref.)<br>g | D  | C  | d <sub>1</sub> |
|-----------------|----------------------------|--------------------------------|----------------------------|--------------------------------|---------------------|----|----|----------------|
|                 | Shield type                |                                | Sealed type                |                                |                     |    |    |                |
|                 | With crowned<br>outer ring | With cylindrical<br>outer ring | With crowned<br>outer ring | With cylindrical<br>outer ring |                     |    |    |                |
| 6               | CF 6 VBR                   | CF 6 VB                        | CF 6 VBUUR                 | CF 6 VBUU                      | 19                  | 16 | 11 | 6              |
| 8               | CF 8 VBR                   | CF 8 VB                        | CF 8 VBUUR                 | CF 8 VBUU                      | 29                  | 19 | 11 | 8              |
|                 | CF 8 VBRM                  | CF 8 VBM                       | CF 8 VBUURM                | CF 8 VBUUM                     | 29                  | 19 | 11 | 8              |
| 10              | CF 10 VBR                  | CF 10 VB                       | CF 10 VBUUR                | CF 10 VBUU                     | 46                  | 22 | 12 | 10             |
|                 | CF 10 VBRM                 | CF 10 VBM                      | CF 10 VBUURM               | CF 10 VBUUM                    | 46                  | 22 | 12 | 10             |
|                 | CF 10-1 VBR                | CF 10-1 VB                     | CF 10-1 VBUUR              | CF 10-1 VBUU                   | 61                  | 26 | 12 | 10             |
|                 | CF 10-1 VBRM               | CF 10-1 VBM                    | CF 10-1 VBUURM             | CF 10-1 VBUUM                  | 61                  | 26 | 12 | 10             |
| 12              | CF 12 VBR                  | CF 12 VB                       | CF 12 VBUUR                | CF 12 VBUU                     | 97                  | 30 | 14 | 12             |
|                 | CF 12-1 VBR                | CF 12-1 VB                     | CF 12-1 VBUUR              | CF 12-1 VBUU                   | 107                 | 32 | 14 | 12             |
| 16              | CF 16 VBR                  | CF 16 VB                       | CF 16 VBUUR                | CF 16 VBUU                     | 173                 | 35 | 18 | 16             |
| 18              | CF 18 VBR                  | CF 18 VB                       | CF 18 VBUUR                | CF 18 VBUU                     | 255                 | 40 | 20 | 18             |
| 20              | CF 20 VBR                  | CF 20 VB                       | CF 20 VBUUR                | CF 20 VBUU                     | 465                 | 52 | 24 | 20             |
|                 | CF 20-1 VBR                | CF 20-1 VB                     | CF 20-1 VBUUR              | CF 20-1 VBUU                   | 390                 | 47 | 24 | 20             |
| 24              | CF 24 VBR                  | CF 24 VB                       | CF 24 VBUUR                | CF 24 VBUU                     | 820                 | 62 | 29 | 24             |
|                 | CF 24-1 VBR                | CF 24-1 VB                     | CF 24-1 VBUUR              | CF 24-1 VBUU                   | 1 140               | 72 | 29 | 24             |
| 30              | CF 30 VBR                  | CF 30 VB                       | CF 30 VBUUR                | CF 30 VBUU                     | 1 870               | 80 | 35 | 30             |
|                 | CF 30-1 VBR                | CF 30-1 VB                     | CF 30-1 VBUUR              | CF 30-1 VBUU                   | 2 030               | 85 | 35 | 30             |
|                 | CF 30-2 VBR                | CF 30-2 VB                     | CF 30-2 VBUUR              | CF 30-2 VBUU                   | 2 220               | 90 | 35 | 30             |

Note<sup>(1)</sup> Minimum allowable value of chamfer dimension *r*  
 Remarks1. Models with a stud diameter *d*<sub>1</sub> of 10 mm or less have no oil hole. Other models are provided with one oil hole each on the outside surface and end surface of the stud.  
 2. Provided with prepacked grease.

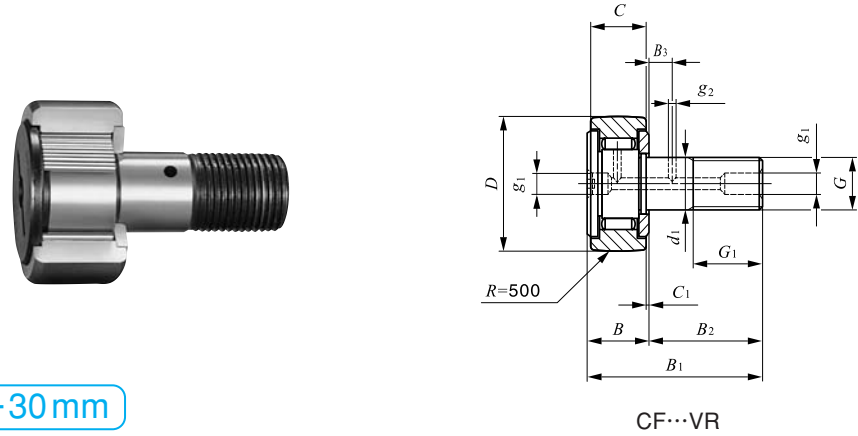


| Boundary dimensions mm |                       |                 |                              |                       |                       |                       |                       |                       |          |   | Mounting<br>dimension<br><i>f</i><br>Min.<br>mm | Maximum<br>tightening<br>torque<br>N·m | Basic dynamic<br>load rating<br><i>C</i><br>N | Basic static<br>load rating<br><i>C</i> <sub>0</sub><br>N | Maximum<br>allowable<br>static load<br>N |
|------------------------|-----------------------|-----------------|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------|---|---|--|---|---|--|
| <i>G</i>               | <i>G</i> <sub>1</sub> | <i>B</i><br>max | <i>B</i> <sub>1</sub><br>max | <i>B</i> <sub>2</sub> | <i>B</i> <sub>3</sub> | <i>C</i> <sub>1</sub> | <i>g</i> <sub>1</sub> | <i>g</i> <sub>2</sub> | <i>H</i> | <i>r</i> <sub>smin</sub> <sup>(1)</sup> |   |  |   |   |  |
| M 6×1                  | 8                     | 12.2            | 28.2                         | 16                    | —                     | 0.6                   | —                     | —                     | 3        | 0.3                                     | 11  | 2.7                                    | 6 980   | 8 500   | 1 950                                    |
| M 8×1.25               | 10                    | 12.2            | 32.2                         | 20                    | —                     | 0.6                   | —                     | —                     | 4        | 0.3                                     | 13  | 6.5                                    | 8 170   | 11 200  | 4 620                                    |
| M 8×1                  | 10                    | 12.2            | 32.2                         | 20                    | —                     | 0.6                   | —                     | —                     | 4        | 0.3                                     | 13  | 7.1                                    | 8 170   | 11 200  | 4 620                                    |
| M10×1.25               | 12                    | 13.2            | 36.2                         | 23                    | —                     | 0.6                   | —                     | —                     | 4        | 0.3                                     | 16  | 13.8                                   | 9 570   | 14 500  | 8 650                                    |
| M10×1                  | 12                    | 13.2            | 36.2                         | 23                    | —                     | 0.6                   | —                     | —                     | 4        | 0.3                                     | 16  | 14.7                                   | 9 570   | 14 500  | 8 650                                    |
| M10×1.25               | 12                    | 13.2            | 36.2                         | 23                    | —                     | 0.6                   | —                     | —                     | 4        | 0.3                                     | 16  | 13.8                                   | 9 570   | 14 500  | 8 650                                    |
| M10×1                  | 12                    | 13.2            | 36.2                         | 23                    | —                     | 0.6                   | —                     | —                     | 4        | 0.3                                     | 16  | 14.7                                   | 9 570   | 14 500  | 8 650                                    |
| M12×1.5                | 13                    | 15.2            | 40.2                         | 25                    | 6                     | 0.6                   | 6                     | 3                     | 6        | 0.6                                     | 21  | 21.9                                   | 13 500  | 19 700  | 13 200                                   |
| M12×1.5                | 13                    | 15.2            | 40.2                         | 25                    | 6                     | 0.6                   | 6                     | 3                     | 6        | 0.6                                     | 21  | 21.9                                   | 13 500  | 19 700  | 13 200                                   |
| M16×1.5                | 17                    | 19.6            | 52.1                         | 32.5                  | 8                     | 0.8                   | 6                     | 3                     | 6        | 0.6                                     | 26  | 58.5                                   | 20 700  | 37 600  | 23 200                                   |
| M18×1.5                | 19                    | 21.6            | 58.1                         | 36.5                  | 8                     | 0.8                   | 6                     | 3                     | 8        | 1                                       | 29  | 86.2                                   | 25 300  | 51 300  | 31 100                                   |
| M20×1.5                | 21                    | 25.6            | 66.1                         | 40.5                  | 9                     | 0.8                   | 8                     | 4                     | 8        | 1                                       | 34  | 119                                    | 33 200  | 64 500  | 37 500                                   |
| M20×1.5                | 21                    | 25.6            | 66.1                         | 40.5                  | 9                     | 0.8                   | 8                     | 4                     | 8        | 1                                       | 34  | 119                                    | 33 200  | 64 500  | 37 500                                   |
| M24×1.5                | 25                    | 30.6            | 80.1                         | 49.5                  | 11                    | 0.8                   | 8                     | 4                     | 12       | 1                                       | 40  | 215                                    | 46 600  | 92 000  | 52 000                                   |
| M24×1.5                | 25                    | 30.6            | 80.1                         | 49.5                  | 11                    | 0.8                   | 8                     | 4                     | 12       | 1                                       | 40  | 215                                    | 46 600  | 92 000  | 52 000                                   |
| M30×1.5                | 32                    | 37              | 100                          | 63                    | 15                    | 1                     | 8                     | 4                     | 17       | 1                                       | 49  | 438                                    | 67 700  | 144 000   | 85 900                                   |
| M30×1.5                | 32                    | 37              | 100                          | 63                    | 15                    | 1                     | 8                     | 4                     | 17       | 1                                       | 49  | 438                                    | 67 700  | 144 000   | 85 900                                   |
| M30×1.5                | 32                    | 37              | 100                          | 63                    | 15                    | 1                     | 8                     | 4                     | 17       | 1                                       | 49  | 438                                    | 67 700  | 144 000   | 85 900                                   |

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**CAM FOLLOWERS**

Standard Type Cam Followers **Full Complement Type/With Screwdriver Slot**



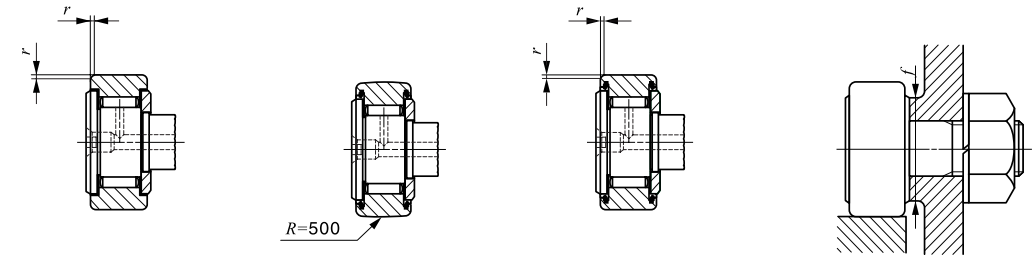
Stud dia. 6—30 mm

| Stud dia.<br>mm | Identification number      |                                |                            |                                | Mass<br>(Ref.)<br>g | D  | C  | d <sub>1</sub> |
|-----------------|----------------------------|--------------------------------|----------------------------|--------------------------------|---------------------|----|----|----------------|
|                 | Shield type                |                                | Sealed type                |                                |                     |    |    |                |
|                 | With crowned<br>outer ring | With cylindrical<br>outer ring | With crowned<br>outer ring | With cylindrical<br>outer ring |                     |    |    |                |
| 6               | CF 6 VR                    | CF 6 V                         | CF 6 VUUR                  | CF 6 VUU                       | 19                  | 16 | 11 | 6              |
| 8               | CF 8 VR                    | CF 8 V                         | CF 8 VUUR                  | CF 8 VUU                       | 29                  | 19 | 11 | 8              |
|                 | CF 8 VRM                   | CF 8 VM                        | CF 8 VUURM                 | CF 8 VUUM                      | 29                  | 19 | 11 | 8              |
| 10              | CF 10 VR                   | CF 10 V                        | CF 10 VUUR                 | CF 10 VUU                      | 46                  | 22 | 12 | 10             |
|                 | CF 10 VRM                  | CF 10 VM                       | CF 10 VUURM                | CF 10 VUUM                     | 46                  | 22 | 12 | 10             |
|                 | CF 10-1 VR                 | CF 10-1 V                      | CF 10-1 VUUR               | CF 10-1 VUU                    | 61                  | 26 | 12 | 10             |
|                 | CF 10-1 VRM                | CF 10-1 VM                     | CF 10-1 VUURM              | CF 10-1 VUUM                   | 61                  | 26 | 12 | 10             |
| 12              | CF 12 VR                   | CF 12 V                        | CF 12 VUUR                 | CF 12 VUU                      | 97                  | 30 | 14 | 12             |
|                 | CF 12-1 VR                 | CF 12-1 V                      | CF 12-1 VUUR               | CF 12-1 VUU                    | 107                 | 32 | 14 | 12             |
| 16              | CF 16 VR                   | CF 16 V                        | CF 16 VUUR                 | CF 16 VUU                      | 173                 | 35 | 18 | 16             |
| 18              | CF 18 VR                   | CF 18 V                        | CF 18 VUUR                 | CF 18 VUU                      | 255                 | 40 | 20 | 18             |
| 20              | CF 20 VR                   | CF 20 V                        | CF 20 VUUR                 | CF 20 VUU                      | 465                 | 52 | 24 | 20             |
|                 | CF 20-1 VR                 | CF 20-1 V                      | CF 20-1 VUUR               | CF 20-1 VUU                    | 390                 | 47 | 24 | 20             |
| 24              | CF 24 VR                   | CF 24 V                        | CF 24 VUUR                 | CF 24 VUU                      | 820                 | 62 | 29 | 24             |
|                 | CF 24-1 VR                 | CF 24-1 V                      | CF 24-1 VUUR               | CF 24-1 VUU                    | 1 140               | 72 | 29 | 24             |
| 30              | CF 30 VR                   | CF 30 V                        | CF 30 VUUR                 | CF 30 VUU                      | 1 870               | 80 | 35 | 30             |
|                 | CF 30-1 VR                 | CF 30-1 V                      | CF 30-1 VUUR               | CF 30-1 VUU                    | 2 030               | 85 | 35 | 30             |
|                 | CF 30-2 VR                 | CF 30-2 V                      | CF 30-2 VUUR               | CF 30-2 VUU                    | 2 220               | 90 | 35 | 30             |

Note<sup>(1)</sup> Minimum allowable value of chamfer dimension *r*

Remarks1. Models with a stud diameter *d*<sub>1</sub> of 10 mm or less (marked \*) are provided with an oil hole on the stud head only. Other models are provided with one oil hole each on the head, outside surface and end surface of the stud.

2. Provided with prepacked grease.



CF...V

CF...VUUR

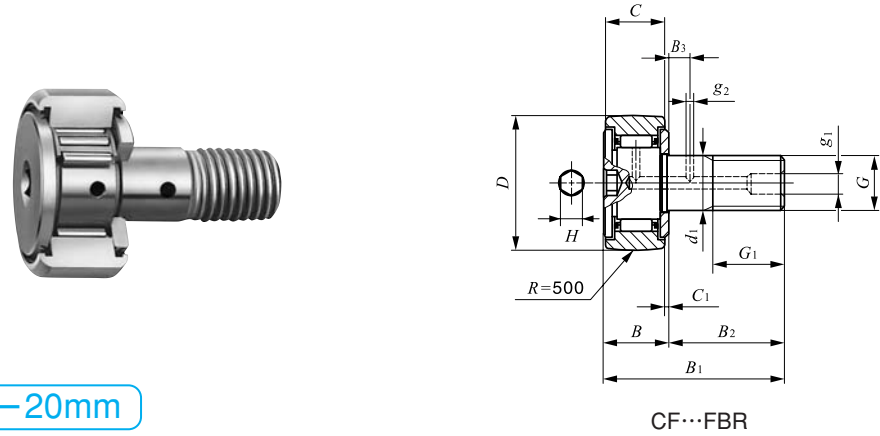
CF...VUU

| Boundary dimensions mm |                       |                 |                              |                       |                       |                       |                       |                       |   |          | Mounting<br>dimension<br><i>f</i><br>Min.<br>mm | Maximum<br>tightening<br>torque<br>N·m | Basic dynamic<br>load rating<br><i>C</i><br>N | Basic static<br>load rating<br><i>C</i> <sub>0</sub><br>N | Maximum<br>allowable<br>static load<br>N |
|------------------------|-----------------------|-----------------|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---|----------|---|--|---|---|--|
| <i>G</i>               | <i>G</i> <sub>1</sub> | <i>B</i><br>max | <i>B</i> <sub>1</sub><br>max | <i>B</i> <sub>2</sub> | <i>B</i> <sub>3</sub> | <i>C</i> <sub>1</sub> | <i>g</i> <sub>1</sub> | <i>g</i> <sub>2</sub> | <i>r</i> <sub>smin</sub> <sup>(1)</sup> | <i>f</i> |   |  |   |   |  |
| M 6×1                  | 8                     | 12.2            | 28.2                         | 16                    | —                     | 0.6                   | *4                    | —                     | 0.3                                     | 11       | 2.7   | 6 980                                  | 8 500   | 1 950   |  |
| M 8×1.25               | 10                    | 12.2            | 32.2                         | 20                    | —                     | 0.6                   | *4                    | —                     | 0.3                                     | 13       | 6.5   | 8 170                                  | 11 200  | 4 620   |  |
| M 8×1                  | 10                    | 12.2            | 32.2                         | 20                    | —                     | 0.6                   | *4                    | —                     | 0.3                                     | 13       | 7.1   | 8 170                                  | 11 200  | 4 620   |  |
| M10×1.25               | 12                    | 13.2            | 36.2                         | 23                    | —                     | 0.6                   | *4                    | —                     | 0.3                                     | 16       | 13.8  | 9 570                                  | 14 500  | 8 650   |  |
| M10×1                  | 12                    | 13.2            | 36.2                         | 23                    | —                     | 0.6                   | *4                    | —                     | 0.3                                     | 16       | 14.7  | 9 570                                  | 14 500  | 8 650   |  |
| M10×1.25               | 12                    | 13.2            | 36.2                         | 23                    | —                     | 0.6                   | *4                    | —                     | 0.3                                     | 16       | 13.8  | 9 570                                  | 14 500  | 8 650   |  |
| M10×1                  | 12                    | 13.2            | 36.2                         | 23                    | —                     | 0.6                   | *4                    | —                     | 0.3                                     | 16       | 14.7  | 9 570                                  | 14 500  | 8 650   |  |
| M12×1.5                | 13                    | 15.2            | 40.2                         | 25                    | 6                     | 0.6                   | 6                     | 3                     | 0.6                                     | 21       | 21.9  | 13 500                                 | 19 700  | 13 200  |  |
| M12×1.5                | 13                    | 15.2            | 40.2                         | 25                    | 6                     | 0.6                   | 6                     | 3                     | 0.6                                     | 21       | 21.9  | 13 500                                 | 19 700  | 13 200  |  |
| M16×1.5                | 17                    | 19.6            | 52.1                         | 32.5                  | 8                     | 0.8                   | 6                     | 3                     | 0.6                                     | 26       | 58.5  | 20 700                                 | 37 600  | 23 200  |  |
| M18×1.5                | 19                    | 21.6            | 58.1                         | 36.5                  | 8                     | 0.8                   | 6                     | 3                     | 1                                       | 29       | 86.2  | 25 300                                 | 51 300  | 31 100  |  |
| M20×1.5                | 21                    | 25.6            | 66.1                         | 40.5                  | 9                     | 0.8                   | 8                     | 4                     | 1                                       | 34       | 119   | 33 200                                 | 64 500  | 37 500  |  |
| M20×1.5                | 21                    | 25.6            | 66.1                         | 40.5                  | 9                     | 0.8                   | 8                     | 4                     | 1                                       | 34       | 119   | 33 200                                 | 64 500  | 37 500  |  |
| M24×1.5                | 25                    | 30.6            | 80.1                         | 49.5                  | 11                    | 0.8                   | 8                     | 4                     | 1                                       | 40       | 215   | 46 600                                 | 92 000  | 52 000  |  |
| M24×1.5                | 25                    | 30.6            | 80.1                         | 49.5                  | 11                    | 0.8                   | 8                     | 4                     | 1                                       | 40       | 215   | 46 600                                 | 92 000  | 52 000  |  |
| M30×1.5                | 32                    | 37              | 100                          | 63                    | 15                    | 1                     | 8                     | 4                     | 1                                       | 49       | 438   | 67 700                                 | 144 000                                       | 85 900  |  |
| M30×1.5                | 32                    | 37              | 100                          | 63                    | 15                    | 1                     | 8                     | 4                     | 1                                       | 49       | 438   | 67 700                                 | 144 000                                       | 85 900  |  |
| M30×1.5                | 32                    | 37              | 100                          | 63                    | 15                    | 1                     | 8                     | 4                     | 1                                       | 49       | 438   | 67 700                                 | 144 000                                       | 85 900  |  |

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**CAM FOLLOWERS**

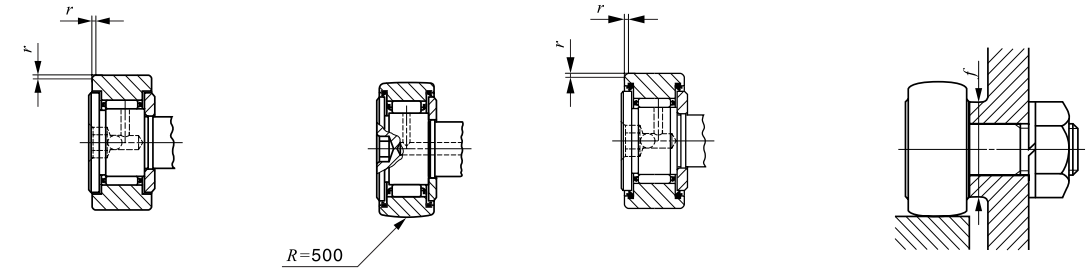
Stainless Steel Made Cam Followers **With Cage/With Hexagon Hole**



Stud dia. 3—20mm

| Stud dia. mm | Identification number   |                             |                         |                             | Mass (Ref.) g | D  | C  | d <sub>1</sub> | G        | G <sub>1</sub> |
|--------------|-------------------------|-----------------------------|-------------------------|-----------------------------|---------------|----|----|----------------|----------|----------------|
|              | Shield type             |                             | Sealed type             |                             |               |    |    |                |          |                |
|              | With crowned outer ring | With cylindrical outer ring | With crowned outer ring | With cylindrical outer ring |               |    |    |                |          |                |
| 3            | CF 3 FBR                | CF 3 FB                     | CF 3 FBUUR              | CF 3 FBUU                   | 4.3           | 10 | 7  | 3              | M 3×0.5  | 5              |
| 4            | CF 4 FBR                | CF 4 FB                     | CF 4 FBUUR              | CF 4 FBUU                   | 7.4           | 12 | 8  | 4              | M 4×0.7  | 6              |
| 5            | CF 5 FBR                | CF 5 FB                     | CF 5 FBUUR              | CF 5 FBUU                   | 10.3          | 13 | 9  | 5              | M 5×0.8  | 7.5            |
| 6            | CF 6 FBR                | —                           | CF 6 FBUUR              | —                           | 18.5          | 16 | 11 | 6              | M 6×1    | 8              |
| 8            | CF 8 FBR                | —                           | CF 8 FBUUR              | —                           | 28.5          | 19 | 11 | 8              | M 8×1.25 | 10             |
| 10           | CF 10 FBR               | —                           | CF 10 FBUUR             | —                           | 45            | 22 | 12 | 10             | M10×1.25 | 12             |
| 12           | CF 12 FBR               | —                           | CF 12 FBUUR             | —                           | 95            | 30 | 14 | 12             | M12×1.5  | 13             |
| 16           | CF 16 FBR               | —                           | CF 16 FBUUR             | —                           | 170           | 35 | 18 | 16             | M16×1.5  | 17             |
| 18           | CF 18 FBR               | —                           | CF 18 FBUUR             | —                           | 250           | 40 | 20 | 18             | M18×1.5  | 19             |
| 20           | CF 20 FBR               | —                           | CF 20 FBUUR             | —                           | 460           | 52 | 24 | 20             | M20×1.5  | 21             |

Note<sup>(1)</sup> Minimum allowable value of chamfer dimension *r*  
 Remarks1. Models with a stud diameter *d*<sub>1</sub> of 10 mm or less have no oil hole. Other models are provided with one oil hole each on the outside surface and end surface of the stud.  
 2. Shield type models with a stud diameter *d*<sub>1</sub> of 10 mm or less and the sealed type models are provided with prepacked grease. Other models are not provided with prepacked grease. Perform proper lubrication for use.

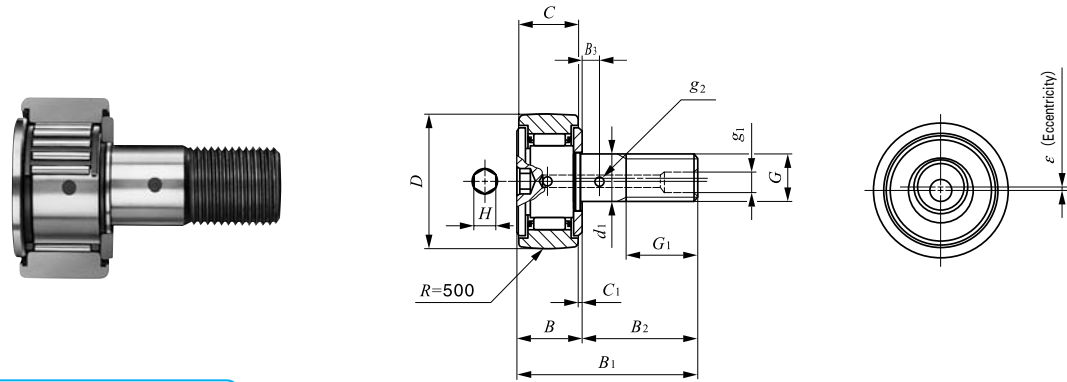


| Boundary dimensions mm |                       |                       |                       |                       |                       |                       |          |  | Mounting dimension <i>f</i> Min. mm | Maximum tightening torque N·m | Basic dynamic load rating <i>C</i> N | Basic static load rating <i>C</i> <sub>0</sub> N | Maximum allowable static load N |
|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------|--|-------------------------------------|-------------------------------|--------------------------------------|--|---------------------------------|
| <i>B</i>               | <i>B</i> <sub>1</sub> | <i>B</i> <sub>2</sub> | <i>B</i> <sub>3</sub> | <i>C</i> <sub>1</sub> | <i>g</i> <sub>1</sub> | <i>g</i> <sub>2</sub> | <i>H</i> | <i>r</i> <sub>s min</sub> <sup>(1)</sup> |                                     |                               |                                      |  |                                 |
| 8                      | 17                    | 9                     | —                     | 0.5                   | —                     | —                     | 2        | 0.2                                      | 6.8                                 | 0.34                          | 1 200                                | 813  | 384                             |
| 9                      | 20                    | 11                    | —                     | 0.5                   | —                     | —                     | 2.5      | 0.3                                      | 8.3                                 | 0.78                          | 1 650                                | 1 270  | 834                             |
| 10                     | 23                    | 13                    | —                     | 0.5                   | —                     | —                     | 3        | 0.3                                      | 9.3                                 | 1.6                           | 1 930                                | 1 730  | 1 260                           |
| 12.2 max               | 28.2 max              | 16                    | —                     | 0.6                   | —                     | —                     | 3        | —  | 11                                  | 2.7                           | 2 930                                | 2 920  | 1 950                           |
| 12.2 max               | 32.2 max              | 20                    | —                     | 0.6                   | —                     | —                     | 4        | —  | 13                                  | 6.5                           | 3 400                                | 3 790  | 3 790                           |
| 13.2 max               | 36.2 max              | 23                    | —                     | 0.6                   | —                     | —                     | 5        | —  | 16                                  | 13.8                          | 4 340                                | 5 510  | 5 510                           |
| 15.2 max               | 40.2 max              | 25                    | 6                     | 0.6                   | 6                     | 3                     | 6        | —  | 21                                  | 21.9                          | 6 330                                | 7 830  | 7 830                           |
| 19.6 max               | 52.1 max              | 32.5                  | 8                     | 0.8                   | 6                     | 3                     | 6        | —  | 26                                  | 58.5                          | 9 620                                | 14 700   | 14 700                          |
| 21.6 max               | 58.1 max              | 36.5                  | 8                     | 0.8                   | 6                     | 3                     | 8        | —  | 29                                  | 86.2                          | 11 800                               | 20 200   | 20 200                          |
| 25.6 max               | 66.1 max              | 40.5                  | 9                     | 0.8                   | 8                     | 4                     | 8        | —  | 34                                  | 119                           | 16 500                               | 27 700   | 27 700                          |

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**CAM FOLLOWERS**

Solid Eccentric Stud Type Cam Followers **With Cage/With Hexagon Hole**

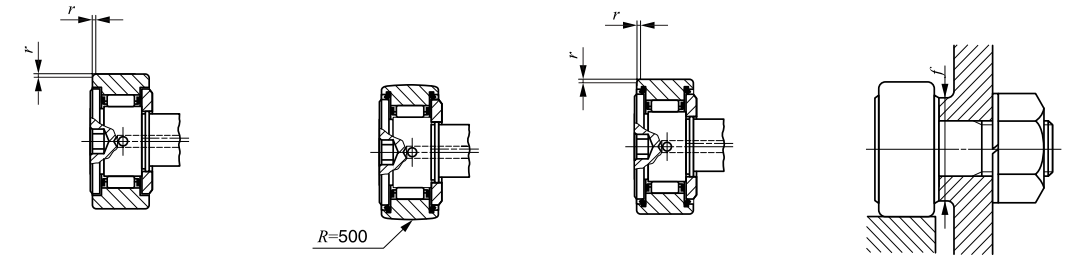


Stud dia. 6—18 mm

CFES...BR

| Stud dia.<br>mm | Identification number   |                             |                         |                             | Mass (Ref.)<br>g | D  | C  | d <sub>1</sub> |
|-----------------|-------------------------|-----------------------------|-------------------------|-----------------------------|------------------|----|----|----------------|
|                 | Shield type             |                             | Sealed type             |                             |                  |    |    |                |
|                 | With crowned outer ring | With cylindrical outer ring | With crowned outer ring | With cylindrical outer ring |                  |    |    |                |
| 6               | CFES 6 BR               | CFES 6 B                    | CFES 6 BUUR             | CFES 6 BUU                  | 18.5             | 16 | 11 | 6              |
| 8               | CFES 8 BR               | CFES 8 B                    | CFES 8 BUUR             | CFES 8 BUU                  | 28.5             | 19 | 11 | 8              |
| 10              | CFES 10 BR              | CFES 10 B                   | CFES 10 BUUR            | CFES 10 BUU                 | 45               | 22 | 12 | 10             |
|                 | CFES 10-1 BR            | CFES 10-1 B                 | CFES 10-1 BUUR          | CFES 10-1 BUU               | 60               | 26 | 12 | 10             |
| 12              | CFES 12 BR              | CFES 12 B                   | CFES 12 BUUR            | CFES 12 BUU                 | 95               | 30 | 14 | 12             |
|                 | CFES 12-1 BR            | CFES 12-1 B                 | CFES 12-1 BUUR          | CFES 12-1 BUU               | 105              | 32 | 14 | 12             |
| 16              | CFES 16 BR              | CFES 16 B                   | CFES 16 BUUR            | CFES 16 BUU                 | 170              | 35 | 18 | 16             |
| 18              | CFES 18 BR              | CFES 18 B                   | CFES 18 BUUR            | CFES 18 BUU                 | 250              | 40 | 20 | 18             |

Note<sup>(1)</sup> Minimum allowable value of chamfer dimension *r*  
 Remarks1. Models with a stud diameter *d*<sub>1</sub> of 10 mm or less have no oil hole. Other models are provided with one oil hole each on the outside surface and end surface of the stud.  
 2. Shield type models with a stud diameter *d*<sub>1</sub> of 10 mm or less and the sealed type models are provided with prepacked grease. Other models are not provided with prepacked grease. Perform proper lubrication for use.



CFES...B

CFES...BUUR

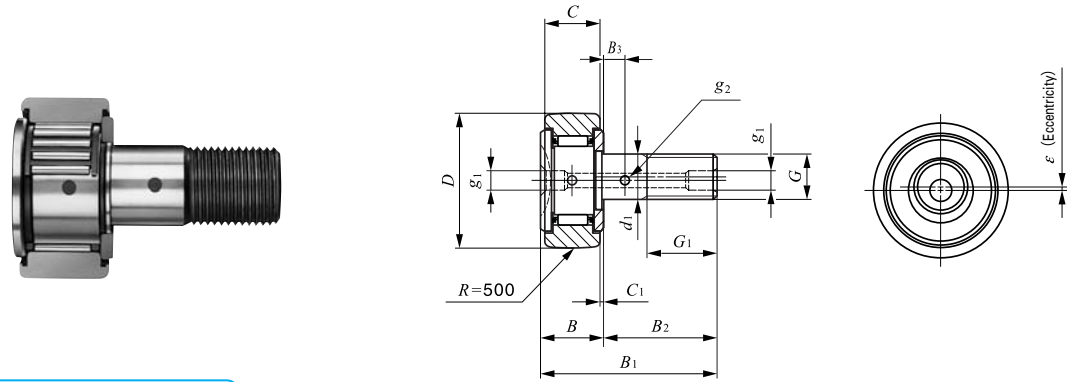
CFES...BUU

| Boundary dimensions mm |                       |                         |                          |                       |                       |                       |                       |                       |          |   |                          |    | Mounting dimension<br><i>f</i><br>Min. mm | Maximum tightening torque<br>N-m | Basic dynamic load rating<br><i>C</i><br>N | Basic static load rating<br><i>C</i> <sub>0</sub><br>N | Maximum allowable static load<br>N |
|------------------------|-----------------------|-------------------------|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------|---|--------------------------|----|---|----------------------------------|--|--|------------------------------------|
| <i>G</i>               | <i>G</i> <sub>1</sub> | <i>B</i> <sub>max</sub> | <i>B</i> <sub>1max</sub> | <i>B</i> <sub>2</sub> | <i>B</i> <sub>3</sub> | <i>C</i> <sub>1</sub> | <i>g</i> <sub>1</sub> | <i>g</i> <sub>2</sub> | <i>H</i> | <i>r</i> <sub>smin</sub> <sup>(1)</sup> | Eccentricity<br><i>ε</i> |    |   |                                  |  |  |                                    |
| M 6×1                  | 8                     | 12.2                    | 28.2                     | 16                    | —                     | 0.6                   | —                     | —                     | 3        | 0.3                                     | 0.25                     | 11 | 2.7                                       | 3 660                            | 3 650                                      | 1 980  |                                    |
| M 8×1.25               | 10                    | 12.2                    | 32.2                     | 20                    | —                     | 0.6                   | —                     | —                     | 4        | 0.3                                     | 0.25                     | 13 | 6.5                                       | 4 250                            | 4 740                                      | 4 670  |                                    |
| M10×1.25               | 12                    | 13.2                    | 36.2                     | 23                    | —                     | 0.6                   | —                     | —                     | 4        | 0.3                                     | 0.3                      | 16 | 13.8                                      | 5 430                            | 6 890                                      | 6 890  |                                    |
| M10×1.25               | 12                    | 13.2                    | 36.2                     | 23                    | —                     | 0.6                   | —                     | —                     | 4        | 0.3                                     | 0.3                      | 16 | 13.8                                      | 5 430                            | 6 890                                      | 6 890  |                                    |
| M12×1.5                | 13                    | 15.2                    | 40.2                     | 25                    | 6                     | 0.6                   | 6                     | 3                     | 6        | 0.6                                     | 0.4                      | 21 | 21.9                                      | 7 910                            | 9 790                                      | 9 790  |                                    |
| M12×1.5                | 13                    | 15.2                    | 40.2                     | 25                    | 6                     | 0.6                   | 6                     | 3                     | 6        | 0.6                                     | 0.4                      | 21 | 21.9                                      | 7 910                            | 9 790                                      | 9 790  |                                    |
| M16×1.5                | 17                    | 19.6                    | 52.1                     | 32.5                  | 8                     | 0.8                   | 6                     | 3                     | 6        | 0.6                                     | 0.5                      | 26 | 58.5                                      | 12 000                           | 18 300                                     | 18 300   |                                    |
| M18×1.5                | 19                    | 21.6                    | 58.1                     | 36.5                  | 8                     | 0.8                   | 6                     | 3                     | 8        | 1                                       | 0.6                      | 29 | 86.2                                      | 14 800                           | 25 200                                     | 25 200   |                                    |

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**CAM FOLLOWERS**

Solid Eccentric Stud Type Cam Followers **With Cage/With Screwdriver Slot**

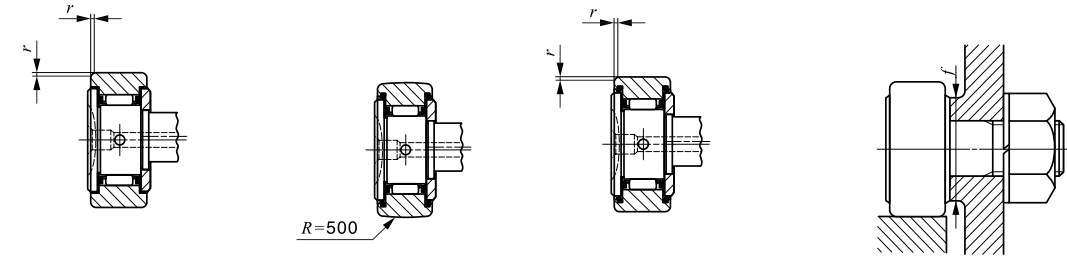


Stud dia. 6–18 mm

CFES...R

| Stud dia.<br>mm | Identification number   |                             |                         |                             | Mass (Ref.)<br>g | D  | C  | d <sub>1</sub> |
|-----------------|-------------------------|-----------------------------|-------------------------|-----------------------------|------------------|----|----|----------------|
|                 | Shield type             |                             | Sealed type             |                             |                  |    |    |                |
|                 | With crowned outer ring | With cylindrical outer ring | With crowned outer ring | With cylindrical outer ring |                  |    |    |                |
| 6               | CFES 6 R                | CFES 6                      | CFES 6 UUR              | CFES 6 UU                   | 18.5             | 16 | 11 | 6              |
| 8               | CFES 8 R                | CFES 8                      | CFES 8 UUR              | CFES 8 UU                   | 28.5             | 19 | 11 | 8              |
| 10              | CFES 10 R               | CFES 10                     | CFES 10 UUR             | CFES 10 UU                  | 45               | 22 | 12 | 10             |
|                 | CFES 10-1 R             | CFES 10-1                   | CFES 10-1 UUR           | CFES 10-1 UU                | 60               | 26 | 12 | 10             |
| 12              | CFES 12 R               | CFES 12                     | CFES 12 UUR             | CFES 12 UU                  | 95               | 30 | 14 | 12             |
|                 | CFES 12-1 R             | CFES 12-1                   | CFES 12-1 UUR           | CFES 12-1 UU                | 105              | 32 | 14 | 12             |
| 16              | CFES 16 R               | CFES 16                     | CFES 16 UUR             | CFES 16 UU                  | 170              | 35 | 18 | 16             |
| 18              | CFES 18 R               | CFES 18                     | CFES 18 UUR             | CFES 18 UU                  | 250              | 40 | 20 | 18             |

Note<sup>(1)</sup> Minimum allowable value of chamfer dimension *r*  
 Remarks1. Models with a stud diameter *d*<sub>1</sub> of 10 mm or less (marked \*) are provided with an oil hole on the stud head only. Other models are provided with one oil hole each on the head, outside surface and end surface of the stud.  
 2. Sealed type models are provided with prepacked grease. Other models are not provided with prepacked grease. Perform proper lubrication for use.



CFES

CFES...UUR

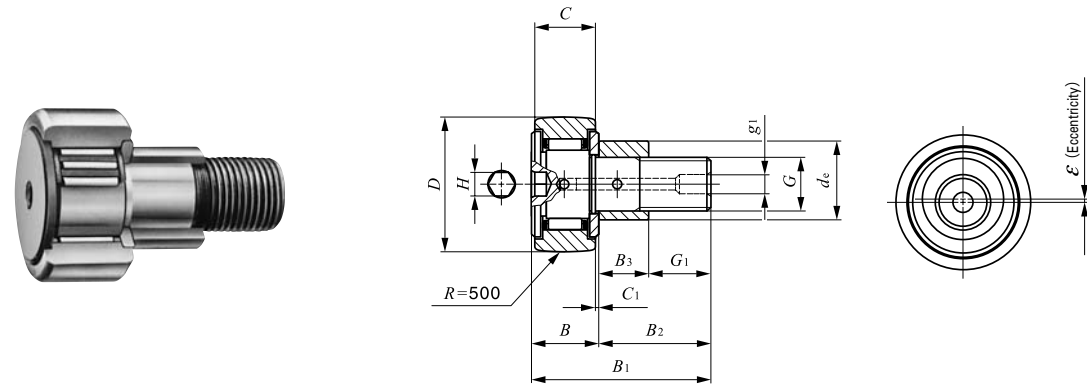
CFES...UU

| Boundary dimensions mm |                       |                 |                              |                       |                       |                       |                       |                       |   |          | Eccentricity<br><i>f</i><br>Min. mm | Mounting dimension<br><i>f</i><br>Min. mm | Maximum tightening torque<br>N-m | Basic dynamic load rating<br><i>C</i><br>N | Basic static load rating<br><i>C</i> <sub>0</sub><br>N | Maximum allowable static load<br>N |
|------------------------|-----------------------|-----------------|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---|----------|-------------------------------------|---|----------------------------------|--|--|------------------------------------|
| <i>G</i>               | <i>G</i> <sub>1</sub> | <i>B</i><br>max | <i>B</i> <sub>1</sub><br>max | <i>B</i> <sub>2</sub> | <i>B</i> <sub>3</sub> | <i>C</i> <sub>1</sub> | <i>g</i> <sub>1</sub> | <i>g</i> <sub>2</sub> | <i>r</i> <sub>smin</sub> <sup>(1)</sup> | <i>ε</i> |                                     |   |                                  |  |  |                                    |
| M 6×1                  | 8                     | 12.2            | 28.2                         | 16                    | —                     | 0.6                   | *4                    | —                     | 0.3                                     | 0.25     | 11                                  | 2.7                                       | 3 660                            | 3 650                                      | 1 980  |                                    |
| M 8×1.25               | 10                    | 12.2            | 32.2                         | 20                    | —                     | 0.6                   | *4                    | —                     | 0.3                                     | 0.25     | 13                                  | 6.5                                       | 4 250                            | 4 740                                      | 4 670  |                                    |
| M10×1.25               | 12                    | 13.2            | 36.2                         | 23                    | —                     | 0.6                   | *4                    | —                     | 0.3                                     | 0.3      | 16                                  | 13.8                                      | 5 430                            | 6 890                                      | 6 890  |                                    |
| M10×1.25               | 12                    | 13.2            | 36.2                         | 23                    | —                     | 0.6                   | *4                    | —                     | 0.3                                     | 0.3      | 16                                  | 13.8                                      | 5 430                            | 6 890                                      | 6 890  |                                    |
| M12×1.5                | 13                    | 15.2            | 40.2                         | 25                    | 6                     | 0.6                   | 6                     | 3                     | 0.6                                     | 0.4      | 21                                  | 21.9                                      | 7 910                            | 9 790                                      | 9 790  |                                    |
| M12×1.5                | 13                    | 15.2            | 40.2                         | 25                    | 6                     | 0.6                   | 6                     | 3                     | 0.6                                     | 0.4      | 21                                  | 21.9                                      | 7 910                            | 9 790                                      | 9 790  |                                    |
| M16×1.5                | 17                    | 19.6            | 52.1                         | 32.5                  | 8                     | 0.8                   | 6                     | 3                     | 0.6                                     | 0.5      | 26                                  | 58.5                                      | 12 000                           | 18 300                                     | 18 300   |                                    |
| M18×1.5                | 19                    | 21.6            | 58.1                         | 36.5                  | 8                     | 0.8                   | 6                     | 3                     | 1                                       | 0.6      | 29                                  | 86.2                                      | 14 800                           | 25 200                                     | 25 200   |                                    |

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**CAM FOLLOWERS**

Eccentric Type Cam Followers **With Cage/With Hexagon Hole**



Outside diameter of eccentric collar 9—41 mm

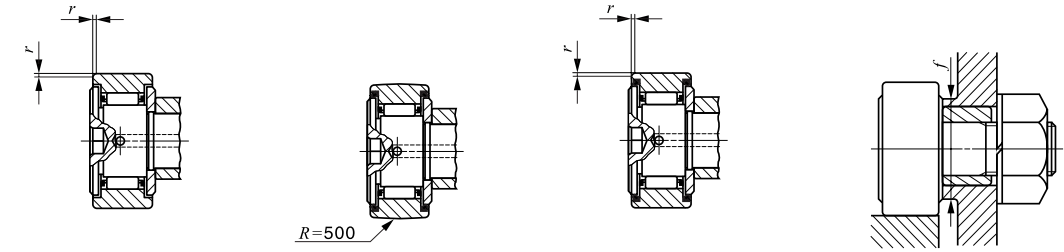
CFE...BR

| Outside diameter of eccentric collar mm | Identification number   |                             |                         |                             | Mass (Ref.) g | D  | C  | de |
|---|-------------------------|-----------------------------|-------------------------|-----------------------------|---------------|----|----|----|
|   | Shield type             |                             | Sealed type             |                             |               |    |    |    |
|   | With crowned outer ring | With cylindrical outer ring | With crowned outer ring | With cylindrical outer ring |               |    |    |    |
| 9                                       | CFE 6 BR                | CFE 6 B                     | CFE 6 BUUR              | CFE 6 BUU                   | 20.5          | 16 | 11 | 9  |
| 11                                      | CFE 8 BR                | CFE 8 B                     | CFE 8 BUUR              | CFE 8 BUU                   | 32            | 19 | 11 | 11 |
| 13                                      | CFE 10 BR               | CFE 10 B                    | CFE 10 BUUR             | CFE 10 BUU                  | 49.5          | 22 | 12 | 13 |
|   | CFE 10-1 BR             | CFE 10-1 B                  | CFE 10-1 BUUR           | CFE 10-1 BUU                | 65            | 26 | 12 | 13 |
| 16                                      | CFE 12 BR               | CFE 12 B                    | CFE 12 BUUR             | CFE 12 BUU                  | 105           | 30 | 14 | 16 |
|   | CFE 12-1 BR             | CFE 12-1 B                  | CFE 12-1 BUUR           | CFE 12-1 BUU                | 115           | 32 | 14 | 16 |
| 22                                      | CFE 16 BR               | CFE 16 B                    | CFE 16 BUUR             | CFE 16 BUU                  | 190           | 35 | 18 | 22 |
| 24                                      | CFE 18 BR               | CFE 18 B                    | CFE 18 BUUR             | CFE 18 BUU                  | 280           | 40 | 20 | 24 |
| 27                                      | CFE 20 BR               | CFE 20 B                    | CFE 20 BUUR             | CFE 20 BUU                  | 500           | 52 | 24 | 27 |
|   | CFE 20-1 BR             | CFE 20-1 B                  | CFE 20-1 BUUR           | CFE 20-1 BUU                | 425           | 47 | 24 | 27 |
| 33                                      | CFE 24 BR               | CFE 24 B                    | CFE 24 BUUR             | CFE 24 BUU                  | 895           | 62 | 29 | 33 |
|   | CFE 24-1 BR             | CFE 24-1 B                  | CFE 24-1 BUUR           | CFE 24-1 BUU                | 1 220         | 72 | 29 | 33 |
| 41                                      | CFE 30 BR               | CFE 30 B                    | CFE 30 BUUR             | CFE 30 BUU                  | 2 030         | 80 | 35 | 41 |
|   | CFE 30-1 BR             | CFE 30-1 B                  | CFE 30-1 BUUR           | CFE 30-1 BUU                | 2 190         | 85 | 35 | 41 |
|   | CFE 30-2 BR             | CFE 30-2 B                  | CFE 30-2 BUUR           | CFE 30-2 BUU                | 2 380         | 90 | 35 | 41 |

Note(1) Minimum allowable value of chamfer dimension *r*

Remarks1. Models with a stud thread diameter *G* of 10 mm or less have no oil hole. Other models are provided with one oil hole each on the outside surface and end surface of the stud.

2. Shield type models with a stud thread diameter *G* of 10 mm or less and the sealed type models are provided with prepacked grease. Other models are not provided with prepacked grease. Perform proper lubrication for use.



CFE...B

CFE...BUUR

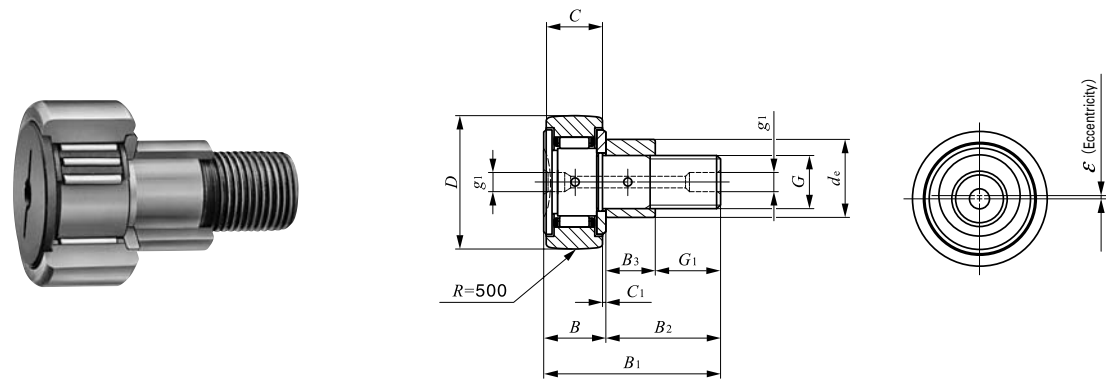
CFE...BUU

| Boundary dimensions mm |                       |                         |                           |                       |                       |                       |                       |          |  |                       | Mounting dimension <i>f</i> Min. mm | Maximum tightening torque N-m | Basic dynamic load rating <i>C</i> N | Basic static load rating <i>C</i> <sub>0</sub> N | Maximum allowable static load N |
|------------------------|-----------------------|-------------------------|---------------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------|--|-----------------------|-------------------------------------|-------------------------------|--------------------------------------|--|---------------------------------|
| <i>G</i>               | <i>B</i> <sub>3</sub> | <i>B</i> <sub>max</sub> | <i>B</i> <sub>1 max</sub> | <i>B</i> <sub>2</sub> | <i>C</i> <sub>1</sub> | <i>g</i> <sub>1</sub> | <i>G</i> <sub>1</sub> | <i>H</i> | <i>r</i> <sub>s min</sub> <sup>(1)</sup> | Eccentricity <i>ε</i> |                                     |                               |                                      |  |                                 |
| M 6×1                  | 7.5                   | 12.2                    | 28.2                      | 16                    | 0.6                   | —                     | 8.5                   | 3        | 0.3                                      | 0.4                   | 11                                  | 2.7                           | 3 660                                | 3 650  | 1 950                           |
| M 8×1.25               | 9.5                   | 12.2                    | 32.2                      | 20                    | 0.6                   | —                     | 10.5                  | 4        | 0.3                                      | 0.4                   | 13                                  | 6.5                           | 4 250                                | 4 740  | 4 620                           |
| M10×1.25               | 10.5                  | 13.2                    | 36.2                      | 23                    | 0.6                   | —                     | 12.5                  | 4        | 0.3                                      | 0.4                   | 16                                  | 13.8                          | 5 430                                | 6 890  | 6 890                           |
| M10×1.25               | 10.5                  | 13.2                    | 36.2                      | 23                    | 0.6                   | —                     | 12.5                  | 4        | 0.3                                      | 0.4                   | 16                                  | 13.8                          | 5 430                                | 6 890  | 6 890                           |
| M12×1.5                | 11.5                  | 15.2                    | 40.2                      | 25                    | 0.6                   | 6                     | 13.5                  | 6        | 0.6                                      | 0.8                   | 21                                  | 21.9                          | 7 910                                | 9 790  | 9 790                           |
| M12×1.5                | 11.5                  | 15.2                    | 40.2                      | 25                    | 0.6                   | 6                     | 13.5                  | 6        | 0.6                                      | 0.8                   | 21                                  | 21.9                          | 7 910                                | 9 790  | 9 790                           |
| M16×1.5                | 15.5                  | 19.6                    | 52.1                      | 32.5                  | 0.8                   | 6                     | 17                    | 6        | 0.6                                      | 0.8                   | 26                                  | 58.5                          | 12 000                               | 18 300   | 18 300                          |
| M18×1.5                | 17.5                  | 21.6                    | 58.1                      | 36.5                  | 0.8                   | 6                     | 19                    | 8        | 1  | 0.8                   | 29                                  | 86.2                          | 14 800                               | 25 200   | 25 200                          |
| M20×1.5                | 19.5                  | 25.6                    | 66.1                      | 40.5                  | 0.8                   | 8                     | 21                    | 8        | 1  | 0.8                   | 34                                  | 119                           | 20 700                               | 34 600   | 34 600                          |
| M20×1.5                | 19.5                  | 25.6                    | 66.1                      | 40.5                  | 0.8                   | 8                     | 21                    | 8        | 1  | 0.8                   | 34                                  | 119                           | 20 700                               | 34 600   | 34 600                          |
| M24×1.5                | 25.5                  | 30.6                    | 80.1                      | 49.5                  | 0.8                   | 8                     | 24                    | 12       | 1  | 0.8                   | 40                                  | 215                           | 30 500                               | 52 600   | 52 000                          |
| M24×1.5                | 25.5                  | 30.6                    | 80.1                      | 49.5                  | 0.8                   | 8                     | 24                    | 12       | 1  | 0.8                   | 40                                  | 215                           | 30 500                               | 52 600   | 52 000                          |
| M30×1.5                | 32.5                  | 37                      | 100                       | 63                    | 1                     | 8                     | 30.5                  | 17       | 1  | 1.5                   | 49                                  | 438                           | 45 400                               | 85 100   | 85 100                          |
| M30×1.5                | 32.5                  | 37                      | 100                       | 63                    | 1                     | 8                     | 30.5                  | 17       | 1  | 1.5                   | 49                                  | 438                           | 45 400                               | 85 100   | 85 100                          |
| M30×1.5                | 32.5                  | 37                      | 100                       | 63                    | 1                     | 8                     | 30.5                  | 17       | 1  | 1.5                   | 49                                  | 438                           | 45 400                               | 85 100   | 85 100                          |

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**CAM FOLLOWERS**

Eccentric Type Cam Followers **With Cage/With Screwdriver Slot**



Outside diameter of eccentric collar 9—41 mm

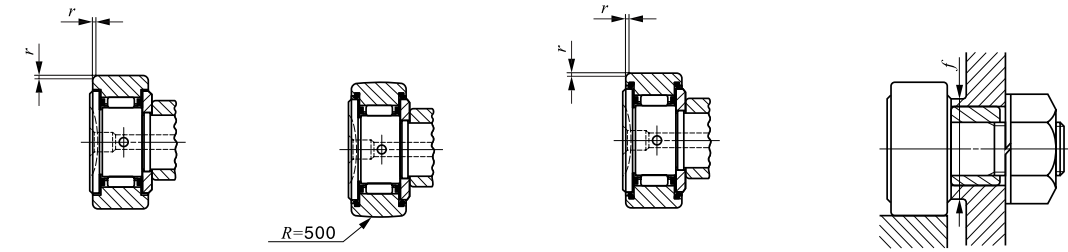
CFE...R

| Outside diameter of eccentric collar mm | Identification number   |                             |                         |                             | Mass (Ref.) g | D  | C  | d <sub>e</sub> |
|---|-------------------------|-----------------------------|-------------------------|-----------------------------|---------------|----|----|----------------|
|   | Shield type             |                             | Sealed type             |                             |               |    |    |                |
|   | With crowned outer ring | With cylindrical outer ring | With crowned outer ring | With cylindrical outer ring |               |    |    |                |
| 9                                       | CFE 6 R                 | CFE 6                       | CFE 6 UUR               | CFE 6 UU                    | 20.5          | 16 | 11 | 9              |
| 11                                      | CFE 8 R                 | CFE 8                       | CFE 8 UUR               | CFE 8 UU                    | 32            | 19 | 11 | 11             |
| 13                                      | CFE 10 R                | CFE 10                      | CFE 10 UUR              | CFE 10 UU                   | 49.5          | 22 | 12 | 13             |
|   | CFE 10-1 R              | CFE 10-1                    | CFE 10-1 UUR            | CFE 10-1 UU                 | 65            | 26 | 12 | 13             |
| 16                                      | CFE 12 R                | CFE 12                      | CFE 12 UUR              | CFE 12 UU                   | 105           | 30 | 14 | 16             |
|   | CFE 12-1 R              | CFE 12-1                    | CFE 12-1 UUR            | CFE 12-1 UU                 | 115           | 32 | 14 | 16             |
| 22                                      | CFE 16 R                | CFE 16                      | CFE 16 UUR              | CFE 16 UU                   | 190           | 35 | 18 | 22             |
| 24                                      | CFE 18 R                | CFE 18                      | CFE 18 UUR              | CFE 18 UU                   | 280           | 40 | 20 | 24             |
| 27                                      | CFE 20 R                | CFE 20                      | CFE 20 UUR              | CFE 20 UU                   | 500           | 52 | 24 | 27             |
|   | CFE 20-1 R              | CFE 20-1                    | CFE 20-1 UUR            | CFE 20-1 UU                 | 425           | 47 | 24 | 27             |
| 33                                      | CFE 24 R                | CFE 24                      | CFE 24 UUR              | CFE 24 UU                   | 895           | 62 | 29 | 33             |
|   | CFE 24-1 R              | CFE 24-1                    | CFE 24-1 UUR            | CFE 24-1 UU                 | 1 220         | 72 | 29 | 33             |
| 41                                      | CFE 30 R                | CFE 30                      | CFE 30 UUR              | CFE 30 UU                   | 2 030         | 80 | 35 | 41             |
|   | CFE 30-1 R              | CFE 30-1                    | CFE 30-1 UUR            | CFE 30-1 UU                 | 2 190         | 85 | 35 | 41             |
|   | CFE 30-2 R              | CFE 30-2                    | CFE 30-2 UUR            | CFE 30-2 UU                 | 2 380         | 90 | 35 | 41             |

Note<sup>(1)</sup> Minimum allowable value of chamfer dimension r

Remarks1. Models with a stud thread diameter G of 10 mm or less (marked \*) are provided with an oil hole on the stud head only. Other models are provided with one oil hole each on the head, outside surface and end surface of the stud.

2. Sealed type models are provided with prepacked grease. Other models are not provided with prepacked grease. Perform proper lubrication for use.



CFE

CFE...UUR

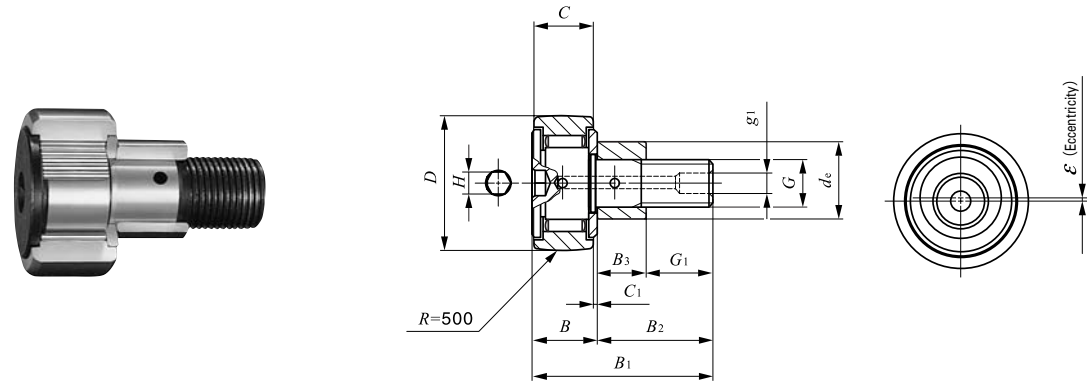
CFE...UU

| Boundary dimensions mm |                |       |                    |                |                |                |                |                                  |                | Mounting dimension f Min. mm | Maximum tightening torque N-m | Basic dynamic load rating C N | Basic static load rating C <sub>0</sub> N | Maximum allowable static load N |
|------------------------|----------------|-------|--------------------|----------------|----------------|----------------|----------------|----------------------------------|----------------|------------------------------|-------------------------------|-------------------------------|---|---------------------------------|
| G                      | B <sub>3</sub> | B max | B <sub>1</sub> max | B <sub>2</sub> | C <sub>1</sub> | g <sub>1</sub> | G <sub>1</sub> | r <sub>smin</sub> <sup>(1)</sup> | Eccentricity ε |                              |                               |                               |   |                                 |
| M 6×1                  | 7.5            | 12.2  | 28.2               | 16             | 0.6            | *4             | 8.5            | 0.3                              | 0.4            | 11                           | 2.7                           | 3 660                         | 3 650                                     | 1 950                           |
| M 8×1.25               | 9.5            | 12.2  | 32.2               | 20             | 0.6            | *4             | 10.5           | 0.3                              | 0.4            | 13                           | 6.5                           | 4 250                         | 4 740                                     | 4 620                           |
| M10×1.25               | 10.5           | 13.2  | 36.2               | 23             | 0.6            | *4             | 12.5           | 0.3                              | 0.4            | 16                           | 13.8                          | 5 430                         | 6 890                                     | 6 890                           |
| M10×1.25               | 10.5           | 13.2  | 36.2               | 23             | 0.6            | *4             | 12.5           | 0.3                              | 0.4            | 16                           | 13.8                          | 5 430                         | 6 890                                     | 6 890                           |
| M12×1.5                | 11.5           | 15.2  | 40.2               | 25             | 0.6            | 6              | 13.5           | 0.6                              | 0.8            | 21                           | 21.9                          | 7 910                         | 9 790                                     | 9 790                           |
| M12×1.5                | 11.5           | 15.2  | 40.2               | 25             | 0.6            | 6              | 13.5           | 0.6                              | 0.8            | 21                           | 21.9                          | 7 910                         | 9 790                                     | 9 790                           |
| M16×1.5                | 15.5           | 19.6  | 52.1               | 32.5           | 0.8            | 6              | 17             | 0.6                              | 0.8            | 26                           | 58.5                          | 12 000                        | 18 300                                    | 18 300                          |
| M18×1.5                | 17.5           | 21.6  | 58.1               | 36.5           | 0.8            | 6              | 19             | 1                                | 0.8            | 29                           | 86.2                          | 14 800                        | 25 200                                    | 25 200                          |
| M20×1.5                | 19.5           | 25.6  | 66.1               | 40.5           | 0.8            | 8              | 21             | 1                                | 0.8            | 34                           | 119                           | 20 700                        | 34 600                                    | 34 600                          |
| M20×1.5                | 19.5           | 25.6  | 66.1               | 40.5           | 0.8            | 8              | 21             | 1                                | 0.8            | 34                           | 119                           | 20 700                        | 34 600                                    | 34 600                          |
| M24×1.5                | 25.5           | 30.6  | 80.1               | 49.5           | 0.8            | 8              | 24             | 1                                | 0.8            | 40                           | 215                           | 30 500                        | 52 600                                    | 52 000                          |
| M24×1.5                | 25.5           | 30.6  | 80.1               | 49.5           | 0.8            | 8              | 24             | 1                                | 0.8            | 40                           | 215                           | 30 500                        | 52 600                                    | 52 000                          |
| M30×1.5                | 32.5           | 37    | 100                | 63             | 1              | 8              | 30.5           | 1                                | 1.5            | 49                           | 438                           | 45 400                        | 85 100                                    | 85 100                          |
| M30×1.5                | 32.5           | 37    | 100                | 63             | 1              | 8              | 30.5           | 1                                | 1.5            | 49                           | 438                           | 45 400                        | 85 100                                    | 85 100                          |
| M30×1.5                | 32.5           | 37    | 100                | 63             | 1              | 8              | 30.5           | 1                                | 1.5            | 49                           | 438                           | 45 400                        | 85 100                                    | 85 100                          |

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**CAM FOLLOWERS**

Eccentric Type Cam Followers **Full Complement Type/With Hexagon Hole**

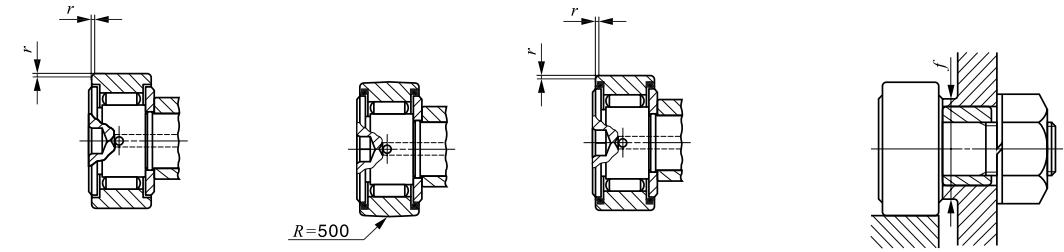


Outside diameter of eccentric collar 9—41 mm

CFE...VBR

| Outside diameter of eccentric collar mm | Identification number   |                             |                         |                             | Mass (Ref.) g | D  | C  | de |
|---|-------------------------|-----------------------------|-------------------------|-----------------------------|---------------|----|----|----|
|   | Shield type             |                             | Sealed type             |                             |               |    |    |    |
|   | With crowned outer ring | With cylindrical outer ring | With crowned outer ring | With cylindrical outer ring |               |    |    |    |
| 9                                       | CFE 6 VBR               | CFE 6 VB                    | CFE 6 VBUUR             | CFE 6 VBUU                  | 21            | 16 | 11 | 9  |
| 11                                      | CFE 8 VBR               | CFE 8 VB                    | CFE 8 VBUUR             | CFE 8 VBUU                  | 32.5          | 19 | 11 | 11 |
| 13                                      | CFE 10 VBR              | CFE 10 VB                   | CFE 10 VBUUR            | CFE 10 VBUU                 | 50.5          | 22 | 12 | 13 |
|   | CFE 10-1 VBR            | CFE 10-1 VB                 | CFE 10-1 VBUUR          | CFE 10-1 VBUU               | 66            | 26 | 12 | 13 |
| 16                                      | CFE 12 VBR              | CFE 12 VB                   | CFE 12 VBUUR            | CFE 12 VBUU                 | 107           | 30 | 14 | 16 |
|   | CFE 12-1 VBR            | CFE 12-1 VB                 | CFE 12-1 VBUUR          | CFE 12-1 VBUU               | 117           | 32 | 14 | 16 |
| 22                                      | CFE 16 VBR              | CFE 16 VB                   | CFE 16 VBUUR            | CFE 16 VBUU                 | 193           | 35 | 18 | 22 |
| 24                                      | CFE 18 VBR              | CFE 18 VB                   | CFE 18 VBUUR            | CFE 18 VBUU                 | 285           | 40 | 20 | 24 |
| 27                                      | CFE 20 VBR              | CFE 20 VB                   | CFE 20 VBUUR            | CFE 20 VBUU                 | 505           | 52 | 24 | 27 |
|   | CFE 20-1 VBR            | CFE 20-1 VB                 | CFE 20-1 VBUUR          | CFE 20-1 VBUU               | 430           | 47 | 24 | 27 |
| 33                                      | CFE 24 VBR              | CFE 24 VB                   | CFE 24 VBUUR            | CFE 24 VBUU                 | 900           | 62 | 29 | 33 |
|   | CFE 24-1 VBR            | CFE 24-1 VB                 | CFE 24-1 VBUUR          | CFE 24-1 VBUU               | 1 220         | 72 | 29 | 33 |
| 41                                      | CFE 30 VBR              | CFE 30 VB                   | CFE 30 VBUUR            | CFE 30 VBUU                 | 2 030         | 80 | 35 | 41 |
|   | CFE 30-1 VBR            | CFE 30-1 VB                 | CFE 30-1 VBUUR          | CFE 30-1 VBUU               | 2 190         | 85 | 35 | 41 |
|   | CFE 30-2 VBR            | CFE 30-2 VB                 | CFE 30-2 VBUUR          | CFE 30-2 VBUU               | 2 380         | 90 | 35 | 41 |

Note<sup>(1)</sup> Minimum allowable value of chamfer dimension *r*  
 Remarks1. Models with a stud thread diameter *G* of 10 mm or less have no oil hole. Other models are provided with one oil hole each on the outside surface and end surface of the stud.  
 2. Provided with prepacked grease.



CFE...VB

CFE...VBUUR

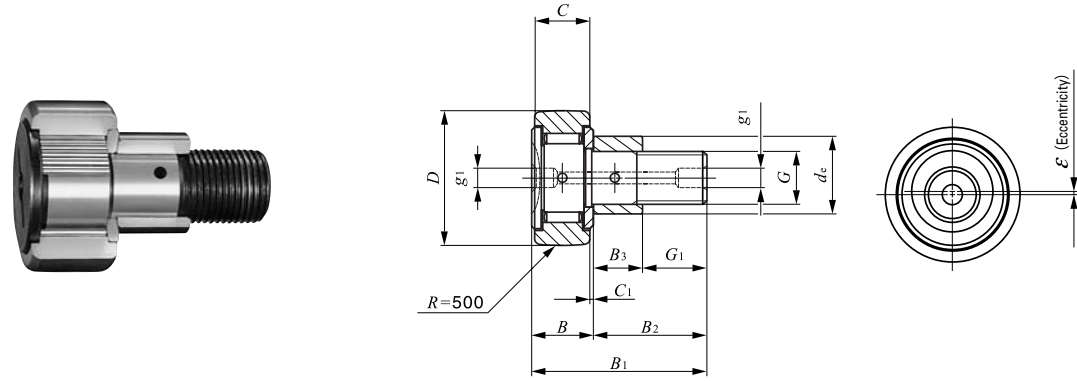
CFE...VBUU

| Boundary dimensions mm |                       |                         |                           |                       |                       |                       |                       |          |   |                       | Mounting dimension <i>f</i> Min. mm | Maximum tightening torque N-m | Basic dynamic load rating <i>C</i> N | Basic static load rating <i>C</i> <sub>0</sub> N | Maximum allowable static load N |
|------------------------|-----------------------|-------------------------|---------------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------|---|-----------------------|-------------------------------------|-------------------------------|--------------------------------------|--|---------------------------------|
| <i>G</i>               | <i>B</i> <sub>3</sub> | <i>B</i> <sub>max</sub> | <i>B</i> <sub>1 max</sub> | <i>B</i> <sub>2</sub> | <i>C</i> <sub>1</sub> | <i>g</i> <sub>1</sub> | <i>G</i> <sub>1</sub> | <i>H</i> | <i>r</i> <sub>smin</sub> <sup>(1)</sup> | Eccentricity <i>ε</i> |                                     |                               |                                      |  |                                 |
| M 6×1                  | 7.5                   | 12.2                    | 28.2                      | 16                    | 0.6                   | —                     | 8.5                   | 3        | 0.3                                     | 0.4                   | 11                                  | 2.7                           | 6 980                                | 8 500  | 1 950                           |
| M 8×1.25               | 9.5                   | 12.2                    | 32.2                      | 20                    | 0.6                   | —                     | 10.5                  | 4        | 0.3                                     | 0.4                   | 13                                  | 6.5                           | 8 170                                | 11 200   | 4 620                           |
| M10×1.25               | 10.5                  | 13.2                    | 36.2                      | 23                    | 0.6                   | —                     | 12.5                  | 4        | 0.3                                     | 0.4                   | 16                                  | 13.8                          | 9 570                                | 14 500   | 8 650                           |
| M10×1.25               | 10.5                  | 13.2                    | 36.2                      | 23                    | 0.6                   | —                     | 12.5                  | 4        | 0.3                                     | 0.4                   | 16                                  | 13.8                          | 9 570                                | 14 500   | 8 650                           |
| M12×1.5                | 11.5                  | 15.2                    | 40.2                      | 25                    | 0.6                   | 6                     | 13.5                  | 6        | 0.6                                     | 0.8                   | 21                                  | 21.9                          | 13 500                               | 19 700   | 13 200                          |
| M12×1.5                | 11.5                  | 15.2                    | 40.2                      | 25                    | 0.6                   | 6                     | 13.5                  | 6        | 0.6                                     | 0.8                   | 21                                  | 21.9                          | 13 500                               | 19 700   | 13 200                          |
| M16×1.5                | 15.5                  | 19.6                    | 52.1                      | 32.5                  | 0.8                   | 6                     | 17                    | 6        | 0.6                                     | 0.8                   | 26                                  | 58.5                          | 20 700                               | 37 600   | 23 200                          |
| M18×1.5                | 17.5                  | 21.6                    | 58.1                      | 36.5                  | 0.8                   | 6                     | 19                    | 8        | 1                                       | 0.8                   | 29                                  | 86.2                          | 25 300                               | 51 300   | 31 100                          |
| M20×1.5                | 19.5                  | 25.6                    | 66.1                      | 40.5                  | 0.8                   | 8                     | 21                    | 8        | 1                                       | 0.8                   | 34                                  | 119                           | 33 200                               | 64 500   | 37 500                          |
| M20×1.5                | 19.5                  | 25.6                    | 66.1                      | 40.5                  | 0.8                   | 8                     | 21                    | 8        | 1                                       | 0.8                   | 34                                  | 119                           | 33 200                               | 64 500   | 37 500                          |
| M24×1.5                | 25.5                  | 30.6                    | 80.1                      | 49.5                  | 0.8                   | 8                     | 24                    | 12       | 1                                       | 0.8                   | 40                                  | 215                           | 46 600                               | 92 000   | 52 000                          |
| M24×1.5                | 25.5                  | 30.6                    | 80.1                      | 49.5                  | 0.8                   | 8                     | 24                    | 12       | 1                                       | 0.8                   | 40                                  | 215                           | 46 600                               | 92 000   | 52 000                          |
| M30×1.5                | 32.5                  | 37                      | 100                       | 63                    | 1                     | 8                     | 30.5                  | 17       | 1                                       | 1.5                   | 49                                  | 438                           | 67 700                               | 144 000  | 85 900                          |
| M30×1.5                | 32.5                  | 37                      | 100                       | 63                    | 1                     | 8                     | 30.5                  | 17       | 1                                       | 1.5                   | 49                                  | 438                           | 67 700                               | 144 000  | 85 900                          |
| M30×1.5                | 32.5                  | 37                      | 100                       | 63                    | 1                     | 8                     | 30.5                  | 17       | 1                                       | 1.5                   | 49                                  | 438                           | 67 700                               | 144 000  | 85 900                          |

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**CAM FOLLOWERS**

Eccentric Type Cam Followers **Full Complement Type/With Screwdriver Slot**



Outside diameter of eccentric collar 9 – 41 mm

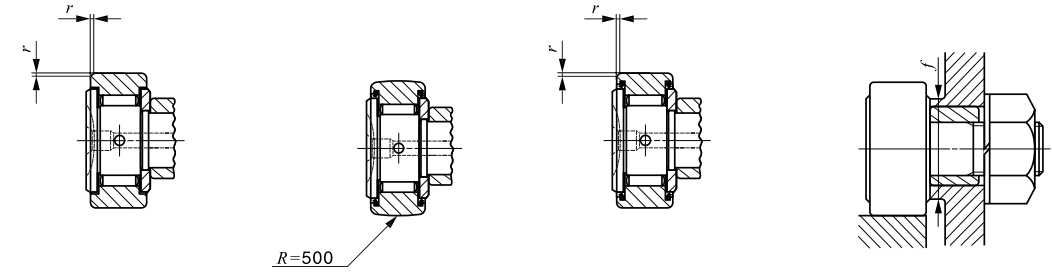
CFE...VR

| Outside diameter of eccentric collar<br>mm | Identification number   |                             |                         |                             | Mass (Ref.)<br>g | D  | C  | de |
|--|-------------------------|-----------------------------|-------------------------|-----------------------------|------------------|----|----|----|
|  | Shield type             |                             | Sealed type             |                             |                  |    |    |    |
|  | With crowned outer ring | With cylindrical outer ring | With crowned outer ring | With cylindrical outer ring |                  |    |    |    |
| 9  | CFE 6 VR                | CFE 6 V                     | CFE 6 VUUR              | CFE 6 VUU                   | 21               | 16 | 11 | 9  |
|  |                         |                             |                         |                             |                  |    |    |    |
| 11   | CFE 8 VR                | CFE 8 V                     | CFE 8 VUUR              | CFE 8 VUU                   | 32.5             | 19 | 11 | 11 |
|  |                         |                             |                         |                             |                  |    |    |    |
| 13   | CFE 10 VR               | CFE 10 V                    | CFE 10 VUUR             | CFE 10 VUU                  | 50.5             | 22 | 12 | 13 |
|  | CFE 10-1 VR             | CFE 10-1 V                  | CFE 10-1 VUUR           | CFE 10-1 VUU                |                  |    |    |    |
| 16   | CFE 12 VR               | CFE 12 V                    | CFE 12 VUUR             | CFE 12 VUU                  | 107              | 30 | 14 | 16 |
|  | CFE 12-1 VR             | CFE 12-1 V                  | CFE 12-1 VUUR           | CFE 12-1 VUU                |                  |    |    |    |
| 22   | CFE 16 VR               | CFE 16 V                    | CFE 16 VUUR             | CFE 16 VUU                  | 193              | 35 | 18 | 22 |
|  |                         |                             |                         |                             |                  |    |    |    |
| 24   | CFE 18 VR               | CFE 18 V                    | CFE 18 VUUR             | CFE 18 VUU                  | 285              | 40 | 20 | 24 |
|  |                         |                             |                         |                             |                  |    |    |    |
| 27   | CFE 20 VR               | CFE 20 V                    | CFE 20 VUUR             | CFE 20 VUU                  | 505              | 52 | 24 | 27 |
|  | CFE 20-1 VR             | CFE 20-1 V                  | CFE 20-1 VUUR           | CFE 20-1 VUU                |                  |    |    |    |
| 33   | CFE 24 VR               | CFE 24 V                    | CFE 24 VUUR             | CFE 24 VUU                  | 900              | 62 | 29 | 33 |
|  | CFE 24-1 VR             | CFE 24-1 V                  | CFE 24-1 VUUR           | CFE 24-1 VUU                |                  |    |    |    |
| 41   | CFE 30 VR               | CFE 30 V                    | CFE 30 VUUR             | CFE 30 VUU                  | 2 030            | 80 | 35 | 41 |
|  | CFE 30-1 VR             | CFE 30-1 V                  | CFE 30-1 VUUR           | CFE 30-1 VUU                | 2 190            | 85 | 35 | 41 |
|  | CFE 30-2 VR             | CFE 30-2 V                  | CFE 30-2 VUUR           | CFE 30-2 VUU                | 2 380            | 90 | 35 | 41 |

Note(1) Minimum allowable value of chamfer dimension r

Remarks1. Models with a stud thread diameter G of 10 mm or less (marked \*) are provided with an oil hole on the stud head only. Other models are provided with one oil hole each on the head, outside surface and end surface of the stud.

2. Provided with prepacked grease.



CFE...V

CFE...VUUR

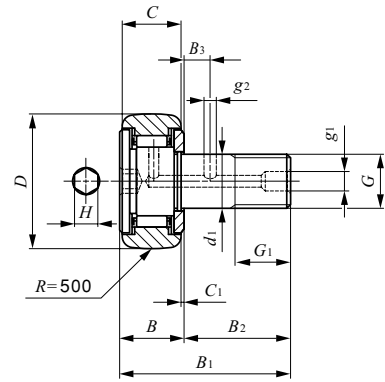
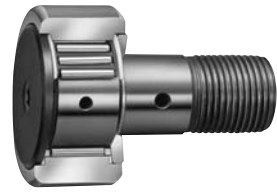
CFE...VUU

| Boundary dimensions mm |                |          |                       |                |                |                |                |                                   |     | Eccentricity<br>ε | Mounting dimension<br>f<br>Min.<br>mm | Maximum tightening torque<br>N-m | Basic dynamic load rating<br>C<br>N | Basic static load rating<br>C <sub>0</sub><br>N | Maximum allowable static load<br>N |
|------------------------|----------------|----------|-----------------------|----------------|----------------|----------------|----------------|-----------------------------------|-----|-------------------|---------------------------------------|----------------------------------|-------------------------------------|---|------------------------------------|
| G                      | B <sub>3</sub> | B<br>max | B <sub>1</sub><br>max | B <sub>2</sub> | C <sub>1</sub> | g <sub>1</sub> | G <sub>1</sub> | r <sub>s</sub> min <sup>(1)</sup> | ε   |                   |                                       |                                  |                                     |   |                                    |
| M 6 × 1                | 7.5            | 12.2     | 28.2                  | 16             | 0.6            | *4             | 8.5            | 0.3                               | 0.4 | 11                | 2.7                                   | 6 980                            | 8 500                               | 1 950   |                                    |
| M 8 × 1.25             | 9.5            | 12.2     | 32.2                  | 20             | 0.6            | *4             | 10.5           | 0.3                               | 0.4 | 13                | 6.5                                   | 8 170                            | 11 200                              | 4 620   |                                    |
| M10 × 1.25             | 10.5           | 13.2     | 36.2                  | 23             | 0.6            | *4             | 12.5           | 0.3                               | 0.4 | 16                | 13.8                                  | 9 570                            | 14 500                              | 8 650   |                                    |
| M10 × 1.25             | 10.5           | 13.2     | 36.2                  | 23             | 0.6            | *4             | 12.5           | 0.3                               | 0.4 | 16                | 13.8                                  | 9 570                            | 14 500                              | 8 650   |                                    |
| M12 × 1.5              | 11.5           | 15.2     | 40.2                  | 25             | 0.6            | 6              | 13.5           | 0.6                               | 0.8 | 21                | 21.9                                  | 13 500                           | 19 700                              | 13 200  |                                    |
| M12 × 1.5              | 11.5           | 15.2     | 40.2                  | 25             | 0.6            | 6              | 13.5           | 0.6                               | 0.8 | 21                | 21.9                                  | 13 500                           | 19 700                              | 13 200  |                                    |
| M16 × 1.5              | 15.5           | 19.6     | 52.1                  | 32.5           | 0.8            | 6              | 17             | 0.6                               | 0.8 | 26                | 58.5                                  | 20 700                           | 37 600                              | 23 200  |                                    |
| M18 × 1.5              | 17.5           | 21.6     | 58.1                  | 36.5           | 0.8            | 6              | 19             | 1                                 | 0.8 | 29                | 86.2                                  | 25 300                           | 51 300                              | 31 100  |                                    |
| M20 × 1.5              | 19.5           | 25.6     | 66.1                  | 40.5           | 0.8            | 8              | 21             | 1                                 | 0.8 | 34                | 119                                   | 33 200                           | 64 500                              | 37 500  |                                    |
| M20 × 1.5              | 19.5           | 25.6     | 66.1                  | 40.5           | 0.8            | 8              | 21             | 1                                 | 0.8 | 34                | 119                                   | 33 200                           | 64 500                              | 37 500  |                                    |
| M24 × 1.5              | 25.5           | 30.6     | 80.1                  | 49.5           | 0.8            | 8              | 24             | 1                                 | 0.8 | 40                | 215                                   | 46 600                           | 92 000                              | 52 000  |                                    |
| M24 × 1.5              | 25.5           | 30.6     | 80.1                  | 49.5           | 0.8            | 8              | 24             | 1                                 | 0.8 | 40                | 215                                   | 46 600                           | 92 000                              | 52 000  |                                    |
| M30 × 1.5              | 32.5           | 37       | 100                   | 63             | 1              | 8              | 30.5           | 1                                 | 1.5 | 49                | 438                                   | 67 700                           | 144 000                             | 85 900  |                                    |
| M30 × 1.5              | 32.5           | 37       | 100                   | 63             | 1              | 8              | 30.5           | 1                                 | 1.5 | 49                | 438                                   | 67 700                           | 144 000                             | 85 900  |                                    |
| M30 × 1.5              | 32.5           | 37       | 100                   | 63             | 1              | 8              | 30.5           | 1                                 | 1.5 | 49                | 438                                   | 67 700                           | 144 000                             | 85 900  |                                    |

CF  
NUCF  
CFS  
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**CAM FOLLOWERS**

Thrust Disk Type Cam Followers **With Cage/With Hexagon Hole**



CF...WBR

Stud dia. 3 – 12mm

| Stud dia.<br>mm | Identification number |               | Mass<br>(Ref.)<br>g | Boundary dimensions mm |    |                |            |                |
|-----------------|-----------------------|---------------|---------------------|------------------------|----|----------------|------------|----------------|
|                 | Shield type           | Sealed type   |                     | D                      | C  | d <sub>1</sub> | G          | G <sub>1</sub> |
| 3               | CF 3 WBR              | CF 3 WBUUR    | 4.3                 | 10                     | 7  | 3              | M 3 × 0.5  | 5              |
| 4               | CF 4 WBR              | CF 4 WBUUR    | 7.4                 | 12                     | 8  | 4              | M 4 × 0.7  | 6              |
| 5               | CF 5 WBR              | CF 5 WBUUR    | 10.3                | 13                     | 9  | 5              | M 5 × 0.8  | 7.5            |
| 6               | CF 6 WBR              | CF 6 WBUUR    | 18.5                | 16                     | 11 | 6              | M 6 × 1    | 8              |
| 8               | CF 8 WBR              | CF 8 WBUUR    | 28.5                | 19                     | 11 | 8              | M 8 × 1.25 | 10             |
| 10              | CF 10 WBR             | CF 10 WBUUR   | 45                  | 22                     | 12 | 10             | M10 × 1.25 | 12             |
|                 | CF 10-1 WBR           | CF 10-1 WBUUR | 60                  | 26                     | 12 | 10             | M10 × 1.25 | 12             |
| 12              | CF 12 WBR             | CF 12 WBUUR   | 95                  | 30                     | 14 | 12             | M12 × 1.5  | 13             |
|                 | CF 12-1 WBR           | CF 12-1 WBUUR | 105                 | 32                     | 14 | 12             | M12 × 1.5  | 13             |

Remarks1. Models with a stud diameter  $d_1$  of 10 mm or less have no oil hole. Other models are provided with one oil hole each on the outside surface and end surface of the stud.  
 2. Shield type models with a stud diameter  $d_1$  of 10 mm or less and the sealed type models are provided with prepacked grease. Other models are not provided with prepacked grease. Perform proper lubrication for use.



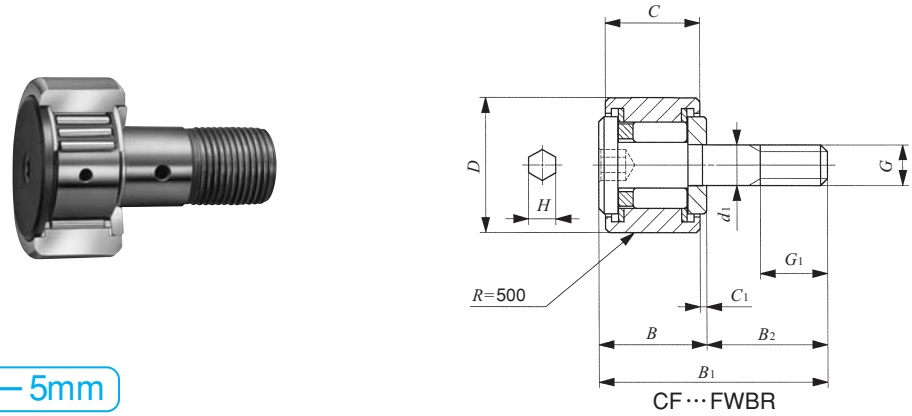
CF...WBUUR

| B           | B <sub>1</sub> | B <sub>2</sub> | B <sub>3</sub> | C <sub>1</sub> | g <sub>1</sub> | g <sub>2</sub> | H   | Mounting dimension<br>f<br>Min.<br>mm | Maximum<br>tightening<br>torque<br>N-m | Basic dynamic<br>load rating<br>C<br>N | Basic static<br>load rating<br>C <sub>0</sub><br>N | Maximum<br>allowable<br>static load<br>N |
|-------------|----------------|----------------|----------------|----------------|----------------|----------------|-----|---------------------------------------|--|--|--|--|
| 8           | 17             | 9              | —              | 0.5            | —              | —              | 2   | 6.8                                   | 0.34                                   | 1 500                                  | 1 020  | 384                                      |
| 9           | 20             | 11             | —              | 0.5            | —              | —              | 2.5 | 8.3                                   | 0.78                                   | 2 070                                  | 1 590  | 834                                      |
| 10          | 23             | 13             | —              | 0.5            | —              | —              | 3   | 9.3                                   | 1.6                                    | 2 520                                  | 2 140  | 1 260                                    |
| 12.2<br>max | 28.2<br>max    | 16             | —              | 0.6            | —              | —              | 3   | 11                                    | 2.7                                    | 3 660                                  | 3 650  | 1 950                                    |
| 12.2<br>max | 32.2<br>max    | 20             | —              | 0.6            | —              | —              | 4   | 13                                    | 6.5                                    | 4 250                                  | 4 740  | 4 620                                    |
| 13.2<br>max | 36.2<br>max    | 23             | —              | 0.6            | —              | —              | 4   | 16                                    | 13.8                                   | 5 430                                  | 6 890  | 6 890                                    |
| 13.2<br>max | 36.2<br>max    | 23             | —              | 0.6            | —              | —              | 4   | 16                                    | 13.8                                   | 5 430                                  | 6 890  | 6 890                                    |
| 15.2<br>max | 40.2<br>max    | 25             | 6              | 0.6            | 6              | 3              | 6   | 21                                    | 21.9                                   | 7 910                                  | 9 790  | 9 790                                    |
| 15.2<br>max | 40.2<br>max    | 25             | 6              | 0.6            | 6              | 3              | 6   | 21                                    | 21.9                                   | 7 910                                  | 9 790  | 9 790                                    |

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**CAM FOLLOWERS**

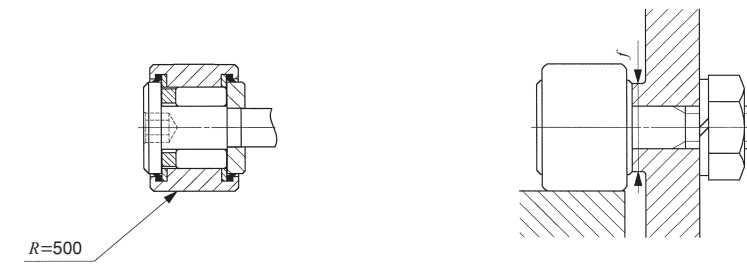
Thrust Disk Type Stainless Steel Made Cam Followers **With Cage/With Hexagon Hole**



Stud dia. 3 – 5mm

| Stud dia.<br>mm | Identification number |             | Mass<br>(Ref.)<br>g | Boundary dimensions mm |   |                |           |                |
|-----------------|-----------------------|-------------|---------------------|------------------------|---|----------------|-----------|----------------|
|                 | Shield type           | Sealed type |                     | D                      | C | d <sub>1</sub> | G         | G <sub>1</sub> |
| 3               | CF 3 FWBR             | CF 3 FWBUUR | 4.3                 | 10                     | 7 | 3              | M 3 × 0.5 | 5              |
| 4               | CF 4 FWBR             | CF 4 FWBUUR | 7.4                 | 12                     | 8 | 4              | M 4 × 0.7 | 6              |
| 5               | CF 5 FWBR             | CF 5 FWBUUR | 10.3                | 13                     | 9 | 5              | M 5 × 0.8 | 7.5            |

Remarks1. No oil hole is provided.  
2. Provided with prepacked grease.



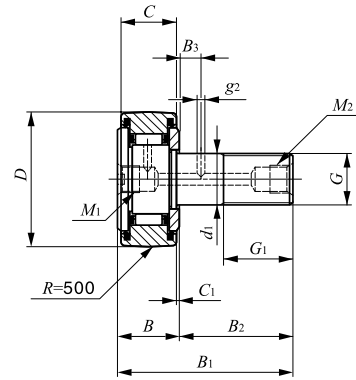
CF...FWBUUR

| B  | B <sub>1</sub> | B <sub>2</sub> | C <sub>1</sub> | H   | Mounting dimension<br>f<br>Min.<br>mm | Maximum tightening torque<br>N-m | Basic dynamic load rating<br>C<br>N | Basic static load rating<br>C <sub>0</sub><br>N | Maximum allowable static load<br>N |
|----|----------------|----------------|----------------|-----|---------------------------------------|----------------------------------|-------------------------------------|---|------------------------------------|
| 8  | 17             | 9              | 0.5            | 2   | 6.8                                   | 0.34                             | 1 200                               | 813   | 384                                |
| 9  | 20             | 11             | 0.5            | 2.5 | 8.3                                   | 0.78                             | 1 650                               | 1 270   | 834                                |
| 10 | 23             | 13             | 0.5            | 3   | 9.3                                   | 1.6                              | 1 930                               | 1 730   | 1 260                              |

CF  
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**CAM FOLLOWERS**

Centralized Lubrication Type Cam Followers **With Cage/With Screwdriver Slot**

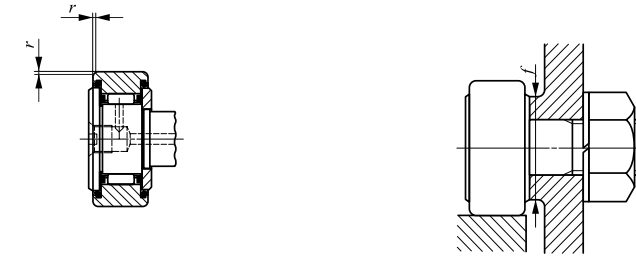


CF...RU1

Stud dia. 6 – 30mm

| Stud dia.<br>mm | Identification number                   |   | Mass<br>(Ref.)<br>g | Boundary dimensions mm |    |                |            |                |
|-----------------|---|---|---------------------|------------------------|----|----------------|------------|----------------|
|                 | With crowned<br>outer ring              | With cylindrical<br>outer ring          |                     | D                      | C  | d <sub>1</sub> | G          | G <sub>1</sub> |
| 6               | CF-RU1- 6                               | CF-FU1- 6                               | 18.5                | 16                     | 11 | 6              | M 6 × 1    | 8              |
| 8               | CF-RU1- 8                               | CF-FU1- 8                               | 28.5                | 19                     | 11 | 8              | M 8 × 1.25 | 10             |
| 10              | CF-RU1-10<br>CF-RU1-10-1                | CF-FU1-10<br>CF-FU1-10-1                | 45                  | 22                     | 12 | 10             | M10 × 1.25 | 12             |
|                 |   |   | 60                  | 26                     | 12 | 10             | M10 × 1.25 | 12             |
| 12              | CF-RU1-12<br>CF-RU1-12-1                | CF-FU1-12<br>CF-FU1-12-1                | 95                  | 30                     | 14 | 12             | M12 × 1.5  | 13             |
|                 |   |   | 105                 | 32                     | 14 | 12             | M12 × 1.5  | 13             |
| 16              | CF-RU1-16                               | CF-FU1-16                               | 170                 | 35                     | 18 | 16             | M16 × 1.5  | 17             |
| 18              | CF-RU1-18                               | CF-FU1-18                               | 250                 | 40                     | 20 | 18             | M18 × 1.5  | 19             |
| 20              | CF-RU1-20<br>CF-RU1-20-1                | CF-FU1-20<br>CF-FU1-20-1                | 460                 | 52                     | 24 | 20             | M20 × 1.5  | 21             |
|                 |   |   | 385                 | 47                     | 24 | 20             | M20 × 1.5  | 21             |
| 24              | CF-RU1-24<br>CF-RU1-24-1                | CF-FU1-24<br>CF-FU1-24-1                | 815                 | 62                     | 29 | 24             | M24 × 1.5  | 25             |
|                 |   |   | 1 140               | 72                     | 29 | 24             | M24 × 1.5  | 25             |
| 30              | CF-RU1-30<br>CF-RU1-30-1<br>CF-RU1-30-2 | CF-FU1-30<br>CF-FU1-30-1<br>CF-FU1-30-2 | 1 870               | 80                     | 35 | 30             | M30 × 1.5  | 32             |
|                 |   |   | 2 030               | 85                     | 35 | 30             | M30 × 1.5  | 32             |
|                 |   |   | 2 220               | 90                     | 35 | 30             | M30 × 1.5  | 32             |

Note<sup>(1)</sup> Minimum allowable value of chamfer dimension *r*  
 Remarks1. Models with a stud diameter *d*<sub>1</sub> of 12 mm or less are provided with a lubrication tapped hole on the stud head only. Other models are provided with one lubrication tapped hole each on the head and end surface of the stud.  
 2. Provided with prepacked grease.



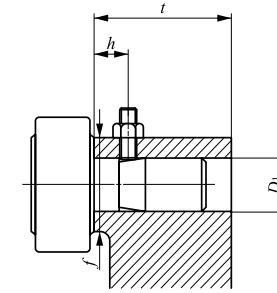
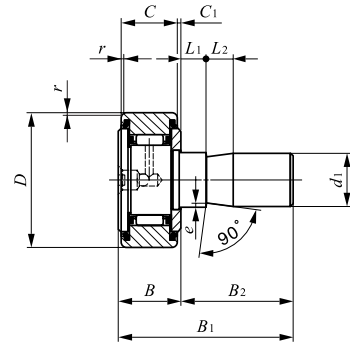
CF...FU1

| B <sub>max</sub> | B <sub>1max</sub> | B <sub>2</sub> | B <sub>3</sub> | C <sub>1</sub> | g <sub>2</sub> | M <sub>1</sub> | M <sub>2</sub> | r <sub>s min</sub> <sup>(1)</sup> | Mounting dimension<br><i>f</i><br>Min. mm | Maximum tightening torque<br>N-m | Basic dynamic load rating<br><i>C</i><br>N | Basic static load rating<br><i>C</i> <sub>0</sub><br>N | Maximum allowable static load<br>N |
|------------------|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------------------------|---|----------------------------------|--|--|------------------------------------|
| 12.2             | 28.2              | 16             | —              | 0.6            | —              | M6×<br>0.75    | —              | 0.3                               | 11  | 2.7                              | 3 660                                      | 3 650  | 1 950                              |
| 12.2             | 32.2              | 20             | —              | 0.6            | —              |                |                | 0.3                               | 13  | 6.5                              | 4 250                                      | 4 740  | 4 620                              |
| 13.2             | 36.2              | 23             | —              | 0.6            | —              |                |                | 0.3                               | 16  | 13.8                             | 5 430                                      | 6 890  | 6 890                              |
| 13.2             | 36.2              | 23             | —              | 0.6            | —              |                |                | 0.3                               | 16  | 13.8                             | 5 430                                      | 6 890  | 6 890                              |
| 15.2             | 40.2              | 25             | —              | 0.6            | —              |                |                | 0.6                               | 21  | 23.9                             | 7 910                                      | 9 790  | 9 790                              |
| 15.2             | 40.2              | 25             | —              | 0.6            | —              | 0.6            | 21             | 23.9                              | 7 910                                     | 9 790                            | 9 790                                      |  |                                    |
| 19.6             | 52.1              | 32.5           | 8              | 0.8            | 3              | PT<br>1/8      | PT<br>1/8      | 0.6                               | 26  | 58.5                             | 12 000                                     | 18 300   | 18 300                             |
| 21.6             | 58.1              | 36.5           | 8              | 0.8            | 3              |                |                | 1                                 | 29  | 86.2                             | 14 800                                     | 25 200   | 25 200                             |
| 25.6             | 66.1              | 40.5           | 9              | 0.8            | 4              |                |                | 1                                 | 34  | 119                              | 20 700                                     | 34 600   | 34 600                             |
| 25.6             | 66.1              | 40.5           | 9              | 0.8            | 4              |                |                | 1                                 | 34  | 119                              | 20 700                                     | 34 600   | 34 600                             |
| 30.6             | 80.1              | 49.5           | 11             | 0.8            | 4              |                |                | 1                                 | 40  | 215                              | 30 500                                     | 52 600   | 52 000                             |
| 30.6             | 80.1              | 49.5           | 11             | 0.8            | 4              |                |                | 1                                 | 40  | 215                              | 30 500                                     | 52 600   | 52 000                             |
| 37               | 100               | 63             | 15             | 1              | 4              |                |                | 1                                 | 49  | 438                              | 45 400                                     | 85 100   | 85 100                             |
| 37               | 100               | 63             | 15             | 1              | 4              |                |                | 1                                 | 49  | 438                              | 45 400                                     | 85 100   | 85 100                             |
| 37               | 100               | 63             | 15             | 1              | 4              |                |                | 1                                 | 49  | 438                              | 45 400                                     | 85 100   | 85 100                             |

CF  
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CFS  
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**CAM FOLLOWERS**

Easy Mounting Type Cam Followers **With Cage/With Screwdriver Slot**



Stud dia. 6 – 20mm

CF...SFU

| Stud dia.<br>mm | Identification number | Mass (Ref.)<br>g | Boundary dimensions mm |    |                |                  |                   |                |                |                |
|-----------------|-----------------------|------------------|------------------------|----|----------------|------------------|-------------------|----------------|----------------|----------------|
|                 |                       |                  | D                      | C  | d <sub>1</sub> | B <sub>max</sub> | B <sub>1max</sub> | B <sub>2</sub> | C <sub>1</sub> | L <sub>1</sub> |
| 6               | CF-SFU- 6             | 19.5             | 16                     | 11 | 6              | 12.2             | 32                | 19.8           | 0.6            | 5              |
| 8               | CF-SFU- 8             | 29               | 19                     | 11 | 8              | 12.2             | 32                | 19.8           | 0.6            | 5              |
| 10              | CF-SFU-10             | 44               | 22                     | 12 | 10             | 13.2             | 33                | 19.8           | 0.6            | 5              |
|                 | CF-SFU-10-1           | 59               | 26                     | 12 | 10             | 13.2             | 33                | 19.8           | 0.6            | 5              |
| 12              | CF-SFU-12             | 94               | 30                     | 14 | 12             | 15.2             | 35                | 19.8           | 0.6            | 5              |
|                 | CF-SFU-12-1           | 104              | 32                     | 14 | 12             | 15.2             | 35                | 19.8           | 0.6            | 5              |
| 16              | CF-SFU-16             | 164              | 35                     | 18 | 16             | 19.6             | 44.5              | 24.9           | 0.8            | 10             |
| 18              | CF-SFU-18             | 235              | 40                     | 20 | 18             | 21.6             | 46.5              | 24.9           | 0.8            | 10             |
| 20              | CF-SFU-20             | 435              | 52                     | 24 | 20             | 25.6             | 50.5              | 24.9           | 0.8            | 10             |
|                 | CF-SFU-20-1           | 360              | 47                     | 24 | 20             | 25.6             | 50.5              | 24.9           | 0.8            | 10             |

Note<sup>(1)</sup> Minimum allowable value of chamfer dimension *r*

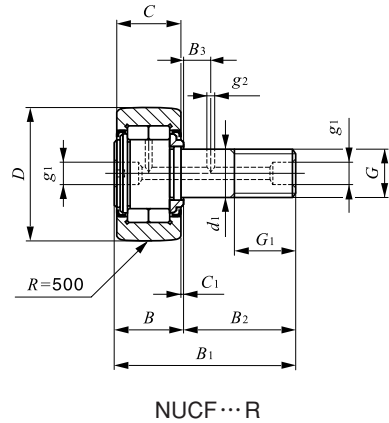
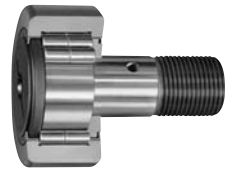
Remarks1. No oil hole is provided.  
2. Provided with prepacked grease.

| L <sub>2</sub> | e   | r <sub>s min</sub> <sup>(1)</sup> | Mounting dimensions mm |             |           |           |             | Basic dynamic load rating<br>C<br>N | Basic static load rating<br>C <sub>0</sub><br>N | Maximum allowable static load<br>N |
|----------------|-----|-----------------------------------|------------------------|-------------|-----------|-----------|-------------|-------------------------------------|---|------------------------------------|
|                |     |                                   | D <sub>1</sub>         | Tolerance   | t<br>Min. | f<br>Min. | h<br>(Ref.) |                                     |   |                                    |
| 10             | 0.3 | 0.3                               | 6                      | +0.012<br>0 | 20        | 11        | 10          | 3 660                               | 3 650   | 1 950                              |
| 10             | 0.5 | 0.3                               | 8                      | +0.015<br>0 | 20        | 13        | 10          | 4 250                               | 4 740   | 4 620                              |
| 10             | 0.5 | 0.3                               | 10                     |             | 20        | 16        | 10          | 5 430                               | 6 890   | 6 890                              |
| 10             | 0.5 | 0.3                               | 10                     | +0.018<br>0 | 20        | 16        | 10          | 5 430                               | 6 890   | 6 890                              |
| 10             | 1   | 0.6                               | 12                     |             | 20        | 21        | 10          | 7 910                               | 9 790   | 9 790                              |
| 10             | 1   | 0.6                               | 12                     | +0.018<br>0 | 20        | 21        | 10          | 7 910                               | 9 790   | 9 790                              |
| 10             | 1   | 0.6                               | 16                     |             | 25        | 26        | 15          | 12 000                              | 18 300  | 18 300                             |
| 10             | 1   | 1                                 | 18                     | +0.021<br>0 | 25        | 29        | 15          | 14 800                              | 25 200  | 25 200                             |
| 10             | 1   | 1                                 | 20                     |             | 25        | 34        | 15          | 20 700                              | 34 600  | 34 600                             |
| 10             | 1   | 1                                 | 20                     | +0.021<br>0 | 25        | 34        | 15          | 20 700                              | 34 600  | 34 600                             |
| 10             | 1   | 1                                 | 20                     |             | 25        | 34        | 15          | 20 700                              | 34 600  | 34 600                             |

CF  
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**CAM FOLLOWERS**

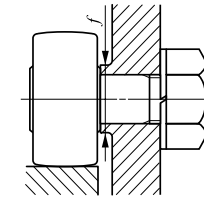
Heavy Duty Type Cam Followers **Full Compliment Type/With Screwdriver Slot**



Stud dia. 10 – 30mm

| Stud dia.<br>mm | Identification number | Mass (Ref.)<br>g | Boundary dimensions mm |    |                |            |                |                  |                   |                |
|-----------------|-----------------------|------------------|------------------------|----|----------------|------------|----------------|------------------|-------------------|----------------|
|                 |                       |                  | D                      | C  | d <sub>1</sub> | G          | G <sub>1</sub> | B <sub>max</sub> | B <sub>1max</sub> | B <sub>2</sub> |
| 10              | NUCF 10 R             | 44               | 22                     | 12 | 10             | M10 × 1.25 | 12             | 13.2             | 36.2              | 23             |
|                 | NUCF 10-1 R           | 58               | 26                     | 12 | 10             | M10 × 1.25 | 12             | 13.2             | 36.2              | 23             |
| 12              | NUCF 12 R             | 86               | 30                     | 14 | 12             | M12 × 1.5  | 13             | 15.2             | 40.2              | 25             |
|                 | NUCF 12-1 R           | 97               | 32                     | 14 | 12             | M12 × 1.5  | 13             | 15.2             | 40.2              | 25             |
| 16              | NUCF 16 R             | 167              | 35                     | 18 | 16             | M16 × 1.5  | 17             | 19.6             | 52.1              | 32.5           |
| 18              | NUCF 18 R             | 244              | 40                     | 20 | 18             | M18 × 1.5  | 19             | 21.6             | 58.1              | 36.5           |
| 20              | NUCF 20 R             | 457              | 52                     | 24 | 20             | M20 × 1.5  | 21             | 25.6             | 66.1              | 40.5           |
|                 | NUCF 20-1 R           | 384              | 47                     | 24 | 20             | M20 × 1.5  | 21             | 25.6             | 66.1              | 40.5           |
| 24              | NUCF 24 R             | 789              | 62                     | 29 | 24             | M24 × 1.5  | 25             | 30.6             | 80.1              | 49.5           |
|                 | NUCF 24-1 R           | 1 020            | 72                     | 29 | 24             | M24 × 1.5  | 25             | 30.6             | 80.1              | 49.5           |
| 30              | NUCF 30 R             | 1 600            | 80                     | 35 | 30             | M30 × 1.5  | 32             | 37               | 100               | 63             |
|                 | NUCF 30-2 R           | 1 970            | 90                     | 35 | 30             | M30 × 1.5  | 32             | 37               | 100               | 63             |

Remarks1. Models with a stud diameter  $d_1$  of 10 mm or less (marked \*) are provided with an oil hole on the stud head only. Other models are provided with one oil hole each on the head, outside surface and end surface of the stud.  
2. Provided with prepacked grease.

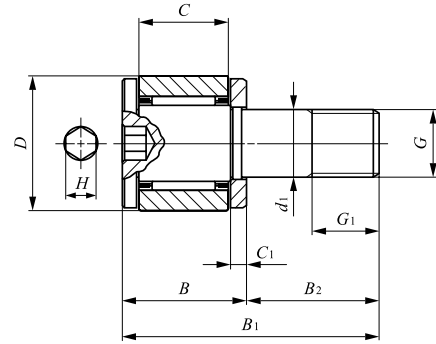


| B <sub>3</sub> | C <sub>1</sub> | g <sub>1</sub> | g <sub>2</sub> | Mounting dimension<br>f<br>Min.<br>mm | Maximum<br>tightening<br>torque<br>N-m | Basic dynamic<br>load rating | Basic static<br>load rating | Maximum<br>allowable<br>static load |
|----------------|----------------|----------------|----------------|---------------------------------------|--|------------------------------|-----------------------------|-------------------------------------|
|                |                |                |                |                                       |  | C                            | C <sub>0</sub>              |                                     |
| —              | 0.6            | *4             | —              | 12                                    | 13.8                                   | 10 400                       | 11 500                      | 5 300                               |
| —              | 0.6            | *4             | —              | 12                                    | 13.8                                   | 10 400                       | 11 500                      | 9 210                               |
| 6              | 0.6            | 6              | 3              | 17                                    | 21.9                                   | 14 000                       | 13 400                      | 5 650                               |
| 6              | 0.6            | 6              | 3              | 17                                    | 21.9                                   | 14 000                       | 13 400                      | 9 040                               |
| 8              | 0.8            | 6              | 3              | 20                                    | 58.5                                   | 23 400                       | 27 300                      | 11 800                              |
| 8              | 0.8            | 6              | 3              | 22                                    | 86.2                                   | 25 200                       | 30 900                      | 20 300                              |
| 9              | 0.8            | 8              | 4              | 31                                    | 119                                    | 43 100                       | 58 100                      | 30 000                              |
| 9              | 0.8            | 8              | 4              | 27                                    | 119                                    | 38 900                       | 49 000                      | 27 200                              |
| 11             | 0.8            | 8              | 4              | 38                                    | 215                                    | 58 200                       | 75 300                      | 35 200                              |
| 11             | 0.8            | 8              | 4              | 44                                    | 215                                    | 63 900                       | 88 800                      | 57 000                              |
| 15             | 1              | 8              | 4              | 45                                    | 438                                    | 90 300                       | 121 000                     | 98 300                              |
| 15             | 1              | 8              | 4              | 45                                    | 438                                    | 90 300                       | 121 000                     | 98 300                              |

CF  
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**CAM FOLLOWERS**

Miniature Type Cam Followers **With Cage/With Hexagon Hole**  
**Full Complement Type/With Hexagon Hole**

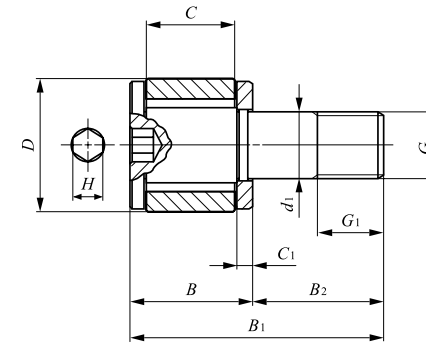


CFS

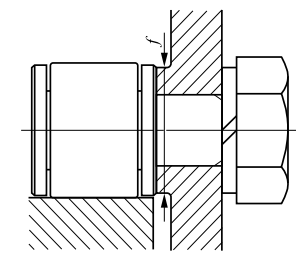
Stud dia. 2 – 6mm

| Stud dia.<br>mm | Identification number |                  | Mass<br>(Ref.)<br>g | Boundary dimensions mm |     |                |             |                |     |
|-----------------|-----------------------|------------------|---------------------|------------------------|-----|----------------|-------------|----------------|-----|
|                 | With cage             | Full complement  |                     | D                      | C   | d <sub>1</sub> | G           | G <sub>1</sub> | B   |
| 2               | <b>CFS 2</b>          | —                | 0.6                 | 4.5                    | 2.5 | 2              | M2 × 0.4    | 2              | 4   |
|                 | —                     | <b>CFS 2 V</b>   | 0.6                 | 4.5                    | 2.5 | 2              | M2 × 0.4    | 2              | 4   |
| 2.5             | <b>CFS 2.5</b>        | —                | 1                   | 5                      | 3   | 2.5            | M2.5 × 0.45 | 2.5            | 4.5 |
|                 | —                     | <b>CFS 2.5 V</b> | 1                   | 5                      | 3   | 2.5            | M2.5 × 0.45 | 2.5            | 4.5 |
| 3               | <b>CFS 3</b>          | —                | 2                   | 6                      | 4   | 3              | M3 × 0.5    | 3              | 5.5 |
|                 | —                     | <b>CFS 3 V</b>   | 2                   | 6                      | 4   | 3              | M3 × 0.5    | 3              | 5.5 |
| 4               | <b>CFS 4</b>          | —                | 4                   | 8                      | 5   | 4              | M4 × 0.7    | 4              | 7   |
|                 | —                     | <b>CFS 4 V</b>   | 4                   | 8                      | 5   | 4              | M4 × 0.7    | 4              | 7   |
| 5               | <b>CFS 5</b>          | —                | 7                   | 10                     | 6   | 5              | M5 × 0.8    | 5              | 8   |
|                 | —                     | <b>CFS 5 V</b>   | 7                   | 10                     | 6   | 5              | M5 × 0.8    | 5              | 8   |
| 6               | <b>CFS 6</b>          | —                | 13                  | 12                     | 7   | 6              | M6 × 1      | 6              | 9.5 |
|                 | —                     | <b>CFS 6 V</b>   | 13                  | 12                     | 7   | 6              | M6 × 1      | 6              | 9.5 |

Remarks1. No oil hole is provided.  
 2. Provided with prepacked grease.



CFS...V

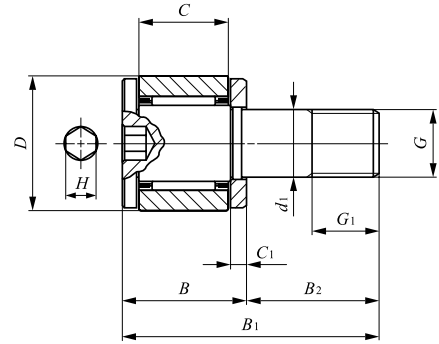


| B <sub>1</sub> | B <sub>2</sub> | C <sub>1</sub> | H   | Mounting<br>dimension<br>f<br>Min.<br>mm | Maximum<br>tightening<br>torque<br>N-cm | Basic dynamic    | Basic static                  | Maximum<br>allowable<br>static load<br>N |
|----------------|----------------|----------------|-----|--|---|------------------|-------------------------------|--|
|                |                |                |     |  |   | load rating<br>C | load rating<br>C <sub>0</sub> |  |
| 8              | 4              | 0.7            | 0.9 | 4.3                                      | 9.1                                     | 288              | 202                           | 202                                      |
| 8              | 4              | 0.7            | 0.9 | 4.3                                      | 9.1                                     | 768              | 734                           | 229                                      |
| 9.5            | 5              | 0.7            | 0.9 | 4.8                                      | 18.7                                    | 428              | 351                           | 351                                      |
| 9.5            | 5              | 0.7            | 0.9 | 4.8                                      | 18.7                                    | 1 000            | 1 080                         | 360                                      |
| 11.5           | 6              | 0.7            | 1.3 | 5.8                                      | 33.5                                    | 629              | 611                           | 484                                      |
| 11.5           | 6              | 0.7            | 1.3 | 5.8                                      | 33.5                                    | 1 420            | 1 790                         | 484                                      |
| 15             | 8              | 1.0            | 1.5 | 7.7                                      | 77.7                                    | 1 120            | 1 120                         | 919                                      |
| 15             | 8              | 1.0            | 1.5 | 7.7                                      | 77.7                                    | 2 370            | 3 000                         | 919                                      |
| 18             | 10             | 1.0            | 2   | 9.6                                      | 158                                     | 1 570            | 1 850                         | 1 570                                    |
| 18             | 10             | 1.0            | 2   | 9.6                                      | 158                                     | 3 180            | 4 700                         | 1 570                                    |
| 21.5           | 12             | 1.2            | 2.5 | 11.6                                     | 268                                     | 2 090            | 2 200                         | 2 150                                    |
| 21.5           | 12             | 1.2            | 2.5 | 11.6                                     | 268                                     | 4 610            | 6 250                         | 2 150                                    |

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**CAM FOLLOWERS**

Miniature Type Cam Followers Stainless Steel Made **With Cage/With Hexagon Hole**  
**Full Complement Type/With Hexagon**

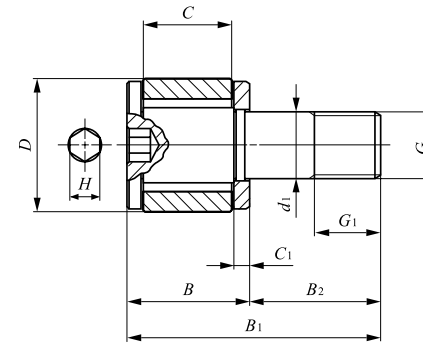


CFS...F

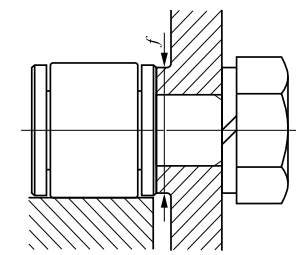
Stud dia. 2.5 – 6mm

| Stud dia.<br>mm | Identification number |                 | Mass<br>(Ref.)<br>g | Boundary dimensions mm |   |                |             |                |     |
|-----------------|-----------------------|-----------------|---------------------|------------------------|---|----------------|-------------|----------------|-----|
|                 | With cage             | Full complement |                     | D                      | C | d <sub>1</sub> | G           | G <sub>1</sub> | B   |
| 2.5             | CFS 2.5 F             | —               | 1                   | 5                      | 3 | 2.5            | M2.5 × 0.45 | 2.5            | 4.5 |
|                 | —                     | CFS 2.5 FV      | 1                   | 5                      | 3 | 2.5            | M2.5 × 0.45 | 2.5            | 4.5 |
| 3               | CFS 3 F               | —               | 2                   | 6                      | 4 | 3              | M3 × 0.5    | 3              | 5.5 |
|                 | —                     | CFS 3 FV        | 2                   | 6                      | 4 | 3              | M3 × 0.5    | 3              | 5.5 |
| 4               | CFS 4 F               | —               | 4                   | 8                      | 5 | 4              | M4 × 0.7    | 4              | 7   |
|                 | —                     | CFS 4 FV        | 4                   | 8                      | 5 | 4              | M4 × 0.7    | 4              | 7   |
| 5               | CFS 5 F               | —               | 7                   | 10                     | 6 | 5              | M5 × 0.8    | 5              | 8   |
|                 | —                     | CFS 5 FV        | 7                   | 10                     | 6 | 5              | M5 × 0.8    | 5              | 8   |
| 6               | CFS 6 F               | —               | 13                  | 12                     | 7 | 6              | M6 × 1      | 6              | 9.5 |
|                 | —                     | CFS 6 FV        | 13                  | 12                     | 7 | 6              | M6 × 1      | 6              | 9.5 |

Remarks1. No oil hole is provided.  
 2. Provided with prepacked grease.



CFS...FV

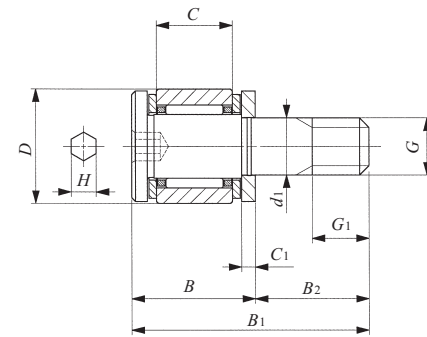


| B <sub>1</sub> | B <sub>2</sub> | C <sub>1</sub> | H   | Mounting<br>dimension<br>f<br>Min.<br>mm | Maximum<br>tightening<br>torque<br>N-cm | Basic dynamic    | Basic static                  | Maximum<br>allowable<br>static load<br>N |
|----------------|----------------|----------------|-----|--|---|------------------|-------------------------------|--|
|                |                |                |     |  |   | load rating<br>C | load rating<br>C <sub>0</sub> |  |
| 9.5            | 5              | 0.7            | 0.9 | 4.8                                      | 18.7                                    | 342              | 281                           | 281                                      |
| 9.5            | 5              | 0.7            | 0.9 | 4.8                                      | 18.7                                    | 800              | 862                           | 360                                      |
| 11.5           | 6              | 0.7            | 1.3 | 5.8                                      | 33.5                                    | 504              | 488                           | 484                                      |
| 11.5           | 6              | 0.7            | 1.3 | 5.8                                      | 33.5                                    | 1 140            | 1 430                         | 484                                      |
| 15             | 8              | 1.0            | 1.5 | 7.7                                      | 77.7                                    | 897              | 894                           | 894                                      |
| 15             | 8              | 1.0            | 1.5 | 7.7                                      | 77.7                                    | 1 900            | 2 400                         | 919                                      |
| 18             | 10             | 1.0            | 2   | 9.6                                      | 158                                     | 1 250            | 1 480                         | 1 480                                    |
| 18             | 10             | 1.0            | 2   | 9.6                                      | 158                                     | 2 540            | 3 760                         | 1 570                                    |
| 21.5           | 12             | 1.2            | 2.5 | 11.6                                     | 268                                     | 1 670            | 1 760                         | 1 760                                    |
| 21.5           | 12             | 1.2            | 2.5 | 11.6                                     | 268                                     | 3 690            | 5 000                         | 2 150                                    |

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**CAM FOLLOWERS**

Thrust Disk Type Miniature Cam Followers **With Cage/With Hexagon Hole**

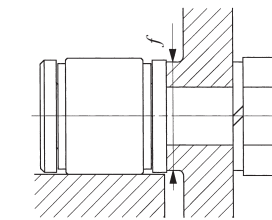


CFS... W

Stud dia. 2 – 6 mm

| Stud dia.<br>mm | Identification number | Mass<br>(Ref.)<br>g | Boundary dimensions mm |     |                |             |                |      |
|-----------------|-----------------------|---------------------|------------------------|-----|----------------|-------------|----------------|------|
|                 |                       |                     | D                      | C   | d <sub>1</sub> | G           | G <sub>1</sub> | B    |
| 2               | <b>CFS 2 W</b>        | 0.6                 | 4.5                    | 2.5 | 2              | M2 × 0.4    | 2              | 4.5  |
| 2.5             | <b>CFS 2.5 W</b>      | 1                   | 5                      | 3   | 2.5            | M2.5 × 0.45 | 2.5            | 5    |
| 3               | <b>CFS 3 W</b>        | 2                   | 6                      | 4   | 3              | M3 × 0.5    | 3              | 6.5  |
| 4               | <b>CFS 4 W</b>        | 4                   | 8                      | 5   | 4              | M4 × 0.7    | 4              | 8    |
| 5               | <b>CFS 5 W</b>        | 7                   | 10                     | 6   | 5              | M5 × 0.8    | 5              | 9    |
| 6               | <b>CFS 6 W</b>        | 13                  | 12                     | 7   | 6              | M6 × 1      | 6              | 10.5 |

Remarks 1. No oil hole is provided.  
2. Provided with prepacked grease.

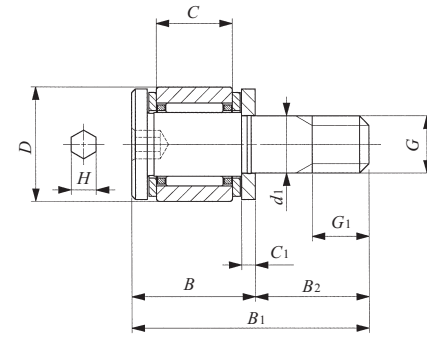
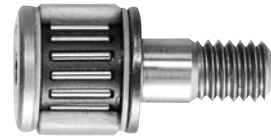


| B <sub>1</sub> | B <sub>2</sub> | C <sub>1</sub> | H   | Mounting dimension<br>f<br>Min.<br>mm | Maximum tightening torque<br>N-cm | Basic dynamic load rating<br>C<br>N | Basic static load rating<br>C <sub>0</sub><br>N | Maximum allowable static load<br>N |
|----------------|----------------|----------------|-----|---------------------------------------|-----------------------------------|-------------------------------------|---|------------------------------------|
| 8.5            | 4              | 0.7            | 0.9 | 4.3                                   | 9.1                               | 288                                 | 202   | 194                                |
| 10             | 5              | 0.7            | 0.9 | 4.8                                   | 18.7                              | 428                                 | 351   | 313                                |
| 12.5           | 6              | 0.7            | 1.3 | 5.8                                   | 33.5                              | 629                                 | 611   | 399                                |
| 16             | 8              | 1.0            | 1.5 | 7.7                                   | 77.7                              | 1 120                               | 1 120   | 785                                |
| 19             | 10             | 1.0            | 2   | 9.6                                   | 158                               | 1 570                               | 1 850   | 1 370                              |
| 22.5           | 12             | 1.2            | 2.5 | 11.6                                  | 268                               | 2 090                               | 2 200   | 1 920                              |

CF  
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CFS  
CR

**CAM FOLLOWERS**

Thrust Disk Type Miniature Cam Followers · Stainless Steel Made **With Cage/With Hexagon Hole**

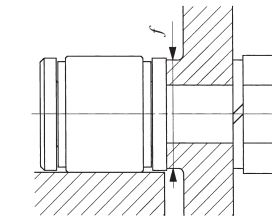


CFS...FW

Stud dia.2 – 6 mm

| Stud dia.<br>mm | Identification number | Mass<br>(Ref.)<br>g | Boundary dimensions mm |     |                |             |                |      |
|-----------------|-----------------------|---------------------|------------------------|-----|----------------|-------------|----------------|------|
|                 |                       |                     | D                      | C   | d <sub>1</sub> | G           | G <sub>1</sub> | B    |
| 2               | <b>CFS 2 FW</b>       | 0.6                 | 4.5                    | 2.5 | 2              | M2 × 0.4    | 2              | 4.5  |
| 2.5             | <b>CFS 2.5 FW</b>     | 1                   | 5                      | 3   | 2.5            | M2.5 × 0.45 | 2.5            | 5    |
| 3               | <b>CFS 3 FW</b>       | 2                   | 6                      | 4   | 3              | M3 × 0.5    | 3              | 6.5  |
| 4               | <b>CFS 4 FW</b>       | 4                   | 8                      | 5   | 4              | M4 × 0.7    | 4              | 8    |
| 5               | <b>CFS 5 FW</b>       | 7                   | 10                     | 6   | 5              | M5 × 0.8    | 5              | 9    |
| 6               | <b>CFS 6 FW</b>       | 13                  | 12                     | 7   | 6              | M6 × 1      | 6              | 10.5 |

Remarks 1. No oil hole is provided.  
2. Provided with prepacked grease.

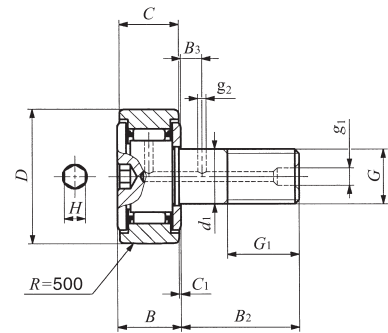
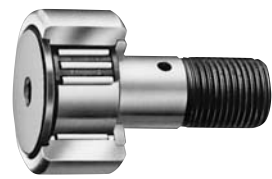


| B <sub>1</sub> | B <sub>2</sub> | C <sub>1</sub> | H   | Mounting<br>dimension<br>f<br>Min.<br>mm | Maximum<br>tightening<br>torque<br>N-cm | Basic dynamic<br>load rating | Basic static<br>load rating | Maximum<br>allowable<br>static load |
|----------------|----------------|----------------|-----|--|---|------------------------------|-----------------------------|-------------------------------------|
|                |                |                |     |  |   | C                            | C <sub>0</sub>              | N                                   |
| 8.5            | 4              | 0.7            | 0.9 | 4.3                                      | 9.1                                     | 230                          | 161                         | 161                                 |
| 10             | 5              | 0.7            | 0.9 | 4.8                                      | 18.7                                    | 342                          | 281                         | 281                                 |
| 12.5           | 6              | 0.7            | 1.3 | 5.8                                      | 33.5                                    | 504                          | 488                         | 399                                 |
| 16             | 8              | 1.0            | 1.5 | 7.7                                      | 77.7                                    | 897                          | 894                         | 785                                 |
| 19             | 10             | 1.0            | 2   | 9.6                                      | 158                                     | 1 250                        | 1 480                       | 1 370                               |
| 22.5           | 12             | 1.2            | 2.5 | 11.6                                     | 268                                     | 1 670                        | 1 760                       | 1 760                               |

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**CAM FOLLOWERS**

Inch Series Cam Followers **With Cage/With Hexagon Hole**

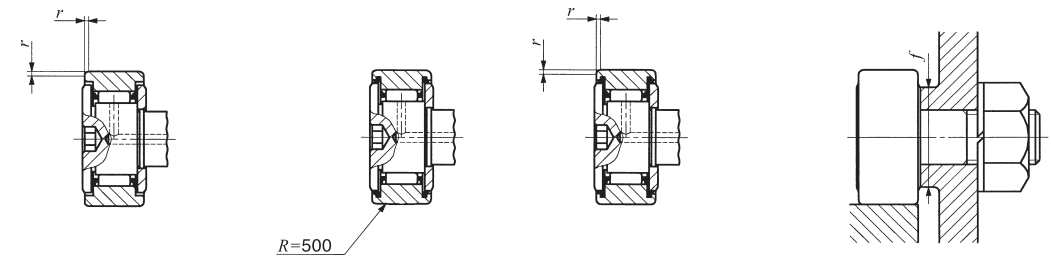


Stud dia. 4.826 – 22.225 mm

CR...BR

| Stud dia.<br>mm<br>(inch) | Identification number      |                                |                            |                                | Mass<br>(Ref.)<br>g | Boundary dimensions mm (inch) |                |                |           |                |
|---------------------------|----------------------------|--------------------------------|----------------------------|--------------------------------|---------------------|-------------------------------|----------------|----------------|-----------|----------------|
|                           | Shield type                |                                | Sealed type                |                                |                     | D                             | C              | d <sub>1</sub> | G<br>UNF  | G <sub>1</sub> |
|                           | With crowned<br>outer ring | With cylindrical<br>outer ring | With crowned<br>outer ring | With cylindrical<br>outer ring |                     |                               |                |                |           |                |
| 4.826                     | CR 8 BR                    | CR 8 B                         | CR 8 BUUR                  | CR 8 BUU                       | 9                   | 12.700 (1/2)                  | 8.731 (11/32)  | 4.826          | No.10-32  | 6.350 (1/4)    |
|                           | CR 8-1 BR                  | CR 8-1 B                       | CR 8-1 BUUR                | CR 8-1 BUU                     | 10                  | 12.700 (1/2)                  | 9.525 (3/8)    | 4.826          | No.10-32  | 6.350 (1/4)    |
| 6.350<br>(1/4)            | CR 10 BR                   | CR 10 B                        | CR 10 BUUR                 | CR 10 BUU                      | 19                  | 15.875 (5/8)                  | 10.319 (13/32) | 6.350 (1/4)    | 1/4 - 28  | 7.938 (5/16)   |
|                           | CR 10-1 BR                 | CR 10-1 B                      | CR 10-1 BUUR               | CR 10-1 BUU                    | 21                  | 15.875 (5/8)                  | 11.112 (7/16)  | 6.350 (1/4)    | 1/4 - 28  | 7.938 (5/16)   |
| 9.525<br>(3/8)            | CR 12 BR                   | CR 12 B                        | CR 12 BUUR                 | CR 12 BUU                      | 35                  | 19.050 (3/4)                  | 12.700 (1/2)   | 9.525 (3/8)    | 3/8 - 24  | 9.525 (3/8)    |
|                           | CR 14 BR                   | CR 14 B                        | CR 14 BUUR                 | CR 14 BUU                      | 46                  | 22.225 (7/8)                  | 12.700 (1/2)   | 9.525 (3/8)    | 3/8 - 24  | 9.525 (3/8)    |
| 11.112<br>(7/16)          | CR 16 BR                   | CR 16 B                        | CR 16 BUUR                 | CR 16 BUU                      | 73                  | 25.400 (1)                    | 15.875 (5/8)   | 11.112 (7/16)  | 7/16 - 20 | 12.700 (1/2)   |
|                           | CR 18 BR                   | CR 18 B                        | CR 18 BUUR                 | CR 18 BUU                      | 88                  | 28.575 (1 1/8)                | 15.875 (5/8)   | 11.112 (7/16)  | 7/16 - 20 | 12.700 (1/2)   |
| 12.700<br>(1/2)           | CR 20 BR                   | CR 20 B                        | CR 20 BUUR                 | CR 20 BUU                      | 132                 | 31.750 (1 1/4)                | 19.050 (3/4)   | 12.700 (1/2)   | 1/2 - 20  | 15.875 (5/8)   |
|                           | CR 22 BR                   | CR 22 B                        | CR 22 BUUR                 | CR 22 BUU                      | 157                 | 34.925 (1 3/8)                | 19.050 (3/4)   | 12.700 (1/2)   | 1/2 - 20  | 15.875 (5/8)   |
| 15.875<br>(5/8)           | CR 24 BR                   | CR 24 B                        | CR 24 BUUR                 | CR 24 BUU                      | 225                 | 38.100 (1 1/2)                | 22.225 (7/8)   | 15.875 (5/8)   | 5/8 - 18  | 19.050 (3/4)   |
|                           | CR 26 BR                   | CR 26 B                        | CR 26 BUUR                 | CR 26 BUU                      | 260                 | 41.275 (1 5/8)                | 22.225 (7/8)   | 15.875 (5/8)   | 5/8 - 18  | 19.050 (3/4)   |
| 19.050<br>(3/4)           | CR 28 BR                   | CR 28 B                        | CR 28 BUUR                 | CR 28 BUU                      | 365                 | 44.450 (1 3/4)                | 25.400 (1)     | 19.050 (3/4)   | 3/4 - 16  | 22.225 (7/8)   |
|                           | CR 30 BR                   | CR 30 B                        | CR 30 BUUR                 | CR 30 BUU                      | 410                 | 47.625 (1 7/8)                | 25.400 (1)     | 19.050 (3/4)   | 3/4 - 16  | 22.225 (7/8)   |
| 22.225<br>(7/8)           | CR 32 BR                   | CR 32 B                        | CR 32 BUUR                 | CR 32 BUU                      | 615                 | 50.800 (2)                    | 31.750 (1 1/4) | 22.225 (7/8)   | 7/8 - 14  | 25.400 (1)     |
|                           | CR 36 BR                   | CR 36 B                        | CR 36 BUUR                 | CR 36 BUU                      | 750                 | 57.150 (2 1/4)                | 31.750 (1 1/4) | 22.225 (7/8)   | 7/8 - 14  | 25.400 (1)     |

Remarks1. Models with a stud diameter  $d_1$  of 6.35 mm or less have no oil hole. Other models are provided with one oil hole each on the outside surface and end surface of the stud.  
2. Provided with prepacked grease.



CR...B

CR...BUUR

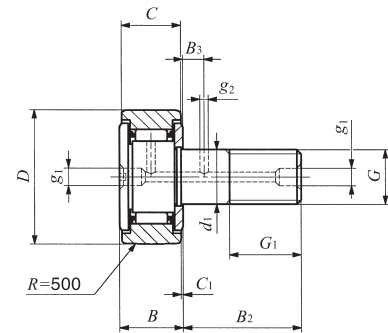
CR...BUU

| Boundary dimensions mm (inch) |                |                |                |                |                |               |              | Mounting<br>dimension<br>f<br>Min.<br>mm (inch) | Maximum<br>tightening<br>torque<br>N-m | Basic dynamic<br>load rating<br>C<br>N | Basic static<br>load rating<br>C <sub>0</sub><br>N |
|-------------------------------|----------------|----------------|----------------|----------------|----------------|---------------|--------------|---|--|--|--|
| B<br>max                      | B <sub>2</sub> | B <sub>3</sub> | C <sub>1</sub> | g <sub>1</sub> | g <sub>2</sub> | H             | r            |   |  |  |  |
| 10.2 (0.40)                   | 12.700 (1/2)   | — (—)          | 0.794 (1/32)   | — (—)          | — (—)          | 3.175 (1/8)   | 0.397 (1/64) | 8.334 (21/64)                                   | 1.4                                    | 2 520                                  | 2 140  |
| 10.9 (0.43)                   | 15.875 (5/8)   | — (—)          | 0.794 (1/32)   | — (—)          | — (—)          | 3.175 (1/8)   | 0.397 (1/64) | 8.334 (21/64)                                   | 1.4                                    | 2 520                                  | 2 140  |
| 11.8 (0.46)                   | 15.875 (5/8)   | — (—)          | 0.794 (1/32)   | — (—)          | — (—)          | 3.175 (1/8)   | 0.397 (1/64) | 11.509 (29/64)                                  | 3.4                                    | 3 650                                  | 3 670  |
| 12.5 (0.49)                   | 19.050 (3/4)   | — (—)          | 0.794 (1/32)   | — (—)          | — (—)          | 3.175 (1/8)   | 0.397 (1/64) | 11.509 (29/64)                                  | 3.4                                    | 3 650                                  | 3 670  |
| 14.2 (0.56)                   | 22.225 (7/8)   | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 2.381 (3/32)   | 4.762 (3/16)  | 0.794 (1/32) | 13.494 (17/32)                                  | 10.8                                   | 4 420                                  | 5 110  |
| 14.2 (0.56)                   | 22.225 (7/8)   | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 2.381 (3/32)   | 4.762 (3/16)  | 0.794 (1/32) | 15.081 (19/32)                                  | 10.8                                   | 4 790                                  | 5 810  |
| 17.3 (0.68)                   | 25.400 (1)     | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 3.175 (1/8)    | 6.350 (1/4)   | 1.191 (3/64) | 17.859 (45/64)                                  | 17.4                                   | 8 810                                  | 10 800   |
| 17.3 (0.68)                   | 25.400 (1)     | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 3.175 (1/8)    | 6.350 (1/4)   | 1.588 (1/16) | 19.050 (3/4)                                    | 17.4                                   | 9 180                                  | 11 600   |
| 20.4 (0.80)                   | 31.750 (1 1/4) | 7.938 (5/16)   | 0.794 (1/32)   | 4.762 (3/16)   | 3.175 (1/8)    | 6.350 (1/4)   | 1.588 (1/16) | 21.828 (55/64)                                  | 27.7                                   | 14 200                                 | 16 000   |
| 20.4 (0.80)                   | 31.750 (1 1/4) | 7.938 (5/16)   | 0.794 (1/32)   | 4.762 (3/16)   | 3.175 (1/8)    | 6.350 (1/4)   | 1.588 (1/16) | 21.828 (55/64)                                  | 27.7                                   | 14 200                                 | 16 000   |
| 23.6 (0.93)                   | 38.100 (1 1/2) | 9.525 (3/8)    | 0.794 (1/32)   | 4.762 (3/16)   | 3.969 (5/32)   | 7.938 (3/8)   | 1.588 (1/16) | 26.196 (1 1/32)                                 | 55.7                                   | 18 600                                 | 24 300   |
| 23.6 (0.93)                   | 38.100 (1 1/2) | 9.525 (3/8)    | 0.794 (1/32)   | 4.762 (3/16)   | 3.969 (5/32)   | 7.938 (3/8)   | 1.588 (1/16) | 26.196 (1 1/32)                                 | 55.7                                   | 18 600                                 | 24 300   |
| 26.8 (1.06)                   | 44.450 (1 3/4) | 11.112 (7/16)  | 0.794 (1/32)   | 4.762 (3/16)   | 3.969 (5/32)   | 7.938 (3/8)   | 1.588 (1/16) | 32.543 (1 1/32)                                 | 100                                    | 25 100                                 | 38 200   |
| 26.8 (1.06)                   | 44.450 (1 3/4) | 11.112 (7/16)  | 0.794 (1/32)   | 4.762 (3/16)   | 3.969 (5/32)   | 7.938 (3/8)   | 1.588 (1/16) | 32.543 (1 1/32)                                 | 100                                    | 25 100                                 | 38 200   |
| 33.5 (1.32)                   | 50.800 (2)     | 12.700 (1/2)   | 0.794 (1/32)   | 4.762 (3/16)   | 4.762 (3/16)   | 11.112 (7/16) | 1.588 (1/16) | 37.306 (1 15/32)                                | 162                                    | 32 500                                 | 63 900   |
| 33.5 (1.32)                   | 50.800 (2)     | 12.700 (1/2)   | 0.794 (1/32)   | 4.762 (3/16)   | 4.762 (3/16)   | 11.112 (7/16) | 1.588 (1/16) | 37.306 (1 15/32)                                | 162                                    | 32 500                                 | 63 900   |

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**CAM FOLLOWERS**

Inch Series Cam Followers **With Cage/With Screwdriver Slot**

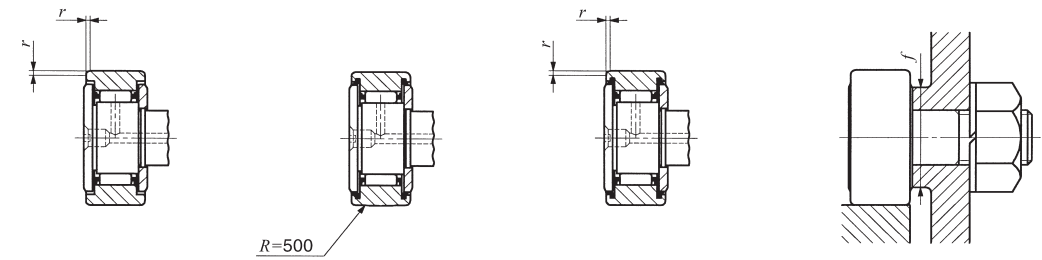


Stud dia. 4.826 – 22.225 mm

CR...R

| Stud dia.<br>mm<br>(inch) | Identification number      |                                |                            |                                | Mass<br>(Ref.)<br>g | Boundary dimensions |                |                |           |                |
|---------------------------|----------------------------|--------------------------------|----------------------------|--------------------------------|---------------------|---------------------|----------------|----------------|-----------|----------------|
|                           | Shield type                |                                | Sealed type                |                                |                     | D                   | C              | d <sub>1</sub> | G<br>UNF  | G <sub>1</sub> |
|                           | With crowned<br>outer ring | With cylindrical<br>outer ring | With crowned<br>outer ring | With cylindrical<br>outer ring |                     |                     |                |                |           |                |
| 4.826                     | CR 8 R                     | CR 8                           | CR 8 UUR                   | CR 8 UU                        | 9                   | 12.700 (1/2)        | 8.731 (11/32)  | 4.826          | No.10-32  | 6.350 (1/4)    |
|                           | CR 8-1 R                   | CR 8-1                         | CR 8-1 UUR                 | CR 8-1 UU                      | 10                  | 12.700 (1/2)        | 9.525 (3/8)    | 4.826          | No.10-32  | 6.350 (1/4)    |
| 6.350<br>(1/4)            | CR 10 R                    | CR 10                          | CR 10 UUR                  | CR 10 UU                       | 19                  | 15.875 (5/8)        | 10.319 (13/32) | 6.350 (1/4)    | 1/4 - 28  | 7.938 (5/16)   |
|                           | CR 10-1 R                  | CR 10-1                        | CR 10-1 UUR                | CR 10-1 UU                     | 21                  | 15.875 (5/8)        | 11.112 (7/16)  | 6.350 (1/4)    | 1/4 - 28  | 7.938 (5/16)   |
| 9.525<br>(3/8)            | CR 12 R                    | CR 12                          | CR 12 UUR                  | CR 12 UU                       | 35                  | 19.050 (3/4)        | 12.700 (1/2)   | 9.525 (3/8)    | 3/8 - 24  | 9.525 (3/8)    |
|                           | CR 14 R                    | CR 14                          | CR 14 UUR                  | CR 14 UU                       | 46                  | 22.225 (7/8)        | 12.700 (1/2)   | 9.525 (3/8)    | 3/8 - 24  | 9.525 (3/8)    |
| 11.112<br>(7/16)          | CR 16 R                    | CR 16                          | CR 16 UUR                  | CR 16 UU                       | 73                  | 25.400 (1 )         | 15.875 (5/8)   | 11.112 (7/16)  | 7/16 - 20 | 12.700 (1/2)   |
|                           | CR 18 R                    | CR 18                          | CR 18 UUR                  | CR 18 UU                       | 88                  | 28.575 (1 1/8)      | 15.875 (5/8)   | 11.112 (7/16)  | 7/16 - 20 | 12.700 (1/2)   |
| 12.700<br>(1/2)           | CR 20 R                    | CR 20                          | CR 20 UUR                  | CR 20 UU                       | 132                 | 31.750 (1 1/4)      | 19.050 (3/4)   | 12.700 (1/2)   | 1/2 - 20  | 15.875 (5/8)   |
|                           | CR 22 R                    | CR 22                          | CR 22 UUR                  | CR 22 UU                       | 157                 | 34.925 (1 3/8)      | 19.050 (3/4)   | 12.700 (1/2)   | 1/2 - 20  | 15.875 (5/8)   |
| 15.875<br>(5/8)           | CR 24 R                    | CR 24                          | CR 24 UUR                  | CR 24 UU                       | 225                 | 38.100 (1 1/2)      | 22.225 (7/8)   | 15.875 (5/8)   | 5/8 - 18  | 19.050 (3/4)   |
|                           | CR 26 R                    | CR 26                          | CR 26 UUR                  | CR 26 UU                       | 260                 | 41.275 (1 5/8)      | 22.225 (7/8)   | 15.875 (5/8)   | 5/8 - 18  | 19.050 (3/4)   |
| 19.050<br>(3/4)           | CR 28 R                    | CR 28                          | CR 28 UUR                  | CR 28 UU                       | 365                 | 44.450 (1 3/4)      | 25.400 (1 )    | 19.050 (3/4)   | 3/4 - 16  | 22.225 (7/8)   |
|                           | CR 30 R                    | CR 30                          | CR 30 UUR                  | CR 30 UU                       | 410                 | 47.625 (1 7/8)      | 25.400 (1 )    | 19.050 (3/4)   | 3/4 - 16  | 22.225 (7/8)   |
| 22.225<br>(7/8)           | CR 32 R                    | CR 32                          | CR 32 UUR                  | CR 32 UU                       | 615                 | 50.800 (2 )         | 31.750 (1 1/4) | 22.225 (7/8)   | 7/8 - 14  | 25.400 (1 )    |
|                           | CR 36 R                    | CR 36                          | CR 36 UUR                  | CR 36 UU                       | 750                 | 57.150 (2 1/4)      | 31.750 (1 1/4) | 22.225 (7/8)   | 7/8 - 14  | 25.400 (1 )    |

Remarks1. Models with a stud diameter  $d_1$  of 6.35 mm or less (marked \*) are provided with an oil hole on the stud head only. Other models are provided with one oil hole each on the head, outside surface and end surface of the stud.  
2. Provided with prepacked grease.



CR

CR...UUR

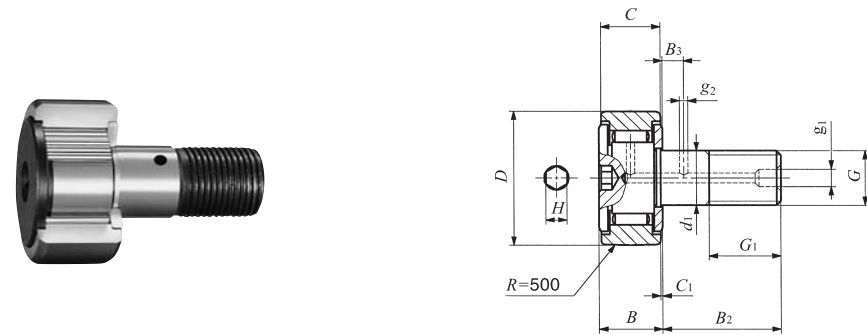
CR...UU

| Boundary dimensions mm(inch) |                |                |                |                |                |              | Mounting<br>dimension<br>f<br>Min.<br>mm(inch) | Maximum<br>tightening<br>torque<br>N-m | Basic dynamic<br>load rating<br>C<br>N | Basic static<br>load rating<br>C <sub>0</sub><br>N |
|------------------------------|----------------|----------------|----------------|----------------|----------------|--------------|--|--|--|--|
| B<br>max                     | B <sub>2</sub> | B <sub>3</sub> | C <sub>1</sub> | g <sub>1</sub> | g <sub>2</sub> | r            |  |  |  |  |
| 10.2(0.40)                   | 12.700 (1/2)   | — (—)          | 0.794 (1/32)   | *3.175 (1/8)   | — (—)          | 0.397 (1/64) | 8.334 (21/64)                                  | 1.4                                    | 2 520                                  | 2 140  |
| 10.9(0.43)                   | 15.875 (5/8)   | — (—)          | 0.794 (1/32)   | *3.175 (1/8)   | — (—)          | 0.397 (1/64) | 8.334 (21/64)                                  | 1.4                                    | 2 520                                  | 2 140  |
| 11.8(0.46)                   | 15.875 (5/8)   | — (—)          | 0.794 (1/32)   | *3.175 (1/8)   | — (—)          | 0.397 (1/64) | 11.509 (29/64)                                 | 3.4                                    | 3 650                                  | 3 670  |
| 12.5(0.49)                   | 19.050 (3/4)   | — (—)          | 0.794 (1/32)   | *3.175 (1/8)   | — (—)          | 0.397 (1/64) | 11.509 (29/64)                                 | 3.4                                    | 3 650                                  | 3 670  |
| 14.2(0.56)                   | 22.225 (7/8)   | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 2.381 (3/32)   | 0.794 (1/32) | 13.494 (17/32)                                 | 10.8                                   | 4 420                                  | 5 110  |
| 14.2(0.56)                   | 22.225 (7/8)   | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 2.381 (3/32)   | 0.794 (1/32) | 15.081 (19/32)                                 | 10.8                                   | 4 790                                  | 5 810  |
| 17.3(0.68)                   | 25.400 (1 )    | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 3.175 (1/8)    | 1.191 (3/64) | 17.859 (45/64)                                 | 17.4                                   | 8 810                                  | 10 800   |
| 17.3(0.68)                   | 25.400 (1 )    | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 3.175 (1/8)    | 1.588 (1/16) | 19.050 (3/4)                                   | 17.4                                   | 9 180                                  | 11 600   |
| 20.4(0.80)                   | 31.750 (1 1/4) | 7.938 (5/16)   | 0.794 (1/32)   | 4.762 (3/16)   | 3.175 (1/8)    | 1.588 (1/16) | 21.828 (55/64)                                 | 27.7                                   | 14 200                                 | 16 000   |
| 20.4(0.80)                   | 31.750 (1 1/4) | 7.938 (5/16)   | 0.794 (1/32)   | 4.762 (3/16)   | 3.175 (1/8)    | 1.588 (1/16) | 21.828 (55/64)                                 | 27.7                                   | 14 200                                 | 16 000   |
| 23.6(0.93)                   | 38.100 (1 1/2) | 9.525 (3/8)    | 0.794 (1/32)   | 4.762 (3/16)   | 3.969 (5/32)   | 1.588 (1/16) | 26.196 (1 3/64)                                | 55.7                                   | 18 600                                 | 24 300   |
| 23.6(0.93)                   | 38.100 (1 1/2) | 9.525 (3/8)    | 0.794 (1/32)   | 4.762 (3/16)   | 3.969 (5/32)   | 1.588 (1/16) | 26.196 (1 3/64)                                | 55.7                                   | 18 600                                 | 24 300   |
| 26.8(1.06)                   | 44.450 (1 3/4) | 11.112 (7/16)  | 0.794 (1/32)   | 4.762 (3/16)   | 3.969 (5/32)   | 1.588 (1/16) | 32.543 (1 3/32)                                | 100                                    | 25 100                                 | 38 200   |
| 26.8(1.06)                   | 44.450 (1 3/4) | 11.112 (7/16)  | 0.794 (1/32)   | 4.762 (3/16)   | 3.969 (5/32)   | 1.588 (1/16) | 32.543 (1 3/32)                                | 100                                    | 25 100                                 | 38 200   |
| 33.5(1.32)                   | 50.800 (2 )    | 12.700 (1/2)   | 0.794 (1/32)   | 4.762 (3/16)   | 4.762 (3/16)   | 1.588 (1/16) | 37.306 (1 15/32)                               | 162                                    | 32 500                                 | 63 900   |
| 33.5(1.32)                   | 50.800 (2 )    | 12.700 (1/2)   | 0.794 (1/32)   | 4.762 (3/16)   | 4.762 (3/16)   | 1.588 (1/16) | 37.306 (1 15/32)                               | 162                                    | 32 500                                 | 63 900   |

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CR

**CAM FOLLOWERS**

Inch Series Cam Followers **Full Complement Type/With Hexagon**

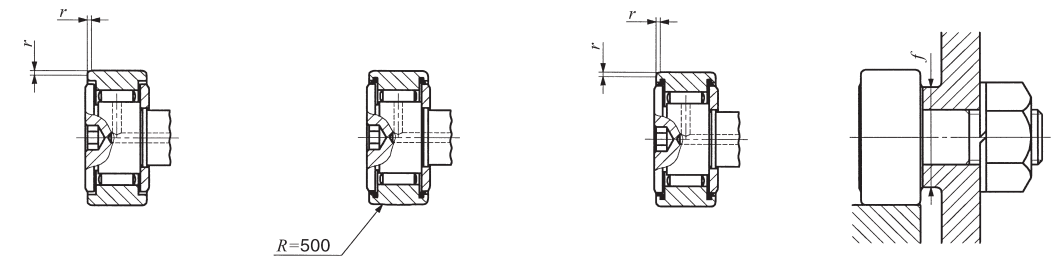


Stud dia. 4.826 – 22.225 mm

CR...VBR

| Stud dia.<br>mm<br>(inch) | Identification number   |                             |                         |                             | Mass<br>(Ref.)<br>g | Boundary dimensions mm (inch) |                |                |           |                |
|---------------------------|-------------------------|-----------------------------|-------------------------|-----------------------------|---------------------|-------------------------------|----------------|----------------|-----------|----------------|
|                           | Shield type             |                             | Sealed type             |                             |                     | D                             | C              | d <sub>1</sub> | G UNF     | G <sub>1</sub> |
|                           | With crowned outer ring | With cylindrical outer ring | With crowned outer ring | With cylindrical outer ring |                     |                               |                |                |           |                |
| 4.826                     | CR 8 VBR                | CR 8 VB                     | CR 8 VBUUR              | CR 8 VBUU                   | 9                   | 12.700 (1/2)                  | 8.731 (11/32)  | 4.826          | No.10-32  | 6.350 (1/4)    |
|                           | CR 8-1 VBR              | CR 8-1VB                    | CR 8-1 VBUUR            | CR 8-1 VBUU                 | 10                  | 12.700 (1/2)                  | 9.525 (3/8)    | 4.826          | No.10-32  | 6.350 (1/4)    |
| 6.350<br>(1/4)            | CR 10 VBR               | CR 10 VB                    | CR 10 VBUUR             | CR 10 VBUU                  | 19                  | 15.875 (5/8)                  | 10.319 (13/32) | 6.350 (1/4)    | 1/4 - 28  | 7.938 (5/16)   |
|                           | CR 10-1 VBR             | CR 10-1VB                   | CR 10-1 VBUUR           | CR 10-1 VBUU                | 21                  | 15.875 (5/8)                  | 11.112 (7/16)  | 6.350 (1/4)    | 1/4 - 28  | 7.938 (5/16)   |
| 9.525<br>(3/8)            | CR 12 VBR               | CR 12 VB                    | CR 12 VBUUR             | CR 12 VBUU                  | 36                  | 19.050 (3/4)                  | 12.700 (1/2)   | 9.525 (3/8)    | 3/8 - 24  | 9.525 (3/8)    |
|                           | CR 14 VBR               | CR 14 VB                    | CR 14 VBUUR             | CR 14 VBUU                  | 47                  | 22.225 (7/8)                  | 12.700 (1/2)   | 9.525 (3/8)    | 3/8 - 24  | 9.525 (3/8)    |
| 11.112<br>(7/16)          | CR 16 VBR               | CR 16 VB                    | CR 16 VBUUR             | CR 16 VBUU                  | 74                  | 25.400 (1 )                   | 15.875 (5/8)   | 11.112 (7/16)  | 7/16 - 20 | 12.700 (1/2)   |
|                           | CR 18 VBR               | CR 18 VB                    | CR 18 VBUUR             | CR 18 VBUU                  | 85                  | 28.575 (1 1/8)                | 15.875 (5/8)   | 11.112 (7/16)  | 7/16 - 20 | 12.700 (1/2)   |
| 12.700<br>(1/2)           | CR 20 VBR               | CR 20 VB                    | CR 20 VBUUR             | CR 20 VBUU                  | 137                 | 31.750 (1 1/4)                | 19.050 (3/4)   | 12.700 (1/2)   | 1/2 - 20  | 15.875 (5/8)   |
|                           | CR 22 VBR               | CR 22 VB                    | CR 22 VBUUR             | CR 22 VBUU                  | 160                 | 34.925 (1 3/8)                | 19.050 (3/4)   | 12.700 (1/2)   | 1/2 - 20  | 15.875 (5/8)   |
| 15.875<br>(5/8)           | CR 24 VBR               | CR 24 VB                    | CR 24 VBUUR             | CR 24 VBUU                  | 230                 | 38.100 (1 1/2)                | 22.225 (7/8)   | 15.875 (5/8)   | 5/8 - 18  | 19.050 (3/4)   |
|                           | CR 26 VBR               | CR 26 VB                    | CR 26 VBUUR             | CR 26 VBUU                  | 265                 | 41.275 (1 5/8)                | 22.225 (7/8)   | 15.875 (5/8)   | 5/8 - 18  | 19.050 (3/4)   |
| 19.050<br>(3/4)           | CR 28 VBR               | CR 28 VB                    | CR 28 VBUUR             | CR 28 VBUU                  | 372                 | 44.450 (1 3/4)                | 25.400 (1 )    | 19.050 (3/4)   | 3/4 - 16  | 22.225 (7/8)   |
|                           | CR 30 VBR               | CR 30 VB                    | CR 30 VBUUR             | CR 30 VBUU                  | 418                 | 47.625 (1 7/8)                | 25.400 (1 )    | 19.050 (3/4)   | 3/4 - 16  | 22.225 (7/8)   |
| 22.225<br>(7/8)           | CR 32 VBR               | CR 32 VB                    | CR 32 VBUUR             | CR 32 VBUU                  | 627                 | 50.800 (2 )                   | 31.750 (1 1/4) | 22.225 (7/8)   | 7/8 - 14  | 25.400 (1 )    |
|                           | CR 36 VBR               | CR 36 VB                    | CR 36 VBUUR             | CR 36 VBUU                  | 759                 | 57.150 (2 1/4)                | 31.750 (1 1/4) | 22.225 (7/8)   | 7/8 - 14  | 25.400 (1 )    |

Remarks1. Models with a stud diameter d<sub>1</sub> of 6.35 mm or less have no oil hole. Other models are provided with one oil hole each on the outside surface and end surface of the stud.  
2. Provided with prepacked grease.



CR...VB

CR...VBUUR

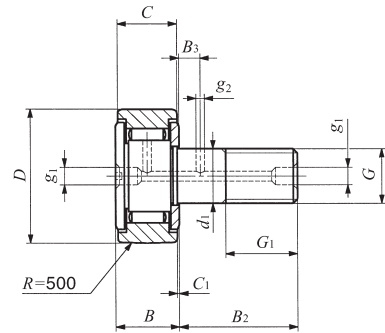
CR...VBUU

| Boundary dimensions mm (inch) |                |                |                |                |                |               |              | Mounting dimension<br>f<br>Min.<br>mm (inch) | Maximum tightening torque<br>N-m | Basic dynamic load rating<br>C<br>N | Basic static load rating<br>C <sub>0</sub><br>N |
|-------------------------------|----------------|----------------|----------------|----------------|----------------|---------------|--------------|--|----------------------------------|-------------------------------------|---|
| B max                         | B <sub>2</sub> | B <sub>3</sub> | C <sub>1</sub> | g <sub>1</sub> | g <sub>2</sub> | H             | r            |  |                                  |                                     |   |
| 10.2 (0.40)                   | 12.700 (1/2)   | — (—)          | 0.794 (1/32)   | — (—)          | — (—)          | 3.175 (1/8)   | 0.397 (1/64) | 8.334 (21/64)                                | 1.4                              | 4 260                               | 4 750   |
| 10.9 (0.43)                   | 15.875 (5/8)   | — (—)          | 0.794 (1/32)   | — (—)          | — (—)          | 3.175 (1/8)   | 0.397 (1/64) | 8.334 (21/64)                                | 1.4                              | 4 710                               | 5 410   |
| 11.8 (0.46)                   | 15.875 (5/8)   | — (—)          | 0.794 (1/32)   | — (—)          | — (—)          | 3.175 (1/8)   | 0.397 (1/64) | 11.509 (29/64)                               | 3.4                              | 5 830                               | 7 660   |
| 12.5 (0.49)                   | 19.050 (3/4)   | — (—)          | 0.794 (1/32)   | — (—)          | — (—)          | 3.175 (1/8)   | 0.397 (1/64) | 11.509 (29/64)                               | 3.4                              | 6 340                               | 8 530   |
| 14.2 (0.56)                   | 22.225 (7/8)   | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 2.381 (3/32)   | 4.762 (3/16)  | 0.794 (1/32) | 13.494 (17/32)                               | 10.8                             | 8 710                               | 12 300  |
| 14.2 (0.56)                   | 22.225 (7/8)   | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 2.381 (3/32)   | 4.762 (3/16)  | 0.794 (1/32) | 15.081 (19/32)                               | 10.8                             | 8 710                               | 12 300  |
| 17.3 (0.68)                   | 25.400 (1 )    | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 3.175 (1/8)    | 6.350 (1/4)   | 1.191 (3/64) | 17.859 (45/64)                               | 17.4                             | 13 100                              | 22 700  |
| 17.3 (0.68)                   | 25.400 (1 )    | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 3.175 (1/8)    | 6.350 (1/4)   | 1.588 (1/16) | 19.050 (3/4)                                 | 17.4                             | 13 100                              | 22 700  |
| 20.4 (0.80)                   | 31.750 (1 1/4) | 7.938 (5/16)   | 0.794 (1/32)   | 4.762 (3/16)   | 3.175 (1/8)    | 6.350 (1/4)   | 1.588 (1/16) | 21.828 (55/64)                               | 27.7                             | 23 600                              | 31 700  |
| 20.4 (0.80)                   | 31.750 (1 1/4) | 7.938 (5/16)   | 0.794 (1/32)   | 4.762 (3/16)   | 3.175 (1/8)    | 6.350 (1/4)   | 1.588 (1/16) | 21.828 (55/64)                               | 27.7                             | 23 600                              | 31 700  |
| 23.6 (0.93)                   | 38.100 (1 1/2) | 9.525 (3/8)    | 0.794 (1/32)   | 4.762 (3/16)   | 3.969 (5/32)   | 7.938 (5/16)  | 1.588 (1/16) | 26.196 (1 3/64)                              | 55.7                             | 28 200                              | 40 100  |
| 23.6 (0.93)                   | 38.100 (1 1/2) | 9.525 (3/8)    | 0.794 (1/32)   | 4.762 (3/16)   | 3.969 (5/32)   | 7.938 (5/16)  | 1.588 (1/16) | 26.196 (1 3/64)                              | 55.7                             | 28 200                              | 40 100  |
| 26.8 (1.06)                   | 44.450 (1 3/4) | 11.112 (7/16)  | 0.794 (1/32)   | 4.762 (3/16)   | 3.969 (5/32)   | 7.938 (5/16)  | 1.588 (1/16) | 32.543 (1 3/32)                              | 100                              | 35 300                              | 55 600  |
| 26.8 (1.06)                   | 44.450 (1 3/4) | 11.112 (7/16)  | 0.794 (1/32)   | 4.762 (3/16)   | 3.969 (5/32)   | 7.938 (5/16)  | 1.588 (1/16) | 32.543 (1 3/32)                              | 100                              | 35 300                              | 55 600  |
| 33.5 (1.32)                   | 50.800 (2 )    | 12.700 (1/2)   | 0.794 (1/32)   | 4.762 (3/16)   | 4.762 (3/16)   | 11.112 (7/16) | 1.588 (1/16) | 37.306 (1 15/32)                             | 162                              | 45 700                              | 80 600  |
| 33.5 (1.32)                   | 50.800 (2 )    | 12.700 (1/2)   | 0.794 (1/32)   | 4.762 (3/16)   | 4.762 (3/16)   | 11.112 (7/16) | 1.588 (1/16) | 37.306 (1 15/32)                             | 162                              | 45 700                              | 80 600  |

CF  
NUCF  
CFS  
CR

CAM FOLLOWERS

Inch Series Cam Followers Full Complement Type/With Screwdriver Slot

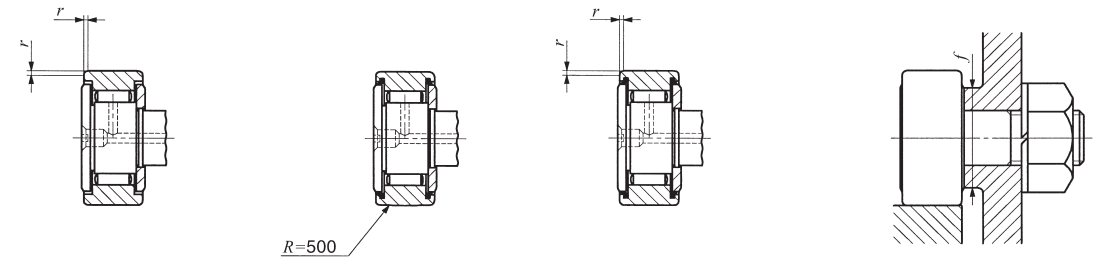


Stud dia. 4.826 – 31.750mm

CR...VR

| Stud dia.<br>mm<br>(inch) | Identification number      |                                |                            |                                | Mass<br>(Ref.)<br>g | Boundary dimensions mm (inch) |                |                |            |                |
|---------------------------|----------------------------|--------------------------------|----------------------------|--------------------------------|---------------------|-------------------------------|----------------|----------------|------------|----------------|
|                           | Shield type                |                                | Sealed type                |                                |                     | D                             | C              | d <sub>1</sub> | G<br>UNF   | G <sub>1</sub> |
|                           | With crowned<br>outer ring | With cylindrical<br>outer ring | With crowned<br>outer ring | With cylindrical<br>outer ring |                     |                               |                |                |            |                |
| 4.826                     | CR 8 VR                    | CR 8 V                         | CR 8 VUUR                  | CR 8 VUU                       | 9                   | 12.700 (1/2)                  | 8.731 (11/32)  | 4.826          | No.10-32   | 6.350 (1/4)    |
|                           | CR 8-1 VR                  | CR 8-1 V                       | CR 8-1 VUUR                | CR 8-1 VUU                     | 10                  | 12.700 (1/2)                  | 9.525 (3/8)    | 4.826          | No.10-32   | 6.350 (1/4)    |
| 6.350<br>(1/4)            | CR 10 VR                   | CR 10 V                        | CR 10 VUUR                 | CR 10 VUU                      | 19                  | 15.875 (5/8)                  | 10.319 (13/32) | 6.350 (1/4)    | 1/4 - 28   | 7.938 (5/16)   |
|                           | CR 10-1 VR                 | CR 10-1 V                      | CR 10-1 VUUR               | CR 10-1 VUU                    | 21                  | 15.875 (5/8)                  | 11.112 (7/16)  | 6.350 (1/4)    | 1/4 - 28   | 7.938 (5/16)   |
| 9.525<br>(3/8)            | CR 12 VR                   | CR 12 V                        | CR 12 VUUR                 | CR 12 VUU                      | 36                  | 19.050 (3/4)                  | 12.700 (1/2)   | 9.525 (3/8)    | 3/8 - 24   | 9.525 (3/8)    |
|                           | CR 14 VR                   | CR 14 V                        | CR 14 VUUR                 | CR 14 VUU                      | 47                  | 22.225 (7/8)                  | 12.700 (1/2)   | 9.525 (3/8)    | 3/8 - 24   | 9.525 (3/8)    |
| 11.112<br>(7/16)          | CR 16 VR                   | CR 16 V                        | CR 16 VUUR                 | CR 16 VUU                      | 74                  | 25.400 (1)                    | 15.875 (5/8)   | 11.112 (7/16)  | 7/16 - 20  | 12.700 (1/2)   |
|                           | CR 18 VR                   | CR 18 V                        | CR 18 VUUR                 | CR 18 VUU                      | 85                  | 28.575 (1 1/8)                | 15.875 (5/8)   | 11.112 (7/16)  | 7/16 - 20  | 12.700 (1/2)   |
| 12.700<br>(1/2)           | CR 20 VR                   | CR 20 V                        | CR 20 VUUR                 | CR 20 VUU                      | 137                 | 31.750 (1 1/4)                | 19.050 (3/4)   | 12.700 (1/2)   | 1/2 - 20   | 15.875 (5/8)   |
|                           | CR 22 VR                   | CR 22 V                        | CR 22 VUUR                 | CR 22 VUU                      | 160                 | 34.925 (1 3/8)                | 19.050 (3/4)   | 12.700 (1/2)   | 1/2 - 20   | 15.875 (5/8)   |
| 15.875<br>(5/8)           | CR 24 VR                   | CR 24 V                        | CR 24 VUUR                 | CR 24 VUU                      | 230                 | 38.100 (1 1/2)                | 22.225 (7/8)   | 15.875 (5/8)   | 5/8 - 18   | 19.050 (3/4)   |
|                           | CR 26 VR                   | CR 26 V                        | CR 26 VUUR                 | CR 26 VUU                      | 265                 | 41.275 (1 5/8)                | 22.225 (7/8)   | 15.875 (5/8)   | 5/8 - 18   | 19.050 (3/4)   |
| 19.050<br>(3/4)           | CR 28 VR                   | CR 28 V                        | CR 28 VUUR                 | CR 28 VUU                      | 372                 | 44.450 (1 3/4)                | 25.400 (1)     | 19.050 (3/4)   | 3/4 - 16   | 22.225 (7/8)   |
|                           | CR 30 VR                   | CR 30 V                        | CR 30 VUUR                 | CR 30 VUU                      | 418                 | 47.625 (1 7/8)                | 25.400 (1)     | 19.050 (3/4)   | 3/4 - 16   | 22.225 (7/8)   |
| 22.225<br>(7/8)           | CR 32 VR                   | CR 32 V                        | CR 32 VUUR                 | CR 32 VUU                      | 627                 | 50.800 (2)                    | 31.750 (1 1/4) | 22.225 (7/8)   | 7/8 - 14   | 25.400 (1)     |
|                           | CR 36 VR                   | CR 36 V                        | CR 36 VUUR                 | CR 36 VUU                      | 759                 | 57.150 (2 1/4)                | 31.750 (1 1/4) | 22.225 (7/8)   | 7/8 - 14   | 25.400 (1)     |
| 31.750<br>(1 1/4)         | —                          | —                              | —                          | CR 48 VUU                      | 1960                | 76.200 (3)                    | 44.450 (1 3/4) | 31.750 (1 1/4) | 1 1/4 - 12 | 31.750 (1 1/4) |

Remarks1. Models with a stud diameter d<sub>1</sub> of 6.35 mm or less (marked \*) are provided with an oil hole on the stud head only. Other models are provided with one oil hole each on the head, outside surface and end surface of the stud.  
2. Provided with prepacked grease.



CR...V

CR...VUUR

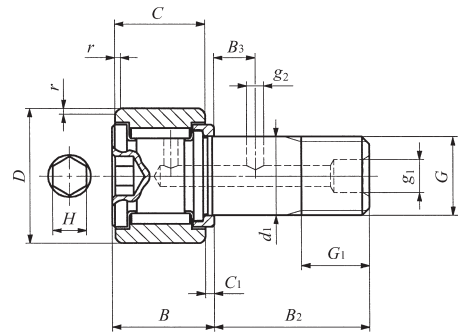
CR...VUU

| Boundary dimensions mm (inch) |                |                |                |                |                |              | Mounting<br>dimension<br>f<br>Min.<br>mm (inch) | Maximum<br>tightening<br>torque<br>N-m | Basic dynamic<br>load rating<br>C<br>N | Basic static<br>load rating<br>C <sub>0</sub><br>N |
|-------------------------------|----------------|----------------|----------------|----------------|----------------|--------------|---|--|--|--|
| B<br>max                      | B <sub>2</sub> | B <sub>3</sub> | C <sub>1</sub> | g <sub>1</sub> | g <sub>2</sub> | r            |   |  |  |  |
| 10.2 (0.40)                   | 12.700 (1/2)   | — (—)          | 0.794 (1/32)   | *3.175 (1/8)   | — (—)          | 0.397 (1/64) | 8.334 (21/64)                                   | 1.4                                    | 4 260                                  | 4 750  |
| 10.9 (0.43)                   | 15.875 (5/8)   | — (—)          | 0.794 (1/32)   | *3.175 (1/8)   | — (—)          | 0.397 (1/64) | 8.334 (21/64)                                   | 1.4                                    | 4 710                                  | 5 410  |
| 11.8 (0.46)                   | 15.875 (5/8)   | — (—)          | 0.794 (1/32)   | *3.175 (1/8)   | — (—)          | 0.397 (1/64) | 11.509 (29/64)                                  | 3.4                                    | 5 830                                  | 7 660  |
| 12.5 (0.49)                   | 19.050 (3/4)   | — (—)          | 0.794 (1/32)   | *3.175 (1/8)   | — (—)          | 0.397 (1/64) | 11.509 (29/64)                                  | 3.4                                    | 6 340                                  | 8 530  |
| 14.2 (0.56)                   | 22.225 (7/8)   | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 2.381 (3/32)   | 0.794 (1/32) | 13.494 (17/32)                                  | 10.8                                   | 8 710                                  | 12 300   |
| 14.2 (0.56)                   | 22.225 (7/8)   | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 2.381 (3/32)   | 0.794 (1/32) | 15.081 (19/32)                                  | 10.8                                   | 8 710                                  | 12 300   |
| 17.3 (0.68)                   | 25.400 (1)     | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 3.175 (1/8)    | 1.191 (3/64) | 17.859 (45/64)                                  | 17.4                                   | 13 100                                 | 22 700   |
| 17.3 (0.68)                   | 25.400 (1)     | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 3.175 (1/8)    | 1.588 (1/16) | 19.050 (3/4)                                    | 17.4                                   | 13 100                                 | 22 700   |
| 20.4 (0.80)                   | 31.750 (1 1/4) | 7.938 (5/16)   | 0.794 (1/32)   | 4.762 (3/16)   | 3.175 (1/8)    | 1.588 (1/16) | 21.828 (55/64)                                  | 27.7                                   | 23 600                                 | 31 700   |
| 20.4 (0.80)                   | 31.750 (1 1/4) | 7.938 (5/16)   | 0.794 (1/32)   | 4.762 (3/16)   | 3.175 (1/8)    | 1.588 (1/16) | 21.828 (55/64)                                  | 27.7                                   | 23 600                                 | 31 700   |
| 23.6 (0.93)                   | 38.100 (1 1/2) | 9.525 (3/8)    | 0.794 (1/32)   | 4.762 (3/16)   | 3.969 (5/32)   | 1.588 (1/16) | 26.196 (1 1/16)                                 | 55.7                                   | 28 200                                 | 40 100   |
| 23.6 (0.93)                   | 38.100 (1 1/2) | 9.525 (3/8)    | 0.794 (1/32)   | 4.762 (3/16)   | 3.969 (5/32)   | 1.588 (1/16) | 26.196 (1 1/16)                                 | 55.7                                   | 28 200                                 | 40 100   |
| 26.8 (1.06)                   | 44.450 (1 3/4) | 11.112 (7/16)  | 0.794 (1/32)   | 4.762 (3/16)   | 3.969 (5/32)   | 1.588 (1/16) | 32.543 (1 1/32)                                 | 100                                    | 35 300                                 | 55 600   |
| 26.8 (1.06)                   | 44.450 (1 3/4) | 11.112 (7/16)  | 0.794 (1/32)   | 4.762 (3/16)   | 3.969 (5/32)   | 1.588 (1/16) | 32.543 (1 1/32)                                 | 100                                    | 35 300                                 | 55 600   |
| 33.5 (1.32)                   | 50.800 (2)     | 12.700 (1/2)   | 0.794 (1/32)   | 4.762 (3/16)   | 4.762 (3/16)   | 1.588 (1/16) | 37.306 (1 15/32)                                | 162                                    | 45 700                                 | 80 600   |
| 33.5 (1.32)                   | 50.800 (2)     | 12.700 (1/2)   | 0.794 (1/32)   | 4.762 (3/16)   | 4.762 (3/16)   | 1.588 (1/16) | 37.306 (1 15/32)                                | 162                                    | 45 700                                 | 80 600   |
| 46.4 (1.83)                   | 63.500 (2 1/2) | 15.875 (5/8)   | 1.588 (1/16)   | 6.350 (1/4)    | 4.762 (3/16)   | 2.381 (3/32) | 51.991 (2 3/64)                                 | 500                                    | 77 600                                 | 172 000  |

CF  
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CAM FOLLOWERS

Inch Series Cam Followers Full Complement Type/With Hexagon

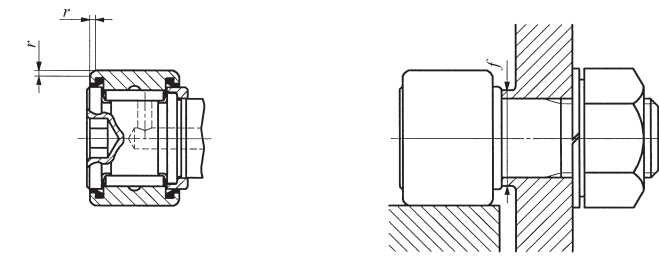


Stud dia. 6.350 – 50.800mm

CRH...VB

| Stud dia.<br>mm<br>(inch) | Identification number |               | Mass<br>(Ref.)<br>g | Boundary dimensions mm(inch) |                |                |               |                |            |
|---------------------------|-----------------------|---------------|---------------------|------------------------------|----------------|----------------|---------------|----------------|------------|
|                           | Shield type           | Sealed type   |                     | D                            | C              | d <sub>1</sub> | G<br>UNF      | G <sub>1</sub> | B<br>max   |
| 6.350<br>(1/4)            | CRH 8-1 VB            | CRH 8-1 VBUU  | 12                  | 12.700 (1/2)                 | 9.525 (3/8)    | 6.350 (1/4)    | 1/4 - 28      | 6.350 (1/4)    | 11.1(0.44) |
|                           | CRH 9 VB              | CRH 9 VBUU    | 15                  | 14.228 (9/16)                | 9.525 (3/8)    | 6.350 (1/4)    | 1/4 - 28      | 6.350 (1/4)    | 11.1(0.44) |
| 7.938<br>(5/16)           | CRH 10-1 VB           | CRH 10-1 VBUU | 23                  | 15.875 (5/8)                 | 11.112 (7/16)  | 7.938 (5/16)   | 5/16 - 24     | 7.938 (5/16)   | 12.8(0.50) |
|                           | CRH 11 VB             | CRH 11 VBUU   | 27                  | 17.462 (11/16)               | 11.112 (7/16)  | 7.938 (5/16)   | 5/16 - 24     | 7.938 (5/16)   | 12.8(0.50) |
| 11.112<br>(7/16)          | CRH 12 VB             | CRH 12 VBUU   | 39                  | 19.050 (3/4)                 | 12.700 (1/2)   | 11.112 (7/16)  | 7/16 - 20     | 9.525 (3/8)    | 14.6(0.57) |
|                           | CRH 14 VB             | CRH 14 VBUU   | 49                  | 22.225 (7/8)                 | 12.700 (1/2)   | 11.112 (7/16)  | 7/16 - 20     | 9.525 (3/8)    | 14.6(0.57) |
| 15.875<br>(5/8)           | CRH 16 VB             | CRH 16 VBUU   | 93                  | 25.400 (1)                   | 15.875 (5/8)   | 15.875 (5/8)   | 5/8 - 18      | 12.700 (1/2)   | 17.9(0.70) |
|                           | CRH 18 VB             | CRH 18 VBUU   | 109                 | 28.575 (1 1/8)               | 15.875 (5/8)   | 15.875 (5/8)   | 5/8 - 18      | 12.700 (1/2)   | 17.9(0.70) |
| 19.050<br>(3/4)           | CRH 20 VB             | CRH 20 VBUU   | 176                 | 31.750 (1 1/4)               | 19.050 (3/4)   | 19.050 (3/4)   | 3/4 - 16      | 15.875 (5/8)   | 21.0(0.83) |
|                           | CRH 22 VB             | CRH 22 VBUU   | 200                 | 34.925 (1 3/8)               | 19.050 (3/4)   | 19.050 (3/4)   | 3/4 - 16      | 15.875 (5/8)   | 21.0(0.83) |
| 22.225<br>(7/8)           | CRH 24 VB             | CRH 24 VBUU   | 296                 | 38.100 (1 1/2)               | 22.225 (7/8)   | 22.225 (7/8)   | 7/8 - 14      | 19.050 (3/4)   | 24.3(0.96) |
|                           | CRH 26 VB             | CRH 26 VBUU   | 329                 | 41.275 (1 5/8)               | 22.225 (7/8)   | 22.225 (7/8)   | 7/8 - 14      | 19.050 (3/4)   | 24.3(0.96) |
| 25.400<br>(1)             | CRH 28 VB             | CRH 28 VBUU   | 463                 | 44.450 (1 3/4)               | 25.400 (1)     | 25.400 (1)     | 1 - 14 UNS    | 22.225 (7/8)   | 27.4(1.08) |
|                           | CRH 30 VB             | CRH 30 VBUU   | 508                 | 47.625 (1 7/8)               | 25.400 (1)     | 25.400 (1)     | 1 - 14 UNS    | 22.225 (7/8)   | 27.4(1.08) |
| 28.575<br>(1 1/8)         | CRH 32 VB             | CRH 32 VBUU   | 722                 | 50.800 (2)                   | 31.750 (1 1/4) | 28.575 (1 1/8) | 1 1/8 - 12    | 25.400 (1)     | 34.2(1.35) |
|                           | CRH 36 VB             | CRH 36 VBUU   | 858                 | 57.150 (2 1/4)               | 31.750 (1 1/4) | 28.575 (1 1/8) | 1 1/8 - 12    | 25.400 (1)     | 34.2(1.35) |
| 31.750<br>(1 1/4)         | CRH 40 VB             | CRH 40 VBUU   | 1 260               | 63.500 (2 1/2)               | 38.100 (1 1/2) | 31.750 (1 1/4) | 1 1/4 - 12    | 28.575 (1 1/8) | 40.0(1.57) |
|                           | CRH 44 VB             | CRH 44 VBUU   | 1 460               | 69.850 (2 3/4)               | 38.100 (1 1/2) | 31.750 (1 1/4) | 1 1/4 - 12    | 28.575 (1 1/8) | 40.0(1.57) |
| 38.100<br>(1 1/2)         | CRH 48 VB             | CRH 48 VBUU   | 2 100               | 76.200 (3)                   | 44.450 (1 3/4) | 38.100 (1 1/2) | 1 1/2 - 12    | 31.750 (1 1/4) | 46.4(1.83) |
|                           | CRH 52 VB             | CRH 52 VBUU   | 2 380               | 82.550 (3 1/4)               | 44.450 (1 3/4) | 38.100 (1 1/2) | 1 1/2 - 12    | 31.750 (1 1/4) | 46.4(1.83) |
| 44.450<br>(1 3/4)         | CRH 56 VB             | CRH 56 VBUU   | 3 240               | 88.900 (3 1/2)               | 50.800 (2)     | 44.450 (1 3/4) | 1 3/4 - 12 UN | 34.925 (1 3/8) | 52.8(2.08) |
| 50.800<br>(2)             | CRH 64 VB             | CRH 64 VBUU   | 4 960               | 101.600 (4)                  | 57.150 (2 1/4) | 50.800 (2)     | 2 - 12 UN     | 38.100 (1 1/2) | 59.4(2.34) |

Remarks1. Models with a stud diameter  $d_1$  of 7.938 mm or less have no oil hole. Other models are provided with one oil hole each on the outside surface and end surface of the stud.  
2. Provided with prepacked grease.



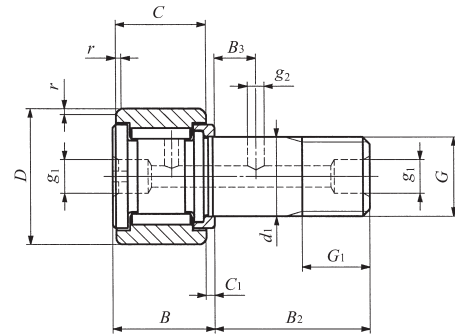
CRH...VBUU

| Boundary dimensions mm(inch) |                |                |                |                |               |              | Mounting dimension<br>f<br>Min.<br>mm(inch) | Maximum tightening torque<br>N-m | Basic dynamic load rating<br>C<br>N | Basic static load rating<br>C <sub>0</sub><br>N |
|------------------------------|----------------|----------------|----------------|----------------|---------------|--------------|---|----------------------------------|-------------------------------------|---|
| B <sub>2</sub>               | B <sub>3</sub> | C <sub>1</sub> | g <sub>1</sub> | g <sub>2</sub> | H             | r            |   |                                  |                                     |   |
| 15.875 (5/8)                 | — (—)          | 0.794 (1/32)   | — (—)          | — (—)          | 3.175 (1/8)   | 0.397 (1/64) | 8.334 (1/4)                                 | 3.4                              | 4 710                               | 5 410   |
| 15.875 (5/8)                 | — (—)          | 0.794 (1/32)   | — (—)          | — (—)          | 3.175 (1/8)   | 0.397 (1/64) | 8.334 (1/4)                                 | 3.4                              | 4 710                               | 5 410   |
| 19.050 (3/4)                 | — (—)          | 0.794 (1/32)   | — (—)          | — (—)          | 3.175 (1/8)   | 0.397 (1/64) | 11.112 (7/16)                               | 6.8                              | 6 340                               | 8 530   |
| 19.050 (3/4)                 | — (—)          | 0.794 (1/32)   | — (—)          | — (—)          | 3.175 (1/8)   | 0.397 (1/64) | 11.112 (7/16)                               | 6.8                              | 6 340                               | 8 530   |
| 22.225 (7/8)                 | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 2.381 (3/32)   | 4.762 (3/16)  | 0.794 (1/32) | 13.494 (11/32)                              | 17.6                             | 8 710                               | 12 300  |
| 22.225 (7/8)                 | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 2.381 (3/32)   | 4.762 (3/16)  | 0.794 (1/32) | 13.494 (11/32)                              | 17.6                             | 8 710                               | 12 300  |
| 25.400 (1)                   | 6.350 (1/4)    | 1.588 (1/16)   | 4.762 (3/16)   | 2.381 (3/32)   | 6.350 (1/4)   | 1.191 (1/64) | 18.256 (3/4)                                | 57.8                             | 13 100                              | 22 700  |
| 25.400 (1)                   | 6.350 (1/4)    | 1.588 (1/16)   | 4.762 (3/16)   | 2.381 (3/32)   | 6.350 (1/4)   | 1.588 (1/16) | 18.256 (3/4)                                | 57.8                             | 13 100                              | 22 700  |
| 31.750 (1 1/4)               | 7.938 (5/16)   | 1.588 (1/16)   | 4.762 (3/16)   | 2.381 (3/32)   | 6.350 (1/4)   | 1.588 (1/16) | 24.209 (9/16)                               | 103                              | 23 600                              | 31 700  |
| 31.750 (1 1/4)               | 7.938 (5/16)   | 1.588 (1/16)   | 4.762 (3/16)   | 2.381 (3/32)   | 6.350 (1/4)   | 1.588 (1/16) | 24.209 (9/16)                               | 103                              | 23 600                              | 31 700  |
| 38.100 (1 1/2)               | 9.525 (3/8)    | 1.588 (1/16)   | 4.762 (3/16)   | 2.381 (3/32)   | 7.938 (5/16)  | 1.588 (1/16) | 26.988 (1 1/16)                             | 162                              | 28 200                              | 40 100  |
| 38.100 (1 1/2)               | 9.525 (3/8)    | 1.588 (1/16)   | 4.762 (3/16)   | 2.381 (3/32)   | 7.938 (5/16)  | 1.588 (1/16) | 26.988 (1 1/16)                             | 162                              | 28 200                              | 40 100  |
| 44.450 (1 3/4)               | 11.112 (7/16)  | 1.588 (1/16)   | 4.762 (3/16)   | 2.381 (3/32)   | 7.938 (5/16)  | 1.588 (1/16) | 32.941 (1 1/8)                              | 258                              | 35 300                              | 55 600  |
| 44.450 (1 3/4)               | 11.112 (7/16)  | 1.588 (1/16)   | 4.762 (3/16)   | 2.381 (3/32)   | 7.938 (5/16)  | 1.588 (1/16) | 32.941 (1 1/8)                              | 258                              | 35 300                              | 55 600  |
| 50.800 (2)                   | 12.700 (1/2)   | 1.588 (1/16)   | 4.762 (3/16)   | 3.175 (1/8)    | 11.112 (7/16) | 1.588 (1/16) | 37.306 (1 13/32)                            | 356                              | 45 700                              | 80 600  |
| 50.800 (2)                   | 12.700 (1/2)   | 1.588 (1/16)   | 4.762 (3/16)   | 3.175 (1/8)    | 11.112 (7/16) | 1.588 (1/16) | 37.306 (1 13/32)                            | 356                              | 45 700                              | 80 600  |
| 57.150 (2 1/4)               | 14.288 (9/16)  | 1.588 (1/16)   | 4.762 (3/16)   | 3.175 (1/8)    | 12.700 (1/2)  | 2.381 (3/32) | 40.878 (1 31/64)                            | 500                              | 61 400                              | 116 000   |
| 57.150 (2 1/4)               | 14.288 (9/16)  | 1.588 (1/16)   | 4.762 (3/16)   | 3.175 (1/8)    | 12.700 (1/2)  | 2.381 (3/32) | 40.878 (1 31/64)                            | 500                              | 61 400                              | 116 000   |
| 63.500 (2 1/2)               | 15.875 (5/8)   | 1.588 (1/16)   | 6.350 (1/4)    | 3.175 (1/8)    | 19.050 (3/4)  | 2.381 (3/32) | 51.991 (2 3/16)                             | 892                              | 77 600                              | 172 000   |
| 63.500 (2 1/2)               | 15.875 (5/8)   | 1.588 (1/16)   | 6.350 (1/4)    | 3.175 (1/8)    | 19.050 (3/4)  | 2.381 (3/32) | 51.991 (2 3/16)                             | 892                              | 77 600                              | 172 000   |
| 69.850 (2 3/4)               | 17.462 (11/16) | 1.588 (1/16)   | 6.350 (1/4)    | 3.175 (1/8)    | 19.050 (3/4)  | 2.381 (3/32) | 59.928 (2 3/8)                              | 1 450                            | 111 000                             | 239 000   |
| 88.900 (3 1/2)               | 19.050 (3/4)   | 1.588 (1/16)   | 6.350 (1/4)    | 3.175 (1/8)    | 19.050 (3/4)  | 2.381 (3/32) | 64.691 (2 5/8)                              | 2 190                            | 142 000                             | 317 000   |

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CAM FOLLOWERS

Inch Series Cam Followers Full Complement Type/With Screwdriver Slot

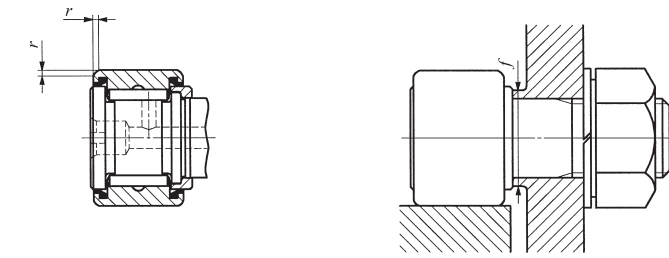


Stud dia. 6.350 – 50.800mm

CRH...V

| Stud dia.<br>mm<br>(inch) | Identification number |              | Mass<br>(Ref.)<br>g | Boundary dimensions mm(inch) |                |                |               |                |             |
|---------------------------|-----------------------|--------------|---------------------|------------------------------|----------------|----------------|---------------|----------------|-------------|
|                           | Shield type           | Sealed type  |                     | D                            | C              | d <sub>1</sub> | G<br>UNF      | G <sub>1</sub> | B<br>max    |
| 6.350<br>(1/4)            | CRH 8-1 V             | CRH 8-1 VUU  | 12                  | 12.700 (1/2)                 | 9.525 (3/8)    | 6.350 (1/4)    | 1/4 - 28      | 6.350 (1/4)    | 11.1 (0.44) |
|                           | CRH 9 V               | CRH 9 VUU    | 15                  | 14.228 (9/16)                | 9.525 (3/8)    | 6.350 (1/4)    | 1/4 - 28      | 6.350 (1/4)    | 11.1 (0.44) |
| 7.938<br>(5/16)           | CRH 10-1 V            | CRH 10-1 VUU | 23                  | 15.875 (5/8)                 | 11.112 (7/16)  | 7.938 (5/16)   | 5/16 - 24     | 7.938 (5/16)   | 12.8 (0.50) |
|                           | CRH 11 V              | CRH 11 VUU   | 27                  | 17.462 (11/16)               | 11.112 (7/16)  | 7.938 (5/16)   | 5/16 - 24     | 7.938 (5/16)   | 12.8 (0.50) |
| 11.112<br>(7/16)          | CRH 12 V              | CRH 12 VUU   | 39                  | 19.050 (3/4)                 | 12.700 (1/2)   | 11.112 (7/16)  | 7/16 - 20     | 9.525 (3/8)    | 14.6 (0.57) |
|                           | CRH 14 V              | CRH 14 VUU   | 49                  | 22.225 (7/8)                 | 12.700 (1/2)   | 11.112 (7/16)  | 7/16 - 20     | 9.525 (3/8)    | 14.6 (0.57) |
| 15.875<br>(5/8)           | CRH 16 V              | CRH 16 VUU   | 93                  | 25.400 (1)                   | 15.875 (5/8)   | 15.875 (5/8)   | 5/8 - 18      | 12.700 (1/2)   | 17.9 (0.70) |
|                           | CRH 18 V              | CRH 18 VUU   | 109                 | 28.575 (1 1/8)               | 15.875 (5/8)   | 15.875 (5/8)   | 5/8 - 18      | 12.700 (1/2)   | 17.9 (0.70) |
| 19.050<br>(3/4)           | CRH 20 V              | CRH 20 VUU   | 176                 | 31.750 (1 1/4)               | 19.050 (3/4)   | 19.050 (3/4)   | 3/4 - 16      | 15.875 (5/8)   | 21.0 (0.83) |
|                           | CRH 22 V              | CRH 22 VUU   | 200                 | 34.925 (1 3/8)               | 19.050 (3/4)   | 19.050 (3/4)   | 3/4 - 16      | 15.875 (5/8)   | 21.0 (0.83) |
| 22.225<br>(7/8)           | CRH 24 V              | CRH 24 VUU   | 296                 | 38.100 (1 1/2)               | 22.225 (7/8)   | 22.225 (7/8)   | 7/8 - 14      | 19.050 (3/4)   | 24.3 (0.96) |
|                           | CRH 26 V              | CRH 26 VUU   | 329                 | 41.275 (1 5/8)               | 22.225 (7/8)   | 22.225 (7/8)   | 7/8 - 14      | 19.050 (3/4)   | 24.3 (0.96) |
| 25.400<br>(1)             | CRH 28 V              | CRH 28 VUU   | 463                 | 44.450 (1 3/4)               | 25.400 (1)     | 25.400 (1)     | 1 - 14 UNS    | 22.225 (7/8)   | 27.4 (1.08) |
|                           | CRH 30 V              | CRH 30 VUU   | 508                 | 47.625 (1 7/8)               | 25.400 (1)     | 25.400 (1)     | 1 - 14 UNS    | 22.225 (7/8)   | 27.4 (1.08) |
| 28.575<br>(1 1/8)         | CRH 32 V              | CRH 32 VUU   | 722                 | 50.800 (2)                   | 31.750 (1 1/4) | 28.575 (1 1/8) | 1 1/8 - 12    | 25.400 (1)     | 34.2 (1.35) |
|                           | CRH 36 V              | CRH 36 VUU   | 858                 | 57.150 (2 1/4)               | 31.750 (1 1/4) | 28.575 (1 1/8) | 1 1/8 - 12    | 25.400 (1)     | 34.2 (1.35) |
| 31.750<br>(1 1/4)         | CRH 40 V              | CRH 40 VUU   | 1 260               | 63.500 (2 1/2)               | 38.100 (1 1/2) | 31.750 (1 1/4) | 1 1/4 - 12    | 28.575 (1 1/8) | 40.0 (1.57) |
|                           | CRH 44 V              | CRH 44 VUU   | 1 460               | 69.850 (2 3/4)               | 38.100 (1 1/2) | 31.750 (1 1/4) | 1 1/4 - 12    | 28.575 (1 1/8) | 40.0 (1.57) |
| 38.100<br>(1 1/2)         | CRH 48 V              | CRH 48 VUU   | 2 100               | 76.200 (3)                   | 44.450 (1 3/4) | 38.100 (1 1/2) | 1 1/2 - 12    | 31.750 (1 1/4) | 46.4 (1.83) |
|                           | CRH 52 V              | CRH 52 VUU   | 2 380               | 82.550 (3 1/4)               | 44.450 (1 3/4) | 38.100 (1 1/2) | 1 1/2 - 12    | 31.750 (1 1/4) | 46.4 (1.83) |
| 44.450<br>(1 3/4)         | CRH 56 V              | CRH 56 VUU   | 3 240               | 88.900 (3 1/2)               | 50.800 (2)     | 44.450 (1 3/4) | 1 3/4 - 12 UN | 34.925 (1 3/8) | 52.8 (2.08) |
| 50.800<br>(2)             | CRH 64 V              | CRH 64 VUU   | 4 960               | 101.600 (4)                  | 57.150 (2 1/4) | 50.800 (2)     | 2 - 12 UN     | 38.100 (1 1/2) | 59.4 (2.34) |

Remarks 1. Models with a stud diameter  $d_1$  of 7.938 mm or less (marked \*) are provided with an oil hole on the stud head only. Other models are provided with one oil hole each on the head, outside surface and end surface of the stud.  
2. Provided with prepacked grease.



CRH...VUU

| Boundary dimensions mm(inch) |                |                |                |                |              | Mounting dimension<br>f<br>Min.<br>mm(inch) | Maximum tightening torque<br>N-m | Basic dynamic load rating<br>C<br>N | Basic static load rating<br>C <sub>0</sub><br>N |
|------------------------------|----------------|----------------|----------------|----------------|--------------|---|----------------------------------|-------------------------------------|---|
| B <sub>2</sub>               | B <sub>3</sub> | C <sub>1</sub> | g <sub>1</sub> | g <sub>2</sub> | r            |   |                                  |                                     |   |
| 15.875 (5/8)                 | — (—)          | 0.794 (1/32)   | *3.175 (1/8)   | — (—)          | 0.397 (1/64) | 8.334 (1/4)                                 | 3.4                              | 4 710                               | 5 410   |
| 15.875 (5/8)                 | — (—)          | 0.794 (1/32)   | *3.175 (1/8)   | — (—)          | 0.397 (1/64) | 8.334 (1/4)                                 | 3.4                              | 4 710                               | 5 410   |
| 19.050 (3/4)                 | — (—)          | 0.794 (1/32)   | *3.175 (1/8)   | — (—)          | 0.397 (1/64) | 11.112 (7/16)                               | 6.8                              | 6 340                               | 8 530   |
| 19.050 (3/4)                 | — (—)          | 0.794 (1/32)   | *3.175 (1/8)   | — (—)          | 0.397 (1/64) | 11.112 (7/16)                               | 6.8                              | 6 340                               | 8 530   |
| 22.225 (7/8)                 | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 2.381 (3/32)   | 0.794 (1/32) | 13.494 (1 1/32)                             | 17.6                             | 8 710                               | 12 300  |
| 22.225 (7/8)                 | 6.350 (1/4)    | 0.794 (1/32)   | 4.762 (3/16)   | 2.381 (3/32)   | 0.794 (1/32) | 13.494 (1 1/32)                             | 17.6                             | 8 710                               | 12 300  |
| 25.400 (1)                   | 6.350 (1/4)    | 1.588 (1/16)   | 4.762 (3/16)   | 2.381 (3/32)   | 1.191 (1/64) | 18.256 (3/32)                               | 57.8                             | 13 100                              | 22 700  |
| 25.400 (1)                   | 6.350 (1/4)    | 1.588 (1/16)   | 4.762 (3/16)   | 2.381 (3/32)   | 1.588 (1/16) | 18.256 (3/32)                               | 57.8                             | 13 100                              | 22 700  |
| 31.750 (1 1/4)               | 7.938 (5/16)   | 1.588 (1/16)   | 4.762 (3/16)   | 2.381 (3/32)   | 1.588 (1/16) | 24.209 (1 1/16)                             | 103                              | 23 600                              | 31 700  |
| 31.750 (1 1/4)               | 7.938 (5/16)   | 1.588 (1/16)   | 4.762 (3/16)   | 2.381 (3/32)   | 1.588 (1/16) | 24.209 (1 1/16)                             | 103                              | 23 600                              | 31 700  |
| 38.100 (1 1/2)               | 9.525 (3/8)    | 1.588 (1/16)   | 4.762 (3/16)   | 2.381 (3/32)   | 1.588 (1/16) | 26.988 (1 1/16)                             | 162                              | 28 200                              | 40 100  |
| 38.100 (1 1/2)               | 9.525 (3/8)    | 1.588 (1/16)   | 4.762 (3/16)   | 2.381 (3/32)   | 1.588 (1/16) | 26.988 (1 1/16)                             | 162                              | 28 200                              | 40 100  |
| 44.450 (1 3/4)               | 11.112 (7/16)  | 1.588 (1/16)   | 4.762 (3/16)   | 2.381 (3/32)   | 1.588 (1/16) | 32.941 (1 1/16)                             | 258                              | 35 300                              | 55 600  |
| 44.450 (1 3/4)               | 11.112 (7/16)  | 1.588 (1/16)   | 4.762 (3/16)   | 2.381 (3/32)   | 1.588 (1/16) | 32.941 (1 1/16)                             | 258                              | 35 300                              | 55 600  |
| 50.800 (2)                   | 12.700 (1/2)   | 1.588 (1/16)   | 4.762 (3/16)   | 3.175 (1/8)    | 1.588 (1/16) | 37.306 (1 13/32)                            | 356                              | 45 700                              | 80 600  |
| 50.800 (2)                   | 12.700 (1/2)   | 1.588 (1/16)   | 4.762 (3/16)   | 3.175 (1/8)    | 1.588 (1/16) | 37.306 (1 13/32)                            | 356                              | 45 700                              | 80 600  |
| 57.150 (2 1/4)               | 14.288 (9/16)  | 1.588 (1/16)   | 4.762 (3/16)   | 3.175 (1/8)    | 2.381 (3/32) | 40.878 (1 3/16)                             | 500                              | 61 400                              | 116 000   |
| 57.150 (2 1/4)               | 14.288 (9/16)  | 1.588 (1/16)   | 4.762 (3/16)   | 3.175 (1/8)    | 2.381 (3/32) | 40.878 (1 3/16)                             | 500                              | 61 400                              | 116 000   |
| 63.500 (2 1/2)               | 15.875 (5/8)   | 1.588 (1/16)   | 6.350 (1/4)    | 3.175 (1/8)    | 2.381 (3/32) | 51.991 (2 3/16)                             | 892                              | 77 600                              | 172 000   |
| 63.500 (2 1/2)               | 15.875 (5/8)   | 1.588 (1/16)   | 6.350 (1/4)    | 3.175 (1/8)    | 2.381 (3/32) | 51.991 (2 3/16)                             | 892                              | 77 600                              | 172 000   |
| 69.850 (2 3/4)               | 17.462 (11/16) | 1.588 (1/16)   | 6.350 (1/4)    | 3.175 (1/8)    | 2.381 (3/32) | 59.928 (2 3/16)                             | 1 450                            | 111 000                             | 239 000   |
| 88.900 (3 1/2)               | 19.050 (3/4)   | 1.588 (1/16)   | 6.350 (1/4)    | 3.175 (1/8)    | 2.381 (3/32) | 64.691 (2 5/16)                             | 2 190                            | 142 000                             | 317 000   |

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