

# CAM FOLLOWERS

- Standard Type Cam Followers
- Solid Eccentric Stud Type Cam Followers
- Eccentric Type Cam Followers
- Thrust Disk Type Cam Followers
- C-Lube Cam Followers
- Centralized Lubrication Type Cam Followers
- Easy Mounting Type Cam Followers
- Cylindrical Roller Cam Followers
- Miniature Type Cam Followers
- Thrust Disk Type Miniature Cam Followers



## Structure and Features

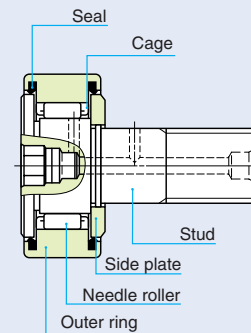
IKO Cam Followers are bearings with a stud incorporating needle rollers in a thick walled outer ring. These bearings are designed for outer ring rotation, and have superior rotational performance with a small coefficient of friction and high load capacity. As studs already have threads or steps, they 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.

### Structure of Cam Followers

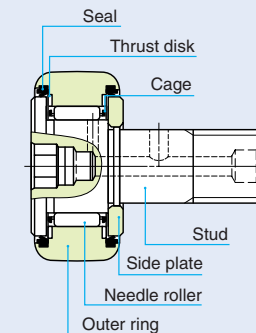
Structure of Standard Type Cam Follower<sup>(1)</sup>

CF···BUU



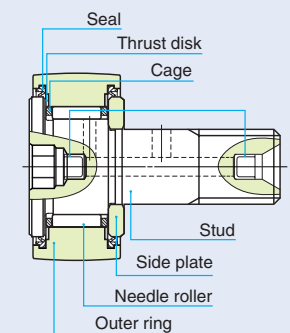
Structure of Thrust Disk Type Cam Follower

CF···WBUUR



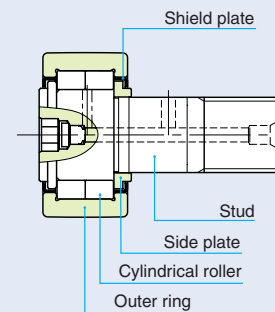
Structure of C-Lube Cam Follower<sup>(2)</sup>

CF···WBUUR/SG



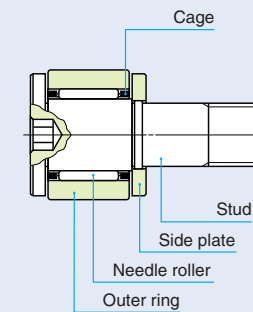
Structure of Cylindrical Roller Cam Follower

NUCF···BR



Structure of Miniature Type Cam Follower

CFS



Note<sup>(1)</sup> In case of the stud diameter ( $d_1$ ) 5 to 10mm, a lubrication fitting is provided in the stud head hex hole. The stud diameter ( $d_1$ ) 12 to 30mm, a grease nipple is provided in the stud head hex hole.

<sup>(2)</sup> For the detail of Capilube, please refer page A55.

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	
		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	
	Stainless steel made	With hexagon hole	Shield type	CF ...FB R	CF ...FB	—	—	
			Sealed type	CF ...FBUUR	CF ...FBUU	—	—	
	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	—	—
		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
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 hexagon hole	Sealed type	—	CF-SFU ... B	—	—	
			With screwdriver slot	Sealed type	—	CF-SFU	—	—
C-Lube Cam Follower CF .../SG	High carbon steel made	With hexagon hole	Sealed type	CF ...WBUUR/SG	—	—	—	
Cylindrical Roller Cam Follower NUCF	High carbon steel made	With hexagon hole	Shield type	—	—	NUCF ... BR	—	
			With screwdriver slot	Shield type	—	—	NUCF ... R	—
Miniature CFS series	Miniature Type Cam Follower CFS	High carbon steel made	With hexagon hole	Shield type	—	CFS	—	CFS ... V
				Stainless steel made	Shield type	—	CFS ... F	—
	Thrust Disk Type Miniature Cam Follower CFS ... W	High carbon steel made	With hexagon hole	Shield type	—	CFS ... W	—	CFS ... WV
				Stainless steel made	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
		With screwdriver slot	Shield type	CR ... R	CR ...	CR ...V R	CR ...V	
			Sealed type	CR ... UUR	CR ... UU	CR ...V UUR	CR ...V UUR	
	Inch series Heavy Duty Cam Follower CRH	High carbon steel made	With hexagon hole	Shield type	—	—	CRH ...VB R	CRH ...VB
				Sealed type	—	—	CRH ...VBUUR	CRH ...VBUU
		With screwdriver slot	Shield type	—	—	CRH ...V R	CRH ...V	
			Sealed type	—	—	CRH ...V UUR	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.

**C-Lube Cam Follower**

These bearings are lubricated with a newly developed thermosetting solid-type lubricant which fills the inner space of the bearing. This lubricant provides long-term maintenance free.

**Cylindrical Roller 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**

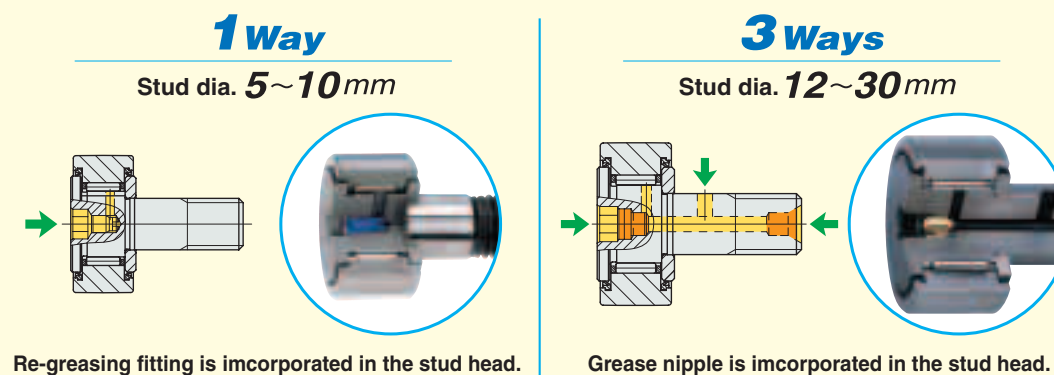
These are compactly designed bearings, incorporating very thin needle rollers in an outer ring with a small outside diameter. They are used in electronic devices, OA equipment, small index devices, etc.

**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.

**Lubrication method of Hex Head Cam Followers**

<Types> Standard Type, Solid Eccentric Stud Type, Eccentric Type, Thrust Disk Type, Easy Mounting Type, Heavy Duty Type.



Remark : All of Easy Mounting Type are 1way port.

## Internal Structures and Shapes

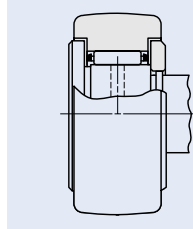
Various types are lined up in Cam Follower series, including the caged type, full complement type, shield type, sealed type, type with crowned outer ring, type

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

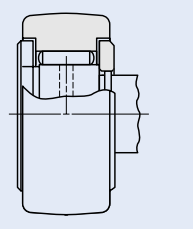
### Roller guide method

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》

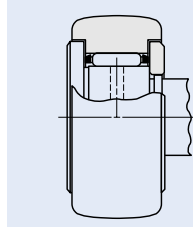


### Seal structure

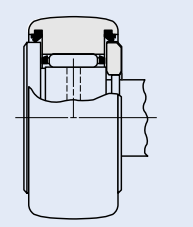
Cam Followers include the shield type and the sealed type. In the shield type, the narrow clearances between the outer ring and the stud flange and between the outer ring and the side plate form labyrinths.

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

《Shield type》



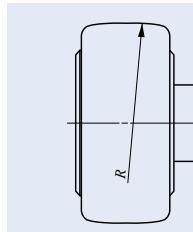
《Sealed type》



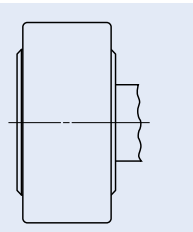
### Shape of outer ring outside surface

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》



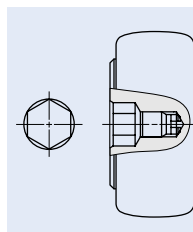
《Cylindrical outer ring》



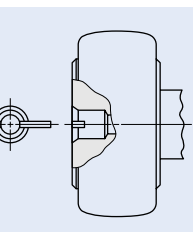
### Shape of stud head

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 hexagon hole》



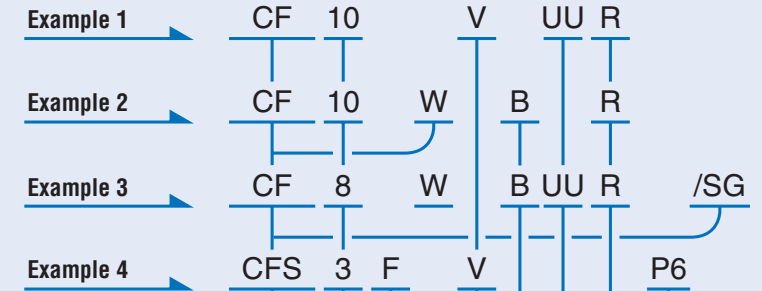
《With screwdriver slot》



## Identification number

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

### Examples of identification number



Model code		
Metric 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 (With crowned outer ring)
	CF-FU1	Centralized Lubrication Type Cam Follower (With cylindrical outer ring)
	CF-SFU	Easy Mounting Type Cam Follower
CF.../SG		C-Lube Cam Follower
NUCF		Cylindrical Roller Cam Follower
Miniature CFS series	CFS	Miniature Type Cam Follower
	CFS...W	Thrust Disk Type Miniature Cam Follower
Inch series	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 <sup>(1)</sup>	With screwdriver slot

Note<sup>(1)</sup> Miniature Type Cam Follower is with hexagon hole with "No symbol".

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	
P6	Class 6	Applicable to Miniature CFS series
P5	Class 5	
P4	Class 4	

## 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 Cylindrical Roller Cam Followers.

**Table 3.1 Tolerances and allowable values of outer rings (Metric CF series cylindrical outer rings)** unit:  $\mu\text{m}$

$D$ Nominal outside dia. of outer ring mm		$\Delta_{Dmp}$ Single plane mean outside dia. deviation		$V_{Dsp}$ Outside dia. variation in a single radial plane (Max.)	$V_{Dmp}$ Mean outside dia. variation (Max.)	$K_{ea}$ Radial runout of assembled bearing 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:  $\mu\text{m}$

$\Delta_{Dmp}$ Single plane mean outside dia. deviation								$K_{ea}$ Radial runout of assembled bearing outer ring (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

**Table 3.3 Tolerances and allowable values of outer rings (Inch series cylindrical outer ring)** unit:  $\mu\text{m}$

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

## 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	
	Cylindrical Roller Cam Followers NUCF	Miniature CFS series <sup>(3)</sup>	Inch series	Min.	Max.
CF 3 ~ CF 5	—	CFS1.4 ~ 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 ~ CRH56	10	40
—	—	—	CRH64	15	50
—	NUCF10 R ~ NUCF24 R	—	—	20	45
—	NUCF24-1R ~ NUCF30-2R	—	—	25	50

Notes<sup>(1)</sup> Also applicable to the full complement type, crowned outer ring type, sealed type, and entire of 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
Cylindrical Roller NUCF series	H7
Miniature CFS series	H6
Inch series	F7

**Table 6 Dimensional tolerances of mounting hole**

unit:  $\mu\text{m}$

Nominal outside dia. of stud 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						

### 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.

For lubrication between the outer ring and the mating track surface, C-Lube Unit for Cam Followers is recommended. (Refer page I18)

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 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 CFS series <sup>(2)</sup>	—	—	CFS1.4	128
	—	—	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 Cylindrical Roller 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 crowned 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 8-1R	401	CRH 8-1	2 360
	—	—	—	—	CRH 9 R	469	CRH 9	2 650
	CR10 R	1 030	CR10	3 210	—	—	—	—
	CR10-1R	1 030	CR10-1	3 480	CRH10-1R	579	CRH10-1	3 480
	—	—	—	—	CRH11 R	658	CRH11	3 830
	CR12 R	1 340	CR12	4 500	CRH12 R	853	CRH12	4 500
	CR14 R	1 630	CR14	5 250	CRH14 R	1 050	CRH14	5 250
	CR16 R	1 970	CR16	7 280	CRH16 R	1 420	CRH16	7 280
	CR18 R	2 300	CR18	7 710	CRH18 R	1 660	CRH18	7 710
	CR20 R	2 680	CR20	10 700	CRH20 R	2 160	CRH20	10 700
	CR22 R	3 050	CR22	11 800	CRH22 R	2 450	CRH22	11 800
	CR24 R	3 410	CR24	15 400	CRH24 R	3 410	CRH24	15 400
	CR26 R	3 820	CR26	16 700	CRH26 R	3 820	CRH26	16 700
	CR28 R	4 210	CR28	21 000	CRH28 R	4 210	CRH28	21 000
	CR30 R	4 610	CR30	22 500	CRH30 R	4 610	CRH30	22 500
	CR32 R	5 050	CR32	30 900	CRH32 R	5 690	CRH32	30 900
	CR36 R	5 900	CR36	34 700	CRH36 R	6 640	CRH36	34 700
	—	—	—	—	CRH40 R	8 970	CRH40	45 000
	—	—	—	—	CRH44 R	10 200	CRH44	49 500
—	—	CR48	64 300	CRH48 R	11 400	CRH48	64 300	
—	—	—	—	CRH52 R	12 700	CRH52	69 600	
—	—	—	—	CRH56 R	14 100	CRH56	87 000	
—	—	—	—	CRH64 R	16 800	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)(2)</sup>

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

Notes<sup>(1)</sup>  $d_1n$  value =  $d_1 \times n$

where,  $d_1$ : Stud diameter mm  
 $n$ : Rotational speed rpm

<sup>(2)</sup> In case of C-Lube Cam Follower,  $d_1n$  value is 10000.  
In case of C-Lube Cam Follower with axial loads,  $d_1n$  value is 10000 or 1/10 of the above table values, whichever smaller.

## Lubrication

Grease-prepacked Cam Followers are shown in Table 10. The lubricating grease prepacked in these bearings is ALVANIA GREASE S2 (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 Size of stud dia. $d_1$ <sup>(1)</sup> mm	Type	With cage				Full complement type
		Shield type		Sealed type		
		With hexagon hole	With screwdriver slot	With hexagon hole	With screwdriver slot	
Metric CF series	CF	3 ~ 5	○	○	○	—
	CFES	6 ~ 10	○	○	○	○
	CFE	12 ~ 30	×	×	○	○
	CF...W					
	CF-RU1, CF-FU1	—	—	—	○	—
	CF-SFU	—	—	×	○	—
C-Lube Cam Followers CF.../SG <sup>(2)</sup>		—	—	×	—	—
Cylindrical Roller Cam Followers NUCF		—	—	—	—	○
Miniature CFS series	CFS	○	—	—	—	○
	CFS...W	○	—	—	—	○
Inch series	CR	○	○	○	○	○
	CRH	—	—	—	—	○

Notes<sup>(1)</sup> For Eccentric Type Cam Followers (CFE), thread diameter  $G$  shown in the table of dimensions is applicable.

<sup>(2)</sup> This Cam Follower incorporates C-Lube which includes a large amount of lubricating oil.

## Oil Hole

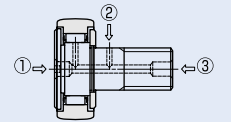
The position of oil hole is shown in Table 11. Re-greasing cannot be made for models without an oil hole.

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.

Table 11 Position of oil hole

○ : Oil hole is prepared.

Series Size of stud dia. $d_1$ <sup>(1)</sup> mm			Position of oil hole	① Stud head	② Stud outside surface	③ Stud end	
Metric CF series	CF CFES CFE CF...W	With hexagon hole	$d_1 < 5$	—	—	—	
			$5 \leq d_1 \leq 10$	○ <sup>(2)</sup>	—	—	
			$10 < d_1$	○ <sup>(3)</sup>	○	○	
		With screwdriver slot	$d_1 < 5$	—	—	—	
			$5 \leq d_1 \leq 10$	○	—	—	
			$10 < d_1$	○	○	○	
		CF-RU1, CF-FU1 <sup>(4)</sup>		$d_1 \leq 12$	○	—	—
			$12 < d_1$	○	○	○	
		CF-SFU	With hexagon hole	$d_1 \leq 10$	○ <sup>(2)</sup>	—	—
			With screwdriver slot	$10 < d_1$	○ <sup>(5)</sup>	—	—
C-Lube Cam Followers CF.../SG			$d_1 \leq 10$	—	—	—	
		$10 < d_1$	—	○ <sup>(6)</sup>	—		
Miniature CFS series	CFS CFS...W			—	—	—	
Cylindrical Roller Cam Followers	NUCF	With hexagon hole	$d_1 \leq 10$	○ <sup>(2)</sup>	—	—	
			$10 < d_1$	○ <sup>(3)</sup>	○	○	
		With screwdriver slot	$d_1 \leq 10$	○	—	—	
		$10 < d_1$	○	○	○		
Inch series	CR	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<sup>(1)</sup> 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.

<sup>(2)</sup> Re-lubrication can be made from the re-greasing fitting that is inserted into the hexagon hole. Refer to page 14.

<sup>(3)</sup> Grease nipple is incorporated in the hexagon hole. Re-greasing can be made from the stud end by press fitting a supplied grease nipple into the stud end. Refer to page 14.

<sup>(4)</sup> Tapped holes for oil connectors are provided at the stud end and hole of the head.

<sup>(5)</sup> Re-greasing can be made from the grease nipple in the hexagon hole.

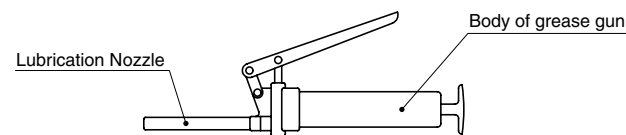
<sup>(6)</sup> Re-greasing is not possible as the bearing internal space is filled with thermosetting solid-type lubricant C-Lube.

Table 12 Types and Dimension of Lubrication Nozzles

Type	Dimension	Applicable grease nipple and re-grease fitting
A-5126T		NPF4-1 (1) NPF6-1 (1) Re-grease fitting
A-5120R		NPF4-1 (1) NPF6-1 (1)
B-5120R		
A-5120V		NPT4 NPT6 NPT8 NPB2 NPB3 NPB3-1
A-5240V		
B-5120V		
B-5240V		

Note(1) HSP-3(Yamada Corporation)can be used for them.

Remark The above nozzles can be attached on the standard grease gun shown below.



## Accessories

Cam Follower accessories are shown in Table 13.  
Grease nipple dimensions are shown in Table 14 and 15.  
Dimensions of plug for unused oil hole and dimensions of plug inserter are shown in Table 16.

Table 13 Accessories

Series				Accessories	Grease nipple	Plug	Nut	Spring washer
Size of stud dia. $d_1$ mm								
Metric CF series	CF	With hexagon hole	$d_1 \leq 10$	—	—	○	—(2)	
			$10 < d_1$	○	—	○	—(2)	
	CFE	With screwdriver slot	$d_1 < 5$	—	—	○	—(2)	
			$5 \leq d_1$	○	○	○	—(2)	
	CF...W							
	CF-RU1, CF-FU1				—	—	○	—
CF-SFU				—	—	—	—	
C-Lube Cam Followers		CF.../SG				○	—	
Cylindrical Roller Cam Followers	NUCF	With hexagon hole	$d_1 \leq 10$	—	—	○	—	
			$10 < d_1$	○	—	○	—	
		With screwdriver slot		—	○	○	○	
Miniature CFS series	CFS			—	—	○	—	
	CFS...W							
Inch 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		—	○	○	○	

Notes(1) For Eccentric Type Cam Follower CFE, thread diameter G is applied.

(2) For CFE, spring washer is supplied.

I

CF  
NUCF  
CFS  
CR

Table 14 Dimensions of grease nipple

Code number	Dimensions mm						Applicable Cam Followers (1)
	d	D	D <sub>1</sub>	L	L <sub>1</sub>	W	
NPF4-1	4	5	—	5	—	1.5	CF12B ~ CF16B
NPF6-1	6	7	—	8	—	2	CF18B ~ CF30B
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

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

Table 15 Dimensions of Grease nipple for Inch series

Code number	Dimensions mm						Applicable Cam Followers (1)
	d	D	D <sub>1</sub>	L	L <sub>1</sub>	W	
NPB2	3.18	7.5	6	9	5.5	1.5	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
NPB4	6.35	8.5	6	13	6	2	CR48, CRH48 ~ CRH64

Note(1) Only representative types are shown in the table.

Table 16 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	3	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
USB4F	6.35	0.5	4.8	5.2	CRH48 ~ CRH64

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

## Operating Temperature Range

The operating temperature range for IKO Cam Followers is -20°C ~ +120°C. However, the maximum allowable temperature for the following types is different.

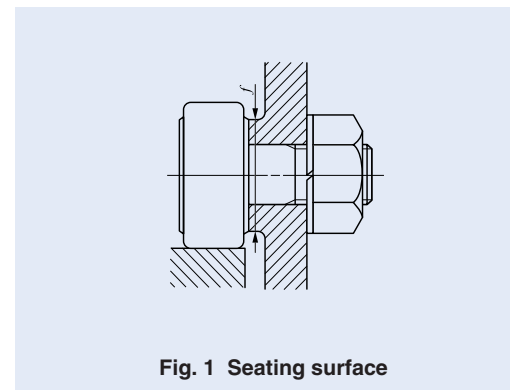
The maximum allowable temperature for the Metric CF series with a stud diameter  $d_1$  of 4 mm or less, Stainless steel mede Cam Followers with a stud diameter  $d_1$  of 5 mm and CFS2 is +110°C, and +100°C when they are continuously operated.

The maximum allowable temperature for the sealed type with a stud diameter  $d_1$  of 5 mm or less is +80°C.

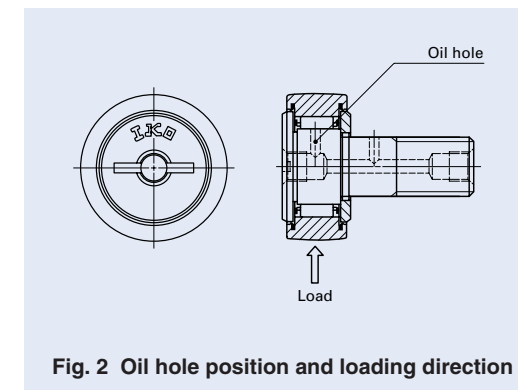
Allowable temperature range of C-Lube Cam Followers is -15°C ~ +80°C. For a long term operation, less than +60°C is recommended.

## 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.

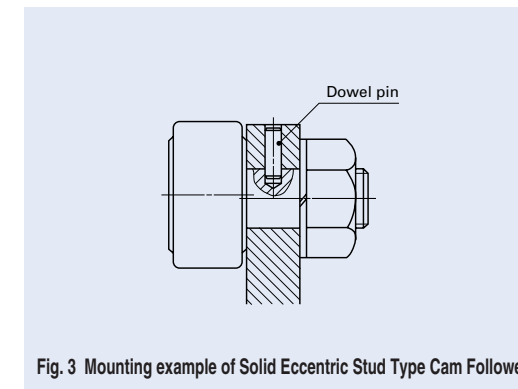


- 2 The IKO mark on the flange head of the stud indicates the position of the oil hole on the raceway. Avoid locating the oil hole within the loading zone. This may lead to a short bearing life. (See Fig. 2.) The hole located in the middle part of the stud perpendicular to the stud center axis is used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



- 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.



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NUCF  
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CR



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.)

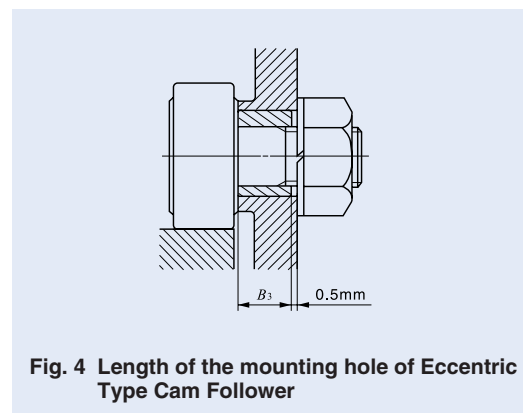


Fig. 4 Length of the mounting hole of Eccentric Type Cam Follower

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.)

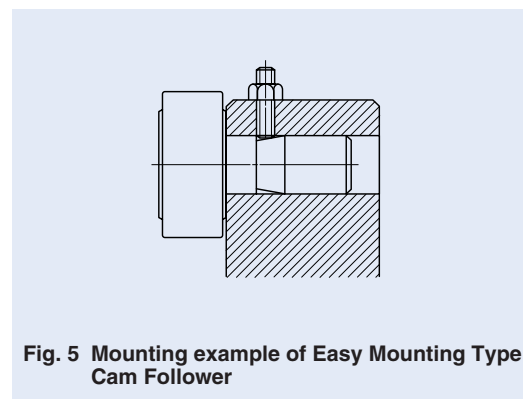


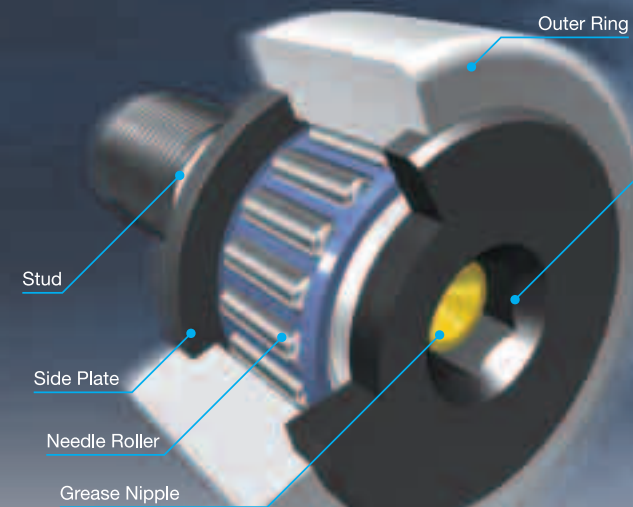
Fig. 5 Mounting example of Easy Mounting Type Cam Follower

### Precaution For Use

- ① Do not wash C-Lube Cam Follower with organic solvent and/or white kerosene, which have the ability of removing fat nor leave them in contact with the above agents.
- ② To ensure normal rotation of the C-Lube Cam Follower, apply a load of 1% or over of the dynamic load rating at use.

# IKO Hex Head Cam Followers

Cam Followers are follower bearings for cam mechanisms and linear motions provided with high rigidity and high accuracy. They are, therefore, used widely for machine tools, industrial robots, electronics devices, and OA equipment. Hex Head Cam Followers can be fixed firmly by hexagonal wrench and re-lubrication port can be chosen from three positions. This series contributes easy assembling and easy maintenance in your applications.

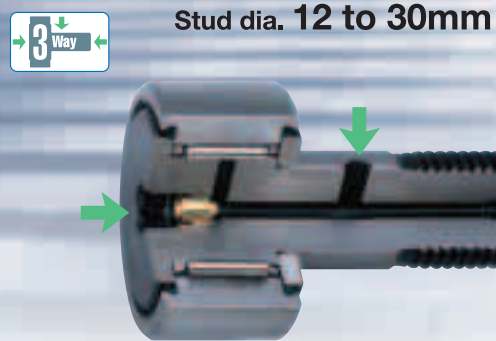


<p><b>Standard Type Cam Follower</b> CF...(F)(V)B(UU R) Stud dia. mm: 3~30</p> <p>5mm to 30mm of stud dia. are available for widely use.</p>	<p><b>Solid Eccentric Stud Type Cam Follower</b> CFES...B(UU R) Stud dia. mm: 6~18 Eccentricity <math>\epsilon</math></p> <p>The stud is designed eccentric to the center axis of the outer ring. This allows easy adjustment of outer ring position in the radial direction in relation to the mating track surface by turning the stud, which makes load distribution on multiple numbers of Cam Followers uniformed. Mounting dimensions are the same as those of standard Cam Followers with eccentricity of 0.25 to 0.6 mm.</p>	<p><b>Standard Type Cam Follower</b> CFE...(V)B(UU R) Stud dia. mm: 6~30 Eccentricity <math>\epsilon</math></p> <p>An eccentric collar is assembled over 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 to 1.5mm.</p>
<p><b>C-Lube Cam Follower</b> CF...WB(UU R)/SG Stud dia. mm: 6~20</p> <p>C-Lube Cam Followers are bearings with prepacked thermosetting solid lubricant (C-Lube) inside. As the bearing rotates, the lubricating oil is deposited onto the raceway in the correct volume maintaining the lubrication performance for greatly extended periods of time.</p>	<p><b>Easy Mounting Type Cam Follower</b> CF-SFU...B Stud dia. mm: 6~20</p> <p>This Cam Follower has stepped tapered portion on the stud that makes easy fixing by tightening a set screw to the stepped portion. This Cam Follower is suite to pallet changer where a large number of Cam Followers are used.</p>	<p><b>Cylindrical Roller Cam Follower</b> NUCF...BR Stud dia. mm: 10~30</p> <p>This is a full complement type Cam Follower incorporating double rows of cylindrical rollers to support large radial load and some axial load.</p>
<p><b>Thrust Disk Type Cam Follower</b> CF...(F)WB(UU R) Stud dia. mm: 3~20</p> <p>Special resin thrust washers are placed to reduce friction and wear due to unexpected axial load caused by misalignment, etc.</p>		

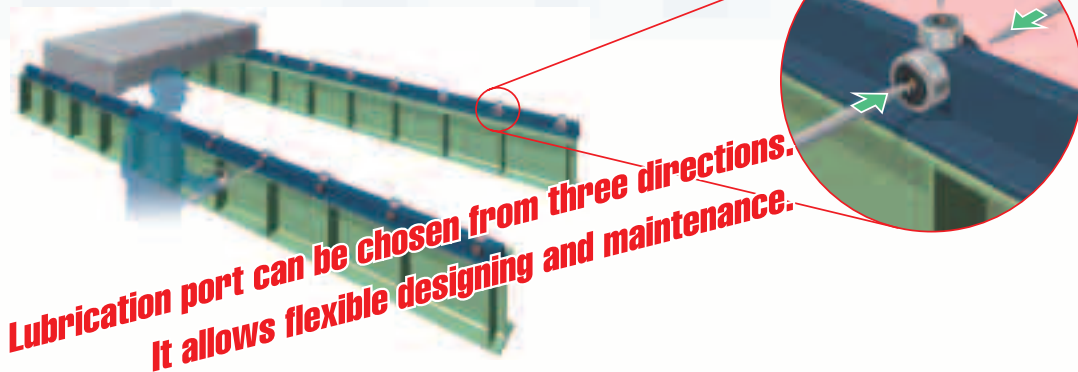
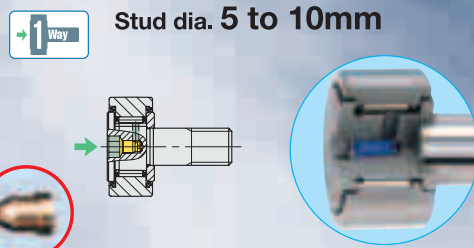
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### Lubrication from three ways

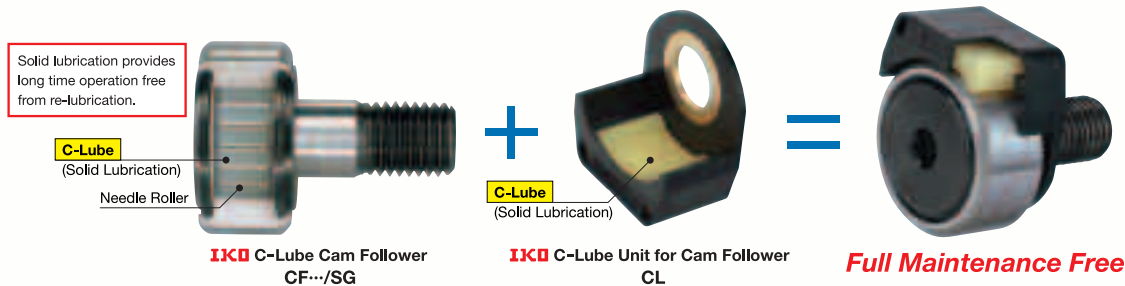


### Lubrication from one way



## IKO C-Lube Unit for Cam Followers

C-Lube Unit CL is the lubrication-supporting equipment for the track surface of Cam Follower's outer ring. Full maintenance free for both inside and the outside of Cam Follower is possible when CL unit is assembled to C-Lube Cam Follower CF.../SG.



### Option Parts

## C-Lube Unit for Cam Followers

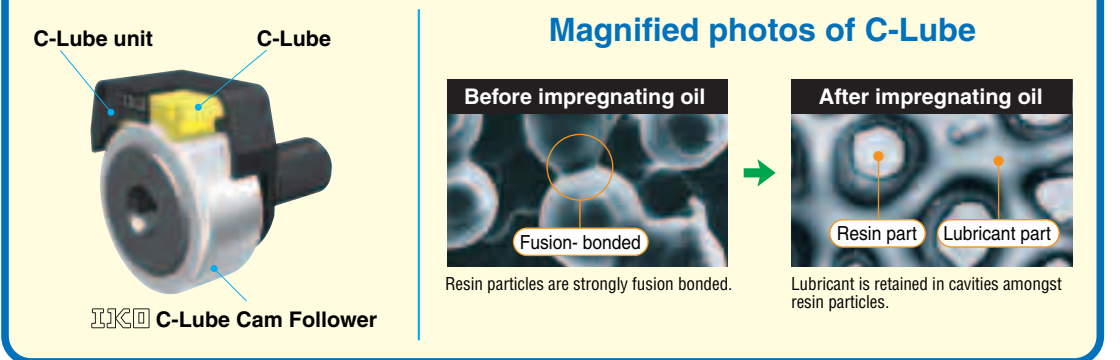
C-Lube Unit CL is the lubrication-supporting equipment for the track surface and Cam Follower's outer ring to keep both surfaces free of maintenance.

Capillary system IKO has developed is a new type lubrication. It is a porous resin Lube-body or plate with steel backing formed by sintering fine resin powder and impregnating a large amount of lubrication oil

in its open pores. Capillary system always supplies proper amount of lubrication oil to the cylindrical rollers and lubrication condition of the raceway can be kept well for long period of time.

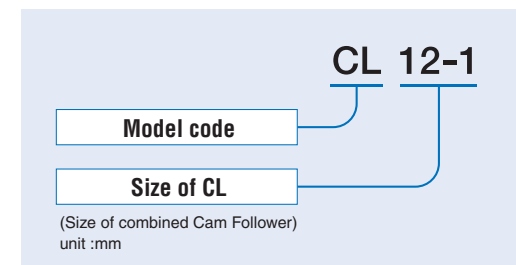
Also it prevents oil scattering causing pollution to the surrounding environment, and helps minimizing oil consumption.

## Structure of C-Lube Unit for Cam Followers



### Identification number

The identification number example of IKO C-Lube Unit is shown below.



### Allowable rotation speed

The rotation speed of IKO Cam Follower with C-Lube Unit should not exceeded  $d_1n=10,000$  for reference.

$$d_1n = d_1 \times n$$

$d_1$  : Stud diameter of Cam Follower, mm  
 $n$  : Rotational speed, rpm

### Minimum rotational angle

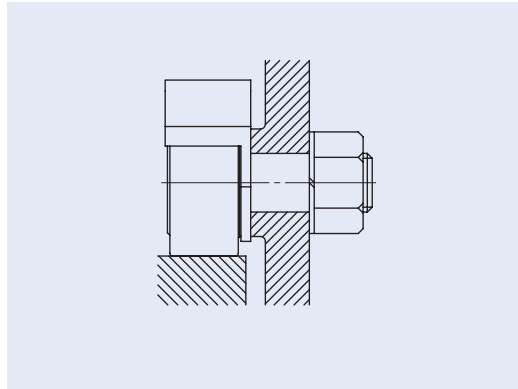
Lubricating oil is supplied to the whole external diameter surface of the outer ring. Accordingly, use the product in a condition in which the outer ring makes one or more turns.

### Operating temperature

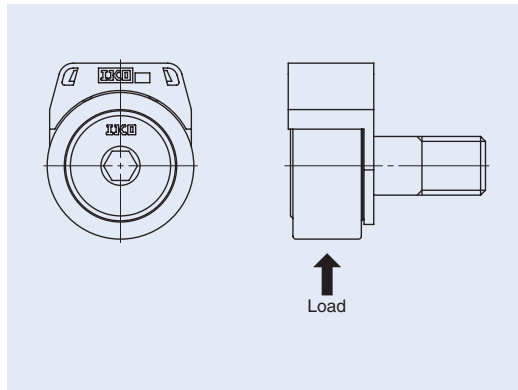
Allowable operating temperature range of IKO Cam Follower with C-Lube Unit is -15 to 80°C.

## Mounting

- 1 Set the C-Lube Unit perpendicularly to the center axis of Cam Follower and fix together with Cam Follower by tightening nut.



- 2 Position of C-Lube Unit is adjustable. C-Lube Unit must be positioned avoiding loading direction.

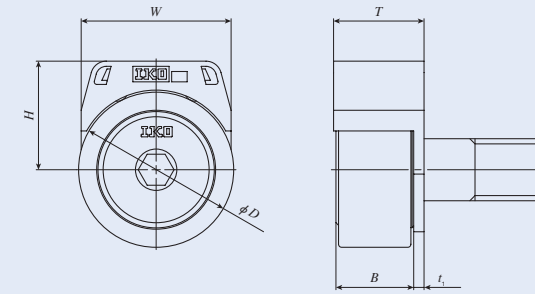


- 3 When tightening the nut, the tightening torque should not be exceeded the value maximum tightening torque on dimension table. In case loosening of the nut is predicted due to vibration, using lock nut, spring washer and other special washer are recommended.

## For use

- 1 The maximum allowable load on IKO Cam Follower with C-Lube Unit is, in some cases, limited by the bending strength and shear strength of the C-Lube Unit instead of the load rating of needle bearing part. In order to safety operation, the maximum allowable static load is specified by the limitations of those strengths.
- 2 After assembling C-Lube Unit and Cam Followers in the machine, please confirm that C-Lube unit provides oil correctly to the track surface before actual operation.
- 3 Do not use in the environment which contamination of liquid and/or harmful foreign matter are expected.
- 4 Do not wash with organic solvent and/or white kerosene, which have the ability of removing fat nor leave them in contact with the above agents.
- 5 To ensure normal rotation of the Cam Follower, apply a load of 1% or over of the dynamic load rating at use.
- 6 Replace with new C-Lube Unit when inside oil finishes completely. Re-lubrication is not possible.
- 7 Do not apply a load onto the C-Lube Unit directly.

Table 19 Dimensions of C-Lube Unit for Cam Followers

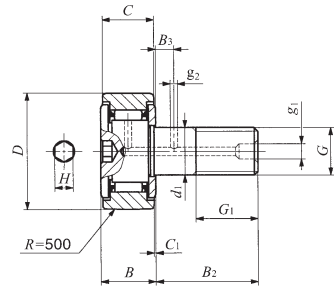


Model number	Boundary Dimensions mm				Applicable Cam Followers			Maximum <sup>(2)</sup> allowable static load N
	W	H	T	t <sub>1</sub>	Model number <sup>(1)</sup>	Boundary Dimensions mm D	B Max	
CL 6	15.4	12.6	14	1.5	CF 6 B	16	12.2	1 560
CL 8	18.4	14.2	14	1.5	CF 8 B	19	12.2	3 700
CL 10	21	17	15.5	2	CF 10 B	22	13.2	5 510
CL 10-1	21	19.2	15.5	2	CF 10-1 B	26	13.2	5 510
CL 12	29	21	17.5	2	CF 12 B	30	15.2	7 830
CL 12-1	29	22	17.5	2	CF 12-1 B	32	15.2	7 830

Note<sup>(1)</sup> Only representative types shown in the table, but also applicable to the same size of standard type, with thrust washer type, centralized lubrication type, C-Lube maintenance free type and Cylindrical Roller Cam Followers. Combine with C-Lube Cam Follower is strongly recommended for full maintenance free.  
 Note<sup>(2)</sup> Actual load should be not exceeded these values. 1N ≒ 0.102kgf

**CAM FOLLOWERS**

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

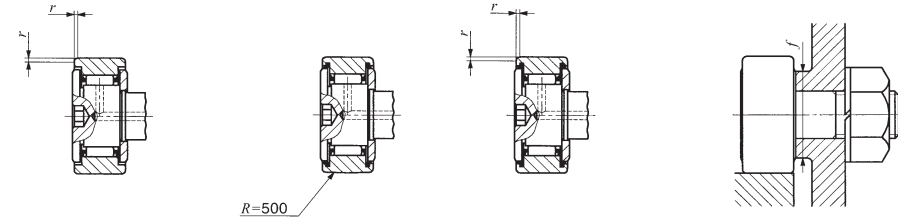


Stud dia. 4.826 – 22.225 mm

CR...BR

Stud dia. mm (inch)	Identification number				Mass (Ref.) g	D	C	d <sub>1</sub>	G UNF	G <sub>1</sub>
	Shield type		Sealed type							
	With crowned outer ring	With cylindrical outer ring	With crowned outer ring	With cylindrical 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 ( 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 ( 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 ( 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 ( 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 ( 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 ( 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 ( 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<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...B

CR...BUUR

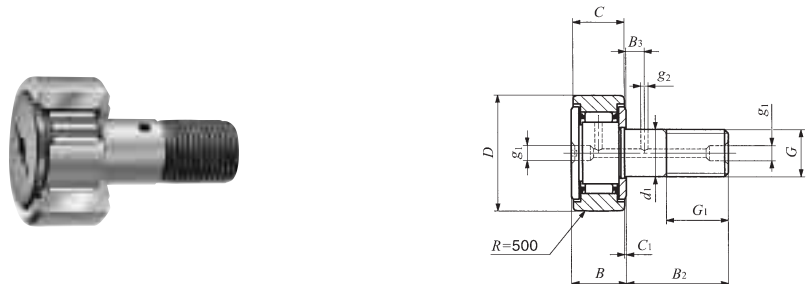
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Boundary dimensions mm(inch)								Mounting dimension f Min. mm(inch)	Maximum tightening torque N-m	Basic dynamic load rating C N	Basic static load rating C <sub>0</sub> N
B max	B <sub>2</sub>	B <sub>3</sub>	C <sub>1</sub>	g <sub>1</sub>	g <sub>2</sub>	H	r				
10.2(0.40)	12.700( 1/2 )	— (—)	0.794( 1/32 )	— (—)	— (—)	3.175( 1/8 )	0.397( 1/16 )	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( 1/16 )	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( 1/16 )	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( 1/16 )	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( 3/16 )	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( 3/32 )	7.938( 5/16 )	1.588( 1/16 )	26.196( 1 1/16 )	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( 3/32 )	7.938( 5/16 )	1.588( 1/16 )	26.196( 1 1/16 )	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( 3/32 )	7.938( 5/16 )	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( 3/32 )	7.938( 5/16 )	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**

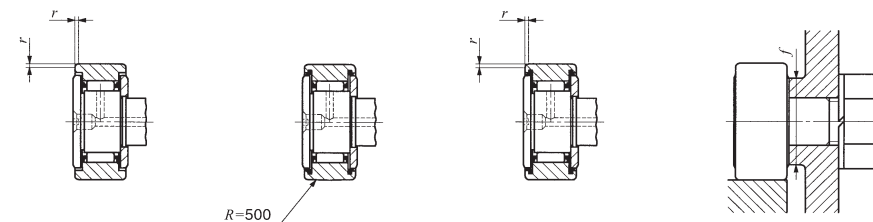


Stud dia. 4.826 – 22.225 mm

CR...R

Stud dia. mm (inch)	Identification number				Mass (Ref.) g	Boundary dimensions				
	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 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 (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 (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 (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 (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 (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 (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 (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<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

CR...UUR

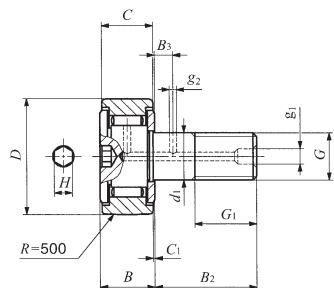
CR...UU

Boundary dimensions mm(inch)							Mounting dimension f Min. mm(inch)	Maximum tightening torque N-m	Basic dynamic load rating C N	Basic static load rating C <sub>0</sub> N
B 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 (1/16)	8.334 (1/3)	1.4	2 520	2 140
10.9(0.43)	15.875 (5/8)	— (-)	0.794 (1/32)	*3.175 (1/8)	— (-)	0.397 (1/16)	8.334 (1/3)	1.4	2 520	2 140
11.8(0.46)	15.875 (5/8)	— (-)	0.794 (1/32)	*3.175 (1/8)	— (-)	0.397 (1/16)	11.509 (3/4)	3.4	3 650	3 670
12.5(0.49)	19.050 (3/4)	— (-)	0.794 (1/32)	*3.175 (1/8)	— (-)	0.397 (1/16)	11.509 (3/4)	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 (1/2)	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 (5/8)	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 (3/16)	17.859 (5/8)	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 (5/8)	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 (5/8)	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 (3/32)	1.588 (1/16)	26.196 (1 1/16)	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 (3/32)	1.588 (1/16)	26.196 (1 1/16)	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 (3/32)	1.588 (1/16)	32.543 (1 1/2)	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 (3/32)	1.588 (1/16)	32.543 (1 1/2)	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 1/2)	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 1/2)	162	32 500	63 900

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**CAM FOLLOWERS**

Inch Series Cam Followers Full Complement Type/With Hexagon Hole

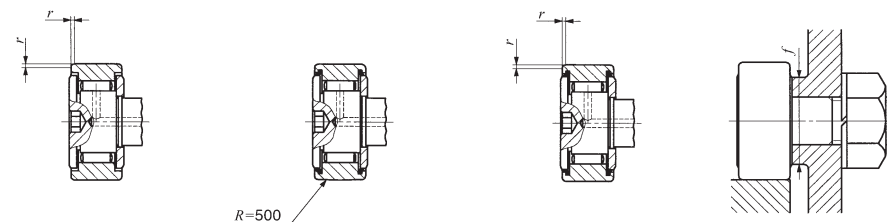


Stud dia. 4.826 – 22.225 mm

CR...VBR

Stud dia. mm (inch)	Identification number				Mass (Ref.) 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 (1/2)	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 (1/4)	CR 10 VBR	CR 10 VB	CR 10 VBUUR	CR 10 VBUU	19	15.875 (5/8)	10.319 (3/8)	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 (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 (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 (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 (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 (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 (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

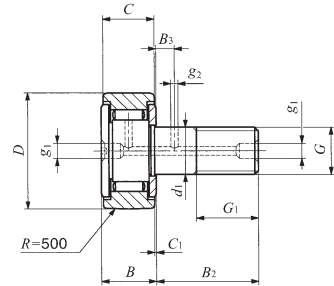
CR...VBUU

Boundary dimensions mm (inch)								Mounting dimension f Min. mm (inch)	Maximum tightening torque N-m	Basic dynamic load rating C N	Basic static load rating C <sub>0</sub> 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 (1/16)	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 (1/16)	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 (1/16)	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 (1/16)	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 (3/16)	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 (3/32)	7.938 (3/16)	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 (3/32)	7.938 (3/16)	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 (3/32)	7.938 (3/16)	1.588 (1/16)	32.543 (1 1/2)	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 (3/32)	7.938 (3/16)	1.588 (1/16)	32.543 (1 1/2)	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

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**CAM FOLLOWERS**

Inch Series Cam Followers **Full Complement Type/With Screwdriver Slot**

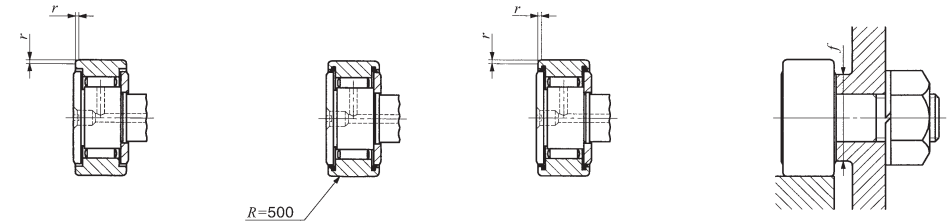


Stud dia. 4.826 – 31.750mm

CR...VR

Stud dia. mm (inch)	Identification number				Mass (Ref.) 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 VR	CR 8 V	CR 8 VUUR	CR 8 VUU	9	12.700 (1/2)	8.731 (1/2)	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 (1/4)	CR 10 VR	CR 10 V	CR 10 VUUR	CR 10 VUU	19	15.875 (5/8)	10.319 (3/2)	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 (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 (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 (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 (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 (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 (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 (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

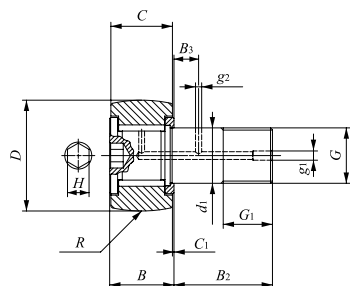
Boundary dimensions mm(inch)							Mounting dimension f Min. mm(inch)	Maximum tightening torque N-m	Basic dynamic load rating C N	Basic static load rating C <sub>0</sub> N
B max	B <sub>2</sub>	B <sub>3</sub>	C <sub>1</sub>	g <sub>1</sub>	g <sub>2</sub>	r				
10.2(0.40)	12.700 (1/2)	— (—)	0.794 (1/2)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

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**CAM FOLLOWERS**

Inch Series Heavy Duty Cam Followers **Full Complement Type/With Hexagon Hole**



Stud dia. 6.350 — 50.800mm

CRH...VBR

Stud dia. mm (inch)	Identification number		Mass (Ref.) g	Boundary dimensions mm (inch)					
	Shield type	Sealed type		D	C	d <sub>1</sub>	G UNF	G <sub>1</sub>	B max
6.350 (1/4)	CRH 8-1 VBR	CRH 8-1 VBUUR	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 VBR	CRH 9 VBUUR	15	14.288 (9/16)	9.525 (3/8)	6.350 (1/4)	1/4-28	6.350 (1/4)	11.1 (0.44)
7.938 (5/16)	CRH 10-1 VBR	CRH 10-1 VBUUR	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 VBR	CRH 11 VBUUR	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 (7/16)	CRH 12 VBR	CRH 12 VBUUR	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 VBR	CRH 14 VBUUR	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 (5/8)	CRH 16 VBR	CRH 16 VBUUR	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 VBR	CRH 18 VBUUR	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 (3/4)	CRH 20 VBR	CRH 20 VBUUR	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 VBR	CRH 22 VBUUR	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 (7/8)	CRH 24 VBR	CRH 24 VBUUR	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 VBR	CRH 26 VBUUR	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 (1)	CRH 28 VBR	CRH 28 VBUUR	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 VBR	CRH 30 VBUUR	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 (1 1/8)	CRH 32 VBR	CRH 32 VBUUR	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 VBR	CRH 36 VBUUR	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 (1 1/4)	CRH 40 VBR	CRH 40 VBUUR	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 VBR	CRH 44 VBUUR	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 (1 1/2)	CRH 48 VBR	CRH 48 VBUUR	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 VBR	CRH 52 VBUUR	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 (1 3/4)	CRH 56 VBR	CRH 56 VBUUR	3 240	88.900 (3 1/2)	50.800 (2)	44.450 (1 3/4)	1 3/4-12UN	34.925 (1 3/8)	52.8 (2.08)
50.800 (2)	CRH 64 VBR	CRH 64 VBUUR	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...VBUUR

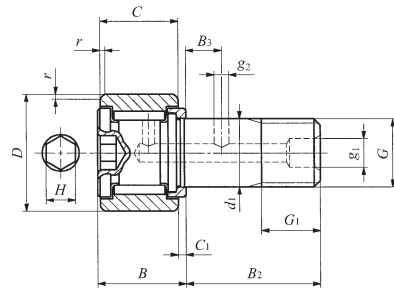
Boundary dimensions mm (inch)							Mounting dimension f Min. mm (inch)	Maximum tightening torque N-m	Basic dynamic load rating C N	Basic static load rating C <sub>0</sub> N
B <sub>2</sub>	B <sub>3</sub>	C <sub>1</sub>	g <sub>1</sub>	g <sub>2</sub>	H	R				
15.875 (5/8)	— (—)	0.794 (1/32)	— (—)	— (—)	3.175 (1/8)	180 (7)	8.334 (21/64)	3.4	4 710	5 410
15.875 (5/8)	— (—)	0.794 (1/32)	— (—)	— (—)	3.175 (1/8)	180 (7)	8.334 (21/64)	3.4	4 710	5 410
19.050 (3/4)	— (—)	0.794 (1/32)	— (—)	— (—)	3.175 (1/8)	200 (8)	11.112 (7/16)	6.8	6 340	8 530
19.050 (3/4)	— (—)	0.794 (1/32)	— (—)	— (—)	3.175 (1/8)	200 (8)	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)	250 (10)	13.494 (17/32)	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)	250 (10)	13.494 (17/32)	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)	300 (12)	18.256 (23/32)	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)	6.350 (1/4)	300 (12)	18.256 (23/32)	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)	6.350 (1/4)	360 (14)	24.209 (61/64)	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)	360 (14)	24.209 (61/64)	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)	500 (20)	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)	500 (20)	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)	500 (20)	32.941 (1 15/64)	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)	500 (20)	32.941 (1 15/64)	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)	600 (24)	37.306 (1 15/32)	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)	600 (24)	37.306 (1 15/32)	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)	760 (30)	40.878 (1 39/64)	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)	760 (30)	40.878 (1 39/64)	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)	760 (30)	51.991 (2 3/64)	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)	760 (30)	51.991 (2 3/64)	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)	760 (30)	59.928 (2 25/64)	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)	760 (30)	64.691 (2 35/64)	2 190	142 000	317 000

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**CAM FOLLOWERS**

Inch Series Heavy Duty Cam Followers **Full Complement Type/With Hexagon Hole**

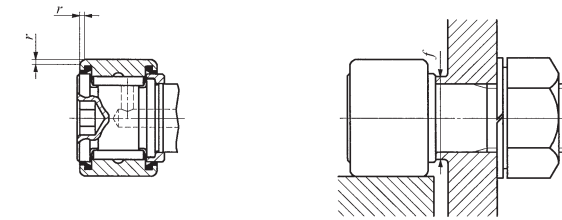


Stud dia. 6.350 – 50.800mm

CRH...VB

Stud dia. mm (inch)	Identification number		Mass (Ref.) g	Boundary dimensions mm (inch)					
	Shield type	Sealed type		D	C	d <sub>1</sub>	G UNF	G <sub>1</sub>	B max
6.350 (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	14.288 (9/16)	9.525 (3/8)	6.350 (1/4)	1/4 - 28	6.350 (1/4)	11.1 (0.44)
7.938 (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 (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 (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 (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 (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 (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 (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 (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 (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 1/8)	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 (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 (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.



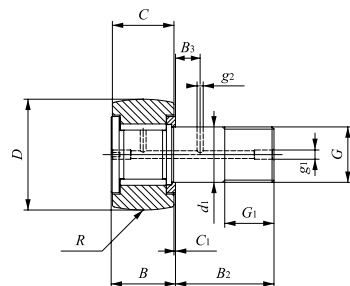
CRH...VBUU

Boundary dimensions mm (inch)							Mounting dimension f Min. mm (inch)	Maximum tightening torque N-m	Basic dynamic load rating C N	Basic static load rating C <sub>0</sub> 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 (1/8)	— (—)	— (—)	3.175 (1/8)	0.397 (1/16)	8.334 (21/64)	3.4	4 710	5 410
15.875 (5/8)	— (—)	0.794 (1/8)	— (—)	— (—)	3.175 (1/8)	0.397 (1/16)	8.334 (21/64)	3.4	4 710	5 410
19.050 (3/4)	— (—)	0.794 (1/8)	— (—)	— (—)	3.175 (1/8)	0.397 (1/16)	11.112 (7/16)	6.8	6 340	8 530
19.050 (3/4)	— (—)	0.794 (1/8)	— (—)	— (—)	3.175 (1/8)	0.397 (1/16)	11.112 (7/16)	6.8	6 340	8 530
22.225 (7/8)	6.350 (1/4)	0.794 (1/8)	4.762 (3/16)	2.381 (3/32)	4.762 (3/16)	0.794 (1/16)	13.494 (11/16)	17.6	8 710	12 300
22.225 (7/8)	6.350 (1/4)	0.794 (1/8)	4.762 (3/16)	2.381 (3/32)	4.762 (3/16)	0.794 (1/16)	13.494 (11/16)	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 (1/8)	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 15/16)	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)	7.938 (5/16)	1.588 (1/16)	32.941 (1 15/16)	258	35 300	55 600
50.800 (2)	12.700 (1/2)	1.588 (1/16)	4.762 (3/16)	3.175 (1/8)	11.112 (7/16)	1.588 (1/16)	37.306 (1 15/16)	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 15/16)	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 39/64)	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 39/64)	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 3/4)	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 3/4)	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 Heavy Duty Cam Followers **Full Complement Type/With Screwdriver Slot**



CRH...VR

Stud dia. 6.350 – 50.800mm

Stud dia. mm (inch)	Identification number		Mass (Ref.) g	Boundary dimensions mm (inch)					
	Shield type	Sealed type		D	C	d <sub>1</sub>	G UNF	G <sub>1</sub>	B max
6.350 (1/4)	CRH 8-1 VR	CRH 8-1 VUUR	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 VR	CRH 9 VUUR	15	14.288 (9/16)	9.525 (3/8)	6.350 (1/4)	1/4 - 28	6.350 (1/4)	11.1 (0.44)
7.938 (5/16)	CRH 10-1 VR	CRH 10-1 VUUR	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 VR	CRH 11 VUUR	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 (7/16)	CRH 12 VR	CRH 12 VUUR	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 VR	CRH 14 VUUR	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 (5/8)	CRH 16 VR	CRH 16 VUUR	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 VR	CRH 18 VUUR	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 (3/4)	CRH 20 VR	CRH 20 VUUR	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 VR	CRH 22 VUUR	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 (7/8)	CRH 24 VR	CRH 24 VUUR	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 VR	CRH 26 VUUR	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 (1)	CRH 28 VR	CRH 28 VUUR	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 VR	CRH 30 VUUR	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 (1 1/8)	CRH 32 VR	CRH 32 VUUR	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 VR	CRH 36 VUUR	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 (1 1/4)	CRH 40 VR	CRH 40 VUUR	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 VR	CRH 44 VUUR	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 (1 1/2)	CRH 48 VR	CRH 48 VUUR	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 VR	CRH 52 VUUR	2 380	82.550 (3 1/8)	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 (1 3/4)	CRH 56 VR	CRH 56 VUUR	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 (2)	CRH 64 VR	CRH 64 VUUR	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 (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.



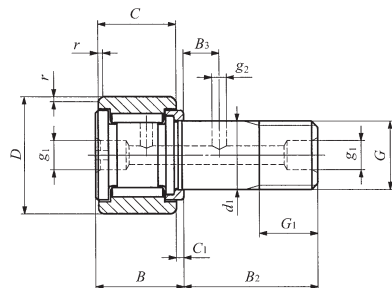
CRH...VUUR

Boundary dimensions mm (inch)						Mounting dimension f Min. mm (inch)	Maximum tightening torque N-m	Basic dynamic load rating C N	Basic static load rating C <sub>0</sub> 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)	— (-)	180 (7)	8.334 (21/16)	3.4	4 710	5 410
15.875 (5/8)	— (-)	0.794 (1/32)	*3.175 (1/8)	— (-)	180 (7)	8.334 (21/16)	3.4	4 710	5 410
19.050 (3/4)	— (-)	0.794 (1/32)	*3.175 (1/8)	— (-)	200 (8)	11.112 (7/16)	6.8	6 340	8 530
19.050 (3/4)	— (-)	0.794 (1/32)	*3.175 (1/8)	— (-)	200 (8)	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)	250 (10)	13.494 (11/16)	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)	250 (10)	13.494 (11/16)	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)	300 (12)	18.256 (3/2)	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)	300 (12)	18.256 (3/2)	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)	360 (14)	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)	360 (14)	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)	500 (20)	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)	500 (20)	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)	500 (20)	32.941 (1 3/16)	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)	500 (20)	32.941 (1 3/16)	258	35 300	55 600
50.800 (2)	12.700 (1/2)	1.588 (1/16)	4.762 (3/16)	3.175 (1/8)	600 (24)	37.306 (1 13/16)	356	45 700	80 600
50.800 (2)	12.700 (1/2)	1.588 (1/16)	4.762 (3/16)	3.175 (1/8)	600 (24)	37.306 (1 13/16)	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)	760 (30)	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)	760 (30)	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)	760 (30)	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)	760 (30)	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)	760 (30)	59.928 (2 39/64)	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)	760 (30)	64.691 (2 5/16)	2 190	142 000	317 000

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**CAM FOLLOWERS**

Inch Series Heavy Duty Cam Followers **Full Complement Type/With Screwdriver Slot**

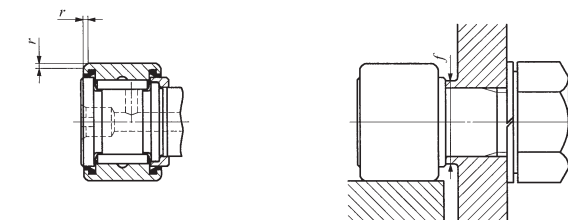


Stud dia. 6.350 – 50.800mm

CRH...V

Stud dia. mm (inch)	Identification number		Mass (Ref.) g	Boundary dimensions mm (inch)					
	Shield type	Sealed type		D	C	d <sub>1</sub>	G UNF	G <sub>1</sub>	B max
6.350 (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 (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 (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 (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 (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 (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 (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 (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 (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 (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 1/8)	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 (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 (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 f Min. mm (inch)	Maximum tightening torque N-m	Basic dynamic load rating C N	Basic static load rating C <sub>0</sub> 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 (1/8)	*3.175 (1/8)	— (-)	0.397 (1/16)	8.334 (2/16)	3.4	4 710	5 410
15.875 (5/8)	— (-)	0.794 (1/8)	*3.175 (1/8)	— (-)	0.397 (1/16)	8.334 (2/16)	3.4	4 710	5 410
19.050 (3/4)	— (-)	0.794 (1/8)	*3.175 (1/8)	— (-)	0.397 (1/16)	11.112 (7/16)	6.8	6 340	8 530
19.050 (3/4)	— (-)	0.794 (1/8)	*3.175 (1/8)	— (-)	0.397 (1/16)	11.112 (7/16)	6.8	6 340	8 530
22.225 (7/8)	6.350 (1/4)	0.794 (1/8)	4.762 (3/16)	2.381 (3/32)	0.794 (1/16)	13.494 (1/2)	17.6	8 710	12 300
22.225 (7/8)	6.350 (1/4)	0.794 (1/8)	4.762 (3/16)	2.381 (3/32)	0.794 (1/16)	13.494 (1/2)	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 (3/16)	18.256 (3/2)	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 (3/2)	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 (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)	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)	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 1/2)	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 1/2)	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 3/8)	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)	2.381 (3/32)	64.691 (2 5/16)	2 190	142 000	317 000

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