

# CAM FOLLOWERS

- Standard Type Cam Followers
- Centralized Lubrication Type Cam Followers
- Stainless Steel Made Cam Followers
- Easy Mounting Type Cam Followers
- Solid Eccentric Stud Type Cam Followers
- Miniature Type Cam Followers
- Eccentric Type Cam Followers
- Thrust Disk Type Cam Followers
- Cylindrical Roller Cam Followers
- Cam Follower G
- C-Lube 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.

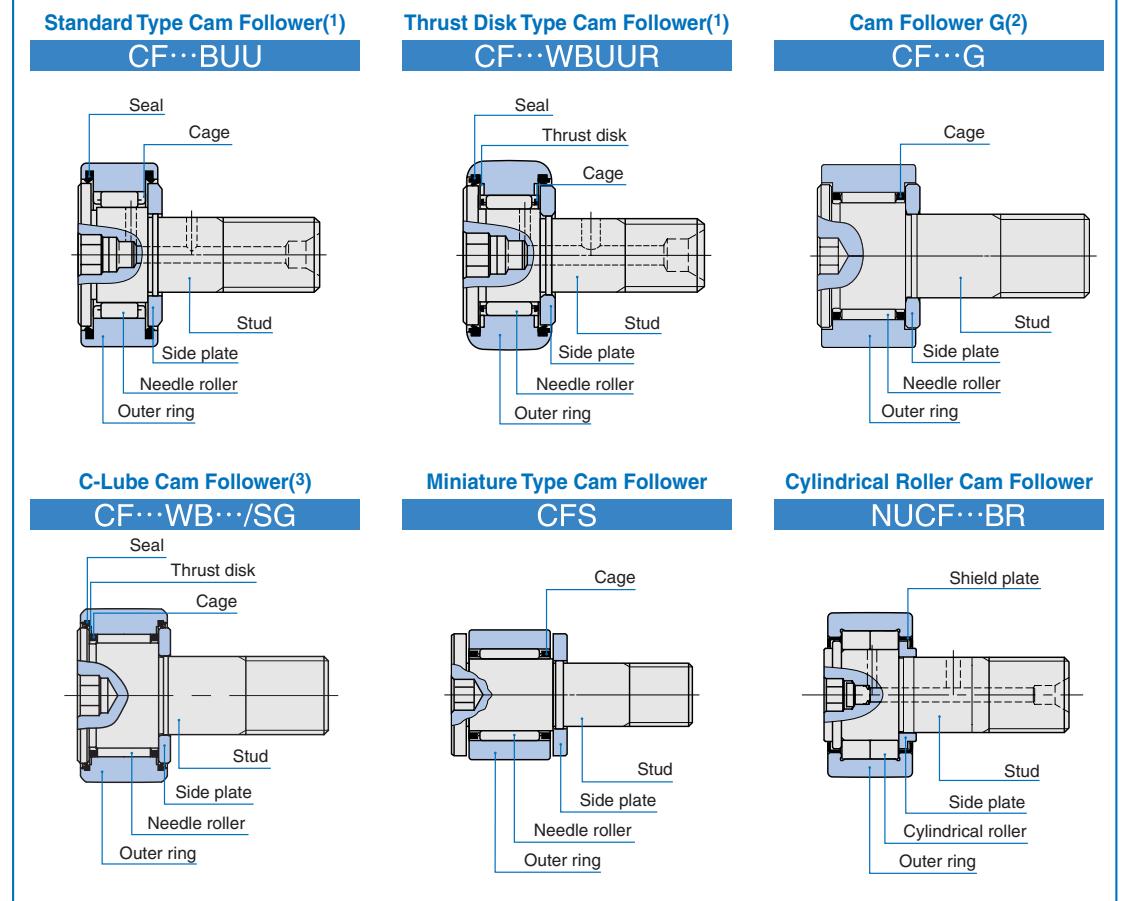
As studs already have threads or steps, they are easy to mount.

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



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> If needed, contact **IKO**.

<sup>(3)</sup> Thermosetting solid-type lubricant fills inner space of the bearing.

## Types

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				
Standard Type Cam Followers CF···B	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 hexagon hole	Shield type	CF ··· FB R	CF ··· FB	—	—	
			Sealed type	CF ··· FBUUR	CF ··· FBUU	—	—	
Solid Eccentric Stud Type Cam Followers CFES···B	High carbon steel made	With hexagon hole	Shield type	CFES ··· B R	CFES ··· B	—	—	
			Sealed type	CFES ··· BUUR	CFES ··· BUU	—	—	
	Eccentric Type Cam Followers CFE···B	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	
Thrust Disk Type Cam Followers CF···WB	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 Followers CF-RU1, CF-FU1	High carbon steel made	With screwdriver slot	Sealed type	CF-RU1	CF-FU1	—	—	
Easy Mounting Type Cam Followers CF-SFU···B	High carbon steel made	With hexagon hole	Sealed type	—	CF-SFU···B	—	—	
Cam Follower G CF···G	High carbon steel made	With hexagon hole	Shield type	—	CF ··· G	—	—	
C-Lube Cam Followers CF···WB··/SG	High carbon steel made	With hexagon hole	Sealed type	CF···WB··/SG	—	—	—	
Miniature CFS series	Miniature Type Cam Followers CFS	High carbon steel made	With hexagon hole	Shield type	—	CFS	—	
			Shield type	—	CFS ··· F	—	CFS ··· FV	
	Thrust Disk Type Miniature Cam Followers CFS···W	High carbon steel made	With hexagon hole	Shield type	—	CFS ··· W	—	
			Shield type	—	CFS ··· FW	—	—	
Cylindrical Roller Cam Followers NUCF···B	High carbon steel made	With hexagon hole	Shield type	—	—	NUCF···BR	—	
Inch series	Inch series Cam Followers 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 UU	
	Inch series Heavy Duty Cam Followers 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 cam guide 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 cam guide 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 cam guide 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 contact area 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.

### Cam Follower G

Taking over the basic performance of Standard Type Cam Follower, this cam follower realizes a reasonable price. As grease is pre-packed, the unit may be used right after unpacking.

### C-Lube Cam Followers

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.

### 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.

### 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.

### Inch series Cam Followers

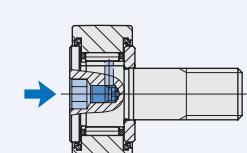
Two types, CR and CRH, are available in the Inch series Cam Followers. Black oxide film treatment is made on CRH models.

## Lubrication method of Hex Head Cam Followers

〈Types〉 Standard Type, Solid Eccentric Stud Type, Eccentric Type, Thrust Disk Type, Easy Mounting Type, Cylindrical Roller Type.

### 1 way

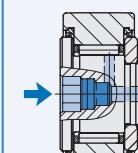
Stud dia. 5~10mm



Re-greasing fitting is incorporated in the stud head.

### 3 ways

Stud dia. 12~30mm



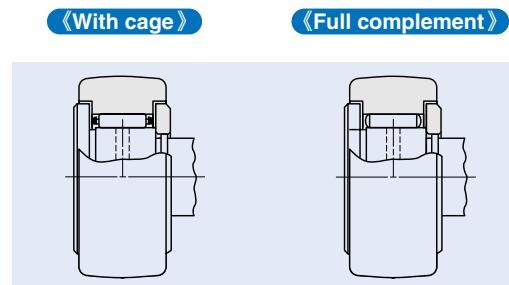
Grease nipple is incorporated in the stud head.

## 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

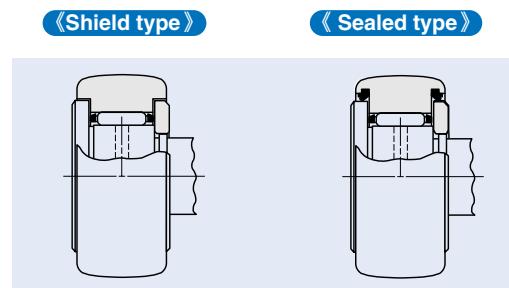
Cam Followers include the caged type and the full complement type. The caged type has a small coefficient of friction and is suitable for high speed rotations, while the full complement type is suitable for heavy loads at low speed rotations.



### Seal structure

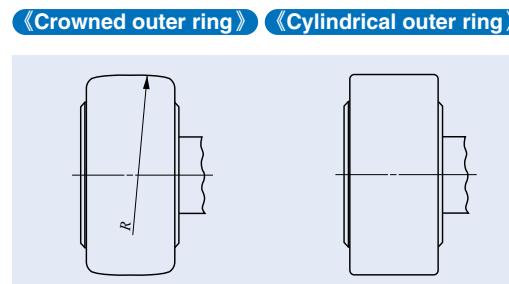
Cam Followers include the shield type and the sealed type. In the shield type, the narrow clearances between the outer ring and the stud flange and between the outer ring and the side plate form labyrinth.

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



### Shape of outer ring outside surface

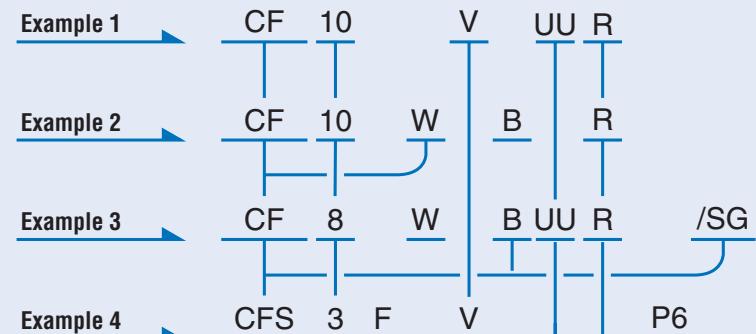
The outside surface of the outer ring of Cam Followers, which makes direct contact with the mating cam guide surface, is either crowned or cylindrical. The crowned outer rings are effective in moderating the edge load due to mounting errors. The cylindrical outer rings have a large contact area with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



## Identification number

Some examples of the identification number of Cam Followers are shown below. For applicable material symbol, roller guide method, seal structure and shape of outer ring outside surface, refer dimension table of each series.

### Examples of identification number



#### Model code

CF···B	Standard Type Cam Follower
CFES···B	Solid Eccentric Stud Type Cam Follower
CFE···B	Eccentric Type Cam Follower
CF···WB	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···B	Easy Mounting Type Cam Follower
CF···G	Cam Follower G
CF···WB··/SG	C-Lube Cam Follower
CFS	Miniature Type Cam Follower
CFS···W	Thrust Disk Type Miniature Cam Follower
NUCF···B	Cylindrical Roller Cam Follower
CR···B	Inch series Cam Follower (With Hexagon socket)
CR	Inch series Cam Follower (With Screw driverslot)
CRH···B	Inch series Cam Follower (With Hexagon socket)
CRH	Inch series Cam Follower (With Screw driverslot)

#### Size

The value indicates a stud diameter. (unit: mm)  
In the inch series, the outside diameter of the outer ring 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

#### 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
P5	Class 5
P4	Class 4

Applicable to  
Miniature CFS  
series



## 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 cam guide surface without causing any deformation or indentation on the cam guide surface when the outer ring of the Cam Follower makes contact with the mating cam guide surface (plane). The track capacities shown in Tables 7.1 and 7.2 are applicable when the hardness of the mating cam guide surface is 40HRC (Tensile strength 1250N/mm<sup>2</sup>). When the hardness of the mating cam guide 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 cam guide 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 cam guide especially for high-speed rotations such as cam mechanisms. For lubrication between the outer ring and the mating cam guide surface, C-Lube Unit for Cam Followers is recommended. (See page I18.)

unit: N

Table 7.1 Track load capacity

Type of bearing	Identification number With crowned outer ring	Track capacity	Identification number With cylindrical outer ring	Track capacity
Metric CF series <sup>(1)</sup>	CF 3 BR	542	CF 3 B	1 360
	CF 4 BR	712	CF 4 B	1 790
	CF 5 BR	794	CF 5 B	2 210
	CF 6 BR	1 040	CF 6 B	3 400
	CF 8 BR	1 330	CF 8 B	4 040
	CF10 BR	1 610	CF10 B	4 680
	CF10-1BR	2 030	CF10-1B	5 530
	CF12 BR	2 470	CF12 B	7 010
	CF12-1BR	2 710	CF12-1B	7 480
	CF16 BR	3 060	CF16 B	11 200
	CF18 BR	3 660	CF18 B	14 500
	CF20 BR	5 190	CF20 B	23 200
	CF20-1BR	4 530	CF20-1B	21 000
	CF24 BR	6 580	CF24 B	34 300
	CF24-1BR	8 020	CF24-1B	39 800
	CF30 BR	9 220	CF30 B	52 700
	CF30-1BR	9 990	CF30-1B	56 000
	CF30-2BR	10 800	CF30-2B	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 Standard Type Cam Follower series. Also applicable to Cam Follower G, C-Lube Cam Follower and Cylindrical Roller Cam Follower.

<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

Type of bearing	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

Notes<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

I  
CF  
CFS  
NUCF  
CR

## Allowable Rotational Speed

The allowable rotational speed of Cam Followers is affected by mounting and operating conditions. For reference, Table 9 shows  $d_1 n$  values when only pure radial loads are applied. Considering that axial loads also act under actual operating conditions, the recommended  $d_1 n$  value is 1/10 of the value shown in the table.

In case of C-Lube Cam Follower,  $d_1 n$  value is 10000 or less.

**Table 9**  $d_1 n$  values of Cam Followers <sup>(1)</sup>

Type	Lubricant	Grease	Oil
Caged type		84 000	140 000
Full complement type		42 000	70 000
Cylindrical Roller Cam Follower		66 000	110 000

Note<sup>(1)</sup>  $d_1 n$  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 S2 (SHOWA SHELL SEKIYU K.K.).

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** Bearings with prepacked grease

Series	Size of stud dia. $d_1$ <sup>(1)</sup> mm	Type	With cage		Full complement type
		Shield type	Sealed type		
Metric series	CF ··· B	$d_1 \leq 5$	O	O	—
CFES ··· B	6 $\leq d_1 \leq 10$	O	O	O	
	CFE ··· B	X			
	12 $\leq d_1$				
Cam Follower G	CF ··· G	O	—	—	
C-Lube Cam Followers	CF ··· WB ··· /SG <sup>(2)</sup>	—	X	—	
Miniature series	CFS CFS ··· W	O	—	O	
Centralized Lubrication Type Cam Followers	CF-RU1 CF-FU1	—	O	—	
Easy Mounting Type Cam Followers	CF-SFU ··· B	—	O	—	
Cylindrical Roller Cam Followers	NUCF ··· B	—	—	O	
Inch series	CR ··· B CR	O	O	O	
Inch series	CRH ··· B CRH	—	—	O	

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

<sup>(2)</sup> Thermosetting solid-type lubricant fills inner space of the bearing.

## Oil Hole

The position of oil hole is shown in Table 11.

Perform greasing quietly by fitting a lubrication nozzle indicated in Table 12 to a straight type grease gun in JIS B 9808:1991 and pressing the nozzle against the grease nipple or re-greasing fitting.

Due to their structures, lubrication is not possible for CF3/CF4, C-Lube Cam Follower, Cam Follower G and Miniature CFS series.

**Table 11** Position of oil hole

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
Standard Type Cam Follower	CF ··· B	$d_1 < 5$	—	—	—
Solid Eccentric Stud Type Cam Follower	CFES ··· B	$5 \leq d_1 \leq 10$	O <sup>(2)</sup>	—	—
Eccentric Type Cam Follower	CFE ··· B	$10 < d_1$	O <sup>(3)</sup>	O	O
Thrust Disk Type Cam Follower	CF ··· WB	$d_1 \leq 12$	O	—	—
Centralized Lubrication Type Cam Follower <sup>(4)</sup> CF-RU1, CF-FU1		$12 < d_1$	O	O	O
Easy Mounting Type Cam Follower	CF-SFU ··· B	$d_1 \leq 10$	O <sup>(2)</sup>	—	—
		$10 < d_1$	O <sup>(5)</sup>	—	—
Cam Follower G	CF ··· G		—	—	—
C-Lube Cam Follower	CF ··· WB ··· /SG		—	—	—
Miniature Type Cam Follower	CFS		—	—	—
Thrust Disk Type Miniature Cam Follower	CFS ··· W		—	—	—
Cylindrical Roller Cam Follower	NUCF ··· B	$d_1 \leq 10$	O <sup>(2)</sup>	—	—
		$10 < d_1$	O <sup>(3)</sup>	O	O
Inch series Cam Follower	CR ··· B (With Hexagon socket)	$d_1 \leq 6.35$	—	—	—
		$6.35 < d_1$	—	O	O
Inch series Cam Follower	CR (With Screw driverslot)	$d_1 \leq 6.35$	O	—	—
		$6.35 < d_1$	O	O	O
Inch series Cam Follower	CRH ··· B (With Hexagon socket)	$d_1 \leq 7.938$	—	—	—
		$7.938 < d_1$	—	O	O
Inch series Cam Follower	CRH (With Screw driverslot)	$d_1 \leq 7.938$	O	—	—
		$7.938 < d_1$	O	O	O

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. See page I4.

<sup>(3)</sup> Grease nipple is incorporated in the hexagon hole. Re-greasing can be made from the stud head and the stud end by press fitting a supplied grease nipple into the stud end. See page I4.

<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.

I

CF  
CFS  
NUCF  
CR

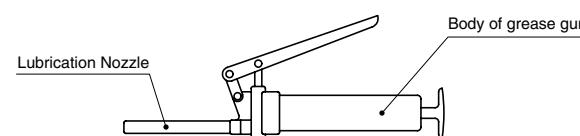
Table 12 Type and Dimension of Lubrication Nozzles

Type	Dimension	Applicable grease nipple and re-grease fitting
A-5126T		NPF4-1 <sup>(1)</sup> NPF6-1 <sup>(1)</sup> Re-grease fitting <sup>(1)</sup>
A-5120R		NPF4-1 <sup>(1)</sup> NPF6-1 <sup>(1)</sup>
B-5120R		
A-5120V		
A-5240V		NPT4-1 NPT6-1 NPB2 NPB3 NPB3-1 NPB4
B-5120V		
B-5240V		

Note<sup>(1)</sup> HSP-3(Yamada Corporation)can be used for them.

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

If required, please consult to IKO with type of lubrication nozzle.



## Accessories

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

Table 13 Accessories

Series <sup>(1)</sup> Size of stud dia. $d_1$ mm	Accessories	Grease nipple	Plug	Nut	Spring washer
Standard Type Cam Follower	CF … B	$d_1 \leq 10$	—	—	○
		$10 < d_1$	○	—	○
Eccentric Type Cam Follower	CFE … B	$d_1 \leq 10$	—	—	○
		$10 < d_1$	○	—	○
Solid Eccentric Stud Type Cam Follower	CFES … B	$d_1 \leq 10$	—	—	○
		$10 < d_1$	○	—	○
Centralized Lubrication Type Cam Follower	CF - RU1, CF - FU1	—	—	○	—
Easy Mounting Type Cam Follower	CF - SFU … B	—	—	—	—
Cam Follower G	CF … G	—	—	○	—
C-Lube Cam Follower	CF … WB … SG	—	—	○	—
Miniature Type Cam Follower	CFS	—	—	○	—
Thrust Disk Type Miniature Cam Follower	CFS … W	—	—	○	—
Cylindrical Roller Cam Follower	NUCF … B (With Hexagon socket)	$d_1 \leq 10$	—	—	○
		$10 < d_1$	○	—	○
Inch series Cam Follower	CR … B (With Hexagon socket)	$d_1 \leq 6.35$	—	—	○
		$9.525 \leq d_1$	○	○	○
Inch series Cam Follower	CR (With Screw driverslot)	○	○	○	—
Inch series Cam Follower	CRH … B (With Hexagon socket)	$d_1 \leq 7.938$	—	—	○
		$11.112 \leq d_1$	○	○	○
Inch series Cam Follower	CRH (With Screw driverslot)	○	○	○	—

Note<sup>(1)</sup> For Eccentric Type Cam Follower CFE, thread diameter G is applied.

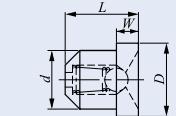
Remark: The standard grease nipple (brass) is included in the Stainless Steel Made Cam Follower.

We also have the stainless steel grease nipple. Please contact IKO and request the product.

I

CF  
CFS  
NUCF  
CRTable 14 Dimensions of grease nipple for standerd Cam Follower<sup>(1)</sup>

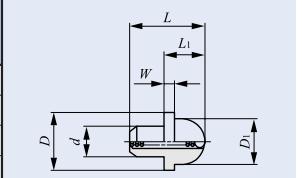
Code number	Dimensions mm				Size of stud dia. $d_1$ <sup>(2)</sup> mm
	d	D	L	W	
NPF4-1	4	5	5	1.5	12~16
NPF6-1	6	7	8	2	18~30

Notes<sup>(1)</sup> This table is applicable except Inch series.

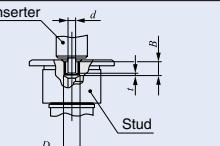
(2) For Eccentric Type Cam Follower CFE, thread diameter G is applied.

Table 15 Dimensions of Grease nipple for Inch series

Code number	Dimensions mm						Applicable Cam Followers
	d	D	$D_1$	L	$L_1$	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	6	13	6	2	CR48, CRH48~CRH64



**Table 16 Dimensions of plug for Inch series**

Code number	Dimensions of plug mm			Dimension of inserter mm $d = 0.1$	Applicable Cam Followers	
	D	t	B			
USB2F	3.18	0.3	3.3	2.3	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	CR48, CRH48 ~ CRH64	

## Special Specification

The grease nipple supplied with Metric series Cam Follower with hexagon socket as an accessory may be replaced with the NPT type grease nipple indicated in Table 17 upon your request. If required, please order with supplemental code, "/NP" at the end of identification number.

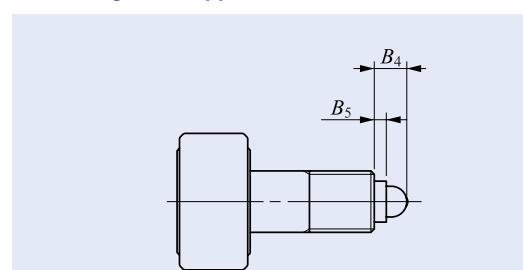
### Example of Identification Number.

CF 12 BUUR / NP

**Table 17 Dimension of NPT type grease nipple**

Code number	Dimension mm						Size of stud dia. $d_1^{(1)}$ mm
	d	D	$D_1$	L	$L_1$	W	
NPT4-1	4	8	6	12	6	2	12~16
NPT6-1	6	8	6	14	8	4	18~30

Note<sup>(1)</sup> For Eccentric Type Cam Follower CFE, thread diameter G is applied.

**Table 18 Dimension of assembled NPT type grease nipple**

Code number	Dimension mm	Size of stud dia. $d_1^{(1)}$ mm
	$B_4$	$B_5$
NPT4-1	6	2
NPT6-1	8	4

Note<sup>(1)</sup> For Eccentric Type Cam Follower CFE, thread diameter G is applied.

## Operating Temperature Range

The operating temperature range for IKO Cam Followers is -20°C ~ +120°C. Please pay attention as the types shown in table 19 have different range.

**Table 19 Restricted Operating Temperature Range**

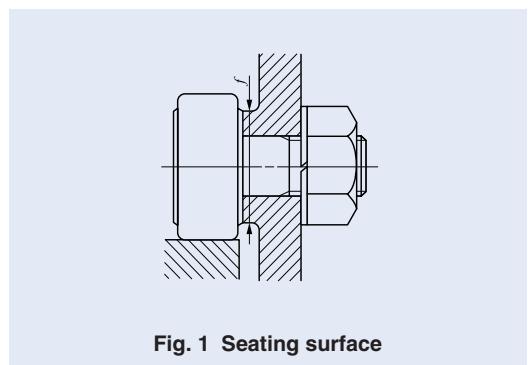
Type Size of stud dia. $d_1$ mm	Type	With cage
	Shield type	Sealed type
Miniature Type Cam Followers CFS	$d_1 = 2$	-20°C ~ 110°C <sup>(1)</sup> —
Thrust Disk Type Miniature Cam Followers CFS … W		
Standard Type Cam Followers CF … B	$d_1 = 3, 4$	-20°C ~ 110°C <sup>(1)</sup> 80°C
Thrust Disk Type Cam Followers CF … WB	$d_1 = 5$	-20°C ~ 120°C 80°C
Stainless Steel Standard Type Cam Followers CF … FB	$3 \leq d_1 \leq 5$	-20°C ~ 110°C <sup>(1)</sup> 80°C
Stainless Steel Thrust Disk Type Cam Followers CF … FWB		
C-Lube Cam Followers CF … WB … /SG	$5 \leq d_1 \leq 20$	— -15°C ~ 80°C <sup>(2)</sup>

Notes<sup>(1)</sup> 100 degree C in continuous operation.

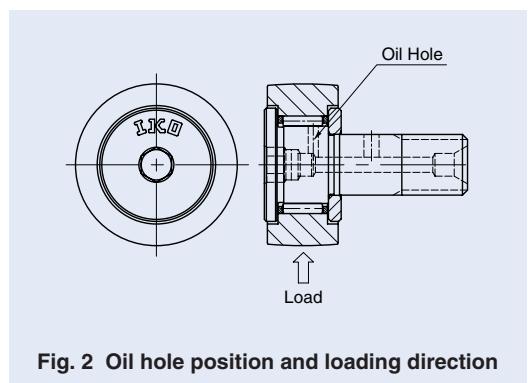
<sup>(2)</sup> 60 degree C or lower is recommended in long time.

## 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 Solid Eccentric Stud Type Cam Followers and Eccentric Type Cam Followers, are mounted in reference position where IKO mark on the head of stud is located as Fig.3. 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. 4. 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.

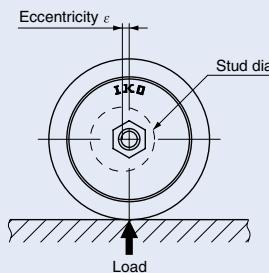


Fig. 3 Reference position for adjusting of Solid Eccentric Stud Type Cam Followers and Eccentric Type Cam Followers

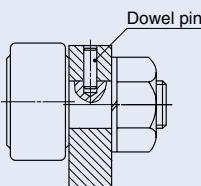


Fig. 4 Mounting example of Solid Eccentric Stud Type Cam Follower

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. 5.)

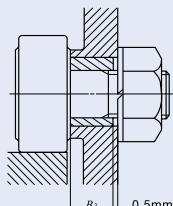
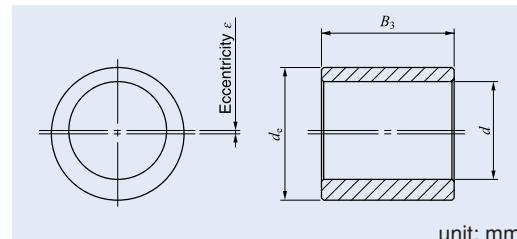


Fig. 5 Length of the mounting hole of Eccentric Type Cam Follower

⑥ Eccentric collar is available for Inch series Cam Followers. Cam Followers with Eccentric collars, CRE are also available. If required, please consult with IKO.

Table 20 Eccentric collars for Inch series Cam Followers



Identification number of collar	Outer diameter of collar $d_e$	Length of collar $B_3$	Eccentricity $\varepsilon$	Stud dia. $d$	Applicable Cam Followers
EB 8	6.350 ( 1/4 )	6.350 ( 1/4 )	0.250	4.826	CR 8 CR 8-1 (V)(B)(UU)(R)
EB10	9.525 ( 3/8 )	9.525 ( 3/8 )	0.380	6.350 ( 1/4 )	CR10 CR10-1 (V)(B)(UU)(R)
EB12	12.700 ( 1/2 )	12.700 ( 1/2 )	0.380	9.525 ( 3/8 )	CR12 CR14 (V)(B)(UU)(R)
EB16	15.875 ( 5/8 )	15.875 ( 5/8 )	0.760	11.112 ( 7/16 )	CR16 CR18 (V)(B)(UU)(R)
EB20	17.450	17.450	0.760	12.700 ( 1/2 )	CR20 CR22 (V)(B)(UU)(R)
EB24	22.225 ( 7/8 )	22.225 ( 7/8 )	0.760	15.875 ( 5/8 )	CR24 CR26 (V)(B)(UU)(R)
EB28	25.400 ( 1 )	25.400 ( 1 )	0.760	19.050 ( 3/4 )	CR28 CR30 (V)(B)(UU)(R)
EB32	30.150	30.150	0.760	22.225 ( 7/8 )	CR32 CR36 (V)(B)(UU)(R)
EB48	44.450 ( 1 3/4 )	44.450 ( 1 3/4 )	1.520	31.750 ( 1 1/4 )	CR48 VUU

⑦ 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. 6.)

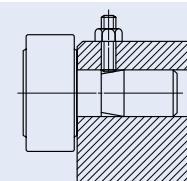


Fig. 6 Mounting example of Easy Mounting Type Cam Follower

## Precaution For Use

- 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.
- To ensure normal rotation of the C-Lube Cam Follower, apply a load of 1% or over of the dynamic load rating at use.

## Option Parts

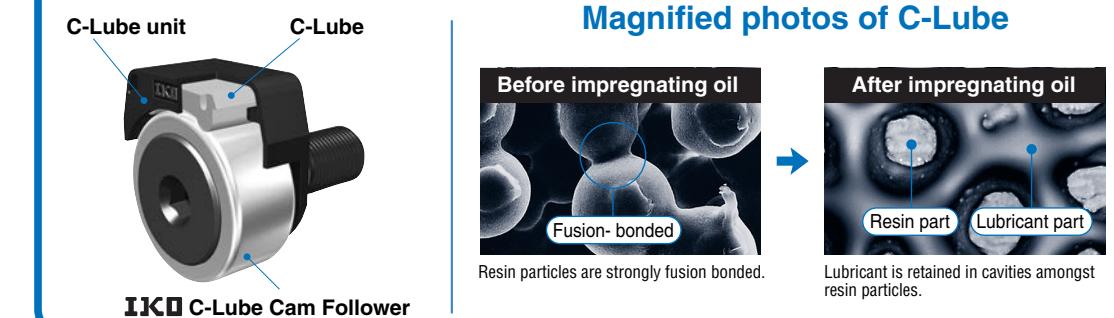
# C-Lube Unit for Cam Followers

## Structure and features

IKO C-Lube unit for Cam Follower is a lubrication part to be mounted on the Cam Follower and its integral capillary lubricating element has a lot of lubrication oil impregnated in it. The capillary lubricating element is consecutive porous resin formed by sinter molding of fine resin powder and a lot of lubrication oil is impregnated in it by using the capillary action that occurs within the internal space.

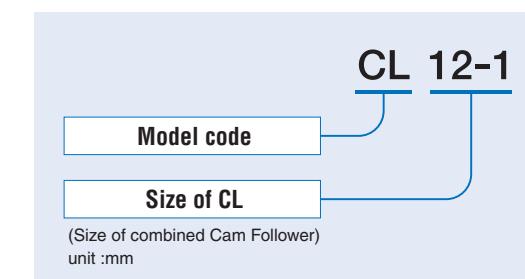
Regular lubrication is not needed as lubrication oil is supplied onto the outside diameter surface of the outer ring and mating guide surface (cam guide surface). The grease is not scattered and contamination of the surrounding environment is prevented. The combination with IKO C-Lube cam follower (See Page I43) realizes maintenance-free cam follower inside and cam guide surface.

## 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 exceed  $d_{1n}=10,000$  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.

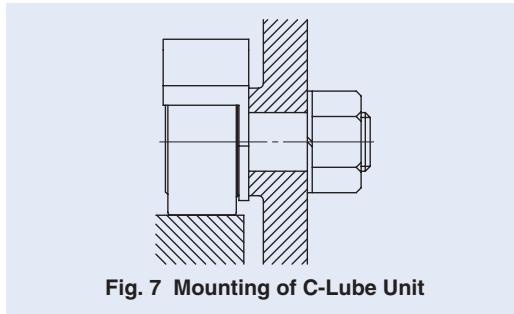
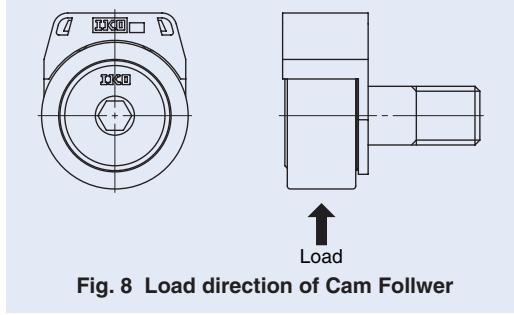


Fig. 7 Mounting of C-Lube Unit

- 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.

## Precaution for use

① 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.

② Do not apply a load onto the C-Lube Unit directly.

③ To ensure normal rotation of the Cam Follower, apply a load of 1% or over of the dynamic load rating at use.  
Also, the outer ring needs to be rotate over a revolution to supply lubricant on entire outer diameter surface.

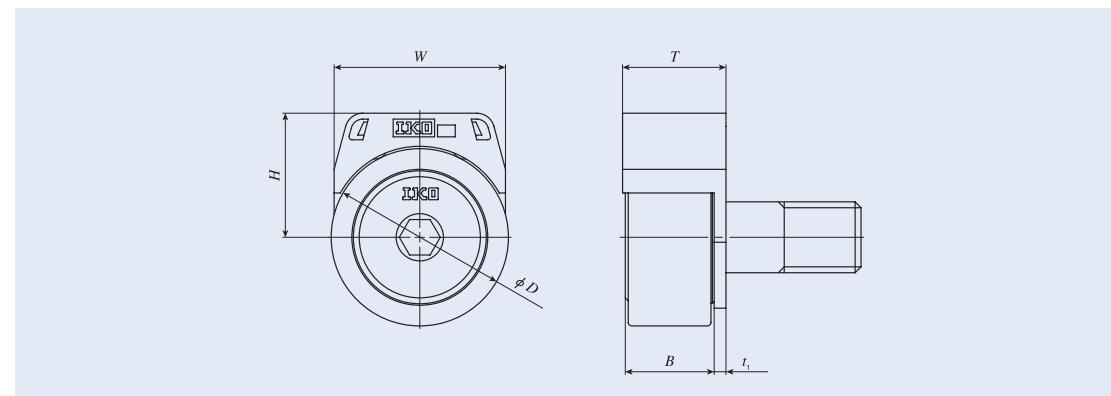
④ The maximum allowable load on IKO Cam Follower with C-Lube Unit is, 80% of the maximum allowable load of the needle bearing.  
C-Lube Unit may be damaged and influenced to the smooth rotation and lubricating performance by excessive load.

⑤ After assembling C-Lube Unit and Cam Followers in the machine, please confirm that C-Lube unit provides oil correctly to the cam guide surface before actual operation.

⑥ Do not use in the environment which contamination of liquid and/or harmful foreign matter are expected.

⑦ Replace with new C-Lube Unit when inside oil finishes completely. Re-lubrication is not possible.

Table 21 Dimensions of C-Lube Unit for Cam Followers



Model number	Boundary Dimensions mm				Applicable Cam Followers		Boundary Dimensions mm	
	W	H	T	t <sub>1</sub>	Model number (1)	D	B	
CL 5	12.4	10.7	12.1	1.5	CF 5 B	13	10	
CL 6	15.4	12.6	14	1.5	CF 6 B	16	12.2 max	
CL 8	18.4	14.2	14	1.5	CF 8 B	19	12.2 max	
CL 10	21	17	15.5	2	CF 10 B	22	13.2 max	
CL 10-1	21	19.2	15.5	2	CF 10-1 B	26	13.2 max	
CL 12	29	21	17.5	2	CF 12 B	30	15.2 max	
CL 12-1	29	22	17.5	2	CF 12-1 B	32	15.2 max	
CL 16	33.8	27.4	23.4	2.5	CF 16 B	35	19.6 max	
CL 18	38.8	30.4	25.4	2.5	CF 18 B	40	21.6 max	
CL 20	45.8	38.4	29.9	3	CF 20 B	52	25.6 max	
CL 20-1	45.8	35.4	29.9	3	CF 20-1 B	47	25.6 max	

Note<sup>(1)</sup> Only representative types shown in the table, but also applicable to the same size of Metric series, Cam Follower G with thrust disk type, centralized lubrication type, C-Lube Cam Followers and Cylindrical Roller Cam Followers. Combine with C-Lube Cam Followers is strongly recommended for full maintenance free.

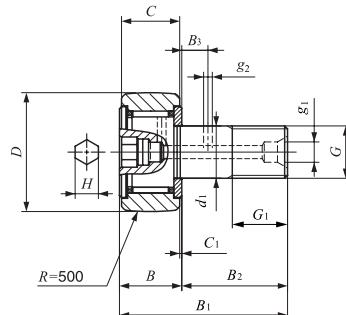
Remark Load on the Cam Follower with the C-Lube unit equipped must be up to 80% of the maximum allowable static load of the Cam Follower to be combined. For the maximum allowed static load of each Cam Follower, please see the dimension tables of respective models.





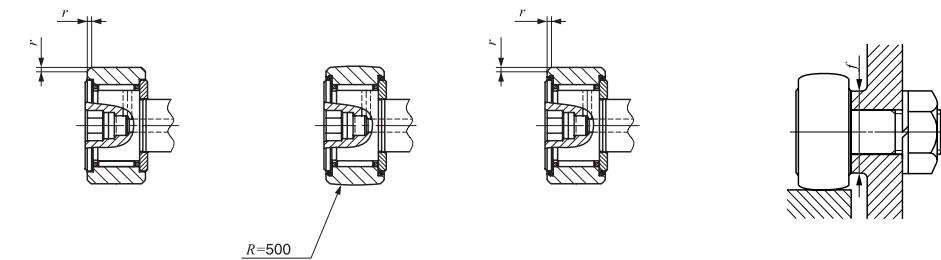
## CAM FOLLOWERS

Stainless Steel Made Cam Followers With Cage/With Hexagon Hole



Stud dia. 3–20mm

CF…FBR



CF…FB

CF…FBUUR

CF…FBUU

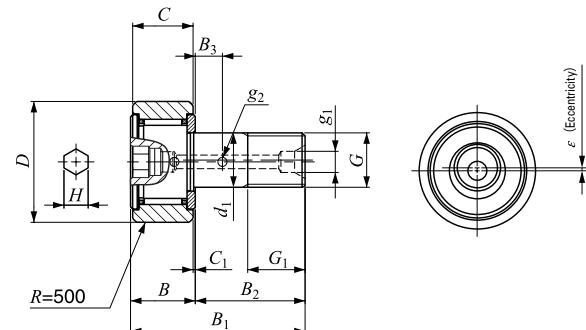
Stud dia. mm	Identification number				Mass (Ref.) g					
	Shield type		Sealed type			D	C	d <sub>1</sub>	G	G <sub>1</sub>
	With crowned outer ring	With cylindrical outer ring	With crowned outer ring	With cylindrical outer ring						
3	CF 3 FBR	CF 3 FB	CF 3 FBUUR	CF 3 FBUU	4.3	10	7	3	M 3×0.5	5
4	CF 4 FBR	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 FB	CF 6 FBUUR	CF 6 FBUR	18.5	16	11	6	M 6×1	8
8	CF 8 FBR	CF 8 FB	CF 8 FBUUR	CF 8 FBUR	28.5	19	11	8	M 8×1.25	10
10	CF 10 FBR CF 10-1 FBR	CF 10 FB CF 10-1 FB	CF 10 FBUUR CF 10-1 FBUUR	CF 10 FBUR CF 10-1 FBUR	45 60	22 26	12	10	M10×1.25	12
12	CF 12 FBR CF 12-1 FBR	CF 12 FB CF 12-1 FB	CF 12 FBUUR CF 12-1 FBUUR	CF 12 FBUR CF 12-1 FBUR	95 105	30 32	14	12	M12×1.5	13
16	CF 16 FBR	CF 16 FB	CF 16 FBUUR	CF 16 FBUR	170	35	18	16	M16×1.5	17
18	CF 18 FBR	CF 18 FB	CF 18 FBUUR	CF 18 FBUR	250	40	20	18	M18×1.5	19
20	CF 20 FBR CF 20-1 FBR	CF 20 FB CF 20-1 FB	CF 20 FBUUR CF 20-1 FBUUR	CF 20 FBUR CF 20-1 FBUR	460 385	52 47	24	20	M20×1.5	21

Note<sup>(1)</sup> Minimum allowable value of chamfer dimension rRemarks1. Models with a stud diameter d<sub>1</sub> of 4 mm or less have no oil hole. For models with a stud dia. 5 to 10 mm, oil hole (re-greasing fitting) is provided at the head. Other models are provided with an oil hole (grease nipple) at the head and an 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 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
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	r <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	0.3	11	2.7	2 930	2 920	1 950
12.2 max	32.2 max	20	—	0.6	—	—	4	0.3	13	6.5	3 400	3 790	3 790
13.2 max	36.2 max	23	—	0.6	—	—	5	0.3	16	13.8	4 340	5 510	5 510
15.2 max	40.2 max	25	6	0.6	4	3	6	0.6	21	21.9	6 330	7 830	7 830
19.6 max	52.1 max	32.5	8	0.8	4	3	6	0.6	26	58.5	9 620	14 700	14 700
21.6 max	58.1 max	36.5	8	0.8	6	3	8	1	29	86.2	11 800	20 200	20 200
25.6 max	66.1 max	40.5	9	0.8	8	4	8	1	34	119	16 500	27 700	27 700

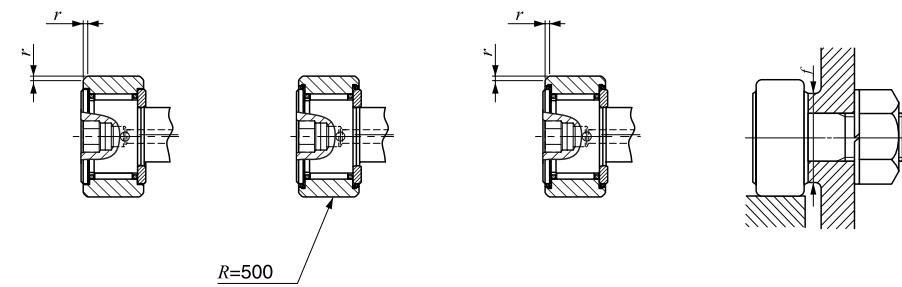
## CAM FOLLOWERS

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



Stud dia. 6–18mm

CFES...BR



CFES...B

CFES...BUUR

CFES...BUU

Stud dia. mm	Identification number				Mass (Ref.) 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  $d_1$  of 10 mm or less have an oil hole (re-greasing fitting) at the head. Other models are provided with an oil hole (grease nipple) at the head and an 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.

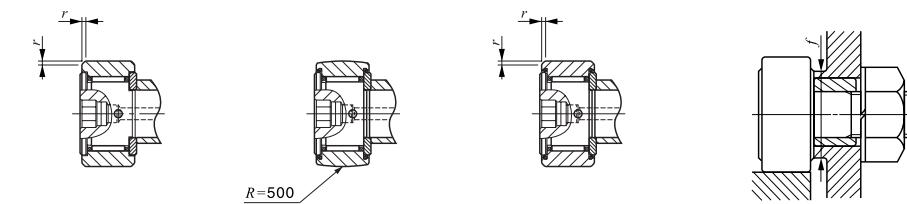
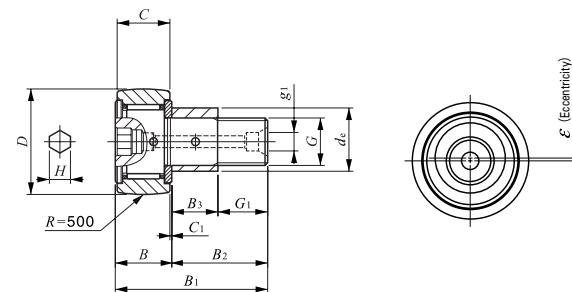
G	Boundary dimensions mm										Eccentricity $\varepsilon$	Mounting dimension f Min. mm	Maximum tightening torque N·m	Basic dynamic load rating C N	Basic static load rating C <sub>0</sub> N	Maximum allowable static load N
	G <sub>1</sub>	B <sub>max</sub>	B <sub>1</sub> max	B <sub>2</sub>	B <sub>3</sub>	C <sub>1</sub>	g <sub>1</sub>	g <sub>2</sub>	H	r <sub>smin</sub> <sup>(1)</sup>						
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	4	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	4	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	4	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

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	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 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	1220	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<sup>(1)</sup> Minimum allowable value of chamfer dimension r

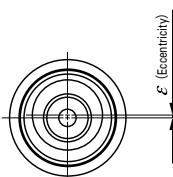
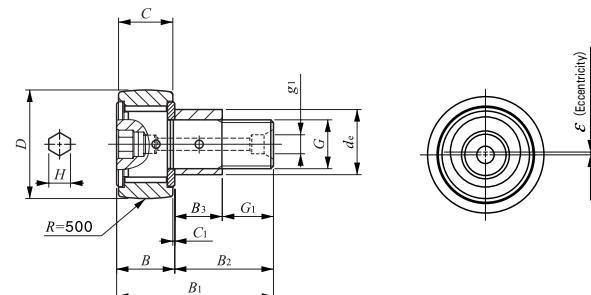
Remarks1. Models with a thread diameter G of 10 mm or less have an oil hole (re-greasing fitting) at the head. Other models are provided with an oil hole (grease nipple) at the head and an oil hole on the end surface of the stud.

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.

G	Boundary dimensions mm								Eccentricity ε	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	
	B <sub>3</sub>	B <sub>max</sub>	B <sub>1max</sub>	B <sub>2</sub>	C <sub>1</sub>	g <sub>1</sub>	G <sub>1</sub>	H							
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	4	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	4	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	4	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	6	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	6	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	6	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	6	24	12	1	0.8	40	215	30 500	52 600	52 000
M30×1.5	32.5	37	100	63	1	6	30.5	17	1	1.5	49	438	45 400	85 100	85 100
M30×1.5	32.5	37	100	63	1	6	30.5	17	1	1.5	49	438	45 400	85 100	85 100
M30×1.5	32.5	37	100	63	1	6	30.5	17	1	1.5	49	438	45 400	85 100	85 100

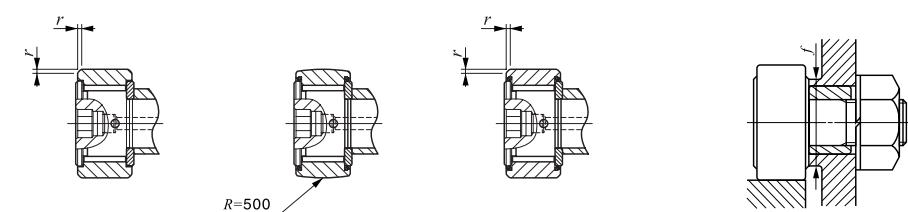
## CAM FOLLOWERS

Eccentric Type Cam Followers Full Complement Type/With Hexagon Hole



Outside diameter of eccentric collar 9–41 mm

CFE···VBR



CFE···VB

CFE···VBUUR

CFE···VBUU

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 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

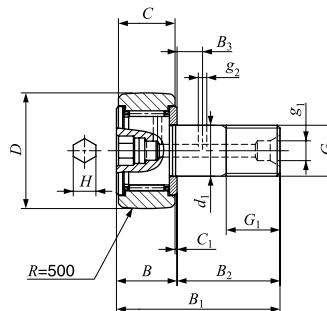
Note<sup>(1)</sup> Minimum allowable value of chamfer dimension r

Remarks1. Models with a thread diameter G of 10 mm or less have an oil hole (re-greasing fitting) at the head. Other models are provided with an oil hole (grease nipple) at the head and an oil hole on the end surface of the stud.

2. Provided with prepacked grease.

## CAM FOLLOWERS

Thrust Disk Type Cam Followers With Cage/With Hexagon Hole



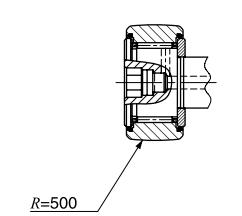
Stud dia. 3 – 20mm

CF…WBR

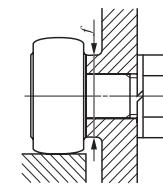
Stud dia. mm	Identification number		Mass (Ref.) g	Boundary dimensions mm				
	Shield type	Sealed type		D	C	d <sub>1</sub>	G	G <sub>1</sub>
3	CF 3 WBR	CF 3 WBUUR	4.3	10	7	3	M 3 × 0.5	5
4	CF 4 WBR	CF 4 WBUUR	7.4	12	8	4	M 4 × 0.7	6
5	CF 5 WBR	CF 5 WBUUR	10.3	13	9	5	M 5 × 0.8	7.5
6	CF 6 WBR	CF 6 WBUUR	18.5	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
16	CF 16 WBR	CF 16 WBUUR	170	35	18	16	M16 × 1.5	17
18	CF 18 WBR	CF 18 WBUUR	250	40	20	18	M18 × 1.5	19
20	CF 20 WBR	CF 20 WBUUR	460	52	24	20	M20 × 1.5	21
	CF 20-1 WBR	CF 20-1 WBUUR	385	47	24	20	M20 × 1.5	21

Remarks1. Models with a stud diameter  $d_1$  of 4 mm or less have no oil hole. For Models with a stud dia. 5 to 10 mm, oil hole (re-greasing fitting) is provided at the head. Other models are provided with an oil hole (grease nipple) at the head and an 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



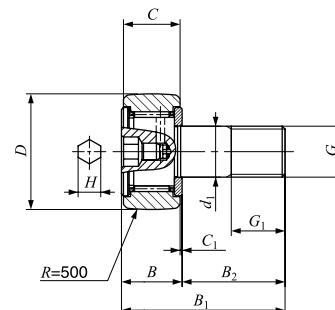
B	B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>	C <sub>1</sub>	g <sub>1</sub>	g <sub>2</sub>	H	Mounting dimension f Min. mm	Maximum tightening torque N-m	Basic dynamic load rating C N	Basic static load rating C <sub>0</sub> N	Maximum allowable static load N
8	17	9	—	0.5	—	—	2	6.8	0.34	1 500	1 020	384
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 max	28.2 max	16	—	0.6	—	—	3	11	2.7	3 660	3 650	1 950
12.2 max	32.2 max	20	—	0.6	—	—	4	13	6.5	4 250	4 740	4 620
13.2 max	36.2 max	23	—	0.6	—	—	4	16	13.8	5 430	6 890	6 890
13.2 max	36.2 max	23	—	0.6	—	—	4	16	13.8	5 430	6 890	6 890
15.2 max	40.2 max	25	6	0.6	4	3	6	21	21.9	7 910	9 790	9 790
15.2 max	40.2 max	25	6	0.6	4	3	6	21	21.9	7 910	9 790	9 790
19.6 max	52.1 max	32.5	8	0.8	4	3	6	26	58.5	12 000	18 300	18 300
21.6 max	58.1 max	36.5	8	0.8	6	3	8	29	86.2	14 800	25 200	25 200
25.6 max	66.1 max	40.5	9	0.8	6	4	8	34	119	20 700	34 600	34 600
25.6 max	66.1 max	40.5	9	0.8	6	4	8	34	119	20 700	34 600	34 600

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## CAM FOLLOWERS

Thrust Disk Type Cam Followers With Cage/With Hexagon Hole



Stud dia. 3 – 5mm

CF…FWBR

Stud dia. mm	Identification number		Mass (Ref.) 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. Models with a stud diameter  $d_1$  of 4 mm or less have no oil hole. For Models with a stud dia. 5 mm, oil hole (re-greasing fitting) is provided at the head.

2. Provided with prepacked grease.



CF…FWBUUR

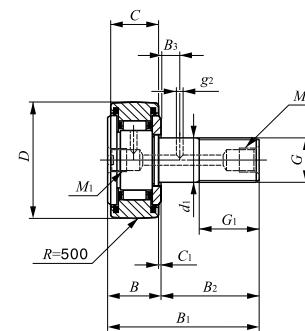
B	B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>	C <sub>1</sub>	g <sub>1</sub>	g <sub>2</sub>	H	Mounting dimension <i>f</i> Min. mm	Maximum tightening torque N·m	Basic dynamic load rating C N	Basic static load rating C <sub>0</sub> N	Maximum allowable static load N
8	17	9	—	0.5	—	—	2	6.8	0.34	1 200	813	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

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**CAM FOLLOWERS**

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



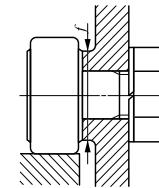
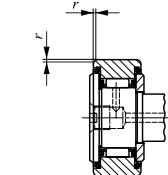
Stud dia. 6 – 30mm

CF...RU1

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



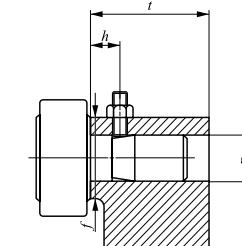
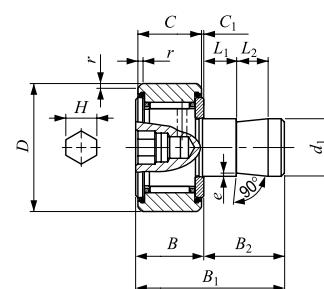
CF...FU1

B <sub>max</sub>	B <sub>1</sub> <sub>max</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 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
									M6×0.75	PT				
12.2	28.2	16	—	0.6	—			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			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	

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## CAM FOLLOWERS

Easy Mounting Type Cam Followers With Cage/With Hexagon Hole



Stud dia. 6 – 20mm

CF-SFU…B

Stud dia. mm	Identification number	Mass (Ref.) 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 B	19.5	16	11	6	12.2	32	19.8	0.6	5
8	CF-SFU- 8 B	29	19	11	8	12.2	32	19.8	0.6	5
10	CF-SFU-10 B	44	22	12	10	13.2	33	19.8	0.6	5
	CF-SFU-10-1 B	59	26	12	10	13.2	33	19.8	0.6	5
12	CF-SFU-12 B	94	30	14	12	15.2	35	19.8	0.6	5
	CF-SFU-12-1 B	104	32	14	12	15.2	35	19.8	0.6	5
16	CF-SFU-16 B	164	35	18	16	19.6	44.5	24.9	0.8	10
18	CF-SFU-18 B	235	40	20	18	21.6	46.5	24.9	0.8	10
20	CF-SFU-20 B	435	52	24	20	25.6	50.5	24.9	0.8	10
	CF-SFU-20-1 B	360	47	24	20	25.6	50.5	24.9	0.8	10

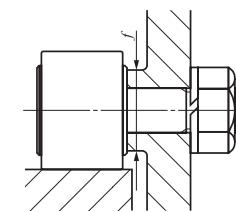
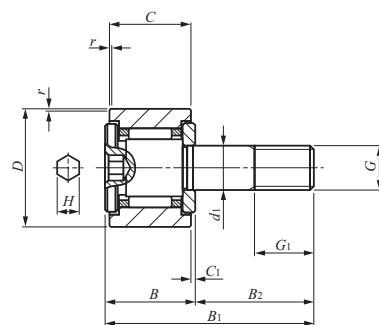
Note<sup>(1)</sup> Minimum allowable value of chamfer dimension rRemarks1. Models with a stud diameter d<sub>1</sub> of 10 mm or less have an oil hole (re-greasing fitting) at the head. Other models are provided with an oil hole (grease nipple) at the head.

2. Provided with prepacked grease.

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

## CAM FOLLOWERS

Cam Follower G | With Cage/With Hexagon Hole



Stud dia. 6 – 20mm

CF...G

Stud dia. mm	Identification number	Mass (Ref.) g	Boundary dimensions mm						
			D	C	d <sub>1</sub>	G	G <sub>1</sub>	B <sub>max</sub>	B <sub>1max</sub>
6	CF 6 G	19.5	16	11	6	M 6 × 1	8	12.2	28.2
8	CF 8 G	29.5	19	11	8	M 8 × 1.25	10	12.2	32.2
10	CF 10 G	47.5	22	12	10	M10 × 1.25	12	13.2	36.2
	CF 10-1 G	61.5	26	12	10	M10 × 1.25	12	13.2	36.2
12	CF 12 G	95.0	30	14	12	M12 × 1.5	13	15.2	40.2
	CF 12-1 G	105	32	14	12	M12 × 1.5	13	15.2	40.2
16	CF 16 G	175	35	18	16	M16 × 1.5	17	19.6	52.1
18	CF 18 G	255	40	20	18	M18 × 1.5	19	21.6	58.1
20	CF 20 G	470	52	24	20	M20 × 1.5	21	25.6	66.1
	CF 20-1 G	400	47	24	20	M20 × 1.5	21	25.6	66.1

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

Remarks 1. This bearing cannot be re-lubricated due to its structure. If re-lubrication is necessary, please use IKO Standard Type Cam Followers.

2. Provided with prepacked grease.

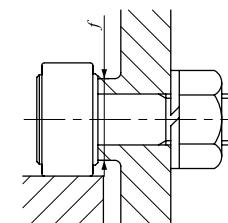
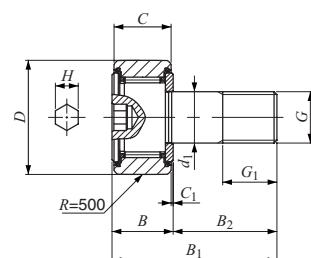
B <sub>2</sub>	C <sub>1</sub>	H	r <sub>s min</sub> <sup>(1)</sup>	Mounting dimension f Min. mm	Radial internal clearance μm		Maximum tightening torque N-m	Basic dynamic load rating C N	Basic static load rating C <sub>0</sub> N	Maximum allowable static load N
					Min.	Max.				
16	0.6	3	0.3	11	5	20	2.7	3 660	3 650	1 950
20	0.6	4	0.3	13	5	25	6.5	4 250	4 740	4 620
23	0.6	4	0.3	16	5	25	13.8	5 430	6 890	6 890
23	0.6	4	0.3	16	5	25	13.8	5 430	6 890	6 890
25	0.6	6	0.6	21	5	25	23.9	7 910	9 790	9 790
25	0.6	6	0.6	21	5	25	23.9	7 910	9 790	9 790
32.5	0.8	6	0.6	26	10	30	61.1	12 000	18 300	18 300
36.5	0.8	8	1	29	10	30	89.2	14 800	25 200	25 200
40.5	0.8	8	1	34	10	30	125	20 700	34 600	34 600
40.5	0.8	8	1	34	10	30	125	20 700	34 600	34 600

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## CAM FOLLOWERS

C-Lube Cam Followers | With Cage / With Hexagon Hole



Stud dia. 5–20mm

Stud dia. mm	Identification number	Mass (Ref.) g	Boundary dimensions mm						
			D	C	d <sub>1</sub>	G	G <sub>1</sub>	B	B <sub>1</sub>
5	CF 5 WBUUR/SG	10.3	13	9	5	M 5×0.8	7.5	10	23
6	CF 6 WBUUR/SG	18.5	16	11	6	M 6×1	8	12.2 max	28.2 max
8	CF 8 WBUUR/SG	28.5	19	11	8	M 8×1.25	10	12.2 max	32.2 max
10	CF 10 WBUUR/SG CF 10-1 WBUUR/SG	45 60	22 26	12 12	10	M10×1.25 M10×1.25	12 12	13.2 max 13.2 max	36.2 max 36.2 max
12	CF 12 WBUUR/SG CF 12-1 WBUUR/SG	95 105	30 32	14 14	12	M12×1.5 M12×1.5	13 13	15.2 max 15.2 max	40.2 max 40.2 max
16	CF 16 WBUUR/SG	170	35	18	16	M16×1.5	17	19.6 max	52.1 max
18	CF 18 WBUUR/SG	250	40	20	18	M18×1.5	19	21.6 max	58.1 max
20	CF 20 WBUUR/SG CF 20-1 WBUUR/SG	460 385	52 47	24 24	20	M20×1.5 M20×1.5	21 21	25.6 max 25.6 max	66.1 max 66.1 max

Remark Regreasing is not possible as the bearing internal space is filled with thermosetting solid-type lubricant C-Lube.

B <sub>2</sub>	C <sub>1</sub>	H	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
13	0.5	3	9.3	1.6	2 520	2 140	1 260
16	0.6	3	11	2.7	3 660	3 650	1 950
20	0.6	4	13	6.5	4 250	4 740	4 620
23	0.6	4	16	13.8	5 430	6 890	6 890
23	0.6	4	16	13.8	5 430	6 890	6 890
25	0.6	6	21	21.9	7 910	9 790	9 790
25	0.6	6	21	21.9	7 910	9 790	9 790
32.5	0.8	6	26	58.5	12 000	18 300	18 300
36.5	0.8	8	29	86.2	14 800	25 200	25 200
40.5	0.8	8	34	119	20 700	34 600	34 600
40.5	0.8	8	34	119	20 700	34 600	34 600

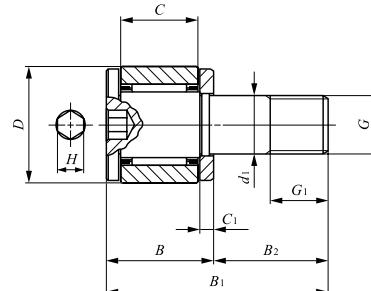
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## CAM FOLLOWERS

Miniature Type Cam Followers With Cage/With Hexagon Hole

Full Complement Type/With Hexagon Hole



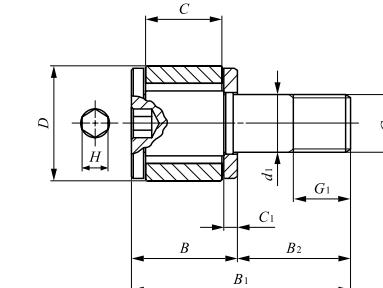
Stud dia. 2 – 6mm

CFS

Stud dia. mm	Identification number		Mass (Ref.) 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

Remarks 1. No oil hole is provided.

2. Provided with prepacked grease.



CFS...V

				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<sub>0</sub></i> N	Maximum allowable static load N
B <sub>1</sub>	B <sub>2</sub>	C <sub>1</sub>	H					
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

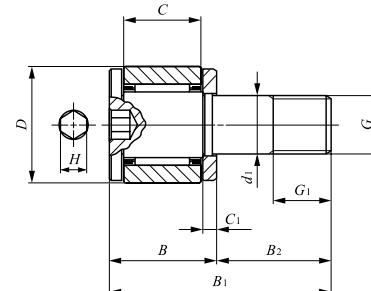
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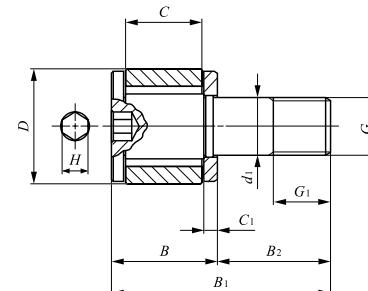
## CAM FOLLOWERS

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

Full Complement Type/With Hexagon Hole



CFS...F



CFS...FV

Stud dia. mm	Identification number		Mass (Ref.) g	Boundary dimensions mm					
	With cage	Full complement		D	C	d <sub>1</sub>	G	G <sub>1</sub>	B
2	CFS 2 F	—	0.6	4.5	2.5	2	M2 × 0.4	2	4
	—	CFS 2 FV	0.6	4.5	2.5	2	M2 × 0.4	2	4
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

Remarks 1. No oil hole is provided.

2. Provided with prepacked grease.

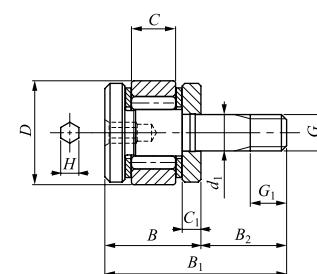
B <sub>1</sub>	B <sub>2</sub>	C <sub>1</sub>	H	Mounting dimension f Min. mm	Maximum tightening torque N-cm	Basic dynamic load rating C N	Basic static load rating C <sub>0</sub> N	Maximum allowable static load N
8	4	0.7	0.9	4.3	9.1	230	161	161
8	4	0.7	0.9	4.3	9.1	614	587	229
9.5	5	0.7	0.9	4.8	18.7	342	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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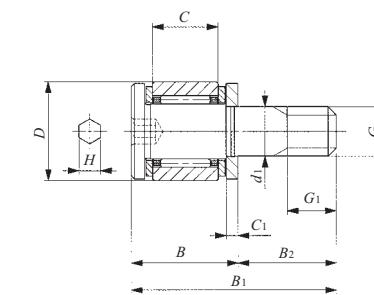
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## CAM FOLLOWERS

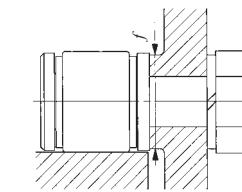
Thrust Disk Type Miniature Cam Followers With Hexagon Hole



CFS1.4 WV



CFS... W



Stud dia. 1.4 – 6 mm

Stud dia. mm	Identification number		Mass (Ref.) g	Boundary dimensions mm					
	With cage	Full complement		D	C	d <sub>1</sub>	G	G <sub>1</sub>	B
1.4	—	CFS 1.4 WV	0.35	4	1.7	1.4	M1.4 × 0.3	1.4	3.7
2	CFS 2 W	—	0.6	4.5	2.5	2	M2 × 0.4	2	4.5
2.5	CFS 2.5 W	—	1	5	3	2.5	M2.5 × 0.45	2.5	5
3	CFS 3 W	—	2	6	4	3	M3 × 0.5	3	6.5
4	CFS 4 W	—	4	8	5	4	M4 × 0.7	4	8
5	CFS 5 W	—	7	10	6	5	M5 × 0.8	5	9
6	CFS 6 W	—	13	12	7	6	M6 × 1	6	10.5

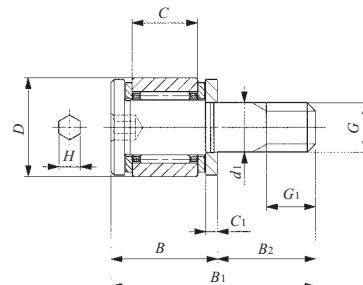
Remarks 1. No oil hole is provided.

2. Provided with prepacked grease.

B <sub>1</sub>	B <sub>2</sub>	C <sub>1</sub>	H	Mounting dimension <i>f</i> Min. mm	Maximum tightening torque N-cm	Basic dynamic load rating C N	Basic static load rating C <sub>0</sub> N	Maximum allowable static load N
7	3.3	0.7	0.9	3.8	3.0	481	385	105
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	1.5	7.7	77.7	1120	1120	785
19	10	1	2	9.6	158	1570	1850	1370
22.5	12	1.2	2.5	11.6	268	2090	2200	1920

## CAM FOLLOWERS

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



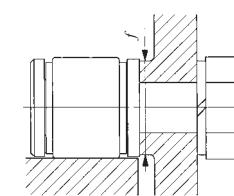
CFS···FW

Stud dia. 2 – 6 mm

Stud dia. mm	Identification number	Mass (Ref.) 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.



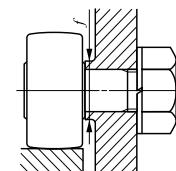
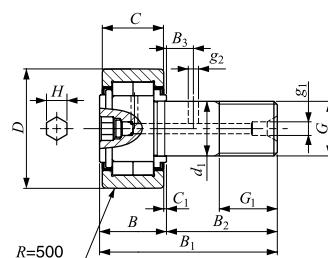
B <sub>1</sub>	B <sub>2</sub>	C <sub>1</sub>	H	Mounting dimension f Min. mm	Maximum tightening torque N-cm	Basic dynamic load rating C N	Basic static load rating C <sub>0</sub> N	Maximum allowable static load N
8.5	4	0.7	0.9	4.3	9.1	230	161	161
10	5	0.7	0.9	4.8	18.7	342	281	281
12.5	6	0.7	1.3	5.8	33.5	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

Cylindrical Roller Cam Followers Full Compliment Type/With Hexagon Hole



Stud dia. 10 – 30mm

NUCF…BR

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

Remarks1. For models with a stud diameter  $d_1$  of 10mm, oil hole (re-greasing fitting) is provided at the head. Other models are provided with an oil hole (grease nipple) at the head and an oil hole each on the outside surface and end surface of the stud.

2. Provided with prepacked grease.

$B_3$	$C_1$	$g_1$	$g_2$	H	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
—	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	4	3	6	17	21.9	14 000	13 400	5 650
6	0.6	4	3	6	17	21.9	14 000	13 400	9 040
8	0.8	4	3	6	20	58.5	23 400	27 300	11 800
8	0.8	6	3	8	22	86.2	25 200	30 900	20 300
9	0.8	6	4	8	31	119	43 100	58 100	30 000
9	0.8	6	4	8	27	119	38 900	49 000	27 200
11	0.8	6	4	12	38	215	58 200	75 300	35 200
11	0.8	6	4	12	44	215	63 900	88 800	57 000
15	1	6	4	17	45	438	90 300	121 000	98 300
15	1	6	4	17	45	438	90 300	121 000	98 300

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