

IKO

[Prepacked with solid-type lubricant]

Capilube Cam Follower

CF.../SG

Maintenance Free

PATENT PENDING

Capilube Cam Follower has been standardized.

Extended lubrication, cleanliness, design flexibility & performance are enhanced !



IKO *Capilube*

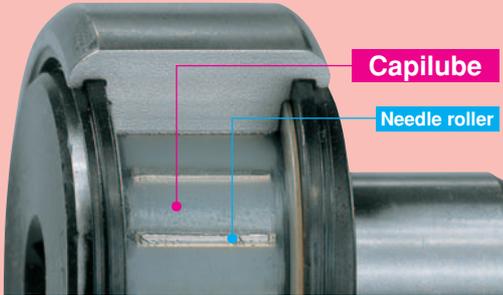


CAT-57127

[Prepacked with solid-type lubricant]

IKO Capilube Cam Follower

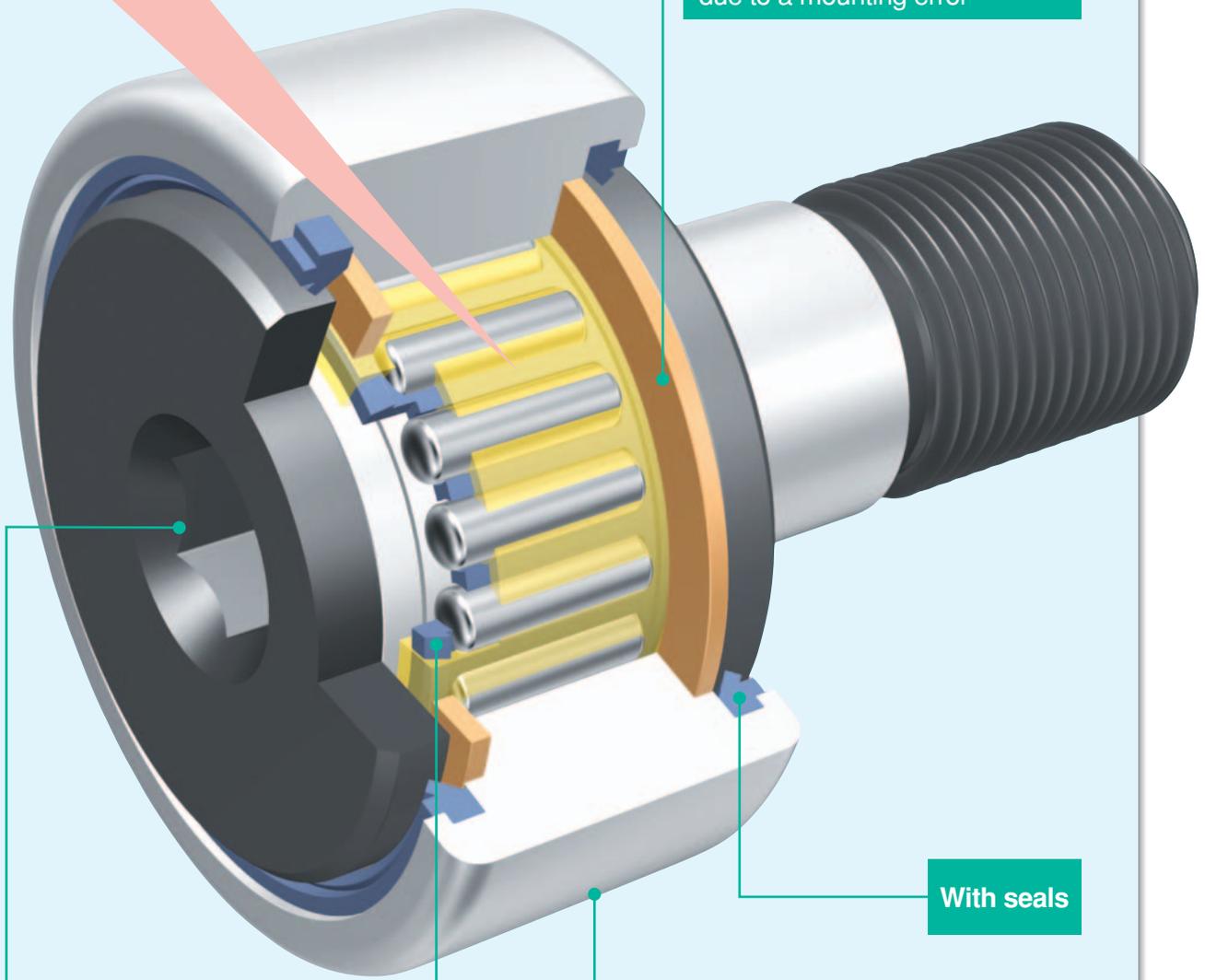
With a prepacked solid-type lubricant, the lubrication performance can be kept for a long time.



IKO Capilube Cam Follower is a cam follower that is prepacked with thermosetting solid lubricant (Capilube) in the bearing space.

Capilube is a lubricant made by thermosetting a large amount of oil and fine particles of ultra high molecular weight polyolefine resin. As the cam follower rotates, the lubricating oil oozes out onto the raceway in proper quantity, keeping the lubrication performance for a long period of time.

Thrust disk incorporated, high resistance to the edge load due to a mounting error



Easy-to-mount stud with hexagon hole

With retainer

Crowned outer ring to relieve the edge load

With seals

Features of **IKO** Capilube Cam Follower

Best remedy for grease loss !

Best solution for grease loss at hard-to grease positions by the restriction of machine/equipment structure.

Maintenance work can be reduced greatly !

Work for lubrication control can be reduced by a good lubrication performance kept by prepacked solid-type lubricant.

Best suited for oil free environment applications !

No oil scattering makes no pollution in the ambient environment.



Applications

Most suitable for applications of printing machines, food manufacturing machines, liquid crystal/semiconductor manufacturing equipment, various types of washing line, various types of transport lines, etc.

**The lubrication effect can be maintained in long-time operation.
It contributes to "Maintenance free".**

Rotational endurance test

Test conditions

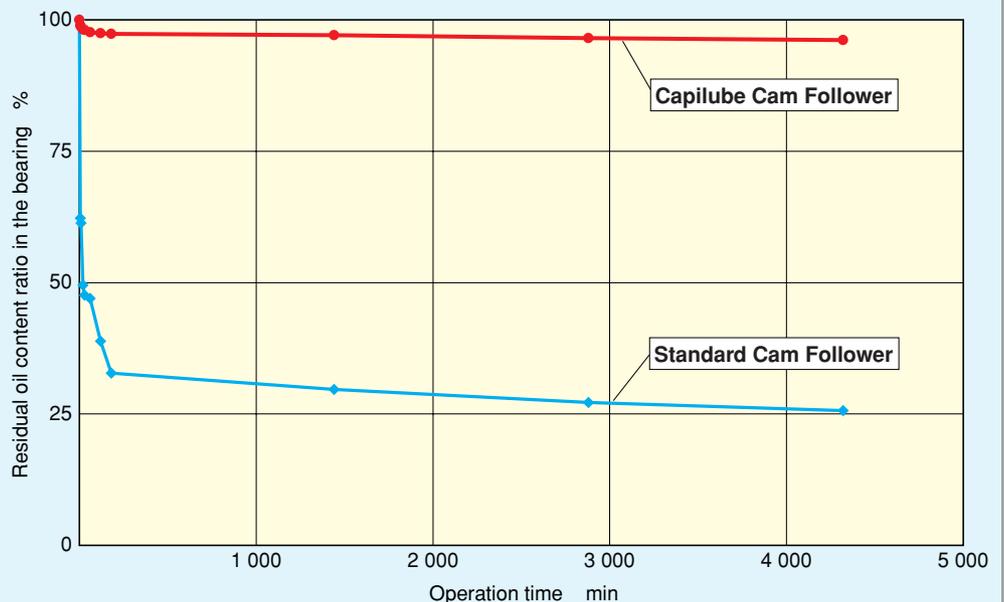
Test bearing

Capilube Cam Follower:
CF10/SG

Standard Cam Follower:
CF10

Rotational speed:
1000rpm

Ambient temperature:
Room temperature



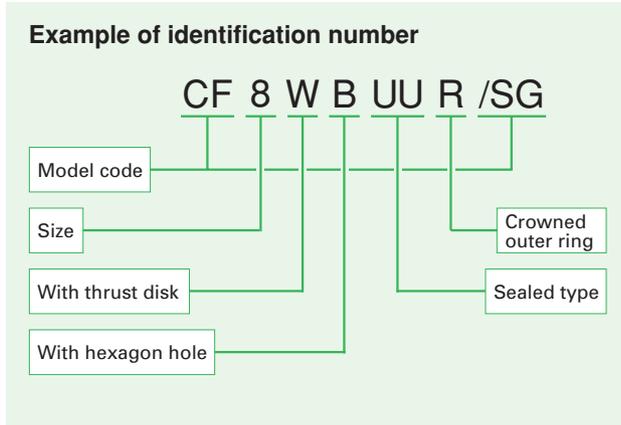
Maintenance Free

IKO Capilube Bearings

Capilube is applicable to **IKO** Needle Bearing Series including machined type needle roller bearings and shell type needle roller bearings. When you require them, ask **IKO** for information.

Identification Number

An example of identification number of  Capilube Cam Follower is shown below.



Accuracy

The accuracy of Capilube Cam Follower is shown in Table 1. And the radial runout of the outer ring is 15 μm max.. Capilube Cam followers with special accuracy are also available. When they are required, please contact .

Table 1 Tolerances

unit: μm

| Dimensions and symbols | Tolerances |
|--------------------------------|------------|
| Outside dia. of outer ring D | 0 - 50 |
| Stud dia. d_1 | h7 |
| Width of outer ring C | 0 - 120 |

Clearance

The radial internal clearances of Capilube Cam Followers are shown in Table 2.

Table 2 Radial internal clearance

unit: μm

| Identification number | Radial internal clearance | |
|---|---------------------------|------|
| | Min. | Max. |
| CF 6 WBUUR/SG | 5 | 20 |
| CF 8 WBUUR/SG CF 10 WBUUR/SG CF 10-1 WBUUR/SG CF 12 WBUUR/SG CF 12-1 WBUUR/SG | 5 | 25 |

Remark Values are applicable before the solid-type lubricant is packed.

Fit

Mounting hole tolerance for stud is recommended to be H7 for Capilube Cam Followers. Since Capilube Cam Followers are supported in a cantilever position, the mounting hole diameter should be prepared without play between the stud and the mounting hole especially when heavy shock loads are applied.

Maximum Allowable Load

The applicable load on Capilube Cam Follower is, in some cases, limited by the bending strength, shear strength of stud, and strength of outer ring instead of the load rating of needle roller bearing, because the Capilube Cam Follower is mounted in a cantilever position. Maximum allowable loads shown in dimension tables are the allowable loads limited by the bending strength and shear strength.

Track Capacity

The capacity is defined as the load which can be continuously applied on a Capilube Cam Follower placed on a steel track surface without causing deformation and indentation (dent) on the track surface. The track capacities shown in Table 3 are applicable when the hardness of the mating track surface is HRC40 (Tensile strength 1250N/mm²). When the hardness of the mating track surface differs from HRC40, the track capacity is obtained by multiplying the value with a track capacity factor shown in Table 4.

If lubrication between the outer ring and the mating track surface is insufficient, seizure and/or wear may occur depending on the application. Therefore, it is needed to pay attention to lubrication and surface roughness of mating track especially in case of high speed rotation such as cam mechanisms.

When the lubrication status is not enough between the outer ring and the counter track surface, seizure or wear may be caused depending on the operating conditions. In particular, when the cam mechanism is in high rotation, care must be taken about both lubrication and surface roughness.

Table 3 Track capacity

unit: N

| Identification number | Track capacity |
|-----------------------|----------------|
| CF 6 WBUUR/SG | 1 040 |
| CF 8 WBUUR/SG | 1 330 |
| CF 10 WBUUR/SG | 1 610 |
| CF 10-1 WBUUR/SG | 2 030 |
| CF 12 WBUUR/SG | 2 470 |
| CF 12-1 WBUUR/SG | 2 710 |

Table 4 Track capacity factor

| Hardness HRC | Tensile strength N/mm ² | Track capacity factor |
|--------------|------------------------------------|-----------------------|
| 20 | 760 | 0.22 |
| 25 | 840 | 0.31 |
| 30 | 950 | 0.45 |
| 35 | 1 080 | 0.65 |
| 38 | 1 180 | 0.85 |
| 40 | 1 250 | 1.00 |
| 42 | 1 340 | 1.23 |
| 44 | 1 435 | 1.52 |
| 46 | 1 530 | 1.85 |
| 48 | 1 635 | 2.27 |
| 50 | 1 760 | 2.80 |
| 52 | 1 880 | 3.46 |
| 54 | 2 015 | 4.21 |
| 56 | 2 150 | 5.13 |
| 58 | 2 290 | 6.26 |

Allowable Rotational Speed

The allowable rotational speeds of Capilube Cam Follower are affected by mounting and operating conditions. Recommended d_1n value ⁽¹⁾ is 10,000 in general.

Note ⁽¹⁾ d_1n value = $d_1 \times n$
 where d_1 : Stud diameter mm
 n : Number of rotations per minute rpm

Lubrication

Capilube Cam Follower is internally prepacked with a solid lubricant made by thermosetting a large amount of oil and fine particles of ultra high molecular weight polyolefine resin. As the cam follower rotates, the lubricating oil oozes out onto the raceway in proper quantity, keeping the lubrication performance for a long period of time. Greasing is impossible for the bearings for the reason of structure.

Operating Temperature

Operating temperature of Capilube Cam Follower is a range of -15 to 80°C as the bearing temperature.

Accessories

A nut is attached to Capilube Cam Follower.

Mounting

① Make the center axis of the mounting hole perpendicular to the moving direction of the Capilube 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 Capilube Cam Follower directly with a hammer, etc. This may lead to a bearing failure such as irregular rotation or cracking.

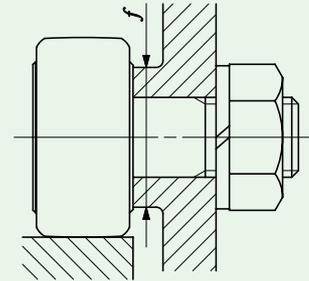


Fig. 1 Seating surface

② The  mark on the flange head of the stud indicates the oil hole position on the raceway. Avoid locating the oil hole within the loading zone which may lead to a short bearing life. (See Fig.2.)

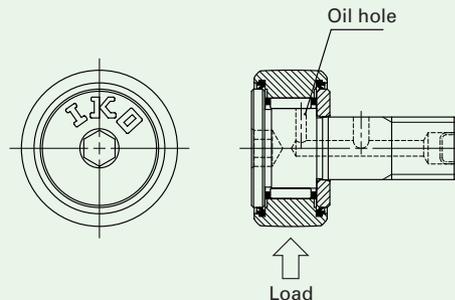


Fig. 2 Oil hole position and loading direction

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.

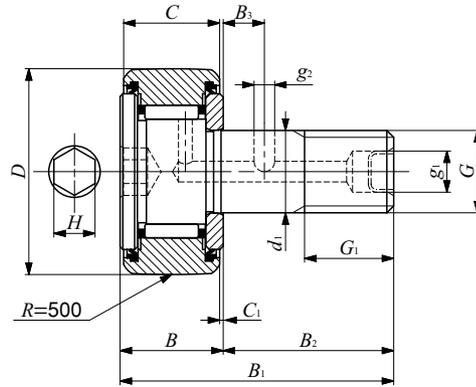
Cautions for Use

① Never wash Capilube Bearing with organic solvent and/or white kerosene which have the ability of removing fat, nor leave the bearing in contact with the above agents.

② To achieve the normal rotation of the bearing, apply a load of 1% or more of the basic dynamic load rating in use.

1N=0.102kgf=0.2248lbs.
 1mm=0.03937inch

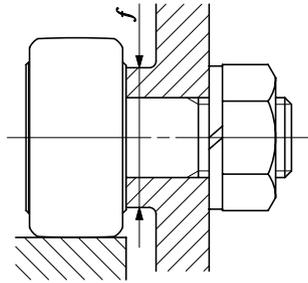
IKO Capilube Cam Follower



CF...WBUUR / SG

| Stud dia. mm | Identification number | | Mass (Ref.) g | Boundary dimensions mm | | | | | | |
|-----------------|-----------------------|------------|---------------------|------------------------|-----|-------|------------|-------|------------------|--------------------|
| | | | | D | C | d_1 | G | G_1 | B_{max} | B_1_{max} |
| 6 | CF 6 | WBUUR / SG | 18.5 | 16 | 11 | 6 | M 6 × 1 | 8 | 12.2 | 28.2 |
| | CF 8 | WBUUR / SG | 28.5 | 19 | 11 | 8 | M 8 × 1.25 | 10 | 12.2 | 32.2 |
| 10 | CF 10 | WBUUR / SG | 45 | 22 | 12 | 10 | M10 × 1.25 | 12 | 13.2 | 36.2 |
| | CF 10-1 | WBUUR / SG | 60 | 26 | 12 | 10 | M10 × 1.25 | 12 | 13.2 | 36.2 |
| 12 | CF 12 | WBUUR / SG | 95 | 30 | 14 | 12 | M12 × 1.5 | 13 | 15.2 | 40.2 |
| | CF 12-1 | WBUUR / SG | 105 | 32 | 14 | 12 | M12 × 1.5 | 13 | 15.2 | 40.2 |

Remark Models with a stud diameter d_1 of 10 mm or less has no oil hole. The others are provided with one oil hole each on the outside surface and end surface of the stud.



| | | | | | | Mounting dimension | Maximum tightening torque | Basic dynamic load rating | Basic static load rating | Maximum allowable load |
|-------|-------|-------|-------|-------|-----|--------------------|---------------------------|---------------------------|--------------------------|------------------------|
| B_2 | B_3 | C_1 | g_1 | g_2 | H | f Min. mm | $N \cdot m$ | C N | C_0 N | N |
| 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 | 6 | 0.6 | 6 | 3 | 6 | 21 | 21.9 | 7 910 | 9 790 | 9 790 |
| 25 | 6 | 0.6 | 6 | 3 | 6 | 21 | 21.9 | 7 910 | 9 790 | 9 790 |



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