McGILL®
Cam Follower Suggested Installation Procedure

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FORM
8898E
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⚠ WARNING

- Read and follow all instructions carefully.
- Disconnect and lock-out power before installation and maintenance. Working on or near energized equipment can result in severe injury or death.
- Do not operate equipment without guards in place. Exposed equipment can result in severe injury or death.
- Avoid contact with energized circuits or rotating parts.
- Be sure shaft key is fully captive before unit is energized.

⚠ CAUTION

- Periodic inspections should be performed. Failure to perform proper maintenance can result in premature product failure and personal injury.
- All electrical work should be performed by qualified personnel and compliant with local and national electrical codes.

Mounting Details - Stud Type Cam Followers and Track Rollers

Series CF, CFH, BCF, CF-CR, CFD, MCF®, MCFD

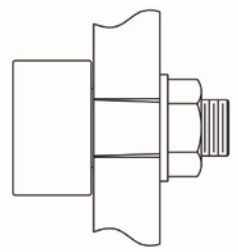
Proper mounting of stud type cam follower and track roller bearings require a close fit between the bearing stud and the housing hole. The endplate must be backed up by the housing member face. Likewise the face of the housing adjacent to the bearing endplate face should be square to the housing bore.

The following are some general guidelines and details to bear in mind when installing the above series' bearings.

1. Inspect housing.
- Clean, remove burrs and sharp edges.
- Check housing bore diameter. The stud diameter should have a tight fit in the housing bore. Refer to the recommended housing bore diameters given in the catalog dimensional tables.

2. Press stud into housing.
- For best bearing performance, bearing should be mounted with raceway radial lubrication hole in the unloaded portion of the raceway. Raceway radial hole is oriented in line with stem radial hole.
- Direct pressure against solid end of stud, not against the flanged portion.
- Do not apply pressure against outer ring face.
- Use arbor press whenever possible.
- Do not hammer directly on stud face.

3. Install nut and lock washer (or two jam nuts).
- Follow recommended clamping torque shown in the Torque Tables. Do not over tighten, otherwise undue stress may be set up in stud. Overtightening nut can also cause stretching of the stud diameter with consequent loosening of the stud in the housing member.



Overtightened Nut

- A screwdriver slot is provided at the flanged end of the stud for the purpose of preventing the stud from turning when the nut is tightened. The bottom of the screwdriver slot is rounded and in some cases it may be necessary to use a special screwdriver having a rounded edge to hold the stud securely.
- An optional hexagonal hole is provided in the stud face on selected sizes for use with applications requiring greater than average thread torque or for ease of installation. In this modification, the ability to relubricate through the flange end of the stud, unless otherwise noted in the catalog dimension tables, is eliminated.

Torque Tables

CF, CF-CR, CFD, SDCF	
Roller Dia. inches	lbs. - in (1)
1/2	15
9/16	15
5/8	35
11/16	35
3/4	95
7/8	95
1	250
1 1/8	250
1 1/4	350
1 3/8	350
1 1/2	650
1 5/8	650
1 3/4	1250
1 7/8	1250
2	1500
2 1/4	1500
2 1/2	2250
2 3/4	2250
3	3450
3 1/4	3450
3 1/2	4200
4	5000
5	5000
6	5000
7	5000
8	5000
9	5000
10	5000

CFH	
Roller Dia. inches	lbs. - in (1)
1/2	35
9/16	35
5/8	90
11/16	90
3/4	250
7/8	250
1	650
1 1/8	650
1 1/4	1250
1 3/8	1250
1 1/2	1500
1 5/8	1500
1 3/4	2250
1 7/8	2250
2	2800
2 1/4	2800
2 1/2	3450
2 3/4	5000
3	5000
3 1/4	5000
3 1/2	5000
4	5000
5	5000
6	5000
7	5000
-	-
-	-
-	-

MCF®, MCFD	
Roller Dia. mm	n - m (1)
13	2.2
16	3
19	8
22	15
26	15
30	22
32	22
35	57
40	85
47	118
52	118
62	216
72	216
80	441
85	441
90	441

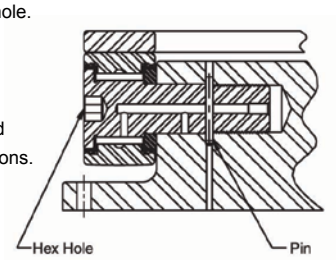
PCF, FCF, VCF	
Stud Dia. inches	lbs. - in (1)
0.625	325
0.750	625
0.875	750
1.000	1120
1.250	1720
2.000	2500
2.500	2500

(1) Clamping torque based on dry threads. If threads are lubricated, use half of values shown.

Blind Hole Mounting

Sometimes a stud type follower must be mounted where a nut and lock-washer cannot be used on the threaded portion. In such blind hole mountings, special care must be given to the fitup of the stem in the housing.

- The drilling diameter used for tapping will generally result in a loose fit between the stud and housing hole. This can lead to premature fatigue fracture of the stud in applications with varying or reverse radial load. Press fitting the stud into a reamed hole without tapped threads would be better for these applications. The soft stud can be retained by drilling and pinning, or by using a set screw to bear against the stud.



Blind Hole Mounting

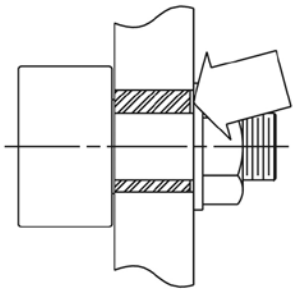
- Certain applications require blind hole mounting into tapped threads. The hex hole option should be used in these cases so that adequate torque can be applied to provide good endplate support.

Eccentric Bushing Mounting

Series CFE, BCFE, CFE-CR, SDCFE, SDMCFE, CFDE, MCFE, MCFDE, PCFE, FCFE, VCFE

In addition to the mounting details listed above, the following should be considered for proper mounting of integral stud followers with the eccentric bushing option.

- The eccentric bushing diameter should have a .001" to .005" loose fit in the housing bore. Refer to catalog dimensional table for specific housing bore diameter.


Eccentric Bushing Mounting

- For proper end-wise clamping, housing width must be .010" wider than bushing length.
- Lock-nut or lock-washer and nut is sufficient to hold the bearing at the desired position for most applications.
- Where a more positive means of holding a given position is required, the bushing and stem can be drilled for pinning. Bushing and exposed stem area is soft steel.
- Hex hole option allows more positive grip for adjustment and locking.

Series PCF, FCF, VCF, SDCF, SDMCF

These series cam followers and track rollers do not have an exposed stud face at the roller end. That face is enclosed by a metal expansion plug assembled into the outer ring face. A loose stud fit in the housing is recommended so that minimal pressure is required to drive stud into the housing bore.

- Recommended catalog housing bore fit for these series is .0005" to .0025" loose. Refer to dimensional table for specific housing bore diameter.
- A hex hole is provided at the threaded end of the stud for the purpose of preventing the stud from turning when the nut is tightened.
- These series can not be tightened into a blind drilled and tapped hole.

⚠WARNING **Disconnect all power while adjusting units**

Mounting Details - Yoke Type Cam Followers and Track Rollers

Series CYR, CYR-CR, CYRD, MCYR®, MCYRD

Endplate support is critical when mounting yoke-type series cam followers and track rollers. If the endplates are not properly backed up, they can work off the inner ring. The preferred mounting method is by use of a separate bushing at one side to permit complete axial clamping of the endplates.

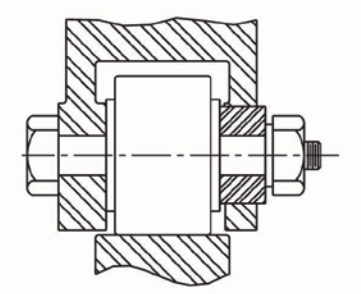
If the endplates can not be clamped end-wise, it is essential to have a close fit axially (maximum .020" clearance) in the yoke in which the bearing is mounted to help prevent the bearing endplates displacing axially.

The following are some general guidelines and details when installing yoke type followers.

1. Inspect housing.
- Clean, remove burrs and sharp edges.

2. Check shaft diameter size.
- Follow recommended shaft fits per table below. Refer to catalog dimensional table for specific shaft diameter and tolerance.

3. Press shaft through bearing within yoke housing.
- For best bearing performance, mount follower with lubrication hole in the unloaded portion of the raceway.
- Apply pressure towards center or below on endplate face if pressing bearing onto shaft.
- Do no apply pressure against outer ring face.
- Use abor press whenever possible.
- Do not hammer directly on bearing faces.


Preferred Yoke-Mounted Arrangement

Shaft Fit Selection - Inch Series CYR, CYR-CR, CYRD

Load	End-W ise Clamp ped	Fit	Shaft Condition
Light	Yes	Push	Not Hardened
Medium	Yes	Push	Hardened
Heavy	Yes	Drive or Press	Hardened
Light	No	Press	Not Hardened
Medium	No	Press	Hardened
Heavy	No	Press	Hardened

Shaft Fit Selection - Metric Series MCYR®, MCYRD

Load	End-W ise Clamp ped	Fit	Shaft Condition
Light	Yes	g6	Not Hardened
Medium	Yes	g6	Hardened
Heavy	Yes	h6 or j6	Hardened
Light	No	j6	Not Hardened
Medium	No	j6	Hardened
Heavy	No	j6	Hardened

Light load = Radial load ≤ 8% Basic Dynamic Rating (BDR)
Medium load = Radial load > 8% BDR and ≤ 18% BDR
Heavy load is considered > 18% BDR

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