Lubrication

Permissible Speed

Permissible speed is usually expressed as a dn (bearing bore x operating speed, RPM) value. Other factors that affect speed are the size and shape of the bearing, lubricant type, and the sealing mechanism. In case of insert bearing units, they are supplied with grease and are sealed by oil seals and a slinger. Accordingly, the friction resistance from seal contact plays an important role. With such factors taken into consideration, we have:

Dn <= 150,000 (dn = d x n)
Where
d = Bearing bore diameter
n = Operating speed, RPM

Lubricant

All FIT Bearings mounted units are supplied from the factory with grease. Since all of the bearings are manufactured to exacting tolerances, appropriate fine quality grease is used. Various types of grease are available in the market today. Among them lithium-based greases offer the best all around performance. All units are lithium-based grease that have outstanding heat resistance properties, low temperature resistance, water repellent, and mechanical stability.

Replenishment

Since high quality grease is supplied by the factory, the grease can be used for a considerable period of time. If the working environment is normal and operating temperatures are not extreme, even the best greases will deteriorate with time. When dust or moisture surround the bearing, periodic replenishment of grease is still necessary. Grease is replenished through the use of a grease gun. Grease is applied at the zerk fitting, and into the bearing by the groove and holes supplied in the outer ring of the bearing. For different operating conditions, please refer to the following table for the recommended replenishment period:

LUBRICATION

Ambient Condition	Operating Temperature (C)		Supply Period	
	Over	Under	dn under 50000	dn over 50000
Fairly Clean	—	50	None	1 1/5-3 years
	50	70	1-2 years	6-12 months
	70	100	4-8 months	1-3 months
	100	—	2-4 weeks	1-2 weeks
Somewhat Dusty	—	50	1-2 years	6-12 months
	50	70	4-8 months	2-4 months
	70	100	3-6 weeks	2-4 weeks
	100	—	1-2 weeks	every week
Dusty	—	70	1-2 months	3-6 weeks
	70	100	2-4 weeks	1-2 weeks
	100	—	1-7 days	1-3 days
Moisture or Water	—	—	1-3 days	every day

Mounting

Housing

FIT Bearings mounted units are easily fitted and will function efficiently on any part of a machine. The following steps should be taken to ensure normal service life:

1) The angle between the housing base and the shaft should be within +/- 2 degrees.
2) The surface the housing is mounted on should be sufficiently rigid.
3) The surface the housing is mounted on should be as flat as possible.

Set Screw System

To secure the set screw system to the shaft, both set screws should be tightened uniformly. If the fit clearance between the inner ring and the shaft is very small, it is advisable to file off a part of the shaft where the set screw is to be seated. Recommended depth of the filed part should be approximately 0.01 inches to 0.02 inches.

Eccentric Locking Collar System

To secure the eccentric locking collar system, fit the collar on the inner ring into the eccentric circular groove. Tighten the collar in the direction of shaft rotation. Insert a small bar into the provided hole on the periphery of the eccentric collar and tap the bar so that the collar turns in the direction of shaft rotation. Fasten the set screw of the eccentric collar onto the shaft.

Inspection

Even with maintenance-free units, periodic inspection is a must. Inspection times vary according to the importance of operation, the level of contaminants in the working environment, and the weather, to name a few. Usually the inspection time should fall between two weeks and a month. Since the inside of the bearing can only be examined with the slinger and seals removed, the condition should be checked while in operation. Pay particular attention to vibration, noise, and overheating.

Dismounting

If it becomes necessary to dismount the bearing unit for replacement, the procedure used to mount the unit should be followed in reverse order. Of special importance, be sure any set screws are turned back fully to avoid damaging the unit.

Replacement

If the bearing needs to be replaced, this can be carried out simply with the use of a plummer block. You do not need to replace the housing; it is reusable. To remove the bearing:

1) Insert the end of a hammer or similar tool into the bore of the bearing and twist.
2) Tilt the bearing through a full 90 degrees.
3) Pull the bearing in the direction of the notches in the housing.

To install a new bearing in the housing, follow the same procedure in reverse.