Bearings - Locking Mechanisms, Lubrication

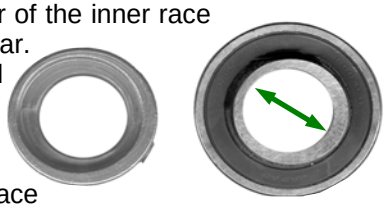
Engineering

METHODS FOR LOCKING THE INNER RING TO THE SHAFT

Eccentric Locking Collar

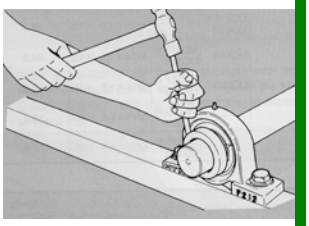
Ball bearings with eccentric locking collars are used on G Series and 800 Series. Additionally, many 900 Series units currently in service have an eccentric locking collar. Should replacement be needed it is important that the locking collar be installed correctly, as illustrated below, to avoid premature failure.

Note the cam-like contour of the inner race extension and of the collar. When assembled and rotated the bearing inner race, the collar, and the shaft are firmly joined with a wide matting surface area.



Setting the Collar:

Insert a punch in the hole provided and apply a solid tap in the direction of blower wheel rotation. Then firmly fasten the set screw in the collar to the shaft. (See torque specifications in this section)



On start-up, ensure that the blower is not reverse rotated, which might loosen an eccentric style lock.

Double Set Screw Locking Collar

Ball bearings with double set screw locking collars are used on 900 Series. The set screws are separated by 120°. See torque settings elsewhere in this section.

If a bearing has failed, the shaft is typically damaged as well and must be replaced. If the shaft is not replaced, a double-set screw type bearing locking mechanism, less reliant on a smooth mating surface, is preferable to the eccentric lock type.

BEARING LUBRICATION

No relubrication <u>is</u> the rule

A lithium based grease, suitable for long term use, is sealed in the bearing making relubrication unnecessary under most operating conditions.

Insert bearings are non-lubricatable. Pillow block bearings are equipped with a grease fitting for unusual operating conditions.

New bearings should never be greased as they contain the correct amount (about 1/3 to 1/2 full) of grease. *Over lubrication can result in reduced bearing life* due to internal temperature gradients reducing internal metal-to-metal clearances.

If lubrication is unavoidable...

Sometimes established maintenance procedures, engineering specifications, or harsh environments like dust, water or elevated temperatures mean re-lubrication will occur.

The best way to avoid overlubrication is to lubricate with extended lube lines, safely away from any moving parts, *while the blower is in operation* which will expel any excess grease through the seals rather than permit the grease to fill the bearing cavity and cause damage. Warning labels should advise against lubricating without rotation.

If lube lines are not present, **disconnect and lock-out the power**. Remove the belt(s) and rotate the blower by hand while adding one or two shots from a grease gun.

Harsh Environment Lubrication Frequency

The list of variables involved in defining the need for lubrication are myriad, but some guidance is available. Rarely do blowers require lubrication at intervals less than 6 - 12 months. One to two shots from a grease gun is sufficient.

Type of Lubricant

Use lithium based lubricants such as ESSO - Beacon 325, Shell - Alvania Grease #3. Others, particularly with a non-lithium carrier for the lubricants, will likely react chemically reducing bearing life.