Proper Handling

Rolling-element bearings are high-precision components that need to be stored and handled carefully to perform as designed. Proper storage and handling of a bearing before, during and aft er installation is important because once debris enters a bearing; it reduces the life of the bearing.

Bearings should be stored in a clean and dry location with the bearing lying on its large fl at side. By placing the bearing this way the chances of false brinnelling are reduced along with the potential of damage due to falling over.

Bearings should remain in their original packaging until they are ready for installation. All assembly areas should be free of sources of contamination. Workbenches, tools, clothing, and hands should be free of dirt, dust and other contaminants that may harm the bearing.

Mechanics handling clean bearings should wear latex gloves. Th is prevents oils from the skin from leaving a deposit that can stain the bearing surface, leading to etching and corrosion. If gloves are not available, hands should be clean and dry.

During installation cleanliness extends beyond the bearing, to shafts, housings, and retaining devices. Debris on the shaft or housing can be pushed to the shoulder during bearing mounting, preventing proper seating. The contamination can become dislodged during service, allowing the bearing to work back against the shoulder, resulting in excessive bearing looseness. Contamination in the housing can result in wear and bruising damage inthe bearings.

Lubrication

Antifriction bearings must be lubricated to prevent metal-to-metal contact between the rolling elements, raceways and retainers. In addition, lubrication protects the bearing against corrosion and wear, helps dissipate heat, helps seal out solid and liquid contamination, and reduces bearing noise. A properly lubricated bearing has the best chance of reaching its maximum service life.

Hand Packing a Tapered Roller Bearing

Hand packing is one method to lubricate a tapered roller bearing. Below we will describe the process to hand pack a bearing

Hand Packing a Tapered Roller Bearing

- Mechanic should clean and dry hands or wear clean latex gloves.
- Place grease about the size of a walnut into the palm of one hand.
- Using your other hand push the large end of the bearing cone into the grease. This action will move the grease between the rollers, cage and cone.
- Begin rotating the cone assembly while pushing grease until the grease is forced out evenly around the small end of the bearing.
- Smear excess around the outside of the cone assembly.
- Additional grease may need to be added to the housing depending on the application requirements.

Using a Mechanical Grease Packer

Using a Mechanical grease packer to lubricate a tapered roller bearing is another method. Below we will describe the process to using a mechanical grease packer.

- Mechanic should clean and dry hands or wear clean latex gloves.
- Place the bearing cone assembly, small end down, into the grease packer funnel.
- Plug the bore of the large end of the bearing cone assembly with the conical retainer.
- Firmly press down on the conical retainer. This enables to grease to be forced between the rollers, cage and cone.
- Smear excess grease on the outside of the bearing cone assembly.