Experiment No. 12

Statement:

Dismantling and Inspection of Bearings

Desired Learning Objectives

2. This practical aim to analyze different types of bearings. After going through this practical, trainees would be able to demonstrate parts of bearing, their rollers types and load carrying characteristics.

(a) Understand different types of roller use in bearing.

(b) Learn different parts of bearings and their assembly.

(c) Lubrication by manual greasing method.

(d) Understand redial and axial movement.

Equipment / Material Required

3. Different types of bearings are required: -

(a) Radial Ball Bearings.

(b) Angular-Contact Ball Bearings.

(c) Thrust Ball Bearings.

(d) Instrument Precision Ball Bearings.

(e) Cylindrical Roller Bearings.

(f) Spherical Roller Bearings.

(g) Tapered Roller Bearings.

(h) Grease

(j) Paraffin paper

Safety Precautions

4. During the practical, trainees are to take following precautions: -

(a) Bearings should be protected from dust and rust.

(b) Bearings are to be handled with care, no uneven force be exerted on them.

(c) Use accurate grade and size of bearings.

(d) Don't drop the bearing on the floor.

(e) Use finger gently for both radials and axially for inspection.

(f) Use accurate grade of grease by referring its maintenance manual.

(g) Lubricated bearings are to be packed in paraffin paper.

Procedure

5. The following procedure during practical are: -

(a) **Dismantling of Bearing.**

(i) Place the bearing in a tray.

(ii) Dismantle the bearing by removing inner race first.

(iii) Remove its rolling element i.e. Balls bearing.

(iv) Remove the cage from outer race.

(v) Get outer cage free from all parts.

(vi) For installation, proceed in reverse order i.e. from last step towards first step.

(b) **Inspection and servicing.**

(i) Bearing are designed to operate with little or no maintenance but inspected regularly. It is permissible to eliminate slight scores, nicks, scratches, wear and rust spots with fine emery paper and applying lapping paste in accordance with TO referred at Para 7 below.

(ii) Check the movement / play of bearing both axially and radially by rotating the bearing with help of finger.

(iii) Check for free, smooth and noiseless movement, any sign of interference or fouling with (or from) adjacent components and movement.

(iv) Observe and feel any restriction, noise, excessive play and indentation. If it appears, declare the bearing "Unserviceable".

(v) Sign of corrosion on ball bearing are visible as an impression of drop of water.

(vi) Lubrication of bearing is done by grease (ZL-5), Refer relevant maintenance manual for correct grade of grease.

(vii) Proceed for greasing the bearing as demonstrated by practical instructor.

(viii) Sealed bearing are pre-packed with grease.

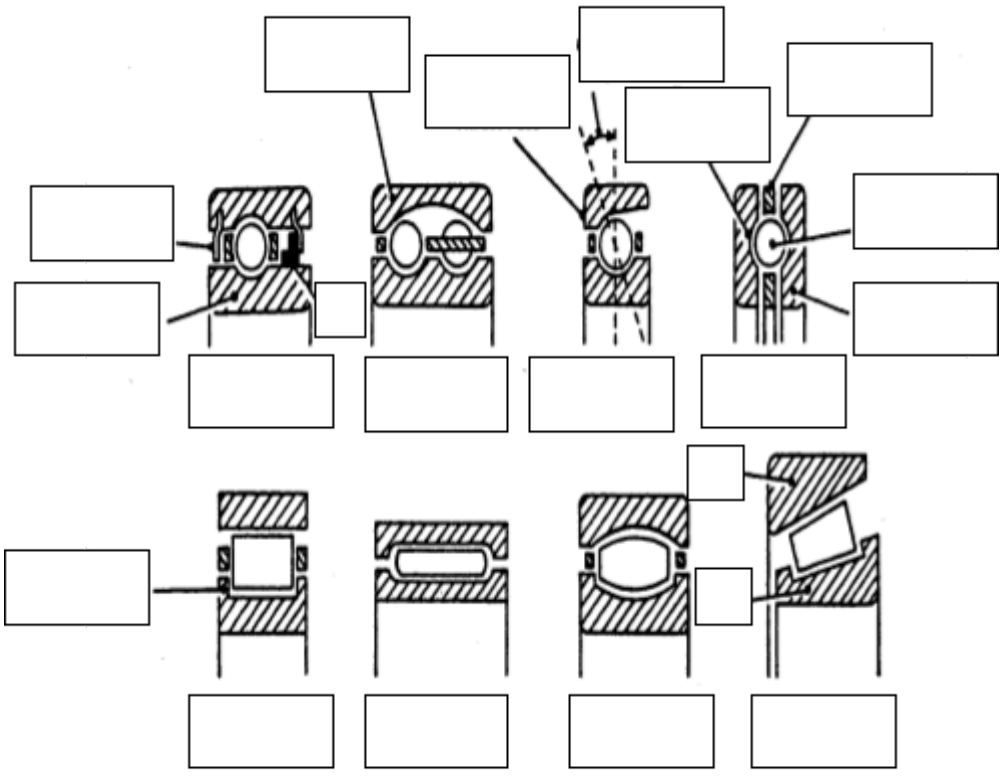
(c) **Parts of Bearing.**

(i) Show different types of bearing to trainees and segregate bearings in groups of Ball Bearing and Roller Bearing.

(ii) Dismantle the bearing by removing inner race first.

(iii) Look for the rolling element, their construction and contact area.

(iv) Label the following work sheet on visual experience: -



(v) Trainees are to pick the three different types of bearing and fill up the following blank space: -

(A) Specimen No 1 Rolling element ……Bearing type…….

(B) Specimen No 2 Rolling element ……Bearing type…….

(C) Specimen No 3 Rolling element ……Bearing type…….

Conclusion: