

**Government of India  
Ministry of Railways  
Research Designs & Standards Organisation  
Manak Nagar , Lucknow - 226011**

NO. EL/2.2.48

Dated : 21.10.1992

**SPECIAL MAINTENANCE INSTRUCTIONS NO. RDSO/EL-RS/SMI/148**

**1. TITLE :**

Guidelines to identify genuine and spurious/reconditioned bearing.

**2. APPLICATION :**

Bearings fitted on Auxiliary motors including ARNO for Electric locomotives.

**3. OBJECT :**

3.1 One of the major problems faced by the Indian Railways is how to detect a spurious/reconditioned bearings. This malpractice of supplying spurious/reconditioned bearings is generally confined to those sizes which are specially in short supply.

3.2 This SMI indicated the method of distinguishing between genuine and spurious/reconditioned bearing.

**3.2.1 SPURIOUS BEARINGS :**

Spurious bearings are those which are not manufactured by the manufacturer whose trade mark/name appears on the bearings/bearing packages.

**3.2.2 RECONDITIONED BEARINGS :**

Reconditioned bearings are those which have been serviced or have been damaged during storage/transportation and have been reconditioned to look like new bearings and supplied as new bearings to the users. This category would also include those bearings on which modifications have been carried out by the suppliers without the permission of the manufacturers.

**4. INSTRUCTION DRAWINGS :**

Nil

**5. INSTRUCTIONS :**

With experience it is generally possible to distinguish spurious/reconditioned bearing in majority of the cases from genuine bearings by visual inspection. Some of the instructions to follow are as under :--

- 5.1 Compare the packaging , marking on packages and the marking on the bearings with the one supplied by original manufacturers.
- 5.2 Compare the rust preventive coating on the bearings with the bearings supplied by the original manufacturer.
- 5.3 Any axial marks on the bore diameter or the OD of the bearing would envisage that the bearing has been mounted on the shaft or in the housing.
- 5.4 Compare the grain flow of the bearing surfaces with the original bearing.
- 5.5 Any bearing which has been service would acquire a slightly dull finish on the raceways.
- 5.6 Look for polishing marks which would be normally uneven caused by fine emery paper to remove rust spots. If the trade marks have been changed on the bearing side face, these polishing marks would be prominent near the surface where the trade mark is stamped/etched.
- 5.7 In some cases of spurious bearings the restamping is done after heating the rings. The blue black discolouration can be observed near the stamping/etching.
- 5.8 Measure the radial internal clearance of the bearings and compare it with the catalogue values given for new bearings.
- 5.9 Any bearings having rust spots/nick marks on the critical surfaces like raceways or rolling elements should not be accepted for use.
- 5.10 The change of trade mark on the bearing would involve removal of material from the bearing side faces at those positions. This would alter the tolerances on the width of these bearings and this measurement would help in distinguishing spurious bearings with the original bearings by comparing them to catalogue tolerances. These tolerances are also standardised by ISO as well as ISI.
- 5.11 It is not advisable to make any indentations on the side faces of the ring since these points would lead to development of areas of stress concentration.
- 5.12 In general the best course of action would be to procure bearings from the original manufacturers.

**6. PERIODICITY OF CHECKING :**

Whenever new bearings are purchased.

**7. AGENCY FOR IMPLEMENTATION :**

All electric loco sheds and POH shops/TM shops including Production Units eg. CLW.

**8. REFERENCE :**

Item 1 of XLX MSG (EL)

**9. DISTRIBUTION :**

As per list enclosed.

A handwritten signature in red ink, appearing to be 'प्रवीण जैन' (Praveen Jain).

(P.K. Jain)  
for Director General (Elec.)