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सत्यमेव
जयते ।

भारत सरकार - रेल मंत्रालय
अनुसंधान, डिजाइन और मानक संगठन
लुक्नो - 226011

Government of India - Ministry of
Railways
Research, Designs & Standards
Organization, LUCKNOW - 226011

No. EL/3.2.182

Dated 12.7.2002

Modification Sheet No. ELRS/MS/0314

1. **Title:** Modification of Drive End - Outer Labyrinth of WAG9/WAP7 Traction Motor type 6FRA 6068.

2. **Object:**

2.1 Eastern Railway have reported cases of bearing seizure of traction motor type 6 FRA 6068 fitted on WAG9 class of Locomotives. The failures were attributed to loosening of Drive End side Outer Labyrinth on pinion shaft resulting in running of grease from its bearing and its failure.

2.2 Detailed study has been carried out in consultation with indigenous manufacturers and it is found that the interference specified between Drive End - Outer Labyrinth on pinion shaft is inadequate. As such it has been decided to provide higher interference of 0.060 mm to 0.120 mm in place of the existing 0.003 mm to 0.068 mm and drawing of Outer Labyrinth of DE side has also been modified accordingly. The drawing of the shaft has been kept unaltered.

2.3 Railways/ Traction Motor manufacturers are, therefore, advised to adopt the modified Drive End side Outer Labyrinth manufactured as per RDSO Drg. No. SKEL-4627 on the traction motor type 6 FRA 6068. The comparison between existing and revised dimensions of shaft, DE side outer labyrinth bore and interference is tabulated below:

S No	Parameter	Existing Design	Revised Design to Drg. No. SKEL - 4627
1.	DE side outer labyrinth bore dia (mm)	(179.8 H7) Min 179.800 Max 179.840	(-0.017) (179.8 -0.052) Min 179.748 Max 179.783
2	Interference (mm)	Min 0.003 Max 0.068	Min 0.060 Max 0.120

3. Work to be Carried Out

- Remove existing plug in pinion as per usual process.
- Fit dummy pinion as per usual process.
- Remove the existing Driving End side outer labyrinth as per usual process.

- Clean the outer labyrinth by compressed air and apply grease as per usual process.
- Assemble two long bolts size M8 X 110 mm for handling outer labyrinth.
- Heat up outer labyrinth in oil bath/ induction heater at 160 °C for 2 hours.
- Refit the heated outer labyrinth as per usual process. During shrinking process, the outer labyrinth must be kept in position and slightly moved up to the moment it comes to a solid contact.

4. Application

WAG9 & WAP7 class of Electric Locomotives fitted with traction motor type 6FRA 6068.

5. Material required :

Modified Drive End side Outer Labyrinth as per RDSO Drg. No. SKEL-4627 (one per TM).

6. Material rendered surplus :

Existing Drive End side Outer Labyrinth (one per TM).

7. Reference :

M/s Adtranz Drg. No. 3EHM 4-13071

8. Periodicity of implementation :

During assembly of traction motors.

9. Agency of implementation :


- All TM manufacturers including CLW.
- All Electric Loco Sheds.
- All shops carrying out POH of WAG9 & WAP7 class of locomotives.

10. Sources of Supply :

As per CLW's list of approved suppliers of WAG9 Loco items.

11. Distribution: As per enclosed list.

Encl: RDSO's Drawing
No. SKEL- 4627


(M K Singhal)
12/7/2002
for Director General (Elec.)

