

**GOVERNMENT OF INDIA  
MINISTRY OF RAILWAYS  
RESEARCH DESIGNS & STANDARDS ORGANISATION**

Manak Nagar, Lucknow-226011

No. EL/3.2.182

Dated 31.5.99

**SPECIAL MAINTENANCE INSTRUCTION NO. ELRS/SMI/0211-99(REV-0).**

**1. TITLE :**

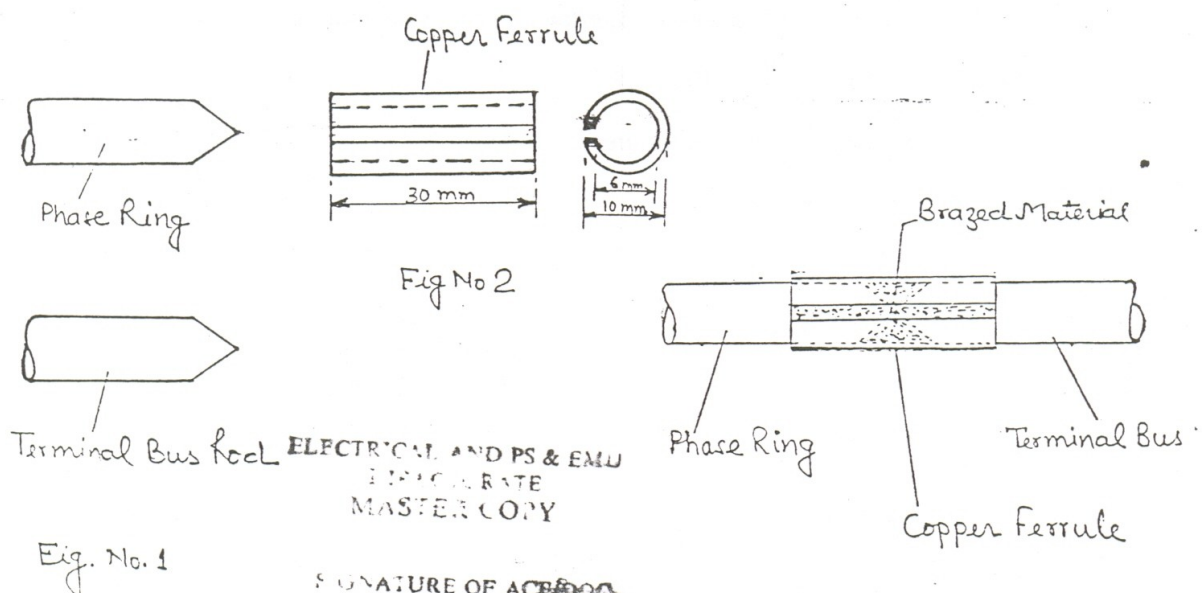
Improved method of brazing of terminal bus rods on the respective phase ring of the stator winding s of three phase traction motor type 6FRA6068.

**2. OBJECT:**

Eastern Railway have reported a number of cases of failures of three phase traction motor type 6FRA 6068 due to the breakage/burning of terminal bus rods at their brazed joints on the respective portion of the phase ring of stator windings.

This failure was jointly investigated by the representatives of Adtranz, RDSO and ELS/E.Rly/Gomoh at Electric Loco Shed, Gomoh/E.Rly. One of the main reasons of this failure is defective brazing.

This matter was further discussed with the three phase traction motor manufacturers – CLW, BHEL and CGL. Hence to overcome this problem it is decided to adopt improved method of brazing as follows:



This SMI states the procedure for the improved method of brazing of terminal bus rods on the respective phase ring of the stator windings and to be followed by all three phase traction motor manufacturers during manufacturing of new traction motors or traction motor rewinding.

**3. WORK TO BE CARRIED :**

- Grind the end of the phase ring and terminal bus rod as per Fig. No.- 1
- Insert the one end of phase ring and terminal bus rod into the copper ferrule procured as per Fig. No.2.
- Do the brazing as per usual process.

**4. APPLICATION :**

AC loco class WAG9 fitted with three phase traction motor type 6FRA6068.

**5. MATERIAL REQUIRED :**

- Copper Ferrule – 6 nos.
- Silver brazing rod, silver foil and flux etc.

**6. MATERIAL RENDERED SURPLUS : Nil**

**7. REFERENCE : Discussions with the TM manufacturers.**

**8. PERIODICITY OF IMPLEMENTATION :**

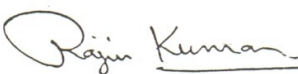
During manufacturing of new traction motor/traction motor rewinding.

**9. AGENCY OF IMPLEMENTATION :**

All three phase traction motor manufacturers.

**10. DISTRIBUTION : As per enclosed list.**

DA: Nil

  
(R K KULSHRESTHA)  
For Director General (Electrical)

