



भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ - 226 011
EPBX (0522) 2451200
Fax : 0522 - 2452581

Government of India-Ministry of Railways
Research Designs & Standards Organisation
Lucknow - 226 011
DID (0522) 2450115
DID (0522) 2465310



No. EL/3.2.172

Date: 8.11.2016

Chief Electrical Engineers,

1. Central Railway, Mumbai CST-400001
2. Eastern Railway, Fairlie Place, Kolkata- 700 001
3. East Coast Railway, Chandrashekharapur, Bhubaneswar-751 016
4. Northern Railway, Baroda House, New Delhi-110 001
5. North Central Railway, Hasting Road, Allahabad-211 001
6. Southern Railway, Park Town, Chennai-600 003
7. South Central Railway, Rail Nilayam, Secunderabad-500 071
8. South Eastern Railway, Garden Reach, Kolkata-700 043
9. South East Central Railway, Bilaspur-495004
10. Western Railway, Churchgate, Mumbai-400 020
11. West Central Railway, Jabalpur-482001
12. East Central Railway, Hazipur-844101 (Bihar)
13. Chittaranjan Locomotive Works, Chittaranjan- 713 331

SPECIAL MAINTENANCE INSTRUCTION NO. RDSO/2016/EL/SMI/301 (Rev '0')

Dated 08.11.2016

1. Title:

Use of Induction Heater for heating of End Shields/End frames of traction motors for bearing fitment.

2. Brief History:

- 2.1 At present, most of the Workshops/Loco Sheds are using Electric Oven for Heating of End Frames/End Shields for fitment of Traction motor Bearing. It takes around 4 to 5 hours to reach the desired temperature and a lot of energy is also consumed in the process.
- 2.2 It is also observed that hammering is required for bearing fitment even after heating of End Frames/End Shields which is not desirable.

3. Object:

Use of Induction Heater for heating of End Shields/End frames of traction motors for bearing fitment.

4. **Modified Instructions :-**

- 4.1 Induction Heater of suitable capacity to be used for heating of End Shields/End frames of traction motors for bearing fitment.
- 4.2 Induction Heater must have the features of temperature display, temperature setting, auto cut-off and de-magnetization.
- 4.3 Induction heating should always be done in temperature mode as same/similar components of different manufacturers may have different properties.
- 4.4 Temperature setting should not be more than 120°C for bearing assembly components.
- 4.5 Induction heating will also help in reducing the cycle time for bearing fitment and will be energy efficient compared to heating in electric oven.
- 4.6 CLW had procured the Induction Heater for heating of End frame/End Shield vide Purchase Order Number 05/2014/7108/04938 dated 17.02.2015 with CLW Specification No. MT/2161 dated 13.06.2013 having following salient features:
 - a. Induction heater should be capable to accommodate the End Frames/End shields for Hitachi and 6FRA-6068/6FXA-7059 TM.
 - b. The equipment should capable to heat the components having following dimensions:
Internal diameter of the job- 80 mm to 300 mm
External diameter of the job-800 mm maximum
Height of the job-350 mm maximum
Maximum weight of the job- 300 kg.



Photo : Induction heater installed at CLW

Signature

5. **Application to class of Locomotives:**

Conventional & three phase locomotives.

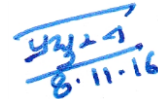
6. **Agency of Implementation:-**

All the manufacturers/ workshops /Loco sheds carrying out manufacturing/ overhauling of Traction motors.

7. **Periodicity of Implementation:**

During fitment of bearing in traction motor.

Encl: nil

Handwritten signature and date in blue ink. The signature appears to be 'P. K. Saraswat' and the date is '8.11.16'.

(P. K. Saraswat)
for Director General/Electrical

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