

Government of India
Ministry of Railways
Research, Designs & Standards Organisation
Manak Nagar, Lucknow - 226 011

No. EL/3.2.5

Dated 03.02.1995.

Special Maintenance instructions No. RDSO/ELRS/SMI/166

1. Title :

Ventilation of TAO 659 Traction Motors.

2. Application :

All AC Electric Locomotive fitted with TAO- 659 Traction Motors.

3. Object :

Railways have reported large cases of failures of Traction Motors due to insulation failures of armatures/stators. Banding failures, BBCR Uneven voltage drop etc.

One of the basic causes of the above failures is the high operating temperature of Traction Motor which causes degradation of insulation and fatigue of copper. This high operating temperature may be due to overloading or by due to inadequate ventilation.

Inadequate ventilation may be due to the following :

- a) Failure of MVMT & isolation of QVMT,.
- b) Collapsed or cracked bellows.
- c) Depositing of dust/dirt on coil or connectors.
- d) Air cutlet expended metal opening or other air-flow passages blocked by dust/dirt and oil etc.

To improve the performance of Traction Motors as well as to minimise the above failures. This SMI is being issued for adoption.

4. Procedure:

4.1 Follow the RDSO modification sheet No. RDSO/WAM4/178 dated 16/23.12.093 for the protection screen (expanded metal) of pinion and shield and air outlet of magnet frame of TAO- 659 Traction Motor.

4.2 The opening of protection screen (expanded metal) of pinion and shield and air outlet of magnet frame of Traction Motor should be cleared with a suitable wire brush - while MVMT is kept on during every inspection stages.

4.3 Clean the complete Traction Motor with compressed air.

5. **References:**

- i) RDSO modification sheet No. RDSO/WAM4/178 of 16/23/.132.93.
- ii) RITES Reliability Engg. Study on Elec. Loco-part 11 for traction motor type 659-Flash over BBCR, Commutator Solder run out.

6. **Schedule of Implementation**

During every inspection storage/AOH/POH.


7. **Agency of implementation:**

All Traction Motor shops/POH shops.

All Electric Loco Sheds.

8. **Distribution:** As per enclosed list.

DA: Nil


(R. K. Kulshrestha)
for Director General (Elect.)