

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RESEARCH DESIGNS & STANDARDS
ORGANISATION

No.EL/3.2.5

Manak Nagar, Lucknow-226011

Dated 17.6.99

SPECIAL MAINTENANCE INSTRUCTION NO.ELRS/SMI/0212-99(Rev-0)

(1) TITLE:

Implementation of RDSO's modification sheet No. RDSO/WAM4/174 and 194 on traction motor type TAO-659 for freight and passenger Electric Locomotives application respectively.

(2) OBJECT:

During 26th MSG(Electric Loco) meeting held at Bangalore/S.Rly. on 7th and 8th April'99, Railways have pointed out that after implementation of RDSO Modification sheet Nos. RDSO/WAM4/174 and 194, failure rate of traction motors type TAO-659 has come down considerably. Specially, performance has been considerably improved after adoption of single potted field coil and flexible Fluonlex interconnecting cables in the stator of traction motor type TAO-659 in line with RDSO Modification Sheet No. WAM4/194. To limit the total cost of implementation of this modification, decision was taken during the MSG meeting that Modification Sheet No. WAM4/194 will be implemented on passenger locos and Modification Sheet No. WAM4/174 will continue to be adopted for freight locos.

In view of the above, it is decided that RDSO modification sheet No. WAM4/194 is to be implemented on traction motor for passenger locomotive application only. Mechanical rehabilitation of the stator is also to be carried out on these traction motors in line with RDSO SMI No. ELRS/SMI/180 of Feb.'96. It may be ensured that RDSO Modification Sheet No. WAM4/194 with mechanical rehabilitation of stator is implemented only on traction motors having 20 years remnant codal life. For other traction motors for freight locomotive application, old RDSO modification No. WAM4/174 only need to be implemented which envisages adoption of split field coils with solid/flexible interconnectors distributed on pinion end and commutator end sides of the stator. During the implementation of modification sheet No. WAM4/174, the following additional work may also be carried out on traction motor stators:

- (1) Vacuum Pressure Impregnation of stator field coils (split coils) using solventless varnish FT2005/500EK of Dr.Backs.
- (2) Work in line with RDSO Modification Sheet Nos. RDSO/WAM4/162,166,167,168 and 169.
- (3) Special care to be taken while brazing field coils at 3 O'clock

position such that cracks do not take place and brazing is properly done due to difficult brazing location which is prone to failure.

- (4) Main-pole and Com pole spring may be replaced on 100% basis during implementation of Modification Sheet No.WAM4/174 on traction motors of goods locomotives.
- (5) Magnet frame rehabilitation, wherever necessary.

(3) WORK TO BE CARRIED OUT:

(1) On traction motor type TAO-659 for Passenger locomotive applications (remnant life 20 years)

- (a) To implement RDSO modification sheet No. RDSO WAM4/194 dated 16.9.97 on improved connectors layout with potted single section field coils, etc. Also apply anti-tracking varnish E-233 of Dr.Beck and curing as per usual process.
- (b) The magnet frame rehabilitation in line with RDSO SMI No.RDSO/ELRS/SMI/180 of Feb.'96.

(2) Ontraction motors type TAO659 for Goods Locomotive application:

- (a) VPI of stator field coils (split coils) using solventless varnish FT2005/500EK of Dr.Becks. Also use Anti tracking varnish E-233 of Dr.Becks and cure as per usual process.
- (b) To implement old modification sheet No. RDSO/WAM4/174 with split field coils and segregation of main pole and com pole inter connections on pinion end and commutator end sides respectively.
- (c) Work in line with RDSO Modification Sheet No. RDSO/WAM4/162,166,167,168 AND 169.
- (d) 100% replacement of main pole and com pole coil springs.
- (e) Special care for brazing of 3 O' clock field coil due to difficult brazing location.
- (f) The magnet frame rehabilitation in line with RDSO SMI NO. RDSO/ELRS/SMI/180 of Feb. '96, wherever necessary.

(4) APPLICATION

AC Electric locos fitted with TAO 659 traction motors.

(5) MATERIAL REQUIRED:

Materials as per RDSO Modification Sheets WAM4/162, 166,167,168,169,174 and 194 and SMI No.ELRS/SMI No.ELRS/SMI/180.

(6) MATERIAL RENDERED SURPLUS: NIL

(7) REFERENCE:

26th MSG/Elec Loco meeting held at Bangalore, S.Rly.on 7th and 8th April, 1999.

(8) AGENCY OF IMPLEMENTATION:

- ALL Electric Loco Sheds.
- ALL POH shops.

(9) PERIODICITY OF IMPLEMENTATION:

During `POH'/Overhaul of traction motors.

(10) DISTRIBUTION:

As per enclosed list.

Encl: Nil



(R K Kulshrestha)
For Director General (Elec.)