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 INSTRUCTION NO.RDSO/ELRS/SMI/171

1. Title :

Fitment of "MICA - LEX INSULATION" on TAO-659 Traction Motor.

2. Application :

All electric locomotives fitted with TAO-659 Traction Motor.

3. Object :

To prevent failure of busbar connection between positive and negative terminals of TAO 659 Traction Motors caused in vibration of the MICA LEX insulators.

4. Procedure :

4.1 As the TAO 659 motors are axle hung, they are subject to very severe vibration and shocks. Therefore, ensure that all bolted or screwed connections are fully tightened.

4.2 Use special sockethead wrenches for tightening of screws which are situated in inaccessible locations.

4.3 Use Spring washers or disc springs as specified under the head of the screws. In order to keep the screw in position as a locking device.

4.4 In order to held the MICA-LEX insulator in position, tighten the screw ‘S’

4.5 It is just possible that screw ‘S’ being in tightened position, even then there is chance that insulators are not fully held, due to the screw being tightened at the thread bottom in the insulators. Therefore, to ensure that screw being tightened are readily tightening the insulators in position so that it should not loose due to vibration encountered in service.

4.6 In order to maintain the clearance at the bottom of the tapped hole in the MICA-LEX insulator should be adequate as per SKEL 4330 i.e. 2mm(min). The useful depth of tapped hole in the insulator should be checked by tightening the screw by hand. Use a special screw with a collar at the required point as a ‘60’ gauge.

4.7 Clean with a wire brush the bolt head and recess etc. and degrease with tri-chloro-ethylene, then apply M-seal around the bolt head.

4.8 Adopt the following precautions during the process of screw tightening.

i) Follow the dimensions of the components used as per relevant drawing with proper limit.

ii) Screw length should not be too high.

iii) Stator length should not be too small.

iv) Useful depth of tapped hole in metal filling on insulator should not be too small

v) M-seal is provided for oil tight and water tight and not as locking device.

vi) If screws are inadequately tight or loose 'M'seal would fall first.

5.0 **Drawing/Sketch No. -** SKEL.-4330

6.0 **Agency for Implementation :**

All electric shed and shop of Indian Railways.

7.0 **Periodicity of Implementation :**

i) During every assembly operation

ii) During failure of busbar connection to the positive and negative terminals of motors.

8.0 **Reference :**

Reliability Engineering study on electric locomotives Part-10 for TAO 659 stator connection failures prepared by RITES, New Delhi.

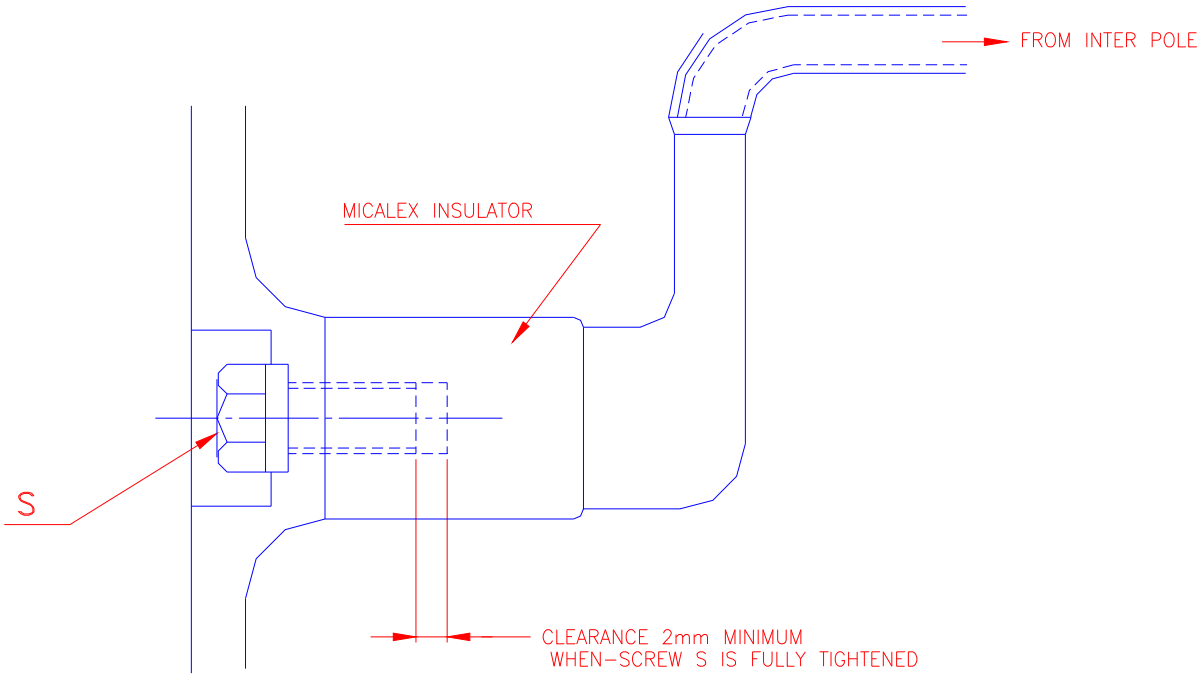
9.0 **Distribution :**

As per enclosed list.

Rajiv Kumar

(R. K. Kulshrestha)
for Director General/Electrical

DA: As Above.



REF:-	SCALE:- NTS	APPROVED:- FOR D.G.

TRACTION MOTOR – TAO-659
ASSEBMLY OF MICALEX INSULATOR

RDSO. ELEC. DTE.	SKEL – 4330

Dt.	30.1.95
D	S.CHRNDRA
C	H.N.S. Dhillon