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भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ - 226 011
Government of India-Ministry of Railways
Research Designs & Standards Organisation
LUCKNOW - 226 011

No. EL/3.2.172

Dated 30.3.1998

MODIFICATION SHEET NO. RDSO/WAG 5/31

(New No. WAG5/244)

1. **Title :** Modification in the pinion end portion of armature shaft of Traction Motor type HS 1050Er/HS15250A.
2. **Application :** Traction Motor type HS 1050Er/HS15250A.
3. **Object :** Railways have reported some cases of the failure of Traction motor type HS1050Er/15250A due to bearing seizure/damage of pinion teeth or slipping of pinion at its seat. All these failure require the removal of pinion from the armature shaft.

In the existing design of Traction Motor, after shrink fitting the pinion on the armature shaft, it is held by a lock washer having nominal inside dia of 100 mm and thickness of 2.3 mm and a special pinion hexagonal nut size M80, pitch 2, that needs a special type of spanner for its tightening and unlocking.

Railways have also reported that sometimes the threaded portion of the armature shaft becomes worn out and sheds are facing problem to fit the pinion hexagonal nut in position properly, which may result slacking of pinion on line. Damage to these require reshafting of armature which is a major repair work. Hence, this defect may be treated as type on this Traction Motor.

The matter has been discussed in the 25th MSG/EL held at Secunderabad on 5th & 6th March '1998 and it is decided to modify the pinion end portion of the armature shaft of Hitachi Traction Motor in line with TAO-659 armature shaft and also adopt the TAO. 659 holding arrangements for pinion.

Hence, Railways and Traction Motor manufacturers are advised to follow this modification sheet on their existing and newly manufactured Traction Motor type HS15250A.

4. **Material Required :**

- Pinion Retaining plate as per RDSO SKEL. Drg. No.4454.
- Double locking plate as per RDSO Drg No. SKEL. 4455.
- Hex head bolt size M18X30L, pitch 2.5
- Armature shaft with modified pinion end portion.

5. **Reference Drawing :**

Armature shaft with modified pinion end portion as per:
- RDSO Drg. No. SKEL. 4453.(copy enclosed)

- Pinion Retaining circular plate : RDSO Drg, NO. SKEL. 4454.

- Double locking plate : RDSO Drg. No. SKEL. 4455.(copy enclosed).

6. Work to be carried out :

- Remove existing pinion hexagonal nut M80.
- Remove pinion lock washer.
- Remove pinion.
- Dismantle the Traction Motor as per usual procedure.
- Modify the pinion end portion of the armature shaft as per RDSO Drg. No.SK. EL. 4453.
- Machine off the portion as marked by thick dark line on the above drawings.
- Drill & tap 4 holes size M18, Pitch 2.5 mm, useful depth 30mm preliminary hole depth of 40 mm.
- Chamfer the PE face of armature shaft as above drawing.
- Reassemble the armature as per usual process.
- Mount the pinion
- Fit the pinion retaining circular plate and hold this with 4 hexagonal head bolts size M18X30L, pitch 2.5 and double locking plates.
- Tighten these four M18 bolts by torque wrench.

7. Periodicity of Implementation :

- On new Traction Motor
- During rehabilitation/overhaul of Traction Motors.
- During IOH/POH
- Whenever armature is removed for rewinding partial repairs.

8. Agency of Implementation :

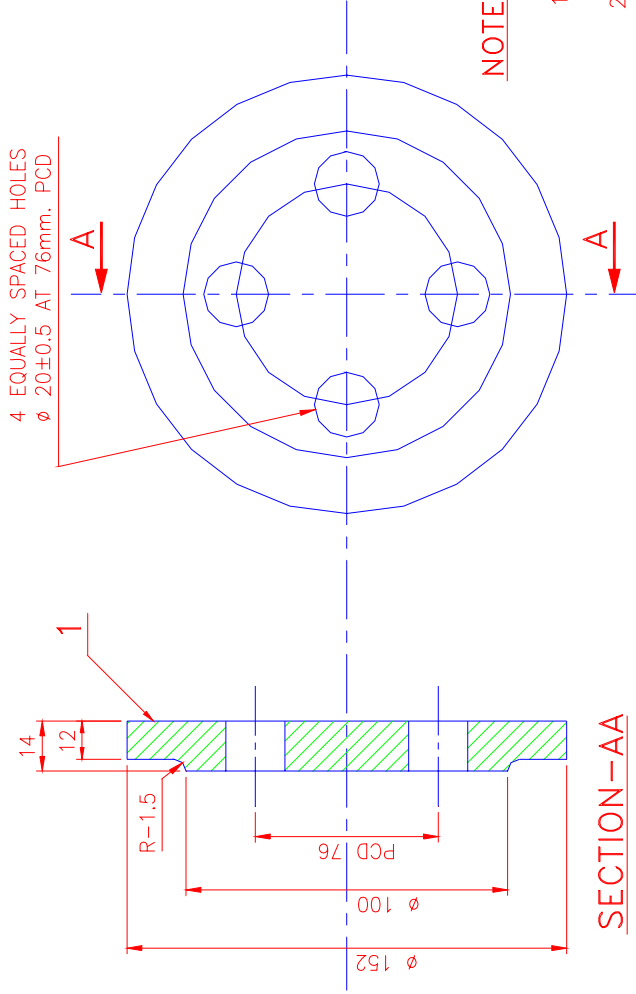
- TM manufacturers
- TM workshops
- POH/repair shops
- Electric loco sheds

9. Distribution : As per enclosed lost.



Encl: As Above.

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



NOTE:-

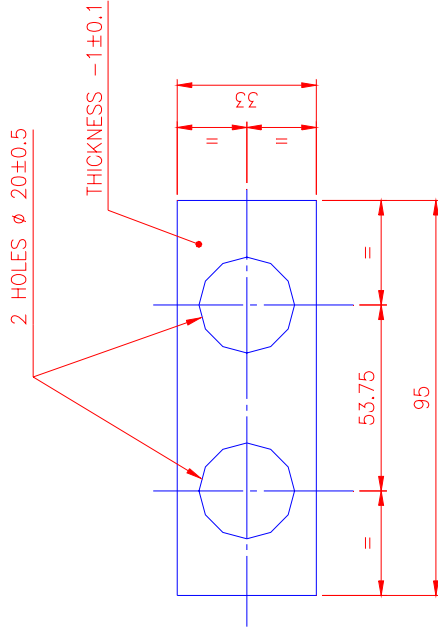
1. MATERIAL – STEEL TO IS:961–1962, ST 58 HT OR EQUIVALENT.
2. ~~XXX~~ (FINISH MACHINED 40 TO 80 MICRONS) ALL OVER.

SECTION-AA

1	PINION RETAINING PLATE		SEE NOTE
PART No.	DESCRIPTION	QTY./ MOTOR	MATL./SPECN.
REF:-	SCALE:- NTS	APPROVED:-	<i>Rajiv Kumar</i> FOR D.G.
TRACTION MOTOR – HS 15250A			
PINION RETAINING PLATE			
RDSO.ELEC.DTE.		SKEL – 4454	

Dt. 30.3.98
D. SCHRADRA
C H.N.S. DHILLON

Dt.	30.3.98
D	S.CHINDRA
T	
C	H.N.S. DHILLON



NOTE:—

1. THIS IS TO BE CADMIUM PLATED.
2. MATERIAL – CARBON STEEL SHEET TO IS: 513–1963.
TYPE– DEEP DRAWING SURFACE FINISH–BRIGHT
3. ALL DIMENSIONS ARE IN mm.

REF:— RETRACED	SCALE:— 1:1	APPROVED :— <i>Rajeev Kumar</i> FOR D.G.
TRACTION MOTOR – HS 15250A		
DOUBLE LOCKING PLATE		
RDSO.ELEC.DTE.	SKEL – 4455	

**Government of India
Ministry of Railways
Research, Designs & Standards Organisation
Manak Nagar , Lucknow-226011**

No. EL/3.2.172

Date 21.09.1998

Addresses as per
Mailing list enclosed.

AMENDMENT NO. 1

Sub: Amendment to modification in the pinion end portion of armature shaft of Traction Motor type HS 15250A/HS 1050Er.

Rdf: RDSO's Modification Sheet No. RDSO/WAG5/31 dated 30.3.98

A few clauses of the above mentioned RDSO's modification sheet have been modified as follows:

Clause 4 : Material Required (Page 1)

Para 3 Change the length of Hex. Head bolts size M18 from 30 mm to 45 mm, i.e., the revised bolt size is M18 × 45 Lmm in lieu of M18 × 30 Lmm.

Clause 6 Work to be carried out (Page 2)

Para 11: Change bolt size from M18 × 30 Lmm,
Pitch 2.5 to M18 × 45 L, Pitch 2.5



DA: Nil

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

