Research Designs & Standards Organisation
LUCKNOW - 226 011

Dated 30.3.98

No.EL/3.2.172

New (a243)

MODIFICATION SHEET NO. RDSO/WAG5/31

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/HS15250A due to bearing seizure/damage of pinion teeth or slipping of pinion at its seat. All these failures 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 100mm 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 threads require reshafting of armature which is a major repair work. Hence, this defect may be treated as type defect on this traction motor.

The matter has been discussed in the 25th MSG/EL held at Secunderabad on 5th and 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 arrangement for pinion.

Hence, Railways and Traction Motor manufacturers are advised to follow this modification sheet on their existing and newly manufactured traction motors type HS 15250A.

4. Material Required:

- Pinion Retaining Plate as per RDSO SKEL Drg.No. 4454.
- Double locking plate as per RDSO SKEL Drg. No. 4455.
- Hex. head bolt size M18x 30L, 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 (copy enclosed).
- 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.
- Dismentle the traction motor as per usual procedure.
- Modify the pinion end portion of the armature shaft as per RDSO Drawing No. SKEL 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 30 mm preliminary hole depth of 40 mm.
  - Chamfer the PE face of armature shaft as per above drawing.
  - Reassemble the armature as per usual process.
  - Mount the pinion.
  - Fit the pinion retaining circular plate and hold this plate with 4 hexagonal head bolts size M18x30L, pitch 2.5 and double locking plates.
  - Tighten these four M18 bolts by torque wrentch.

7. Periodicity of Implementation:

- On new traction motors.
- During rehabilitation/overhaul of traction motors.
- During IOH/POH.
- Whenoverthe 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 list.

Rajan Kumar.

(R K Kulshreshtha)
for Director General (El

Encl: As above.
WAGS/31

Government of India
Ministry of Railways
Research Designs & Standards Organisation

Manak Nagar, Lucknow-226011

No. EL/3.2.172 Dated 21.9.1998

Addressees 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.

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

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

Clause 4 : Material Required (Page 1)

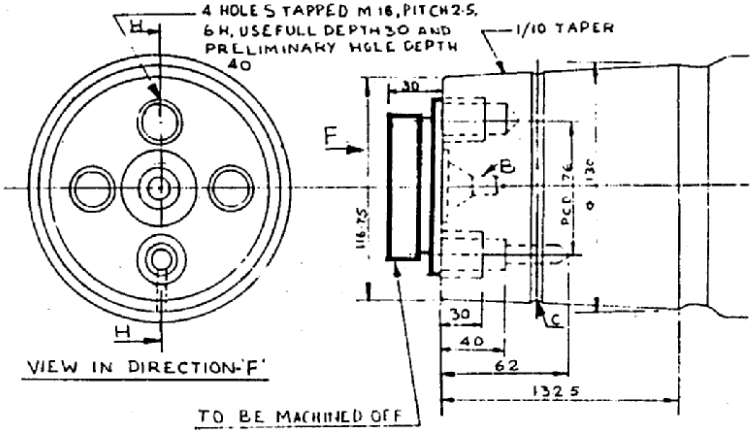
Para 3 Change the length of Hex. Hed bolts size M18 from 30 mm to 45 mm, i.e., the revised bolt size is M18x45Lmm in lieu of M18x30Lmm.

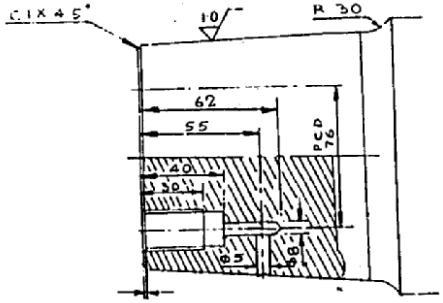
Clause 6 - Work to be carried out (Page 2):

Para 11 : Change bolt size from M18x30Lmm, Pitch 2.5 to M18x45L, Pitch 2.5.

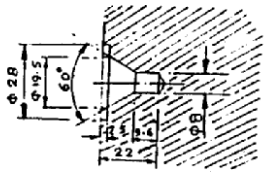
Rajiv Kumar
(R K Kulshrestha)
for Director General (Elec)

DA: Nil





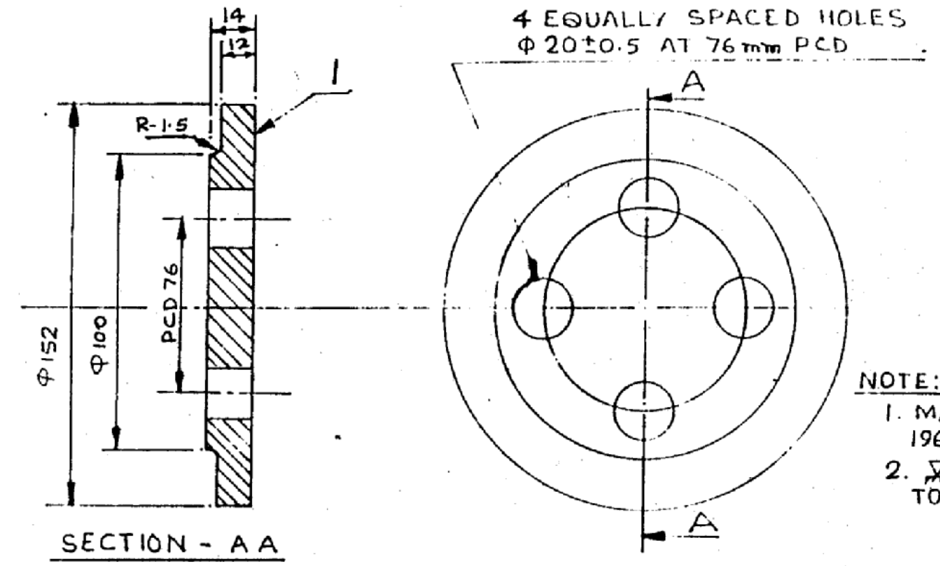
PARTIAL SECTION - H-H



DETAIL - 'B'

REF:	SCALE NTS	APPROVED:
TRACTION MOTOR- HS 15250 A		
MODIFIED PINION END PORTION OF ARMATURE SHA		

KG-S/31
30.3.98
S. CHANGE



NOTE:-

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

1	PINION RETAINING PLATE	1	SEE NOTE
PART NO.	DESCRIPTION	QTY./MOTOR	MATL./SPECN.
REF:	SCALE: NTS	APPROVED: Rajiv Kumar FOR DG	

TRACTION MOTOR- HS 15250 A

PINION RETAINING PLATE

R.D.S.O ELECT. DTE. SKEL 4454

WAG5/31 ~~WAG5/31~~

DU	30 3 98
D	S CHANDRA
C	H N S. DHILLON