

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RESEARCH DESIGNS & STANDARDS ORGANISATION
Manak Nagar, Lucknow-226011**

Fax 0522-2452581

No.EL3.2.182

Dated 23.03.2005

Modification Sheet No. ELRS/MS/0337 Rev '0'

- 1.0 **Title :** Enhancement of cooling of rotors of 3 Phase traction Motor type 6FRA6068 of WAG9/WAP7 Locos.
- 2.0 **Object:** A large number of failures on rotors of traction motors of WAG9/WAP7 class of Locos were reported by Railways. Even though majority of the failures were attributed to rotor bar cracks caused by torsional stresses, it has been felt that improving the cooling of rotors will lead to improved performance of the motor.

Arrangement of cooling ducts in rotor has been reviewed and it has been decided to increase the cooling duct area on the rotor stampings.

At present there are two row of cooling ducts on rotor stampings

- 18 holes of Ø 20 at PCD of Ø 220 mm.
- 18 holes of Ø 25 at PCD of Ø 265 mm.

Proposed scheme for cooling ducts :

- 18 holes of Ø 20 at PCD of Ø 220 mm.
- 18 holes of Ø 30 at PCD of Ø 270 mm.

The proposed scheme will result in enhanced cooling duct area of approx 27%.

While adopting this scheme, there shall be no change in any other part of rotor like end ring, resistance ring etc. Only location and size of one row of cooling ducts has been shifted 5 mm from PCD 265 mm to PCD 270 mm.

3.0 **Work to be carried out :**

- Cut the holes on rotor stampings and end plate as per SKEL 4693. Alt. ' 0'
- There shall not be any other change in any operation or stage of manufacturing of rotor.
- CLW should make necessary amendment in the drawing of TOT documents.

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4.0 **Application** :


- New rotors for TM type 6 FRA6068 to be fitted in WAG9/WAP7 class of locomotives.
- This modification is to be adopted while manufacturing new rotors and not applicable on existing rotors in service.

5.0 **Drawings** : RDSO Drawing No. SKEL 4693 Alt'0' (enclosed)

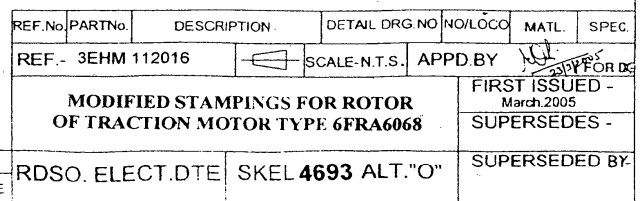
6.0 **Material required** : Nil


7.0 **Material surplus** : Nil

8.0 **Agency for implementation** : CLW and Traction Motor manufacturers.


(M K Singh)
for Director General (Elec)

23/3/2005



REF.No.	PARTNo.	DESCRIPTION.	DETAIL DRG NO	NO/LOCO	MATL.	SPEC.
REF.-	3EHM 112016		SCALE-N.T.S.	APPD.BY	<i>WJ</i>	<i>APPRD BY</i>
MODIFIED STAMPINGS FOR ROTOR OF TRACTION MOTOR TYPE 6FRA6068					FIRST ISSUED - March 2005	
					SUPERSEDES -	
RDSO. ELECT.DTE			SKEL 4693 ALT."O"		SUPERSEDED BY	

A.	21.03.2005
D.	CSS
C.	SKS
B.	