

**Government of India
Ministry of Railways
Research, Designs & Standards Organisation
Manak Nagar, Lucknow - 226 011**

No. EL/3.2.30/J-6

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**SPECIAL MAINTENANCE INSTRUCTIONS NO.
RDSO/ELRS/SMI/134**

REPLACEMENT PROCEDURE OF AIRMOTOR SUPPORT

1. OBJECT

Railways have reported a few cases of breakage/cracking of SMGR support plate. Investigation has shown that these are mainly due to interchanging the SMGR alongwith support plate from one unit to the other, which is not recommended.

2. INSTRUCTION

After the fitment of the support place on a tap changer, it is locked for a particular tap changer. Interchangeability with other tap changer is not permissible with the same locating holes. It require proper alignment and relocation of roll pin (1912). Support plate should only be removed and replaced in case of breakage of support plate. In such condition, the following procedure may be adopted for fitment.

- The old support plate with air motor to be removed from the loco.
- The new support plate of modified design tube fixed on the mounting frame loosely with the help of 3 hex. bolts (1909)
- Dismantle air motor
- Take only bearing plate with crank shaft assembly with bevel gear (1924) from dismantled air motor.
- Fit this assembly on the support plate fitted on the mounting frame such that the gear (1924) correctly meshed with gear 1925 on the main shaft.
- If required, the support plate is to be taken up or down to ensure correct fitment of bevel gear (1924) or (1925)
- Apply thin coat of blue on few teeth of gear 1925 and main shaft with gear 1925 to be rotated (either by hand drive or separate handle) to take the blue impression on bevel gear 1924 on crankshaft. There should be uniform impression of blue on teeth of bevel gear 1924 on both flanks and the blue impression should be more than 50 of flank area. If it is not achieved, the fixing bolts of support plate are loosened and support should be taken up or down till the both bevel gear teeth mesh properly. The fixing screws to be tightened and once again the blue impression is seen.
This process is to be repeated till blue impression on bevel gear 1294 is correctly achieved as indicated above.
- Tighten the support plate in correct position with fixing screws.
- Drill another hole 8↵ in the mounting frame and insert roll pins 8x28 & 5x28
- Now take out the bearing plate alongwith crank shaft.

- Assemble the air motor on the stand and fit the assembled motor on the support plate already mounted on the frame.

NOTE : (1) The stand can be procured/manufactured as per the enclosed drawing No. SK EL 3920

- (2) It should be noted that the design of the support plate is now modified so that the same size bolts can be provided. In case the support plate is of old design i.e. raised rib at the middle portion of the support plate, the central bolt may be changed from M 10x35 to M 10x40. Also introduce plain washer of dia 28x10.5x3.2 below the belleville washer (1910) to ensure proper sitting of the bolt and as well as tightening of the same. This has been introduced from S.No. 1B80783290 onwards by HBB. Sheds/workshops will implement the above on the existing SMGR.

3. REFERENCE

Item 13 of minutes of the meeting held between Railways & HBB in Jan. 1986 and circulated vide this office letter of even No. dated 14.2.86

4. PERIODICITY

During replacement/reassembly of air motor support

5. INSTRUCTION DRAWING

RDSO SK EL 3920

6. APPLICATION

On locomotive fitted with No. 32 tap changer

7. AGENCY OF IMPLEMENTATION

- Electric loco shed and repair shops of railways.
- M/s HBB during assembly.



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for Director General(Elect)



