

SPECIAL MAINTENANCE INSTRUCTIONS NO. RDSO/ELRS/SMI/101**Method for confirming that the pin is nitrided and procedure for replacement of journal pin (Pt. no 4518) tap changer No. 32 type of HBB make.****1. Object :**

Railways have reported a few cases of breakage of journal pin (pt. No. 4518) on stage III tap changers. Investigation has shown that this was due to the un-nitrided pins used on some of the stage III tap changers by mistake at HBB works during assembly.

2. Instructions :**2.1 Method to confirm that the existing pins are nitrided :-**

The scratch pen (already distributed by HBB to Rlys) to be rubbed against the ground surface of all existing pins (part No. 4518) as shown in SK EL 3523. In the case of assembled journal pins the rubbing can be done beyond the circlip groove portion.

Result:- The pen should not make any scratch mark on the ground surface.

2.2 If it makes a scratch mark, the Bearing complete (Pt. No. 4518) with journal pin to be replaced as follows --

- Remove the Fly Wheel.
- Take out the lever complete 4501
- Remove the broken journal pin alongwith its block (4518)
- Assemble the new bearing block with its journal pin (4518) in position with the help of roll pins and bolts.
- Slide the lever complete on to the journal pin to seat in position. At this point the following conditions are to be fulfilled.
- The teeth of toothed segment (4502) meshes smoothly with teeth of planet ring with pinion (5209) without any load and also without any excessive play.
- If it is observed that the toothed segment in planet ring with pinion meshes with interference or having excessive play, the following procedure is to be adopted to overcome this problem.
 - (a) Remove the two fixing roll pins on the toothed segment.
 - (b) Remove the screw (4503) after dismantling nut locked with pin (4504).
 - (c) Use new screw (4503) and hold the toothed segment in position after slightly tightening the nut. Adjust the toothed segment such that its teeth smoothly match with pinion. Under this condition tighten the nut firmly. Locate and secure the toothed segment firmly in position after drilling two holes of $\phi 4$ similar to the one existed in the opposite direction, and by assembling the two roll pins. Then the nut 4504 to be locked with $\phi 2$ through hole in nut and screw.

- Appropriate No. of shims are to be provided on the journal pin to maintain 0.4 to 0.7mm gap between guide pin 4521 and intermediate wheel 6103 and the gap between circlip 4514 and lever is bridged with additional shims.
- Check the minimum lead angle on either side of segment of intermediate wheel 6103 is within 63 ± 5^0
- Put the fly wheel and maintain the minimum gap 0.7 mm between toothed segment and fly wheel back face through out its notching up and notching down operation.
- Check and ensure that the fly wheel is fitted back as per the condition given above.
- Adjust the lead angle to 75 ± 4^0
- Finally check the operation of the air motor.

- Reference :**
1. Item 2.1.3 of the minutes of the meeting held between Rlys. and HBB in June-July 1982 and minutes circulated vide RDSO letter No. EL/3.2.30/CG dated 29.7.82.
 2. HBB's instruction TC-92 and SWT-5089
 3. BBC's instruction AM91001E.

3. **Periodicity :**

- **During periodical maintenance** - A cyclic check to be given on all tap changer in service.
- Earlier in case of breakage of pin

4. **Instruction Drawing :** RDSO SK EL 3523

5. **Application of class of locomotives :**

Locomotives fitted with No. 32 tap changer

6. **Agency of implementation :**

All electric loco sheds and repair shops of Railways.

7. **Distribution :**

As per list attached.

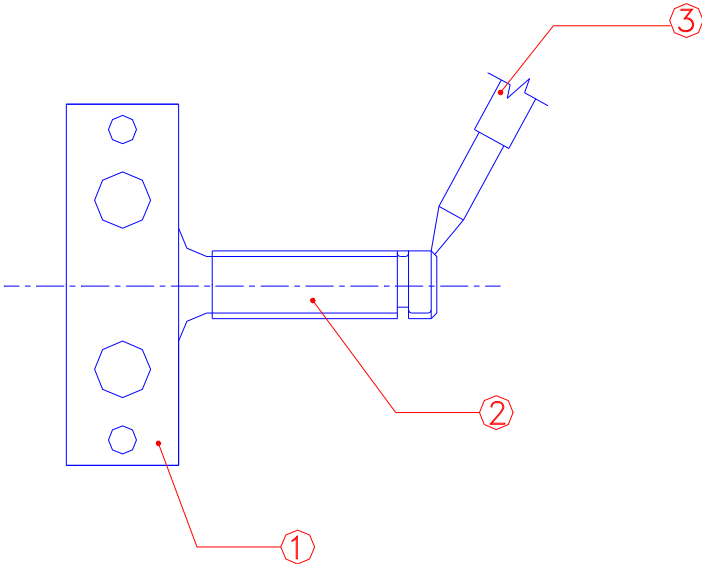
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Encl: SK EL 3423.

(K. Vishwakumar)
for Director

General/Elect.

SKEL 3523



3	SCRATCH PEN		
2	JOURNAL PIN		
1	BEARING COMPLETE (4518)		
PART NO.	DESCRIPTION	QTY.	MAT.

REF:- SKETCH NO TC - 92	SCALE:- NTS	APPROVED BY:-
SCRATCH TEST FOR JOURNAL PII OF BEARING COMPLETE 4518 (TAP CHANGER NO 32)		
RDSO. ELEC. DTE.	SKEL 3523	

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