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

No. EL/2.2/J-6 Dt.1.1.86

SPECIAL MAINTENANCE INSTRUCTION NO. RDSO/ELRS/SMI/130

Damping adjustment of isolating drive complete (2400) of circuit breaker (DJ) type DBTF 30i250 of HBB make.

1. OBJECT

Railways have reported a few cases of breakage of isolator blade (6031), sleeve (2408and 2404) etc. of circuit braker. It is observed that during investigation that these breakages are mainly due to any of the following reasons;

i) Step formation on the isolator blade (6031)

ii) Unmodified sleeve (2408/2404)

iii) Over shooting of the isolator blade (6031)

iv) Improper damping of isolator drive (2400)

2. INSTRUCTIONS

(i) Step on the existing isolator blades are to be removed as per procedure shown by M/s.HBB at their works during the meeting held between M/s. HBB and Railways.

(ii) If existing sleeves are unmodified, replace both the sleeves with modified (improved material) sleeves as per RDSO modification sheet No.RDSO/WAM4/92

dated 5.2.80.

(iii) Check whether the Isolator blade vibrates considerably at end on closing and tripping operation. In case of vibration, Isolator blade can overshoot and result in breakages of isolator blade/sleeve. it means damping of the isolator drive is improper.

iv) Generally damping is factory adjusted. It may be required to be adjusted during maintenance due to wear and tear of the parts of isolator drive mechanism. To prevent the improper damping in the absence of a damping recorder, the wear and tear of components of isolator operating mechanism is to be monitored during AOH. General guidelines are given below to replace the worn cut components if the wear exceeds the given permissible limits.

Replace the associated components (to bring the play within the acceptable limits) if the play between :

(a) Shackle 2415 and toggle joint 2411 or bolt 2123 exceeds 0.3mm.

(b) Sleeve 2408 and cylinder 2409 exceeds 0.3mm.

(c) Sleeve 2408/2404 and piston and 2403 exceeds 0.3 mm.

(d) Sleeve 2404 intermediate platform exceeds 0.3 mm.

(e) piston 2406 and piston rod exceeds 0.3 mm.

(f) End gap of piston ring 2407 or piston 2406 exceeds 0.3 mm. Measurement of end gap of piston ring shall be made when the piston is in assembled condition inside the cylinder.

It may be possible that the damping may still be improper when wear of the components are very near the wear limits in combination.

In such cases, if vibration/ overshooting of the isolator blade is noticed, then damping is to be adjusted during closing at 7 Kg/Cm2 pressure by removing the roll pin 2423 as per procedure given below.

(i) Hold intermediate platform 2405 in a Vice.

(ii) Using M6 HSS taps (1st and IInd and IIIrd) and wrench handle cut M/ s threads on the rol pin 2423 as shown in SK. EL. 3850 Fig.(1).

(iii) Mount the spacer/sleeves (3), washer(4) Hex screw M6(7) with nut (8) as shown in RDSO Drg.No. SK. EL.. 3850.Fig.(2)Screw the M6 screw on to the roll pin. continue to tighten the nut using a spanner (5) Further tightening of the nut after it touches the washer, results in the pulling out of the roll pin which ultimately comes out as per Fig.2.

(iv) Now adjusting screw 2422 can be adjusted to allow less air to escape through. The damping is said to be OK When the isolator closes and trips without appreciable vibration. Insert new roll pin 2423 to lock the adjusting screw 2422.

3. **Reference:** HBB Instruction No.5098 and 5099.

4. **Instruction Drawing :** RDSO Drg. No SK. EL. 3850.

5. **Application:** Electric locomotives and EMUs fitted with air blast circuit breaker type DBTF 30i250 of M/s HBB.

6. **Agency for implementation:** All Electric Loco sheds and EMU car sheds. POH workshops.

7. **Periodicty implementation:** Sheds, AOH/POH workshop POH,

8. **Distribution:** As per the list attached.

Encl. Drg. No SK. EL.: 3850
and mailing list

(ARUN SHRIVASTAVA)
for Director General/Electrical.

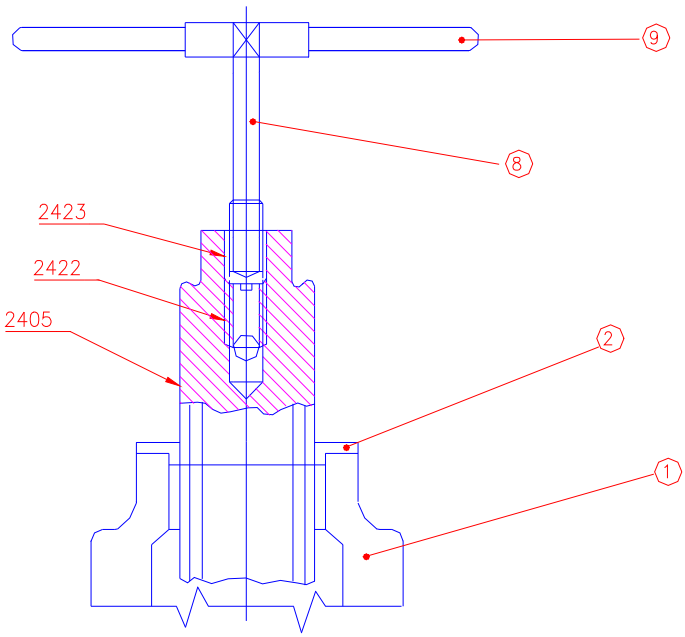

FIG. 1

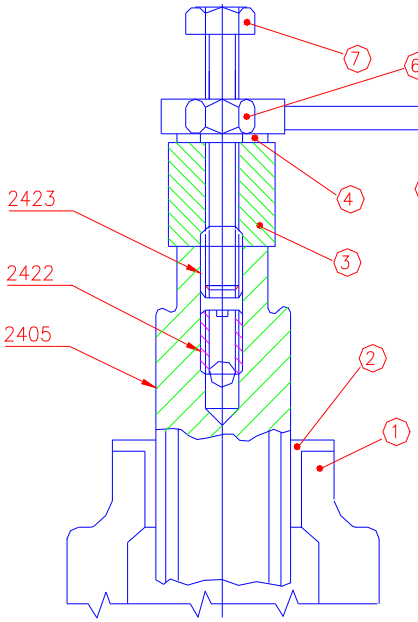

FIG. 2

PART No.	DESCRIPTION	QTY.	MAT/SPEC
9	HANDLE		
8	TAP M6		
7	HEX.SCREW M6x40		
6	HEX NUT 0.8dxM6		
5	SPANNER		
4	WASHER ø6.4/14		
3	SLEEVE ø10/18x20		
2	AL. CLAMP		
1	WISE		

REF:- HBB DRG. NO.SWGT 5098	SCALE:- NTS	APPROVED BY:-

REMOVING OF ROOL PIN FROM INTERMEDIATE PLAT – FROM OF DJ

RDSO.ELEC.DTE.	SKEL– 3850

Dt.	16.2.79
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