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भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ - २२६०११
Government of India - Ministry of Railways
Research, Designs & Standards
Organization, LUCKNOW - 226011

No. EL/2.2.9/3

Date: 31 - 01 - 2005

SPECIAL MAINTENANCE INSTRUCTION NO. ELRS/SMI/0232 - 2004 (REV 0)

1. TITLE:

Improvement in the reliability of Pulse Generator of Speedometer.

2. OBJECT:

Railways have reported failure of Speedometer mainly due to failure of Pulse Generator. A committee consisting of Sr. DEE/Lallaguda, Sr. DEE/Kanpur, Sr. DEE/Baroda and Director/RDSO was nominated as per the recommendation of 29th MSG Meeting to suggest remedial measures to be taken to arrest the PG failures.

Based on the recommendations contained in the report of above committee this SMI is issued to improve the reliability of PG of Speedometers.

3. WORK TO BE CARRIED OUT:

- i. Oil Seal should be changed whenever PG is opened during every overhaul.
- ii. Ensure proper clamping of PG cable with rubber packing to avoid damage to the cable. Some slack on PG cable to allow rotation of loco bogie with reference to body on curves should be provided. There should not be any sharp bends in PG cable.
- iii. To avoid water ingress from cable entry side, PG should be mounted on axle box such that cable entry is inclined 30° downwards from the centerline.
- iv. Cover gasket must be replaced whenever it is opened. Sealant such as RTV should be applied over PG cover and cable gland.

- v. All unmodified fork (made of 1.6 mm sheet) must be replaced with modified fork (made of 7.5 mm solid piece) to avoid breakage of forks.
- vi. All PG Bearings should be replaced with double Sealed PG bearings at Sheds/Shops to prevent ingress of grease and dust deposition.
- vii. All rubber components should be purchased from OEM in Kit form.
- viii. The connectors of M/s Laxven make PG should be got modified with robust type connectors.
- ix. PGs having single sensor should be modified with double sensor type having automatic changeover as being used with Energy cum speed Monitoring System.
- x. Semicircular protection plate as per enclosed RDSO Drg no..... should be provided on axle box to prevent damage to PG due to external hitting.
- xi. The connector at Junction Box should be horizontal to Rail.
- xii. Axle on which PG is to be mounted should not be fitted with flat Axle Box cover.
- xiii. Driving Pin should be inserted 10 mm inside the fork and fitted perpendicular to Axle Keeper plate and should be of length as given in table below:

Class of Locomotive	Pin Length
WAM4, WAG5	55 mm
WAP4, WAG7	65 mm

- xiv. Driving Pin should be 32 mm from center of Axle Box End Cap.
- xv. Do not hold PG from cable while carrying from one place to another, it can cause internal breakage in cable conductor, instead hold PG assembly by hand as shown in Annexure enclosed.

4.0 APPLICATION:

Pulse Generator of all makes of Speedometers of all class of Electric Locomotive.

5. MATERIAL REQUIRED:

A semicircular protection plate, double sealed bearings. 6002ZZ.

6. MATERIAL RENDERED SURPLUS:

Old bearings.

7. REFERENCE:

29th MSG Meeting held at Nagpur.

8. PERIODICITY OF IMPLEMENTATION:

During AOH/IOH/POH and whenever PG is opened.

9. AGENCY OF IMPLEMENTATION:

All Electric Loco sheds and Workshops.

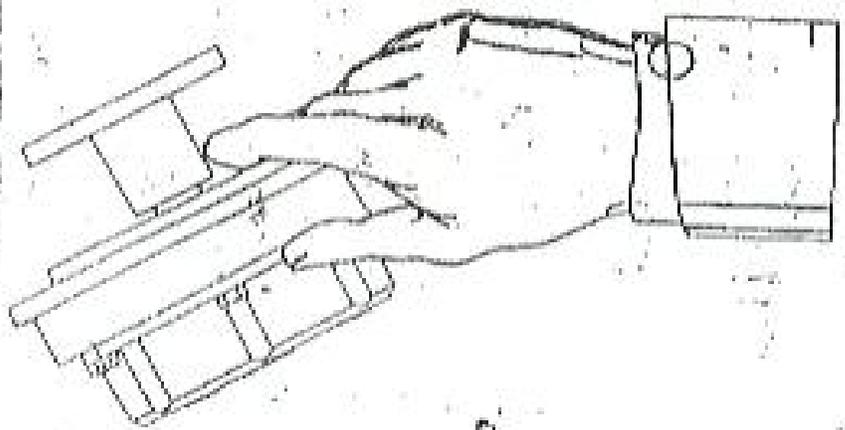
10. DISTRIBUTION:

As per enclosed mailing list.

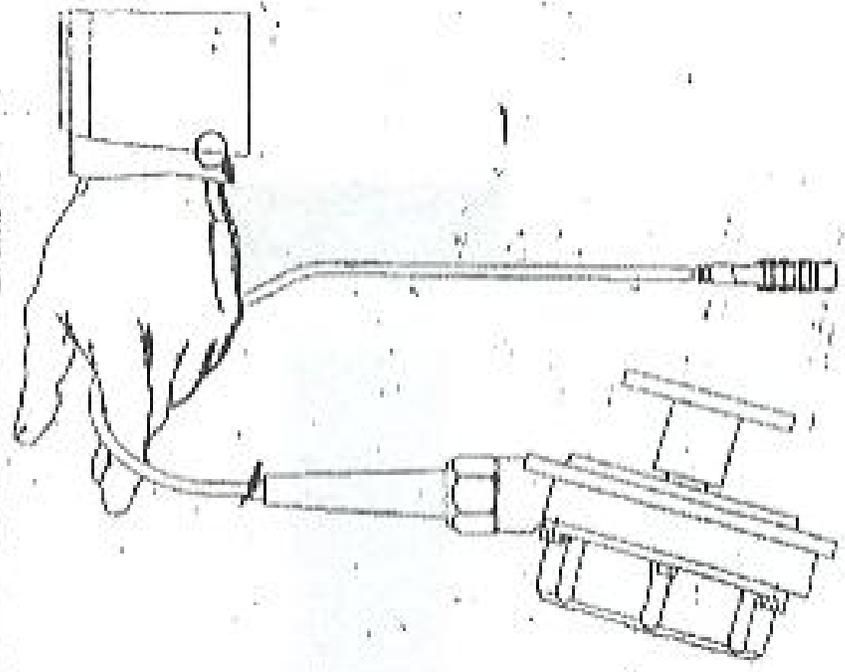
DA: i. RDSO's Drg No. SKEL-4690
ii. Annexure 'A'

(Ram Prakash)
for Director General/Elect

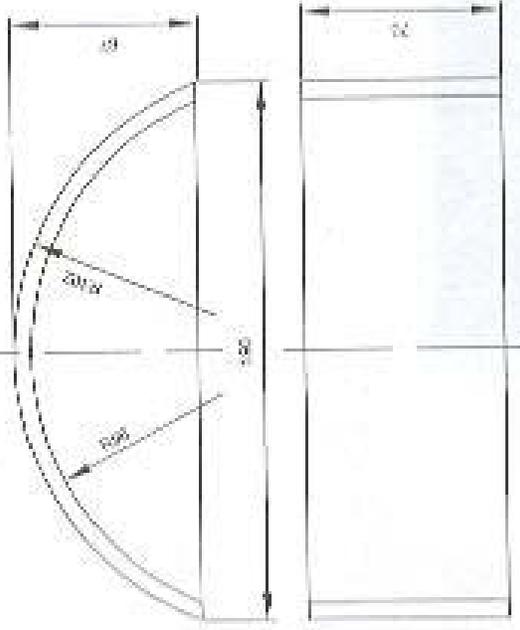
PROCEDURE OF HOLDING EG CORRECTLY



DO



DO NOT



NOTE - ALL DIMENSIONS ARE IN MM

MATERIAL - MS - 18200892

FINISHED MATERIAL SHALL BE GIVEN ONE COAT OF ZINC CHROMATE PRIMER TO IS 2026 FOLLOWED BY ONE COAT OF GREY EPOXY SYNTHETIC ENAMEL TO IS 2022 FOR PROTECTION AGAINST CORROSION

DATE: 27.01.2008
 BY: [Signature]
 TO: [Signature]

REF NO	REVISION	DESCRIPTION	DETAILS DRAWING NO	MAIL	SPEC.
REF -		-CC- (PULSE GENERATOR)	APPRO BY	[Signature]	FIRST ISSUED - 20.03.00
		SAFETY PLATE FOR PULSE GENERATOR			SUPERSEDED BY -
		R.D.S.O. ELECT DTE			SUPERSEDED BY -

SCALE	ALT REF NO	DESCRIPTION	APPRO BY	DATE