

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

Ref.No.EL/2.2.1/DC2

December, 1980

**MODIFICATION SHEET No. RDSO/WAM4/108**

**Replacement of indigenous double coil springs by indigenous  
single coil springs of pantograph type AM12 of  
M/s Stone Platt Electricals (India)Ltd.**

**1. Object of modification**

M/s SPEI had developed an indigenous set of springs to replace the imported Main springs in their indigenous development programme. These springs consisted of a nest of two springs each. During monitoring of performance, these springs were found to have developed permanent set in a few months service. Investigations revealed that the design of these springs was inadequate for the duty. Subsequently a new design was developed by M/s SPEI in consultation with RDSO with the following modifications:

- a) Single coil springs with wire dia 12.7 mm.
- b) Material of spring changed to grade 2D to IS. 4454 (Part III).75
- c) Shorter anchor plate.
- d) Machined spring holder.

M/s SPEI have accented inadequacy of their earlier design and have agreed to replace these springs with the new single coil indigenous springs which is now similar to the original Faively by design, with modified and fittings, free of cost.

**2. Work to be carried out**

- 2.1** Replace the old indigenous main springs A and B along with the end fittings by new ones obtained from M/s SPEI along with modified and fittings. The old Indigenous springs can be easily identified as each main springs consists of a nest of two springs, on inside the other, while the new design has single springs
- 2.2** Balance the pantograph with the help of balancing screw C,D,E and F and main adjusting screws G and H in accordance with Special maintenance Instruction No. RDSO/ELRS/SMI/64 dated 8.2.80.

- 2.3 Measure and record gaps L1 and L2 as indicated in SK. EL. 3110 enclosed. Monitor the performance of the springs by measurements and Keeping record of gaps L1 and L2 during IC inspections and AOH. Advise results to RDSO after one year's service.
3. **Application to class of Locomotives/EMUs**  
All locomotives and EMUs fitted with pantograph type AM12 and of M/s SPEI.
- 4- **Material required**  
One set of single coil main springs, consisting of two springs with modified anchor plate and spring holder to be obtained free of cost on replacement account from M/s SPEI, Calcutta.
5. **Material rendered surplus**  
Existing set of main springs with and fittings to be returned to M/s SPEI for replacement.
6. **Reference**  
RDSO Letter Ref EL/2.2.1/DC2 dt 20.7.79, 27.12.79, 6.3.80, 23.4.80 and 5.8.80
7. **Reference drawing**  
RDSO SK EL 3110
8. **Agency of implementation**  
All Electric Loco sheds and Electric Car Sheds holding pantographs type AM12 of M/s SPEI.
9. **Distribution**  
As per list attached.

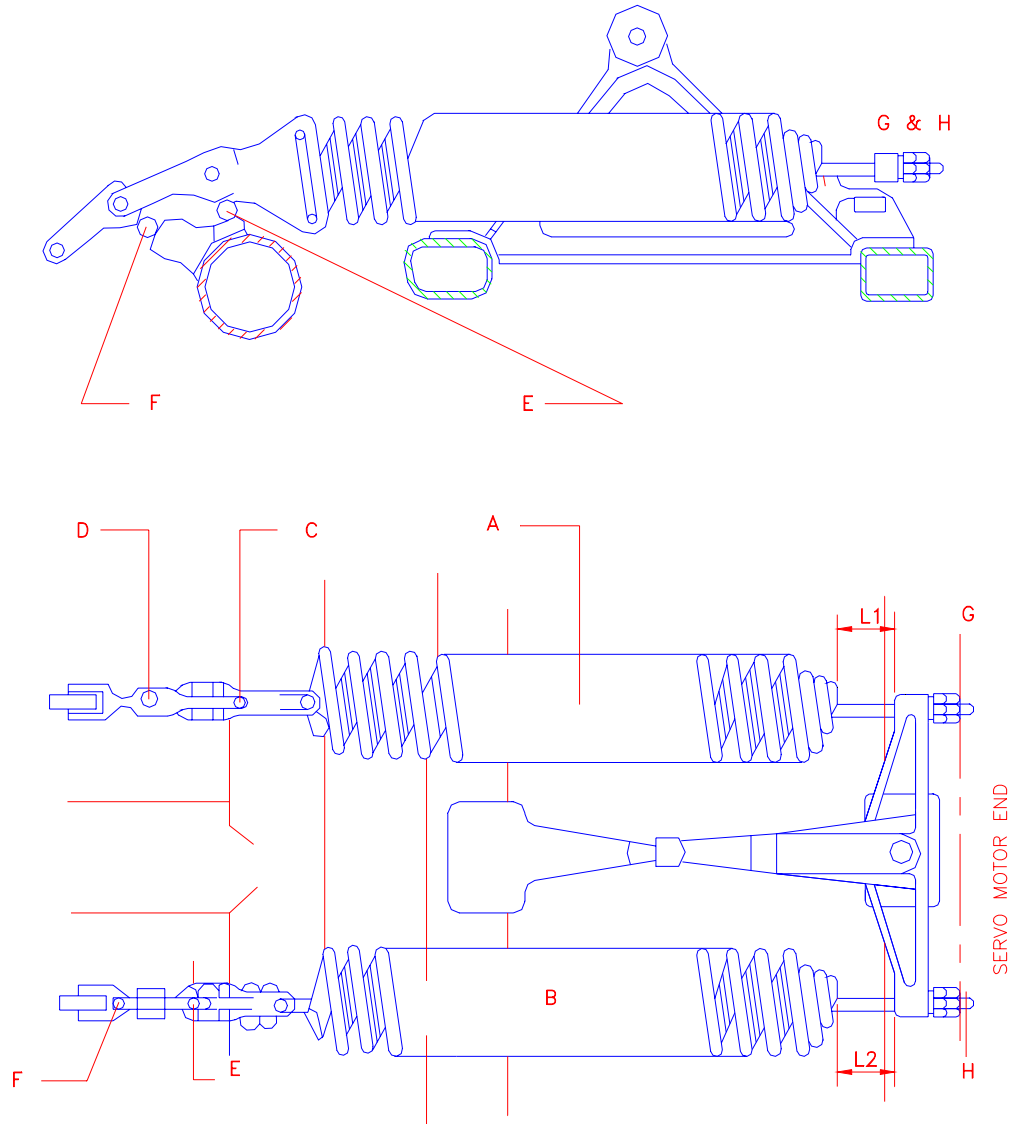
Enc: 1 Drg SK EL 3110.

(RAMESH CHANDRA)

FOR DIRECTOR GENERAL (ELECT.)



SK.EL-3110



REF:-

SCALE:- NTS

APPROVED BY:-

FOR D.G.

BALANCING PROCEDURE OF  
PANTOGRAPH TYPE AM-12 AND AM-18

RDSO.ELEC.DTE.

SKEL - 3110

Dt. 16.2.79

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