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No. EL/3.2.19/3-Phase

Dated 21.03.2016

**Chief Electrical Engineers:**

- Central Railway, Mumbai CST- 400 001.
- Eastern Railway, Fairlie Place, Kolkata- 700 001.
- East Cost Railway, Chandrashekharapur, Bhubaneswar- 751 016.
- Northern Railway, Baroda House, New Delhi-110 001.
- North Central Railway, Subedarganj, Allahabad-211 015.
- Southern Railway, Park Town, Chennai-600 003.
- South Central Railway, Rail Nilayam, Secunderabad -500 017.
- South Eastern Railway, Garden Reach, Kolkata -700 043.
- South Western Railway, Hubli.
- Western Railway, Churchgate, Mumbai-400 020.
- West Central Railway, Jabalpur-482001.
- South East Central Railway, Bilaspur-495004.
- East Central Railway, Hazipur-844101 (Bihar).
- Chittaranjan Locomotive Works, Chittaranjan- 713 331.

***MODIFICATION SHEET No. RDSO/2016/EL/MS/0447 Rev.'0' dated 21.03.16***

**1.0 TITLE:**

Removal of Anti-slip valve on E-70 & CCB and Flange lubrication manifold of E-70 from 3-phase electric locomotives.

**2.0 OBJECT:**

**(i) Removal of Anti-Spin Brake:**

RDSO carried out trials in Dhanbad Division on Gomoh based WAG-9 locomotives to adjudge the efficacy of Anti Slip Brakes and observed the behavior of traction control system during wheel slip. On the basis of findings of trial report no. ELRS/IR/110, it was recommended to isolate Anti Spin Brake (ASB) on WAG-9 and WAP-7 electric locomotives. Subsequently, it was decided to isolate the anti-spin valve, as per the Minutes of performance review meeting of 3-phase electric locomotives, issued by Railway Board vide letter No. 2001/Elect.(TRS)/440/18/7/Vol-III (3-Phase) dated 23.11.2005.

**(ii) Removal of Flange Lubrication manifold of E-70:**

Auxiliary Equipment Flange Lubrication (AEFL) on the E-70 brake system are also not being used by the Railways. CLW is also isolating the equipment needed for these features by not

providing power supply to anti-spin brake valves and isolating the cocks on AEFL manifold on the E-70 brake frame.

Removal of these equipments can result in reduction of overall cost of the brake system and also improve reliability in relevant equipments will be free from any trouble.

### **3.0 EXISTING ARRANGEMENT:**

The following equipments are existing on the locomotives and not being used for operation.

1. Anti Spin brake
2. Auxiliary equipment and flange Lubrication (AEFL)

This modification is intended to remove them.

### **4.0 MODIFIED ARRANGEMENT :**

#### **4.1 Removal of Anti-spin valve from E-70, ILSEIR12 & CCB system**

**Following works are to be done:**

##### **1.0 E-70 Brake System (In Existing Locomotive by Sheds/Shops)**

###### **1.1 For Bogie - I & Bogie - II**

- i) Uncouple the pneumatic fitting of 25mm and Anti Spin Valve No.65.
- ii) Uncouple the Pipe line fitting of Double check valve No. 66 of D2 Relay Valve No. 58
- iii) Disconnect & remove the Pipe line from MR equalising pipe at T-Joint above CP-I to anti spin valve and Dummy the T-Joint with  $\frac{3}{4}$ " Female Dummy.
- iv) Remove the Pipe line from Anti spin valve to Double Check Valve No. 66 of D2 Relay Valve No.57.
- v) Remove the Anti Spin Valve, Double Check Valve No. 66 by removing their fixing bolts.
- vi) Remove the choke no. 67 from the double check valve no. 66 of the D2 relay valve 58 and refit into the double check valve no. 66 of the D2 relay valve 57.
- vii) Connect the Pipe line of D2 Relay Valve No. 58 to Double Check Valve No. 66 of D2 Relay Valve No. 57 with 25 mm male connector.

##### **2.0 Improved CCB System (In Existing Locomotive by Sheds/Shops)**

###### **2.1 For Bogie – I & Bogie - II**

- i) Uncouple the pneumatic fitting of 25mm from MREP and Anti Spin Valve No.65.
- ii) Uncouple the Pipe line fitting of Pressure Reducing Valve (PRV) (74.1, Part No. 143364/0140), Magnet valve (74, Part No. 186708) and Double check valve No. 76, Part No. 12830 with connected pipes.
- iii) Connect BC line coming from panel to Choke (B85) for both Cabs with New pipe between removed Double Check Valve (76) to Choke (B85) with the help of *Elbow union 1"*
- iv) Disconnect & remove the Pipe line from MR equalising pipe at T-Joint above CP-I to anti spin valve and Dummy the T-Joint with  $\frac{3}{4}$ " Female Dummy.

### **3.0 E-70 Brake System (In New Locomotive by CLW)**

#### **3.1 For Bogie – I & Bogie – II**

- i) Insert choke 67 in Double Check Valve delivery port -BC and connect to BC line via isolating cock (63)

### **4.0 Improved CCB System (In New Locomotive by CLW)**

#### **4.1 For Bogie – I & Bogie – II**

- i) Connect BC line coming from Panel to Choke (B85) for both Cabs.

In the improved CCB system the feature of Flange lubrication is not provided

#### **4.2 Removal of flange lubrication features in E-70 brake system for 3-Phase electric locomotives.**

##### **4.2.1 Following works are to be done In existing Locomotives by Sheds/Shops)**

- (i) A dummy plate is to be provided at the place where the AEFL manifold is mounted on the brake frame.
- (ii) 04 No. of isolating cocks (86, 88, 68 & 125), 01 No. regulator (79)
- (iii) 02 solenoid valves (CLW supply 135) and AEFL manifold.

##### **4.2.2 For ILS-EIR12 brake system (New loco by CLW)**

- i) Insert choke no. 62 into the inlet port of BC isolating cock no. 63. and connect to BC line.

##### **4.2.3 In new supply for locomotives.**

CLW to modify the scope of supply in their technical specification and place tenders accordingly.

### **6.0 APPLICATION TO CLASS OF LOCOMOTIVES:**

WAP-9/WAP-7 & WAP-5 class of 3- phase electric locomotives.

### **7.0 MATERIAL REQUIRED:**

#### **(A) FOR REMOVAL OF ANTI-SPIN VALVE & AEFL**

- i.  $\frac{3}{4}$  "Female Dummy – 02 Nos.
  - ii. 25 mm Male Connector – 01 No.
  - iii. For connecting the Pipe line of D2 Relay Valve No. 58 to Double Check Valve of D2 Relay Valve No. 57 in both bogies the existing pipe line/ remove fittings can be used.
  - iv. A dummy plate in place of AEFL manifold on the E-70 brake frame.
- Material should be carbon steel with cadmium coating of grade ASTM-A-108***

### **8.0 MATERIAL RENDERED SURPLUS:**

- 1. Anti Spin Valve - 02 Nos. (E-70 & CCB)
- 2. Double Check valves - 02 Nos. (E-70 & CCB)

3. Pressure Reducing Valve - 02 Nos. (CCB)
4. Magnet Valve - 02 Nos. (CCB)
5. Grease Pump with reservoir - 02 Nos. (E-70)
6. Flange Lubrication manifold - 01 Nos. (E-70 Brake frame)
7. 22 mm Pipe line from MREQ pipe line to Anti Spin Valves and AEFL and grease pump.

#### 9.0 REFERENCE:

As per Minutes of Meeting while discussing Item No. 9 proposed by Southern Central Railway in 37<sup>th</sup> MSG held on date 24<sup>th</sup>-25<sup>th</sup> July 2015 at Shimla, it was decided to remove the Anti Spin Valve and its Double Check valve in 3- phase electric locomotives.


OEM M/s. FTRTIL vide their letter No. FTRTIL/2013-14/RDSO-E-70 dated 06. 08.13, it was informed that CLW is dummyming the equipment for anti spin braking and auxiliary equipment and flange lubrication (AEFL) by not providing power supply to ASB and isolating the cocks on AEFL manifold on the E-70 brake frame. However, piping connection is being provided to the equipment.

#### 10.0 MODIFICATION DRAWING: NIL

#### 11.0 AGENCY OF IMPLEMENTATION:

- (i) CLW & Electric Loco Sheds/Workshops having 3-Phase class of electric locomotives.
- (ii) CLW to modify the scope of supply by removing item No. 20, 21 & 22 as given in the specification No. CLW/MS/3/001 Alt."13" for WAG-9 & WAP-7 and item No. 16 & 17 as given in specification No. CLW/MS/10/031 Alt."6" for WAP-5 electric locomotives.
- (iii) OEM shall submit QAP duly incorporating above modification in their Bill of Material and schematic drawings to RDSO for approval.

End: NIL


  
(Kishore Vaibhav)  
for Director General/Elect.

#### DISTRIBUTION

Copy to : As per Standard Mailing List No. EL/M/0019, Ver. '2'

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Encl: NIL

  
(Kishore Vaibhav)  
for Director General/Elect.