

No. EL/3.2.1-3Phase

Dt.:13.08.2002

**SPECIAL MAINTENANCE INSTRUCTIONS NO.: RDSO/ELRS/SMI/ 0228**

**1.0 TITLE :**

Assembly of Electrical Terminations of the Traction Winding Bushings 2U1-2V1, 2U2-2V2, 2U3-2V3 & 2U4-2V4 in indigenously manufactured Transformers type LOT-6500 / LOT-7500 used in 3-phase drive locomotives type WAG9 / WAP5.

**2.0 BRIEF HISTORY :**

Incidences of overheating and melting of the 'L' Clamp / bushing stud of the traction winding bushings 2U1-2V1, 2U2-2V2, 2U3-2V3 & 2U4-2V4 in indigenously manufactured Transformers type LOT-6500 used in 3-phase drive locomotives type WAG9 have been reported by Electric Loco Shed, Gomoh. On investigation, it has been noticed that transformers supplied by different indigenous manufacturers have adopted different arrangement of connections on bushings. Though the problem reported was on M/s.Bombardier supply, the basic arrangement of connection was gone through and it was considered necessary to standardise connection arrangement using standard indigenous hardware. This supersedes arrangement adopted on imported transformers by OEM and given in TOT documents.

**3.0 APPLICATION :**

Electric Locomotives provided with transformers type LOT 6500 / LOT 7500.

**4.0 OBJECT :**

To standardise arrangement of electrical connection on 2U1-2V1, 2U2-2V2, 2U3-2V3 & 2U4-2V4 bushing with associated hardware for Transformers type LOT-6500 / LOT-7500 on locomotives type WAG9 / WAP5.

**5.0 INSTRUCTIONS :**

- (i) Tighten nut 'A' (Ref.: Drawing No. **SKEL- 4630**) on the bushing stud till it is 3-5 mm above the nut 'C' holding the bushing in position.
- (ii) Place brass washer 'BW1' on the bushing stud above the nut 'A'.
- (iii) Place the copper connector 'L' on the brass washer 'BW1'.

- (iv) Place the brass washer 'BW2' on the bushing stud above the copper connector 'L'.
- (v) Place the spring washer 'SW' on the brass washer 'BW2' on the stud.
- (vi) Tighten nut 'B' till the spring washer becomes flat.
- (vii) Unscrew nut 'B' by quarter turn &
- (viii) Tighten the nut 'C' with tightening torque of 150 Nm.

#### **6.0 INSTRUCTION DRAWING :**

RDSO Drawing No. SKEL - 4630

#### **7.0 AGENCY OF IMPLEMENTATION :**

All Electric Loco Sheds holding WAG9 / WAP5 three phase drive locomotives, POH workshops and CLW.

#### **8.0 DISTRIBUTION :**

**(i) Chief Electrical Engineer,**

- Eastern Railway, Fairlie Place, Kolkata-700 001
- Northern Railway, Baroda House, New Delhi-110 001
- Chittaranjan Locomotive Works, Chittaranjan-713 331

**(ii) Sr.Divl.Elect.Engineer (TRS), Electric Loco Shed,**

- Eastern Railway, Gomoh
- Northern Railway, Ghaziabad (UP)

**(iii) Transformer Manufacturers :**

- M/s. Bharat Heavy Electricals Ltd.,  
Transformer Division,  
P.O. BHEL,  
Jhansi
- M/s. Crompton Greaves Limited,  
Transformer Division,  
Kanjur Marg (East),  
Mumbai-400 042

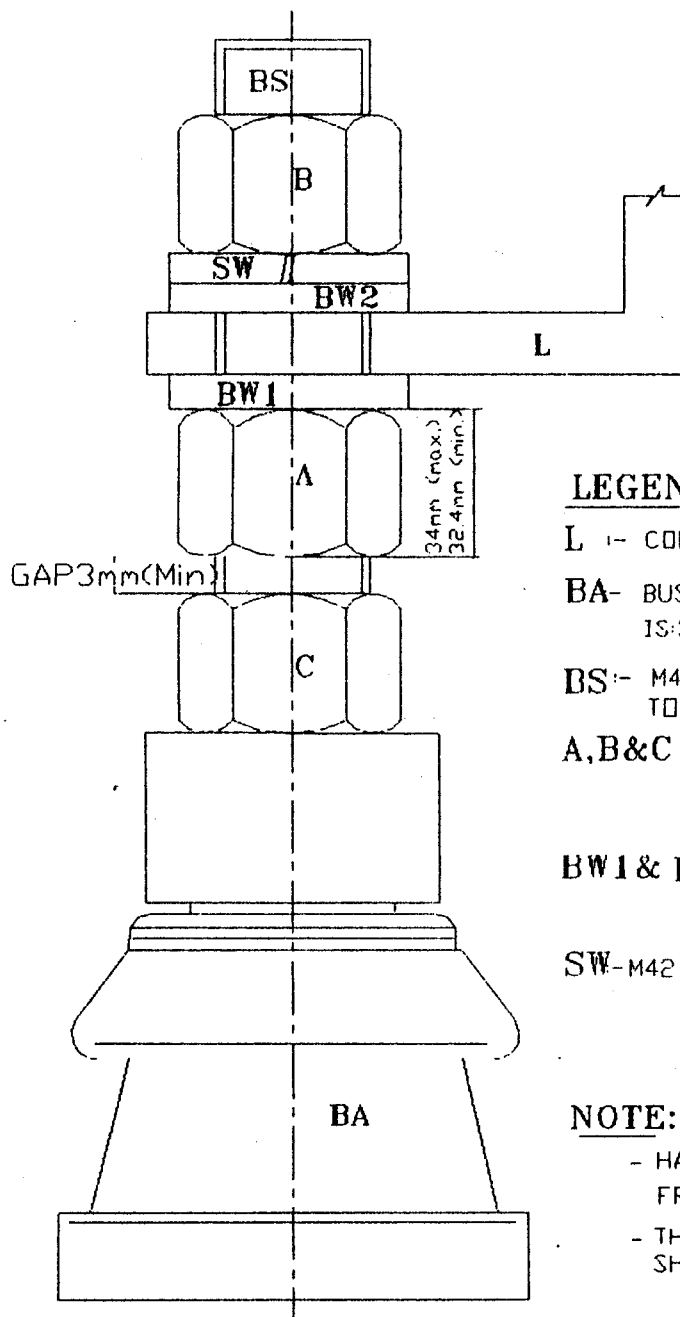
- M/s.NGEF Ltd.  
Byappanahalli Post,  
Transformer Division  
Post Bag No. 3876  
Bangalore-560038.
- M/s., Bombardier Transportation (I) Ltd,  
ERDA Road,  
Maneja, VADODARA- 390013.
- M/s. EMCO Limited,  
Plot No. F-5, Road No.-28,  
Waghle Industrial Estate,  
Thane-400 604

**For supply of hardware accordingly.**

**Encl: Drg. No. SKEL- 4630**

  
**(Arun Srivastava)**  
**for Director General(Elect.)**

STATUS	ALT.	REF. NO.	DESCRIPTION	APP. BY	DATE



### LEGEND

- L :- CONNECTOR--COPPER 8.0 MM THICK  
BA- BUSHING ASSEMBLY (3.6 KV /2000 A)  
IS:3347(Pt.II/SECTION-2)-1979  
BS:- M42x3 BUSHING STUD-COPPER  
TO IS: 3347(Pt.II/SECTION-2)-1979  
A,B&C :- M42x3 BRASS NUT  
HEIGHT(MAX.34 MM-MIN. 32.4 MM)  
TO IS: 1364 (Pt.III)-1992  
BW1& BW2 :- M42 BRASS WASHER  
(MACHINED)  
IS:2016 1967  
SW-M42 SPRING WASHER( PHOSPHATE COATED)  
'TYPE B' (WITH FLAT ENDS)  
TO IS : 3063-1967

### NOTE:-

- HARDWARE OF STANDARD QUALITY FROM REPUTED SOURCES
- THIS SUPERSEDES ARRANGEMENT SHOWN IN TOT DOCUMENTS

REF NO.	PART NO.	DESCRIPTION	DETAIL DRG. NO.	NOS.	MATL	SPEC
REF:-			SCALE:-	APPROVED BY:-		
STANDARD ARRANGEMENT OF CONNECTION AT TRACTION BUSHING LOT6500/7500KVA					FIRST ISSUED:-	
RDSO ELEC DTE					SUPERSEDES:-	
SKEL-4630					BKKERSEHER	

Dt. 08.8.2002

D. AJA