

**Government of India
Ministry of Railways
Research Designs & Standards Organisation
Manak Nagar , Lucknow - 226011**

No. EL/3.2.92.3

Dated - 11-92

MODIFICATION SHEET NO.RDSO/WAM4/171

1.0 Title of modification :

Rewinding details of Siemens make of MCP type ILA6 186-6.

2.0 Application to class of electric locomotives. All electric locos which are fitted with Elgi Compressor TRC 1000 M and driven by Siemens make of motor type ILA6 186-6.

3.0 Object of modification:

3.1 Railway have reported large number of failures of M/s Siemens make of motor during service on account of stator winding burnt. Detailed investigations in to the failure revealed that these motors have failed on lower voltage i.e. below 320V due to higher current density adopted with the glass covered enamelled copper conductor used for stator winding.

3.2 In order to arrest the bruning of these motors in service a modified rewinding data is being issued to follow by the shed and shop of the Railways.

3.3 It is proposed that rewinding details which is furnished in this modification sheet should be incorporated on the motors having serial No. less than 170636(inclusive)

3.4 This modification have already been incorporated on the motors having serial No. greater than 170636 by M/s Siemens.

3.5 Modified stator winding will be suitable from 290V-500V to take care of problem of low voltage reported by Railways.

4.0 Material Required

4.1 Dual coat enamelled winding wire conforming to IS:4800 Pt. XIII. The dual coat wire have first coat of Dr. Beck enamel MT533.39 and top coat with Allotherm 602 of Dr. Deck & Co.

4.2 Till such time dual coat wire is procured by shed and Shop. Rewinding shall be done with enamelled winding wire confirming to IS:4800 Pt.IX having enamel MT533.39 of Dr. Beck & Co.

- 4.3 Other insulating material viz. for slot liner inter phase separator, coil separator & wedges etc. shall be followed as advised in SMI No.98 except that VPI impregnation shall be done with solventless resin FT 1052 of Dr. Beck & Co.
- 4.4 No impregnation shall be done by Elmotherm F 40 or F 50 of Dr. Beck & Co. or H-71.
- 4.5 Glass covered enamelled copper conductor shall not be used.

5.0 Details of Modification or Works to be carried out :

5.1 Remove the failed stator winding and follow the rewinding procedure as per SMI No.RDSO/ELRS/SMI/98 issued vide RDSO letter No.EL/3.2.70 dated 15/16.10.92. Test on the rewound motor will be done as per SMI/98 also.

5.2 Following rewinding data shall be followed.

1.	Type of winding	-	Single layer
2.	Slot/pole/phase	-	2+1
3.	No. of coils	-	27
4.	Conductor per slot	-	12 (each conductor shall have 5 wires in parallel of size 1.0 mm dia i.e. 5 x 1.0)
5.	Wire size	-	1.0 mm (bare) 1.093 mm(insulated ie enamelled)
			0.785 mm ² (Area of one wire)
6.	Class of insulation	-	F
7.	Winding wire	-	i) Conforming to IS : 4800 Pt. IX ii) Conforming to IS : 4800
Pt.XIII			
8.	Copper Weight	-	9.00 kg. approximately
9.	Coil per phase in series	-	3
10.	Connection of phase	-	Star
11.	Coil pitch	-	9/9
12.	Coil Span	-	1-10/2-9; 11-18
13.	Total resistance for 3 phase	-	1.0427 at 20 degree C

6. **Modification Drawing No.**
M/s Siemens Drawing No.TME 6.1-6313

7. **Agency for modification :**

All electric loco Sheds & Shops of the Indian railways

8. Periodicity of modification to be carried out whenever stator winding is burnt.

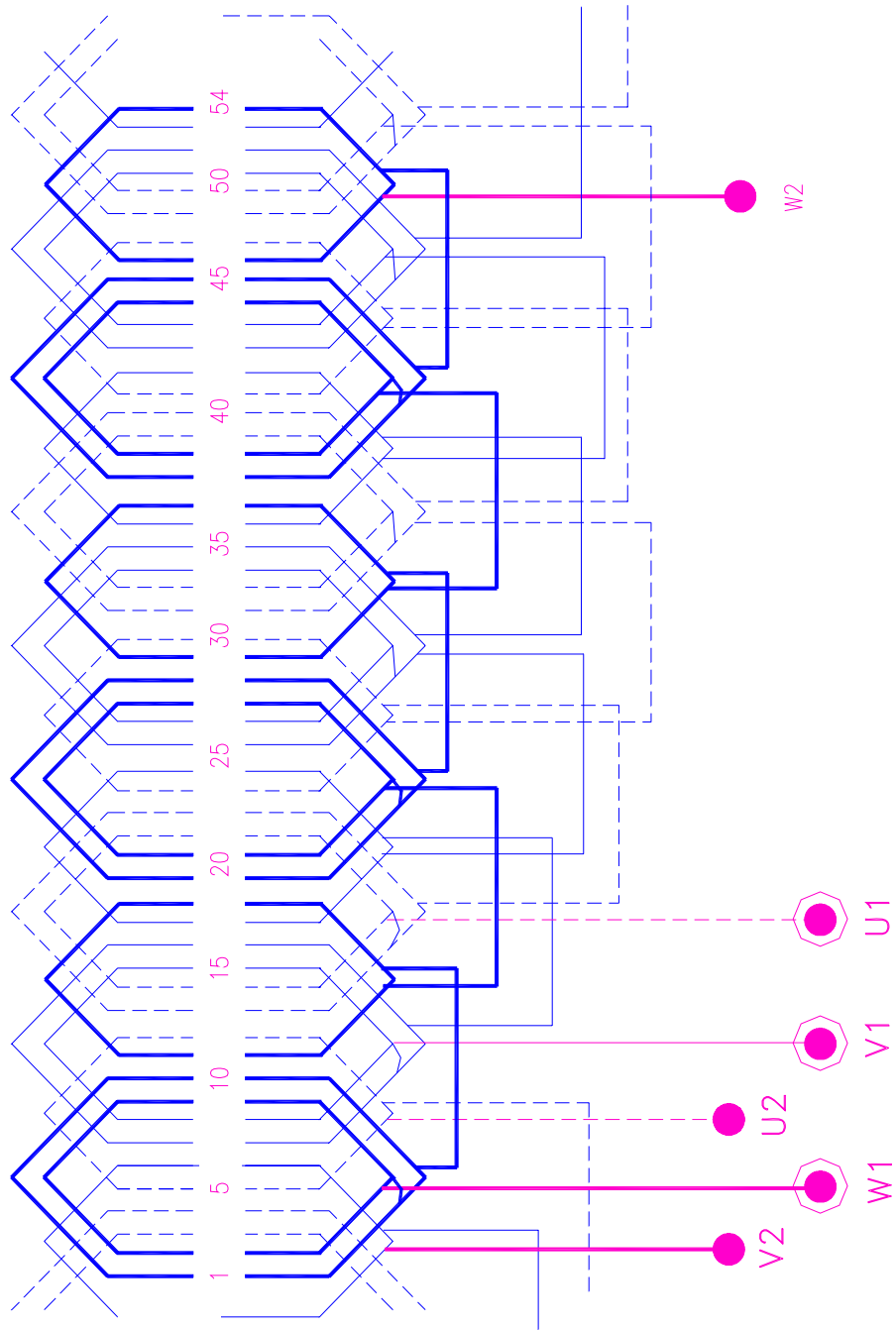
9. **Distribution**
As per enclosed list.

Encl : As above



(P.K.Jain)
for Director General/Elect.

DIRECTION OF ROTATION : CLOCKWISE



COIL CONNECTIONS ON 'A' SIDE

Dt.	
T	
D	

REF : SIEMENS DRG. NO.
TME 6.1-6313

SCALE: NTS

APPROVED

REWINDING DIAGRAM FOR SIEMENS
MAKE MCP TYPE ILA6 186-6

R.D.S.O. ELEC. DTE

SKEL-4104

