

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

NO. EL/3.2.70

Dated 18.03.1993

SPECIAL MAINTENANCE INSTRUCTION NO. RDSO/ELRS/SMI/155

Title : Special Instruction for Essential Requirements of Facilities to rewind 3 \downarrow AC Auxiliary motors in Loco sheds and Rewinding shops.

1.1 OBJECTIVE :

Large No. of Aux. motor failures are being reported regularly by Railways due to inter turn short and earthfault. RDSO conducted detailed investigation to find out the causes of such failures.

1.2 Based on above, it is considered that significant improvement in reliability level of motors can be achieved by adoption of correct winding procedure. It also emphasis for special precaution while rewinding these motors.

1.3 This SMI indicates the minimum essential facilities which are required for rewinding of Auxiliary Motors.

2.0 MACHINES AND PLANTS :

2.1 VPI PLANT :

VPI Plant suitable for vacuum impregnating using solventless varnish FT 1052 of Dr. Beck shall be required to work under following conditions -

2.1.1 Vacuum level - 1 Torr

2.1.2 Pressure - 2 to 3 kg/cm²

2.2 OVEN :

Basic requirement of oven to operate shall be followed --

2.2.1 Temperature Range --0-300°C

2.2.2 Temperature Control - Auto cut in and cut out.

2.2.3 STORAGE FACILITY :

Air conditioned room with min. two air conditioner for keeping insulating materials.

2.2.4 Coil making facilities.

2.2.5 Slot wedge cutting machine (All cut machine)

- 2.2.6 Brazing facility
- 2.2.7 Dynamic balancing machine for rotor balancing
- 2.2.8 Miscellaneous tools e.g. mallet, Hylem or Nylon round bar, wire cutter.

2.3 TESTING FACILITIES :

- 2.3.1 Winding wire testing facility as per IS 4800 Pt. (III) (Testing facility should include for winding wires confirming to IS 4800 Part V, IX, XIII and IS : 11184)
- 2.3.2 Resistance measurement facility
- 2.3.3 Surge comparison tester
- 2.3.4 Shock Pulse meter
- 2.3.5 High Voltage Testing facility
- 2.3.6 Megger
- 2.3.7 Suitable test bed having 3 Ø regulated supply

3.0 AGENCY OF IMPLEMENTATION :

All Electric Loco sheds motor rewinding and repair shops of Railways doing rewinding of Auxiliary Motor.

4.0 DISTRIBUTION :

As per list attached.

 10/02/13

(Pradeep Jain)
for Director General / (Electrical)