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WORK INSTRUCTION OF CONTINUITY & HIGH VOLTAGE TEST FOR LHB AC COACHES			

WORK INSTRUCTIONS

(ISO 9001 – 2015)

Verified By : SEE/VD	**Signature:**
Approved By : DY.CEE/D&D	**Signature:**

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Amendment Record Sheet

S. No.	Date of amendment	Page Number	Current Version	Summary of Amendment
1.	09.06.2025	ALL	1.0	Initial issue

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1.0 INSTRUCTION

1.1 Refer relevant drawings for the coach under in process inspection and testing.

1.2 Ensure the validity of calibration of the instruments used for testing purpose.

2.0 TYPES OF COACHES APPLICABLE:

2.1 All LHB AC Coaches.

3.0 TOOLS AND EQUIPMENTS

3.1 Continuity tester

3.2 Megger 500/1000V range

3.3 High voltage test kit

4.0 PARAMETERS

3.1 Minimum IR value required and applied voltage for different circuits are mentioned below

S.No.	Circuit	Meggering Voltage	Required IR Value	Applied Voltage for H.V. test for 1 minute
1	**750 V AC**	1000 V DC	5 Mega ohms	2500 VOLTS
2	**415 V AC**	500 V DC	3 Mega ohms	1800 VOLTS
3	**230 V AC**	500 V DC	2 Mega ohms	1500 VOLTS
4	**190 V AC**	500 V DC	2 Mega ohms	1400 VOLTS
5	**110 V AC & DC**	500 V DC	2 Mega ohms	1200 VOLTS
6	**24 V DC**	110 V DC	2 Mega ohms	------

#24 V Circuit shall not be subjected to High Voltage tests.

5.0 ACTIVITIES:

5.1 CONTINUITY TEST

5.1.1 Ensure that no staffs are working in the coaches up to one meter distance.

5.1.2 Wrap the caution barricade tape around the coach and place danger boards at both ends of the coach.

5.1.3 Wear Safety helmet.

5.1.4 Check all under-frame equipments are mounted with proper hardware's as per Drawings.

5.1.5 Ensure adequate lighting in the coach wherever necessary.

5.1.6 Ensure that all the wiring work such as ferruling, crimping, proper routing and bunching of cables are completed by the Production Department.

5.1.7 Refer respective harness chart for Continuity test.

5.1.8 Ensure that proper size of cable crimping socket and proper size designation of numbering of the ferrules are used.

5.1.9 Check the continuity of the cable as per Roof & under-frame harness chart.

5.1.10 On completion of the continuity test, list out all non-conformities observed such as wrong connections/missing cables etc. on NCR format and hand over to production section in-charge for the rectification.

5.2 HV TEST:

5.2.1 Ensure that coach is isolated both electrically and mechanically from nearby coach.

5.2.2 Ensure that paneling and moulding works in ceiling and end walls are completed.

5.2.3 Ensure that Non-Conformity points highlighted to production after the continuity checks are attended and cleared.

5.2.4 Before switching ON the H.T. supply, ensure that nobody is available in and around the coach under testing.

5.2.5 Ensure that instruments used for this testing are calibrated are within the validity period.

5.2.6 Isolate the unconnected cables from metal parts.

5.2.7 Measure the IR value of the respective circuit as per chart mentioned above using Insulation tester.

5.2.8 After ensuring IR values, short all the cables using shorting wire.

5.2.9 Discharge the circuit with earth wire after each meggering.

5.2.10 Ensure that the HV test kit earth cable is properly connected at appropriate location.

5.2.11 Connect the HV kit positive cable to the circuit under test.

5.2.12 Switch on the supply and adjust the voltage as per the given chart and wait for one minute. After one minute, switch off the supply. Repeat the same for other circuits.

5.2.13 After completion of HV test, remove the input supply for HV Kit and discharge the circuit.

5.2.14 Megger each circuit immediately after HV test.
Insulation Resistance value measured immediately after the HV test shall not be less than the original value.

5.2.15 Remove all the shorting wires provided.

6.0 RECORDS:

6.1 Test Results format book.

6.2 Check list for LHB AC Coaches.

7.0 CROSS REFERENCE

7.1 Relevant drawings for Coaches.

7.2 Test Protocol