	RAIL COACH FACTORY, KAPURTHALA INDIAN RAILWAY	Document No.	EDW 0024
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WORK INSTRUCTION OF CONTINUITY & HIGH VOLTAGE TEST FOR LHB NON-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 Ensure the completion of roof ceiling side wall, end wall paneling, fixing of fan base in roof (only in LWSCN, LSDD/LWS, LSLRD & LWSCZ Coaches), cable terminations in SBC (for LSLRD Coaches) and all under frame equipment's.

1.2 Ensure isolation of coach and prohibiting other staff by providing caution band/ barricade around the coach under test.

1.3 All the wiring works such as proper routing, bunching, ferruling, crimping and termination of cables should be completed.

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

2.0 TYPES OF COACHES APPLICABLE:

2.1 LWSCN, LSDD/LWS, LWSCZ, LVPH, LSLRD Coaches.

3.0 TOOLS AND EQUIPMENTS

3.1 Continuity tester

3.2 Megger up to 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

5.0 ACTIVITIES:

5.1 CONTINUITY TEST

5.1.1 Check continuity test of roof & under-frame cables as per harness chart drawing.

5.1.2 Ensure that proper size of cable crimping socket and proper ferrule numbers are used with proper designation as per harness chart.

5.1.3 Check the continuity of the cable, keep one lead of continuity tester at one end of the cable and the other end of the tester at the appropriate terminal where the other end of the cable under test is expected to be terminated as per harness chart.

5.1.4 If the buzzer of the tester doesn't beep, touch the other lead of the tester to other adjacent cable terminals and note down where the buzzer is beeping, if even after not beeping in any adjacent terminal, check the cable routing of the bunch and find whether cable is hanging without termination in terminal board.

5.1.5 Repeat the same above activities for all cables one by one with the help of check diagram/harness chart

5.1.6 List out all non-conformities such as wrong connection/missing cables, tightness of cables etc. on NCR format and hand over to production shop for attention.

5.2 HV TEST:

5.2.1 Isolate all the cables connections from the respective electrical equipment's.

5.2.2 Ensure that all non-conformity points are attended.

5.2.3 Check Insulation Resistance value for all cables.

5.2.4 If any cable terminal showing zero or low IR value identify the cause and rectify it.

5.2.5 If all the individual terminals IR values are within limit, short all the cables grade wise using shorting wire and measure the IR value of each circuit.

5.2.6 Connect the HV test kit cable, switch on the HT supply and slowly increase the supply as per the given value (control and power circuit table) and keep for one minute.

5.2.7 After one minute bring back the voltage to zero, switch off the HT supply and disconnect the HT kit and re- confirm the IR value of each circuit.

5.2.8 Ensure all shorting wires are removed after the completion of HV test.

6.0 RECORDS:

6.1 Record Local and final points in NCR format (if any non- conformity observed).

7.0 CROSS REFERENCE

7.1 Relevant drawing.