TECHNICAL BULLETIN
LM204-001
04 JAN 2005

SECTION: 204-05 (Suspension System)

Range Rover (LM) - Incorrect Air Suspension ECU Diagnosis

AFFECTED VEHICLE RANGE:

Range Rover (LM)	**VIN:**	**2A 100042 Onwards**

MARKETS:

All

CONDITION SUMMARY:

Situation: An Increasing number of Electronic Air Suspension (EAS) electronic control units (ECUs) are being replaced, which when inspected by the manufacturer are returned with no fault found.

Cause: The ECU stores fault codes for numerous air suspension system component failures. In the majority of cases, changing the ECU will re-activate the system and appear to have rectified the fault, but it will not solve the root cause of the problem.

Action: Should a customer express concern regarding air suspension, refer to the Diagnostic Procedure detailed in this bulletin for correct system diagnosis **before** changing the ECU.

PARTS:

RQT000010	Air Suspension ECU up to VIN 3A132853	Quantity: 1
RQT000011	Air Suspension ECU from VIN 3A132854 up to 4A155166	Quantity: 1
RQT000013	Air Suspension ECU from VIN 4A155167	Quantity: 1

WARRANTY:

NOTE: Repair procedures are under constant review, and therefore times are subject to change; those quoted here must be taken as guidance only. Always refer to TOPIx to obtain the latest repair time.

NOTE: DDW requires the use of causal part numbers. Labor only claims must show the causal part number with a quantity of zero.

DESCRIPTION	SRO	TIME	CONDITION CODE	CAUSAL PART
T4 fault code 52 rectification	**64.90.89/30**	2.40 hours	28	RQT000010
T4 fault code 52 rectification - including ECU renew	**64.90.89/31**	2.70 hours		
EAS ECU communications failure rectification	**64.90.89/32**	2.20 hours		
EAS ECU communications failure rectification - including ECU renew	**64.90.89/33**	2.50 hours		

NOTE: Normal Warranty policies and procedures apply.

DIAGNOSTIC PROCEDURE:

1. There are **only** four reasons for changing the Air Suspension ECU:

1. T4 Fault Code 52 (ECU Memory Fault)

2. T4 Fault Code 53 (ECU Fault)

3. T4 Fault Code 55 (ECU Calibration Fault)

4. Communications to the EAS ECU have failed.

The following procedures detail the way that these four Fault Codes should be diagnosed **before** replacing the ECU. **All** other problems that appear to be ECU-related are due to other components and/or wiring/air harness faults. Normal fault diagnosis should be used for component and harness faults. The solving of height sensor problems should always be accompanied by re-calibrating the vehicle trim heights.

2. T4 Fault Code 52 (ECU Memory Fault)

1. Start T4 diagnostic session.

2. Enter Vehicle VIN & follow on-screen instructions.

3. Select 'Vehicle Configuration'.

4. Select 'Reconfigure ECUs'. If the fault code is not cleared proceed to next step.

5. Check EAS ECU connection C0867 for loose connection or corrosion. For additional information, refer to Range Rover 2002MY ON Electrical Library Workshop Manual Section Connector Details, ECU-Air suspension (C0867). Re-secure or clean connection as necessary. Proceed to next step.

6. Check connection C2030 for loose connection or corrosion. For additional information, refer to Range Rover 2002MY ON Electrical Library Workshop Manual Section Connector Details, ECU-Air suspension (C2030). Examine the connector mating-face to check for any terminals that are not fully seated. All terminals should be seated to the same level. Working from the back of the connector (wire entry) push the wire such that any unseated terminals are fully clicked home. (NB. A fully seated terminal will be 0-1mm back from the mating-face).

7. Check battery ground connections C0821 & C0553. For additional information, refer to Range Rover 2002MY ON Electrical Library Workshop Manual Section Connector Details, Header-Earth (C0821 + C0553). Re-secure or clean connections as necessary. Proceed to next step.

8. Repeat steps 1-4. If the fault code is cleared the failure has been fixed. If the fault code is not cleared proceed to next step.

9. If Steps 1 to 8 have not resolved the issue, then replace the EAS ECU.

3. T4 Fault Code 53 (ECU Fault)

1. Replace the EAS ECU.

4. T4 Fault Code 55 (ECU Calibration Fault)

1. Replace the EAS ECU.

5. Communications to the EAS ECU have failed.

1. Ensure that the T4 connector is correctly coupled to the vehicle diagnostic connector.

2. Check for good battery ground connection on pins 4 & 5 of the diagnostic connector (C0040). For additional information, refer to Range Rover 2002MY ON Electrical Library Workshop Manual Section Connector Details, diagnostic connector (C0040).

3. Check for battery power at pin 1 (ignition positive) & pin 16 (battery positive) of the diagnostic connector (C0040). If no power is evident, check fuse 5 (ignition - 7.5 amp) and fuse 15 (battery feed - 5 amp) at the passenger fuse box. If the fuses are okay proceed to next step, if not okay replace fuses as necessary, ensure that no short circuit is present and T4 connections are okay.

4. Check for battery power at EAS ECU - check fuse 57 (15 amp) in passenger fuse box. If okay, proceed to next step. If NOT, check connector C0582, cavity 3, at the top of the passenger fuse box for loose

connections or corrosion. Re-secure or clean connections as necessary. For additional information, refer to Range Rover 2002MY ON Electrical Library Workshop Manual Section Connector Details, Fuse box - Passenger compartment (C0582).

5. Check connections C0867 and C2030 at the EAS ECU for loose connections or corrosion. Re-secure or clean connections as necessary. Re-connect and test for communication. If there is no communication proceed next step. For additional information, refer to Range Rover 2002MY ON Electrical Library Workshop Manual Section Connector Details, ECU - Air suspension (C0867 + C2030).

6. Check for battery power at connector C2030, cavity 10. If okay, proceed to next step. If NOT, check fuse 57 (battery feed 15amp) in passenger fuse box.

7. Check for battery ground at EAS ECU, connector C2030, cavity 5. If okay, Proceed to next step. If NOT, check harness run, ground header X219, connector C0285, and ground eyelet C0821 RHD or C0553 LHD. For additional information, refer to Range Rover 2002MY ON Electrical Library Workshop Manual Section Connector Details, Header (C0285). For additional information, refer to Range Rover 2002MY ON Electrical Library Workshop Manual Section Connector Details, Header - Earth (C0821 + C0553).

8. Check for continuity between connector C0867, cavity 2, to instrument pack connector C0234, cavity 8. If okay, proceed to next step. If NOT, check harness run, and sealed joint X18827 & X18836. For additional information, refer to Range Rover 2002MY ON Electrical Library Workshop Manual Section Connector Details, Body Control Unit (C0234). For additional information, refer to Range Rover Electrical Circuit Diagrams Workshop Manual Section 65, Splices and Centre Taps (X18827 + X18836).

9. Check for continuity between connector C0867, cavity 20, to instrument pack connector C0234, cavity 9 If okay, proceed to next step. If NOT, check harness run, and sealed joint X18826 & X18835. For additional information, refer to Range Rover Electrical Circuit Diagrams Workshop Manual Section 65, Splices and Centre Taps (X18826 + X18835).

10. Check for continuity between pin 8 of diagnostic connector (C0040) and pin 1of instrument pack (C0233). If this is okay proceed to next step. If no continuity exists, check harness run/sealed joint X183. For additional information, refer to Range Rover 2002MY ON Electrical Library Workshop Manual Section Connector Details, Instrument Pack (C0233). For additional information, refer to Range Rover Electrical Circuit Diagrams Workshop Manual Section 65, Splices and Centre Taps (X183).

11. Check instrument pack for faults. Repair as necessary. If any repairs have been completed, check for communication. If the instrument pack is okay proceed to next step.

12. If these steps have not resolved the issue, renew the EAS ECU.