

# TECHNICAL BULLETIN



**MODEL/DERIVATIVE:**  
Range Rover

**Bulletin N°:** 0010  
**CDS. ref:** L8450bu  
**Issue:** 2  
**Date:** 06.10.99

**AFFECTED RANGE:**  
All V8 derivatives with air conditioning prior to VIN XA 411503

## **RE - ISSUE INFORMATION:**

Page 6 text amended to include a new reference to the compressor clutch and a new, related Technical Bulletin.

***Please destroy your existing copy and replace with this Issue 2.***

## **PROBLEM:**

### **INTERMITTENT OPERATION OF THE ATC SYSTEM - LINK HARNESS**

The owner reports that the Air Temperature Control system (ATC) operates intermittently and the Handbook symbol  illuminates on the ATC display.

## **CAUSE:**

Compressor clutch fails to engage due to low voltage levels at the compressor clutch connector. This allows varying degrees of slip and accelerated wear at the clutch faces when engagement is attempted, i.e. when ATC is switched on.

## **ACTION:**

To ensure that sufficient voltage is available to enable full engagement of the compressor clutch, a modification is required to the compressor and alternator link harnesses. The purpose of this modification is to ensure that a minimum voltage of 11.5 volts is achieved at the compressor.

Where a customer complaint of intermittent operation of the ATC system is identified, install the new link leads detailed in *PARTS INFORMATION* as described below.

- **NOTE:** Due to the possibility of damage to the compressor clutch, it will also be necessary to confirm the condition of this component, as described on page 6 of this bulletin.
- Prior to commencing work, carry out an initial examination to confirm that the new link harnesses have not previously been fitted.
- Compressor link harness YMQ104590AA can be identified by the presence of resistor A, (illustration 1) and relay RL10 in the fuse box, (illustration 4).

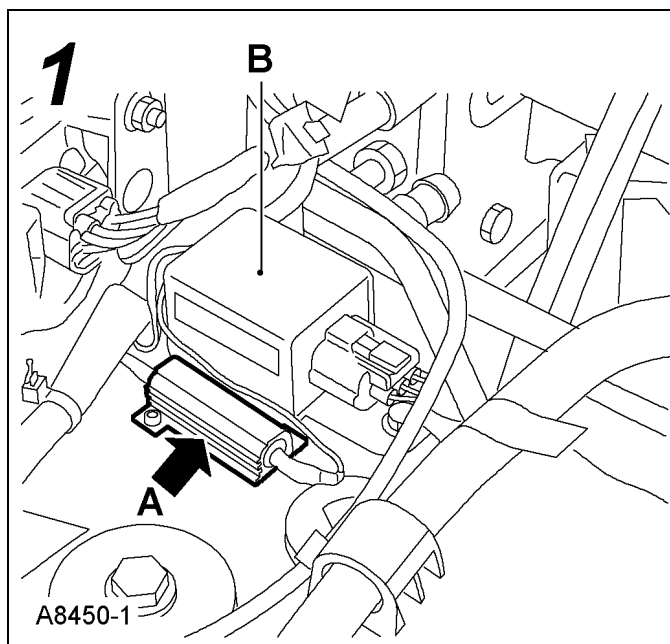
- Alternator link harness YSB106340 can be identified by referring to illustration 6, items A and B.

### Installation Of Compressor Link Harness Kit YMQ104590AA

- For an overall view of the harness kit installation, refer to illustration 6.
  - Fit the harness kit as follows:
1. Remove the battery box cover and disconnect the battery, negative terminal first.

2. Position resistor (A in illustration 1) to the radiator side of the left hand front body mounting. Drill two 2.0mm holes and secure with self tapping screws from the kit. Secure the harness locally to support resistor wiring and maintain route.

**NOTE:** On earlier vehicles with dual crash sensors, the resistor will be positioned adjacent to the side of the crash sensor, (B in illustration 1). Later vehicles have one centrally located crash sensor but the position of the resistor remains the same.

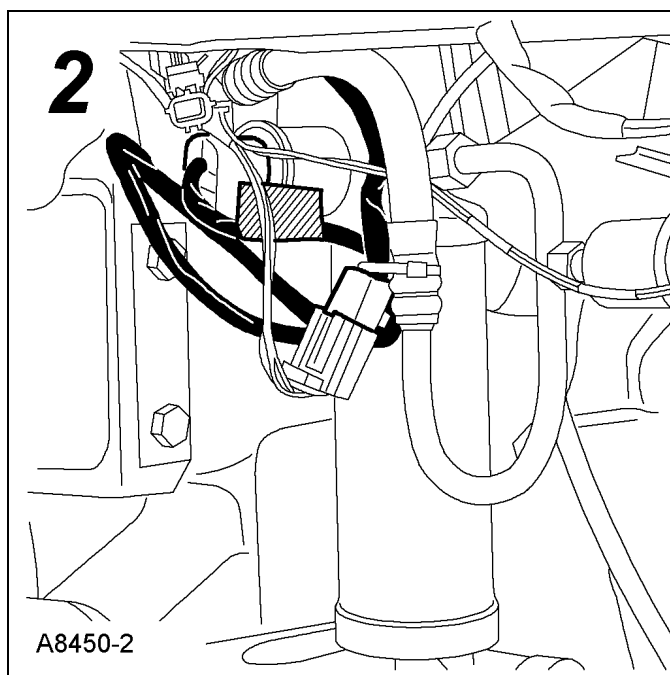


3. Route the link harness down to the receiver/drier.

4. Disconnect the trinary pressure switch connector, connect the link harness to the switch and the original connector, (refer to illustration 2). The new harness is highlighted in black.

5. Route the link harness across the front of the vehicle following the existing condenser fan harness and spiraling the link harness around it. Continue harness run around the side of the battery box to the fuse box.

6. Unbolt the fuse box so that the underside is accessible.



7. Fit link harness wires to fuse box connector locations as follows, (illustration 3 refers):

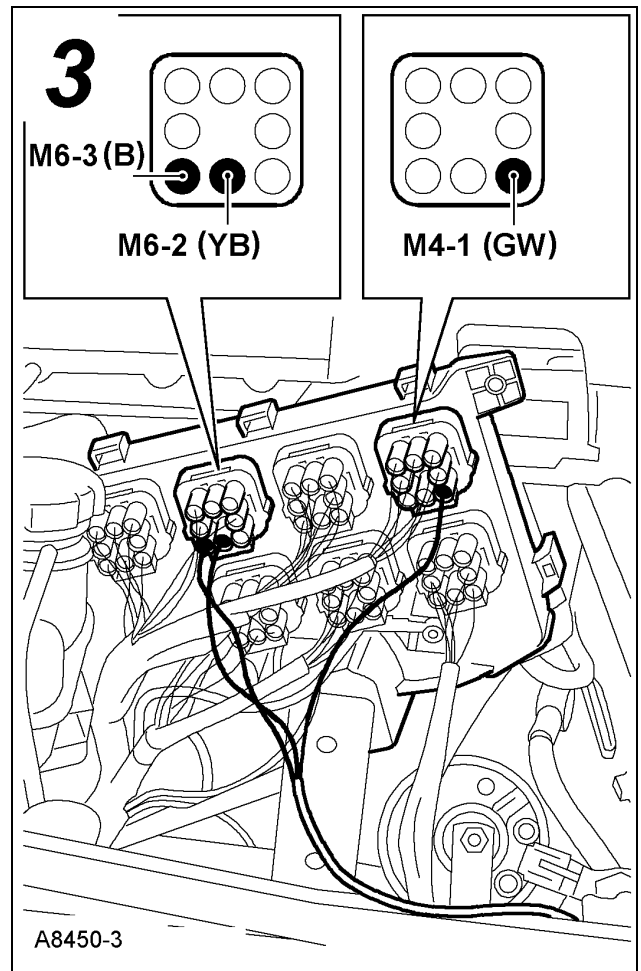
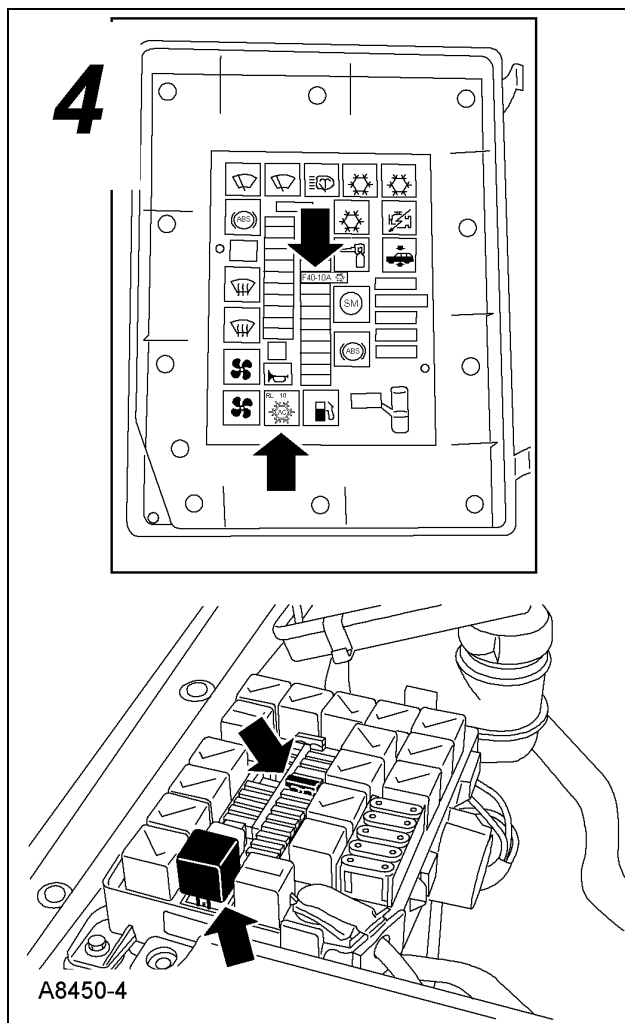
Violet block M6 - 3:  
Black wire (B)

Violet block M6 - 2:  
Yellow/Black wire (YB)

Blue block M4 - 1:  
Green/White wire (GW)

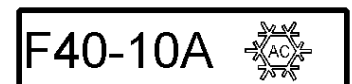
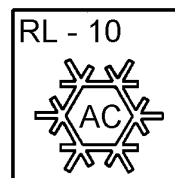
**NOTE:** The connector terminals are self latching. Ensure that they are securely latched.

8. Refit fuse box.

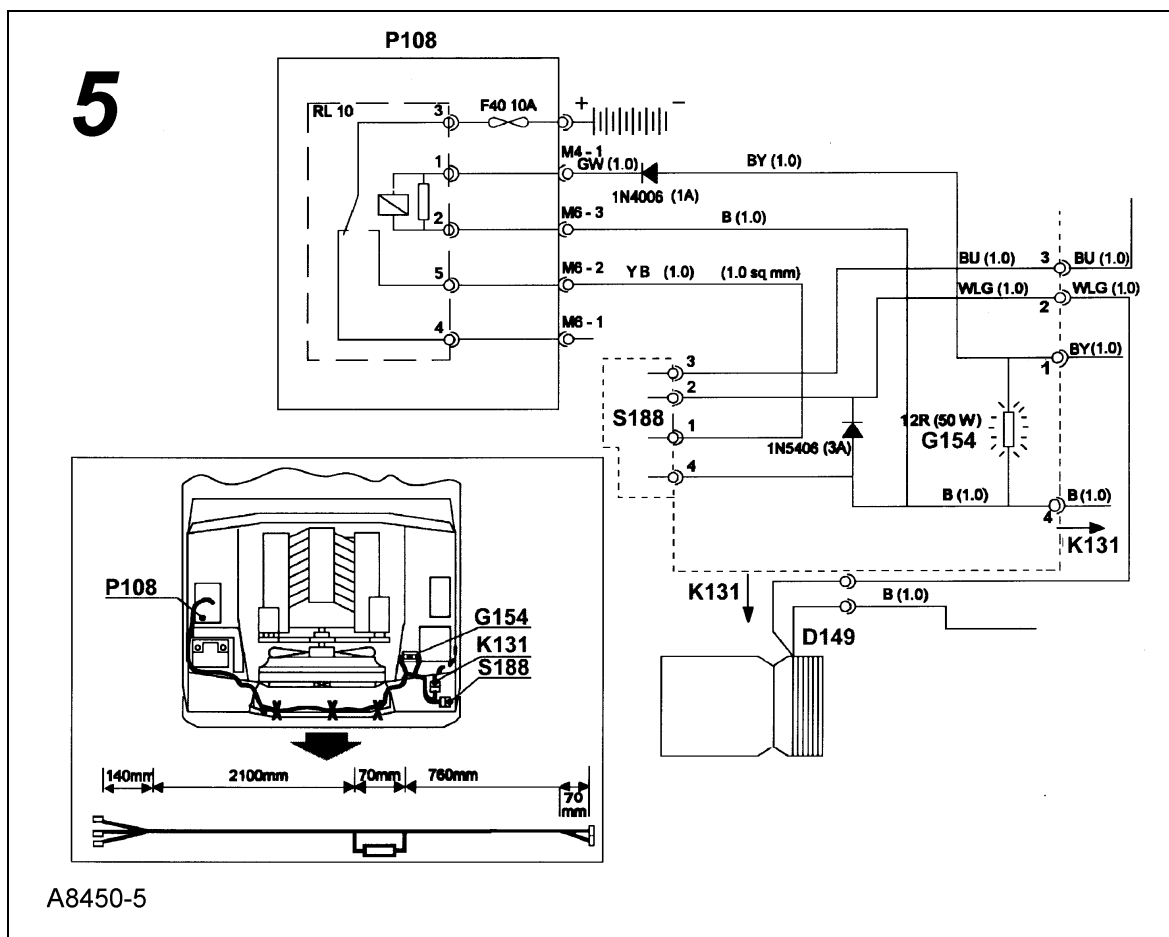


9. Remove the fuse box cover and fit the relay from the kit to location RL10 and the 10 amp fuse from the kit to location F40, (illustration 4 refers).

10. Identify the additional relay and fuse by attaching the relay and fuse map labels from the kit to the fuse box lid where shown, (illustration 4 refers).



11. Secure the new link harness in the battery box area using tie wraps from the kit.



**Illustration 5 - Overall view of Link Harness Kit YMQ104590AA installation**

**Key to wiring diagram:**

Component Code	Component Description
D149	Air conditioning compressor
G154	Resistor and heat sink
K131	Existing connection
P108	Engine compartment fuse box
S188	Air conditioning trinary switch

### **Installation of Alternator Link Lead YSB106340**

**Fit the new lead as follows:**

- 1. Remove the battery box cover.**
- 2. Disconnect the battery negative terminal clamp.**

**NOTE:** Ensure that the terminal cannot accidentally re-connect to the battery post until the procedure has been completed.

3. Disconnect the battery positive terminal and dismantle the clamp assembly. Discard the clamp bolt. Using a sharp knife or scissors, cut a hole in the unused port of the battery box grommet.

4. On the new link lead, cut the black sleeving back by 50mm from the threaded stud end of the lead.

5. Feed the stud end of the new lead through the new hole in the battery box grommet, towards the battery.

6. Remove the terminal cover from the rear face of the alternator.

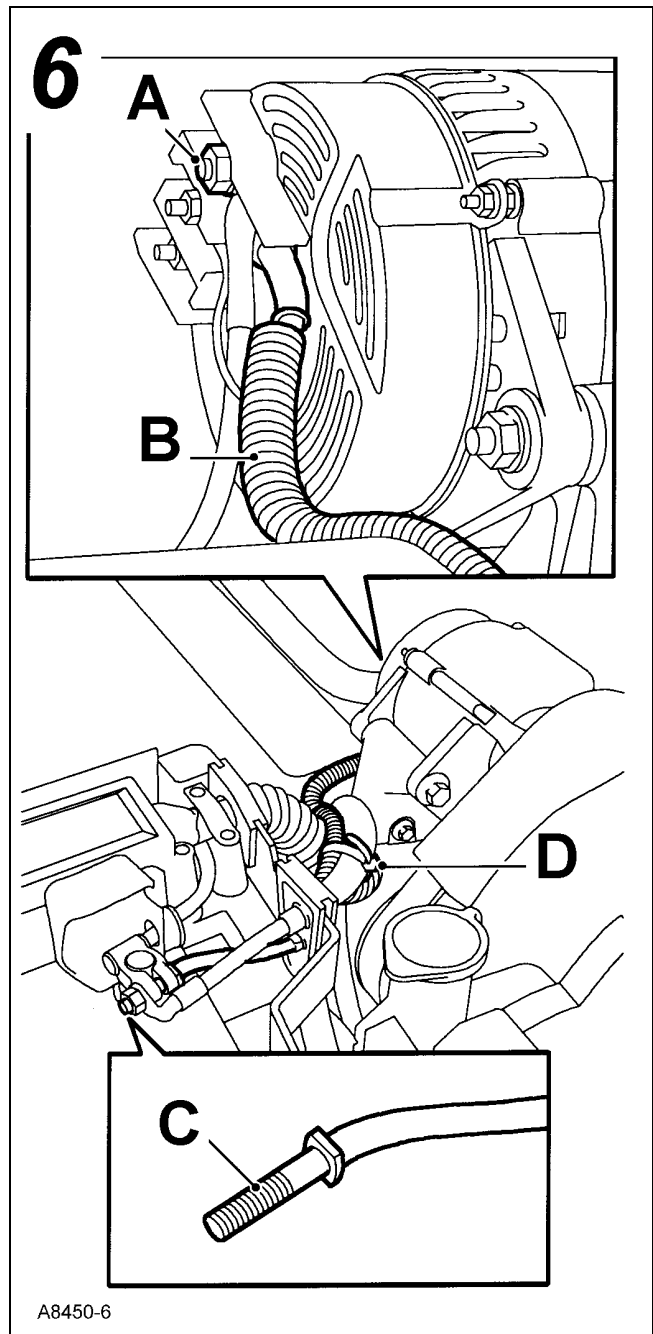
7. Remove the feed lead M8 nut from the B+ terminal of the alternator, (A in illustration 6).

8. Route the new lead (B in Illustration 6) from the battery box grommet, between the rocker cover and the alternator mounting bracket, to the alternator.

9. Connect the lead to the alternator B+ terminal and secure with the previously removed M8 nut, (A in illustration 6).

10. Refit the terminal cover to the alternator rear face.

11. Reassemble the battery positive clamp, using the link lead stud (C in Illustration 6), in place of the discarded bolt and reconnect to the battery positive terminal.



A8450-6

12. Secure the additional lead to the existing harness by means of a cable tie, (D in illustration 6).

**NOTE:** Secure the new lead at a point directly above the auxiliary drive belt.

13. Reconnect battery negative terminal.

14. Refit the battery box cover.

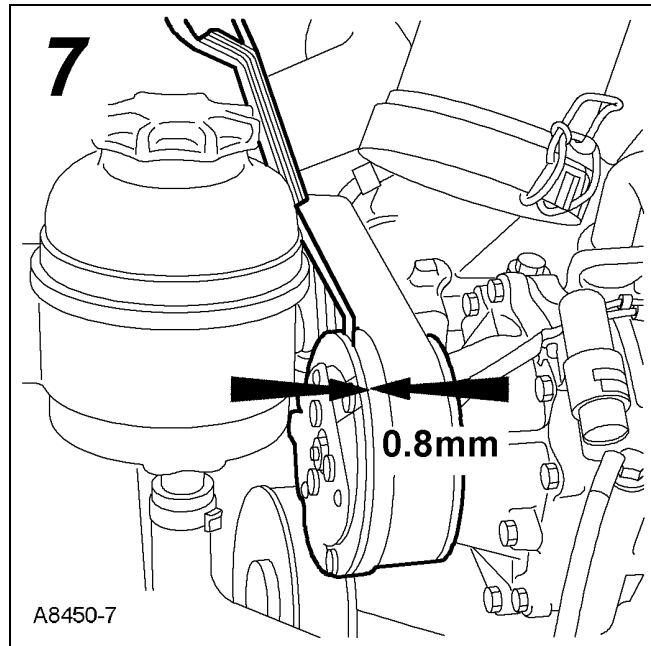
## Checking condition of ATC compressor clutch.

A clutch in serviceable condition will have an air gap not exceeding an average of 0.8mm when measured with a feeler gauge at three points around its circumference, (illustration 7 refers).

This dimension only applies to vehicles where the changes to ensure the 11.5 volts minimum supply have been installed.

If the average air gap exceeds 0.8mm, the compressor clutch must be replaced.

For clutch replacement procedure, refer to:



**Technical Bulletin - INTERMITTENT OPERATION OF THE ATC SYSTEM - COMPRESSOR CLUTCH - Heating and Air Conditioning Section Number 0012.**

**NOTE:** Ensure that the compressor clutch dust cover *is ALWAYS* refitted.

---

### *PARTS INFORMATION:*

**YMQ104590AA Kit - link harness - compressor.**

The kit contains the link harness, relay, relay label, 10 amp fuse, fuse label, 2 screws and cable ties.

**YSB106340 Link harness - alternator**

---

### *WARRANTY CLAIMS:*

**Use Complaint Code: 8Q2Z**

**Use S.R.O: 82.10.89/28**

**Time allowance: 1.10Hrs**