



Technical Service Bulletin

No.LM303-002
05 October 2004

Reissue

Please replace the previous edition of this bulletin.

This bulletin supersedes TSB L8947bu/2004 dated 18 June, which should either be destroyed or clearly marked to show it is no longer valid (e.g. with a line across the page).

Subject/Concern: Range Rover (LM) - High Engine Speeds and/or Transmission Shift Problems

Models:

Range Rover (LM)	Engine: V8	VIN-range: 2A 100042 Onwards
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Markets: All

Section: 303-03

Section: Cooling System - 26

Summary:

High engine speeds and/or transmission shift problems after driving for 25 minutes or longer, with the possibility of the transmission overheat message being displayed on the instrument cluster.

This bulletin has been re-issued to reflect changes to the anti-freeze specification.

Cause: Depletion of the coolant corrosion inhibitor can result in partial blockage of the low flow circuits of the radiator (lower eight tubes that supply coolant to the transmission oil cooler), with the residues from the depletion. This can result in insufficient cooling of the automatic transmission fluid. The transmission has a 'normal operating' program whereby if the transmission bulk fluid temperature exceeds a threshold value, the transmission control system will adopt a shift strategy intended to cool down the transmission. It achieves this by extending the shift points significantly. As a result, the transmission is inclined to change down to lower gears to keep the engine speed (and therefore the cooling) to its optimum.

Action: Should a customer express concern regarding the above, follow the procedure detailed in this bulletin to measure the coolant flow rate from the radiator drain plug to confirm partial blockage of the radiator and to replace the radiator if required.

Parts Required:

Description	Part Number	Quantity
Radiator	PCC000850	1
Anti-freeze (ARTECO GLACELF MDX) - 1 litre	PDA500300	1
Anti-freeze (ARTECO GLACELF MDX) - 5 litre	PDA500310	1

Labour Time:

Operation Description	Operation No.	Time
Radiator blockage check	264089/30	0.9 hours
Radiator blockage check and replace the radiator	264089/31	1.6 hours

Repair/Claim Coding:

Causal Part:	PCC000850
ACES Condition Code:	55
Defect Code:	2C5S

Service Procedure

- 1 . Position the vehicle on a lift.
- 2 . Set the heater controls to maximum.
- 3 . Disconnect the battery earth lead For additional information, refer to Global Technical Reference (GTR) New Range Rover Workshop Manual Section Battery, Remove (86.15.01).

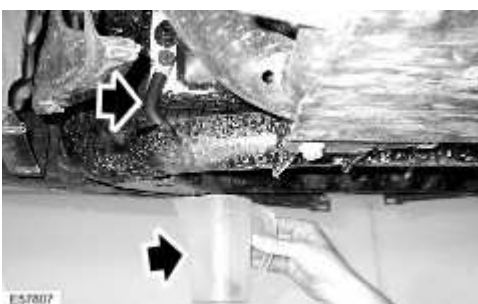


WARNING: SINCE INJURY SUCH AS SCALDING COULD BE CAUSED BY ESCAPING STEAM OR COOLANT, DO NOT REMOVE THE FILLER CAP FROM THE COOLANT EXPANSION TANK WHILE THE SYSTEM IS HOT.

- 4 . Remove the coolant expansion tank cap.
- 5 . Remove the under-tray For additional information, refer to Global Technical Reference (GTR) New Range Rover Workshop Manual Section Exterior Fittings, Undertray - front (76.11.81).
- 6 . Clamp the lower sub cooler hose.



- 7 . Install a tube to the drain tap and position a measuring container beneath the radiator to collect coolant .



CAUTION: ENGINE COOLANT WILL DAMAGE PAINT FINISHED SURFACES. IF SPILLED, IMMEDIATELY REMOVE COOLANT AND CLEAN AREA WITH WATER.

- 8 . With the aid of a timing device, fully open the drain tap and allow 250ml of coolant to drain and note the time taken to drain the amount before closing the radiator drain tap. The time taken to drain 250ml of coolant will indicate the existence of blockage within the low flow circuit of the radiator. For guidance, indicative times are listed: New radiator (zero blockage) - 10 seconds to drain 250ml of coolant. Used radiator (confirmed blockage and exhibiting fault symptoms) - 1 minute 40 seconds to drain 250ml of coolant. **NOTE:** If there is no existence of a blockage in the radiator, top up the coolant level and refit the coolant expansion tank cap, carry out any other diagnostics and associated repairs and claim as a separate Warranty Claim.



- 9 . **NOTE:** Where a blockage of the low flow circuit of the radiator is confirmed, the radiator **MUST** be replaced with a new unit, as it is not possible to clear the blockage.

If blockage of the radiator is confirmed, remove the radiator For additional information, refer to Global Technical Reference (GTR) New Range Rover Workshop Manual Section Cooling System - V8, Radiator (26.40.01).

- 10 . Remove the clamp from the lower sub cooler hose. Refer to illustration in 6.

11 .



CAUTION: DO NOT USE WATER UNDER HIGH PRESSURE AS IT CAN DAMAGE COOLANT SYSTEM COMPONENTS.

Flush cooling system with water under low pressure.

- 12 . Install a new radiator. For additional information, refer to Global Technical Reference (GTR) New Range Rover Workshop Manual Section Cooling System - V8, Radiator (26.40.01). **NOTE:** The Land Rover approved Coolant Specification has changed from Texaco AFC to BASF Glysantin G48 (Castrol NF or Artecó Glacelf MDX are acceptable alternatives as these products are re-badged versions of BASF Glysantin G48). BASF Glysantin G48 (or Castrol NF or Artecó Glacelf MDX) **MUST** be used to prevent repeat failure. Land Rover Part Numbers PDA500300 and PDA500310 are available via Land Rover Parts.
- 13 . Connect T4 to the vehicle and load Range Rover 12 or a later version and begin a new diagnostic session.
- 14 . Follow on-screen instructions and select 'Diagnostics'.
- 15 . Follow on-screen instructions and select 'System Diagnostics'.
- 16 . Follow on-screen instructions and select 'Automatic Transmission'.
- 17 . Follow on-screen instructions and select 'Fault Code Diagnostics'.
- 18 . Follow on-screen instructions and clear fault codes.
- 19 . Follow on-screen instructions and return to System Diagnostics' screen.
- 20 . Follow on-screen instructions and select 'Exterior Lights'.
- 21 . Follow on-screen instructions and select 'Fault Code Diagnostics'.
- 22 . Follow on-screen instructions and clear fault codes.
- 23 . End the diagnostic session and return to 'Welcome' screen, disconnect T4 from the vehicle.