



Technical Service Bulletin

No.LTB00047v2
01 May 2007

Reissue

Please replace the previous edition of this bulletin.

This bulletin supersedes TSB LS303-019/2006 dated 01 September, which should either be destroyed or clearly marked to show it is no longer valid (e.g. with a line across the page).

This bulletin supersedes TSB LTB00047/2007 dated 29 March, which should either be destroyed or clearly marked to show it is no longer valid (e.g. with a line across the page).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: Rough Engine Idle After Cold Start

Models:

Discovery 3 / LR3	2.7L (TDV6) Diesel	2.7L (TDV6) Diesel VIN-range: 5A300394-6A399900
Range Rover Sport (LS)	2.7L (TDV6) Diesel	2.7L (TDV6) Diesel VIN-range: 5A900505-6A966000

Markets: All

Section: 303-04

Summary:

A customer may report a concern that the engine idle quality is poor for 10 to 25 seconds after starting from cold for the first time during the day. No poor idle or power loss is experienced after the first initial cold start of the day and all other engine starts of the day, whether the engine is warm or hot, do not result in the same poor idle quality.

This Version of the bulletin has been issued to inform Authorized Repairers to destroy or clearly mark LS303-019 to show that it is no longer valid.

Cause: Contamination (debris/dirt or corrosion) in the fuel injectors affects injector spray and delivery rate. Contamination ingress can occur during various operations such as vehicle maintenance or repair and running on contaminated fuel. An injector with damaged internal sealing will also result in unmetered fuel entering the intake manifold.

Action: Should a customer express concern regarding the above, refer to the Diagnostic Procedure detailed in this bulletin to establish the root cause of the issue.

Parts Required:

Description	Part Number	Quantity
Fuel filter	WJN500025	1
Fuel injector (kit)	1331260	1

Special Service Tools

Spill Test kit
310-129

Diagnostic Procedure

1. Check with the vehicle owner/user that only diesel fuel to the correct specification or automotive gas oil to EN590 with a maximum 5% biofuel is being used. If an incorrect fuel is being used:
 - 1 Drain the fuel tank. For additional information, refer to Global Technical Reference (GTR) . Discovery 3/LR3 Workshop Manual Section 310-00, Fuel Tank Draining (19.55.02).

- 2 Renew the fuel filter. For additional information, refer to Global Technical Reference (GTR) . Discovery 3/LR3 Workshop Manual Section 310-01C, Fuel Filter Element (19.25.02).
 - 3 Fill with the correct specification fuel.
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 - 4 Re-test the vehicle. If the problem is resolved, no further action is required. If the problem . still exists, continue to the next step.
- 2 . Check the fuel in the vehicle for abnormal discoloration. If the fuel is discolored:
 - 1 Drain the fuel tank. For additional information, refer to Global Technical Reference (GTR) . Discovery 3/LR3 Workshop Manual Section 310-00, Fuel Tank Draining (19.55.02).
 - 2 Renew the fuel filter. For additional information, refer to Global Technical Reference (GTR) . Discovery 3/LR3 Workshop Manual Section 310-01C, Fuel Filter Element (19.25.02).
 - 3 Fill with the correct specification fuel.
 - .
 - 4 Re-test the vehicle. If the problem is resolved, no further action is required. If the problem . still exists, continue to the next step.
 - 3 . **NOTE:** DO NOT REJECT a set of injectors if the flow rate values are even, but **outside** of the expected values. The actual injector spill return rate will be affected by fuel rail pressure and fuel temperature. Only reject the injectors with much **higher** spill return than the others. Experience shows the flow will be very high on failed injectors and will fill the test bottle within two minutes.

Complete an injector balance test and injector spill test using the test limit data below and renew the injectors as necessary. For additional information, refer to Global Technical Reference (GTR) Discovery 3/LR3 Workshop Manual Section 303-04C, Injector Balance/Spill Test (19.90.08).

Injector Balance Test Values and Injector Spill Test Return Flow Rates

NOTE: Injector balance limits are 700 to 1.3K (Renew any injector outside this limit). Injectors with a balance value outside of 600 to 1.4K will cause a DTC to be logged.

Time at Engine Idle	Minimum Spill Return (ml)	Maximum Spill Return (ml)
1 minute	10	25
4 minutes	15	26
5 minutes	18	30