

Reference	SSM72584
Models	Discovery Sport / L550 Range Rover Evoque / L538
Title	2.0L GTDi Check Engine Light Illuminated with DTC P2096 and or P2097 Stored in PCM
Category	Driveability
Last modified	11-Jan-2016 00:00:00
Symptom	698298 Malfunction Indicator Lamp
Attachments	High-Pressure Diagnostic Leak Detector Information1.pdf (High-Pressure Diagnostic Leak Detector Information1.pdf)

Content**Issue:**

Customer has observed 'Check Engine Light' - also known as 'Engine Malfunction Indicator Lamp (MIL)' - illuminated in the instrument cluster & DTC P2096-00 and/or P2097-00 is evident in the PCM.

A concern in the PCM diagnostic software has been discovered, which when combined with a specific customer drive cycle can lead to the false flagging of this DTC. Work is on-going to deliver revised PCM software; timing is to be confirmed.

Exhaust system leaks outside design specification can increase the likelihood of repeat failures.

JLR have recognised that the supplied leak check equipment does not fit on certain LC - Discovery Sport exhaust tail pipes. A solution is being sourced.

Action:

As per the 'Possible Cause' listed in TOPIx, there may be an air leak in the exhaust system. If possible, carry out a leak check of the exhaust system and follow the actions as detailed below:

1. Perform a pressurised smoke test of the exhaust system using the high pressure supplied JLR 'High-Pressure Diagnostic Leak Detector' test equipment.
 - Maximum test pressure for ALL Exhaust gas joints is 0.5 bar (7.3 PSI).
 - Flow rate is visible on the test equipment on the front right hand side. The mid-point / widest point of the float, is the reference point to be used, when reading the value. Please record this value for submission on either TA or EPQR.
 - The Turbo waste-gate operating shaft is a clearance fit in the shaft bush and therefore under these specific test conditions, a 'leak' is expected to be seen and will not be the cause of the CEL. (This may only be evident when the engine has been left not running for more than 6 hours)

2. When pressurizing the exhaust system with smoke pay particular attention to:
 - The welding around the bosses where the O2 sensors are fitted
 - The flange where the turbocharger and exhaust meet
 - The flexible coupling
 - The flange where the primary and secondary catalytic converters meet.
 - Note: Leak rate of less than 12 l/min on the total system is acceptable. If the total leak rate exceeds 12 l/min, separate the exhaust system at the joint immediately behind the 3rd O2 sensor. Retest the system from this joint back to the tail pipes, leak rate should be < 10 l/min. Also test forward of this joint, leak rate should be < 2 l/min. Please identify any component that fails to meet this specification, raise a TA and advice will be provided on a case by case basis.
3. Check the 3 exhaust manifold to catalytic converter bolts are tightened to 24Nm/18Lb-ft – do not loosen bolts first only tighten them.
4. Check each of the 3 heated O2 sensors are tightened to 48 Nm / 35 Lb-ft – do not loosen bolts first only tighten them.
5. If a leak is detected when performing steps 1 to 4, please collect photographic evidence, rectify the problem and proceed to step 6.
6. If no exhaust leaks are evident and / or have been rectified, please clear the DTC's.
7. Updates on software availability will be provided as soon as available.

High-Pressure Diagnostic Leak Detector



The high-pressure diagnostic leak detector has a variety of applications in detecting even very small leaks in different applications

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Flow Meter l/min AIR

