Reference	SSM73330
Models	Range Rover / L405 Range Rover Sport / L494
Title	Incorrect Diesel Exhaust Fluid Quality Warning Message DTC P2BA9
Category	Engine
Last modified	26-May-2017 00:00:00
Symptom	403000 Exhaust System Concerns

Content

Issue:

Reports of 'No Engine Restarts in XXX miles. 'Incorrect Diesel Exhaust Fluid Quality Detected' warning message displayed on the Instrument Cluster (IC) and Diagnostic Trouble Code (DTC) P2BA9-00 and/or P2BA9-92 stored in the Powertrain Control Module (PCM) which may be accompanied by DTCs P2BAE and P2BAF.

Cause:

Various error states under ongoing investigation.

Action:

1) Check the PCM (Powertrain Control Module) has the latest level of software loaded, i.e. SSD/Pathfinder reports no ECU update available. Previous software numbers are detailed below:

17MY

L405 HPLA-12K532-PKF
L494 HK62-12K532-PKF
L462 HY32-12K532-PKF

16MY

L405 GK52-12K532-PRJ
L494 GK62-12K532-PRJ

2) Using the Diesel Exhaust Fluid (DEF) quality hydrometer (tool number: JLR-44-862) check the DEF is within the acceptable (green) scale. If fluid is in the green zone when tested please move to step 3a. If it is not in the green zone please drain and replace the DEF (*refer to TOPIx Section 303-08A - General Procedures - Diesel Exhaust Fluid Tank Drain and Refill) and* then proceed to step 3a.

3a) Using the approved high pressure diagnostic leak detector (tool number: 95-0106), follow the TOPIx instructions and conduct the induction smoke check (*refer to TOPIx Section 303-00: Engine System - General Information* - **General Procedures** - *Leakage Test Using*

Smoke Test Equipment). When investigating the induction system, remove the engine cover for further visibility and using the provided strobe light, check for smoke or leaks under the bonnet. If no leaks are found, raise the vehicle, remove all under trays and check under the vehicle for leaks/smoke. Previous leaks have been found around the induction system post the MAF (Mass Air Flow Sensor) and pre compressor and also around the charge air cooler warm drive clamps.
If any leaks are found please repair in line with JLR TOPIx repair procedures and raise a Quality Report detailing the failure. If any further assistance is required with the repair, please raise a TA.

3b) Using the approved high pressure diagnostic leak detector (tool number: 95-0106), carry out a smoke leak test of the exhaust system, (instructions are provided with the Redline smoke test kit). Using the suitable tailpipe adaptors provided, ensure the tailpipes are sealed (no smoke should be emitted beyond the adaptors while pressurised). Pressurise the exhaust system and begin the smoke leak check and monitor for any leaks. Previous leaks have been found around the low pressure EGR cooler joint and around both the high pressure and low pressure EGR valves. If any leaks are found please repair in line with JLR TOPIx repair procedures and raise a Quality Report detailing the failure. If any further assistance is required with the repair, please raise a TA.

As per the induction check, please use the strobe light provided in the kit to check for smoke. For both exhaust and induction checks, a minimum of 1 Bar or 15PSI is required in the system to aid the check.

If there are any doubts about the leak check performance, other reports have indicated that applying dish soap helps to identify smaller leaks to up and downstream NOx sensors located on the exhaust system. Check for any signs of air bubbles. If bubbles/sign of leakage found, Torque NOx sensors located on the exhaust system as per TOPIx (48 Nm). Repeat test to confirm they are correctly sealed.

If a leak is found on any of the above checks, rectify as necessary and raise a Quality Report detailing the error state found, with photographs where possible.

4) Please now clear all Powertrain Control Module (PCM) DTC codes, the message 'Incorrect Diesel Exhaust Fluid Quality Detected' may now default to 'Diesel Exhaust Fluid Dosing System Malfunction' and DTC P2BA9-00/92 may be cleared. When the 'reset selective catalyst reduction quality' monitor has been successfully completed (see step 5), the warning message in the Instrument Cluster (IC) will no longer be displayed. The remaining DTCs (P2BAE/P2BAF) can now be cleared from the PCM

5) Where possible instead of running the static SCR inducement clear routine (via SDD/Pathfinder), please carry out the drive cycle detailed below. This is because if successful, the inducement warning will clear and will give a positive indication of the SCR Quality monitor running and passing successfully. The drive cycle is as follows:

NOTE - *Before conducting the drive cycle, using SDD/Pathfinder please check the DPF soot mass. If above 6g, perform the force regeneration application available on JLR approved diagnostic tool SDD or Pathfinder and successfully confirm soot mass is 6g or below.

Now perform the following SCR diagnostic monitor drive cycle;

1. Idle the engine for 10 minutes.
2. Run the vehicle at speeds between 40 - 60 mph, for a minimum of 5 minutes avoiding high accelerations.
3. Cruise at 40 mph for around 4 - 5 minutes, then slowly accelerate to 60 mph, using a steady accelerator pedal input.
4. Pull over safely and conveniently and switch off the engine until the red P symbol is no longer present on the Instrument Cluster.
5. Start the engine and repeat steps 2 and 3 and return to Retailer.

Please note that failing to drive to the above cycle may not result in the SCR monitor correctly running and prevent confidence in ensuring the issue is fully resolved. If the drive cycle was unsuccessful in clearing the inducement warning ('Diesel Exhaust Fluid Dosing System Malfunction on the Instrument Cluster), please raise a Technical Assistance.

SRO's (to be used as applicable)

18.90.90 – Reflash Powertrain Control Module – 0.2hrs
17.50.50 Tank - diesel exhaust fluid - fluid check – 0.2hrs
17.50.37 Tank - diesel exhaust fluid - drain and refill – 0.5rs
01.01.28 - Leakage test using smoke test equipment – 0.4hrs
17.90.10 - Reset Selective Catalyst Reduction Quality Monitor (only to be used where the drive cycle detailed in this SSM is not possible) – 0.1hrs
10.41.17 – Road test vehicle – 0.3hrs

NOTE - if a standard SRO repair operation is not available, a non-standard operation number can be claimed. Refer to the Global Warranty Compliance and Procedures Manual section G.2.2: NON-STANDARD OPERATIONS.

Technicians - Please rate this SSM and provide comments so that future communications can be improved.

1 = Poor – Basic information provided – The SSM does not help me resolve the customer concern.

3 = Average – Adequate information provided – The SSM partially helps me resolve the customer concern.

5 = Excellent – All required information provided to resolve the customer concern.