

Reference	SSM73330
Models	Discovery / L462 Range Rover / L405 Range Rover Sport / L494
Title	Incorrect Diesel Exhaust Fluid Quality Warning Message DTC P2BA9
Category	Engine
Last modified	26-Jun-2017 00:00:00
Symptom	403000 Exhaust System Concerns
Content	<u>Issue:</u> 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. <u>Cause:</u> Various error states under ongoing investigation. <u>Action:</u> 1) 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 2a. If it is not in the green zone please drain and replace the DEF (<i>refer to TOPIx Section 303-08A - General Procedures - Diesel Exhaust Fluid Tank Drain and Refill</i>) and then proceed to step 2a. 2a) Using the approved high pressure diagnostic leak detector (tool number: 95-0106), follow the TOPIx instructions and conduct the induction smoke check (<i>refer to TOPIx Section 303-00: Engine System - General Information - General Procedures - Leakage Test Using Smoke Test Equipment</i>). 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 worm 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. 2b) 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. Inspect the exhaust system for air leaks around all the heated oxygen sensors, exhaust gas temperature sensors and NOx sensors located on the exhaust system. If a leak is detected, torque the sensor to the correct specification as shown in TOPIx. An inspection of the exhaust system for air leaks around the exhaust downpipe connection is also recommended, if a leak is found tighten the bolts to the correct specification as shown in TOPIx. Leaks have also been found around the low pressure EGR cooler joint and around both the high pressure and low pressure EGR valves so careful attention should be given to these areas. As per the induction check, please use the strobe light provided in the kit to check for smoke. If any leaks are found please repair in line with JLR TOPIx repair procedures and raise a Quality Report detailing the error state found, with photographs where possible. Repeat test to confirm the defect found is repaired. If any further assistance is required with the repair, please raise a TA. 3) Using the manual patch instructions detailed below update the PCM (Powertrain Control Module) software. NOTE – The manual patch is only applicable to 2016 Model Year vehicles (prefix GA before the last six numbers of the VIN) WARNING; DO NOT Restart the PC until the manual patch has been used as the manual patch is removed on restart of the PC. - Restart the SDD machine - Login to SDD. - Select 'Continue' on the SDD Warning screen. - Select 'Settings' tab. - Select 'System Utilities'. - Select 'Manual Patch Update'. - A pop-up will be displayed for Manual patch selection dialog box. - Enter 'MP_JLR_L0064' in the Manual patch selection dialog box. - Select 'OK'. - The 'Software Management Wizard' will then download the fix file. - The Manual patch update information pop up will ask 'Do you want to install the update now?' Select 'OK'.

12. Select 'OK' when the message 'Please shut down SDD before continuing' is displayed. **DO NOT SHUT DOWN THE PC.**
13. 'Please wait' message is displayed.
14. Select 'OK' when the 'Package has been installed' message is displayed.
15. Select 'OK' in the Manual patch update information pop up.
16. Close the Internet Explorer Window where the SDD program runs.
17. Start a new SDD session.
18. Program the **PCM**.
19. Close the SDD session.
20. Restart the SDD machine.

For 17MY vehicles please check the PCM (Powertrain Control Module) has the latest level of software loaded, i.e. Pathfinder reports no ECU update is available.

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 40-60mph (64-96kph), for a minimum of 5 minutes avoiding high accelerations.
3. Cruise at 40mph (64kph) for around 4 - 5 minutes, then slowly accelerate to 60mph (96kph), 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 – 0.5hrs
- 17.50.30 - Diesel particulate filter - regeneration - 0.5hrs
- 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.