

SCR NOx sensor update

Two recent Autobiz helpline calls, regarding test information for Land Rover rear NOx sensors that had fault codes for poor NOx readings, SCR catalyst efficiency. The testing process for the SCR efficiency begins with serial data checks on the AdBlue system.

Important data groups included the reductant level and it is worth noting, the system will malfunction and not display a fluid level, if the tank is filled to the very top. Customers often overfill the system and this registers as empty. The level sensing system requires an airgap at the top of the reservoir, to accurately monitor the actual reductant level.

The next data PID is the system pressure. With the ignition and the engine not running, it will normally display 4 bar. When the engine is running, it should rise to 5 bar, with a maximum pressure of 8 bar.

Next, you will need to monitor the NOx sensor output from both sensors. This often requires the vehicle to be on a road test, to accurately monitor the part per million (PPM) figures. The exhaust needs to be up to full operating temperature. The two sensors should display a PPM value around 300-400 ppm upstream of the SCR catalytic convertor, and 10% of this figure on the downstream side (around 30 to 40 ppm). Readings in this range show good

catalysation in the SCR Cat.

Testing the NOx sensor involves checking the power and ground supplies to the NOx module and CAN signal checks. But as these sensors are in short supply for most vehicle brands, and on back order for many months, problems have arisen with the replacement sensors supplied by Land Rover.

Recent calls to the Helpline showed that the signals from these are not as expected, when fitting

- LR118316 – NOx Sensor
- LR153923 – Connector Housing

Please complete the following instruction:

- Remove NOx Sensor following TOPIx process 303-14C: Electronic Engine Controls - INGENIUM I4 2.0L Diesel - SENSOR - NOX - POST SELECTIVE CATALYST REDUCTION – RENEW
- Locate body harness side NOx Sensor connector C1E179A
- Backout the terminals using extraction tool 418595 from C1E179A connector housing
- Remove the blanking plug from cavity 5
- Discard the housing and replace with LR153923 connector housing and install the terminals in the following locations:
 - Install WH-BU wire into cavity 1
 - Install VT wire into cavity 2
 - Install VT-WH wire into cavity 3
 - Install BK-YE wire into cavity 4
 - Fit blanking plug into cavity 5
- Install new NOx sensor (LR118316) following TOPIx process 303-14C: Electronic Engine Controls - INGENIUM I4 2.0L Diesel - SENSOR - NOX - POST SELECTIVE CATALYST REDUCTION – RENEW
- Clear DTC's and release vehicle

The reallocation of the terminal locations on the new sensor (a new connector is available as a replacement part)

the replacement parts. But with some research, we have found a Technical Service Bulletin (TSB) from JLR that the new sensors are wired differently from the original.

Once the adaptations are completed for new parts replacement, a road test will need to be performed, this can take up to 40 minutes at cruise speeds, before the system returns to a proper operational mode.