

Published: 28-Jan-2020

2020.0 New Range Rover Evoque (LZ), 100-00

General Information

About This Manual (G2255554)

DESCRIPTION AND OPERATION

Introduction

The workshop manual has been written in a format that is designed to meet the needs of technicians worldwide. The objective is to provide descriptions for completing diagnosis and testing, service and repair work with tested and effective techniques, using a common publishing format.

It is structured into groups which are specific to vehicle areas, sections which are component areas, and sub sections which contain lists detailing Specifications, Description and Operation, Diagnosis and Testing, General Procedures, Disassembly and Assembly, Removal and Installation.

How to use this Workshop Manual

Appropriate service methods and repair procedures are essential for the safe, reliable operation of all vehicles as well as the personal safety of the individual carrying out the work.

Anyone who does not follow the instructions provided in this manual, must first establish that personal safety or vehicle integrity is not compromised by the choice of method, tools or components.

Warnings, Cautions and Notes

WARNING:

Warnings indicate hazards that may be present while carrying out the procedure. These hazards may cause personal injury if not followed.

CAUTION:

Cautions indicate that failure to follow the instruction may result in damage to the vehicle or equipment.

NOTE:

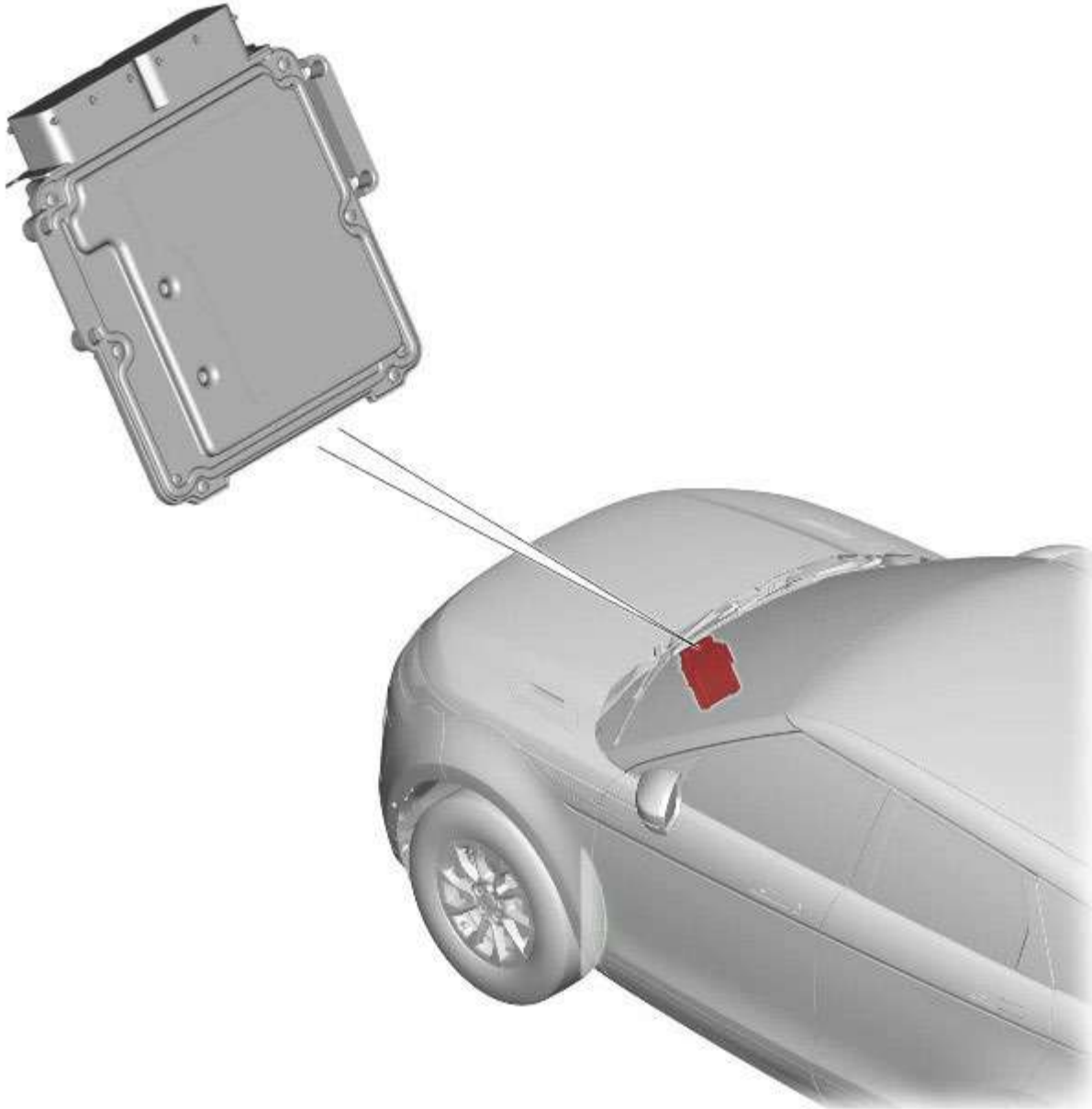
Notes provide additional information that is required in the procedure.

General warnings, cautions and notes are included before any procedural steps. These are only used when they apply to each step contained in the procedure.

Step specific warnings, cautions and notes are only assigned to the individual step that they apply to.

Positional References

Vehicle



E233732

The PCM is located at the rear of the engine compartment, between the bulkhead panel and the engine sound insulation.

The PCM receives inputs from sensors and supplies signal information to other sensors for engine control.

The PCM receives inputs from the following:

- Integrated power brake
- CKP
- CMP (quantity 2)
- TCM
- TCS
- AAT sensor
- ECT sensor - Radiator outlet
- ECT sensor - Cylinder block outlet
- Electric cooling fan

The CMP has a 3-pin electrical connector. The 3-pin electrical connector has these connections:

- A 5V reference voltage from the PCM
- A CMP signal to the PCM
- A ground connection to the PCM.

The PCM uses the signal from the CMPs and the CKP sensor to determine current intake and exhaust camshaft positions.

When a fault occurs with any of the CMPs, a DTC is registered in the PCM.

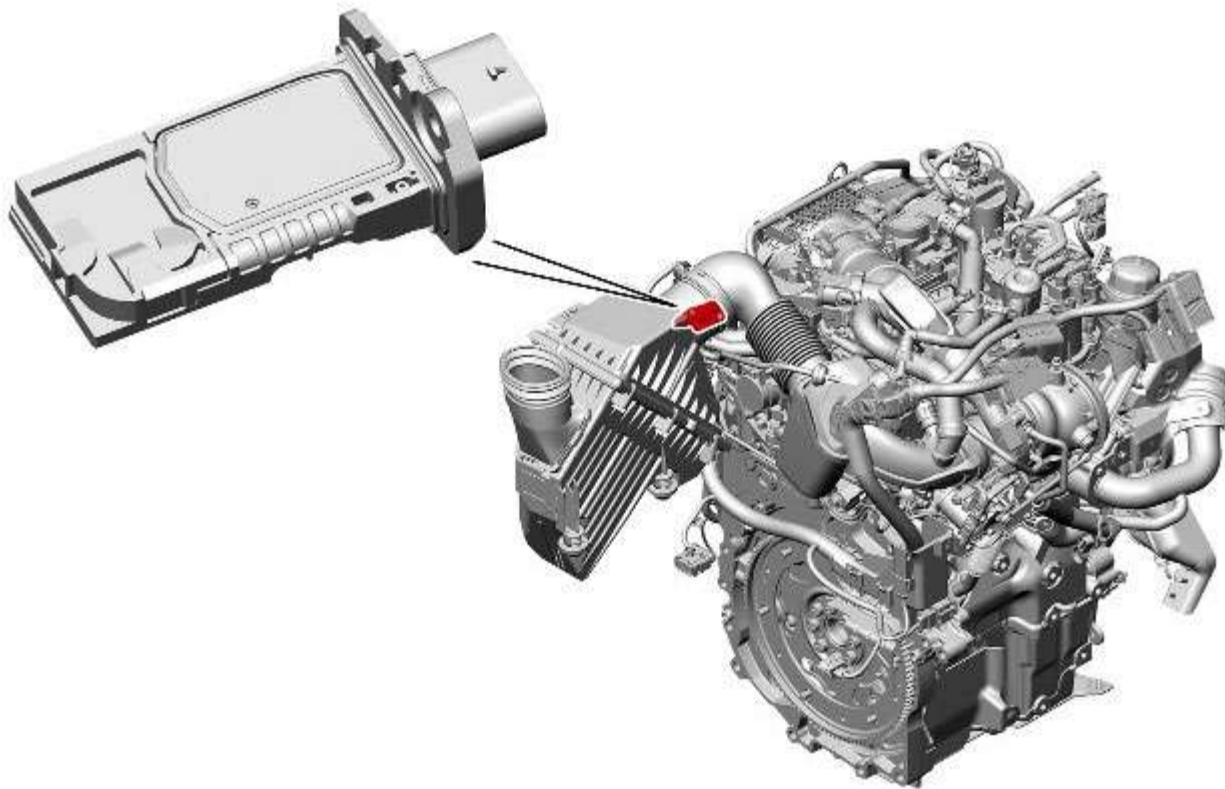
There are 2 types of failure that can occur:

- Camshaft signal frequency too high.
- Total failure of the camshaft signal.

The DTC recorded by the PCM can also relate to a total failure of the crankshaft signal or crankshaft signal dynamically implausible. Both components should be checked to determine the cause of the fault.

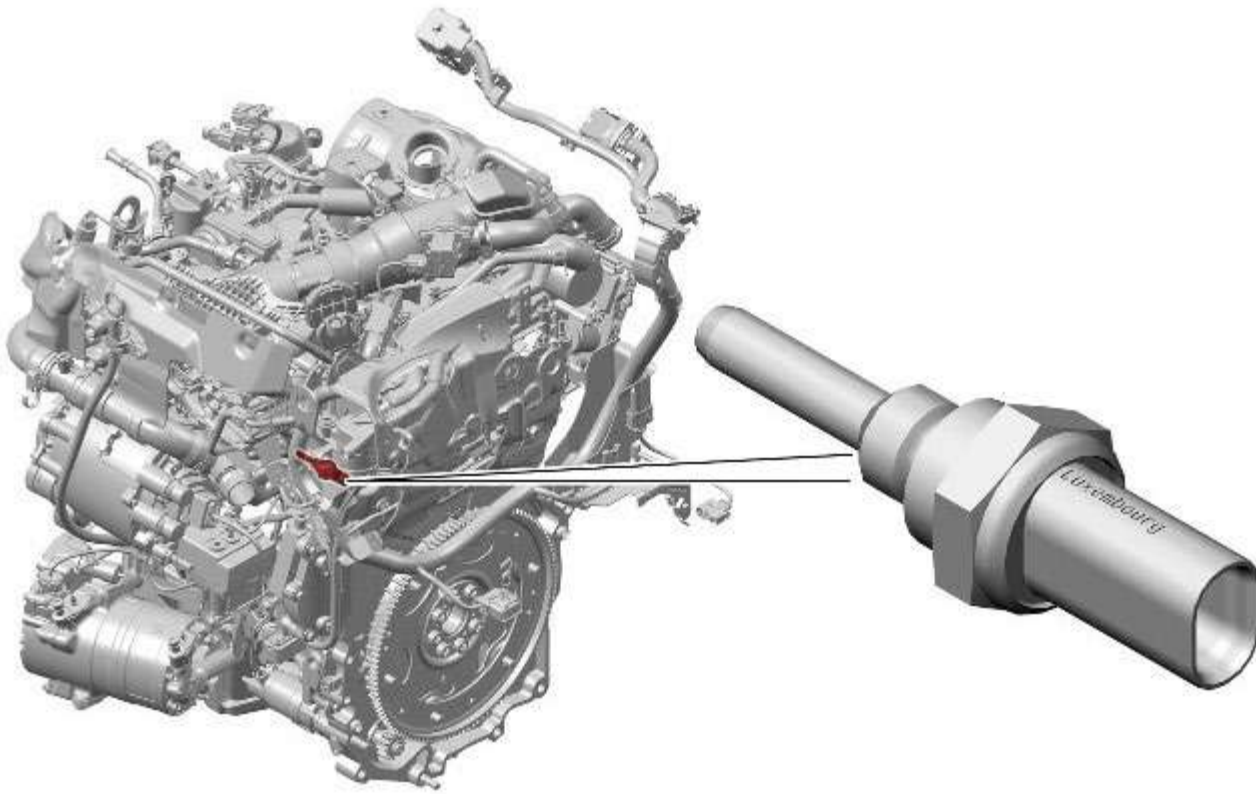
When a fault occurs with any of the CMPs when the engine is running, the engine continues to run. When the engine is switched OFF, the engine restarts while the fault is present, but VCT control is disabled.

Mass Air Flow and Temperature Sensor



E245173

The air filter housing is located in the front right corner of the engine compartment. The air outlet connection of the air filter housing incorporates a MAFT sensor. The MAFT sensor is secured with 2 screws and measures the air entering the clean air duct to the turbocharger.



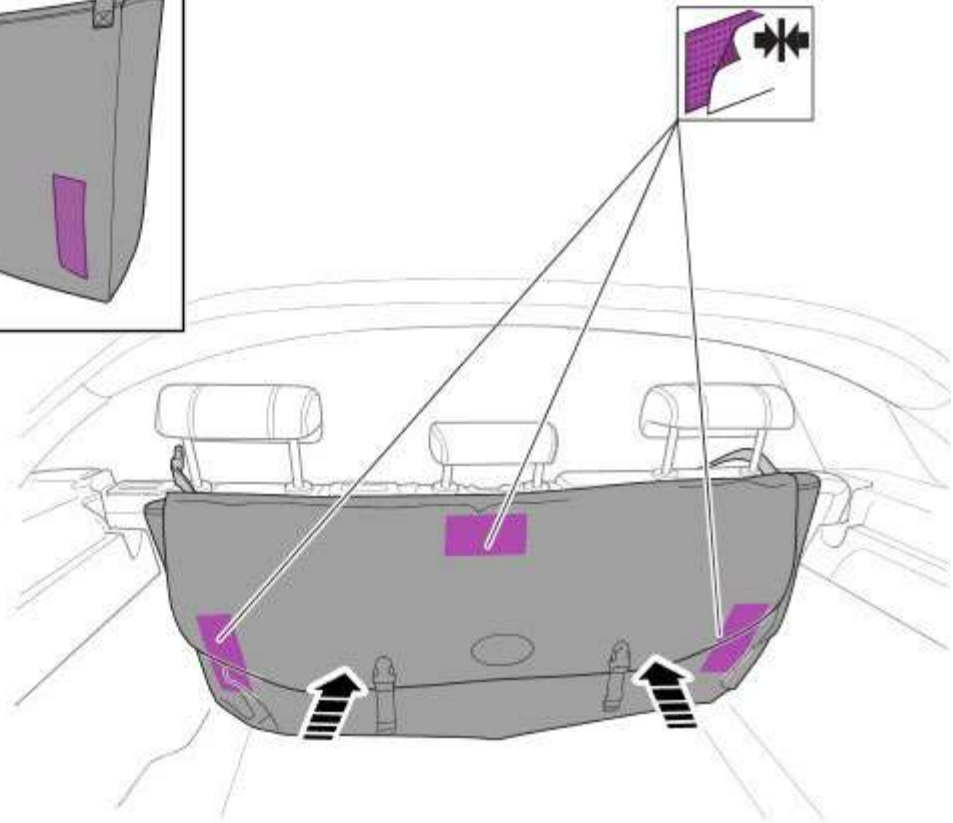
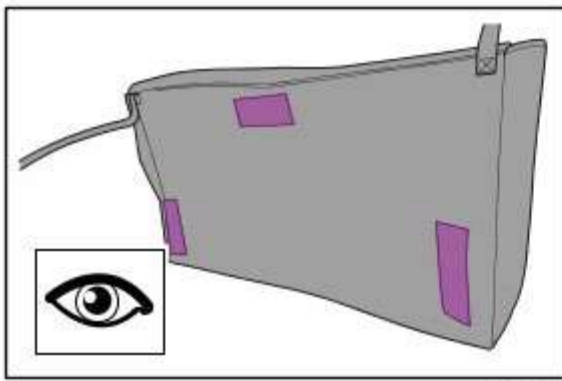
E252903

The cylinder block temperature sensor is located in a threaded hole on the left of the cylinder block. The sensor is a NTC resistor with a 2-pin electrical connection and has these connections:

- A 5V reference voltage from the PCM
- A cylinder block temperature signal to the PCM.

Knock Sensors

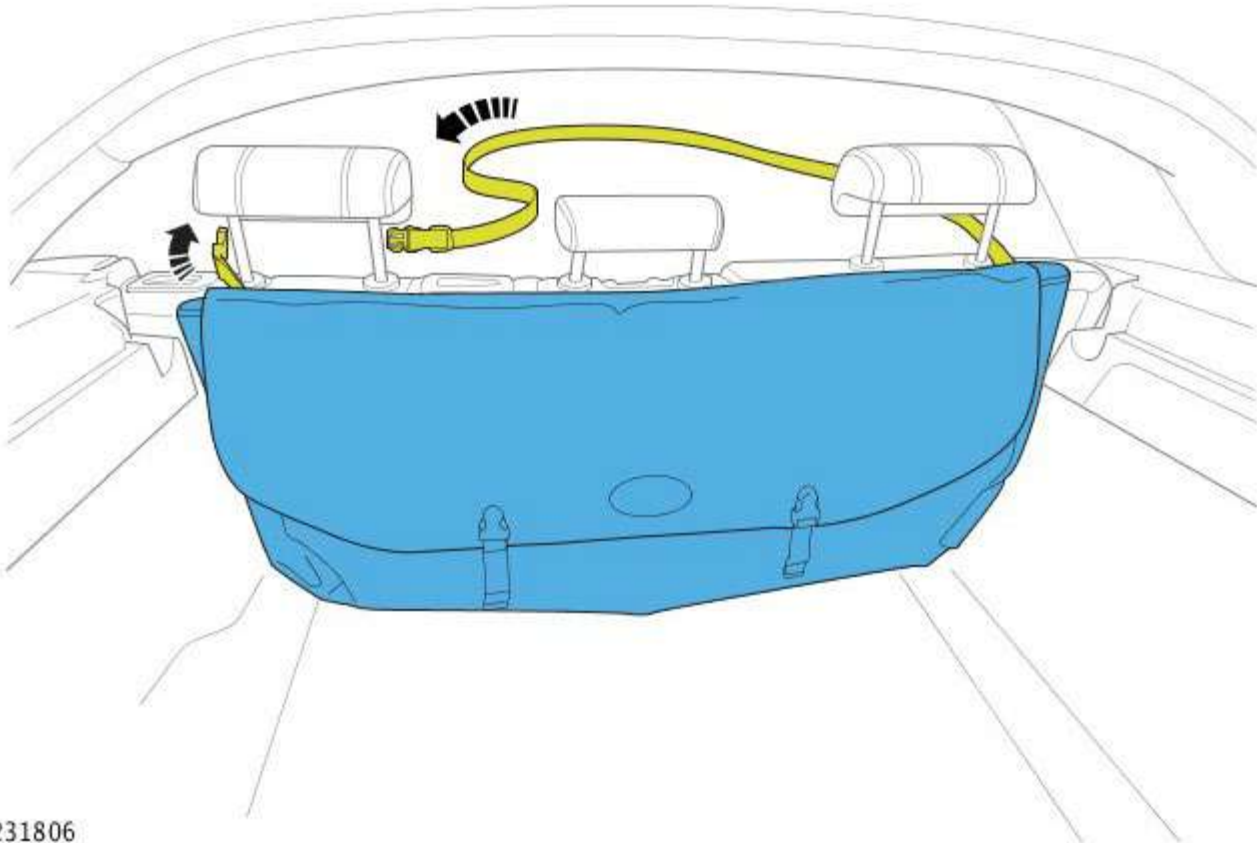
P20E8-85	Reductant Pressure Too Low - Signal above allowable range	<ul style="list-style-type: none"> • Purpose of the DTC To monitor for diesel exhaust fluid line under pressure error • Electrical Cause No • Mechanical Cause Yes • Control Module Signal Name Not applicable • Monitor Description If modeled pressure falls below 4.5 bar the system is purged and pressure is made again. If this occurs during a drive cycle the error is set • Prioritized List of Possible Causes The powertrain control module has determined failures where some circuit quantity, reported through serial data, is above a specified range DEF injector dosing too high. Diesel Exhaust Fluid injection pump delivers too much DEF Diesel exhaust fluid line leakage Diesel exhaust fluid line air bubbles Diesel exhaust fluid tank module circuit short circuit to ground, short circuit to power, open circuit, high resistance Connector is disconnected, connector pin is backed out, connector pin corrosion 	<p>NOTE:</p> <p>A fault clear is NOT sufficient to clear the vehicle 'inducement' system warnings. The 'inducement' warnings automatically clear ONLY upon confirmation of the repair by the vehicle OBD system. The monitoring MUST be executed. The pressure build-up normally occurs when the selective catalyst reduction catalytic converter temperature exceeds 150 °C</p> <ul style="list-style-type: none"> • Prioritized Checks to Perform Check diesel exhaust fluid line for leakage Using the Jaguar Land Rover approved diagnostic equipment, complete diagnostic routine 0x4092 Refer to the electrical circuit diagrams and check the diesel exhaust fluid tank module circuit for short circuit to ground, short circuit to power, open circuit, high resistance Inspect connectors for signs of water ingress, and pins for damage and/or corrosion Contact retailer technical support • Vehicle Conditions to Enable DTC Logging Strategy
----------	---	--	---



E231805

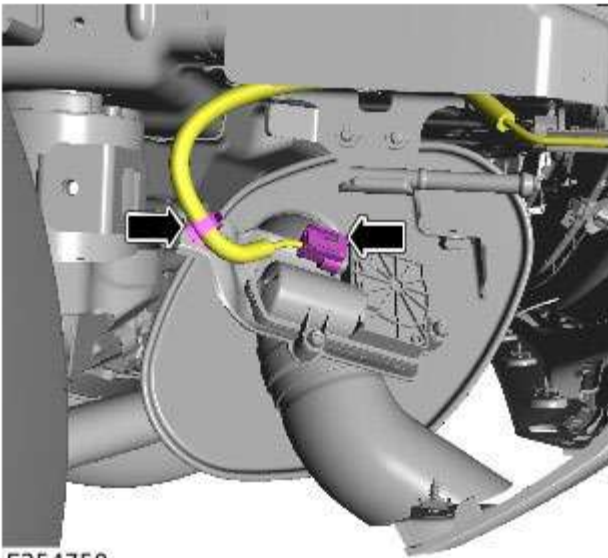
Position the loadspace seat back stowage bag against the second row seat back carpet.

1. Apply pressure at the points where the velcro pads are positioned on the bag. Make sure good contact is made between the velcro pads and the second row seat back carpet.



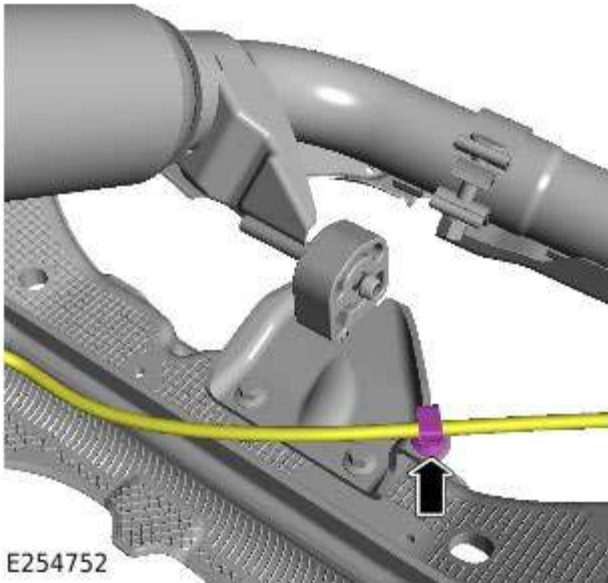
E231806

6. Feed the loadspace seat back stowage bag securing strap around the second row head restraint stems.



E254750

- 3.
- Disconnect the active exhaust module electrical connector.
 - Release the wiring harness clip.
 - Reposition the wiring harness away from the exhaust.



E254752

- 4.
- Release the wiring harness clip.
 - Reposition the wiring harness away from the bracket.



E245239



braking performance and brake disc replacement is not required.

2.



E245550



NOTE:

If the brake disc(s) is similar to illustration E245550, This is not a manufacturing defect and is not covered under warranty.

Light corrosion - If the disc(s) condition is as illustrated and within the service wear limit REFER to: [Specifications](#) (206-00 Brake System - General Information, Specifications). This is not detrimental to braking performance and brake disc replacement is not required.

3.

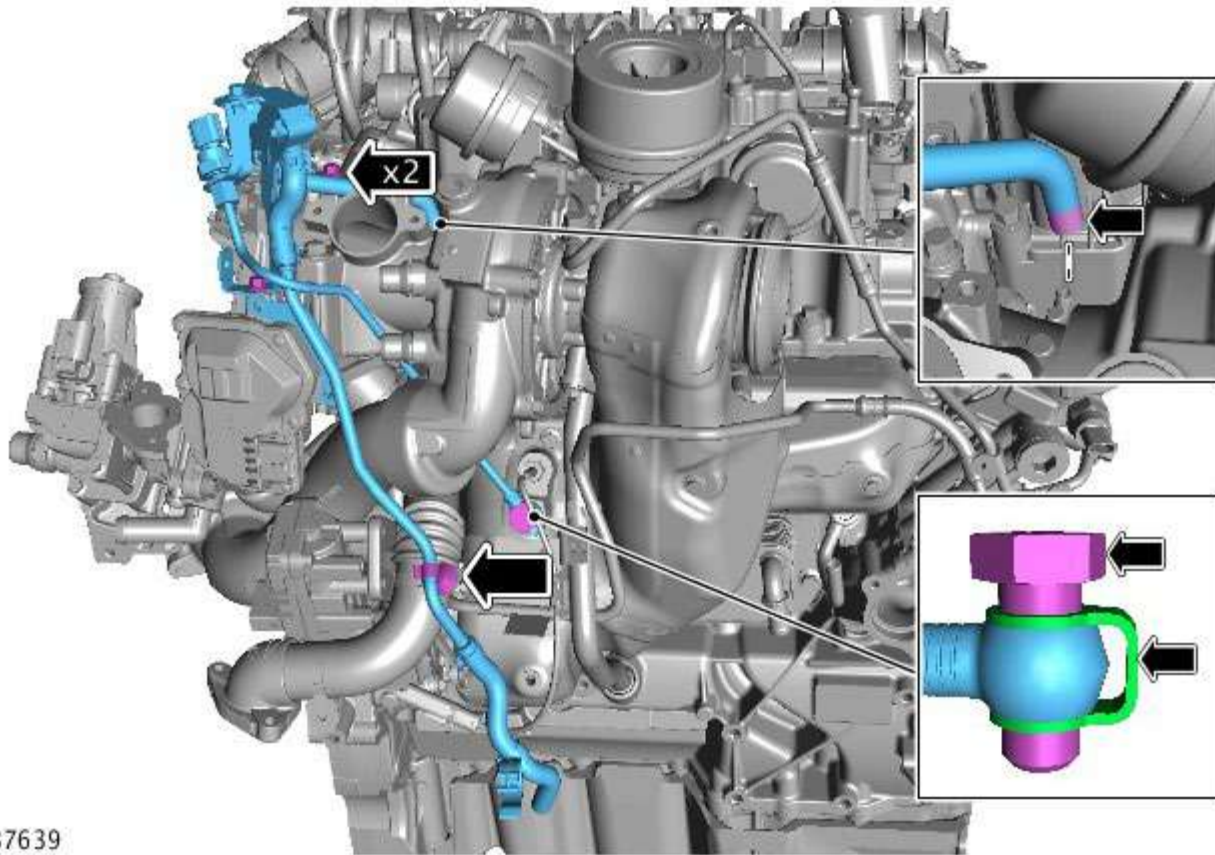
NOTE:

If the brake disc(s) is similar to illustration E245238, This is not a manufacturing defect and is not covered under warranty.

Moderate corrosion - If the disc(s) condition is as illustrated and within the

			<p>values are seen, clear the learned values and run the learning procedure again</p> <ul style="list-style-type: none"> • Check turbocharger wastegate rod/lever for any mechanical damage, bend or heavy corrosion close to pin For additional information, refer to: Turbocharger (303-04D Fuel Charging and Controls - Turbocharger - INGENIUM I4 2.0L Petrol, Diagnosis and Testing). • Using the Jaguar Land Rover approved diagnostic equipment, clear the Diagnostic Trouble Code(s) and retest
P2B83-00	Charge Air Cooler Coolant Pump "A" Overspeed/Air In System - No sub type information	<ul style="list-style-type: none"> • Electrical Cause No • Mechanical Cause Yes • Prioritized List of Possible Causes Coolant level low Air trapped in cooling system 	<ul style="list-style-type: none"> • Vehicle Conditions to Enable DTC Logging Strategy Engine running • Prioritized Checks to Perform Refer to the relevant section of the workshop manual and check that the coolant level is correct, air is not trapped in the cooling system, charge air cooler coolant pump
P2B84-00	Charge Air Cooler Coolant Pump "A" Underspeed - No sub type information	<ul style="list-style-type: none"> • Electrical Cause Yes • Mechanical Cause Yes • Control Module Cavity Circuit reference - O_T_CCP - • Prioritized List of Possible Causes Coolant system contamination/debris Charge air cooler inlet hose blocked Charge air cooler outlet hose blocked Charge air cooler coolant pump failure 	<ul style="list-style-type: none"> • Vehicle Conditions to Enable DTC Logging Strategy Engine running • Prioritized Checks to Perform Refer to the relevant section of the workshop manual and check the coolant system for contamination/debris Refer to the relevant section of the workshop manual and check the charge air cooler inlet hose for blockages Refer to the relevant section of the workshop manual and check the charge air cooler outlet hose for blockages Check and install a new charge air cooler coolant pump only when diagnosed as failed Using the Jaguar Land Rover approved diagnostic equipment, clear all stored Diagnostic Trouble Code(s) and retest

			<p>Install a new cylinder block temperature sensor Using the Jaguar Land Rover approved diagnostic equipment, run application - ECU Diagnostics / Powertrain Control Module (PCM) / Clear DTCs. Retest</p>
P01E5-16	<p>Engine Coolant Temperature Sensor 3 Circuit Low - Circuit voltage below threshold</p>	<ul style="list-style-type: none"> • Electrical Cause Yes • Mechanical Cause Yes • Control Module Cavity Circuit reference - I_A_CBT - Circuit reference - G_R_CBT - • Prioritized List of Possible Causes Cylinder block temperature sensor circuit short circuit to ground, short circuit to power, open circuit, high resistance Cylinder block temperature sensor failure 	<ul style="list-style-type: none"> • Vehicle Conditions to Enable DTC Setting Strategy Ignition on or engine running • Prioritized Checks to Perform Refer to the electrical circuit diagrams and check the cylinder block temperature sensor circuit for short circuit to ground, short circuit to power, open circuit, high resistance. Check the electrical connectors for evidence of water ingress. Check the terminals for damage and corrosion. Repair the wiring harness as necessary Install a new cylinder block temperature sensor Using the Jaguar Land Rover approved diagnostic equipment, run application - ECU Diagnostics / Powertrain Control Module (PCM) / Clear DTCs. Retest
P01E6-17	<p>Engine Coolant Temperature Sensor 3 Circuit High - Circuit voltage above threshold</p>	<ul style="list-style-type: none"> • Electrical Cause Yes • Mechanical Cause Yes • Control Module Cavity Circuit reference - I_A_CBT - Circuit reference - G_R_CBT - • Prioritized List of Possible Causes Cylinder block temperature sensor circuit short circuit to 	<ul style="list-style-type: none"> • Vehicle Conditions to Enable DTC Setting Strategy Ignition on or engine running • Prioritized Checks to Perform Refer to the electrical circuit diagrams and check the cylinder block temperature sensor circuit for short circuit to ground, short circuit to power, open circuit, high



E237639

- Install the differential pressure sensor assembly.
- Install a new seal.
Renew Part: [Exhaust back pressure sensor sealing washer\(s\)](#) Quantity: 1.
- Install and tighten the banjo bolt.
Torque: 18Nm
- Install and tighten the 2 bolts.
Torque: 12Nm
- Install the clip.
- Connect the pipe.

59. NOTE:

Single turbocharger.

Areas in which work on clutches, brakes or where welding or machining are carried out are not suitable in view of the risk of contamination to the fuel system. Failure to follow this instruction may result in damage to the vehicle.

- Make sure that any protective clothing worn is clean and made from lint-free non-flocking material. Failure to follow this instruction may result in damage to the vehicle.
- Make sure that any protective gloves worn are new and are of the non-powdered latex type. Failure to follow this instruction may result in damage to the vehicle.
- Make sure that clean, non-plated tools are used. Clean tools using a new brush that will not lose its bristles and fresh cleaning fluid prior to starting work on the vehicle. Failure to follow this instruction may result in damage to the vehicle.
- Use a steel-topped work bench and cover it with clean, lint-free, non-flocking material. Failure to follow this instruction may result in damage to the vehicle.
- Diagnosis by substitution from a donor vehicle is NOT acceptable. Substitution of control modules does not guarantee confirmation of a fault, and may also cause additional faults in the vehicle being tested and/or the donor vehicle.

NOTES:

- If a control module or a component is suspect and the vehicle remains under manufacturer warranty, refer to the Warranty Policy and Procedures manual, or determine if any prior approval programme is in operation, prior to the installation of a new module/component.
- When performing voltage or resistance tests, always use a digital multimeter accurate to three decimal places, and with an up-to-date calibration certificate. When testing resistance always take the resistance of the digital multimeter leads into account.
- Check and rectify basic faults before beginning diagnostic routines involving pinpoint tests.

1. Verify the customer concern

1. Visually inspect for obvious signs of damage and system integrity

Visual Inspection

Mechanical	Electrical
<ul style="list-style-type: none"> • Fuel level • Fuel condition • Fuel pipes • Fuel tank and filler pipe • Fuel leaks • Fuel filler cap • Fuel filter • High pressure fuel pump • High pressure fuel pipes • Fuel rail • Fuel injectors • Exhaust gas recirculation system 	<ul style="list-style-type: none"> • Fuses • Wiring harnesses and connectors • Powertrain control module • Fuel rail pressure sensor • Fuel temperature sensor • Fuel volume control valve • Fuel pressure control valve • Fuel injectors

Procedures).

3. Drain the fuel tank.

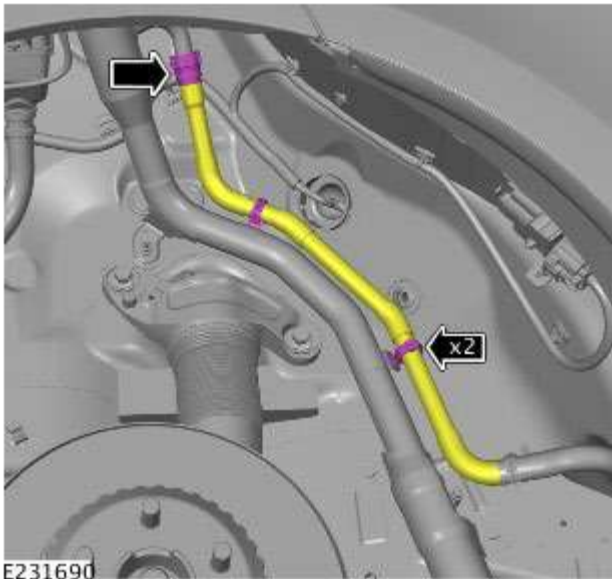
Refer to: [Fuel Tank Draining](#) (310-00 Fuel System - General Information, General Procedures).

4. Raise and support the vehicle on a suitable 2 post lift.

Refer to: [Jacking and Lifting](#) (100-02 Jacking and Lifting, Description and Operation).

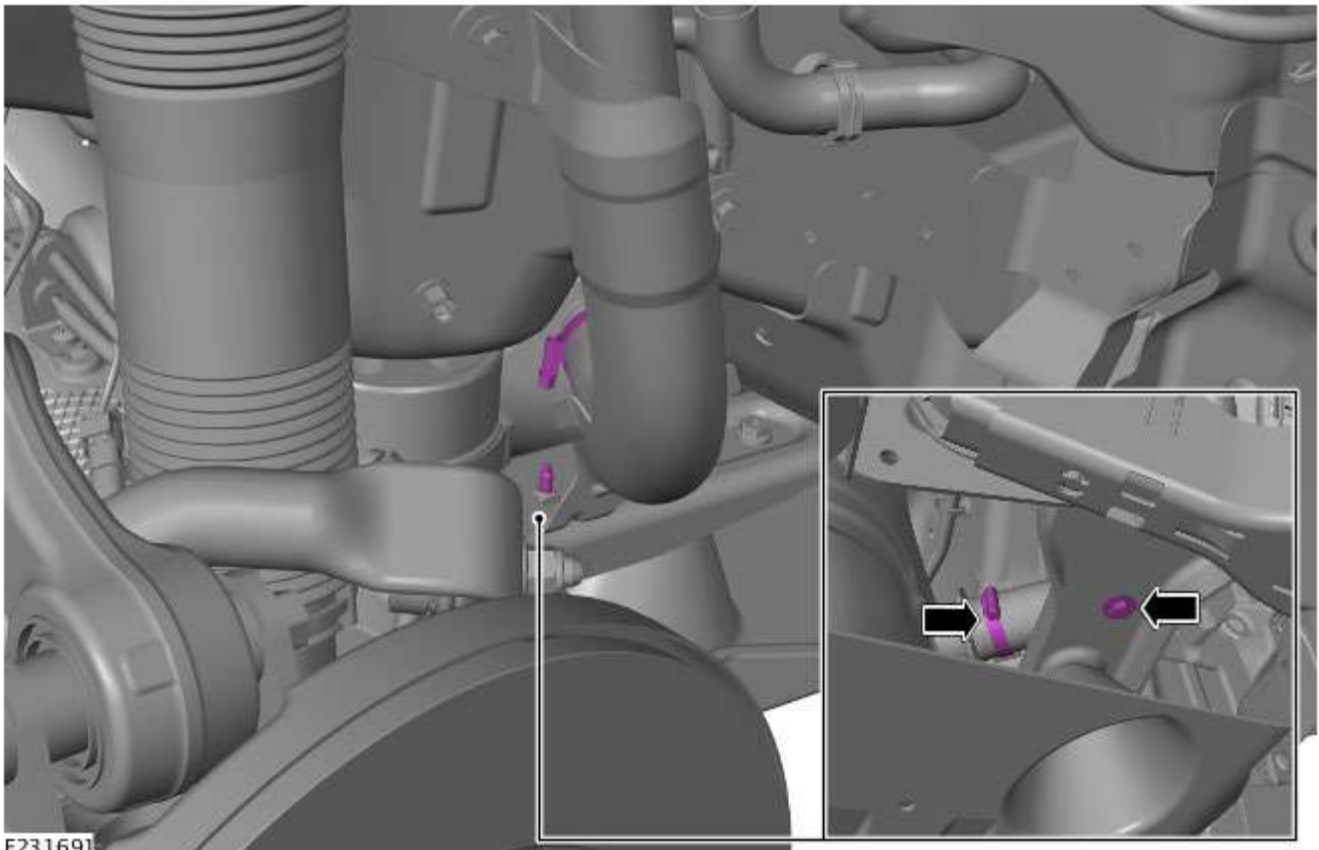
5. Remove the rear right wheel arch liner.

Refer to: [Rear Wheel Arch Liner](#) (501-08 Exterior Trim and Ornamentation, Removal and Installation).



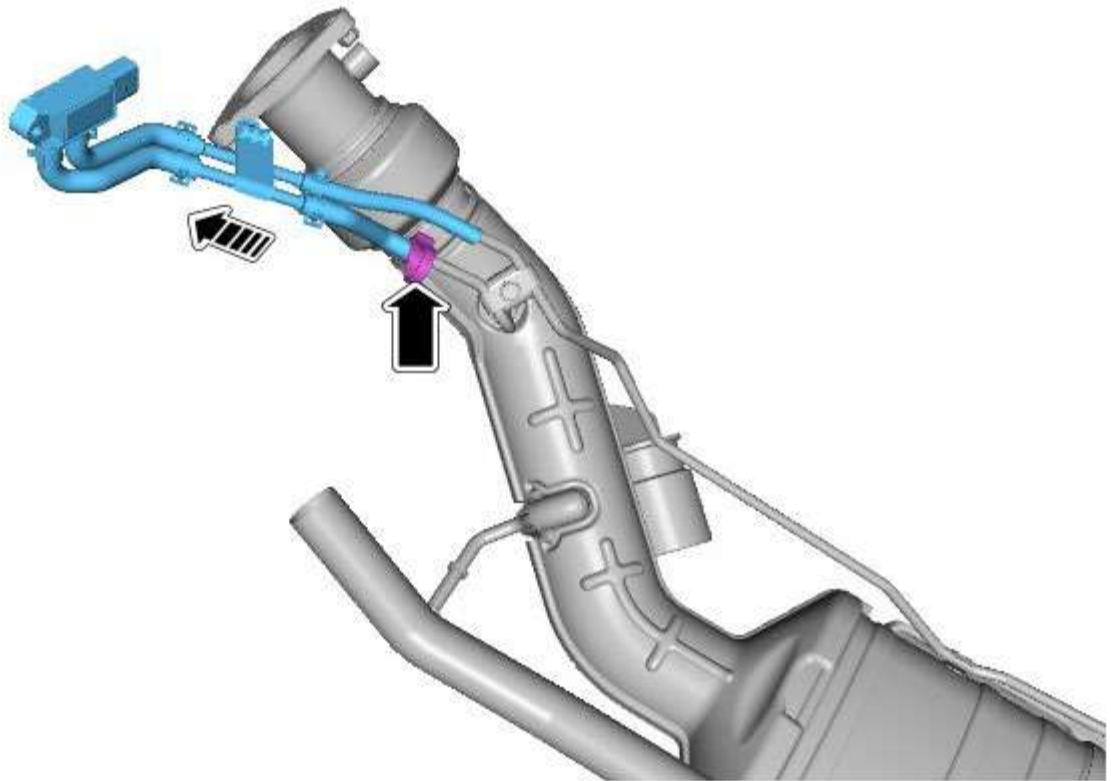
- 6.

- Release the 2 clips.
- Disconnect the breather pipe.



- 7.

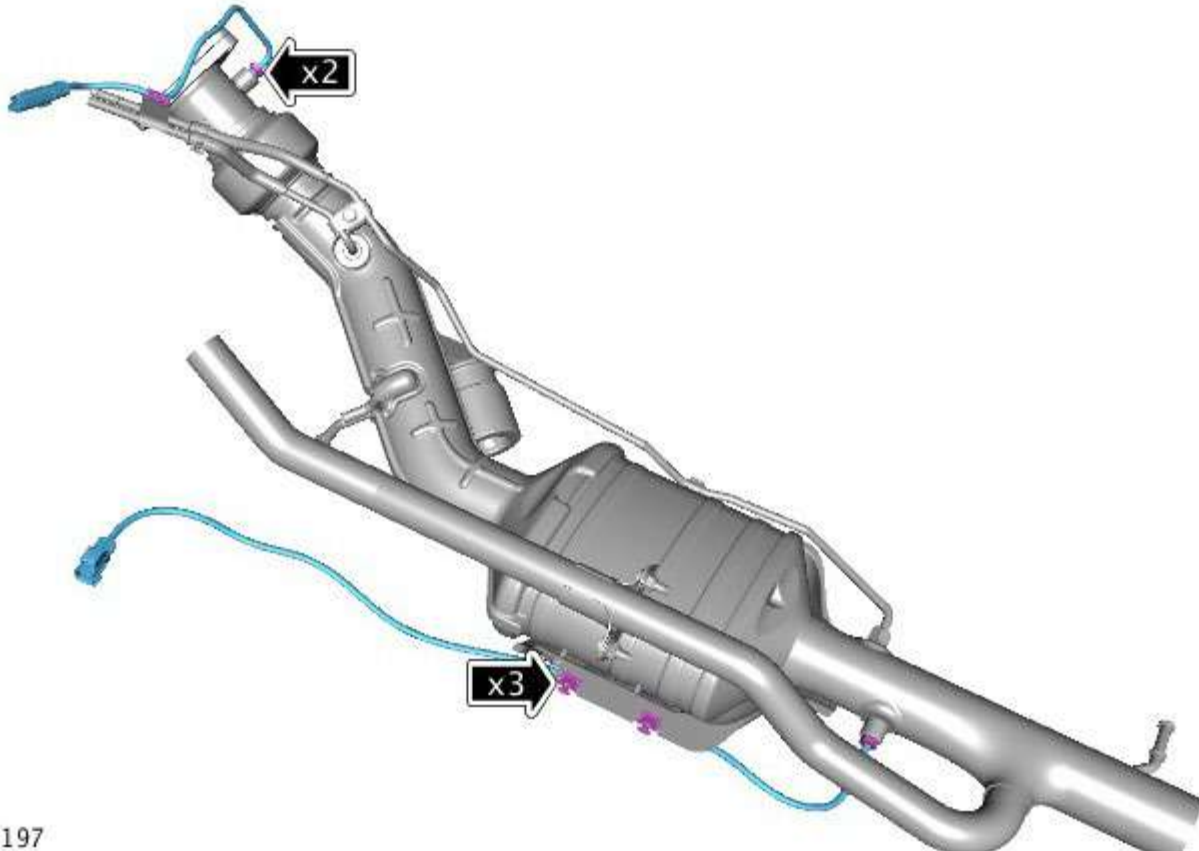
- Release the clamp.
- Remove the bolt.



E246535

12.

- Remove the clip.
- Release the 2 DPF differential pressure sensor hoses.
- Remove the DPF differential pressure sensor.



E231197

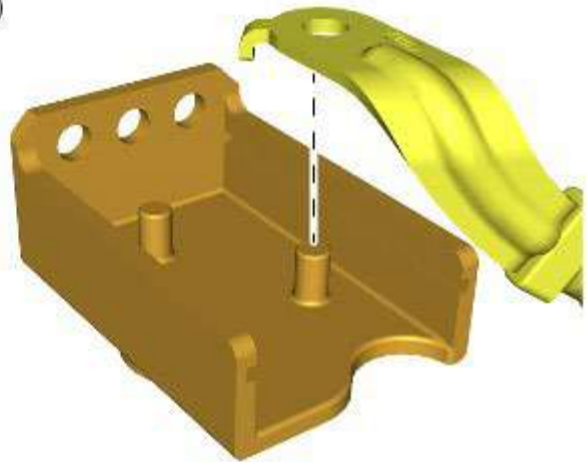
13.

- Release the 2 wiring harnesses from the 3 clips.

(A)



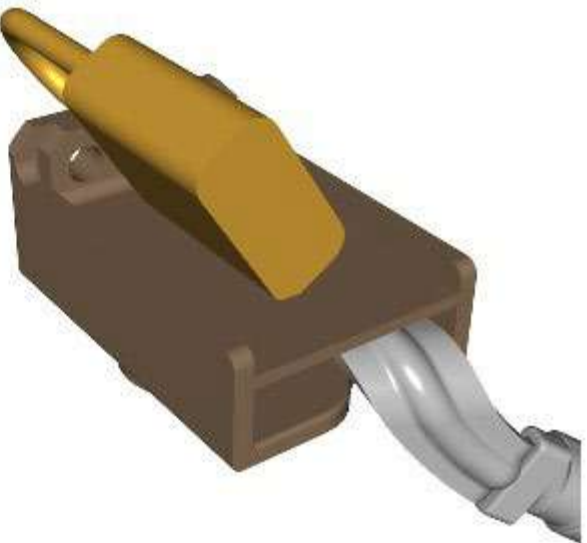
(B)



(C)



(D)



E261809

- Remove the lock-off tool lid.
Special Tool(s): [JLR-415-132](#)
- Secure the auxiliary battery negative cable in the lock-off tool.
- Install the lock off tool lid.
- Install the padlock.
General Equipment: [Padlock](#)