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2020.0 DEFENDER (LE), 418-02

WIRING HARNESSES

ENGINE WIRING HARNESS – INGENIUM I6 3.0L PETROL (G2398293)

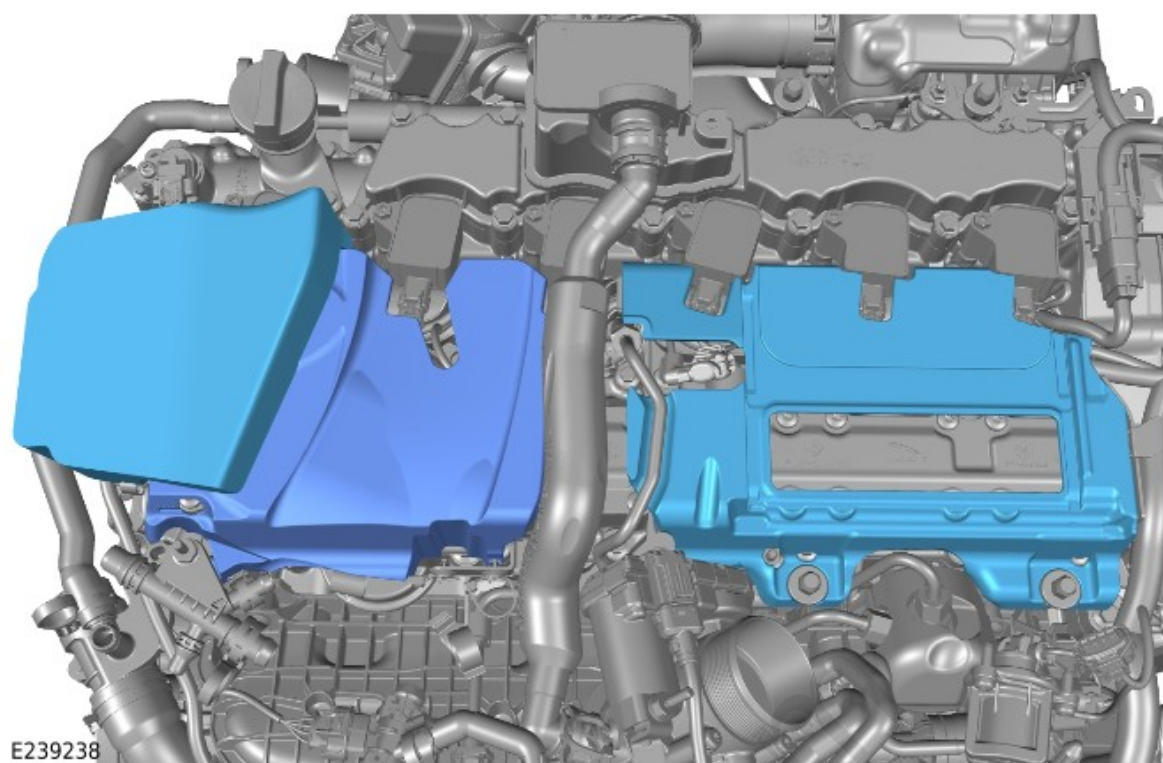
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REMOVAL

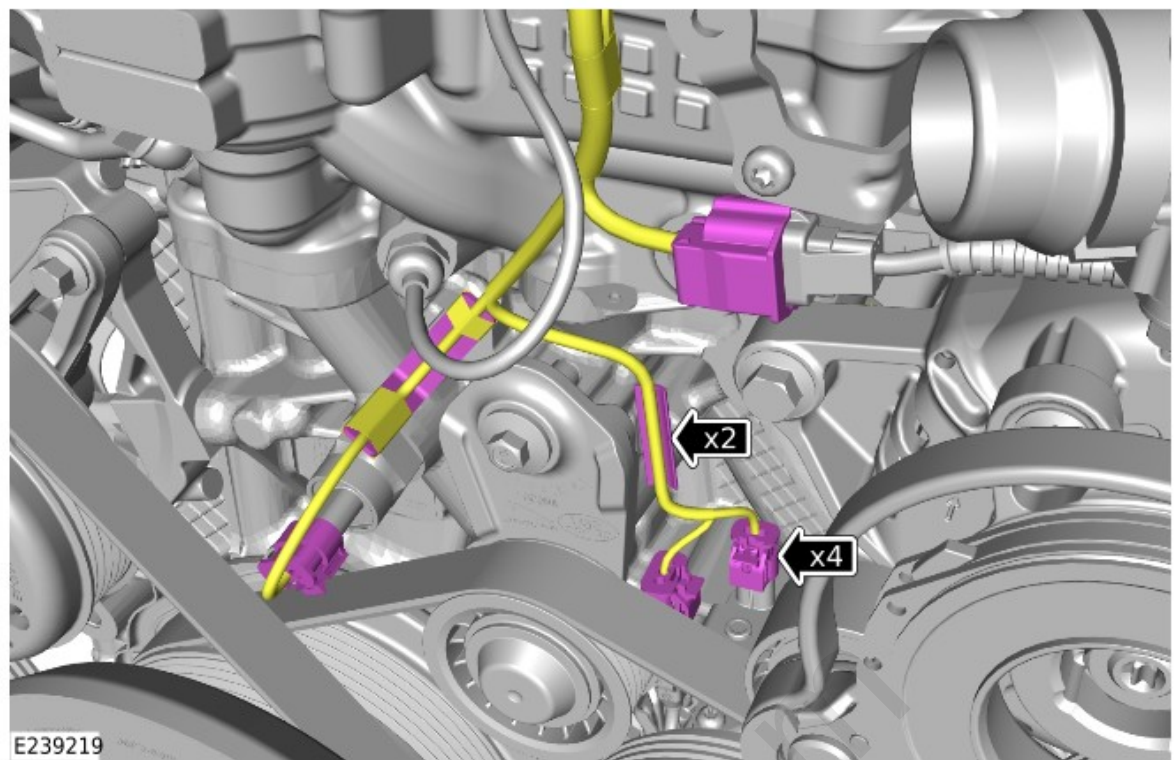
**NOTE:**

- This procedure contains some variation in the illustrations depending on the vehicle specification, but the essential information is always correct.
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1. Disconnect the startup battery ground cable.
Refer to: [Startup Battery Disconnect and Connect](#) (414-00 Battery and Charging System - General Information, General Procedures).
2. Raise and support the vehicle on a suitable 2 post lift.
Refer to: [Jacking and Lifting](#) (100-02 Jacking and Lifting, Description and Operation).
3. Remove the air filter outlet pipe.
Refer to: [Air Filter Outlet Pipe](#) (303-12C Intake Air Distribution and Filtering - INGENIUM I6 3.0L Petrol, Removal and Installation).
4. Remove the charge air cooler.
Refer to: [Charge Air Cooler](#) (303-12C Intake Air Distribution and Filtering - INGENIUM I6 3.0L Petrol, Removal and Installation).
5. Remove the 2 front wheel arch liners.
Refer to: [Front Wheel Arch Liner](#) (501-02 Front End Body Panels, Removal and Installation).
6. Remove the engine undershield.
Refer to: [Engine Undershield](#) (501-02 Front End Body Panels, Removal and Installation).

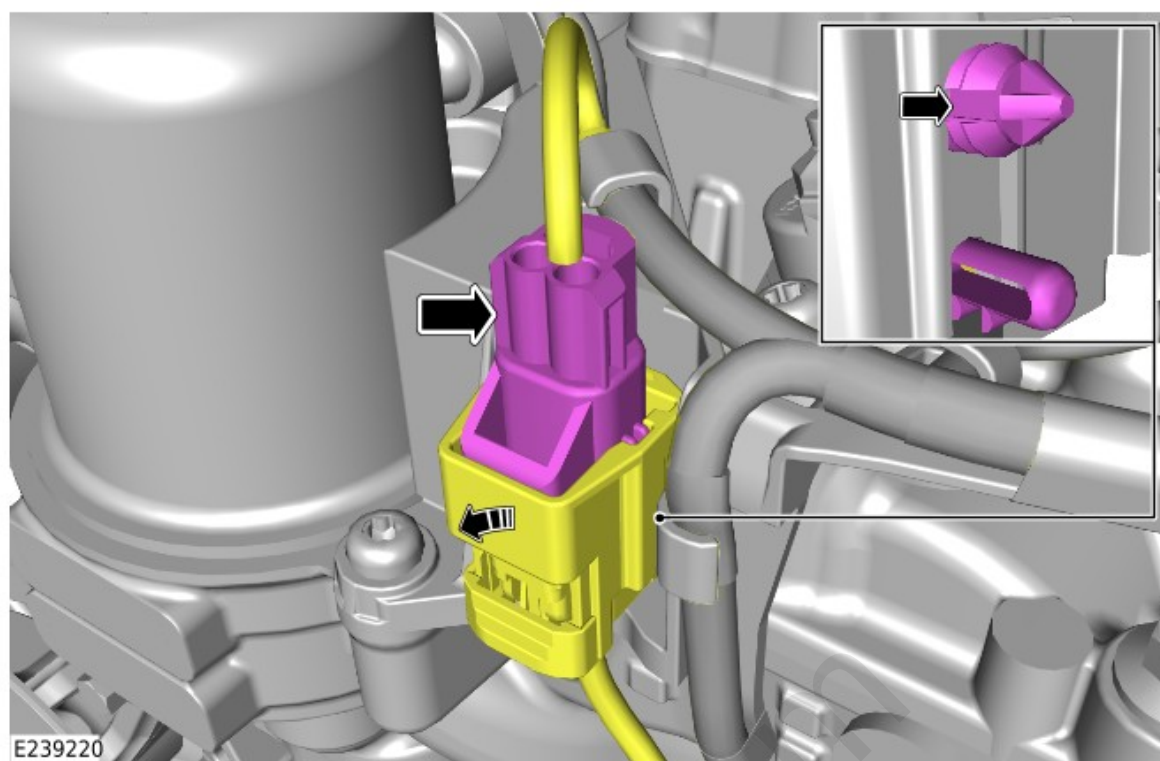


Remove the 3 Noise, Vibration and Harshness (NVH) components.



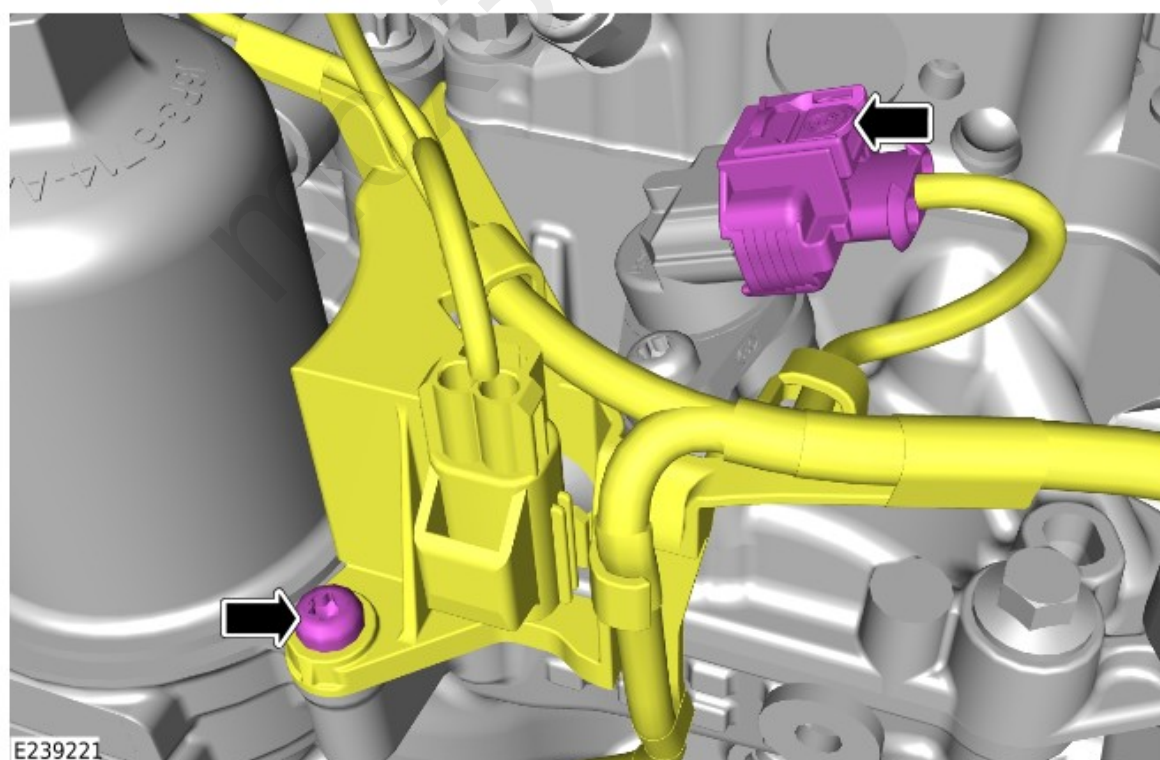
- Disconnect the 2 electrical connectors from the coolant pump.
- Disconnect the electrical connector from the oil pressure and temperature sensor.
- Disconnect the electrical connector from the Belt Integrated Starter Generator (BISG) wiring harness.
- Release the 2 clips.

9.

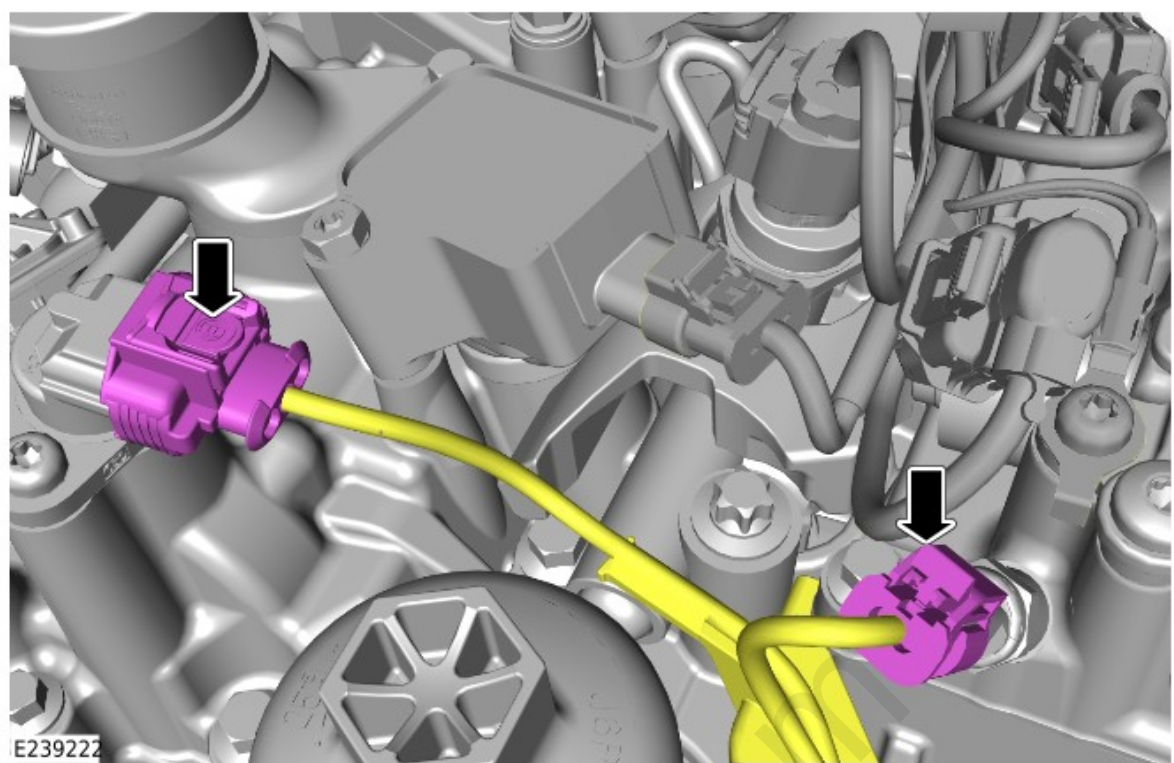


- Disconnect the electrical connector from the cylinder head temperature sensor.
- Release the clip.

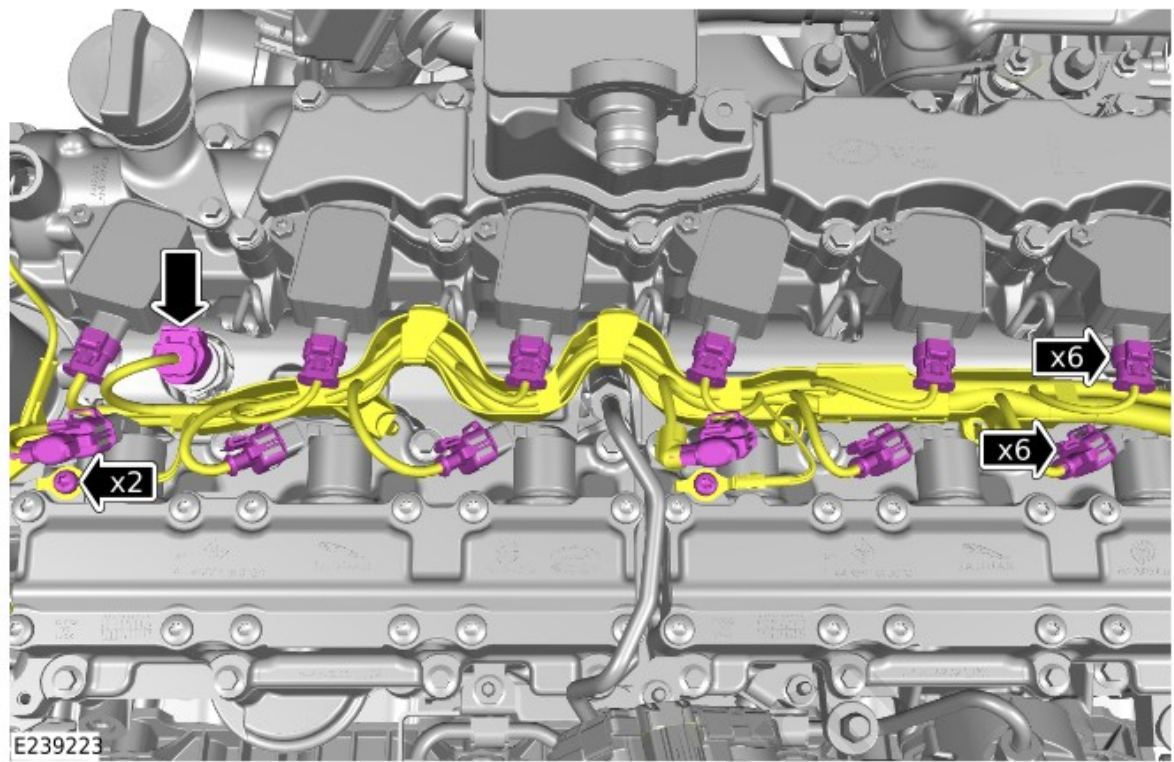
10.



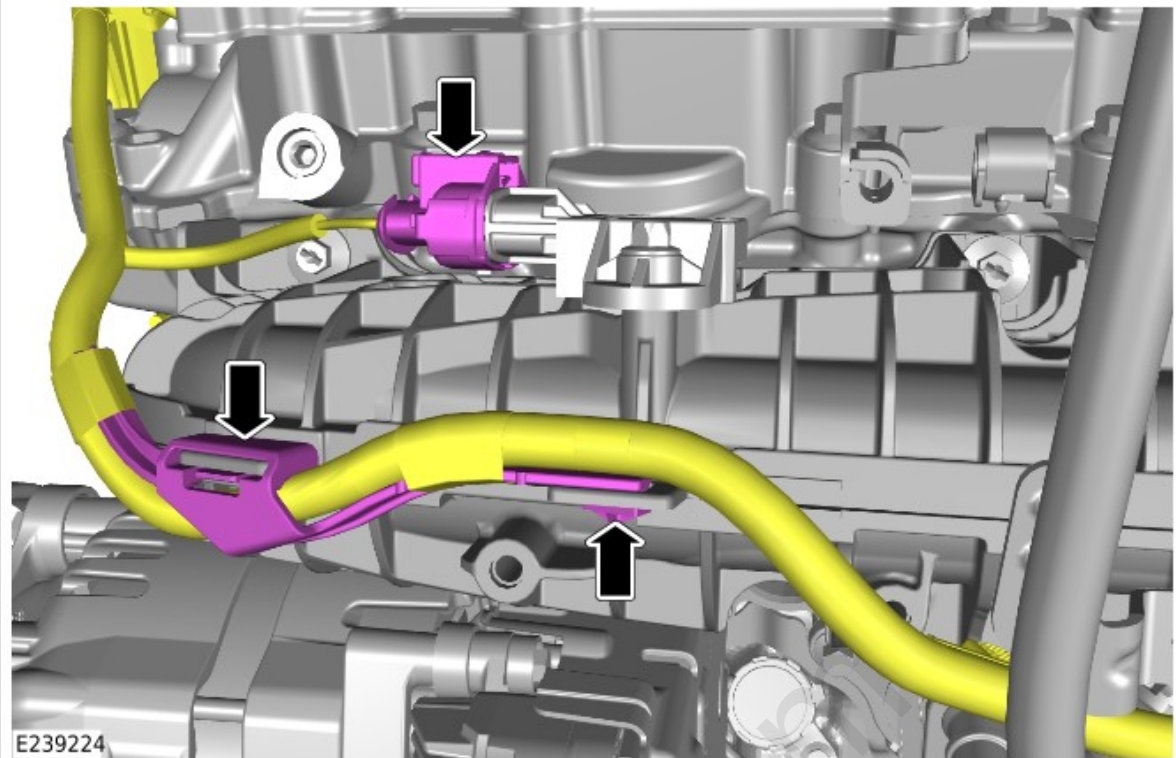
- Remove the bolt.
- Disconnect the electrical connector from the Camshaft Position Sensor (CMP).



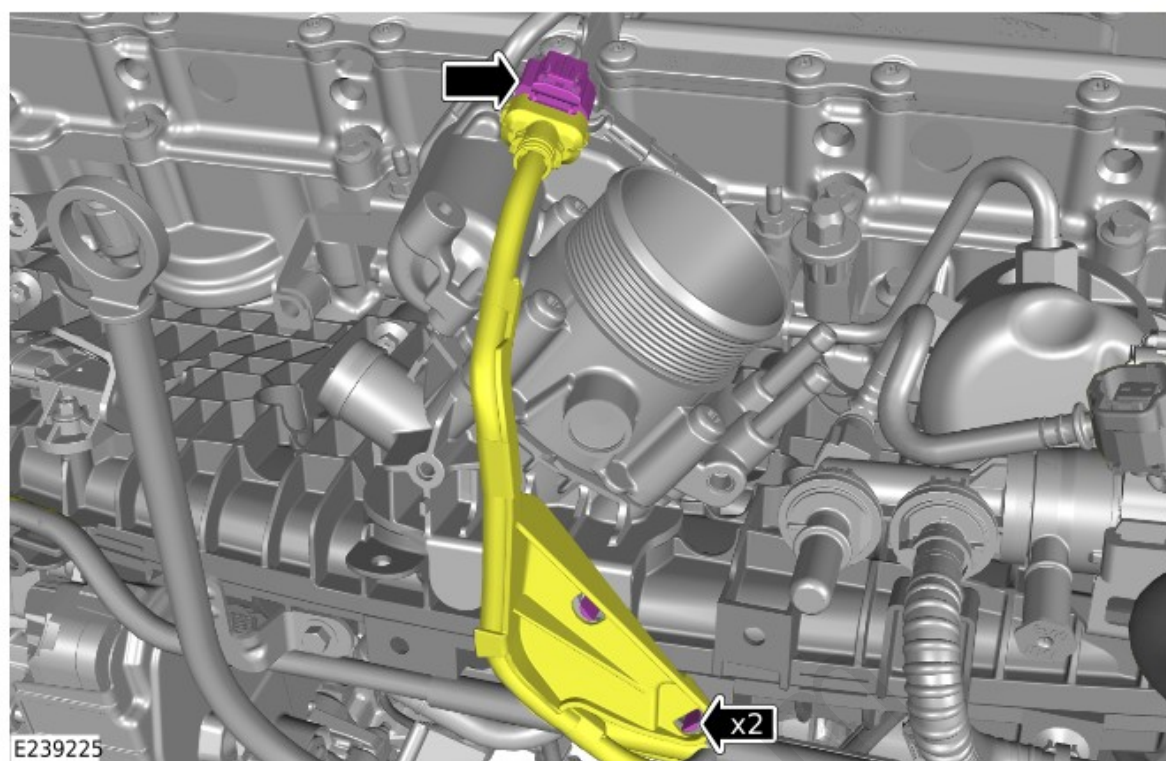
- Disconnect the electrical connector from the Camshaft Position Sensor (CMP).
- Disconnect the electrical connector from the CVVL temperature sensor.



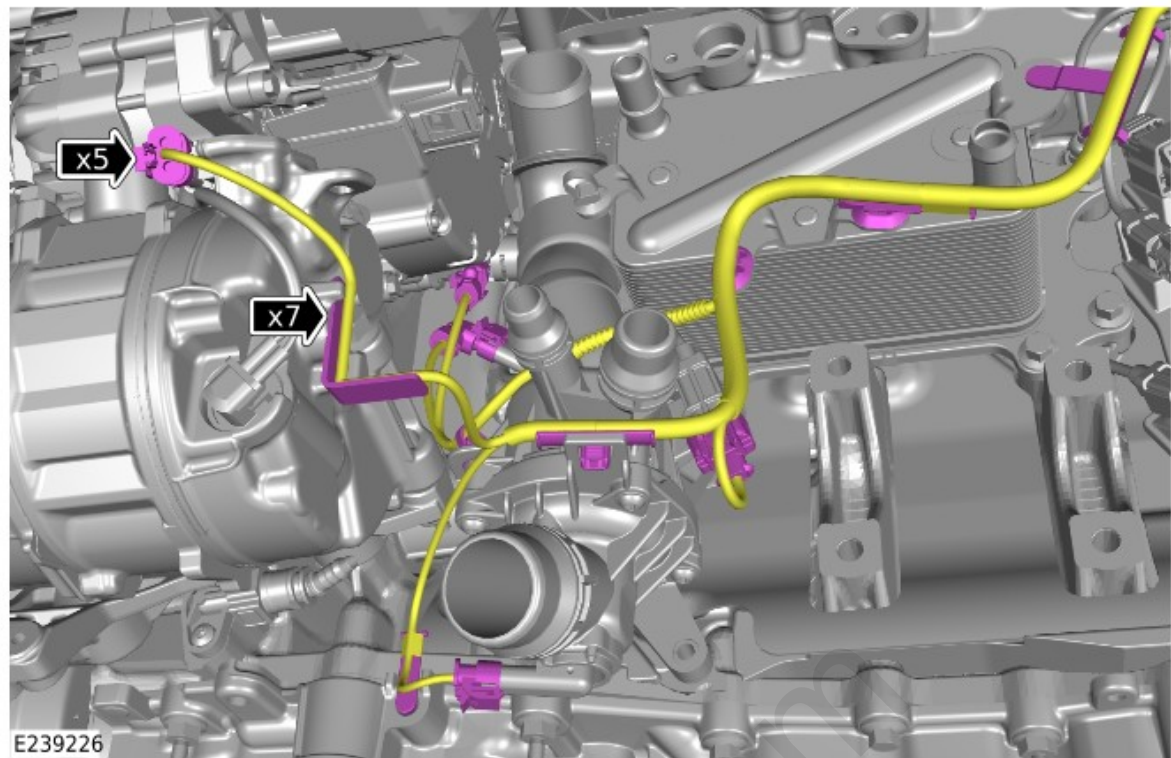
- Remove the 2 bolts.
- Disconnect the 6 electrical connectors from the ignition coils.
- Disconnect the 6 electrical connectors from the Continuous Variable Valve Lift (CVVL) assembly.
- Disconnect the electrical connector from the fuel rail pressure and temperature sensor.



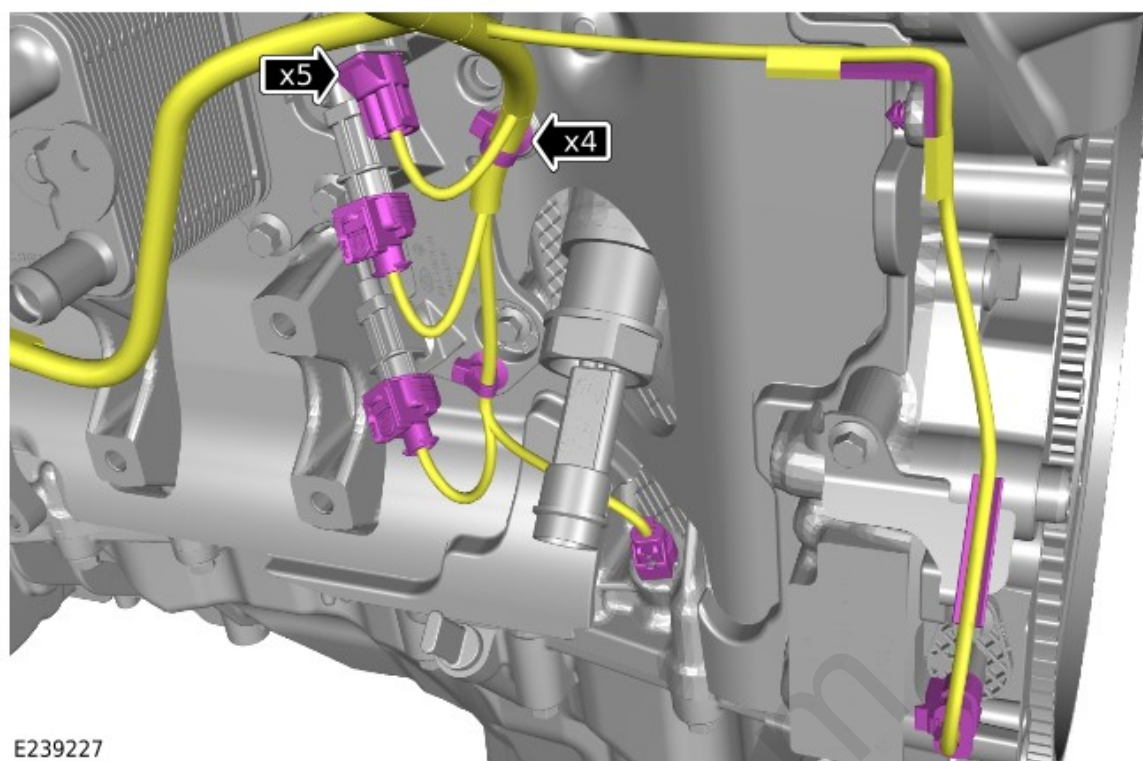
- Disconnect the electrical connector from the Manifold Absolute Pressure and Temperature sensor (MAPT).
- Release the 2 clips.



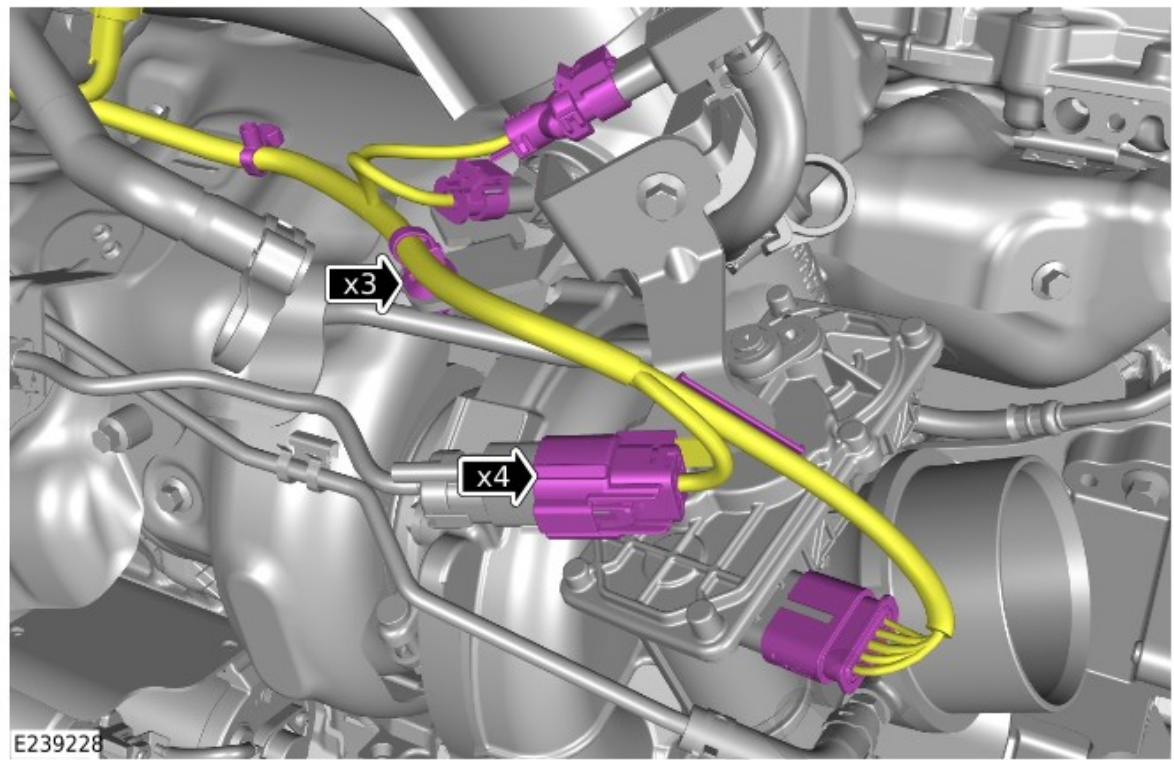
- Disconnect the electrical connector from the throttle body.
- Release the 2 clips.



- Disconnect the electrical connector from the Air Conditioning (AC) compressor.
- Disconnect the electrical connector from the piston cooling jet solenoid.
- Disconnect the electrical connector from the engine coolant bypass valve.
- Disconnect the electrical connector from the thermostat housing.
- Disconnect the electrical connector from the knock sensor.
- Release the 7 clips.

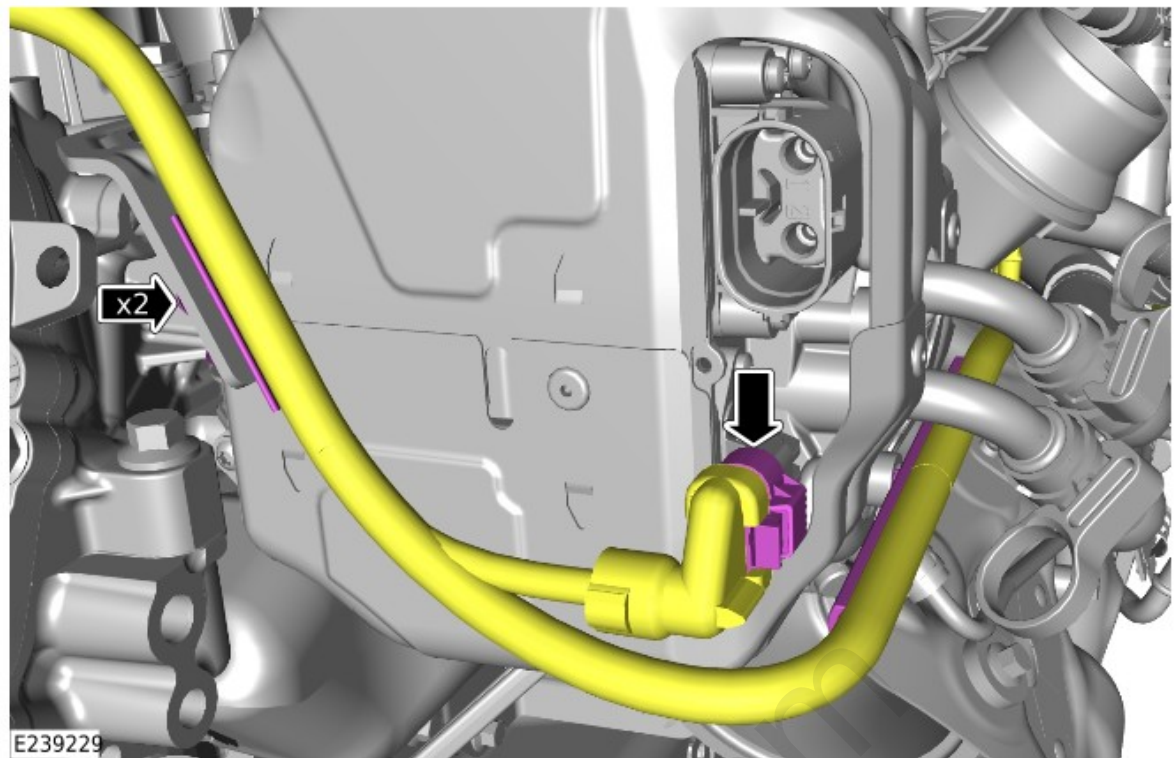


- Disconnect the 2 electrical connectors from the knock sensors.
- Disconnect the electrical connector from the cylinder head temperature sensor.
- Disconnect the electrical connector from the oil pump.
- Disconnect the electrical connector from the Crankshaft Position Sensor (CKP).
- Release the 4 clips.



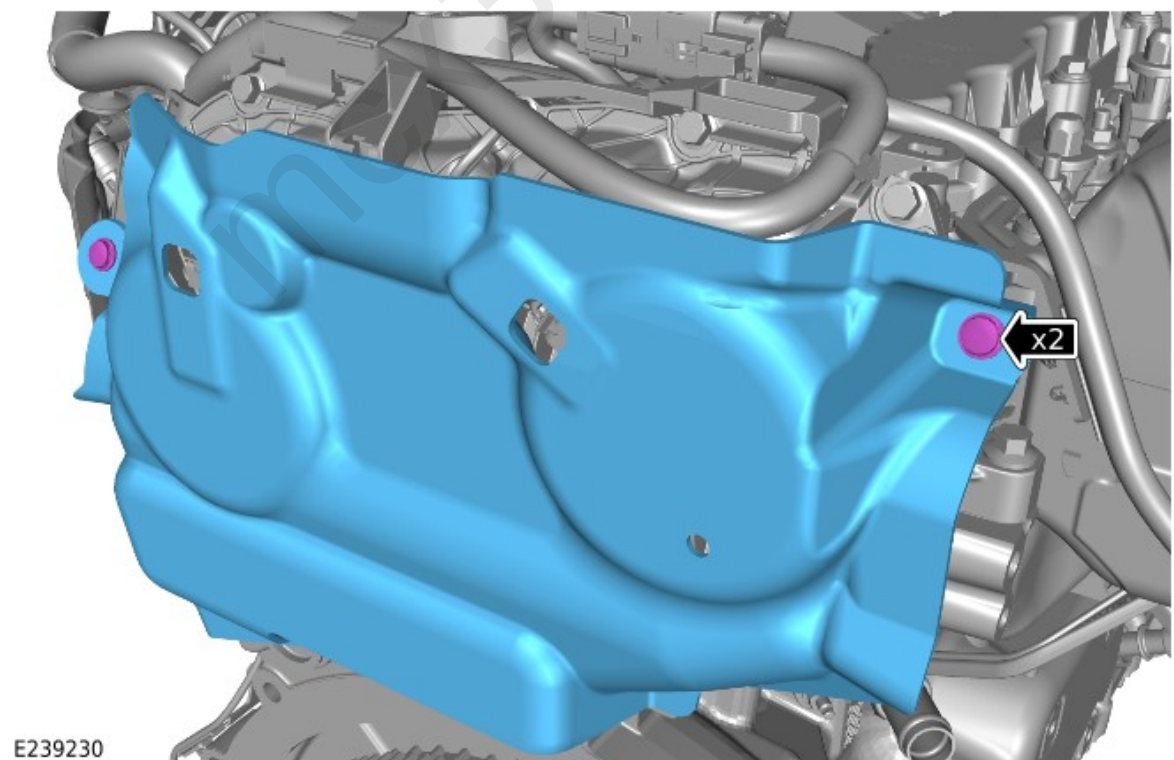
- Disconnect the electrical connector from the turbocharger.
- Disconnect the electrical connector from the Heated Oxygen Sensor (HO2S).
- Disconnect the electrical connector from the charge air temperature sensor.
- Disconnect the electrical connector from the charge air pressure sensor.
- Release the 3 clips.

18.



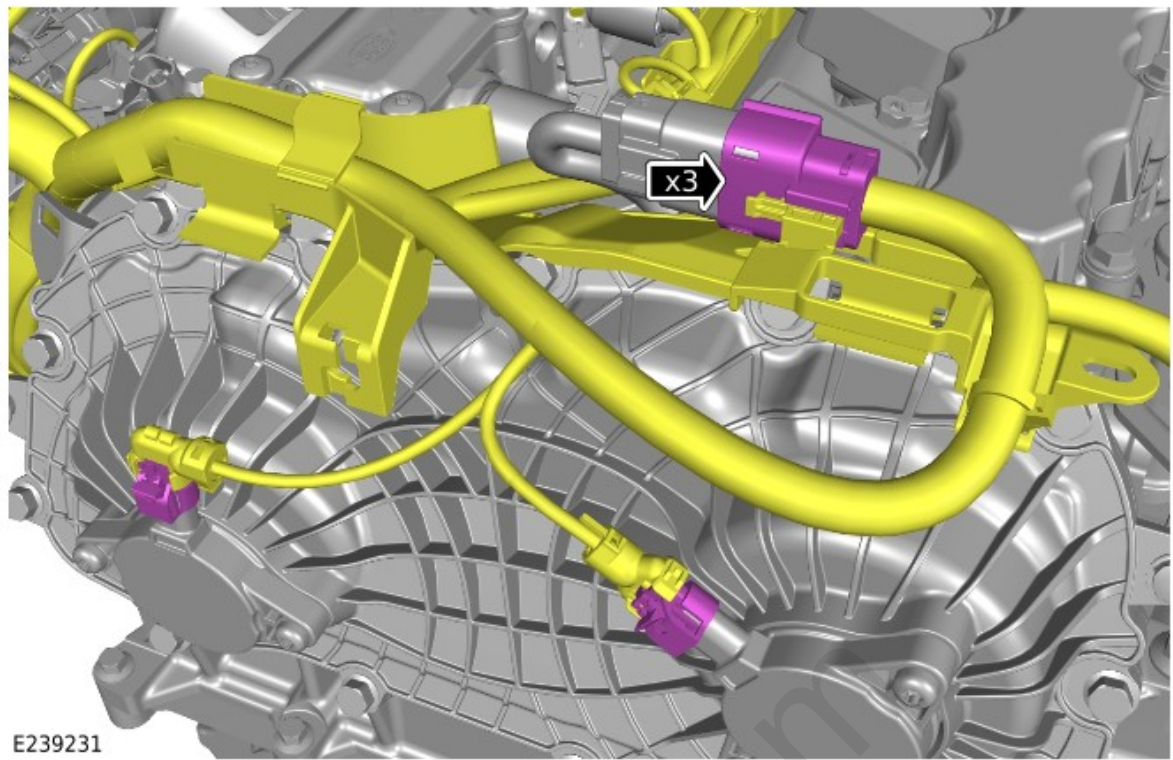
- Disconnect the electrical connector from the electric supercharger.
- Release the 2 clips.

19.



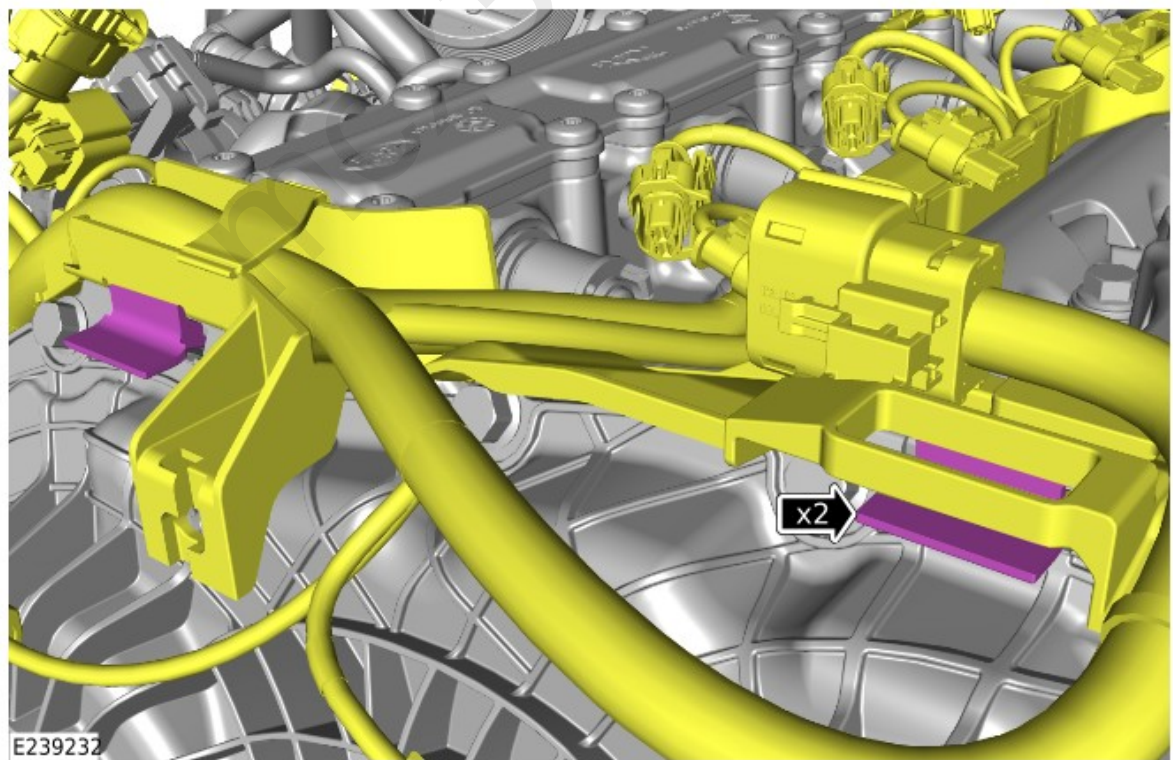
- Release the 2 clips.
- Remove the NVH component.

20.

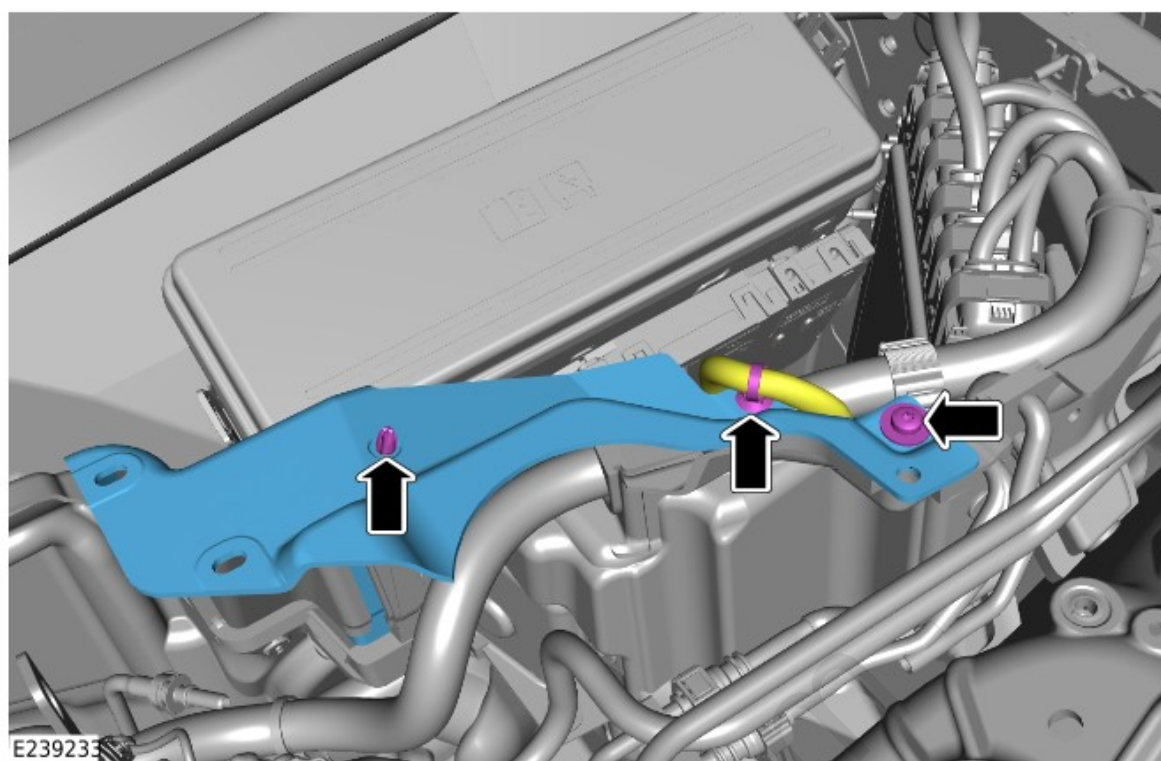


- Disconnect the electrical connector from the fuel injector wiring harness.
- Disconnect the 2 electrical connectors from the Variable Camshaft Timing (VCT) solenoids.

21.

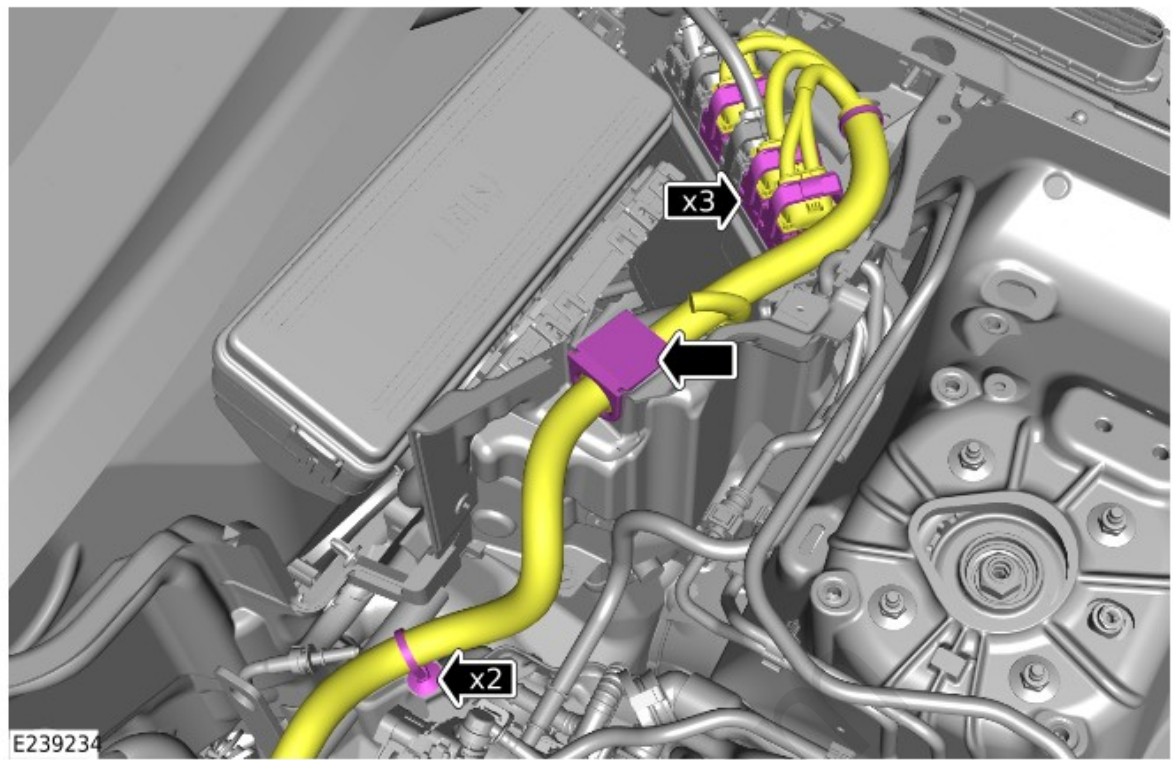


- Release the 2 clips.
- Release and reposition the wiring harness.



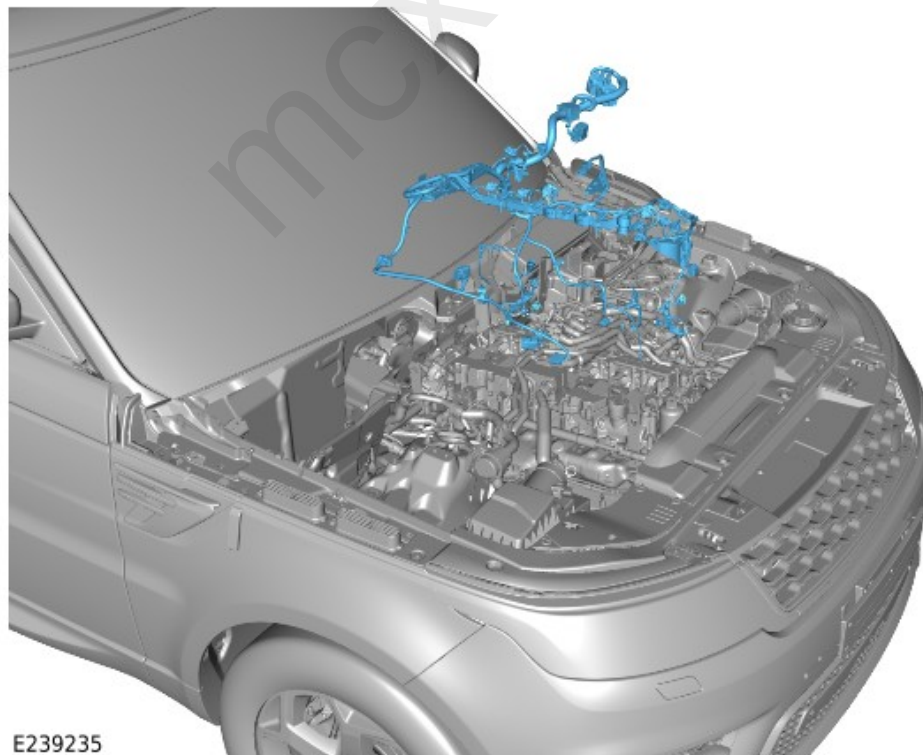
- Release the 2 clips.
- Remove the bolt.
- Remove the bracket.

23.



- Disconnect the 3 electrical connectors from the engine control module (ECM).
- Release the 2 clips.
- Release the grommet.

24.



Remove the engine wiring harness.

INSTALLATION

1. Install the engine wiring harness.

- 2.
- Connect the 3 electrical connectors to the Engine Control Module (ECM).
 - Install the grommet.
 - Install the 2 clips.

- 3.
- Install the bracket.
 - Install the 2 clips.
 - Install and tighten the bolt.

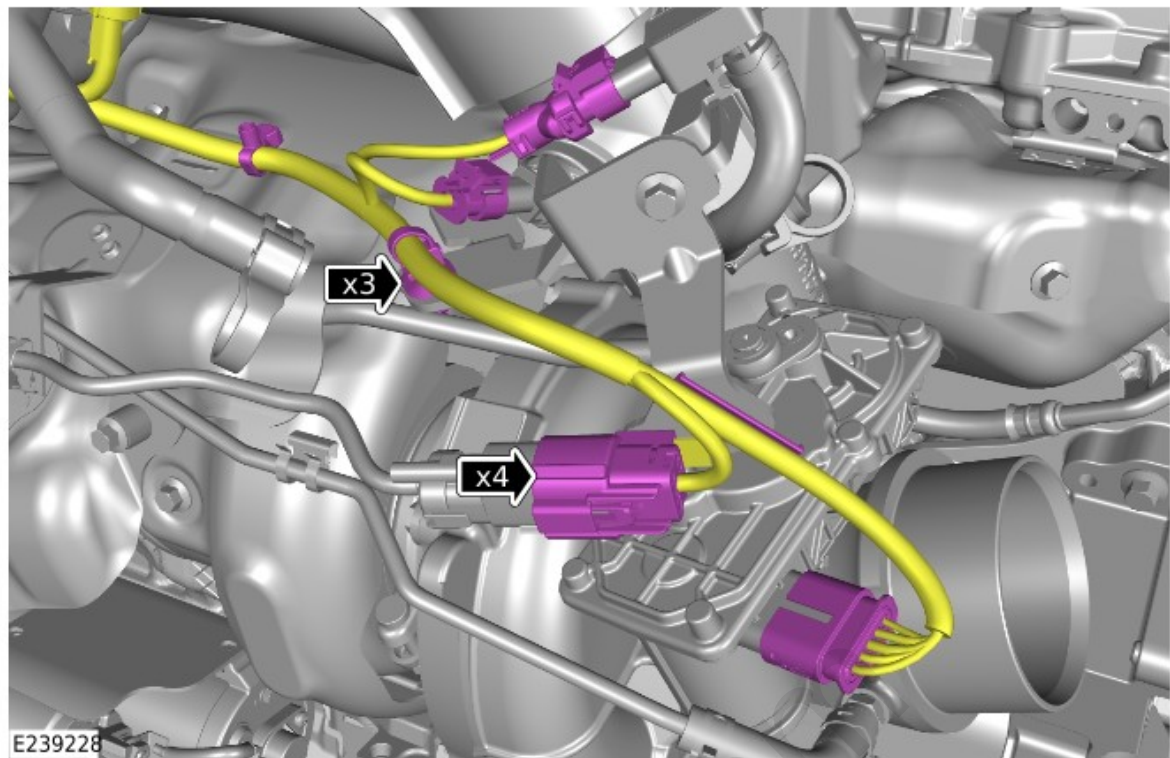
4. Install the 2 clips.

- 5.
- Connect the fuel injector wiring harness electrical connector.
 - Connect the 2 electrical connectors to the Variable Camshaft Timing (VCT) solenoids.

- 6.
- Install the Noise, Vibration and Harshness (NVH) material.
 - Install the 2 clips.

- 7.
- Connect the electrical connector to the electric supercharger.
 - Install the 2 clips.

8.



- Connect the electrical connector to the turbocharger.
- Connect the electrical connector to the Heated Oxygen Sensor (HO2S).
- Connect the electrical connector to the charge air temperature sensor.
- Connect the electrical connector to the charge air pressure sensor.
- Install the 3 clips.

9.

- Connect the 2 electrical connector to the knock sensors.
- Connect the electrical connector to the cylinder head temperature sensor.
- Connect the electrical connector to the oil pump.
- Connect the electrical connector to the Crankshaft Position Sensor (CKP).
- Install the 4 clips.

10.

- Connect the electrical connector to the Air Conditioning (AC) compressor.
- Connect the electrical connector to the thermostat housing.
- Connect the electrical connector to the piston cooling jet solenoid.
- Connect the electrical connector to the knock sensor.
- Connect the electrical connector to the engine coolant bypass valve.
- Install the 7 clips.

11.

- Connect the electrical connector to the throttle body.
- Install the 2 clips.

12.

- Connect the electrical connector to the Manifold Absolute Pressure and Temperature sensor (MAPT).
- Install the 2 clips.

13.

- Connect the 6 electrical connectors to the CVVL assembly.
- Connect the 6 electrical connectors to the ignition coils.
- Connect the electrical connector to the fuel rail pressure and temperature sensor.
- Reposition the engine wiring harness.
- Install and tighten the 2 bolts.

Torque: 10Nm

14.

- Connect the electrical connector to the Camshaft Position Sensor (CMP).
- Connect the electrical connector to the Continuous Variable Valve Lift (CVVL) oil temperature sensor.

15.

- Connect the electrical connector to the CMP sensor.
- Install and tighten the bolt.

Torque: 7Nm

16.

- Connect the electrical connector to the cylinder head temperature sensor.
- Install the clip.

17.

- Connect the 2 electrical connectors to the coolant pump.
- Connect the electrical connector to the oil pressure and temperature sensor.
- Connect the electrical connector to the Belt Integrated Starter Generator (BISG) wiring harness.
- Install the 2 clips.

18.

Install the 3 NVH components.

19.

Install the 2 front wheel arch liners.

Refer to: [Front Wheel Arch Liner](#) (501-02 Front End Body Panels, Removal and Installation).

20.

Install the engine undershield.

Refer to: [Engine Undershield](#) (501-02 Front End Body Panels, Removal and Installation).

21. Install the charge air cooler.

Refer to: [Charge Air Cooler](#) (303-12C Intake Air Distribution and Filtering - INGENIUM I6 3.0L Petrol, Removal and Installation).

22. Install the air filter outlet pipe.

Refer to: [Air Filter Outlet Pipe](#) (303-12C Intake Air Distribution and Filtering - INGENIUM I6 3.0L Petrol, Removal and Installation).

23. Connect the startup battery ground cable.

Refer to: [Startup Battery Disconnect and Connect](#) (414-00 Battery and Charging System - General Information, General Procedures).

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