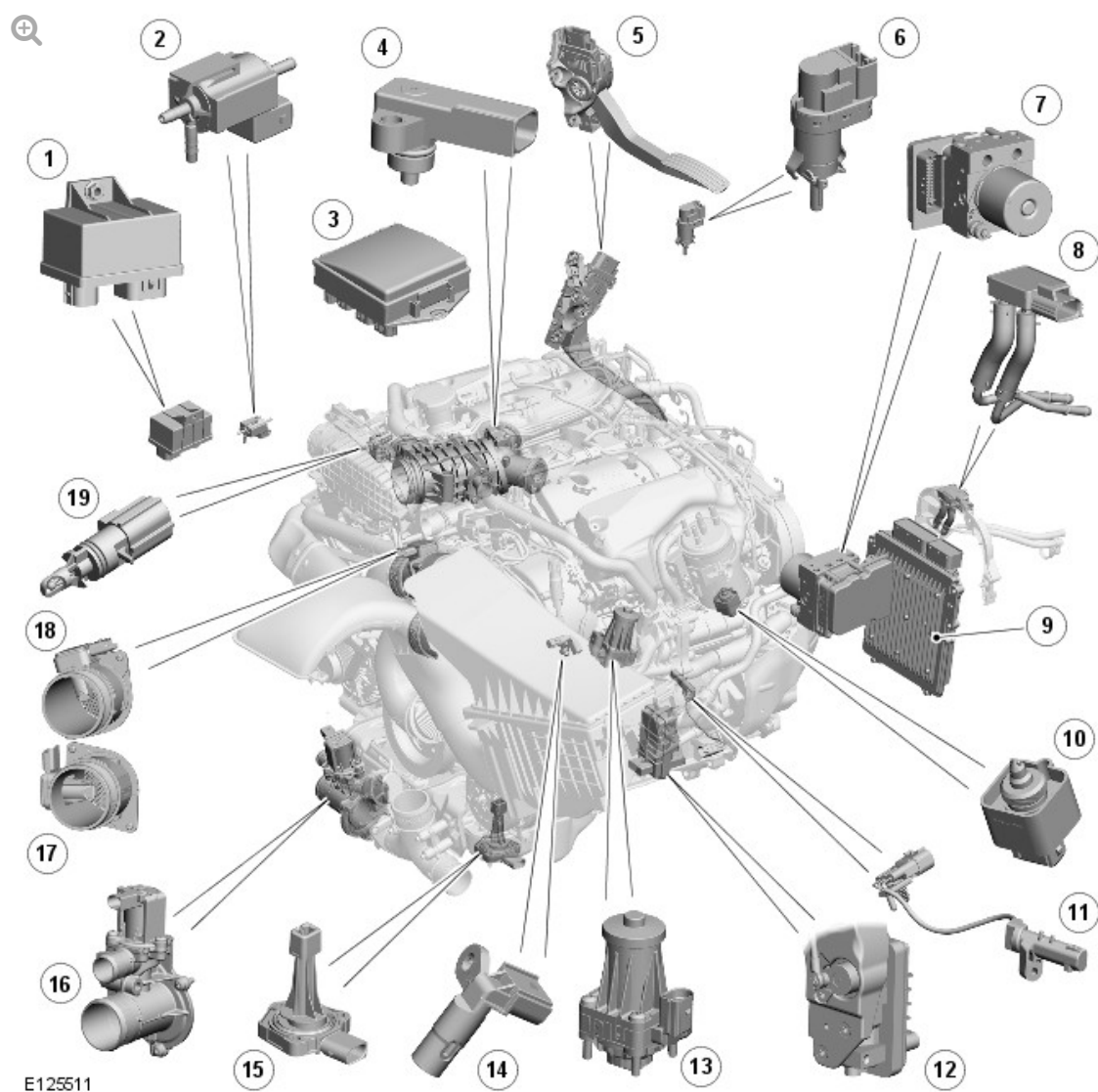


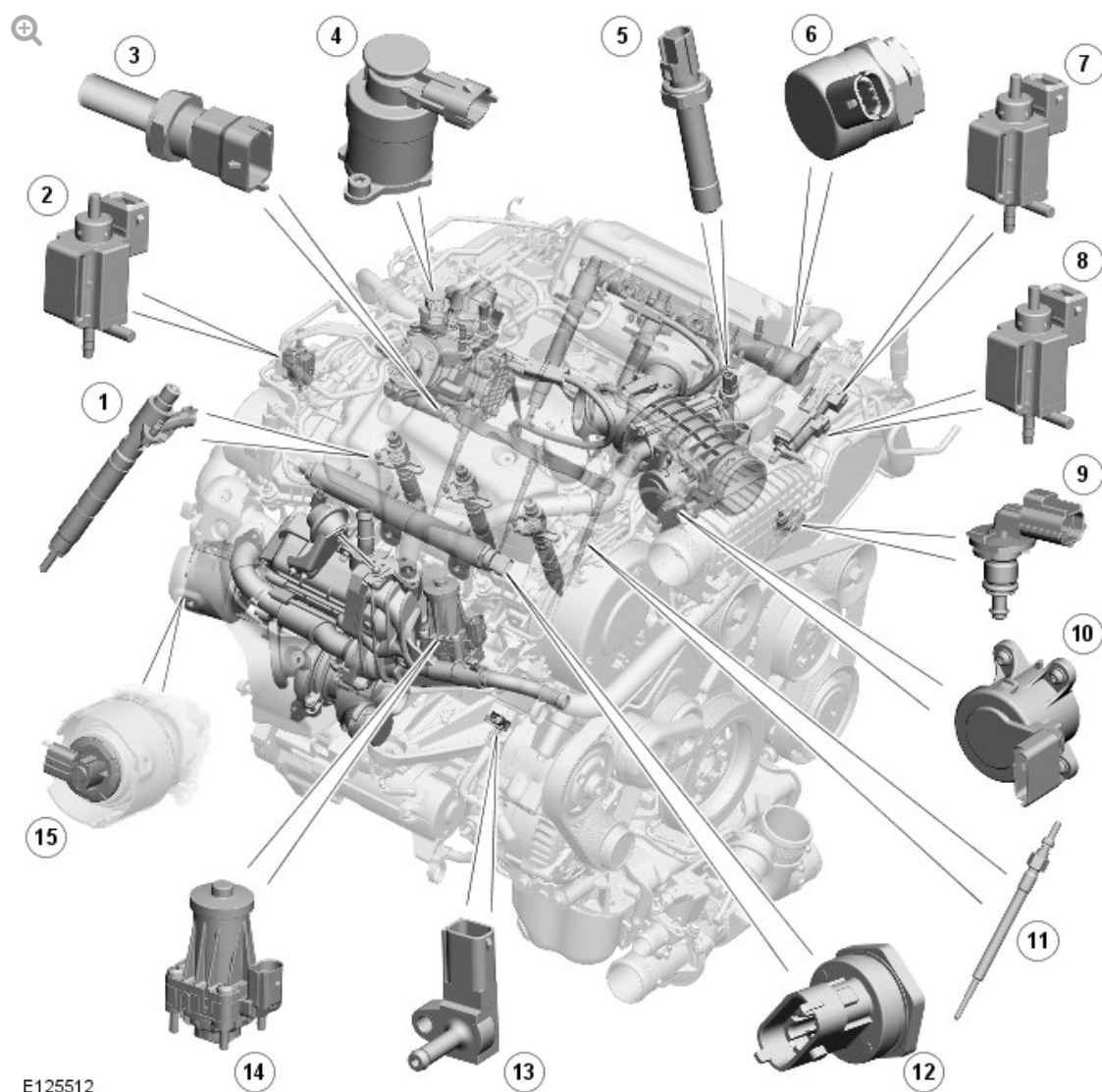
E125510

1	Engine Junction Box (EJB)
2	Battery Junction Box (BJB)
3	Central Junction Box (CJB)
4	Exhaust gas temperature sensor
5	Differential pressure sensor
6	Pre Diesel Particulate Filter (DPF) temperature sensor
7	Post DPF temperature sensor
8	Post catalyst temperature sensor
9	Pre-catalyst temperature sensor
10	Heated Oxygen sensor (HO2S)



1	Glow plug module
2	Active engine mount solenoid valve
3	Engine Junction Box (EJB)
4	Manifold Absolute Pressure (MAP) sensor
5	Accelerator Pedal Position (APP) sensor
6	Brake lamp/brake test switch
7	Anti-lock Brake System (ABS) module

8	Differential pressure sensor
9	Engine Control Module (ECM)
10	Water in fuel sensor
11	Crankshaft Position (CKP) sensor
12	Primary turbocharger control module
13	Left Hand (LH) Exhaust Gas Recirculation (EGR) valve
14	Camshaft Position (CMP) sensor
15	Engine oil level/temperature sensor
16	Secondary turbocharger recirculation valve
17	Mass Air Flow (MAF) / Intake Air Temperature (IAT) sensor (primary turbocharger)
18	Mass Air Flow (MAF) sensor (secondary turbocharger)
19	Charge air temperature sensor



1	Fuel injector (6 off)
2	EGR cooler bypass vacuum solenoid valve
3	Fuel temperature sensor
4	Fuel volume control valve
5	Engine oil pressure sensor
6	Fuel pressure control valve
7	Secondary turbocharger compressor shut-off solenoid valve
8	Secondary turbocharger turbine shut-off solenoid valve
9	Engine Coolant Temperature (ECT) sensor
10	Throttle actuator

11	Glow plug (6 off)
12	Fuel pressure sensor
13	Secondary turbocharger boost pressure sensor
14	Right Hand (RH) EGR valve
15	Secondary turbocharger turbine shut-off valve and position sensor

ELECTRONIC ENGINE CONTROLS - TDV6 3.0L DIESEL

CRANKSHAFT POSITION SENSOR [G1269236]

REMOVAL

Removal steps in this procedure may contain installation details.



All vehicles

1.

Make sure to support the vehicle with axle stands.

Raise and support the vehicle.

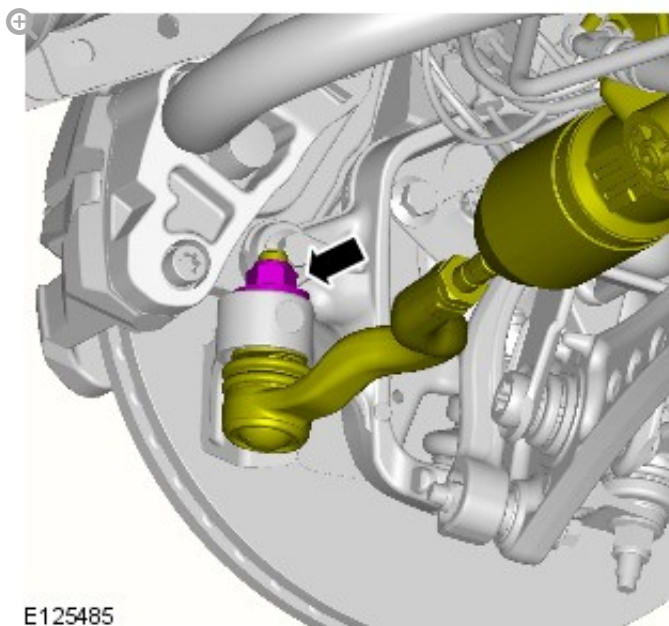
2. Refer to: [Air Deflector](#) (501-02 Front End Body Panels, Removal and Installation).



Left-hand drive vehicles

3.

This step only applies to LHD vehicles.

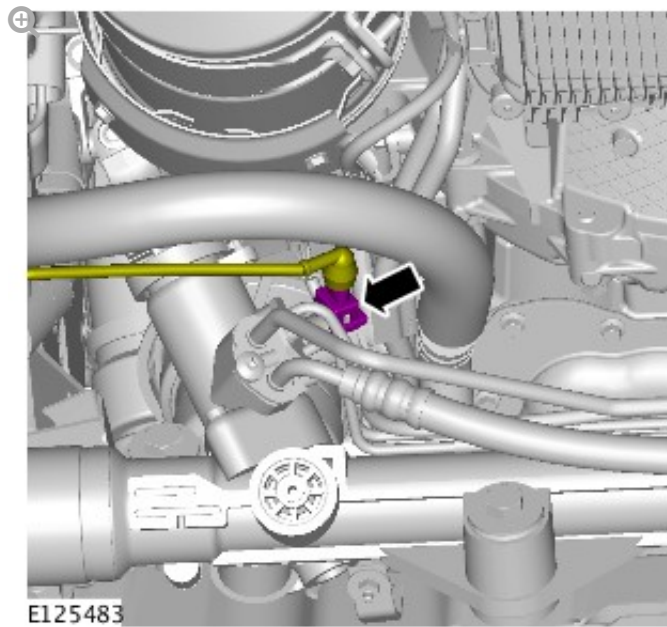


Remove and discard the nut. Install a new nut.

Torque: **133 Nm**

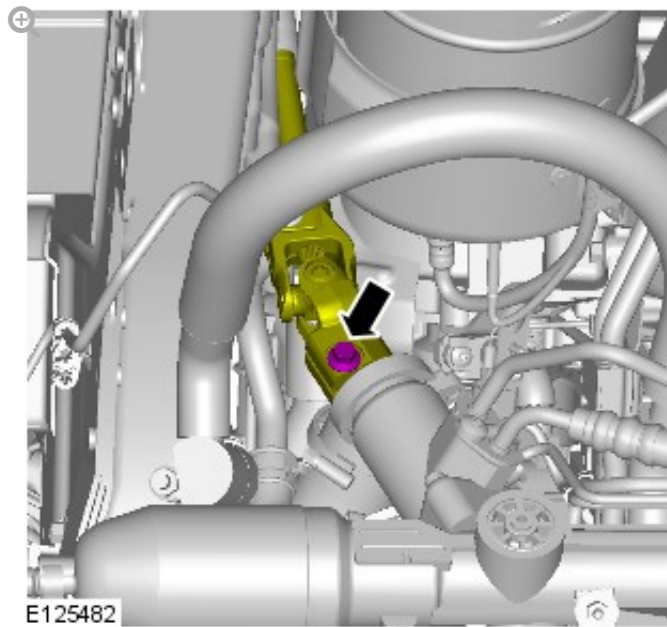
4.

This step only applies to LHD vehicles.



5.

This step only applies to LHD vehicles.

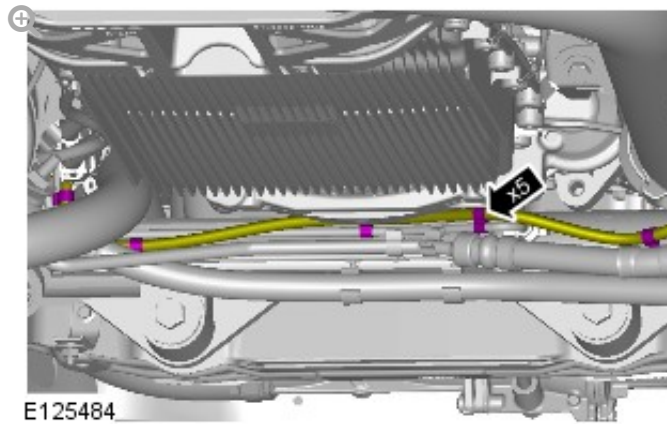


Remove and discard the bolt. Install a new bolt.

Torque: **35 Nm**

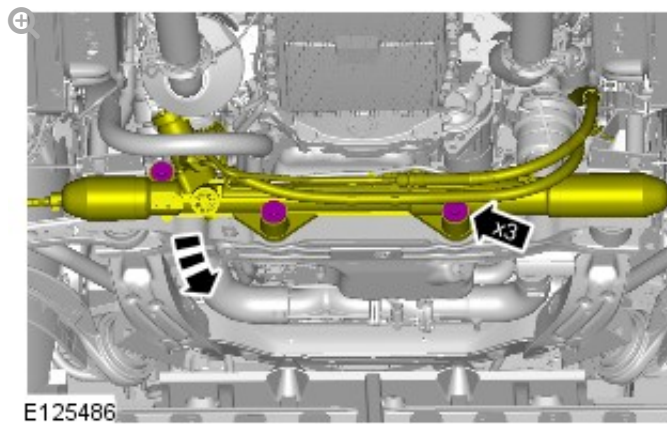
6.

This step only applies to LHD vehicles.



7.

This step only applies to LHD vehicles.



- Move the steering rack aside.
- RWD all bolts.
Torque: 115 Nm
- AWD lower bolts.
Torque: 115 Nm

- AWD upper bolt.

Torque:

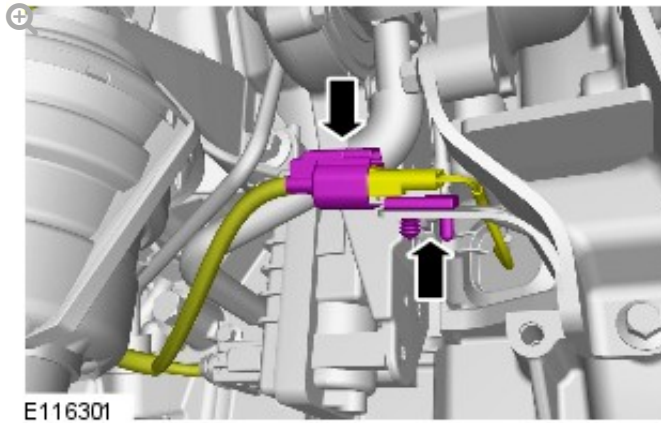
Stage 1: **60 Nm**

Stage 2: **240°**

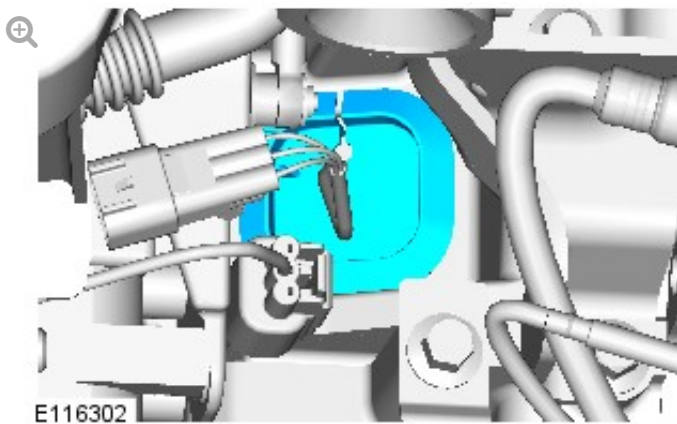


All vehicles

8.



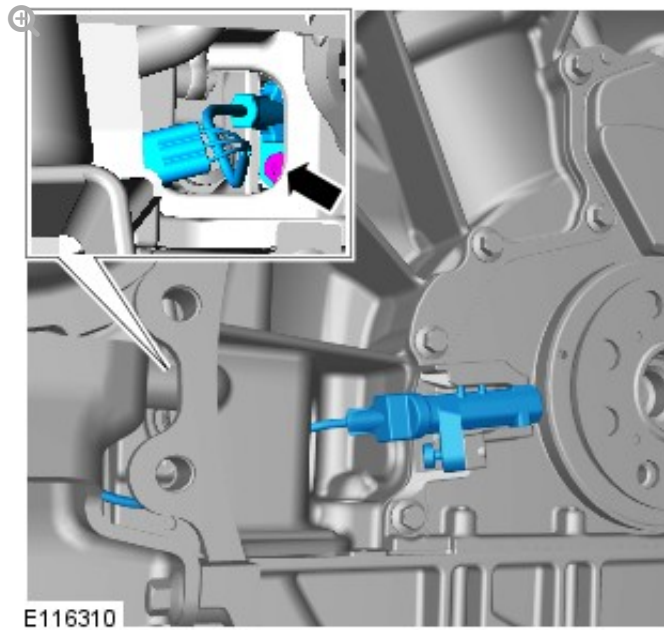
9.



10.

Before the disconnection or removal of any components, make sure the area around joint faces and connections are clean.
Plug any open connections to prevent contamination.

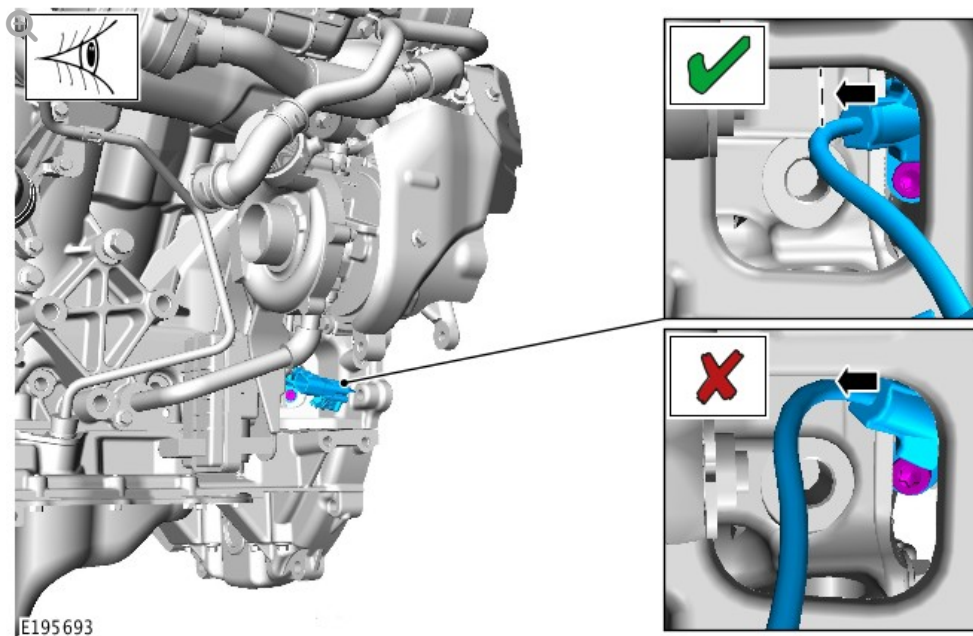
- The CKP sensor retaining bolt should not be removed from the CKP sensor.
- Engine shown removed for clarity.



Torque: **5 Nm**

11.

Install the CKP sensor correctly into the housing. Failure to follow this instruction may result in damage to the CKP sensor.



Using the illustration, check the installed position of the CKP sensor as seen through the cylinder block opening. The CKP sensor wiring must point towards the 9 o'clock position and not contact the cylinder block as shown. If the position is not correct repeat the process from step 10 of the removal procedure.

INSTALLATION

1.

- Install the CKP sensor correctly into the housing. Failure to follow this instruction may result in damage to the CKP sensor.
- Make sure that the mating faces are clean and free of foreign material.
- Make sure that the component is clean, free of foreign material and lubricant.

To install, reverse the removal procedure.

ELECTRONIC ENGINE CONTROLS - TDV6
3.0L DIESEL

CRANKSHAFT POSITION SENSOR RING [G1269237]

+

SPECIAL TOOL[S]



303-1130

Installer - Crankshaft
Position (CKP)
Sensor Ring

PART[S]

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REMOVAL

1. Disconnect the battery ground cable.

Refer to: [Battery Disconnect and Connect](#) (414-01 Battery, Mounting and Cables, General Procedures).

2.

Make sure to support the vehicle with axle stands.

Raise and support the vehicle.

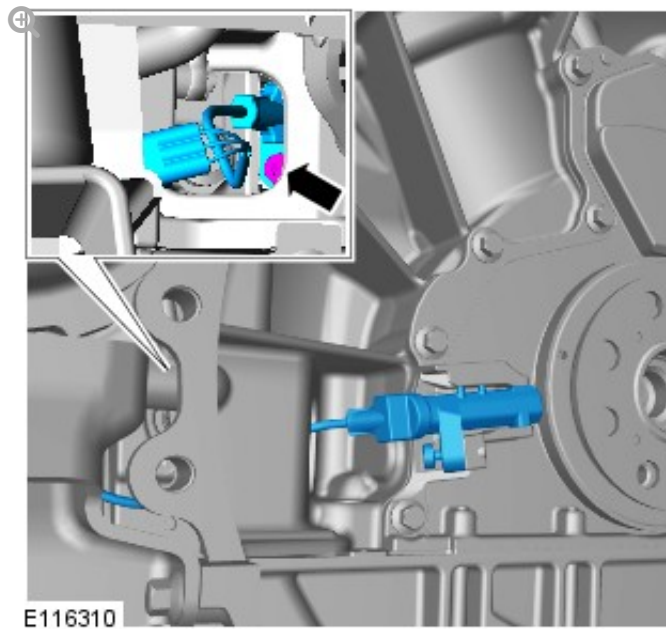
Refer to: [Lifting](#) (100-02 Jacking and Lifting, Description and Operation).

3. Refer to: [Flexplate](#) (303-01A Engine - TDV6 3.0L Diesel, Removal and Installation).

4.

Before the disconnection or removal of any components, make sure the area around joint faces and connections are clean.
Plug any open connections to prevent contamination.

The crankshaft position (CKP) sensor retaining bolt should not be removed from the CKP sensor.



5.



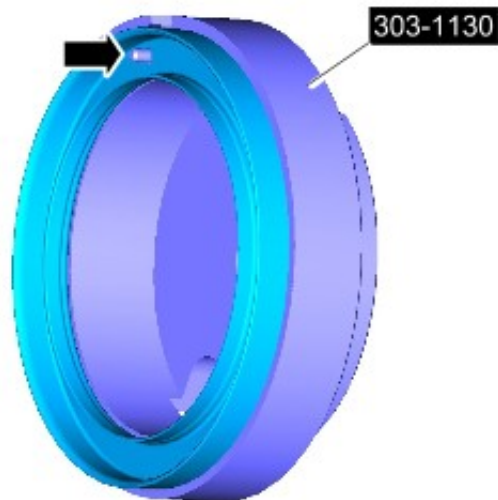
Remove and discard the CKP sensor ring.

INSTALLATION

1.

Make sure that the CKP sensor ring is aligned correctly with the special tool pip and that both mating surfaces are fully seated.

Make sure a new CKP sensor ring is installed.

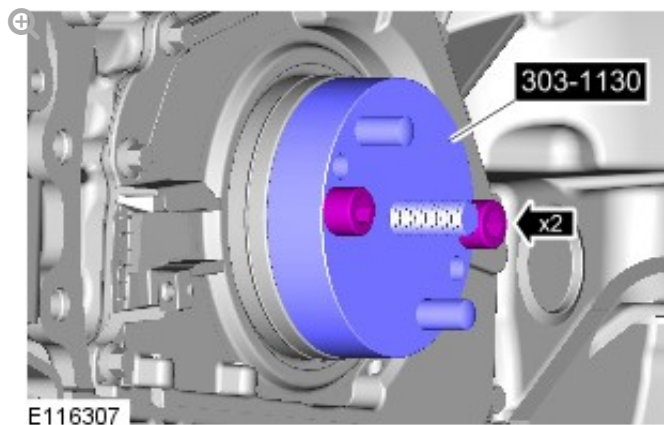


E116306

Special Tool(s): 303-1130

Renew Part: Crank position sensor ring (CKP).

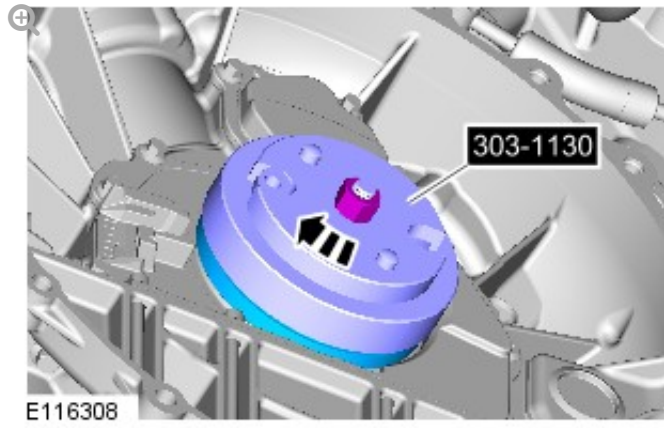
2.



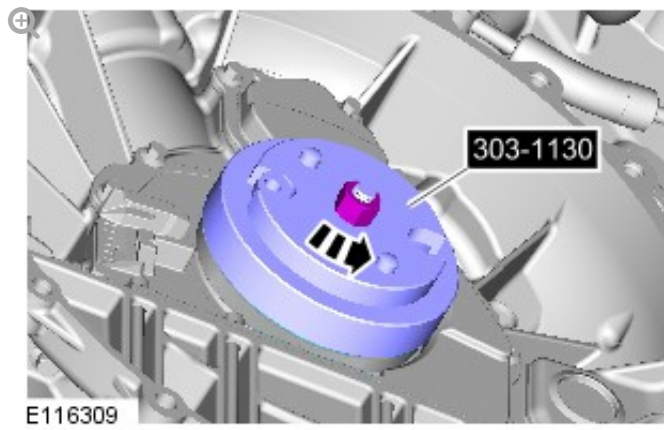
E116307

Install the special tool.

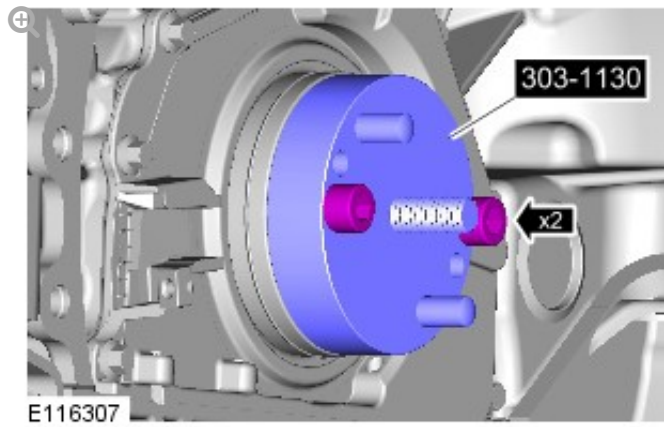
3.



4.



5.

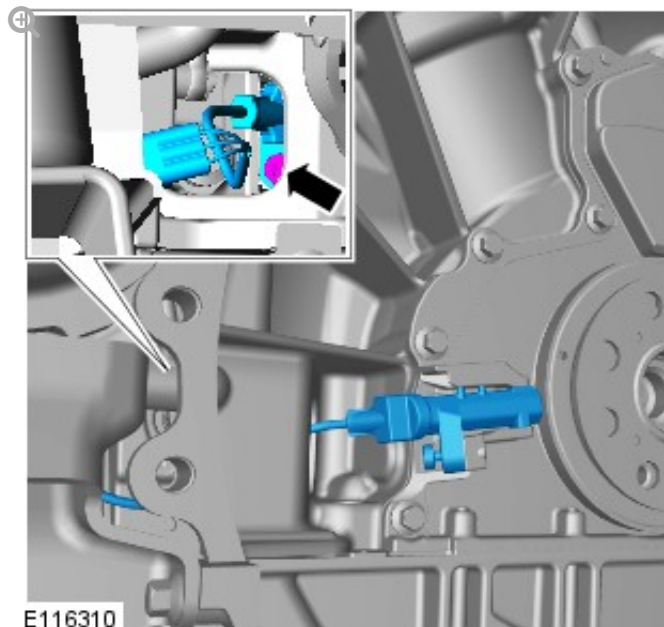


Remove the special tool.

Special Tool(s): [303-1130](#)

6.

- Make sure that the mating faces are clean and free of foreign material.
- Make sure that the component is clean, free of foreign material and lubricant.
- Install the CKP sensor correctly into the housing. Failure to follow this instruction may result in damage to the CKP sensor.



Torque: **5 Nm**

7. Refer to: [Flexplate](#) (303-01A Engine - TDV6 3.0L Diesel, Removal and Installation).
8. Connect the battery ground cable.
Refer to: [Battery Disconnect and Connect](#) (414-01 Battery, Mounting and Cables, General Procedures).

ELECTRONIC ENGINE CONTROLS - TDV6 3.0L DIESEL

DIESEL PARTICULATE FILTER DIFFERENTIAL PRESSURE SENSOR [G1269238]



REMOVAL

Removal steps in this procedure may contain installation details.

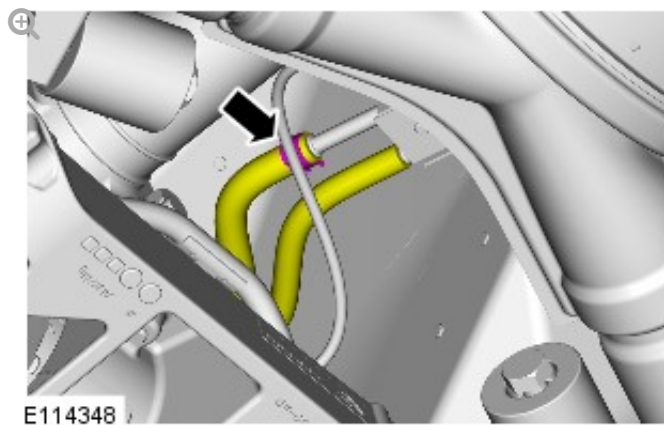
1.

Make sure to support the vehicle with axle stands.

Raise and support the vehicle.

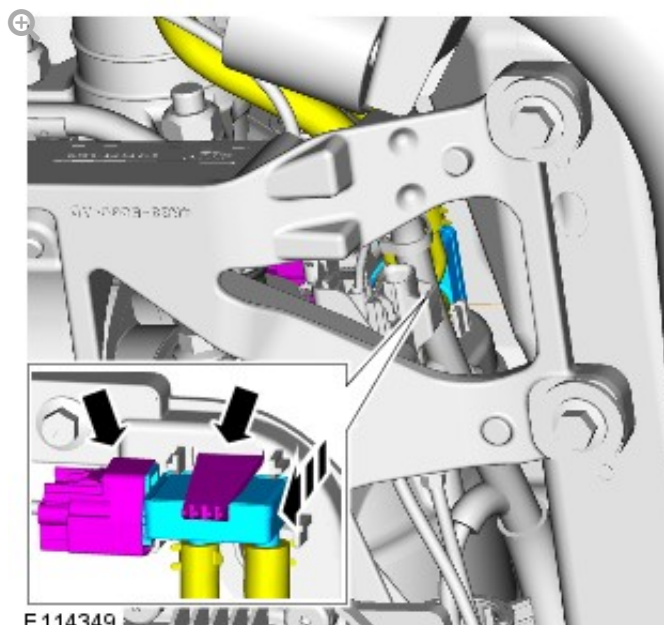
2. Refer to: [Air Deflector](#) (501-02 Front End Body Panels, Removal and Installation).

3.



E114348

4.



E114349

5.



E114350

INSTALLATION

1. To install, reverse the removal procedure.

2.

This step is only necessary when installing a new component.

- Using the diagnostic tool, clear diagnostic trouble codes (DTCs) from the engine control module (ECM).
- Using the data logger, check the engine oil temperature.
- Make sure the selector lever is in the 'P' position.
- Start and run the engine.
- Make sure that the engine oil is at a minimum temperature of 50 degrees C.
- Allow the engine to idle for 2 minutes and 30 seconds.
- Make sure that the engine cooling fan is not running.
- Turn off the ignition.

- Wait for 30 seconds.
- Repeat steps 4 to 9, a further 5 times.
- Disconnect the Jaguar approved diagnostic system.

ELECTRONIC ENGINE CONTROLS - TDV6 3.0L DIESEL

ENGINE CONTROL MODULE

[G1269240]



REMOVAL

Removal steps in this procedure may contain installation details.

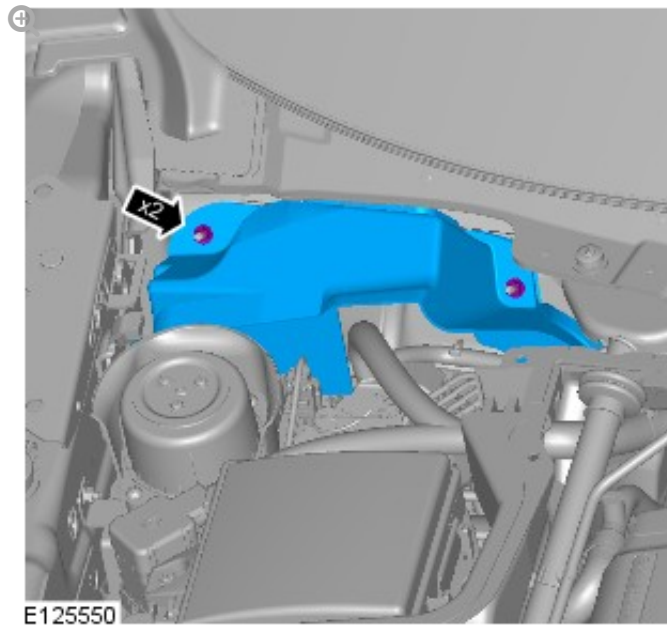


All vehicles

1. Refer to: [Battery Disconnect and Connect](#) (414-01 Battery, Mounting and Cables, General Procedures).
2. Refer to: [Cowl Vent Screen](#) (501-02 Front End Body Panels, Removal and Installation).

3.

RH illustration shown, LH is similar.

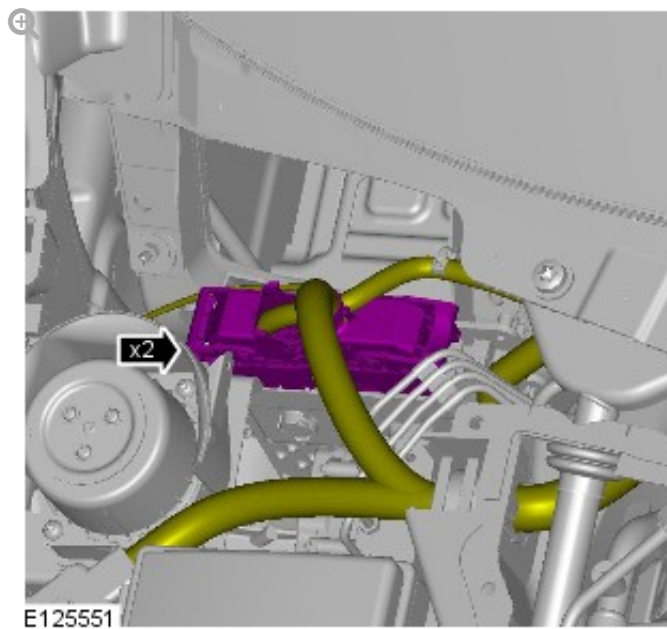


Torque: 7 Nm

4.

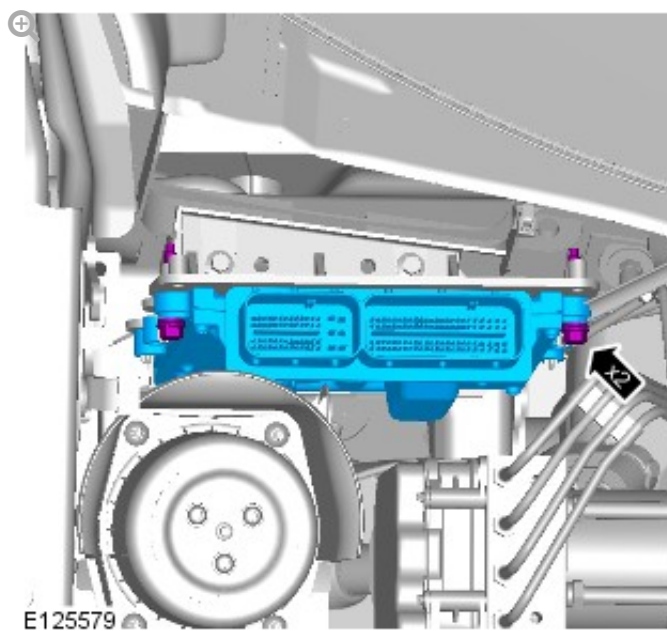
Before disconnecting or removing the components, make sure the area around the joint faces and connections are clean.

RH illustration shown, LH is similar.



Left-hand drive vehicles

5.

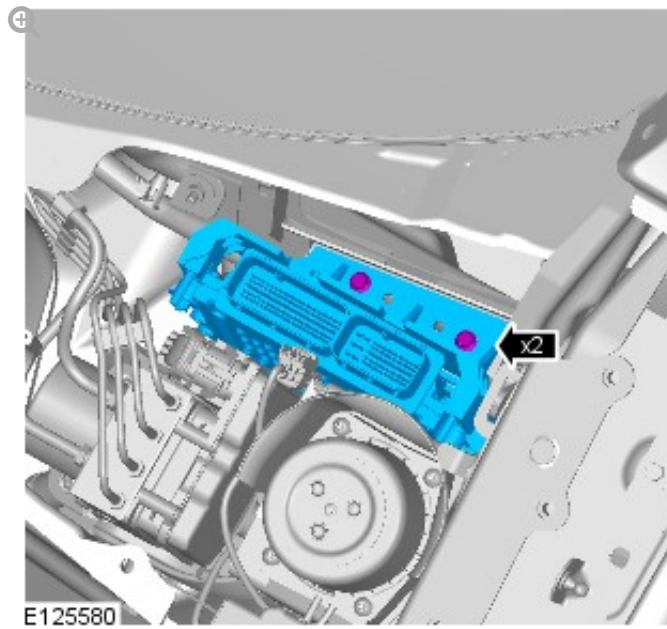


Torque: 7 Nm



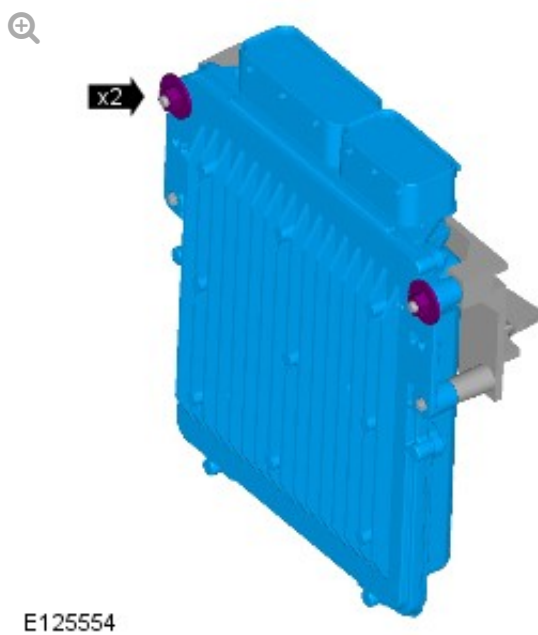
Right-hand drive vehicles

6.



Torque: 7 Nm

7.



Torque: 7 Nm

INSTALLATION

1. To install, reverse the removal procedure.

ELECTRONIC ENGINE CONTROLS - TDV6 3.0L DIESEL

ENGINE COOLANT TEMPERATURE SENSOR [G1269239]

+

+

REMOVAL

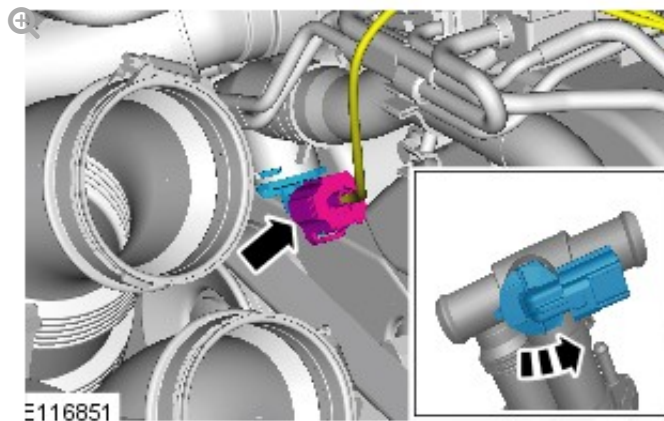
Removal steps in this procedure may contain installation details.

1. Refer to: [Engine Cover - TDV6 3.0L Diesel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).
2. Refer to: [Air Cleaner](#) (303-12A Intake Air Distribution and Filtering - TDV6 3.0L Diesel, Removal and Installation).

3.

- Be prepared to collect escaping fluids.
- The seal is to be reused unless damaged.
- Make sure that the mating faces are clean and free of foreign material.

Release the locking tang to remove the ECT sensor.



INSTALLATION

1.

Make sure that all the component mating faces are clean.

To install, reverse the removal procedure.

2. Fill the cooling system, keeping coolant to the upper level mark of the expansion tank.

ELECTRONIC ENGINE CONTROLS - TDV6 3.0L DIESEL

ENGINE OIL LEVEL SENSOR

[G1269241]



REMOVAL

Removal steps in this procedure may contain installation details.

1.

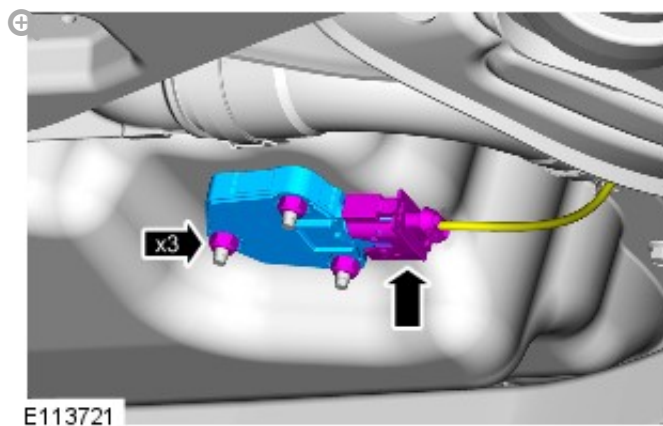
Make sure to support the vehicle with axle stands.

Raise and support the vehicle.

2. Refer to: [Engine Oil Draining and Filling](#) (303-01A Engine - TDV6 3.0L Diesel, General Procedures).

3.

- Before the disconnection or removal of any components, make sure the area around joint faces and connections are clean. Plug any open connections to prevent contamination.
- Be prepared to collect escaping oil.



Torque: 11 Nm

INSTALLATION

1.

Install a new O-ring seal.

To install, reverse the removal procedure.

ELECTRONIC ENGINE CONTROLS - TDV6 3.0L DIESEL

ENGINE OIL PRESSURE SENSOR [G1269242]



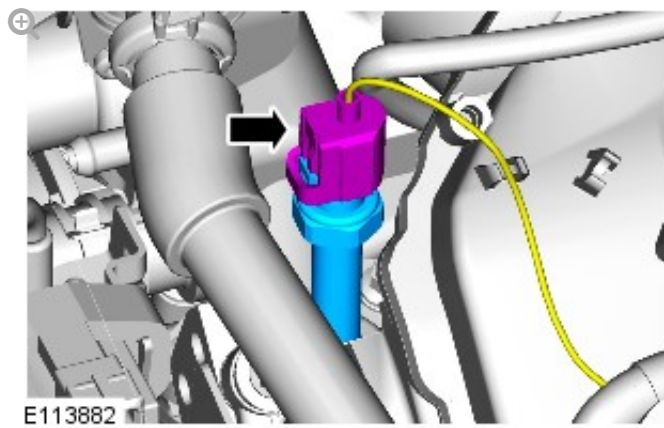
REMOVAL

Removal steps in this procedure may contain installation details.

1. Refer to: [Engine Cover - TDV6 3.0L Diesel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).

2.

Before the disconnection or removal of any components, make sure the area around joint faces and connections are clean. Plug any open connections to prevent contamination.



Torque: **14 Nm**

INSTALLATION

1. To install, reverse the removal procedure.

ELECTRONIC ENGINE CONTROLS - TDV6 3.0L DIESEL

HEATED OXYGEN SENSOR

[G1269244]

REMOVAL

- Removal steps in this procedure may contain installation details.
- This procedure contains some variation in the illustrations depending on the vehicle specification, but the essential information is always correct.
- This procedure contains illustrations showing certain components removed to provide extra clarity.

1. Disconnect the battery ground cable.

Refer to: [Battery Disconnect and Connect](#) (414-01 Battery, Mounting and Cables, General Procedures).

2. Raise and support the vehicle.

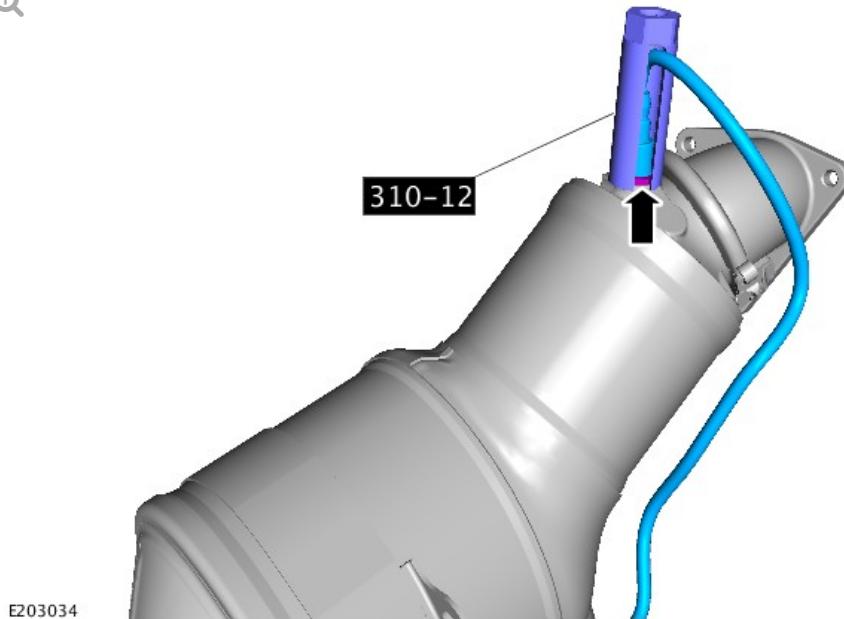
3. Remove the Catalytic Converter and Diesel Particulate Filter (DPF) assembly.

Refer to: [Catalytic Converter](#) (309-00A Exhaust System - TDV6 3.0L

Diesel, Removal and Installation).

4.

Make sure that the mating faces are clean and free of corrosion and foreign material.



To install, reverse the removal procedure.

Torque: **48 Nm**

INSTALLATION

1.

- Make sure the anti-seize compound does not contact the catalyst monitor sensor tip.
- If accidentally dropped or knocked install a new sensor.
- Make sure the catalyst monitor sensor wiring harness is not twisted more than 180 degrees and is not in contact with either the exhaust or driveshaft.
-

To install, reverse the removal procedure.

2. If a new unit is installed, configure using the approved Jaguar diagnostic tool.

ELECTRONIC ENGINE CONTROLS - TDV6 3.0L DIESEL

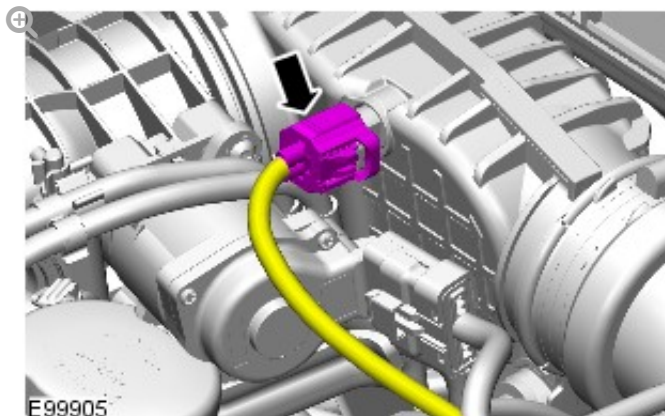
INTAKE AIR TEMPERATURE SENSOR [G1269173]

REMOVAL

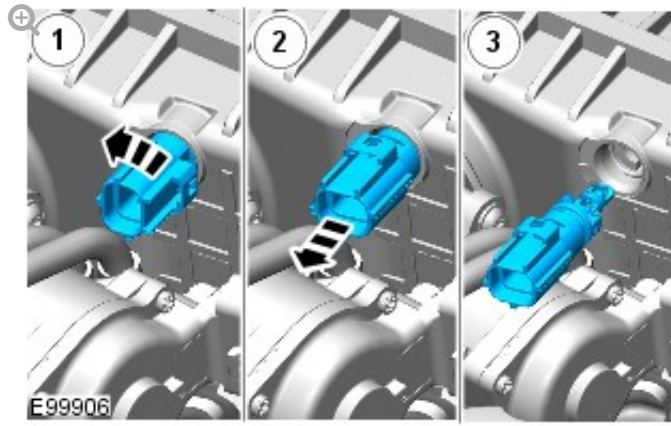
- Removal steps in this procedure may contain installation details.
- Some variation in the illustrations may occur, but the essential information is always correct.

1. Refer to: [Engine Cover - TDV6 3.0L Diesel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).

2.



3.



INSTALLATION

1. To install, reverse the removal procedure.

ELECTRONIC ENGINE CONTROLS - TDV6 3.0L DIESEL

MANIFOLD ABSOLUTE PRESSURE SENSOR [G1269174]

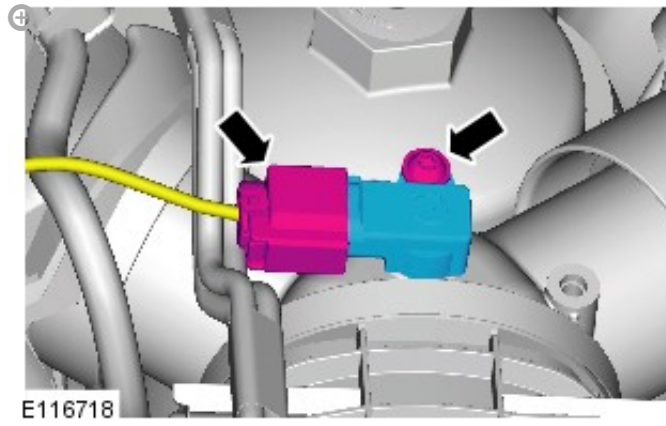


REMOVAL

Removal steps in this procedure may contain installation details.

1. Refer to: [Engine Cover - TDV6 3.0L Diesel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).

2.



- *Torque: 3 Nm*

INSTALLATION

1. To install, reverse the removal procedure.

ELECTRONIC ENGINE CONTROLS - TDV6 3.0L DIESEL

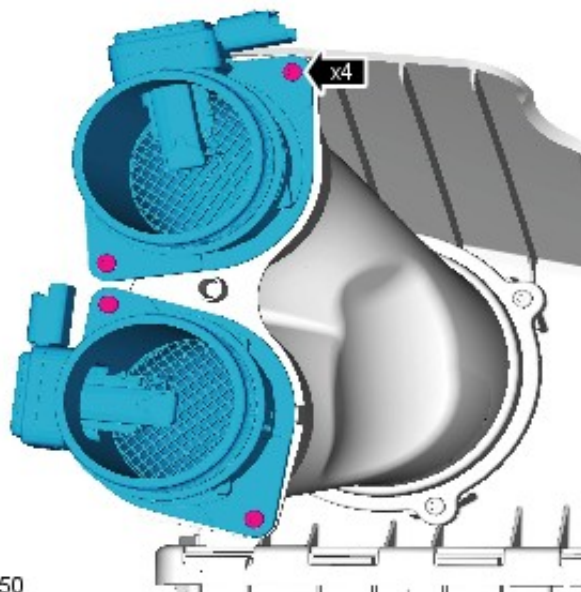
MASS AIR FLOW SENSOR [G1269175]

REMOVAL

Removal steps in this procedure may contain installation details.

1. Refer to: [Air Cleaner](#) (303-12A Intake Air Distribution and Filtering - TDV6 3.0L Diesel, Removal and Installation).

2.



≡ 116850

- *Torque:* **2 Nm**

INSTALLATION

1. To install, reverse the removal procedure.

ELECTRONIC ENGINE CONTROLS - TDV6 3.0L DIESEL

OIL TEMPERATURE SENSOR

[G1269245]

REMOVAL

1. The oil temperature sensor is an integrated part of the engine oil level sensor.
Refer to: [Engine Oil Level Sensor](#) (303-14A Electronic Engine Controls - TDV6 3.0L Diesel, Removal and Installation).

INSTALLATION

1. To install, reverse the removal procedure.

ELECTRONIC ENGINE CONTROLS - TDV6 3.0L DIESEL

ELECTRONIC ENGINE CONTROLS - OVERVIEW [G1245435]

OVERVIEW

The 3.0L V6 diesel engine has an ECM controlled engine management system. Multiple sensor inputs and precision control of actuators are used by the ECM to achieve optimum performance during all driving conditions.

The ECM receives and processes information from the following input sources:

- Oil level sensor
- Secondary turbocharger shut-off sensor
- Secondary turbocharger boost pressure sensor
- Alternator
- Differential pressure sensor
- Camshaft Position (CMP) sensor
- Crankshaft Position (CKP) sensor
- Fuel rail pressure sensor
- Fuel temperature sensor
- Air charge temperature sensor

- Engine Coolant Temperature (ECT) sensor
- Throttle Position (TP) sensor
- Mass Air Flow (MAF) / Intake Air Temperature (IAT) sensor
- Manifold Absolute Pressure (MAP) sensor
- EGR sensors
- HO2S
- Catalyst and Diesel Particulate Filter (DPF) temperature sensors
- Brake lamp switch

The Engine Control Module (ECM) outputs controlling signals to the following sensors and actuators:

- Air Conditioning (A/C) compressor clutch solenoid
- A/C compressor clutch
- Fuel injectors
- Glow plug module
- Fuel pressure control valve
- Fuel volume control valve
- Fan control module
- Vacuum control valves (EGR cooler by-pass, secondary turbocharger compressor shut-off, secondary turbocharger turbine shut-off)
- ABS module
- Transmission Control Module (TCM)
- Instrument cluster
- Restraints Control Module (RCM)
- Primary turbocharger control module
- EGR recirculation valves

- Alternator
- Throttle actuator
- Secondary turbocharger compressor recirculation valve
- Active engine mount solenoid valve.

ELECTRONIC ENGINE CONTROLS - TDV6 3.0L DIESEL

POST CATALYTIC CONVERTER TEMPERATURE SENSOR [G1269246]



REMOVAL

Removal steps in this procedure may contain installation details.

1.

Make sure to support the vehicle with axle stands.

Raise and support the vehicle.

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