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2019 Ford Escape Service and Repair Manual

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		camshaft timing) unit. Diagnose any base engine concerns related to the engine oil pressure or engine timing. Refer to the appropriate 303-00 section, Engine System, Oil Pressure Test, to check the engine oil pressure. Refer to the appropriate 303-01 section, Engine, to check the engine timing and VCT phasers.
PCM (powertrain control module) P0018:00	Crankshaft Position - Camshaft Position Correlation - Bank 2 Sensor A: No Sub Type Information	Sets when PCM (powertrain control module) detects a misalignment between the camshaft and crankshaft. This indicates the misalignment is 1 tooth or greater. This DTC (diagnostic trouble code) can also set due to VCT (variable camshaft timing) system concerns (oil contamination or VCT (variable camshaft timing) solenoid stuck). This DTC (diagnostic trouble code) may be accompanied by other Diagnostic Trouble Codes (DTCs). Diagnose all CMP (camshaft position) sensor Diagnostic Trouble Codes (DTCs) first. If no CMP (camshaft position) sensor related Diagnostic Trouble Codes (DTCs) are present, continue to follow diagnosis for this DTC (diagnostic trouble code) . This DTC (diagnostic trouble code) is a functional check of the VCT (variable camshaft timing) unit. Diagnose any base engine concerns related to the engine oil pressure or engine timing. Refer to the appropriate 303-00 section, Engine System, Oil Pressure Test, to check the engine oil pressure. Refer to the appropriate 303-01 section, Engine, to check the engine timing and VCT phasers.
PCM (powertrain control module) P0019:00	Crankshaft Position - Camshaft Position Correlation - Bank 2 Sensor B: No Sub Type Information	Sets when PCM (powertrain control module) detects a misalignment between the camshaft and crankshaft. This indicates the misalignment is 1 tooth or greater. This DTC (diagnostic trouble code) can also set due to VCT (variable camshaft timing) system concerns (oil contamination or VCT (variable camshaft timing) solenoid stuck). This DTC (diagnostic trouble code) may be accompanied by other Diagnostic Trouble Codes (DTCs). Diagnose all CMP (camshaft position) sensor Diagnostic Trouble Codes (DTCs) first. If no CMP (camshaft position) sensor related Diagnostic Trouble Codes (DTCs) are present, continue to follow diagnosis for this DTC (diagnostic trouble code) . This DTC (diagnostic trouble code) is a functional check of the VCT (variable camshaft timing) unit. Diagnose any base engine concerns related to the engine oil pressure or engine timing. Refer to the appropriate 303-00 section, Engine System, Oil Pressure Test, to check the engine oil pressure. Refer to the appropriate 303-01 section, Engine, to check the engine timing and VCT phasers.

control module) P0023:00	'A' Control Circuit/Open Bank 2: No Sub Type Information	low or high voltage from the VCT (variable camshaft timing) bank 2 solenoid 2 circuit.
PCM (powertrain control module) P0024:00	'B' Camshaft Position Timing - Over-Advanced (Bank 2): No Sub Type Information	Sets when PCM (powertrain control module) detects the camshaft timing exceeds a maximum calibrated value or remains in an advanced position, indicating the VCT (variable camshaft timing) position is over-advanced. This DTC (diagnostic trouble code) may be accompanied by other Diagnostic Trouble Codes (DTCs). Diagnose all CMP (camshaft position) sensor Diagnostic Trouble Codes (DTCs) first. If no CMP (camshaft position) sensor related Diagnostic Trouble Codes (DTCs) are present, continue to follow diagnosis for this DTC (diagnostic trouble code) . This DTC (diagnostic trouble code) is a functional check of the VCT (variable camshaft timing) unit. Diagnose any base engine concerns related to the engine oil pressure or engine timing. Refer to the appropriate 303-00 section, Engine System, Oil Pressure Test, to check the engine oil pressure. Refer to the appropriate 303-01 section, Engine, to check the engine timing and VCT phasers.
PCM (powertrain control module) P0025:00	'B' Camshaft Position Timing - Over-Retarded (Bank 2): No Sub Type Information	Sets when PCM (powertrain control module) detects the camshaft timing exceeds a maximum calibrated value or remains in a retarded position, indicating the VCT (variable camshaft timing) position is over-retarded. This DTC (diagnostic trouble code) may be accompanied by other Diagnostic Trouble Codes (DTCs). Diagnose all CMP (camshaft position) sensor Diagnostic Trouble Codes (DTCs) first. If no CMP (camshaft position) sensor related Diagnostic Trouble Codes (DTCs) are present, continue to follow diagnosis for this DTC (diagnostic trouble code) . This DTC (diagnostic trouble code) is a functional check of the VCT (variable camshaft timing) unit. Diagnose any base engine concerns related to the engine oil pressure or engine timing. Refer to the appropriate 303-00 section, Engine System, Oil Pressure Test, to check the engine oil pressure. Refer to the appropriate 303-01 section, Engine, to check the engine timing and VCT phasers.

PCM (powertrain control module) P054A:00	Cold Start Exhaust (B) Camshaft Position Timing Over-Advanced (Bank 1): No Sub Type Information	Sets when PCM (powertrain control module) detects the camshaft timing exceeds a maximum calibrated value or remains in an advanced position, indicating the VCT (variable camshaft timing) position is over-advanced during cold start up. This DTC (diagnostic trouble code) is a functional check of the VCT (variable camshaft timing) unit. Diagnose any base engine concerns related to the engine oil pressure or engine timing. Refer to the appropriate 303-00 section, Engine System, Oil Pressure Test, to check the engine oil pressure. Refer to the appropriate 303-01 section, Engine, to check the engine timing and VCT phasers.
PCM (powertrain control module) P054B:00	Cold Start Exhaust (B) Camshaft Position Timing Over-Retarded (Bank 1): No Sub Type Information	Sets when PCM (powertrain control module) detects the camshaft timing exceeds a maximum calibrated value or remains in a retarded position, indicating the VCT (variable camshaft timing) position is over-retarded during cold start up. This DTC (diagnostic trouble code) is a functional check of the VCT (variable camshaft timing) unit. Diagnose any base engine concerns related to the engine oil pressure or engine timing. Refer to the appropriate 303-00 section, Engine System, Oil Pressure Test, to check the engine oil pressure. Refer to the appropriate 303-01 section, Engine, to check the engine timing and VCT phasers.
PCM (powertrain control module) P054C:00	Cold Start Exhaust (B) Camshaft Position Timing Over-Advanced (Bank 2): No Sub Type Information	Sets when PCM (powertrain control module) detects the camshaft timing exceeds a maximum calibrated value or remains in an advanced position, indicating the VCT (variable camshaft timing) position is over-advanced during cold start up. This DTC (diagnostic trouble code) is a functional check of the VCT (variable camshaft timing) unit. Diagnose any base engine concerns related to the engine oil pressure or engine timing. Refer to the appropriate 303-00 section, Engine System, Oil Pressure Test, to check the engine oil pressure. Refer to the appropriate 303-01 section, Engine, to check the engine timing and VCT phasers.
PCM (powertrain control module) P054D:00	Cold Start Exhaust (B) Camshaft Position Timing Over-Retarded (Bank 2): No Sub Type Information	Sets when PCM (powertrain control module) detects the camshaft timing exceeds a maximum calibrated value or remains in a retarded position, indicating the VCT (variable camshaft timing) position is over-retarded during cold start up. This DTC (diagnostic trouble code) is a functional check of the VCT (variable camshaft timing) unit. Diagnose any base engine concerns related to the engine oil pressure or engine timing. Refer to the appropriate 303-00 section, Engine System, Oil Pressure Test, to check the engine oil pressure. Refer to the appropriate 303-01 section, Engine, to check the engine timing and VCT phasers.

Camshaft Position (CMP) Sensor

303-14C Electronic Engine Controls - 3.5L EcoBoost (BM)	***2022 F-150***
Removal and Installation	***Procedure revision date: 05/28/2020***

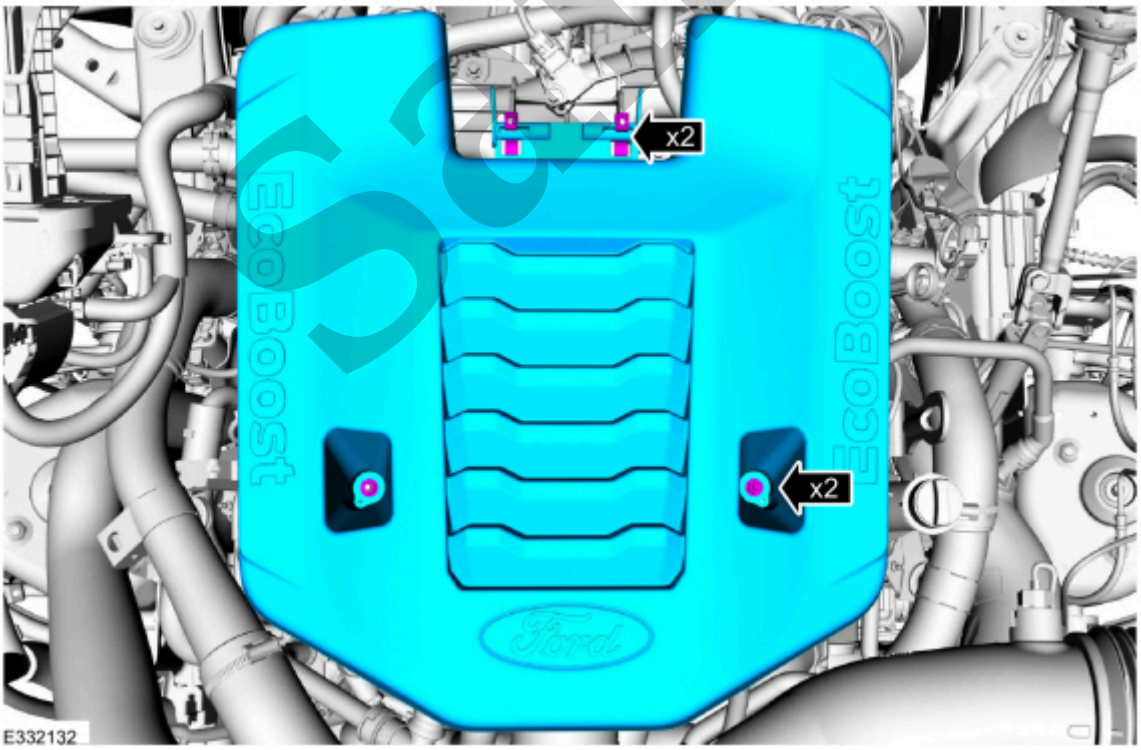
Camshaft Position (CMP) Sensor

Removal

All Sensors

1. Remove the nuts and engine appearance cover.

   Torque : 89 lb.in (10 Nm)

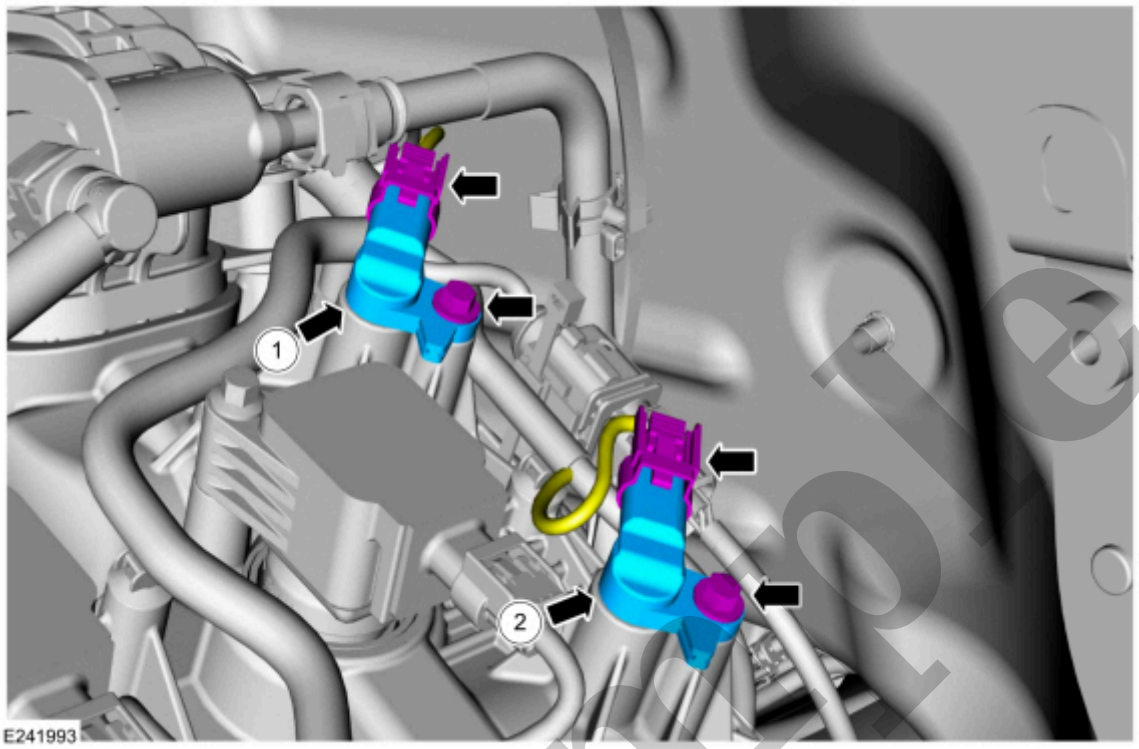


Click here to learn about symbols, color coding, and icons used in this manual.

- Disconnect the electrical connector, remove the retainer and the exhaust CMP (camshaft position) sensor.

  Material : Motorcraft® SAE 5W-30 Synthetic Blend Motor Oil / XO-5W30-Q1SP (WSS-M2C961-A1)

  Torque : 89 lb.in (10 Nm)



Click here to learn about symbols, color coding, and icons used in this manual.

Installation

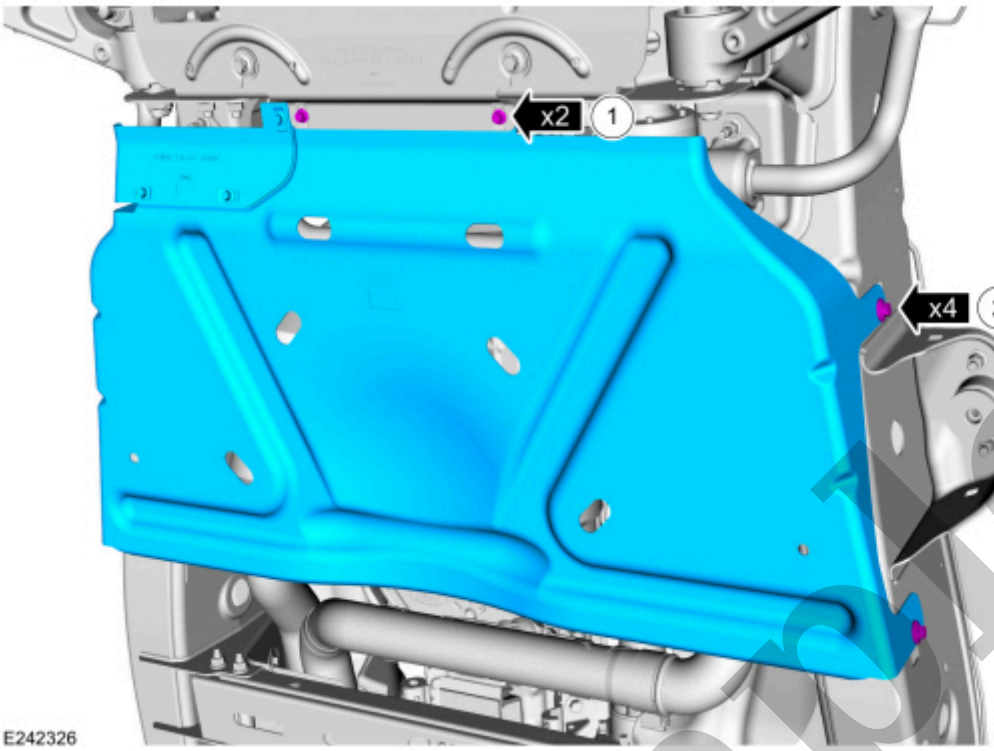
NOTE

Before installation, lubricate the CMP (camshaft position) sensor O-ring seal with clean engine oil.

1. To install, reverse the removal procedure.

Click here to learn about symbols, color coding, and icons used in this manual.

3. If equipped, remove the underbody skid plate.



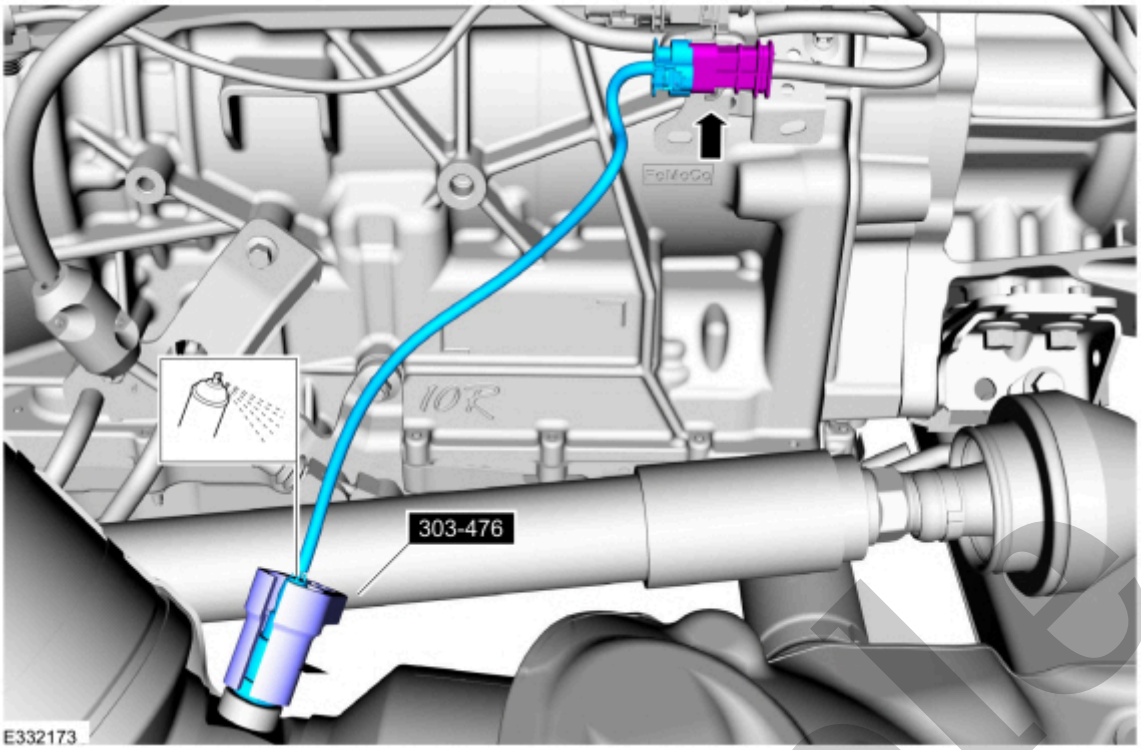
Click here to learn about symbols, color coding, and icons used in this manual.

Catalyst Monitor Bank 1 Sensor 1

4.
- Disconnect the electrical connector.
- Apply penetrating oil to sensor, using the special tool remove the Catalyst monitor sensor.

  Use Special Service Tool : 303-476 (T94P-9472-A) Socket, Exhaust Gas Oxygen Sensor

  Material : Motorcraft® Penetrating and Lock Lubricant / XL-1



Click here to learn about symbols, color coding, and icons used in this manual.

Installation

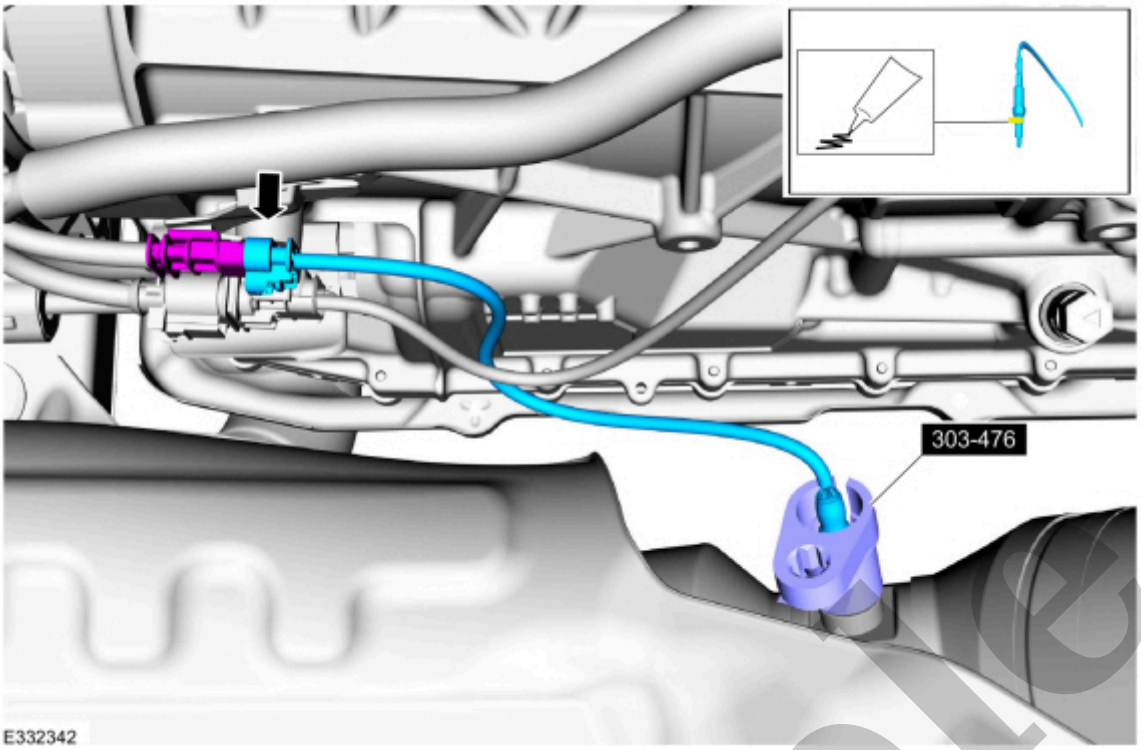
Catalyst Monitor Bank 2 Sensor 1

1. Apply anti-seize to thread of sensor, using special tool install the Catalyst monitor sensor. Connect the electrical connector.

   Use Special Service Tool : 303-476 (T94P-9472-A) Socket, Exhaust Gas Oxygen Sensor

   Material : Motorcraft® High Temperature Nickel Anti-Seize Lubricant / XL-2

   Torque : 35 lb.ft (48 Nm)

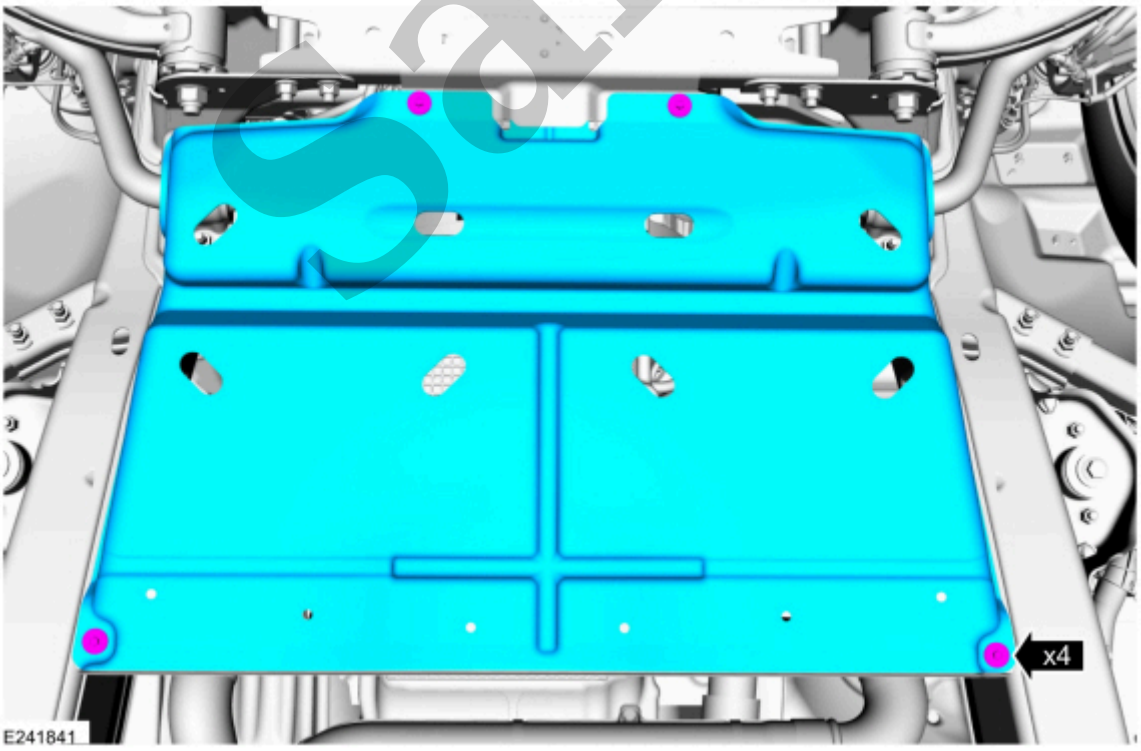


Click here to learn about symbols, color coding, and icons used in this manual.

All sensors

3. If equipped, install the underbody shield.

   Torque : 71 lb.in (8 Nm)



Crankshaft Position (CKP) Sensor

303-14C Electronic Engine Controls - 3.5L EcoBoost (BM)	***2022 F-150***
Removal and Installation	***Procedure revision date: 06/30/2021***

Crankshaft Position (CKP) Sensor

Removal

NOTE

Removal steps in this procedure may contain installation details.

1. Remove the LH (left-hand) turbocharger.

   Refer to: Turbocharger LH(303-04G Fuel Charging and Controls - Turbocharger - 3.5L EcoBoost (BM), Removal and Installation).

2. Remove the nut, bolt and the heat shield.