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2019 Ford Police Interceptor Utility Service and Repair Manual

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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

303-14B Electronic Engine Controls - 3.3L Duratec-V6	2022 F-150
Removal and Installation	Procedure revision date: 05/28/2020

Camshaft Position (CMP) Sensor

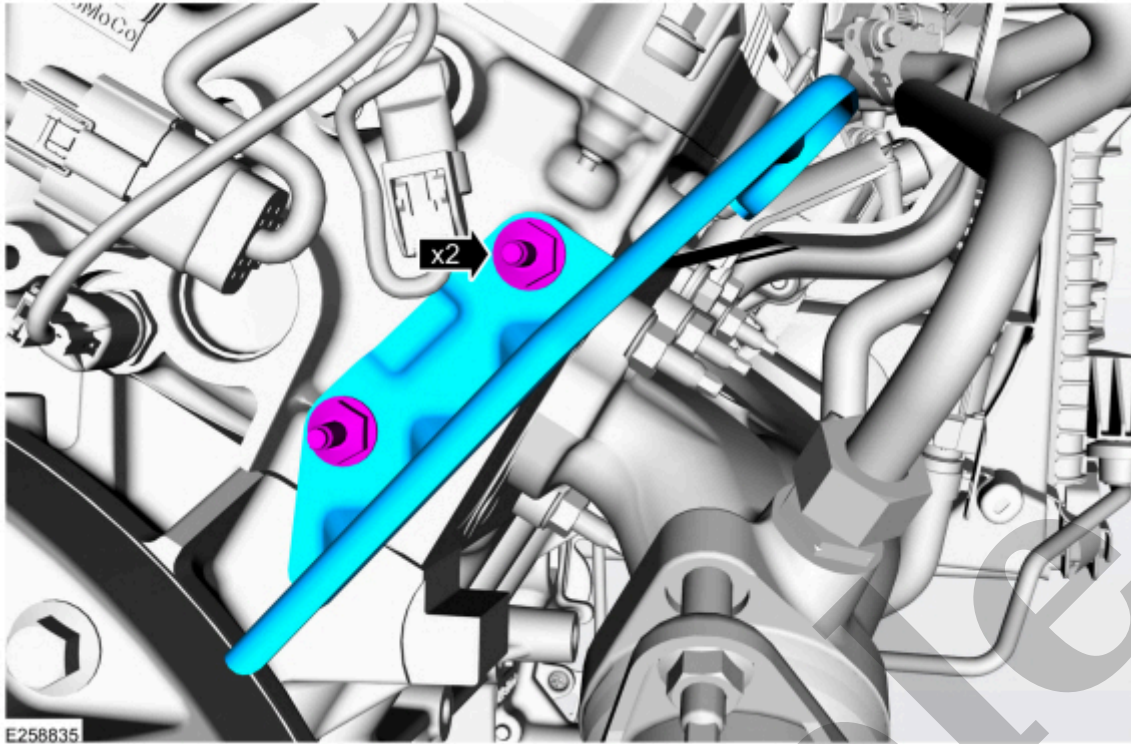
Removal

Camshaft Position (CMP) Bank 1 Sensor 1 and Bank 1 sensor 2

NOTE

Removal steps in this procedure may contain installation details.

1. Remove the RH (right-hand) fender splash shield. Refer to: Fender Splash Shield
2. Disconnect the transmission wiring harness retainers from the stud bolts.



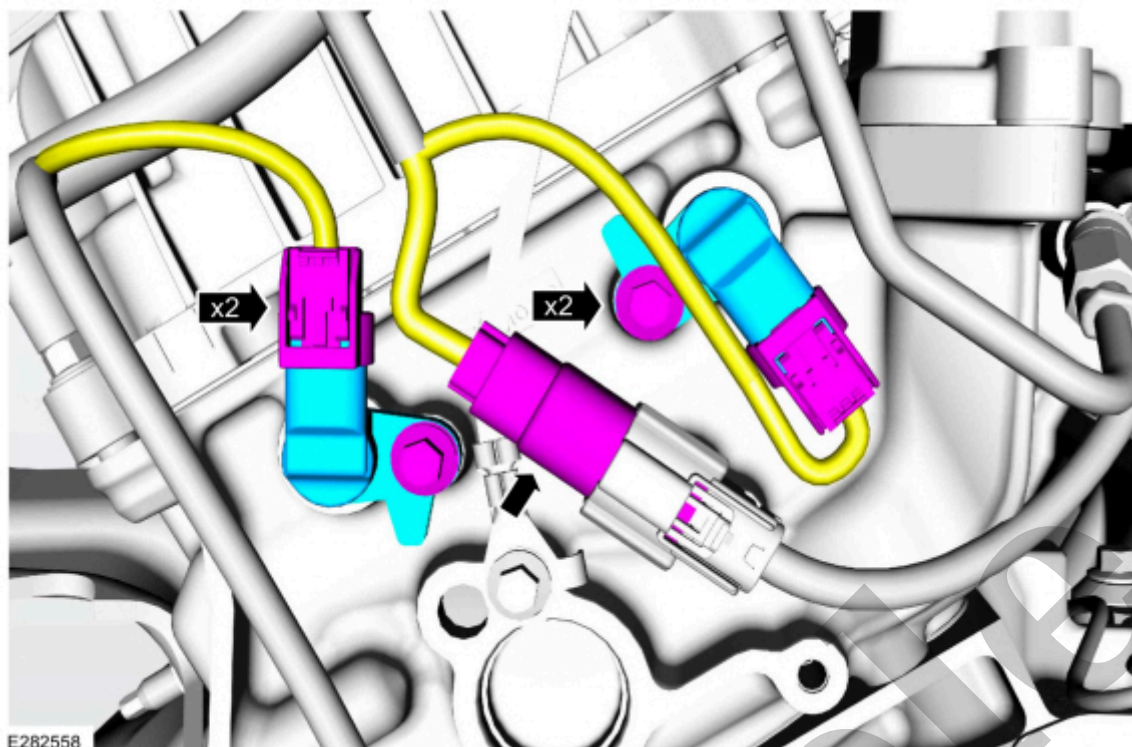
[Click here to learn about symbols, color coding, and icons used in this manual.](#)

4. • Disconnect the CMP (camshaft position) sensor electrical connector and remove the retainer and the CMP (camshaft position) sensor.

Torque : 89 lb.in (10 Nm)

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

Torque : 89 lb.in (10 Nm)



[Click here to learn about symbols, color coding, and icons used in this manual.](#)

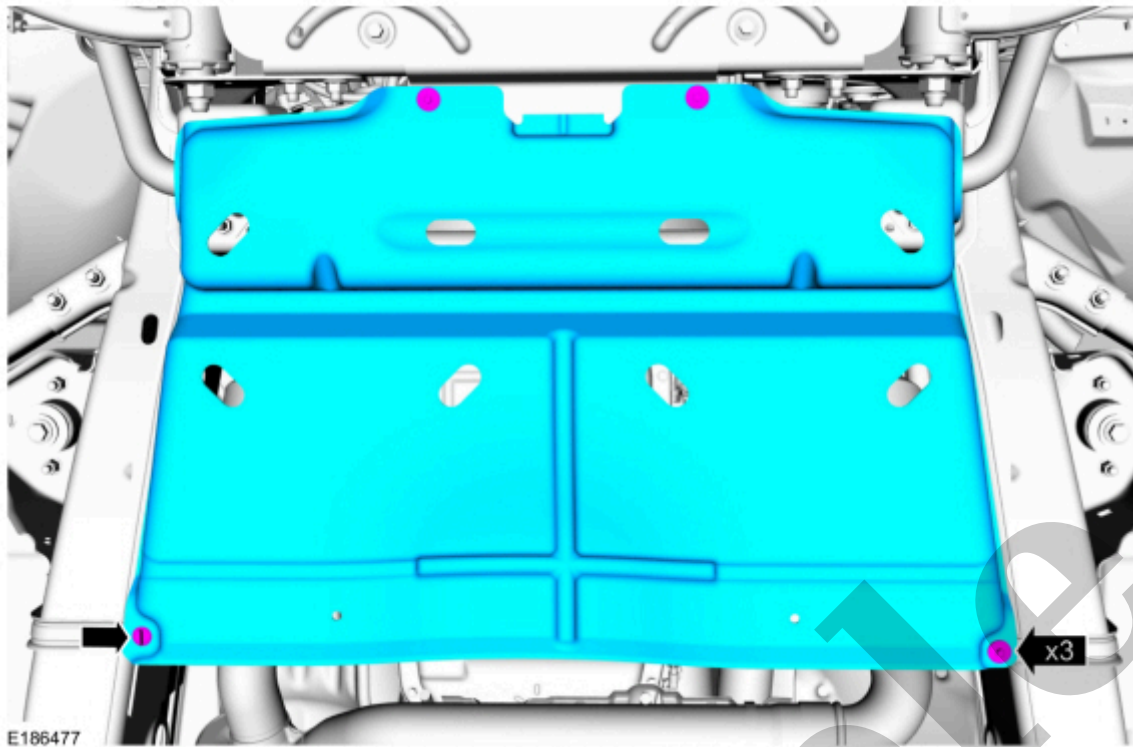
Installation

NOTE

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

1. To install, reverse the removal procedure.

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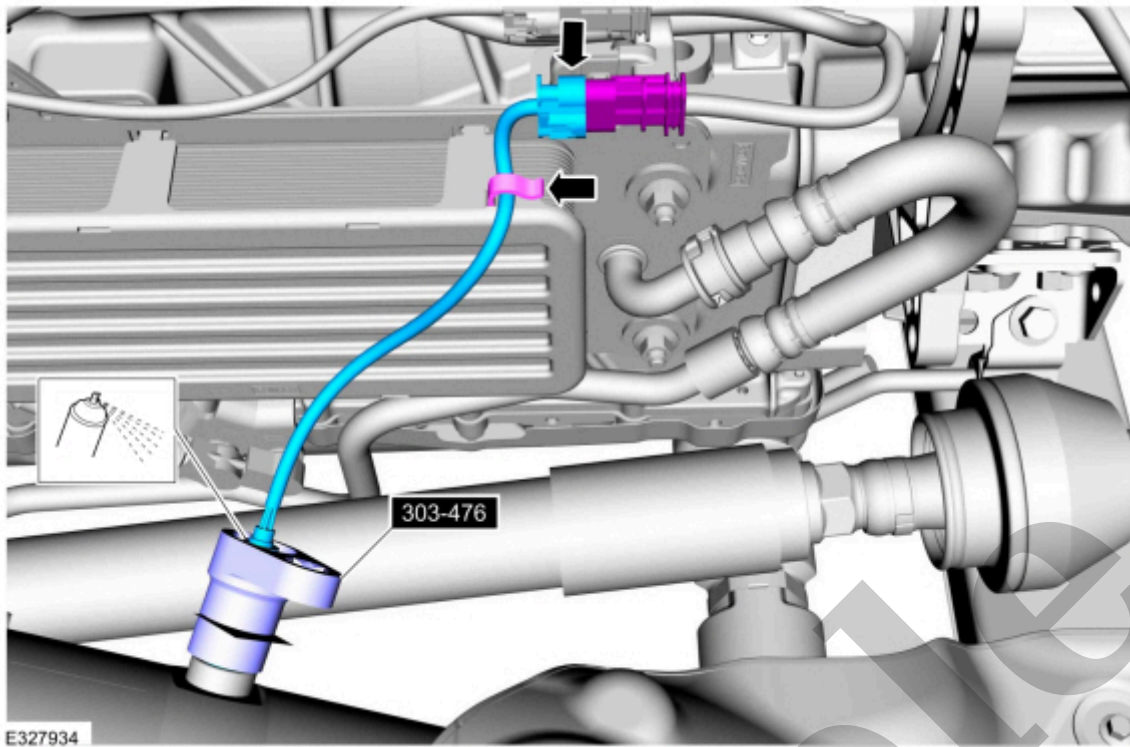
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Catalyst Monitor Bank 1 Sensor 1

3.
 - Disconnect the electrical connector and remove the harness retainer.
 - 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



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Installation

Catalyst Monitor Bank 2 sensor 1

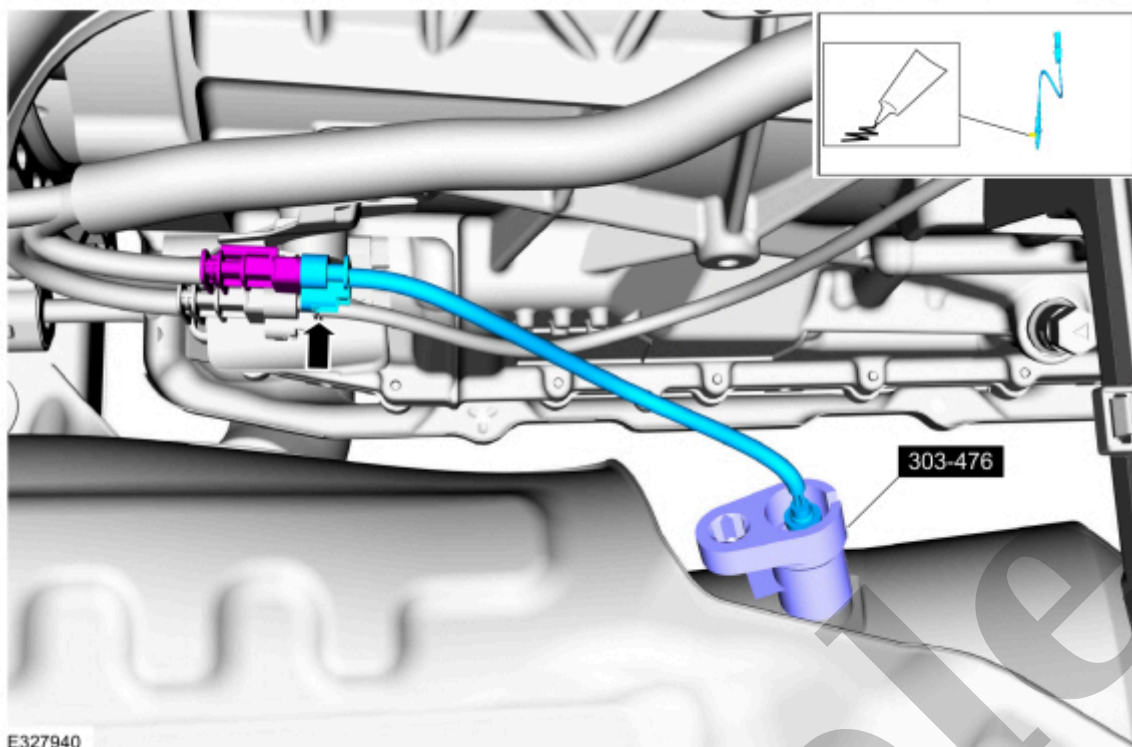
1. • Apply anti-seize to thread of sensor, using special tool install the Catalyst monitor sensor.

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)

- Install the harness retainer and connect the electrical connector.

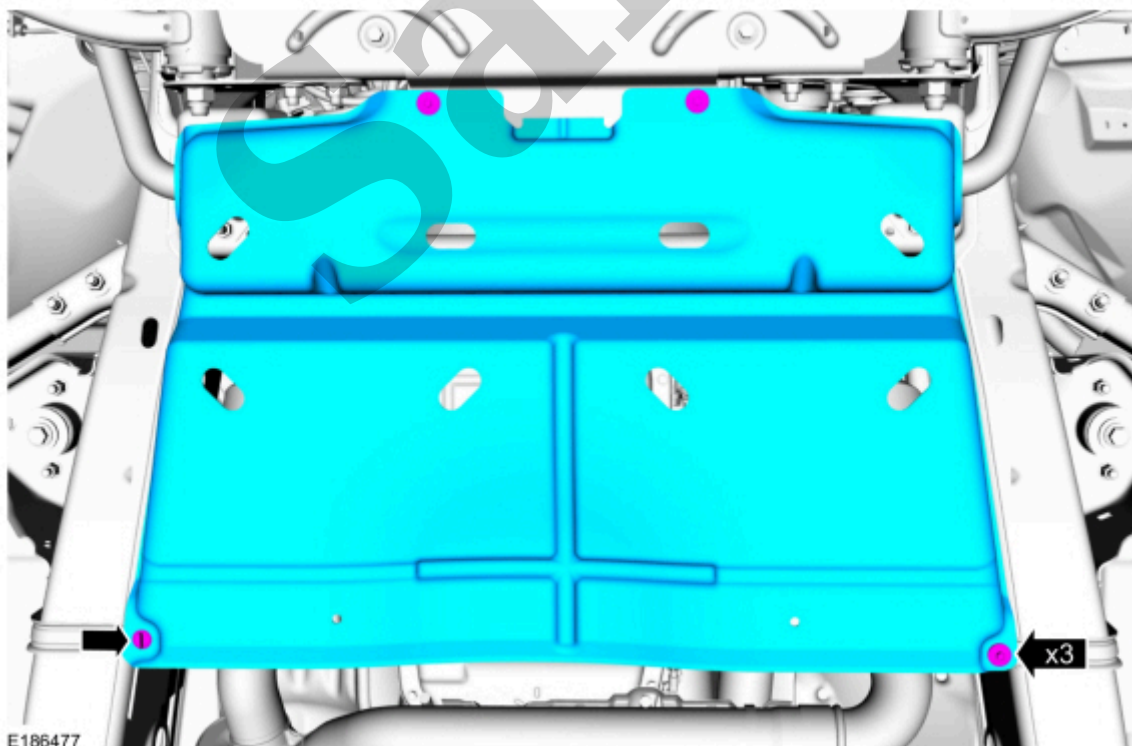


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All sensors

3. If equipped, install the underbody shield.

Torque : 71 lb.in (8 Nm)





Crankshaft Position (CKP) Sensor

303-14B Electronic Engine Controls - 3.3L Duratec-V6	2022 F-150
Removal and Installation	Procedure revision date: 05/28/2020

Crankshaft Position (CKP) Sensor

Removal

NOTE

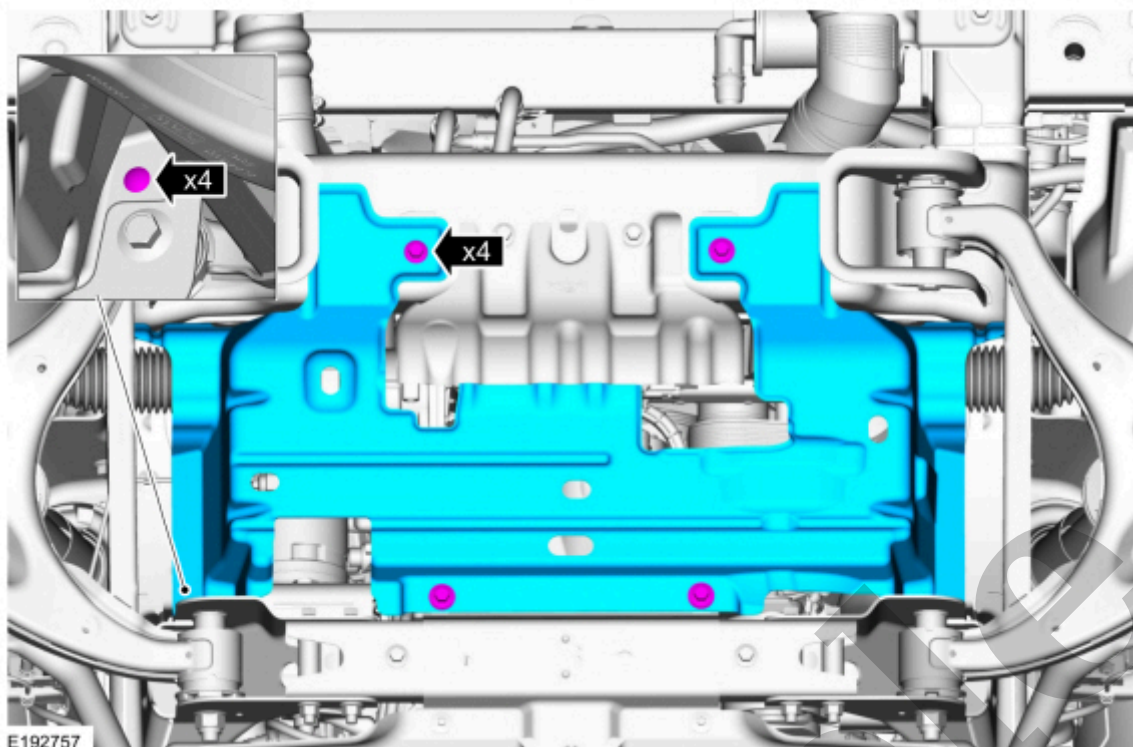
Removal steps in this procedure may contain installation details.

1. With the vehicle in NEUTRAL, position it on a hoist.

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

2.
 - If equipped, remove the bolts.
 - Release the retainer and remove the transmission housing cover.

Torque : 71 lb.in (8 Nm)



[Click here to learn about symbols, color coding, and icons used in this manual.](#)

4. NOTE

Vehicles come with an underbody shield or a skid plate.

If equipped, remove the bolts and the skid plate.

Torque : 30 lb.ft (40 Nm)