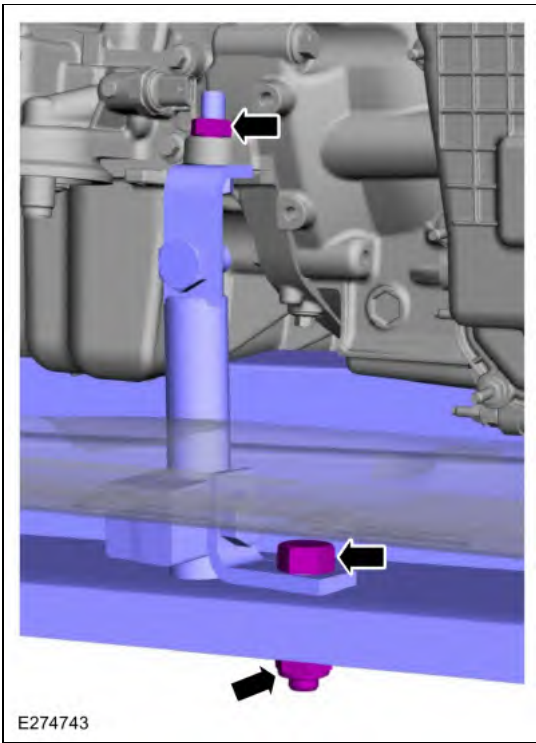
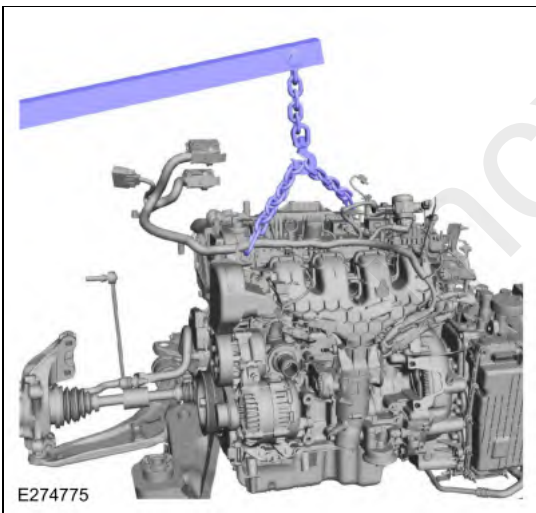


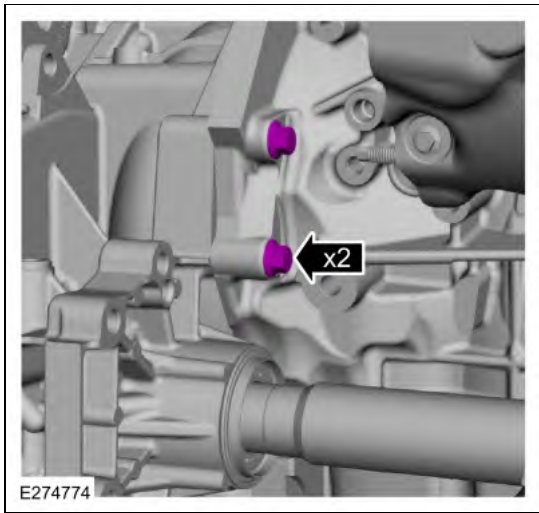


- Remove the engine lift equipment.
Use the General Equipment: Floor Crane

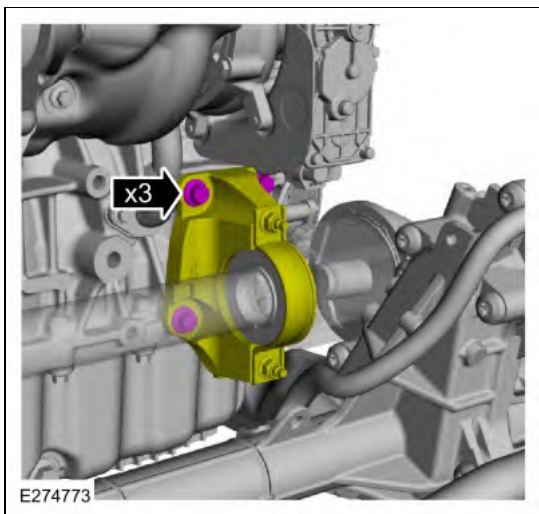


LHD FWD

- Install the engine-to-transmission bolts.
Torque: 35 lb.ft (48 Nm)

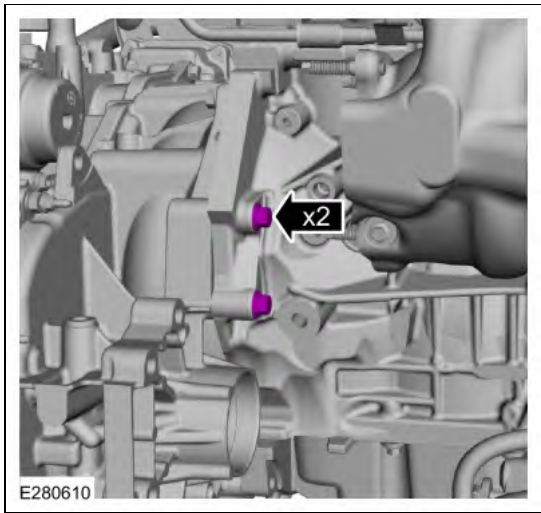


7. Install the halfshaft support bracket bolts.
Torque: 35 lb.ft (48 Nm)

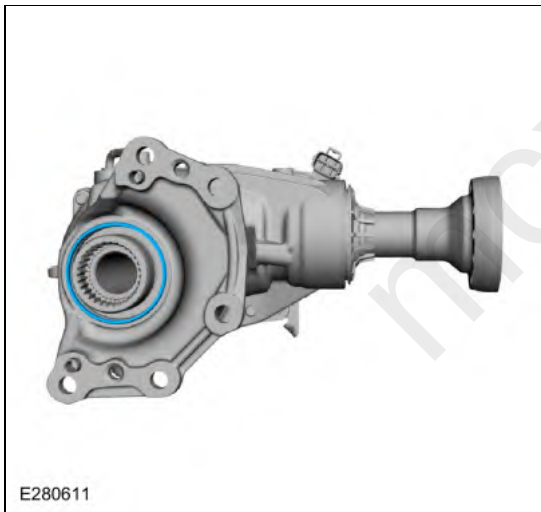


LHD AWD

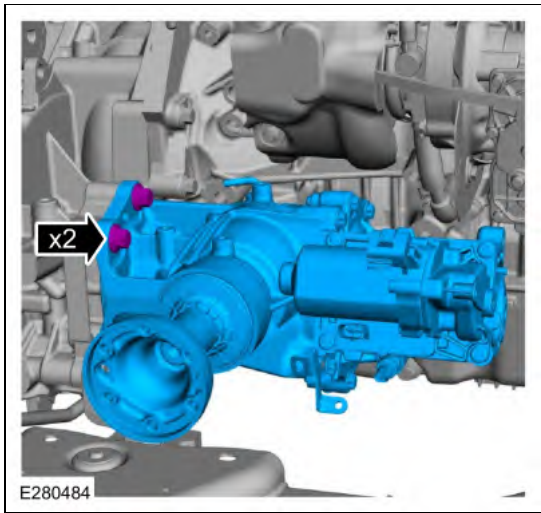
8. Install the engine-to-transmission bolts.
Torque: 35 lb.ft (48 Nm)



9. Install a new transfer case compression seal.



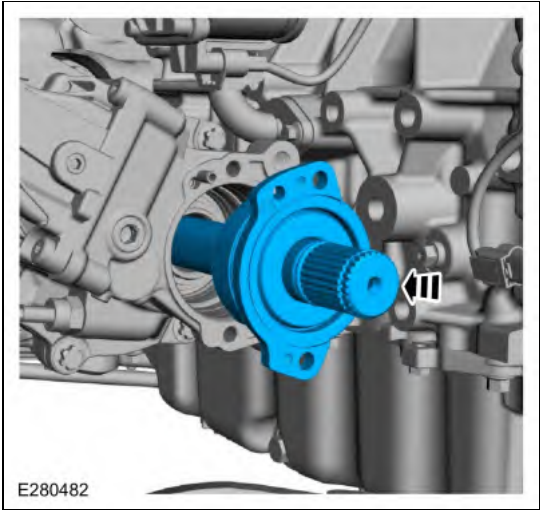
10. Install the transfer case and the bolts.
Torque: 76 lb.ft (103 Nm)



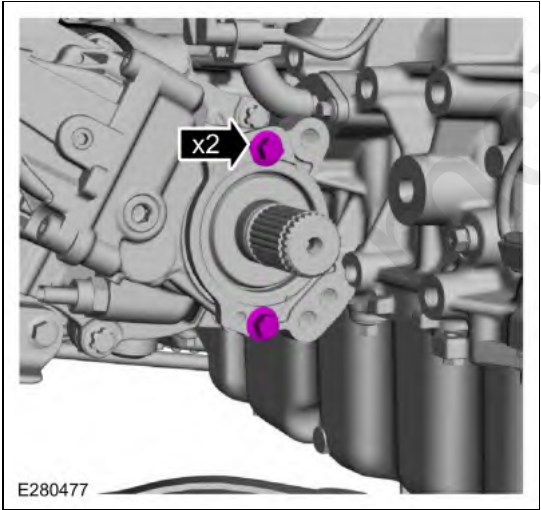
11. Install and lubricate the new transfer case axle shaft seal.



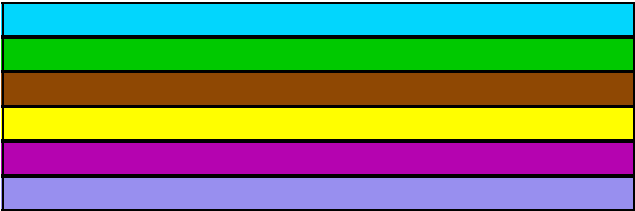
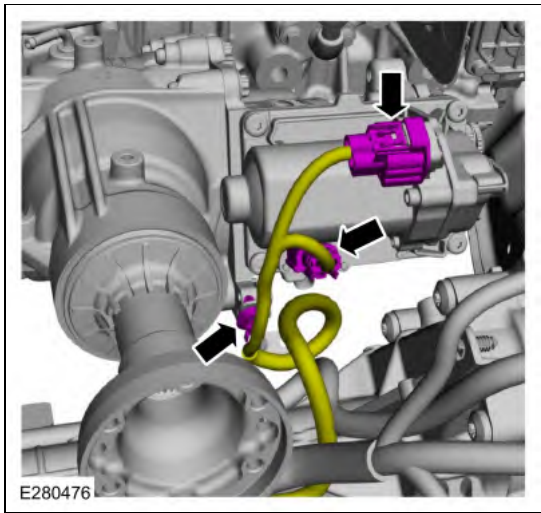
12. Install the transfer case axle shaft.



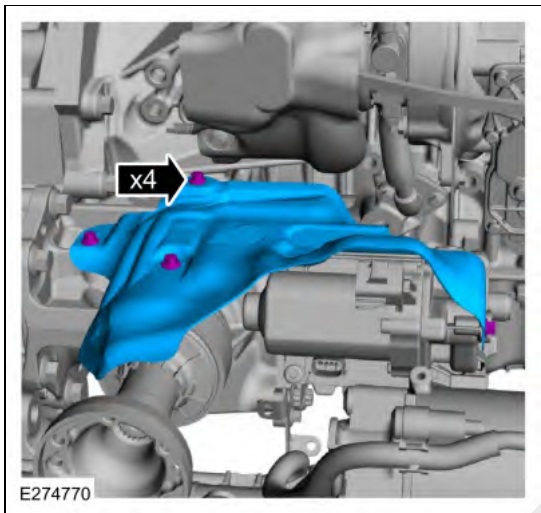
13. Install the bolts for the transfer case axle shaft.
Torque: 18 lb.ft (25 Nm)



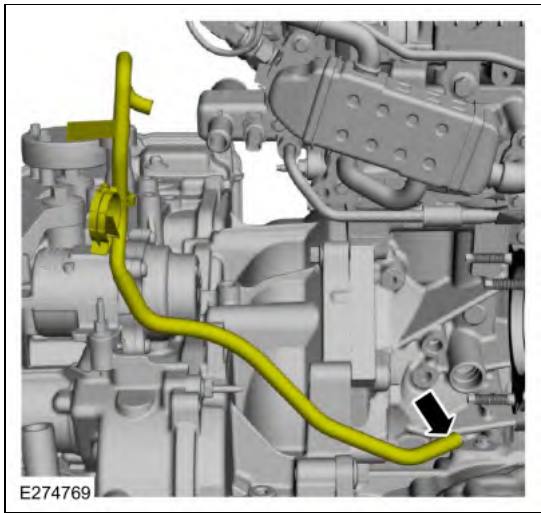
14. Connect the upper transfer case wiring harness electrical connectors and retainer.



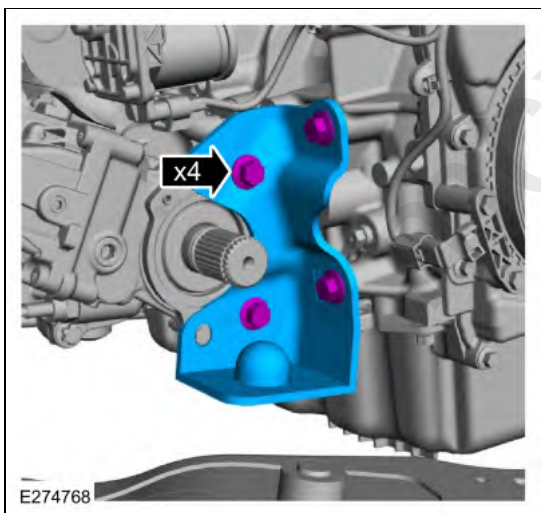
15. Install the transfer case heat shield and the bolts.
Torque: 97 lb.in (11 Nm)



16. Connect the transfer case vent tube.

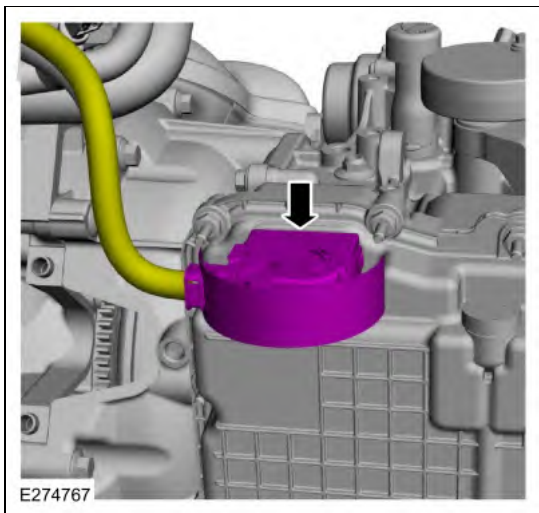


17. Install the transfer case support bracket and the bolts.
Torque: 35 lb.ft (48 Nm)

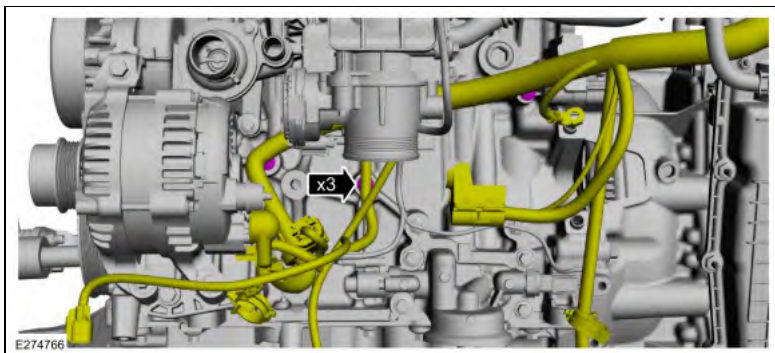


LHD AWD/LHD FWD

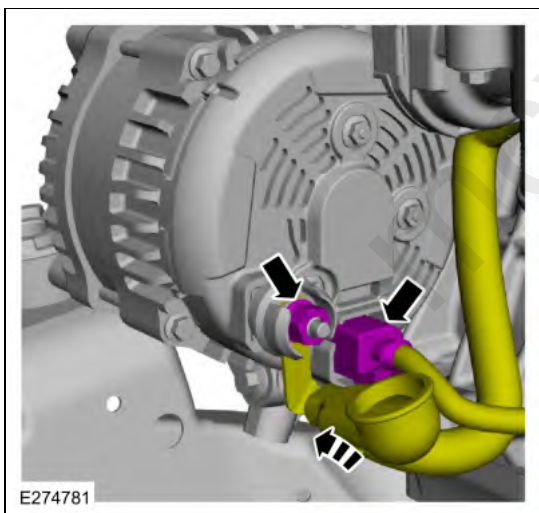
18. Connect the transmission wiring harness connector.



19. Position the harness and attach the generator wiring harness retainers.

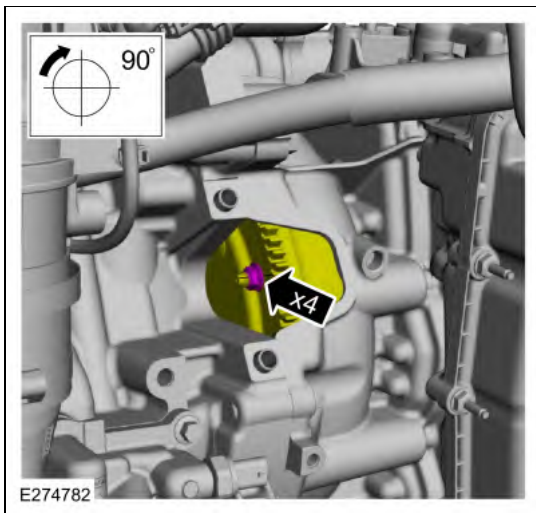


- 20.
- Connect the generator electrical connector.
 - Install the B+ cable, nut and position the cover.
- Torque: 150 lb.in (17 Nm)*

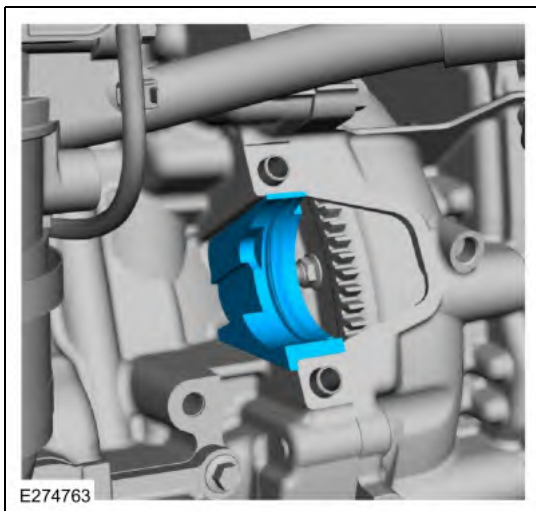


21. **NOTE:** Only rotate the crankshaft in a clockwise direction.

Install the torque converter nuts.
Use the General Equipment: Magnetic Socket
Torque: 30 lb.ft (40 Nm)

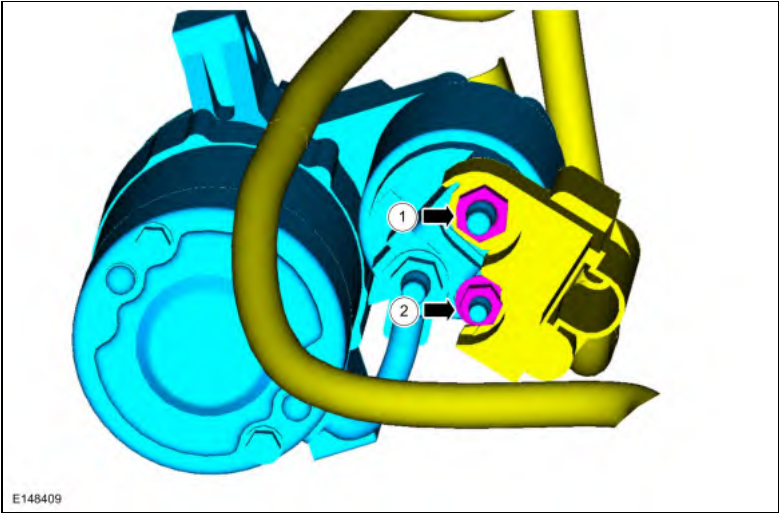


22. Install the stator motor isolator.

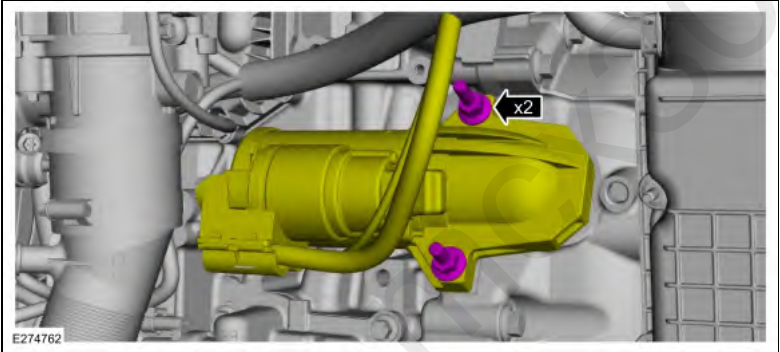


23.

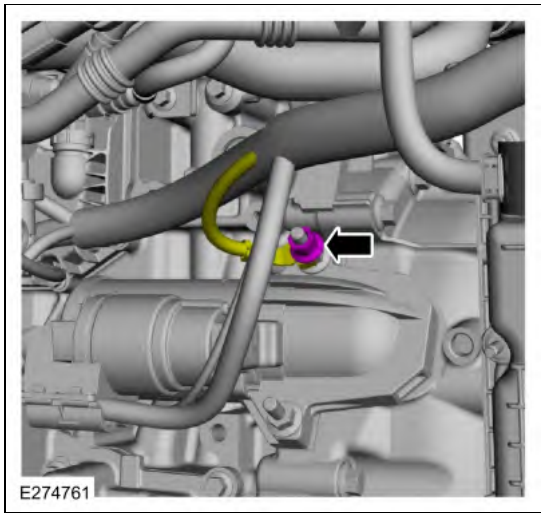
1. Install the battery cable and install the nut.
Torque: 106 lb.in (12 Nm)
2. Install the nut.
Torque: 53 lb.in (6 Nm)



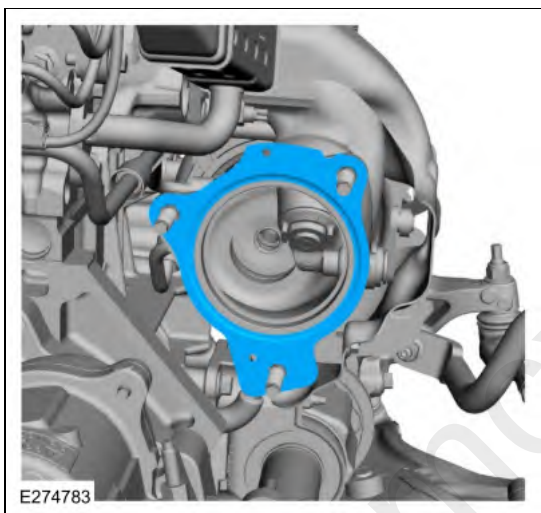
24. Position the starter motor and install the stud bolts.
Torque: 35 lb.ft (48 Nm)



25. Install ground wire and nut.
Torque: 159 lb.in (18 Nm)

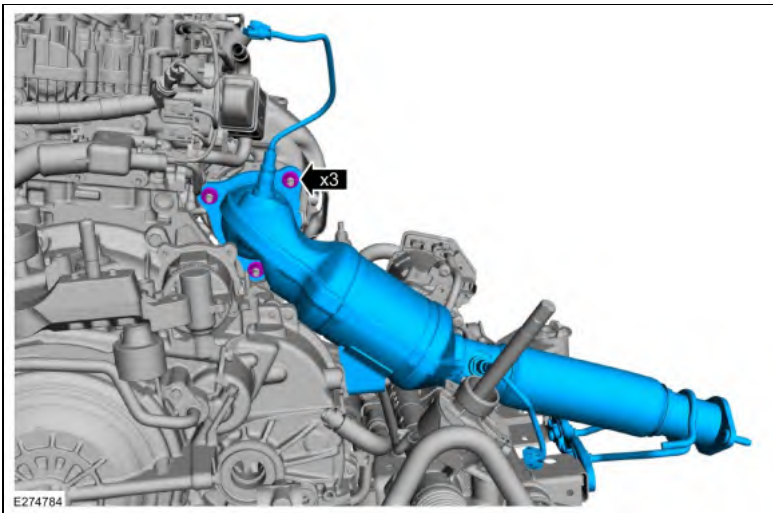


26. Install a new catalytic converter gasket.

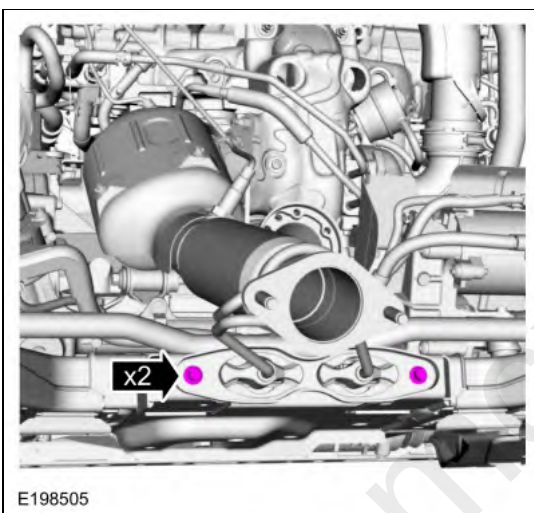


27. **NOTE:** Do not tighten the new catalytic converter-to-turbocharger nuts at this time.

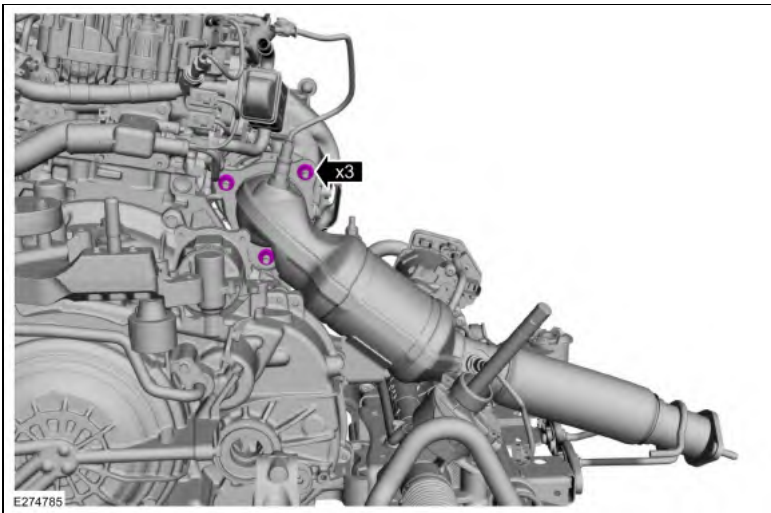
Install the catalytic converter and the new nuts finger-tight.



28. Install the catalytic converter support bracket-to-subframe bolts finger tight.

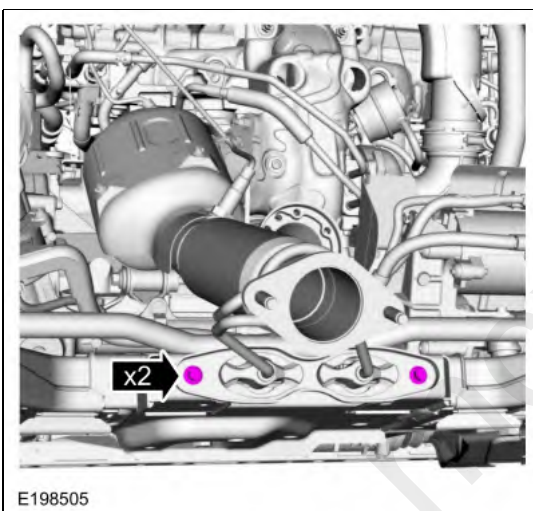


29. Tighten.
Torque: 30 lb.ft (40 Nm)



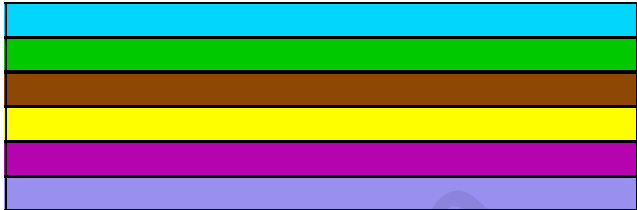
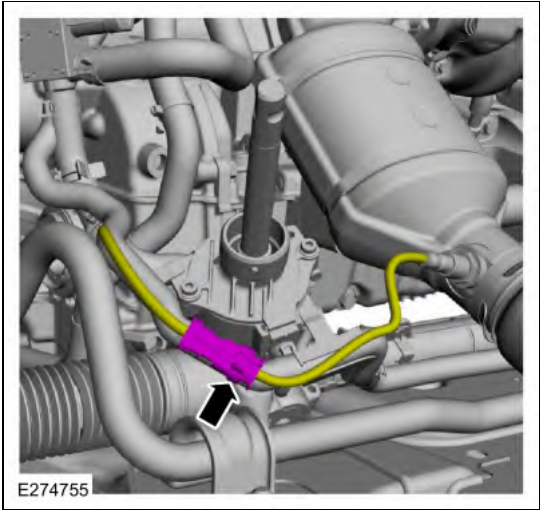


30. Tighten the catalytic converter support bracket-to-subframe bolts.
Torque: 18 lb.ft (25 Nm)

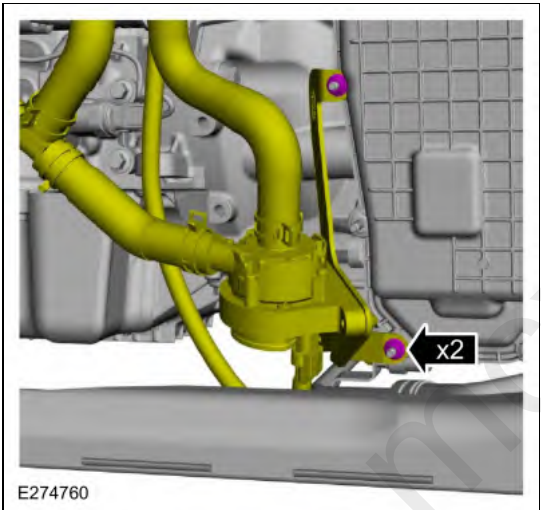




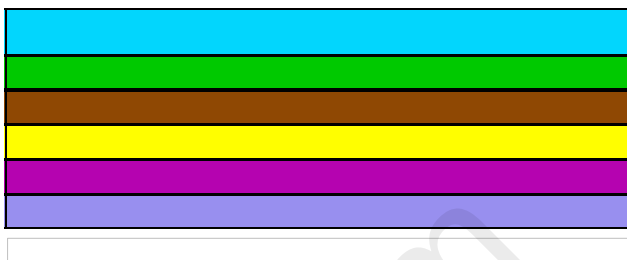
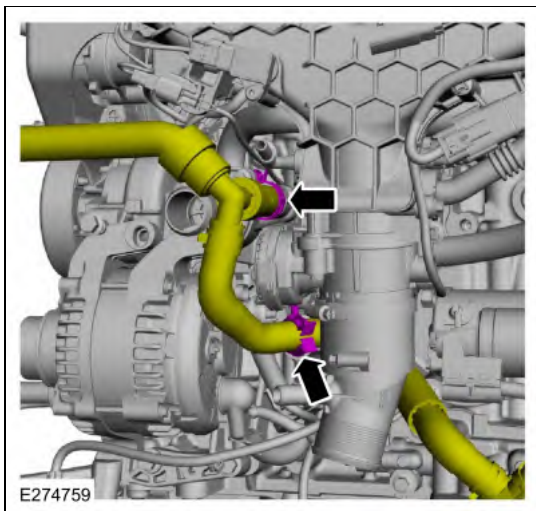
31. Connect the catalyst monitor sensor electrical connector.



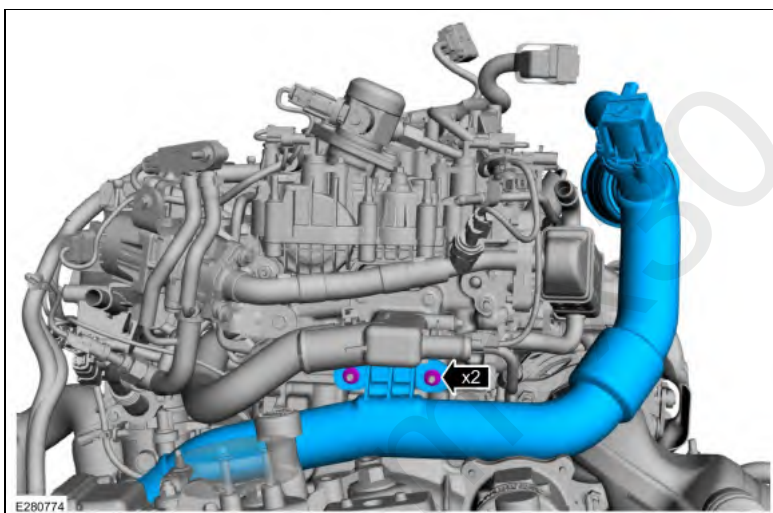
32. Position the start/stop coolant pump and install the nuts.
Torque: 71 lb.in (8 Nm)



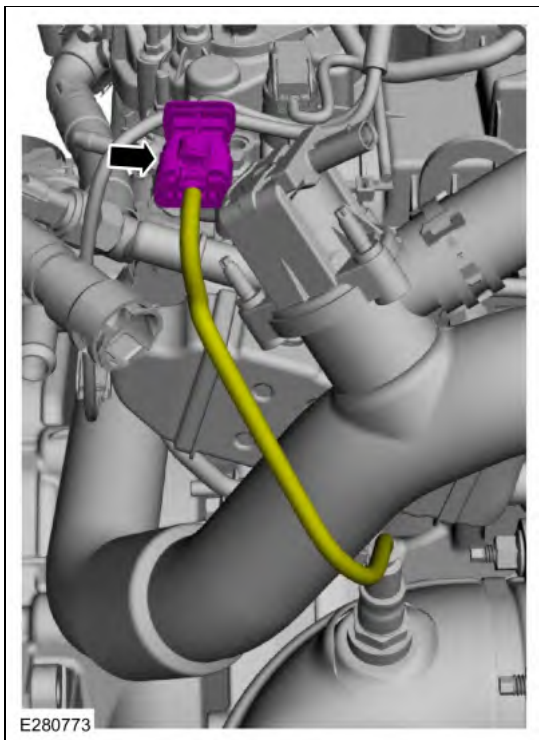
33. Connect the coolant hose to the thermostat housing and attach wiring harness retainer.



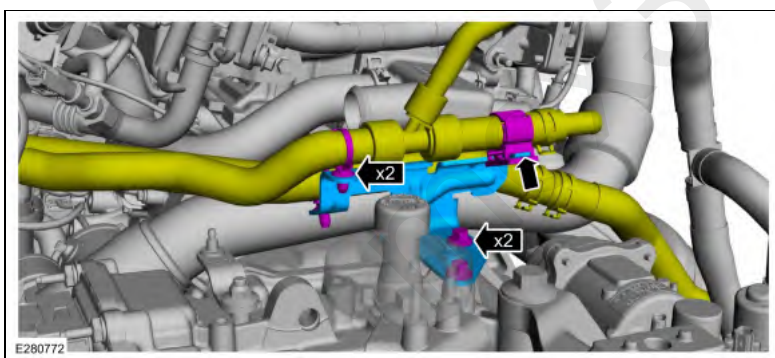
34. Install the CAC tube and the nuts.
Torque: 97 lb.in (11 Nm)



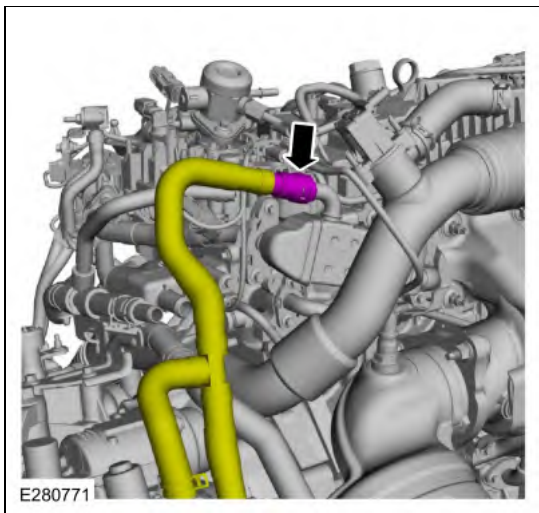
35. Connect the HO2S electrical connector.



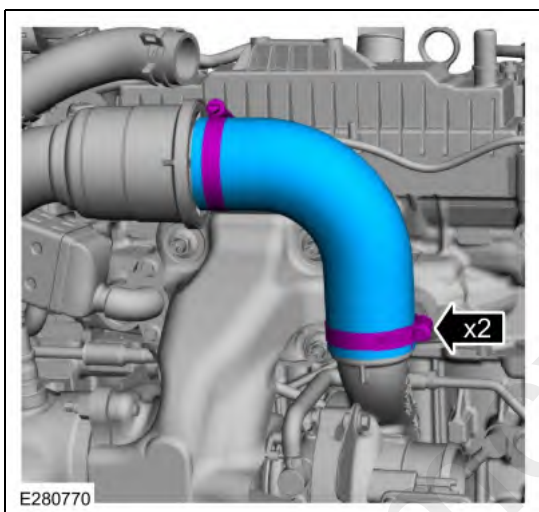
36. Install the coolant hoses bracket, bolts and attach the retainers.
Torque: 106 lb.in (12 Nm)



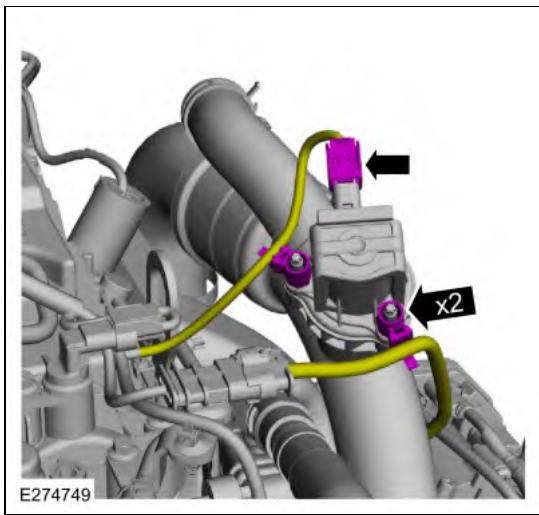
37. Connect the coolant hose to the EGR cooler.



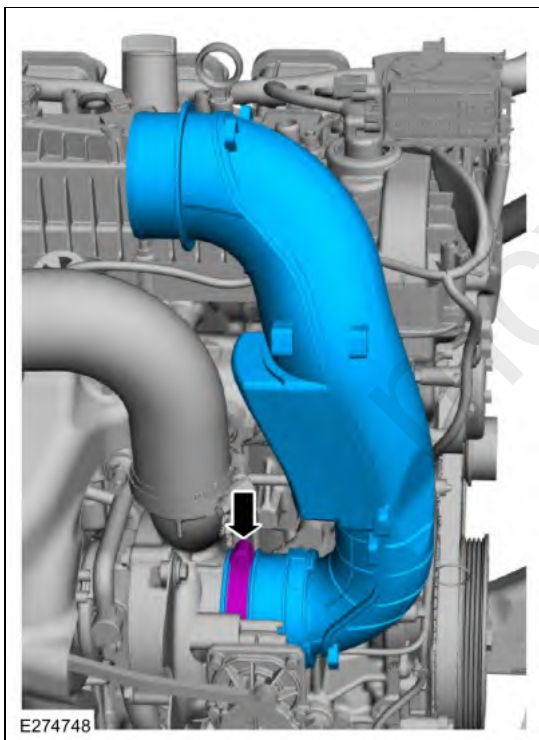
38. Install the CAC tube and tighten the clamps.
Torque: 53 lb.in (6 Nm)



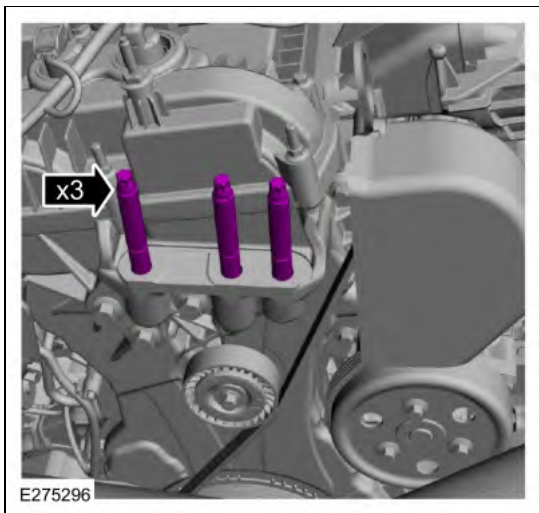
39. Connect the CAC tube bypass valve electrical connector and wire retainers.



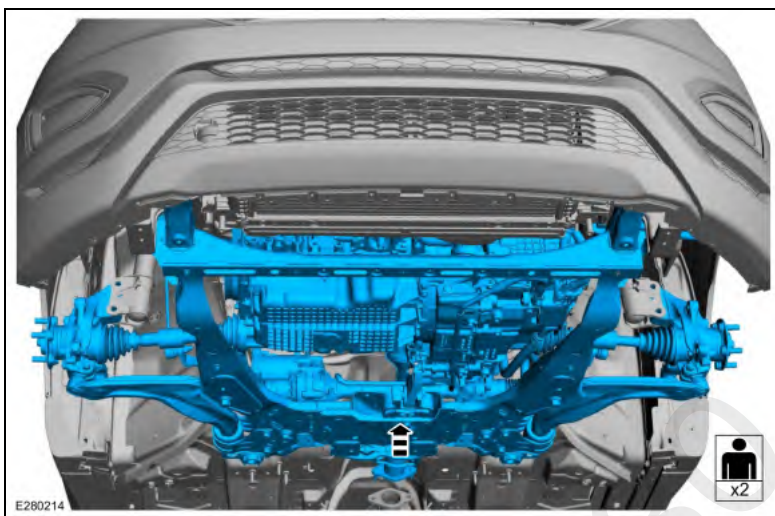
40. Install the CAC tube and tighten the clamp.
Torque: 53 lb.in (6 Nm)



41. Tighten the engine mount studs.
Torque: 22 lb.ft (30 Nm)

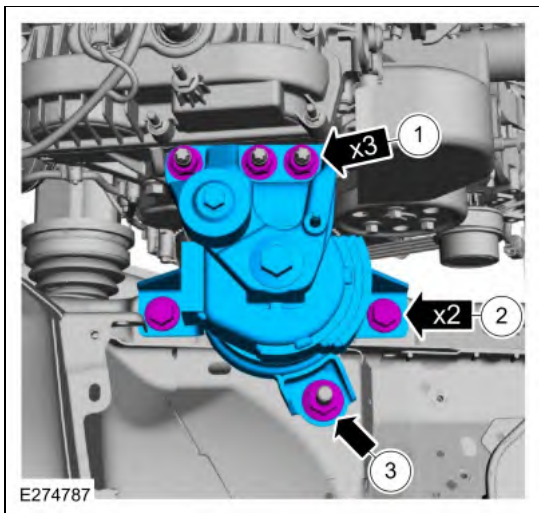


42. With the aid of an assistant and using the powertrain jack, raise the powertrain and subframe as an assembly.

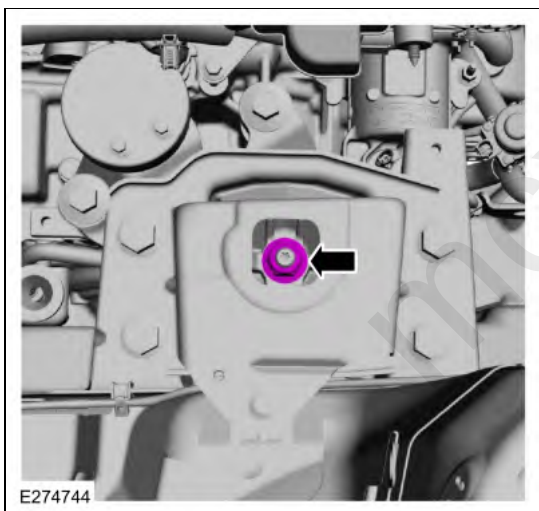


43.

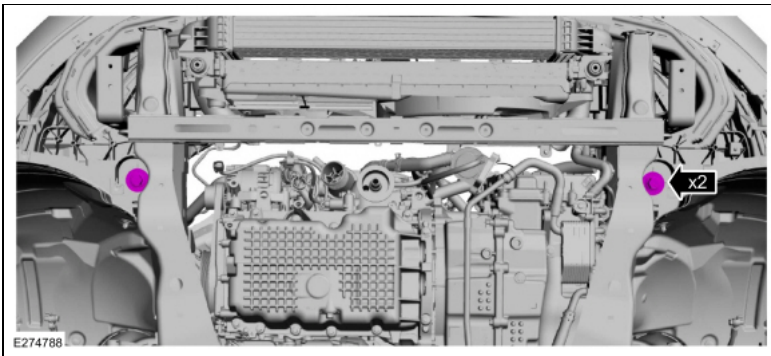
1. Install the engine mount and the new nuts.
Torque: 85 lb.ft (115 Nm)
2. Install the new bolts finger tight.
3. Install the new nut finger tight.



44. Install the new transmission mount nut.
Torque: 98 lb.ft (133 Nm)



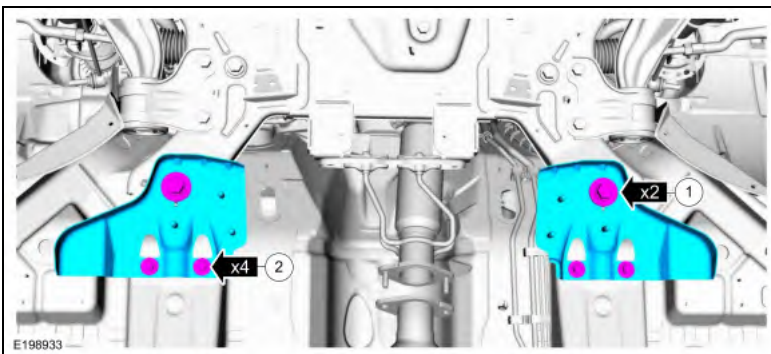
45. **NOTE:** Align the reference marks made during removal.
NOTE: Only tighten the bolts finger tight at this stage.
Install the new forward subframe bolts.



46. **NOTE:** Align the reference marks made during removal.

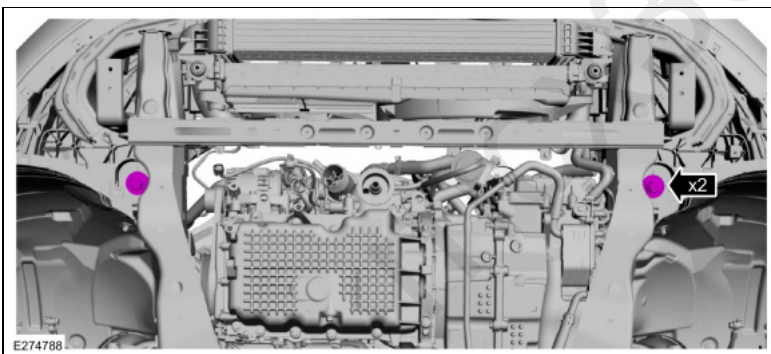
NOTE: Only tighten the bolts finger tight at this stage.

1. Install the subframe brackets and the new rearward subframe bolts.
2. Install the subframe bracket bolts.



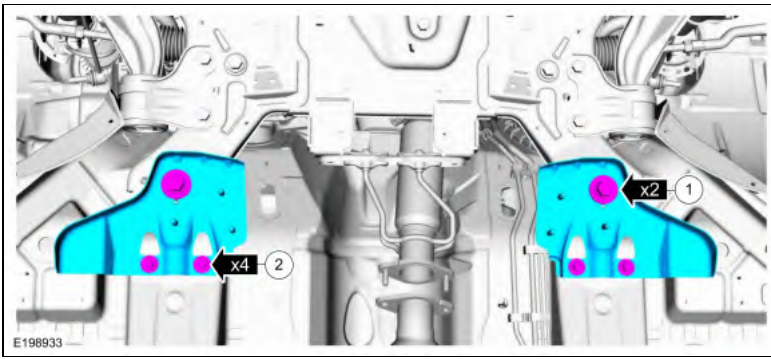
47. **NOTE:** While tightening the subframe bolts, make sure the front subframe does not move.

Tighten the forward subframe bolts.
Torque: 173 lb.ft (235 Nm)

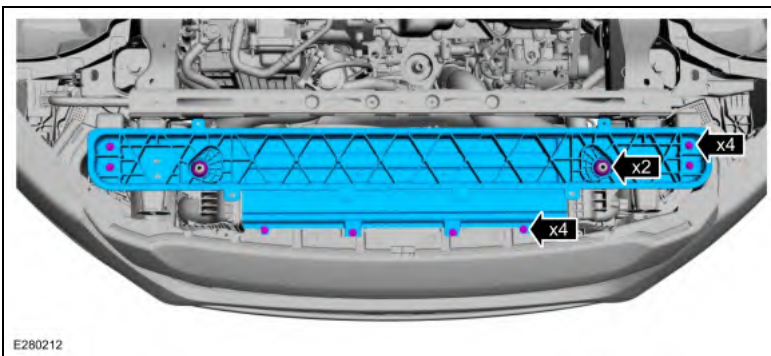


48.

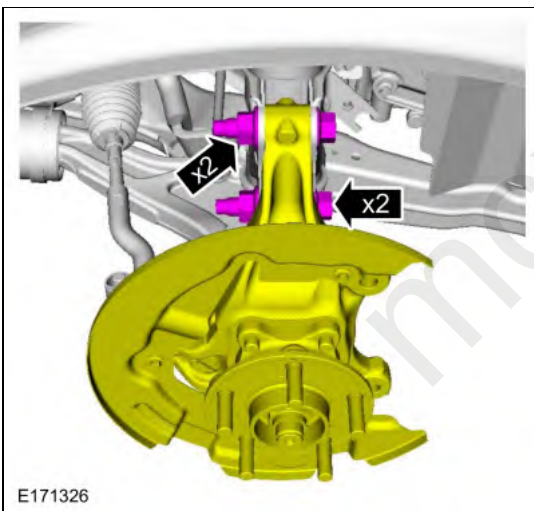
1. Tighten.
Torque:
Stage 1: 76 lb.ft (103 Nm)
Stage 2: 270Â°
2. Tighten.
Torque: 35 lb.ft (48 Nm)



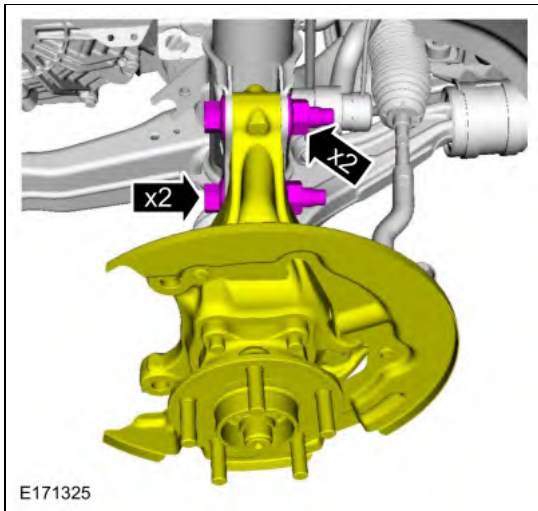
- 49.
- Install the cooling module support panel and the bolts.
Torque: 18 lb.ft (24 Nm)
 - Install the pin-type retainers.



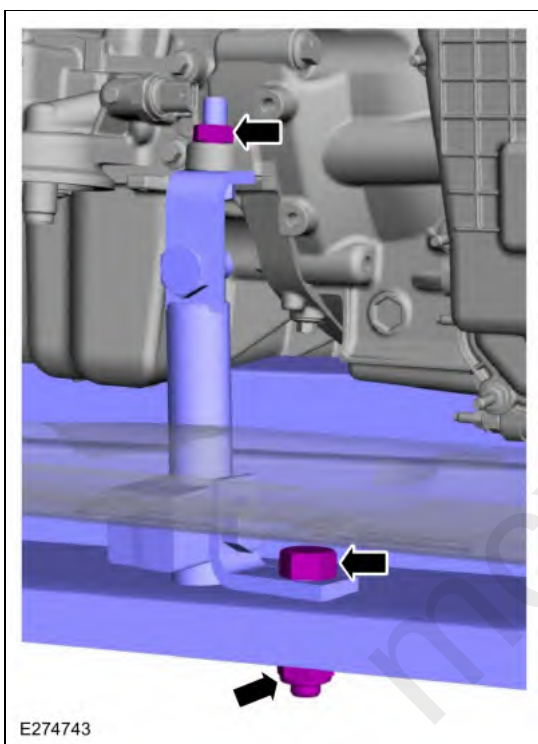
50. Install the new bolts and nuts.
Torque: 173 lb.ft (235 Nm)



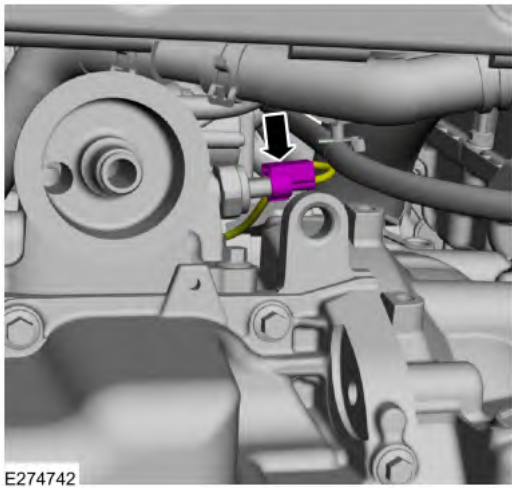
51. Install the new bolts and nuts.
Torque: 173 lb.ft (235 Nm)



52. Remove the adjustable mounting arm and the lift table.

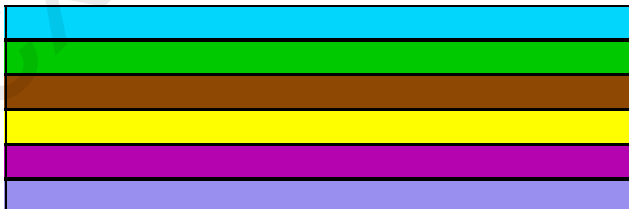
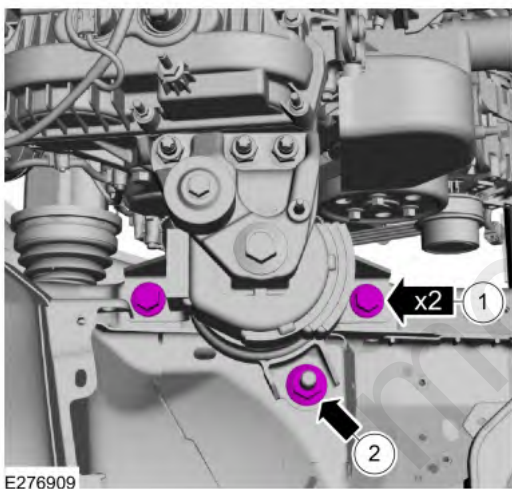


53. Connect the EOP switch electrical connector.



54.

1. Tighten the new bolts.
Torque: 81 lb.ft (110 Nm)
2. Tighten the new nut.
Torque: 66 lb.ft (90 Nm)



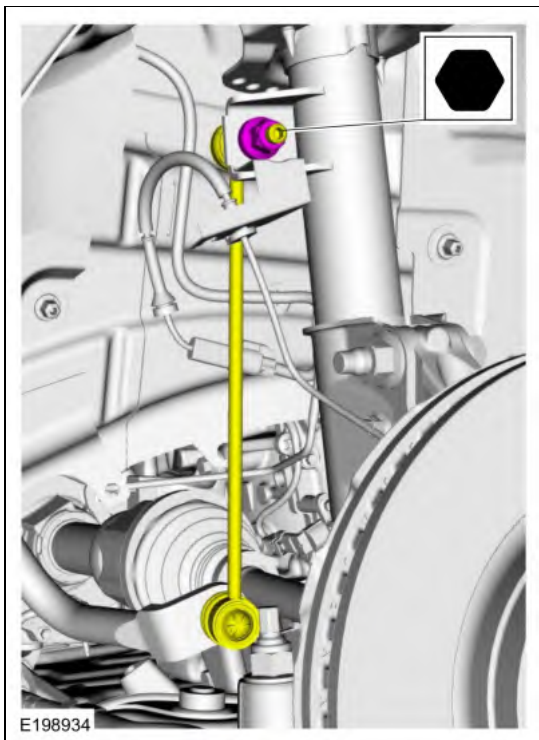
55. Install both front brake disc.

Refer to: Brake Disc (206-03 Front Disc Brake, Removal and Installation).

56. **NOTICE:** Use the internal or external hex-holding feature to prevent the ball and stud from turning while removing or installing the stabilizer bar link nuts. The link boot seal must not be allowed to twist while tightening the link nuts or damage to the boot seal will occur.

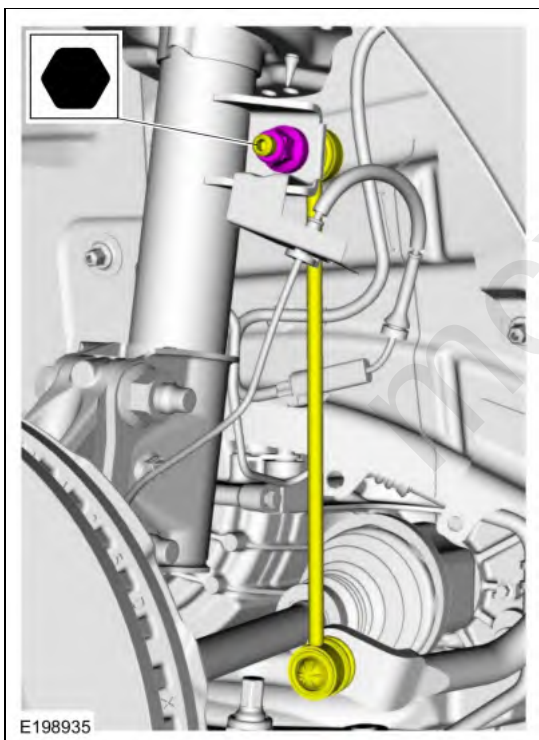
Position the RH sway bar link and install the new nut.

Torque: 85 lb.ft (115 Nm)

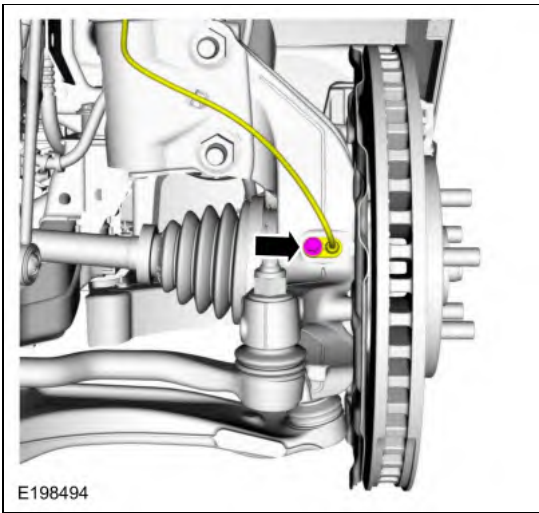


57. **NOTICE:** Use the internal or external hex-holding feature to prevent the ball and stud from turning while removing or installing the stabilizer bar link nuts. The link boot seal must not be allowed to twist while tightening the link nuts or damage to the boot seal will occur.

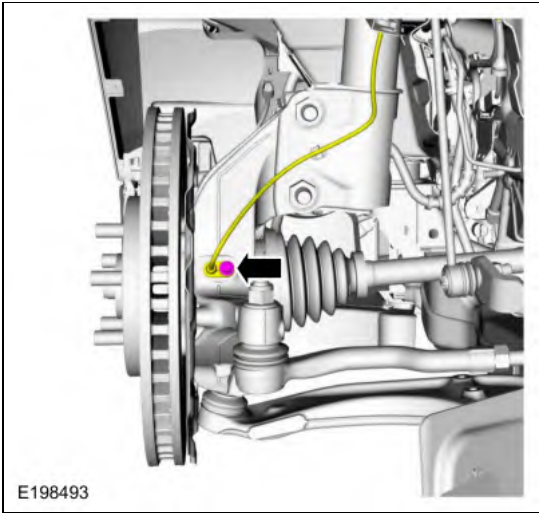
Position the LH sway bar link and install the new nut.
Torque: 85 lb.ft (115 Nm)



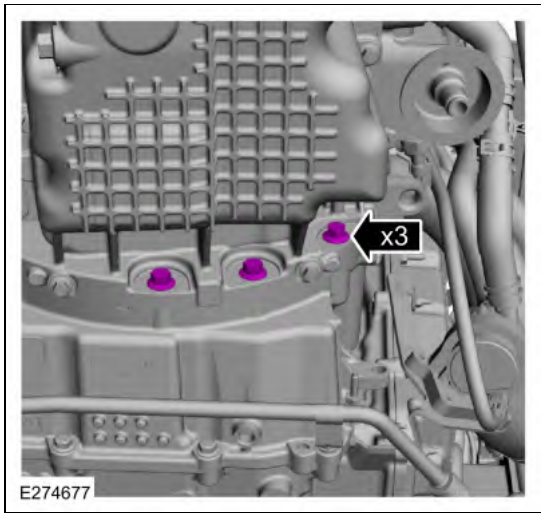
58. Install the RH anti-lock sensor and the bolt.
Torque: 80 lb.in (9 Nm)



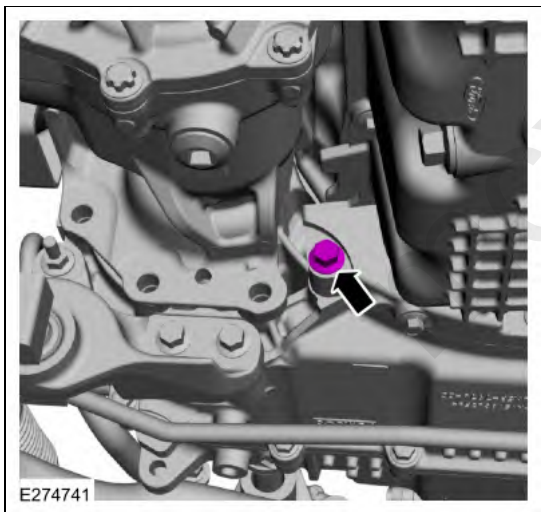
59. Install the LH anti-lock sensor and the bolt.
Torque: 80 lb.in (9 Nm)



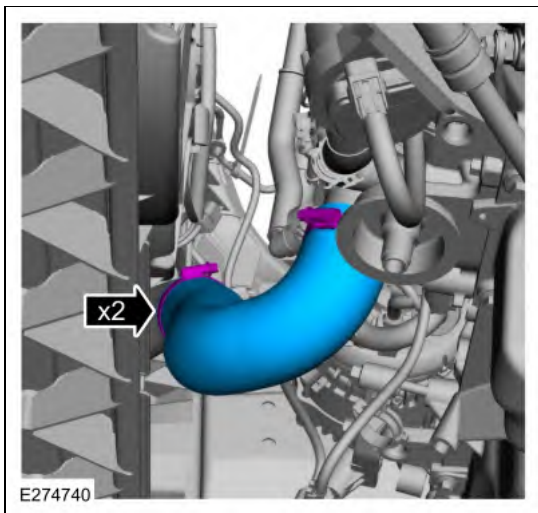
60. Install the transmission-to-engine bolts.
Torque: 35 lb.ft (48 Nm)



61. Install the oil pan-to-transmission bolt.
Torque: 35 lb.ft (48 Nm)



62. Install the CAC tube and tighten the clamp.
Torque: 53 lb.in (6 Nm)

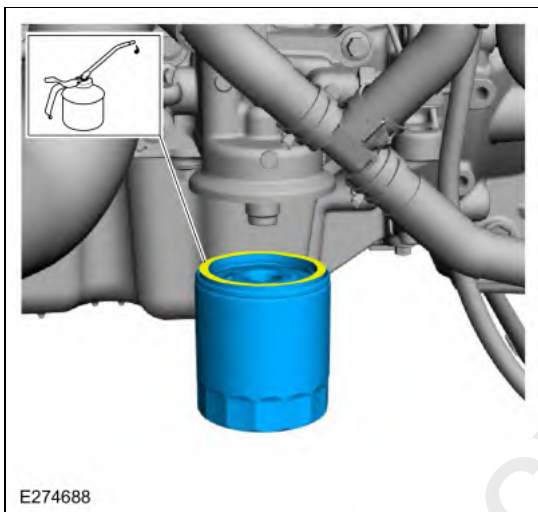


63. Lubricate the oil filter sealing surface and install.

Torque:

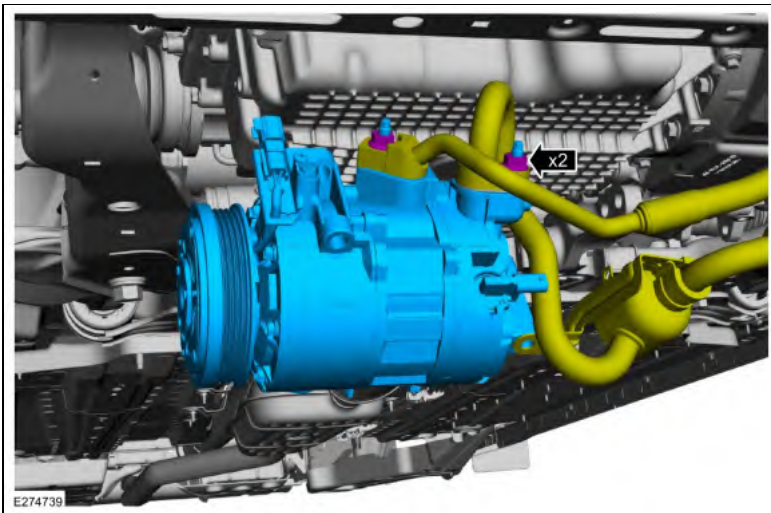
Stage 1: 71 lb.in (8 Nm)

Stage 2: 180°



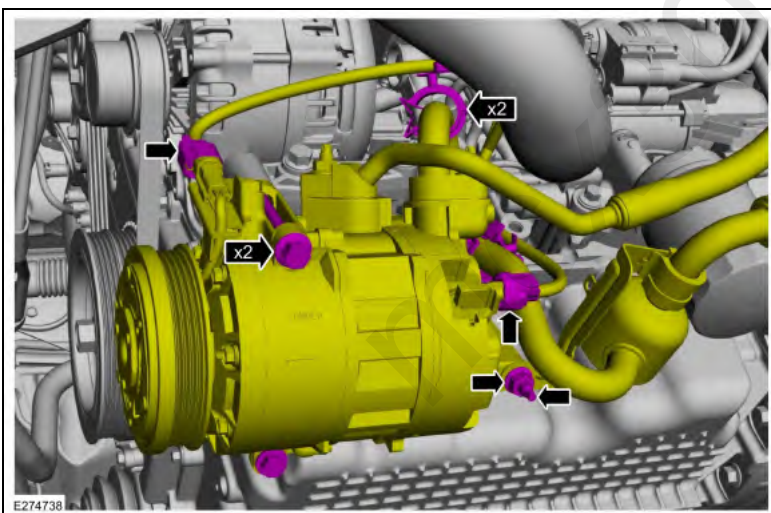
64. **NOTICE:** During the removal of components, cap, tape or otherwise appropriately protect all openings to prevent the ingress of dirt or other contamination. Remove protective materials prior to installation.

- Install new the O-ring seals and gasket seals.
 - Install A/C compressor and connect the A/C lines.
- Torque:* 133 lb.in (15 Nm)



65.

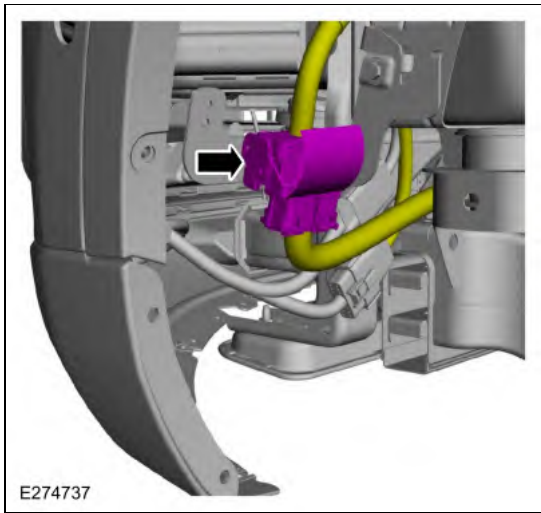
- Position the A/C compressor and install the stud.
Torque: 80 lb.in (9 Nm)
- Install the A/C nut and stud.
Torque: 18 lb.ft (25 Nm)
- Connect the electrical connectors and wiring retainers.



66. Install the following items:

1. Install the A/C compressor belt.
Refer to: Air Conditioning (A/C) Compressor Belt (303-05A Accessory Drive - 2.0L EcoBoost (184kW/250PS) â€™ MI4, Removal and Installation).
2. Install the front headlamp leveling sensor.
Refer to: Headlamp Leveling Sensor (417-01 Exterior Lighting, Removal and Installation).

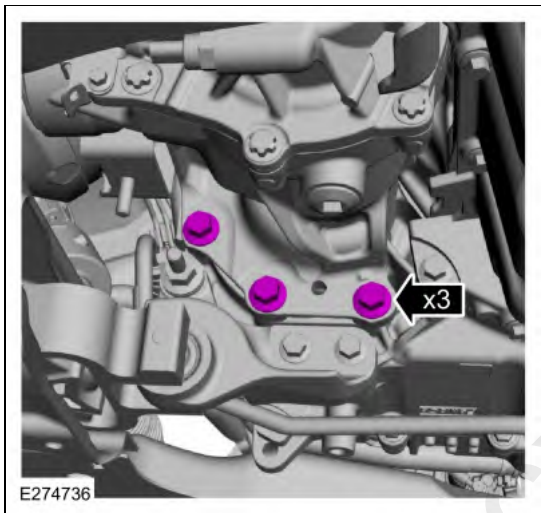
67. Connect the engine harness electrical connector.



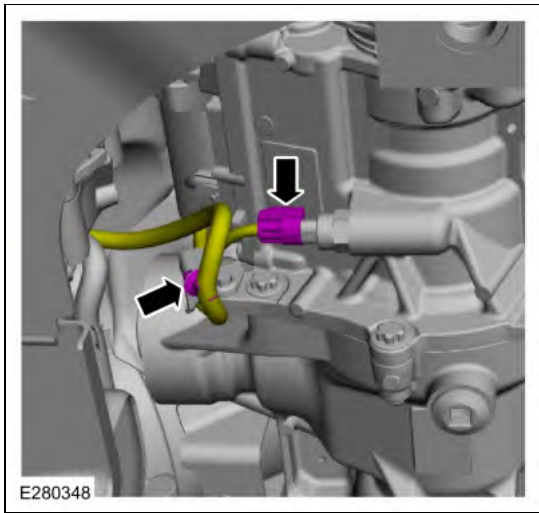
68. Install the RH and LH splash shield.
 Refer to: Fender Splash Shield (501-02 Front End Body Panels, Removal and Installation).

LHD AWD

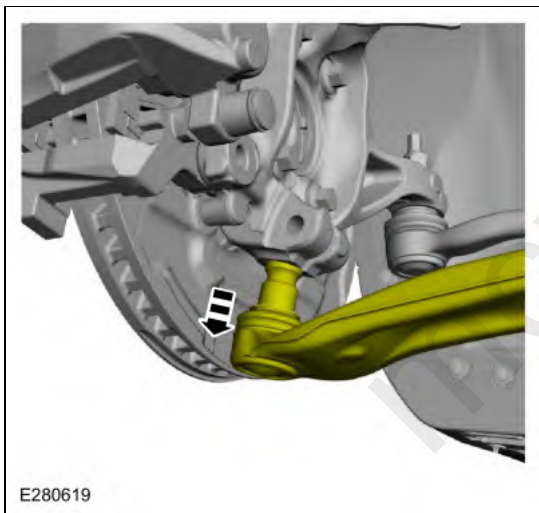
69. Install the new bottom transfer case bolts.
Torque: 76 lb.ft (103 Nm)



70. Connect the lower transfer case wiring harness electrical connector and retainer.



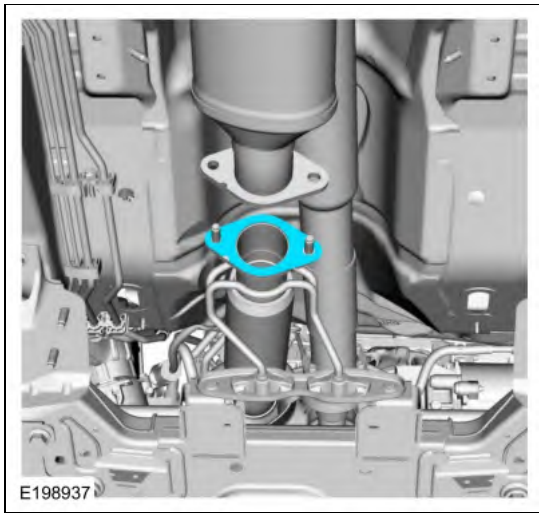
71. Remove the ball joint from the wheel knuckle.



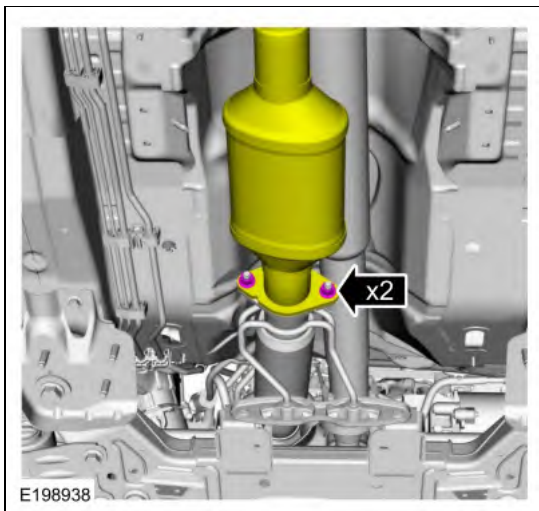
72. Install the following items:
1. Install the rear driveshaft.
 2. Install the RH halfshaft.
- Refer to: Front Halfshaft RH - 2.0L EcoBoost (184kW/250PS) &MI4, All-Wheel Drive (AWD) (205-04 Front Drive Halfshafts, Removal and Installation).

LHD FWD

73. Install a new exhaust gasket.

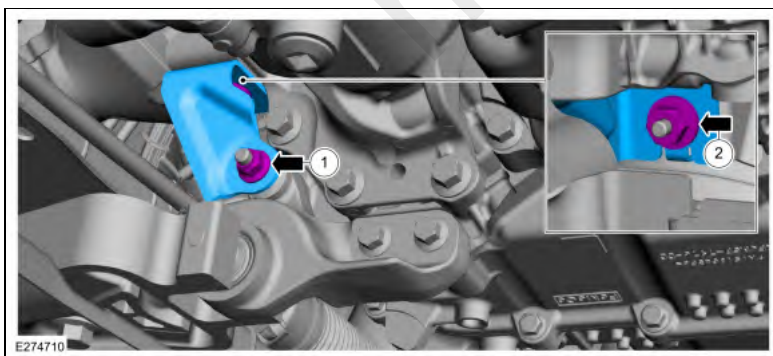


74. Position the exhaust and install the new nuts.
Torque: 35 lb.ft (48 Nm)

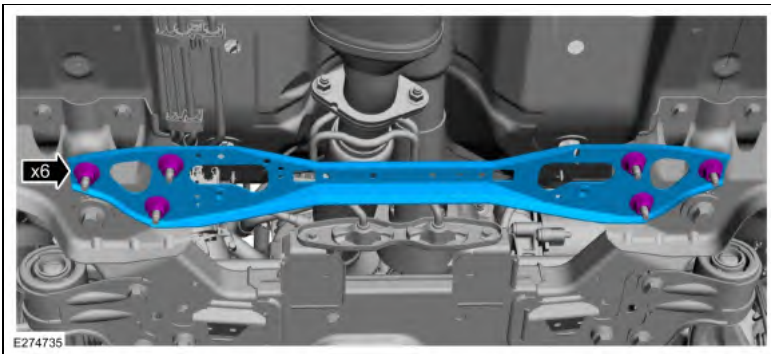


LHD AWD/LHD FWD

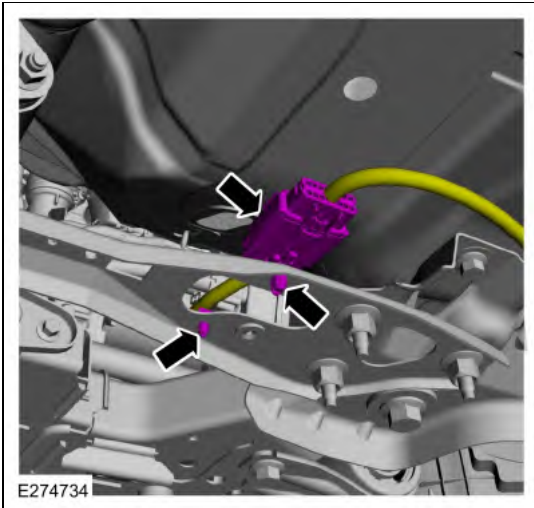
- 75.
1. Install the catalytic converter support bracket and the nut.
Torque: 30 lb.ft (40 Nm)
 2. Install the catalytic converter support bracket nut.
Torque: 41 lb.ft (55 Nm)



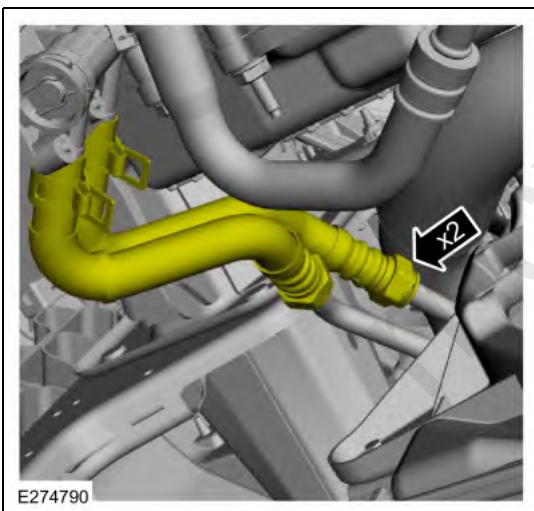
76. Install the subframe support bracket and the nuts.
Torque: 30 lb.ft (40 Nm)



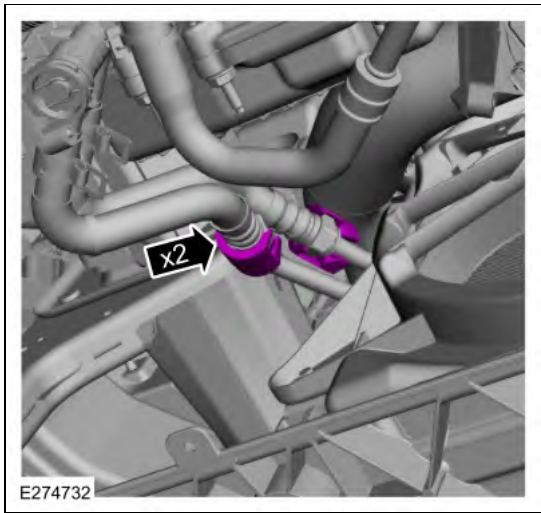
77. If equipped, connect and attach the wiring harness electrical connector and retainer.



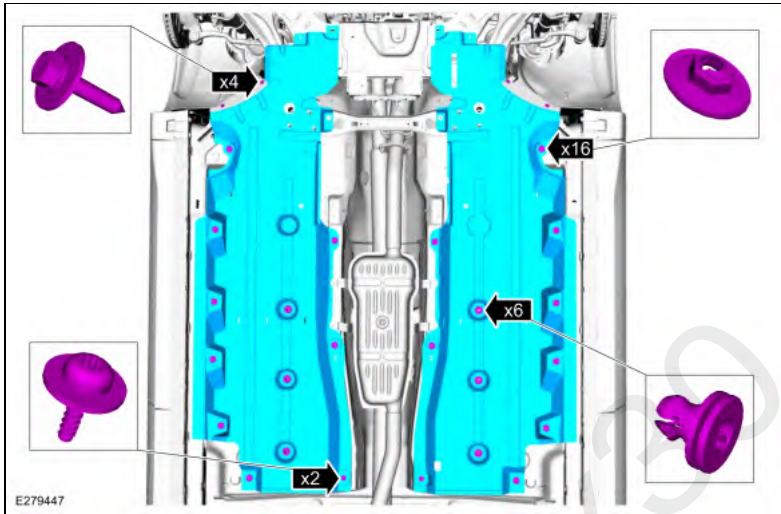
78. If equipped, connect the transmission fluid cooler tubes to the transmission fluid cooler thermal bypass valve.



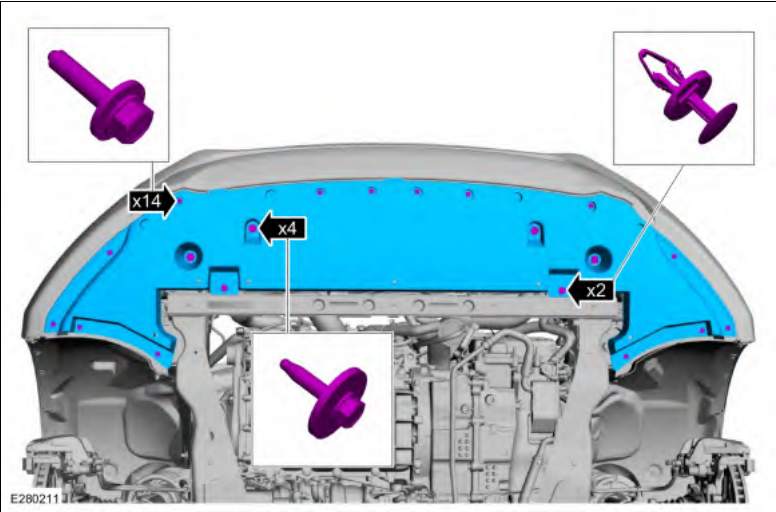
79. If equipped, install the transmission fluid cooler tube secondary latches.



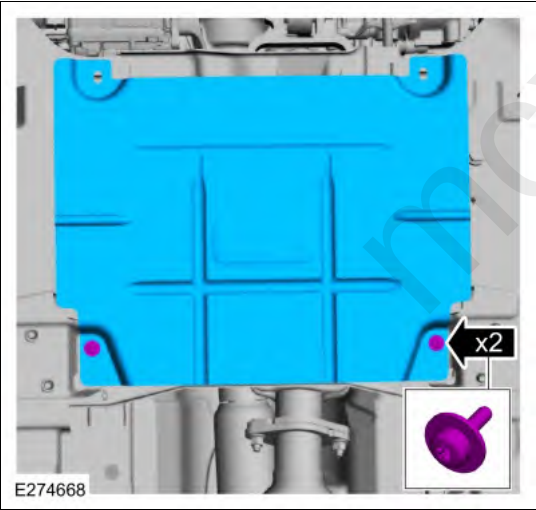
80. Install the underbody shields and the retainers.



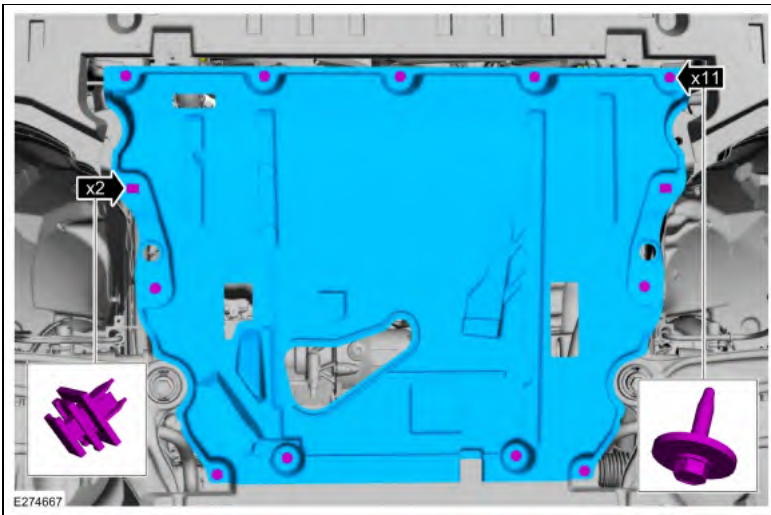
81. Install the front underbody shield and the retainers.



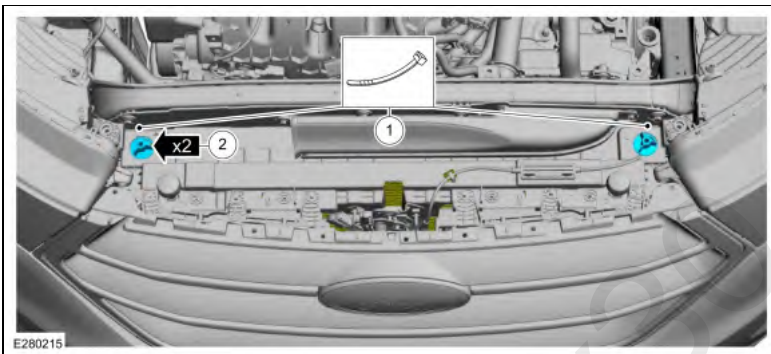
82. Install the underbody shields and the retainers.



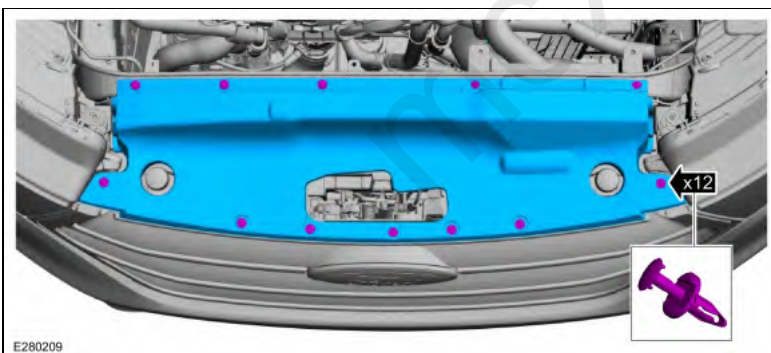
83. Install the underbody shields and the retainers.



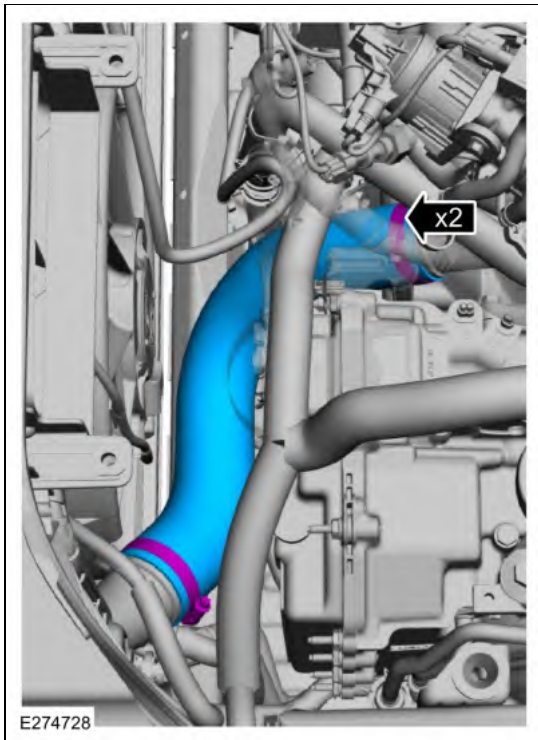
84. Install the front wheels and tires.
 Refer to: Wheel and Tire (204-04A Wheels and Tires, Removal and Installation).
- 85.
1. Remove the cable ties or mechanics wire.
 2. Install the upper cooling module support brackets.



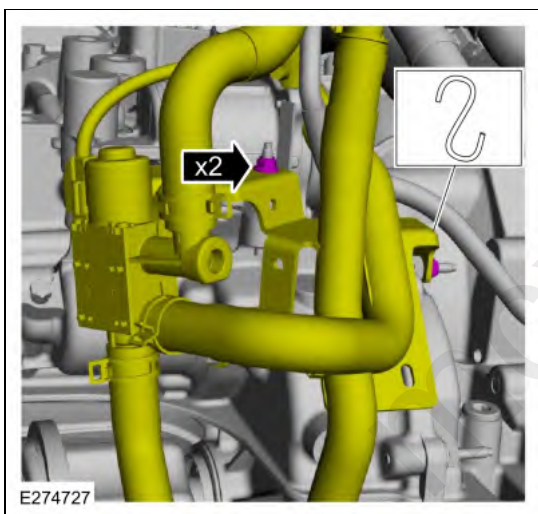
86. Install the upper air deflector and the retainers.



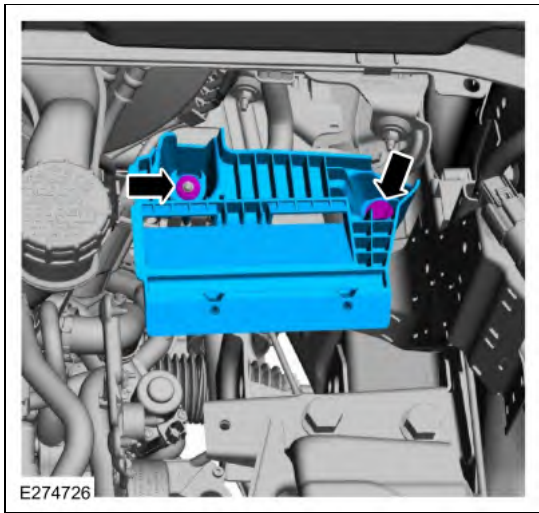
87. Install the CAC tube and tighten the clamps.
 Torque: 53 lb.in (6 Nm)



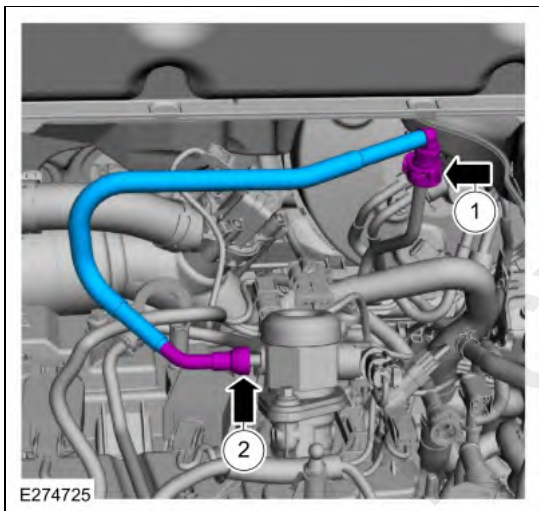
88. Remove the hook and position the coolant valve and hoses and install the nuts.
Torque: 106 lb.in (12 Nm)



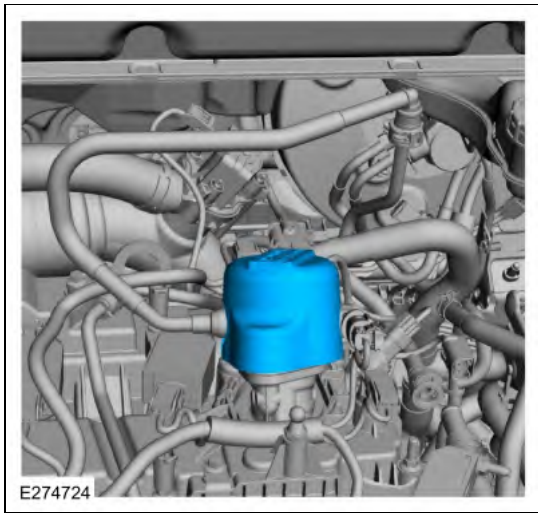
89. Install the battery tray support bracket and the nut and bolt.
Torque: 177 lb.in (20 Nm)



- 90.
1. Connect the fuel tube quick release coupling.
Refer to: Quick Release Coupling (310-00 Fuel System - General Information) .
 2. Connect the fuel tube spring lock coupling.
Refer to: Spring Lock Couplings (310-00A Fuel System - General Information - 2.0L EcoBoost (184kW/250PS) à MI4, General Procedures).



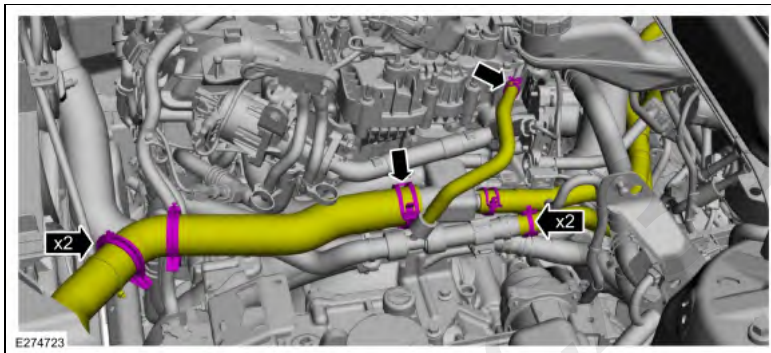
91. Install the high-pressure fuel pump noise insulator.

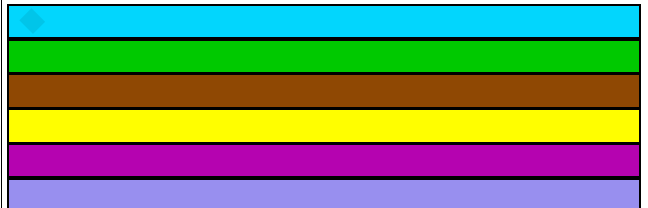




92.

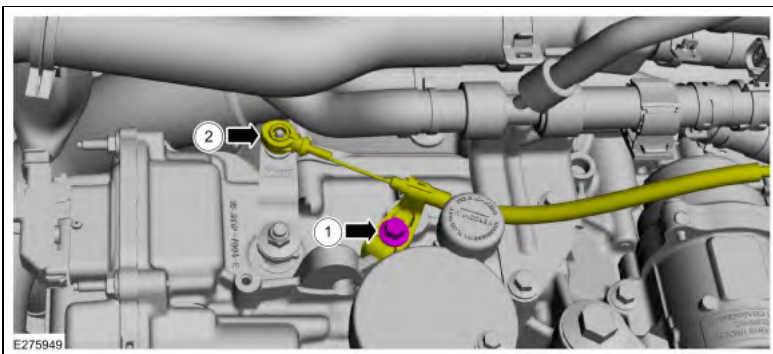
- Connect the coolant hoses.
Use the General Equipment: Hose Clamp Remover/Installer
- Attach the wiring harness retainers to the upper radiator hose.





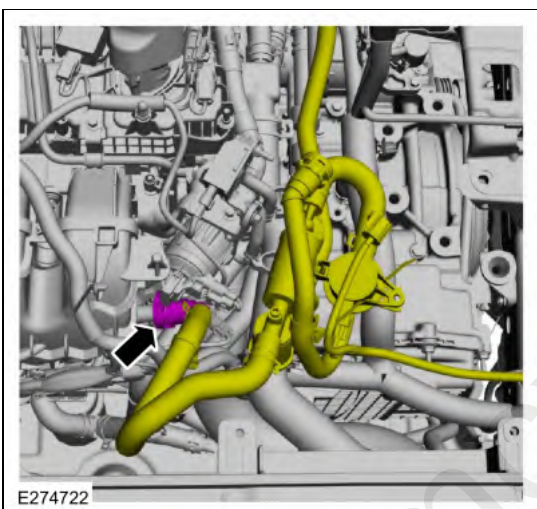
93.

1. Position back the manual park release cable and install the bolt.
Torque: 177 lb.in (20 Nm)
2. Connect the manual park release cable to the manual control lever.



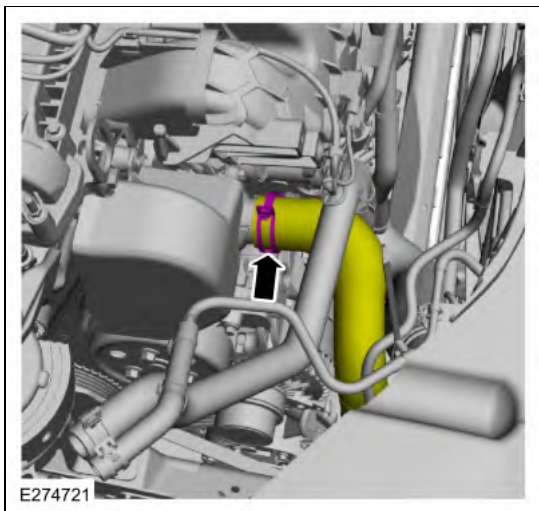
A horizontal bar chart consisting of six bars of equal length, stacked vertically. The bars are colored cyan, green, brown, yellow, purple, and light blue from top to bottom. Each bar has a thin black outline.

94. Position and connect the brake vacuum tube assembly quick release coupling. Refer to: Quick Release Coupling (310-00 Fuel System - General Information) .



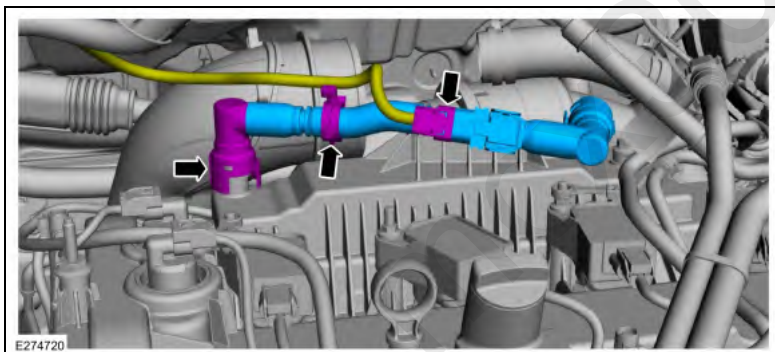
A diagram showing a vertical stack of six colored rectangles. From top to bottom, the colors are cyan, green, brown, yellow, purple, and light blue. A small white box is located at the top left of the stack.

95. Connect the lower radiator hose to the thermostat housing. Use the General Equipment: Hose Clamp Remover/Installer



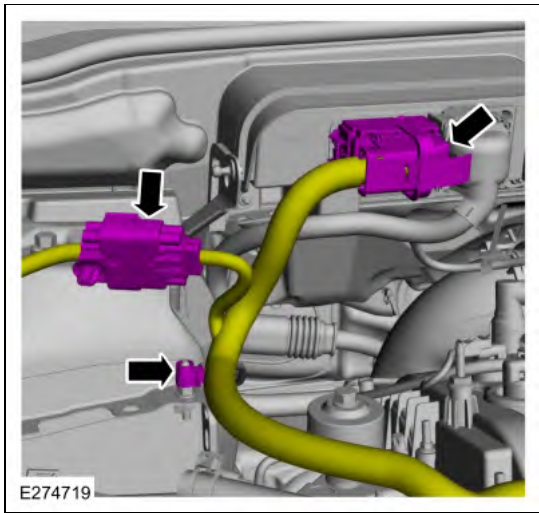
96.

- Install the new crankcase vent tube.
- If the replacement crankcase vent tube part comes with no crankcase pressure sensor, reprogram the PCM.
Refer to: Module Programming (418-01 Module Configuration, General Procedures).
- If the replacement crankcase vent tube came without a crankcase pressure sensor, tape the wiring harness electrical connector back to the wiring harness.
- If the replacement crankcase vent tube comes with a crankcase pressure sensor, connect the wiring harness electrical connector and the retainer.

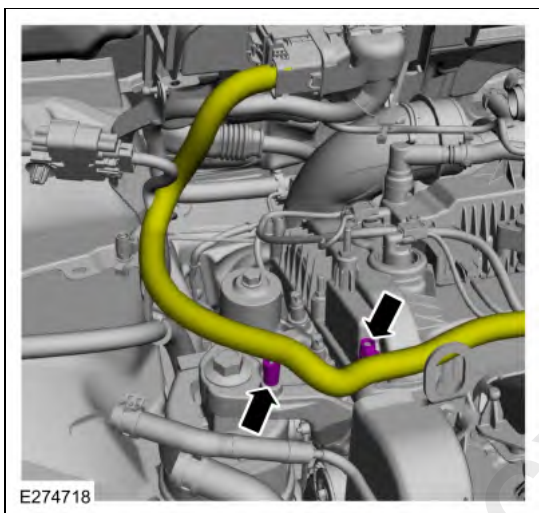


97.

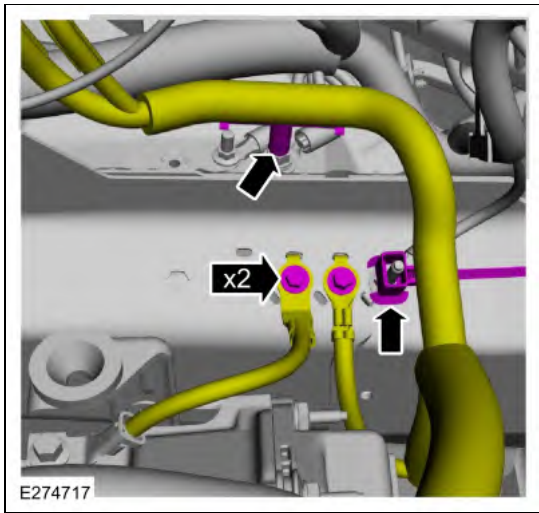
- Connect the PCM electrical connector.
- Connect the engine harness electrical connector and retainer.



98. Attach wire harness retainers to the engine mount and valve cover stud bolt.

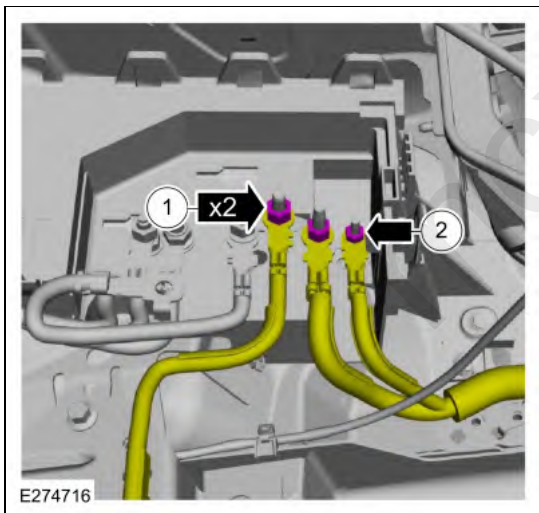


99. Install the bolts and attach the wiring harness retainers.
Torque: 106 lb.in (12 Nm)

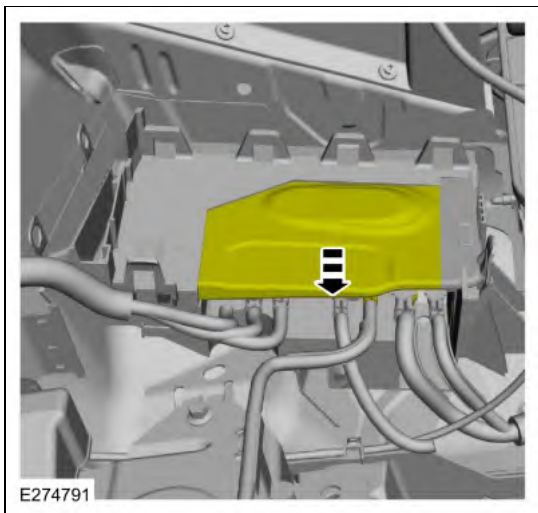


100.

1. Install the electrical wiring harness and the nuts.
Torque: 106 lb.in (12 Nm)
2. Install the electrical wiring harness and the nut.
Torque: 71 lb.in (8 Nm)

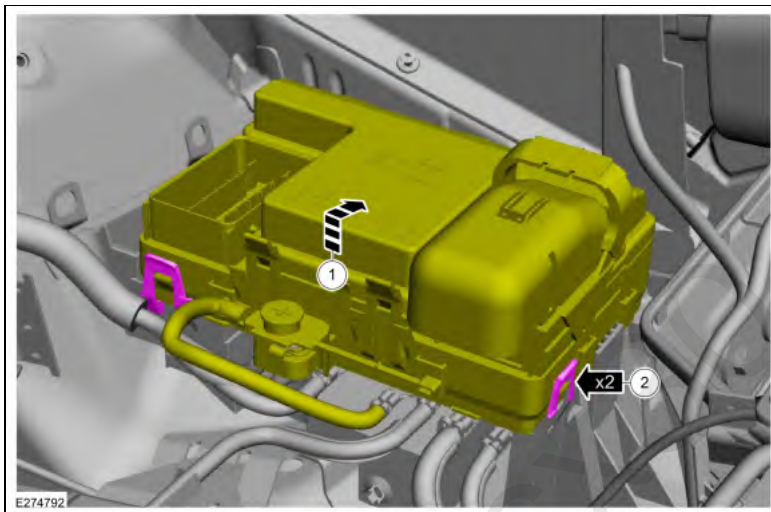


101. Close the cover.

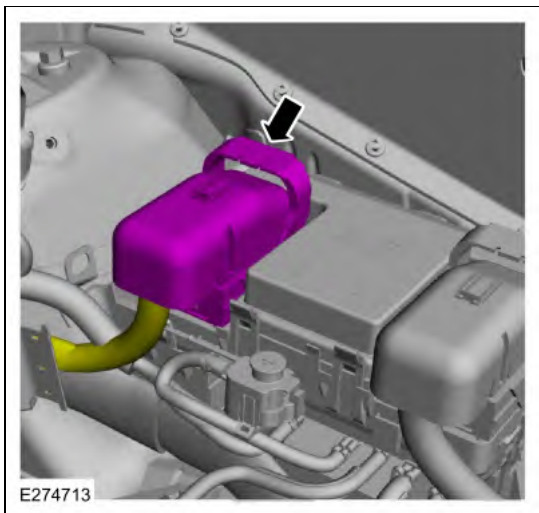


102.

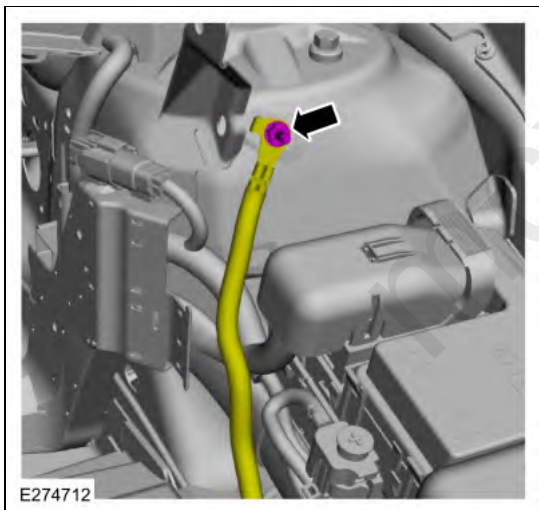
- Position the top part of junction box.
- Latch the tabs.



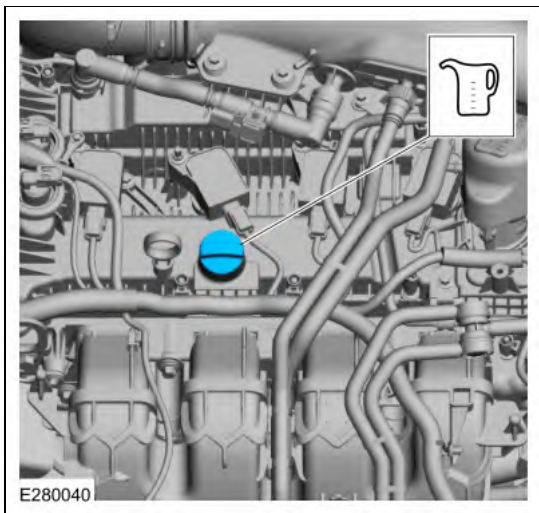
103. Connect the junction box electrical connector.



104. Install the ground cable and stud bolt.
Torque: 106 lb.in (12 Nm)



105. Install the following items:
1. Install the EVAP canister purge valve.
 2. Install the battery tray.
Refer to: Battery Tray (414-01 Battery, Mounting and Cables, Removal and Installation).
 3. Install the air cleaner.
Refer to: Air Cleaner (303-12A Intake Air Distribution and Filtering - 2.0L EcoBoost (184kW/250PS) â€” MI4, Removal and Installation).
 4. Install the air cleaner outlet pipe.
Refer to: Air Cleaner Outlet Pipe (303-12A Intake Air Distribution and Filtering - 2.0L EcoBoost (184kW/250PS) â€” MI4, Removal and Installation).
 5. Install the degas bottle.
Refer to: Degas Bottle (303-03A Engine Cooling - 2.0L EcoBoost (184kW/250PS) â€” MI4, Removal and Installation).
106. Fill the engine with clean engine oil.
Refer to: Specifications (303-01A Engine - 2.0L EcoBoost (184kW/250PS) â€” MI4, Specifications).



107. Pressurize the fuel system.

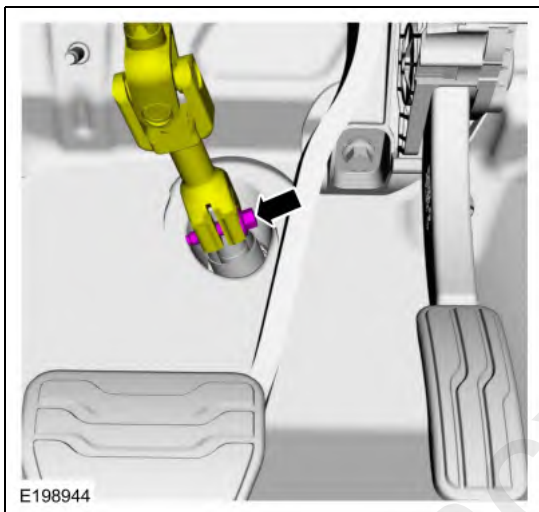
Refer to: Fuel System Pressure Release (310-00A Fuel System - General Information - 2.0L EcoBoost (184kW/250PS) â€” MI4, General Procedures).

108. Fill the cooling system.

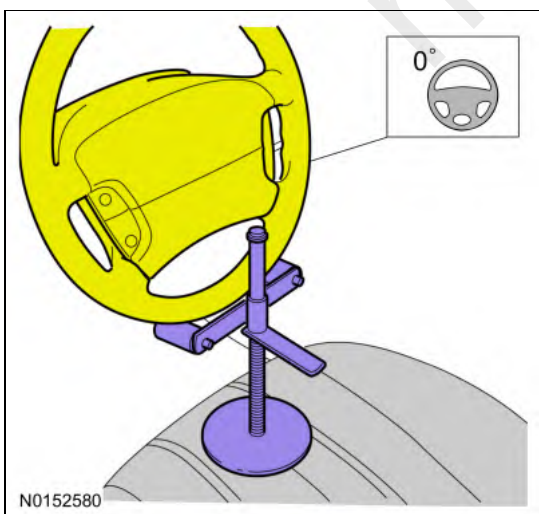
Refer to: Engine Cooling System Draining, Vacuum Filling and Bleeding (303-03A Engine Cooling - 2.0L EcoBoost (184kW/250PS) â€” MI4, General Procedures).

109. Position steering column shaft and install a new bolt.

Torque: 18 lb.ft (25 Nm)



110. Remove the holding device.



111. Charge the A/C system.

Refer to: Air Conditioning (A/C) System Recovery, Evacuation and Charging - Vehicles With: R1234YF Refrigerant (412-00 Climate Control System - General Information, General Procedures).

Refer to: Air Conditioning (A/C) System Recovery, Evacuation and Charging - Vehicles With: R1234YF Refrigerant (412-00 Climate Control System - General Information, General Procedures).

112. Check the transmission fluid level.
Refer to: Transmission Fluid Level Check (307-01A Automatic Transmission - 8-Speed Automatic Transmission 8F35/8F40, General Procedures).
 113. If equipped with AWD, check the transfer case fluid level.
 114. Start and check the exhaust system for leaks.
 115. Use the Powertrain Control Module (PCM) Misfire Monitor Profile Correction routine in the diagnostic scan tool.
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303-01B Engine - 2.7L EcoBoost (238kW|324PS)

Specifications

Engine

Item	Specification
Displacement	2.7L (4V) (164 CID)
No. of cylinders	6
Bore/stroke	83/83 mm (3.268/3.268 in)
Firing order	1-4-2-5-3-6
Spark plug	12405
Spark plug gap	0.028â€”0.031 in (0.7â€”0.8 mm)
Compression ratio	10:1
Engine weight	409 Lb (189 Kg)

Lubricants

Item	Specification
Motorcraft® SAE 5W-30 Premium Synthetic Blend Motor Oil (US) â€” XO-5W30-Q1SP (US); Motorcraft® SAE 5W-30 Super Premium Motor Oil (Canada) â€” CXO-5W30-LSP6 (Canada)	WSS-M2C946-B1

Engine Oil Capacity

Item	Specification
Service fill including oil filter	6.0 qt (5.68 L)

Oil Pressure

NOTE: The following oil pressure readings are acquired using a scan tool and monitoring the **EOP_PRESS** PID.

Item	Specification
Reading 1: Minimum average oil pressure @ 2,000 rpm after 15 secs with engine at normal operating temperature and transmission in Park	21 psi (144.8 kPa)
Reading 2: Minimum average oil pressure @ 2,000 rpm after 15 secs with engine at normal operating temperature and transmission in Park (Oil Pressure Control Solenoid connector disconnected)	Reading 1 value plus 8 psi (55.1 kPa)