

Engine

Special Tool(s) / General Equipment

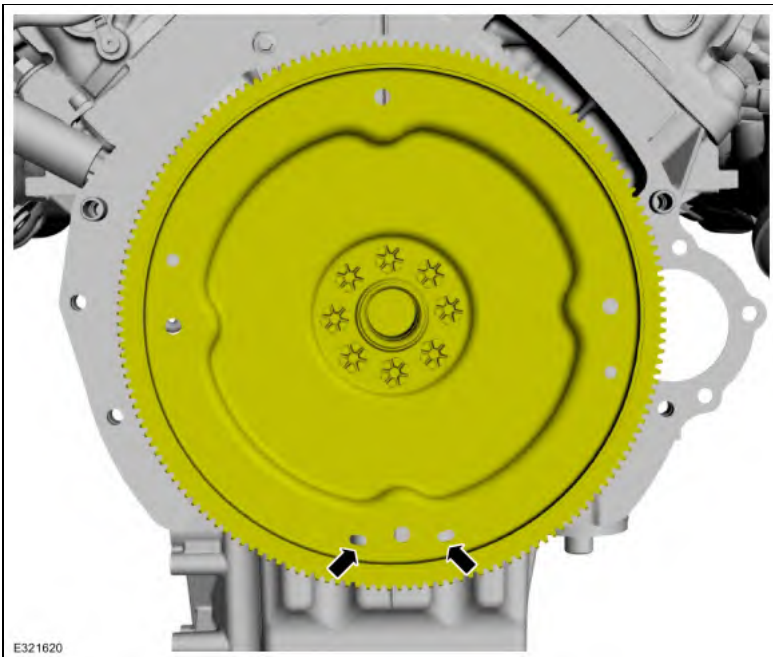
	303-050 (T70P-6000) Lifting Bracket, Engine
 E318622	303-050-01 7.3L Bracket, Engine (P558)
 307-346	307-346 (T97T-7902-A) Retainer, Torque Converter TKIT-1998-LM (Navigator) TKIT-1997-F/FLM/LT
Magnetic Socket	
Lifting Bracket	
Floor Crane	
Trolley Jack	
Wooden Block	

Materials

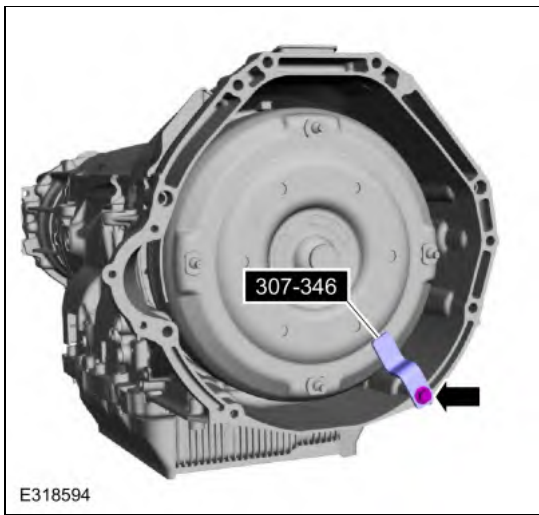
Name	Specification
Motorcraft® Multi-Purpose Grease Spray XL-5-A	ESB-MIC93-B

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

Rotate the flexplate to align the 2 slots at the 6 o'clock position.

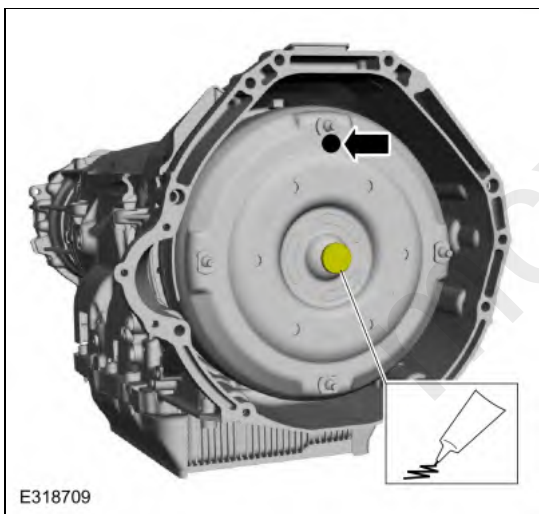


2. Remove the special tool.
Use Special Service Tool: 307-346 (T97T-7902-A) Retainer, Torque Converter.

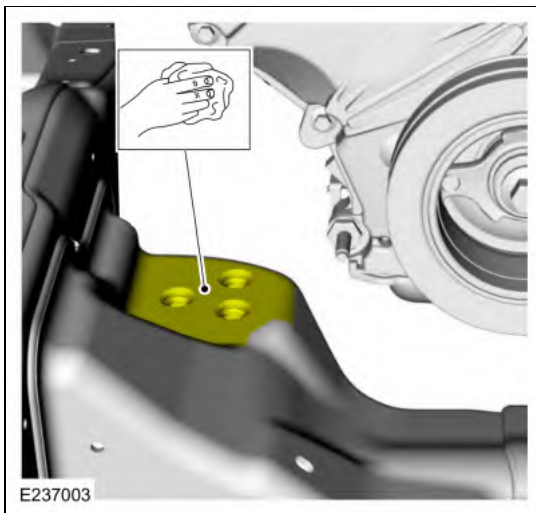


3.

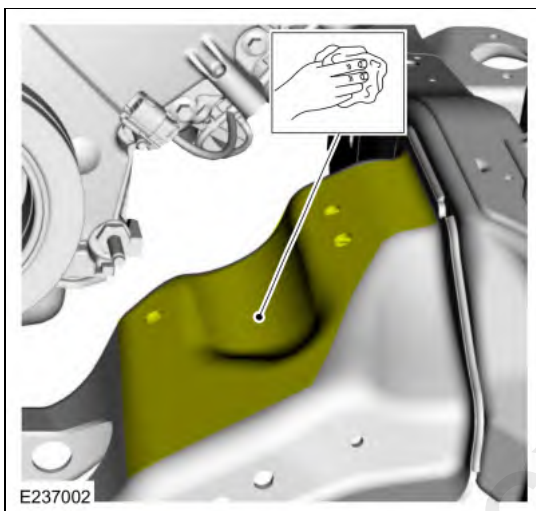
- Lubricate the torque converter pilot hub with multi-purpose grease.
Material: Motorcraft® Multi-Purpose Grease Spray / XL-5-A (ESB-M1C93-B)
- Align the paint dot on the torque converter in the 12 o'clock position.



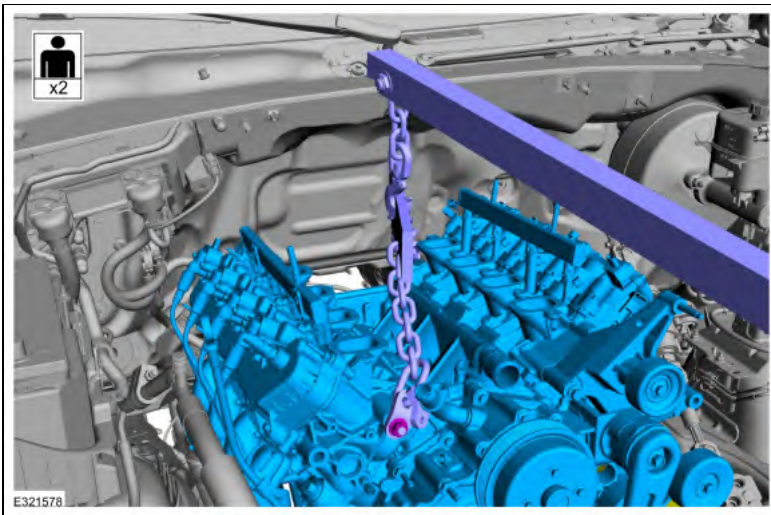
4. Clean the RH engine mount-to-frame mating surfaces of any dirt or foreign material prior to installation.



5. Clean the LH engine mount-to-frame mating surfaces of any dirt or foreign material prior to installation.

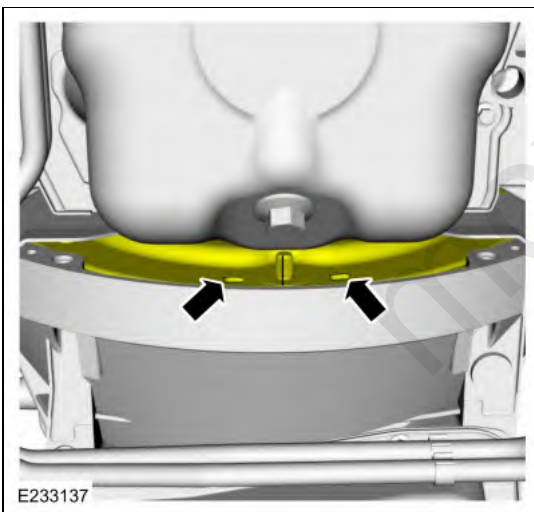


6. With the aid of an assistant and using the floor crane, position the engine assembly into the vehicle and onto the transmission.
Use the General Equipment: Floor Crane



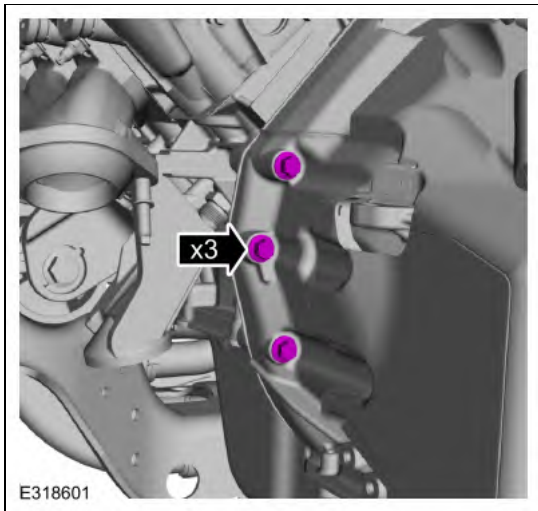
7. **NOTICE:** The torque converter must be installed in it's original orientation to the flexplate or engine damage may occur.

Check that the flexplate is positioned so that the 2 slotted holes are shown at the 6 o'clock position and the index marks are aligned.

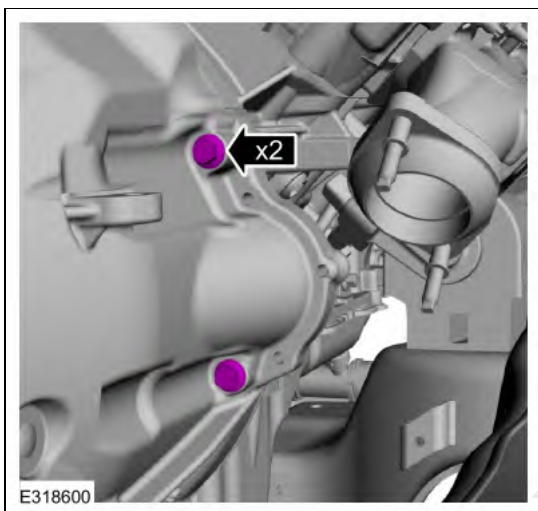


8. **NOTE:** Do not tighten at this time.

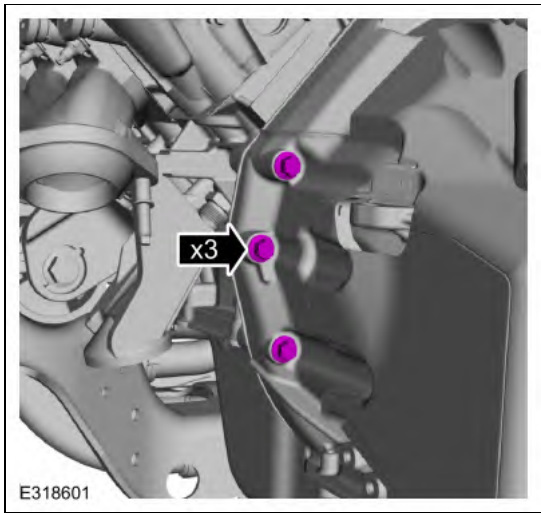
Install the LH transmission-to-engine bolts finger tight.



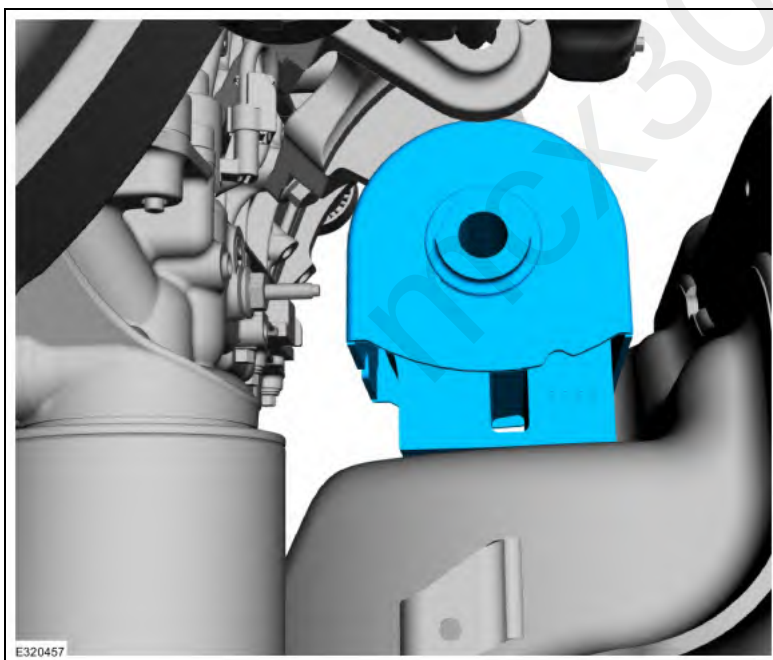
9. Instal the RH transmission-to-engine bolts.
Torque: 35 lb.ft (48 Nm)



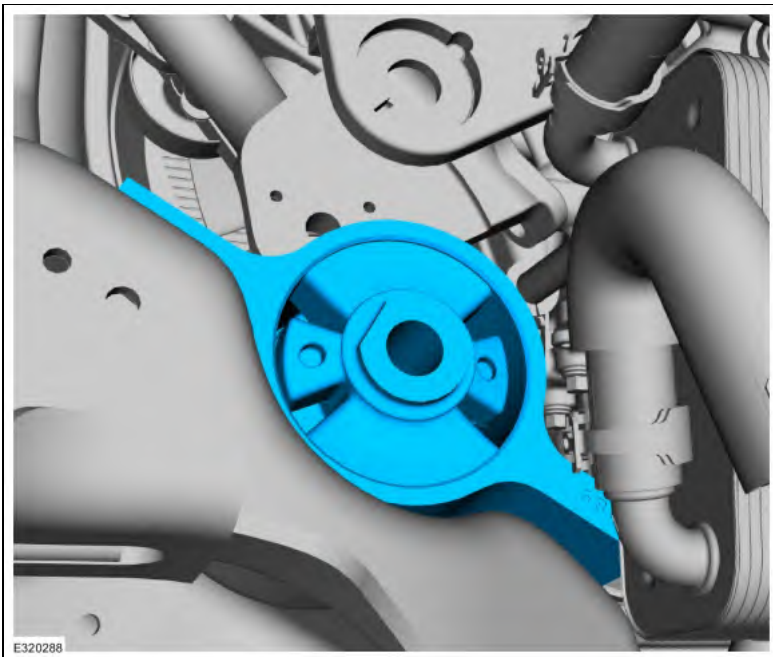
10. Tighten the transmission-to-engine bolts.
Torque: 35 lb.ft (48 Nm)



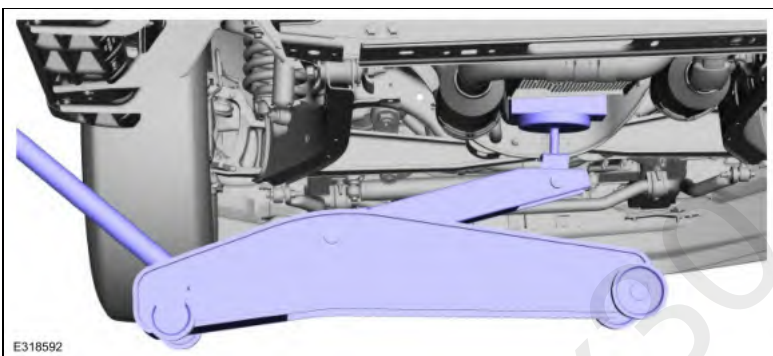
11. Install the RH engine mount.



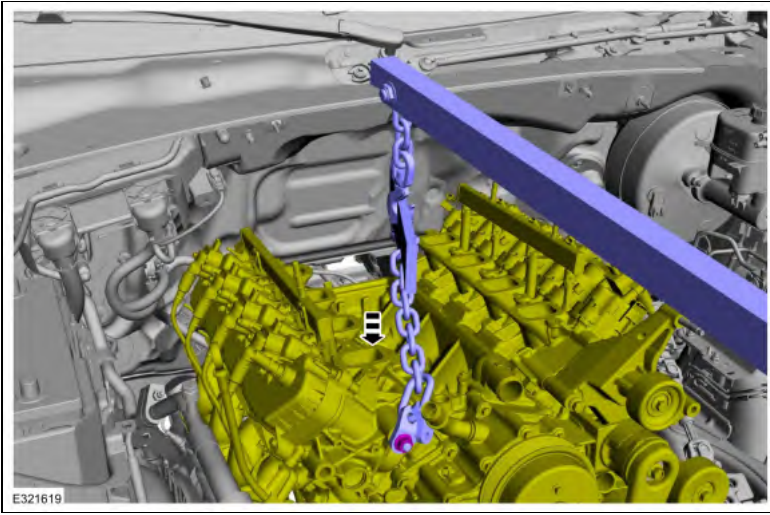
12. Install the LH engine mount.



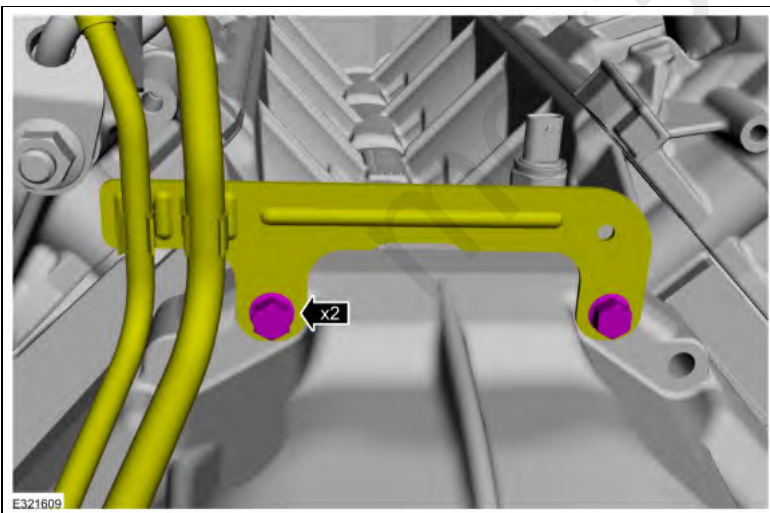
13. Remove the floor jack and block of wood.
 Use the General Equipment: Trolley Jack
 Use the General Equipment: Wooden Block



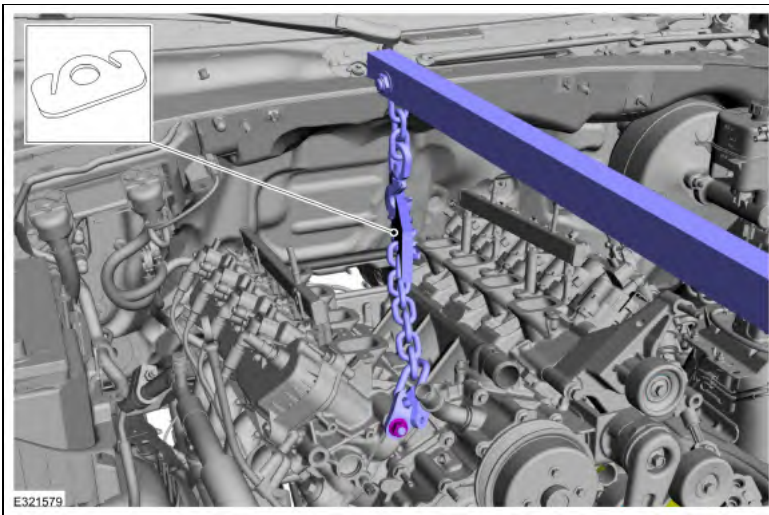
14. Using the floor crane and the special tool, lower the engine onto the engine mounts.
 Use the General Equipment: Floor Crane



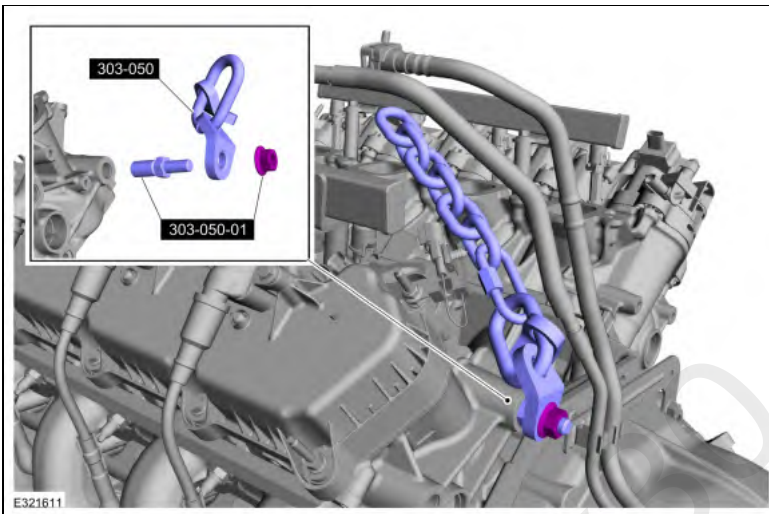
15. Install the upper transmission-to-engine bolts.
Torque: 35 lb.ft (48 Nm)



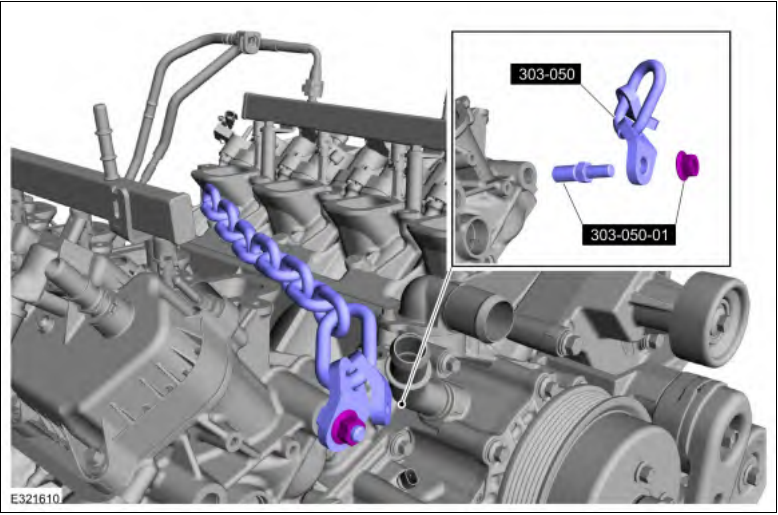
- 16.
- NOTE:** Use a commercially available sling (such as an OTC 38841 or equivalent).
 Remove the floor crane and the sling.
 Use the General Equipment: Floor Crane
 Use the General Equipment: Lifting Bracket



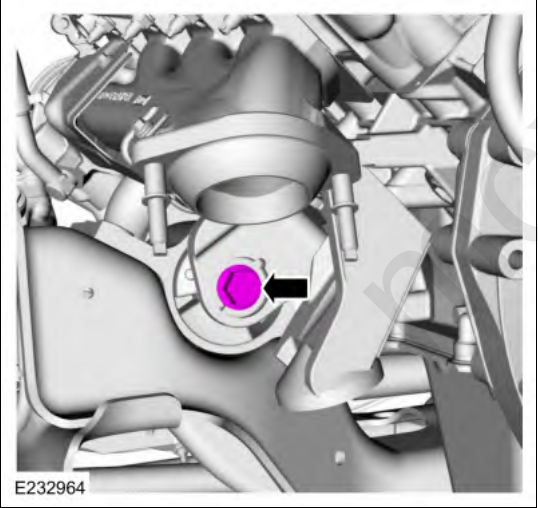
17. Remove the chain and the special tools.
Remove Special Service Tool: 303-050 (T70P-6000) Lifting Bracket, Engine. , 303-050-01 7.3L Bracket, Engine (P558).



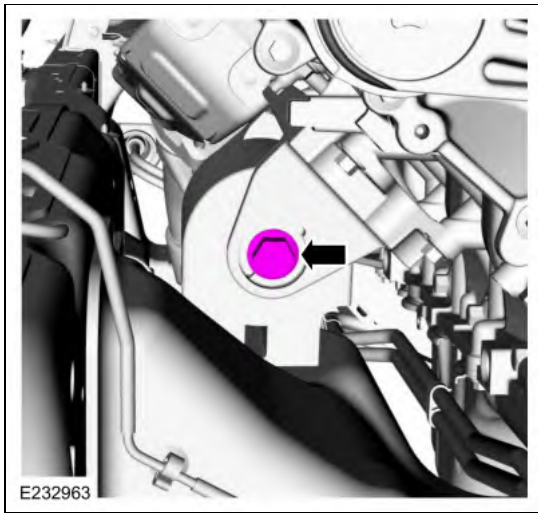
18. Remove the chain and the special tools.
Remove Special Service Tool: 303-050 (T70P-6000) Lifting Bracket, Engine. , 303-050-01 7.3L Bracket, Engine (P558).



19. **NOTE:** Do not tighten the fastener at this time.
Install the new LH engine mount through bolt.

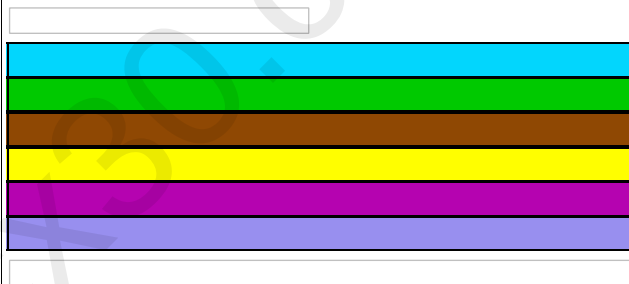
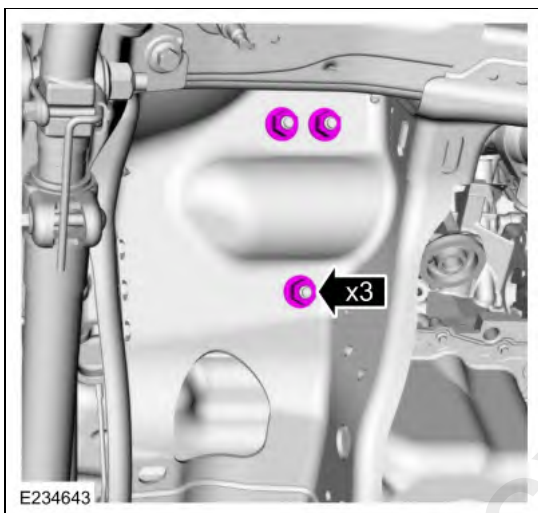


20. **NOTE:** Do not tighten the fastener at this time.
Install the RH engine mount through bolt.



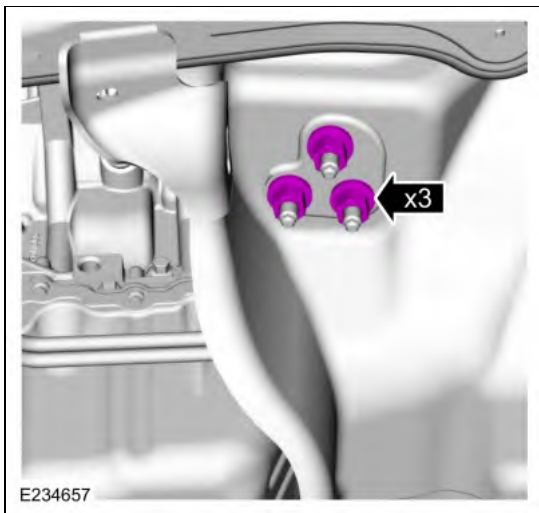
21. **NOTICE:** Only use hand tools when tightening the engine mount bolts or damage to the engine mount may occur.

Install the new LH engine support insulator bracket nuts.
Torque: 148 lb.ft (200 Nm)



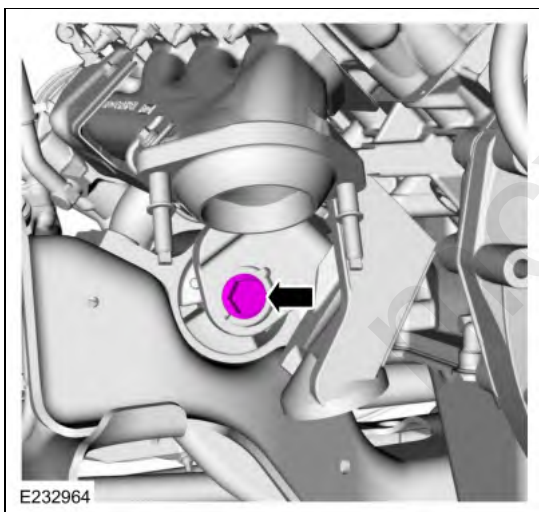
22. **NOTICE:** Only use hand tools when tightening the engine mount bolts or damage to the engine mount may occur.

Install the new RH engine support insulator bracket nuts.
Torque: 111 lb.ft (150 Nm)



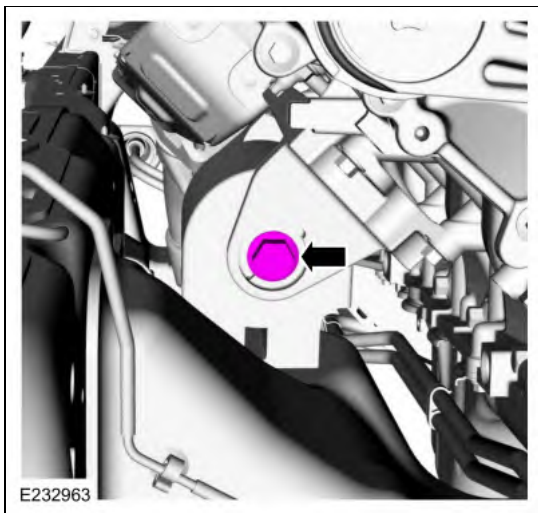
23. **NOTICE:** Only use hand tools when tightening the engine support insulator nuts or damage to the engine support insulator may occur.

Tighten the LH engine mount through bolt.
Torque: 258 lb.ft (350 Nm)



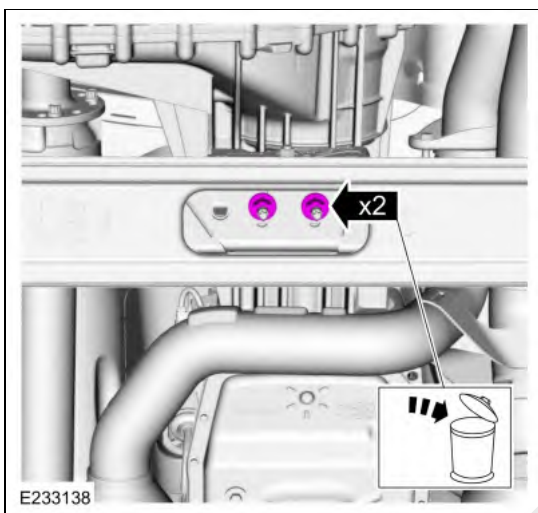
24. **NOTICE:** Only use hand tools when tightening the engine support insulator nuts or damage to the engine support insulator may occur.

Install and tighten the RH engine mount through bolt.
Torque: 258 lb.ft (350 Nm)



25. **NOTICE:** The transmission support insulator-to-crossmember nuts must be discarded and new nuts installed, or damage to the vehicle or transmission support insulator may occur.

Remove and discard the transmission support insulator nuts.



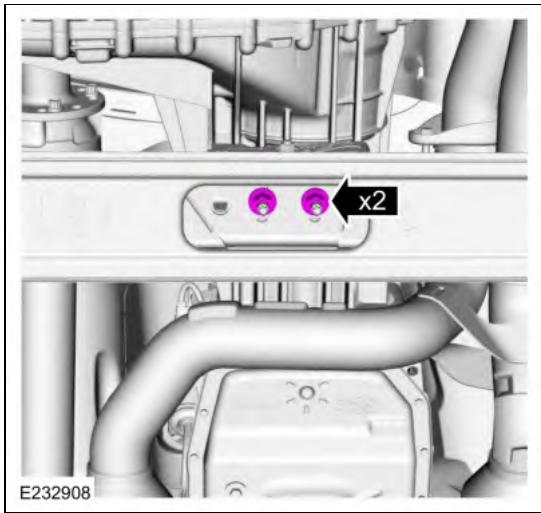
26.

- **NOTE:** The transmission support insulator studs may come out of the insulator while removing the nuts.

If required, tighten transmission support insulator studs.

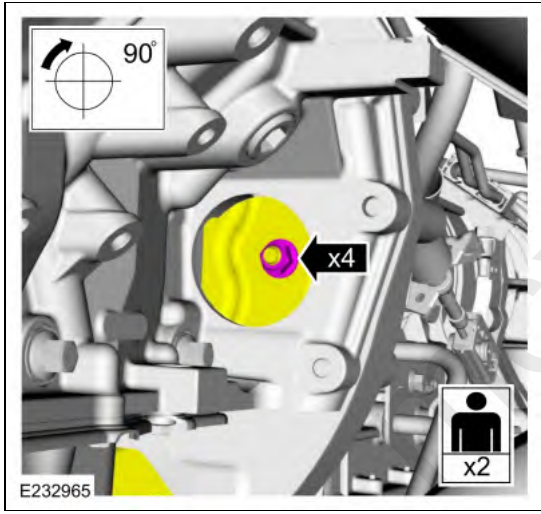
Torque: 55 lb.ft (75 Nm)

- If the transmission support insulator studs can not be tightened, the transmission support insulator must be replaced.
Refer to: Transmission Support Insulator (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€” 10R140, Removal and Installation).
- Install new transmission support insulator nuts.
Torque: 85 lb.ft (115 Nm)

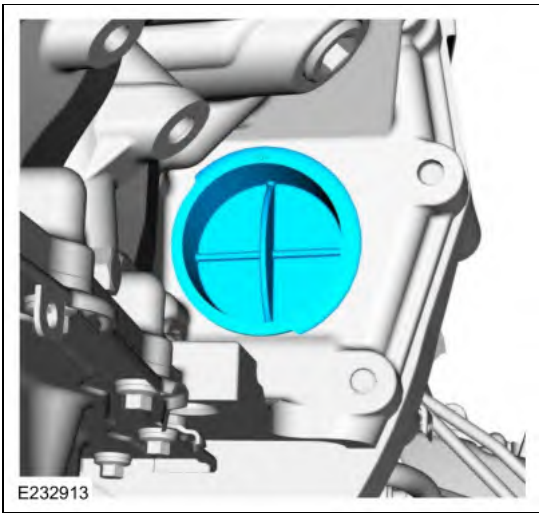


27. **NOTE:** Only rotate the crankshaft in a clockwise direction.

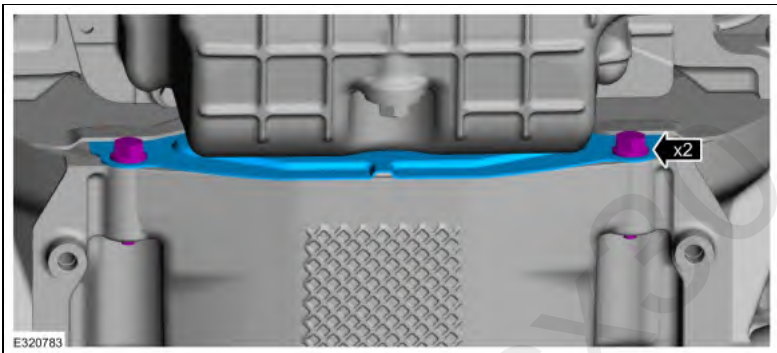
Install the new the torque converter nuts.
 Use the General Equipment: Magnetic Socket
 Torque: 26 lb.ft (35 Nm)



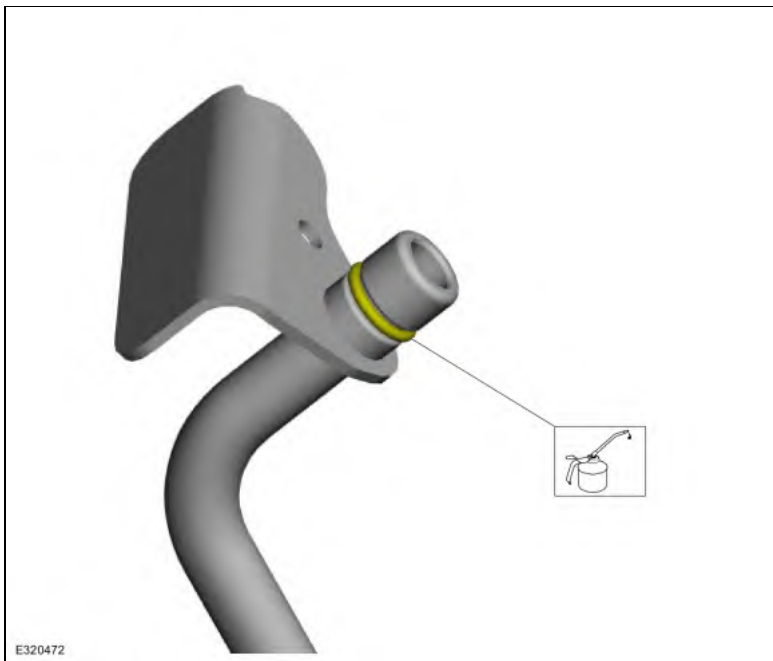
28. Install the torque converter nut access cover.



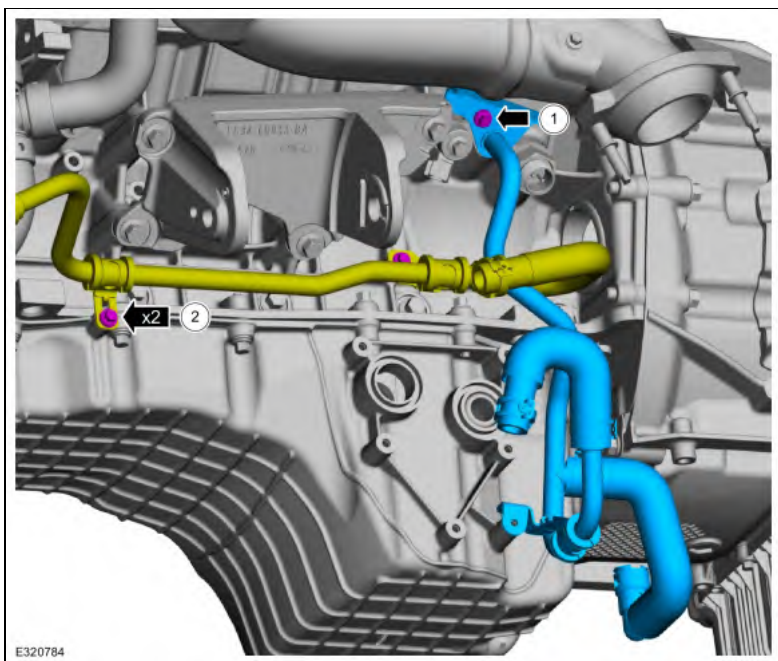
29. Install the transmission inspection plate and the bolts.
Torque: 25 lb.ft (34 Nm)



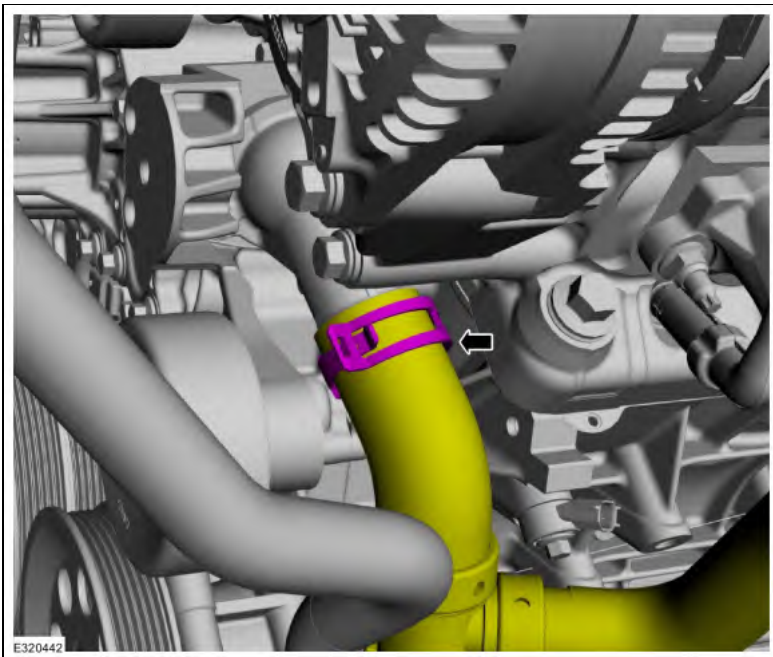
30. Lubricate the O-ring seal with clean engine coolant.



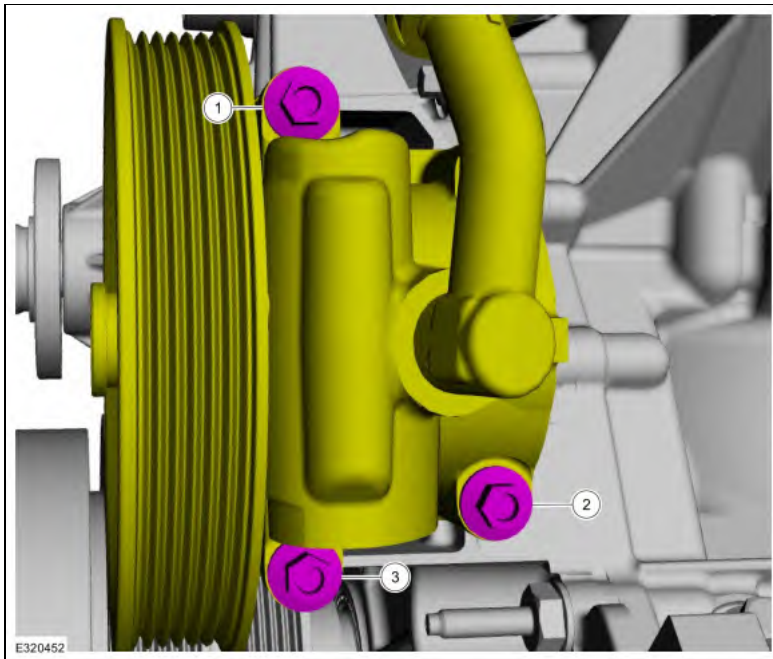
- 31.
1. Install the coolant tube and the bolt.
Torque: 97 lb.in (11 Nm)
 2. Position the coolant tube and install the bolts.
Torque: 97 lb.in (11 Nm)



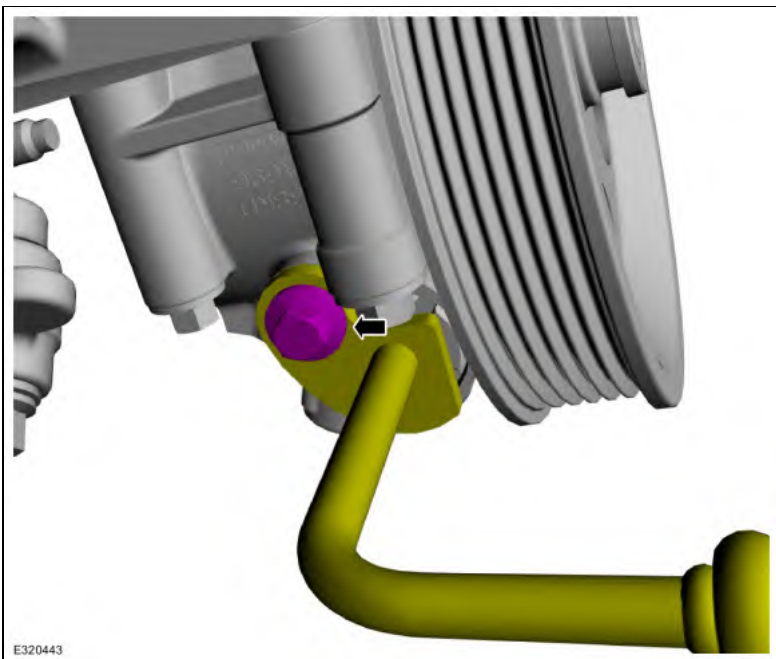
32. Install the hose and clamp.



33. Install the power steering pump and the bolts.
Torque: 18 lb.ft (25 Nm)

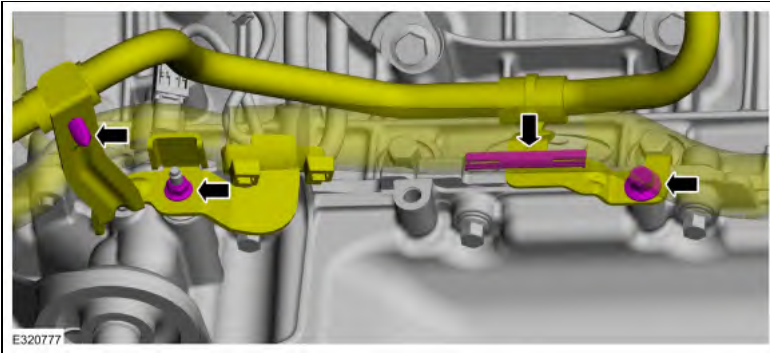


34. Install the power steering tube and the bolt.
Torque: 18 lb.ft (25 Nm)



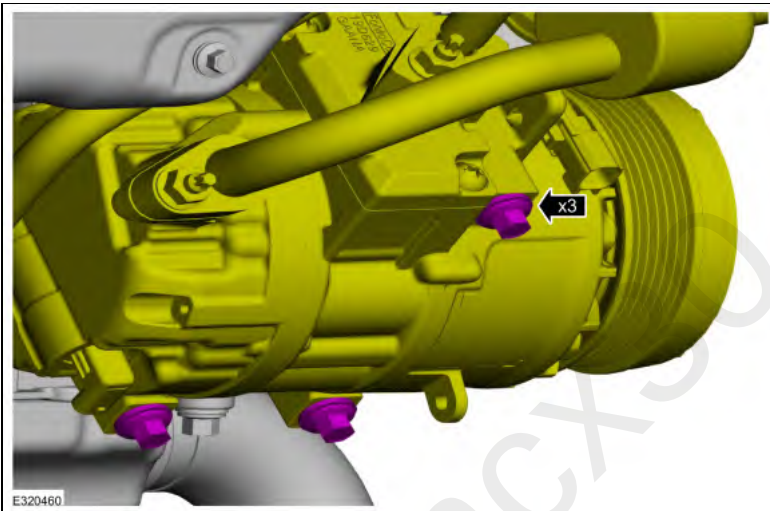
35.

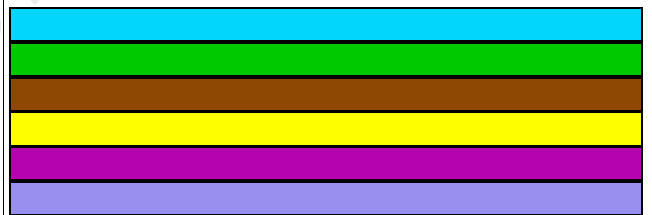
- Position the bracket and install the bolt.
Torque: 18 lb.ft (25 Nm)
- Position the bracket and install the nut.
Torque: 97 lb.in (11 Nm)
- Attach the wiring harness retainers.



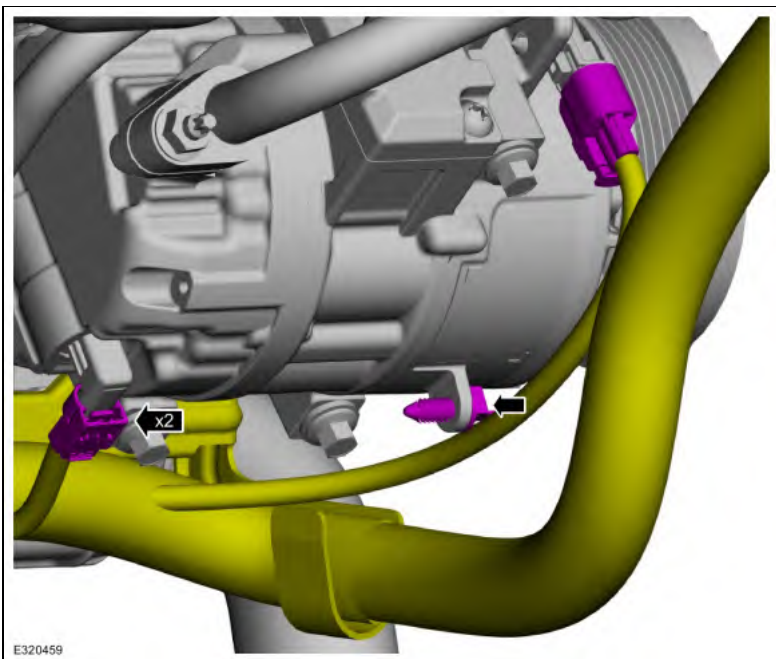


36. Position the A/C compressor and install the bolts.
Torque: 18 lb.ft (25 Nm)

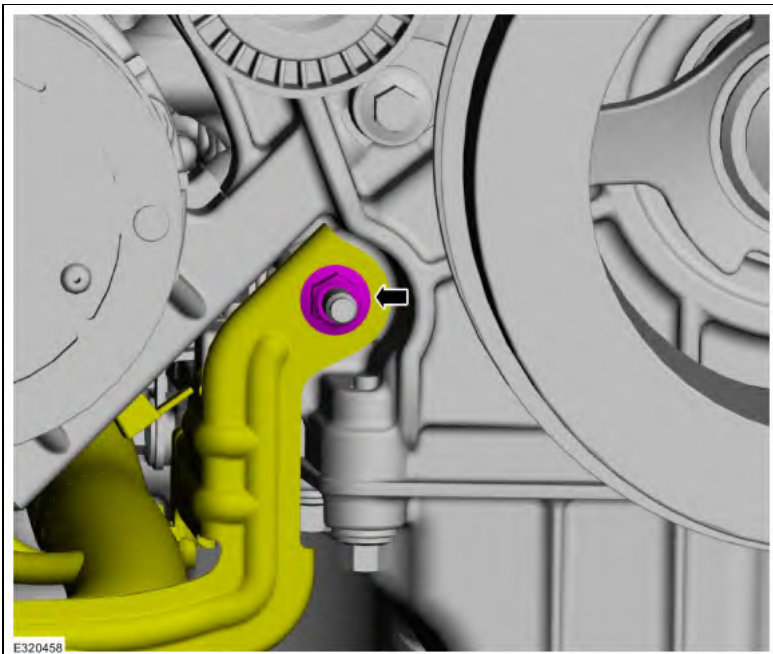




37. Connect the A/C compressor wiring harness electrical connectors and attach the wiring harness retainer.



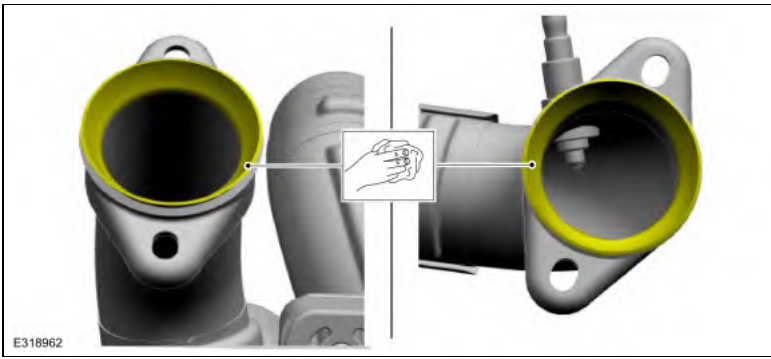
38. Install the starter motor wiring harness bracket and the nut.
Torque: 18 lb.ft (25 Nm)



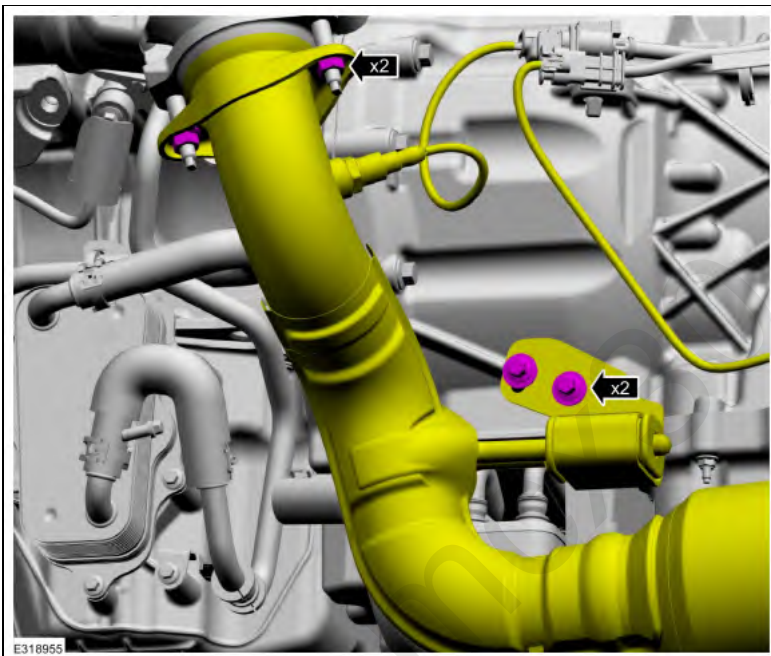
39. Install the following items:

1. Transmission oil cooler.
Refer to: Transmission Fluid Cooler - 6.2L V8/7.3L 2V DEVCT V8 (239kW/320PS) (J0) (307-02B Transmission Cooling - 10-Speed Automatic Transmission & 10R140, Removal and Installation).
2. Engine oil cooler.
Refer to: Oil Cooler (303-01C Engine - 7.3L 2V DEVCT V8 (239kW/320PS) (J0), Removal and Installation).
3. Starter motor.
Refer to: Starter Motor (303-06C Starting System - 7.3L 2V DEVCT V8 (239kW/320PS) (J0), Removal and Installation).

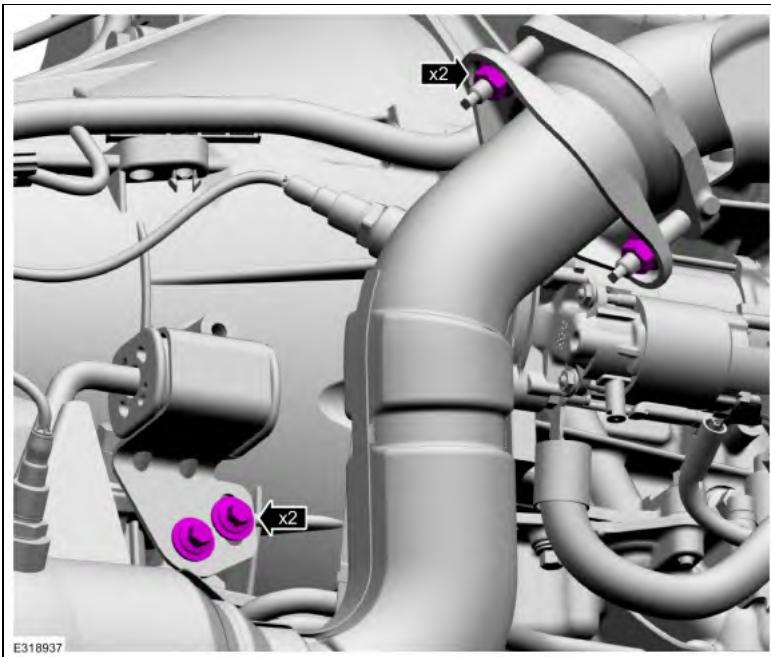
40. Make sure that the mating faces are clean and free of foreign material.



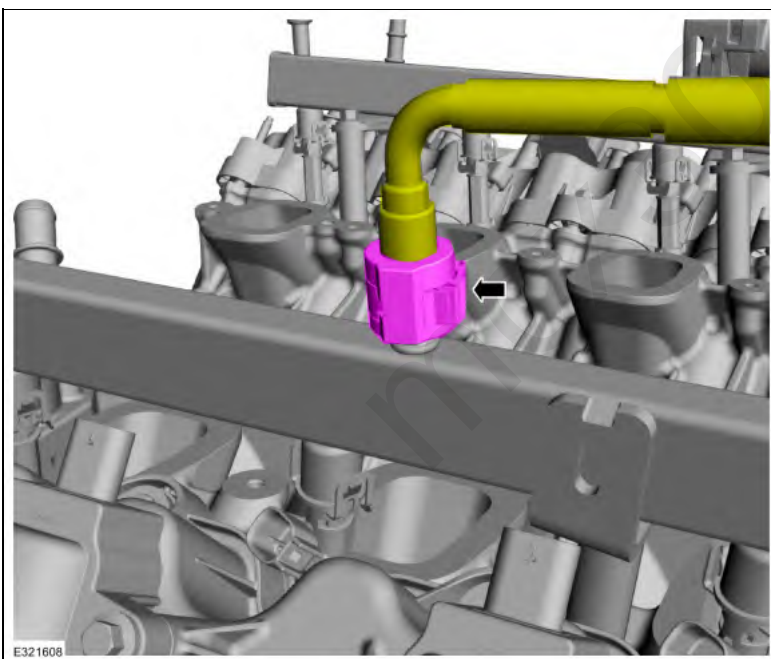
- 41.
1. Position the Y-pipe and install the new nuts.
Torque: 30 lb.ft (40 Nm)
 2. Install the exhaust hanger bolts.
Torque: 18 lb.ft (25 Nm)



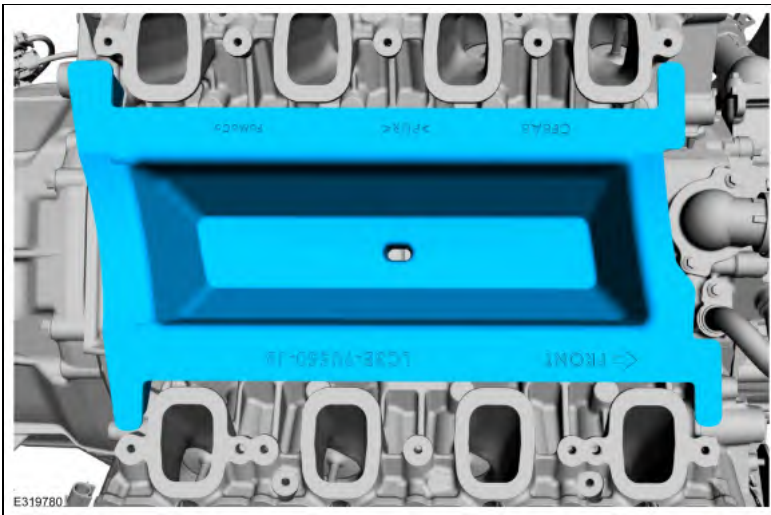
- 42.
1. Install the new Y-pipe nuts.
Torque: 30 lb.ft (40 Nm)
 2. Install the exhaust hanger bolts.
Torque: 18 lb.ft (25 Nm)



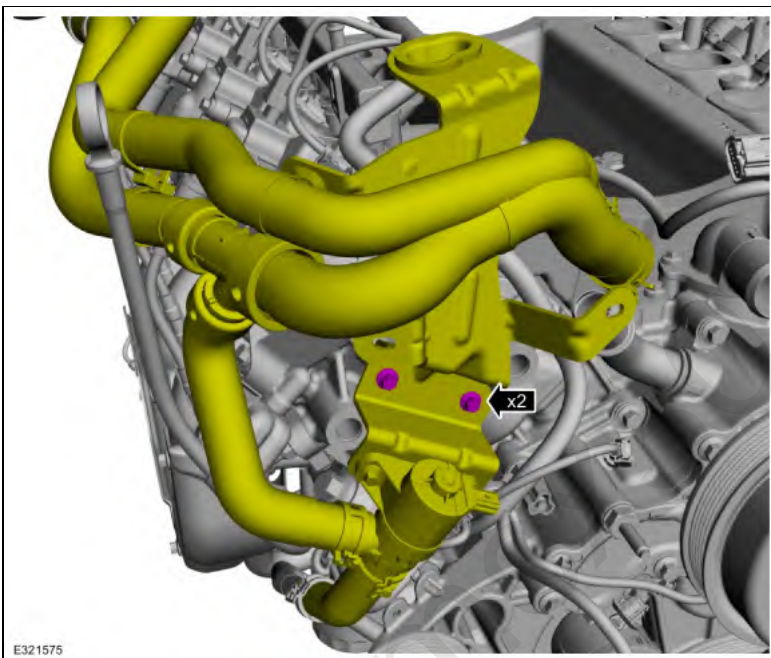
43. Follow directions to connect quick release couplings type 10. Connect the fuel supply tube.
Refer to: Quick Release Coupling (310-00 Fuel System - General Information - 7.3L 2V DEVCT V8 (239kW/320PS) (J0)).



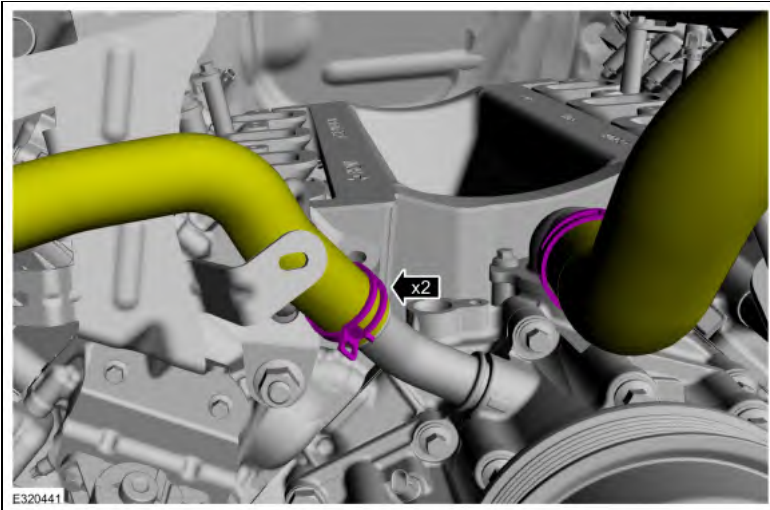
44. Install the insulator.



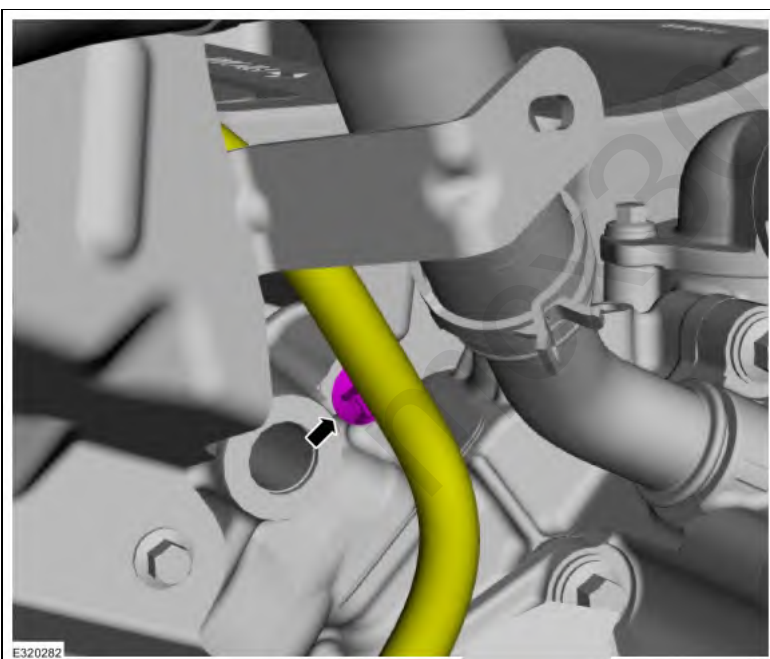
45. Install the bracket and the bolts.
Torque: 106 lb.in (12 Nm)



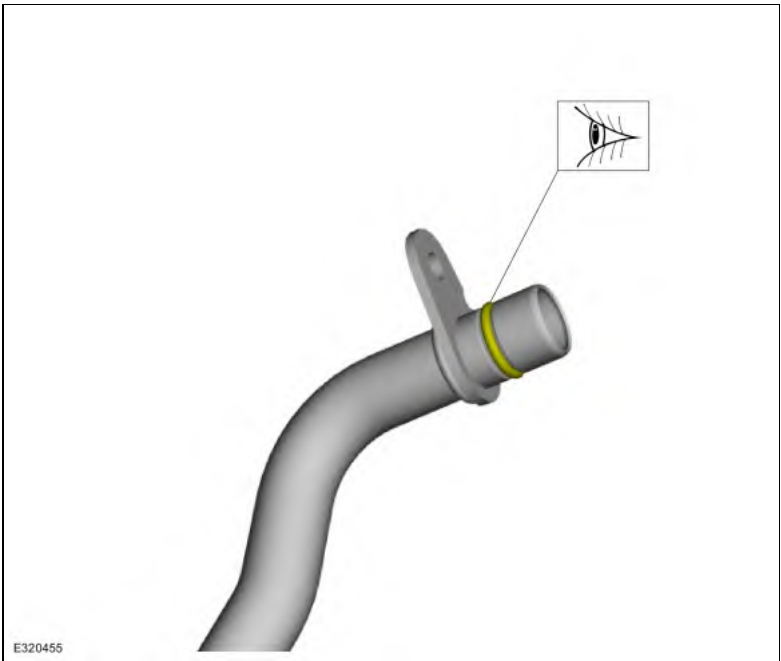
46. Install the hoses and the clamps.



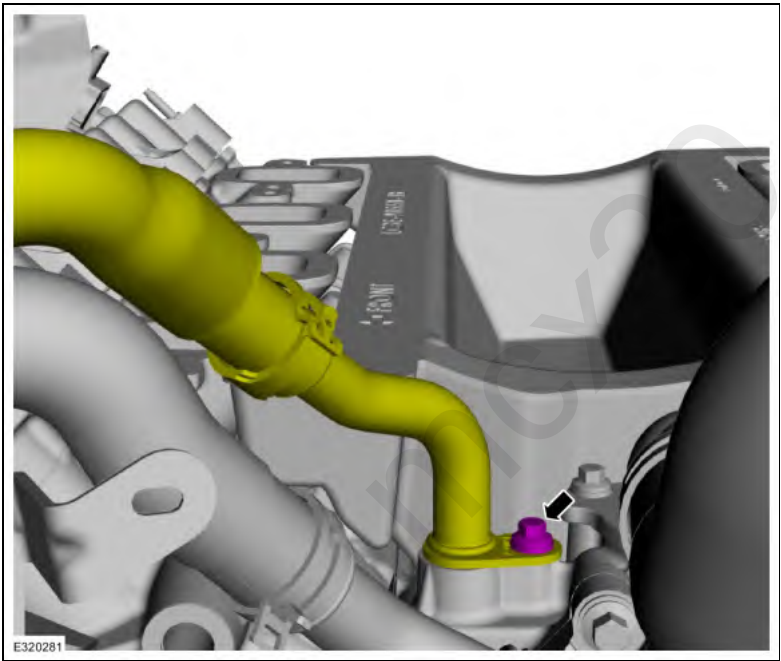
47. Attach the wiring harness retainer.



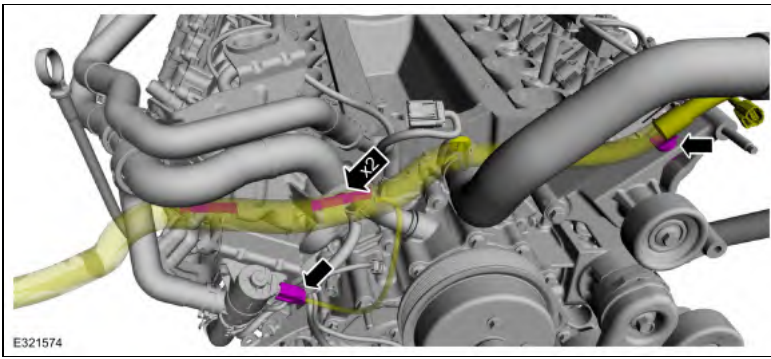
48. Inspect the O-ring seal and replace as necessary.



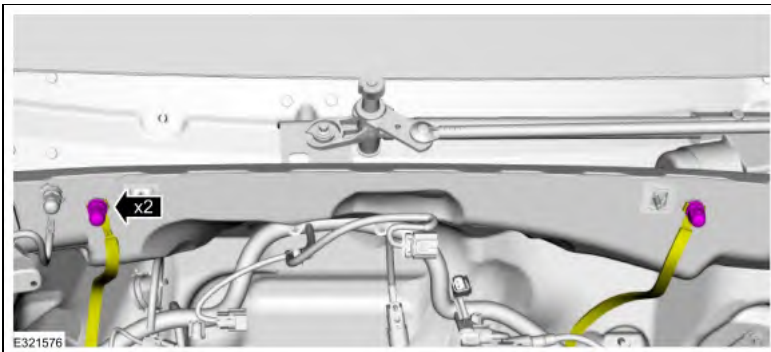
49. Install the coolant outlet pipe and the bolt.
Torque: 89 lb.in (10 Nm)



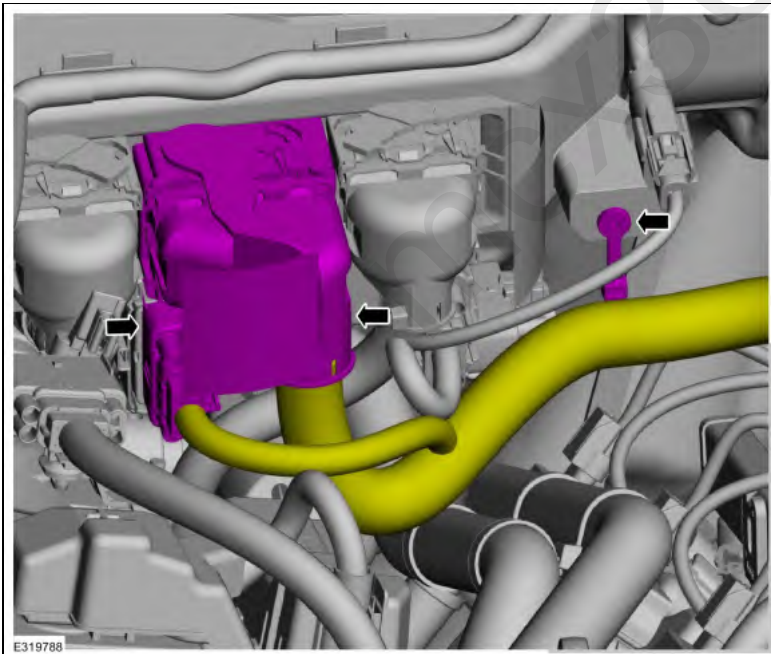
- 50.
- Attach the wiring harness retainers.
 - Connect the coolant pump electrical connector.



51. Position the engine ground straps and install the nuts.
Torque: 89 lb.in (10 Nm)



- 52.
1. Connect the engine wiring harness to the PCM.
 2. Connect the engine wiring harness electrical connector.
 3. Attach the engine wiring harness retainer.



53. Install the following items:
1. Intake manifold.
Refer to: Intake Manifold (303-01A Engine - 6.2L V8, Removal and Installation).
 2. A/C compressor belt.
Refer to: Air Conditioning (A/C) Compressor Belt (303-05C Accessory Drive - 7.3L 2V DEVCT V8 (239kW/320PS) (J0), Removal and Installation).
 3. Generator(s).
Refer to: Generator - 7.3L 2V DEVCT V8 (239kW/320PS) (J0) (414-02 Generator and Regulator, Removal and Installation).
 4. Cooling fan.
Refer to: Cooling Fan (303-03D Engine Cooling - 7.3L 2V DEVCT V8 (239kW/320PS) (J0), Removal and Installation).
 5. Remove the cooling module.
Refer to: Cooling Module (303-03A Engine Cooling - 6.2L V8, Removal and Installation).
 6. Remove the air cleaner.

Refer to: Air Cleaner (303-12A Intake Air Distribution and Filtering - 6.2L V8, Removal and Installation).

7. Remove the cowl panel.

Refer to: Cowl Panel (501-02 Front End Body Panels, Removal and Installation).

54. Install a new oil filter and fill the engine with clean engine oil.

Refer to: Engine Oil Draining and Filling (303-01C Engine - 7.3L 2V DEVCT V8 (239kW/320PS) (J0), General Procedures).

55. Fill and bleed the cooling system.

Refer to: Engine Cooling System Draining, Vacuum Filling and Bleeding (303-03D Engine Cooling - 7.3L 2V DEVCT V8 (239kW/320PS) (J0), General Procedures).

56. Connect the battery ground cable.

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

57. Pressurize the fuel system.

Refer to: Fuel System Pressure Release (310-00A Fuel System - General Information - 6.2L V8, General Procedures).

58. Fill the power steering system.

Refer to: Power Steering System Filling (211-02 Power Steering, General Procedures).

59. Check the transmission fluid.

Refer to: Transmission Fluid Level Check (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€” 10R140, General Procedures).

60. Check the exhaust system for leaks.

61. Use the Powertrain Control Module (PCM) Misfire Monitor Profile Correction routine in the diagnostic scan tool.

mcx30.com