

Engine

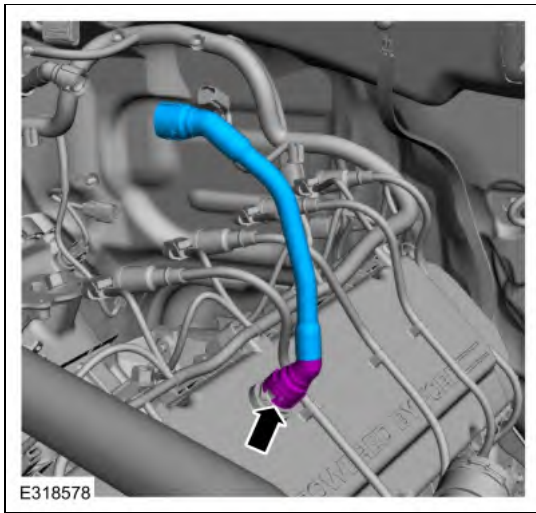
Special Tool(s) / General Equipment

	303-1507 Brackets, Support
	303-214 (T83T-6312-B) Wrench, Fan Clutch Nut
	303-478 (T94T-6312-AH) Holding Wrench, Fan Clutch Pulley TKIT-1994-FHFMHFLMHLTH
	303-F047 Lifting Bracket, Engine
	307-346 (T97T-7902-A) Retainer, Torque Converter TKIT-1998-LM (Navigator) TKIT-1997-F/FLM/LT
Magnetic Socket	
Floor Crane	
Oil Drain Equipment	
Trolley Jack	
Hose Clamp Remover/Installer	
1/2 Inch Square Drive Breaker Bar	
Wooden Block	

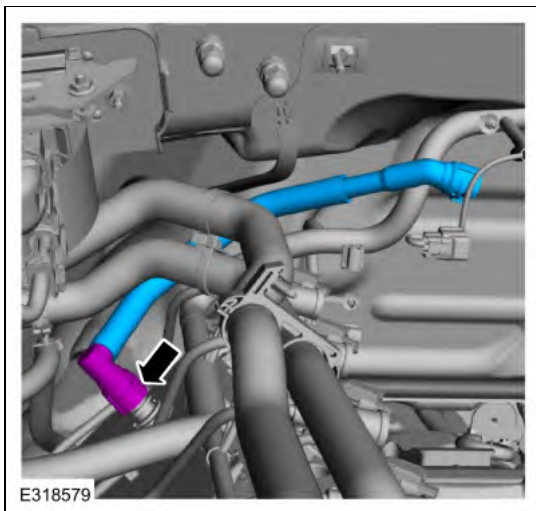
5-Speed Manual Transmission â€“ TR4050/6-Speed Automatic Transmission â€“ 6R100/10-Speed Automatic Transmission â€“ 10R140

NOTICE: During engine repair procedures, cleanliness is extremely important. Any foreign material, including any material created while cleaning gasket surfaces, that enters the oil passages, coolant passages or the oil pan, can cause engine failure.

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. Release the fuel system pressure.
Refer to: Fuel System Pressure Release (310-00A Fuel System - General Information - 6.2L V8, General Procedures).
3. Drain the cooling system.
Refer to: Engine Cooling System Draining, Vacuum Filling and Bleeding (303-03A Engine Cooling - 6.2L V8, General Procedures).
4. Remove the following items:
 1. Remove the cowl panel.
Refer to: Cowl Panel (501-02 Front End Body Panels, Removal and Installation).
 2. Remove the accessory drive belt.
Refer to: Accessory Drive Belt (303-05A Accessory Drive - 6.2L V8, Removal and Installation).
 3. Remove the intake manifold.
Refer to: Intake Manifold (303-01A Engine - 6.2L V8, Removal and Installation).
 4. Remove the cooling module.
Refer to: Cooling Module (303-03A Engine Cooling - 6.2L V8, Removal and Installation).
 5. Remove the air cleaner.
Refer to: Air Cleaner (303-12A Intake Air Distribution and Filtering - 6.2L V8, Removal and Installation).
5. Follow directions to release the quick release coupling type 3. Disconnect and remove the crankcase vent tube.
Refer to: Quick Release Coupling (310-00 Fuel System - General Information) .



6. Follow directions to release the quick release coupling type 3. Disconnect and remove the PCV tube.
Refer to: Quick Release Coupling (310-00 Fuel System - General Information) .

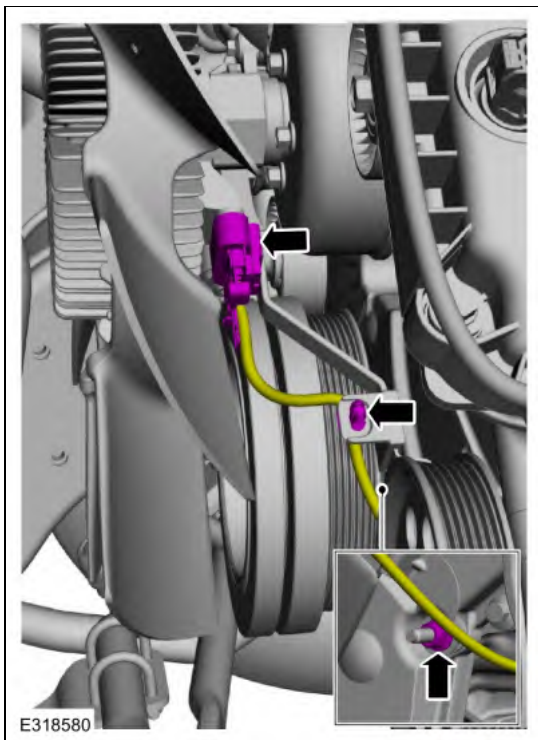


5-Speed Manual Transmission â€“ TR4050

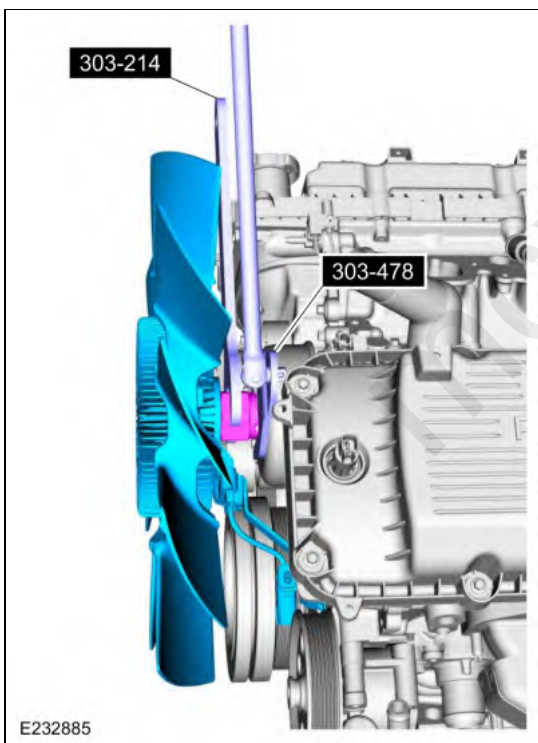
7. Remove the clutch and pressure plate.
Refer to: Clutch Disc and Pressure Plate (308-01 Clutch, Removal and Installation).

5-Speed Manual Transmission â€“ TR4050/6-Speed Automatic Transmission â€“ 6R100/10-Speed Automatic Transmission â€“ 10R140

- 8.
- Disconnect the cooling fan wiring harness electrical connector and retainer.
 - Remove the cooling fan wiring harness support bracket nut.

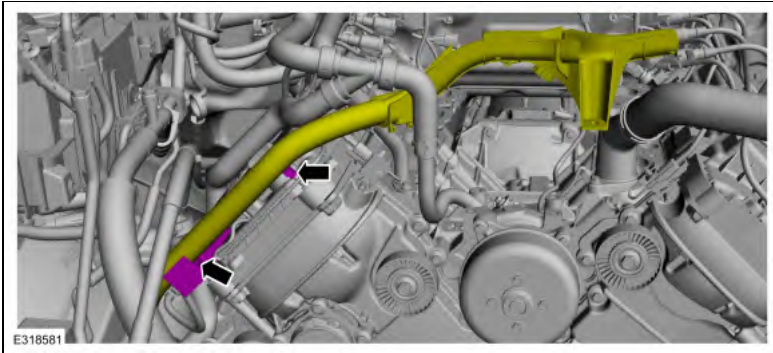


9. Using the special tools, remove the cooling fan.
 Use Special Service Tool: 303-478 (T94T-6312-AH) Holding Wrench, Fan Clutch Pulley. , 303-214 (T83T-6312-B) Wrench, Fan Clutch Nut.
 Use the General Equipment: 1/2 Inch Square Drive Breaker Bar

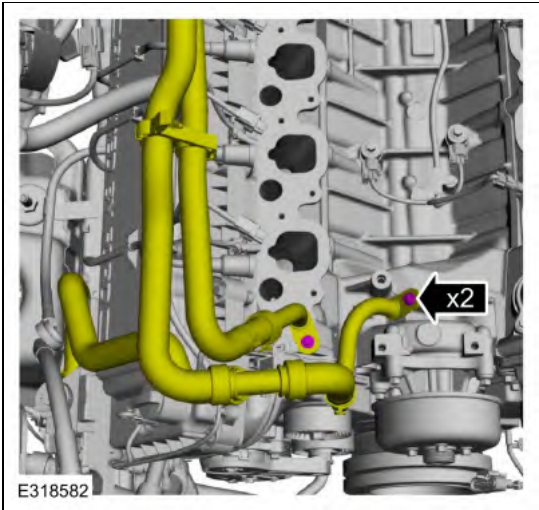


10. **NOTE:** Primary battery vehicles shown, secondary battery vehicles similar.

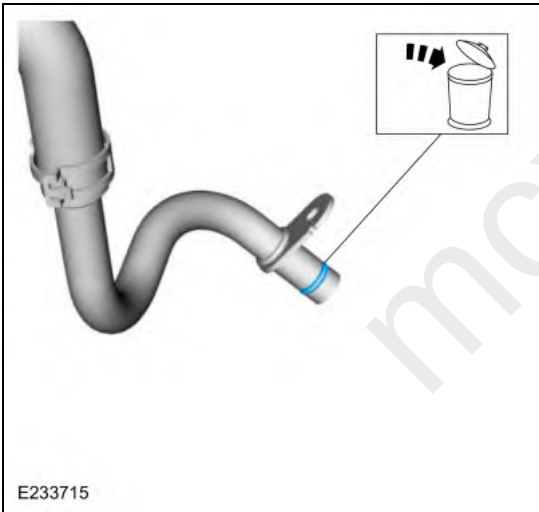
Detach the generator wiring harness pin-type retainers and position aside.



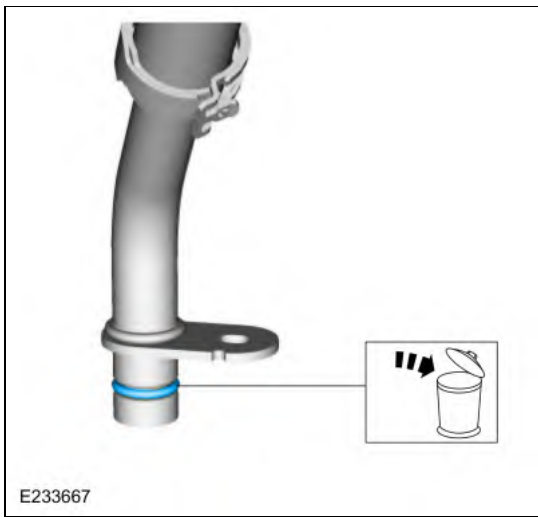
11. Remove the bolts and position the coolant tubes aside.



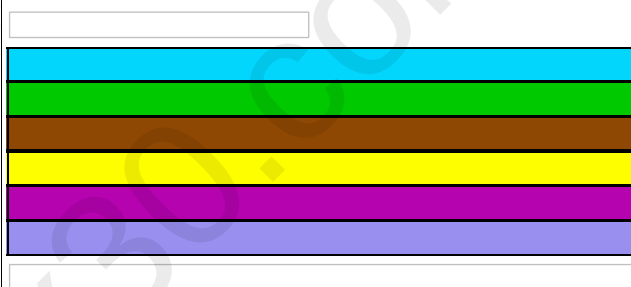
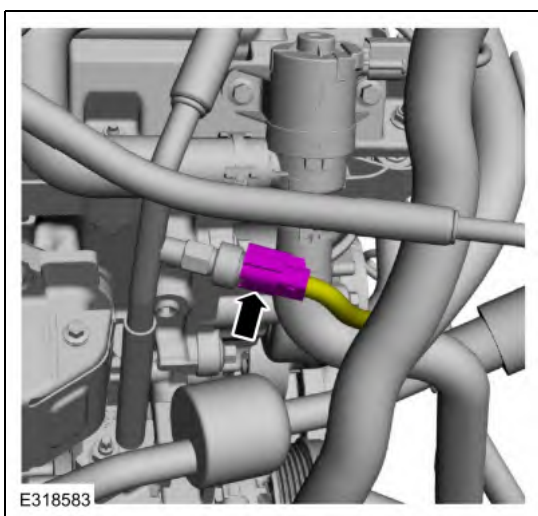
12. Remove and discard the coolant tube O-ring seal.



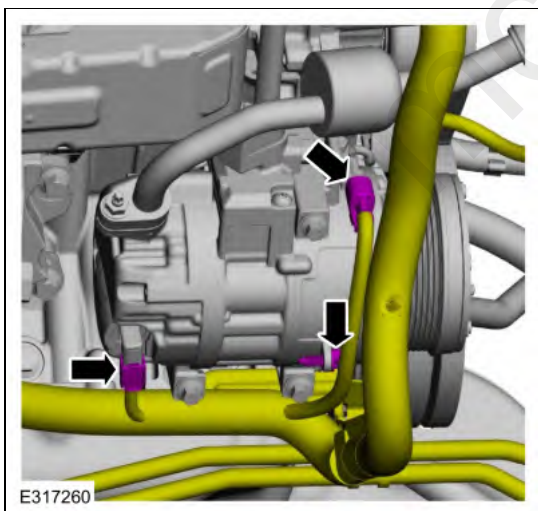
13. Remove and discard the coolant tube O-ring seal.



14. Disconnect the A/C pressure switch wiring harness electrical connector.



15. Disconnect the A/C compressor wiring harness electrical connectors and detach the wiring harness retainer.

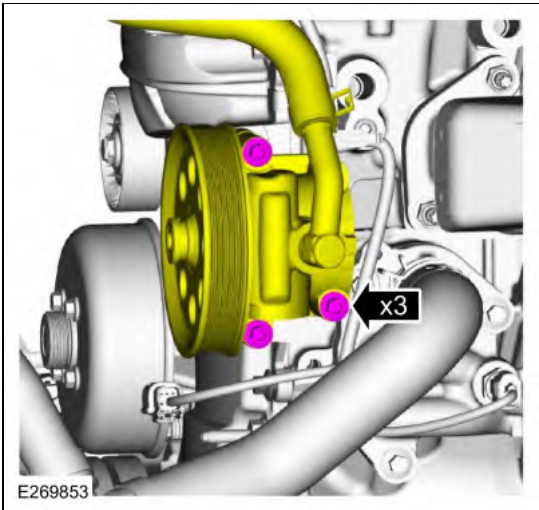


16.

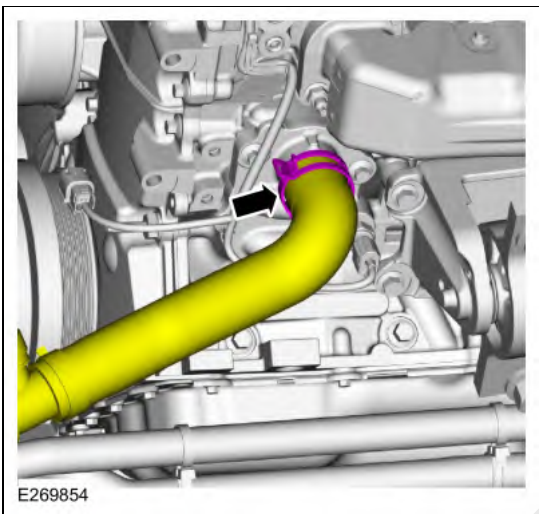
- Remove the nut.
- **NOTE:** 6R100 transmission lines shown, 10R140 similar.
- If equipped with automatic transmission, remove the transmission cooler lines bracket.
- Remove the starter motor wiring harness bracket.

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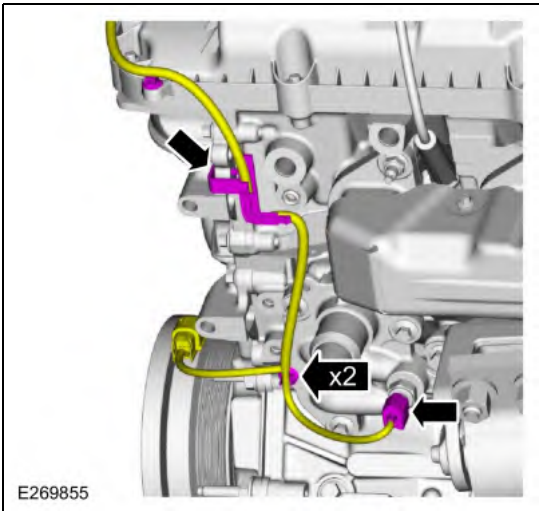
19. Remove the bolts and position the power steering pump aside.



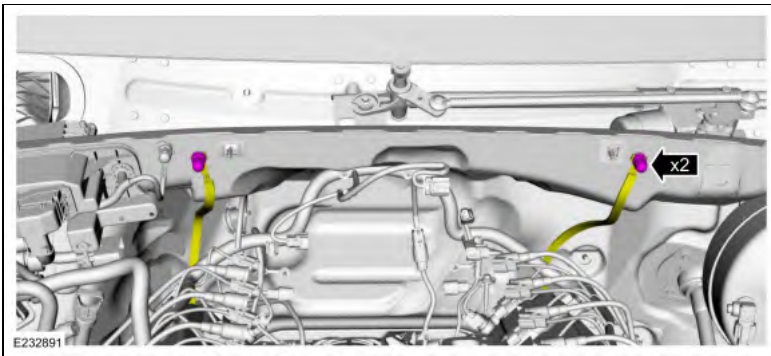
20. Disconnect the lower radiator hose from the cylinder block.
Use the General Equipment: Hose Clamp Remover/Installer



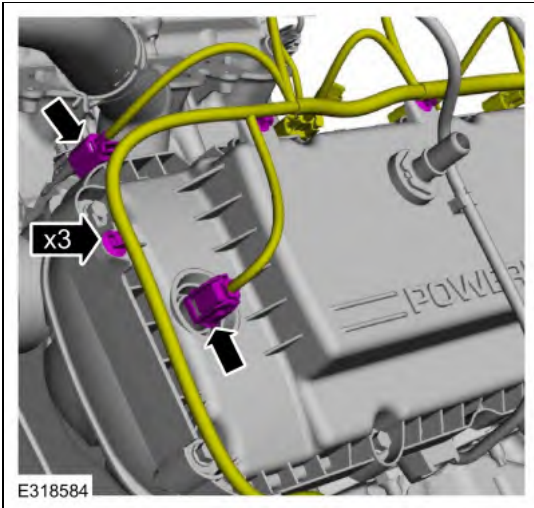
21. Disconnect the oil pressure switch wiring harness electrical connector and the retainers.



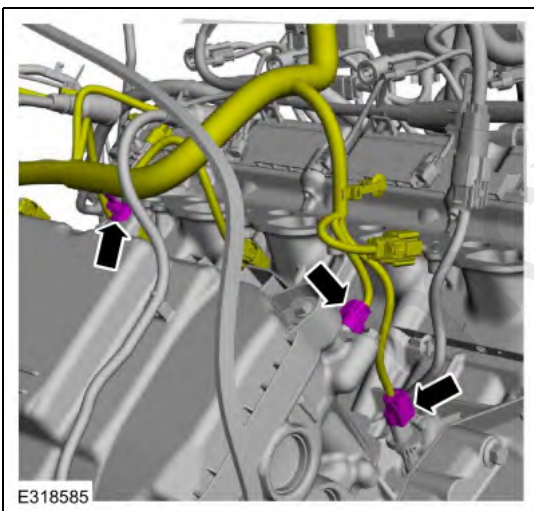
22. Remove the nuts and position the engine ground straps aside.



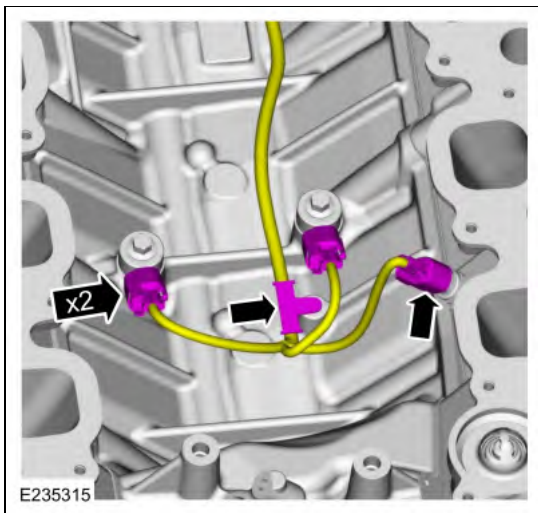
23. Disconnect the wiring harness electrical connectors and the retainers.



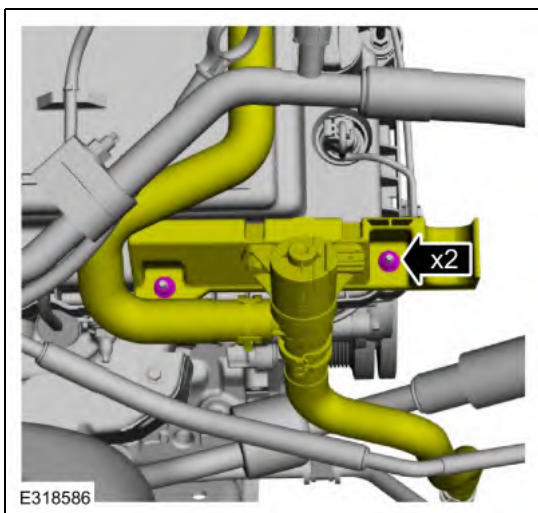
24. Disconnect the wiring harness electrical connectors and the retainer.



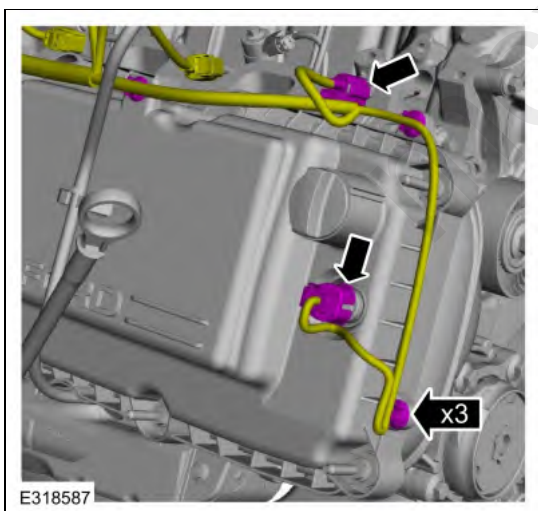
25. Disconnect the wiring harness electrical connectors and the retainer.



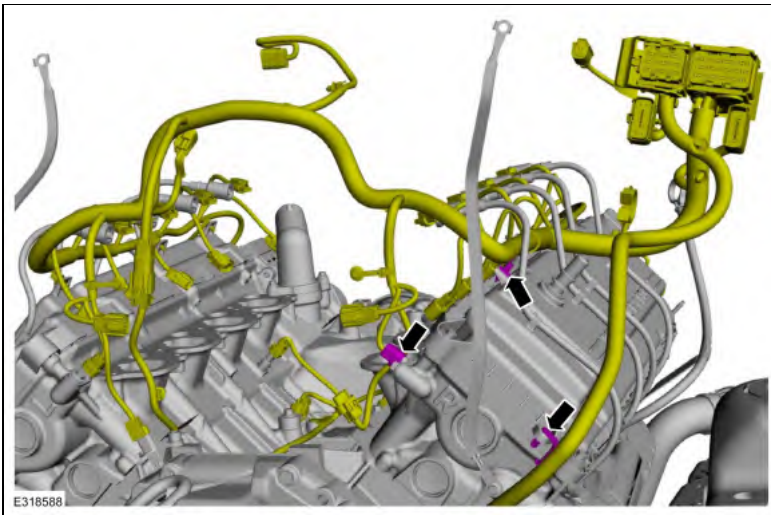
26. Remove the nuts and position the coolant valve and bracket aside.



27. Disconnect the wiring harness electrical connector and the retainers.

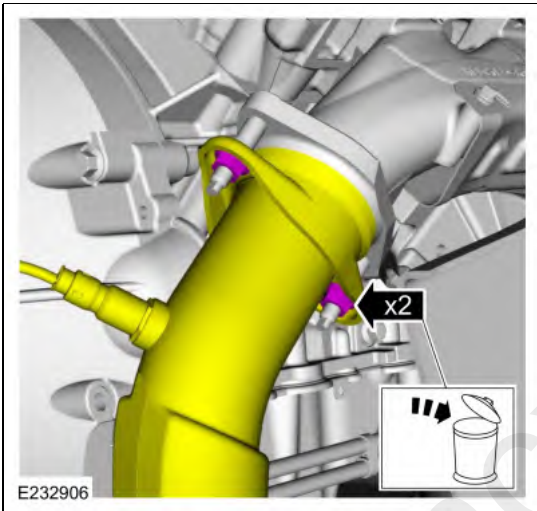


28. Disconnect the wiring harness electrical connector and the retainers and position the engine wiring harness aside.

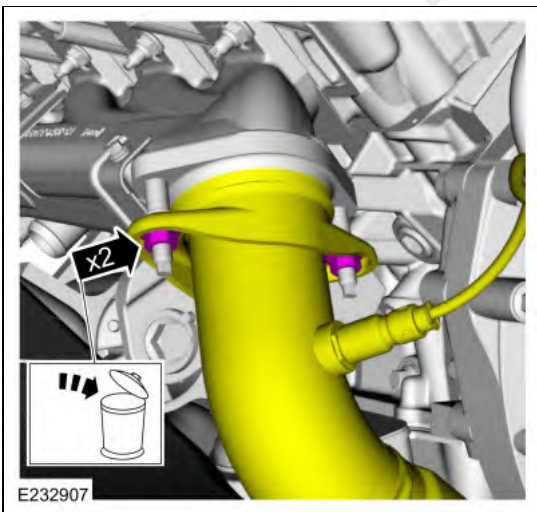


6-Speed Automatic Transmission “ 6R100/10-Speed Automatic Transmission “ 10R140

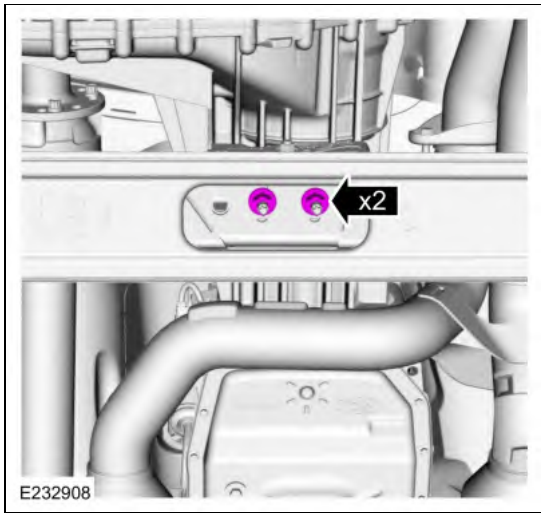
- 29. Remove the starter motor.
Refer to: Starter Motor (303-06A Starting System - 6.2L V8, Removal and Installation).
- 30.
 - Remove the RH catalytic converter pipe-to-manifold nuts and discard.
 - Make sure that the mating faces are clean and free of foreign material.



- 31.
 - Remove the LH catalytic converter pipe-to-manifold nuts and discard.
 - Make sure that the mating faces are clean and free of foreign material.

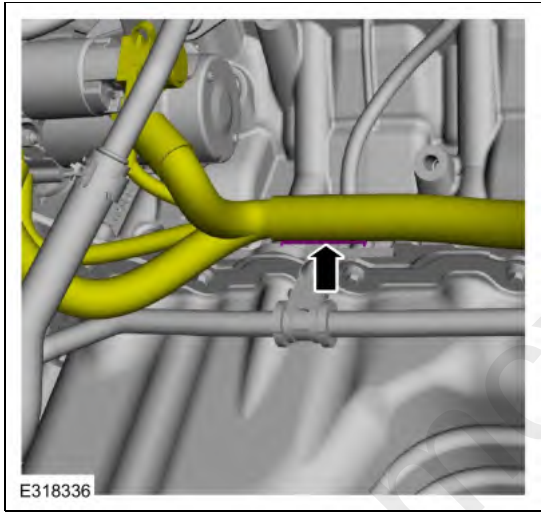


- 32. **NOTICE:** Failure to replace the transmission support insulator nuts may result in transmission support insulator damage. New transmission support insulator nuts will be installed during engine installation.
- Loosen the transmission support insulator-to-crossmember nuts.

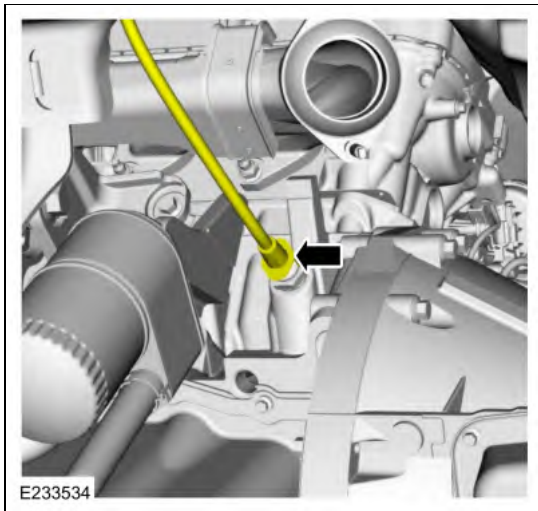


5-Speed Manual Transmission “ TR4050/6-Speed Automatic Transmission “ 6R100/10-Speed Automatic Transmission “ 10R140

33. Detach the starter motor wiring harness pin-type retainer from the oil pan.

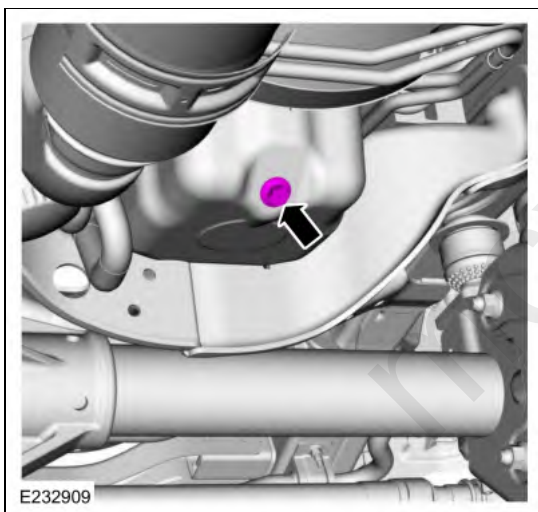


34. If equipped with an engine block heater, disconnect the engine block heater electrical connector and position the wiring harness aside.

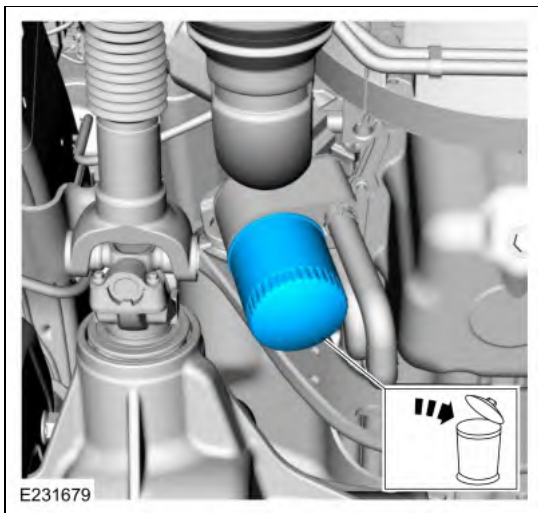


35.

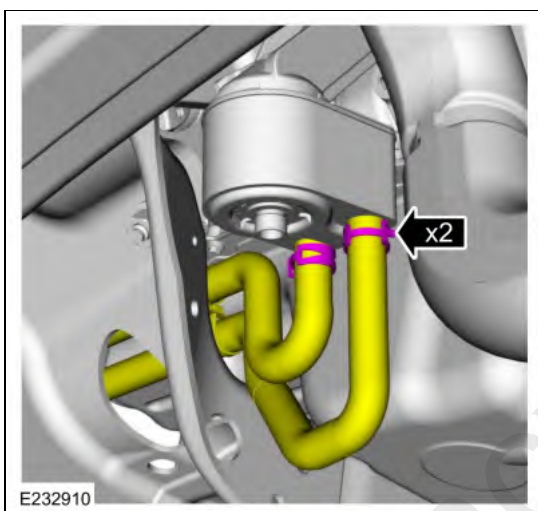
- Remove the drain plug and drain the engine oil.
Use the General Equipment: Oil Drain Equipment
- Install the drain plug.
Torque: 17 lb.ft (23 Nm)



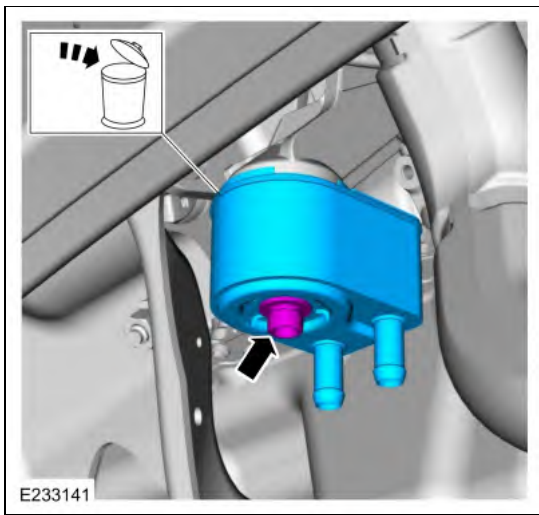
36. Remove and discard the engine oil filter.
Use the General Equipment: Oil Drain Equipment



37. Disconnect the oil cooler coolant hoses.
Use the General Equipment: Hose Clamp Remover/Installer

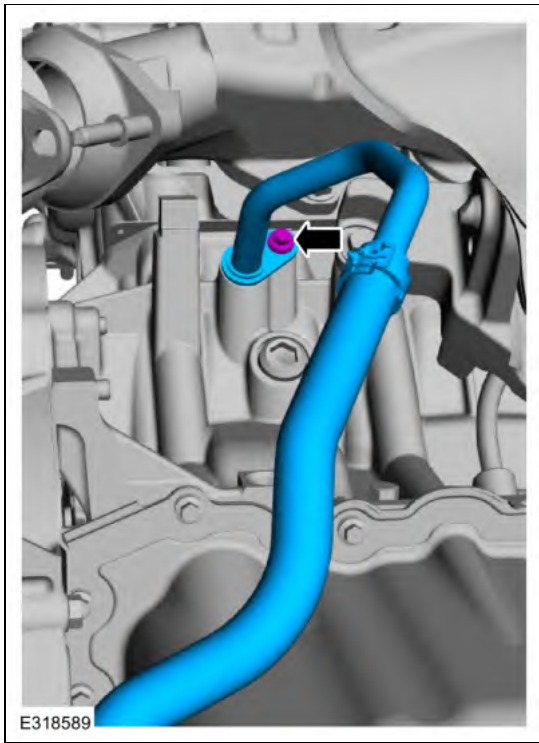


- 38.
- Remove the retainer and the engine oil cooler.
 - Discard the engine oil cooler.

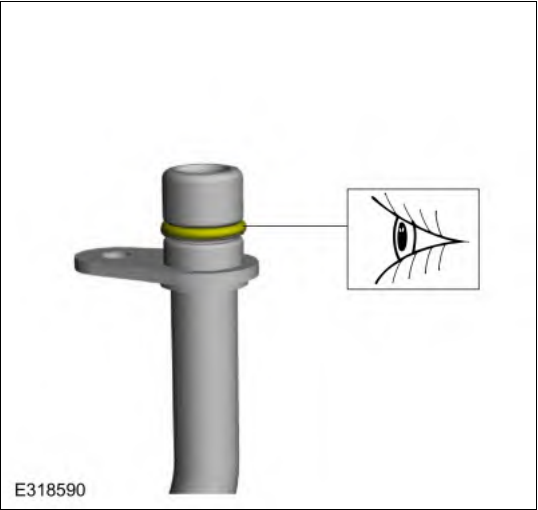


6-Speed Automatic Transmission “ 6R100/10-Speed Automatic Transmission “ 10R140

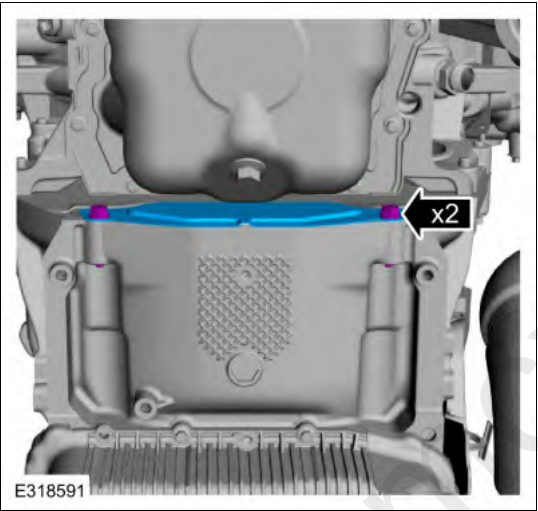
39. If equipped with 10R40 transmission, remove the transmission cooler.
Refer to: Transmission Fluid Cooler - 6.2L V8/7.3L 2V DEVCT V8 (239kW/320PS) (J0) (307-02B Transmission Cooling - 10-Speed Automatic Transmission “ 10R140, Removal and Installation).
40. If equipped with 10R40 transmission, remove the bolt and the transmission cooler coolant tube from the RH side of engine block.



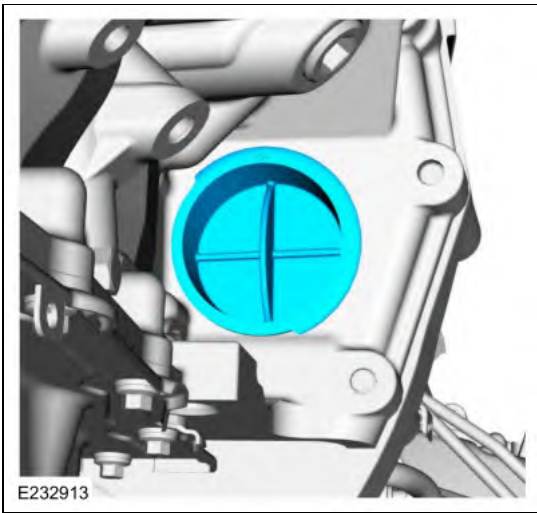
41. If equipped with 10R40 transmission, inspect the transmission cooler coolant tube O-ring seal and replace if damaged.



42. Remove the bolts and the transmission inspection plate.

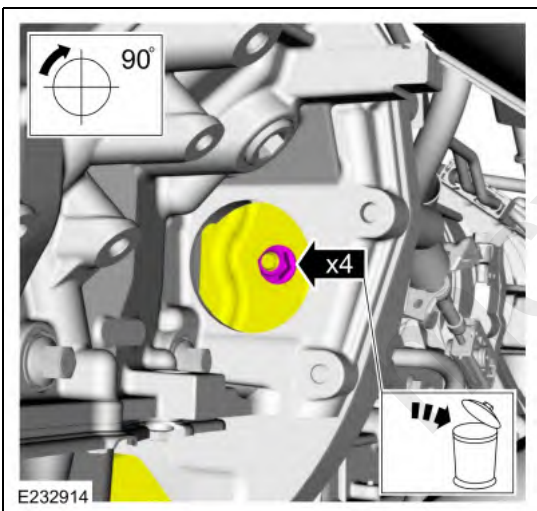


43. Remove the torque converter nut access cover.



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

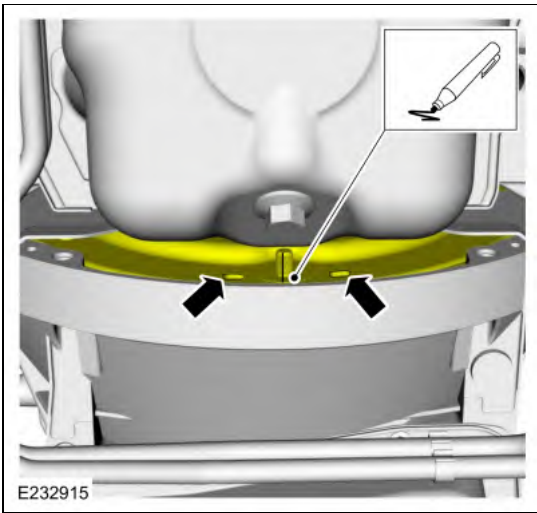
Remove and discard the torque converter nuts.
Use the General Equipment: Magnetic Socket



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

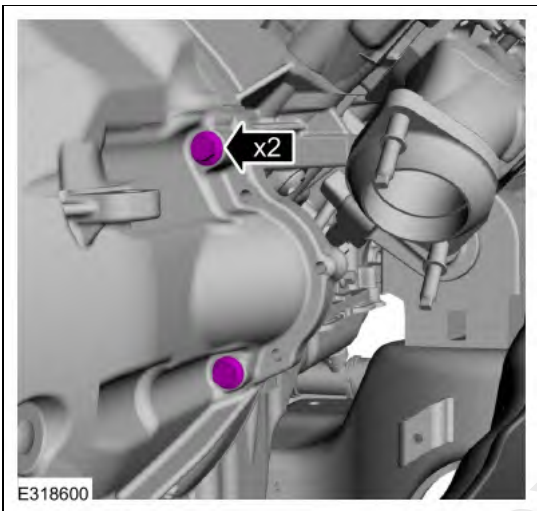
NOTE: Only rotate the crankshaft in a clockwise direction.

Rotate the flexplate so that the 2 slotted holes are shown at the 6 o'clock position and index mark the torque converter stud to the flexplate to maintain alignment during installation.

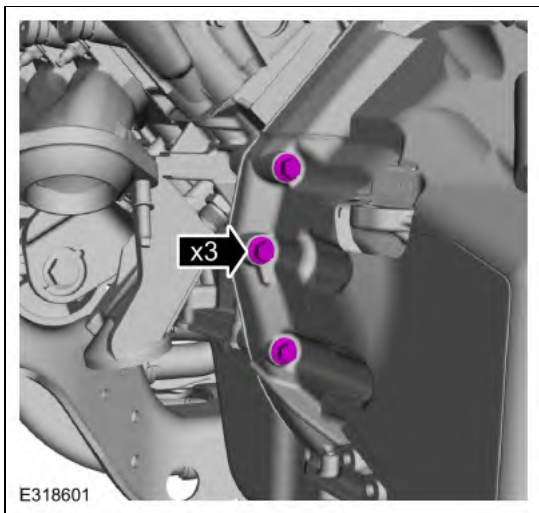


46. **NOTE:** The upper 2 transmission-to-engine bolts will be removed later.

Remove the RH transmission-to-engine bolts.



47. Remove the LH transmission-to-engine bolts.

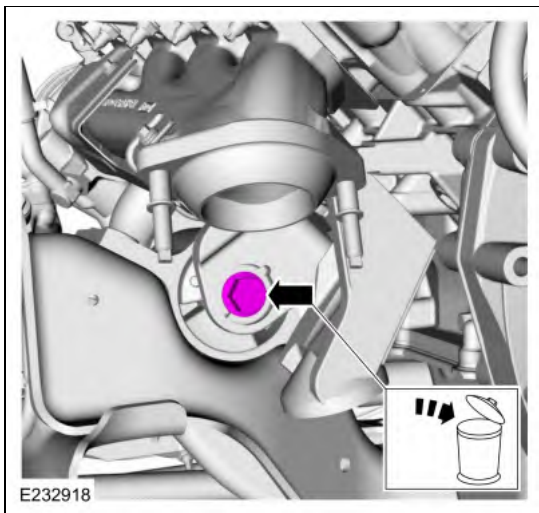


5-Speed Manual Transmission “ TR4050/6-Speed Automatic Transmission “ 6R100/10-Speed Automatic Transmission “ 10R140

48. **NOTICE:** The engine support insulator through bolt must be discarded and a new bolt installed, or damage to the vehicle or engine support insulator may occur.

NOTICE: Only use hand tools when removing the engine support insulator through bolt or damage to the engine support insulator may occur.

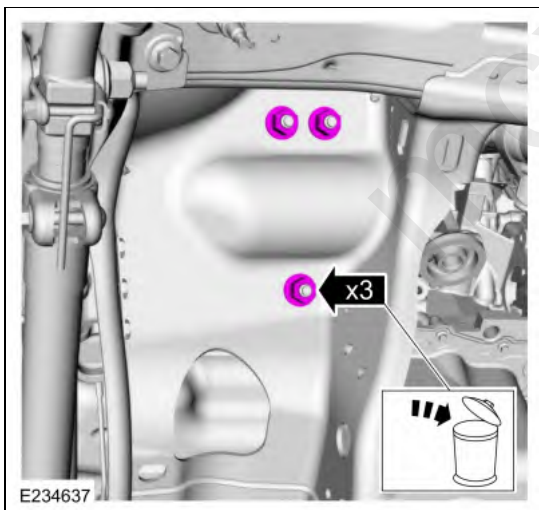
Remove and discard the LH engine mount through bolt.



49. **NOTICE:** Failure to replace the engine mount nuts may result in engine mount damage.

NOTICE: Only use hand tools when loosening the engine mount nuts or damage to the engine mount may occur.

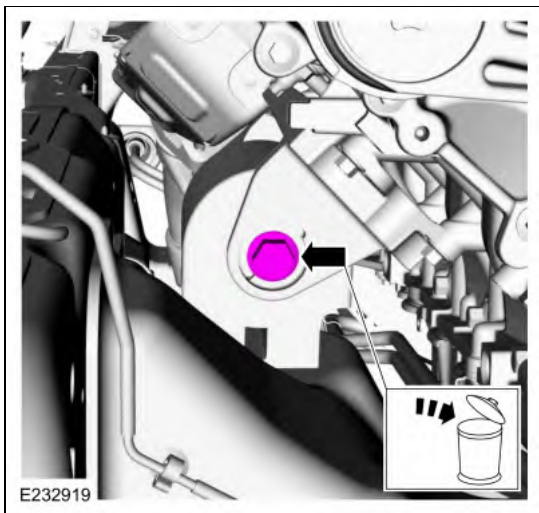
Remove and discard the LH engine support insulator bracket nuts.



50. **NOTICE:** The engine support insulator through bolt must be discarded and a new bolt installed, or damage to the vehicle or engine support insulator may occur.

NOTICE: Only use hand tools when removing the engine support insulator through bolt or damage to the engine support insulator may occur.

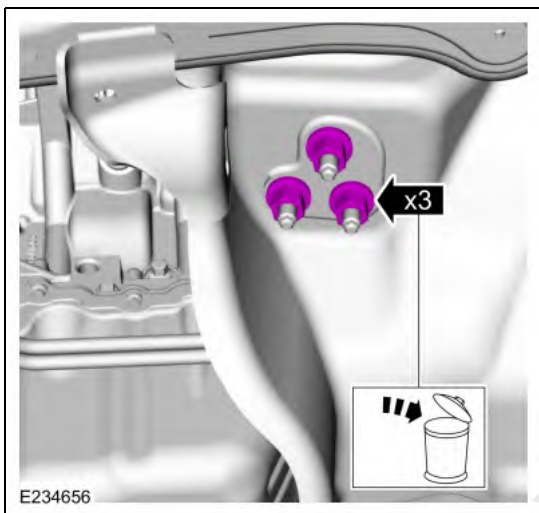
Remove and discard the RH engine mount through bolt.



51. **NOTICE:** Failure to replace the engine mount nuts may result in engine mount damage.

NOTICE: Only use hand tools when loosening the engine mount nuts or damage to the engine mount may occur.

Remove and discard the RH engine support insulator bracket nuts.



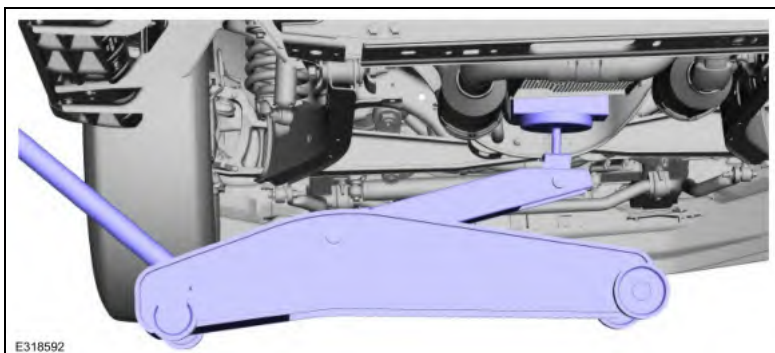
6-Speed Automatic Transmission “ 6R100/10-Speed Automatic Transmission “ 10R140

52. **NOTICE:** Do not support the transmission by the fluid pan, failure to follow this instruction may result in serious damage to the transmission.

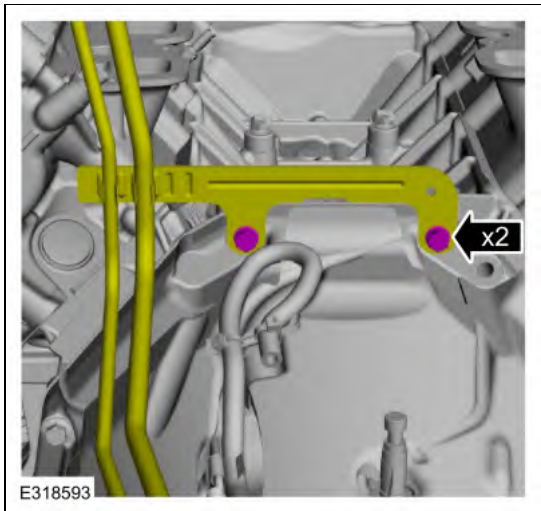
Support the bellhousing of the transmission with a suitable floor jack and a block of wood.

Use the General Equipment: Trolley Jack

Use the General Equipment: Wooden Block

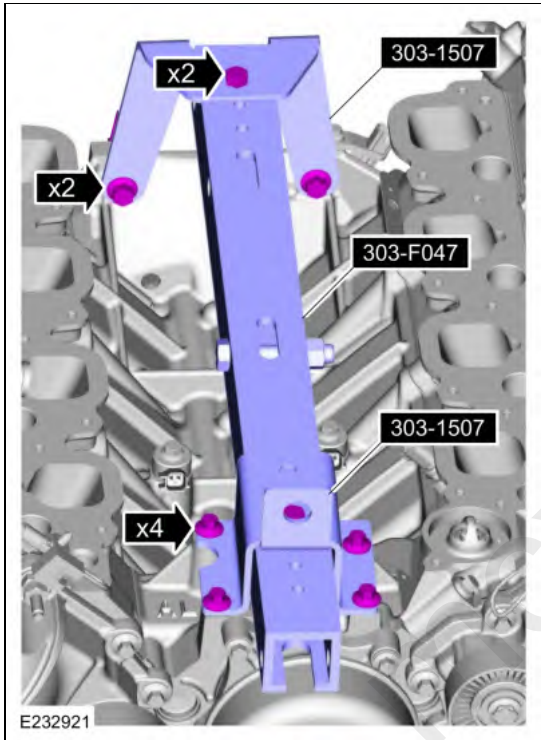


53. Working from on top of engine, remove the upper transmission-to-engine bolts.

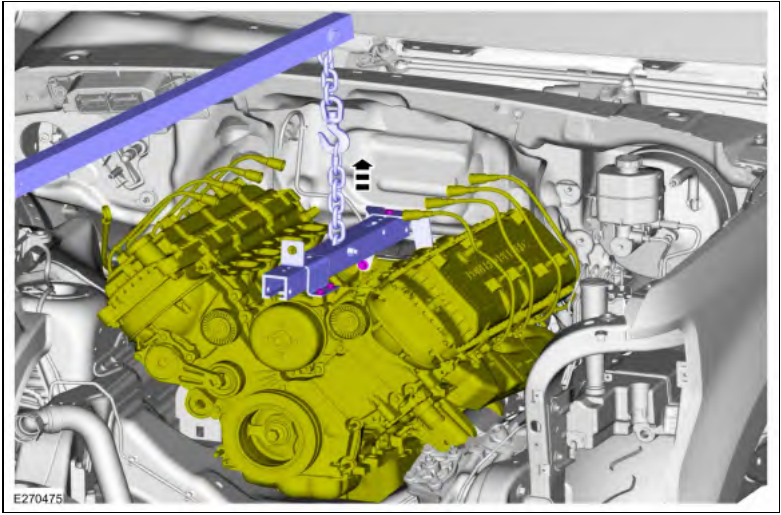


5-Speed Manual Transmission & TR4050/6-Speed Automatic Transmission & 6R100/10-Speed Automatic Transmission & 10R140

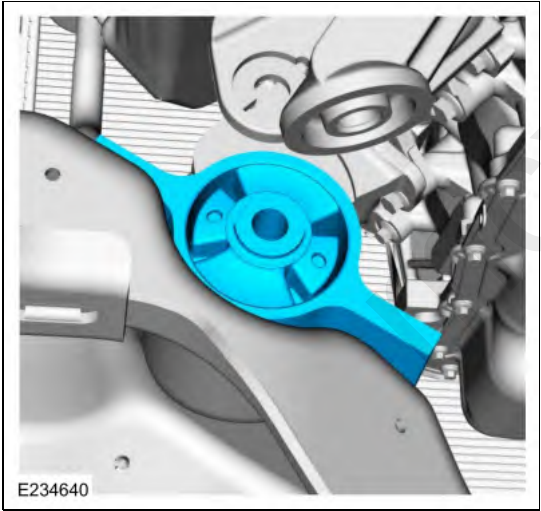
54. Install the special tools and the bolts.
 Use Special Service Tool: 303-1507 Brackets, Support. , 303-F047 Lifting Bracket, Engine.



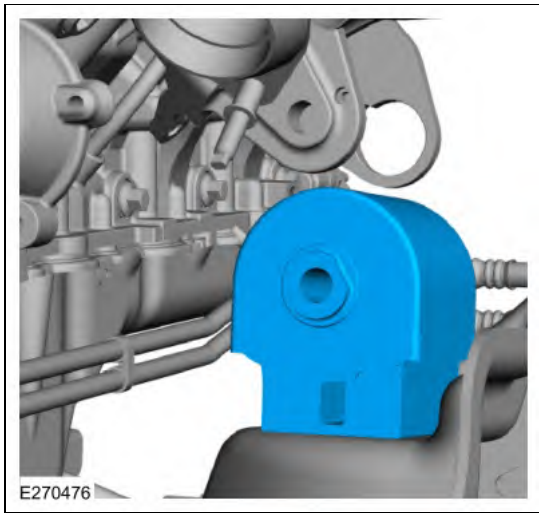
55. Using the floor crane and the special tool, raise the engine to access the engine mounts.
 Use the General Equipment: Floor Crane



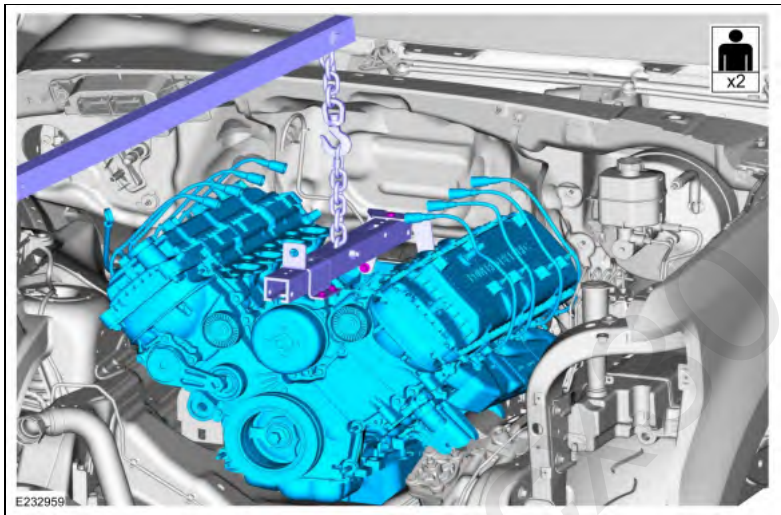
56. Remove the LH engine mount.



57. Remove the RH engine mount.

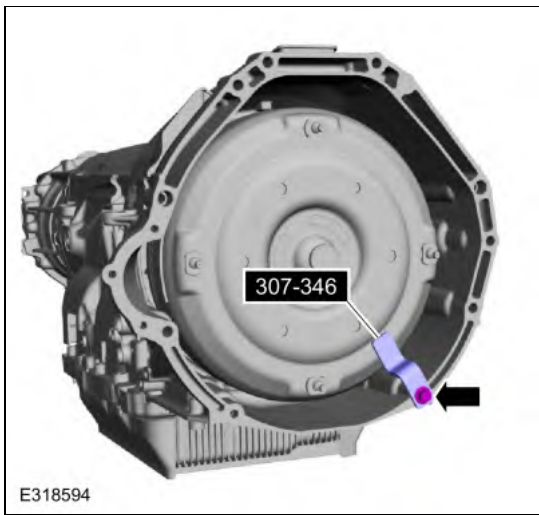


58. With the aid of an assistant and using a floor crane, remove the engine assembly from the vehicle.
 Use the General Equipment: Floor Crane



6-Speed Automatic Transmission “ 6R100/10-Speed Automatic Transmission “ 10R140

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



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