



SECTION 303-01B: Engine — 5.4L (3V)
REMOVAL

2004 F-150 Workshop Manual
Procedure revision date: 02/10/2004

Engine

 [Printable View \(943 KB\)](#)

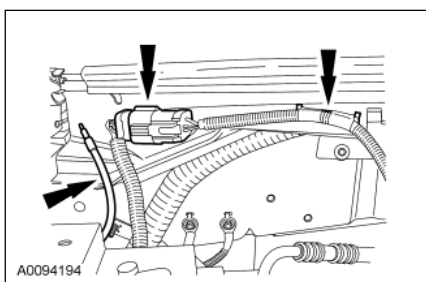
Special Tool(s)

 ST1377-A	Modular Engine Lift Bracket 303-F047 (014-00073) or equivalent
 ST1290-B	Remover, Power Steering Pump Pulley 211-016 (T69L-10300-B)

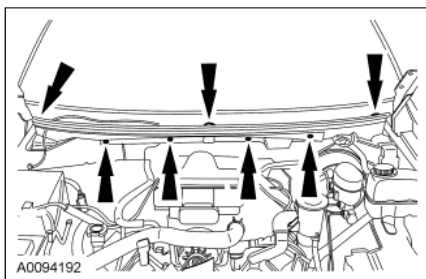
Material

Item	Specification
SAE 5W-20 Motor Oil XO-5W20-QSP	WSS-M2C153-H
Silicone Gasket Remover ZC-30	—
Metal Surface Prep ZC-31	—

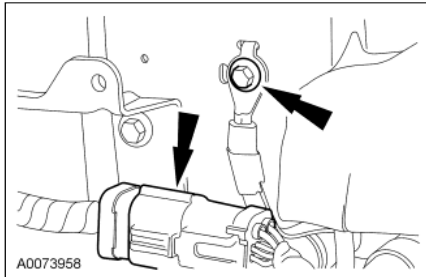
1. With the vehicle in NEUTRAL, position it on a hoist. For additional information, refer to [Section 100-00](#).
2. Remove the hood.
3. Remove the intake manifold. For additional information, refer to [Intake Manifold](#) in this section.
4. Remove the accessory drive belt.
5. Discharge and recover the A/C system. For additional information, refer to [Section 412-00](#).
6. Remove the radiator. For additional information, refer to [Section 303-03](#).
7. Remove the powertrain control module (PCM) and the support bracket. For additional information, refer to [Section 303-04B](#).
8. Remove the cowl panel grille. For additional information, refer to [Section 501-00](#).
9. Detach the wiring harness and the windshield washer hose retainers from the cowl panel extension.



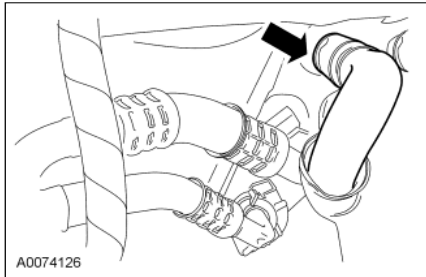
10. Remove the bolts and the cowl extension panel.



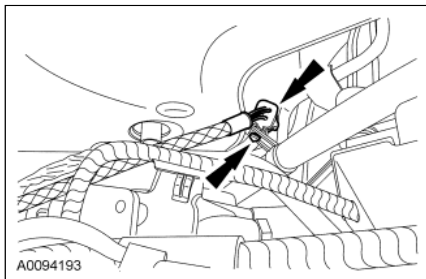
11. Disconnect the electrical connector and remove the bolt and the ground strap.



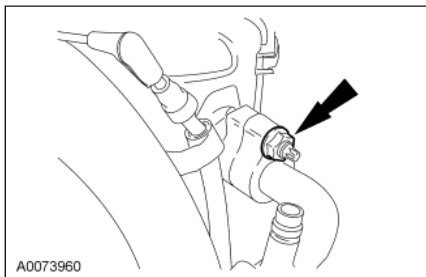
12. Disconnect the heater hose.



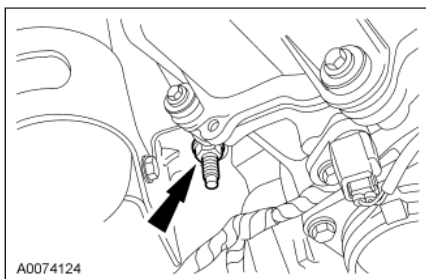
13. Disconnect the RH heated oxygen sensor (HO2S) electrical connector and detach the wiring harness retainer.



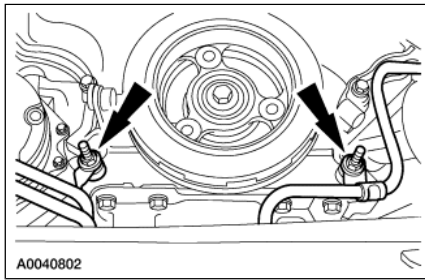
14. Remove the nut, disconnect the A/C manifold and tube assembly and position aside.



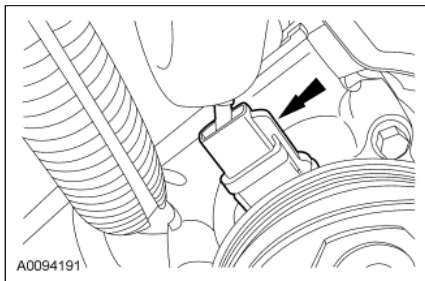
15. Remove the nut and the A/C manifold and tube assembly and support bracket.



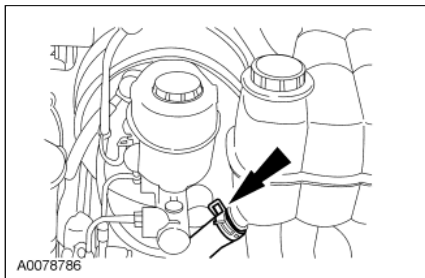
16. Remove the nuts, the transmission cooler tube and the power steering pressure tube support brackets.



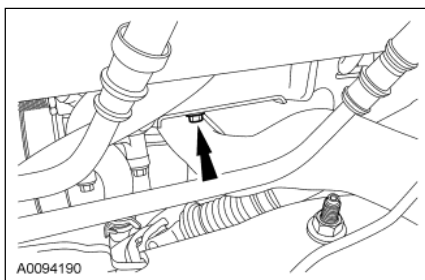
17. Disconnect the A/C compressor electrical connector.



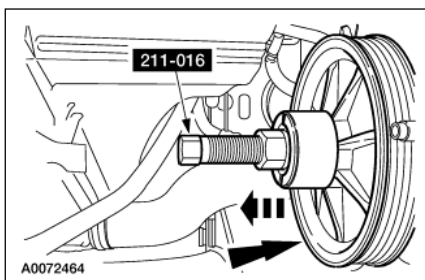
18. Disconnect the coolant hose.



19. Remove the bolts and position the power steering reservoir assembly aside.



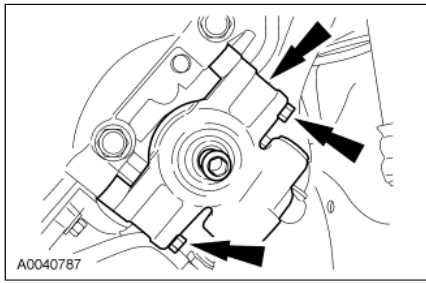
20. Using the special tool, remove the power steering pump pulley.



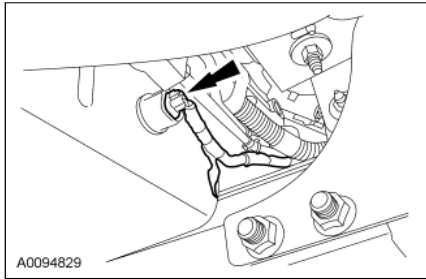
21. **NOTE:** Power steering lines shown disconnected for clarity.

Remove the bolts and position the power steering pump aside.

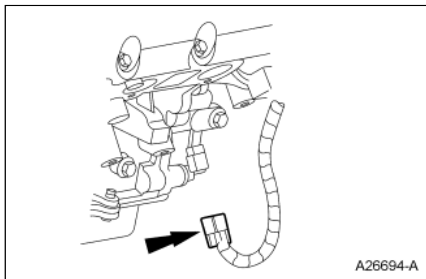
- Detach the wiring harness retainer from the pump assembly.



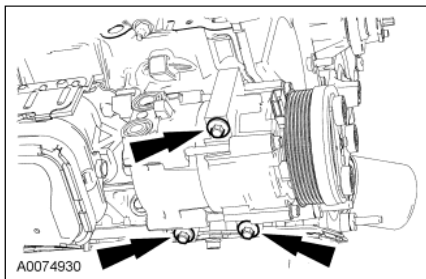
22. Remove the starter. For additional information, refer to [Section 303-04B](#).
23. Disconnect the oil temperature sensor electrical connector.



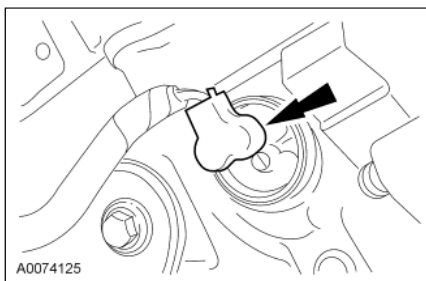
24. Disconnect the crankshaft position (CKP) sensor electrical connector and harness retainer.



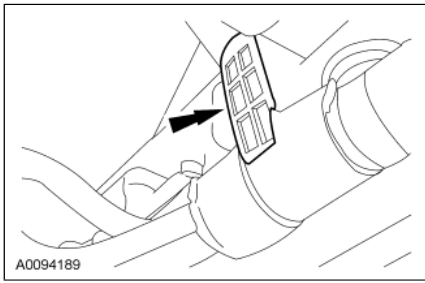
25. Remove the bolts and position the A/C compressor aside.



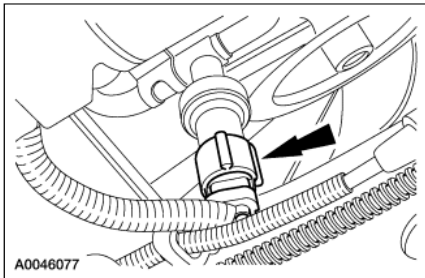
26. If equipped, disconnect the block heater electrical connector.



27. Detach the starter electrical harness support from the cylinder block.



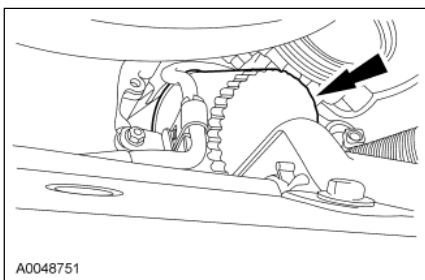
28. If equipped, disconnect the power steering pressure switch electrical connector.



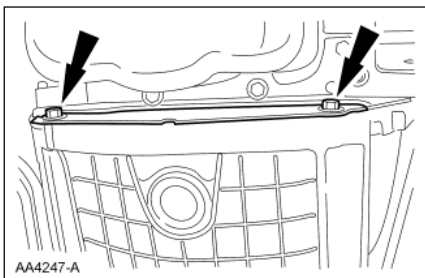
29. Remove the drain plug and drain the engine oil.



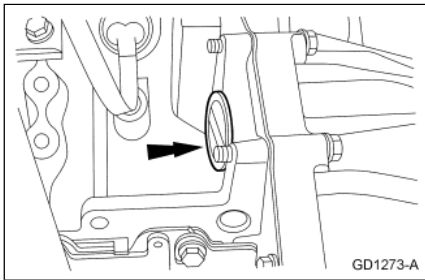
30. Remove the oil filter.



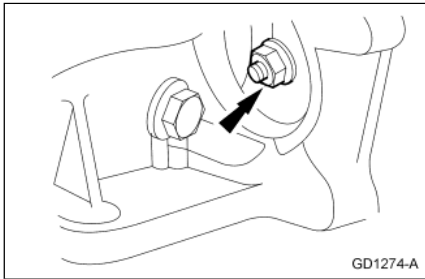
31. Remove the bolts and the flexplate inspection cover.



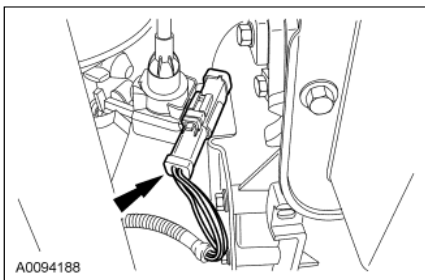
32. Remove the cylinder block opening cover.



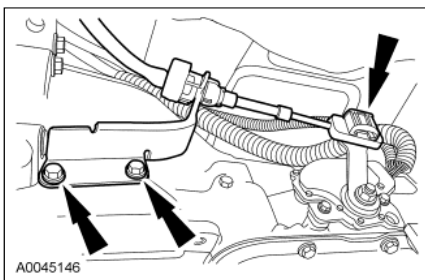
33. Remove the torque converter-to-flexplate nuts.
- Discard the nuts.



34. Disconnect the LH heated exhaust gas oxygen sensor electrical connector and detach the electrical connector retainer.

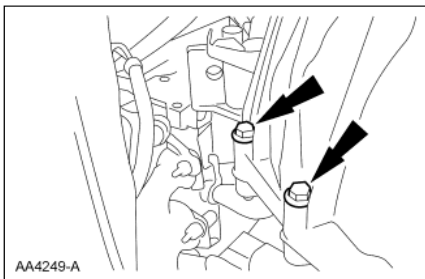


35. Disconnect the shift cable and remove the shift cable bracket.

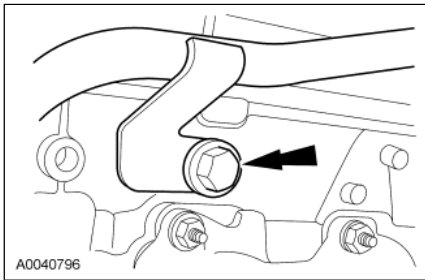


36. **NOTE:** The upper two transmission-to-engine bolts will be removed later.

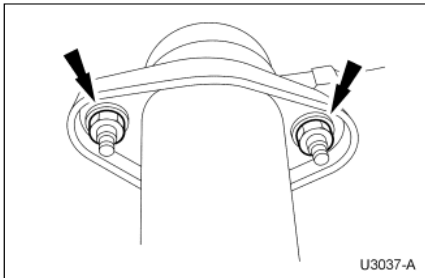
Remove the lower five transmission-to-engine bolts.



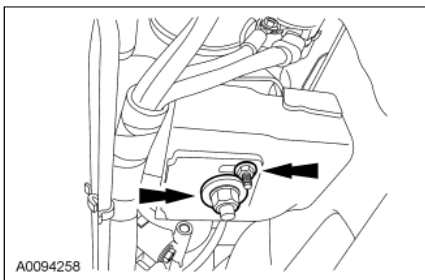
37. Remove the bolt and position the transmission fluid filler tube aside.



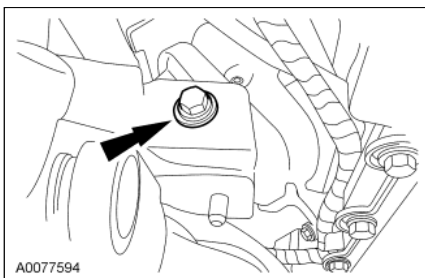
38. Remove the four exhaust manifold flange nuts.



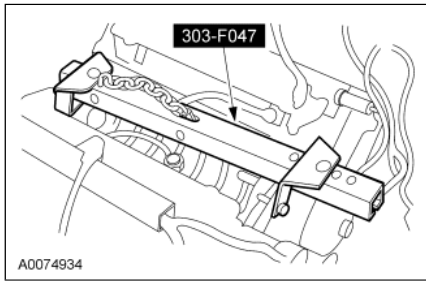
39. Remove the RH motor mount nuts.



40. Remove the LH motor mount bolt.



41. Support the transmission.
42. **NOTE:** On 4x4 vehicles, it may be necessary to reposition the transfer case vent hose to access the bolts.
Remove the upper two transmission-to-engine bolts and the wiring harness bracket.
43. Install the special tool.



44. Using a suitable floor crane, remove the engine assembly from the vehicle.
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