



SECTION 303-01: Engine — 4.6L and 5.4L
REMOVAL

1998 Expedition/Navigator Workshop Manual
Procedure revision date: 01/16/2003

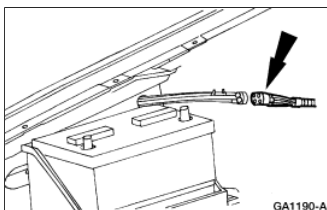
Engine

Special Tool(s)

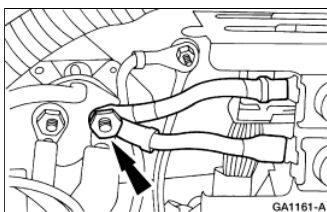
 <p>ST1377-A</p>	<p>Engine Lift Bar 303-F047 (014-00073)</p>
 <p>ST1648-A</p>	<p>Heater Hose Disconnect Tool 5/8 Inch 412-042 (T85T-18539-AH)</p>

Removal

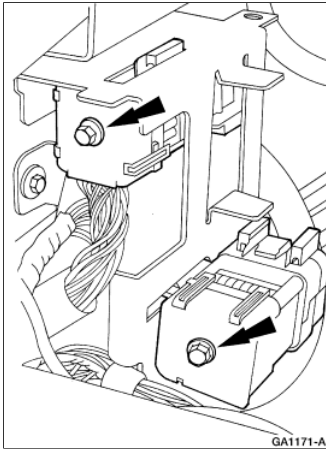
1. Evaluate the A/C system. For additional information, refer to [Section 412-00](#).
2. Disconnect the battery ground cable (14301). For additional information, refer to [Section 414-01](#).
3. Remove the hood (16612).
4. Remove the engine air cleaner. For additional information, refer to [Section 303-12](#).
5. Remove the radiator. For additional information, refer to [Section 303-03](#).
6. Disconnect the climate control vacuum feed connector.



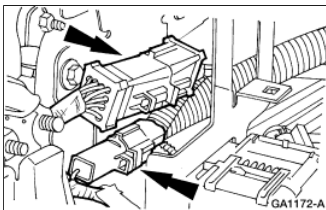
7. Position aside the power steering reservoir. For additional information, refer to [Section 211-02](#).
8. Remove the intake manifold. For additional information, refer to [Intake Manifold—Variable Resonance Induction System](#) in this section.
9. Remove the splash shield covering the engine main harness connectors.
10. Disconnect the two starter cable leads from the starter relay.



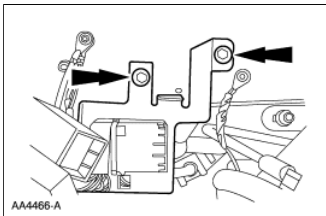
11. Disconnect the two 42-pin connectors and the single pin connector.



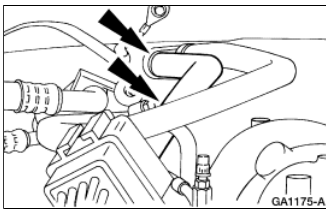
12. Disconnect the 16-pin connector and the single pin connector.



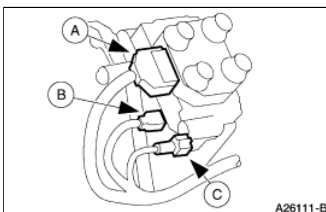
13. Remove the bolts and the junction block bracket.



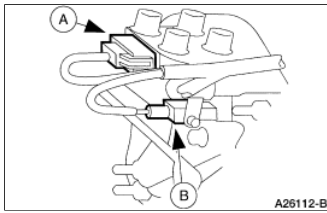
14. Remove the heater water hoses from the heater core.



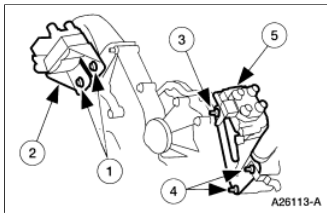
15. On 4.6L engines, disconnect the following electrical connectors.
- LH ignition coil connector (A).
 - Camshaft position (CMP) sensor electrical connector (B).
 - Radio capacitor electrical connector (C).



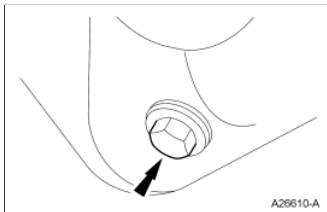
16. On 4.6L engines, disconnect the following electrical connectors.
- RH ignition coil connector (A).
 - Radio capacitor electrical connector (B).



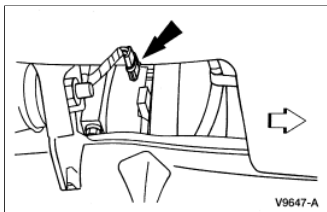
17. On 4.6L engines, remove the ignition coils and ignition coil mounting brackets.
1. Remove the RH bolts.
 2. Remove the RH ignition coil and bracket.
 3. Remove the LH bolt.
 4. Remove the LH nuts.
 5. remove the LH ignition coil and bracket.



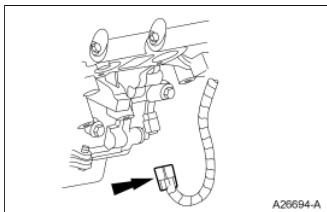
18. Remove the lower radiator hose and retaining bracket from the engine.
19. Remove the transmission oil filler tube if equipped. For additional information, refer to [Section 307-01A](#) (4R70W), or [Section 307-01B](#) (4R100).
20. Raise and support the vehicle. For additional information, refer to [Section 100-02](#).
21. Remove the drain plug and drain the engine oil.



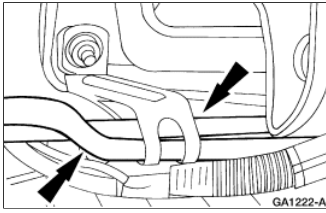
22. Disconnect the A/C compressor electrical connection if equipped.



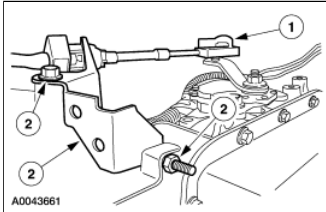
23. Disconnect the crankshaft position (CKP) sensor.



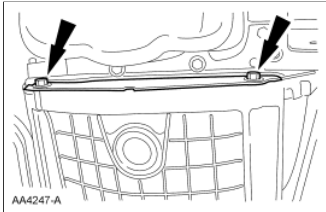
24. Remove the starter motor (11001). For additional information, refer to [Section 303-06](#).
25. Remove the A/C compressor if equipped. For additional information, refer to [Section 412-03A](#).
26. Remove the transmission fluid cooler hose (7B093) from the block-mounted clip, if equipped.



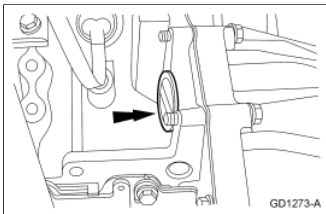
27. Position the shift cable and bracket aside.
1. Disconnect the shift cable.
 2. Remove the fasteners and position the bracket and shift cable aside.



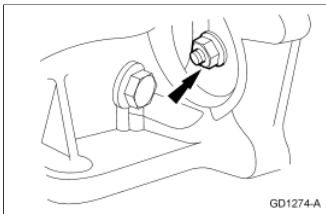
28. Remove the bolts and the flexplate inspection cover.



29. Remove the cylinder block opening cover.

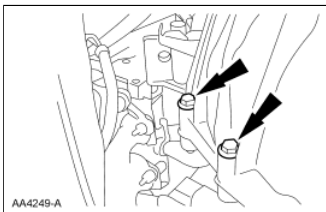


30. Remove the torque converter-to-flexplate nuts.
- Discard the nuts.

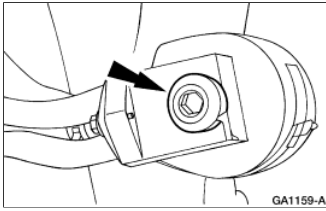


31. **NOTE:** The upper two transmission-to-engine bolts will be removed later.

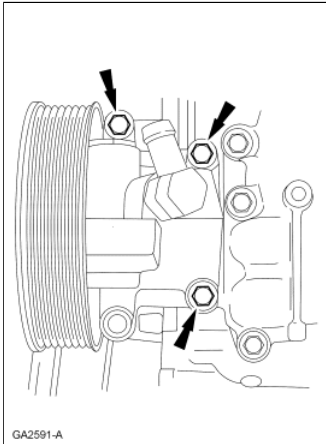
Remove the lower five transmission-to-engine bolts.



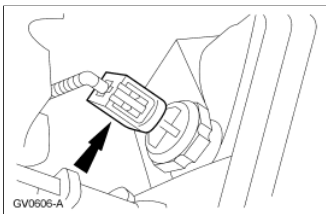
32. On 4x4 vehicles, loosen the bolt and position the oil cooler aside.



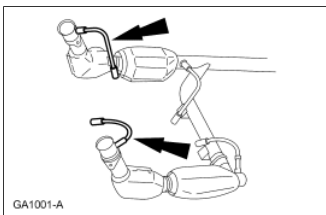
33. Remove the bolts and position the power steering pump aside.



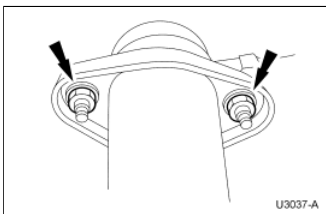
34. Disconnect the oil pressure sender electrical connection.



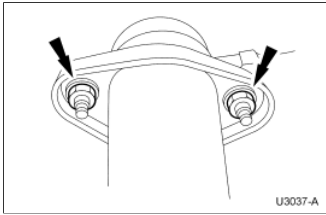
35. Disconnect the heated exhaust gas oxygen electrical connectors.



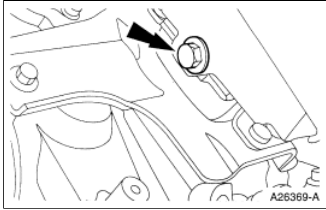
36. Remove the RH exhaust manifold to three-way catalytic converter nuts.



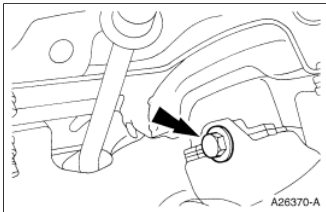
37. Remove the RH exhaust manifold studs.
38. Remove the LH exhaust manifold to three-way catalytic converter nuts.
- Position the Y pipe aside.



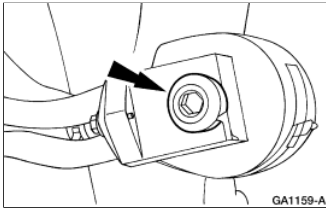
39. Remove the RH motor mount bolt.



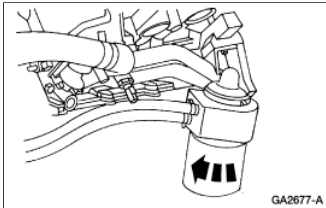
40. Remove the LH motor mount bolt.



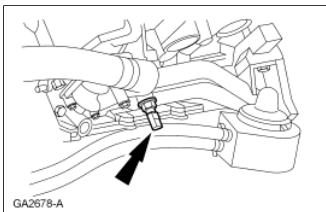
41. On 4x4 vehicles, loosen the bolt and position oil cooler aside.



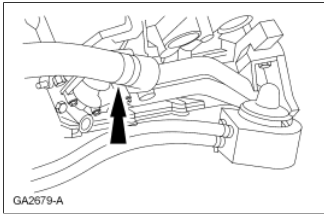
42. On 4x2 vehicles, remove the oil bypass filter.



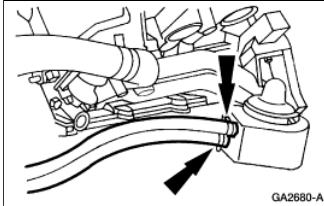
43. Remove the oil pressure sensor.



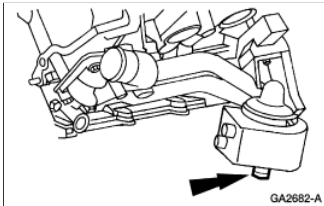
44. Slide back the hose clamp and disconnect the lower radiator hose from the oil filter adapter.



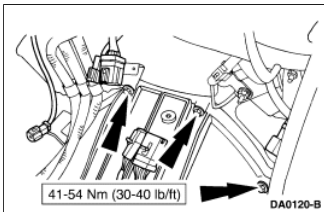
45. Slide back the hose clamps and remove the coolant lines from the oil cooler.



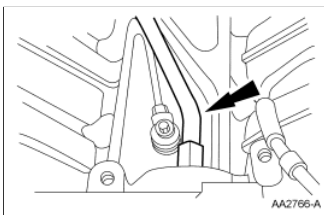
46. Remove the oil filter insert and remove the oil cooler.



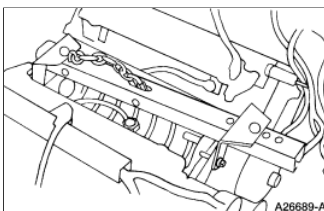
47. Lower the vehicle and support the transmission with a suitable device.
48. Remove the upper transmission bell housing to engine bolts, the wiring harness, and the retaining bracket.



49. Remove the water heater inlet tube, discard the O-ring.

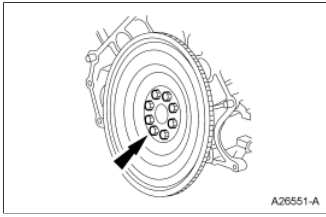


50. Install the Engine Lift Bar.



51. Remove the engine.
52. **NOTE:** If engine disassembly is to be performed, remove the rear crankshaft oil seal slinger and the crankshaft rear oil seal. For additional information, refer to [Crankshaft Rear Seal with Retainer Plate](#) in this section.

Remove the flywheel.



53. Place the engine on a suitable engine stand.
