


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

2001 F-150 Workshop Manual  
Procedure revision date: 06/24/2003

## Engine

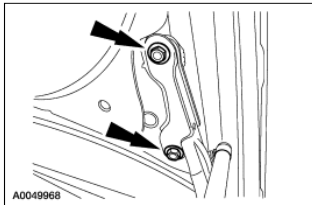
### Special Tool(s)

 <p>ST1377-A</p>	<p>Modular Engine Lift Bracket 303-F047 (014-00073)</p>
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### Removal

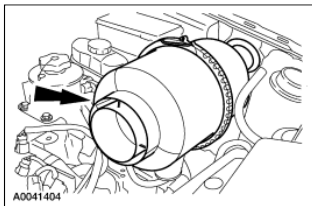
#### All vehicles

1. Remove the intake manifold. For additional information, refer to [Intake Manifold — 4.6L](#) or [Intake Manifold — 5.4L](#) or [Intake Manifold — Lightning](#) in this section.
2. Remove the hood.

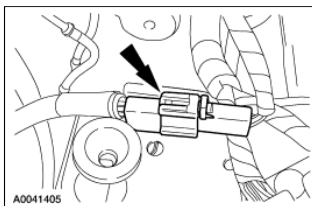


#### All except supercharged vehicles

3. Remove the engine air cleaner (ACL) and reposition it to gain access to the mass air flow (MAF) sensor electrical connector.

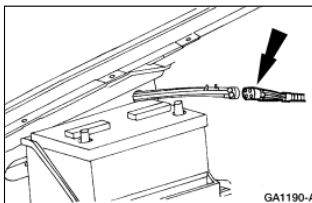


4. Disconnect the MAF sensor electrical connector and remove the ACL.



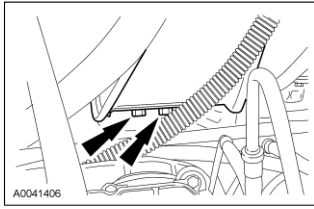
#### All vehicles

5. Remove the radiator. For additional information, refer to [Section 303-03A](#).
6. If equipped, remove the A/C condenser core. For additional information, refer to [Section 412-03](#).
7. If equipped, disconnect the climate control vacuum connector.



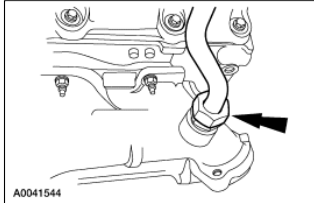
#### All except supercharged vehicles

8. Remove the bolts and position the power steering reservoir aside.

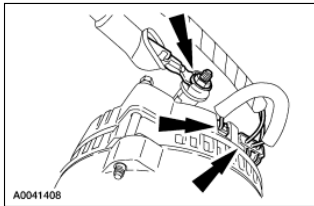


**All vehicles**

9. Disconnect the exhaust manifold to exhaust gas recirculation (EGR) valve tube lower fitting and remove the tube.

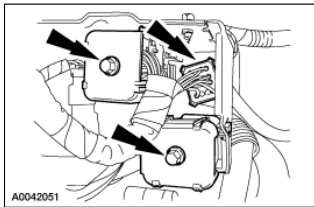


10. Disconnect the generator electrical connections and remove the generator.

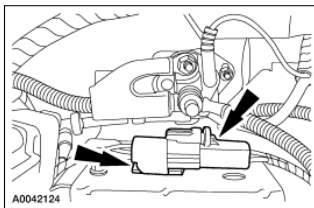


11. **NOTE:** Battery removed for clarity.

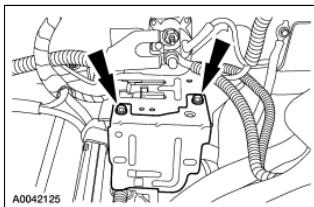
Disconnect the 38-pin, 42-pin and 16-pin electrical connectors.



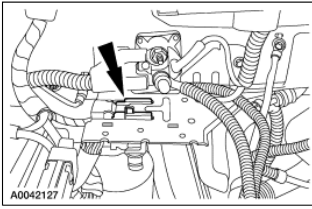
12. Disconnect the electrical connector and remove the connector from the bracket.



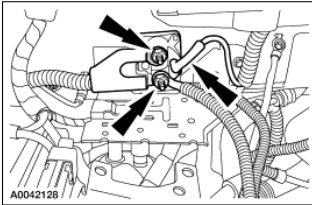
13. Remove the bolts and the connector bracket cover.



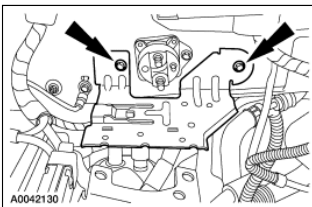
14. Remove the 38-pin connector from the bracket.



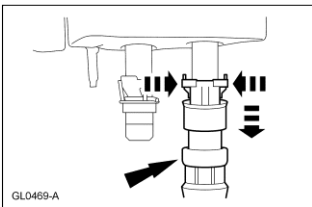
15. Disconnect the starter relay electrical connections and position the cables aside.



16. Remove the bolts and connector bracket.

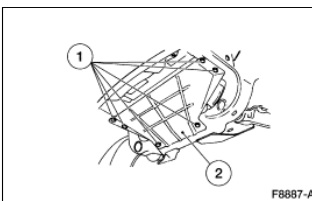


17. Compress the holding tabs and disconnect the heater hoses from the heater core.



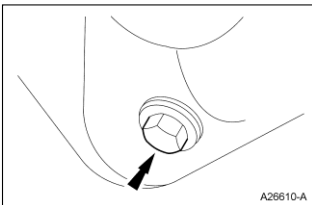
18. Raise and support the vehicle. For additional information, refer to [Section 100-02](#).

19. If equipped, remove the skid plate.
1. Remove the bolts.
  2. Remove the skid plate.



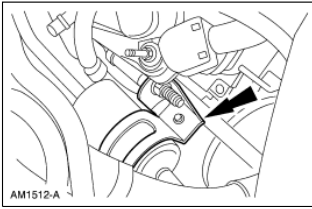
20. Remove the A/C compressor, if equipped. For additional information, refer to [Section 412-03](#).

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



**All except supercharged vehicles**

22. Remove the starter motor. For additional information, refer to [Section 303-06](#).
23. If equipped, install the A/C line (muffler) bracket.

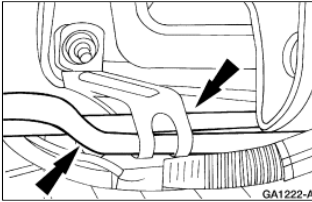


**Manual transmission vehicles**

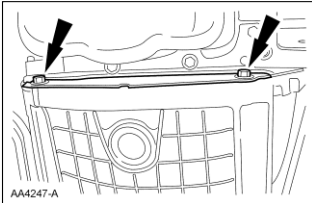
24. Remove the clutch disc and pressure plate. For additional information, refer to [Section 308-01](#).

**Automatic transmission vehicles**

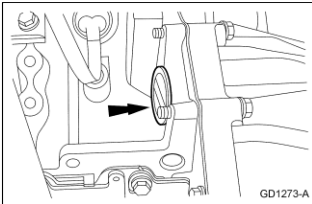
25. Remove the transmission fluid cooler tubes from the block mounted clip.



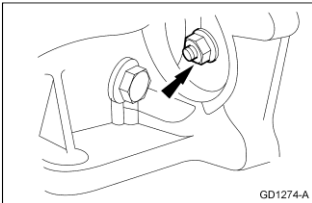
26. Remove the bolts and the flexplate inspection cover.



27. Remove the cylinder block opening cover.

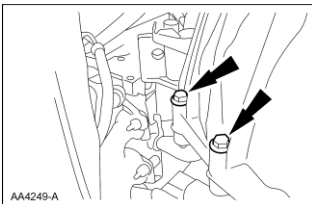


28. Remove the torque converter-to-flexplate nuts.
- Discard the nuts.

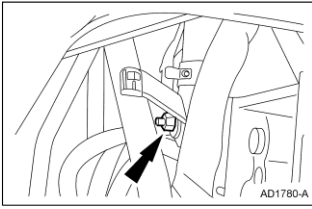


29. **NOTE:** The upper two transmission-bolts will be removed later.

Remove the lower five transmission-to-engine bolts.

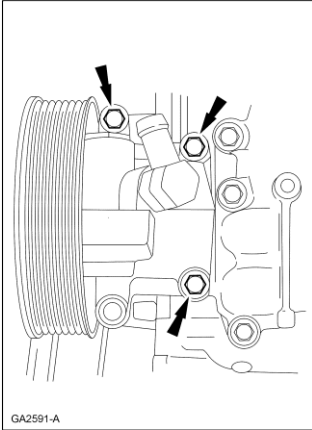


30. Remove the nut and the transmission oil filler tube.

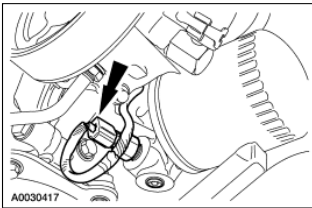


**All vehicles**

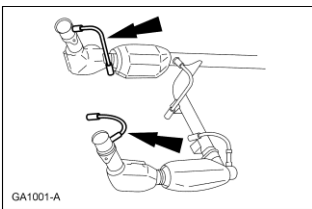
31. Remove the bolts and position the power steering pump aside.



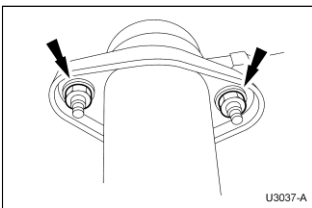
32. Disconnect the oil pressure sender electrical connection.



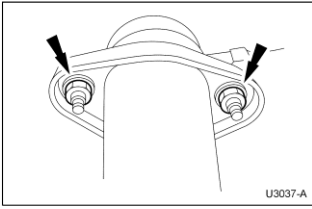
33. Disconnect the heated exhaust gas oxygen sensor electrical connectors.



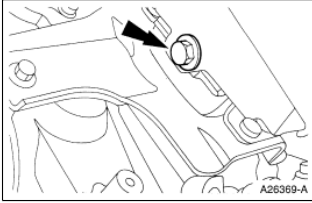
34. Remove the RH exhaust manifold to three-way catalytic converter nuts.



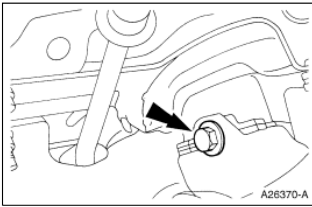
35. Remove the RH exhaust manifold studs.
36. Remove the LH exhaust manifold to three-way catalytic converter nuts.
- Position the Y-pipe aside.



37. Remove the RH motor mount bolt.

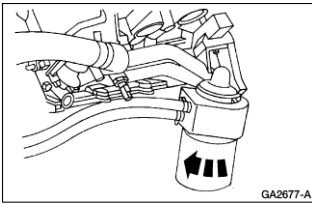


38. Remove the LH motor mount bolt.

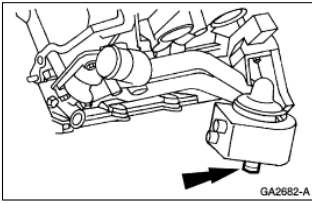


**Vehicles with oil coolers**

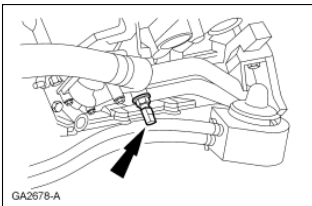
39. Remove the oil filter.



40. Remove the oil cooler insert and remove the oil cooler.

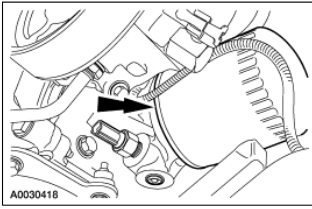


41. Remove the oil pressure sending unit.

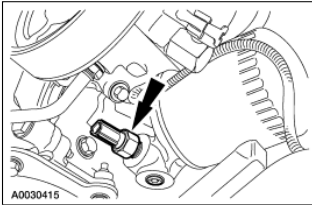


**Vehicles without oil coolers**

42. Remove the oil filter.

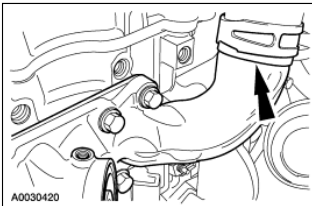


43. Remove the oil pressure switch.



**All vehicles**

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



45. Lower the vehicle.

**Automatic transmission vehicles**

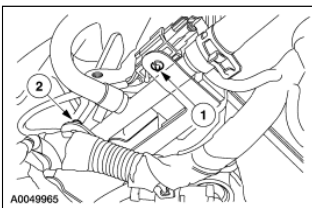
46. Support the transmission.
47. **NOTE:** On 4x4 vehicles, it may be necessary to reposition the transfer case vent hose to access the bolts.

Remove the upper two transmission-to-engine bolts and the wiring harness bracket.

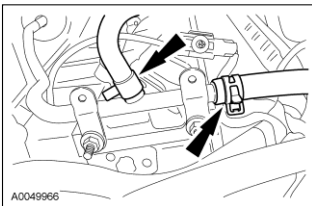
48. If equipped, remove the cable routing bracket from the heater outlet tube mounting studs.

**All vehicles**

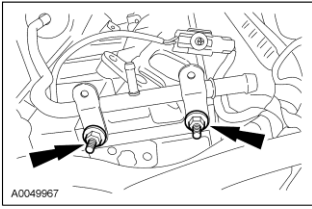
49. Remove the wiring retainers from the heater outlet tube bracket.
1. Release the knock sensor electrical connector retainer on 5.4L only.
  2. Release the engine harness routing clip.



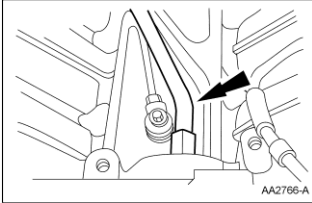
50. Disconnect the hoses from the heater outlet tube.



51. Loosen the upper (outboard) heater outlet tube stud and remove the lower stud on 5.4L engines. Remove the upper and lower studs on 4.6L engines.

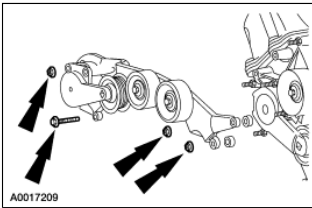


52. Remove the heater outlet tube and discard the O-ring seal.



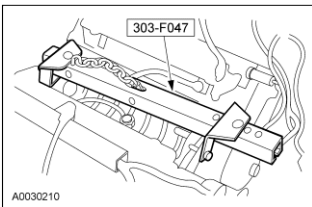
#### Supercharged engine vehicles

53. Remove the bolt, nuts and idler support bracket.



#### All vehicles

54. Install the special tool.



55. Remove the engine.
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