

1999 Ford RANGER

Submodel: | Engine Type: V6 | Liters: 4.0
Fuel Delivery: FI | Fuel: GAS

SECTION 303-01C: Engine — 4.0L Push Rod
REMOVAL

1999 Ranger Workshop Manual
[Procedure revision date: 10/21/2002](#)

Engine

Special Tool(s)



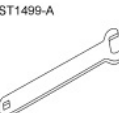
Lifting Eyes
303-D030 (D81L-6001-D)



Spreader Bar
303-D089 (D93P-6001-A3)



Fan Pulley Holding Tool (3.0L, 4.0L)
303-239 (T84T-6312-C)

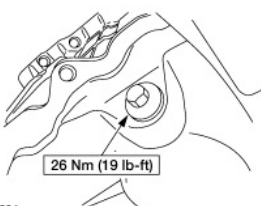


Fan Clutch Nut Wrench (3.0L, 4.0L)
303-240 (T84T-6312-D)

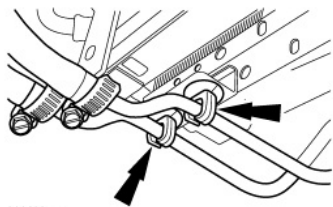
1. Disconnect the battery ground cable. For additional information, refer to Section 414-01.
2. **NOTE:** Mark the hood hinge locations on the hood.
Remove the hood.
3. Remove the air cleaner outlet pipe. For additional information, refer to Section 303-12.
4. If equipped, recover the A/C system. For additional information, refer to Section 412-00.
5. Drain the engine cooling system. For additional information, refer to Section 303-03.
6. Remove the lower radiator hose.



7. Drain the engine oil.
 - Install the drain plug when finished.

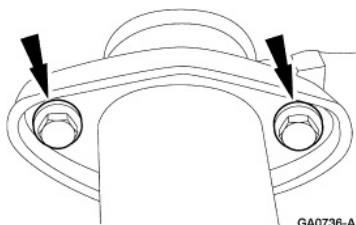


8. Release the transmission cooler tubes from the clips on the bottom of the radiator.



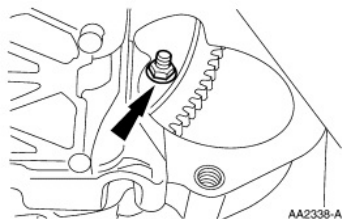
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9. Remove the starter motor. For additional information, refer to Section 303-06.
10. Disconnect the LH and the RH exhaust pipes from the exhaust manifolds.



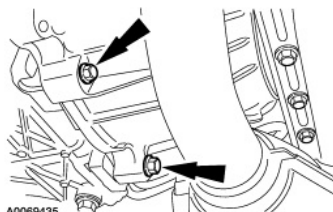
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11. If equipped, remove the four torque converter nuts.



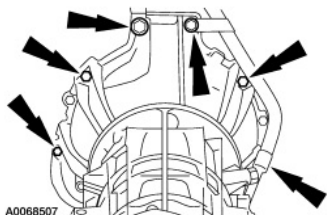
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12. Remove the transmission-to-oil pan bolts.



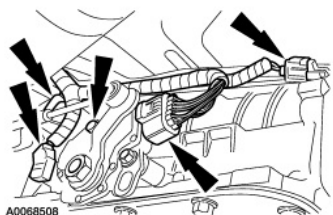
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13. Remove the transmission-to-engine bolts.



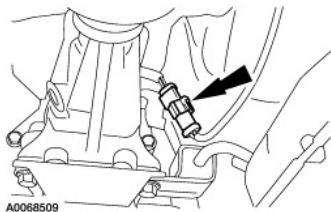
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14. Disconnect the transmission electrical connectors and wiring harness retainers.

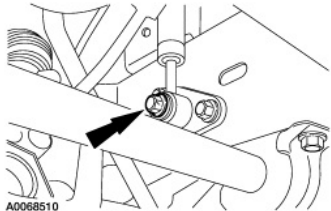


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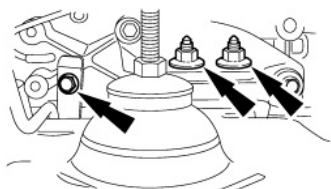
15. Disconnect the catalyst monitor electrical connector and detach the connector from the bracket.



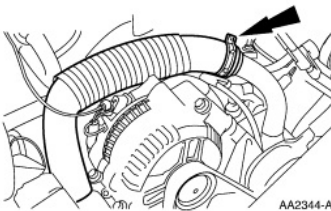
16. If equipped, remove the engine damper bolt.



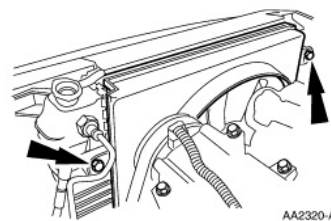
17. **NOTE:** Partially lowering the vehicle and working through the right wheel well opening will assist in accessing the bolt and nuts.
Remove the transmission cooler tube bracket bolt and the right motor mount nuts.



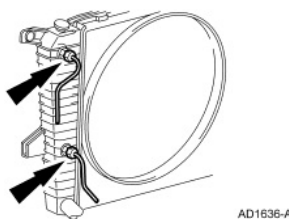
18. Lower the vehicle.
19. Remove the upper radiator hose.



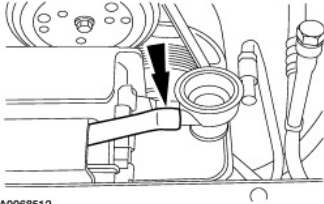
20. Remove the bolts and position the fan shroud on the fan blade.



21. If equipped, disconnect the transmission cooler tubes.

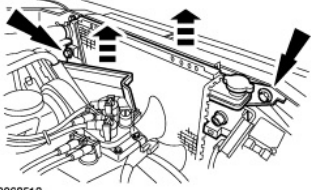


22. Disconnect the coolant recovery hose.



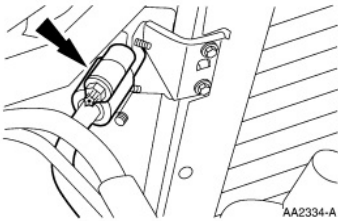
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23. Remove the radiator bolts, radiator, and the fan shroud.



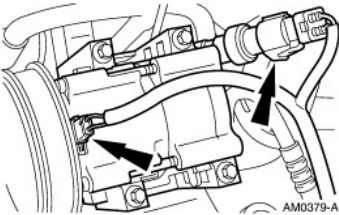
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24. If equipped, disconnect the peanut fitting on the A/C discharge tube. For additional information, refer to Section 412-00.



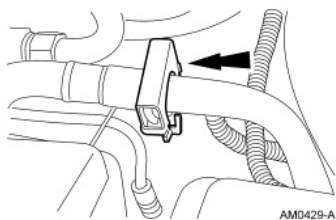
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25. If equipped, disconnect the A/C compressor clutch and high pressure cutoff switch electrical connectors.



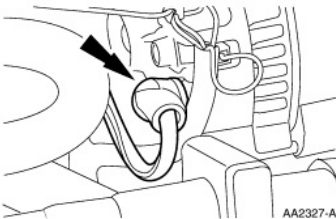
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26. If equipped, disconnect the A/C manifold and tube from the suction accumulator/drier. For additional information, refer to Section 412-00.



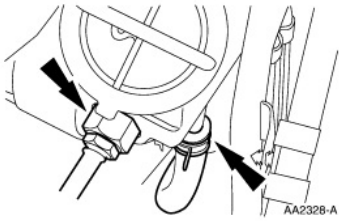
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27. Disconnect the B+ wiring lead from the generator.

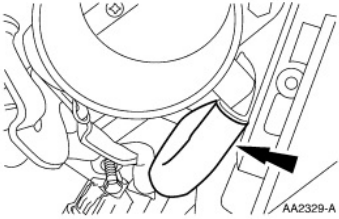


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28. Disconnect the power steering pressure and return tubes.

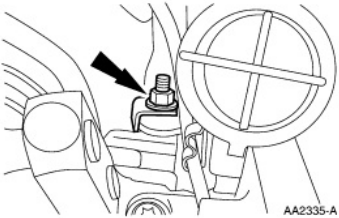


29. Disconnect the canister purge hose from the throttle body.

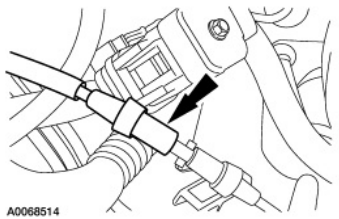


30. Disconnect the fuel tube spring lock couplings. For additional information, refer to Section 310-00.

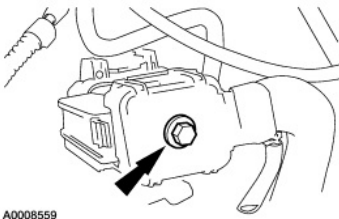
31. Remove the wiring harness retaining clip.



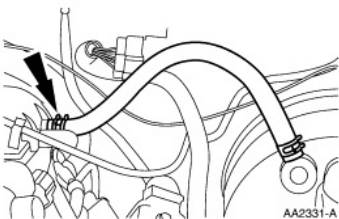
32. Disconnect the evaporative emissions (EVAP) canister vacuum tube.



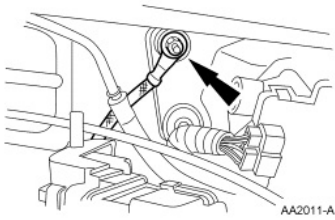
33. Disconnect the engine control wiring harness connector.



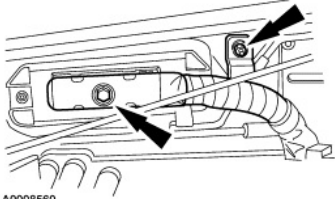
34. Disconnect the brake booster vacuum hose.



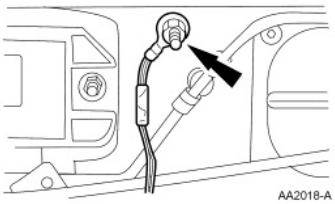
35. Disconnect the ground strap.



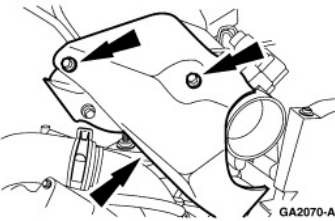
36. Disconnect the powertrain control module (PCM) electrical connector and remove the nut.



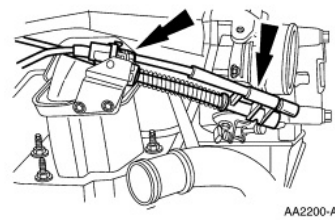
37. Disconnect the PCM ground strap.



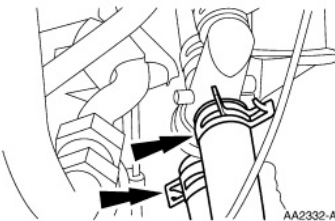
38. Remove the accelerator cable snow shield.



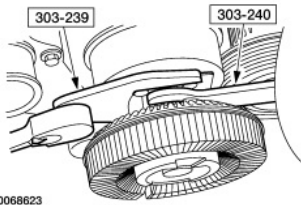
39. Disconnect the accelerator and speed control cables from the throttle body and routing bracket.



40. Disconnect the heater hoses.

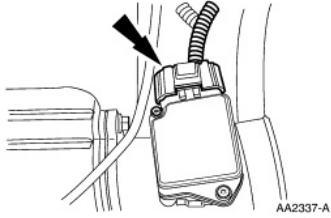


41. **NOTE:** The fan blade has been removed for clarity.
Remove the fan blade and fan clutch as an assembly.



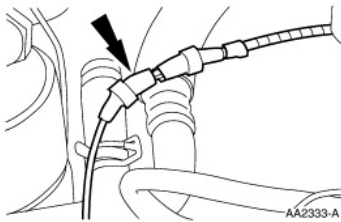
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42. Disconnect the mass air flow (MAF) sensor electrical connector.



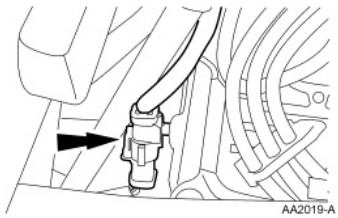
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43. Disconnect the vacuum tube from the vacuum reservoir.



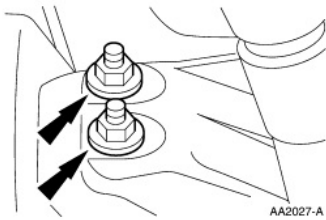
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44. **NOTE:** RH shown, LH similar.
Disconnect the LH and the RH heated oxygen sensor (HO2S) electrical connectors.



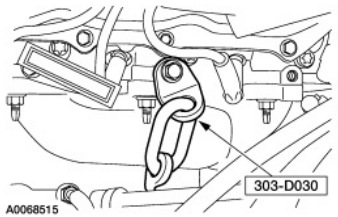
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45. Remove the LH motor mount nuts.



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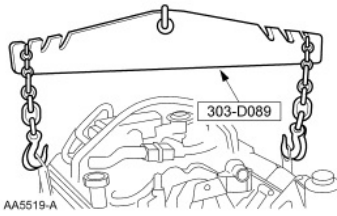
46. Attach the special tools to the threaded holes in the cylinder head.



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303-D030

47. Support the engine using the special tool and a floor crane.



48. Support the transmission with a suitable floor jack.
 49. Remove the engine from the vehicle.
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