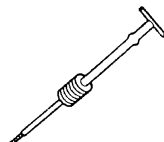
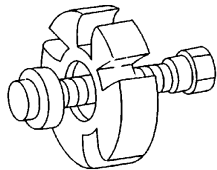
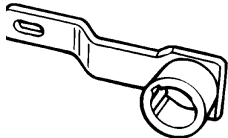
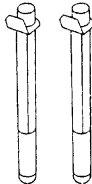
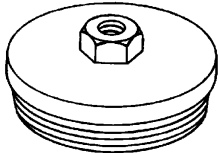
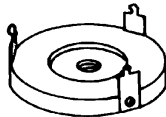


## DISASSEMBLY

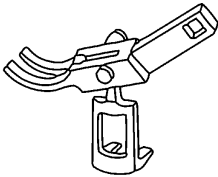
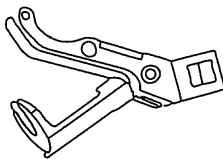

### Engine

#### Special Tool(s)

 <p>ST1185-A</p>	<p>Slide Hammer 100-001 (T50T-100-A)</p>
 <p>ST1286-A</p>	<p>Remover, Crankshaft Vibration Damper 303-009 (T58P-6316-D)</p>
 <p>ST1335-A</p>	<p>Holding Tool, Crankshaft 303-448 (T93P-6303-A)</p>
 <p>ST1337-A</p>	<p>Installer, Connecting Rod 303-442 (T93P-6136-A)</p>
 <p>ST1382-A</p>	<p>Remover, Crankshaft Rear Oil Seal 303-519 (T95P-6701-EH)</p>
 <p>ST1481-A</p>	<p>Remover, Crankshaft Rear Oil Slinger 303-514 (T95P-6701-AH)</p>

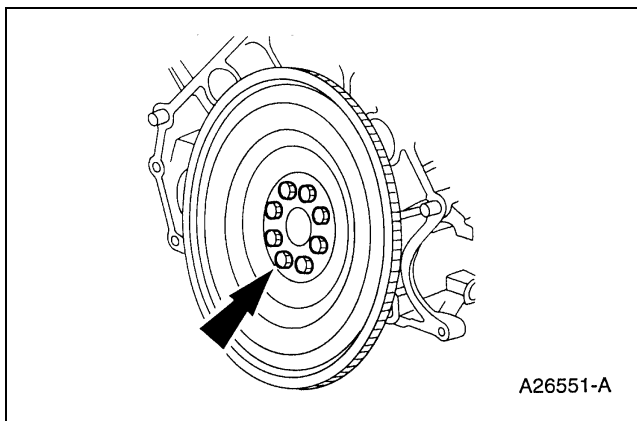
(Continued)

#### Special Tool(s)

 <p>ST1718-A</p>	<p>Compressor, Valve Spring (Intake) 303-452 (T93P-6565-AR)</p>
 <p>ST1693-A</p>	<p>Compressor, Valve Spring (Exhaust) 303-567 (T97P-6565-AH)</p>
 <p>ST1730-A</p>	<p>Remover, Crankshaft Front Oil Seal 303-107 (T74P-6700-A)</p>

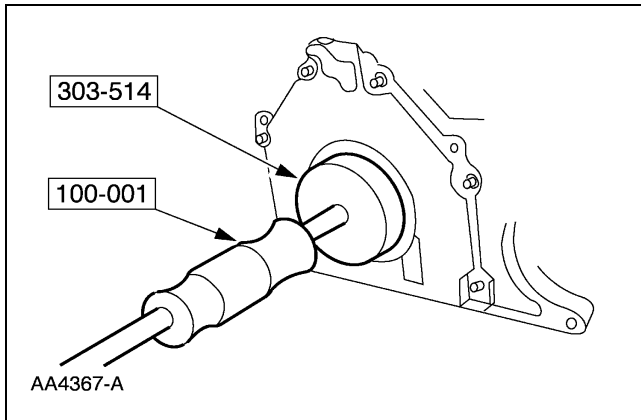
#### Disassembly

1. Remove the bolts and the flywheel.

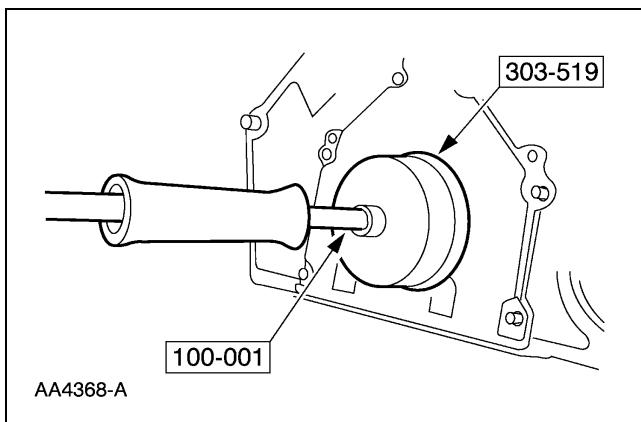


**DISASSEMBLY (Continued)**

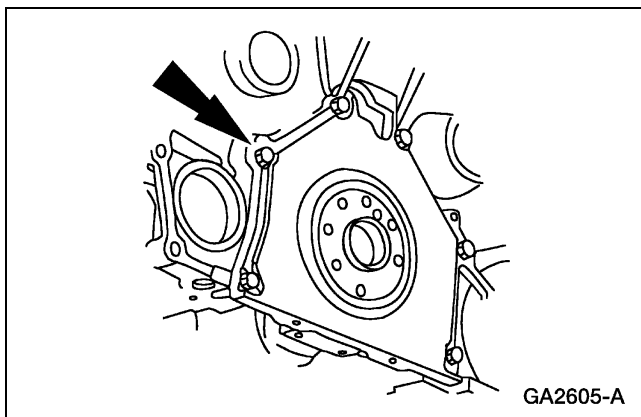
2. Using the special tool, remove the rear oil slinger.



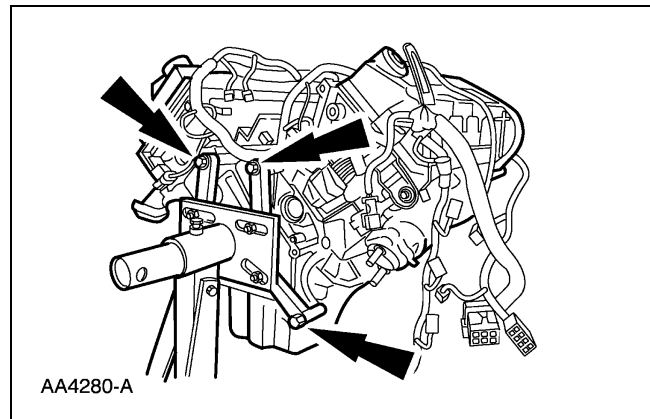
3. Using the special tool, remove the rear main seal.



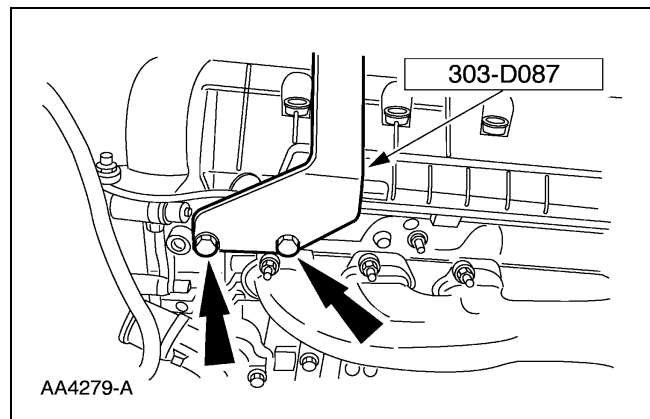
4. Remove the bolts and the rear seal retainer plate.



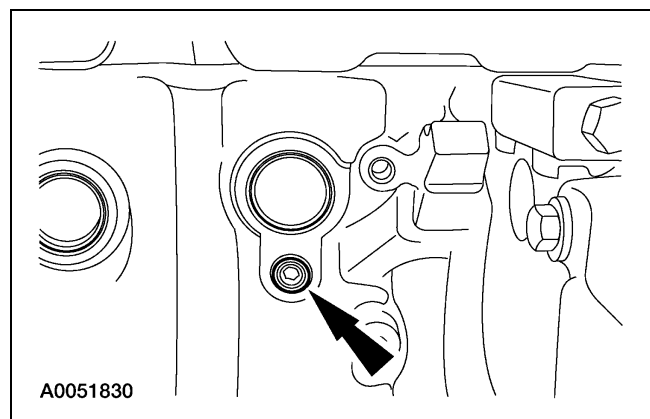
5. Mount the engine on a workstand.



6. Remove the special tools.

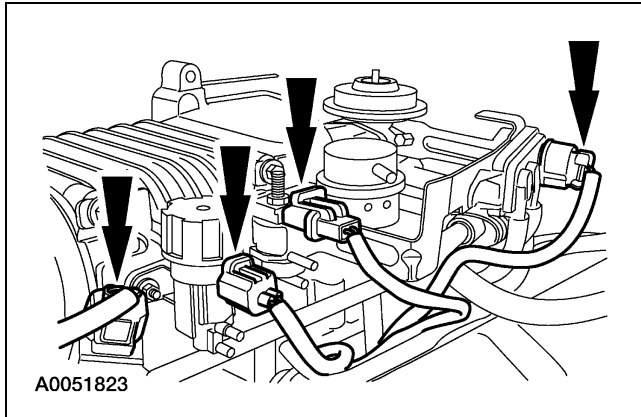


7. Remove the drain plug and drain the engine coolant.

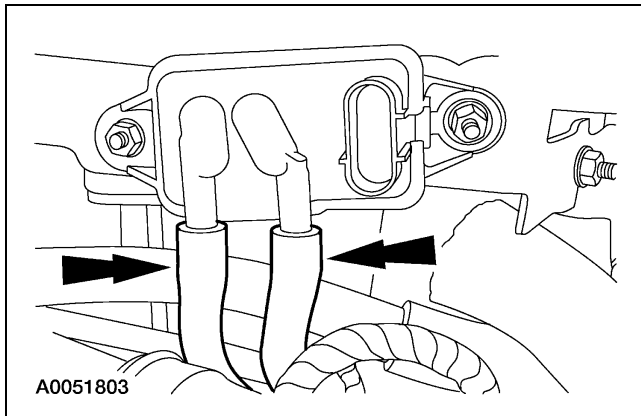


**DISASSEMBLY (Continued)**

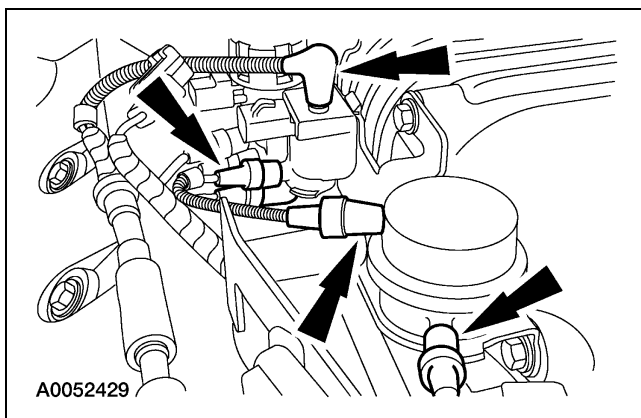
8. Disconnect the electrical connectors from the fuel pulse damper, exhaust gas recirculation (EGR) vacuum regulator solenoid, supercharger bypass vacuum solenoid, and the differential pressure feedback EGR system.



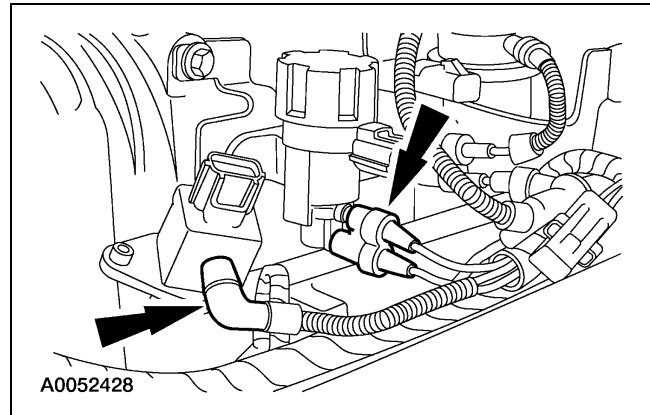
9. Disconnect the vacuum hoses from the differential pressure feedback EGR system.



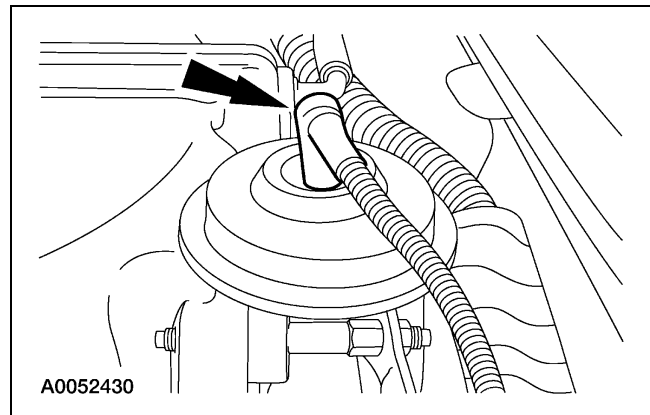
10. Disconnect the vacuum hoses from the supercharger bypass vacuum solenoid and the actuator.



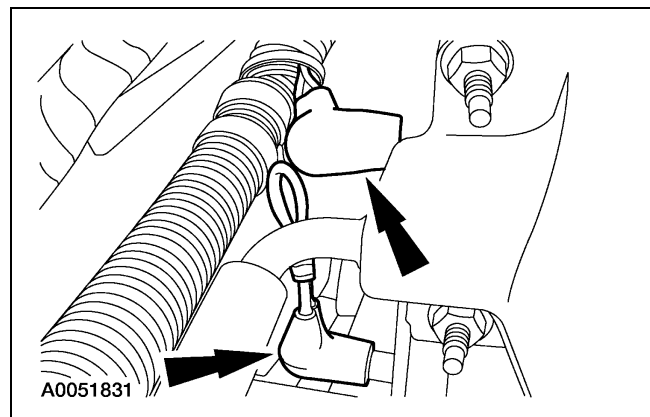
11. Disconnect the vacuum hoses from the fuel pulse damper and the EGR vacuum regulator solenoid.



12. Disconnect the vacuum hose from the EGR valve.

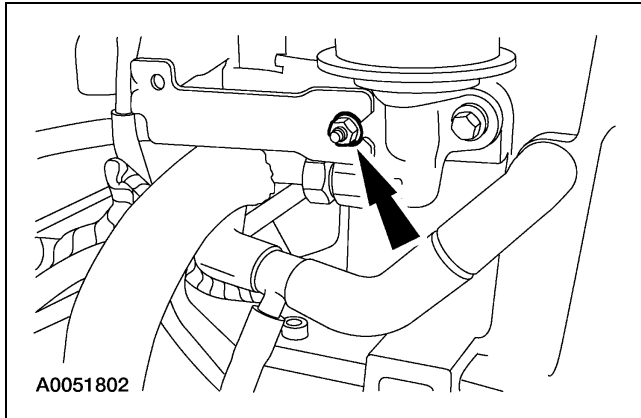


13. Disconnect the vacuum hoses at the back of the supercharger and remove the vacuum harness.

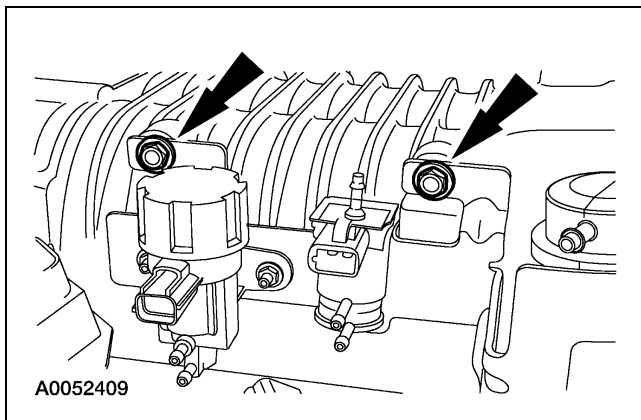


**DISASSEMBLY (Continued)**

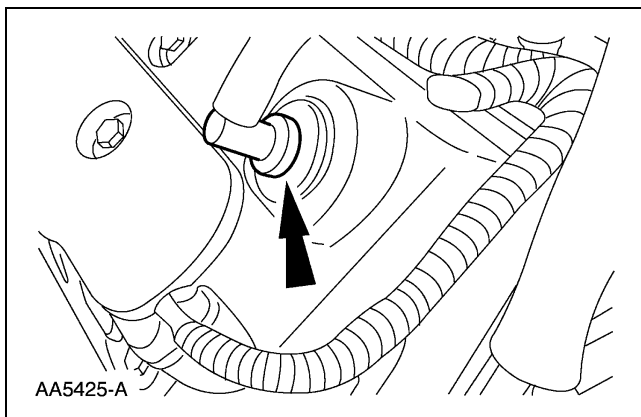
14. Remove the vacuum accessory bracket mounting nut.



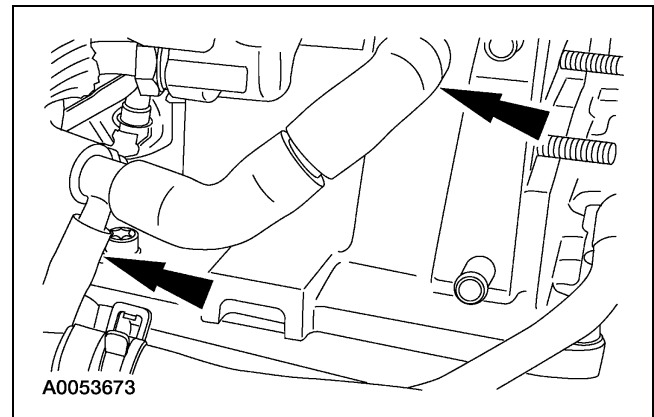
15. Remove the mounting bolts and the vacuum accessory bracket.



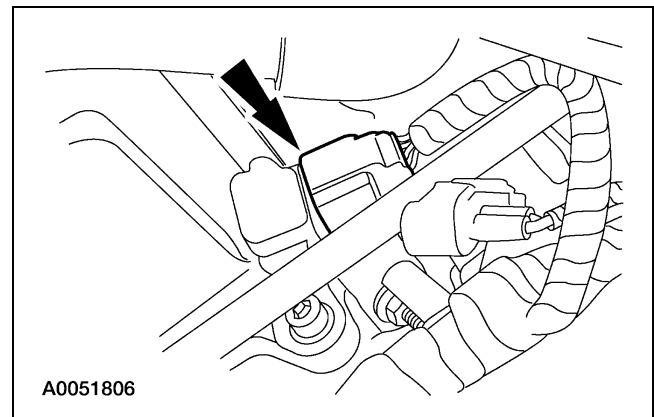
16. Remove the positive crankcase ventilation (PCV) valve.



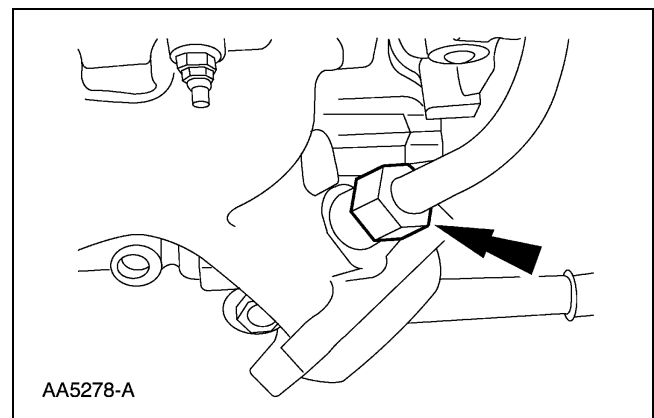
17. Disconnect and remove the PCV hose.



18. Disconnect the barometric pressure (BARO) sensor electrical connector.

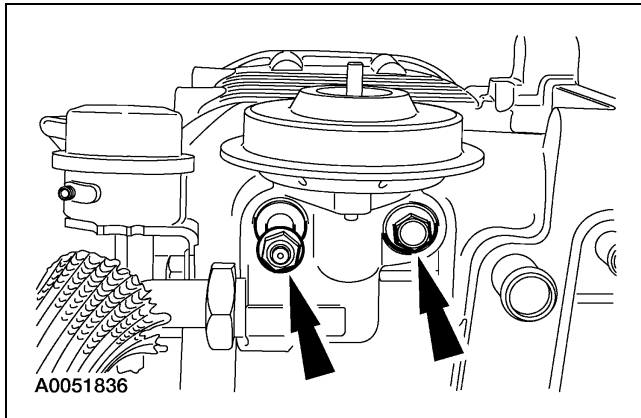


19. Disconnect the EGR tube from the exhaust manifold.

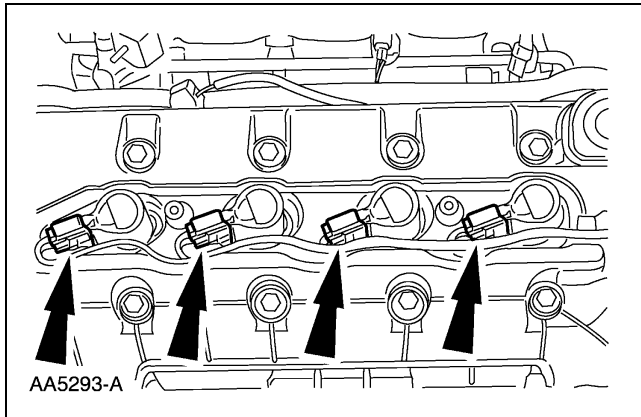


**DISASSEMBLY (Continued)**

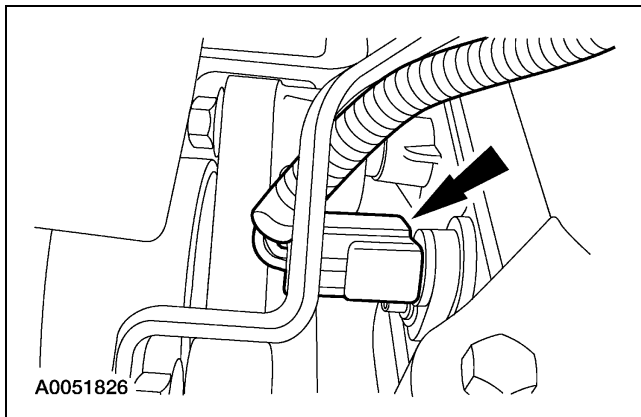
20. **NOTE:** Discard the EGR valve gasket.  
Remove the EGR valve and tube as an assembly.



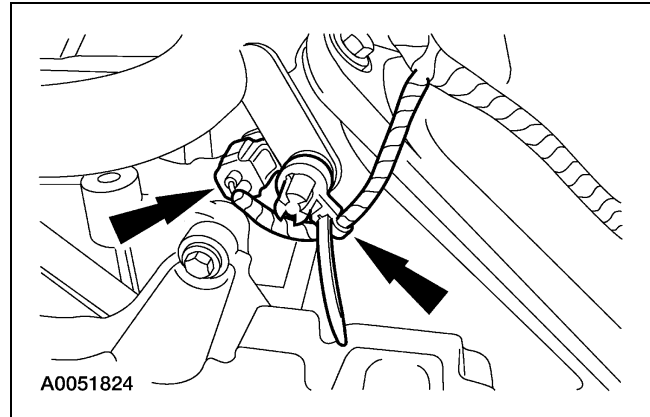
21. Disconnect the electrical connectors and remove the LH ignition coils.



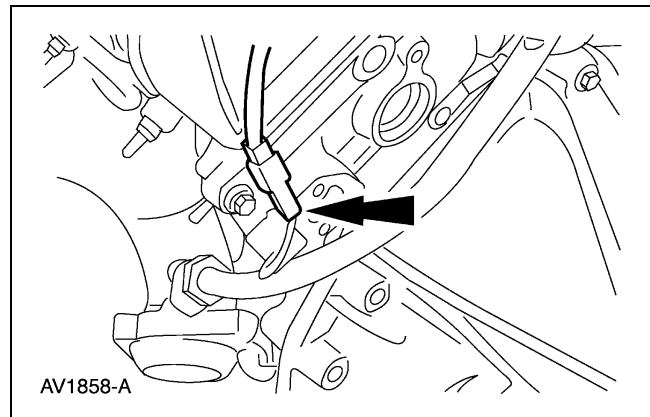
22. Disconnect the camshaft position (CMP) sensor electrical connector.



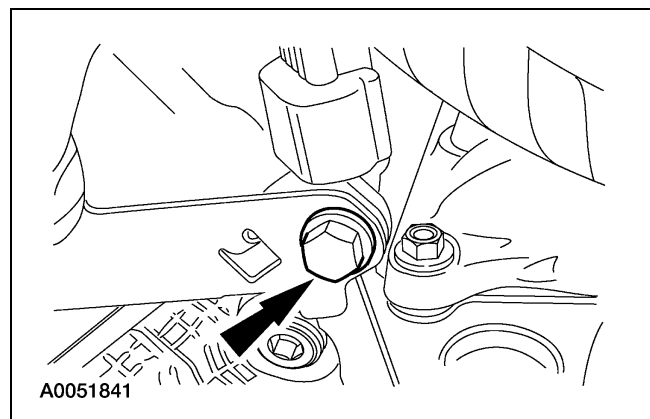
23. Disconnect the engine coolant temperature (ECT) sensor electrical connector and unclip the harness from the stud.



24. **NOTE:** LH is shown, RH is similar.  
Disconnect the two radio ignition interference capacitor electrical connectors.

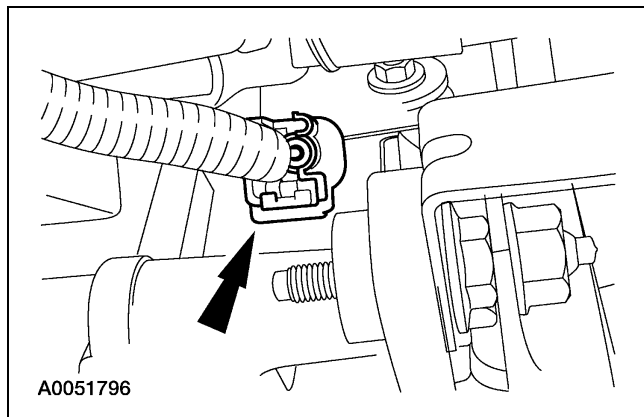


25. Remove the fuel charging wiring harness bracket bolt.

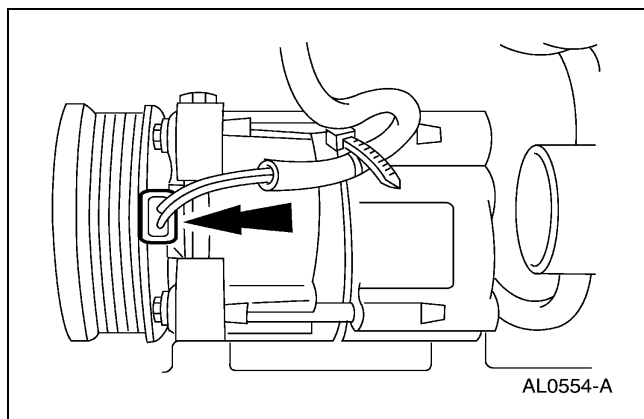


**DISASSEMBLY (Continued)**

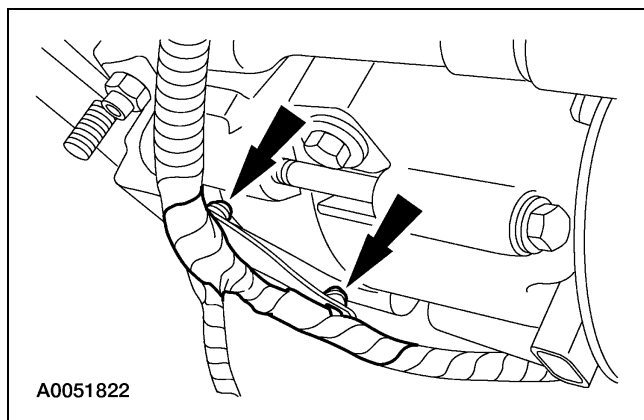
26. Disconnect the crankshaft position (CKP) sensor electrical connector.



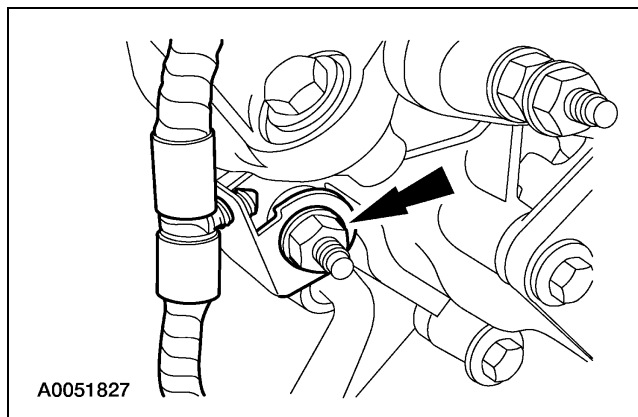
27. Disconnect the A/C compressor electrical connector.



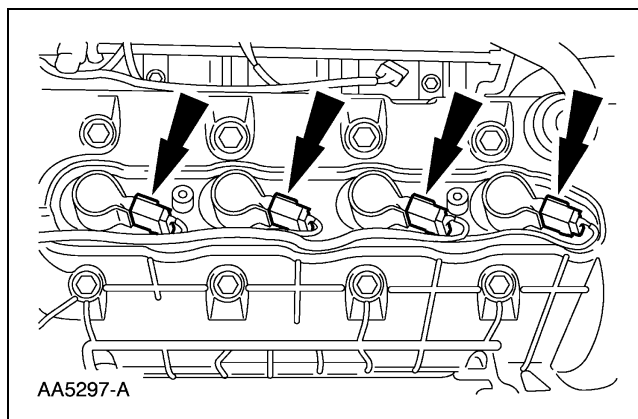
28. Unclip the harness from the bracket.



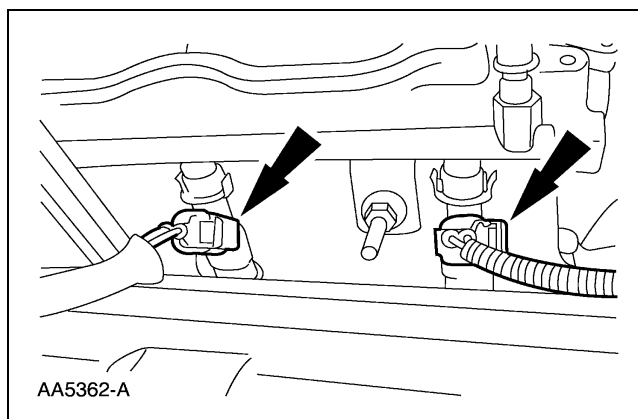
29. Remove the harness support bracket.



30. Disconnect the electrical connectors and remove the RH ignition coils.

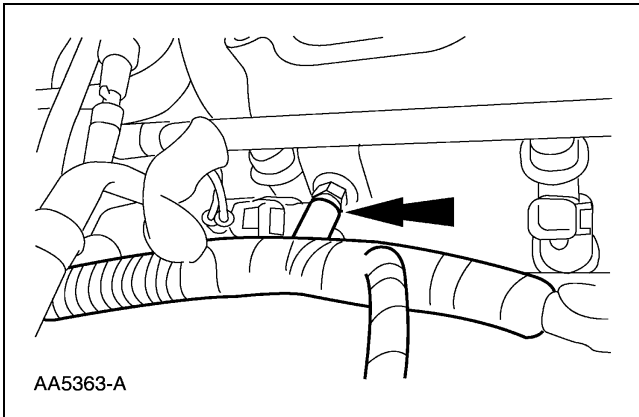


31. Disconnect the eight fuel injectors.



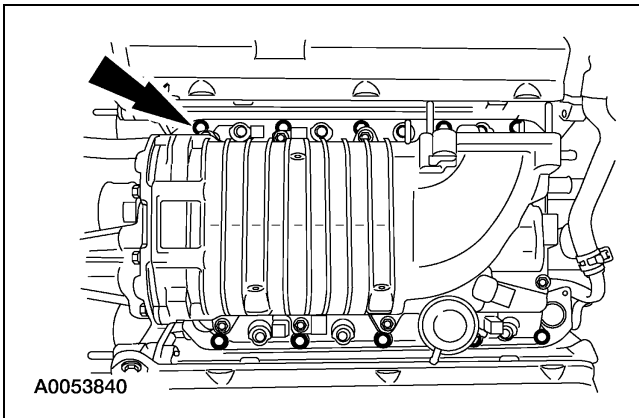
**DISASSEMBLY (Continued)**

32. Separate the harness from the fuel supply manifold studs in four places and remove the fuel charging wiring harness.

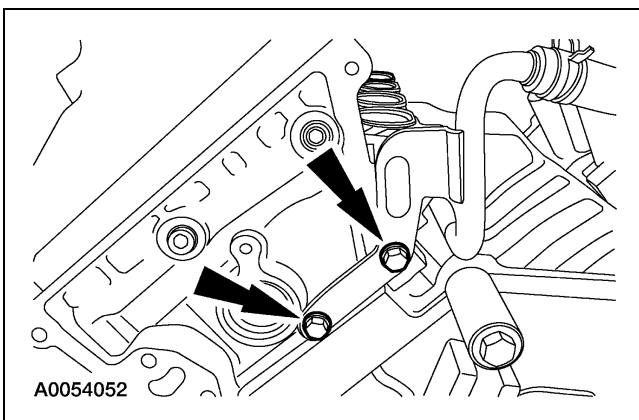


33. **NOTE:** The intake manifold gaskets are reusable if undamaged.

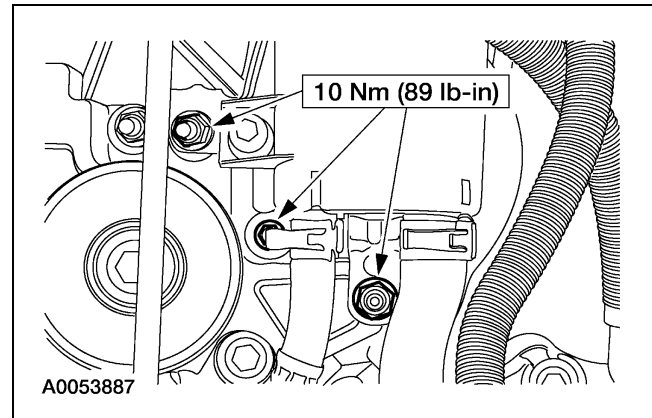
Remove the ten bolts and the intake manifold, and the supercharger and fuel supply manifold as an assembly.



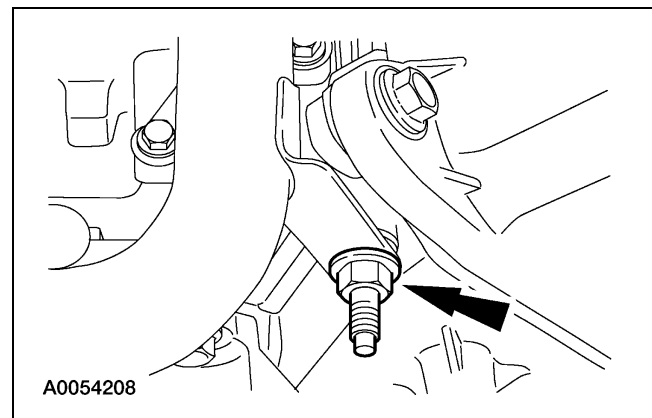
34. Remove the bolts and the heater water outlet tube.



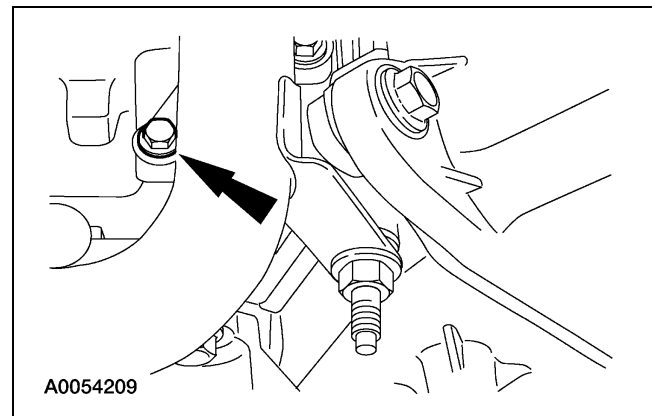
35. Remove the bolts and the heater water inlet tube.



36. **NOTE:** LH is shown, RH is similar.  
Remove the coolant bypass studs.

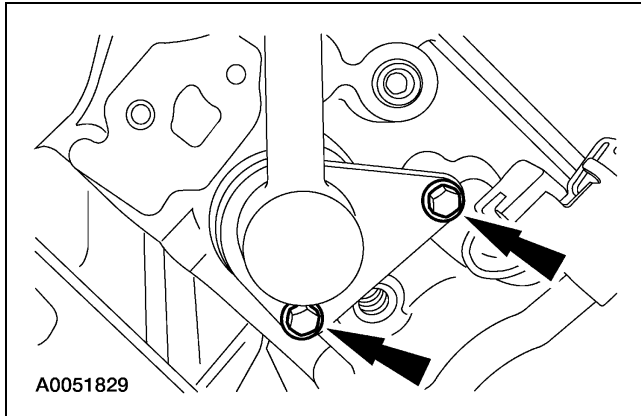


37. **NOTE:** LH is shown, RH is similar.  
Remove the bolts and the coolant bypass tube.



**DISASSEMBLY (Continued)**

38. Remove the bolts and the heater water inlet tube.

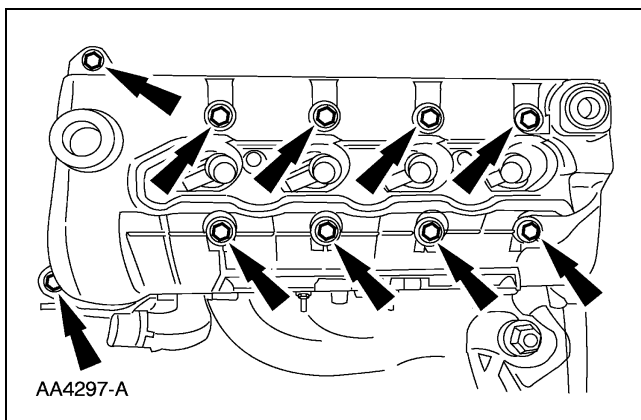


39. **CAUTION:** Do not use metal scrapers, wire brushes, power abrasive discs or other abrasive means to clean the sealing surfaces. These tools cause scratches and gouges which make leak paths. Use a plastic scraping tool to remove all traces of old sealant.

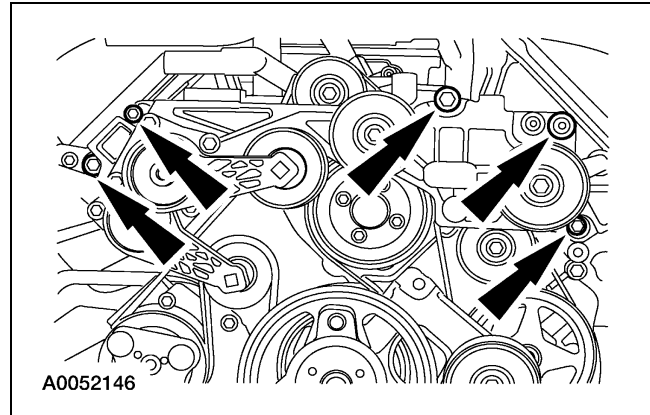
**NOTE:** LH is shown, RH is similar.

Remove the fasteners and the LH and RH valve covers.

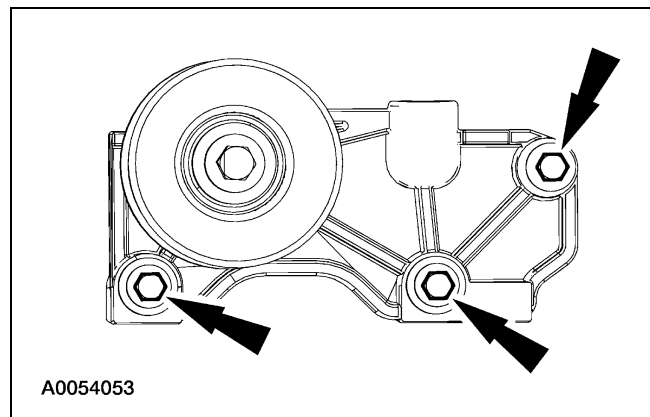
- Remove and discard the gasket, clean and inspect the sealing surfaces.



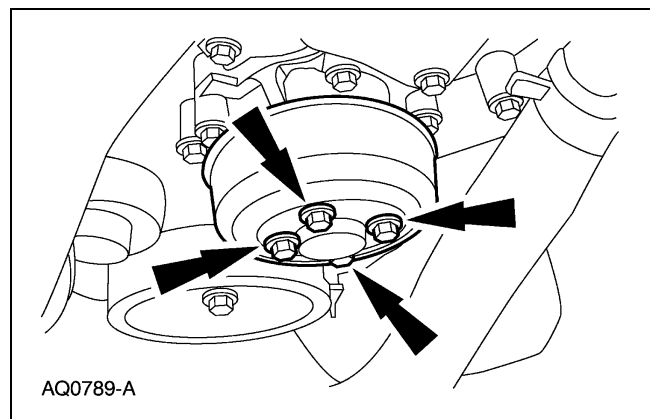
40. Remove the supercharger belt idler support bracket assembly.



41. Remove the accessory drive belt.
42. Remove the bolts and belt idler bracket.



43. Remove the bolts and the water pump pulley.

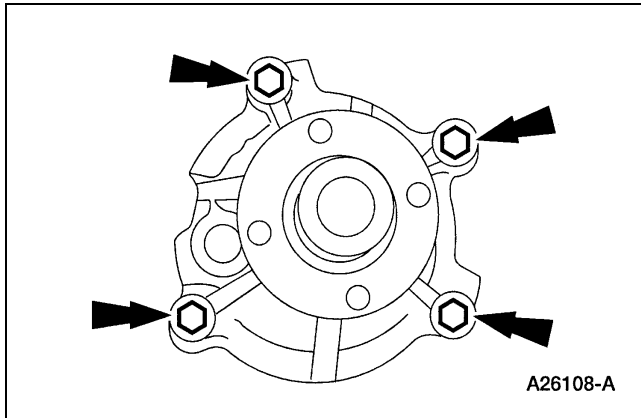




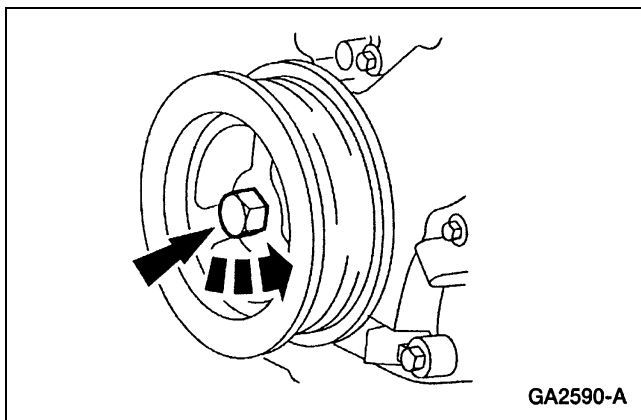
**DISASSEMBLY (Continued)**

44. Remove the water pump from the cylinder block.

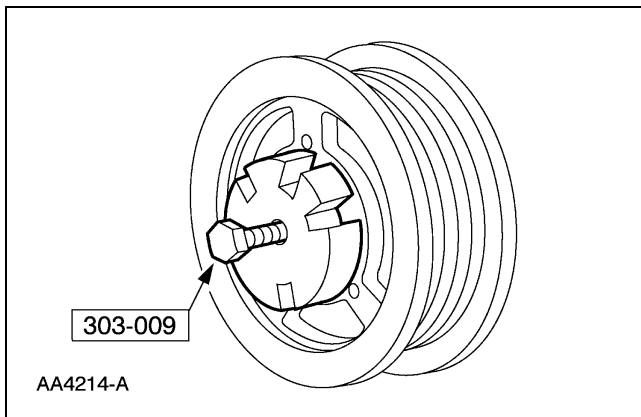
- Inspect and clean the sealing surfaces.



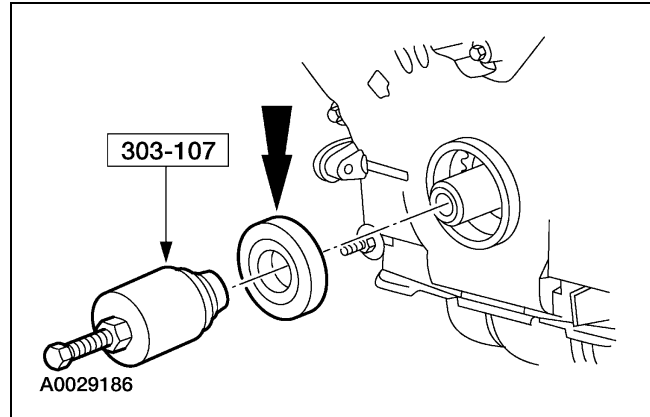
45. Remove the bolt.



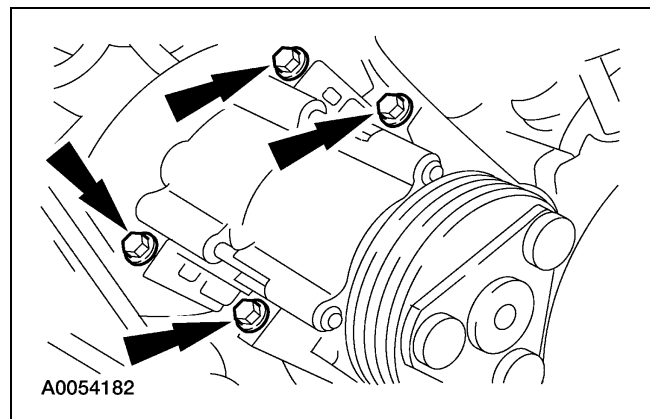
46. Using the special tool, remove the crankshaft pulley.



47. Using the special tools, remove the crankshaft front seal.



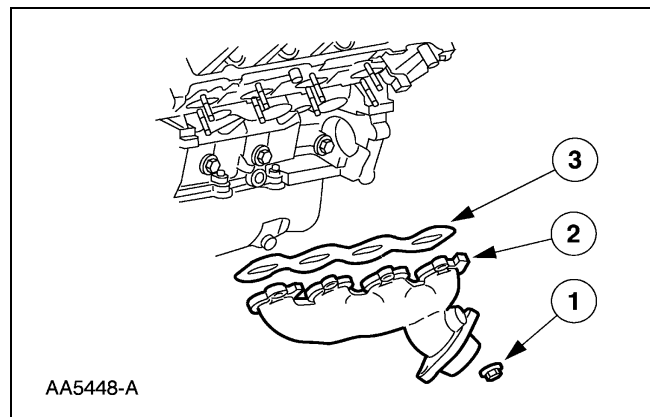
48. Remove the bolts and the A/C compressor.



49. **NOTE:** LH is shown; RH is similar.

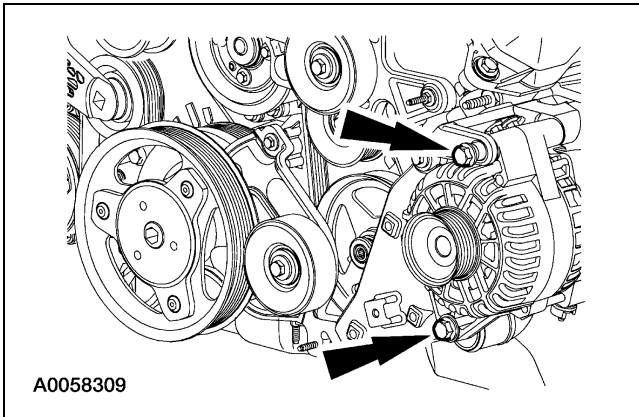
Remove the exhaust manifold.

- 1 Remove the nuts.
- 2 Remove the exhaust manifold.
- 3 Remove and discard the exhaust manifold gasket.

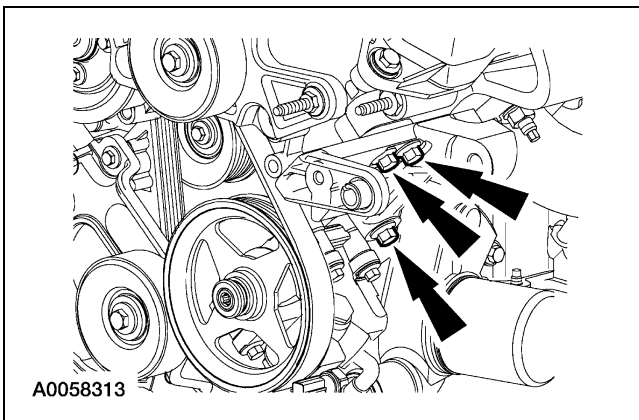


**DISASSEMBLY (Continued)**

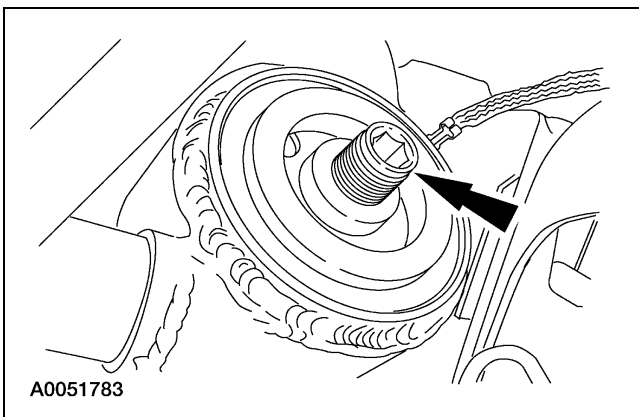
50. Remove the bolts and the generator.



51. Remove the bolts and the generator support bracket.

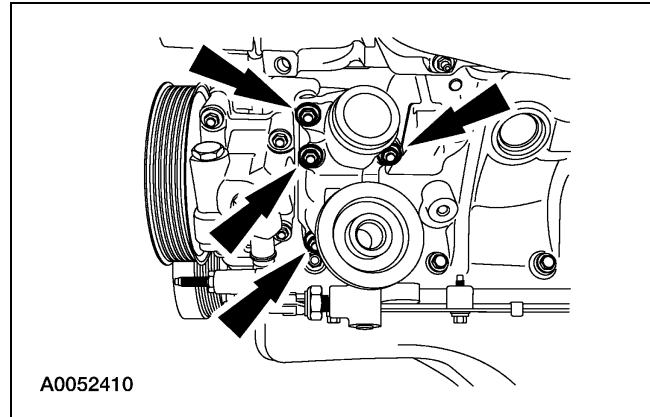


52. Remove the oil cooler.



53. Remove the bolts, the oil filter adapter and the gasket.

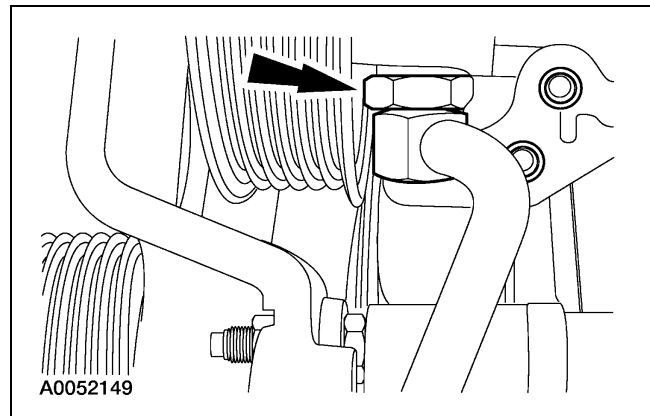
- Discard the gasket.



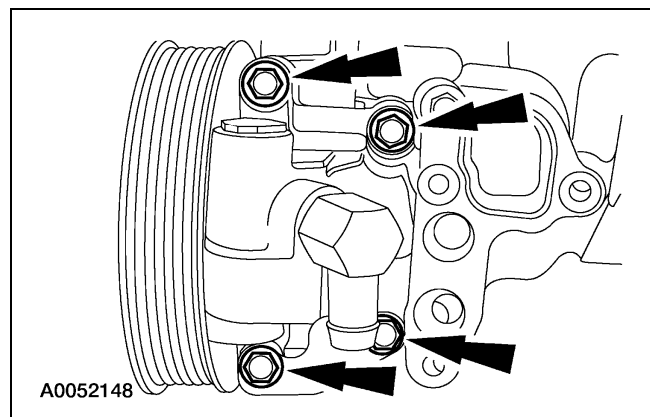
54. Clean and inspect the oil filter adapter and the oil cooler.

- Plug the oil cooler coolant lines.
- Flush the adapter and cooler with parts cleaner. If metal particles are present, install a new oil filter adapter and oil cooler.

55. Remove the power steering pressure hose.

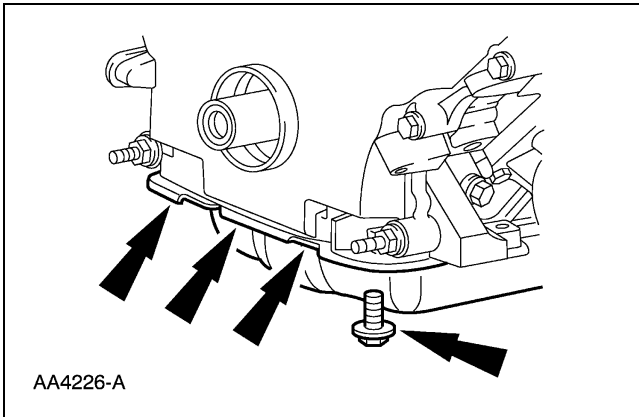


56. Remove the bolts and the power steering pump.

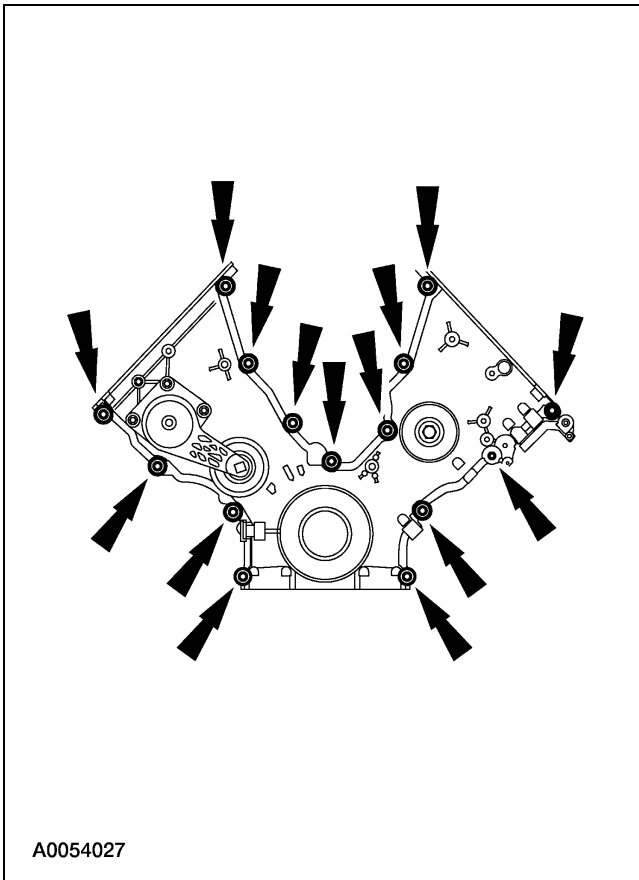


**DISASSEMBLY (Continued)**

57. Remove the four bolts.

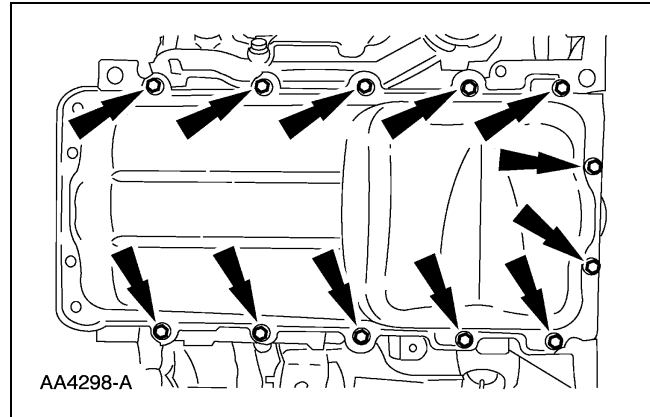


58. Remove the bolts, the studs, and the engine front cover.

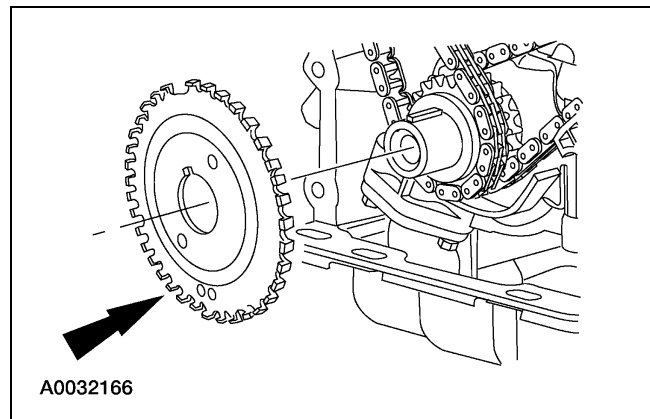


59. **NOTE:** The oil pan gasket is reusable if not damaged. Inspect the gasket and install new if necessary.

Remove the bolts, the oil pan, and the gasket.

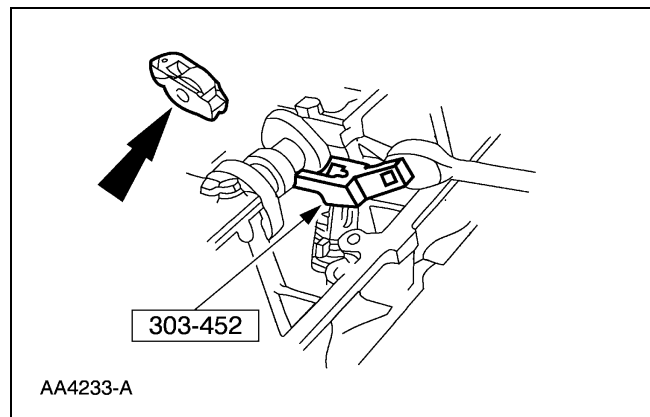


60. Remove the crankshaft position sensor pulse wheel.



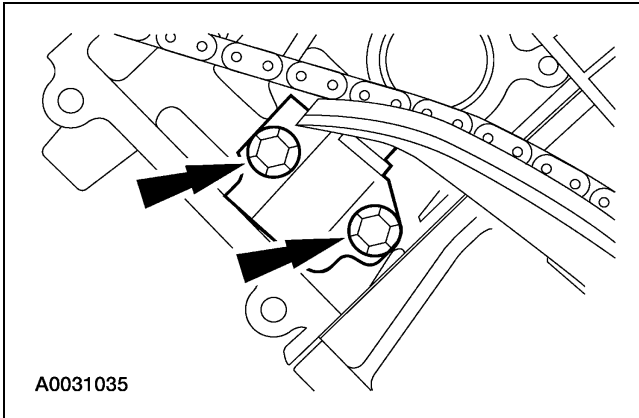
61. **NOTE:** Make sure the base circle of the camshaft is facing the roller follower being removed.

Using the special tool, remove the 32 roller followers.

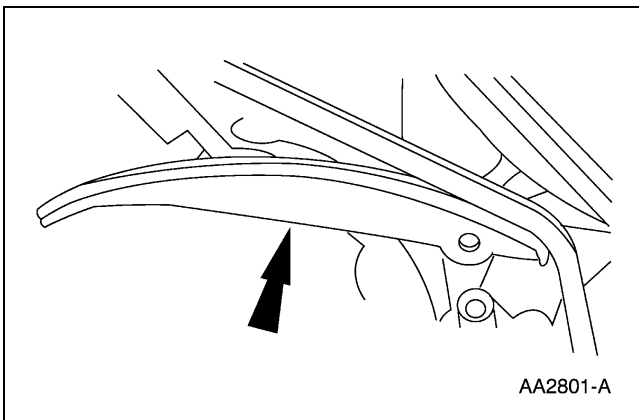


**DISASSEMBLY (Continued)**

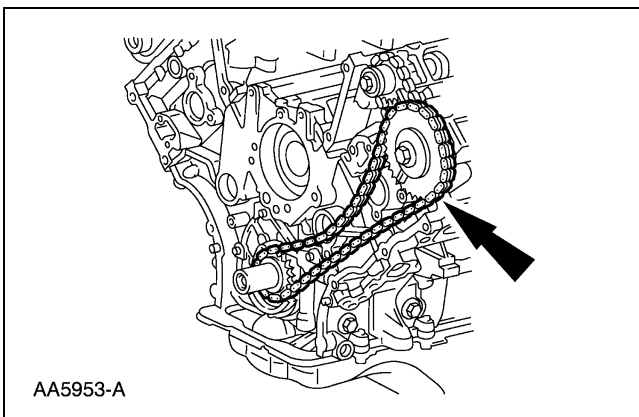
62. Remove the bolts and the RH and LH timing chain tensioners.



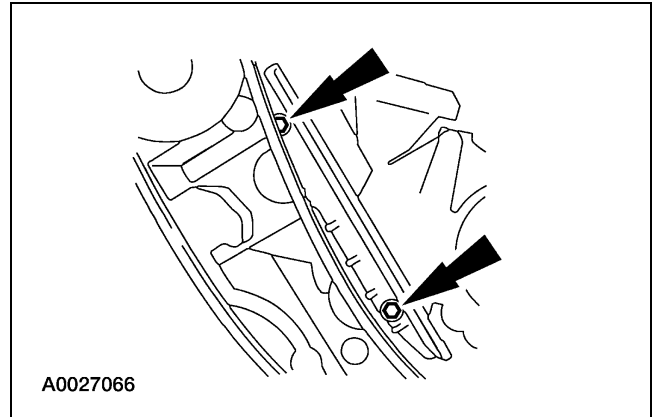
63. Remove the RH and LH timing chain tensioner arms.



64. Remove the RH and the LH timing chains and the crankshaft sprocket.

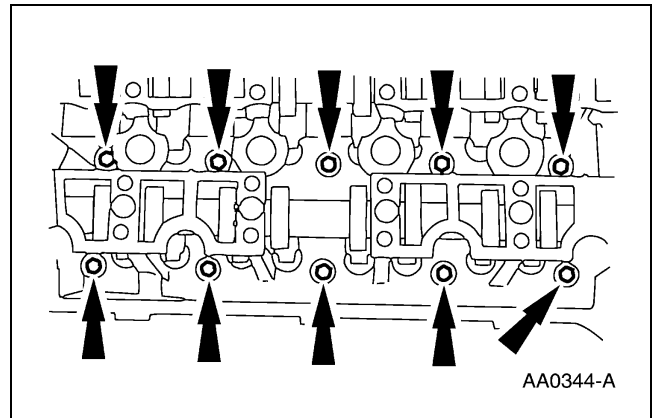


65. Remove the bolts and the RH and LH timing chain guides.

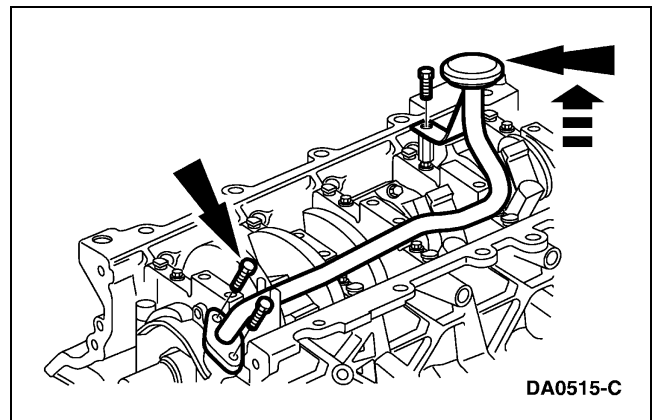


66. **NOTE:** Cylinder head bolts are not to be reused. Discard the bolts.

Remove the bolts and the RH and LH cylinder heads.

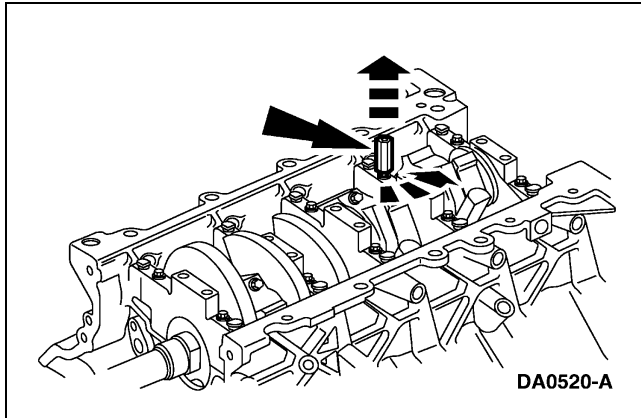


67. Remove the bolts and the oil pump screen and pickup tube (6622).

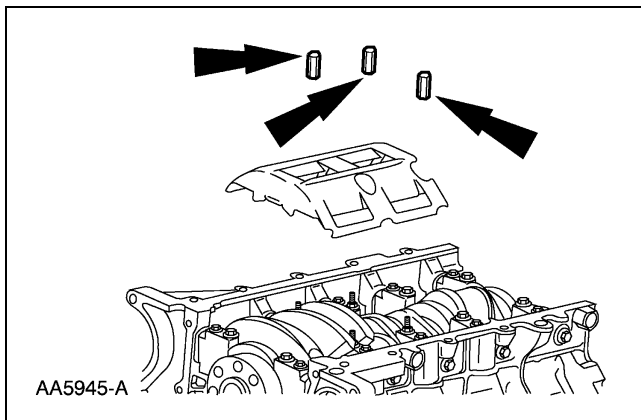


**DISASSEMBLY (Continued)**

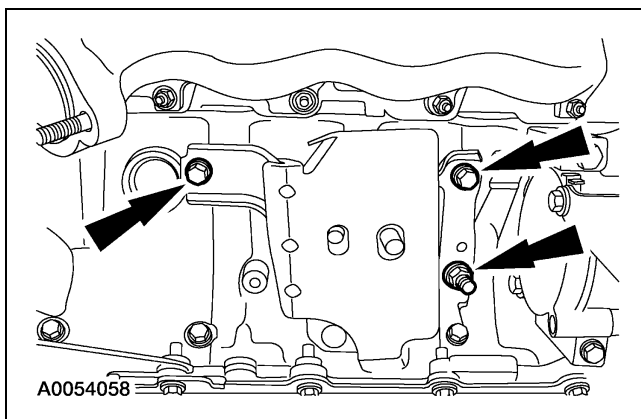
68. Remove the oil pump screen and pickup tube spacer.



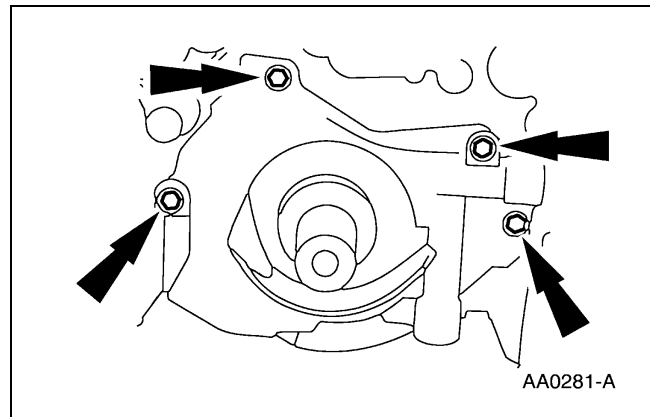
69. Remove the spacers and the windage tray.



70. **NOTE:** RH is shown, LH is similar.  
Remove the RH and LH engine mounts.



71. Remove the bolts and remove the oil pump.

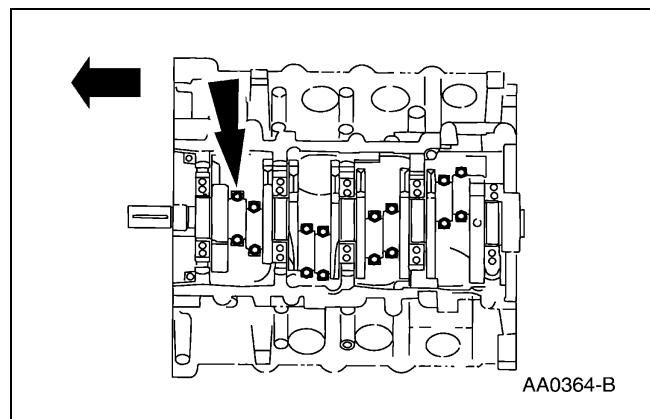


72. **CAUTION:** Do not stamp the top of pistons, as ring land damage can occur.


**NOTE:** Connecting rods and rod caps should be numbered to keep the correct orientation in the following sequence.

Remove the connecting rod caps for pistons number 1 and 6.

- Discard the bolts.

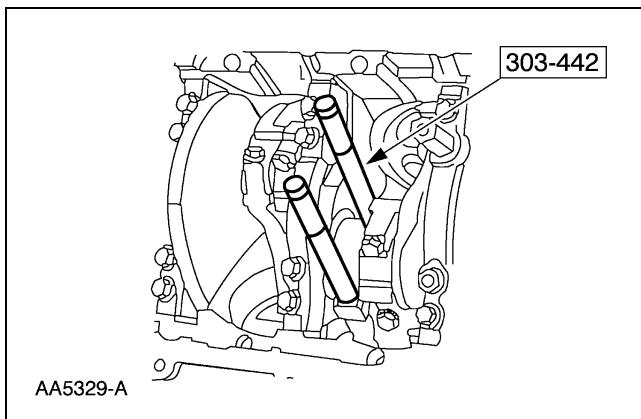


**DISASSEMBLY (Continued)**

73.  **CAUTION:** Do not scratch the cylinder walls or crankshaft journals with the connecting rod.

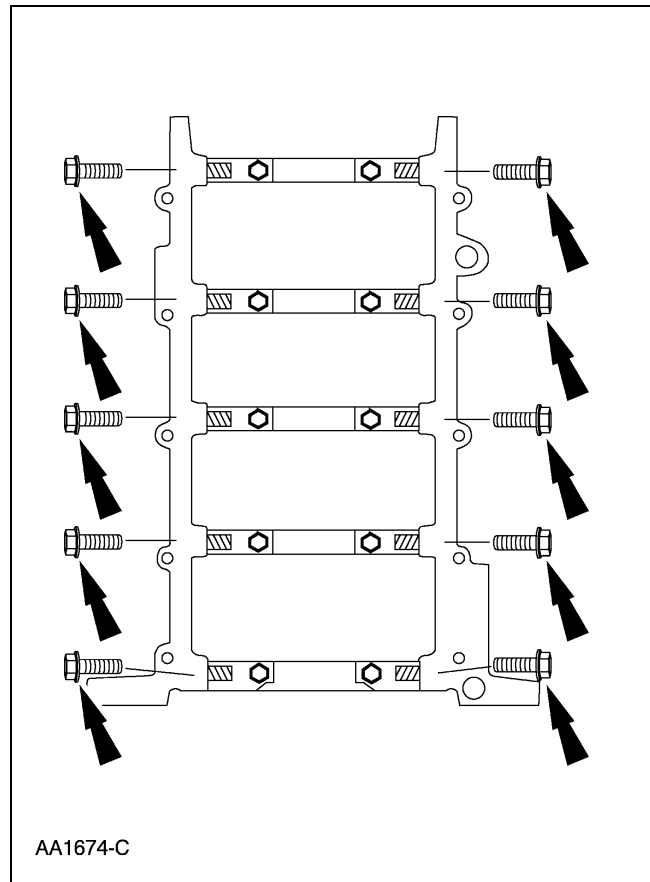
**NOTE:** Before removing pistons, inspect the top of the cylinder bores. If necessary, remove the ridge or carbon deposits from each cylinder using a cylinder ridge reamer. Follow manufacturer's instructions.

Using the special tool, push pistons number 1 and 6 through the top of the cylinder block.



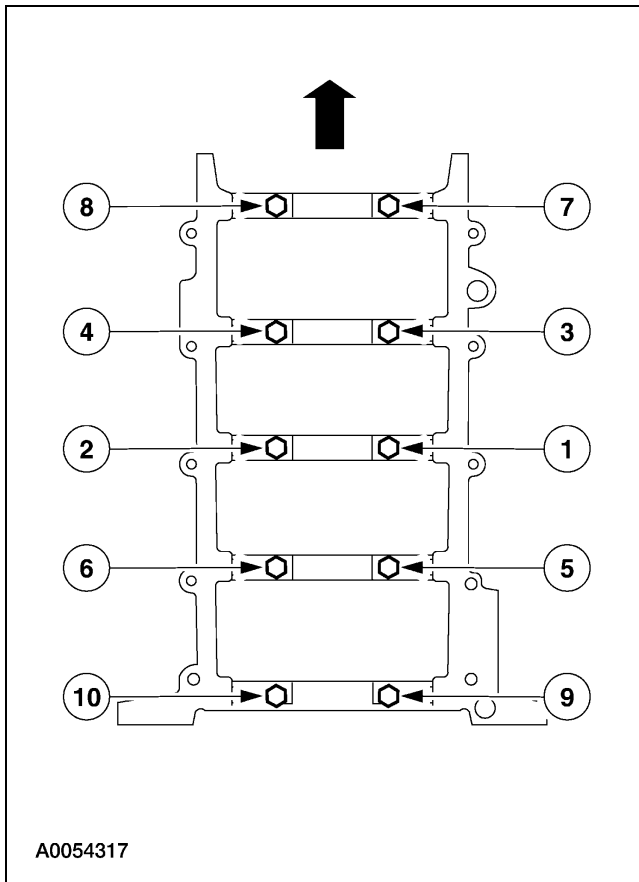
74. To remove pistons number 3 and 5, 4 and 7, 2 and 8, turn the crankshaft 90 degrees and repeat the previous two steps.

75. Remove the side bolts.

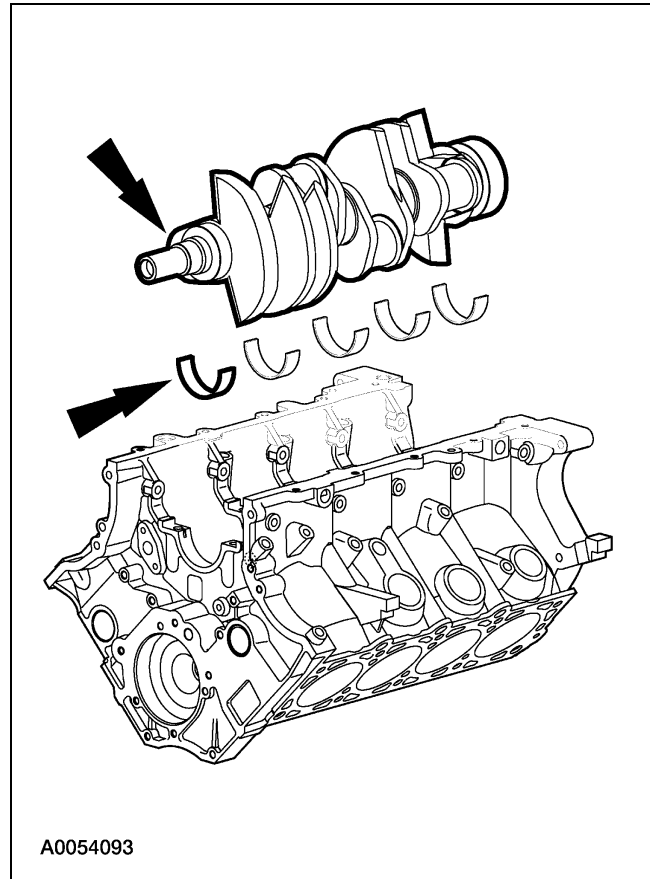


**DISASSEMBLY (Continued)**

76. Remove and discard the bolts.



78. Remove the crankshaft, the crankshaft thrust washer, and the crankshaft upper main bearings from the cylinder block.



77. Remove the main bearing caps and the crankshaft lower main bearings from the cylinder block.

