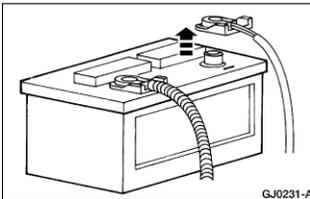


**Engine****Special Service Tool(s)**

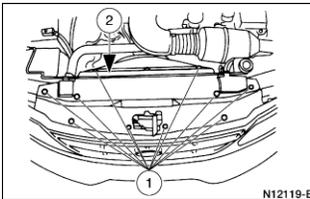
 <p>ST1377-A</p>	<p>Engine Lifting Bracket or equivalent 014-00730</p>
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**Removal**

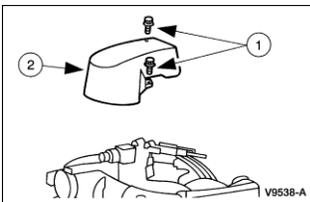
1. Remove the hood.
2. On A/C equipped vehicles, recover the air conditioning system; refer to [Section 412-00](#).
3. Drain the cooling system; refer to [Section 303-03](#).
4. Relieve the fuel pressure; refer to [Section 310-00](#).
5. Disconnect the battery ground cable.



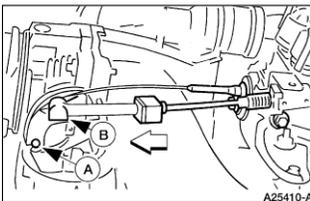
6. Remove the upper front air deflector (19E525).
  1. Remove the ten screws.
  2. Remove the upper front air deflector.



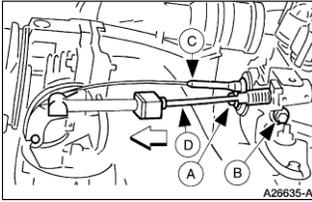
7. Remove the engine air cleaner outlet tube; refer to [Section 303-12](#).
8. Remove the radiator, fan blade assembly, and fan shroud; refer to [Section 303-03](#).
9. Remove the accelerator control splash shield.
  1. Remove the two bolts.
  2. Remove the accelerator control splash shield.



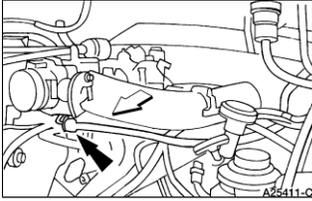
10. Disconnect the (A) accelerator cable end and, if equipped, the (B) speed control actuator cable end.



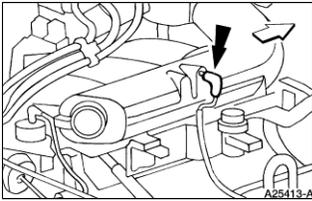
11. Remove the (A) accelerator cable to bracket bolt and, if equipped, the (B) speed control actuator cable to bracket bolt and position the (C) accelerator cable and, if equipped, the (D) speed control actuator cable aside.



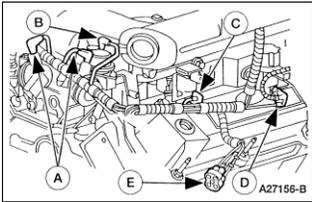
12. Disconnect the vapor management valve (VMV) hose.



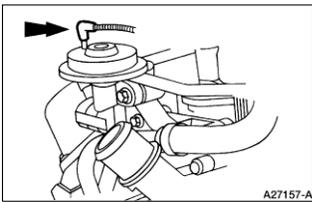
13. Disconnect the manifold vacuum connection.



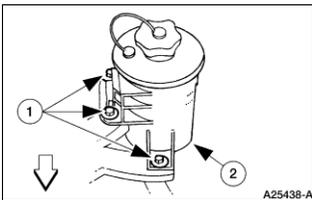
14. Disconnect the (A) intake manifold runner control (IMRC) vacuum connectors, the (B) fuel pressure regulator vacuum connector, the (C) IMRC solenoid vacuum connector, the (D) engine vacuum regulator (EVR) vacuum connector, and the (E) vacuum reservoir connector.



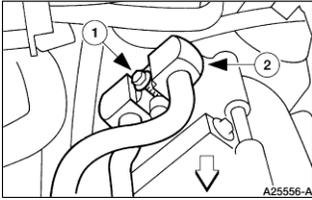
15. Disconnect the exhaust gas recirculation (EGR) valve vacuum connector.



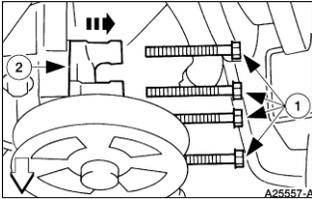
16. Position the power steering reservoir aside.  
 1. Remove the three bolts.  
 2. Position the power steering reservoir aside.



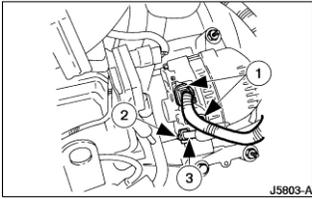
17. On A/C equipped vehicles, position the A/C lines aside.  
 1. Remove the A/C compressor manifold bolt.  
 2. Disconnect and position the A/C lines aside.



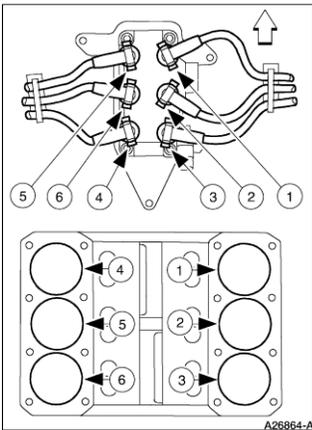
18. Remove the accessory drive belt. For additional information, refer to [Section 303-05](#).
19. Position the power steering pump aside.
1. Remove the four bolts.
  2. Remove and position the power steering pump aside.



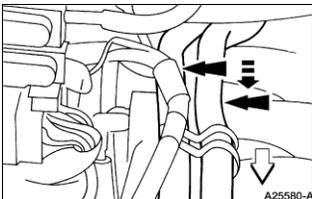
20. Disconnect the generator electrical connections.
1. Disconnect the two generator electrical connectors.
  2. Remove the battery positive cable nut.
  3. Disconnect the battery positive cable.



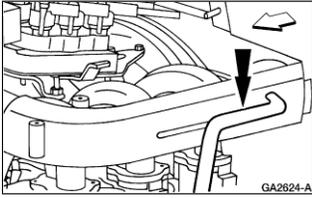
21. Disconnect the fuel charging wiring. For additional information, refer to [Section 303-04A](#).
22. Disconnect and remove the six spark plug wires.



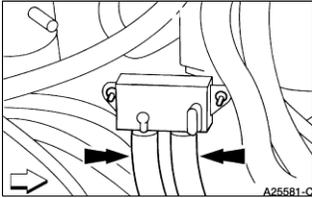
23. Disconnect the two heater hoses.



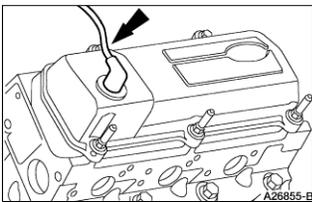
24. Disconnect the brake booster vacuum hose.



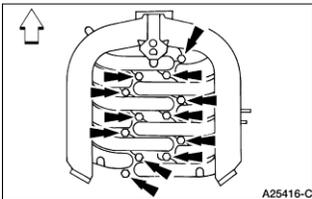
25. Disconnect the differential pressure feedback EGR (DPFE) transducer hose.



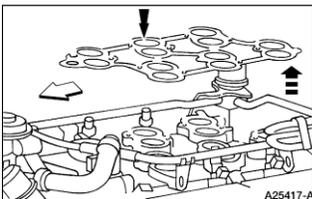
26. Remove the breather.



27. Remove the 12 upper intake manifold bolts and remove the upper intake manifold.

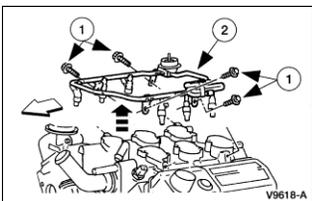


28. Remove and discard the intake manifold upper gasket.

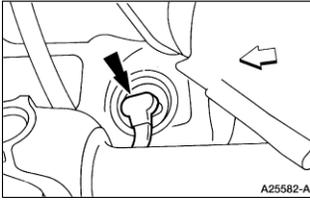


**⚠ WARNING: DO NOT SMOKE OR CARRY LIGHTED TOBACCO OR OPEN FLAME OF ANY TYPE WHEN WORKING ON OR NEAR ANY FUEL RELATED COMPONENTS. HIGHLY FLAMMABLE MIXTURES ARE ALWAYS PRESENT AND MAY BE IGNITED, RESULTING IN POSSIBLE PERSONAL INJURY.**

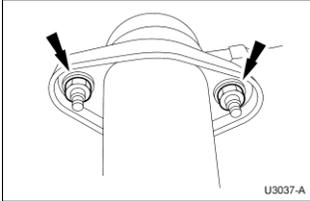
29. Disconnect the fuel lines; refer to [Section 310-01](#).
30. Remove the fuel injection supply manifold and fuel injectors (9F593).
1. Remove the four bolts.
  2. Remove the fuel injection supply manifold and the fuel injectors.



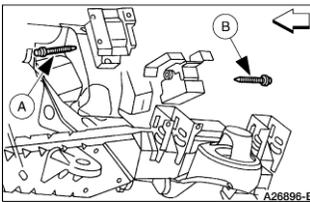
31. Raise and support the vehicle.
32. If equipped, disconnect the block heater cable.



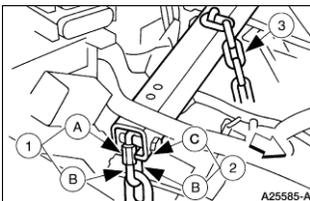
33. Remove the four three way catalytic converter to exhaust manifold nuts (two each side).



34. Remove the starter; refer to [Section 303-06](#).
35. Remove the transmission bolts.
- If equipped with automatic transmission, refer to [Section 307-01A](#).
  - If equipped with manual transmission, refer to [Section 308-03](#).
36. If equipped with manual transmission, remove the clutch; refer to [Section 308-01](#).
37. Remove the (A) RH engine mount through bolt and the (B) LH engine mount through bolt.



38. Lower the vehicle.
39. Install Engine Lifting Bracket.
1. Install a (A) link in each (B) engine lifting eye.
  2. Connect each end of (C) Engine Lifting Bracket to a (B) link.
  3. Connect the chain to the hoist.



40. Use the hoist to raise and remove the engine.

