
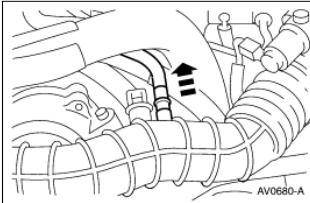


Intake Manifold—Lower**Special Tool(s)**

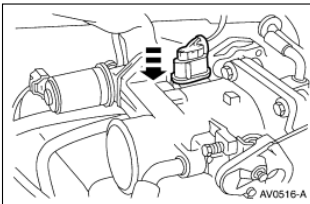
 <p>ST1371-A</p>	<p>Fuel Pressure Gauge T80L-9974-B</p>
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Removal

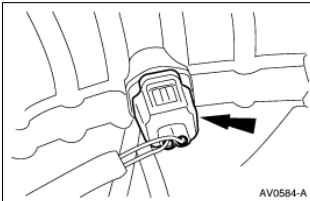
1. Disconnect the battery ground cable. Refer to [Section 414-01](#).
2. Drain the cooling system. Refer to [Section 303-03](#).
3. Disconnect the crankcase ventilation tube (6758) from the air cleaner outlet tube (9B659).



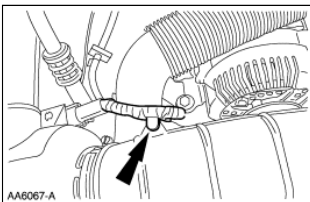
4. Disconnect the electrical connector from the mass airflow (MAF) sensor (12B579).



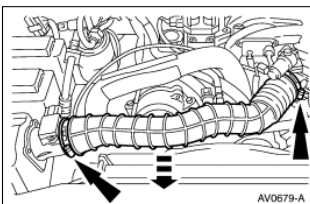
5. Disconnect the electrical connector from the intake air temperature (IAT) sensor (12A697).



6. Disconnect the harness locator from the air cleaner outlet tube.

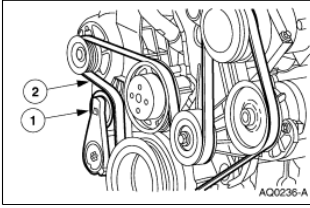


7. Remove the air cleaner outlet tube.

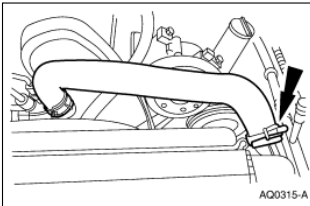


8. Loosen the accessory drive belt and remove from the generator pulley (10344).

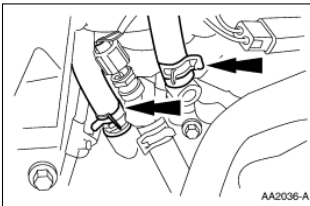
1. Loosen tensioner.
2. Remove belt.



9. Remove the upper radiator hose (8260).



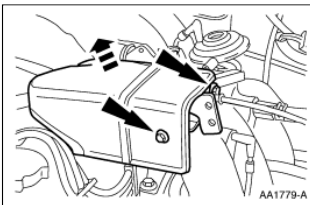
10. Disconnect the heater hoses from the intake manifold (9424) and the thermostat housing. Position the hoses out of the way.



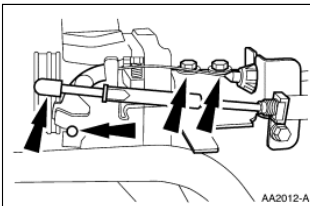
11. **⚠ WARNING: Fuel supply lines on vehicles equipped with fuel injected engines remain pressurized for long periods of time after engine shut down. Fuel system pressure must be relieved prior to fuel system repair to prevent possible injury.**

Using the Fuel Pressure Gauge T80L-9974-B, relieve the fuel pressure and remove the tool.

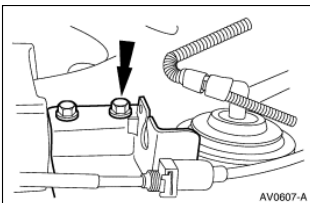
12. Remove the accelerator control splash shield (9E766).



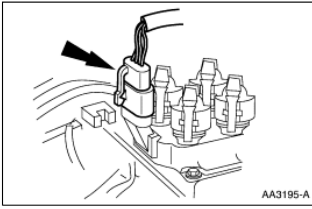
13. Disconnect the canister purge hose from the valve and the locator from the accelerator control bracket.
14. Disconnect the throttle cable and the speed control cable (if equipped) from the throttle body.



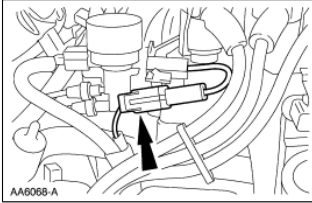
15. Remove the bolts and position the bracket with cable(s) out of the way.



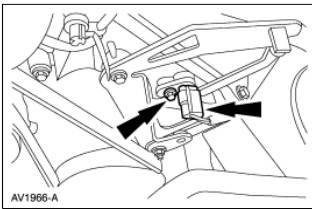
16. Disconnect the electrical connectors from the coil connector.



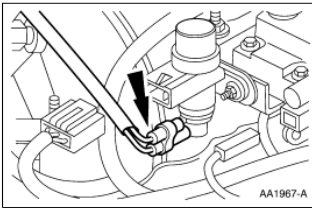
17. Disconnect the electrical connector from the radio noise suppressor.



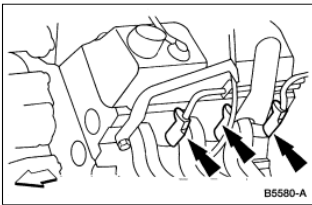
18. Disconnect the electrical connector from the engine vacuum regulator (EVR) solenoid.



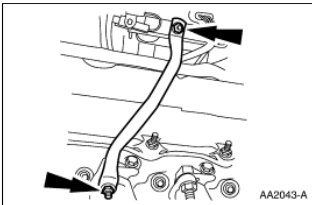
19. Disconnect the vacuum hose from the EVR.



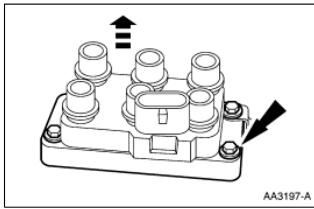
20. Disconnect the RH side spark plugs and locators.



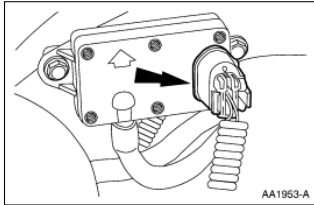
21. Remove the coil support.



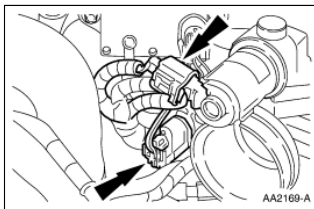
22. Remove the bolts and the coil assembly.



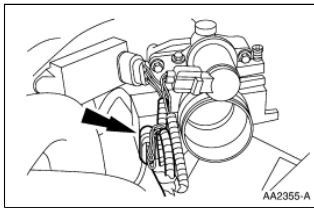
23. Disconnect the electrical connector from the differential pressure feedback EGR system (9J433).



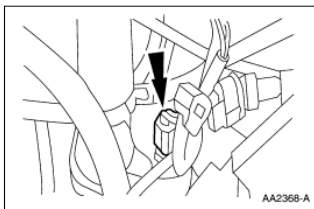
24. Disconnect the electrical connector from the idle air control (IAC) valve (9F715).



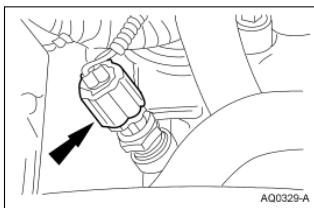
25. Disconnect the electrical connector from the throttle position (TP) sensor (9B989).



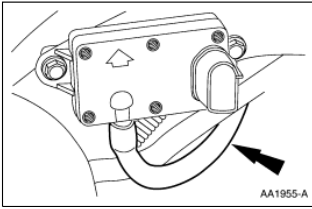
26. Disconnect the electrical connector from the engine coolant temperature (ECT) sensor (12A648).



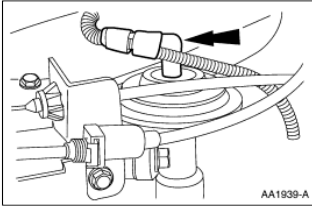
27. Disconnect the electrical connector from the water temperature sending unit sensor.



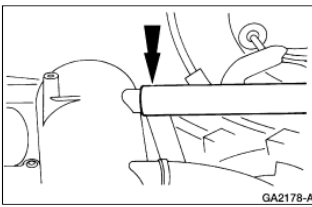
28. Disconnect the vacuum hoses from the differential pressure feedback EGR system.



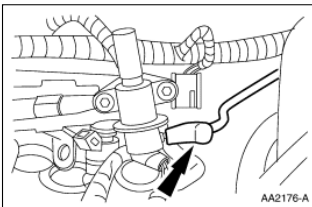
29. Disconnect the vacuum hose from the EGR valve (9D475).



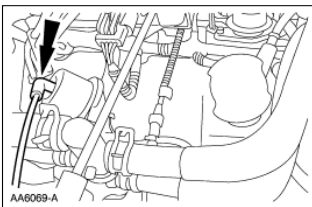
30. Disconnect the vacuum hose from the power brake booster.



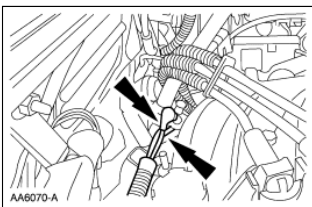
31. Disconnect the vacuum hose from the fuel pressure regulator (9C968).



32. Disconnect the heater control.

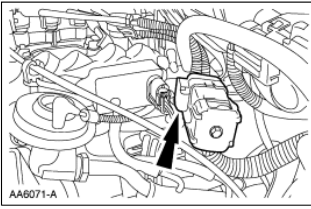


33. Disconnect and remove the engine vacuum harness.

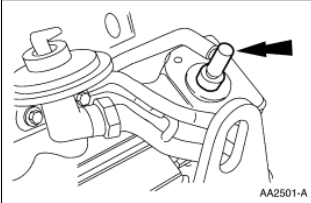


34. Disconnect exhaust manifold tube (9D475) from the EGR valve.

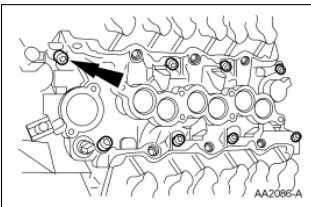
35. Disconnect the 42-pin connector from the bracket.



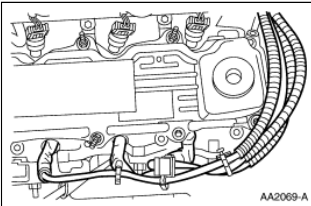
36. Disconnect the positive crankcase ventilation (PCV) valve.



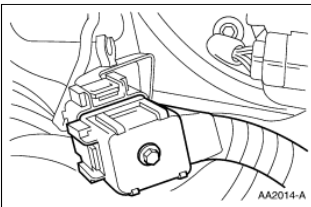
37. Remove the upper intake manifold and gasket, and tape the lower intake openings.



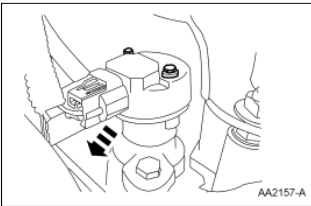
38. Disconnect the LH side spark plug wires from the spark plugs (12405) and from the locators.



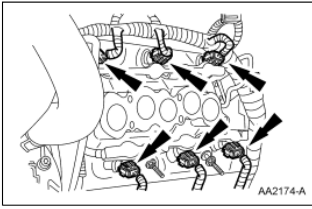
39. Disconnect the electrical connector from the 42-pin connector.



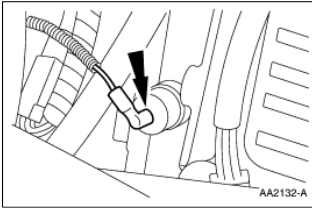
40. Disconnect the electrical connector from the camshaft position (CMP) sensor (6B288).



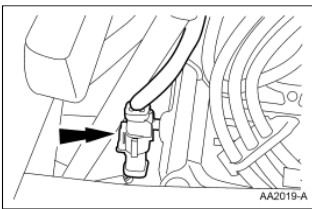
41. Disconnect the electrical connector from the fuel injectors (9F593).



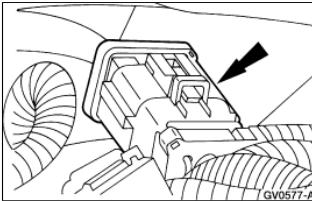
42. Disconnect the electrical connector from the oil pressure sender (9278).



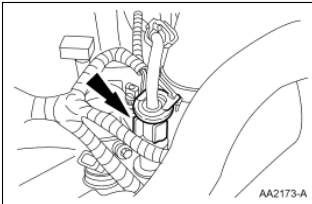
43. Disconnect the electrical connector from the rear heated oxygen (HO2S) sensors (9F472).



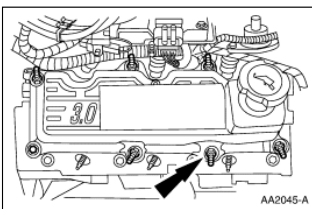
44. Disconnect the electrical connector from the CID sensor.
 45. Disconnect the two 16-pin electrical connectors and locator. Position the harness aside.



46. Remove the safety clips and disconnect the fuel lines. Install protective caps over the fuel lines and rail openings.

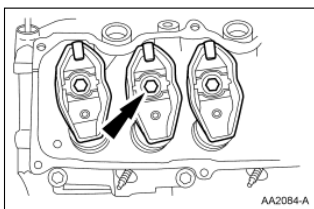


47. Disconnect the lower radiator bypass hose from the thermostat housing.
 48. Remove the RH valve cover (6582) and valve cover gasket (6584).

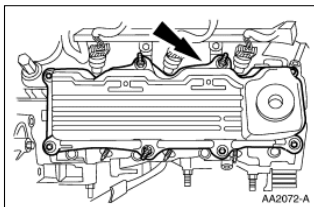


49. **CAUTION:** Identify the location of each rocker arm and push rod. Each rocker arm and push rod is to be installed in the original location to prevent premature wear.

Remove the rocker arms (6564) and the push rods (6565).

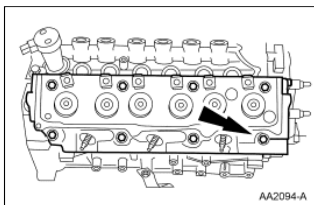


50. Remove the LH valve cover and gasket.

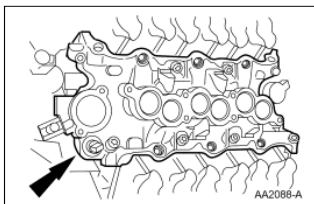


51. **CAUTION:** Identify the location of each rocker arm and push rod. Each rocker arm and push rod is to be installed in the original location to prevent premature wear.

Remove the rocker arms and the push rods.



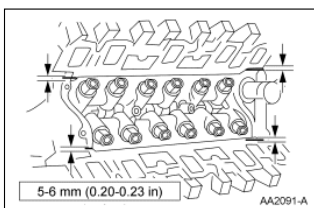
52. Remove the lower intake manifold, gasket and seals.



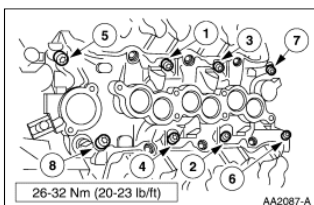
Installation

1. **NOTE:** Apply a drop of silicone gasket and sealant at the four cylinder block to cylinder head seams. Use Silicone Gasket and Sealant F6AZ-19562-AA or equivalent meeting Ford specification WSE-M4G323-A6.

Install the sealant and the intake manifold gaskets and seals.

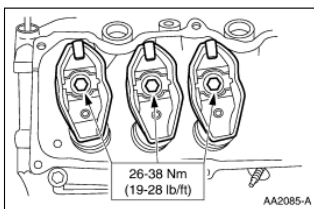


2. Install the lower intake manifold.



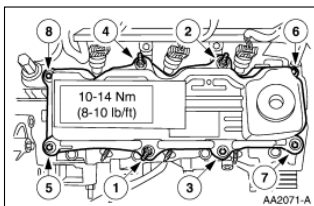
3. **NOTE:** Apply clean Super Premium SAE 5W30 Motor Oil XO-5W30-QSP or equivalent meeting Ford specification WSE-M2C153-G to the rocker arms (6564) and push rods (6565).

Install the LH push rods and the rocker arms in their correct positions.



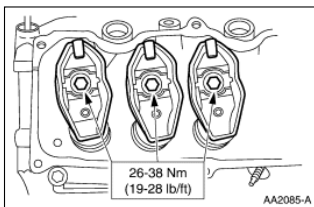
4. **NOTE:** Apply a bead of silicone gasket and sealant in two places where the cylinder head and cylinder block meet. Use Silicone Gasket and Sealant F6AZ-19562-AA or equivalent meeting Ford specification WSE-M4G323-A6.

Install a new gasket and the LH valve cover (6582).



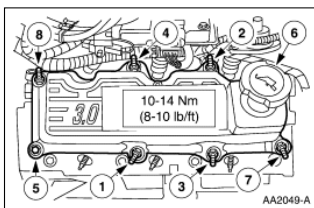
5. **NOTE:** Apply clean Super Premium SAE 5W30 Motor Oil XO-5W30-QSP or equivalent meeting Ford specification WSE-M2C153-G to the rocker arms and push rods.

Install the RH push rods and the rocker arms in their correct positions.

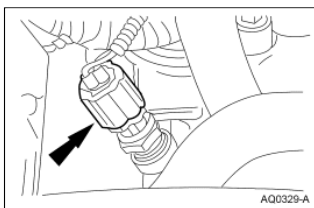


6. **NOTE:** Apply a bead of silicone gasket and sealant in two places where the cylinder head and cylinder block meet. Use Silicone Gasket and Sealant F6AZ-19562-AA or equivalent meeting Ford specification WSE-M4G323-A6.

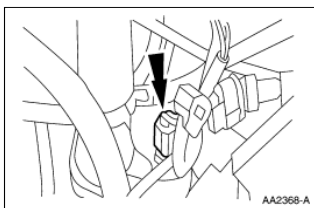
Install a new gasket and the RH valve cover.



7. Connect the water temperature sending unit.

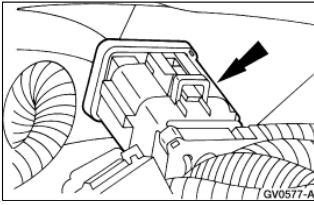


8. Connect the engine coolant temperature (ECT) sensor (12A648).

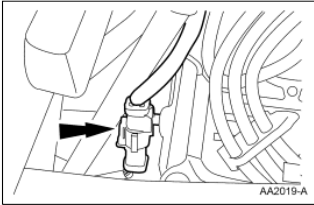


9. Connect the CID sensor.

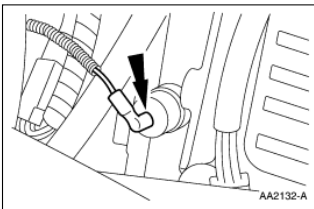
10. Connect the two 16-pin electrical connectors.



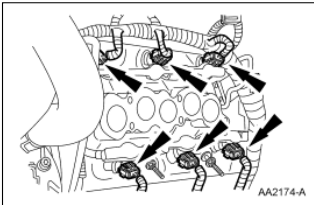
11. Connect the rear heated oxygen (HO2S) sensors (9F472).



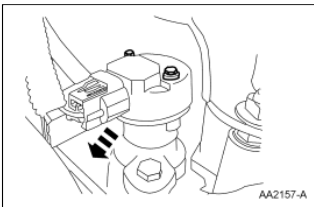
12. Connect the oil pressure sender (9278).



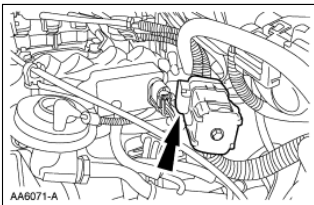
13. Connect the fuel injectors (9F593).



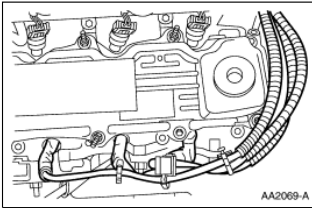
14. Connect the camshaft position (CMP) sensor (6B288).



15. Connect the 42-pin connector to the bracket.

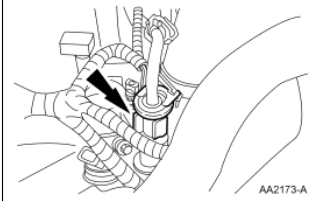


16. Connect all harness locators.
17. Connect the LH spark plug wire locators and spark plugs (12405).



18. **NOTE:** Inspect and install new O-rings as necessary.

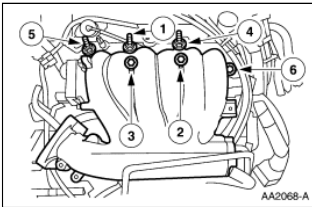
Remove the protective caps and connect the fuel lines to the fuel rail and install the safety clips.



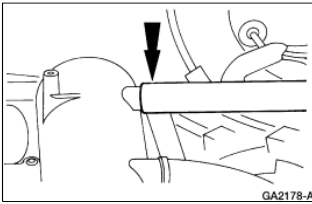
19. **NOTE:** Tighten the bolts in sequence and in two steps.

Install the upper intake manifold and gasket.

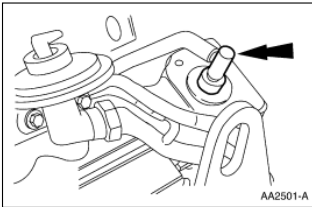
1. Tighten to 20 Nm (14 lb-ft).
2. Tighten to 25 Nm (18 lb-ft).



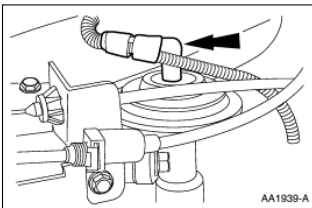
20. Connect the power brake booster vacuum hose.



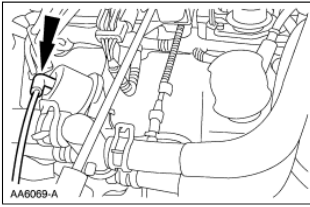
21. Connect the positive crankcase ventilation (PCV) valve hose.



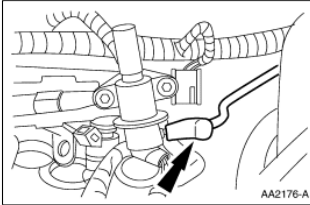
22. Connect the vacuum hose at the EGR valve (9D475).



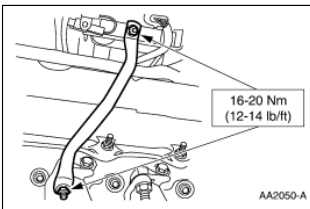
23. Connect the vacuum hose at the heater control.



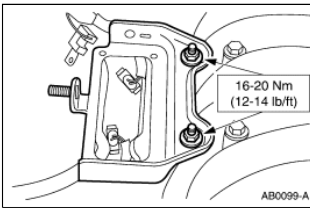
24. Connect the vacuum hose at the fuel pressure regulator (9C968).



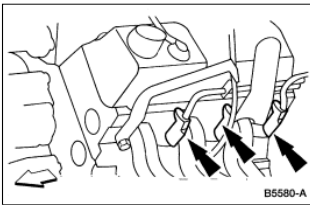
25. Install the coil bracket support.



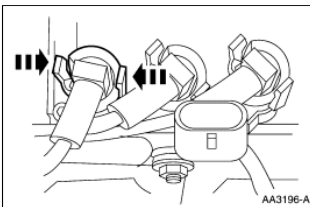
26. Install the coil bracket and the coil to the support.



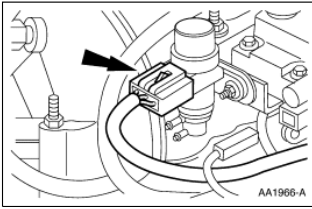
27. Connect the RH spark plug wires to the locators and the spark plugs.



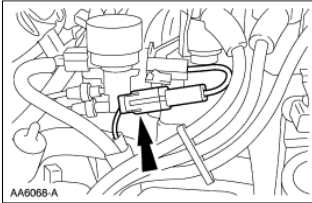
28. Connect the LH spark plug wires to the coil.



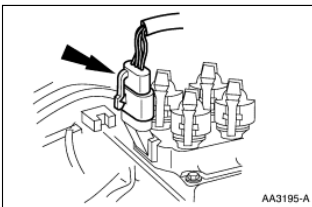
29. Connect the engine vacuum regulator (EVR).



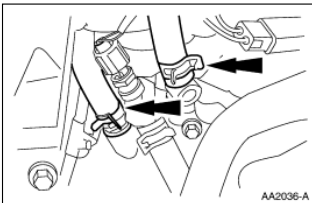
30. Connect the radio noise suppressor.



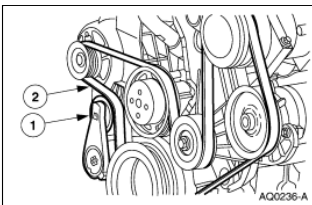
31. Connect the coil connector.



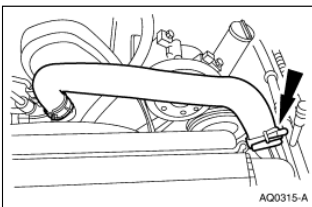
32. Connect the lower radiator bypass hose to the thermostat housing.
33. Connect the heater hoses to the intake manifold (9424) and the thermostat housing.



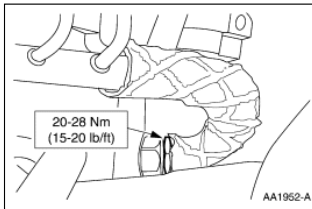
34. Install the accessory drive belt on the generator pulley (10344).
1. Loosen tensioner.
2. Install belt.



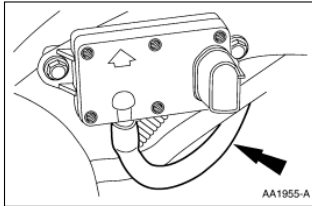
35. Install the upper radiator hose (8260).



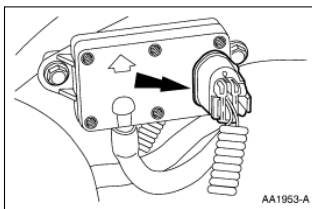
36. Install the exhaust manifold tube (9D475) to the EGR valve.



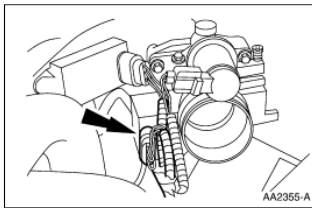
37. Connect the vacuum hoses to the differential pressure feedback EGR system (9J433).



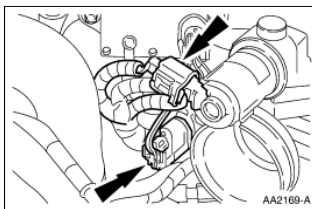
38. Connect the electrical connector to the differential pressure feedback EGR system.



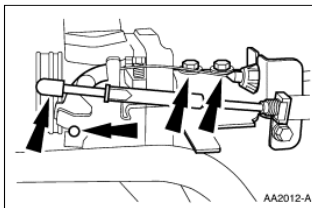
39. Connect the electrical connector to the throttle position (TP) sensor (9B989).



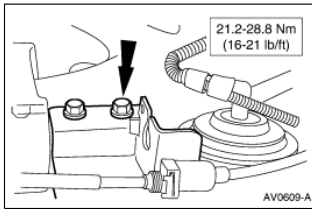
40. Connect the electrical connector to the idle air control (IAC) valve (9F715).



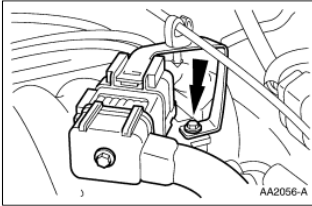
41. Connect the throttle cable and speed control cable (if equipped) to the throttle bracket.



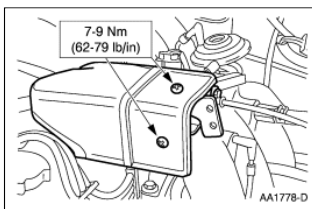
42. Install the bracket to the throttle body.



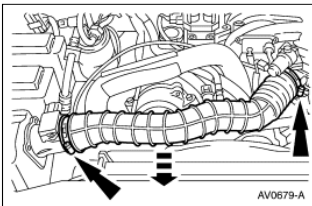
43. Connect the canister purge hose and locator to the accelerator control bracket.



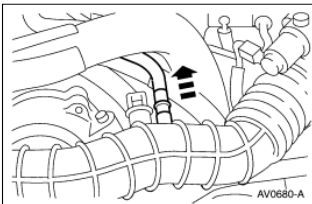
44. Install the accelerator control splash shield (9E766).



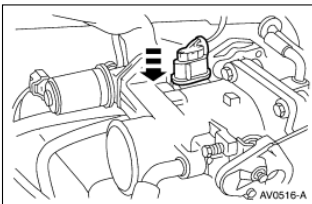
45. Raise and support the vehicle. Refer to [Section 100-02](#).
46. Drain engine oil.
47. Lower the vehicle.
48. Install the air cleaner outlet tube.



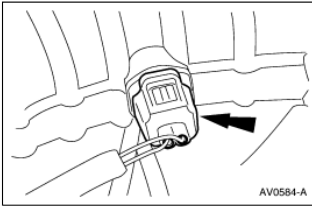
49. Connect the crankcase ventilation hose.



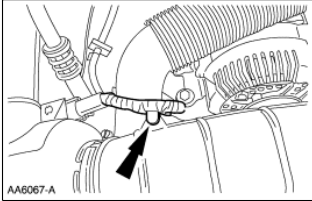
50. Connect the electrical connector to the mass air flow (MAF) sensor.



51. Connect the electrical connector to the intake air temperature (IAT) sensor.



52. Connect harness locator to the air cleaner outlet tube.



53. Fill the engine with clean engine oil.
54. Fill the cooling system. Refer to [Section 303-03](#).
55. **NOTE:** When the battery (10655) is disconnected and reconnected, some abnormal drive symptoms may occur while the vehicle relearns its adaptive strategy. The vehicle may need to be driven 16 km (10 miles) or more to relearn the strategy.

Connect the battery ground cable.

56. Start the engine and check for leaks.
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