

**RIGHT SIDE****▶ See Figure 59**

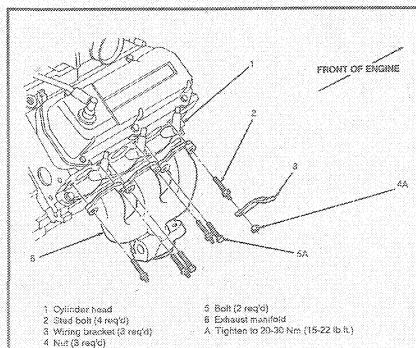
1. Disconnect the negative battery cable.
2. Remove the air cleaner and the air cleaner outlet tube assembly.
3. Tag and disconnect the ignition wire from the ignition coil, then tag and disconnect the wires from the spark plugs. Remove the spark plugs.
4. Disconnect the EGR valve-to-exhaust manifold tube.
5. Raise and safely support the vehicle.
6. Remove the transaxle dipstick tube.
7. Remove the exhaust manifold-to-exhaust pipe attaching nuts.
8. Carefully lower the vehicle.
9. Remove the exhaust manifold retaining bolts, then remove the exhaust manifold from the vehicle.

**To install:**

10. Lightly oil all bolt and stud threads before installation. Clean the exhaust manifold, cylinder head and Y-pipe mating surfaces.
11. Position the inner half of the heat shroud, if equipped, and exhaust manifold on cylinder head. Start two retaining bolts to align the manifold with the cylinder head. Install the remaining retaining bolts and tighten to 15–22 ft. lbs. (20–30 Nm). Do not overtorque the retainers, it may cause exhaust leaks.

➔ **A slight warping in the exhaust manifold may cause a misalignment between the bolt-holes in the cylinder head and exhaust manifold. Elongate the holes in the exhaust manifold as necessary to correct the misalignment. Do not elongate the pilot hole (the lower rear bolt hole on the No. 2 cylinder).**

12. Raise and safely support the vehicle.
13. Connect the dual converter Y-pipe to the exhaust manifold. Tighten the retaining nuts to 16–24 ft. lbs. (22–33 Nm).
14. Install the transaxle dipstick tube, and then carefully lower the vehicle.
15. If equipped, install the outer heat shroud, then tighten the retaining screws to 50–70 inch lbs. (6–8 Nm).
16. Install the spark plugs. Connect the ignition wires to their respective spark plugs, then connect the ignition wire to the coil.
17. Apply special heat-resistant anti-seize compound to the threads and connect the EGR valve-to-exhaust manifold tube.



**Fig. 59 Right side exhaust manifold mounting—3.8L engine**

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18. Install the air cleaner. Install the air cleaner outlet tube assembly.
19. Connect the negative battery cable, then start the engine, and check for exhaust leaks. Check the transaxle fluid.

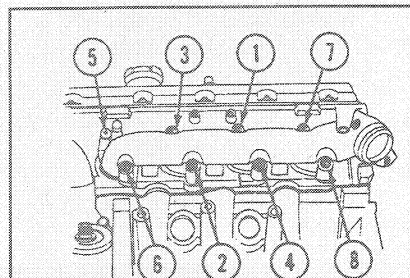
**4.6L Engine except Continental****▶ See Figure 60**

1. Disconnect the battery cables, negative cable first. Remove the air inlet tube.
2. Drain the cooling system and remove the cooling fan and shroud. Relieve the fuel system pressure and disconnect the fuel lines; refer to Section 5.

**\*\*\* CAUTION**

**Never open, service, or drain the radiator or cooling system when hot; serious burns can occur from the steam and hot coolant. In addition, when draining engine coolant, keep in mind that cats and dogs are attracted to ethylene glycol antifreeze and could drink any that is left in an uncovered container or in puddles on the ground. This will prove fatal in sufficient quantities. Always drain coolant into a sealable container. Coolant should be reused unless it is contaminated or is several years old.**

3. Remove the upper radiator hose. Remove the wire module and support bracket.
4. Discharge the air conditioning system; refer to Section 1. Disconnect and plug the compressor outlet hose at the compressor and remove the bolt retaining the hose assembly to the right coil bracket. Cap the compressor opening.
5. Remove the 42-pin engine harness connector from the retaining bracket on the brake vacuum booster. Disconnect the connector.
6. Disconnect the throttle valve cable from the throttle body. Disconnect the heater outlet hose.
7. Remove the nut retaining the ground strap to the right cylinder head. Remove the upper stud and lower bolt retaining the heater outlet hose to the right cylinder head and position out of the way.
8. Remove the blower motor resistor and remove the bolt retaining the right engine mount to the lower engine bracket. Disconnect both oxygen sensors.
9. Raise and safely support the vehicle. Remove the engine mount through bolts.



**Fig. 60 Exhaust manifold bolt torque sequence—4.6L engine**

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10. Remove the EGR tube line nut from the right exhaust manifold.

11. Disconnect the exhaust pipes from the manifolds. Lower the exhaust system and hang it from the crossmember with wire.

12. To remove the left exhaust manifold, remove the engine mount from the engine block and remove the 8 bolts retaining the exhaust manifold.

13. Position a jack and a block of wood under the oil pan, rearward of the oil drain hole. Raise the engine approximately 4 in. (100 mm).

14. Remove the 8 bolts retaining the right exhaust manifold and remove the manifold.

**To install:**

15. If the exhaust manifolds are being replaced, transfer the oxygen sensors and tighten to 27–33 ft. lbs. (37–45 Nm). On the right manifold, transfer the EGR tube connector and tighten to 33–48 ft. lbs. (45–65 Nm).

16. Clean the mating surfaces of the exhaust manifolds and cylinder heads.

17. Position the exhaust manifolds to the cylinder heads and install the retaining bolts. Tighten, in sequence, to 15–22 ft. lbs. (20–30 Nm).

18. Position and connect the EGR valve and tube assembly to the exhaust manifold. Tighten the line nut to 26–33 ft. lbs. (35–45 Nm).

19. Install the left engine mount and tighten the bolts to 15–22 ft. lbs. (20–30 Nm). Lower the engine onto the mounts and remove the jack. Install the engine mount through bolts and tighten to 15–22 ft. lbs. (20–30 Nm).

20. Cut the wire and position the exhaust system. Tighten the nuts to 20–30 ft. lbs. (27–41 Nm).

➔ **Make sure the exhaust system clears the No. 3 crossmember. Adjust as necessary.**

21. Lower the vehicle. Connect both oxygen sensors and install the bolt retaining the right engine mount to the frame. Tighten to 15–22 ft. lbs. (20–30 Nm).

22. Install the blower motor resistor. Position the heater outlet hoses. Install the upper stud and lower bolt and tighten to 15–22 ft. lbs. (20–30 Nm). Install the ground strap onto the stud and tighten the nut to 15–22 ft. lbs. (20–30 Nm).

23. Connect the heater outlet hose. Connect and if necessary, adjust the throttle valve cable.

24. Connect the 42-pin connector and transmission harness connector. Install the connector to the retaining bracket on the brake vacuum booster.

25. Connect the air conditioning compressor outlet hose to the compressor and install the bolt retaining the hose assembly to the right coil bracket.

26. Install the upper radiator hose and connect the fuel lines. Install the wiper module and retaining bracket.

27. Install the cooling fan and shroud. Fill the cooling system.

28. Install the air inlet tube. Connect the battery cables, start the engine, and check for leaks.

29. Have a MVAC certified tech evacuate and charge the air conditioning system.

**4.6L Engine Continental****LEFT-HAND SIDE**

1. Disable the air suspension.
2. Disconnect the negative battery cable.
3. Raise and safely support the vehicle securely on a hoist.