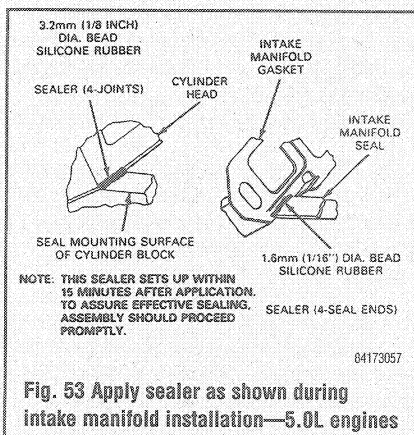


## 3-16 ENGINE AND ENGINE OVERHAUL



**Fig. 53 Apply sealer as shown during intake manifold installation—5.0L engines**

13. Position new seals on the cylinder block and new gaskets on the cylinder heads with the gaskets interlocked with the seal tabs. Make sure the holes in the gaskets are aligned with the holes in the cylinder heads.

14. Apply a  $\frac{3}{16}$  in. bead of sealer to the outer end of each intake manifold seal for the full width of the seal.

15. Using guide pins to ease installation, carefully lower the intake manifold into position on the cylinder block and cylinder heads.

➔ **After the intake manifold is in place, run a finger around the seal area to make sure the seals are in place. If the seals are not in place, remove the intake manifold and position the seals.**

16. Make sure the holes in the manifold gaskets and the manifold are in alignment. Remove the guide pins. Install the intake manifold attaching bolts and tighten, in sequence, to 23–25 ft. lbs. (31–34 Nm).

17. If required, install the heater tube assembly to the lower intake manifold studs.

18. Install the water pump bypass hose and upper radiator hose on the thermostat housing. Install the hoses to the heater tubes and intake manifold. Connect the fuel lines.

19. Install the distributor, aligning the housing and rotor with the marks that were made during removal. Install the distributor cap. Position the spark plug wires in the harness brackets on the rocker arm cover-attaching stud and connect the wires to the spark plugs.

20. Install a new gasket and the upper intake

manifold. Tighten the bolts to 12–18 ft. lbs. (16–24 Nm). Install the cover plate and connect the crankcase vent tube.

21. Connect the accelerator, throttle valve cable and cruise control cable, if equipped, to the throttle body. Connect the electrical connectors and vacuum lines to their proper locations.

22. Connect the coolant hoses to the EGR spacer. Fill the cooling system.

23. Connect the negative battery cable, start the engine, and check for leaks. Check the ignition timing.

24. Operate the engine at fast idle. When engine temperatures have stabilized, tighten the intake manifold bolts to 23–25 ft. lbs. (31–34 Nm).

25. Connect the air intake duct and the crankcase vent hose.

### Exhaust Manifold

#### REMOVAL & INSTALLATION

##### 3.8L Engine

##### LEFT SIDE

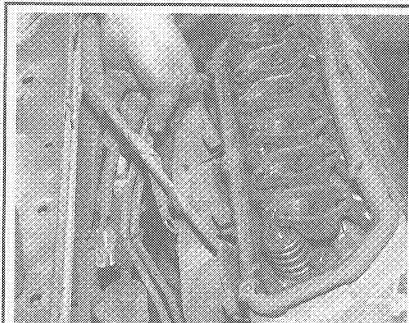
➔ **See Figures 54, 55, 56, 57 and 58**

1. Disconnect the negative battery cable and the stud. Matchmark the stud and hole
2. Remove the oil level dipstick tube support bracket.
3. Tag and disconnect the spark plug wires.
4. Raise and safely support the vehicle.



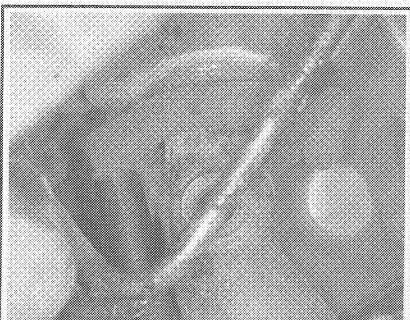
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**Fig. 54 Remove the nut holding the dipstick tube support bracket and the stud. Matchmark the stud and hole**



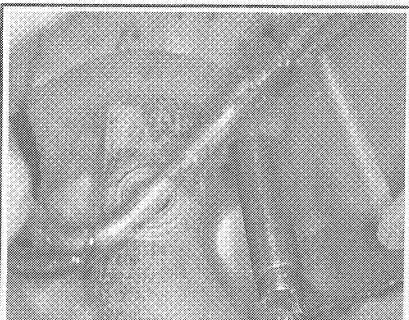
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**Fig. 55 Remove the bolts and studs to the exhaust manifold**



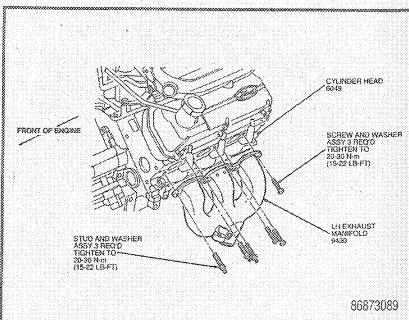
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**Fig. 56 Usually soaking the exhaust nuts with a rust solvent . . .**



93143P22

**Fig. 57 . . . makes them easier to remove. There is one on each side of the pipe. You will need a flex joint to remove them**



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**Fig. 58 Left side exhaust manifold mounting—3.8L engine**

5. Remove the exhaust manifold-to-exhaust pipe attaching nuts.

6. Lower the vehicle.

7. Remove the exhaust manifold retaining bolts, then remove the exhaust manifold from the vehicle.

##### To install:

8. Lightly oil all bolt and stud threads before installation. Clean the exhaust manifold, cylinder head and Y-pipe mating surfaces.

9. Position the exhaust manifold on the cylinder head. Install the lower front bolt on the No. 5 cylinder as a pilot bolt.

➔ **A slight warping in the exhaust manifold may cause a misalignment between the bolt-holes in the head and the manifold. Elongate the holes in the exhaust manifold as necessary to correct the misalignment, if apparent. Do not elongate the pilot hole, the lower front bolt on No. 5 cylinder.**

10. Install the remaining exhaust manifold retaining bolts, then tighten the bolts 15–22 ft. lbs. (20–30 Nm).

11. Raise and safely support the vehicle.

12. Connect the dual converter Y-pipe to the exhaust manifold. Tighten the attaching nuts to 16–24 ft. lbs. (21–32 Nm).

13. Carefully lower the vehicle.

14. Connect the spark plug wires as tagged during removal.

15. Install the oil level dipstick tube support bracket-attaching nut. Tighten to 15–22 ft. lbs. (20–30 Nm).

16. Connect the negative battery cable, then start the engine, and check for exhaust leaks.