

## 3-24 ENGINE AND ENGINE OVERHAUL

3. Remove the fan shroud attaching bolts and position the shroud over the fan. Remove the fan and clutch assembly from the water pump shaft and remove the shroud.

4. Remove the air conditioner drive belt and idler pulley bracket. Remove the alternator and power steering drive belts. Remove the power steering pump and position aside, leaving the hoses attached. Remove all accessory brackets that attach to the water pump.

5. Remove the water pump pulley. Disconnect the lower radiator hose, heater hose and water pump bypass hose at the water pump.

6. Remove the water pump attaching bolts and remove the water pump. Discard the gasket.

### To install:

7. Clean all old gasket material from the timing cover and water pump.

8. Apply a suitable waterproof sealing compound to both sides of a new gasket and install the gasket on the timing cover.

9. Install the water pump and tighten the mounting bolts to 12–18 ft. lbs. (16–24 Nm).

10. Connect the hoses and accessory brackets to the water pump. Install the pulley on the water pump shaft.

11. Install the power steering pump and air conditioner idler pulley bracket. Install the accessory drive belts.

12. Install the fan and fan clutch assembly and the fan shroud.

13. Adjust the accessory drive belt tension; refer to Section 1.

14. Connect the negative battery cable and fill the cooling system, as explained in Section 1.

15. Run the engine and check for leaks.

## Cylinder Head

### REMOVAL & INSTALLATION

#### 3.8L Engine

##### ▶ See Figures 92 thru 106

1. Drain the cooling system, then disconnect the negative battery cable.

2. Properly relieve the fuel system pressure.

3. Remove the air cleaner assembly including air intake duct and heat tube.

4. Loosen the accessory drive belt idler, then remove the drive belt.

5. If the left cylinder head is being removed, perform the following:

a. Remove the power steering pump. Leave the hoses connected and place the pump/bracket assembly aside in a position to prevent the fluid from leaking out.

b. If equipped with air conditioning, remove mounting bracket attaching bolts. Leaving the hoses connected, position the compressor aside.

c. Remove the alternator and bracket.

6. If the right cylinder head is being removed, perform the following:

a. Disconnect the thermactor air control valve or bypass valve hose assembly at the air pump.

b. If equipped, disconnect the thermactor tube support bracket from the rear of cylinder head.

c. Remove the accessory drive idler pulley.

d. Remove the PCV valve.

7. Remove the upper intake manifold. For details, please refer to the procedure located earlier in this section.

8. Remove the valve/rocker arm cover retaining bolts, then remove the covers.

9. Remove the injector fuel rail assembly.

10. Remove the lower intake manifold and the exhaust manifold(s). For details, please refer to the procedure located earlier in this section.

11. Loosen the rocker arm fulcrum attaching bolts enough to allow rocker arm to be lifted off the pushrod and rotate to one side. Remove the pushrods. Identify and label the position of each pushrod. Pushrods should be installed in their original position during assembly.

### ▶ You must use new cylinder head retaining bolts and gaskets when replacing or re-installing the cylinder head!

12. Remove the cylinder head attaching bolts and discard. Do NOT reuse the old bolts.

13. Remove the cylinder head(s).

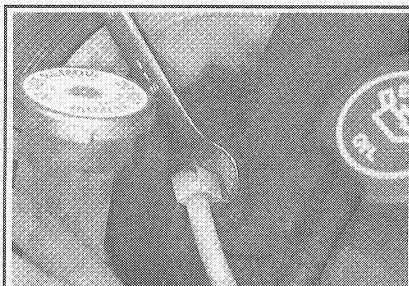
14. Remove and discard old cylinder head gasket(s).

### To install:

15. Lightly oil all bolt threads before installation.

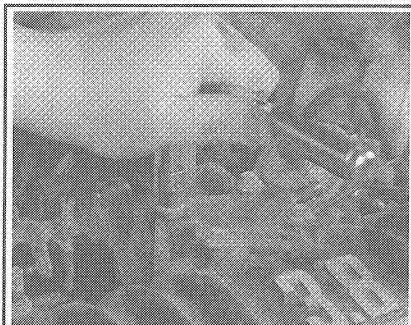
16. Clean cylinder head, intake manifold, valve rocker arm cover, and cylinder head gasket contact surfaces. If cylinder head was removed for a cylinder head gasket replacement, check flatness of cylinder head and block gasket surfaces.

17. Position the new head gasket(s) onto cylinder block using dowels for alignment. Position cylinder head(s) onto block.



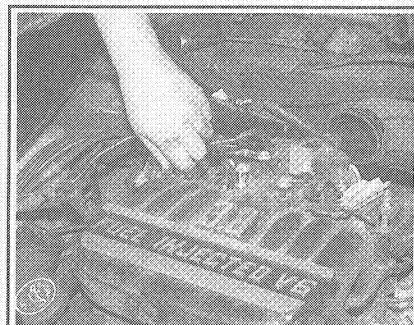
93143P38

**Fig. 92** If you are removing the head to replace the head gasket, remove the pressure and return lines for power steering and leave the pump attached



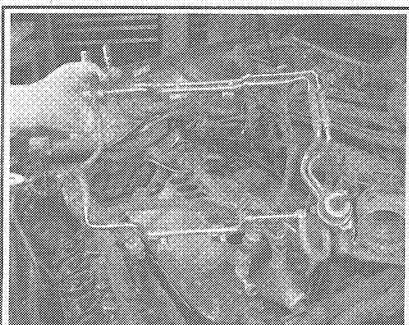
93143P34

**Fig. 93** Loosening the 4 center bolts (long) holding the intake manifold in place



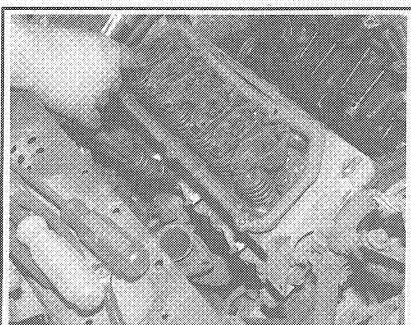
93143P32

**Fig. 94** Removing the studs on the outer flanges of the upper intake manifold



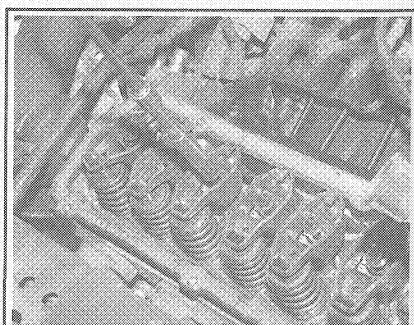
93143P83

**Fig. 95** This fuel rail comes off in one piece, but has 2 different spots with flex hoses



93143P74

**Fig. 96** Removing the lower mounted head bolts. Notice the exhaust manifold has been removed



93143P79

**Fig. 97** Removing the fulcrum to allow clearance to the head bolts