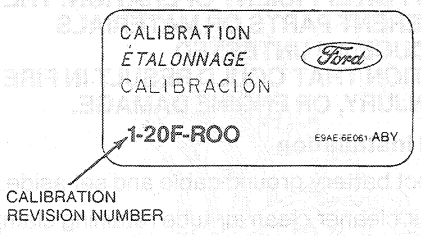
DESCRIPTION AND OPERATION (Continued)

Emission Calibration Label

The emission calibration number label is located on the LH side door or LH door post pillar. It identifies the engine calibration number, the engine code number and revision level. These numbers are used to determine if parts are unique to specific engines.

NOTE: It is imperative that the engine codes and the calibration number be used when ordering parts or making inquiries about the engine.



Induction System

The fuel/air mixture needed for burning in the cylinders is provided by sequential multiport fuel injection (SFI). Refer to Section 03-04A for SFI description and operation.

Fuel is supplied from the vehicle fuel tank by a high pressure electric fuel pump mounted in the fuel tank. The fuel is filtered and sent to the fuel injectors. A regulator on the fuel rail controls the fuel delivery pressure up to 269 kPa (39 psi). Excess fuel supplied by the pump, but not needed by the engine, is returned to the vehicle fuel tank by a fuel return line.

This fuel induction system is mounted on an aluminum intake manifold (9424) which in turn is bolted to cast iron cylinder heads.

Crankshaft and Camshaft

The crankshaft is supported on the bottom of the cylinder block by four steel-backed, over-plated copper-lead main bearings. To provide smooth engine operation, the piston crankpins are positioned to provide a power impulse every 120 degrees of crankshaft rotation. This spacing provides smoothness of operation and quietness. Two sprockets and a timing chain connect the crankshaft with the camshaft and provide a 2:1 drive ratio.

The camshaft is installed in the block and is supported on four bearing inserts. Thrust loads and end play are limited by a thrust plate installed on the front of the camshaft. The distributor or camshaft sensor (FF only) drive gear is located at the rear of the camshaft. The distributor or camshaft sensor (FF only) drive gear is part of the camshaft casting.

Valve Train

Hydraulic tappets, providing automatic lash adjustment, ride on camshaft lobes and transfer up and down motion to the rocker arms through push rods. The rocker arms are pedestal-mounted and pivot on fulcrums bolted to the cylinder head. The valves are arranged alternately, intake/exhaust.

Lubrication System

The engine lubrication system is of the force-feed type in which oil is supplied under full pressure to the crankshaft and connecting rod bearings, hydraulic tappets and camshaft bearings. From the tappets, a controlled volume of oil is supplied to the rocker arms through the hollow push rods. All other moving parts are lubricated by gravity flow or splash. The rotary spur-type pump, which develops the oil pressure, is bolted to the No. 4 main bearing cap. The spur driven gear is rotated by the distributor shaft through an intermediate shaft. A full-flow oil filter is externally mounted on the engine block and normally all engine oil passes through the filter element. However, if the element should become restricted, a spring-loaded bypass valve will open and allow an uninterrupted flow of oil to the engine's moving parts.

Moulded Silicone Rubber Gaskets

Many of the component mating surfaces which were formerly sealed with a cork gasket are being sealed with a moulded rubber silicone gasket. This gasket is used in the manufacture of the 3.0L engine and will be specified for service procedures.

Accessory Drive Belt System

Accessories mounted on the front of the engine are belt-driven by the crankshaft. A single 6k rib Poly-Vee drive belt is routed over the water pump, power steering pump, A/C compressor (if so equipped), generator, automatic tensioning pulley and the crankshaft pulley. For service refer to Section 03-05.

IN-VEHICLE SERVICE

Crankshaft Rear Oil Seal

A one-piece crankshaft rear main oil seal is used.

Tools Required:

- Jet Plug Remover T77L-9533-B
- Crankshaft Rear Seal Installer T88L-6701-A

Removal

CAUTION: Use care to avoid scratching or damaging the oil seal surface.