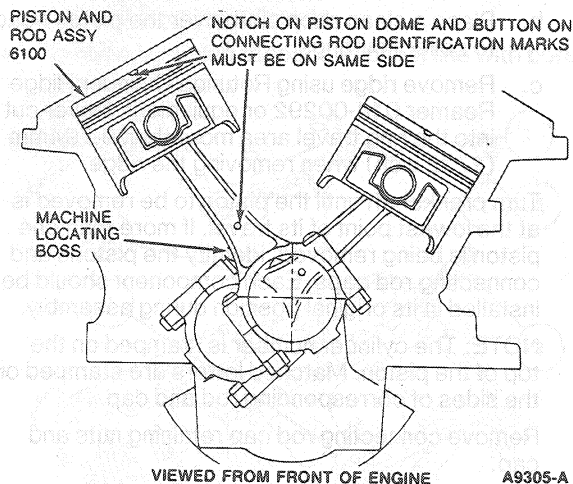


## IN-VEHICLE SERVICE (Continued)

3. Install piston using Rotunda Piston Ring Compressor 014-00290 or equivalent.

Ensure notch in piston dome faces the front of engine and machine locating boss is facing RH side of engine.



**CAUTION:** As piston is tapped into bore with a wooden hammer handle, guide connecting rod onto crankshaft journal to avoid damage to bearing surfaces.

**NOTE:** Connecting rod and cap are not identified to cylinder position.

**NOTE:** Install the pistons in the same cylinders from which they were removed or to which they were fitted. The connecting rod and bearing caps are identified with matching correlation letters. Letters on the connecting rod and bearing cap must be on the same side when installed in the cylinder bore. If a connecting rod is transposed from one block or cylinder to another, new bearings should be fitted.

4. Check connecting rod bearing clearance. Refer to Section 03-00.
5. Lubricate bearing surfaces with Engine Assembly Lubricant D9AZ-19579-D (ESR-M99C80-A) or equivalent, heavy engine oil.
6. Ensure connecting rod is seated on crankshaft journal. Install connecting rod cap. Tighten the cap retaining nuts to 35 N·m (26 lb-ft).
7. If necessary, check connecting rod side clearance as outlined. Refer to Section 03-00.
8. Install oil pump and intermediate shaft assembly. Tighten retaining bolts to 48 N·m (35 lb-ft).
9. Install oil pan as outlined in this section.
10. Install cylinder heads as outlined in this section.
11. Install intake manifold as outlined in this section.

12. Install rocker arm covers and throttle body as outlined in this section.
13. Fill crankcase with the correct viscosity and amount of engine oil.
14. Fill cooling system with specified coolant.
15. Start engine and check for oil, exhaust and coolant leaks.
16. Check, and if necessary, adjust transaxle throttle linkage and speed control.

## Oil Pan and Oil Pump

## Removal

1. Disconnect battery ground cable and set aside.
2. Remove oil level dipstick.
3. Raise vehicle on hoist. Refer to Section 00-02.
4. If equipped with a low oil level sensor, remove retainer clip at sensor. Remove electrical connector from sensor.
5. Drain crankcase.
6. Remove starter motor and brace.
7. Disconnect heated oxygen sensor (HO2S) (9F472).
8. Remove catalyst and pipe assembly.
9. Remove lower engine / flywheel dust cover from converter housing.
10. Remove oil pan retaining bolts. Remove oil pan making sure internal pan baffle does not snag oil pump pickup tube and screen.
 

**NOTE:** If replacing oil pump make sure to remove intermediate drive shaft from pump.
11. Remove oil pump.

## Installation

1. Clean the gasket surfaces on the cylinder block and oil pan.
2. If replacing oil pump, insert oil pump intermediate shaft assembly into hex drive hole in oil pump assembly until retainer "clicks" into place.
3. Install oil pump assembly with intermediate shaft through intermediate shaft hole in rear main bearing cap. Position pump over locating pins.
4. Install retaining bolt and tighten to 40-55 N·m (30-40 lb-ft).
 

**NOTE:** When using silicone rubber sealer, assembly should occur within five minutes after sealer application. After this time, the sealer may start to set-up, and its sealing effectiveness may be reduced.