

## IN-VEHICLE SERVICE (Continued)

8. On unleaded gasoline only, coat distributor gear teeth with Engine Assembly Lubricant D9AZ-19579-D (ESR-M99C80-A) or equivalent. Install distributor and align to premarked location on cylinder block and rotor position. Install retaining bolt and washer and hand tighten.
9. Apply engine oil XO-10W30-QSP (ESE-M2C153-E) or equivalent to cylinder No. 3 intake valve push rod and rocker arm. Install push rod. Move rocker arm into position with push rod and snug retaining bolt. Rotate crankshaft to position camshaft lobe straight down and away from valve lifter. Tighten retaining bolt to 7-15 N·m (5-11 lb-ft) to seat rocker arm fulcrum into cylinder head. Final tighten bolt to 26-38 N·m (19-28 lb-ft) in any position.  
NOTE: Fulcrum must be fully seated into cylinder head and push rod must be fully seated in rocker arm and lifter sockets prior to final tightening.
10. Install rocker arm covers as outlined in this section.
11. Install fuel charging wiring to each injector. Secure with stand offs to inboard rocker arm cover studs.
12. Install ignition coil to rear of LH cylinder head. Tighten retaining bolts to 40-55 N·m (29-41 lb-ft).
13. Install distributor cap and ignition wires (unleaded gasoline only). Install wire harness stand offs to rocker arm cover studs and connect wires to spark plugs and ignition coil.
14. Install throttle body assembly and new intake manifold upper gasket as outlined.
15. Install EGR valve to exhaust manifold tube from exhaust manifold (9430) to EGR valve. Tighten retaining nuts to 35-65 N·m (26-48 lb-ft).
16. Install fuel lines. Refer to Section 03-04A.
17. Install fuel line safety clips.
18. Install upper radiator hose and heater hoses. Tighten retaining clamps securely.
19. Connect vacuum lines to premarked locations.
20. Connect electrical connections to IAT and distributor (unleaded gasoline only), CSI and camshaft sensor (FF only). Connect electrical connections to IAC, TP, ECT, PFE or DPFE sensor, ignition coil and coolant temperature sending unit.
21. Fill and bleed cooling system with specified coolant and proper mixture.

**CAUTION: Engine coolant is corrosive to all engine bearing material. Replacing oil after removal of a coolant carrying component prevents damage.**

22. Fill crankcase with correct viscosity and amount of engine oil.
23. Install air cleaner outlet tube to throttle body and engine air cleaner. Tighten retaining clamps to 2.7-5.4 N·m (24-48 lb-in).
24. Install PVC system closure tube to rocker arm cover and air cleaner outlet tube provisions. Install aspirator hose to air cleaner outlet tube.
25. Connect battery ground cable.
26. Start engine and check for coolant, oil, fuel and vacuum leaks.  
NOTE: FF base initial engine timing is not adjustable.
27. Verify and if necessary, correct base initial engine timing to 10 degrees BTDC. Refer to the Powertrain Control/Emissions Diagnosis Manual<sup>2</sup>. Tighten distributor retaining bolt to 24 N·m (18 lb-ft).
28. Install idle air control valve snowshield.

## Thermostat

## Removal

1. Drain cooling system.
2. Remove upper radiator hose from thermostat housing.
3. Remove three retaining bolts.
4. Remove housing and thermostat as an assembly.  
**CAUTION: Aluminum gouges easily which forms leak paths. Use care when scraping.**
5. Discard gasket. Rotate thermostat counterclockwise and remove from housing. Clean sealing surfaces with gasket scraper.

## Installation

1. Sealing surfaces must be totally free of gasket material.
2. Install thermostat into housing with valve facing up. Rotate thermostat clockwise to lock into housing. Note location of jiggle valve in relation to housing (up).
3. Position gasket onto housing using bolts as a holding device. Install assembly and tighten bolts to 10-14 N·m (8-10 lb-ft).
4. Install upper radiator hose. Tighten clamp securely.
5. Fill and bleed cooling system with proper amount and mixture.

<sup>2</sup> Can be purchased as a separate item.