

## INTAKE MANIFOLD INSPECTION/REPLACEMENT

### AFFECTED VEHICLES:

1996-1998 CROWN VICTORIA TAXI VEHICLES WITH 4.6L SOHC ENGINES BUILT AT THE ST. THOMAS ASSEMBLY PLANT FROM AUGUST 8, 1995 THROUGH NOVEMBER 22, 1997.

1996-1998 TOWN CAR LIMO PREP AND LIVERY PACKAGE VEHICLES WITH 4.6L SOHC ENGINES BUILT AT THE WIXOM ASSEMBLY PLANT FROM JOB #1, 1996 THROUGH NOVEMBER 22, 1997.

1996-1997 THUNDERBIRD AND COUGAR VEHICLES WITH 4.6L SOHC ENGINES BUILT AT THE LORAIN ASSEMBLY PLANT FROM JULY 31, 1995 THROUGH JUNE 24, 1997.

1996-1997 MUSTANG VEHICLES WITH 4.6L SOHC ENGINES BUILT AT THE DEARBORN ASSEMBLY PLANT FROM AUGUST 1, 1995 THROUGH JUNE 24, 1997.

### INSPECTION

Inspect intake manifold in area shown in Figure 1 for coolant seepage. If seepage is **present**, the intake manifold **must be replaced**. If seepage is **not present**, no service action is required.

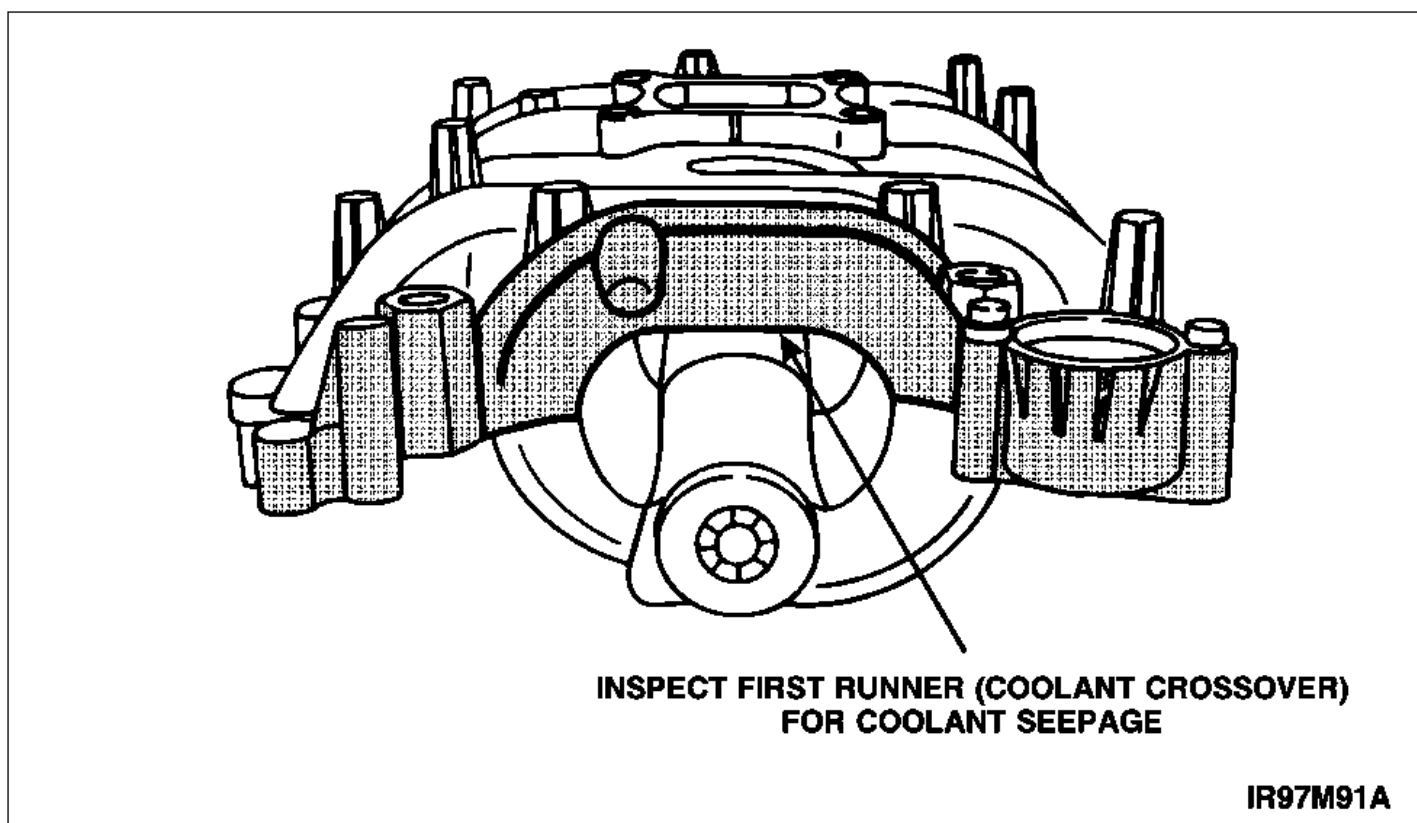


Figure 1

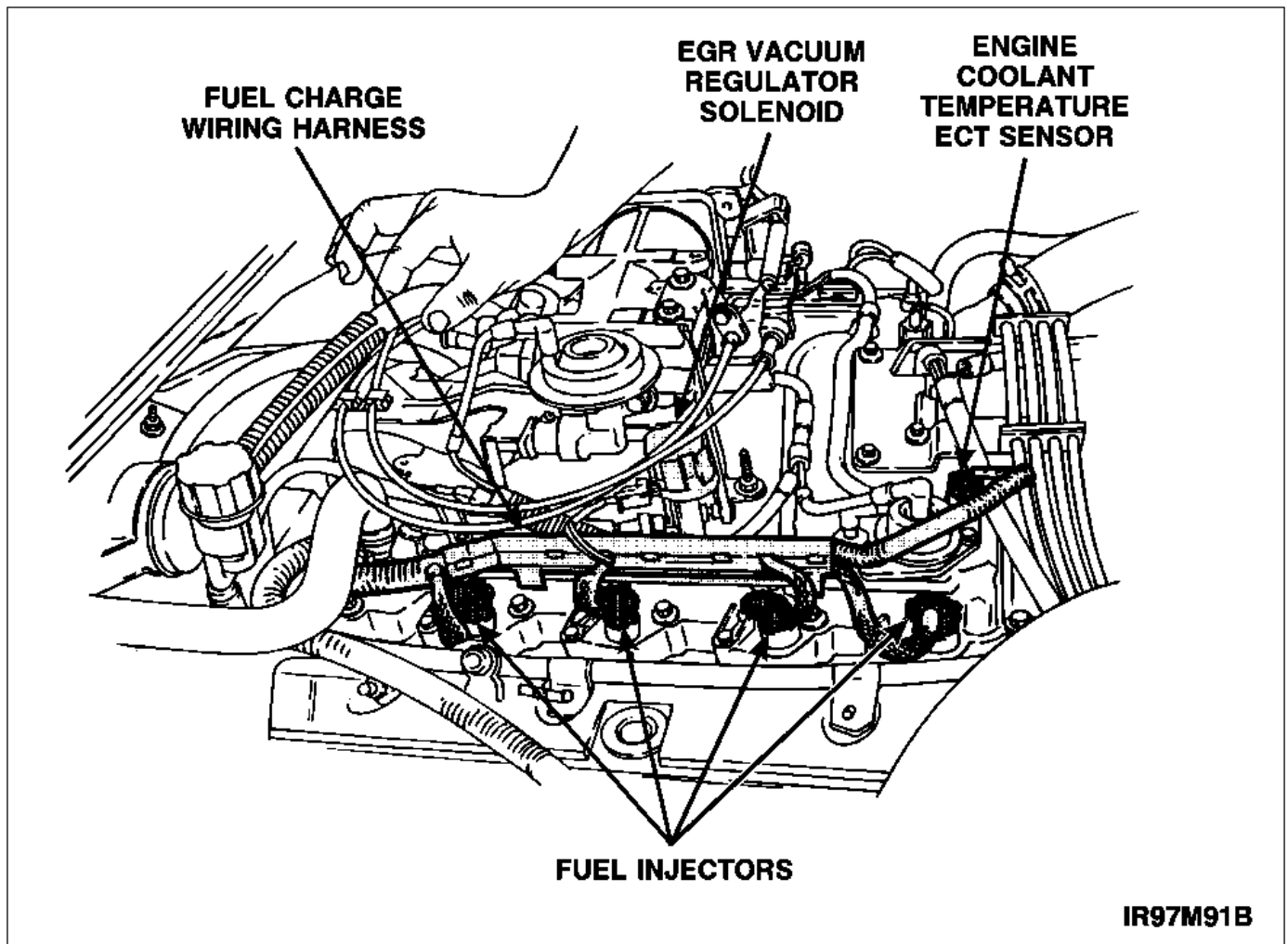
### INTAKE MANIFOLD REPLACEMENT

#### NOTE:

THE FIGURES ILLUSTRATED IN THE FOLLOWING TECHNICAL INSTRUCTIONS REPRESENT A 1997 CROWN VICTORIA EQUIPPED WITH A 4.6L SOHC ENGINE. THE 1996 AND 1998 MODEL YEAR VEHICLES ARE SIMILAR. REFER TO THE APPROPRIATE MODEL YEAR SERVICE MANUAL FOR ADDITIONAL DETAILS.

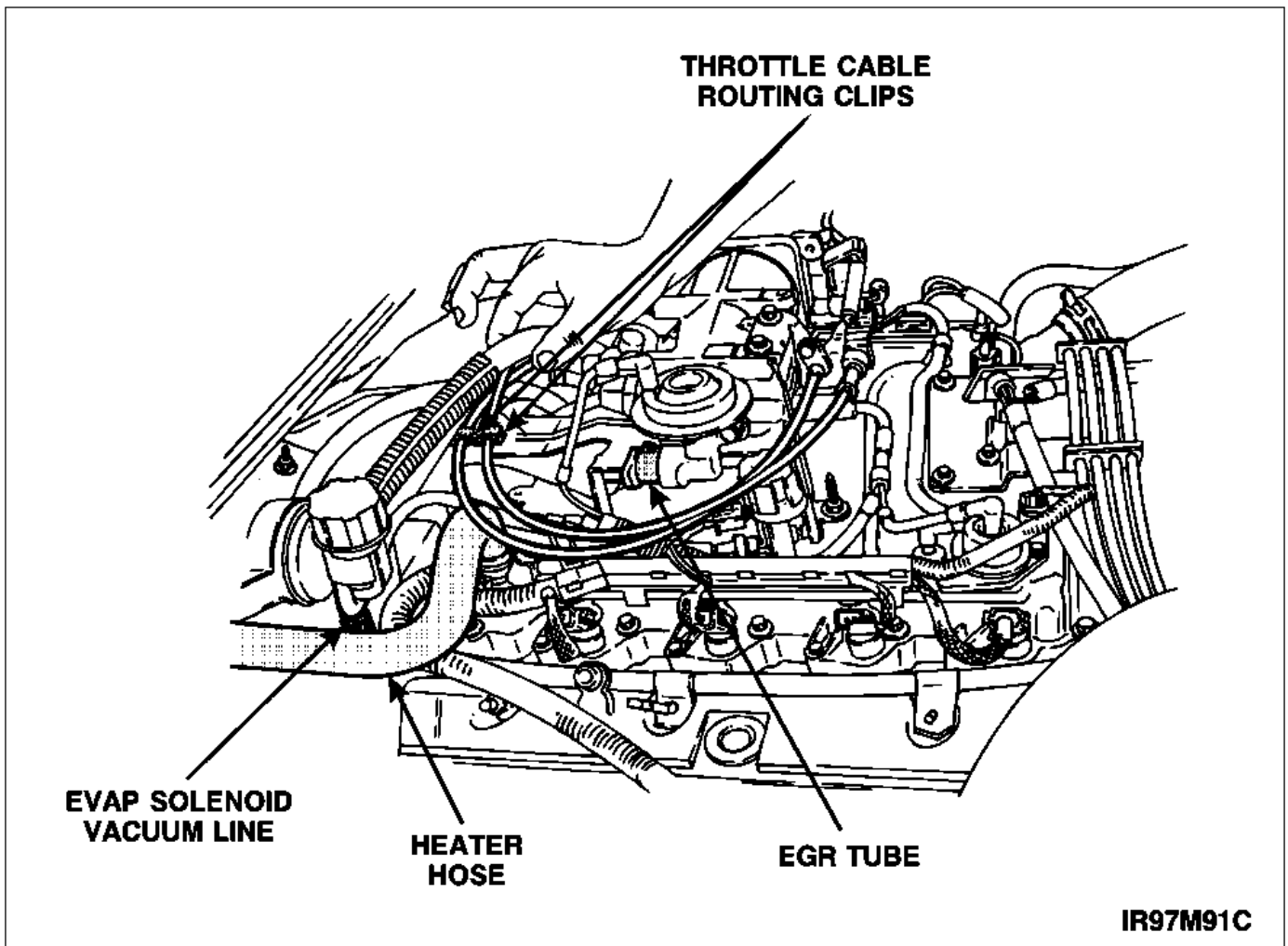
## REMOVAL

1. Install memory saver, then disconnect battery ground cable.
2. Remove cover from throttle body.
3. Drain cooling system.
4. Relieve fuel system pressure as follows:
  - Connect Multiport Fuel Injection (MFI) Fuel Pressure Gauge T80L-9974-B to fuel pressure relief valve on the fuel supply manifold.
  - Open manual valve on gauge to relieve fuel system pressure.
  - Remove gauge from relief valve.
5. Remove air cleaner outlet tube.
6. If equipped with ignition wires, disconnect the ignition wires from spark plugs and routing clips. If equipped with a coil-on-plug system, disconnect and remove individual coils from each cylinder.
7. Remove PCV valve and hose from engine.
8. Disconnect fuel charge wiring harness from right side fuel injectors, Engine Coolant Temperature (ECT) sender and EGR Vacuum Regulator (EVR) solenoid. See Figure 2. Position right side fuel charge wiring harness away from intake manifold.



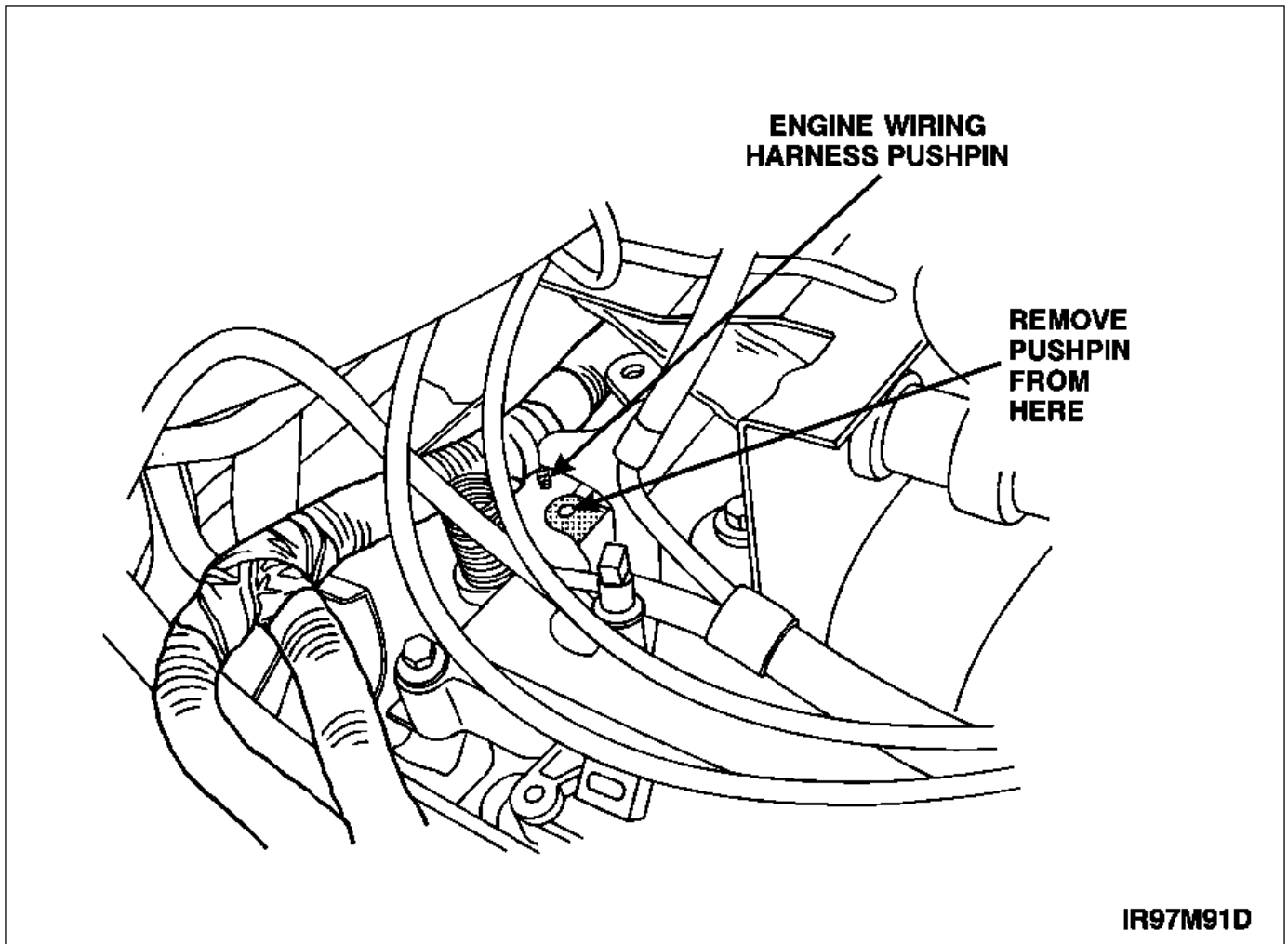
**Figure 2**

9. Disconnect heater hose from right rear corner of intake manifold. See to Figure 3.
10. Remove throttle/speed control cable routing bracket. See to Figure 3.
11. Disconnect EGR tube from EGR valve. See to Figure 3.
12. Disconnect vacuum line from EVAP solenoid. See Figure 3.



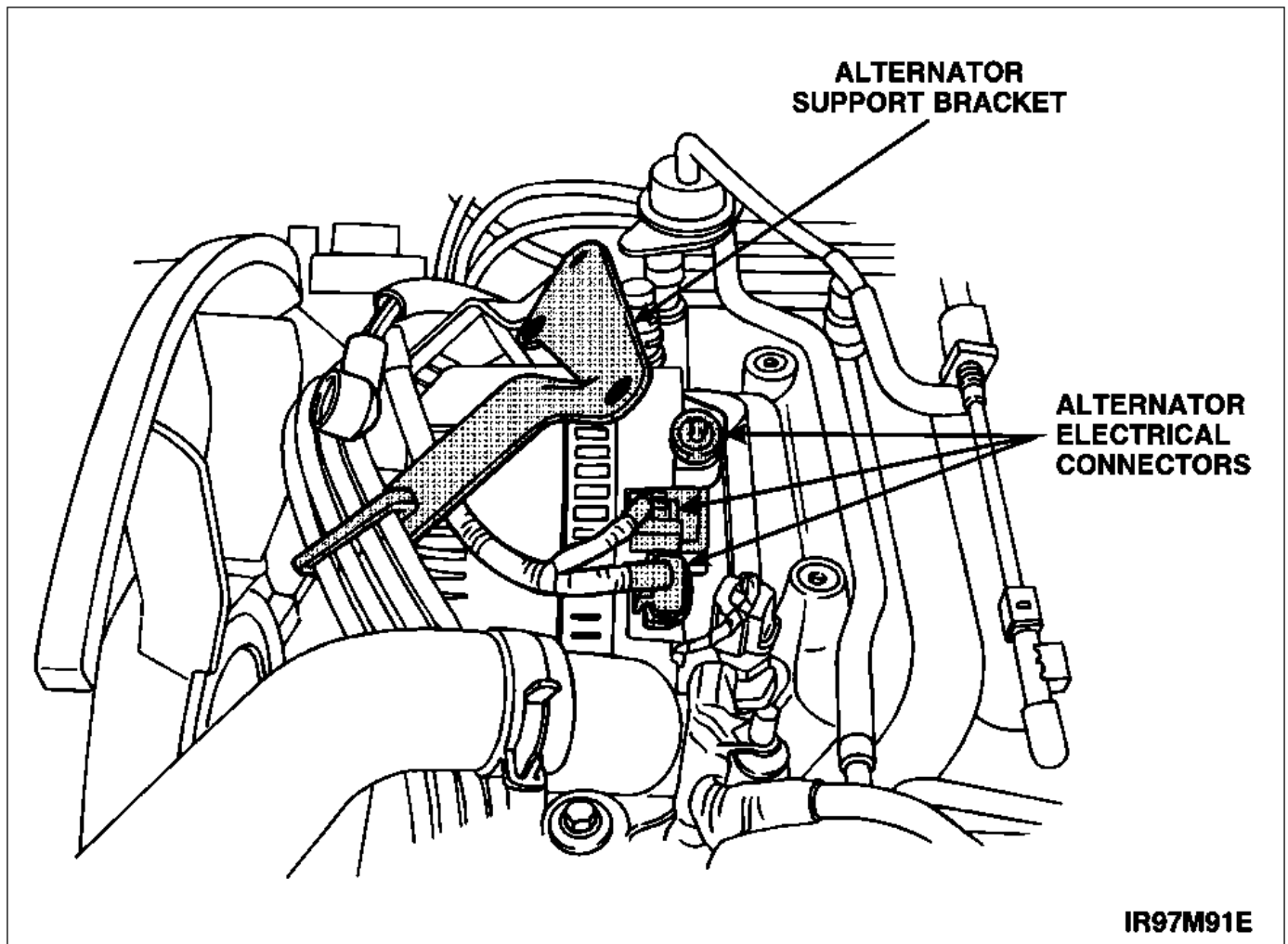
*Figure 3*

13. Disconnect two (2) vacuum lines from top of throttle body adapter.
14. Disconnect main engine wiring harness pushpin from rear of intake manifold. See Figure 4.



*Figure 4*

15. Remove drivebelt from alternator.
16. Remove retainers from alternator upper support bracket, then slightly raise bracket. Refer to Figure 5.
17. Disconnect all alternator electrical connectors. See Figure 5.



**Figure 5**

18. Position alternator upper support bracket and ignition wires (if equipped) away from intake manifold.
19. Detach alternator wiring harness from intake manifold, then position wiring harness aside.
20. Remove alternator from vehicle.
21. Disconnect radiator hose from thermostat housing.
22. Disconnect throttle and speed control cables from throttle body. See to Figure 6. Position cable away from intake manifold.
23. Disconnect fuel charge wiring harness from left side fuel injectors, Engine Coolant Temperature (ECT) sensor and retaining stud. See to Figure 6.
24. Disconnect fuel lines at spring clips. See Figure 6.

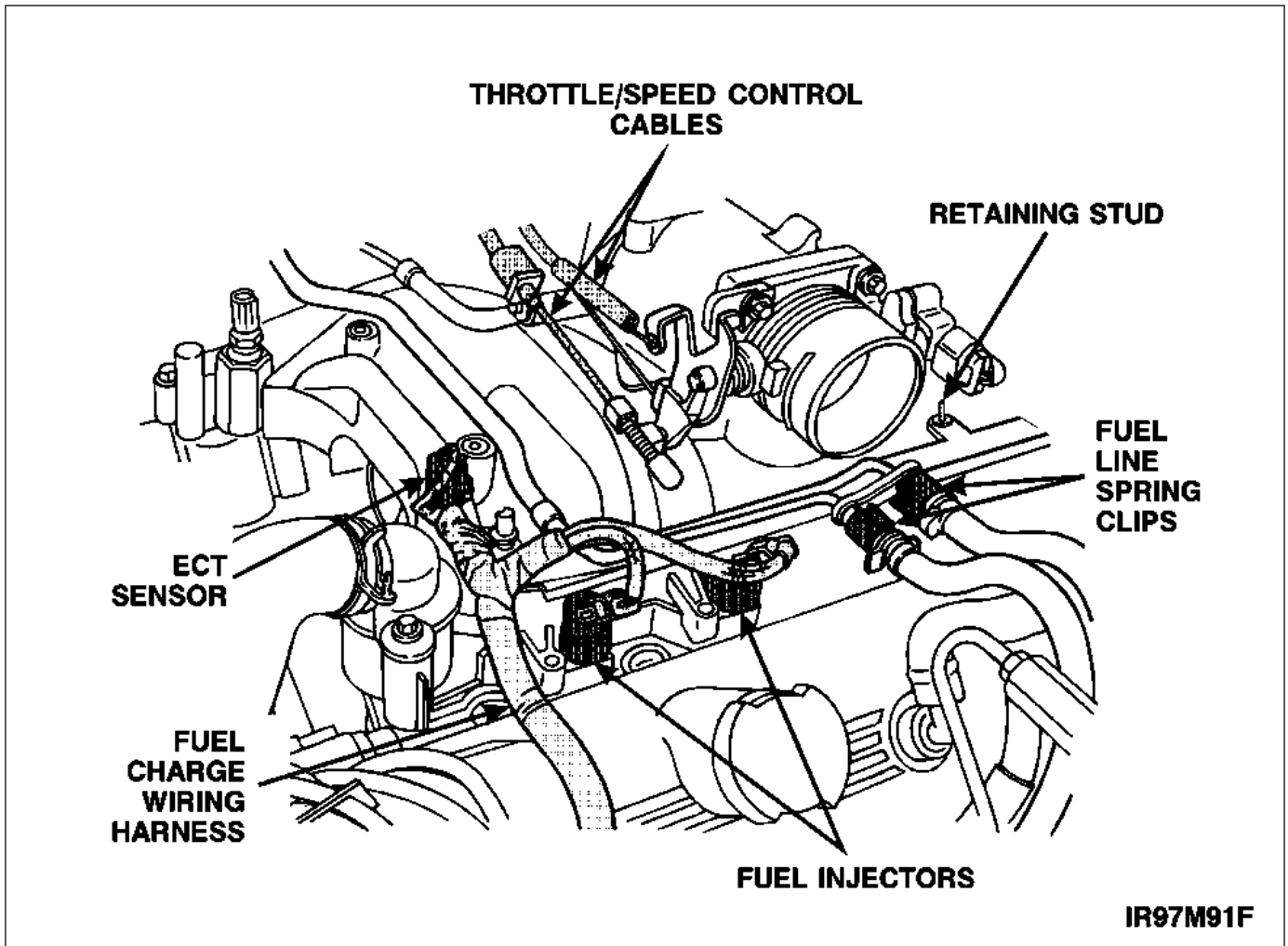
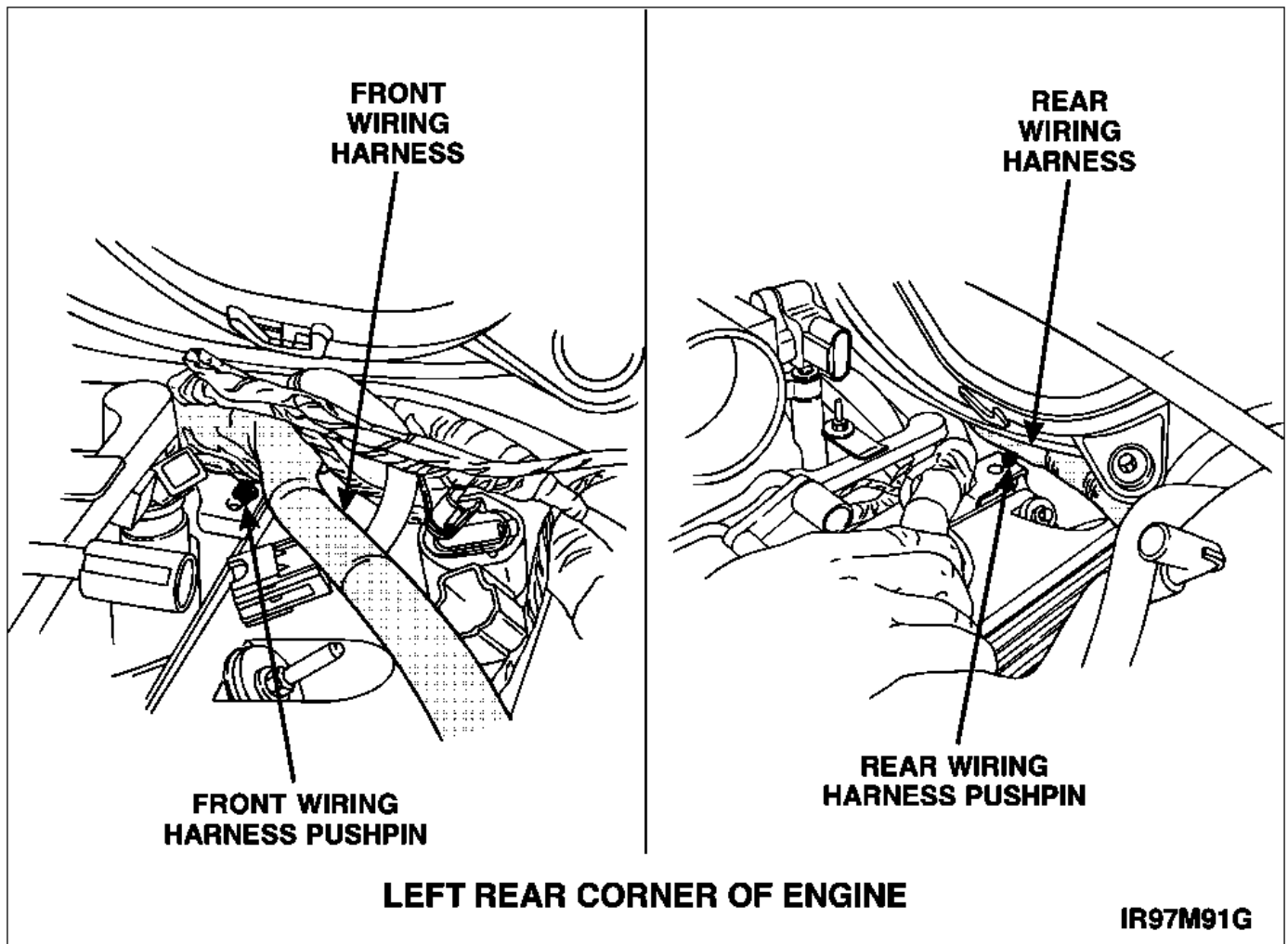


Figure 6

25. Detach two (2) wiring harnesses from clip on left rear of intake manifold. See Figure 7. Push both harnesses toward bulkhead clearing intake manifold.



*Figure 7*

26. Disconnect Throttle Position (TP) sensor electrical connector.
27. Disconnect Idle Air Control (IAC) sensor electrical connector.
28. Unclip fuel charge wiring harness from studs on left side valve cover. Position wiring harness away from intake manifold. See Figure 8.

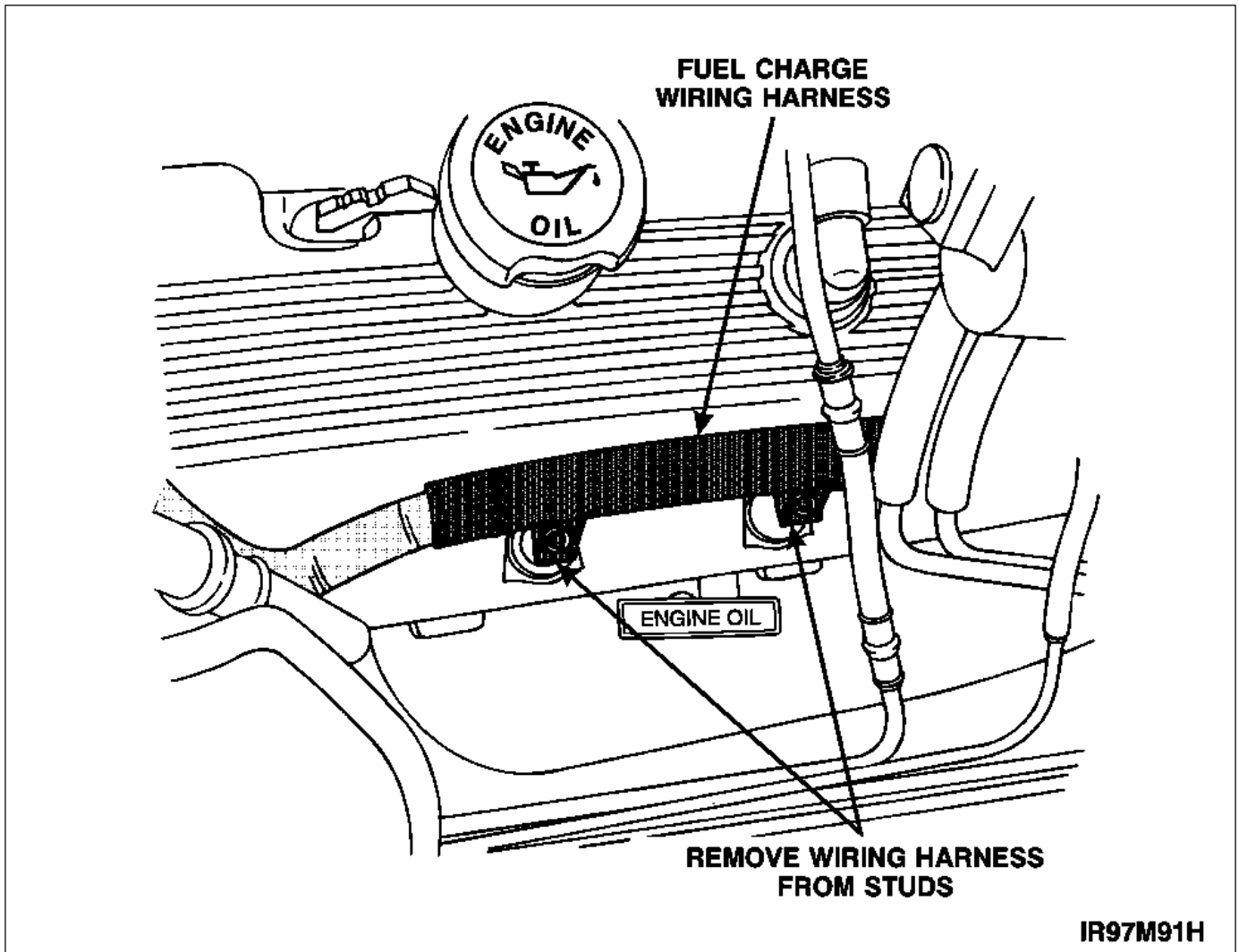
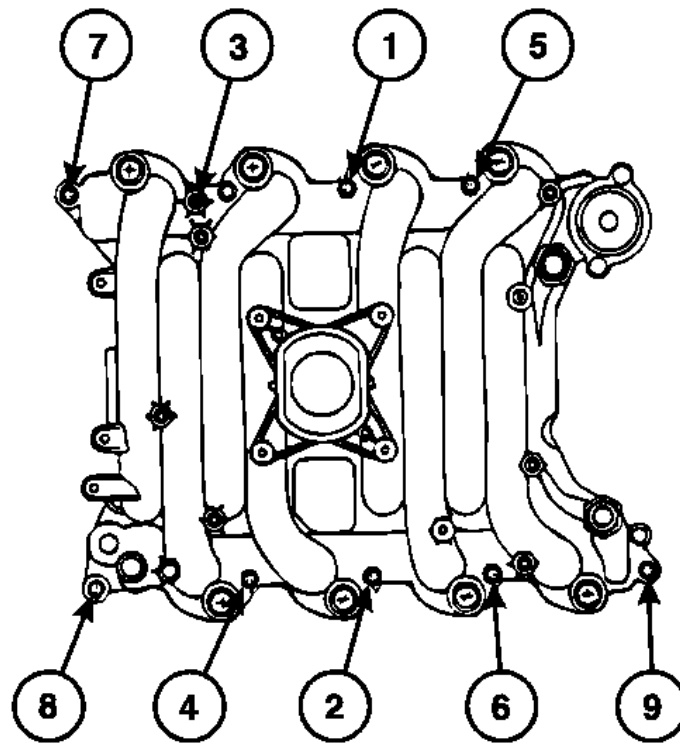


Figure 8

29. Remove intake manifold retaining bolts.
30. With an assistant's help, remove intake manifold assembly.

## INSTALLATION

1. Transfer all necessary components to new intake manifold.
2. Clean intake manifold to cylinder head gasket surface.
3. Install **new** intake manifold gaskets.
4. With an assistant's help, install intake manifold assembly. Tighten screws in sequence shown in Figure 9, to 20-30 Nm (15-22 lb/ft). Hand tighten bolt No. 7 prior to final tightening.



IR97M91I

**Figure 9**

5. Clip fuel charge wiring harness to studs on left side valve cover.
6. Connect Idle Air Control (IAC) motor electrical connector.
7. Connect Throttle Position (TP) sensor electrical connector.
8. Attach two (2) wiring harnesses to clip on left rear of intake manifold.
9. Connect fuel lines to spring clips.
10. Connect fuel charge wiring harness to left side fuel injectors, Engine Coolant Temperature (ECT) sensor and retaining stud.
11. Connect throttle and speed control cables to throttle body.
12. Connect radiator hose to thermostat housing.
13. Install alternator. Tighten bolts to 20-30 Nm (15-22 lb/ft).
14. Position alternator upper support bracket close to installed position, then connect all alternator electrical connectors.
15. Install alternator upper support bracket. Tighten bolts to 8-12 Nm (71-106 lb/in).
16. Attach alternator wiring harness to intake manifold.
17. Install drivebelt on alternator.
18. Connect main engine wiring harness pushpin to rear of intake manifold.

19. Connect two (2) vacuum lines to top of throttle body adapter.
  20. Connect vacuum line to EVAP solenoid.
  21. Connect EGR tube to EGR valve. Tighten nut to 35-45 Nm (26-33 lb/ft).
  22. Clip throttle/speed control cables on routing bracket.
  23. Clip fuel charge wiring harness to fuel supply manifold, then connect right side fuel injectors, Engine Coolant Temperature (ECT) sender and EGR Vacuum Regulator (EVR) solenoid.
  24. Install PCV valve and hose.
  25. If equipped with ignition wires, connect the ignition wires to spark plugs and routing clips. If equipped with a coil-on-plug system, install and connect individual coils to each cylinder.
  26. Install air cleaner outlet tube.
  27. Connect battery negative cable, then remove memory saver.
  28. Fill cooling system as follows:
    - Fill coolant recovery reservoir with 50/50 mixture of antifreeze and water until the mixture flows out of the disconnected heater hose.
    - Connect heater hose to right rear corner of intake manifold.
    - Fill coolant recovery reservoir to below the filler neck seat.
    - Place heater temperature selector in Maximum heat position.
    - Install pressure relief cap.
    - Start and run engine until normal operating temperature (thermostat opens) is reached.
    - Stop engine and allow to cool.
    - Refill reservoir to the COLD FULL LEVEL.
  29. Check engine for fuel and cooling system leaks.
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