

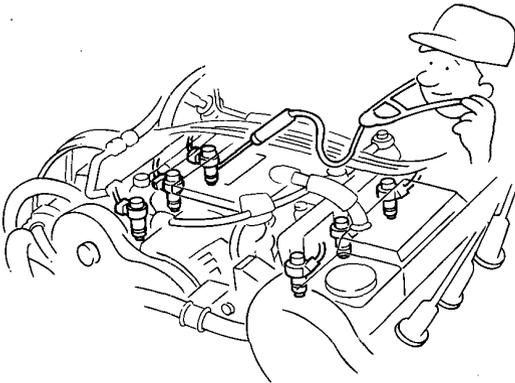
# Fuel Injectors

## Test

**NOTE:** Check the following items before testing: idle speed, ignition timing and idle CO %.

### If the engine will run:

1. With the engine idling, disconnect each injector connector individually and inspect the change in the idling speed.
  - If the idle speed drop is almost the same for each cylinder, the injectors are normal.
  - If the idle speed or quality remains the same when you disconnect a particular injector, replace the injector and retest.
2. Check the clicking sound of each injector by means of a stethoscope when the engine is idling.



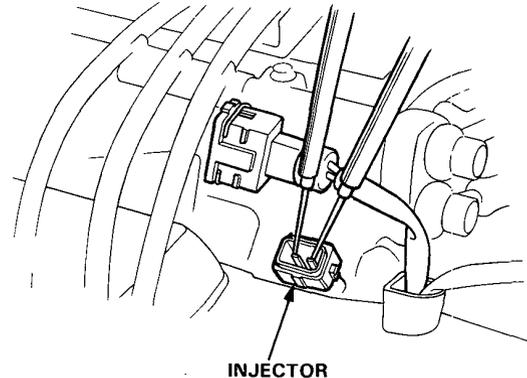
- If any injector fails to make the typical clicking sound, check the sound again after replacing the injector.
- If clicking sound is still absent, check the following:
  - Whether there is any short-circuiting, wire breakage or poor connection in the YEL/BLK wire between the main relay and the resistor.
  - Whether the resistor is open or corroded (page 6-80).
  - Whether there is any short-circuiting, wire breakage or poor connection in the RED/BLK wire between the resistor and the injector.
  - Whether there is any short-circuiting, wire breakage or poor connection in the wire between the injector and the ECU.

If all is OK, check the ECU (page 6-25).

### If the engine cannot be started:

1. Remove the connector of the injector, and measure the resistance between the 2 terminals of the injector.

**Resistance should be: 1.5—2.5  $\Omega$**



- If the resistance is not as specified, replace the injector.
- If the resistance is as specified, check the fuel Pressure (page 6-77).
- If the fuel pressure is as specified, check the following:
  - Whether there is any short-circuiting, wire breakage or poor connection in the YEL/BLK wire between the main relay and the resistor.
  - Whether the resistor is open or corroded (page 6-79).
  - Whether there is any short-circuiting, wire breakage, or poor connection in the RED/BLK wire between the resistor and the injector.
  - Whether there is any short-circuiting, wire breakage or poor connection in the wire between the injector and the ECU.

If all is OK, check the ECU (page 6-25).



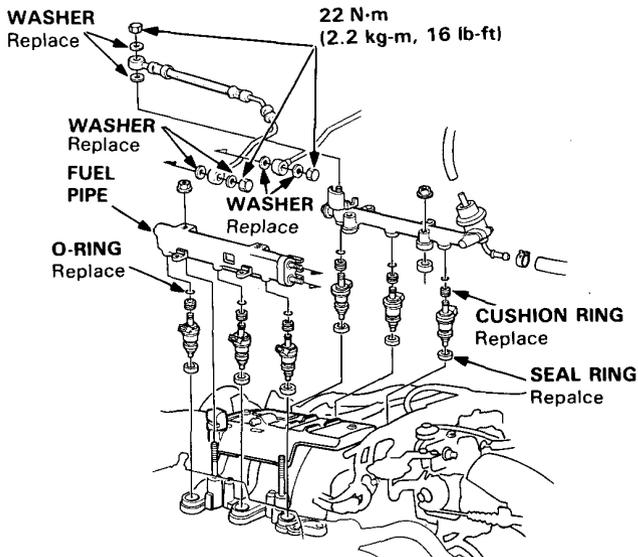
## Replacement

**WARNING** Do not smoke during the work. Keep open flames away from your work area.

1. Disconnect the battery negative cable from the battery negative terminal.
2. Relieve fuel pressure (page 6-77).
3. Disconnect the connectors of the injectors.
4. Disconnect the vacuum hose and fuel return hose from the pressure regulator.

NOTE: Place a rag or shop towel over the hoses before disconnecting them.

5. Disconnect the fuel hose from the fuel pipe.
6. Loosen the retainer nuts on the fuel pipe and harness holder.
7. Disconnect the fuel pipe.
8. Remove the injectors from the intake manifold.

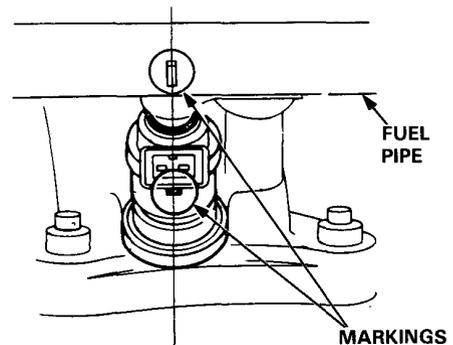


9. Slide new cushion rings onto the injectors.
10. Coat new O-rings with clean engine oil and put them on the injectors.

11. Insert the injectors into the fuel pipe first.
12. Coat new seal rings with clean engine oil and press them into the intake manifold.
13. Install the injectors and fuel pipe assembly in the manifold.

**CAUTION:** To prevent damage to the O-ring, install the injectors in the fuel pipe first, then install them in the intake manifold.

14. Align the center line on the connector with the mark on the fuel pipe.



15. Install and tighten the retainer nuts.
16. Connect the vacuum hose and fuel return hose to the pressure regulator.
17. Install the connectors on the injectors.
18. Turn the ignition switch ON but do not operate the starter. After the fuel pump runs for approximately two seconds, the fuel pressure in the fuel line rises. Repeat this two or three times, then check whether there is any fuel leakage.