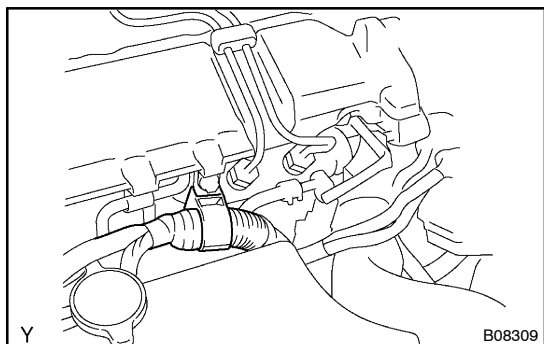


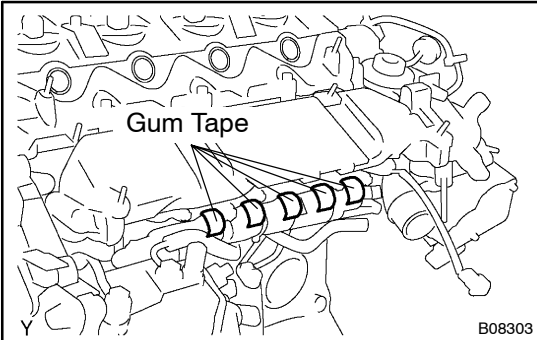
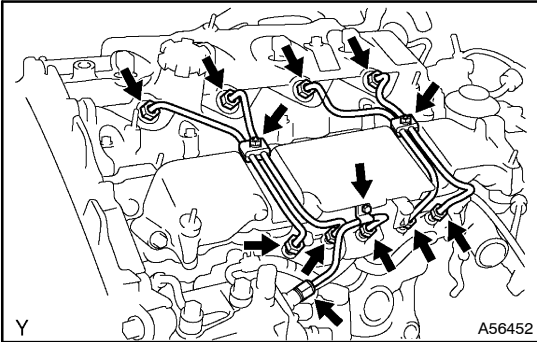
REPLACEMENT

1. DRAIN ENGINE COOLANT (See page 16-19)
2. REMOVE HOOD SUB-ASSY
3. REMOVE FR WIPER ARM RH
(See page 66-9)
4. REMOVE FR WIPER ARM LH
(See page 66-9)
5. REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSY
6. REMOVE WINDSHIELD WIPER MOTOR ASSY
(See page 66-9)
7. REMOVE COWL TOP PANEL SUB-ASSY OUTER
 - (a) Remove the 2 nuts and the relay box.
 - (b) Remove the cowl top panel sub assy outer.
8. REMOVE RADIATOR RESERVE TANK ASSY
9. REMOVE ENGINE COVER SUB-ASSY NO.1
10. REMOVE AIR TUBE NO.1
(See page 13-6)



11. REMOVE INJECTION PIPE SUB-ASSY NO.1

- (a) Remove the wire bracket and slide the engine wire.



- (b) Remove the fuel inlet pipe. (See page 11-31)
- (c) Remove the 2 nuts and 2 upper injection pipe clamps from the intake manifold.
- (d) Using SST, remove the injection pipe from the common rail side.
SST 09023-12900
- (e) Using SST, remove the injection pipe from the injector side.
SST 09023-12700

NOTICE:

- After removing the fuel pipe, affix the gum tape on the common rail for preventing dust from coming into them.
 - After removing the fuel pipe, put a vinyl bag and rubber band for preventing from mixing foreign objects over the injectors inlet.
- (f) Remove the 2 lower injection pipe clamps from the intake manifold.

12. REMOVE INJECTION PIPE SUB-ASSY NO.2

SST 09023-12900, 09023-12700

13. REMOVE INJECTION PIPE SUB-ASSY NO.3

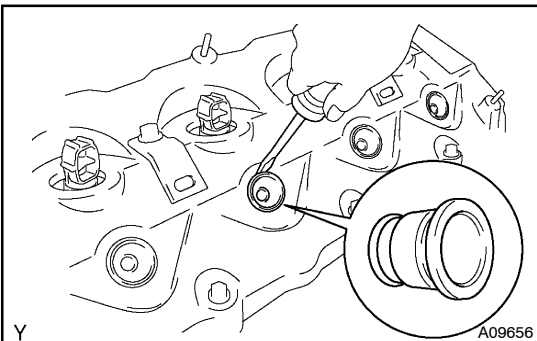
SST 09023-12900, 09023-12700

14. REMOVE INJECTION PIPE SUB-ASSY NO.4

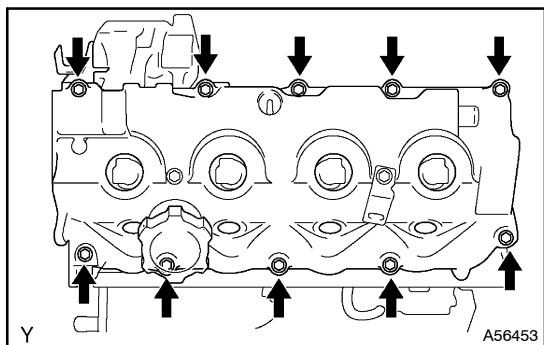
SST 09023-12900, 09023-12700

15. REMOVE TIMING BELT NO.2 COVER

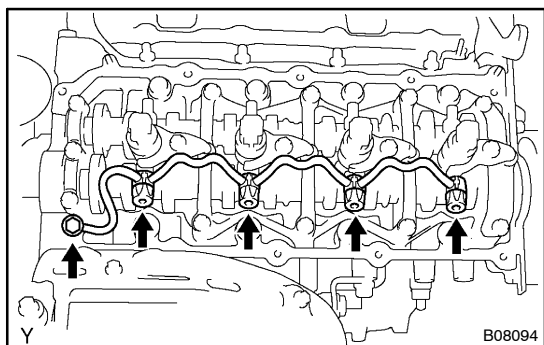
(See page 14-114)

**16. REMOVE CYLINDER HEAD COVER SUB-ASSY**

- (a) Using a screwdriver, pry out the 4 nozzle holder seals.



- (b) Remove the 10 bolts, cylinder head cover and gasket.

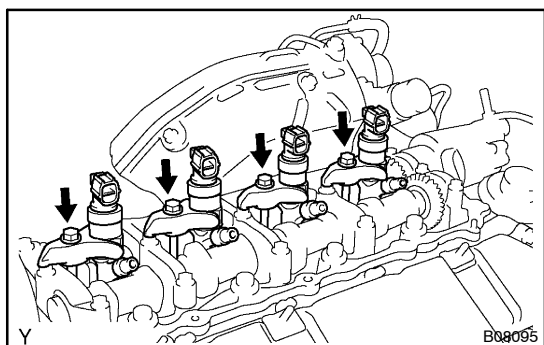


17. REMOVE NOZZLE LEAKAGE PIPE ASSY

- (a) Remove the union bolt, 4 hollow screws, nozzle leakage pipe and 5 gaskets from the cylinder head and injector.

NOTICE:

When removing the return pipe, place the shop rag and the likes under pipe.

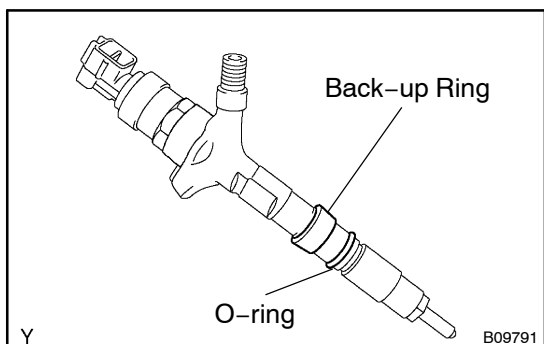


18. REMOVE INJECTOR ASSY

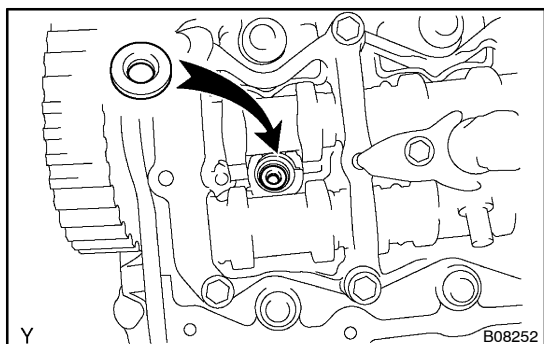
- (a) Remove the 4 bolts, 4 washers and 4 nozzle holder clamps.
(b) Disconnect the 4 injectors from the cylinder head.

HINT:

Arrange the injectors in correct orders.

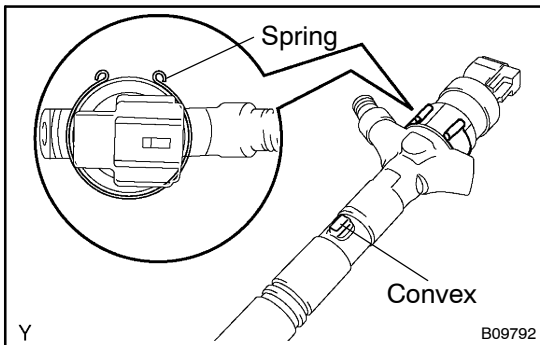


- (c) Remove the O-ring and back-up ring from each injector.
(d) Remove the 4 nozzle seats from the cylinder head.



19. INSTALL INJECTOR ASSY

- (a) Install 4 new nozzle seats to the cylinder head.

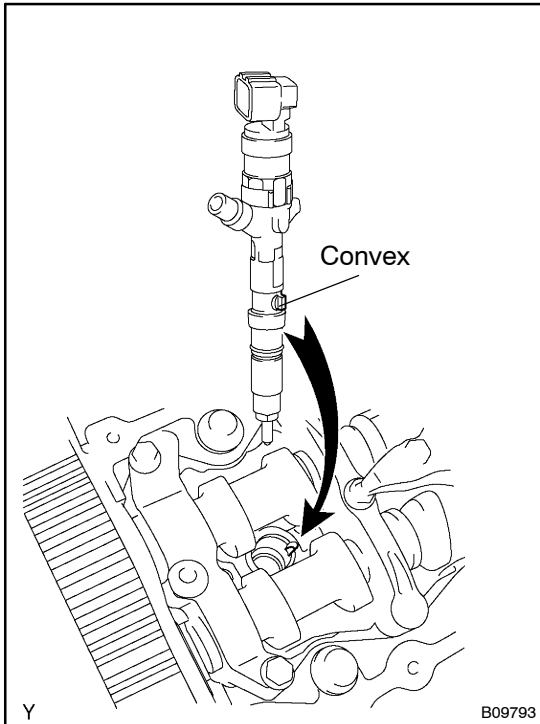


- (b) Set the spring to each injector.

NOTICE:

Be sure to make the opening direction of the spring and the direction of the injector positioning convex meet.

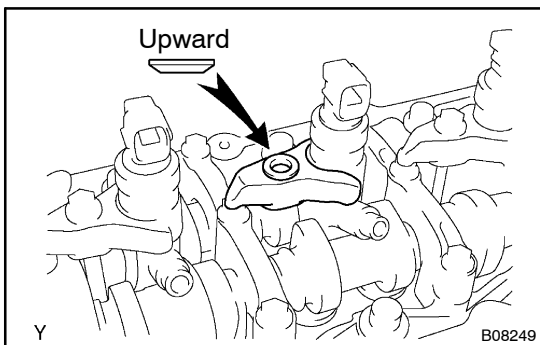
- (c) Install a new back-up and O-ring to each injector.
(d) Apply a light coat of oil onto O-ring to each injector.



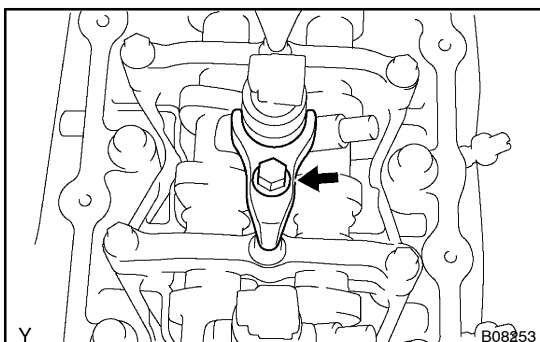
- (e) Meet the injector positioning convex to the positioning concave at the cylinder head side and install the injector to the cylinder head.

NOTICE:

- At this time, insert the injector until it touches the nozzle sheet surface.
 - When installing the injector to the cylinder head and in case that the injector comes to float up with the reaction of O-ring, pull out the injector once, install it again.
 - During the time after equipping the head cover and before installing the injection pipe, install the irregular objects prevention cover.
 - Do not exchange the injector cylinder.
- (f) Place the 4 nozzle holder clamps to each injector.



- (g) Set the washer on the nozzle holder clamp as shown in the illustration.



- (h) Tighten the bolt.

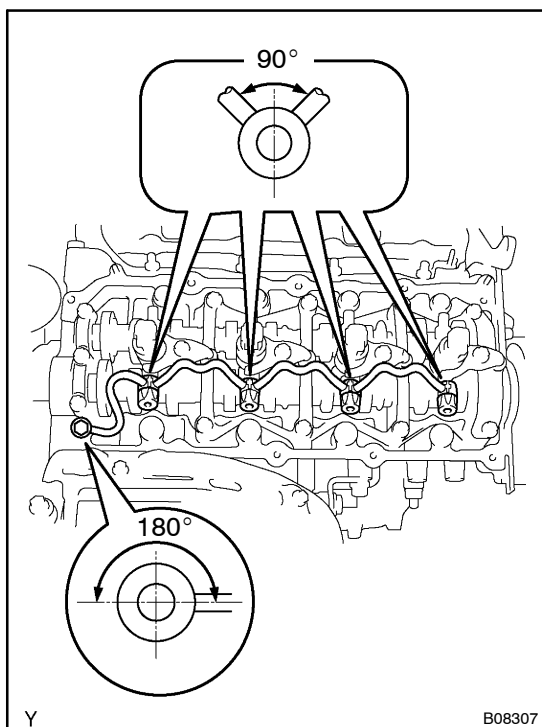
HINT:

Apply a light coat of engine oil on the threads and under the heads of the nozzle holder clamp bolts.

Torque: 26 N·m (262 kgf·cm, 19 ft·lbf)

NOTICE:

At this time, the clamp has its cam cap bolt as a fulcrum and clip the injector at the fork portion.



20. INSTALL NOZZLE LEAKAGE PIPE ASSY

- (a) Place the leakage pipe and 5 new gaskets.

NOTICE:

Do the installation of the gasket crew within the angle range shown in the illustration.

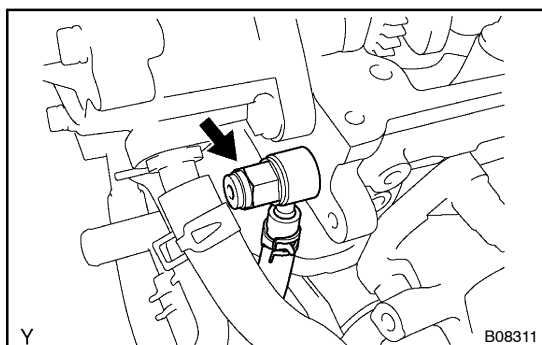
- (b) Apply a light coat of oil onto 4 hollow screws and union bolt.
 (c) Tighten the 4 hollow screws and union bolt by hand.
 (d) Tighten the 4 hollow screws and union bolt.

Torque:

Hollow screw 16 N·m (163 kgf·cm, 12 ft·lbf)

Union bolt 12.5 N·m (128 kgf·cm, 9 ft·lbf)

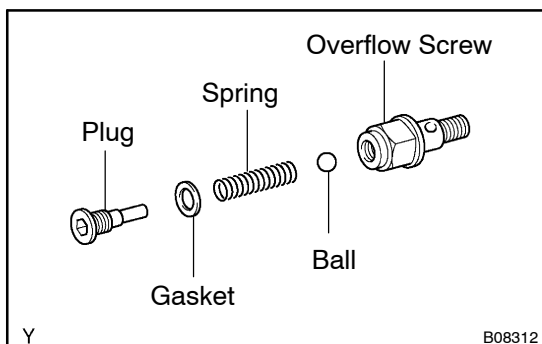
- (e) Check that there are no leaks from nozzle leakage pipe connection.



- (1) Disconnect the fuel hose, and remove the check valve, No. 2 nozzle leakage pipe and gasket.
 (2) Purchase a new check valve.

HINT:

Part No. 23122-27010



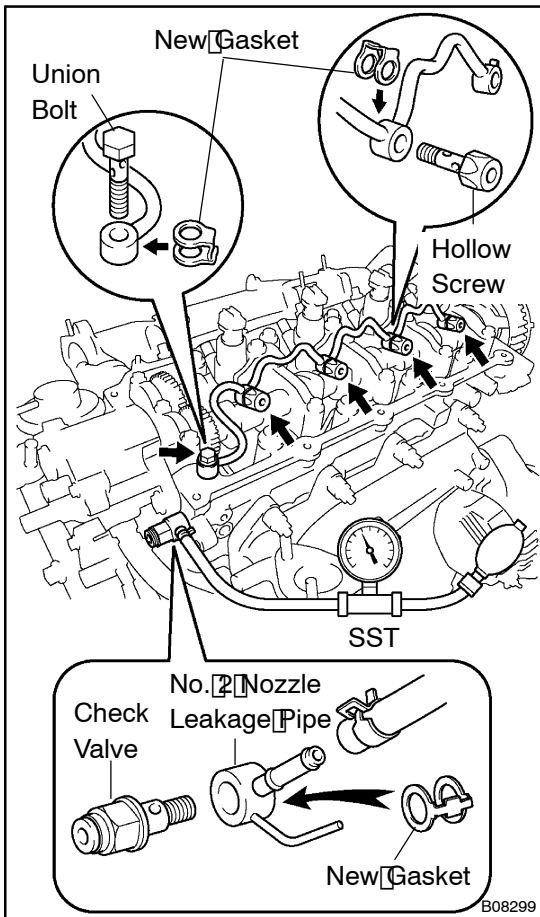
- (3) Remove the plug, gasket, spring and ball.
 (4) Install the plug with the gasket to the overflow screw.

Torque: 9.8 N·m (100 kgf·cm, 87 in·lbf)

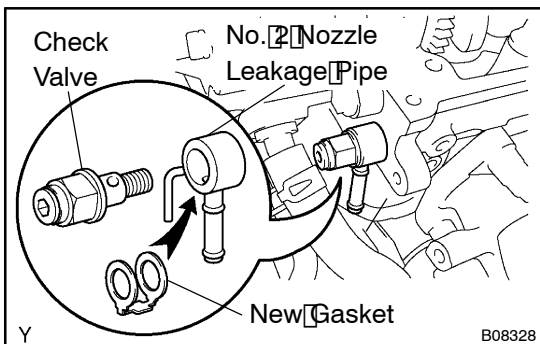
- (5) Install the No. 2 nozzle leakage pipe and gasket with the check valve to the cylinder head.

Torque: 21 N·m (214 kgf·cm, 15 ft·lbf)

- (6) Apply a light coat of soapy water (any fluid to detect fuel leakage) on the nozzle leakage pipe connection.



- (7) Using SST (turbocharger pressure gauge), apply the SST to the fuel return side of the No. 2 nozzle leakage pipe, and maintain 100 kPa (1 kgf/cm², 14.5 psi) of pressure for 600 seconds to check that there are no bubbles from applying the soapy water place.
- (8) After checking fuel leaks, wipe off soapy water from nozzle leakage pipe connection.
- (9) Remove SST, check valve, No. 2 nozzle leakage pipe and gasket.



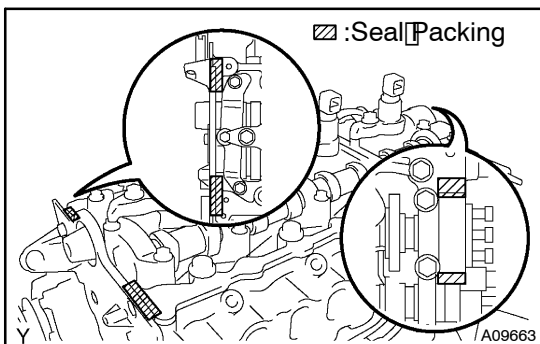
- (10) Reinstall the No. 2 nozzle leakage pipe and a new gasket with the check valve.

Torque: 21 N·m (214 kgf·cm, 15 ft·lbf)

HINT:

Never reinstall the disassembled check valve on the engine.

- (11) Reconnect the fuel hose to the No. 2 nozzle leakage pipe.

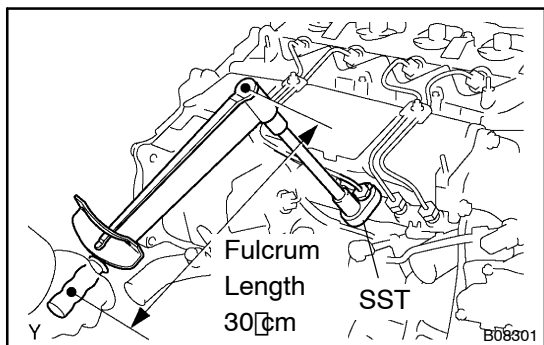


21. INSTALL CYLINDER HEAD COVER SUB-ASSY

- (a) Remove any old packing (FIPG) material.
- (b) Apply a seal packing to the cylinder head.
Seal packing: Part No. 08826-00080 or equivalent
- (c) Install the gasket to the head cover.
- (d) Install the cylinder head cover with the 10 bolts.
Torque: 13 N·m (135 kgf·cm, 10 ft·lbf)
- (e) Install new 4 nozzle holder seals.

22. INSTALL TIMING BELT NO.2 COVER

(See page 14-114)

**23. INSTALL INJECTION PIPE SUB-ASSY NO.1****NOTICE:**

In case of having the injectors replaced, must replace injection pipes, too.

- (a) Using SST, tighten the injection pipe from the common rail side.

SST 09023-12900

Torque:

37 N·m (377 kgf·cm, 27 ft·lbf) for use with SST

41 N·m (418 kgf·cm, 30 ft·lbf)

HINT:

Use a torque wrench with a fulcrum length of 30 cm (11.8 in.).

- (b) Using SST, tighten the injection pipe from the injector side.

SST 09023-12700

Torque:

31 N·m (316 kgf·cm, 23 ft·lbf) for use with SST

41 N·m (418 kgf·cm, 25 ft·lbf)

HINT:

Use a torque wrench with a fulcrum length of 30 cm (11.8 in.).

- (c) Install the 2 upper injection pipe clamps and 2 nuts.

Torque: 5 N·m (51 kgf·cm, 44 in. lbf)

- (d) Install the fuel inlet pipe (See page 11-31)

24. INSTALL INJECTION PIPE SUB-ASSY NO.2

SST 09023-12900, 09023-12700

25. INSTALL INJECTION PIPE SUB-ASSY NO.3

SST 09023-12900, 09023-12700

26. INSTALL INJECTION PIPE SUB-ASSY NO.4

SST 09023-12900, 09023-12700

27. INSTALL ENGINE COVER SUB-ASSY NO.1**Torque:**

Bolt 8.0 N·m (82 kgf·cm, 70 in. lbf)

Nut 12 N·m (122 kgf·cm, 9 ft. lbf)

28. INSTALL WINDSHIELD WIPER MOTOR ASSY

(See page 66-9)

29. INSTALL FR WIPER ARM RH

(See page 66-9)

30. INSTALL FR WIPER ARM LH

(See page 66-9)

31. INSPECT HOOD SUB-ASSY

(See page 75-1)

32. ADJUST HOOD SUB-ASSY

(See page 75-1)

33. ADD COOLANT (See page 16-19)**34. CHECK ENGINE COOLANT LEAK (See page 16-19)**

35. INSPECT FUEL LEAK**CAUTION:**

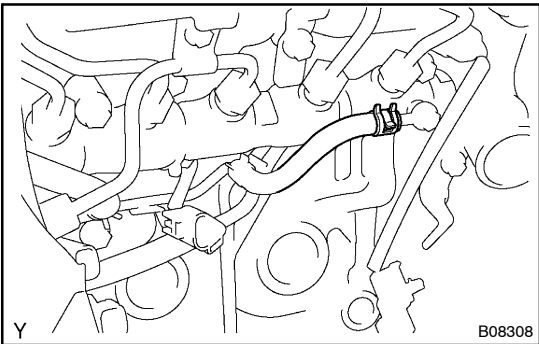
- During ACTIVE TEST mode, engine speed goes high and combustion noise becomes loud, so pay attention.
- During ACTIVE TEST mode, fuel becomes high-pressure, so take much care for not expose your eyes, hands, or body to the escaped fuel.

(a) Check that there are no leaks from any part of the fuel system at the engine stops.

If there is fuel leakage, replace these parts.

(b) While cranking or start the engine, check that there are no leaks from any part of the fuel system.

If there is fuel leakage, replace these parts.



(c) Disconnect the return hose from the common rail.

(d) While cranking the engine, check fuel leaks from the return pipe.

If there is fuel leakage, replace the common rail assembly.

(See page 1-37)

(e) Connect the hand-held tester to the DLC3.

(f) Start the engine and push the hand-held tester main switch ON.

(g) Select the FUEL LEAK test of ACTIVE TEST mode on the hand-held tester.

(h) If you have no hand-held tester, depress the accelerator pedal quickly and fully to increase the engine speed at maximum and keep it for 2 seconds. Repeat this operation several times.

(i) Check that there are no leaks from any part of the fuel system.

NOTICE:

However, if the leakage from the return pipe is less than 10 cc (0.6 cu in.) in a minute, it is acceptable.

If there is fuel leakage, replace these parts.

(j) Reconnect the return hose to the common rail.