SFI SYSTEM

PRECAUTION

SF1XD−02

HINT:

All DTCs retained in the ECM will be erased when the negative (−) terminal cable is removed from the battery.

If necessary, read the DTC before removing the negative (−) terminal cable from the battery.

1. BEFORE WORKING ON FUEL SYSTEM, DISCONNECT CABLE FROM NEGATIVE (−) BATTERY TERMINAL

2. DO NOT SMOKE OR WORK NEAR AN OPEN FLAME WHEN WORKING ON FUEL SYSTEM

3. KEEP GASOLINE AWAY FROM RUBBER OR LEATHER PARTS

4. MAINTENANCE PRECAUTIONS

(a) To prevent engine misfire, these precautions should be taken.
  (1) Check the battery terminals are proper connected.
  (2) After repair, check that the ignition coil terminals and all other ignition system lines are reconnected securely.
  (3) When cleaning the engine compartment, be especially careful to protect the electrical system from water.

(b) Observe the following when handling the air fuel ratio sensors and oxygen sensor.
  (1) Do not drop the sensor or hit it against another object.
  (2) The sensor should be free from any contact with water.

5. IF VEHICLE IS EQUIPPED WITH MOBILE RADIO SYSTEM (HAM, CB, ETC.)

If the vehicle is equipped with a mobile communication system, refer to the precaution in the IN section.

6. AIR INDUCTION SYSTEM

(a) Removal of the engine oil dipstick, oil filler cap, PCV hose, may break the engine.

(b) Disconnection, looseness or cracks in the parts of the air induction system between the throttle body and cylinder head may result in air suction and break the engine.

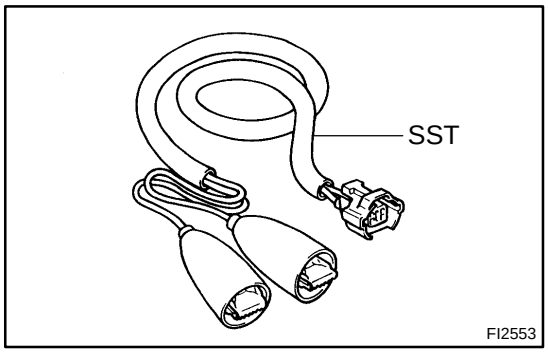
7. ELECTRONIC CONTROL SYSTEM

(a) Before removing SFI wiring connectors, terminals, first disconnect the power by turning the ignition switch off or disconnecting the negative (−) terminal cable from the battery.

HINT:

Be sure to check DTCs before disconnecting the negative (−) terminal cable from the battery.

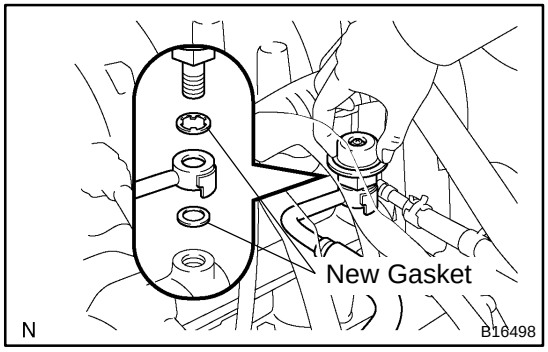
(b) When installing the battery, be especially careful to correctly connect the positive (+) and negative (−) cables.
(c) Do not give a severe impact to the SFI parts during removal or installation. Handle all SFI parts carefully, especially the ECM.
(d) Be careful during troubleshooting. Numerous transistor circuits are used and even slight terminal contact can cause further trouble.
(e) Do not open the ECM cover.
(f) When inspecting during rainy weather, take care to prevent entry of water. Also, when washing the engine compartment, prevent water from getting into the SFI parts and wiring connectors.
(g) Parts should be replaced as an assembly.
(h) Care should be taken when pulling out and inserting wiring connectors.
    (1) Release the lock and pull out the connector, pulling on the connectors.
    (2) Fully insert the connector and check that it is locked.



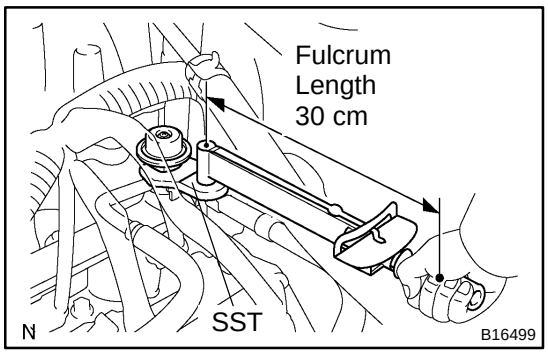
(i) Use SST for inspection or test of the injector or its wiring connector.
SST 09842−30070

8. FUEL SYSTEM

(a) When disconnecting the high fuel pressure line, a large amount of gasoline will spill out. Observe the following procedures:
    (1) Disconnect the circuit opening relay.
    (2) Start the engine. After the engine has stopped on its own, turn the ignition switch off.
    (3) Put a container under the connecting part of the pressure line.
    (4) Slowly loosen the connection.
    (5) Disconnect the high fuel pressure line.
    (6) Reconnect the fuel pump connector.



(b) When connecting the union bolt (fuel pressure pulsation damper) on the high pressure pipe union, observe the following procedures:
    (1) Always use 2 new gaskets.
    (2) Tighten the union bolt by hand.



(3) Using SST, tighten the union bolt to the specified torque.

SST 09612−24014 (09617−24011)

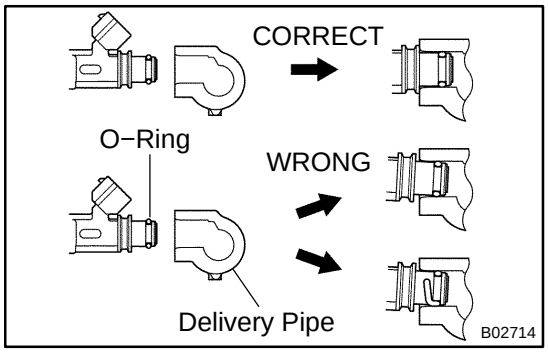
Torque:

33 N·m (340 kgf·cm, 24 ft·lbf) for use with SST

39 N·m (400 kgf·cm, 29 ft·lbf)

HINT:

Use a torque wrench with a fulcrum length of 30 cm (11.81 in.).

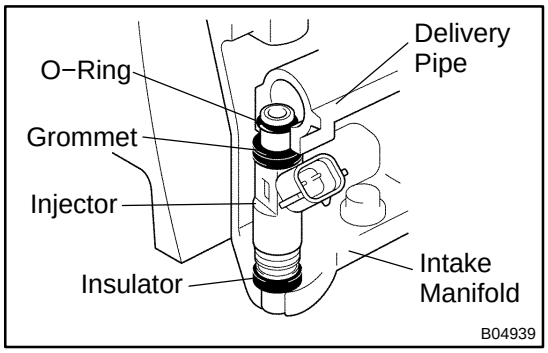


(c) Observe the following precautions when removing or installing the injectors.

(1) Never reuse the O−ring.

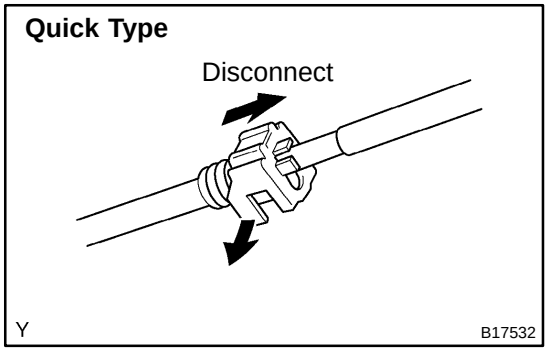
(2) When placing a new O−ring on the injector, take care not to damage it in any way.

(3) Coat a new O−ring with spindle oil or gasoline before installing. Never use engine, gear or brake oil.



(d) Install the injector to the delivery pipe and intake manifold as shown in the illustration.

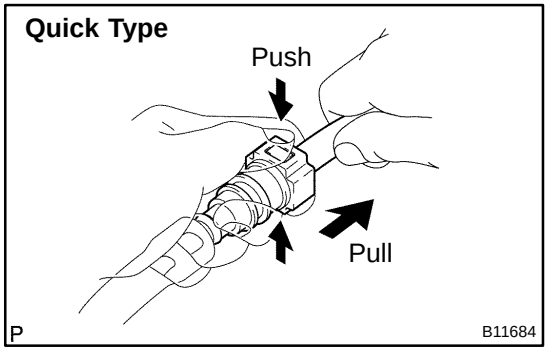
Before installing the injector, apply spindle oil or gasoline on the place where the delivery pipe or the intake manifold touches the O−ring of the injector.



(e) Observe the following when disconnecting the fuel tube connector (quick type):

(1) Check if there is any dirt in the pipe and around the connector before disconnecting the fuel tube connector. If necessary, clean the dirt away.

(2) Disconnect the fuel pipe clamp from the connector.

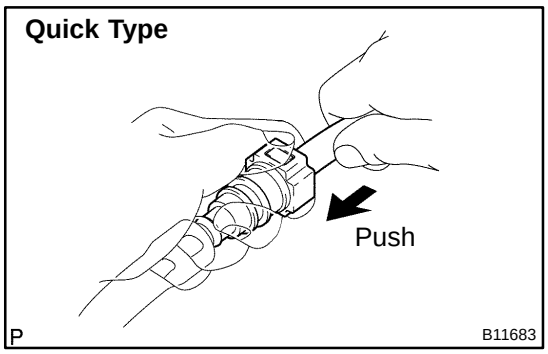


(3) Be sure to disconnect them by hand.

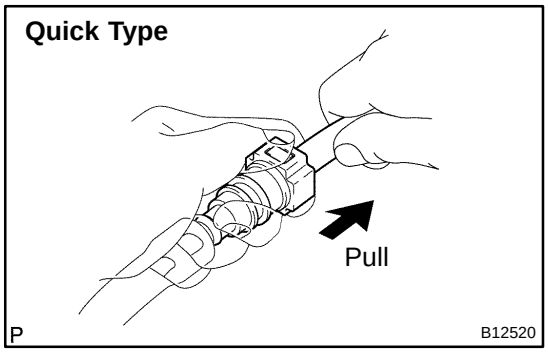
(4) When the connector and the pipe are stuck, push and pull the connector. Then disconnect and pull it out. Do not use any tools at this time.

(5) Check if there is any dirt or other foreign matter on the seal surface of the disconnected pipe. If necessary, clean the dirt away.

(6) Do not damage the disconnected pipe and connector and prevent intrusion of foreign objects by covering them with a plastic bag.

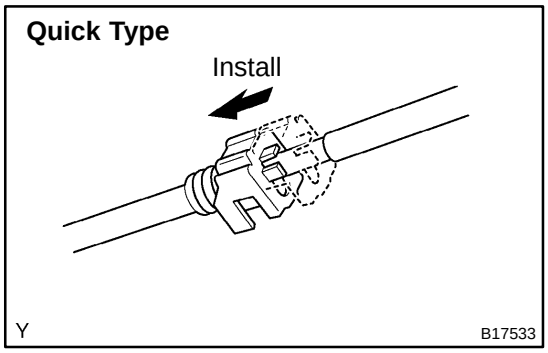


(f) Observe the following when connecting the fuel tube connector (quick type):
(1) Check if there is any damage or foreign objects in the connected part of the pipe.
(2) Match the axis of the connector with the axis of the pipe, and push into the connector until a ”click” sound is heard. If the connection is tight, apply a small amount of fresh engine oil on the tip of the pipe.



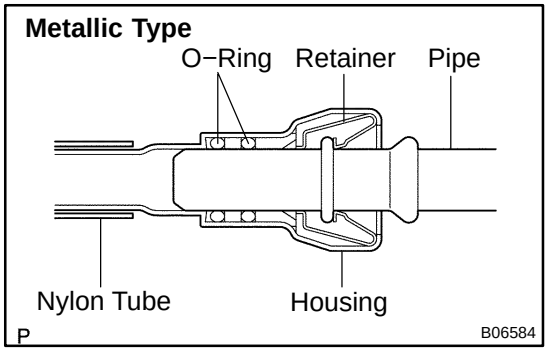
(3) After finishing the connection, pull the pipe and the connector to ensure it is secure.
(4) Check to make sure no fuel leak is present.

If the result is not specified, repair or replace.



(5) Install the fuel pipe clamp to the connector.
(6) Check to make sure no fuel leak is present.

If the result is not specified, repair or replace.

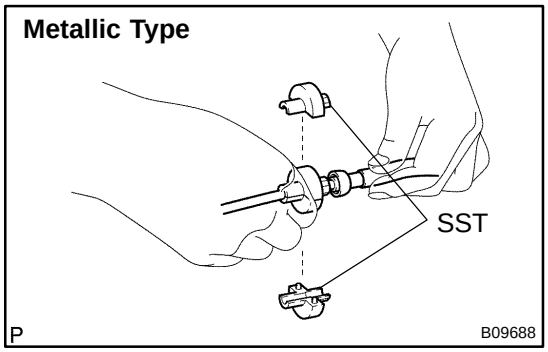


(g) Observe the following when disconnecting the fuel tube connector (metallic type):

HINT:

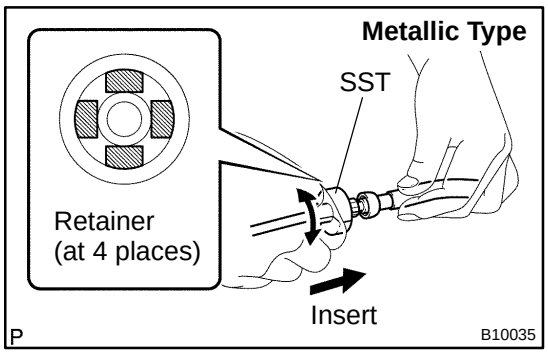
The structure of the metallic connector is shown on the left.

(1) Check if there is any dirt in the pipe and around the connector before disconnecting the fuel tube connector. If necessary, clean the dirt away.

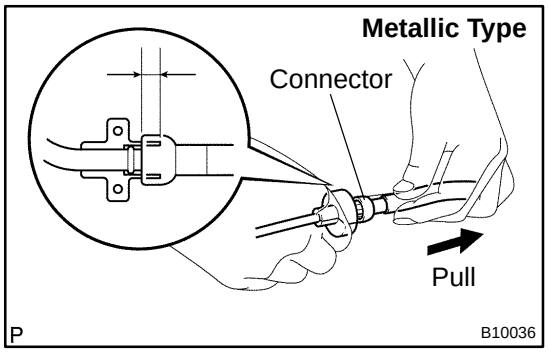


(2) Assemble SST to the connecting part, as shown in the illustration.

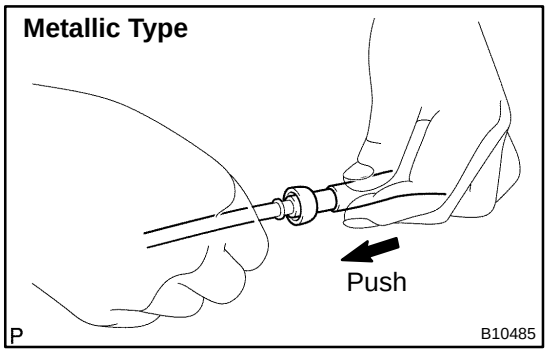
SST 09268−21010



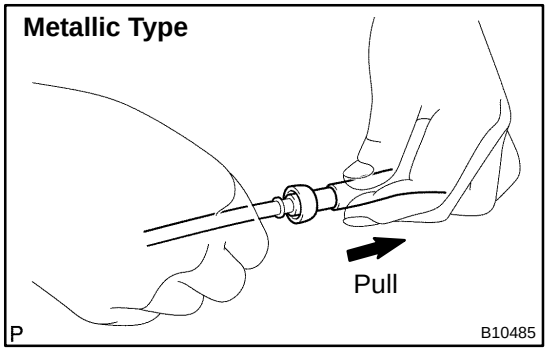
(3) Turn the SST, align the retainers inside the connector with the SST chamfered parts and insert the SST into the connector.



(4) While holding the SST, pull the connector towards the SST to put the retainers on the SST chamfered parts.
(5) Slide the SST and connector together towards the fuel tube assembly.



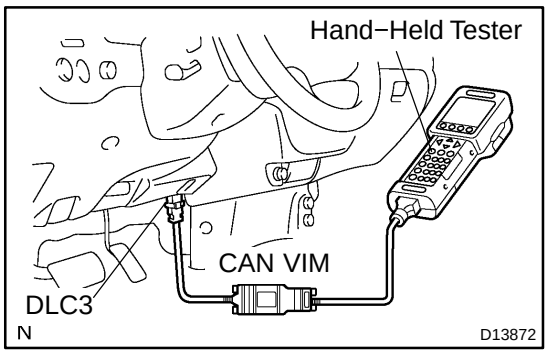
(h) Observe the following when connecting the fuel tube connector (metallic type):
(1) Check if there is any damage or foreign objects in the connected part of the pipe.
(2) Match the axis of the connector with the axis of the pipe, and push into the connector until a ”click” sound is heard. If the connection is tight, apply a small amount of fresh engine oil on the tip of the pipe.



(3) After finishing the connection, pull the pipe and the connector to ensure it is secure.
(4) Check to make sure no fuel leak is present.

If the result is not specified, repair or replace.

(i) Observer the following when handling the nylon tube:
(1) Pay attention not to turn the connected part of the nylon tube and the quick connector with tube when connecting them.
(2) Pay attention not to kink the nylon tube.
(3) Do not remove the nylon tube.
(4) Do not close the piping with the nylon tube by bending it.



(j) Check that there is any fuel leak after maintenance anywhere on the fuel system.

(1) Connect a hand−held tester to the Controller Area Network Vehicle Interface Module (CAN VIM). Then connect the CAN VIM to the Date Link Connector 3 (DLC3).

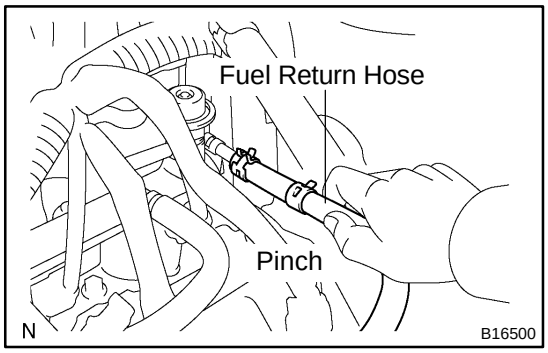
(2) Turn the ignition switch ON and push the hand−held tester main switch ON.

NOTICE:

Do not start the engine.

(3) Enter the following menus: DIAGNOSIS / ENHANCED OBDII / ACTIVE TEST / FUEL PUMP / SPD.

(4) Please refer to the hand−held tester operator's manual for further details.



(5) Pinch the fuel return hose.

The pressure in the high pressure line will rise to approx. 392 kPa (4 kgf/cm^2, 57 psi). In this state, check to see that there are no leaks from any part of the fuel system.

NOTICE:

Always pinch the hose. Avoid bending as it may cause the hose to crack.

(6) Turn the ignition switch OFF.

(7) Disconnect the hand−held tester and CAN VIM from the DLC3.