

FUEL SYSTEM (1GR-FE)

1100I-02

PRECAUTION

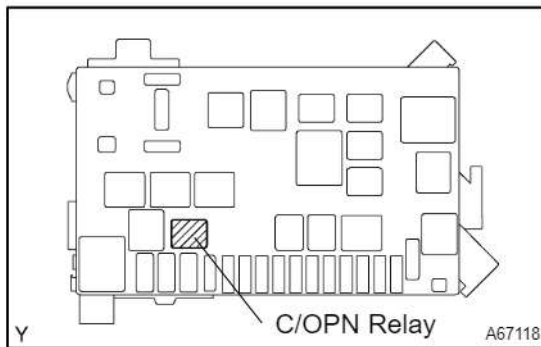
1. PRECAUTION

- (a) Before starting on the work for the fuel system inspection and repair, disconnect the negative (–) terminal cable from the battery.
- (b) Do not smoke or work near fire when handling the fuel system.
- (c) Keep gasoline away from rubber or leather parts.

2. WORK FOR PREVENT GASOLINE FROM SPILLING OUT

CAUTION:

- ◆ Take precaution for preventing gasoline from spilling out before removing the fuel system parts.
- ◆ As there is the remained pressure in the fuel line after working for prevent gasoline from spilling out, prevent it from splashing inside the vehicle compartment by covering them with a shop rag.



- (a) Remove the circuit opening relay from the engine room relay block.
- (b) Start the engine. After the engine stopped, turn the ignition switch OFF.

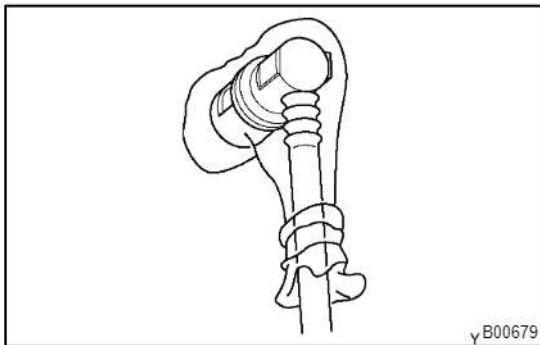
HINT:

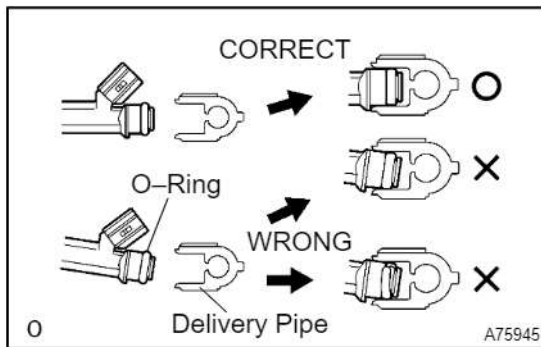
There is a case that DTC P0171 (system too lean) is output.

- (c) Check that the engine does not start.
- (d) Remove the fuel tank cap, and let the air out of the fuel tank.
- (e) Disconnect the negative (–) terminal cable from the battery.
- (f) Reinstall the circuit opening relay.

3. FUEL SYSTEM

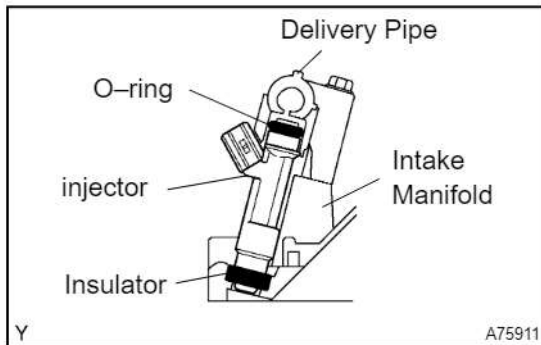
- (a) When disconnecting the high fuel pressure line, a large amount of gasoline will spill out, so observe these procedures.
 - (1) Disconnect the fuel pump tube.
(See page 11-20)
 - (2) Drain the fuel remained inside the fuel pump tube.
 - (3) In order to prevent the disconnected fuel pump tube from damaging and foreign objects being mixed into cover them with a vinyl bag.
 - (4) Put a container under the connection.





(b) Observe these precautions when removing and installing the injectors.

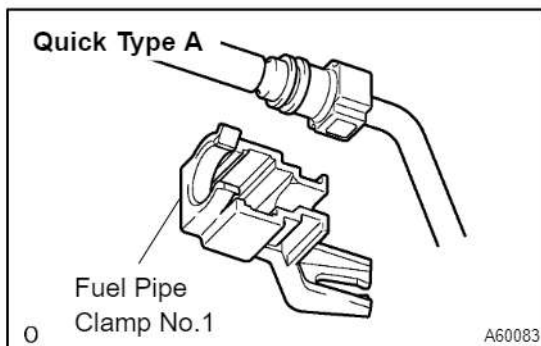
- (1) Never reuse the O-ring.
- (2) When placing the new O-ring on the injector, do not damage the O-ring.
- (3) Coat the new O-rings with spindle oil or gasoline before installing. Do not use engine oil, gear oil or brake oil.



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

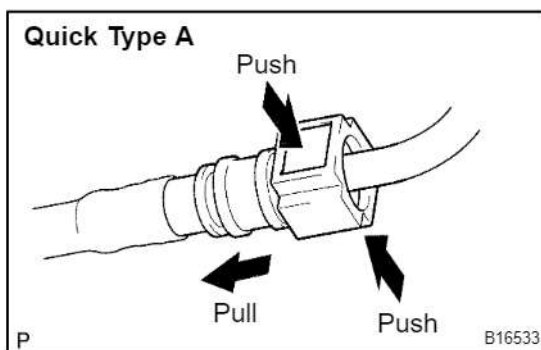
NOTICE:

Before installing the injector, must apply spindle oil or gasoline on the place where a delivery pipe or cylinder head contacts the O-ring of the injector.

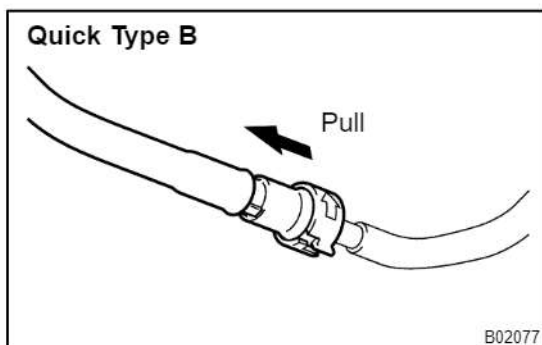
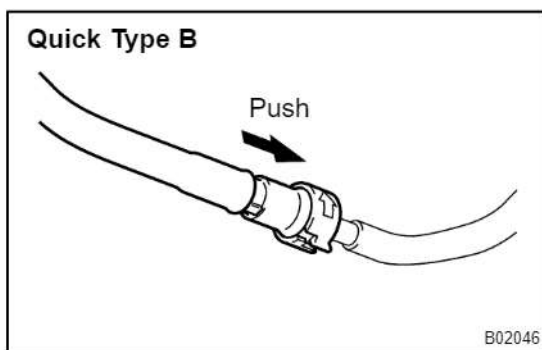
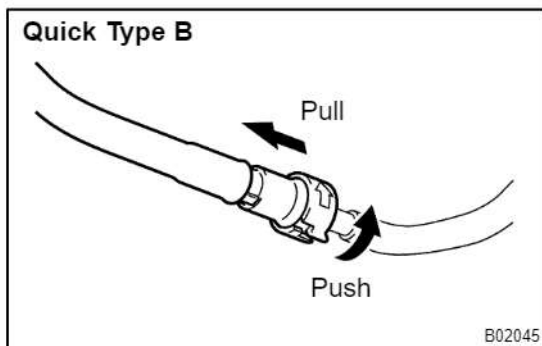
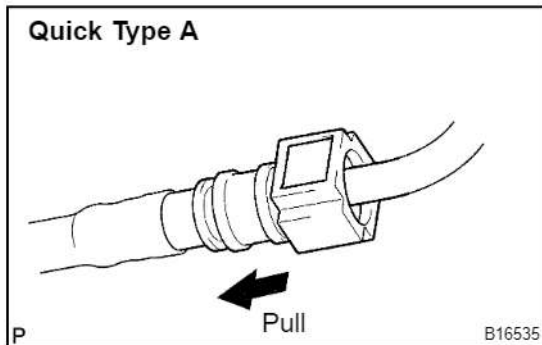
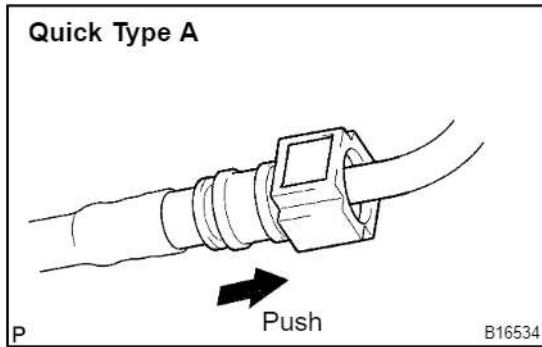


(d) Observe these precautions when disconnecting the fuel tube connector (Quick type A):

- (1) Remove the fuel pipe clamp No.1.



- (2) Check that there is no dirt like mud on the pipe and around the connector before disconnecting them. Clean them if necessary.
- (3) Disconnect them by hand.
- (4) When the connector and the pipe are stuck, pinch the fuel pipe with fingers and push the fuel tube connector to the fuel pipe by pressing the release buttons, then pull the connector out from the pipe.
- (5) Inspect that there is no dirt or the like on the seal surface of the disconnected pipe. Clean it away if necessary.
- (6) In order to prevent the disconnected pipe and connector from damaging and foreign objects being mixed into, cover them with a vinyl bag.



- (e) Observe these precautions when connecting the fuel tube connector (Quick Type A):
- (1) Check that there is no 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 the connector makes a "click" sound. In case that the connection is tight, apply little amount of fresh engine oil on the tip of the pipe.
 - (3) After having finished the connection, check if the pipe and the connector are securely connected by pulling them.
 - (4) Check for any fuel leak.
- (f) Observe these precautions when disconnecting the fuel tube connector (Quick type B):
- (1) Check if there is any dirt like mud on the pipe and around the connector before disconnecting them. Clean the dirt away if necessary.
 - (2) Disconnect them by your hands.
 - (3) When the connector and the pipe are stuck, push and pull the connector to free to disconnect and pull it out. Do not use any tool at this time.
 - (4) Inspect if there is any dirt or the like on the seal surface of the disconnected pipe. Clean it away if necessary.
 - (5) Prevent the disconnected pipe and connector from damaging and foreign objects being mixed into by covering them with a vinyl bag.
- (g) Observe these precautions when connecting the fuel tube connector (Quick type B):
- (1) Match the axis of the connector with axis of the pipe, and push in the connector until the connector makes a "click" sound. In case that the connections is tight, apply little amount of new engine oil on the tip of the pipe.
 - (2) After having finished the connection, check if the pipe and the connector are securely connected by pulling them.
 - (3) Check for fuel leakage.

(h) Observe these precautions when handling nylon tube.

CAUTION:

- ◆ Be careful not to turn the connection part of the nylon tube and the quick connector when connecting them.
- ◆ Do not kink the nylon tube.
- ◆ Do not remove the EPDM protector on the outside of the nylon tube.
- ◆ Do not close the piping with the nylon tube by bending it.

4. CHECK FUEL LEAK

(a) Check that there are no fuel leaks after doing maintenance the fuel system.(See page 11-5)

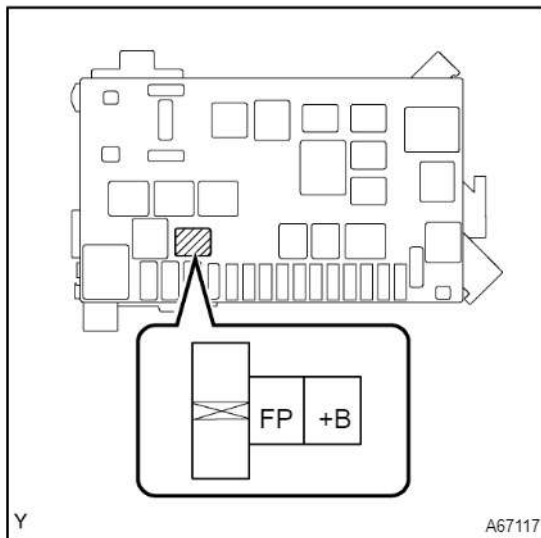
ON-VEHICLE INSPECTION

1. **CHECK FUEL PUMP OPERATION AND FUEL LEAK**
 - (a) When using the hand-held tester
 - (1) Connect the hand-held tester to the DLC3.
 - (2) Turn the ignition switch ON and hand-held tester main switch ON.

NOTICE:

Do not start the engine.

- (3) Select the ACTIVE TEST mode on the hand-held tester.
- (4) Please refer to the hand-held tester operator's manual for further details.



- (b) When not using hand-held tester
 - (1) Remove the circuit opening relay.
 - (2) Using a service wire, connect terminals FP and +B of the relay block.

NOTICE:

Pay due attention to the terminal connecting position to avoid a malfunction.

- (3) Turn the ignition switch ON, and check that the fuel pump operates.

NOTICE:

Do not start the engine.

- (c) Check that there are no fuel leaks after doing maintenance to the fuel system.
- (d) Turn the ignition switch OFF.
- (e) Disconnect the hand-held tester from the DLC3.

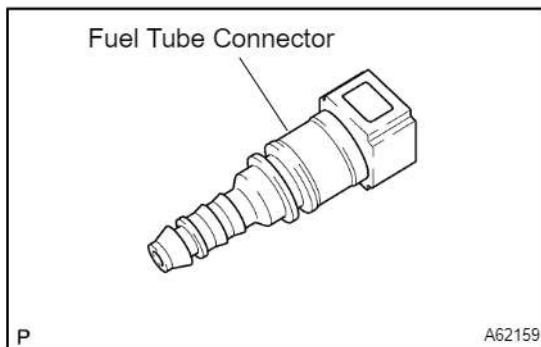
2. CHECK FUEL PRESSURE

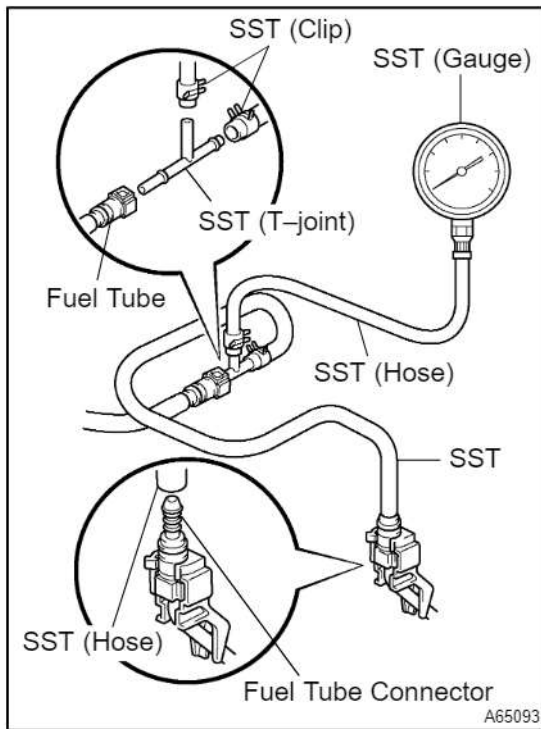
- (a) Prepare for inspection.
 - (1) Prepare a new fuel tube, and take out the fuel tube connector from the tube.

HINT:

Part No. 23801-31070

- (b) Prevent gasoline from spilling out (See page 11-1).
- (c) Disconnect the EFI fuel pipe clamp (See page 11-1).
- (d) Disconnect the fuel pipe No. 1 from the fuel main tube.





- (e) Install SST (pressure gauge) as shown in the illustration by using the SSTs and a fuel tube connector.
 SST 09268-41047 (90467-13001, 95336-08070),
 09268-45014 (09268-41200, 09268-41220,
 09268-41250, 90467-13001)

- (f) Wipe off any splattered gasoline.
 (g) Start the engine.
 (h) Measure the fuel pressure at idle.

Fuel pressure:

281 – 287 kPa (2.87 – 2.93 kgf·cm², 40.8 – 41.7 psi)

- (i) Stop the engine.
 (j) Check that the fuel pressure remains as specified for 5 minutes after the engine has stopped.

Fuel pressure:

147 kPa (1.5 kgf·cm², 21 psi) or more

If pressure is not as specified, check the fuel pump, pressure regulator and/or injectors.

- (k) After checking the fuel pressure, disconnect the negative (-) terminal cable from the battery carefully, remove the SST and fuel tube connector to prevent gasoline from the splashing.
 (l) Reconnect the fuel tube to fuel main tube.
 (m) Install the EFI fuel pipe clamp.
 (n) Check for fuel leak (See page 11-1).

INSPECTION

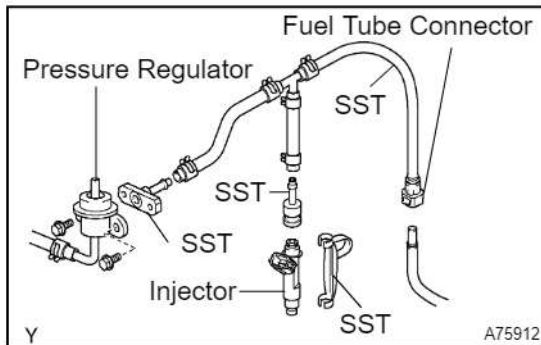
1. INSPECT FUEL INJECTOR ASSY

(a) Inspect injector resistance

- (1) Using an ohmmeter, measure the resistance between the terminals.

Resistance: 11.6 – 12.4 Ω at 20°C (68°F)

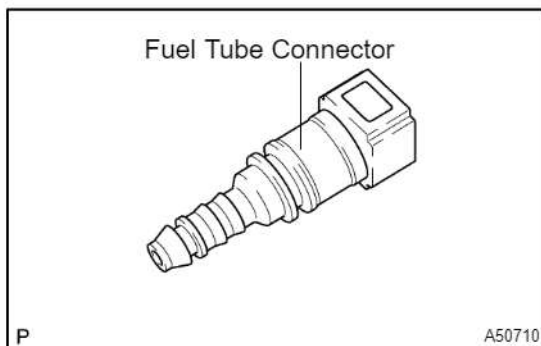
If the resistance is not as specified, replace the injector.



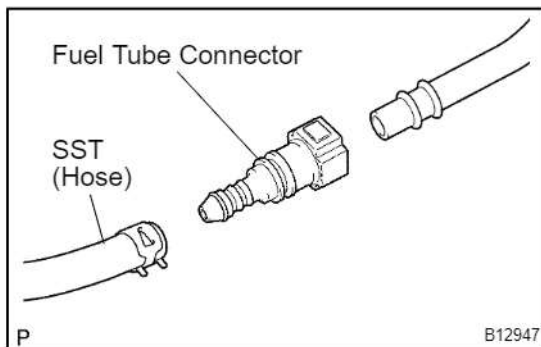
(b) Inspect injector inspection

CAUTION:

Keep injector clear of sparks during the test.



- (1) Obtain the new No.1 fuel pipe (part No. 23801-31070) and take out the fuel tube connector from the pipe.



- (2) Install the fuel tube connector to a SST (hose), then connect the tube connect and fuel pipe.

SST 09268-41047 (95336-08070)

CAUTION:

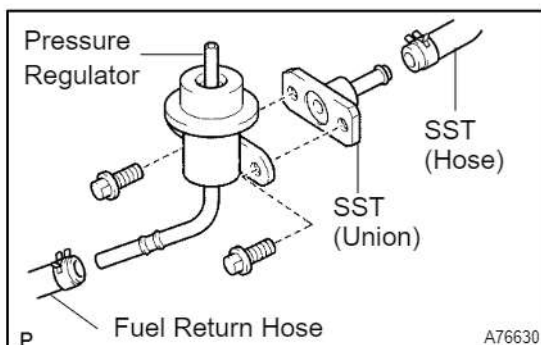
Connect the fuel tube connector (quick type) after observing the precautions.

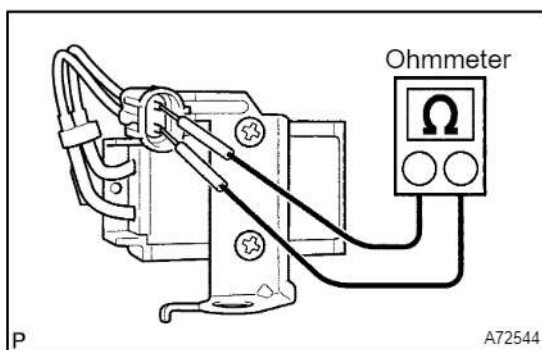
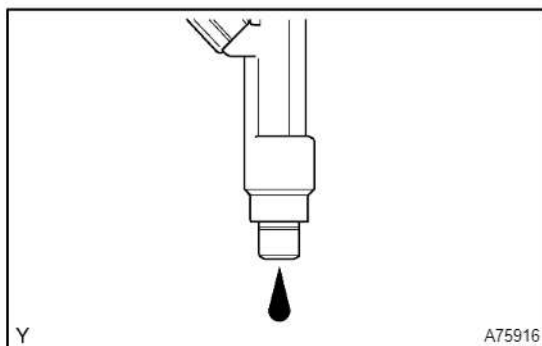
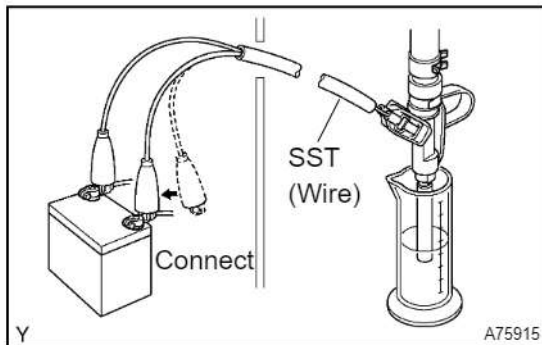
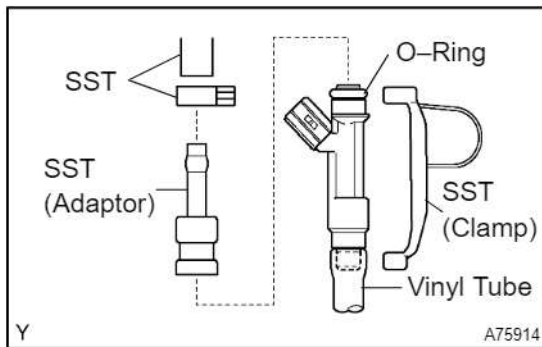
- (3) Remove the pressure regulator from the delivery pipe.
- (4) Install the O-ring to the fuel inlet of the pressure regulator.
- (5) Connect the SST (hose) to the fuel inlet of the pressure regulator with another SST (union) and the 2 bolts.

SST 09268-41047 (95336-08070, 09268-41091)

Torque: 7.5 N·m (80 kgf·cm, 66 in·lbf)

- (6) Connect the fuel return hose to the fuel outlet of the pressure regulator.





- (7) Install the O-ring to the injector.
- (8) Connect SSTs (adaptor and hose) to the injector, and hold the injector and union with SST (clamp)
- SST 09268-41047 (09268-41140, 09268-41400, 95336-08070)
- (9) Put the injector into a graduated cylinder.

CAUTION:

Install a suitable vinyl tube onto the injector to prevent gasoline from splashing out.

- (10) Operate the fuel pump. (See Page 11-5)
- (11) Connect a SST (wire) to the injector and battery for 15 seconds, and measure the injection volume with a graduated cylinder. Test each injector 2 or 3 times.

SST 09842-30080

Volume: 76 – 91 cm³ (4.6 – 5.5 cu in.) per 15 seconds

Difference between each injector:

15 cm³ (0.9 cu in.) or less

If the injection volume is not as specified, replace the injector.

- (c) Inspect leakage
 - (1) In the condition above, disconnect the tester probes of the SST (wire) from the battery and check the fuel leakage from the injector.

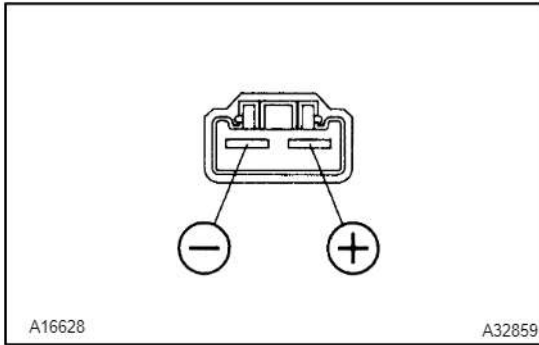
SST 09842-30080

Fuel drop: 1 drop or less per 12 minutes

2. INSPECT FUEL PUMP RESISTOR

- (a) Inspect the fuel pump resistor resistance.
 - (1) Using an ohmmeter, measure the resistance between terminal.

Resistance: 0.70 – 0.76 Ω at 20°C (68°F)

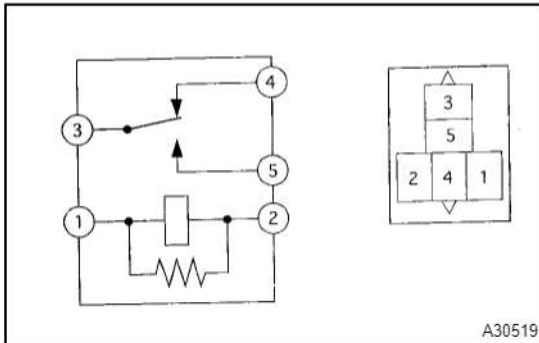


3. INSPECT FUEL PUMP

- (a) Inspect fuel pump resistance.
 - (1) Using an ohmmeter, measure the resistance between terminals 4 and 5.
Resistance: 0.2 – 3.0 Ω at 20°C (68°F)
- (b) Inspect fuel pump operation
 - (1) Apply the battery voltage to both terminals. Check that the pump operates.

NOTICE:

- ◆ These tests must be done quickly (within 10 seconds) to prevent the coil from burning out.
- ◆ Keep fuel pump as far away from the battery as possible.
- ◆ Always do the switching at the battery side.



4. INSPECT FUEL PUMP RELAY ASSY

- (a) Continuity inspection.
 - (1) Using the ohmmeter, check that there is continuity between each terminal.

Specified condition:

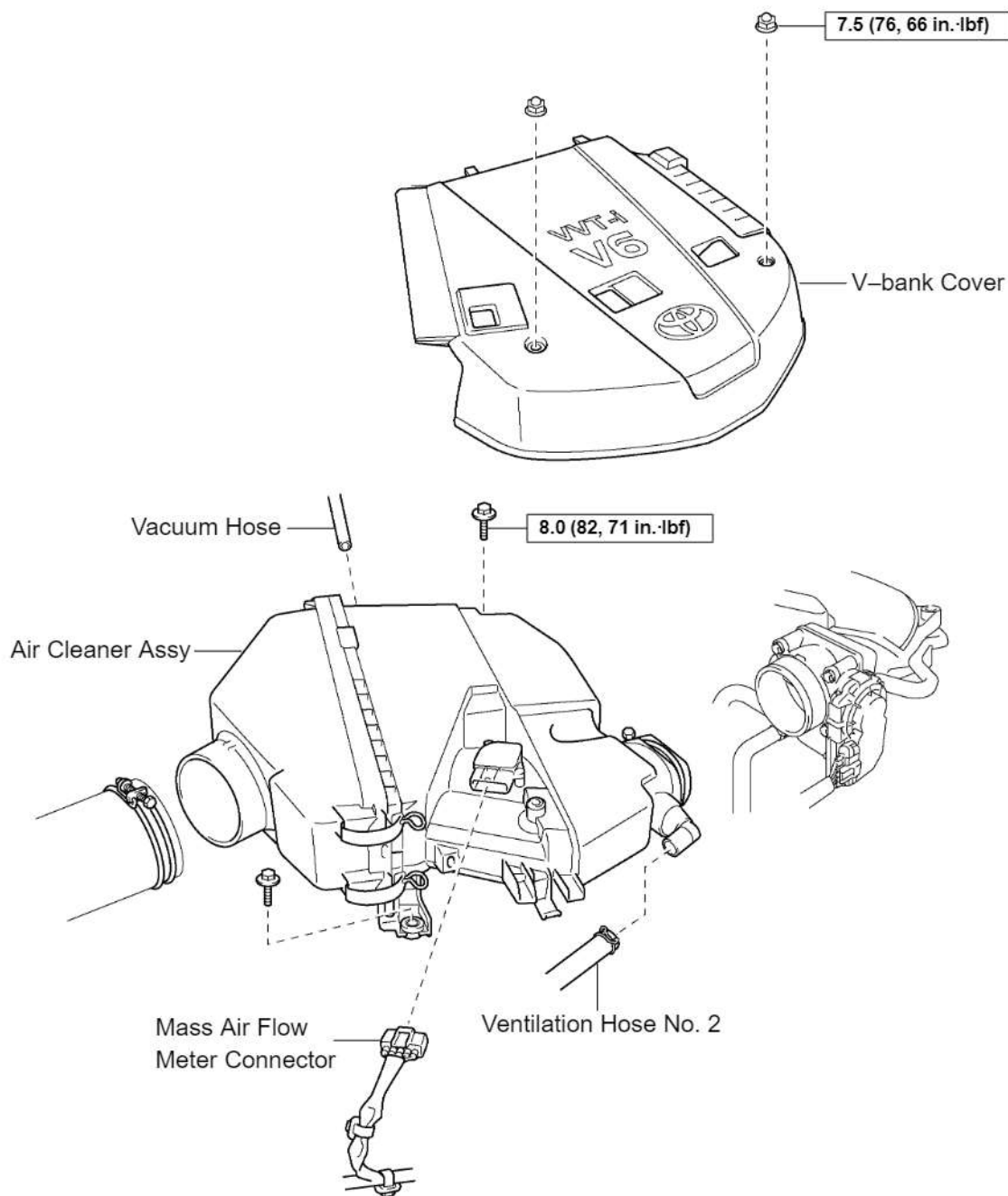
Between terminals	Specified condition
1 - 2	Continuity
3 - 4	
3 - 5	No continuity

- (2) Using the ohmmeter, check that there is continuity between terminals 3 and 5 when the battery voltage is applied across terminals 1 and 2.

Specified condition: Continuity

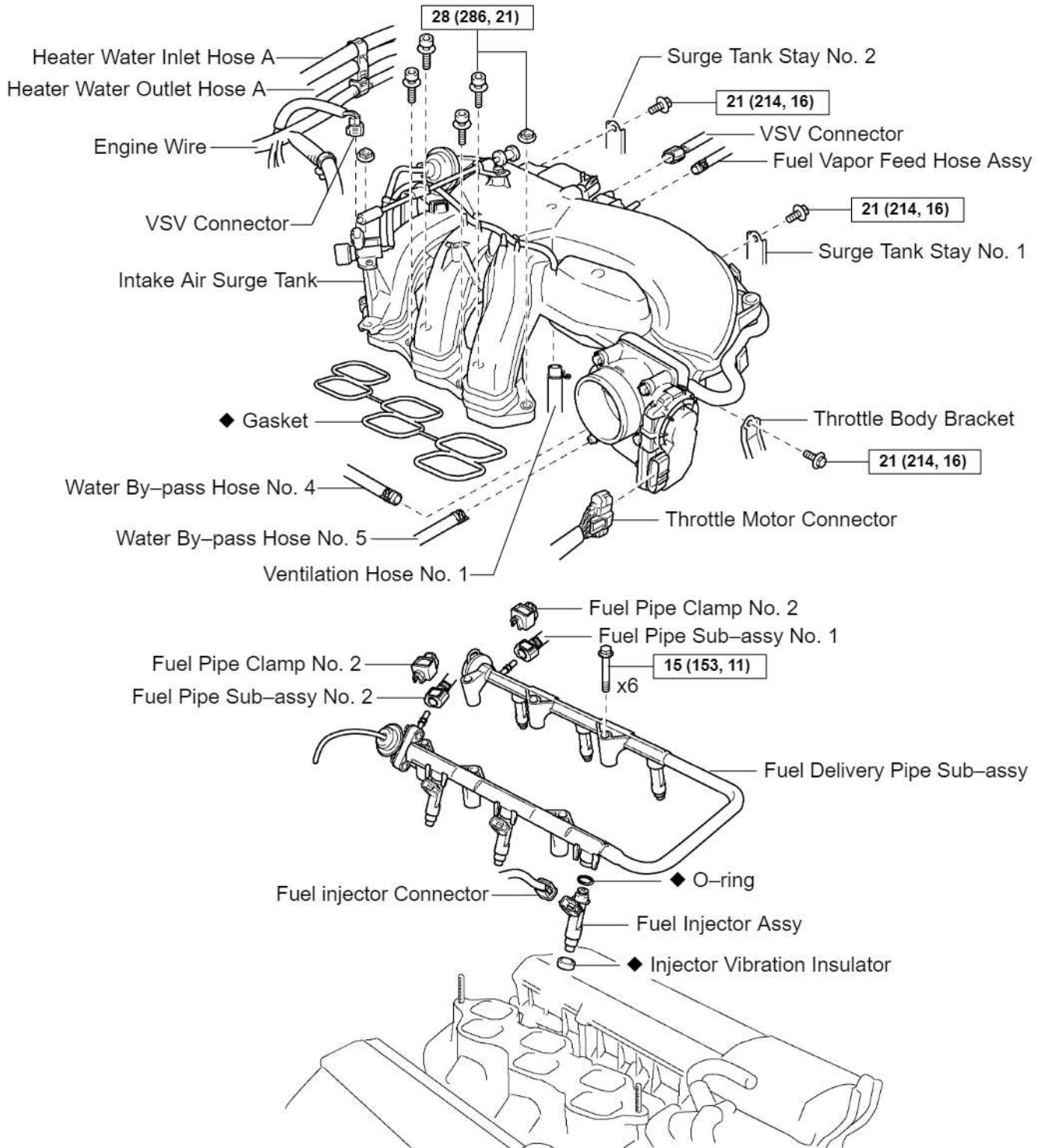
FUEL INJECTOR ASSY (1GR-FE) COMPONENTS

1100P-02



γ N·m (kgf·cm, ft·lbf) : Specified torque

A75642



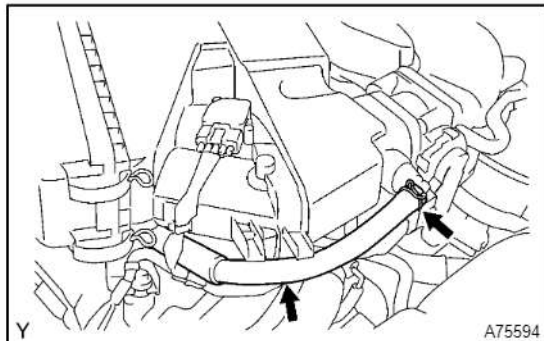
N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

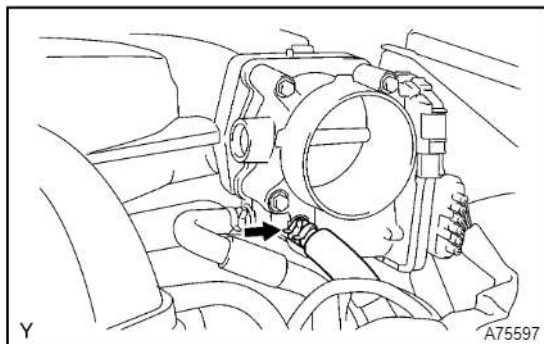
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REPLACEMENT

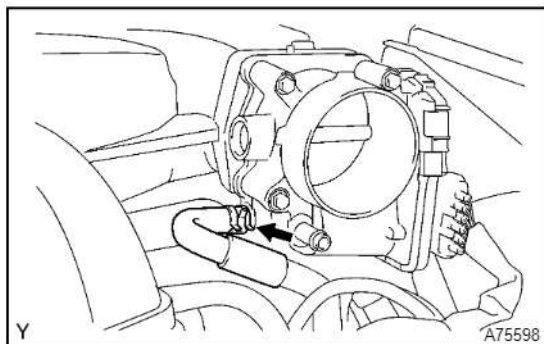
1. WORK FOR PREVENTING GASOLINE FROM SPILLING OUT (See page 11-1)
2. DRAIN ENGINE COOLANT (See page 16-5)
3. REMOVE V-BANK COVER (See page 10-7)



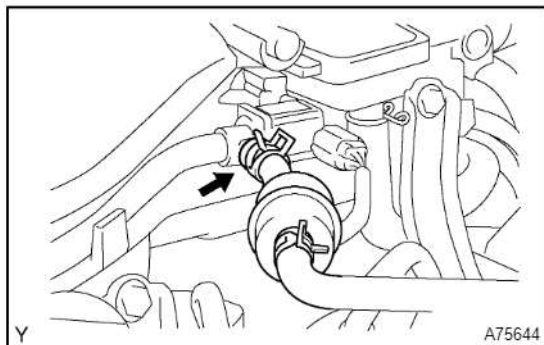
4. DISCONNECT VENTILATION HOSE NO.2
5. REMOVE AIR CLEANER ASSY (See page 10-7)



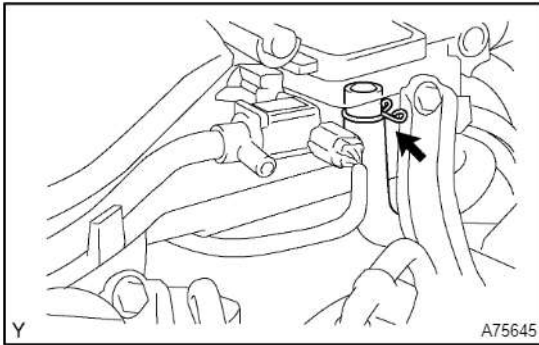
6. DISCONNECT WATER BY-PASS HOSE NO.5



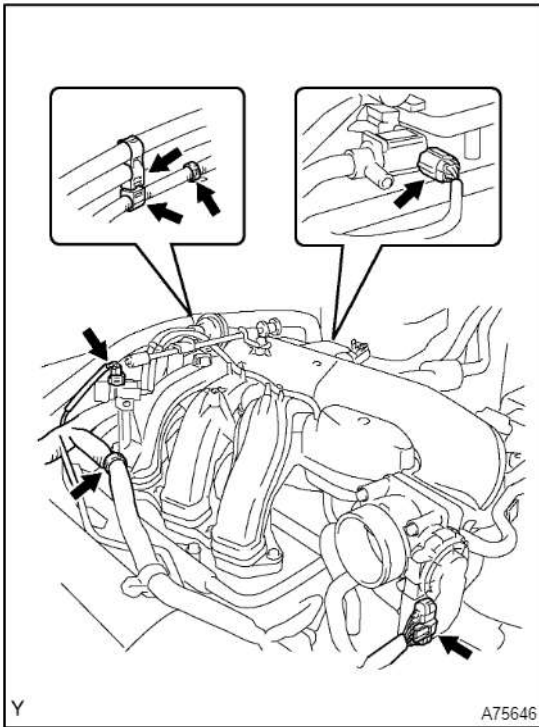
7. DISCONNECT WATER BY-PASS HOSE NO.4



8. DISCONNECT FUEL VAPOR FEED HOSE ASSY

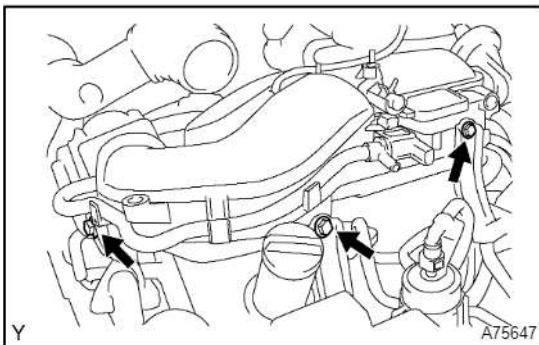


9. DISCONNECT VENTILATION HOSE

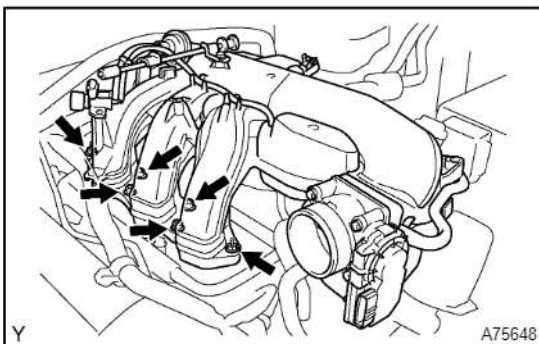


10. REMOVE INTAKE AIR SURGE TANK

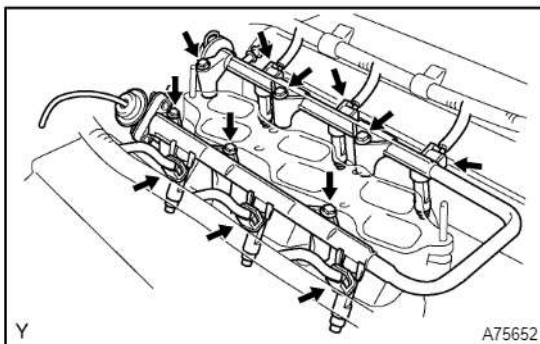
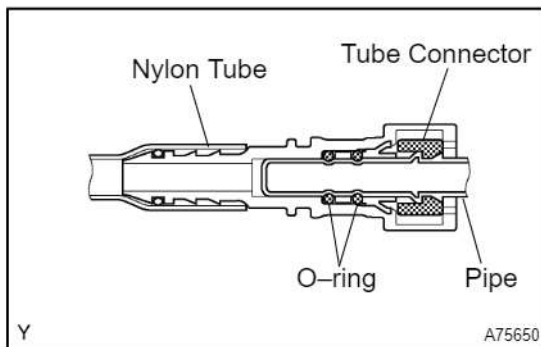
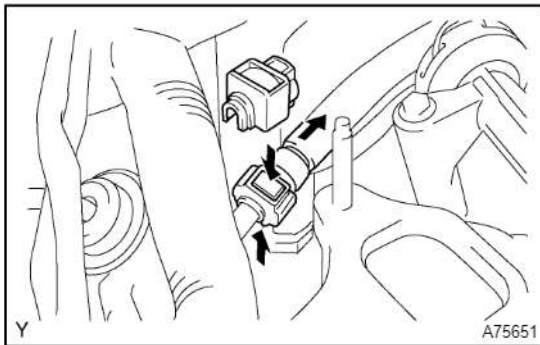
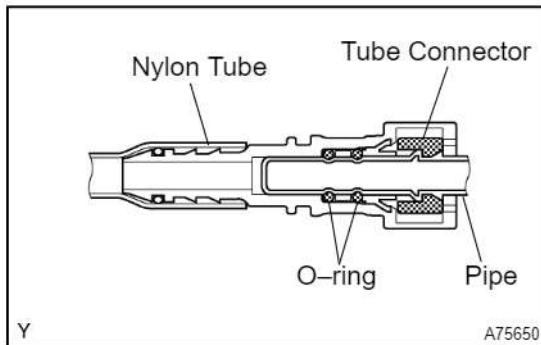
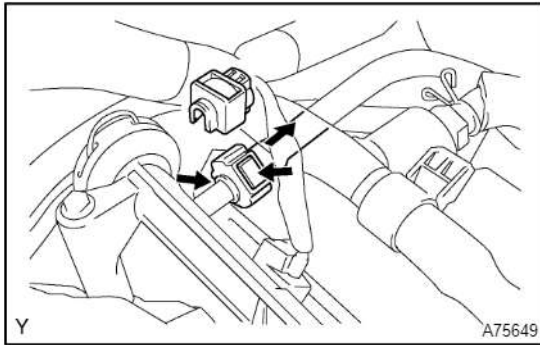
- Disconnect the 2 VSV connectors.
- Disconnect the throttle motor connector.
- Remove the 3 wire harness clamps and hose clamp.



- Remove the 3 upper bolts which are used to secure the 2 surge tank stays and throttle body bracket.



- Using the socket hexagon wrench 8, remove the 4 bolts.
- Remove the 2 nuts, intake air surge tank and gasket.



11. DISCONNECT FUEL PIPE SUB-ASSY NO.1

- Remove the fuel pipe clamp.
- Pinch the tube connector then pull out the fuel pipe.

NOTICE:

- ◆ Check if there is any dirt like mud around the connector before this work, because the quick connector has the O-ring to seal the fuel pipe and fuel delivery pipe. Clean dirt away if necessary.
- ◆ Do not use any tool in this work.
- ◆ Do not bend or twist the nylon tube.
- ◆ Keep off plug from foreign objects.
- ◆ To protect the fuel pipe, cover it with a vinyl bag after checking.
- ◆ When the fuel pipe and fuel delivery pipe are stuck, pinch the nylon tube with fingers, and turn it carefully to free and then disconnect the fuel pipe.

12. DISCONNECT FUEL PIPE SUB-ASSY NO.2

- Remove the fuel pipe clamp.
- Pinch the tube connector then pull out the fuel pipe.

NOTICE:

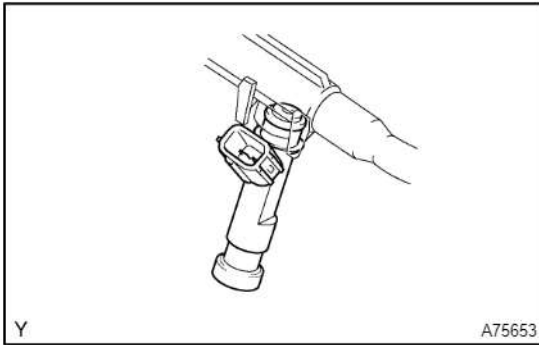
- ◆ Check if there is any dirt like mud around the connector before this work, because the quick connector has the O-ring to seal the fuel pipe and fuel delivery pipe. Clean dirt away if necessary.
- ◆ Do not use any tool in this work.
- ◆ Do not bend or twist the nylon tube.
- ◆ Keep off plug from foreign objects.
- ◆ To protect the fuel pipe, cover it with a vinyl bag after checking.
- ◆ When the fuel pipe and fuel pressure regulator are stuck, pinch the nylon tube with fingers, and turn it carefully to free and then disconnect the fuel pipe.

13. REMOVE FUEL DELIVERY PIPE SUB-ASSY

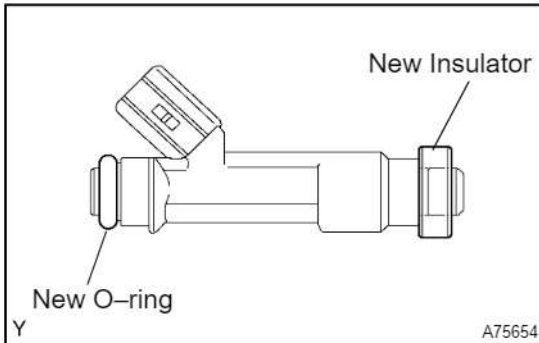
- Disconnect the 6 fuel injector connectors.
- Remove the 6 bolts and fuel delivery pipe together with the 6 fuel injectors.

NOTICE:

Be careful not to drop the injectors when removing the fuel delivery pipe.

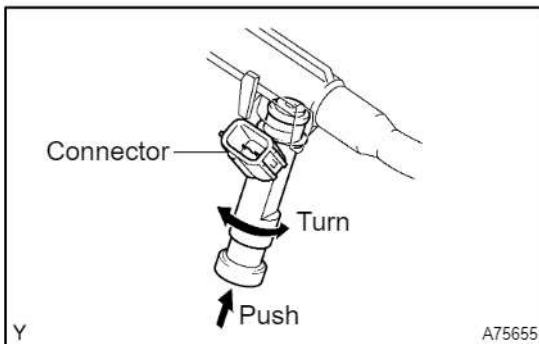


14. REMOVE FUEL INJECTOR ASSY

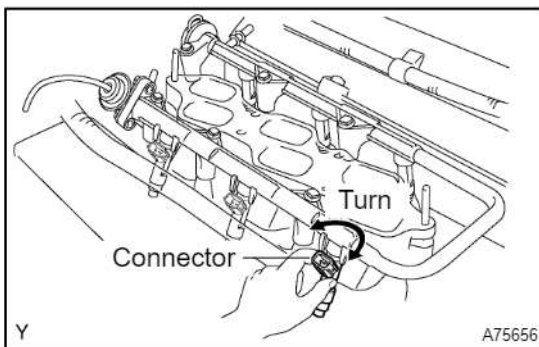


15. INSTALL FUEL INJECTOR ASSY

- Install a new insulator to the each fuel injector.
- Apply a light coat of spindle oil or gasoline to a new O-ring and install it to the each fuel injector.



- While turning the fuel injector left and right, install it to the fuel delivery pipe.
- Position the fuel injector connector outward.



16. INSTALL FUEL DELIVERY PIPE SUB-ASSY

- Place the fuel delivery pipe together with the 6 fuel injectors on the intake manifold.
- Temporarily install the 6 bolts which are used to hold the fuel delivery pipe to the intake manifold.
- Check that the fuel injectors rotate smoothly.

HINT:

If fuel injectors do not rotate smoothly, the probable cause is incorrect installation of O-rings. Replace an O-ring.

- Position the fuel injector connector outward.
- Tighten the 6 bolts which are used to hold the fuel delivery pipe to the intake manifold.

Torque: 15 N·m (153 kgf·cm, 11 ft·lbf)

- Connect the 6 fuel injector connectors.

17. CONNECT FUEL PIPE SUB-ASSY NO.2

- Push in the tube connector to the pipe then tube connector makes "click" sound.

NOTICE:

- ◆ Check if there is any damage or foreign objects on the connected part of the fuel pipe.
 - ◆ After connecting, check if the pipe and connector are securely connected by pulling them.
- Install the fuel pipe clamp.

18. CONNECT FUEL PIPE SUB-ASSY NO.1

- (a) Push in the tube connector to the pipe then tube connector makes "click" sound.

NOTICE:

- ◆ Check if there is any damage or foreign objects on the connected part of the fuel pipe.
- ◆ After connecting, check if the pipe and connector are securely connected by pulling them.

- (b) Install the fuel pipe clamp.

19. INSTALL INTAKE AIR SURGE TANK

- (a) Install a new gasket and the intake air surge tank with the 2 nuts.

Torque: 28 N·m (286 kgf·cm, 21 ft·lbf)

- (b) Using the socket hexagon wrench 8, install the 4 bolts.

Torque: 28 N·m (286 kgf·cm, 21 ft·lbf)

- (c) Install the 3 upper bolts which are used to secure the 2 surge tank stays and throttle body bracket.

Torque: 21 N·m (214 kgf·cm, 16 ft·lbf)

- (d) Install the 3 wire harness clamps and hose clamp.

- (e) Connect the throttle motor connector.

- (f) Connect the 2 VSV connectors.

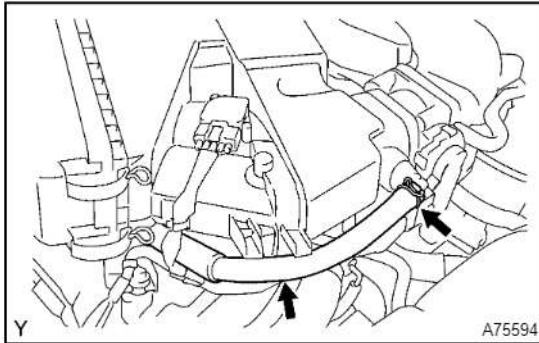
20. CONNECT VENTILATION HOSE**21. CONNECT FUEL VAPOR FEED HOSE ASSY****22. CONNECT WATER BY-PASS HOSE NO.4****23. CONNECT WATER BY-PASS HOSE NO.5****24. INSTALL AIR CLEANER ASSY (See page 10-7)****25. CONNECT VENTILATION HOSE NO.2****26. INSTALL V-BANK COVER (See page 10-7)****27. ADD ENGINE COOLANT (See page 16-5)****28. CHECK FOR ENGINE COOLANT LEAKS (See page 16-1)****29. CHECK FOR FUEL LEAKS (See page 11-5)**

FUEL PRESSURE REGULATOR ASSY (1GR-FE)

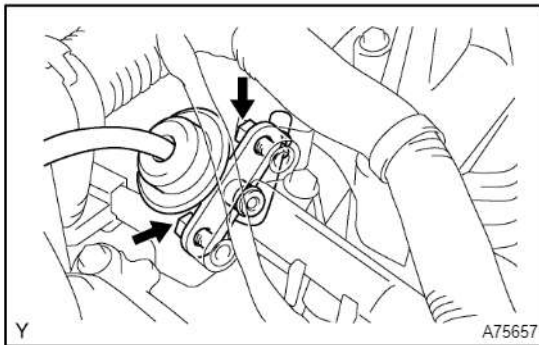
REPLACEMENT

1100R-02

1. WORK FOR PREVENTING GASOLINE FROM SPILLING OUT (See page 11-1)
2. REMOVE V-BANK COVER (See page 10-7)



3. DISCONNECT VENTILATION HOSE NO.2
4. REMOVE AIR CLEANER ASSY (See page 10-7)
5. DISCONNECT FUEL PIPE SUB-ASSY NO.2 (See page 11-12)



6. REMOVE FUEL PRESSURE REGULATOR ASSY
 - (a) Remove the 2 bolts and fuel pressure regulator.
 - (b) Remove the vacuum hose.

7. INSTALL FUEL PRESSURE REGULATOR ASSY

- (a) Install the vacuum hose.
- (b) Apply a light coat of spindle oil or gasoline to a new O-ring and install it to the fuel pressure regulator.
- (c) Install the fuel pressure regulator with the 2 bolts.

Torque: 9.0 N·m (92 kgf·cm, 80 in.·lbf)

8. CONNECT FUEL PIPE SUB-ASSY NO.2 (See page 11-12)

9. INSTALL AIR CLEANER ASSY (See page 10-7)

10. CONNECT VENTILATION HOSE NO.2

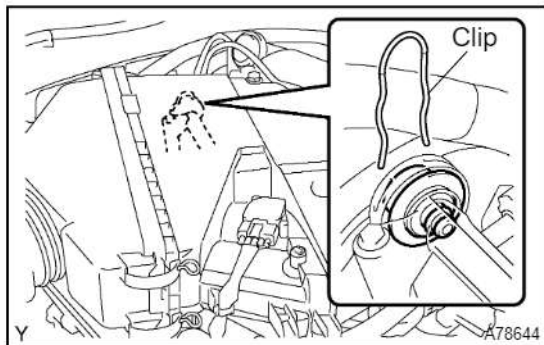
11. INSTALL V-BANK COVER (See page 10-7)

12. CHECK FOR FUEL LEAKS (See page 11-5)

FUEL PRESSURE PULSATION DAMPER ASSY (1GR-FE) REPLACEMENT

1100S-02

1. WORK FOR PREVENTING GASOLINE FROM SPILLING OUT (See page 11-1)
2. REMOVE V-BANK COVER (See page 10-7)



3. REMOVE FUEL PRESSURE PULSATION DAMPER ASSY

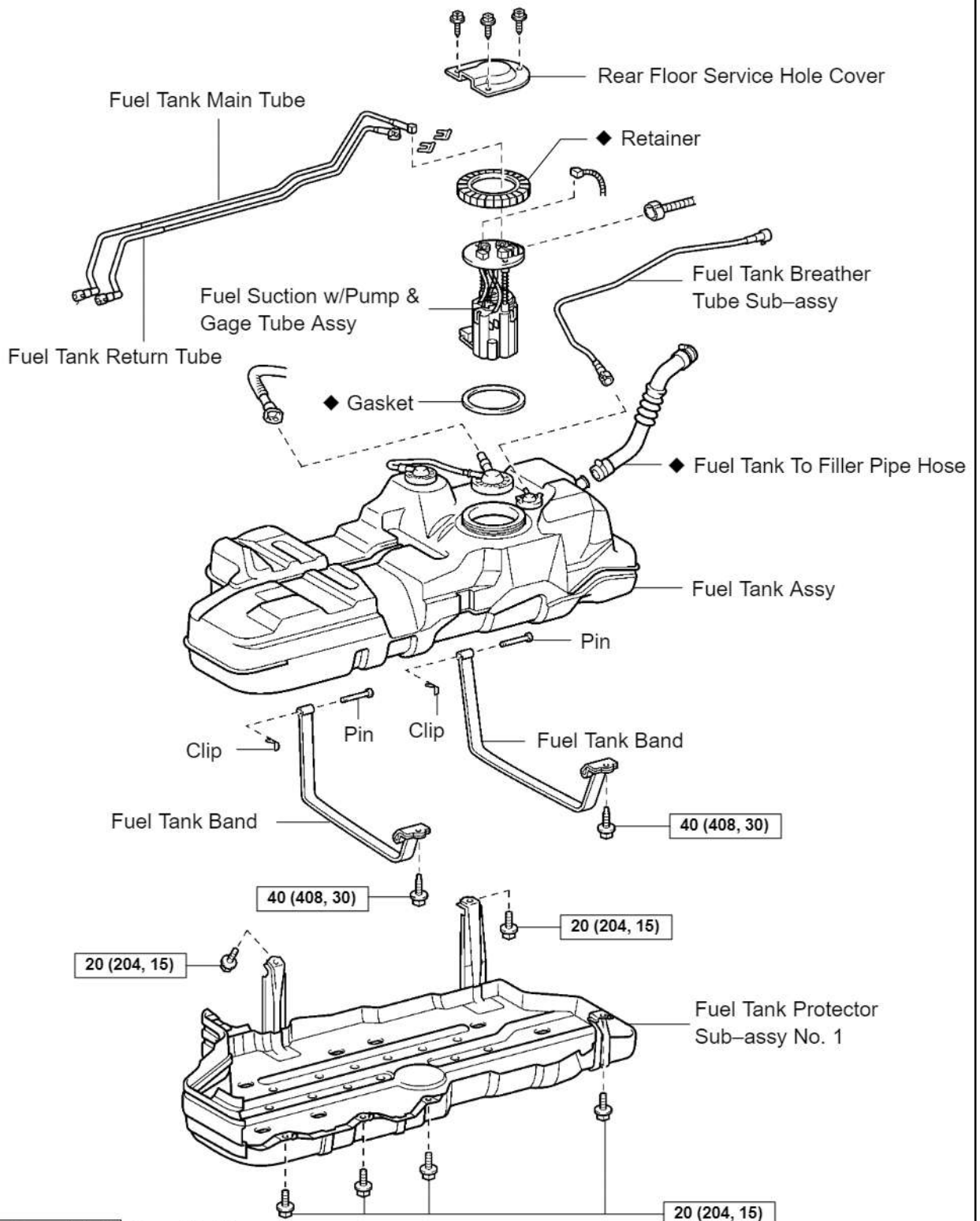
- (a) Remove the clip.
- (b) Pull out the fuel pressure pulsation damper from the fuel delivery pipe.

4. INSTALL FUEL PRESSURE PULSATION DAMPER ASSY

- (a) Apply a light coat of spindle oil or gasoline to a new O-ring and install it to the fuel pressure pulsation damper.
 - (b) Install the fuel pressure pulsation damper to the fuel delivery pipe.
 - (c) Install the clip.
5. INSTALL V-BANK COVER (See page 10-7)
 6. CHECK FOR FUEL LEAKS (See page 11-5)

FUEL TANK ASSY (1GR-FE) COMPONENTS

1100L-02



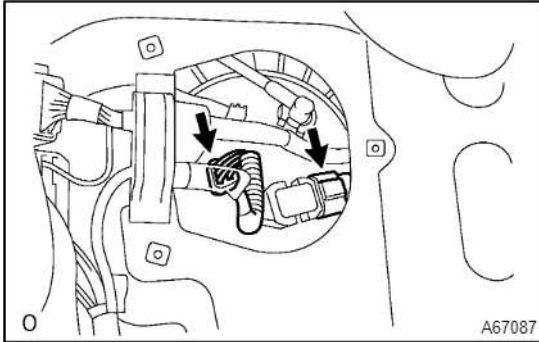
N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

A76631

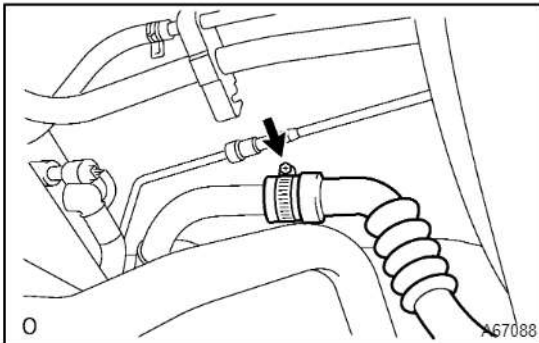
Removal & Installation and Disassembly & Reassembly

1. WORK FOR PREVENTING GASOLINE FROM SPILLING OUT (See page 11-1)



2. REMOVE CENTER FLOOR HOLE COVER

- (a) Hold the rear No. 1 seat assy LH.
- (b) Hold the rear No. 1 seat assy RH.
- (c) Remove a tear-off floor mat.
- (d) Remove the 3 screws from the center floor hole cover.
- (e) Disconnect the 2 connectors.



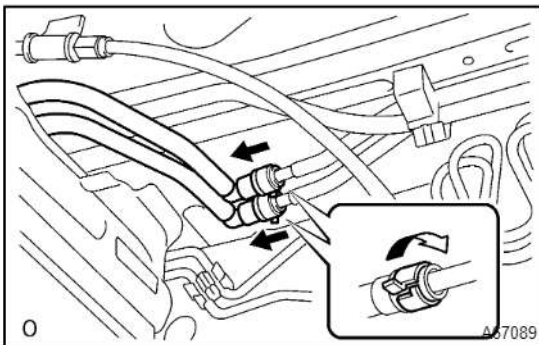
3. REMOVE FUEL TANK TO FILLER PIPE HOSE

- (a) Disconnect the fuel-tank-to-filler-pipe hose from the fuel filler pipe.

4. DRAIN FUEL

5. REMOVE FUEL TANK PROTECTOR SUB-ASSY NO.1

- (a) Set a mission jack to the fuel tank protector.
- (b) Remove the 6 bolts and the fuel tank protector.

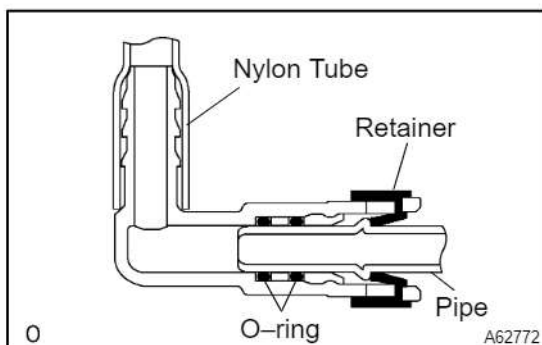


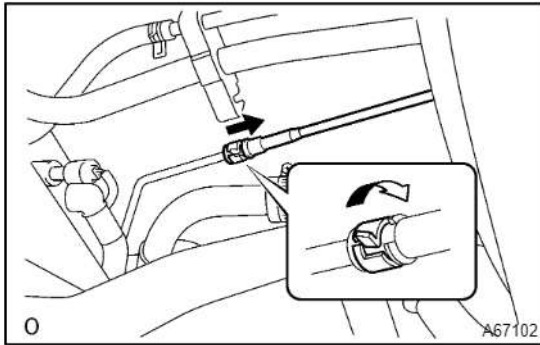
6. DISCONNECT FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE

- (a) Pinch the tabs of the retainer to remove the lock claws and pull out the 2 fuel tank tubes.

NOTICE:

- ◆ Check that there is no dirt or mud around the quick connector before this work, because the quick connector has an O-ring which seals the pipe and the connector. Clean the connector if necessary.
- ◆ Do not use any tool in this work.
- ◆ Do not bend or twist the nylon tube.
- ◆ To protect the tube, cover it with a vinyl bag after checking.
- ◆ When connector and the pipe are stuck, turn the retainer carefully to free and then disconnect the fuel tank tube.



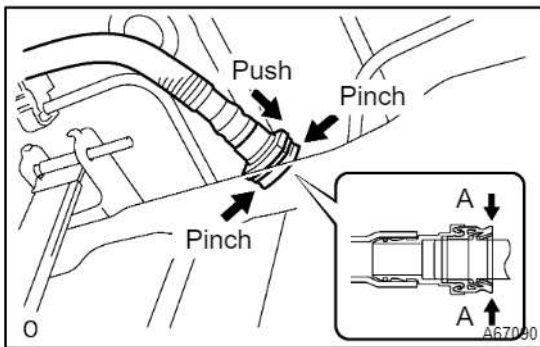
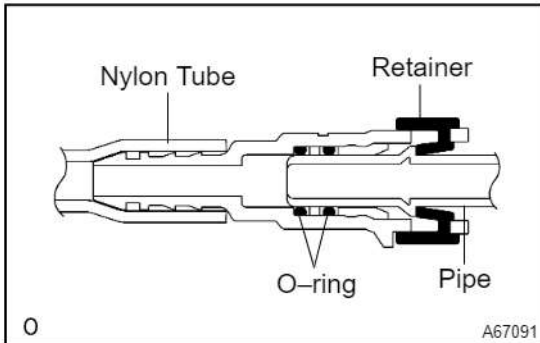


7. DISCONNECT FUEL TANK BREATHER TUBE SUB-ASSY

- (a) Pinch a tab of the retainer to remove the lock claws and pull out the fuel tank tube.

NOTICE:

- ◆ Check that there is no dirt or mud around the quick connector before this work, because the quick connector has an O-ring which seals the pipe and the connector. Clean the connector if necessary.
- ◆ Do not use any tool in this work.
- ◆ Do not bend or twist the nylon tube by force.
- ◆ To protect the tube, cover it with a vinyl bag after checking.
- ◆ When connector and the pipe are stuck, turn the retainer carefully to free and then disconnect the tube.



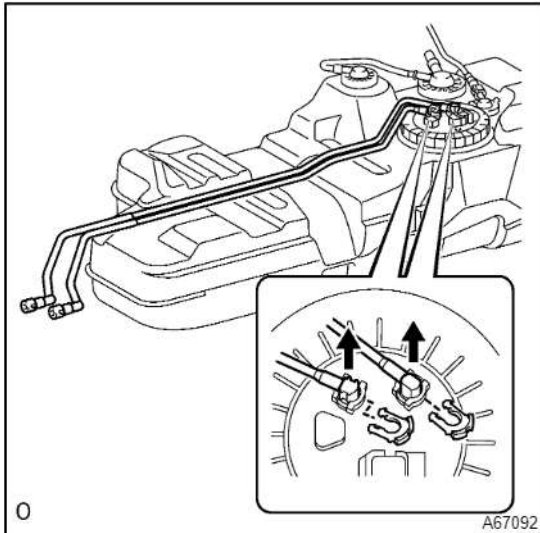
8. DISCONNECT FUEL TANK VENT HOSE

- (a) Disconnect the fuel tank breather tube from the fuel tank.
- (1) Push the connector deep inside.
 - (2) Pinch portion A, as shown in the illustration.
 - (3) Pull out the connector.

9. REMOVE FUEL TANK ASSY

- (a) Set a mission jack to the fuel tank.
- (b) Remove the 2 bolts, 2 fuel tank bands and fuel tank.

10. REMOVE FUEL TANK CUSHION

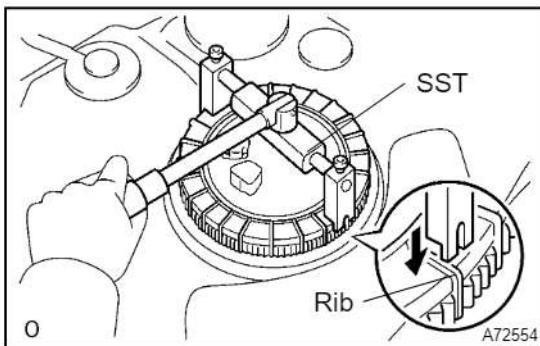
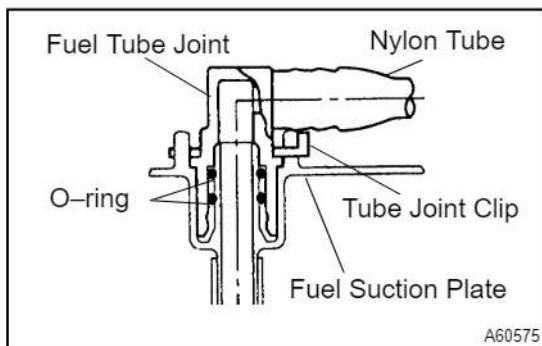


11. REMOVE FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE

- (a) Remove the 2 tubes joint clips, and pull out the 2 fuel tank tubes.

NOTICE:

- ◆ Check that there is no dirt or mud around the quick connector before this work, because the quick connector has an O-ring which seals the pipe and the connector. Clean the connector if necessary.
- ◆ Do not use any tool in this work.
- ◆ Do not bend or twist the nylon tube by force.
- ◆ After disconnecting, cover the fuel tube joint with a vinyl bag.
- ◆ When the fuel tube joint and fuel suction plate are stuck, turn the fuel tank main tube carefully to free and then disconnect it. Likewise, disconnect the fuel tank return tube.



12. REMOVE FUEL SUCTION W/PUMP & GAGE TUBE ASSY

NOTICE:

Protect a connector and tube joint with a masking tape or something in order to prevent sticking foreign objects onto them, and clean dirt and foreign objects from the fuel suction tube assy before removing it.

- (a) Using a SST, loosen the retainer.
SST 09808-14020 (09808-01410, 09808-01420, 09808-01430)

HINT:

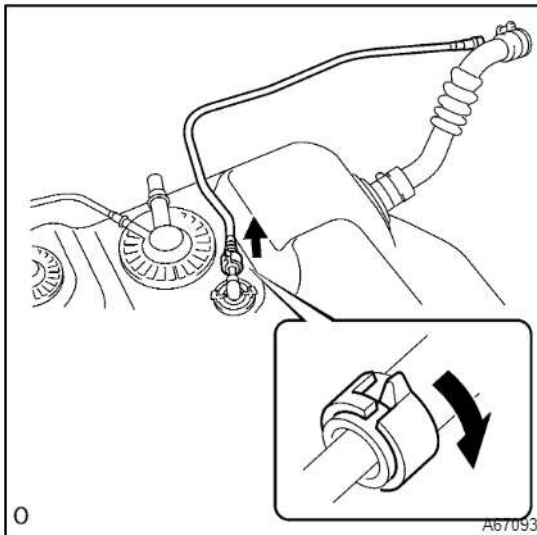
A rib on the retainer can be fitted into a tip of the SST.

- (b) Remove the retainer.
(c) Pull out the fuel suction tube assy.

NOTICE:

Be careful not bend the arm of the sender gage.

- (d) Remove the gasket from the fuel tank.

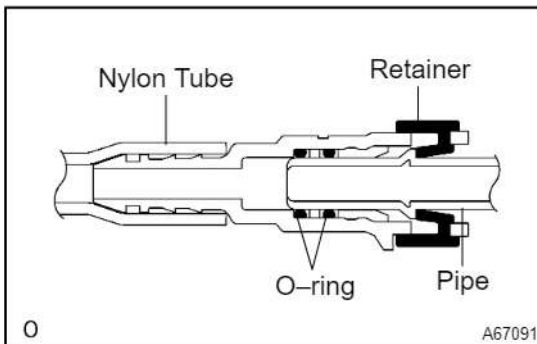


13. REMOVE FUEL TANK BREATHER TUBE SUB-ASSY

- (a) Pinch the tab of the retainer to remove the lock claws and pull out the fuel tank breather tube.

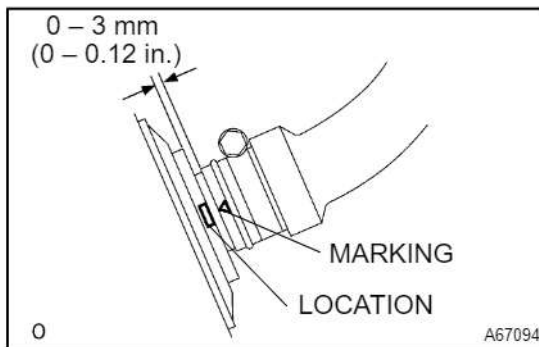
NOTICE:

- ◆ Check that there is no dirt or mud around the quick connector before this work, because the quick connector has an O-ring which seals the pipe and the connector. Clean the connector if necessary.
- ◆ Do not use any tool in this work.
- ◆ Do not bend or twist the nylon tube.
- ◆ To protect the tube, cover it with a vinyl bag after checking.
- ◆ When connector and the pipe are stuck, turn the fuel tank breather tube carefully to free and then disconnect the tube.



14. REMOVE FUEL TANK TO FILLER PIPE HOSE

- (a) Remove the fuel tank inlet hose from the fuel tank.

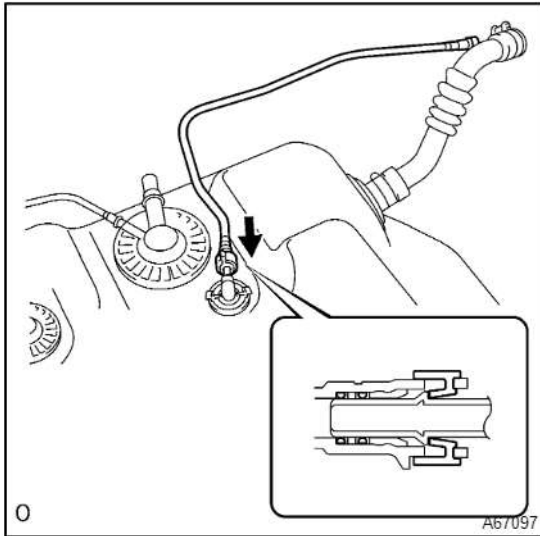


15. INSTALL FUEL TANK TO FILLER PIPE HOSE

- (a) Hose and pipe connection is as shown in the illustration.

NOTICE:

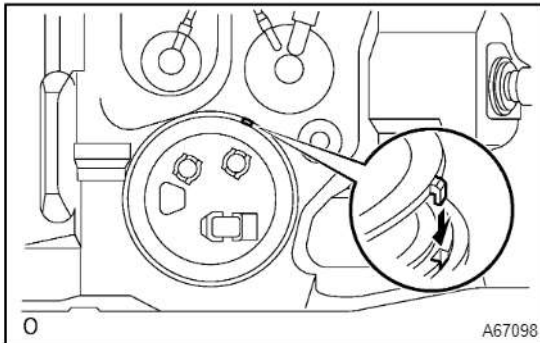
The filler hose must be replaced with new one.



- 16. INSTALL FUEL TANK BREATHER TUBE SUB-ASSY**
 (a) Push in the tube connector to the pipe until the connector makes a "click" sound and install the retainer.

NOTICE:

- ◆ Check if there is any damage or foreign objects on the connected part of the pipe.
- ◆ After connecting, check if the pipe and the connector are securely connected by pulling them.

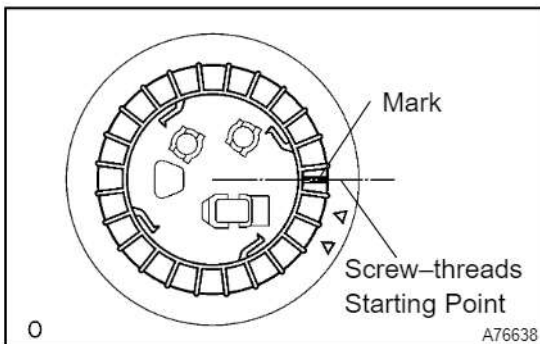
**17. INSTALL FUEL SUCTION W/PUMP & GAGE TUBE ASSY**

- (a) Install a new gasket onto the fuel tank.
 (b) Set the fuel suction tube assy to the fuel tank.

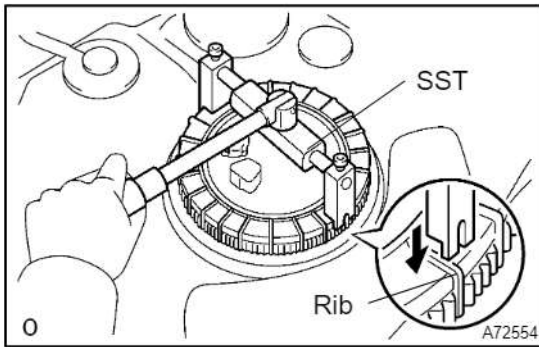
NOTICE:

Be careful not bend the arm of the fuel sender gage.

- (c) Fit a spline of the fuel suction tube assy into a keyway of the fuel tank.



- (d) Install a retainer.
 (1) Using a new retainer, align mark on the retainer with a screw-threads starting point of the fuel tank.
 (2) While holding the fuel suction tube assy, tighten the retainer one complete turn by hand.

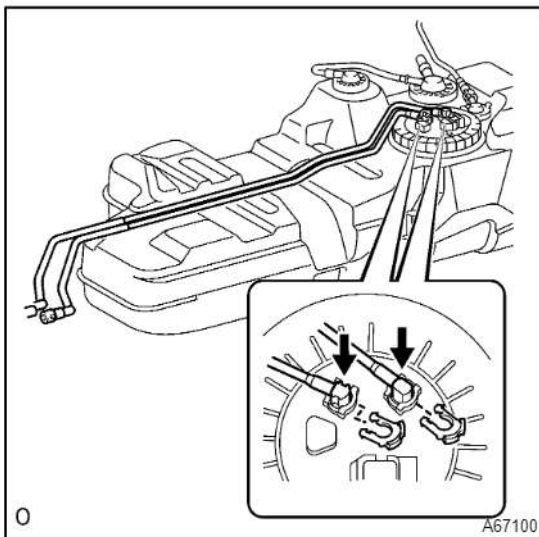
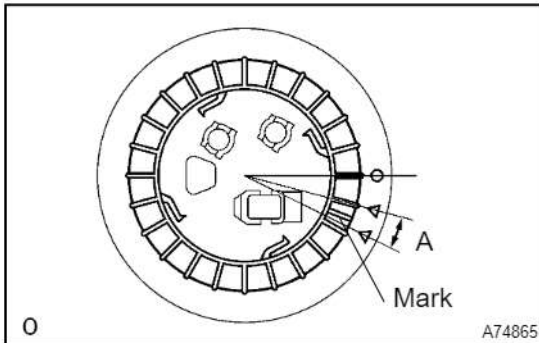


- (e) Using a SST, tighten the retainer one more complete turn, and position the mark on the retainer into a range A of the fuel tank.

SST 09808-14020 (09808-01410, 09808-01420, 09808-01430)

HINT:

- ◆ Turn the retainer two complete turns and position the mark within the range A for the installation of the retainer.
- ◆ A rib on the retainer can be fitted into a tip of the SST.

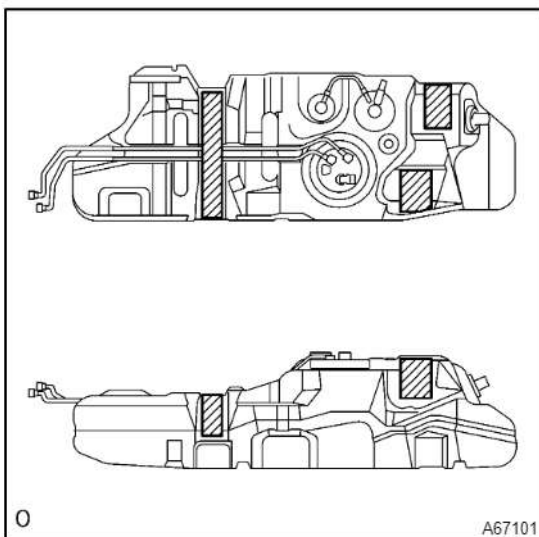


18. INSTALL FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE

- (a) Connect the fuel tank main tube with the tube joint clip.

NOTICE:

- ◆ Check that there is no scratch or foreign objects on the connecting parts.
- ◆ Check that the connector is fully inserted.
- ◆ Check that the tube joint clip is on the collar of the connector.
- ◆ After installing the tube joint clip, check if the tubes are securely connected by pulling them.



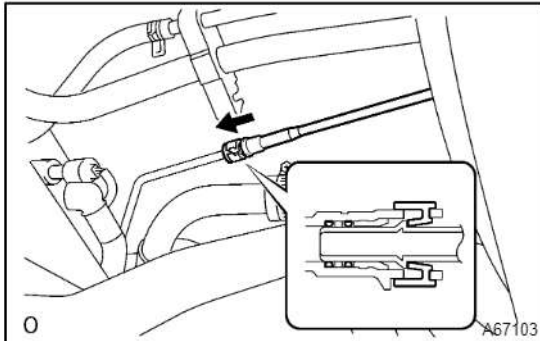
19. INSTALL FUEL TANK CUSHION

- (a) Install the 3 new fuel tank cushions to the fuel tank.

20. INSTALL FUEL TANK ASSY

- (a) Set a mission jack to the fuel tank.
- (b) Install the fuel tank and 2 fuel tank bands with the 2 bolts.

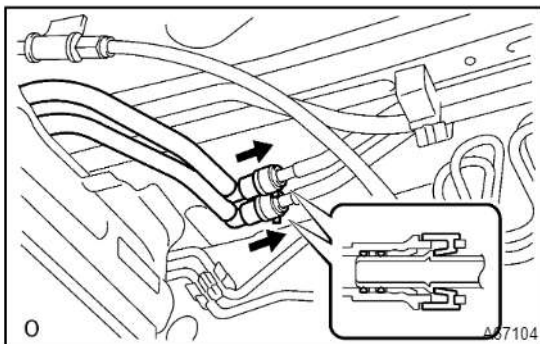
Torque: 40 N·m (408 kgf·cm, 30 ft·lbf)

**21. CONNECT FUEL TANK BREATHER TUBE SUB-ASSY**

- (a) Push in the tube connector to the pipe until the connector makes "click" sound.

NOTICE:

- ◆ Check that there is no damage or foreign objects on the connected part of the pipe.
- ◆ After connecting, check if the pipe and the connector are securely connected by pulling them.

**22. CONNECT FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE**

- (a) Push in the tube connector to the pipe until the connector makes "click" sound.

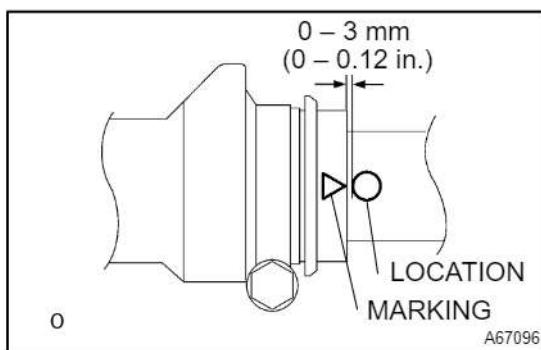
NOTICE:

- ◆ Check that there is no damage or foreign objects on the connected part of the pipe.
- ◆ After connecting, check if the pipe and the connector are securely connected by pulling them.

23. INSTALL FUEL TANK PROTECTOR SUB-ASSY NO.1

- (a) Set a mission jack to the fuel tank protector.
- (b) Install the fuel tank protector with the 6 bolts.

Torque: 20 N·m (204 kgf·cm, 15 ft·lbf)

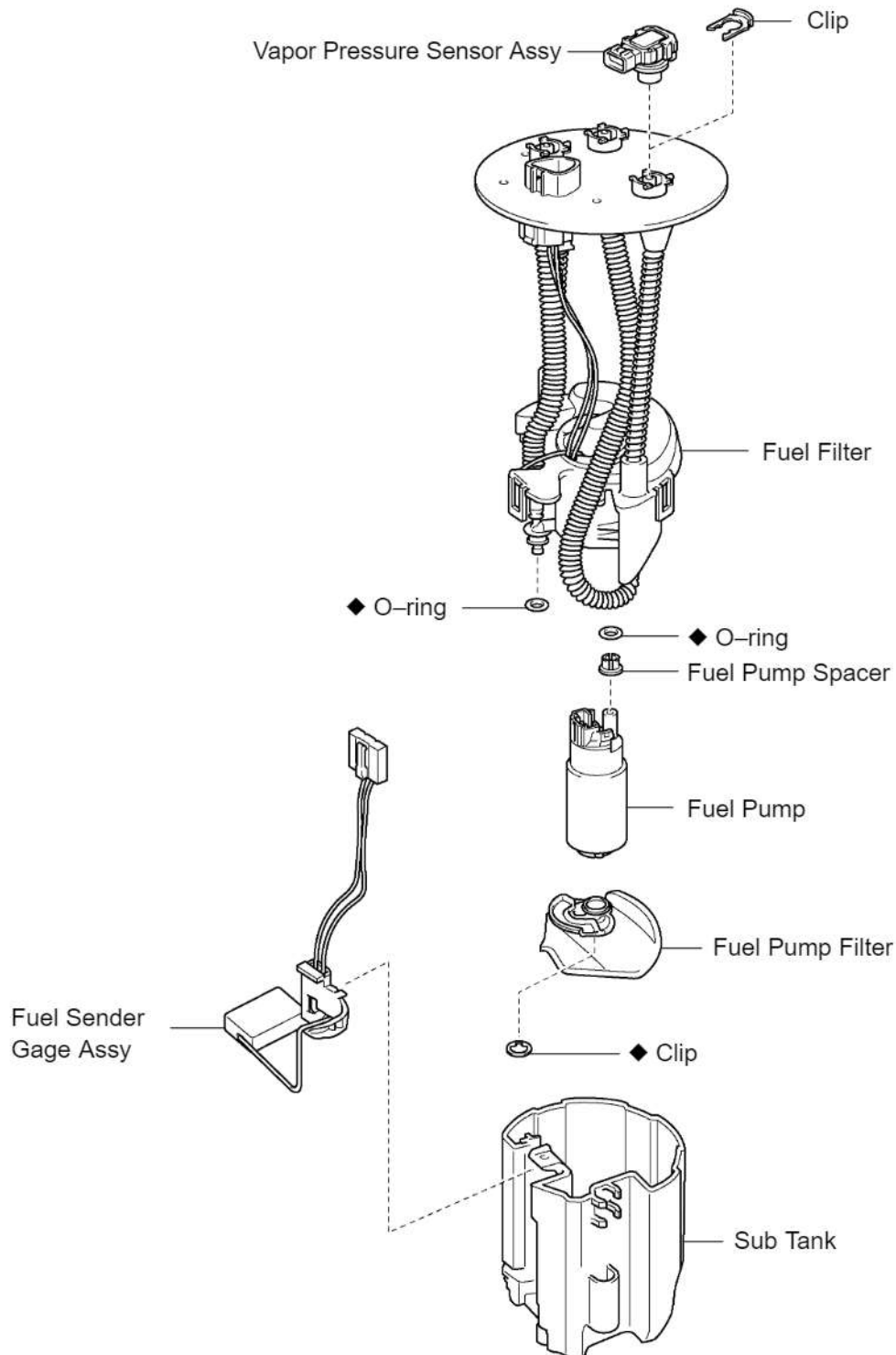
**24. CONNECT FUEL TANK TO FILLER PIPE HOSE**

- (a) Hose and pipe connection is as shown in the illustration.

25. CHECK FUEL LEAK

FUEL PUMP ASSY (1GR-FE) COMPONENTS

1100N-02



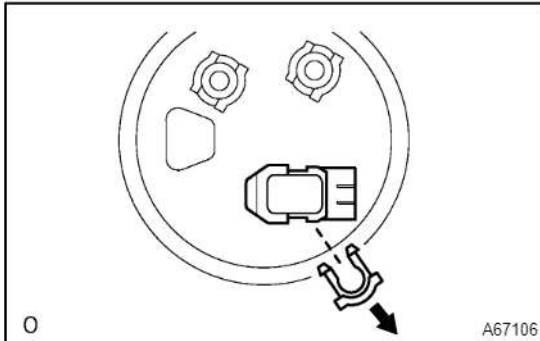
Y ◆ Non-reusable part

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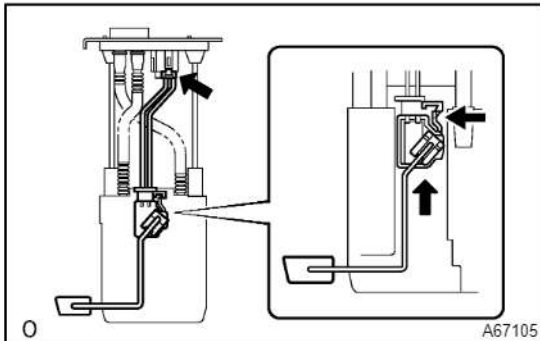
Removal & Installation and Disassembly & Reassembly

1. REMOVE FUEL SUCTION W/PUMP & GAGE TUBE ASSY (See page 11-20)



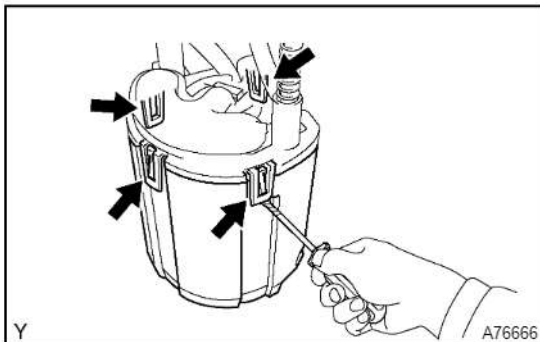
2. REMOVE VAPOR PRESSURE SENSOR ASSY

- (a) Remove the tube joint clip, and pull out the vapor pressure sensor.



3. REMOVE FUEL SENDER GAGE ASSY

- (a) Disconnect the fuel sender gage connector.
(b) Unlock the fuel sender gage, and slide it to remove.

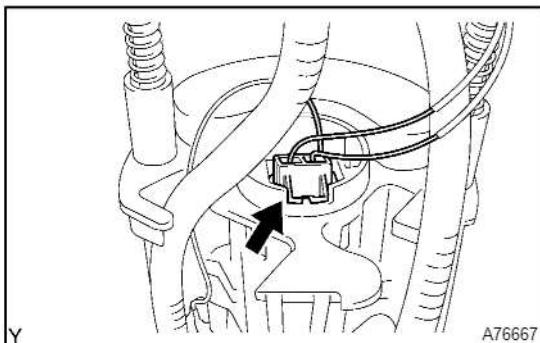


4. REMOVE FUEL PUMP ASSY W/FILTER

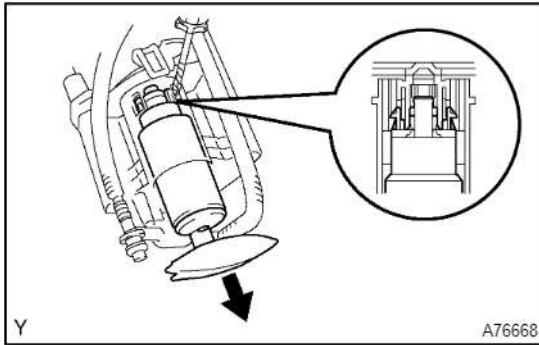
- (a) Using a screwdriver, disconnect the 4 snap-claws from the claw holes, and remove the sub tank.

NOTICE:

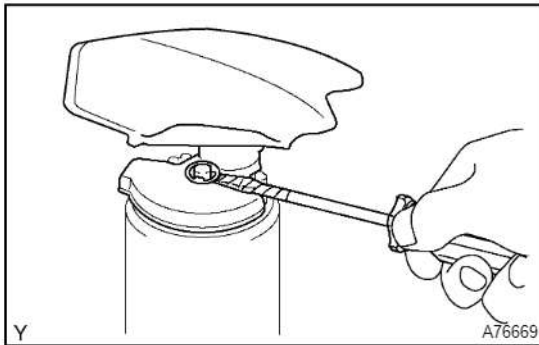
Do not damage the sub tank.



- (b) Disconnect the fuel pump connector.



- (c) Using a small screwdriver, disconnect the 4 claws from the claw holes, and remove the fuel pump w/ filter.
- (d) Remove the fuel pump O-ring from the fuel pump.
- (e) Remove the fuel pump spacer from the fuel pump.

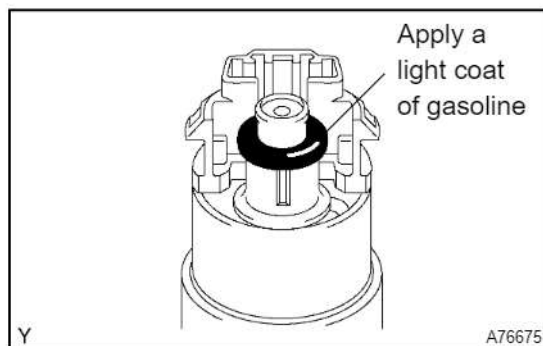


5. REMOVE FUEL PUMP FILTER

- (a) Using a small screwdriver, pry out the clip.
- (b) Pull out the fuel pump filter from the fuel pump.

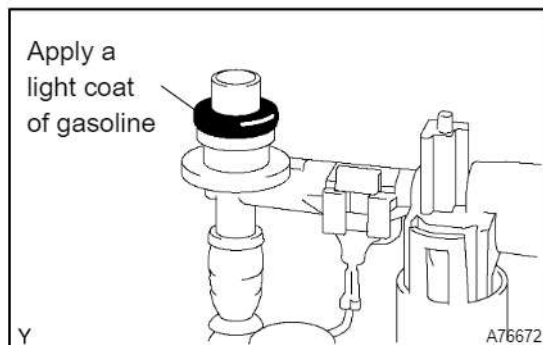
6. INSTALL FUEL PUMP FILTER

- (a) Install the fuel pump filter with a new clip.

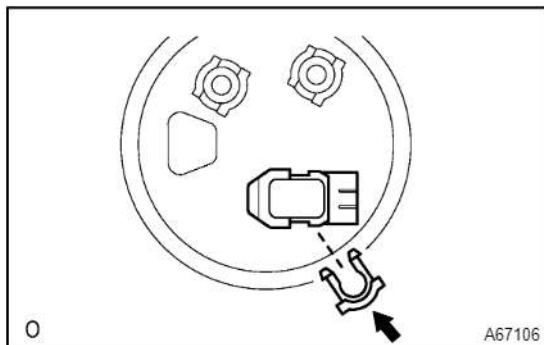


7. INSTALL FUEL PUMP ASSY W/FILTER

- (a) Install a fuel pump spacer to the fuel pump.
- (b) Apply a light coat of gasoline to a new O-ring, and install it to the fuel pump.
- (c) Apply a light coat of gasoline to the O-ring again, and install the fuel pump to the fuel filter.



- (d) Install the sub tank.
 - (1) Apply a light coat of gasoline to a new O-ring, and install it to the fuel suction tube assy.
 - (2) Apply a light coat of gasoline to the O-ring again, and install the sub tank to the fuel filter.

**8. INSTALL VAPOR PRESSURE SENSOR ASSY**

(a) Install the vapor pressure sensor with the tube joint clip.

NOTICE:

- ◆ Check that there is no scratch or foreign objects on the connecting parts.
- ◆ Check that the fuel tube joint connector is fully inserted.
- ◆ Check that the tube joint clip is on the collar of the fuel tube joint.
- ◆ After installing the tube joint clip, check if the fuel tube joint connector is securely connected by pulling it.

9. INSTALL FUEL SUCTION W/PUMP & GAGE TUBE ASSY (See page 11-20)

FUEL SYSTEM (2UZ-FE)

PRECAUTION

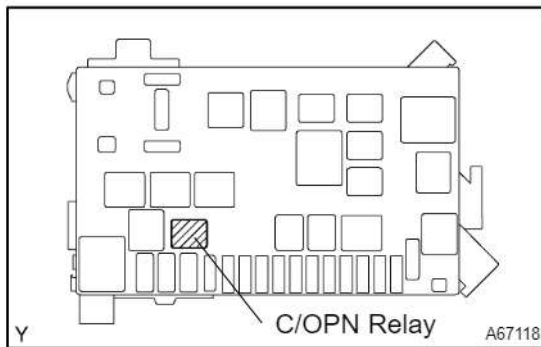
1. PRECAUTION

- Before working on fuel system, disconnect negative (–) terminal cable from battery.
- Do not smoke or work near an open flame when working on fuel system.
- Keep gasoline away from rubber or leather parts.

2. WORK FOR PREVENT GASOLINE FROM SPILLING OUT

CAUTION:

- ◆ Perform disconnecting operation of the fuel system parts after working for prevent gasoline from spilling out.
- ◆ As there is remained pressure in the fuel line after working for prevent gasoline from spilling out, prevent it from splashing inside the vehicle compartment by covering them with a shop rag.



- Remove the circuit opening relay in the engine room relay block.
- Start the engine. After the engine has stopped on its own, turn the ignition switch OFF.

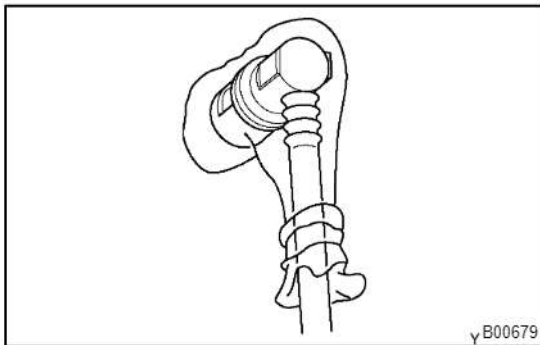
HINT:

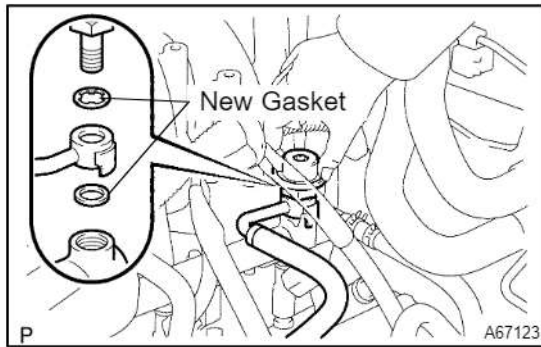
There is a case that DTC P0171 (system too lean) is output.

- Check that the engine does not start.
- Remove the fuel tank cap, and let the air out of the fuel tank.
- Disconnect negative (–) terminal cable from battery.
- Reinstall the circuit opening relay.

3. FUEL SYSTEM

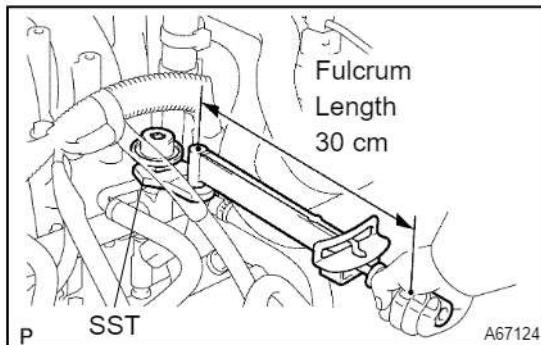
- When disconnecting the high fuel pressure line, a large amount of gasoline will spill out, so observe these procedures.
 - Work for prevent gasoline from spilling out.
 - Disconnect the fuel pump tube.
(See page 11-44)
 - Drain the fuel remained inside the fuel pump tube.
 - Prevent the disconnected fuel pump tube from damaging and mixing foreign objects by covering them with a vinyl bag.
 - Put a container under the connection.





- (b) When connecting the union bolt (fuel pressure pulsation damper) on the high pressure pipe union, observe these 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)

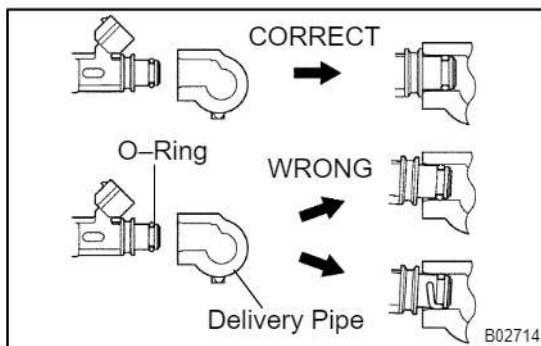
Torque:

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

39 N·m (400 kgf·cm, 29 ft·lbf)

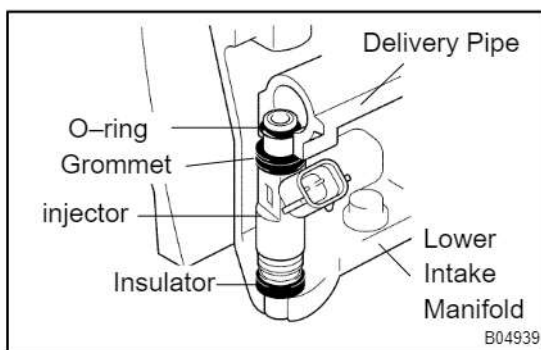
HINT:

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



- (c) Observe these precautions when removing and installing the injectors.

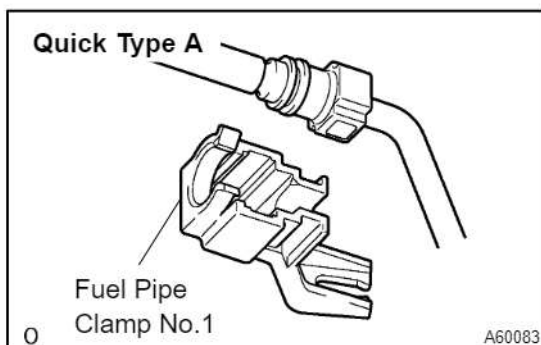
- (1) Never reuse the O-ring.
- (2) When placing the new O-rings on the injector, take care not to damage it in any way.
- (3) Coat a new O-rings with spindle oil or gasoline before installing. Never use engine, gear or brake oil.



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

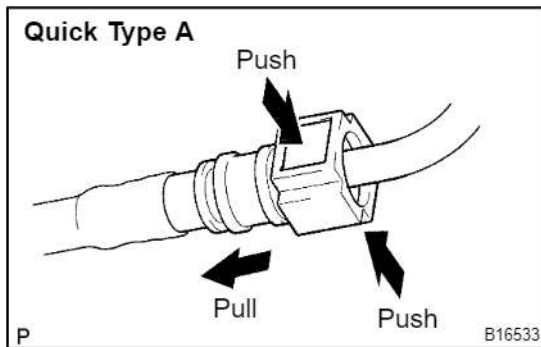
NOTICE:

Before installing the injector, must apply spindle oil or gasoline on the place where a delivery pipe or cylinder head touches an O-ring of the injector.

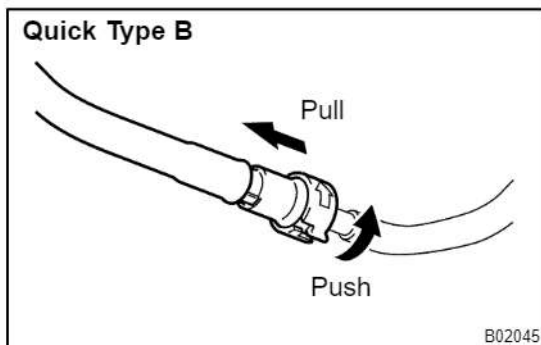
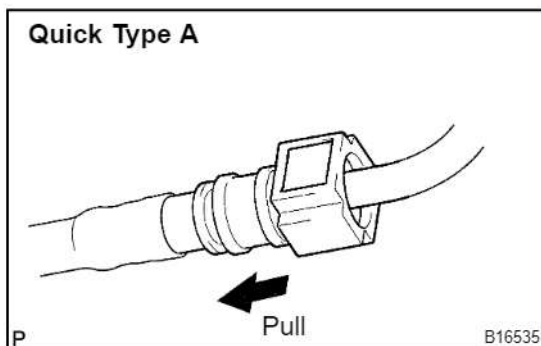
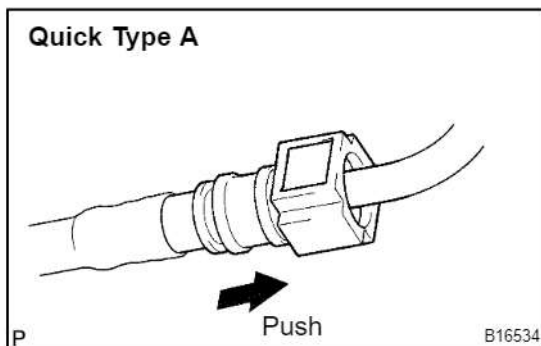


- (e) Observe these precautions when disconnecting the fuel tube connector (Quick type A):

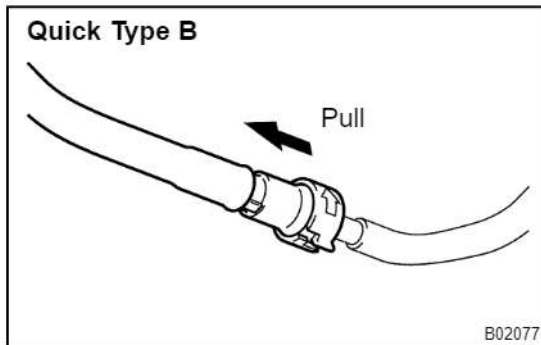
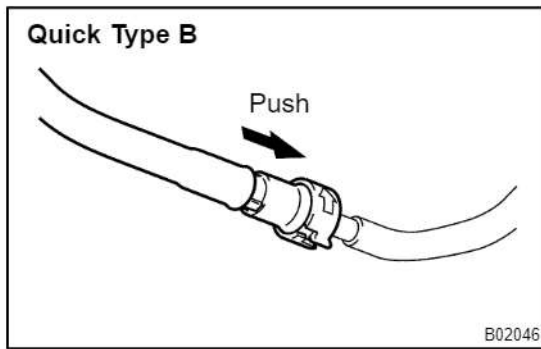
- (1) Remove the fuel pipe clamp No.1.
- (2) Check if there is any dirt like mud on the pipe and around the connector before disconnecting them and clean the dirt away.



- (3) Check that there is any dirt like mud in the pipe and around the connector before disconnecting them and clean the dirt away.
- (4) Be sure to disconnect them with hands.
- (5) When the connector and the pipe are stuck, pinch the fuel pipe between the hands, push and pull the connector to free to disconnect and pull it out. Do not use any tool at this time.
- (6) Inspect if there is any dirt or the likes on the seal surface of the disconnected pipe and clean it away.
- (7) Prevent the disconnected pipe and connector from damaging and mixing foreign objects by covering them with a vinyl bag.



- (f) Observe these precautions when connecting the fuel tube connector (Quick Type A):
 - (1) Check that 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 the connector makes a "click" sound. In case that the connection is tight, apply little amount of fresh engine oil on the tip of the pipe.
 - (3) After having finished the connection, check if the pipe and the connector are securely connected by pulling them.
 - (4) Check that there is any fuel leak.
- (g) Observe these precautions when disconnecting the fuel tube connector (Quick type B):
 - (1) Check if there is any dirt like mud on the pipe and around the connector before disconnecting them and clean the dirt away.
 - (2) Be sure to disconnect with hands.
 - (3) When the connector and the pipe are stuck, push and pull the connector to free to disconnect and pull is out. Do not use any tool at this time.
 - (4) Inspect if there is any dirt or the likes on the seal surface of the disconnected pipe and clean it away.
 - (5) Prevent the disconnected pipe and connector from damaging and mixing foreign objects by covering them with a vinyl bag.



(h) Observe these precautions when connecting the fuel tube connector (Quick type B):

- (1) Match the axis of the connector with axis of the pipe, and push in the connector until the connector makes a "click" sound. In case that the connections is tight, apply little amount of new engine oil on the tip of the pipe.
- (2) After having finished the connection, check if the pipe and the connector are securely connected by pulling them.
- (3) Check if there is any fuel leakage.

(i) Observe these precautions when handling nylon tube.

- (1) Pay attention not to turn the connected part of the nylon tube and the quick connector with force when connection them.
- (2) Pay attention not to kink the nylon tube.
- (3) Do not remove the EPDM protector on the outside of the nylon tube.
- (4) Must not close the piping with the nylon tube by bending it.

4. CHECK FUEL LEAK

- (a) Check that there are no fuel leaks after doing maintenance anywhere on the fuel system.
(See page 11-35)

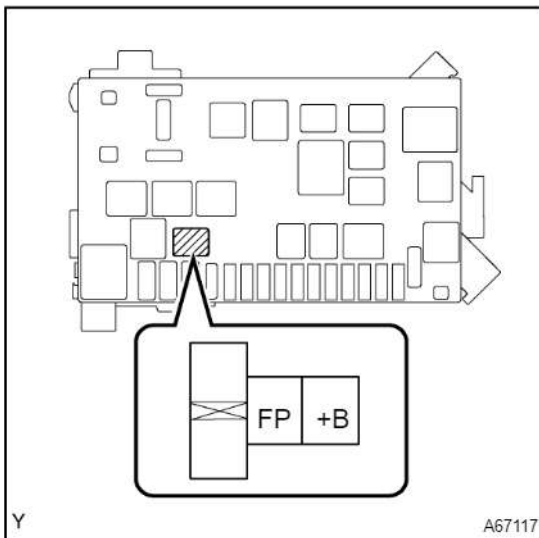
ON-VEHICLE INSPECTION

1. **CHECK FUEL PUMP OPERATION AND FUEL LEAK**
 - (a) When using hand-held tester
 - (1) Connect the hand-held tester to the DLC3.
 - (2) Turn the ignition switch ON and hand-held tester main switch ON.

NOTICE:

Do not start the engine.

- (3) Select the ACTIVE TEST mode on the hand-held tester.
- (4) Please refer to the hand-held tester operator's manual for further details.



- (b) When not using hand-held tester
 - (1) Remove the circuit opening relay.
 - (2) Using a service wire connect terminals FP and +B of the relay block.

NOTICE:

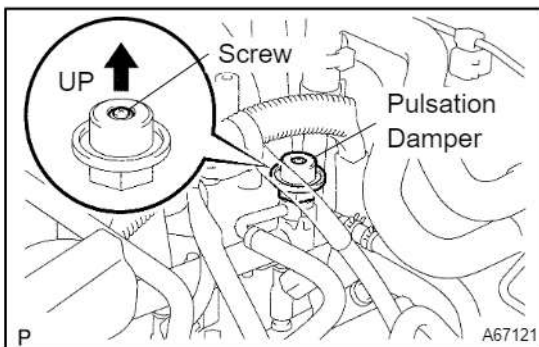
Pay due attention to the terminal connecting position to avoid a malfunction.

- (3) Turn the ignition switch ON, and check that the fuel pump operates.

NOTICE:

Do not start the engine.

- (c) Check that there are no fuel leaks after doing maintenance anywhere on the fuel system.



- (d) Check that the pulsation damper screw rises up when the fuel pump operates.

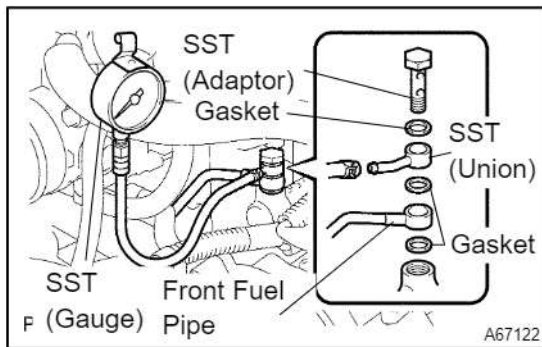
If operation is not as specified, check these parts:

- ◆ Fusible link
- ◆ Fuses
- ◆ EFI main relay
- ◆ Fuel pump
- ◆ ECM
- ◆ Wiring connections

- (e) Turn the ignition switch OFF.
- (f) Disconnect the hand-held tester from the DLC3.

2. CHECK FUEL PRESSURE

- (a) Check the battery positive voltage is above 12 V.
- (b) Disconnect the negative (-) terminal cable from the battery.
- (c) Remove the front fuel pipe from the LH delivery pipe (See page 11-41)



- (d) Install the front fuel pipe and SST (pressure gauge) to the delivery pipe with 3 lower gaskets and SST (adaptor).
SST 09268-45014 (09268-41200, 09268-41190, 90405-06167, 09268-41210, 90467-11009)

Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)

- (e) Wipe off any splattered gasoline.
(f) Reconnect the negative (–) terminal cable to the battery.
(g) Connect a hand-held tester to the DLC3 (See step 1 in check fuel pump operation).
(h) Measure the fuel pressure.

Fuel pressure:

265 – 304 kPa (2.7 – 3.1 kgf/cm², 38 – 44 psi)

If pressure is high, replace the fuel pressure regulator.

If pressure is low, check these parts:

- ◆ Fuel hoses and connections
- ◆ Fuel pump
- ◆ Fuel filter
- ◆ Fuel pressure regulator

- (i) Disconnect the hand-held tester from the DLC3.
(j) Start the engine.
(k) Measure the fuel pressure at idle.

Fuel pressure:

265 – 304 kPa (2.7 – 3.1 kgf/cm², 38 – 44 psi)

- (l) Stop the engine.
(m) Check that the fuel pressure remains as specified for 5 minutes after the engine has stopped.

Fuel pressure: 147 kPa (1.5 kgf/cm², 21 psi) or more

If pressure is not as specified, check the fuel pump, pressure regulator and/or injectors.

- (n) After checking fuel pressure, disconnect the negative (–) terminal cable from the battery and carefully remove the SST to prevent gasoline from splashing.
SST 09268-45014 (09268-41200, 09268-41190, 90405-06167, 09268-41210, 90467-11009)
(o) Reinstall the front fuel pipe to the LH delivery pipe (See page 11-41).
(p) Reconnect the negative (–) terminal cable to the battery.
(q) Check for fuel leakage (See step 1 in check fuel pump operation).

INSPECTION

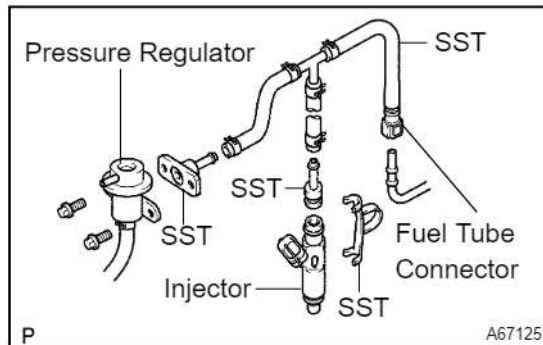
1. FUEL INJECTOR ASSY

(a) Inspect injector resistance

- (1) Using an ohmmeter, measure the resistance between the terminals.

Resistance: 13.4 – 14.2 Ω at 20°C (68°F)

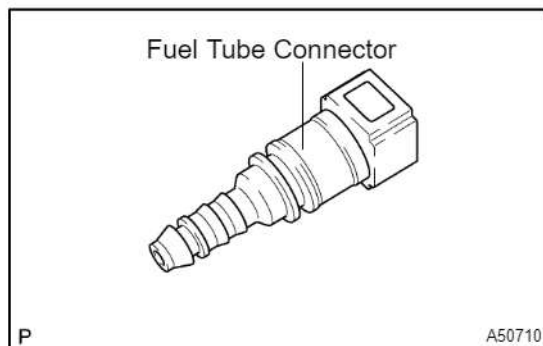
If the resistance is not as specified, replace the injector.



(b) Inspect injector inspection

CAUTION:

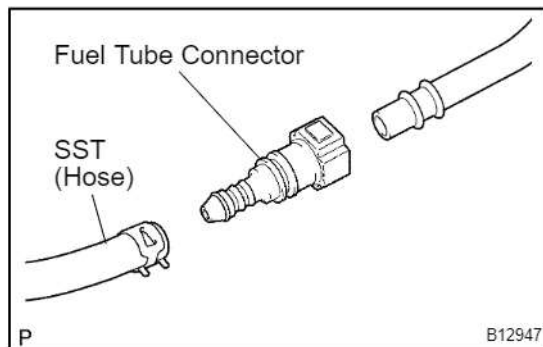
Keep injector clear of sparks during the test.



- (1) Purchase the new No.1 fuel pipe and take out the fuel tube connector from its pipe.

HINT:

Part No. 23271-50190



- (2) Connect SST and fuel tube connector to the fuel pipe.

SST 09268-41047 (95336-08070)

CAUTION:

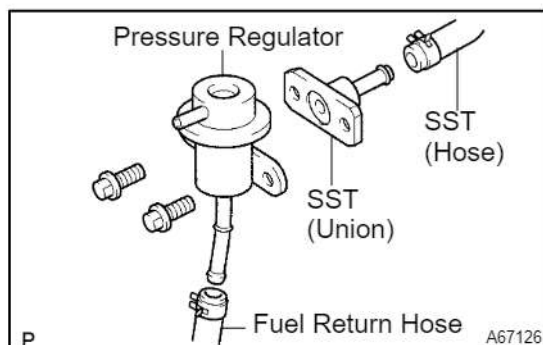
Perform connecting operations of the fuel tube connector (quick type) after observing the precautions.

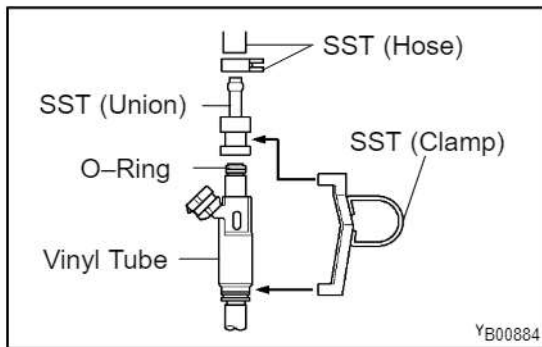
- (3) Remove the pressure regulator from the delivery pipe.
- (4) Install the O-ring to the fuel inlet of the pressure regulator.
- (5) Connect SST (hose) to the fuel inlet of the pressure regulator with SST (union) and the 2 bolts.

SST 09268-41047 (95336-08070, 09268-41091)

Torque: 7.5 N·m (80 kgf·cm, 66 in·lbf)

- (6) Connect the fuel return hose to the fuel outlet of the pressure regulator.

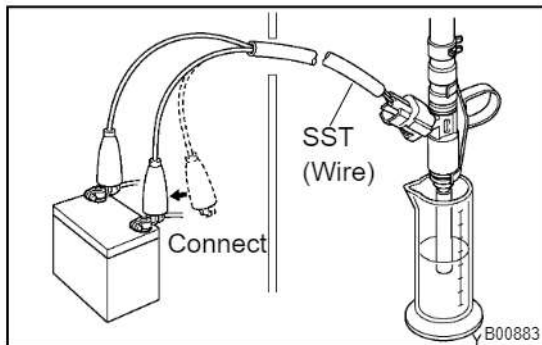




- (7) Install the O-ring to the injector.
- (8) Connect SST (union and hose) to the injector, and hold the injector and union with SST (clamp)
- SST 09268-41047 (09268-41110, 09268-41300, 95336-08070)
- (9) Put the injector into a graduated cylinder.

CAUTION:

Install a suitable vinyl tube onto the injector to prevent gasoline from splashing out.



- (10) Operate the fuel pump. (See Page 11-35)
- (11) Connect SST (wire) to the injector and battery for 15 seconds, and measure the injection volume with a graduated cylinder. Test each injector 2 or 3 time.

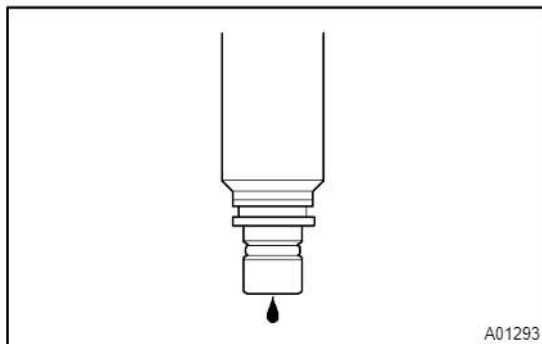
SST 09842-30070

Volume: 56 – 69 cm³ (3.4 – 4.2 cu in.) per 15 seconds

Difference between each injector:

13 cm³ (0.8 cu in.) or less

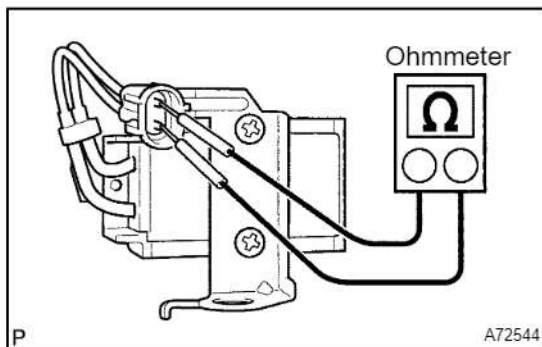
If the injection volume is not as specified, replace the injector.



- (c) Inspect leakage
 - (1) In the condition above, disconnect the tester probes of SST (wire) from the battery and check the fuel leakage from the injector.

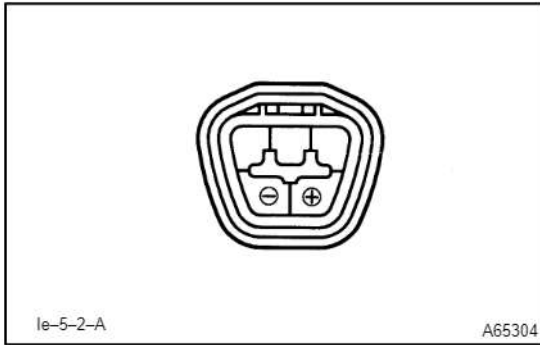
SST 09842-30070

Fuel drop: 1 drop or less per 12 minutes

**2. FUEL PUMP RESISTOR**

- (a) Inspect the fuel pump resistor resistance.
 - (1) Using an ohmmeter, measure the resistance between terminal.

Resistance: 0.70 – 0.76 Ω at 20°C (68°F)



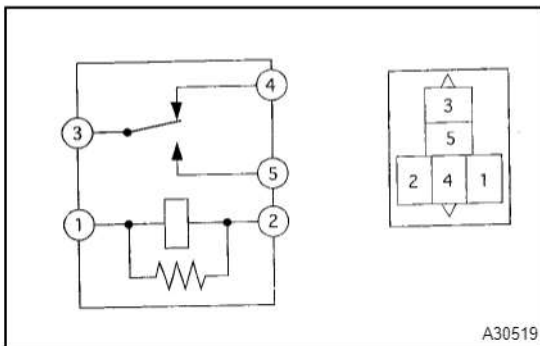
3. FUEL SUCTION W/PUMP & GAGE TUBE ASSY

- (a) Inspect fuel pump resistance.
 - (1) Using an ohmmeter, measure the resistance between terminals 4 and 5.

Resistance: 0.2 – 3.0 Ω at 20°C (68°F)
- (b) Inspect fuel pump operation
 - (1) Apply battery voltage to both terminals. Check that the pump operates.

NOTICE:

- ◆ These tests must be done quickly (within 10 seconds) to prevent the coil from burning out.
- ◆ Keep fuel pump as far away from the battery as possible.
- ◆ Always do the switching at the battery side.



4. FUEL PUMP RELAY ASSY

- (a) Continuity inspection.
 - (1) Using an ohmmeter, check that there is continuity between each terminal.

Specified condition:

Between terminals	Specified condition
1 - 2	Continuity
3 - 4	
3 - 5	No continuity

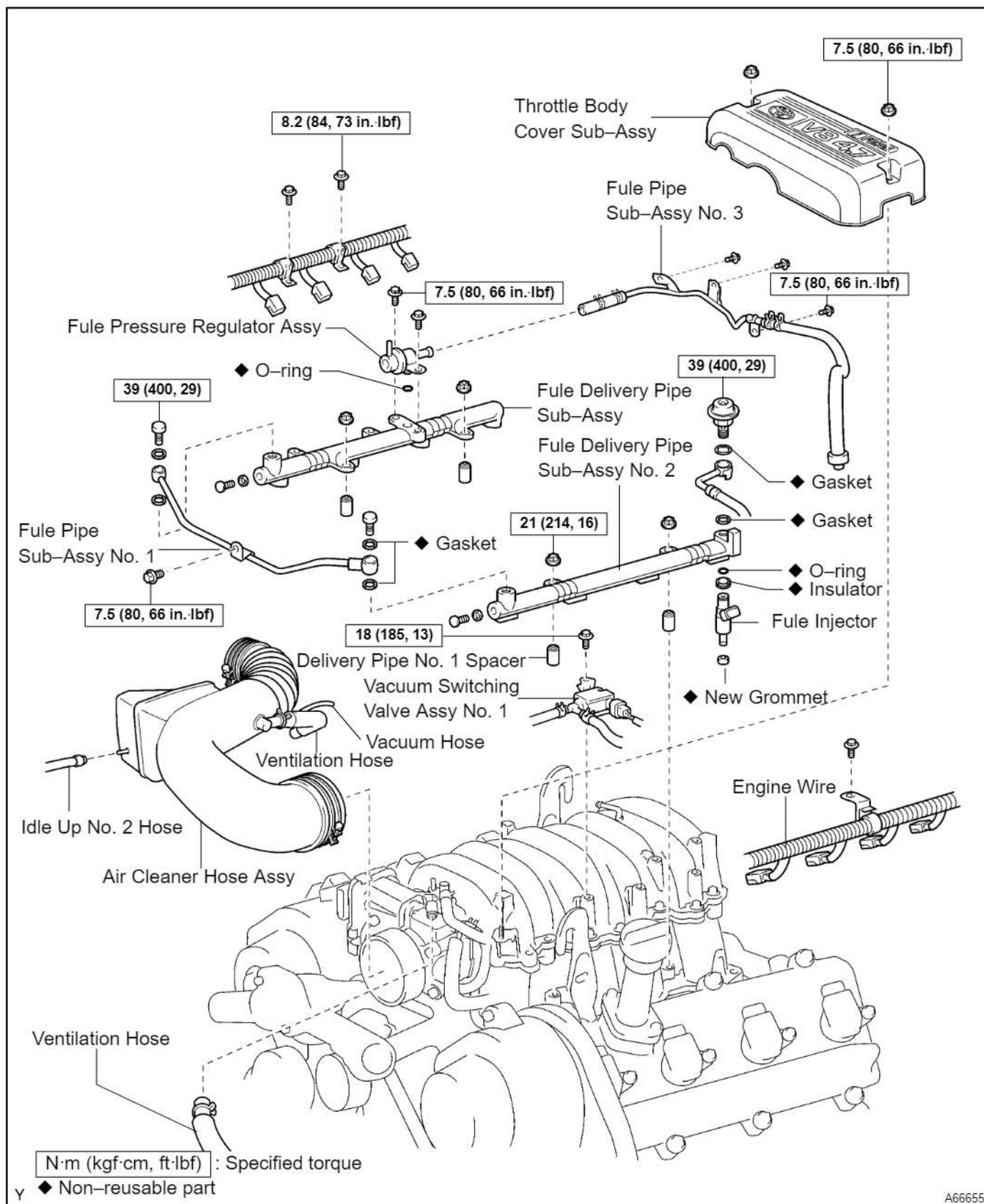
- (2) Using an ohmmeter, check that there is continuity between terminals 3 and 5 when the battery voltage is applied across terminals 1 and 2.

Specified condition: Continuity

FUEL INJECTOR ASSY (2UZ-FE)

COMPONENTS

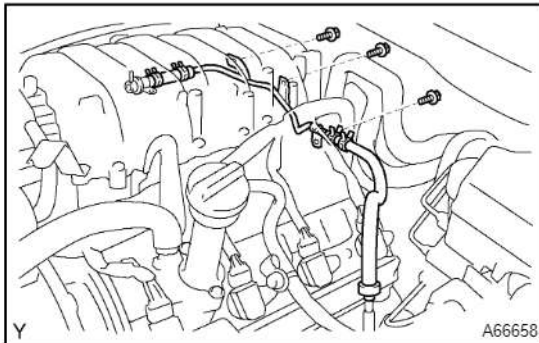
110IG-03



A66655

REPLACEMENT

1. **WORK FOR PREVENTING GASOLINE FROM SPILLING OUT** (See page 11-31)
2. **REMOVE THROTTLE BODY COVER SUB-ASSY**
 - (a) Remove the 2 cap nuts and throttle body cover sub-assy.
3. **REMOVE AIR CLEANER HOSE ASSY**
 - (a) Disconnect the vacuum hoses (For P/S idle-up and for fuel pressure regulator) and ventilation hose.
 - (b) Remove the air cleaner hose assy.
4. **REMOVE FUEL PIPE SUB-ASSY NO.1**
 - (a) Remove the 2 union bolts, and 4 gaskets.
 - (b) Remove the bolts and fuel pipe sub-assy.

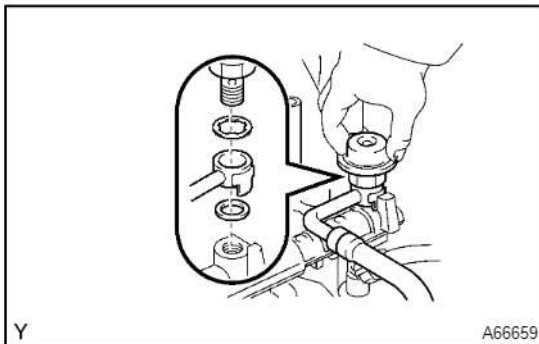


5. SEPARATE FUEL PIPE SUB-ASSY NO.3

- (a) Remove the 3 bolts and disconnect the fuel return pipe sub-assy from fuel pressure regulator.

HINT:

Move it aside for stream lining your work.



6. DISCONNECT FUEL HOSE

- (a) Remove the pulsation damper and 2 gaskets.
- (b) Disconnect the fuel hose No. 1.

7. SEPARATE VACUUM SWITCHING VALVE ASSY NO.1

- (a) Remove the bolts and separate the vacuum switching valve assy.

8. DISCONNECT ENGINE WIRE

- (a) Disconnect the 8 fuel injector connectors.
- (b) Remove the 3 bolts and disconnect the engine wire.

9. REMOVE FUEL DELIVERY PIPE SUB-ASSY

- (a) Remove the 2 nuts, then the fuel delivery pipe by pulling it straight upward holding the both ends.

10. REMOVE FUEL DELIVERY PIPE SUB-ASSY NO.2

- (a) Remove the 2 nuts, then the fuel delivery pipe No. 2 by pulling it straight upward holding the both ends.

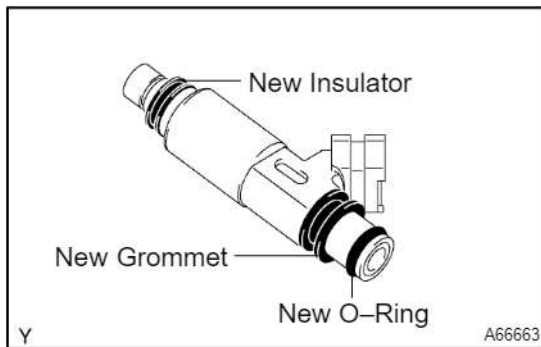
11. REMOVE FUEL INJECTOR ASSY

- (a) Remove the injector from the delivery pipe.

NOTICE:

Do not put any force to the injector in the horizontal direction, because the O-ring might be stuck.

- (b) Remove the O-ring, grommet and vibration insulator from the injector.

**12. INSTALL FUEL INJECTOR ASSY**

- (a) Install a new grommet and vibration insulator to the injector.
- (b) Check that there is no foreign object stuck nor damage in the groove of the O-ring of the injector. Apply some gasoline to new O-ring, and install it to the injector.
- (c) Install the injector to the delivery pipe, rotating the injector both ways.
- (d) Check that the injector can rotate smoothly.

NOTICE:

When the injector cannot rotate smoothly, the O-ring might engage with something. In case of that, the operation should be started after the injector has been removed then the O-ring has been replaced with a new one once again.

13. INSTALL FUEL DELIVERY PIPE SUB-ASSY NO.2

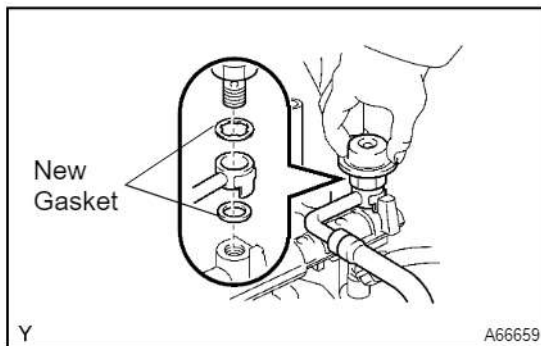
- (a) Install the injector with delivery pipe to the intake manifold.
- (b) Under the above condition, turn the injector both ways by approximately 45 degrees.
- (c) Inserting a spacer in between, install the delivery pipe with injector by 2 nuts.

Torque: 21 N·m (214 kgf·cm, 16 ft·lbf)

14. INSTALL FUEL DELIVERY PIPE SUB-ASSY

- (a) Install the injector with delivery pipe to the intake manifold.
- (b) Under the above condition, turn the injector both ways by approximately 45 degrees.
- (c) Inserting a spacer in between, install the delivery pipe with injector by 2 nuts.

Torque: 21 N·m (214 kgf·cm, 16 ft·lbf)

**15. INSTALL FUEL HOSE**

- (a) Inserting 2 new gaskets in between, install the fuel main hose the fuel pressure pulsation damper.

Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)

16. INSTALL VACUUM SWITCHING VALVE ASSY NO.1

Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)

17. INSTALL FUEL PIPE SUB-ASSY NO.3

Torque: 7.5 N·m (80 kgf·cm, 66 in·lbf)

18. INSTALL FUEL PIPE SUB-ASSY NO.1

- (a) Install the bolts and fuel pipe sub-assy.
- (b) Installing 2 new gaskets in between, install the fuel pipe sub-assy with the union bolt each parts as shown in the illustration.

Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)

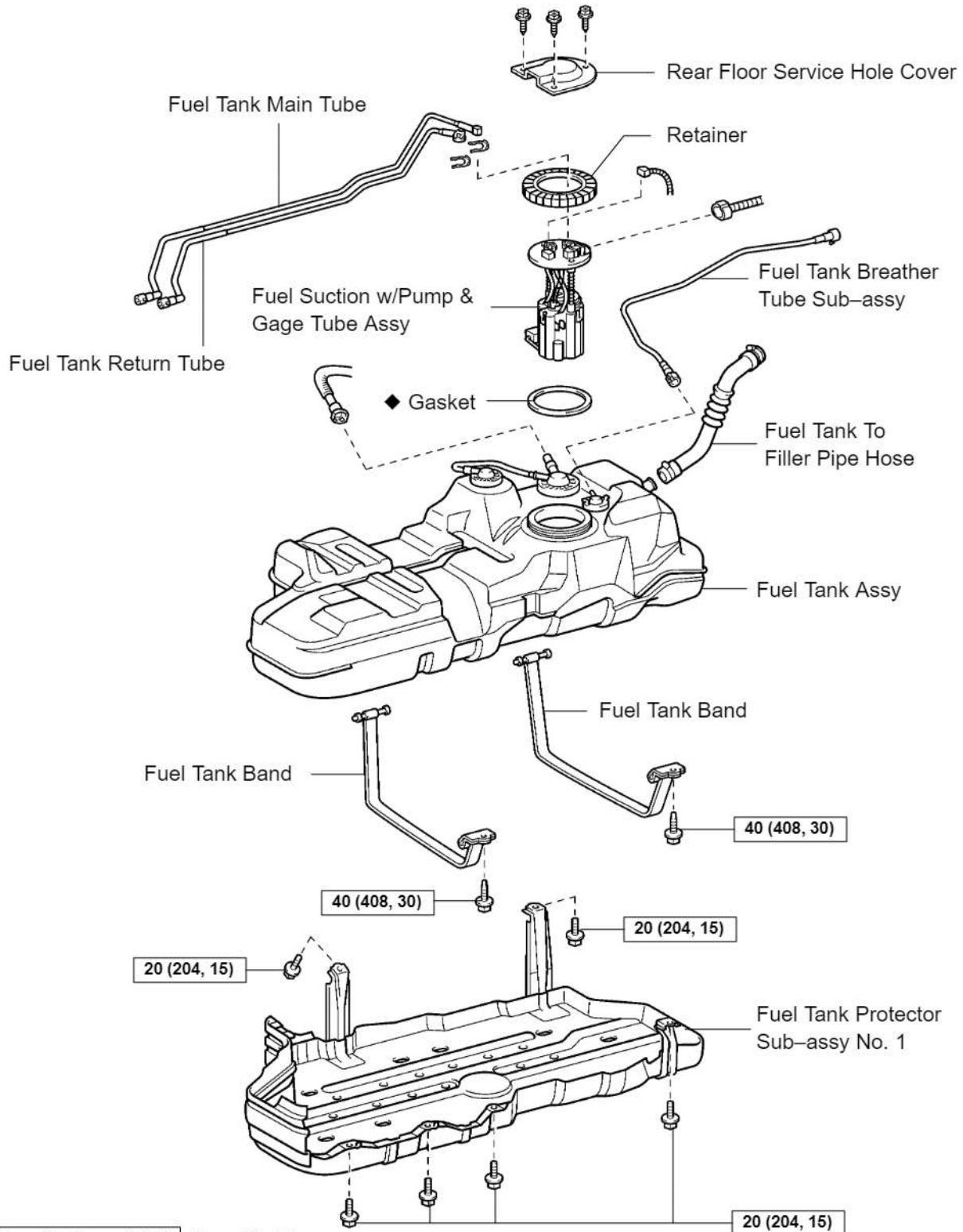
19. INSTALL AIR CLEANER HOSE ASSY**20. INSTALL THROTTLE BODY COVER SUB-ASSY**

Torque: 7.5 N·m (80 kgf·cm, 66 in·lbf)

21. CHECK FUEL LEAK (See page 11-31)

FUEL TANK ASSY (2UZ-FE) COMPONENTS

11013-02



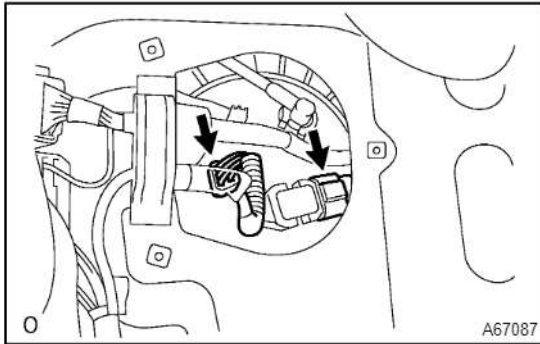
N·m (kgf·cm, ft·lbf) : Specified torque

0 ♦ Non-reusable part

A67107

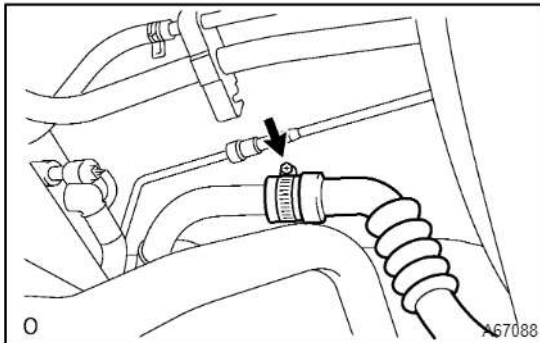
Removal & Installation and Disassembly & Reassembly

1. WORK FOR PREVENTING GASOLINE FROM SPILLING OUT (See page 11-31)



2. REMOVE CENTER FLOOR HOLE COVER

- (a) Hold the rear No. 1 seat assy LH.
- (b) Hold the rear No. 1 seat assy RH.
- (c) Remove a tear off the floor mat.
- (d) Remove the 3 screws the senter floor hole cover.
- (e) Disconnect the 2 connectors.



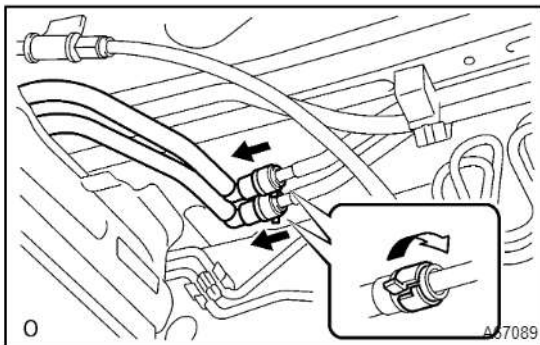
3. REMOVE FUEL TANK TO FILLER PIPE HOSE

- (a) Disconnect the fuel tank to filler pipe hose from the fuel filler pipe.

4. DRAIN FUEL

5. REMOVE FUEL TANK PROTECTOR SUB-ASSY NO.1

- (a) Set a mission jack to the fuel tank protector.
- (b) Remove the 6 bolts and the fuel tank protector.

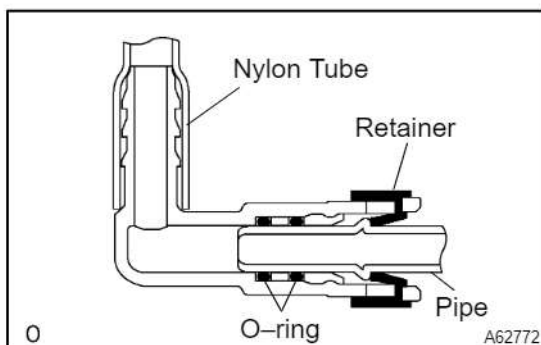


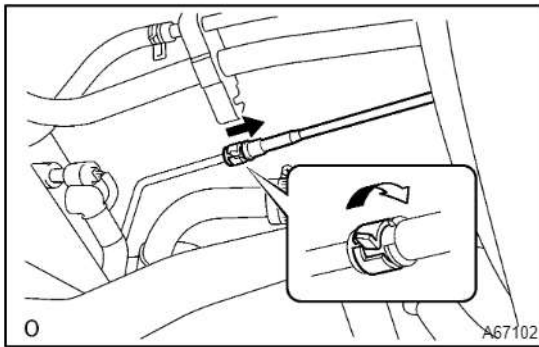
6. DISCONNECT FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE

- (a) Pinch the projections of the retainer to remove the lock claws and pull out the 2 fuel tank tubes.

NOTICE:

- ◆ Check if there is any dirt like mud around the connector before this work and clean the dirt away.
- ◆ Be careful of dirt like mud because the quick connector has an O-ring to seal the pipe and the connector.
- ◆ Do not use any tool in this work.
- ◆ Do not bend or twist the nylon tube by force.
- ◆ Keep off plug from foreign subjects.
- ◆ To protect the tube, cover it with a vinyl bag after checking.
- ◆ When connector and the pipe are stuck, pinch the tube between fingers, and turn it carefully to free and then disconnect the fuel tank tube.



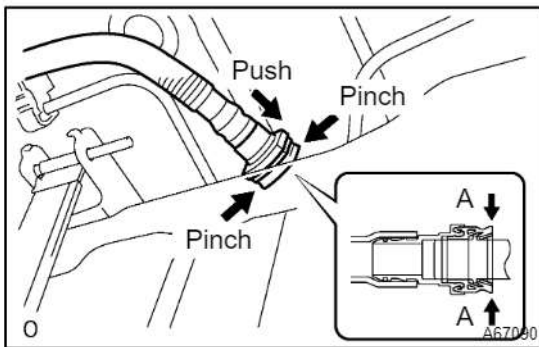
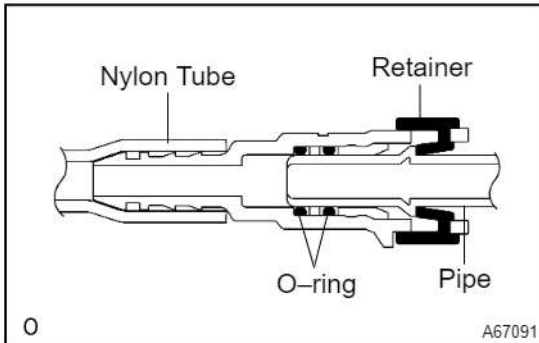


7. DISCONNECT FUEL TANK BREATHER TUBE SUB-ASSY

- (a) Pinch the projections of the retainer to remove the lock claws and pull out the fuel tank tube.

NOTICE:

- ◆ Check if there is any dirt like mud around the connector before this work and clean the dirt away.
- ◆ Be careful of dirt like mud because the quick connector has an O-ring to seal the pipe and the connector.
- ◆ Do not use any tool in this work.
- ◆ Do not bend or twist the nylon tube by force.
- ◆ Keep off plug from foreign subjects.
- ◆ To protect the tube, cover it with a vinyl bag after checking.
- ◆ When connector and the pipe are stuck, pinch the tube between fingers, and turn it carefully to free and then disconnect the tube.



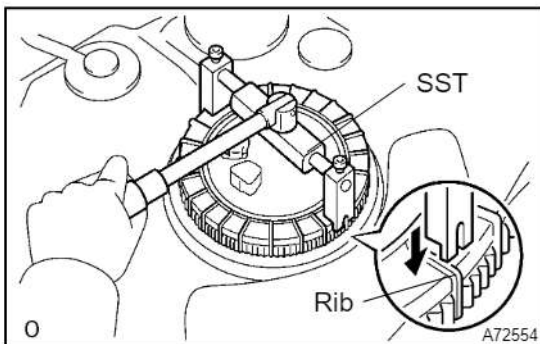
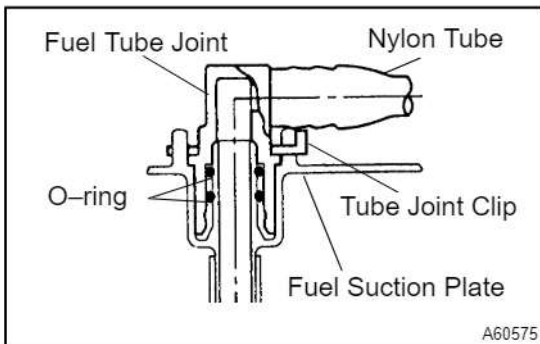
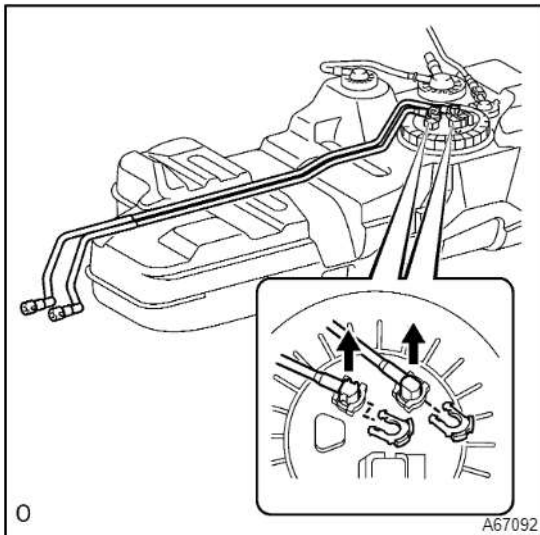
8. DISCONNECT FUEL TANK VENT HOSE

- (a) Disconnect the fuel tank breather tube from the fuel tank.
- (1) Push the connector deep inside.
 - (2) Pinch portion A.
 - (3) Pull out the connector.

9. REMOVE FUEL TANK ASSY

- (a) Set a mission jack to the fuel tank.
 (b) Remove the 2 bolts, 2 fuel tank bands and fuel tank.

10. REMOVE FUEL TANK CUSHION



11. REMOVE FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE

- (a) Remove the 2 tubes joint clip, and pull out the 2 fuel tank tubes.

NOTICE:

- ◆ Check if there is any dirt like mud around the fuel tube joint before this work and clean the dirt away.
- ◆ Be careful of dirt like mud because the fuel tube joint has an O-ring to seal the fuel tube connector and fuel suction plate.
- ◆ Do not use any tool in this work.
- ◆ Do not bend or twist the nylon tube by force.
- ◆ After disconnecting, cover the fuel tube joint with a vinyl bag.
- ◆ When the fuel tube joint and fuel suction plate are stuck, pinch the fuel tank main tube between fingers, and turn it carefully to free and then disconnect the fuel tank tube.

12. REMOVE FUEL SUCTION W/PUMP & GAGE TUBE ASSY

NOTICE:

Protect a connector and tube joint with a vinyl adhesive tape or something in order to prevent sticking foreign materials onto them, and clean dirt and foreign objects from the fuel suction tube assy before removing it.

- (a) Using SST, loosen the retainer.
SST 09808-14020 (09808-01410, 09808-01420, 09808-01430)

HINT:

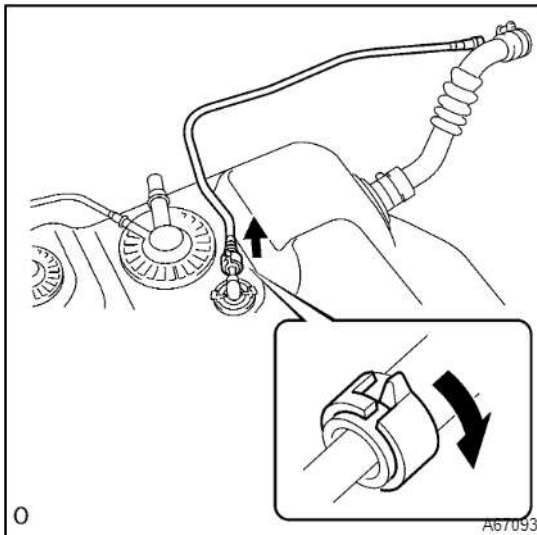
A rib on the retainer can be fitted into a tip of an SST.

- (b) Remove the retainer.
(c) Pull out the fuel pump assembly.

NOTICE:

Be careful that the arm of the sender gauge should not bent.

- (d) Remove the gasket from the fuel tank.

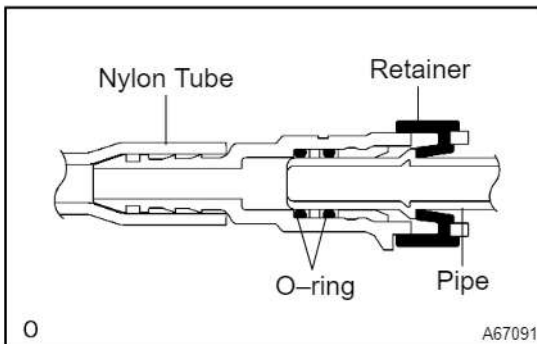


13. REMOVE FUEL TANK BREATHER TUBE SUB-ASSY

- (a) Pinch the projections of the retainer to remove the lock claws and pull out the fuel tank breather tube.

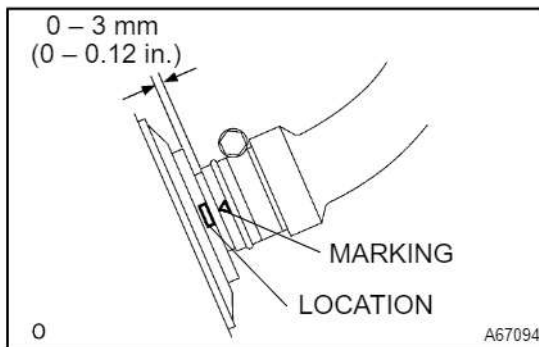
NOTICE:

- ◆ Check if there is any dirt like mud around the connector before this work and clean the dirt away.
- ◆ Be careful of dirt like mud because the quick connector has an O-ring to seal the pipe and the connector.
- ◆ Do not use any tool in this work.
- ◆ Do not bend or twist the nylon tube by force.
- ◆ Keep off plug from foreign subjects.
- ◆ To protect the tube, cover it with a vinyl bag after checking.
- ◆ When connector and the pipe are stuck, pinch the tube between fingers, and turn it carefully to free and then disconnect the tube.



14. REMOVE FUEL TANK TO FILLER PIPE HOSE

- (a) Remove the fuel tank inlet hose from the fuel tank.

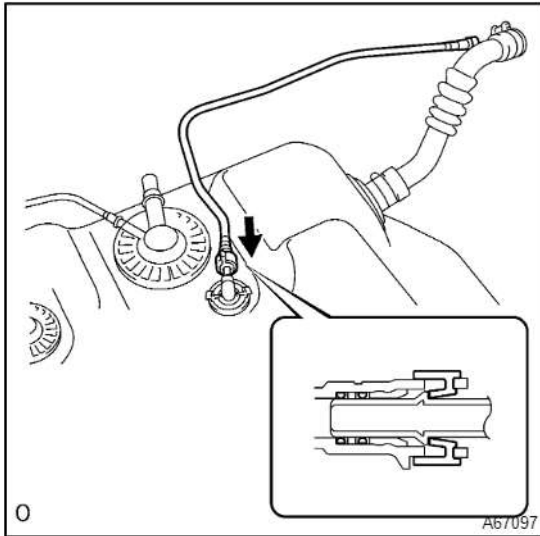


15. INSTALL FUEL TANK TO FILLER PIPE HOSE

- (a) Hose and pipe connection is as shown in the illustration.

NOTICE:

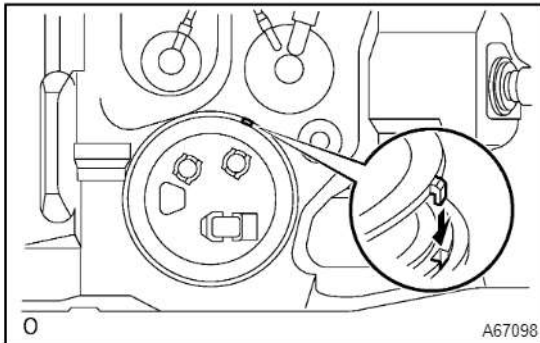
The filler hose must be replaced to new one.



- 16. INSTALL FUEL TANK BREATHER TUBE SUB-ASSY**
 (a) Push in the tube connector to the pipe until and install the retainer.

NOTICE:

- ◆ Check if there is any damage or foreign objects on the connected part of the pipe.
- ◆ After connecting, check if the pipe and the connector are securely connected by pulling them.

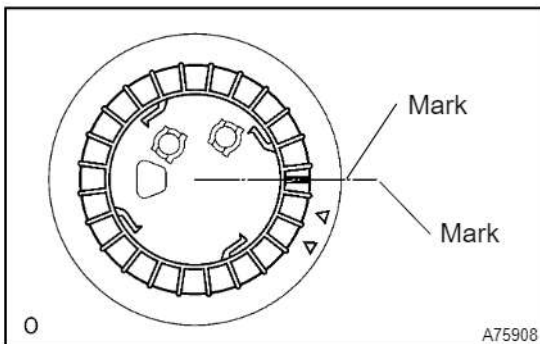
**17. INSTALL FUEL SUCTION W/PUMP & GAGE TUBE ASSY**

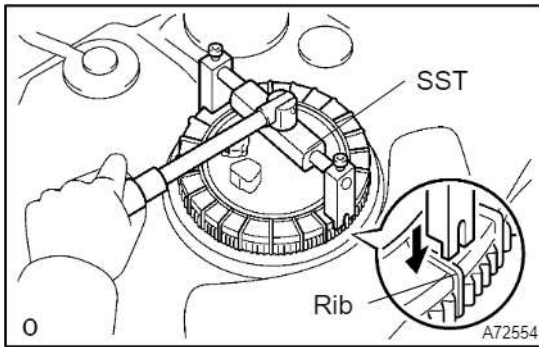
- (a) Install a new gasket onto the fuel tank.
 (b) Set the fuel suction tube assy w/ pump & gauge to the fuel tank.

NOTICE:

Be careful that the arm of the fuel sender gage should not bent.

- (c) Fit a spline of the fuel suction tube assy into a keyway of the fuel tank.
 (d) Install a retainer.
 (1) Use new retainer, align marks on the retainer and the fuel tank.
 (2) While holding the fuel tank suction tube assy w/ pump & gauge, tighten the retainer one complete turn with a hand.



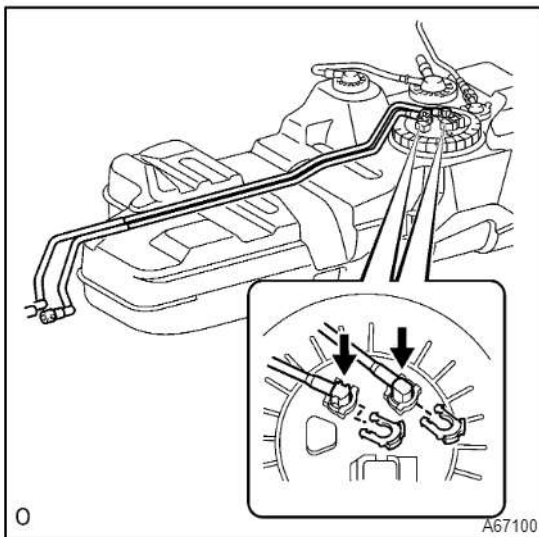
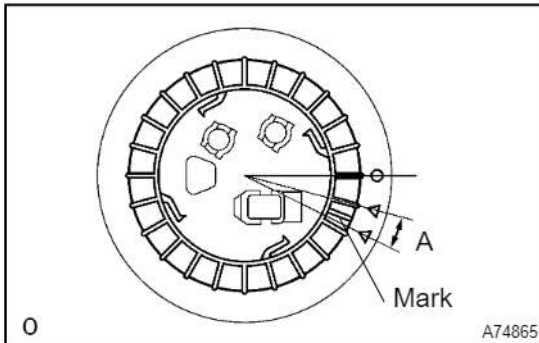


- (e) Using an SST, Tighten the retainer one more complete turn, and position the mark on the retainer into a range A of the fuel tank.

SST 09808-14020 (09808-01410, 09808-01420
09808-01430)

HINT:

- ◆ Turn the retainer two complete turns and position the mark within the range A for the installation of the retainer.
- ◆ A rib on the retainer can be fitted into a tip of an SST.

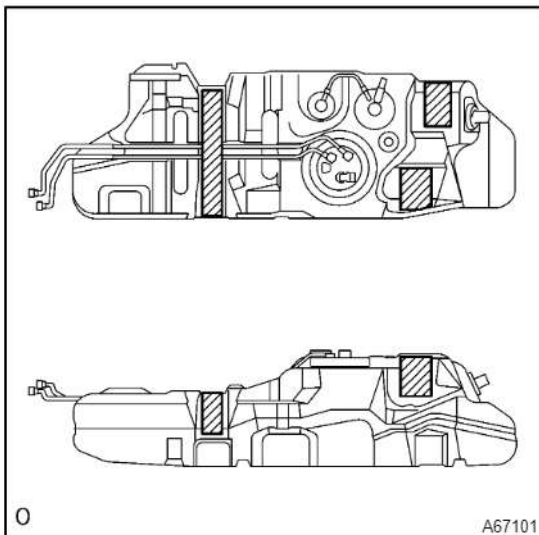


18. INSTALL FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE

- (a) Connect the fuel tank main tube with the tube joint clip.

NOTICE:

- ◆ Check that there is no scratch or foreign objects on the connecting parts.
- ◆ Check that the connector is inserted fully and securely.
- ◆ Check that the clip of the tube joint is on the collar of the connector.
- ◆ After installing the tube joint clip, check that the connector is not pulled off.



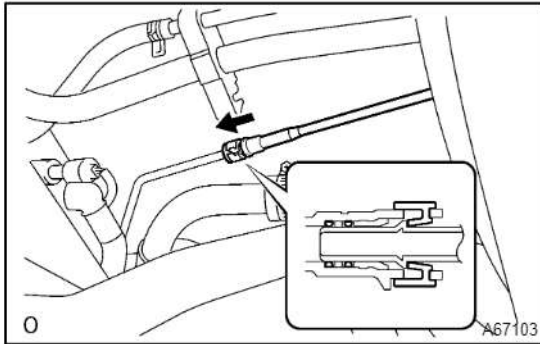
19. INSTALL FUEL TANK CUSHION

- (a) Install 3 new fuel tank cushions to the fuel tank.

20. INSTALL FUEL TANK ASSY

- (a) Set a mission jack to the fuel tank.
- (b) Install the fuel tank and 2 fuel tank bands with the 2 bolts.

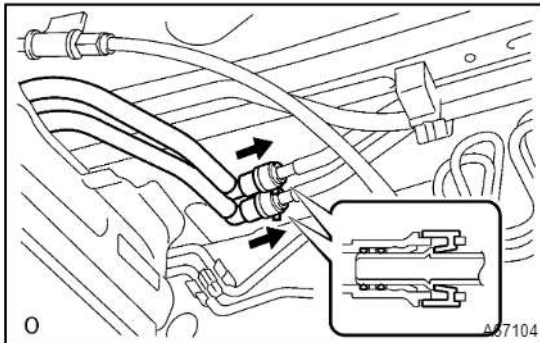
Torque: 40 N·m (408 kgf·cm, 30 ft·lbf)

**21. CONNECT FUEL TANK BREATHER TUBE SUB-ASSY**

- (a) Push in the tube connector to the pipe until connector makes "click" sound.

NOTICE:

- ◆ Check if there is any damage or foreign objects on the connected part of the pipe.
- ◆ After connecting, check if the pipe and the connector are securely connected by pulling them.

**22. CONNECT FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE**

- (a) Push in the tube connector to the pipe until connector makes "click" sound.

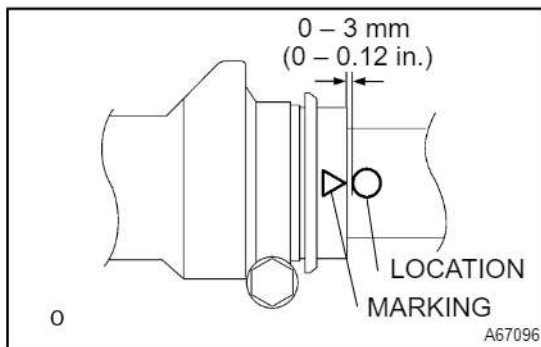
NOTICE:

- ◆ Check if there is any damage or foreign objects on the connected part of the pipe.
- ◆ After connecting, check if the pipe and the connector are securely connected by pulling them.

23. INSTALL FUEL TANK PROTECTOR SUB-ASSY NO.1

- (a) Set a mission jack to the fuel tank protector.
- (b) Install the fuel tank protector with the 6 bolts.

Torque: 20 N·m (204 kgf·cm, 15 ft·lbf)

**24. CONNECT FUEL TANK TO FILLER PIPE HOSE**

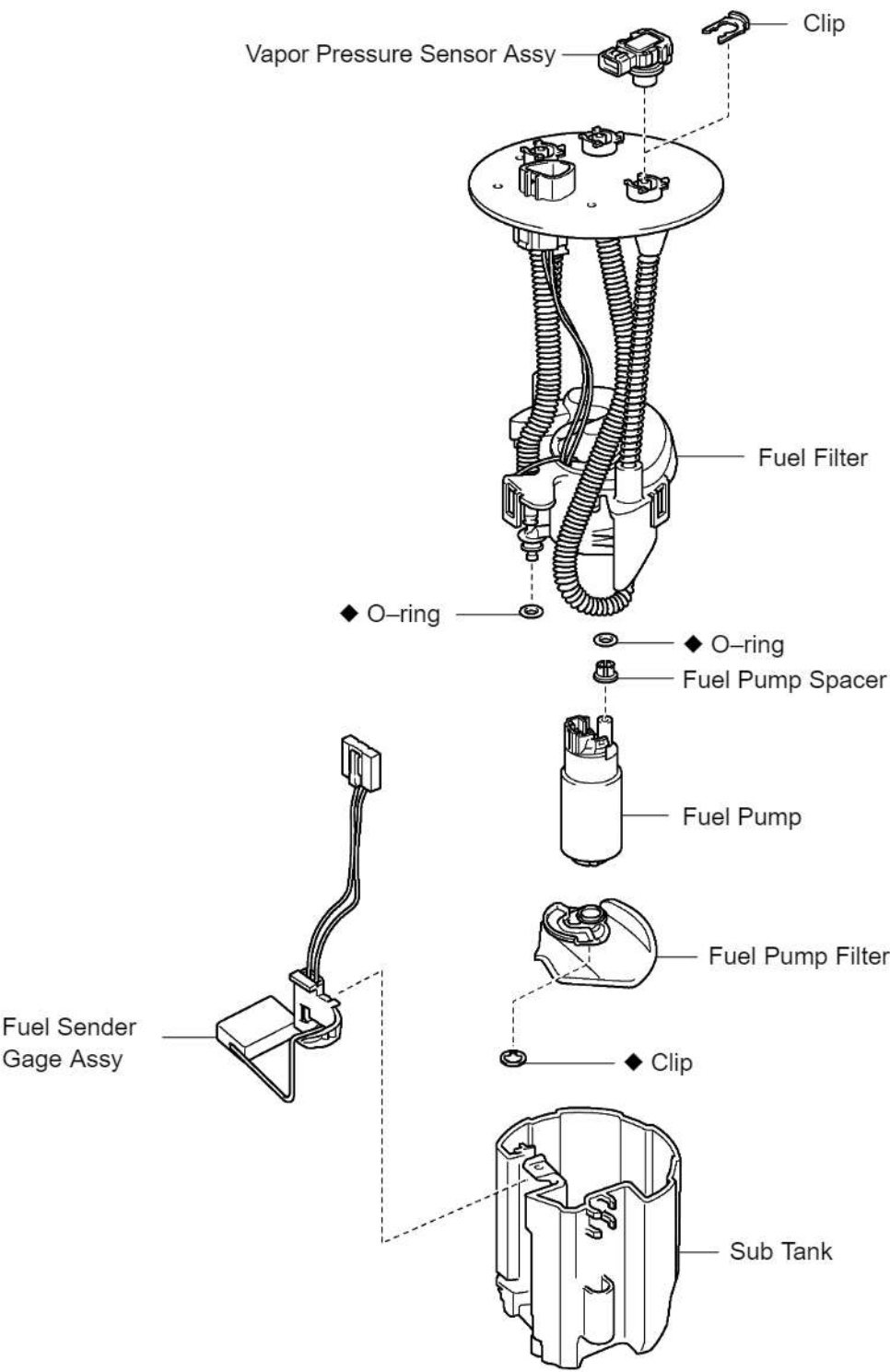
- (a) Hose and pipe connection is as shown in the illustration.

25. CHECK FUEL LEAK

FUEL PUMP ASSY (2UZ-FE)

COMPONENTS

110R01-02

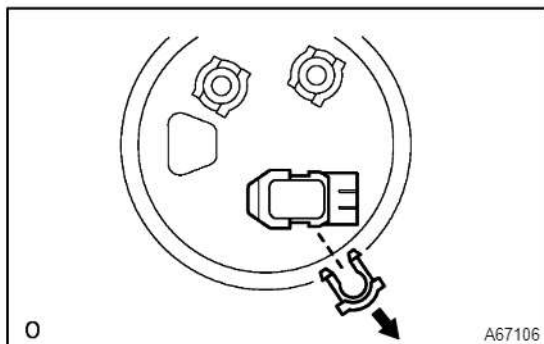


Y ◆ Non-reusable part

A76676

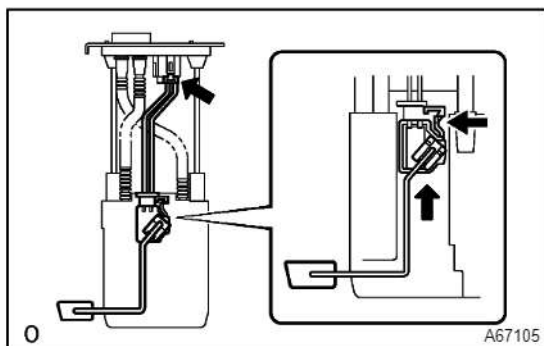
Removal & Installation and Disassembly & Reassembly

1. REMOVE FUEL SUCTION W/PUMP & GAGE TUBE ASSY (See page 11-44)



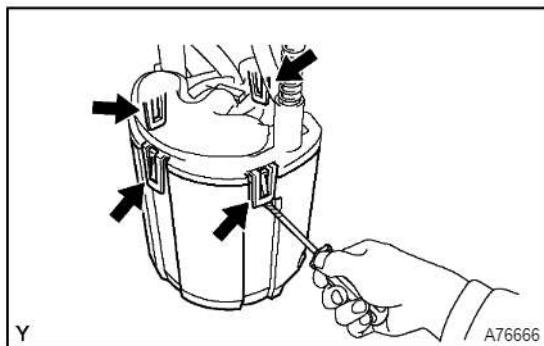
2. REMOVE VAPOR PRESSURE SENSOR ASSY

- (a) Remove the tube joint clip, and pull out the vapor pressure sensor.



3. REMOVE FUEL SENDER GAGE ASSY

- (a) Disconnect the fuel sender gage connector.
(b) Unlock the fuel sender gage, and slide it to remove.

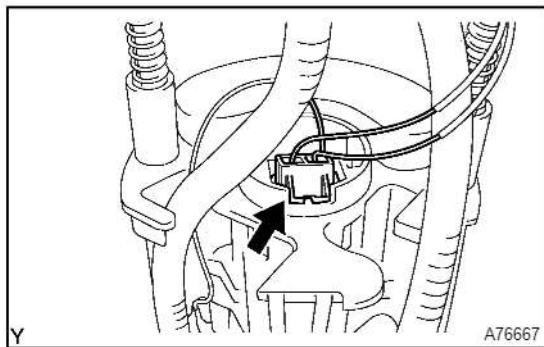


4. REMOVE FUEL PUMP ASSY W/FILTER

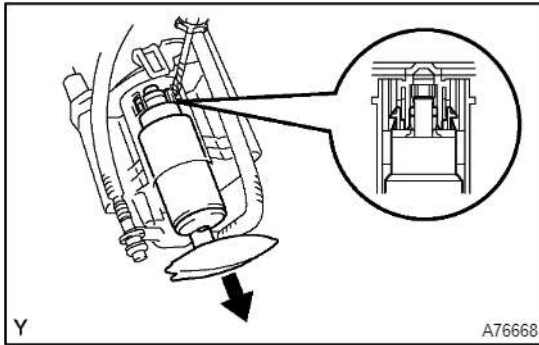
- (a) Using a screwdriver, disconnect the 4 snap-claws from the claw holes and remove the sub tank.

NOTICE:

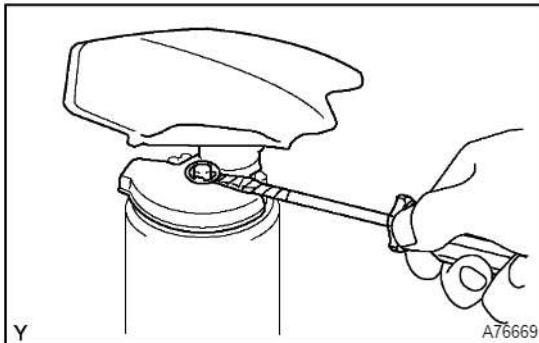
Do not damage the sub tank.



- (b) Disconnect the fuel pump connector.



- (c) Using a small screwdriver, disconnect the 2 claws from the claw holes and remove the fuel pump w/ filter.
- (d) Remove the fuel pump O-ring from the fuel pump.
- (e) Remove the fuel pump spacer from the fuel pump.

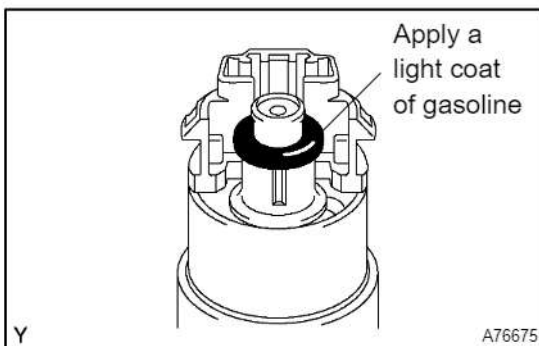


5. REMOVE FUEL PUMP FILTER

- (a) Using a small screwdriver with tip wrapped in tape, pry out the clip.
- (b) Pull out the fuel pump filter from the fuel pump.

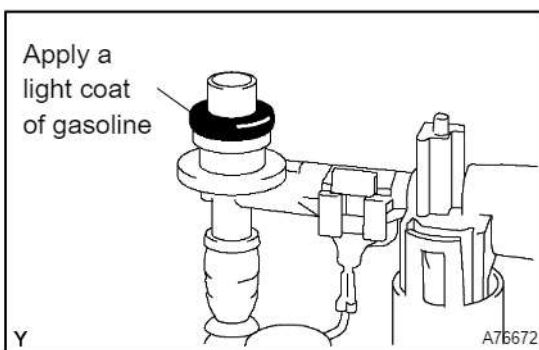
6. INSTALL FUEL PUMP FILTER

- (a) Install the fuel pump filter with a new clip.

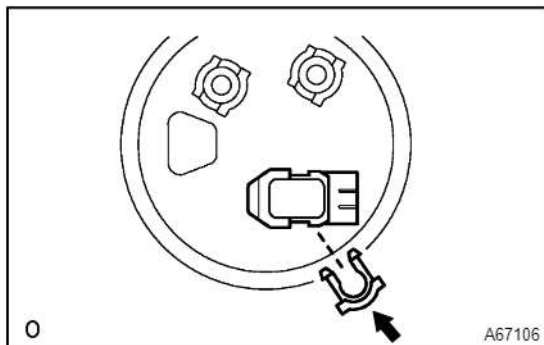


7. INSTALL FUEL PUMP ASSY W/FILTER

- (a) Install a fuel pump spacer to the fuel pump.
- (b) Apply a light coat of gasoline to a new O-ring and install it to the fuel pump.
- (c) Apply a light coat of gasoline to the O-ring again, and install the fuel pump to the fuel filter.



- (d) Install the sub tank.
 - (1) Apply a light coat of gasoline to a new O-ring and install it to the fuel suction tube assy.
 - (2) Apply a light coat of gasoline to the O-ring again, and install the sub tank to the fuel filter.

**8. INSTALL VAPOR PRESSURE SENSOR ASSY**

(a) Install the vapor pressure sensor with the tube joint clip.

NOTICE:

- ◆ Check that there is no scratch or foreign objects on the connecting parts.
- ◆ Check that the fuel tube joint connector is fully inserted.
- ◆ Check that the tube joint clip is on the collar of the fuel tube joint.
- ◆ After installing the tube joint clip, check if the fuel tube joint connector is securely connected by pulling it.

9. INSTALL FUEL SUCTION W/PUMP & GAGE TUBE ASSY (See page 11-44)