

FUEL SYSTEM

PRECAUTION

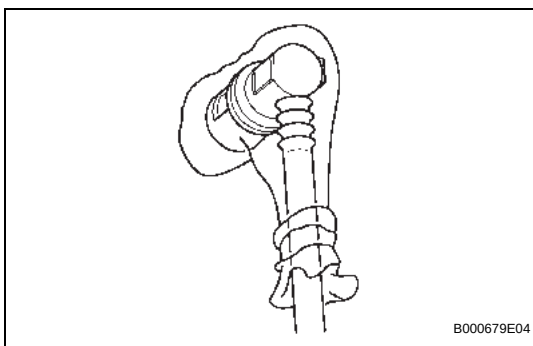
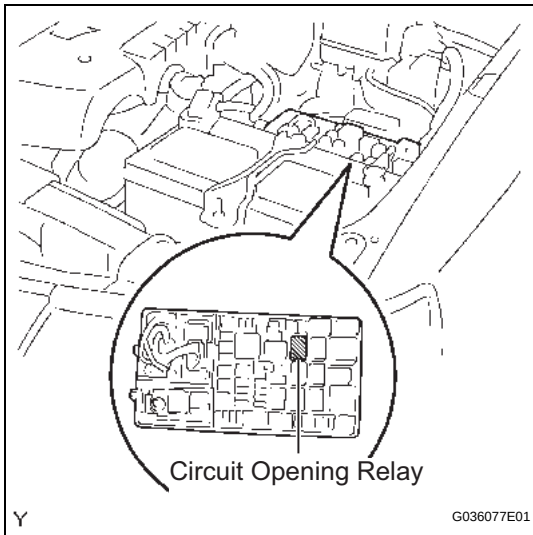
1. PRECAUTION

- (a) Before working on the fuel system, disconnect the cable from the battery negative terminal.
- (b) Do not work on the fuel system near fire. Never smoke during the work.
- (c) Keep rubber and leather parts away from gasoline.

2. DISCHARGE FUEL PRESSURE

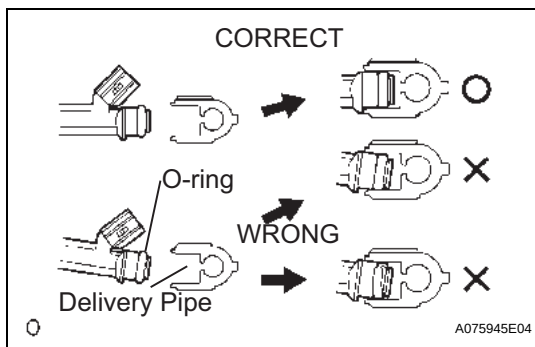
CAUTION:

- Before removing fuel system parts, take precautions to prevent gasoline spillage.
 - As some pressure remains in the fuel line even after taking precautions to prevent gasoline spillage, use a shop rag to prevent gasoline splashes when disconnecting the fuel line.
- (a) Disconnect the cable from the battery negative terminal.
 - (b) Remove the engine relay block cover.
 - (c) Remove the circuit opening relay.
 - (d) Connect the cable to the battery negative terminal.
Torque: 5.4 N*m (55 kgf*cm, 48 in.*lbf)
 - (e) Start the engine.
 - (f) Turn the ignition switch to ON after the engine stops.
- HINT:
DTC P0171 (system too lean) may be present.
- (g) Crank the engine again and check that the engine stops.
 - (h) Remove the fuel tank cap and discharge the pressure in the fuel tank completely.
 - (i) Install the circuit opening relay.



3. FUEL SYSTEM

- (a) When disconnecting the high-pressure fuel line, a large amount of gasoline will splash. So take the following precautions.
 - (1) Discharge the fuel system pressure (step 2).
 - (2) Disconnect the fuel tank main tube (see page [FU-30](#)).
 - (3) Drain the fuel remaining in the fuel tank main tube.
 - (4) Cover the disconnected fuel tank main tube (fuel tube joint and fuel tube connector) with a vinyl bag to prevent damage and the intrusion of foreign objects.



- (b) Take the following precautions when installing the fuel injector.

- (1) Do not reuse the O-ring.
- (2) Do not damage a new O-ring when installing it into the fuel injector.
- (3) Before installing a new O-ring, apply gasoline or spindle oil.

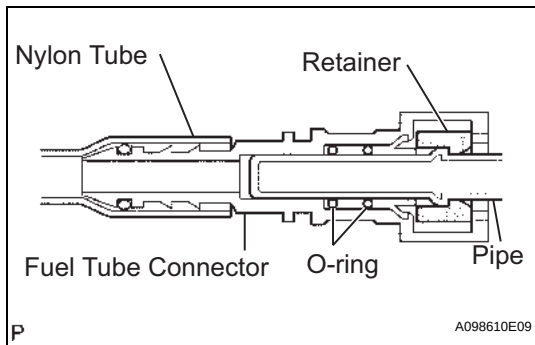
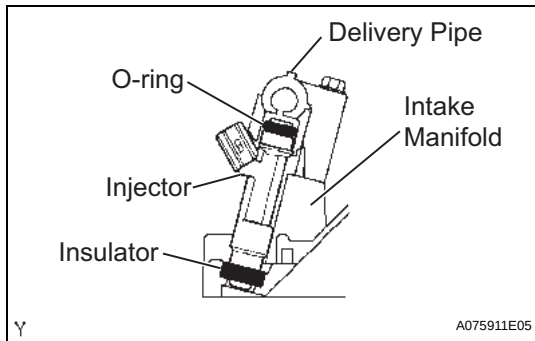
NOTICE:

Do not use engine oil, gear oil or brake oil.

- (4) Install the fuel injector into the fuel delivery pipe and cylinder head as illustrated.

NOTICE:

Apply gasoline or spindle oil to the contact surface of the fuel delivery pipe and fuel injector before installing the fuel injector.



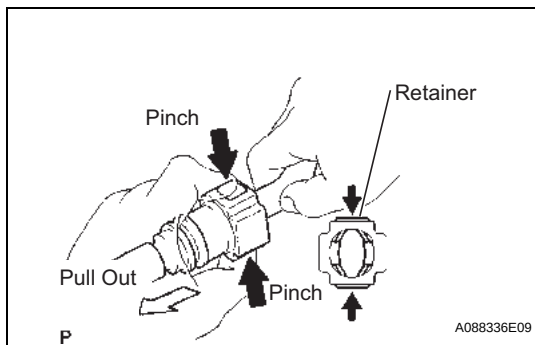
- (c) Take the following precautions when disconnecting the fuel tube connector (type A).

HINT:

The structure of the fuel tube connector is as shown in the illustration.

- (1) Check the fuel tube connector and pipe for dirt and mud before removing the fuel tube connector.
If dirty, wipe it with a shop rag.

- (2) Pinch the retainer as illustrated, and pull the fuel tube connector out of the pipe.

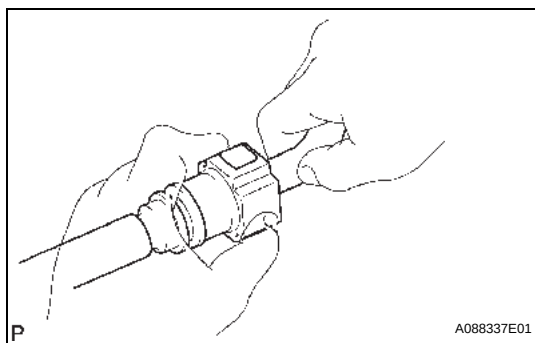


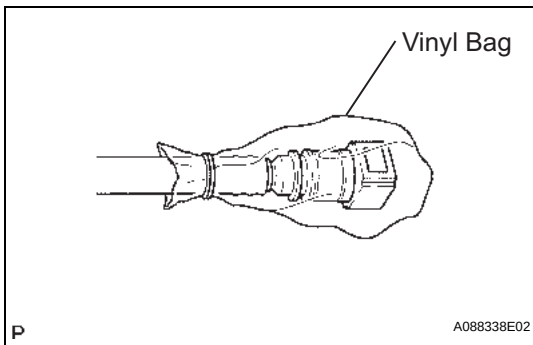
- (3) If the fuel tube connector and pipe are stuck, pinch the pipe, then push and pull the fuel tube connector to release and disconnect it.

NOTICE:

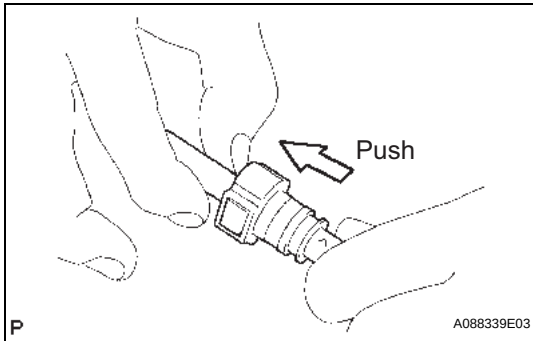
Never use any tools.

- (4) After removing the fuel tube, check the sealing surface of the pipe for dirt and mud.
If dirty, wipe it with a shop rag.

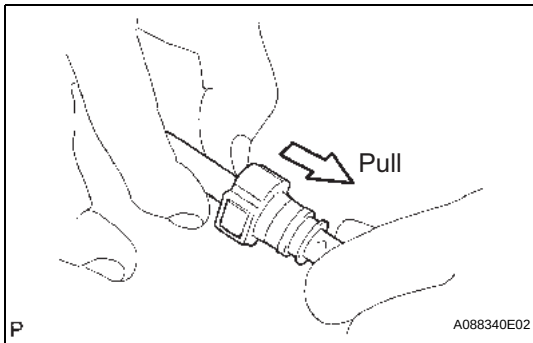




- (5) Cover the disconnected fuel tube connector and pipe with a vinyl bag to prevent damage and the intrusion of foreign objects.

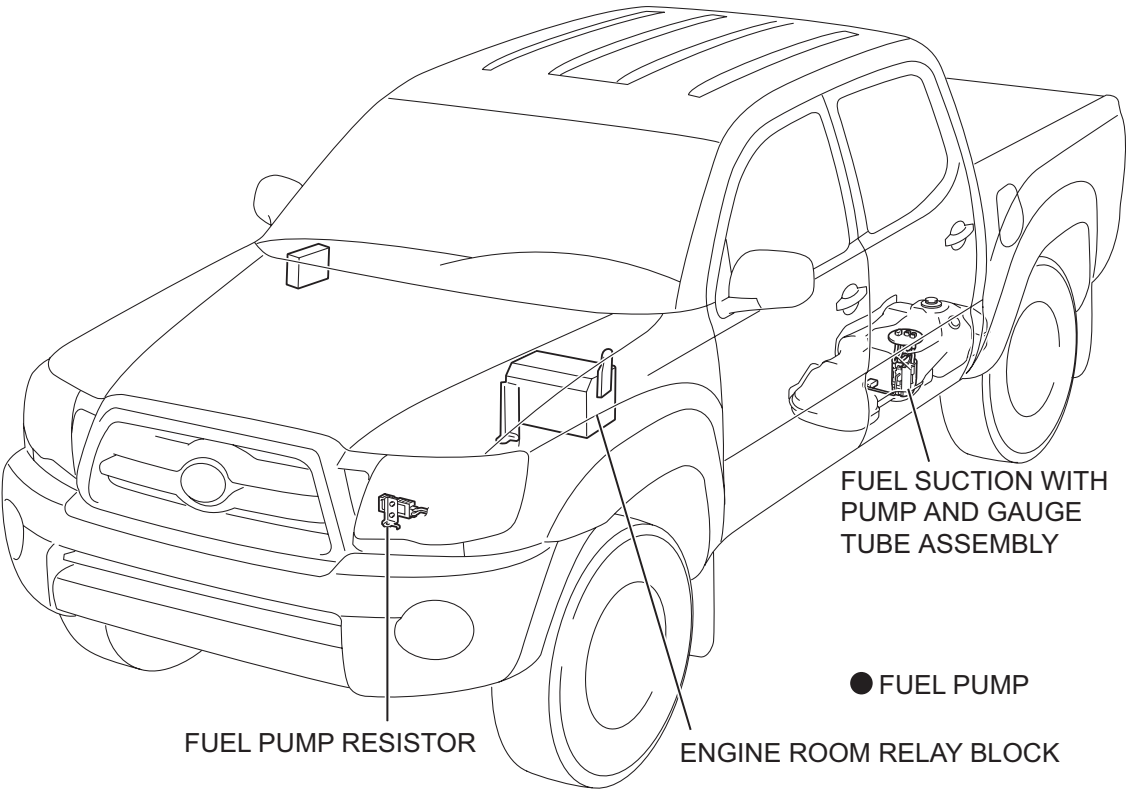


- (d) Take the following precautions when installing the fuel tube connector (type A).
- (1) Align the fuel tube connector with the pipe, then push in the fuel tube connector until the retainer makes a "click" sound.



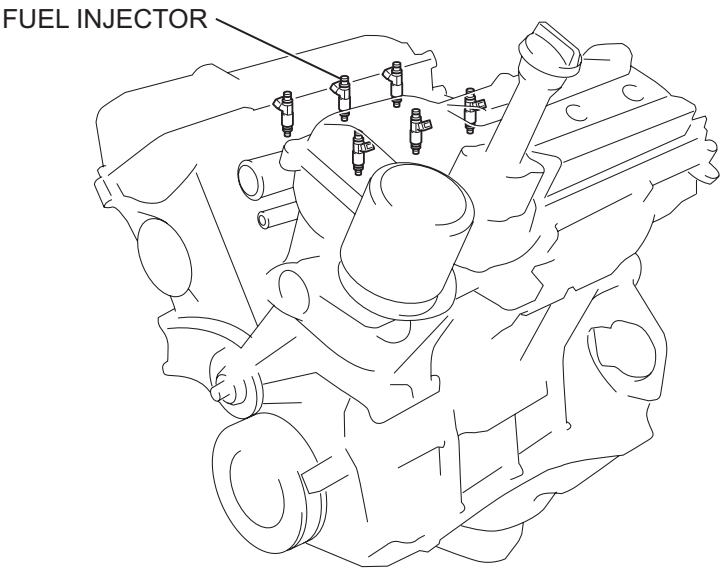
- (2) After connecting the fuel tube connector, check that the fuel tube connector and pipe are securely connected by pulling them.

PARTS LOCATION



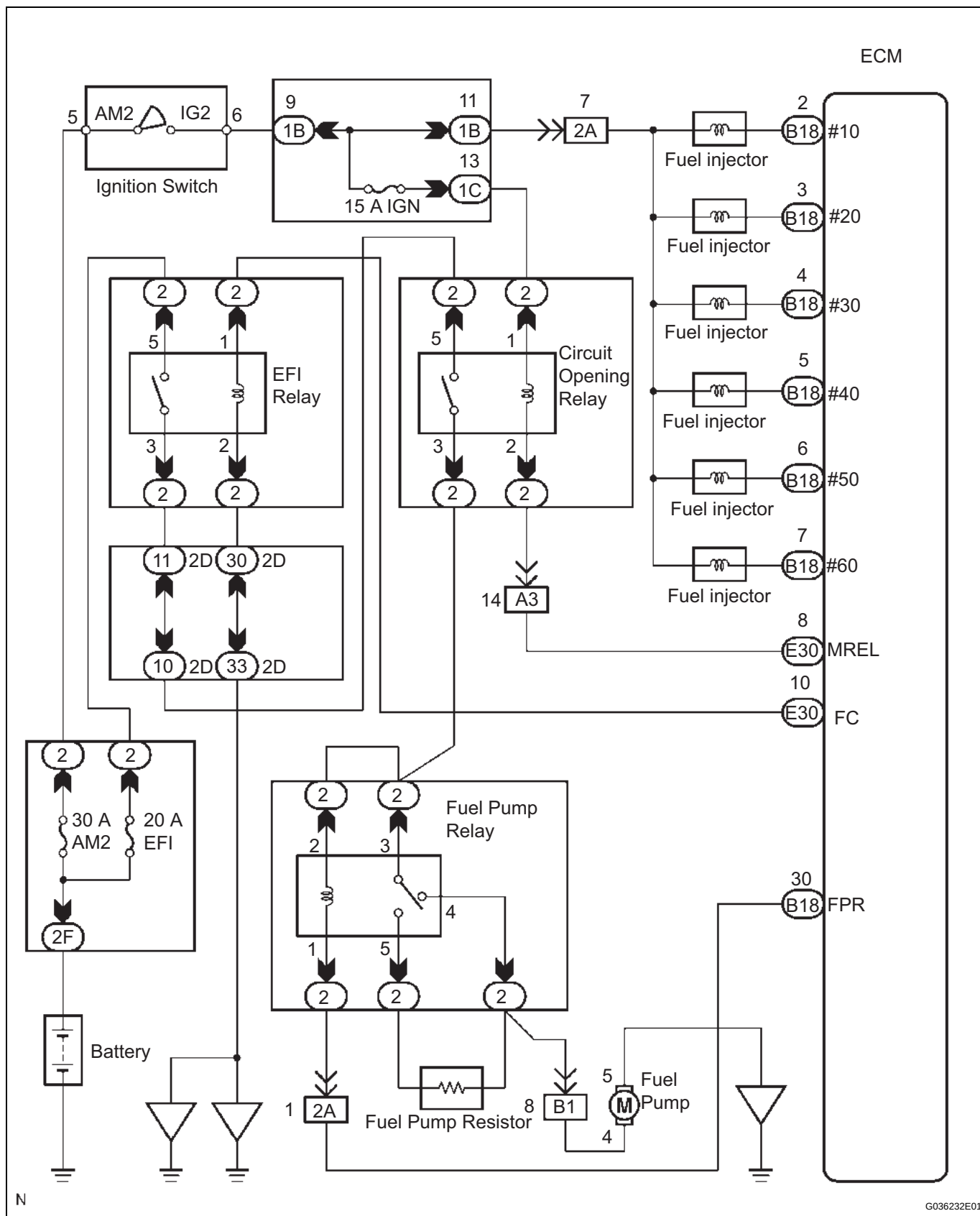
● FUEL PUMP

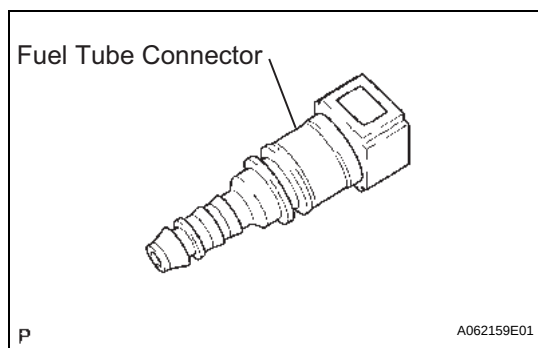
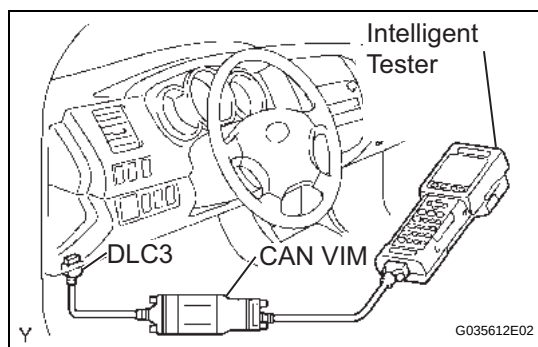
● FUEL PUMP RELAY



FU

SYSTEM DIAGRAM





ON-VEHICLE INSPECTION

1. CHECK FUEL PUMP

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch to ON.

NOTICE:

Do not start the engine.

- (c) Turn the intelligent tester ON.
- (d) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / ACTIVE TEST / FUEL PUMP / SPD.
- (e) Check the fuel operation by operating it with the intelligent tester.
If the fuel pump does not operate, replace the fuel pump.

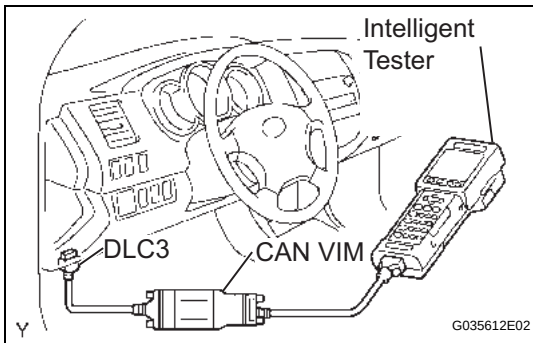
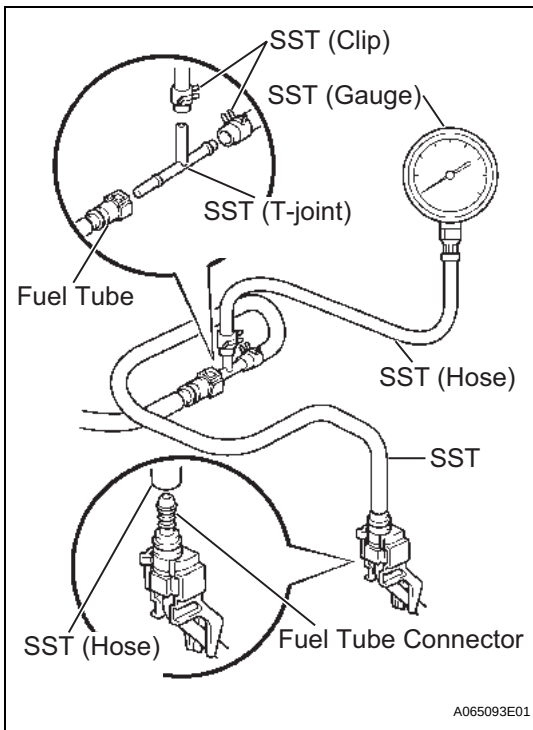
2. CHECK FUEL PRESSURE

- (a) Prepare for the inspection.
 - (1) Prepare a new fuel tube.
HINT:
Part No. 23801-0P010
 - (2) Using a cutter knife, cut the fuel tube protector. Tear the protector by hand, then remove the fuel tube connector.

NOTICE:

If the protector is cut too deeply with the cutter, the O-ring of the fuel tube connector will be damaged.

- (b) Discharge the fuel pressure system (see page [FU-1](#)).
- (c) Using a voltmeter, measure the battery voltage.
Standard:
9.0 to 14 V
- (d) Disconnect the battery negative terminal.
- (e) Disengage the fuel pipe clamp (see page [FU-1](#)).
- (f) Disconnect the fuel pipe No. 1.



- (g) Install SST and the fuel tube connector onto the vehicle.
SST 09268-41048 (90467-13001, 95336-08070, 09268-41500), 09268-45014 (09268-41200, 09268-41220, 09268-41250)
- (h) Wipe off any spilt gasoline.
 (i) Connect the cable to the battery negative terminal.
Torque: 3.9 N*m (40 kgf*cm, 35 in.*lbf)

- (j) Connect the intelligent tester to the DLC3.
 (k) Turn the ignition switch to ON.
 (l) Turn the intelligent tester ON.
 (m) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / ACTIVE TEST / FUEL PUMP / SPD / ON.
 (n) Measure the fuel pressure.

Standard:

281 to 287 kPa (2.87 to 2.93 kgf/cm², 40.8 to 41.7 psi)

- If the fuel pressure is greater than the standard value, replace the fuel pump.
- If the fuel pressure is less than the standard value, check the connection between the fuel hose and fuel pump.

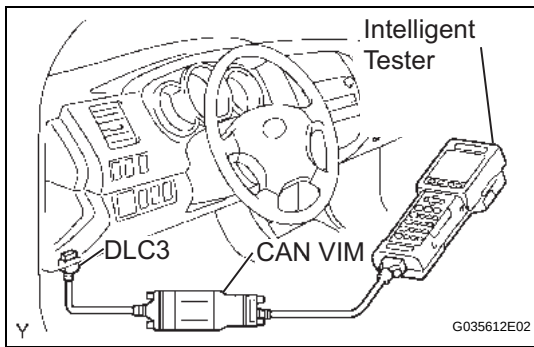
- (o) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / ACTIVE TEST / FUEL PUMP / SPD / OFF.
 (p) Check that the fuel pressure does not change for 5 minutes.

Standard:

147 kPa (1.5 kgf/cm², 21 psi)

If the result is not as specified, check the fuel pump and fuel injector.

- (q) Disconnect the intelligent tester from the DLC3.
 (r) Disconnect the cable from the battery negative terminal.
 (s) Remove SST and the fuel tube connector while being careful to prevent gasoline splashes.
 (t) Connect the fuel tube.



3. CHECK FOR FUEL LEAKAGE

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch to ON.

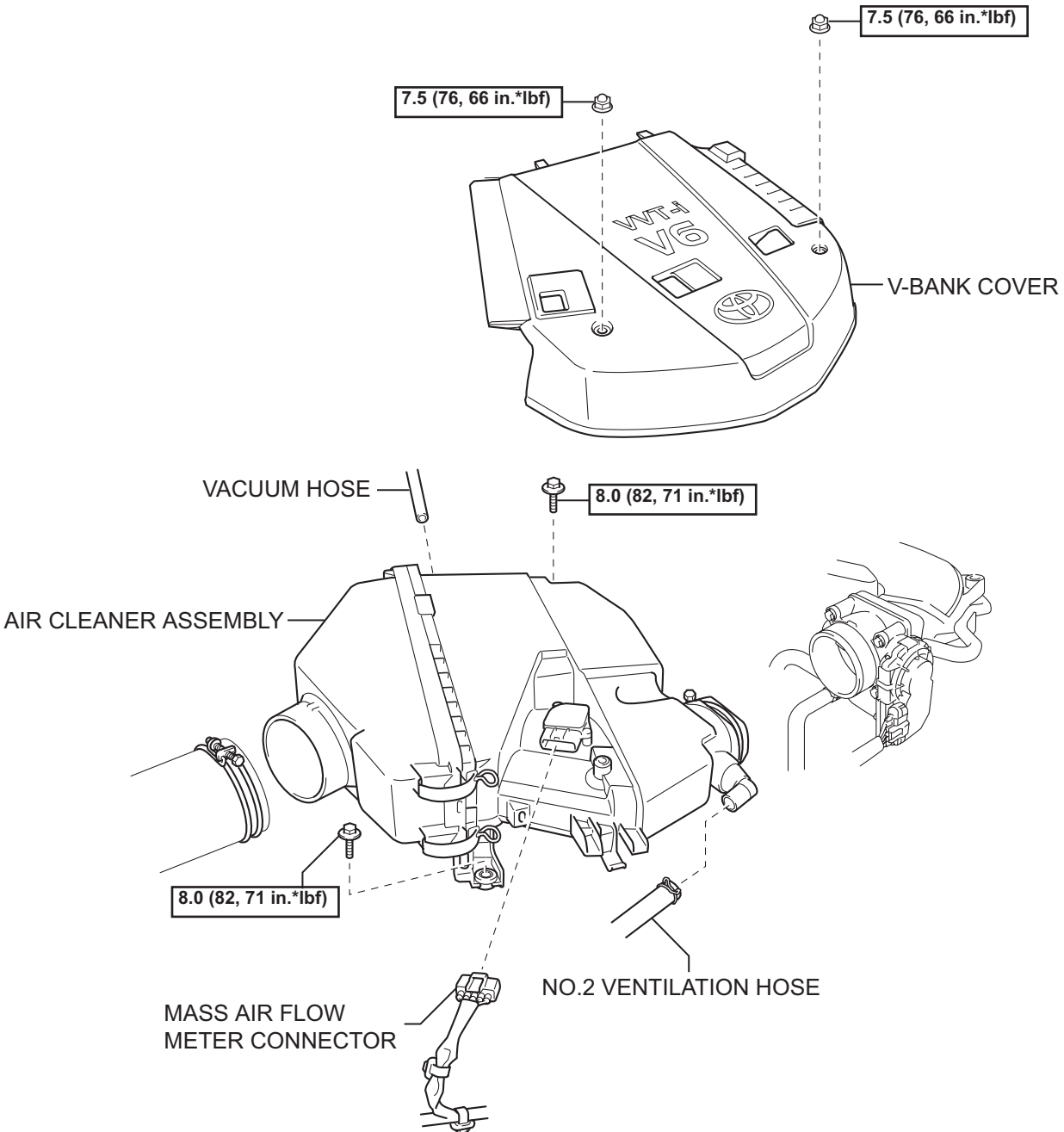
NOTICE:

Do not start the engine.

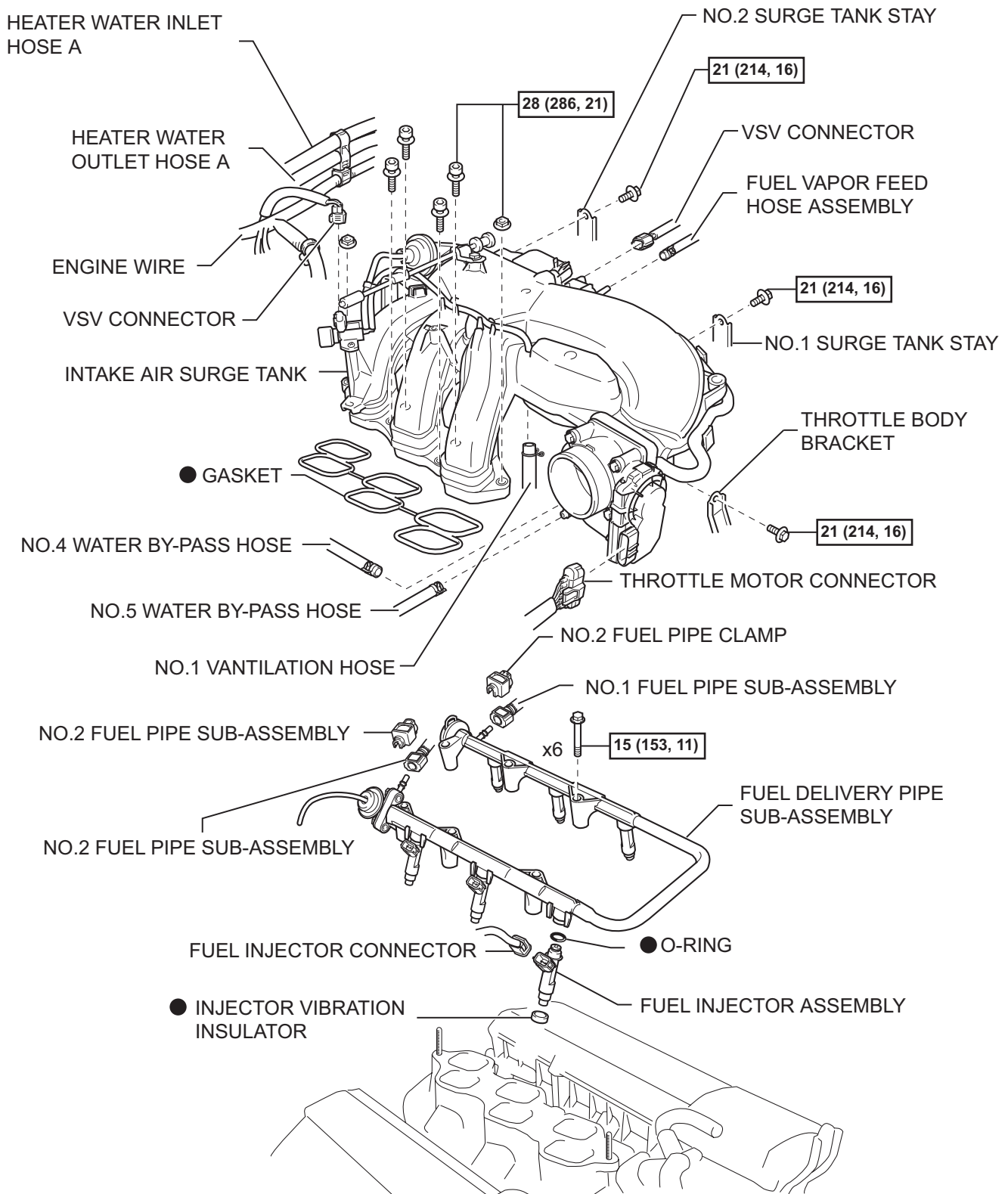
- (c) Turn the intelligent tester ON.
- (d) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / ACTIVE TEST / FUEL PUMP / SPD / ON.
- (e) Check that there are no leakage in the fuel system.

FUEL INJECTOR

COMPONENTS



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

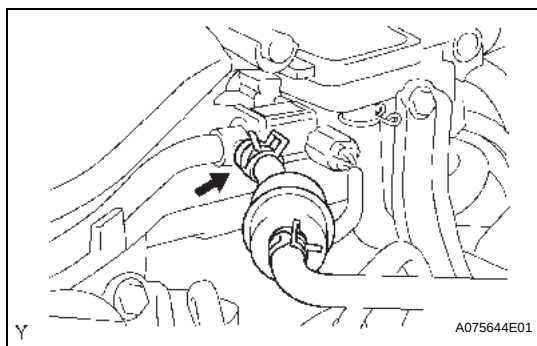
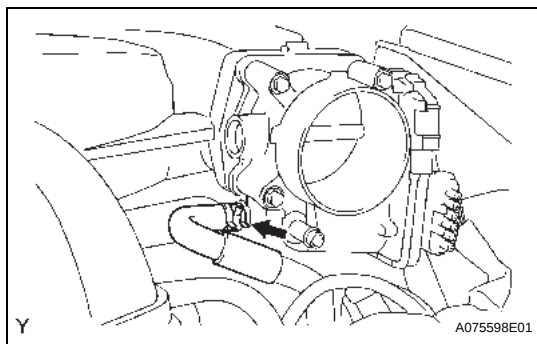
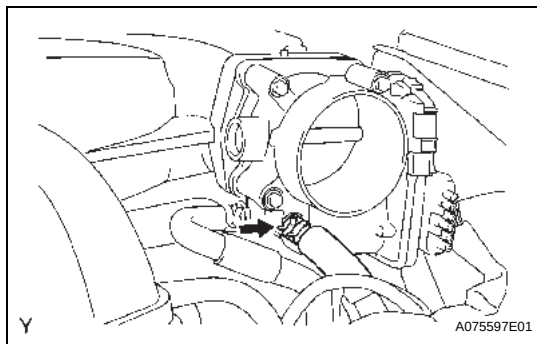


N*m (kgf*cm, ft*lb) : Specified torque

● Non-reusable part

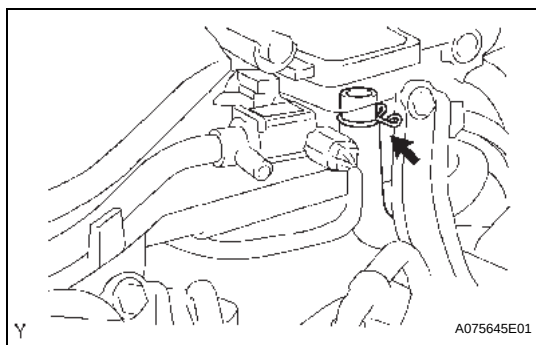
REMOVAL

1. **DISCHARGE FUEL SYSTEM PRESSURE**
(See page [FU-1](#))
2. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
3. **DRAIN ENGINE COOLANT** (See page [CO-3](#))
4. **REMOVE V-BANK COVER** (See page [ES-414](#))
5. **REMOVE AIR CLEANER ASSEMBLY** (See page [ES-415](#))
6. **REMOVE INTAKE AIR SURGE TANK**
 - (a) Disconnect the water by-pass hose No. 5.

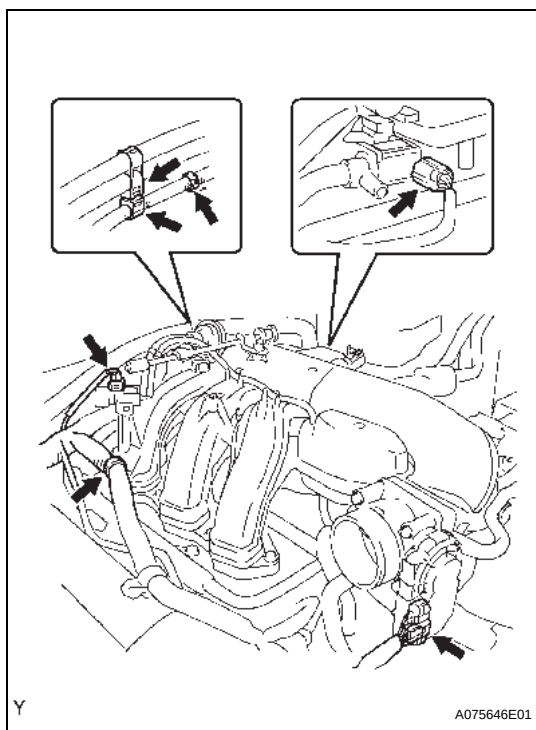


(b) Disconnect the water by-pass hose No. 4.

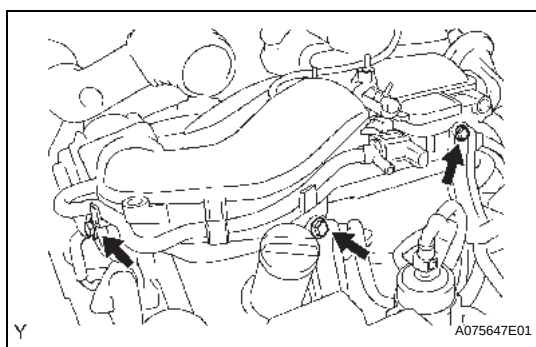
(c) Disconnect the fuel vapor feed hose.



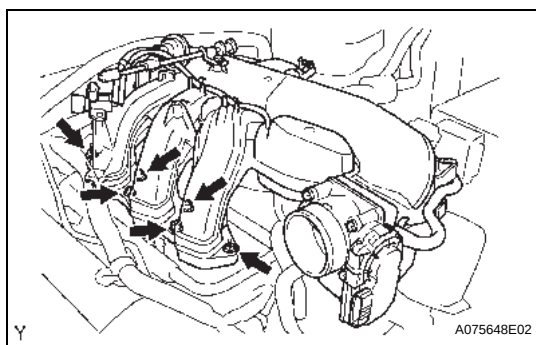
(d) Disconnect the ventilation hose.



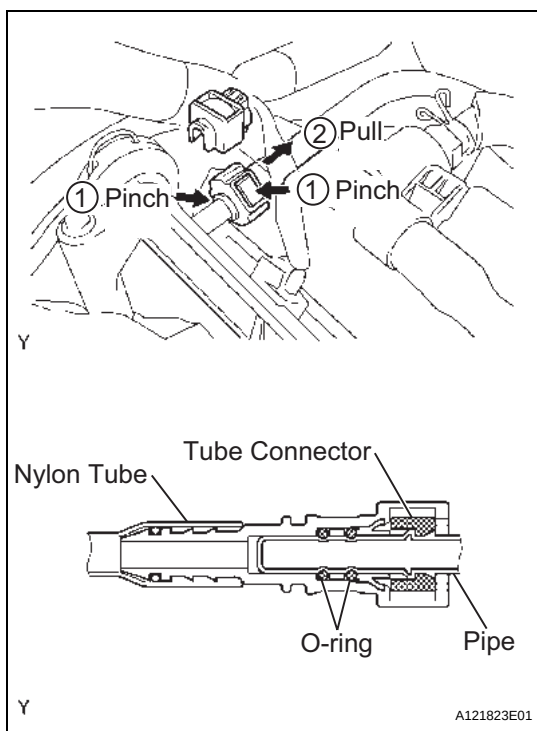
- (e) Disconnect the 2 VSV connectors.
- (f) Disconnect the throttle motor connector.
- (g) Remove the 3 wire harness clamps and hose clamp.



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



- (i) Using an 8 mm socket hexagon wrench, remove the 4 bolts.
- (j) Remove the 2 nuts, then remove the intake air surge tank and gasket.



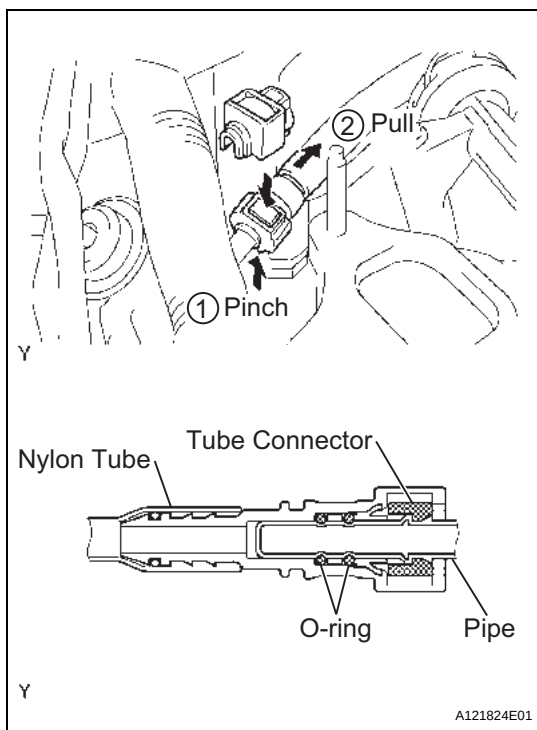
7. DISCONNECT NO.1 FUEL PIPE SUB-ASSEMBLY

- Remove the fuel pipe clamp.
- Pinch the tube connector, and then pull the fuel pipe out of the pipe as shown in the illustration.

NOTICE:

- Remove any dirt and foreign objects from the fuel tube connector before performing this work.
- Do not allow any scratches or foreign objects on the parts when disconnecting, as the fuel tube connector has the O-ring that seals the pipe.
- Perform this work by hand. Do not use any tools.
- Do not forcibly bend, twist or turn the nylon tube.
- Protect the disconnected part by covering it with a vinyl bag after disconnecting the fuel tube.
- If the fuel tube connector and pipe are stuck, push and pull to release them.

FU

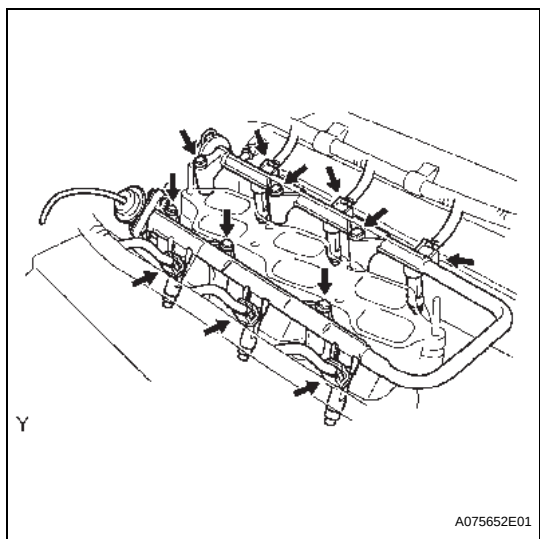


8. DISCONNECT NO.2 FUEL PIPE SUB-ASSEMBLY

- Remove the fuel pipe clamp.
- Pinch the tube connector, and then pull the fuel pipe out of the pipe as shown in the illustration.

NOTICE:

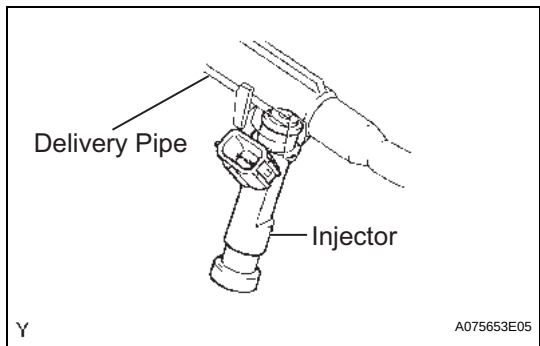
- Remove any dirt and foreign objects from the fuel tube connector before performing this work.
- Do not allow any scratches or foreign objects on the parts when disconnecting, as the fuel tube connector has the O-ring that seals the pipe.
- Perform this work by hand. Do not use any tools.
- Do not forcibly bend, twist or turn the nylon tube.
- Protect the disconnected part by covering it with a vinyl bag after disconnecting the fuel tube.
- If the fuel tube connector and pipe are stuck, push and pull to release them.



9. REMOVE FUEL DELIVERY PIPE SUB-ASSEMBLY

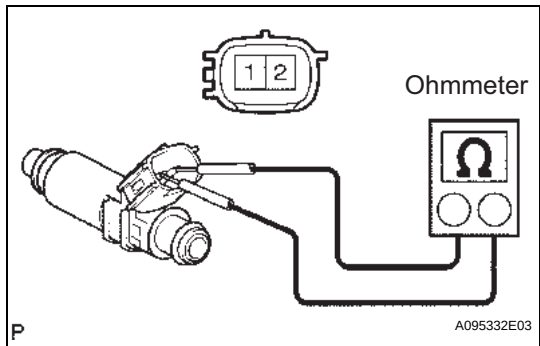
- (a) Disconnect the 6 fuel injector connectors.
- (b) Remove the 6 bolts and fuel delivery pipe together with the 6 fuel injectors.

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



10. REMOVE FUEL INJECTOR

- (a) Pull the 6 injectors out of the delivery pipe.



INSPECTION

1. INSPECT FUEL INJECTOR ASSEMBLY

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

Standard

Tester Connection	Specified Condition
1 -2	11.6 to 12.4 Ω at 20°C (68°F)

If the result is not as specified, replace the fuel injector.

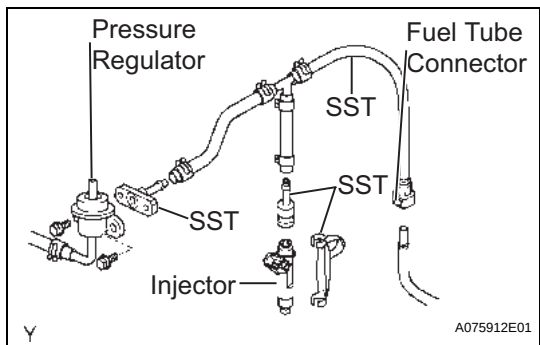
- (b) Check the injection volume.

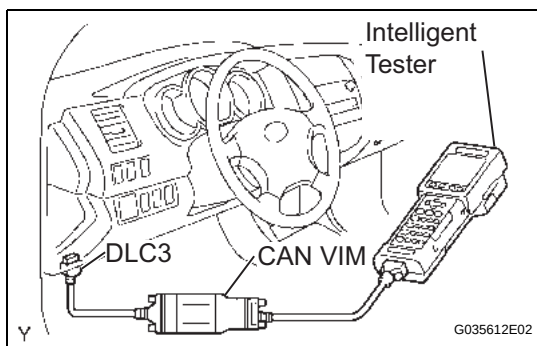
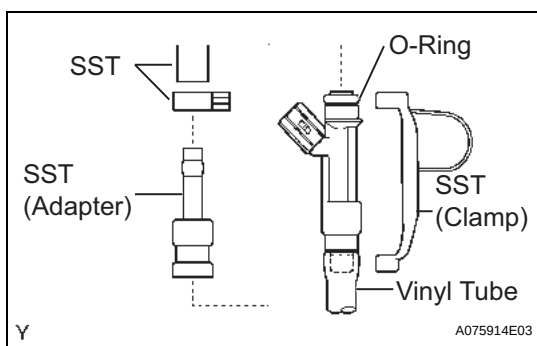
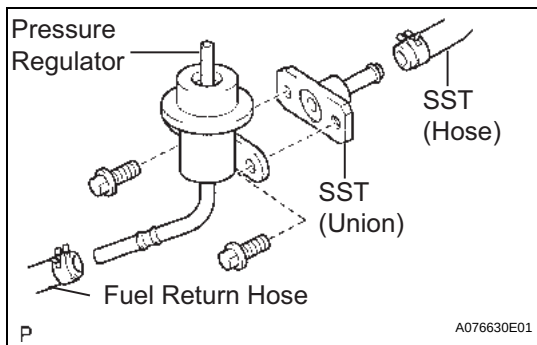
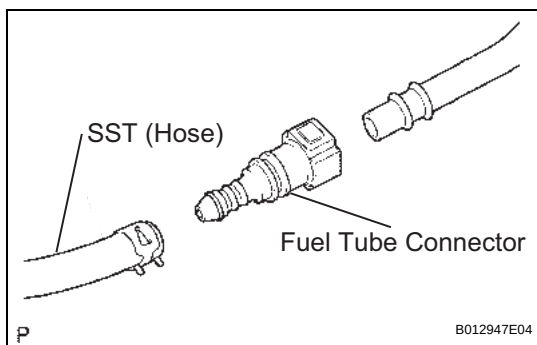
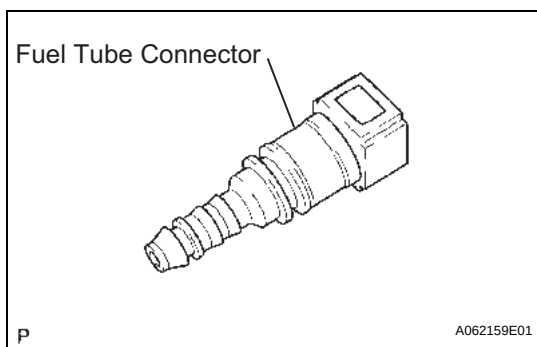
NOTICE:

- Perform the test in a well-ventilated area and watch out for flames.
- Handle the fuel tube connector carefully.

- (1) Prepare a new fuel tube.

HINT:
Part No. 23801-0P010





- (2) Using a cutter knife, cut the fuel tube protector. Tear the protector by hand, then remove the fuel tube connector.

NOTICE:

If the protector is cut too deeply with the cutter, the O-ring of the fuel tube connector will be damaged.

- (3) Install the fuel tube connector into SST (hose), then connect the tube connector to the fuel pipe.

SST 09268-41047 (95336-08070)

CAUTION:

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

- (4) Remove the pressure regulator(see page 11-40).
- (5) Install the O-ring onto the fuel inlet of the pressure regulator.
- (6) Connect SST (hose) to the fuel inlet of the pressure regulator with another SST (union) and the 2 bolts.
- (7) Connect the fuel return hose to the fuel outlet of the pressure regulator.

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

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

- (8) Install a new O-ring onto the injector.
- (9) Connect SST (adaptor and hose) to the injector and hold the injector and union with SST (clamp).

SST 09268-41047 (95336-08070), 09268-41140, 09268-41400

- (10) Set the injector in a graduated cylinder.

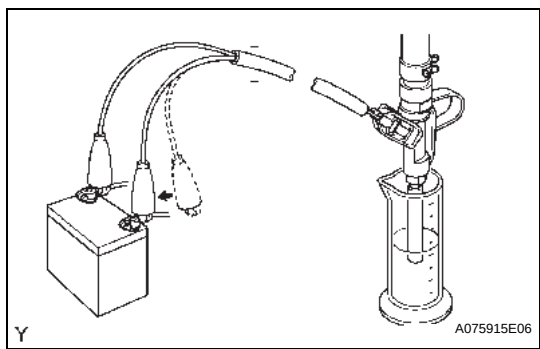
CAUTION:

Install a suitable vinyl tube onto the injector to prevent gasoline splashes.

- (11) Connect the intelligent tester to the DLC3.
- (12) Turn the ignition switch to ON.
- (13) Turn the intelligent tester ON.
- (14) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / ACTIVE TEST / FUEL PUMP / SPD / ON.
- (15) Install SST onto the fuel injector.

SST 09842-30080

FU



(16) Connect SST to the battery, then measure the injection volume for 15 seconds. Perform the inspection 2 or 3 times, then calculate the average.

Standard:

Injection Volume	Difference Between Each Fuel Injector
76 to 91 cm ³ (4.6 to 5.5 cu in.) per 15 seconds	15 cm ³ (0.9 cu in.) or less

NOTICE:

Always do the switching at the battery side.
If the result is not as specified, replace the fuel injector.

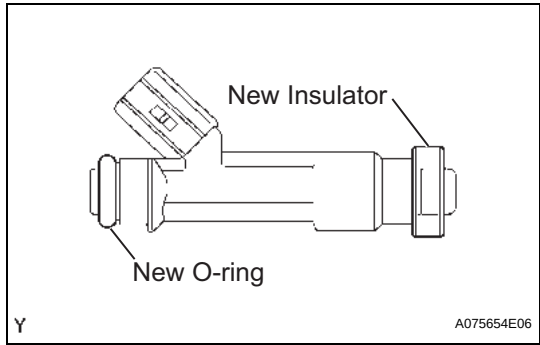
- (c) Check the fuel leakage.
 - (1) When checking the injection volume, remove SST from the battery. Inspect the fuel leakage from the fuel injector.

Standard:

1 drop or less every 12 minutes.

If the result is not as specified, replace the fuel injector.

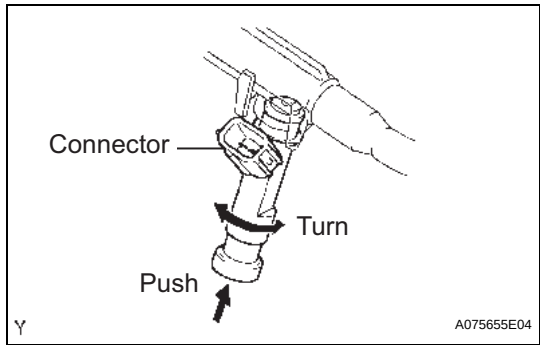
FU



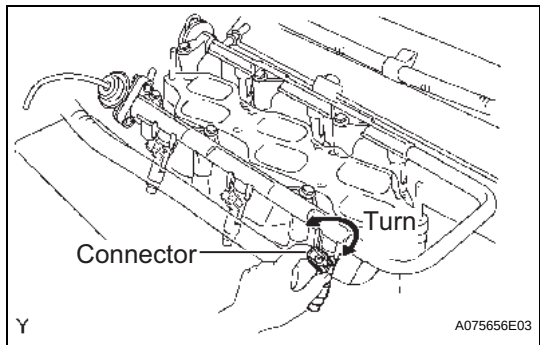
INSTALLATION

1. INSTALL FUEL INJECTOR

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



- (c) While turning the fuel injector left and right, install it onto the fuel delivery pipe.
- (d) Position the fuel injector connector facing outward.



2. INSTALL FUEL DELIVERY PIPE SUB-ASSEMBLY

- (a) Place the fuel delivery pipe together with the 6 fuel injectors on the intake manifold.
- (b) Provisionally install the 6 bolts, which are used to hold the fuel delivery pipe, onto the intake manifold.
- (c) Check that the fuel injectors rotate smoothly.

HINT:
If the fuel injectors do not rotate smoothly, replace the O-ring.
- (d) Position the fuel injector connector facing outward.

- (e) 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)

- (f) Connect the 6 fuel injector connectors.

3. CONNECT FUEL PIPE SUB-ASSEMBLY

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

NOTICE:

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

- (b) Install the fuel pipe clamp.

4. CONNECT NO.1 FUEL PIPE SUB-ASSEMBLY

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

NOTICE:

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

- (b) Install the fuel pipe clamp.

5. 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 an 8 mm socket hexagon wrench, 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.
- (g) Connect the ventilation hose.
- (h) Connect the fuel vapor feed hose.
- (i) Connect the water by-pass hose No. 4.
- (j) Connect the water by-pass hose No. 5.

6. INSTALL AIR CLEANER ASSEMBLY (See page [ES-416](#))

7. INSTALL V-BANK COVER (See page [ES-416](#))

8. CONNECT CONNECT BATTERY NEGATIVE TERMINAL

Torque: 3.9 N*m (40 kgf*cm, 35 in.*lbf)

9. ADD ENGINE COOLANT (See page [CO-3](#))

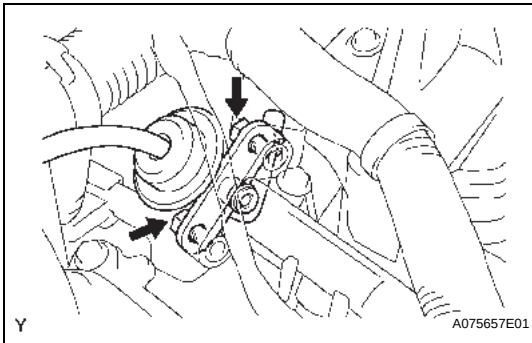
10. CHECK FOR ENGINE COOLANT LEAKAGE (See page [CO-4](#))

11. CHECK FOR FUEL LEAKAGE

FUEL PRESSURE REGULATOR

REMOVAL

1. **DISCHARGE FUEL SYSTEM PRESSURE**
(See page [FU-1](#))
2. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
3. **REMOVE V-BANK COVER** (See page [ES-414](#))
4. **REMOVE AIR CLEANER ASSEMBLY** (See page [ES-415](#))
5. **DISCONNECT NO.2 FUEL PIPE SUB-ASSEMBLY**
(See page [FU-13](#))
6. **REMOVE FUEL PRESSURE REGULATOR ASSEMBLY**
 - (a) Remove the 2 bolts, then remove the fuel pressure regulator.
 - (b) Remove the vacuum hose.



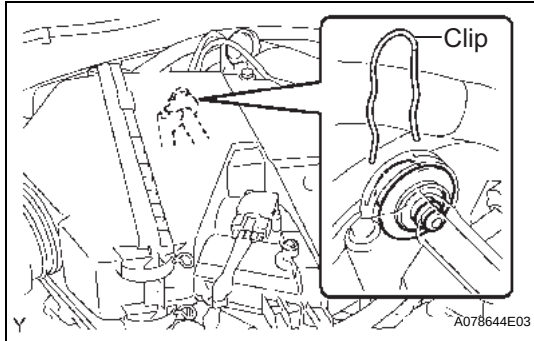
INSTALLATION

1. **INSTALL FUEL PRESSURE REGULATOR ASSEMBLY**
 - (a) Install the vacuum hose.
 - (b) Apply a light coat of spindle oil or gasoline to a new O-ring and install it onto 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)
2. **CONNECT NO.2 FUEL PIPE SUB-ASSEMBLY** (See page [FU-17](#))
3. **INSTALL AIR CLEANER ASSEMBLY** (See page [ES-416](#))
4. **INSTALL V-BANK COVER** (See page [ES-416](#))
5. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**
Torque: 3.9 N*m (40 kgf*cm, 35 in.*lbf)
6. **CHECK FOR FUEL LEAKAGE**

FUEL PRESSURE PULSATION DAMPER

REMOVAL

1. **DISCHARGE FUEL SYSTEM PRESSURE**
(See page [FU-1](#))
2. **REMOVE V-BANK COVER** (See page [ES-414](#))
3. **REMOVE FUEL PRESSURE PULSATION DAMPER ASSEMBLY**
 - (a) Remove the clip.
 - (b) Pull the fuel pressure pulsation damper out of the fuel delivery pipe.

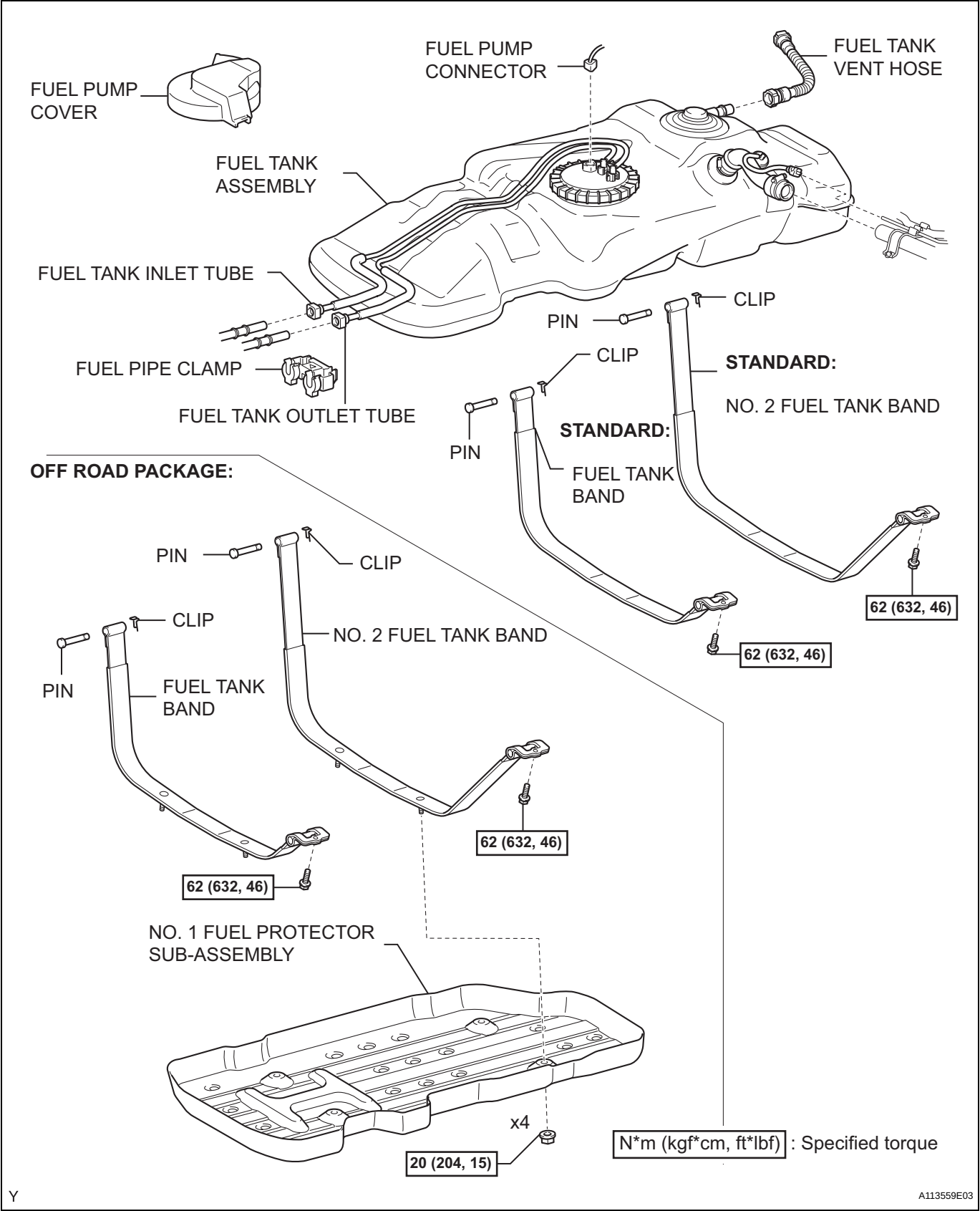


INSTALLATION

1. **INSTALL FUEL PRESSURE PULSATION DAMPER ASSEMBLY**
 - (a) Apply a light coat of spindle oil or gasoline to a new O-ring and install it onto the fuel pressure pulsation damper.
 - (b) Install the fuel pressure pulsation damper onto the fuel delivery pipe.
 - (c) Install the clip.
2. **INSTALL V-BANK COVER (See page [ES-416](#))**
3. **CHECK FOR FUEL LEAKAGE**

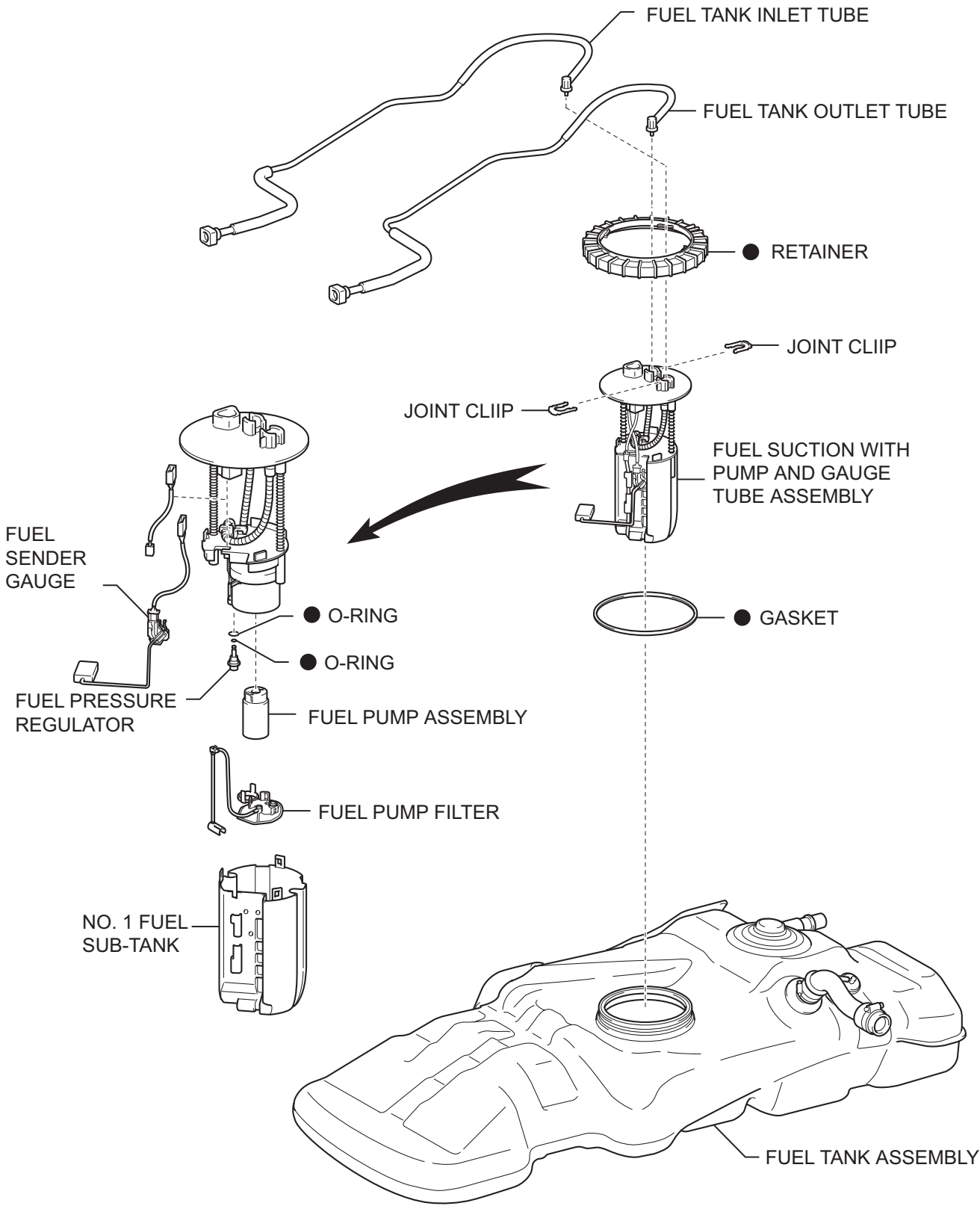
FUEL PUMP

COMPONENTS



FU

FU



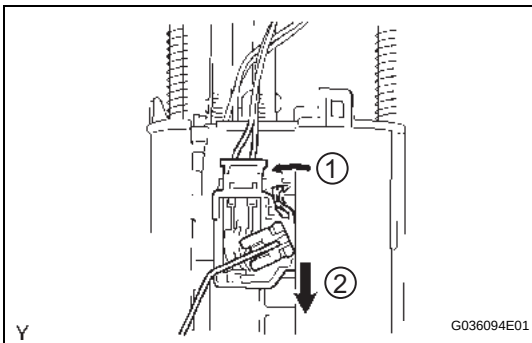
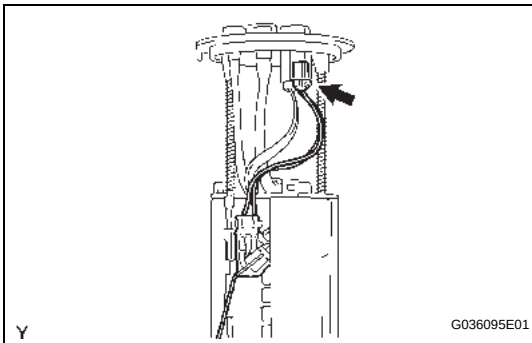
● Non-reusable part

REMOVAL

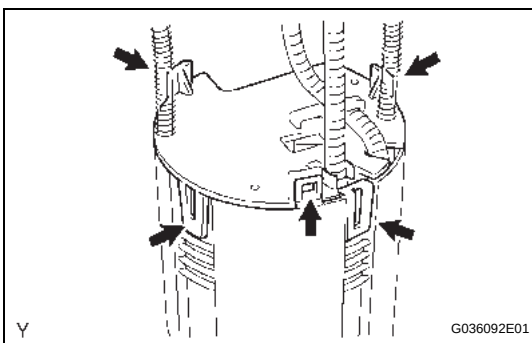
1. **DISCHARGE FUEL SYSTEM PRESSURE**
(See page [FU-1](#))
2. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
3. **REMOVE NO.1 FUEL TANK PROTECTOR SUB-ASSEMBLY (OFF ROAD PACKAGE)**
4. **DISCONNECT FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE** (See page [FU-30](#))
5. **REMOVE FUEL TANK ASSEMBLY** (See page [FU-30](#))
6. **REMOVE FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE** (See page [FU-32](#))
7. **REMOVE FUEL SUCTION WITH PUMP & GAUGE TUBE ASSEMBLY** (See page [FU-33](#))

8. DRAIN FUEL DISASSEMBLY

1. **REMOVE FUEL SENDER GAUGE ASSEMBLY**
(a) Disconnect the connector.

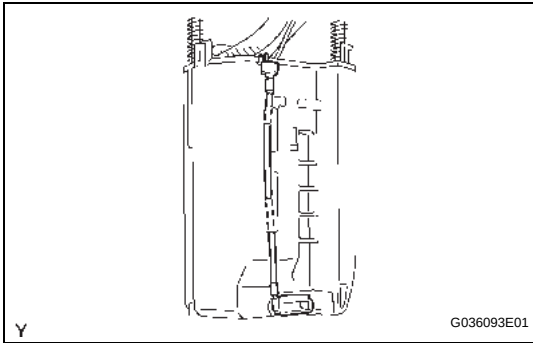


- (b) Disengage the claw fitting and remove the sender gauge by sliding it in the direction as shown in the illustration.

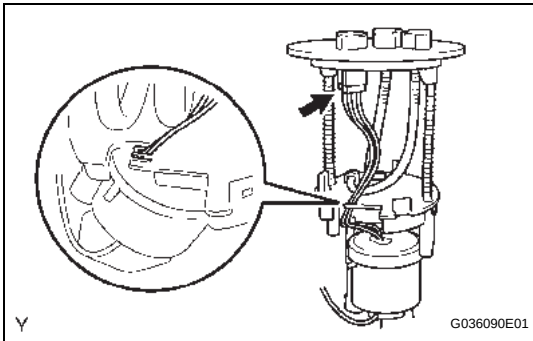


2. **REMOVE NO. 1 FUEL SUB-TANK**

- (a) Disengage the 5 claw fittings and remove the fuel pump tank.

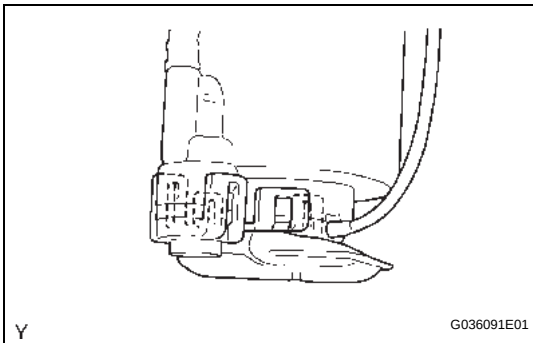


(b) Separate the connector and disengage the clamp.

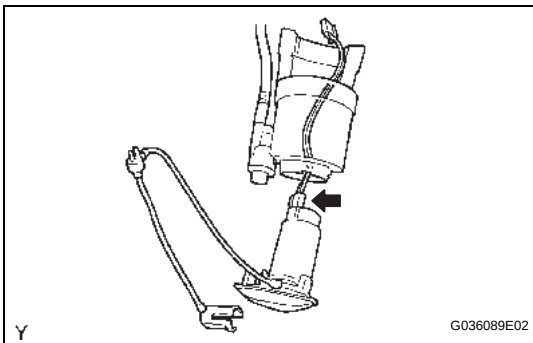


3. REMOVE FUEL PUMP ASSEMBLY

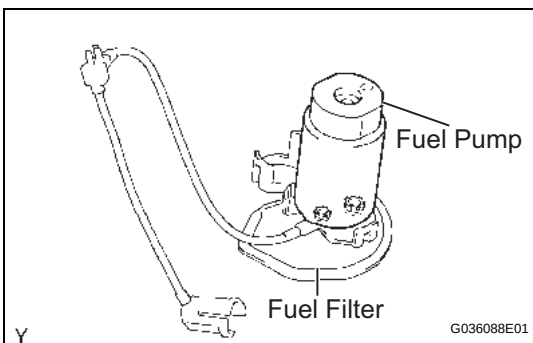
(a) Disengage the clamp, then disconnect the connector.



(b) Disengage the 5 claw fittings and separate the fuel pump from the fuel pump case.

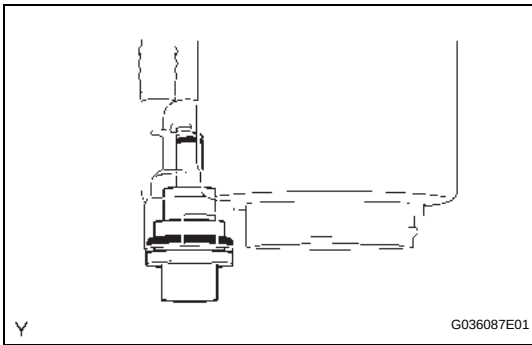


(c) Disconnect the connector from the fuel pump.



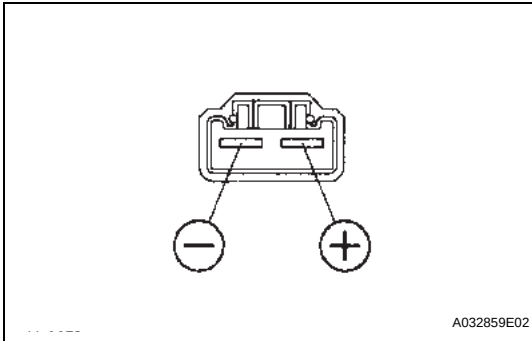
4. REMOVE FUEL PUMP FILTER

(a) Remove the fuel filter from the fuel pump.



5. REMOVE FUEL PRESSURE REGULATOR ASSEMBLY

- (a) Remove the fuel pressure regulator and the 2 O-rings.



INSPECTION

1. INSPECT FUEL PUMP ASSEMBLY

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

Resistance:

0.2 to 3.0 Ω at 20°C (68°F)

- (b) Check the operation.
 - (1) Apply battery voltage to both terminals. Check that the pump operates.

NOTICE:

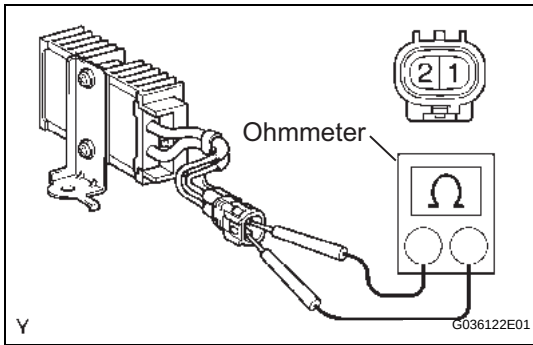
- These tests must be performed quickly (within 10 seconds) to prevent damage to the pump.
- Keep the fuel pump as far away from the battery as possible.
- Always do the switching at the battery side.

REASSEMBLY

1. **INSTALL FUEL PRESSURE REGULATOR**
 - (a) Install the new O-ring into the fuel pump case.
 - (b) Install the new O-ring onto the fuel pressure regulator.
2. **INSTALL FUEL PUMP FILTER**
3. **INSTALL FUEL PUMP ASSEMBLY**
4. **INSTALL NO.1 FUEL SUB-TANK**
5. **INSTALL FUEL SENDER GAGE ASSEMBLY**

INSTALLATION

1. INSTALL FUEL SUCTION WITH PUMP & GAGE TUBE ASSEMBLY (See page [FU-34](#))
2. INSTALL FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE (See page [FU-35](#))
3. INSTALL FUEL TANK ASSEMBLY (See page [FU-35](#))
4. CONNECT FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE (See page [FU-36](#))
5. INSTALL NO.1 FUEL TANK PROTECTOR SUB-ASSEMBLY (See page [FU-36](#))
6. ADD FUEL
7. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL
Torque: 3.9 N*m (40 kgf*cm, 35 in.*lbf)
8. CHECK FOR FUEL LEAKAGE



FUEL PUMP RESISTOR

INSPECTION

1. INSPECT FUEL PUMP RESISTER

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

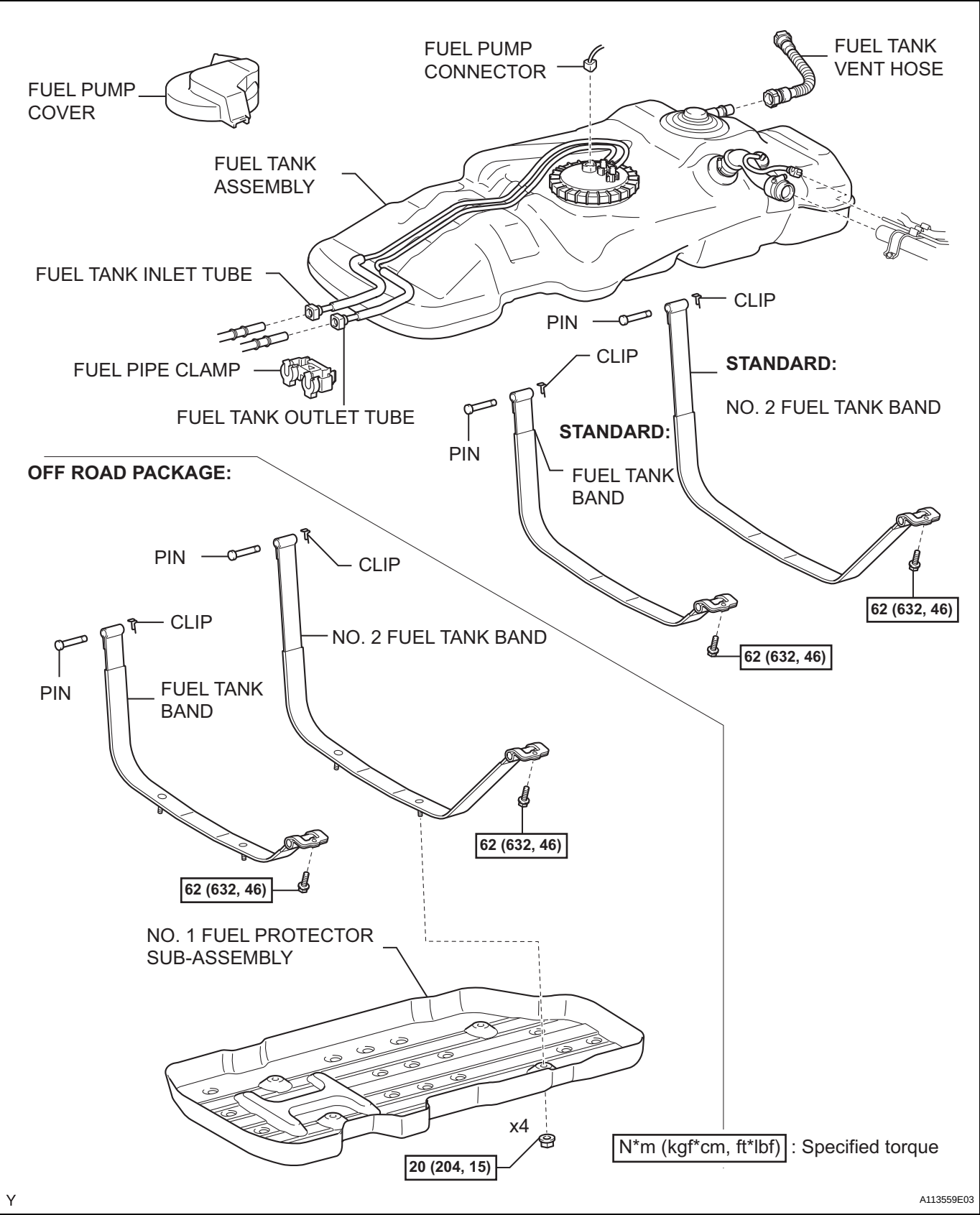
Resistance:

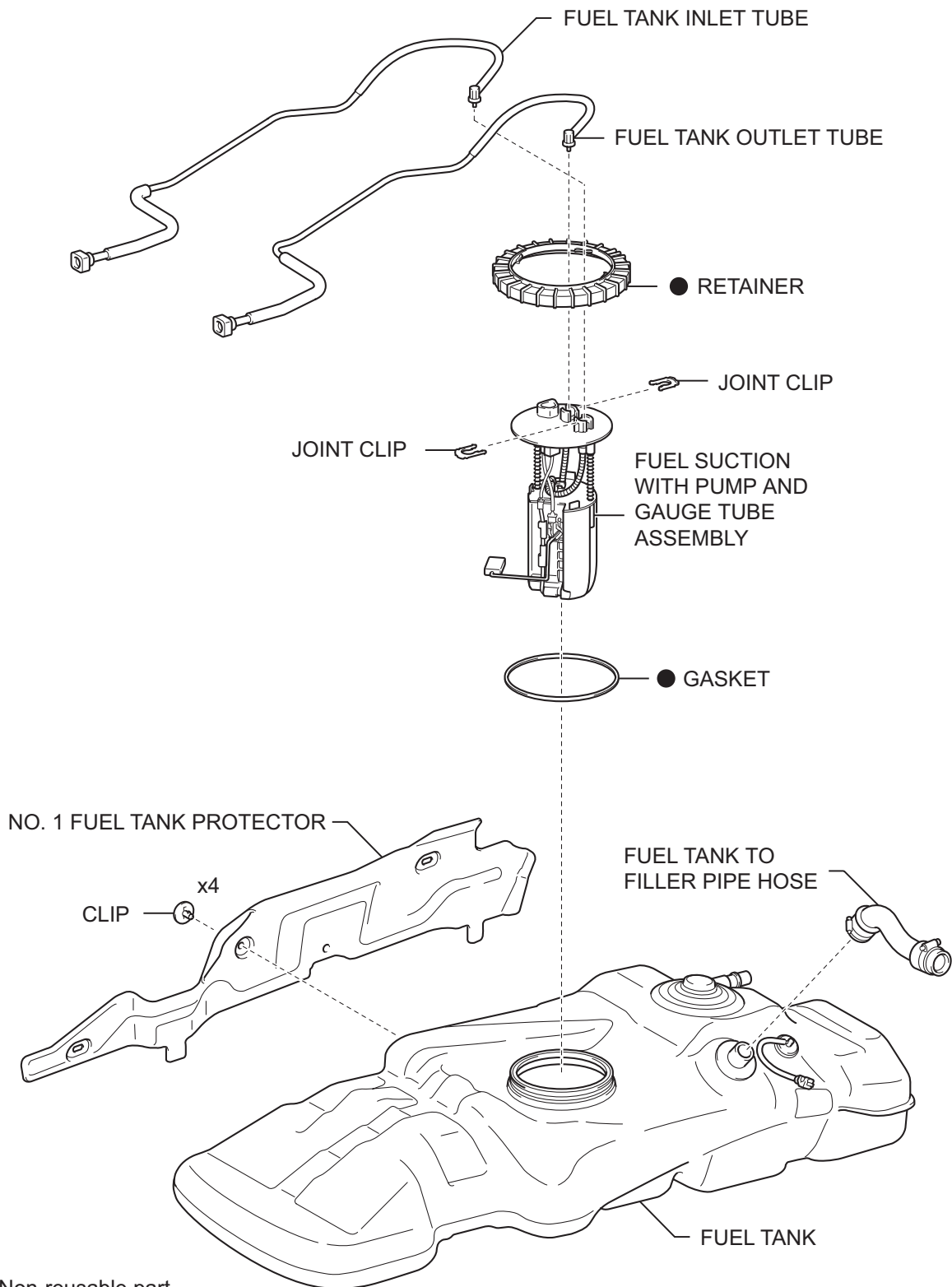
0.71 to 0.75 Ω

If the result is not as specified, replace the fuel pump resistor.

FUEL TANK

COMPONENTS



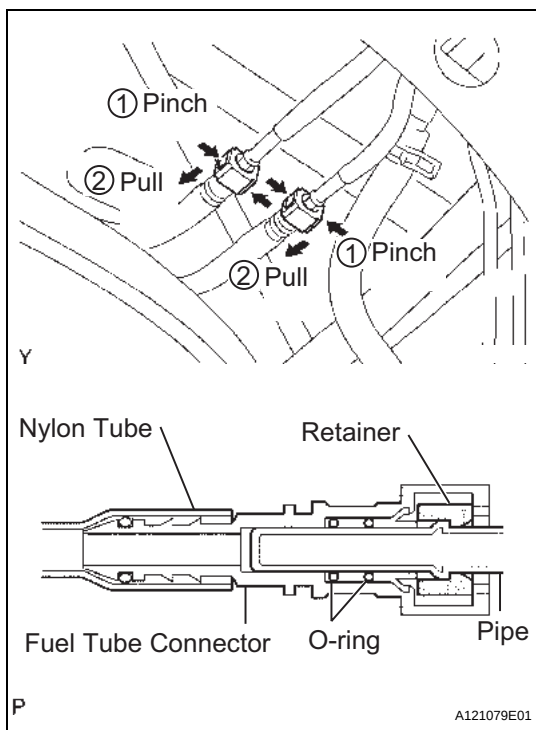
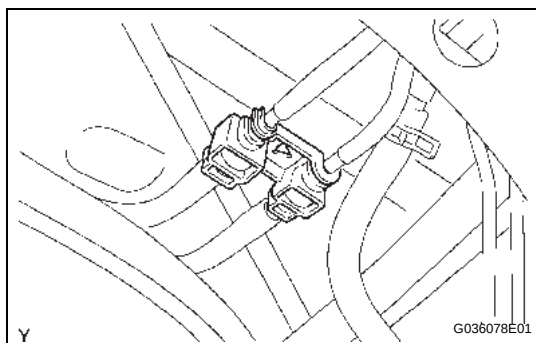


$\boxed{\text{N}^*\text{m (kgf}^*\text{cm, ft}^*\text{lbf)}} : \text{Specified torque}$

FU

REMOVAL

1. **DISCHARGE FUEL SYSTEM PRESSURE**
(See page [FU-1](#))
2. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
3. **REMOVE NO.1 FUEL TANK PROTECTOR SUB-ASSEMBLY (WITH OFF ROAD PACKAGE)**
4. **DISCONNECT FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE**
 - (a) Remove the fuel pipe clamp.



- (b) Disconnect the fuel tank main tube and fuel tank return tube.

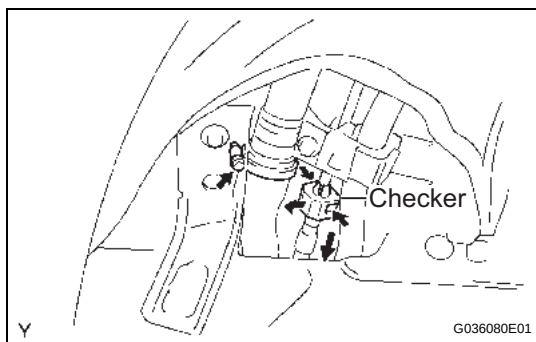
- (1) Pinch the retainer as illustrated, then pull the fuel tube connectors out of the pipes.

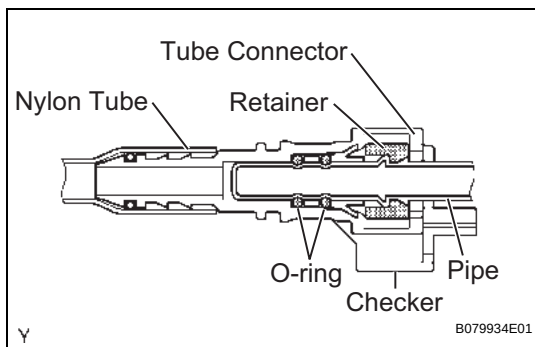
NOTICE:

- Remove any dirt and foreign objects from the fuel tube connector before performing this work.
- Do not allow any scratches or foreign objects on the parts when disconnecting, as the fuel tube connector has the O-ring that seals the pipe.
- Perform this work by hand. Do not use any tools.
- Do not forcibly bend, twist or turn the nylon tube.
- Protect the disconnected part by covering it with a vinyl bag after disconnecting the fuel tube.
- If the fuel tube connector and pipe are stuck, push and pull to release them.

5. **REMOVE FUEL TANK ASSEMBLY**

- (a) Loosen the clamp bolt.
- (b) Disconnect the fuel breather tube.
 - (1) Remove the checker of the fuel tube connector from the pipe.





- (2) Pinch the retainer of the fuel tube connector, then pull the tube connector out of the pipe.

NOTICE:

- Remove any dirt and foreign objects from the fuel tube connector before performing this work.
- Do not allow any scratches or foreign objects on the parts when disconnecting, as the fuel tube connector has the O-ring that seals the pipe.
- Perform this work by hand. Do not use any tools.
- Do not forcibly bend, twist or turn the nylon tube.
- Protect the disconnected part by covering it with a vinyl bag after disconnecting the fuel tube.
- If the fuel tube connector and pipe are stuck, push and pull to release them.

- (c) Hold the fuel tank using the mission jack.

- (d) Remove the 2 fuel tank bands.

- (1) Remove the 2 bolts.

- (2) Remove the 2 clips and 2 pins, then remove the 2 fuel tank bands.

- (e) Slightly jack the fuel tank down and separate the fuel tank to filler pipe hose from the inlet pipe.

NOTICE:

Slowly jack down the fuel tank so as not to tear the wire harness and hose.

- (f) Remove the fuel pump cover.

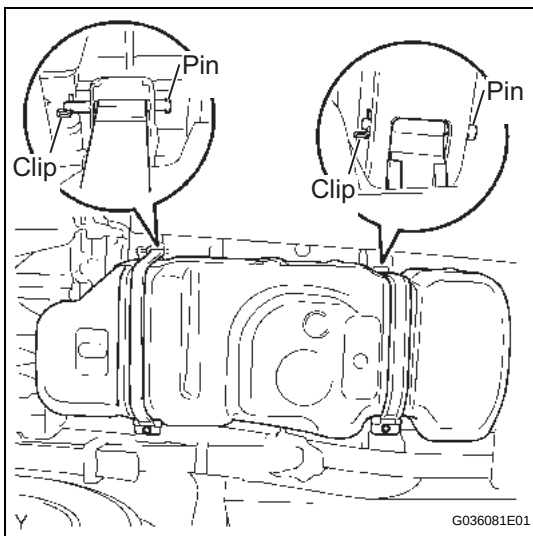
- (g) Disconnect the fuel pump connector.

- (h) Disconnect the fuel tank vent hose.

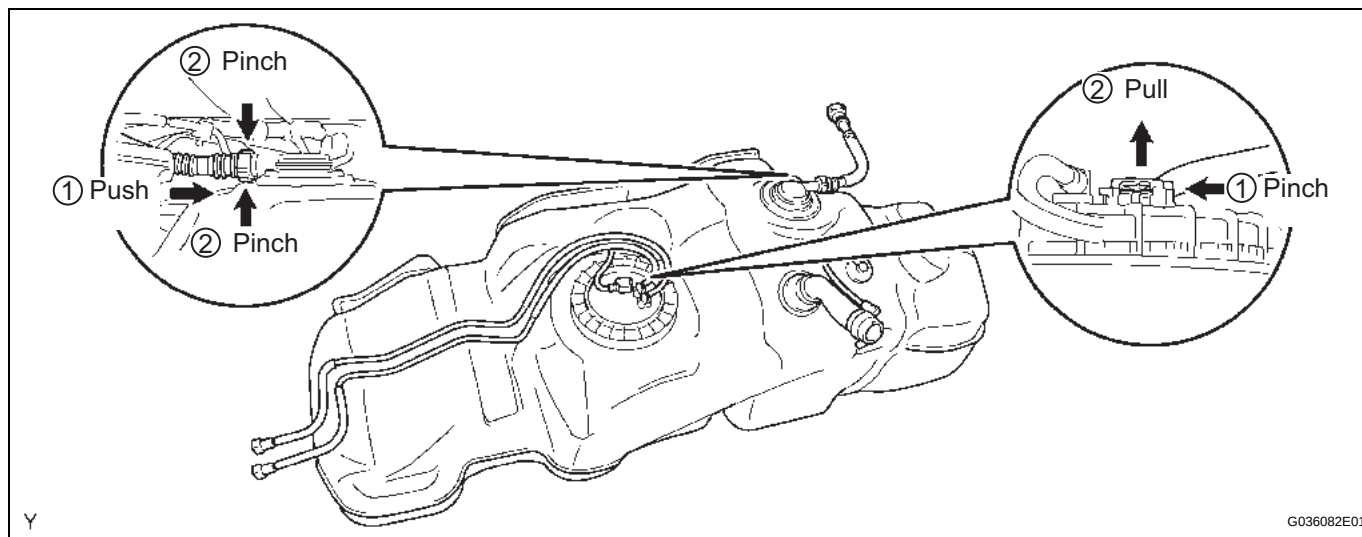
- (1) Pinch the retainer and pull the fuel tank vent hose connector out of the charcoal canister to disconnect the fuel tank vent hose from the charcoal canister.

NOTICE:

- Remove any dirt and foreign objects from the fuel tank vent hose connector before performing this work.
- Do not allow any scratches of foreign objects on the parts when disconnecting, as the fuel tank vent hose connector has the O-ring that seals the pipe.
- Perform this work by hand. Do not use any tools.
- Do not forcibly bend, twist or turn the nylon tube.
- Protect the disconnected part by covering it with a vinyl bag after disconnecting the fuel tank vent hose.
- If the fuel tank vent connector and pipe are stuck, push and pull to release them.



(i) Remove the fuel tank assy.

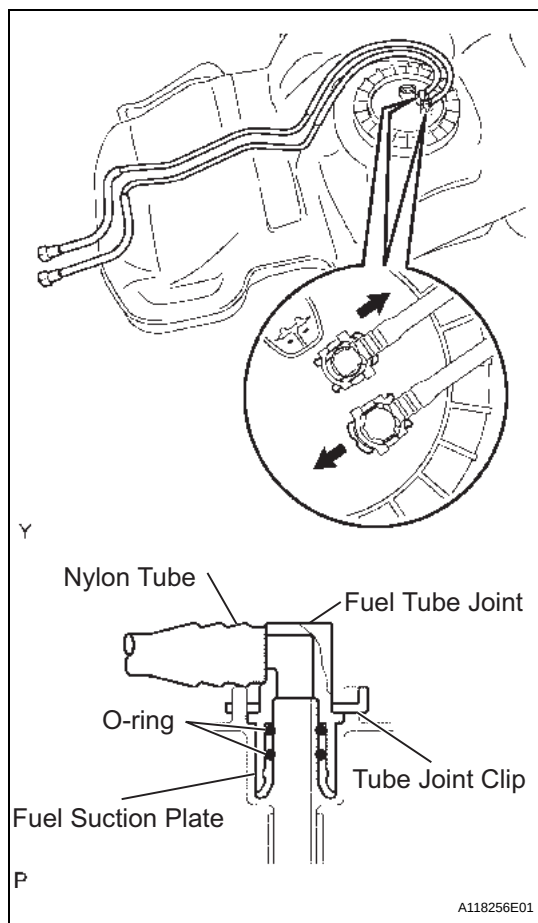


6. REMOVE FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE

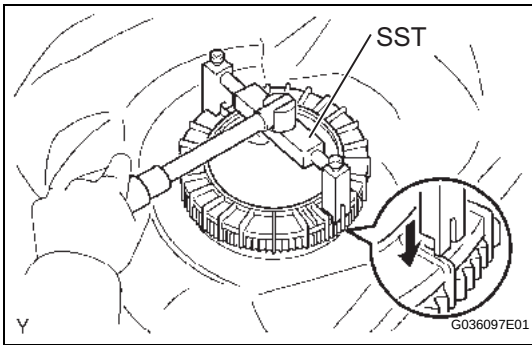
(a) Remove the 2 joint clips, then remove the fuel tank main tube and fuel tank return tube.

NOTICE:

- Remove any dirt and foreign objects from the fuel tube connector before performing this work.
- Do not allow any scratches or foreign objects on the parts when disconnecting, as the fuel tube connector has the O-ring that seals the pipe.
- Perform this work by hand. Do not use any tools.
- Do not forcibly bend, twist or turn the nylon tube.
- Protect the disconnected part by covering it with a vinyl bag after disconnecting the fuel tube.
- If the fuel tube connector and pipe are stuck, push and pull to release them.



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7. REMOVE FUEL SUCTION WITH PUMP & GAUGE TUBE ASSEMBLY

NOTICE:

Protect the connector and tube joint with masking tape or equivalent to prevent any foreign objects from sticking to them. Clean any dirt and foreign objects from the fuel suction tube assy before removing.

- (a) Using a SST, loosen the retainer.

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

HINT:

The ribs on the retainer can be fitted into a tip of the SST.

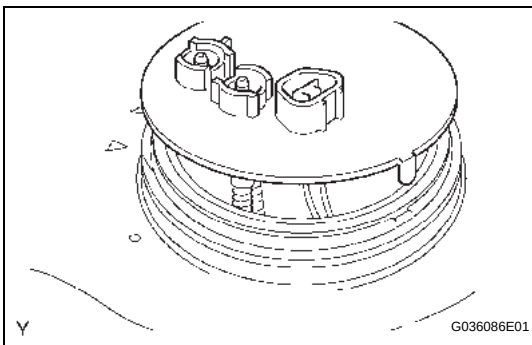
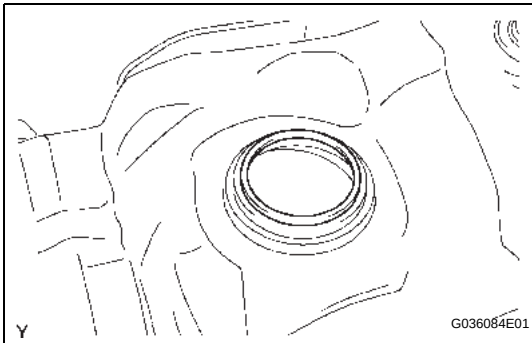
- (b) Remove the retainer.
(c) Pull the fuel pump assy out of the fuel tank.

NOTICE:

Be careful not to bend the arm of the sender gauge.

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

8. DRAIN FUEL

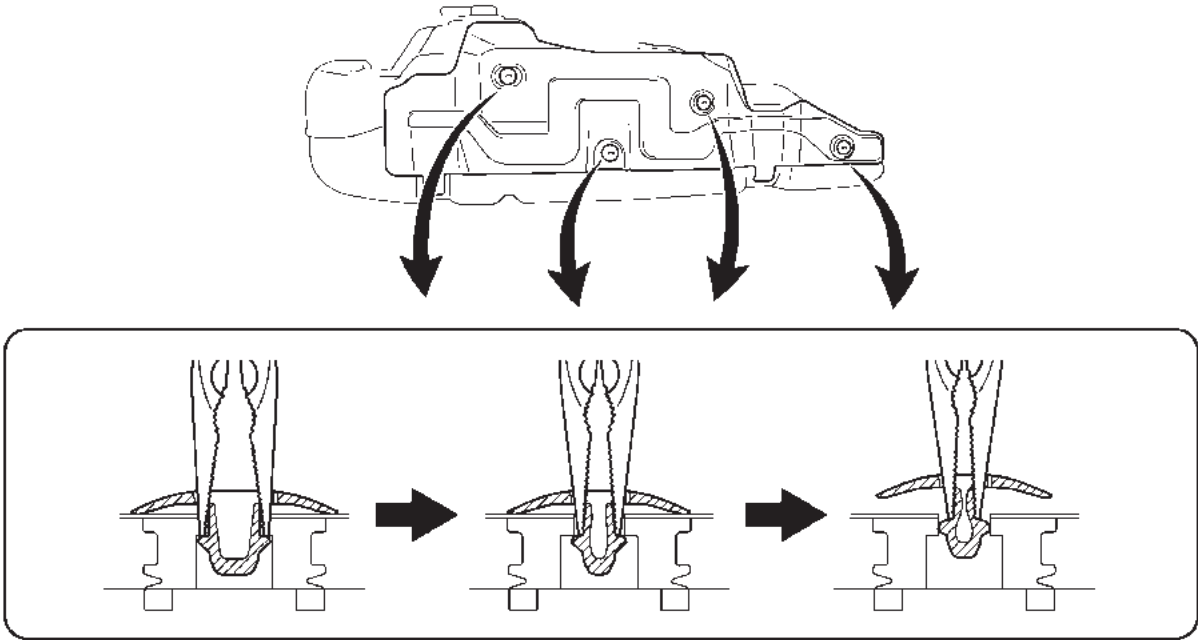


9. REMOVE FUEL TANK TO FILLER PIPE HOSE

- (a) Loosen the clamp bolt, then remove the fuel tank to filler pipe hose.

10. REMOVE NO.1 FUEL TANK PROTECTOR

- (a) Remove the 4 clips, then remove the fuel tank protector.



FU

Y

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INSTALLATION

1. INSTALL NO.1 FUEL TANK PROTECTOR

- (a) Install the fuel tank protector with the 4 clips.

2. INSTALL FUEL TANK TO FILLER PIPE HOSE

- (a) Install the fuel tank onto the filler pipe hose, then tighten the pipe clamp bolt.

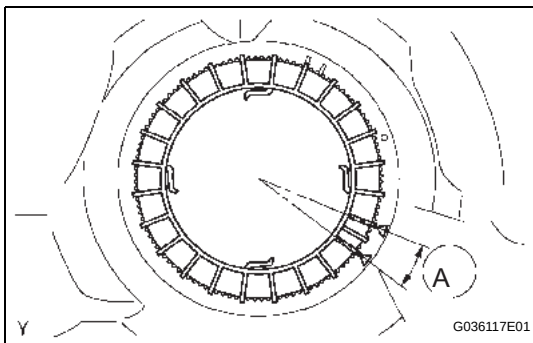
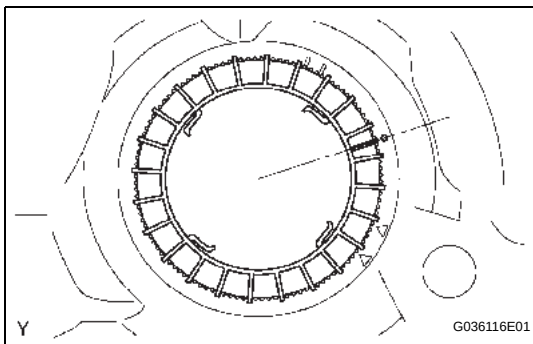
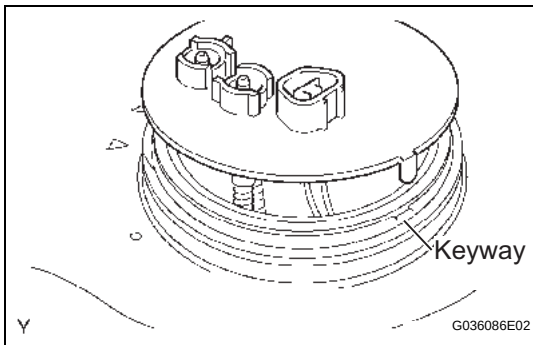
3. INSTALL FUEL SUCTION WITH PUMP & GAUGE TUBE ASSEMBLY

- (a) Install a new gasket onto the fuel tank.
(b) Set the fuel pump assembly in the fuel tank.

NOTICE:

Be careful not to bend the arm of the sender gauge.

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



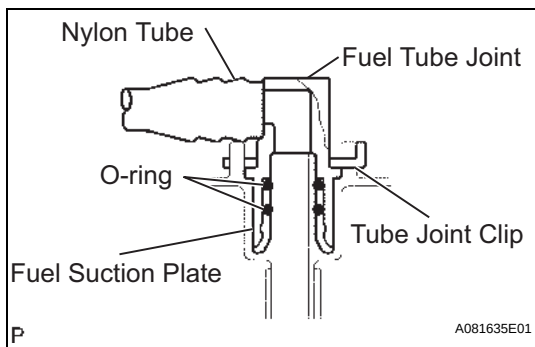
- (d) Install a new retainer.

- (1) Align the mark on a new retainer with the rib on the fuel tank as shown in the illustration.

- (2) Using SST, turn the retainer 740° to 780° clockwise (more than 2 turns), and position the mark on the retainer within range A to install it.
SST 09808-14020 (09808-01410, 09808-01420, 09808-01430)

HINT:

The ribs on the retainer can be fitted into the tip of the SST.



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

- (a) Install the fuel tank main tube and return tube with the 2 joint clips.

NOTICE:

- Check that there are no scratches or foreign objects around the connected part of the fuel tube joint and plug before performing this work.
- Check that the fuel tube joint is securely inserted to the end.
- Check that the tube joint clips are on the collar of the fuel tube joint.
- After installing the tube joint clip, check that the fuel tank main tube and return tube can be pulled out.

5. INSTALL FUEL TANK ASSEMBLY

- (a) Set the fuel tank assembly onto the mission jack.
- (b) Connect the fuel tank vent hose.
- (1) Align the fuel tank vent connector with the pipe, then push in the fuel tank vent connector until the retainer makes a "click" sound to connect the fuel tank vent hose to the fuel suction plate.

NOTICE:

- Check that there are no scratches or foreign objects around the connected part of the fuel tank vent connector and plug before performing this work.
- After connecting the fuel tank vent hose, check that the fuel tank vent hose is securely connected by pulling the quick connector.

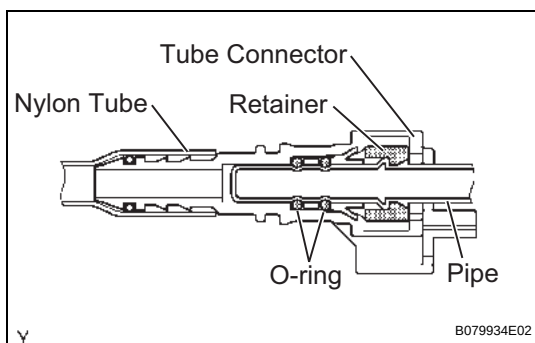
- (c) Connect the fuel pump connector.
- (d) Install the fuel pump cover.
- (e) Connect the fuel tank to filler pipe hose.
- (f) Install the 2 fuel tank bands.
- (1) Install the 2 fuel tank bands with the 2 pins and 2 clips.
- (2) Install the 2 fuel tank bands with the 2 bolts.
- Torque: 62 N*m (632 kgf*cm, 46 ft.*lbf)**

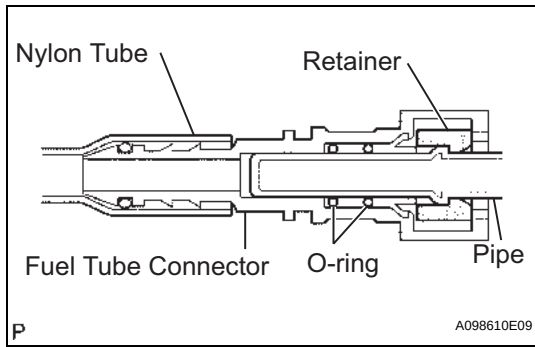
- (g) Connect the fuel tank breather tube.

- (1) Align the fuel tube connector with the pipe, then push the fuel tube connector in until the retainer makes a "click" sound to connect the fuel tank vent breather tube.

NOTICE:

- Check that there are no scratches or foreign objects around the connected part of the fuel tube connector and pipe before performing this work.
- After connecting the fuel tank breather tube, check that the fuel pump tube is securely connected by pulling the fuel tube connector and pipe.





- (2) Install the checker onto the pipe.
 - (h) Tighten the clamp bolt.
6. **CONNECT FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE**
 - (a) Connect the fuel tank main tube and return tube.
 - (1) Align the fuel tube connector with the pipe, then push the fuel tube connector in until the retainer makes a "click" sound to connect the fuel tank main tube and return tube.

NOTICE:

 - Check that there are no scratches or foreign objects around the connected part of the fuel tube connector and pipe before performing this work.
 - After connecting the fuel tube connector, check that the fuel tube connector and pipe are securely connected by pulling them.
 - (2) Install the fuel pipe clamp.
7. **INSTALL NO.1 FUEL TANK PROTECTOR SUB-ASSEMBLY (with Off Road Package)**
 - (a) Install the fuel tank protector LWR with the 4 nuts.
Torque: 20 N*m (204 kgf*cm, 15 ft.*lbf)
8. **ADD FUEL**
9. **CONNECT BATTERY NEGATIVE TERMINAL**
Torque: 3.9 N*m (40 kgf*cm, 35 in.*lbf)
10. **CHECK FOR FUEL LEAKAGE**

FUEL SYSTEM

PRECAUTION

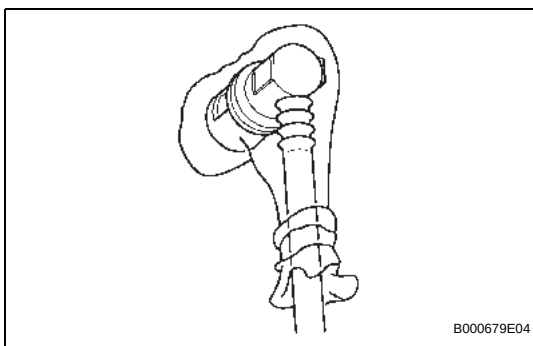
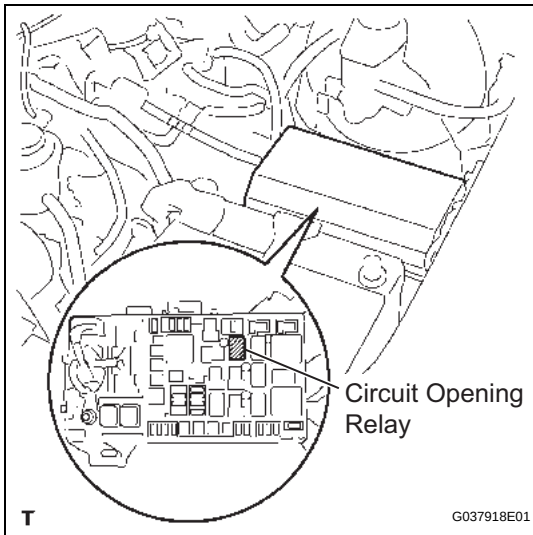
1. PRECAUTION

- (a) Before working on the fuel system, disconnect the cable from the negative battery terminal.
- (b) Do not work on the fuel system near fire. Never smoke during the work.
- (c) Keep rubber and leather parts away from gasoline.

2. DISCHARGE FUEL PRESSURE

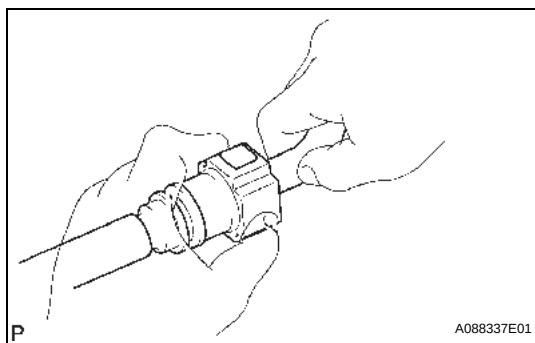
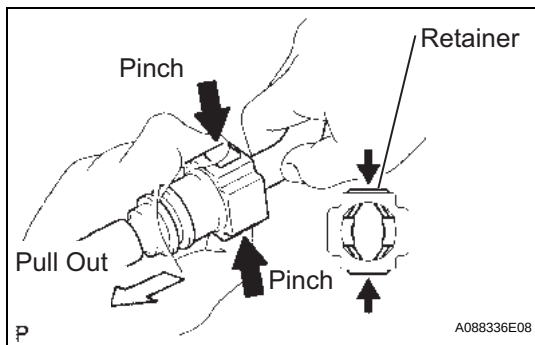
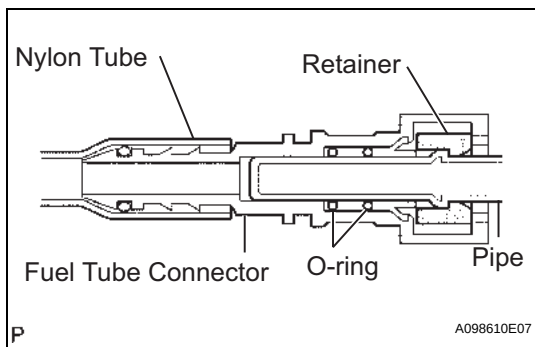
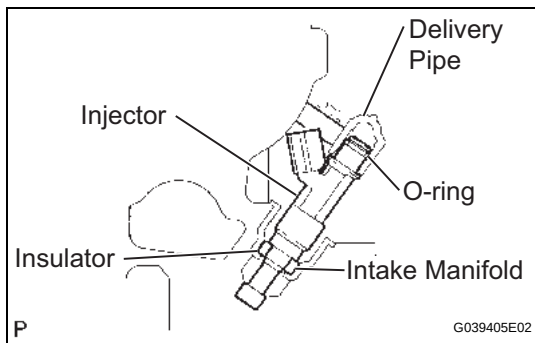
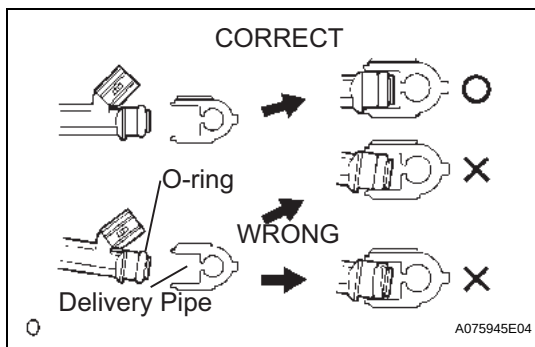
CAUTION:

- Before removing fuel system parts, take precautions to prevent gasoline spillage.
 - As some pressure remains in the fuel line even after taking precautions to prevent gasoline spillage, use a shop rag to prevent gasoline splashes when disconnecting the fuel line.
- (a) Disconnect the cable from the negative battery terminal.
 - (b) Remove the engine relay block cover.
 - (c) Remove the circuit opening relay.
 - (d) Connect the cable to the negative battery terminal.
Torque: 3.9 N*m (40 kgf*cm, 35 in.*lbf)
 - (e) Start the engine.
 - (f) Turn the ignition switch to ON after the engine stops.
HINT:
DTC P0171 (system too lean) may be present.
 - (g) Crank the engine again, and check that the engine stops.
 - (h) Remove the fuel tank cap, and discharge the pressure in the fuel tank completely.
 - (i) Install the circuit opening relay.



3. FUEL SYSTEM

- (a) When disconnecting the high-pressure fuel line, a large amount of gasoline will splash. So take the following precautions.
 - (1) Discharge the fuel system pressure (step 2).
 - (2) Disconnect the fuel tank main tube (see page [FU-30](#)).
 - (3) Drain the fuel remaining in the fuel tank main tube.
 - (4) Cover the disconnected fuel tank main tube (fuel tube joint and fuel tube connector) with a vinyl bag to prevent damage and the intrusion of foreign objects.



- (b) Take the following precautions when installing the fuel injector.

- (1) Do not reuse the O-ring.
- (2) Do not damage a new O-ring when installing it onto the fuel injector.
- (3) Before installing a new O-ring, apply gasoline or spindle oil.

NOTICE:

Do not use engine oil, gear oil or brake oil.

- (4) Install the fuel injector into the fuel delivery pipe and cylinder head as illustrated.

HINT:

Apply gasoline or spindle oil to the contact surface of the fuel delivery pipe and fuel injector before installing the fuel injector.

- (c) Take the following precautions when disconnecting the fuel tube connector.

HINT:

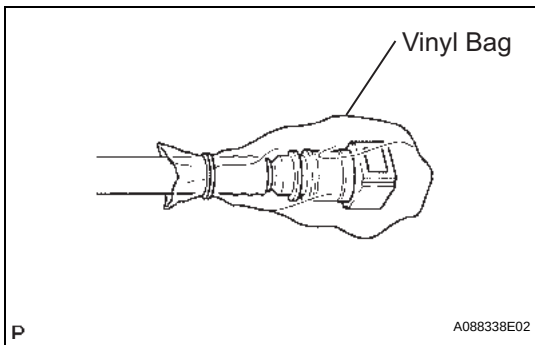
The structure of the fuel tube connector is as shown in the illustration.

- (1) Check the fuel tube connector and pipe for dirt and mud before removing the fuel tube connector.
If dirty, wipe it with a shop rag.
- (2) Pinch the retainer as illustrated, then pull the fuel tube connector out of the pipe.
- (3) If the fuel tube connector and pipe are stuck, pinch the pipe and push and pull the fuel tube connector to release it.

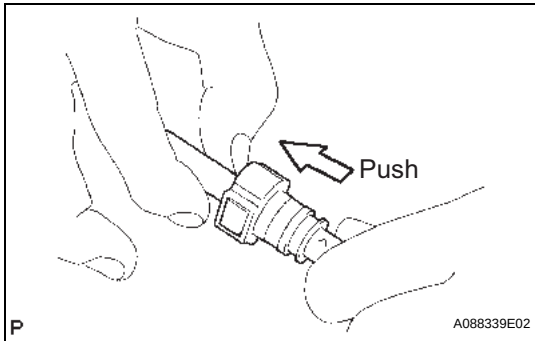
NOTICE:

Never use any tools.

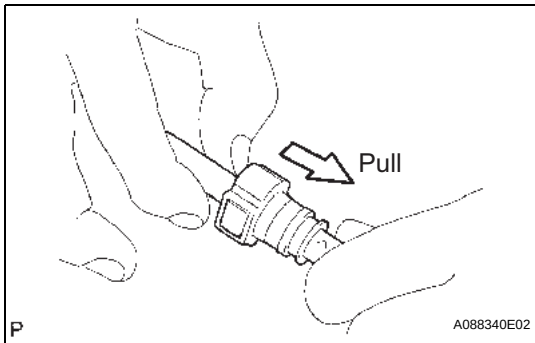
- (4) After disconnecting the fuel tube, check the sealing surface of the pipe for dirt and mud.
If dirty, wipe it with a shop rag.



- (5) Cover the disconnected fuel tube connector and pipe with a vinyl bag to prevent damage and the intrusion of foreign objects.

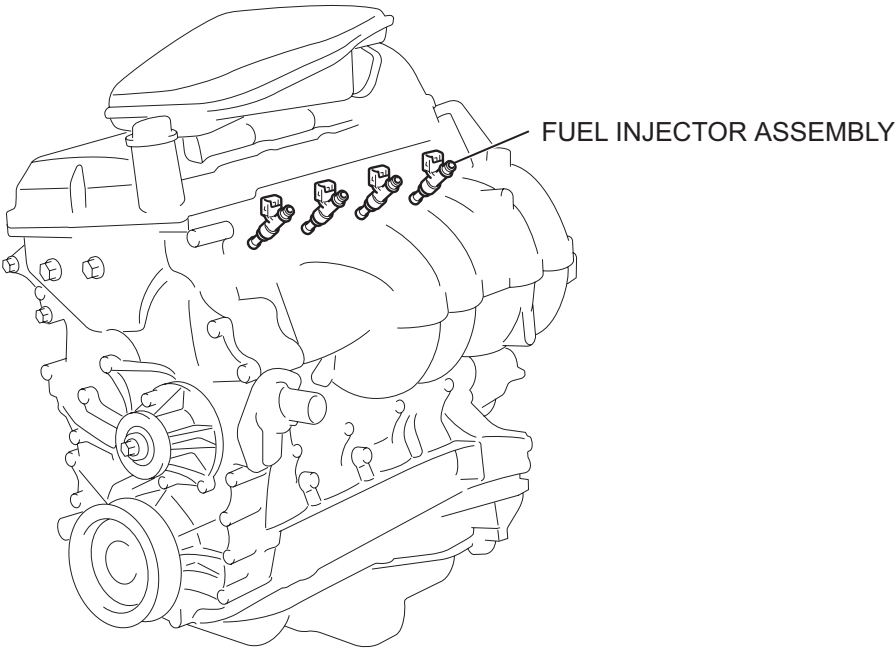
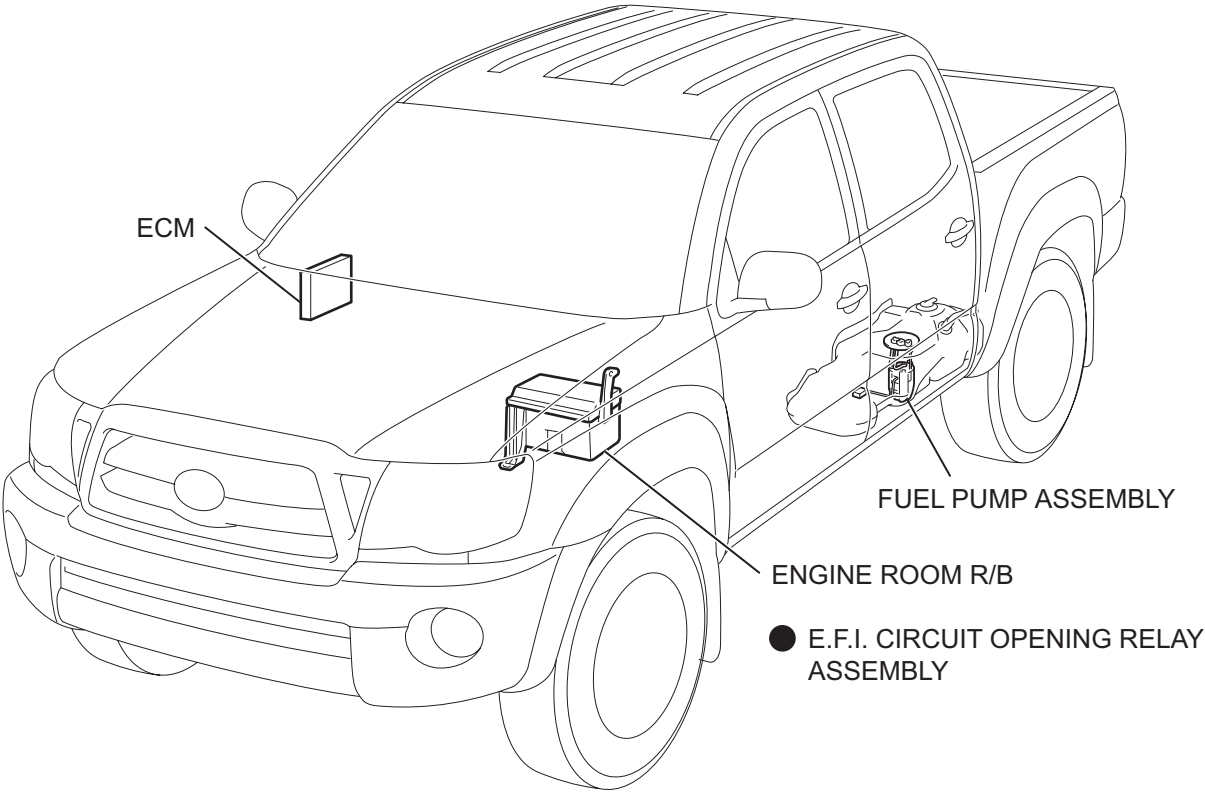


- (d) Take the following precautions when installing the fuel tube connector.
- (1) Align the fuel tube connector with the pipe, then push in the fuel tube connector until the retainer makes a "click" sound.



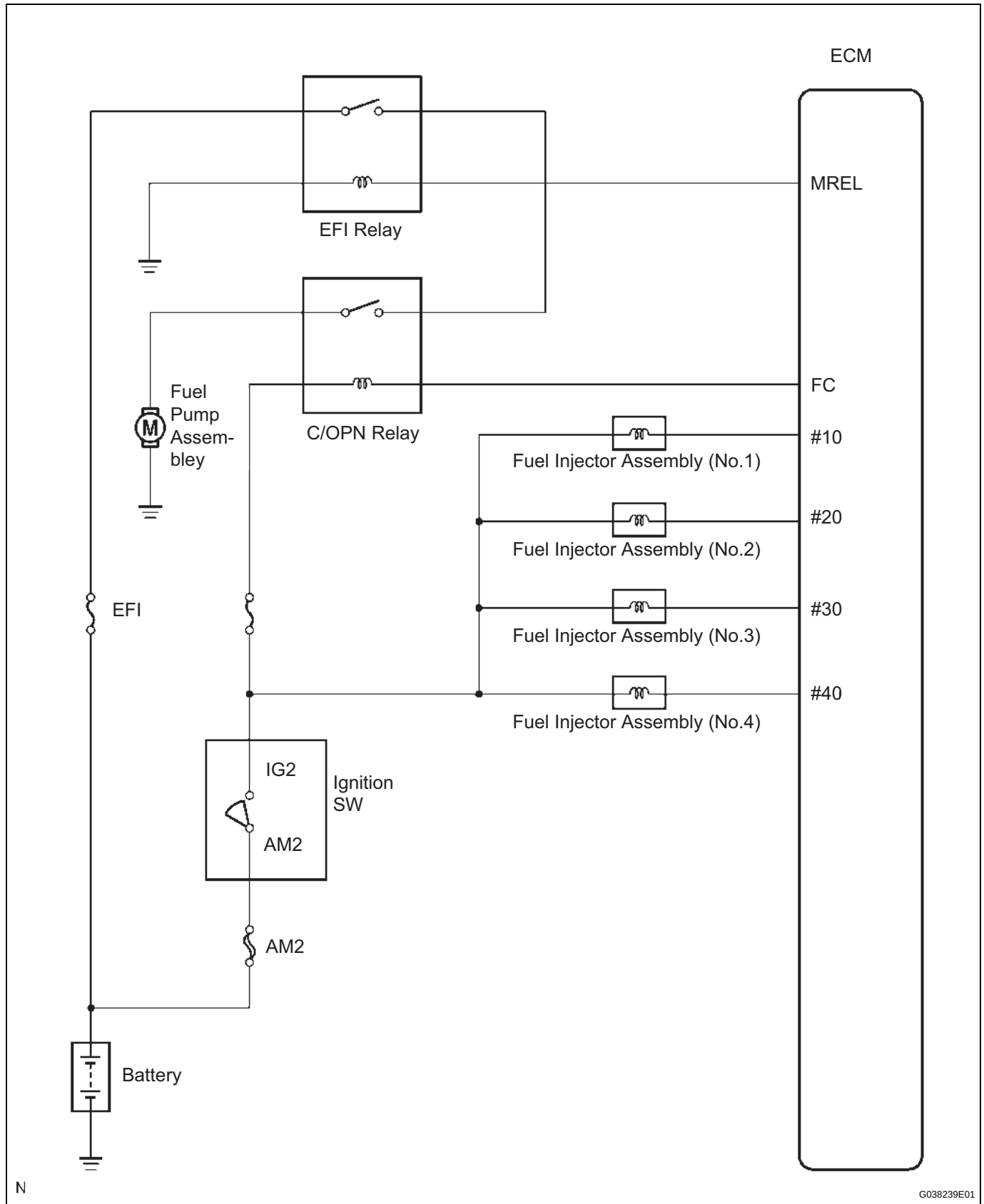
- (2) After connecting the fuel tube connector, check that the fuel tube connector and pipe are securely connected by pulling them.

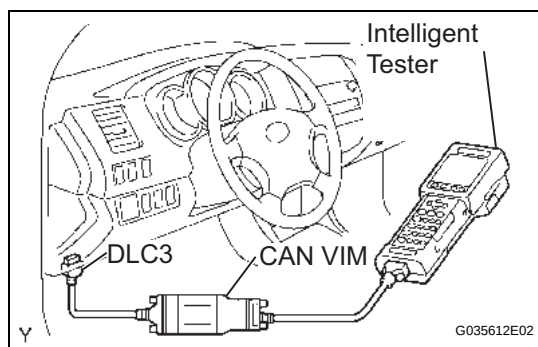
PARTS LOCATION



FU

SYSTEM DIAGRAM





ON-VEHICLE INSPECTION

1. CHECK FUEL PUMP

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch to ON.

NOTICE:

Do not start the engine.

- (c) Turn the intelligent tester ON.
- (d) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / ACTIVE TEST / FUEL PUMP / SPD.
- (e) Check the fuel operation by operating it with the intelligent tester.
If the fuel pump does not operate, replace the fuel pump.

2. CHECK FUEL PRESSURE

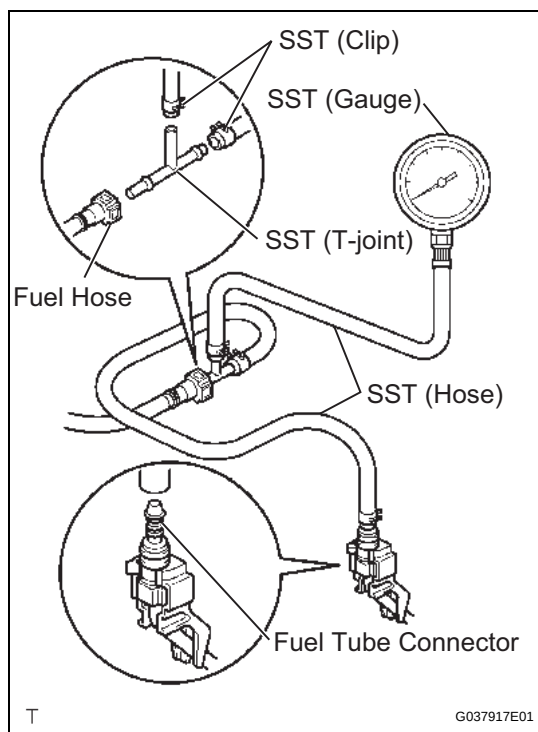
- (a) Discharge the fuel system pressure.
- (b) Using a voltmeter, measure the battery voltage.

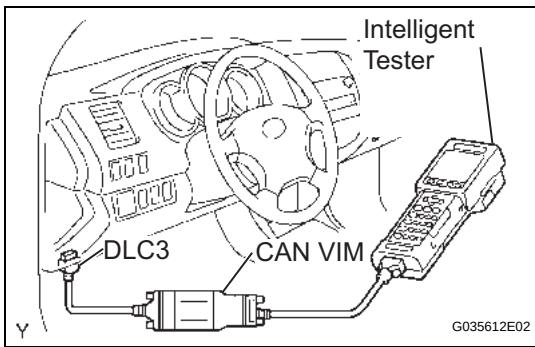
Standard:

9.0 to 14 V

- (c) Disconnect the cable from the negative battery terminal.
- (d) Remove the fuel pipe clamp.
- (e) Disconnect the fuel hose.
- (f) Install SST into the vehicle.
SST 09268-41048 (09268-41500, 90467-13001, 95336-08070), 09268-45014 (09268-41200, 09268-41220, 09268-41250)
- (g) Wipe off any spilt gasoline.
- (h) Connect the cable to the negative battery terminal.

Torque: 3.9 N*m (40 kgf*cm, 35 in.*lbf)





- (i) Connect the intelligent tester to the DLC3.
- (j) Turn the ignition switch to ON.
- (k) Turn the intelligent tester ON.
- (l) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / ACTIVE TEST / FUEL PUMP / SPD / ON.
- (m) Measure the fuel pressure.

Standard:

281 to 287 kPa (2.87 to 2.93 kgf/cm², 40.8 to 41.7 psi)

- If the pressure is too high, replace the fuel pressure regulator.
 - If the pressure is too low, check the connection between the fuel hose and fuel pump.
- (n) Disconnect the intelligent tester from the DLC3.
 - (o) Start the engine.
 - (p) Measure the fuel pressure while the engine idles.

Standard:

281 to 287 kPa (2.87 to 2.93 kgf/cm², 40.8 to 41.7 psi)

- (q) Stop the engine.
- (r) Check that the fuel pressure does not change for 5 minutes.

Standard:

147 kPa (1.5 kgf/cm², 21 psi)

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

- (s) Discharge the fuel system pressure.
- (t) Disconnect the cable from the negative battery terminal.
- (u) Remove SST while being careful to prevent gasoline splashes.
- (v) Connect the fuel hose.
- (w) Install the fuel pipe clamp.
- (x) Connect the cable to the negative battery terminal.

Torque: 3.9 N*m (40 kgf*cm, 35 in.*lbf)

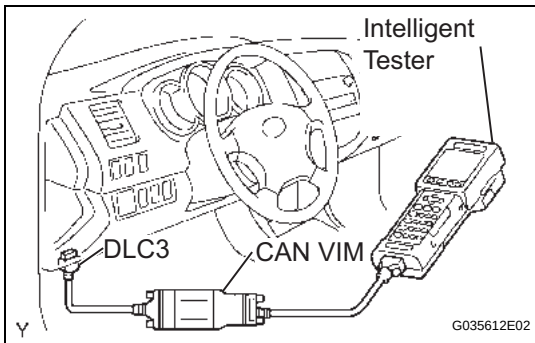
3. CHECK FOR FUEL LEAKAGE

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch to ON.

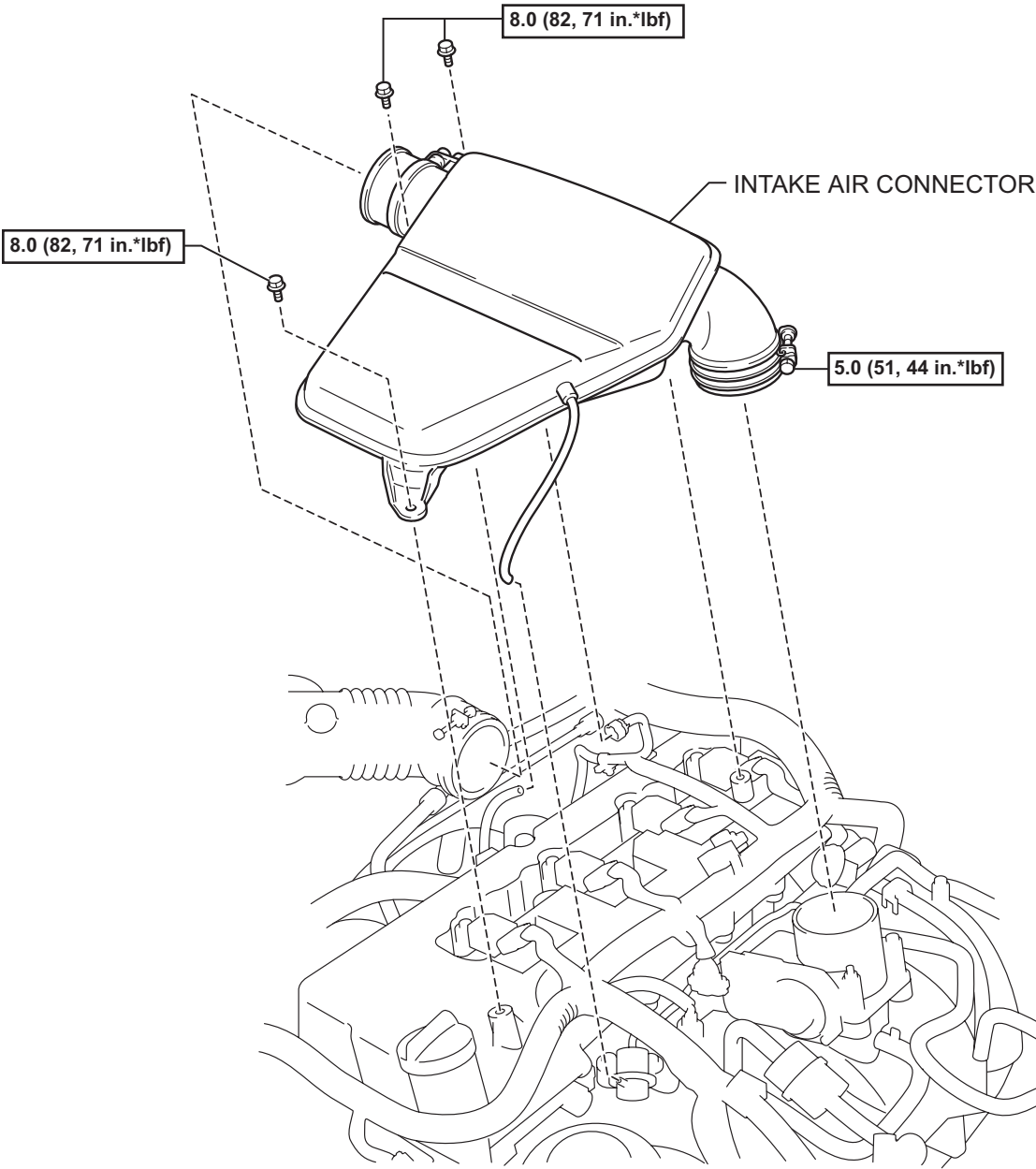
NOTICE:

Do not start the engine.

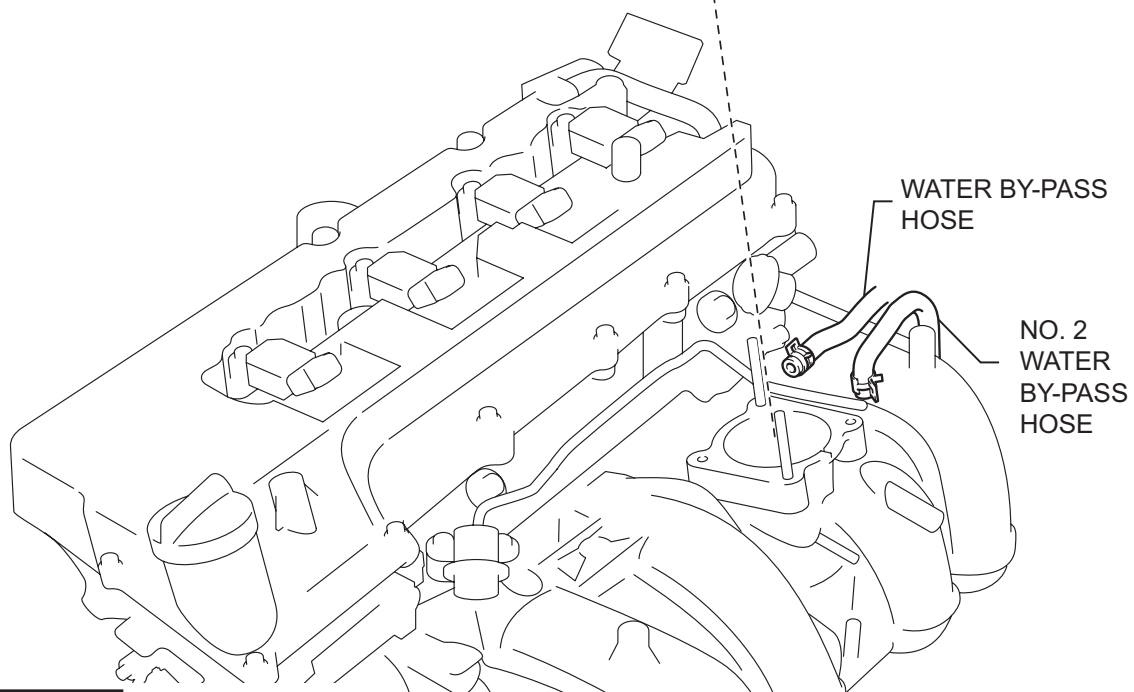
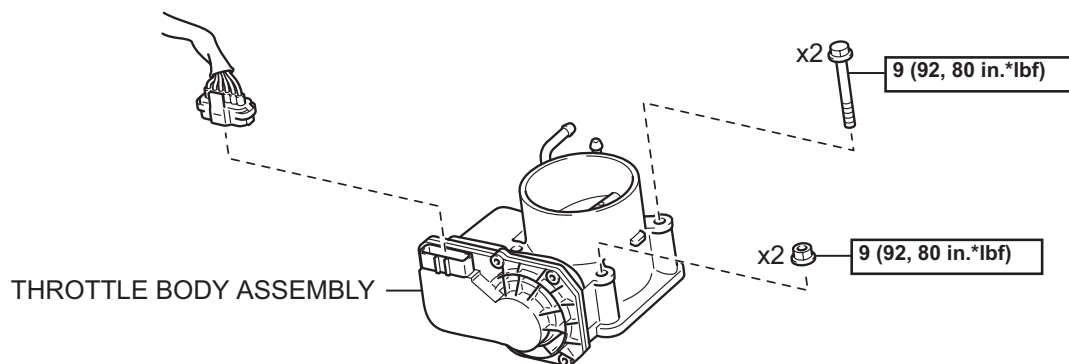
- (c) Turn the intelligent tester ON.
- (d) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / ACTIVE TEST / FUEL PUMP / SPD / ON.
- (e) Check that there are no leakage in the fuel system.



FUEL INJECTOR
COMPONENTS



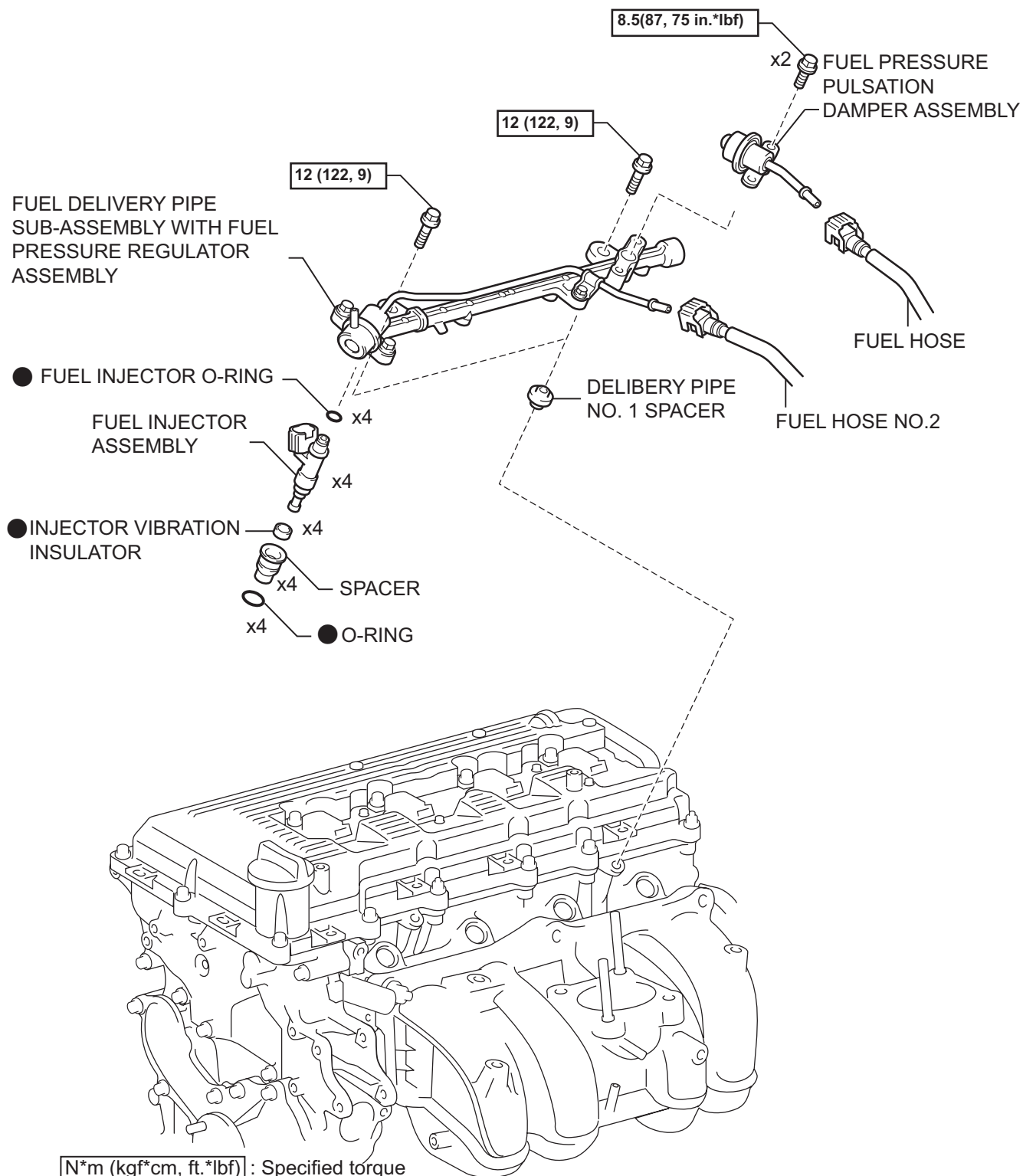
N*m (kgf*cm, ft*lbf) : Specified torque



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

● Non-reusable part

FU



- Non-reusable part

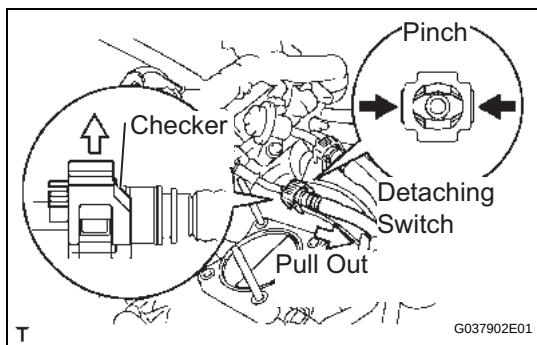
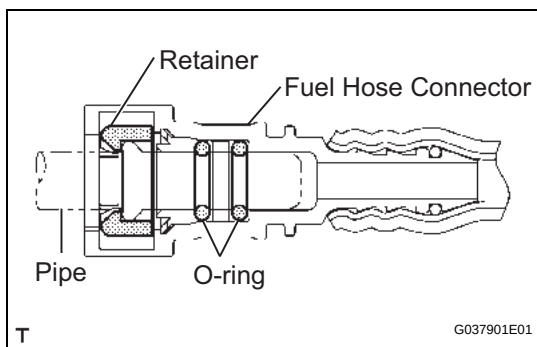
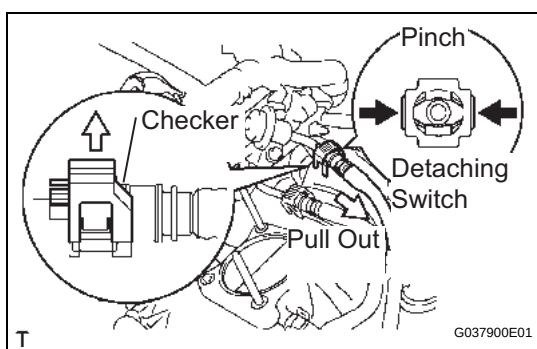
REMOVAL

1. **DISCHARGE FUEL SYSTEM PRESSURE**
(See page [FU-1](#))
2. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
3. **REMOVE ENGINE UNDER COVER SUB-ASSEMBLY NO.1**
4. **DRAIN ENGINE COOLANT** (See page [CO-3](#))
5. **REMOVE INTAKE AIR CONNECTOR** (See page [ES-452](#))
6. **REMOVE THROTTLE WITH MOTOR BODY ASSEMBLY** (See page [ES-453](#))
7. **DISCONNECT FUEL HOSE**

- (a) Pull the checker of the fuel hose upward.
- (b) Pinch the detaching switch of the fuel hose connector and pull out the fuel hose.

NOTICE:

- Remove any dirt and foreign objects on the fuel tube connector before performing this work.
- Do not allow any scratches or foreign objects on the parts when disconnecting, as the fuel tube connector has the O-ring that seals the pipe.
- Perform this work by hand. Do not use any tools.
- Do not forcibly bend, twist or turn the nylon tube.
- Protect the disconnected part by covering it with a vinyl bag after disconnecting the fuel hose.
- If the fuel tube connector and pipe are stuck, push and pull to release them.

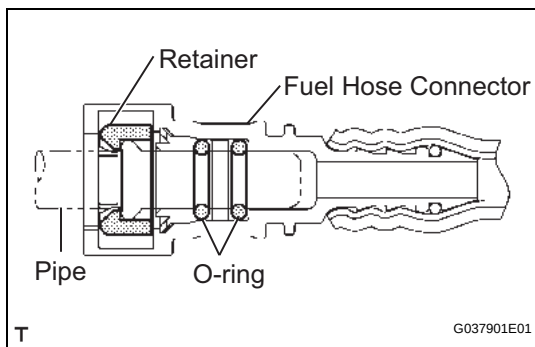


8. **DISCONNECT NO. 2 FUEL HOSE**

- (a) Pull the checker of the fuel hose upward.
- (b) Pinch the detaching switch of the fuel hose connector and pull out the fuel hose.

NOTICE:

- Remove any dirt and foreign objects on the fuel tube connector before performing this work.
- Do not allow any scratches or foreign objects on the parts when disconnecting, as the fuel tube connector has the O-ring that seals the pipe.

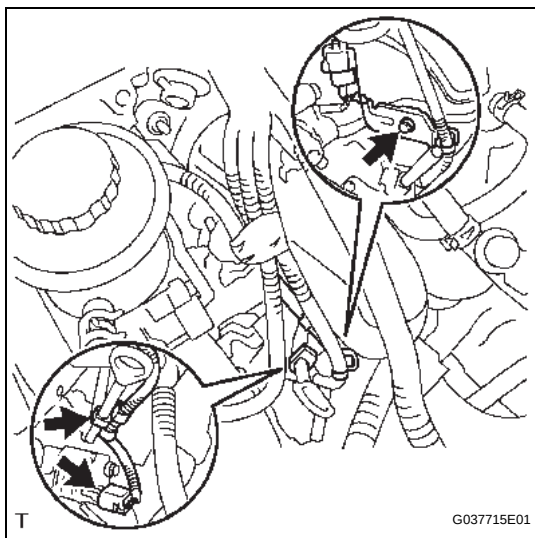
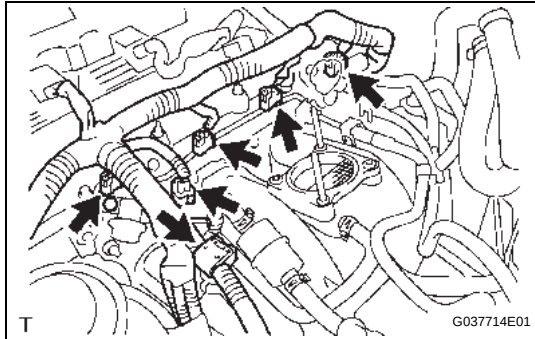


- Perform this work by hand. Do not use any tools.
- Do not forcibly bend, twist or turn the nylon tube.
- Protect the disconnected part by covering it with a vinyl bag after disconnecting the fuel hose.
- If the fuel tube connector and pipe are stuck, push and pull to release them.

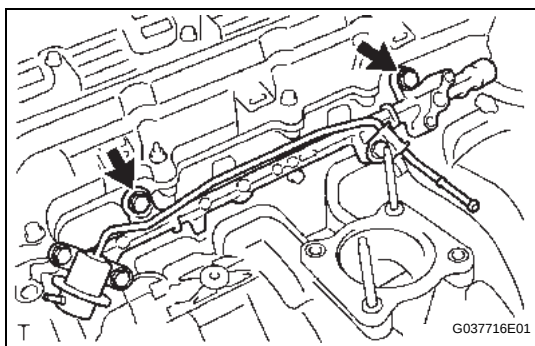
9. REMOVE FUEL PRESSURE PULSATION DAMPER ASSEMBLY (See page [FU-21](#))

10. REMOVE FUEL DELIVERY PIPE WITH INJECTOR

- Disconnect the 4 injector connectors.
- Disconnect the VSV connector.
- Disconnect the engine wire harness clamp.



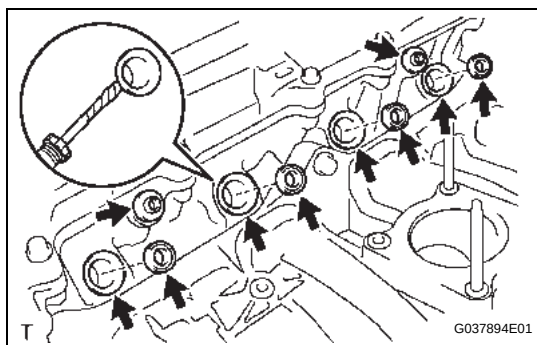
- Disconnect the compressor magnetic clutch connector. (with AIR CONDITIONING)
- Disconnect the wire harness clamp.
- Remove the bolt, then remove the harness clamp bracket.



- Remove the 2 bolts, then remove the fuel delivery pipe together with the fuel injectors.

NOTICE:

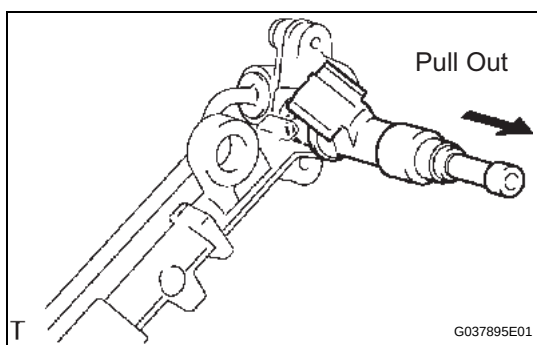
Be careful not to drop the fuel injectors when removing the fuel delivery pipe.



- (h) Remove the 2 delivery pipe No. 1 spacers.
- (i) Remove the 4 injector vibration insulators.
- (j) Using a screwdriver, remove the 4 spacers.

11. REMOVE FUEL INJECTOR ASSEMBLY

- (a) Pull the 4 fuel injectors out of the fuel delivery pipe.

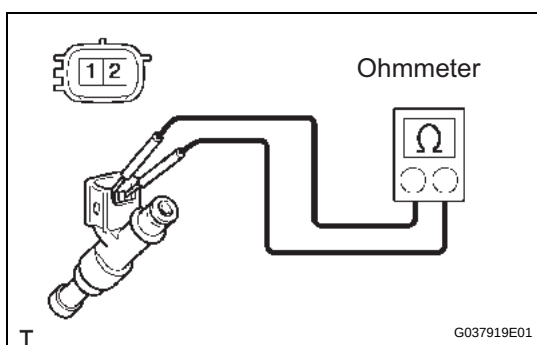


INSPECTION

1. INSPECT FUEL INJECTOR ASSEMBLY

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

Resistance:
11.6 to 12.4 Ω at 20°C (68°F)
 If the result is not as specified, replace the fuel injector.



- (b) Check the injection volume.

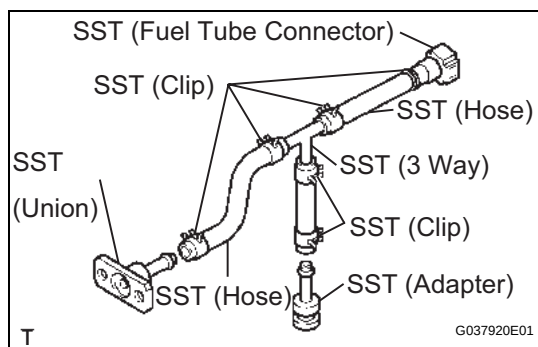
CAUTION:

This test involves high-pressure fuel and electricity, therefore, safety precautions should be taken. Perform this test in a safe area and avoid any sparks and flames. Do not smoke.

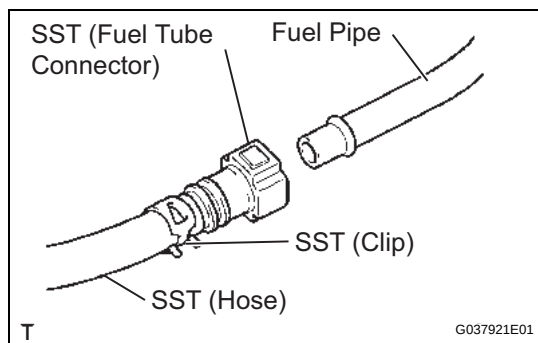
- (1) Discharge the fuel system pressure (see page [FU-1](#)).
- (2) Remove the fuel hose from the fuel pressure pulsation damper (see page [FU-21](#)).
- (3) Remove the fuel hose from the fuel pipe (see page [FU-1](#)).
- (4) Separate the pressure regulator (see page [FU-19](#)).

NOTICE:

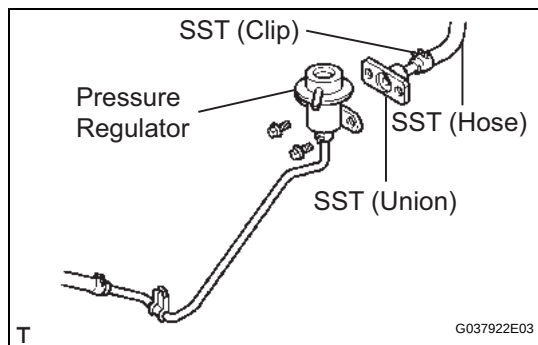
Do not separate the fuel hose No.2.



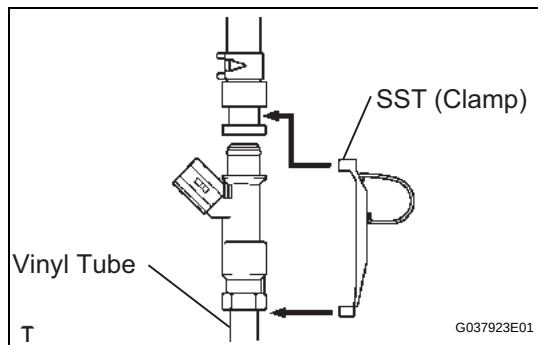
- (5) Assemble SST as shown in the illustration.
SST 09268-41048 (09268-41091, 09268-41110, 09268-41120, 09268-41500, 95336-08070, 90467-13001)



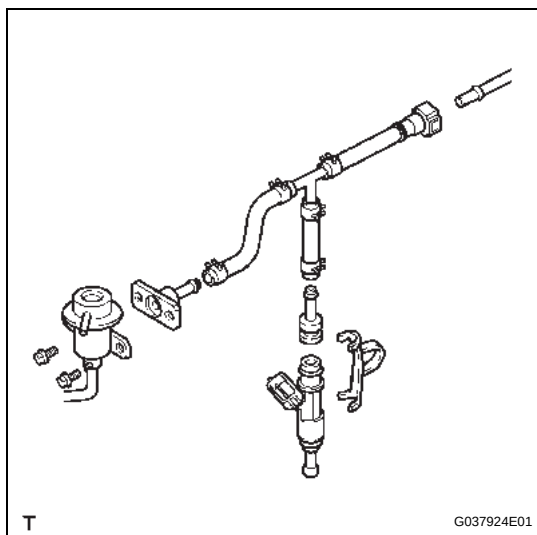
- (6) Connect SST to the fuel pipe.
SST 09268-41048 (09268-41500, 90467-13001)



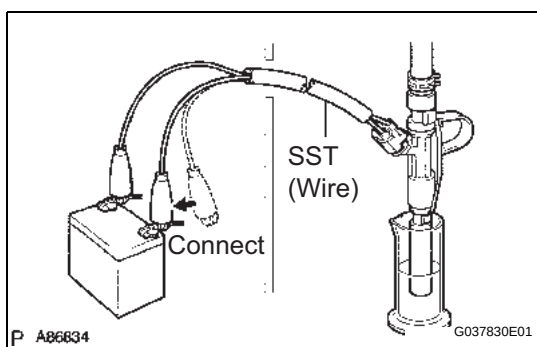
- (7) Install the pressure regulator onto SST (union) with the 2 bolts.
Torque: 8.5 N*m (87 kgf*cm, 75 in.*lbf)
SST 09268-41048 (09268-41091)
NOTICE:
Make sure that the O-ring is installed onto the pressure regulator.



- (8) Install the O-ring onto the injector.
 (9) Assemble SST as shown in the illustration.
SST 09268-41048 (09268-41110, 09268-41310)
 (10) Put the injector into a graduated cylinder.
CAUTION:
Install a suitable vinyl tube onto the injector to contain any gasoline spray.



- (11) Make sure that SST is installed as shown in the illustration.
- (12) Operate the fuel pump (see page [FU-6](#)).



- (13) Connect SST (wire) to the injector and the battery for 15 seconds, and measure the injection volume with a graduated cylinder. Test each injector 2 or 3 times.

SST 09842-30080

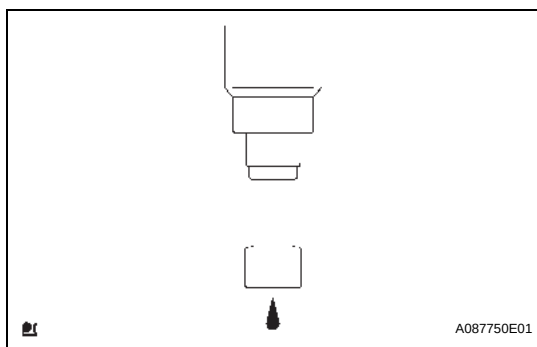
Volume:

71 to 86 cm³ (4.3 to 5.2 cu in.) per 15 seconds

Difference between each injector:

15 cm³ (0.9 cu in.) or less

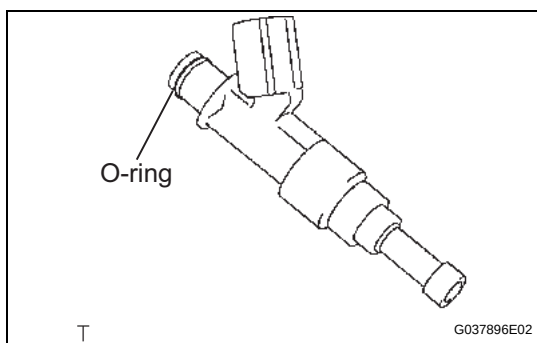
If the injection volume is not as specified, replace the injector.



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

Fuel drop:

1 drop or less in 12 minutes

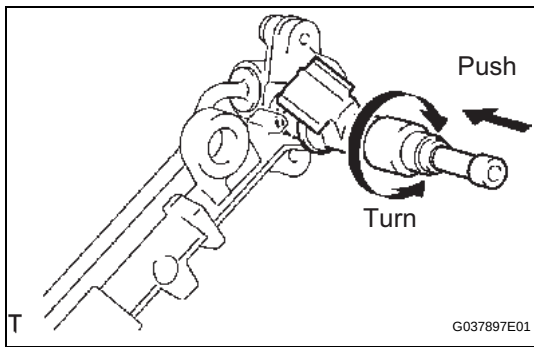


INSTALLATION

1. INSTALL FUEL INJECTOR ASSEMBLY

- (a) Apply a light coat of gasoline or spindle oil to new O-rings, then install one onto each fuel injector.

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- (b) Apply a light coat of gasoline or spindle oil to the contact surfaces of the fuel delivery pipe and the O-ring of the fuel injector.
- (c) Apply a light coat of gasoline or spindle oil to the O-ring again, then install the fuel injector into the fuel delivery pipe by turning it right and left.

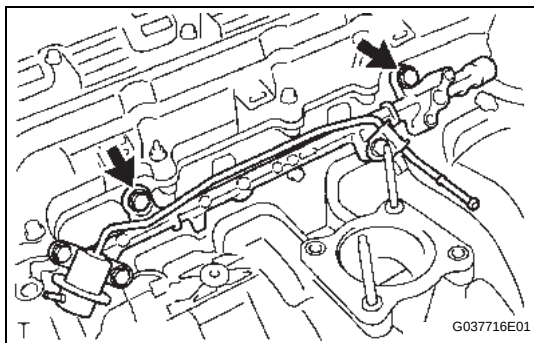
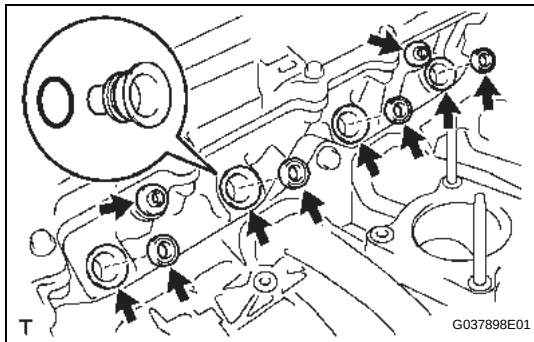
NOTICE:

Make sure that the O-ring is not cracked or jammed when installing.

- (d) Check that the fuel injector rotates smoothly. If the fuel injector does not rotate, replace the O-ring.

2. INSTALL FUEL DELIVERY PIPE W/ INJECTOR

- (a) Apply a light coat of gasoline or spindle oil to new O-rings, then install one onto each spacer.
- (b) Install the 4 spacers onto the cylinder head.
- (c) Install 4 new injector vibration insulators onto the cylinder head.
- (d) Install the 2 delivery pipe No. 1 spacers onto the cylinder head.

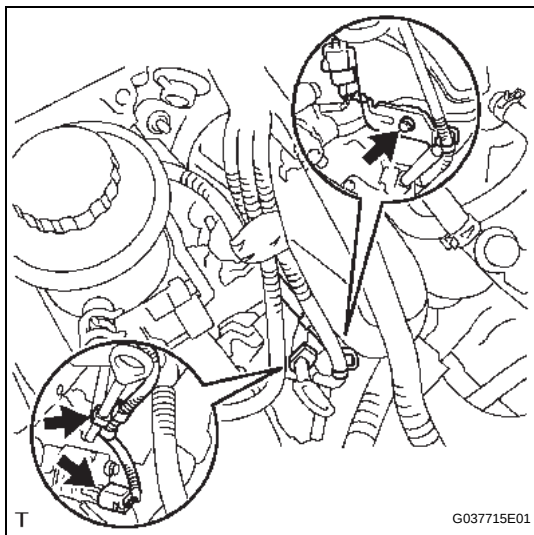


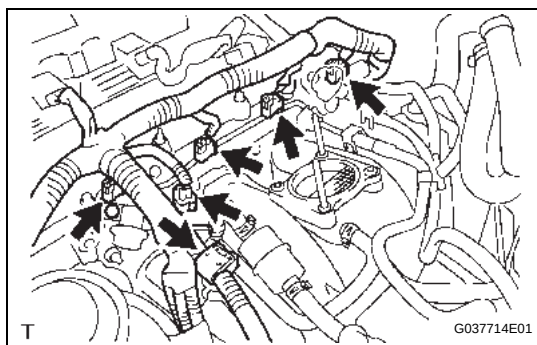
- (e) Install the fuel delivery pipe together with the 4 fuel injectors, then provisionally tighten the fuel delivery pipe with the 2 bolts.

NOTICE:

Do not drop the fuel injectors when installing the fuel delivery pipe.

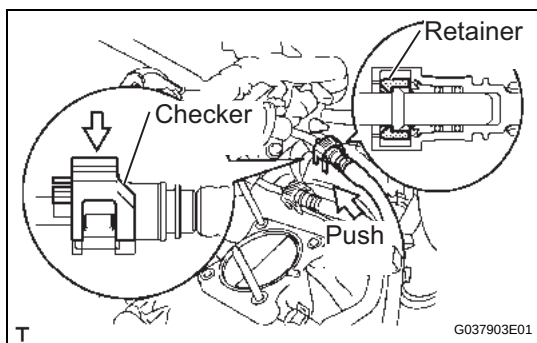
- (f) Check that the fuel injector rotates smoothly. If the fuel injector does not rotate, replace the O-ring.
- (g) Retighten the 2 bolts to the specified torque.
Torque: 12 N*m (122 kgf*cm, 9 ft.*lbf)
- (h) Install the harness clamp bracket with the bolt.
Torque: 8.2 N*m (84 kgf*cm, 73 in.*lbf)
- (i) Connect the wire harness clamp.
- (j) Connect the compressor magnetic clutch connector. (with AIR CONDITIONING)





- (k) Connect the engine wire harness clamp.
- (l) Connect the VSV connector.
- (m) Connect the 4 injector connectors.

3. INSTALL FUEL PRESSURE PULSATION DAMPER ASSEMBLY (See page [FU-21](#))



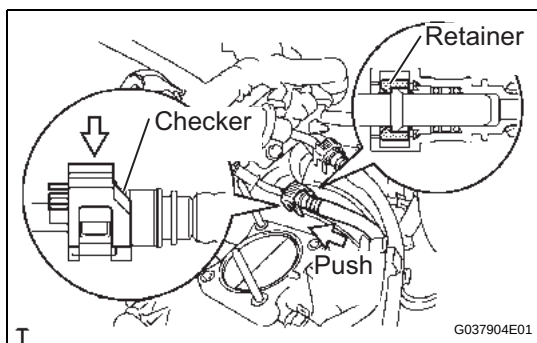
4. CONNECT FUEL HOSE

- (a) Align the fuel hose connector with the pipe stem, and insert the fuel hose until the retainer makes a "click" sound.
- (b) Push down the checker of the fuel hose.

NOTICE:

- Check that there are no scratches or foreign objects around the disconnected parts of the fuel hose connector and pipe before performing this work.
- After connecting the fuel hose, check that the fuel hose is securely connected by pulling the fuel hose connector and pipe.

- (c) Push the fuel hose down until the checker of the fuel hose makes a "click" sound.



5. CONNECT FUEL HOSE NO.2

- (a) Align the fuel hose connector with the pipe stem, and insert the fuel hose until the retainer makes a "click" sound.
- (b) Push down the checker of the fuel hose.

NOTICE:

- Check that there are no scratches or foreign objects around the disconnected parts of the fuel hose connector and pipe before performing this work.
- After connecting the fuel hose, check that the fuel hose is securely connected by pulling the fuel hose connector and pipe.

- (c) Push the fuel hose down until the checker of the fuel hose makes a "click" sound.

6. INSTALL THROTTLE WITH MOTOR BODY ASSEMBLY (See page [ES-454](#))

7. INSTALL INTAKE AIR CONNECTOR (See page [ES-455](#))

8. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

Torque: 3.9 N*m (40 kgf*cm, 35 in.*lbf)

9. ADD ENGINE COOLANT (See page [CO-3](#))

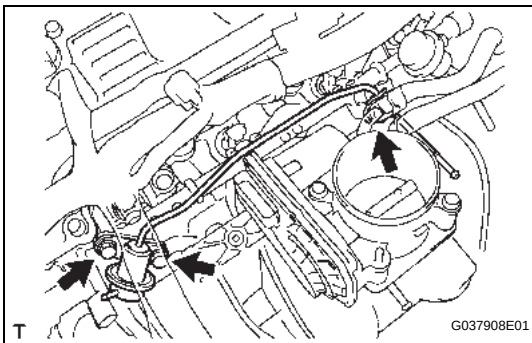
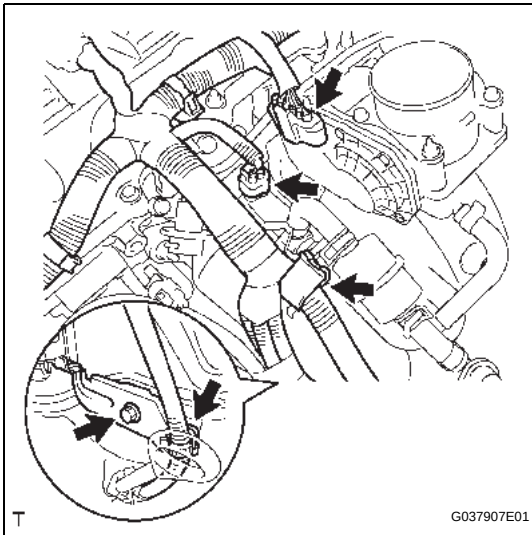
10. CHECK FOR ENGINE COOLANT LEAKAGE (See page [CO-2](#))

11. CHECK FOR FUEL LEAKAGE (See page [FU-7](#))
12. INSTALL ENGINE UNDER COVER SUB-ASSEMBLY NO.1

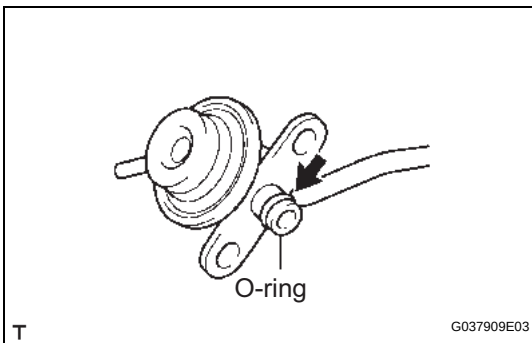
FUEL PRESSURE REGULATOR

REMOVAL

1. **DISCHARGE FUEL SYSTEM PRESSURE**
(See page [FU-1](#))
2. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
3. **REMOVE INTAKE AIR CONNECTOR** (See page [ES-452](#))
4. **DISCONNECT NO. 2 FUEL HOSE** (See page [FU-11](#))
5. **REMOVE FUEL PRESSURE REGULATOR**
 - (a) Disconnect the throttle with motor body connectors.
 - (b) Disconnect the VSV connector.
 - (c) Disconnect the engine wire harness clamp.
 - (d) Remove the bolt, then remove the harness clamp bracket.

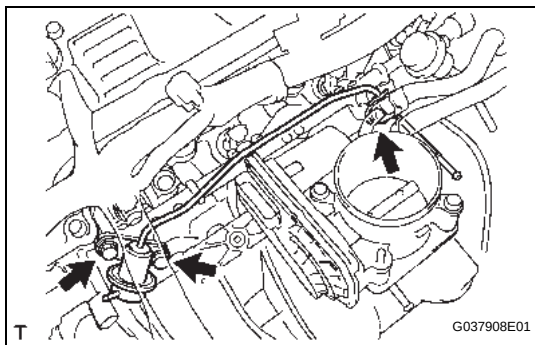


- (e) Remove the 3 bolts, then remove the fuel pressure regulator.

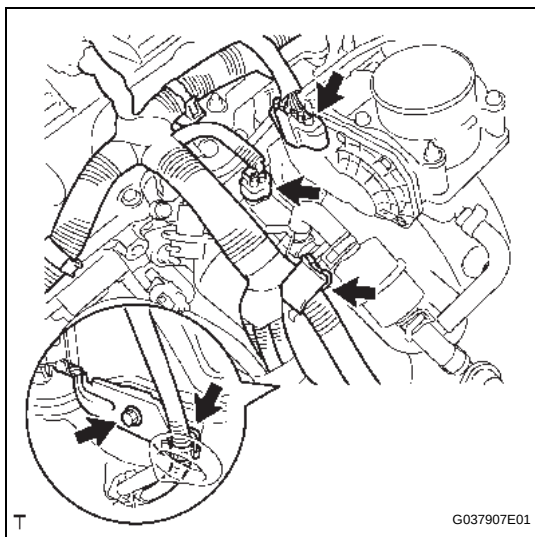


INSTALLATION

1. **INSTALL FUEL PRESSURE REGULATOR ASSEMBLY**
 - (a) Apply a light coat of gasoline or spindle oil to the O-ring.



- (b) Install the fuel pressure regulator with the 3 bolts.
Torque: 8.5 N*m (87 kgf*cm, 75 in.*lbf)



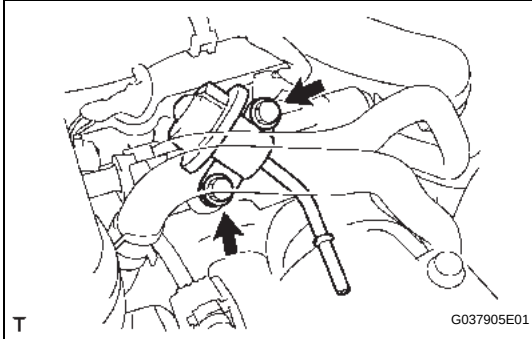
- (c) Install the harness clamp bracket with the bolt.
Torque: 8.2 N*m (84 kgf*cm, 73 in.*lbf)
(d) Connect the engine wire harness clamp.
(e) Connect the VSV connector.
(f) Connect the throttle with motor body connectors.

2. **CONNECT NO. 2 FUEL HOSE** (See page [FU-17](#))
3. **INSTALL INTAKE AIR CONNECTOR** (See page [ES-455](#))
4. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**
Torque: 3.9 N*m (40 kgf*cm, 35 in.*lbf)
5. **CHECK FOR FUEL LEAKAGE** (See page [FU-7](#))

FUEL PRESSURE PULSATION DAMPER

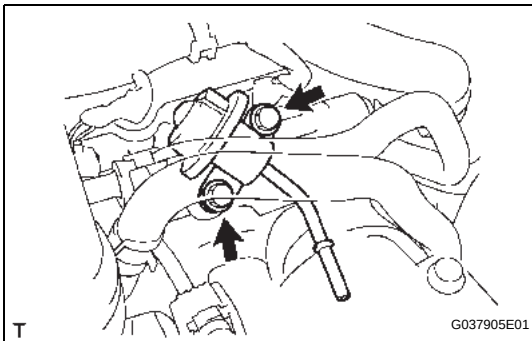
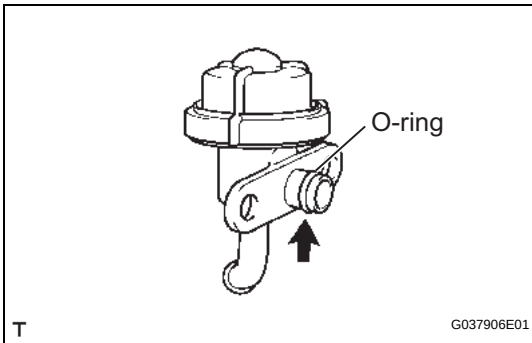
REMOVAL

1. **DISCHARGE FUEL SYSTEM PRESSURE**
(See page [FU-1](#))
2. **DISCONNECT FUEL HOSE** (See page [FU-11](#))
3. **REMOVE FUEL PRESSURE PULSATION DAMPER ASSEMBLY**
 - (a) Remove the 2 bolts, then remove the fuel pressure pulsation damper.



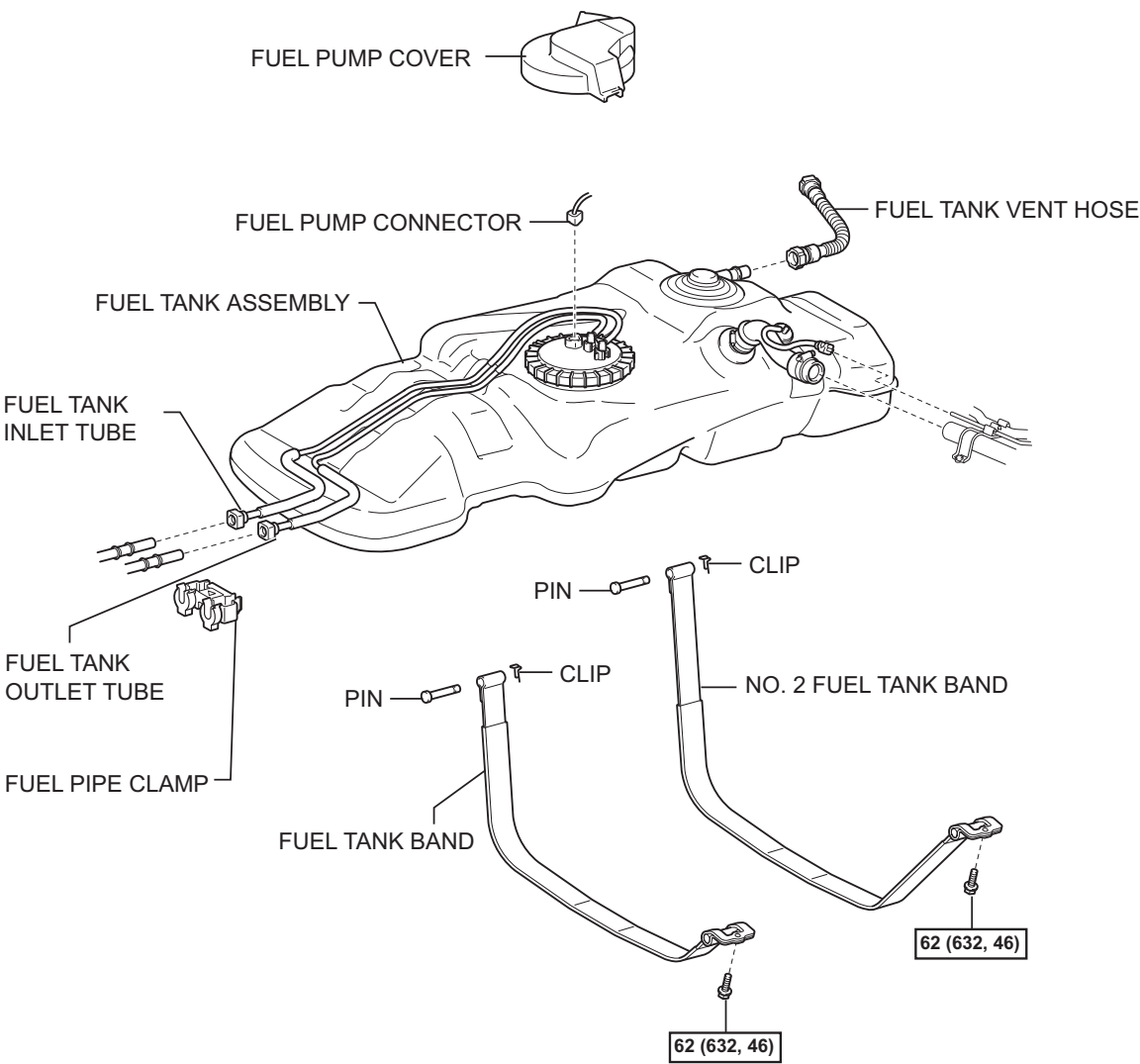
INSTALLATION

1. **INSTALL FUEL PRESSURE PULSATION DAMPER ASSEMBLY**
 - (a) Apply a light coat of gasoline or spindle oil to the O-ring.
 - (b) Install the fuel pressure pulsation damper with the 2 bolts.
Torque: 8.5 N*m (87 kgf*cm, 75 in.*lbf)
2. **CONNECT FUEL HOSE** (See page [FU-17](#))
3. **CHECK FOR FUEL LEAKAGE** (See page [FU-7](#))

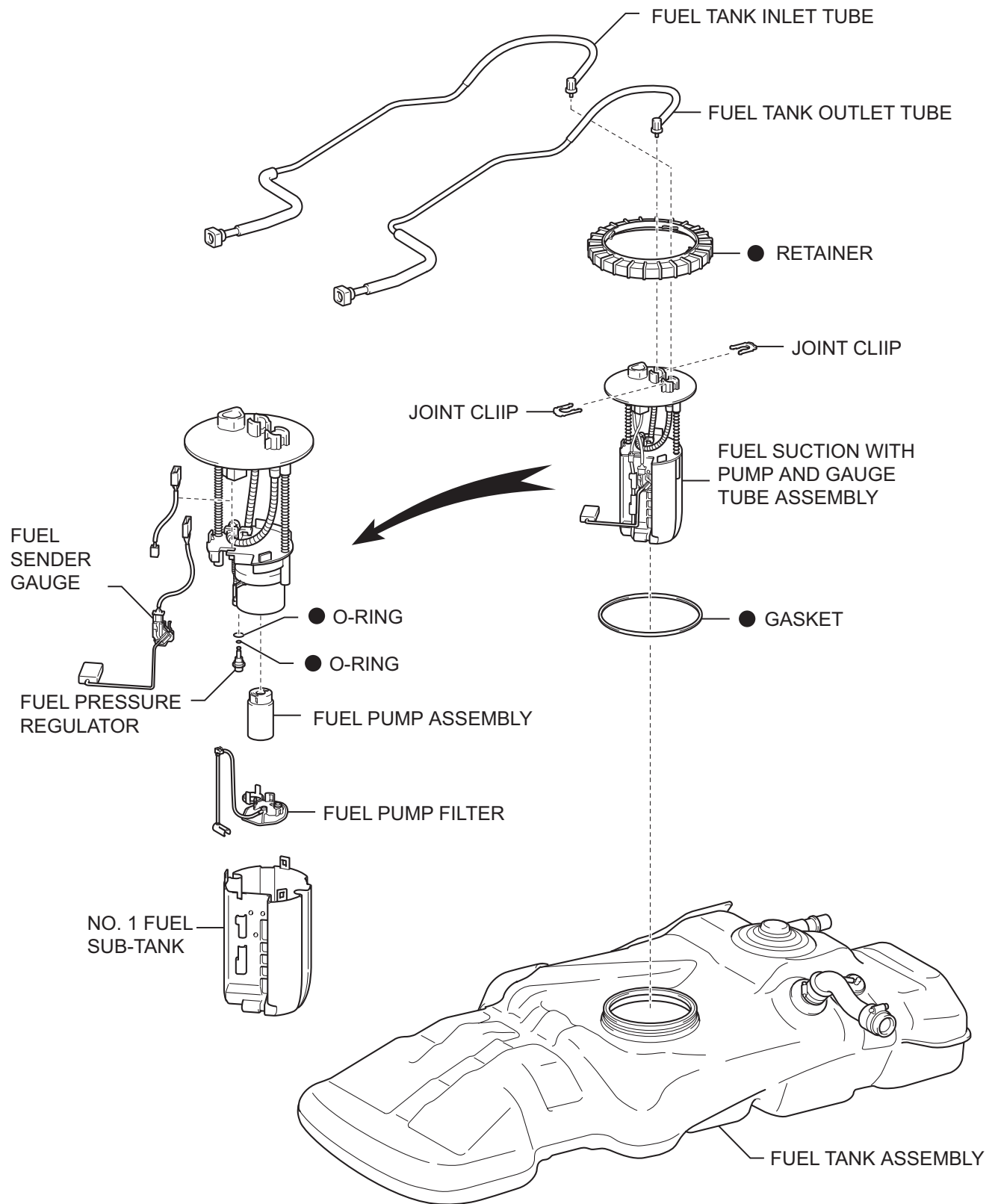


FUEL PUMP

COMPONENTS



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



● Non-reusable part

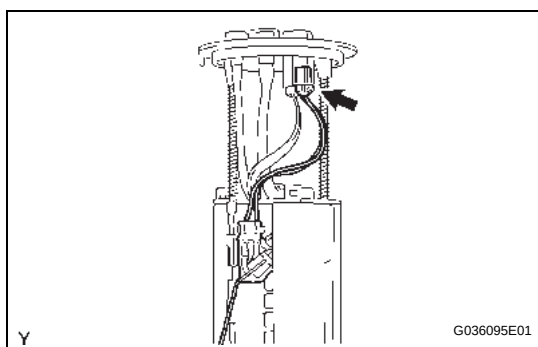
FU

REMOVAL

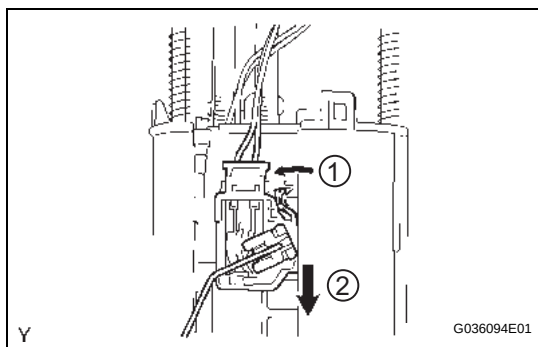
1. **DISCHARGE FUEL SYSTEM PRESSURE**
(See page [FU-1](#))
2. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
3. **DISCONNECT FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE** (See page [FU-30](#))
4. **REMOVE FUEL TANK ASSEMBLY** (See page [FU-31](#))
5. **REMOVE FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE** (See page [FU-32](#))
6. **REMOVE FUEL SUCTION WITH PUMP & GAUGE TUBE ASSEMBLY** (See page [FU-33](#))
7. **DRAIN FUEL**

DISASSEMBLY

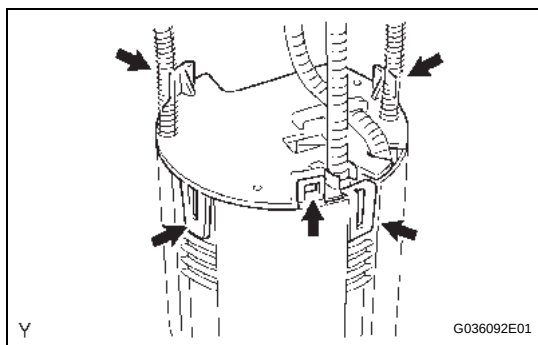
1. **REMOVE FUEL SENDER GAGE ASSEMBLY**
(a) Disconnect the connector.

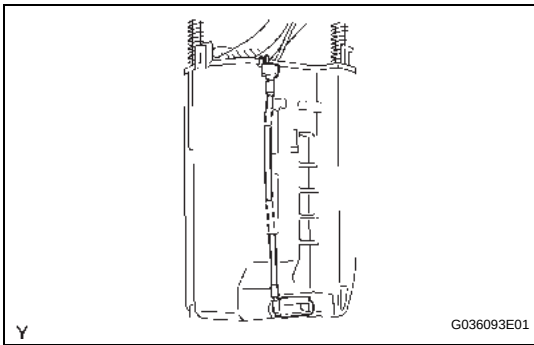


- (b) Disengage the claw fitting and remove the sender gauge by sliding it in the direction as shown in the illustration.

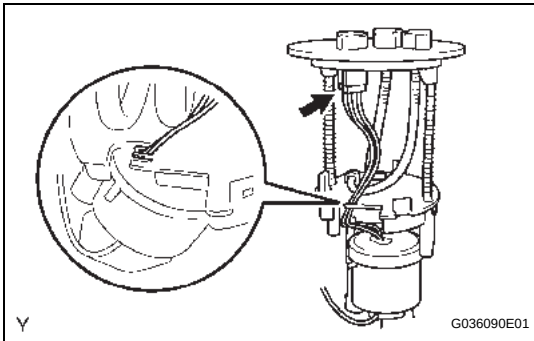


2. **REMOVE NO. 1 FUEL SUB-TANK**
(a) Disengage the 5 claw fittings and remove the fuel pump tank.



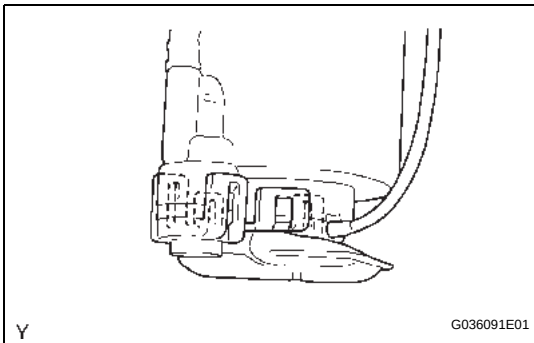


- (b) Separate the connector and disengage the clamp.

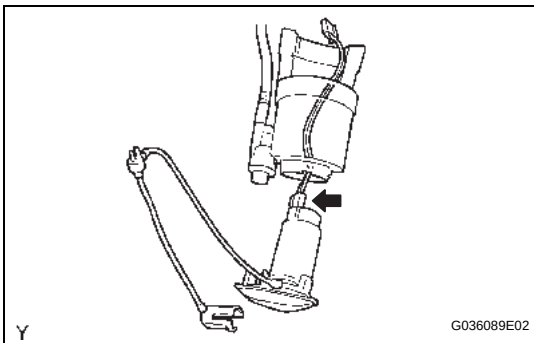


3. REMOVE FUEL PUMP ASSEMBLY

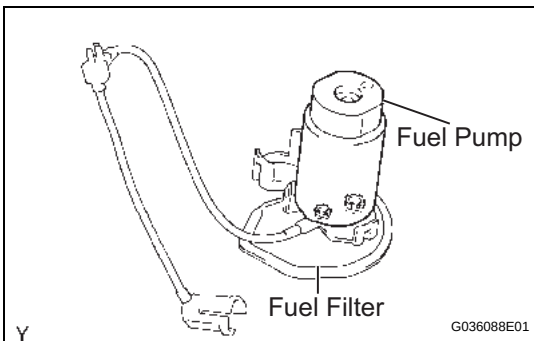
- (a) Disengage the clamp, then disconnect the connector.



- (b) Disengage the 5 claw fittings and separate the fuel pump from the fuel pump case.

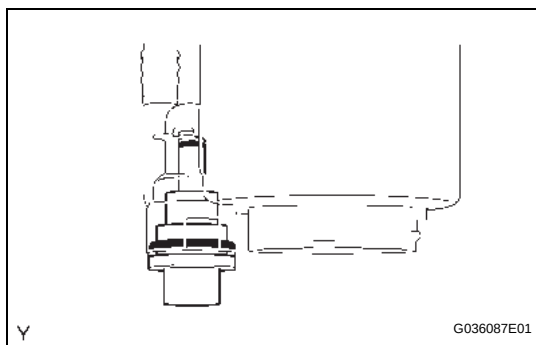


- (c) Disconnect the connector from the fuel pump.



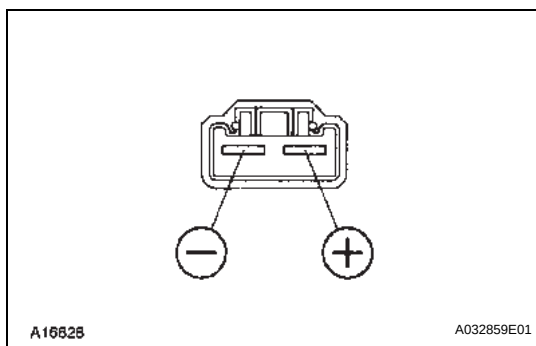
4. REMOVE FUEL PUMP FILTER

- (a) Remove the fuel filter from the fuel pump.



5. REMOVE FUEL PRESSURE REGULATOR ASSEMBLY

- (a) Remove the fuel pressure regulator and the 2 O-rings.



INSPECTION

1. INSPECT FUEL PUMP

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

NOTICE:

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

REASSEMBLY

1. **INSTALL FUEL PRESSURE REGULATOR ASSEMBLY**
 - (a) Install the new O-ring into the fuel pump case.
 - (b) Install the new O-ring onto the fuel pressure regulator.
2. **INSTALL FUEL PUMP FILTER**
3. **INSTALL FUEL PUMP ASSEMBLY**
4. **INSTALL NO. 1 FUEL SUB-TANK**
5. **INSTALL FUEL SENDER GAGE ASSEMBLY**

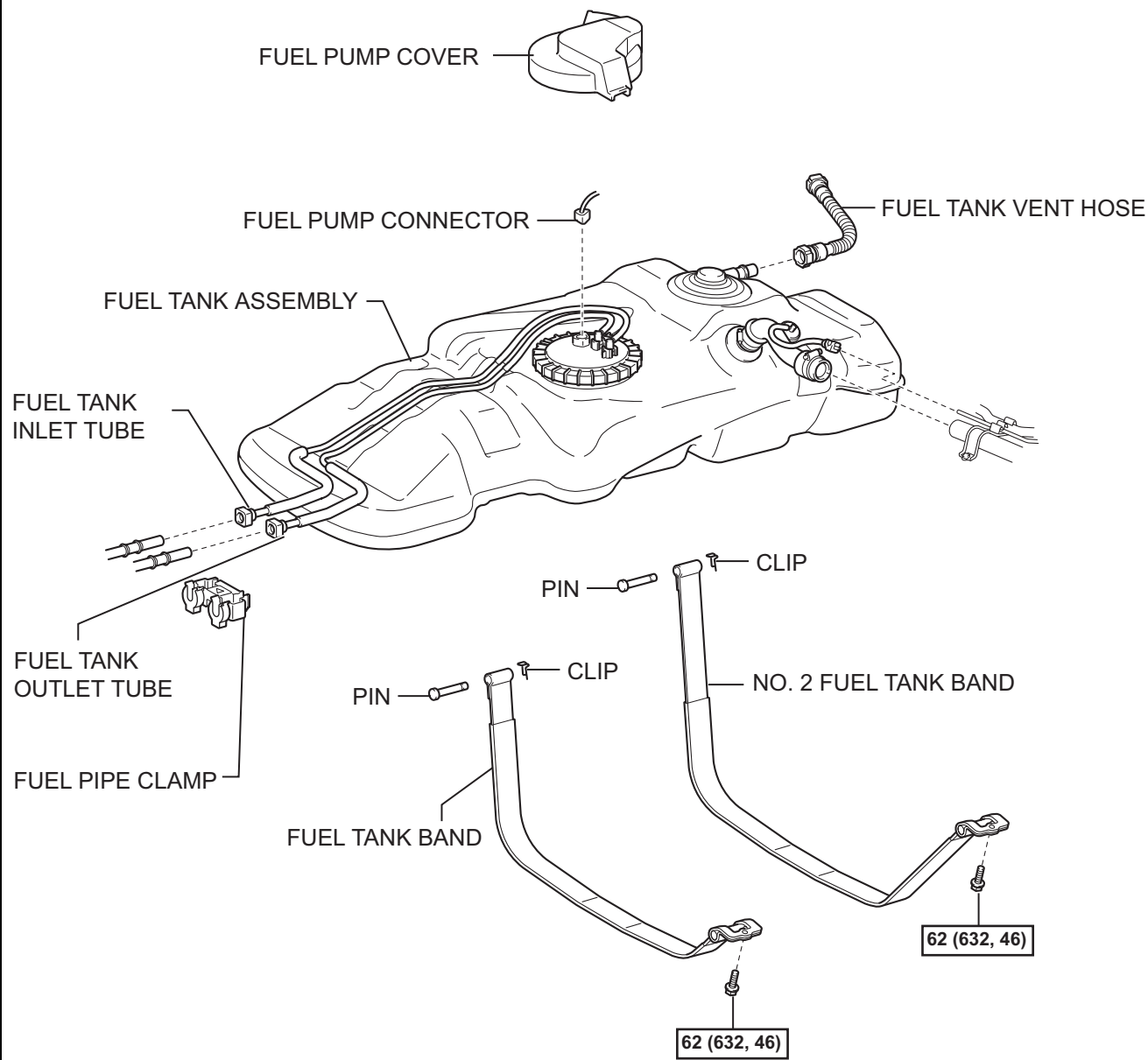
INSTALLATION

1. INSTALL FUEL SUCTION WITH PUMP & GAGE TUBE ASSEMBLY (See page [FU-34](#))
2. INSTALL FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE (See page [FU-35](#))
3. INSTALL FUEL TANK ASSEMBLY (See page [FU-35](#))
4. CONNECT FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE (See page [FU-36](#))
5. ADD FUEL
6. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL
Torque: 3.9 N*m (40 kgf*cm, 35 in.*lbf)
7. CHECK FOR FUEL LEAKAGE (See page [FU-7](#))

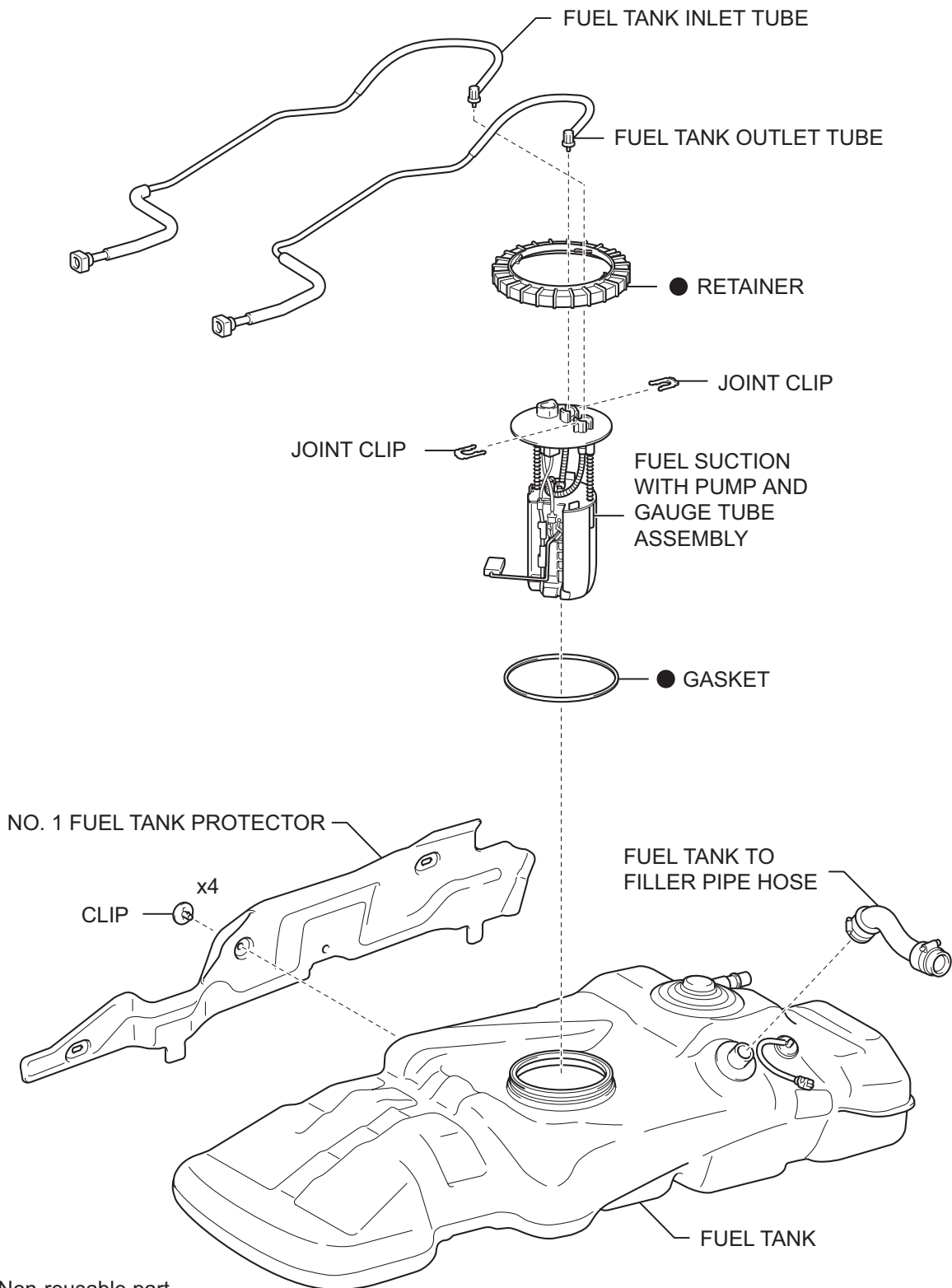
FUEL TANK

COMPONENTS

FU



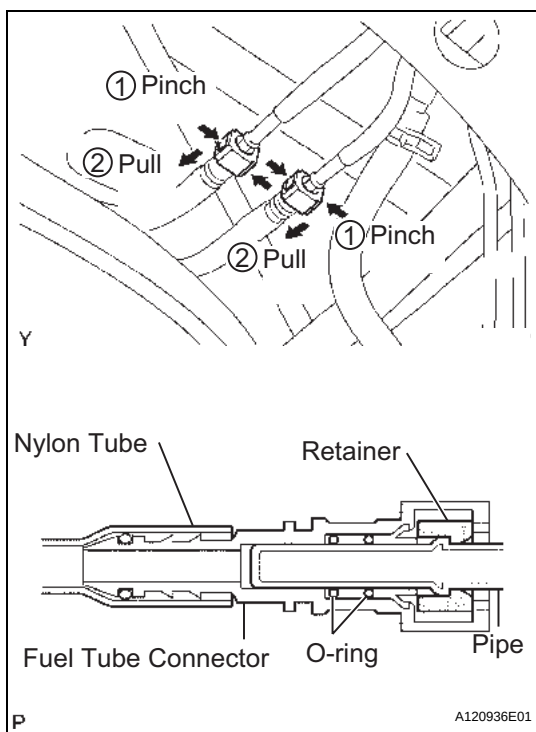
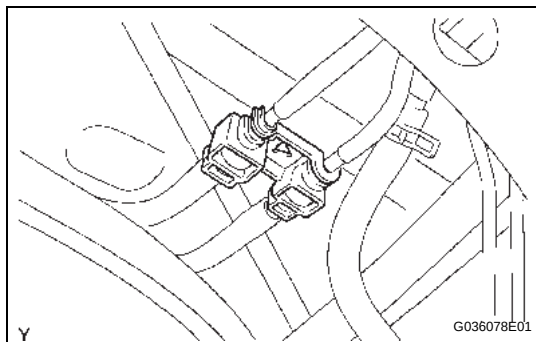
N*m (kgf*cm, ft*lbf) : Specified torque



$\boxed{\text{N}^*\text{m (kgf}^*\text{cm, ft}^*\text{lbf)}} : \text{Specified torque}$

REMOVAL

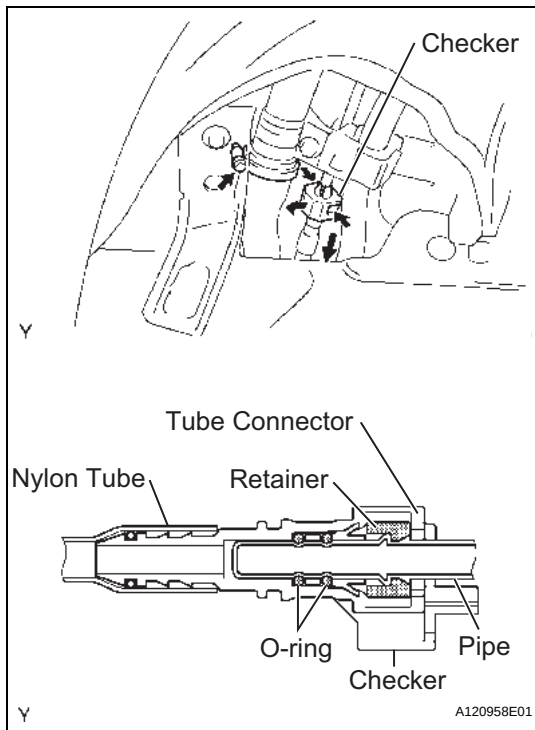
1. **DISCHARGE FUEL SYSTEM PRESSURE**
(See page [FU-1](#))
2. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
3. **DISCONNECT FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE**
 - (a) Remove the fuel pipe clamp.



- (b) Disconnect the fuel tank main tube and fuel tank return tube.
 - (1) Pinch the retainer as illustrated, then pull the fuel tube connectors out of the pipes.

NOTICE:

- Remove any dirt and foreign objects from the fuel tube connector before performing this work.
- Do not allow any scratches or foreign objects on the parts when disconnecting, as the fuel tube connector has the O-ring that seals the pipe.
- Perform this work by hand. Do not use any tools.
- Do not forcibly bend, twist or turn the nylon tube.
- Protect the disconnected part by covering it with a vinyl bag after disconnecting the fuel tube.
- If the fuel tube connector and pipe are stuck, push and pull to release them.

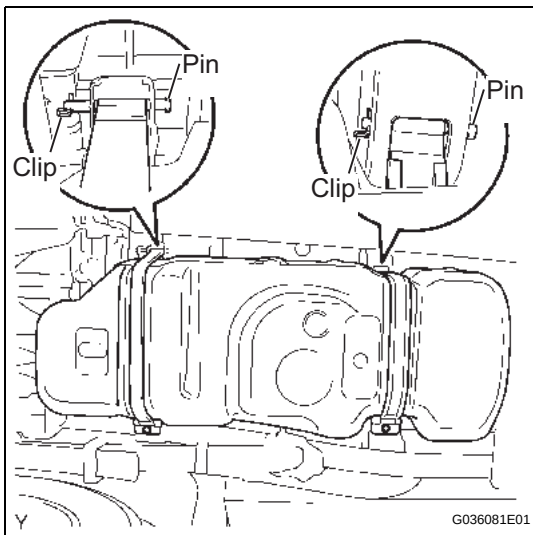


4. REMOVE FUEL TANK ASSEMBLY

- (a) Loosen the clamp bolt.
- (b) Disconnect the fuel breather tube.
 - (1) Remove the checker of the fuel tube connector from the pipe.
 - (2) Pinch the retainer of the fuel tube connector, then pull the tube connector out of the pipe.

NOTICE:

- Remove any dirt and foreign objects from the fuel tube connector before performing this work.
- Do not allow any scratches or foreign objects on the parts when disconnecting, as the fuel tube connector has the O-ring that seals the pipe.
- Perform this work by hand. Do not use any tools.
- Do not forcibly bend, twist or turn the nylon tube.
- Protect the disconnected part by covering it with a vinyl bag after disconnecting the fuel tube.
- If the fuel tube connector and pipe are stuck, push and pull to release them.



- (c) Hold the fuel tank using the mission jack.
- (d) Remove the 2 fuel tank bands.
 - (1) Remove the 2 bolts.
 - (2) Remove the 2 clips and 2 pins, then remove the 2 fuel tank bands.
- (e) Remove the fuel pump cover.
- (f) Slightly jack the fuel tank down and separate the fuel tank to filler pipe hose from the inlet pipe.

NOTICE:

Slowly jack down the fuel tank so as not to tear the wire harness and hose.

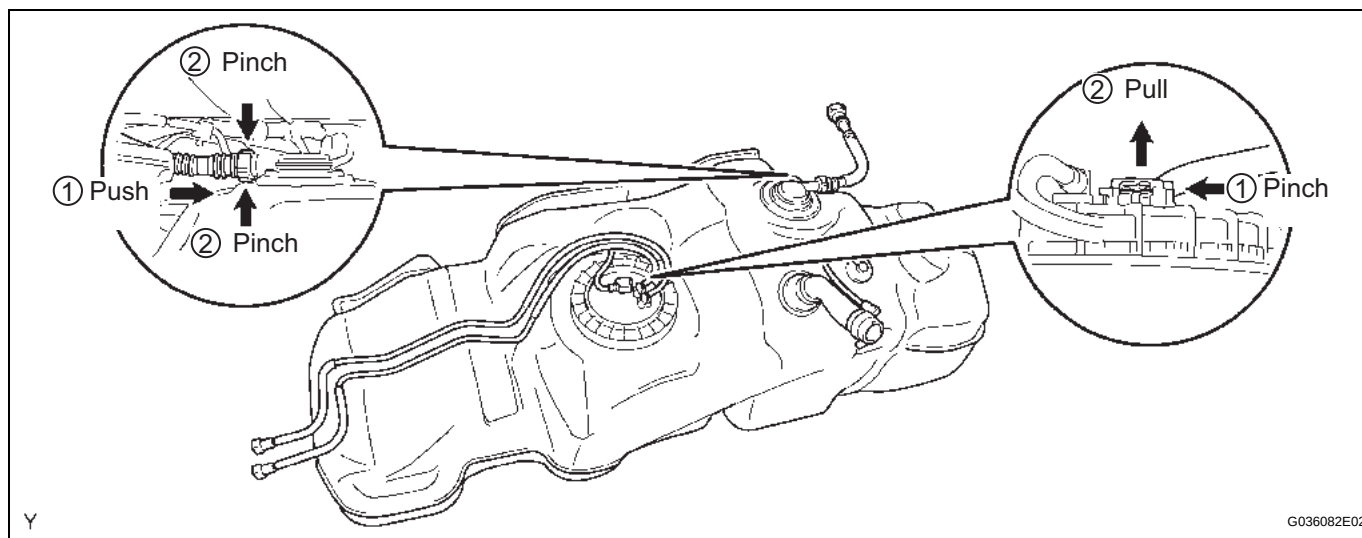
- (g) Disconnect the fuel pump connector.
- (h) Disconnect the fuel tank vent hose.
 - (1) Pinch the retainer and pull the fuel tank vent hose connector out of the charcoal canister to disconnect the fuel tank vent hose from the charcoal canister.

NOTICE:

- Remove any dirt and foreign objects from the fuel tank vent hose connector before performing this work.
- Do not allow any scratches or foreign objects on the parts when disconnecting, as the fuel tank vent hose connector has the O-ring that seals the pipe.
- Perform this work by hand. Do not use any tools.
- Do not forcibly bend, twist or turn the nylon tube.

- Protect the disconnected part by covering it with a vinyl bag after disconnecting the fuel tank vent hose.
- If the fuel tank vent connector and pipe are stuck, push and pull to release them.

(i) Remove the fuel tank assembly.



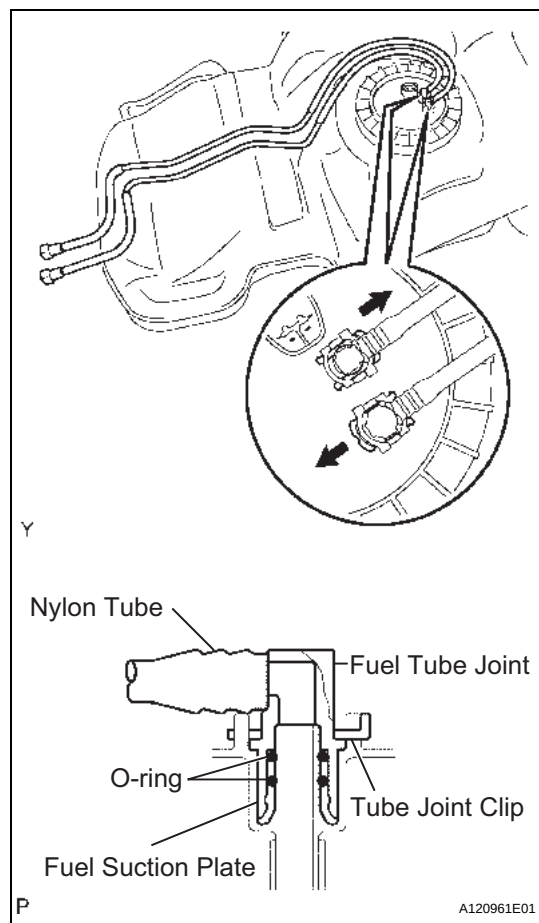
FU

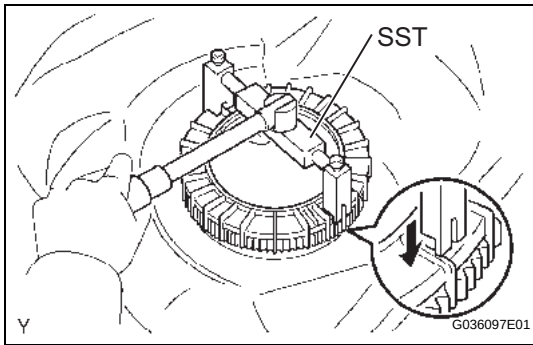
5. REMOVE FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE

(a) Remove the 2 joint clips, then remove the fuel tank main tube and fuel tank return tube.

NOTICE:

- Remove any dirt and foreign objects from the fuel tube connector before performing this work.
- Do not allow any scratches or foreign objects on the parts when disconnecting, as the fuel tube connector has the O-ring that seals the pipe.
- Perform this work by hand. Do not use any tools.
- Do not forcibly bend, twist or turn the nylon tube.
- Protect the disconnected part by covering it with a vinyl bag after disconnecting the fuel tube.
- If the fuel tube connector and pipe are stuck, push and pull to release them.





6. REMOVE FUEL SUCTION WITH PUMP & GAGE TUBE ASSEMBLY

NOTICE:

Protect the connector and tube joint with masking tape or equivalent to prevent any foreign objects from sticking to them. Clean any dirt and foreign objects from the fuel suction tube assembly before removing.

- (a) Using a SST, loosen the retainer.

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

HINT:

The ribs on the retainer can be fitted into a tip of the SST.

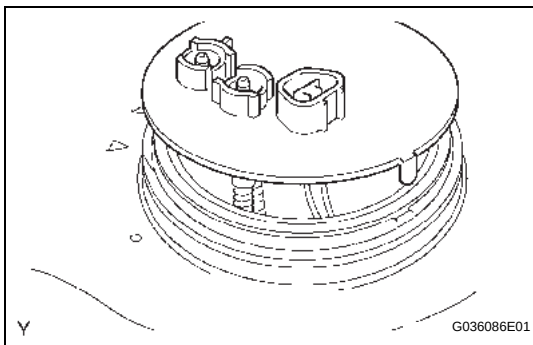
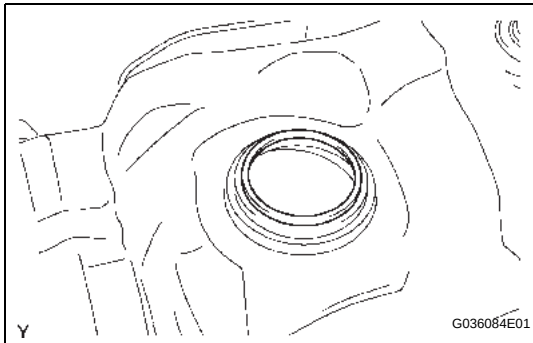
- (b) Remove the retainer.
(c) Pull the fuel pump assembly out of the fuel tank.

NOTICE:

Be careful not to bend the arm of the sender gauge.

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

7. DRAIN FUEL

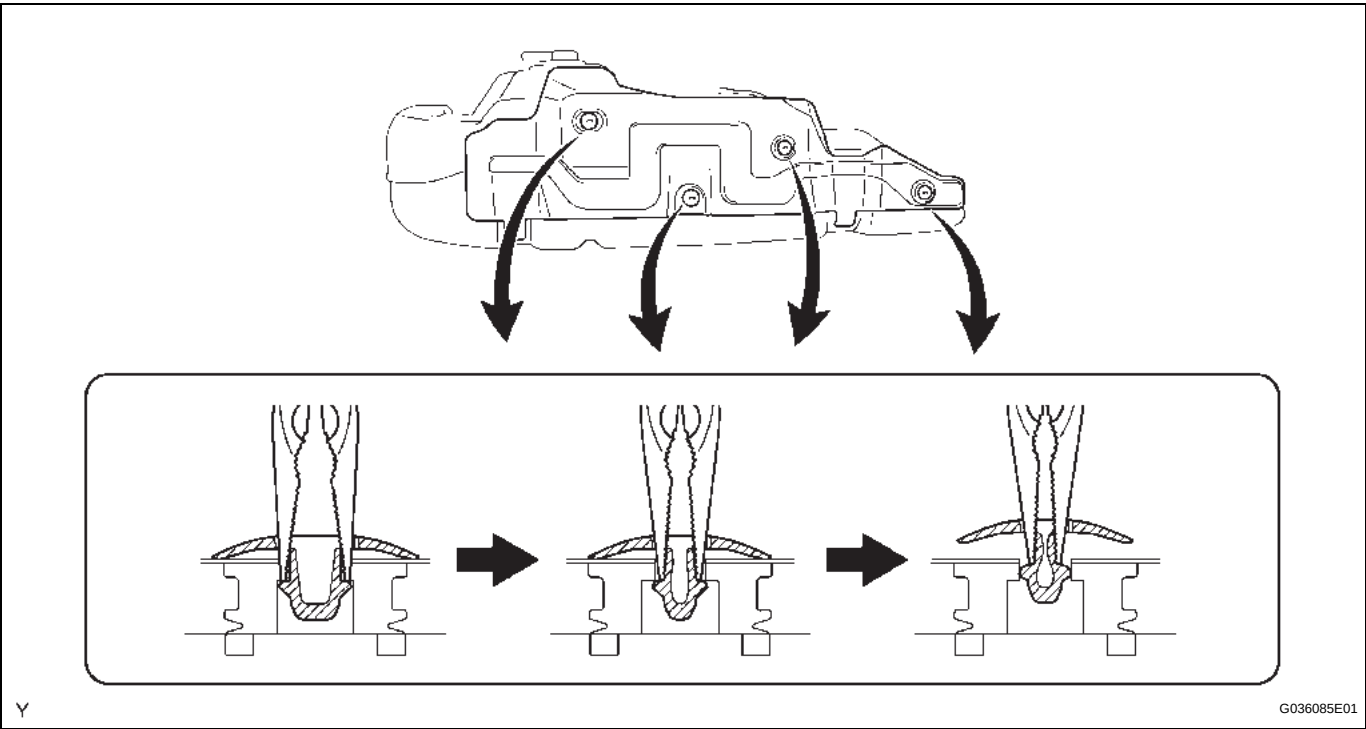


8. REMOVE FUEL TANK TO FILLER PIPE HOSE

- (a) Loosen the clamp bolt, then remove the fuel tank to filler pipe hose.

9. REMOVE NO. 1 FUEL TANK PROTECTOR

- (a) Remove the 4 clips, then remove the fuel tank protector.



INSTALLATION

1. INSTALL NO. 1 FUEL TANK PROTECTOR

- (a) Install the fuel tank protector with the 4 clips.

2. INSTALL FUEL TANK TO FILLER PIPE HOSE

- (a) Install the fuel tank onto the filler pipe hose, then tighten the pipe clamp bolt.

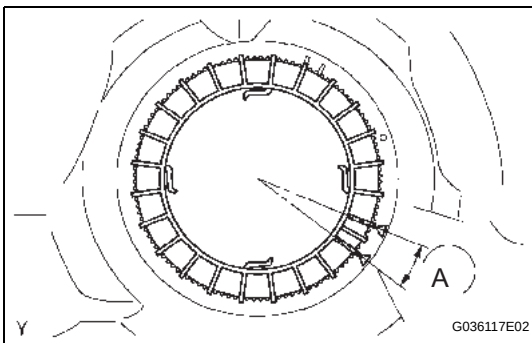
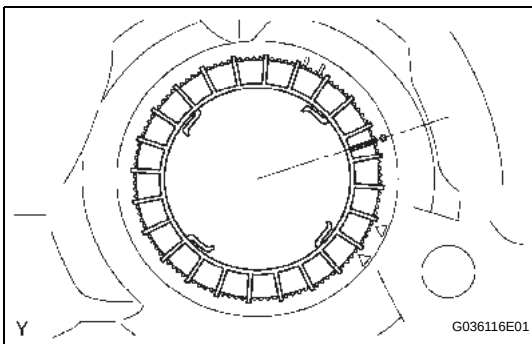
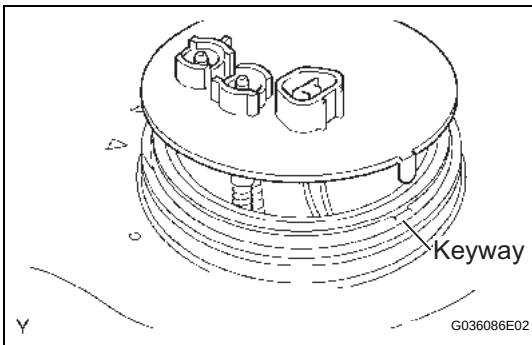
3. INSTALL FUEL SUCTION WITH PUMP & GAGE TUBE ASSEMBLY

- (a) Install a new gasket onto the fuel tank.
(b) Set the fuel pump assembly in the fuel tank.

NOTICE:

Be careful not to bend the arm of the sender gauge.

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



- (d) Install a new retainer.

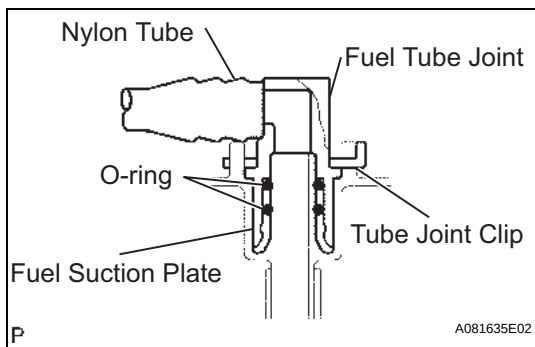
- (1) Align the mark on a new retainer with the rib on the fuel tank as shown in the illustration.

- (2) Using SST, turn the retainer 740° to 780° clockwise (more than 2 turns), and position the mark on the retainer within range A to install it.

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

HINT:

The ribs on the retainer can be fitted into the tip of the SST.



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

- (a) Install the fuel tank main tube and return tube with the 2 joint clips.

NOTICE:

- Check that there are no scratches or foreign objects around the connected part of the fuel tube joint and plug before performing this work.
- Check that the fuel tube joint is securely inserted to the end.
- Check that the tube joint clips are on the collar of the fuel tube joint.
- After installing the tube joint clip, check that the fuel tank main tube and return tube can be pulled out.

5. INSTALL FUEL TANK ASSEMBLY

- (a) Set the fuel tank assembly onto the mission jack.
- (b) Connect the fuel tank vent hose.
- (1) Align the fuel tank vent connector with the pipe, then push in the fuel tank vent connector until the retainer makes a "click" sound to connect the fuel tank vent hose to the fuel suction plate.

NOTICE:

- Check that there are no scratches or foreign objects around the connected part of the fuel tank vent connector and plug before performing this work.
- After connecting the fuel tank vent hose, check that the fuel tank vent hose is securely connected by pulling the quick connector.

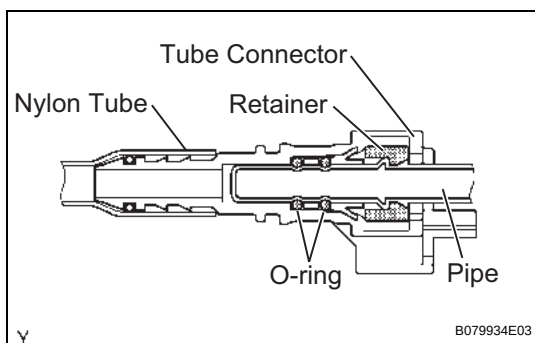
- (c) Connect the fuel pump connector.
- (d) Connect the fuel tank to filler pipe hose.
- (e) Install the fuel pump cover.
- (f) Install the 2 fuel tank bands.
- (1) Install the 2 fuel tank bands with the 2 pins and 2 clips.
- (2) Install the 2 fuel tank bands with the 2 bolts.
- Torque: 62 N*m (632 kgf*cm, 46 ft.*lbf)**

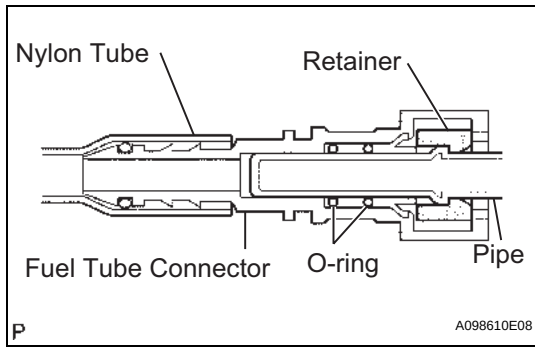
- (g) Connect the fuel tank breather tube.

- (1) Align the fuel tube connector with the pipe, then push the fuel tube connector in until the retainer makes a "click" sound to connect the fuel tank vent breather tube.

NOTICE:

- Check that there are no scratches or foreign objects around the connected part of the fuel tube connector and pipe before performing this work.
- After connecting the fuel tank breather tube, check that the fuel pump tube is securely connected by pulling the fuel tube connector and pipe.





- (2) Install the checker onto the pipe.
- (h) Tighten the clamp bolt.
6. **CONNECT FUEL TANK MAIN TUBE AND FUEL TANK RETURN TUBE**
- (a) Connect the fuel tank main tube and return tube.
- (1) Align the fuel tube connector with the pipe, then push the fuel tube connector in until the retainer makes a "click" sound to connect the fuel tank main tube and return tube.
- NOTICE:**
- Check that there are no scratches or foreign objects around the connected part of the fuel tube connector and pipe before performing this work.
 - After connecting the fuel tube connector, check that the fuel tube connector and pipe are securely connected by pulling them.
- (b) Install the fuel pipe clamp.
7. **ADD FUEL**
8. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**
Torque: 3.9 N*m (40 kgf*cm, 35 in.*lbf)
9. **CHECK FOR FUEL LEAKAGE** (See page [FU-7](#))