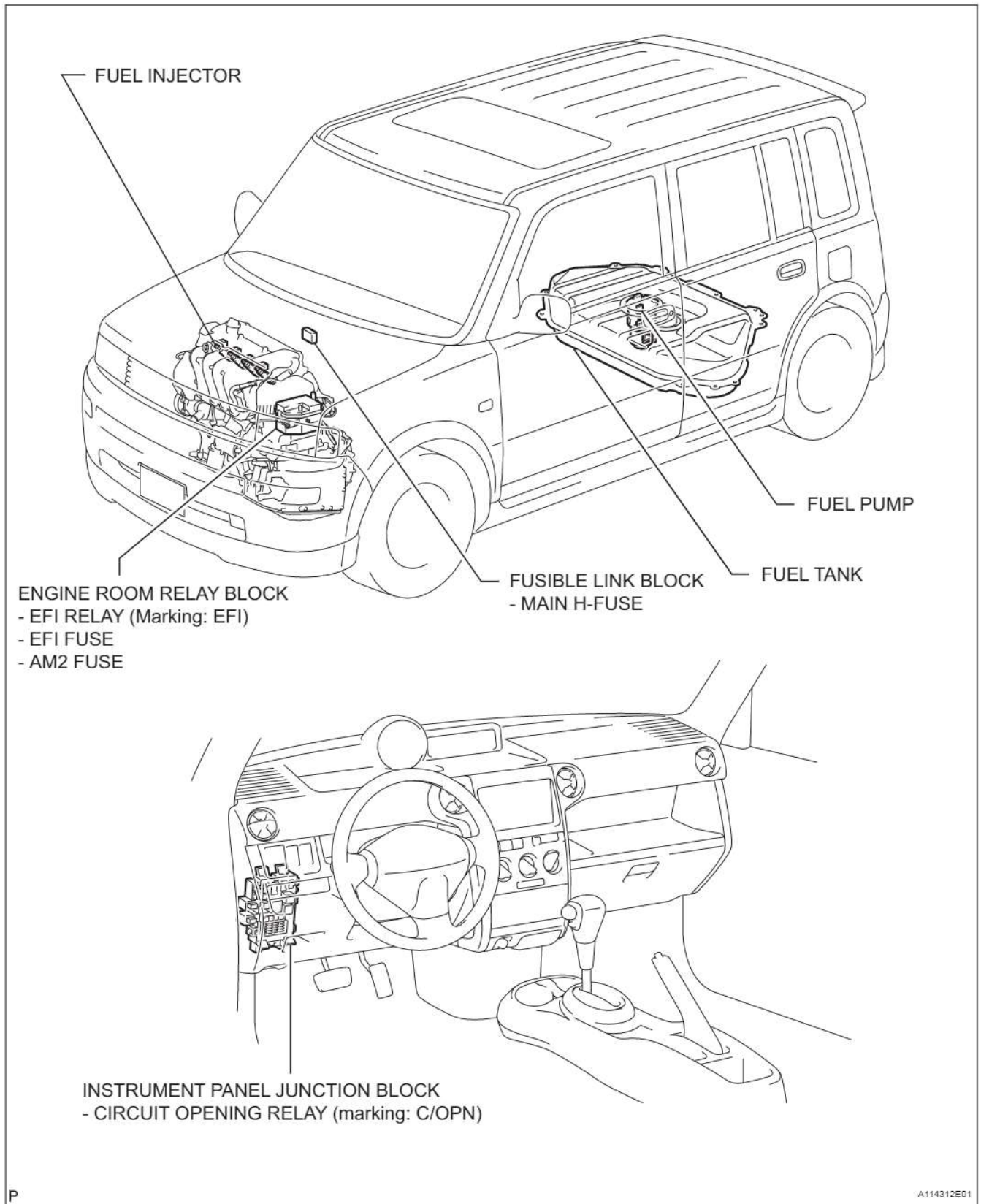


1NZ-FE FUEL – FUEL SYSTEM

FU-5

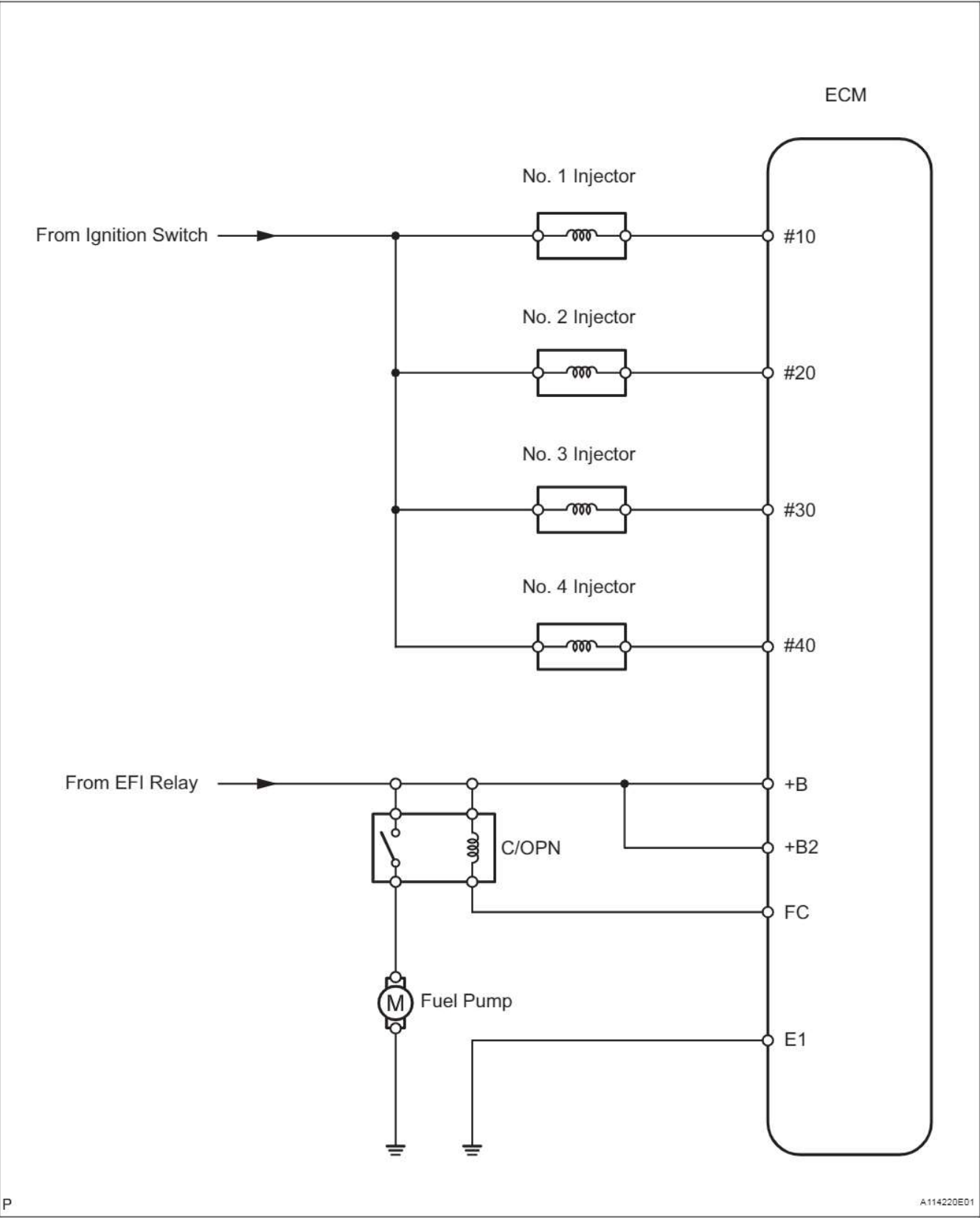
PARTS LOCATION



FU-6

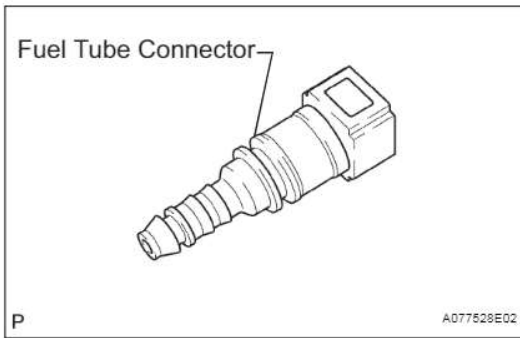
1NZ-FE FUEL – FUEL SYSTEM

SYSTEM DIAGRAM



1NZ-FE FUEL – FUEL SYSTEM

FU-7



ON-VEHICLE INSPECTION

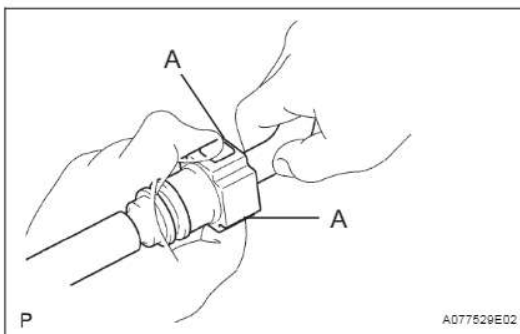
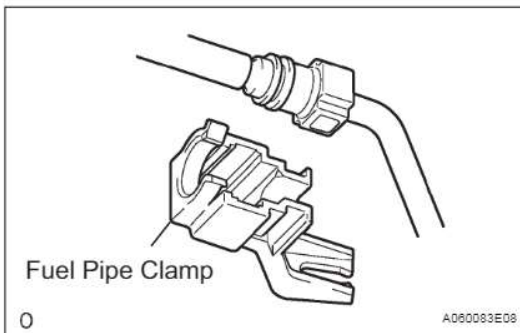
1. CHECK FUEL PRESSURE

- Discharge the fuel system pressure and take precautions against possible fuel spray (see page [FU-11](#)).
- Check that the battery voltage is above 11 V.
- Disconnect the cable from the negative (-) battery terminal.
- Prepare the part number shown below. Remove the connector from the tube.

HINT:

Part No. 23901-22130

- Remove the fuel pipe clamp from the fuel tube connector.



- Disconnect the fuel tube connector from the fuel pipe by pinching part A with your fingers as shown in the illustration.

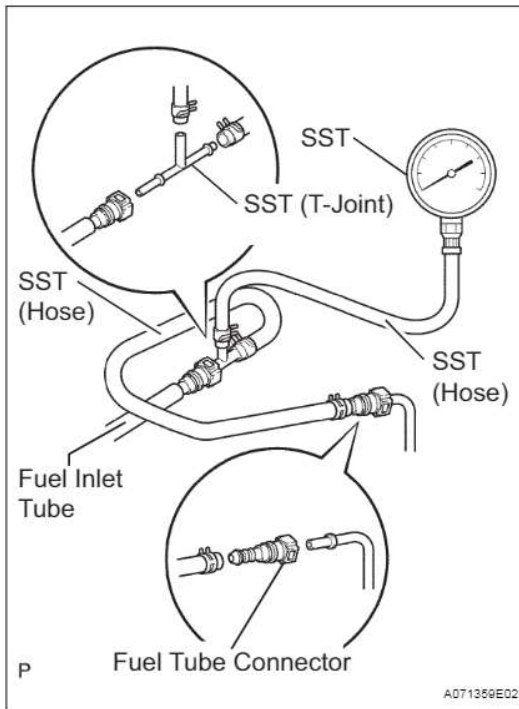
CAUTION:

- DISCHARGE FUEL SYSTEM PRESSURE** procedures must be performed before disconnecting any part of the fuel system,
- After performing the **DISCHARGE FUEL SYSTEM PRESSURE** procedures, pressure will remain in the fuel line. When disconnecting the fuel line, place a cloth or equivalent over fittings to reduce the risk of fuel spray.

FU

FU-8

1NZ-FE FUEL – FUEL SYSTEM



- (g) Install SST (pressure gauge) and the fuel tube connector as shown in the illustration using SST.
SST 09268-41047 (95336-08070), 09268-45014 (09268-41250, 09268-41200, 09268-41220)
- (h) Wipe up any gasoline.
- (i) Reconnect the cable to the negative (-) battery terminal.
- (j) Connect the intelligent tester to the DLC3.
- (k) Measure the fuel pressure.

Standard fuel pressure:

304 to 343 kPa (3.1 to 3.5 kgf/cm², 44 to 50 psi)

If the pressure is greater than the specified range, replace the fuel pressure regulator.

If the pressure is less than the specified range, check the fuel hose connections, fuel pump, fuel filter and fuel pressure regulator.

- (l) Disconnect the intelligent tester from the DLC3.
- (m) Start the engine.
- (n) Check that the fuel pressure remains as specified for 5 minutes after the engine has stopped.

Standard fuel pressure:

147 kPa (1.5 kgf/cm², 21 psi)

HINT:

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

- (o) After checking the fuel pressure, disconnect the negative (-) battery cable and carefully remove SST and the fuel tube connector to prevent fuel spray.
- (p) Reconnect the fuel inlet tube (fuel tube connector).

CAUTION:

After taking the precautions, connect the fuel tube connector (quick type).

2. CHECK FUEL PUMP OPERATION AND CHECK FOR FUEL LEAKS

- (a) When using the intelligent tester:
 - (1) Connect the intelligent tester to the DLC3.
 - (2) Turn the ignition switch ON and intelligent tester main switch ON.

NOTICE:

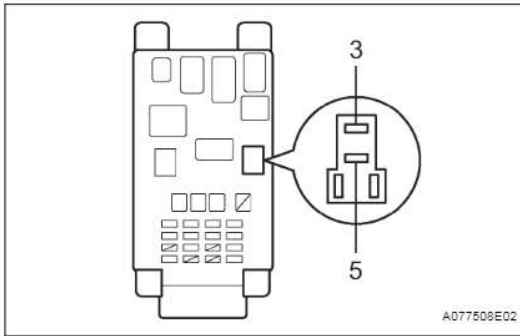
Do not start the engine.

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

FU

1NZ-FE FUEL – FUEL SYSTEM

FU-9



- (b) When not using the intelligent tester:
- (1) Remove the circuit opening relay from the instrument panel junction block.
 - (2) Using a service wire, connect terminals 3 and 5 of the relay block.

NOTICE:

Pay due attention to the terminal connecting position to avoid malfunctions.

- (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) Disconnect the intelligent tester from the DLC3.

FU

FU-14

1NZ-FE FUEL – FUEL INJECTOR

INSPECTION

1. INSPECT FUEL INJECTOR ASSEMBLY

- (a) Inspect the resistance.
 - (1) Measure the resistance between the terminals.
Standard resistance:
13.5 to 14.2 Ω at 21°C (70°F)
 If the result is not as specified, replace the injector assembly.
- (b) Inspect the injector operation.

CAUTION:

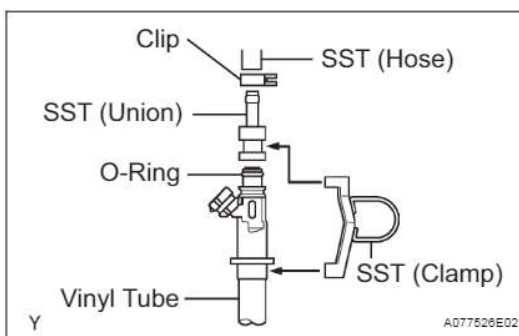
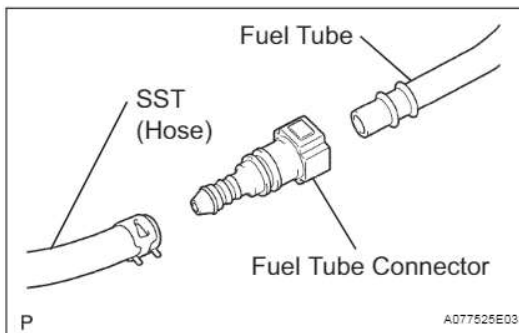
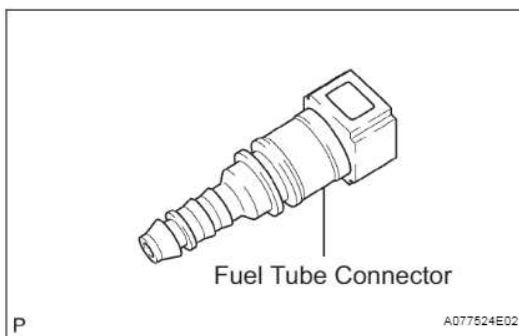
- Perform the test in a well-ventilated area and be careful of flames.
- Carefully handle the fuel tube connector.

- (1) Prepare a fuel tube connector.

HINT:

Part No. 23901-21060

FU

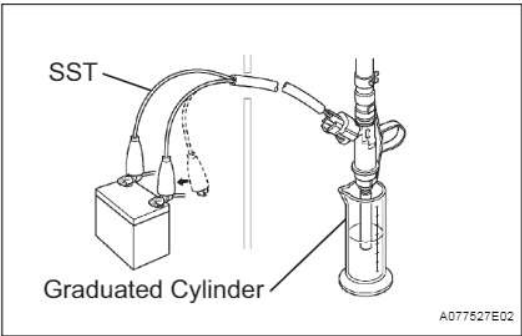


- (2) Connect SST and the fuel tube connector to the fuel pipe.

SST 09268-41047 (95336-08070)**CAUTION:**

After following the precautions of the **FUEL SYSTEM**, connect the fuel tube connector (quick type).

- (3) Install a new O-ring to the injector.
- (4) Connect SST (union and hose) to the injector, and hold the injector and union with SST (clamp).
SST 09268-41047 (95336-08070, 09268-41110, 09268-41300), 09842-30080
- (5) Put the injector into a graduated cylinder.
HINT:
 Install a suitable vinyl tube onto the injector to prevent fuel spray.
- (6) Operate the fuel pump (see page [FU-8](#)).



- (7) Connect SST (wire) to the injector and battery for 15 seconds, and measure the injection volume with the graduated cylinder. Test each injector 2 or 3 times.
SST 09842-30080
Standard injection volume

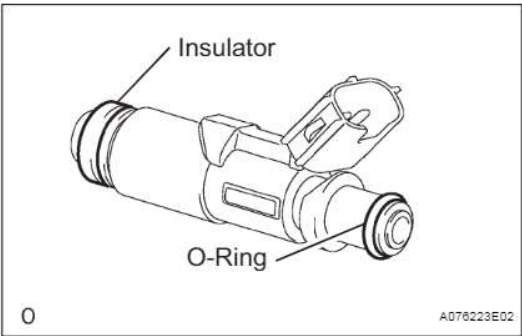
Injection Volume	Difference between each injector
47 to 58 cm ³ (2.9 to 3.5 cu in.) per 15 seconds	11 cm ³ (0.6 cu in.) or less

NOTICE:
Always do the switching at the battery side.
If the injection volume is not as specified, replace the injector assembly.

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

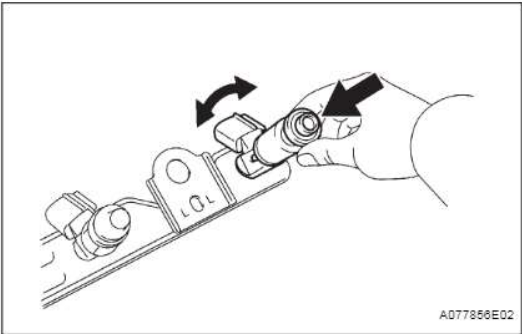
Standard fuel drop:
1 drop or less in 12 minutes
If the injection volume is not as specified, replace the injector assembly.

FU



INSTALLATION

1. **INSTALL FUEL INJECTOR ASSEMBLY**
- (a) Install new insulators onto each fuel injector.
 - (b) Apply a light coat of grease or gasoline to new O-rings and install them onto each fuel injector.
 - (c) Apply a light coat of grease or gasoline to the place where each fuel delivery pipe comes into contact with each O-ring.

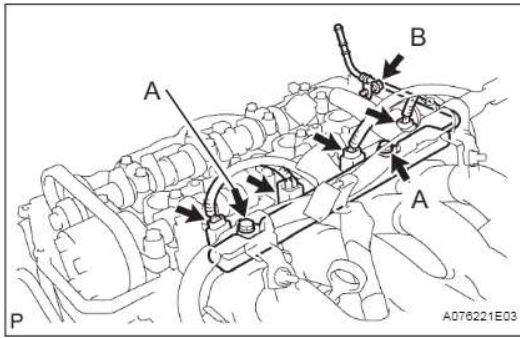


- (d) While turning each fuel injector clockwise and counterclockwise, push it into each fuel delivery pipe.
- NOTICE:**
- Be careful not to twist the O-ring.
 - After installing the fuel injectors, check that they turn smoothly. If they do not, replace the O-ring of the improperly installed fuel injector with a new one, and install the fuel injector again.

2. **INSTALL FUEL DELIVERY PIPE SUB-ASSEMBLY**
- (a) Install the 2 spacers onto the cylinder head.

FU-16

1NZ-FE FUEL – FUEL INJECTOR

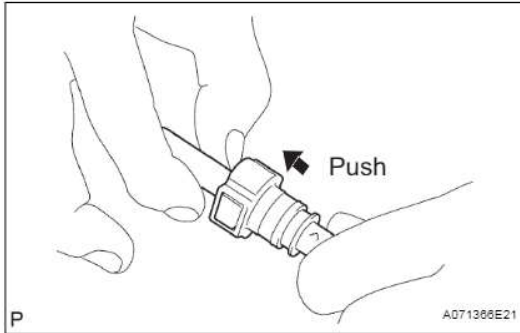


- (b) Install the fuel delivery pipe with the 4 fuel injectors.
Torque: 19 N*m (194 kgf*cm, 14 ft.*lbf) for bolt A
9.0 N*m (92 kgf*cm, 80 in.*lbf) for bolt B

NOTICE:

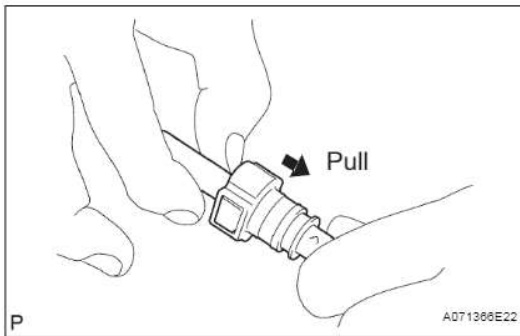
- Be careful not to drop the fuel injectors when installing the fuel delivery pipe.
- Check that the fuel injectors rotate smoothly after installing the fuel delivery pipe.

- (c) Connect the 4 fuel injector connectors.

**3. CONNECT FUEL TUBE SUB-ASSEMBLY**

- (a) Connect the fuel tube.

- (1) Check the connected part of the pipe for damage or foreign objects.
- (2) Align the axis of the connector with the axis of the pipe, and push the pipe into the connector until the connector makes a "click" sound. If the connection is tight, apply a small amount of fresh engine oil to the tip of the pipe.



- (3) After finishing the connection, check that the pipe and connector are securely connected by pulling them.

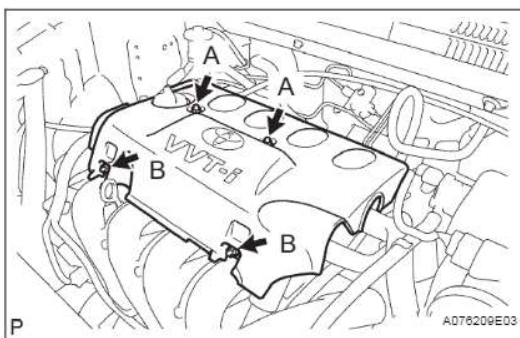
- (b) Install the fuel pipe clamp.

4. INSTALL CYLINDER HEAD COVER SUB-ASSEMBLY (See page EM-21)**5. INSTALL IGNITION COIL (See page IG-8)****6. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL****7. CHECK FOR FUEL LEAKS (See page FU-8)****8. INSTALL NO. 2 CYLINDER HEAD COVER**

- (a) Install the cylinder head cover.

- (b) First tighten the nuts labeled A, and then tighten the nuts labeled B.

Torque: 7.0 N*m (71 kgf*cm, 62 in.*lbf)



FUEL SYSTEM

PRECAUTION

1. PRECAUTION

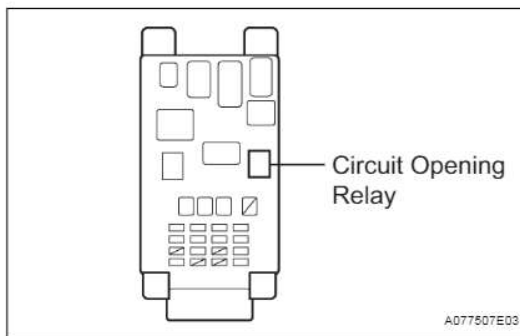
- (a) Before working on the fuel system, disconnect the negative (-) battery terminal.
- (b) Do not smoke or work near fire when handling the fuel system.
- (c) Keep gasoline away from rubber or leather parts.

2. DISCHARGE FUEL SYSTEM PRESSURE

CAUTION:

- **DISCHARGE FUEL SYSTEM PRESSURE** procedures must be performed before disconnecting any part of the fuel system.
- After performing the **DISCHARGE FUEL SYSTEM PRESSURE** procedures, pressure will remain in the fuel line. When disconnecting the fuel line, place a cloth or equivalent over fittings to reduce the risk of fuel spray.

FU



- (a) Remove the circuit opening relay (Marking: C/OPN) from the instrument panel junction block.
- (b) Start the engine. After the engine has stopped, turn the ignition switch OFF.

HINT:

Possibly DTC P0171 (system too lean) will be set.

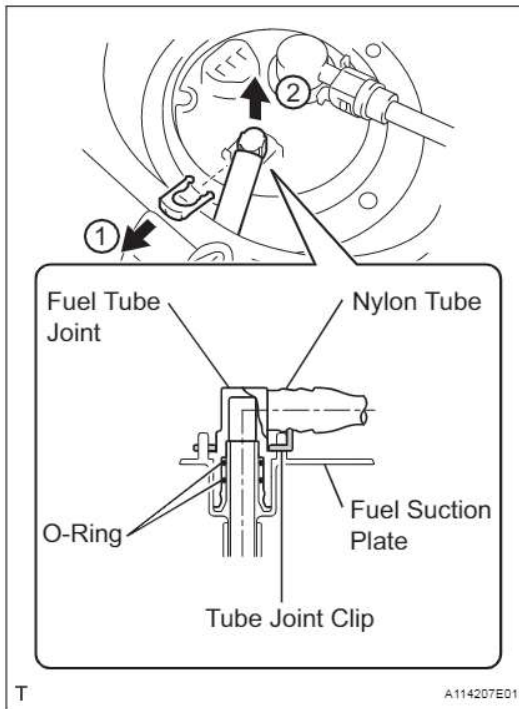
- (c) Check that the engine does not start.
- (d) Remove the fuel tank cap, and let the air out of the fuel tank.
- (e) Disconnect the cable from the negative (-) battery terminal.
- (f) Install the circuit opening relay.

3. FUEL SYSTEM

- (a) When disconnecting the high pressure fuel line, a large amount of fuel will spray out, so perform these procedures.
 - (1) Discharge the pressure in the fuel system.

FU-2

1NZ-FE FUEL – FUEL SYSTEM



(2) Disconnect the fuel pump tube.

1. Remove the tube joint clip, and pull out the fuel pump tube.

NOTICE:

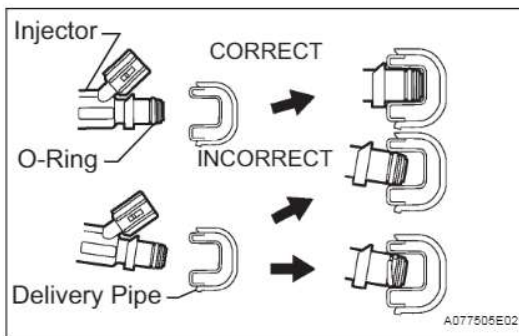
- Check around the connector for dirt or mud before this operation and clean as necessary.
- Be careful of mud because the quick connector has an O-ring (which seals the pipe and connector) that can be contaminated.
- Do not use any tool in this operation.
- Do not bend or twist the nylon tube. Protect the connector by covering it with a plastic bag.
- When the pipe and connector are stuck, push and pull the connector to release and disconnect the connector.

(3) Drain the fuel remaining inside the fuel pump tube.



(4) Cover the disconnected fuel pump tube with a plastic bag to prevent damage and intrusion of foreign objects.

(5) Place a tray under the vehicle or point of disconnection to catch any fuel spray.

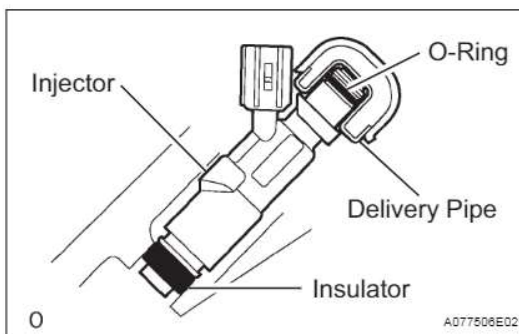


(b) Follow these precautions when removing and installing the fuel injectors.

NOTICE:

Never reuse the O-ring.

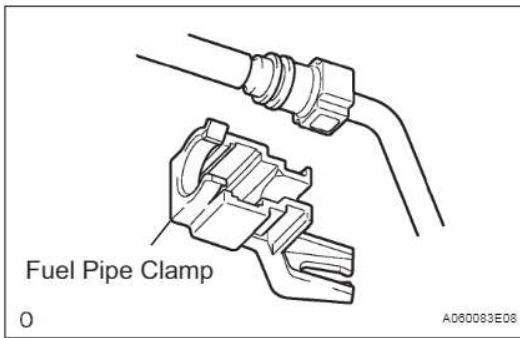
- (1) When installing a new O-ring onto the injector, be careful not to damage it.
- (2) Coat the new O-ring with grease or gasoline before installing. Never use engine oil, gear oil or brake oil.



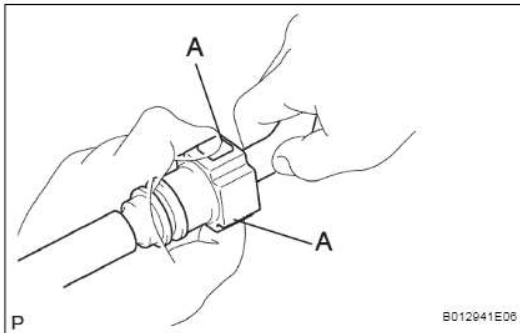
(c) Install the injector onto the delivery pipe and cylinder head as shown in the illustration. Before installing the injector, be sure to apply grease or gasoline to the place where the delivery pipe comes into contact with the O-ring of the injector.

1NZ-FE FUEL – FUEL SYSTEM

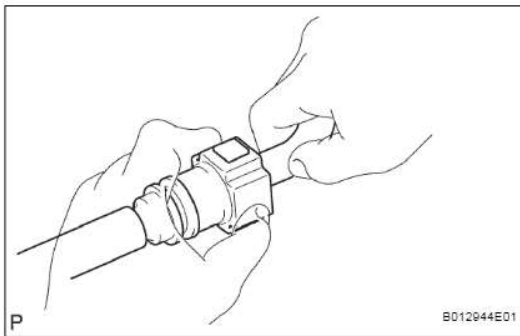
FU-3



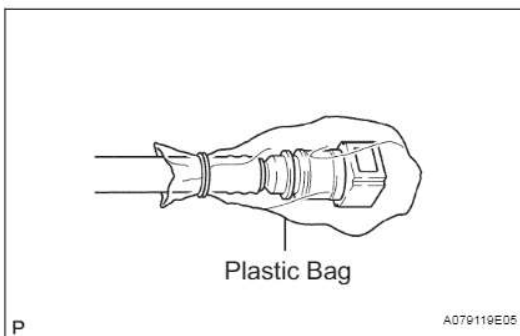
- (d) Follow these precautions when disconnecting the fuel tube connectors.
- (1) Remove the fuel pipe clamp from the connector.
 - (2) Check the pipe and around the connector for dirt or mud before disconnecting it and clean as necessary.



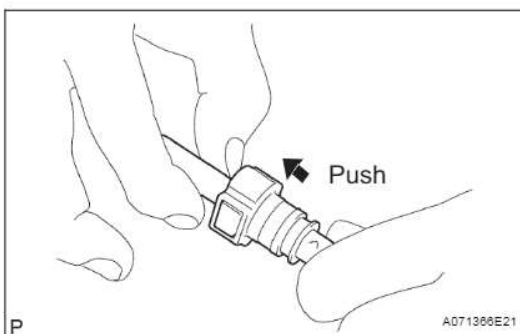
- (3) Disconnect the connector from the hose while pinching part A with your fingers as shown in the illustration.



- (4) If the connector and pipe are stuck, pinch the fuel pipe with your fingers, then push and pull the connector to release and disconnect the fuel tube connector. Do not use any tools.
- (5) If there is dirt or any other substance in the sealing surface that might interfere with the seal, clean the area thoroughly before assembling.



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

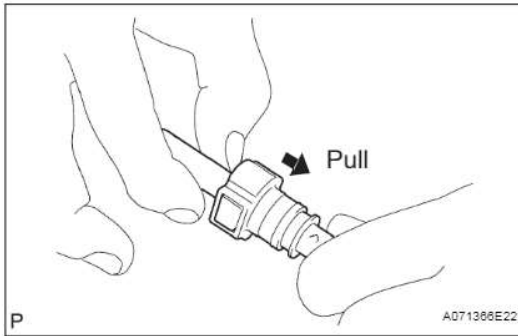


- (e) Follow these precautions when connecting the fuel tube connectors.
- (1) Check the connected part of the pipe for damage or foreign objects.
 - (2) Align the axis of the connector with the axis of the pipe, and push the pipe into the connector until the connector makes a "click" sound. If the connection is tight, apply a small amount of fresh engine oil to the tip of the pipe.

FU

FU-4

1NZ-FE FUEL – FUEL SYSTEM



- (3) After finishing the connection, check that the pipe and connector are securely connected by pulling them.
- (4) Install the fuel pipe clamp to the connector.
- (5) Check for fuel leaks.

4. CHECK FOR FUEL LEAKS

- (a) When using the intelligent tester:

- (1) Connect the intelligent tester to the DLC3.
- (2) Turn the ignition switch ON.

NOTICE:

Do not start the engine.

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

- (b) When not using the intelligent tester:

- (1) Remove the circuit opening relay from the instrument panel junction block.
- (2) Using a service wire, connect terminals 3 and 5 of the relay block.

NOTICE:

Pay attention to the terminal connecting position to avoid malfunctions.

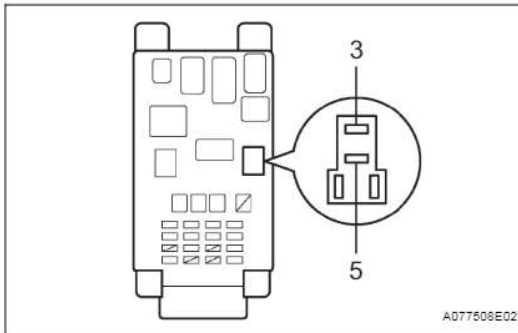
- (3) Turn the ignition switch ON, and check that the fuel pump operates.

NOTICE:

Do not start the engine.

- (c) Check that there are no fuel leaks after doing maintenance to the fuel system.
- (d) Disconnect the intelligent tester from the DLC3.

FU

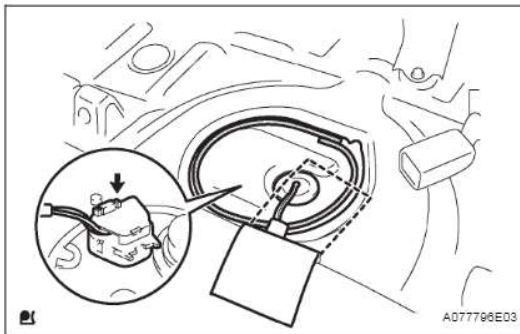
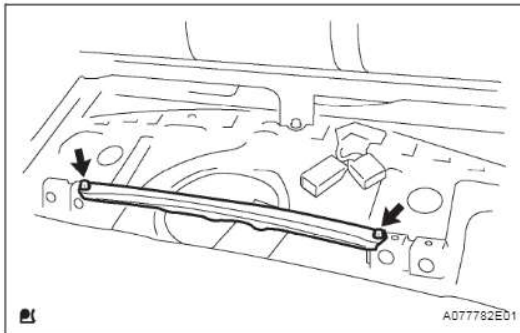


FU-18

1NZ-FE FUEL – FUEL PUMP

REMOVAL

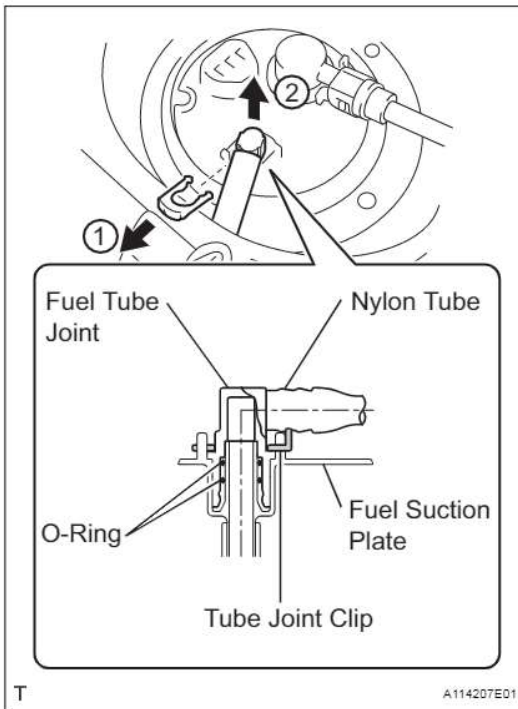
1. **DISCHARGE FUEL SYSTEM PRESSURE** (See page [FU-11](#))
2. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
CAUTION:
 Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.
3. **REMOVE REAR SEAT CUSHION ASSEMBLY** (See page [SE-22](#))
4. **REMOVE REAR SEAT CUSHION SUPPORT BRACKET**
 - (a) Remove the 2 bolts and rear seat cushion support bracket.
5. **REMOVE REAR FLOOR SERVICE HOLE COVER**
 - (a) Remove the rear floor service hole cover.
6. **DISCONNECT FUEL PUMP CONNECTOR**



FU

1NZ-FE FUEL – FUEL PUMP

FU-19



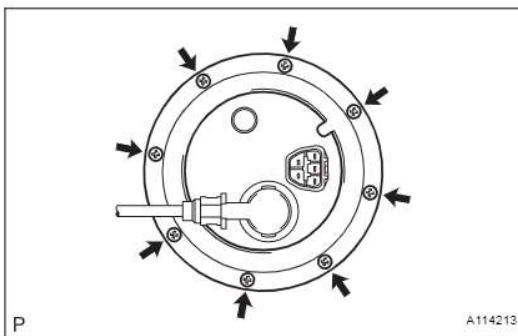
7. DISCONNECT FUEL PUMP TUBE SUB-ASSEMBLY

- (a) Remove the tube joint clip, and pull out the fuel pump tube.

NOTICE:

- Check around the connector for dirt or mud before this operation and clean as necessary.
- Be careful of mud because the quick connector has an O-ring (which seals the pipe and connector) that can be contaminated.
- Do not use any tool in this operation.
- Do not bend or twist the nylon tube. Protect the connector by covering it with a plastic bag.
- When the pipe and connector are stuck, push and pull the connector to release and disconnect the connector.

FU

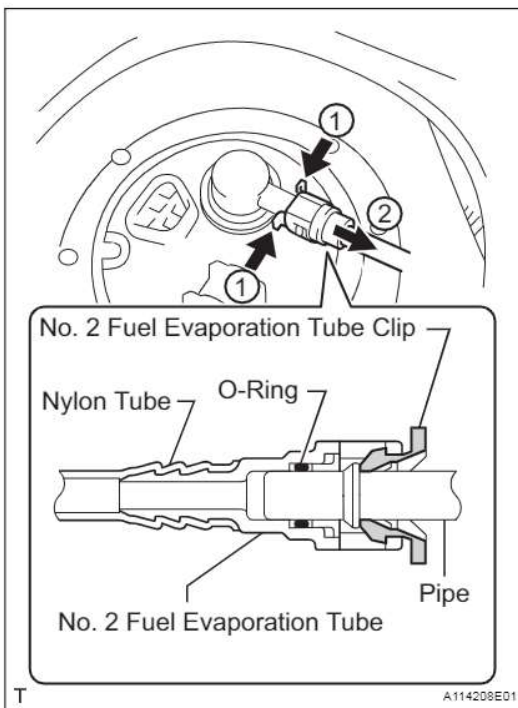


8. REMOVE FUEL TANK VENT TUBE SET PLATE BOLT

- (a) Remove the 8 bolts.

HINT:

Only remove the bolts. The fuel tank vent tube set plate is removed in the next step.



9. DISCONNECT NO. 2 FUEL EVAPORATION TUBE SUB-ASSEMBLY

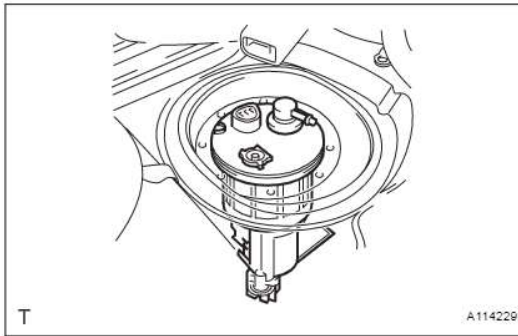
- (a) Pinch the No. 2 fuel evaporation tube clip and then pull out the No. 2 fuel evaporation tube.

NOTICE:

- Check around the connector for dirt or mud before this operation and clean as necessary.
 - Be careful of mud because the quick connector has an O-ring (which seals the pipe and connector) that can be contaminated.
 - Do not use any tool in this operation.
 - Do not bend or twist the nylon tube. Protect the connector by covering it with a plastic bag.
 - When the pipe and connector are stuck, push and pull the connector to release and disconnect the connector.
- (b) Remove the fuel tank vent tube set plate.

FU-20

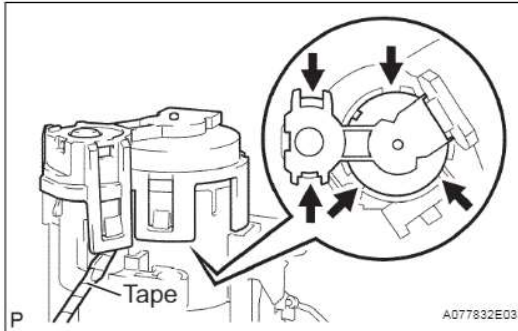
1NZ-FE FUEL – FUEL PUMP

**10. REMOVE FUEL PUMP ASSEMBLY WITH FUEL SENDER GAUGE ASSEMBLY**

- (a) Remove the fuel pump with fuel sender gauge from the fuel tank.

CAUTION:

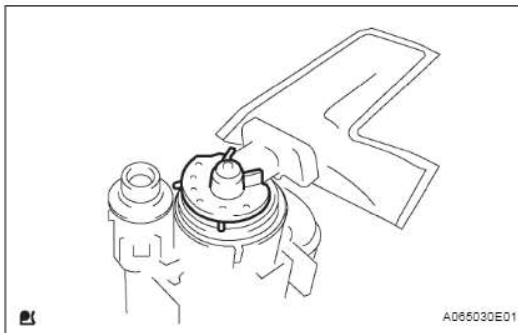
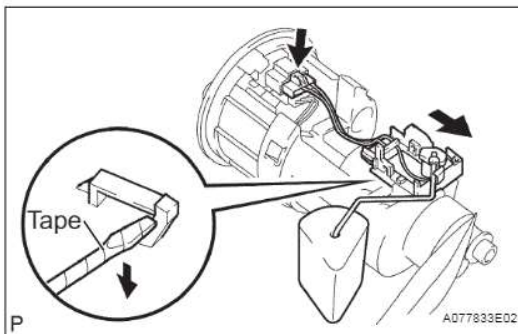
- Do not damage the fuel pump filter.
- Do not bend the arm of the fuel sender gauge.

**11. REMOVE NO. 2 FUEL SUCTION SUPPORT**

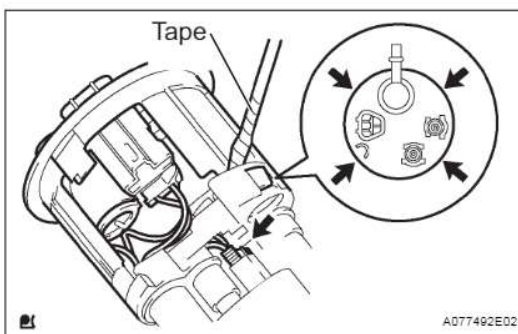
- (a) Using a screwdriver with its tip wrapped in tape, detach the 5 snap claws from the claw holes, and remove the fuel suction support.

NOTICE:

Do not damage the fuel suction support.

**12. REMOVE FUEL PUMP CUSHION RUBBER****13. REMOVE FUEL SENDER GAUGE ASSEMBLY**

- (a) Disconnect the fuel sender gauge connector.
 (b) Using a screwdriver with its tip wrapped in tape, unfasten the clamp to release the fuel sender gauge. Slide the fuel sender gauge to remove it from the fuel pump.

**14. REMOVE FUEL SUCTION PLATE SUB-ASSEMBLY**

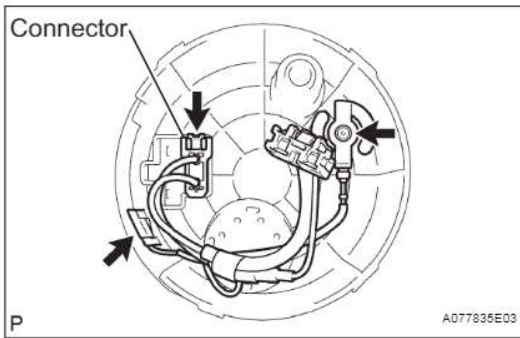
- (a) Disconnect the fuel pump connector.
 (b) Using a screwdriver with its tip wrapped in tape, detach the 4 snap claws from the claw holes, and pull out the fuel suction plate.

NOTICE:

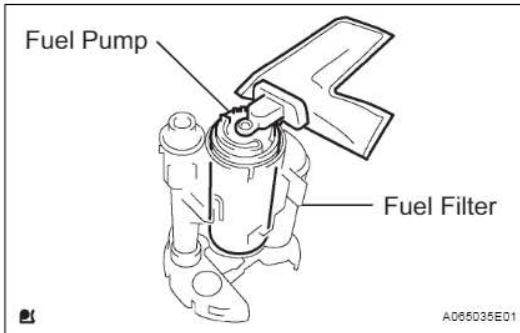
Do not damage the fuel pump filter.

1NZ-FE FUEL – FUEL PUMP

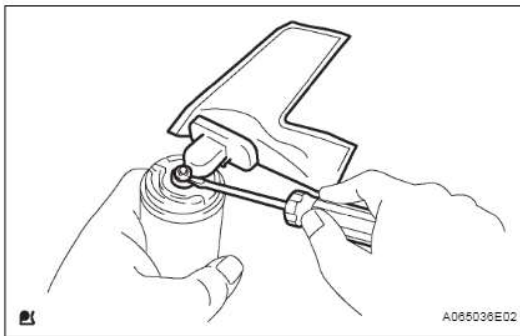
FU-21

**15. REMOVE FUEL PUMP HARNESS**

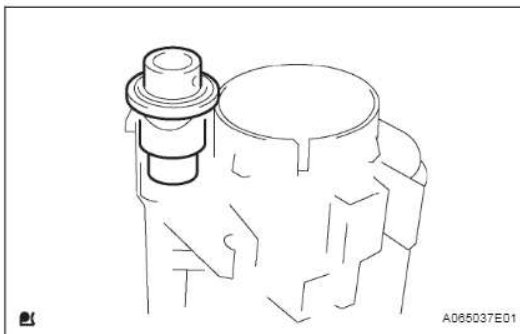
- (a) Disconnect the connector.
- (b) Using a small screwdriver, pry out the fuel pump harness.

**16. REMOVE FUEL PUMP**

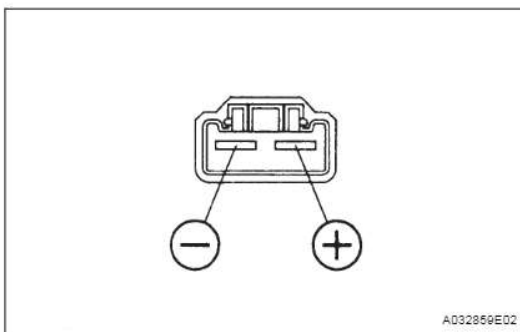
- (a) Pull out the fuel pump from the fuel filter.

**17. REMOVE FUEL PUMP FILTER**

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

**18. REMOVE FUEL PRESSURE REGULATOR ASSEMBLY**

- (a) Pull out the fuel pressure regulator from the fuel filter.
- (b) Remove the O-ring from the fuel pressure regulator.

**INSPECTION****1. INSPECT FUEL PUMP**

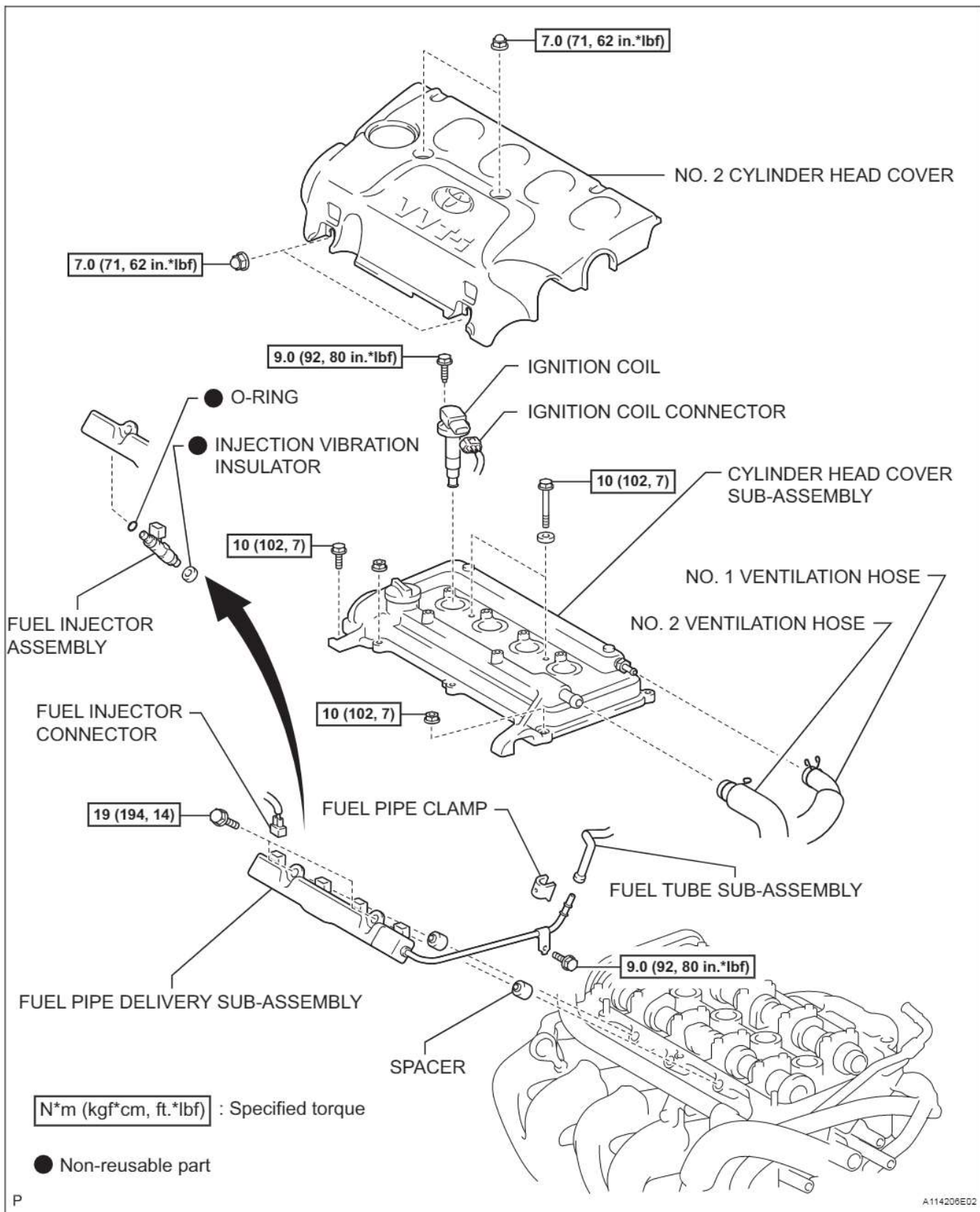
- (a) Inspect the fuel pump resistance.
 - (1) Measure the resistance between the terminals.

Standard resistance:
0.2 to 3.0 Ω at 20°C (68°F)

FU-10

1NZ-FE FUEL – FUEL INJECTOR

FUEL INJECTOR COMPONENTS



REMOVAL

1. DISCHARGE FUEL SYSTEM PRESSURE

CAUTION:

- **DISCHARGE FUEL SYSTEM PRESSURE** procedures must be performed before disconnecting any part of the fuel system.
- After performing the **DISCHARGE FUEL SYSTEM PRESSURE** procedures, pressure will remain in the fuel line. When disconnecting the fuel line, place a cloth or equivalent over fittings to reduce the risk of fuel spray.

- (a) Remove the circuit opening relay (Marking: C/OPN) from the instrument panel junction block.
- (b) Start the engine. After the engine has stopped, turn the ignition switch OFF.

HINT:

Possibly DTC P0171 (system too lean) will be set.

- (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 cable from the negative (-) battery terminal.
- (f) Install the circuit opening relay.

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

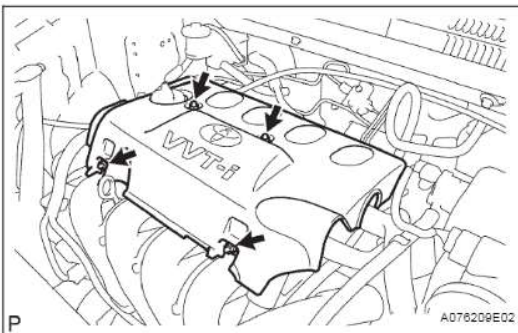
Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.

3. REMOVE NO. 2 CYLINDER HEAD COVER

- (a) Remove the 4 nuts and cover.

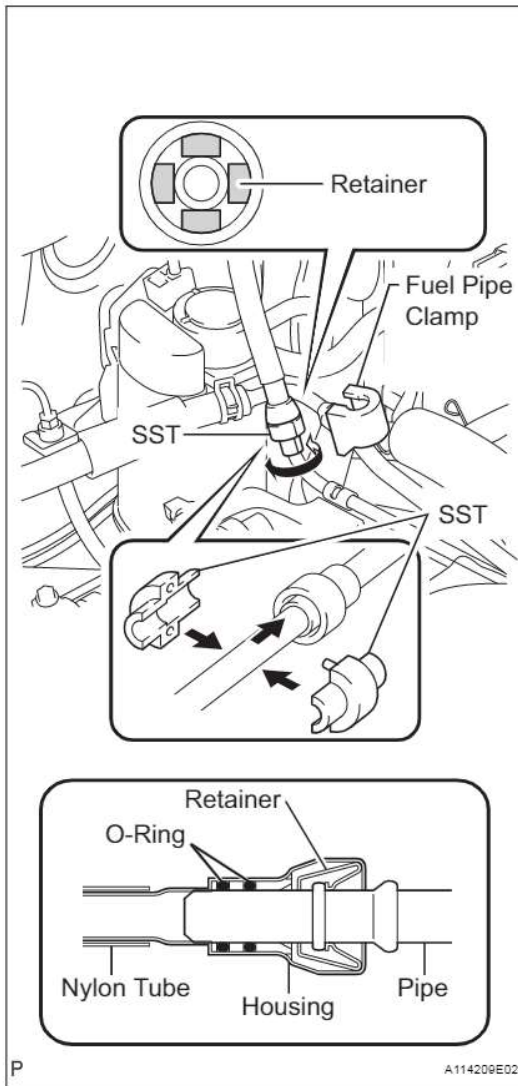
4. REMOVE IGNITION COIL (See page [IG-8](#))

5. REMOVE CYLINDER HEAD COVER SUB-ASSEMBLY (See page [EM-10](#))

**FU**

FU-12

1NZ-FE FUEL – FUEL INJECTOR



6. DISCONNECT FUEL TUBE SUB-ASSEMBLY

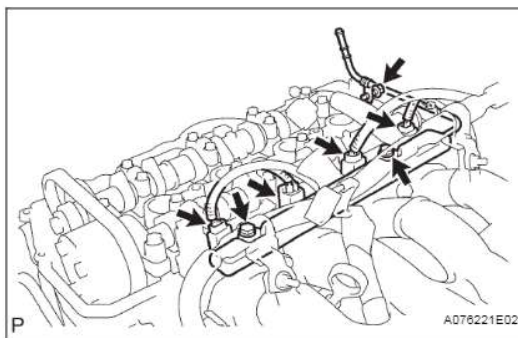
- (a) Remove the fuel pipe clamp.
- (b) Using SST, disconnect the fuel tube.

SST 09268-21010

- (1) Assemble SST onto the connection of the fuel tube as shown in the illustration.
- (2) Rotate SST, align the retainers inside the connector with SST chamfered parts, and insert SST into the connector.
- (3) Push SST and the connector together towards the fuel tube assembly.

NOTICE:

- Remove dirt or foreign objects in the connector before this work.
- Do not forcibly bend and twist the nylon tube.
- When the connector and pipe are stuck, push and pull the connector to release and disconnect the connector.
- Cover the disconnected pipe and connector with a plastic bag to prevent damage and keep out foreign matter.



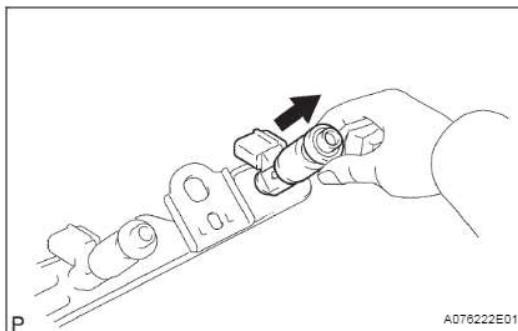
7. REMOVE FUEL PIPE DELIVERY SUB-ASSEMBLY

- (a) Disconnect the 4 fuel injector connectors.
- (b) Remove the 3 bolts and then remove the fuel delivery pipe with the 4 fuel injectors.

NOTICE:

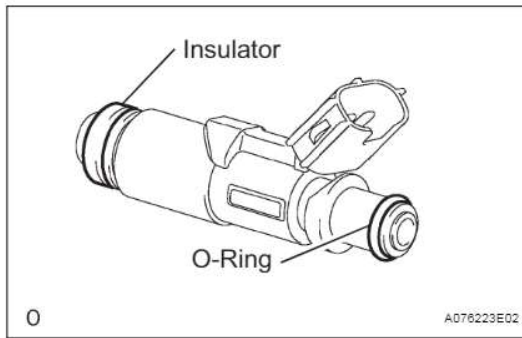
Be careful not to drop the fuel injectors when removing the fuel delivery pipe.

- (c) Remove the 2 spacers from the cylinder head.



8. REMOVE FUEL INJECTOR ASSEMBLY

- (a) Remove the 4 fuel injectors from the delivery pipe.

1NZ-FE FUEL – FUEL INJECTOR**FU-13**

(b) Remove the 4 O-rings and 4 insulators.

FU

FU-22

1NZ-FE FUEL – FUEL PUMP

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

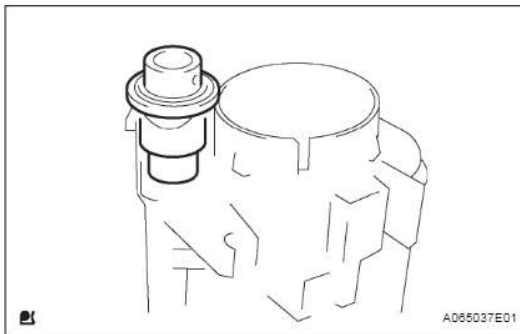
NOTICE:

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

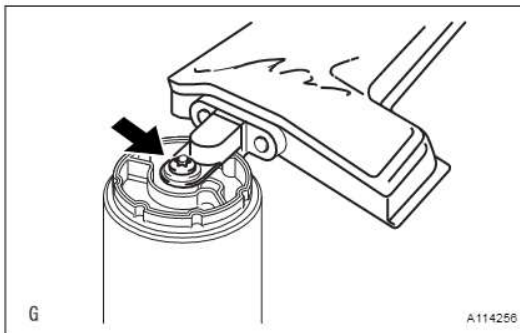
If the operation is not as specified, replace the fuel pump.

INSTALLATION**1. INSTALL FUEL PRESSURE REGULATOR ASSEMBLY**

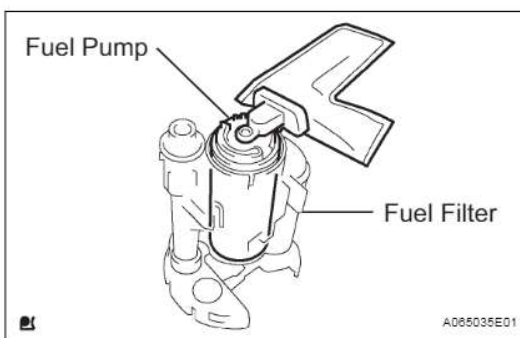
- (a) Apply a light coat of gasoline or grease to a new O-ring, and install it onto the fuel pressure regulator.
 (b) Push the fuel pressure regulator into the fuel filter.

**2. INSTALL FUEL PUMP FILTER**

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

**3. INSTALL FUEL PUMP**

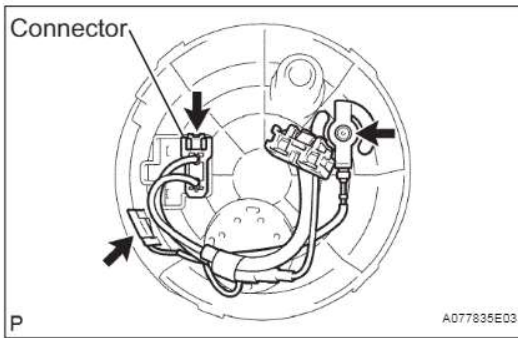
- (a) Install the fuel pump to the fuel filter.



FU

1NZ-FE FUEL – FUEL PUMP

FU-23

**4. CONNECT FUEL PUMP HARNESS**

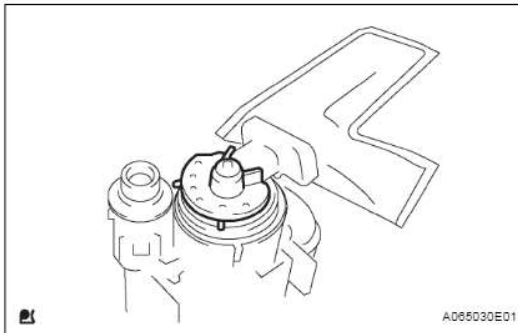
- (a) Connect the fuel pump harness.
- (b) Connect the connector.

5. INSTALL FUEL SUCTION PLATE SUB-ASSEMBLY

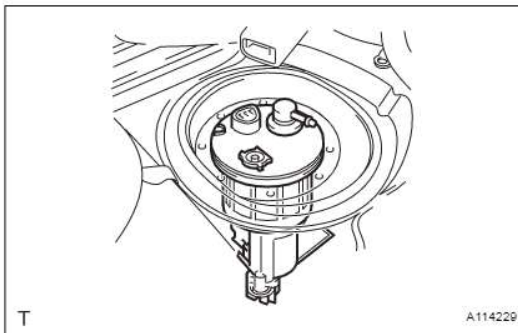
- (a) Attach the 4 snap claws to the claw holes.
- (b) Connect the fuel pump connector.

6. INSTALL FUEL SENDER GAUGE ASSEMBLY

- (a) Install the sender gauge to the fuel pump.
- (b) Connect the fuel sender gauge connector.

**7. INSTALL FUEL PUMP CUSHION RUBBER****8. INSTALL NO. 2 FUEL SUCTION SUPPORT**

- (a) Attach the 5 snap claws to the claw hoses and install the fuel suction support.

**9. INSTALL FUEL PUMP ASSEMBLY WITH FUEL SENDER GAUGE ASSEMBLY**

- (a) Install a new gasket onto the fuel pump with fuel sender gauge.
- (b) Install the fuel pump with fuel sender gauge onto the fuel tank.

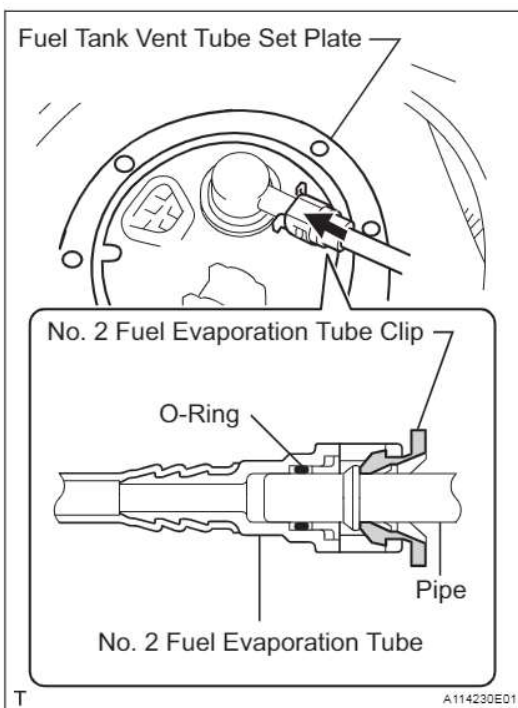
10. CONNECT NO. 2 FUEL EVAPORATION TUBE SUB-ASSEMBLY

- (a) Set the fuel tank vent tube set plate on the fuel tank.

- (b) Push the No. 2 fuel evaporation tube onto the pipe until the No. 2 fuel evaporation tube makes a "click" sound.

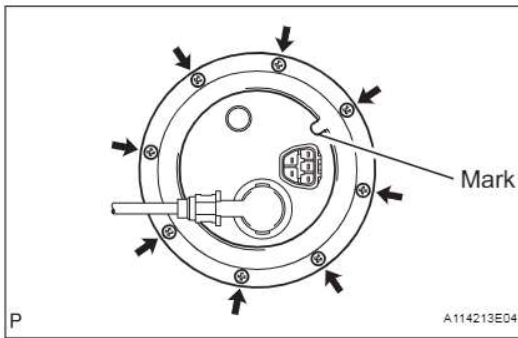
NOTICE:

- Check the connected part for damage or foreign objects.
- After connecting, check if the No. 2 fuel evaporation tube and pipe are securely connected by pulling in them.



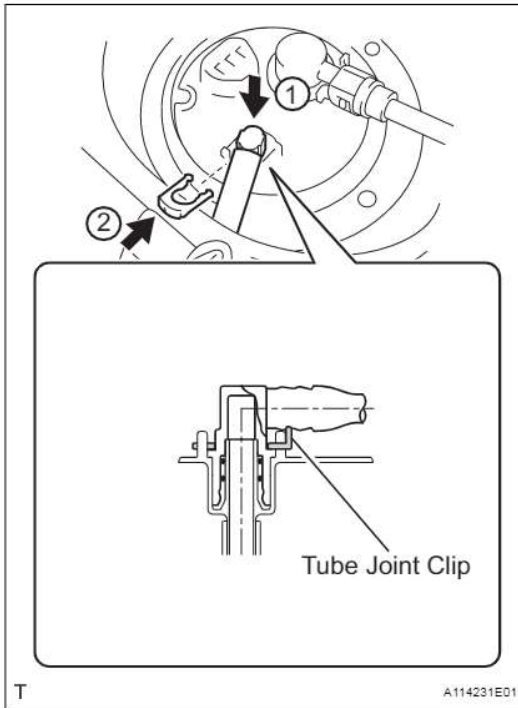
FU-24

1NZ-FE FUEL – FUEL PUMP

**11. INSTALL FUEL TANK VENT TUBE SET PLATE BOLT**

- (a) Align the marks of the fuel tank vent tube set plate and fuel pump with fuel sender gauge.
- (b) Install the fuel tank vent tube set plate with the 8 bolts.

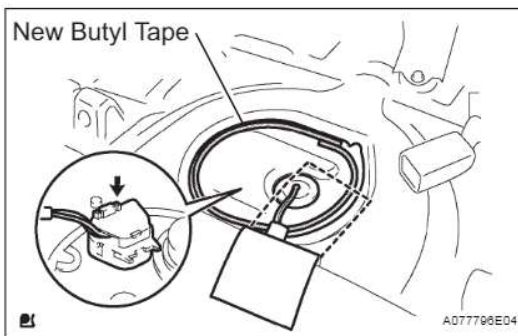
Torque: 3.5 N*m (36 kgf*cm, 31 in.*lbf)

**12. CONNECT FUEL PUMP TUBE SUB-ASSEMBLY**

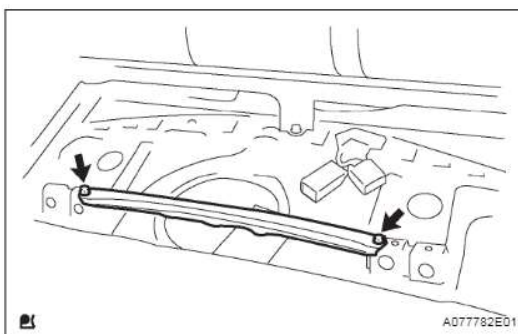
- (a) Install the fuel pump tube with the tube joint clip.

NOTICE:

- Check that there are no scratches or foreign objects on the connected part.
- Check that the fuel tube joint is inserted securely.
- Check that the tube joint clip is on the collar of the fuel tube joint.
- After installing the tube joint clip, check that the fuel tube joint is not pulled off.

13. CONNECT FUEL PUMP CONNECTOR**14. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL****15. CHECK FOR FUEL LEAKS (See page [FU-8](#))****16. INSTALL REAR FLOOR SERVICE HOLE COVER**

- (a) Using new butyl tape, install the rear floor service hole cover.

**17. INSTALL REAR SEAT CUSHION SUPPORT BRACKET**

- (a) Install the bracket with the 2 bolts.

Torque: 5.0 N*m (51 kgf*cm, 44 in.*lbf)

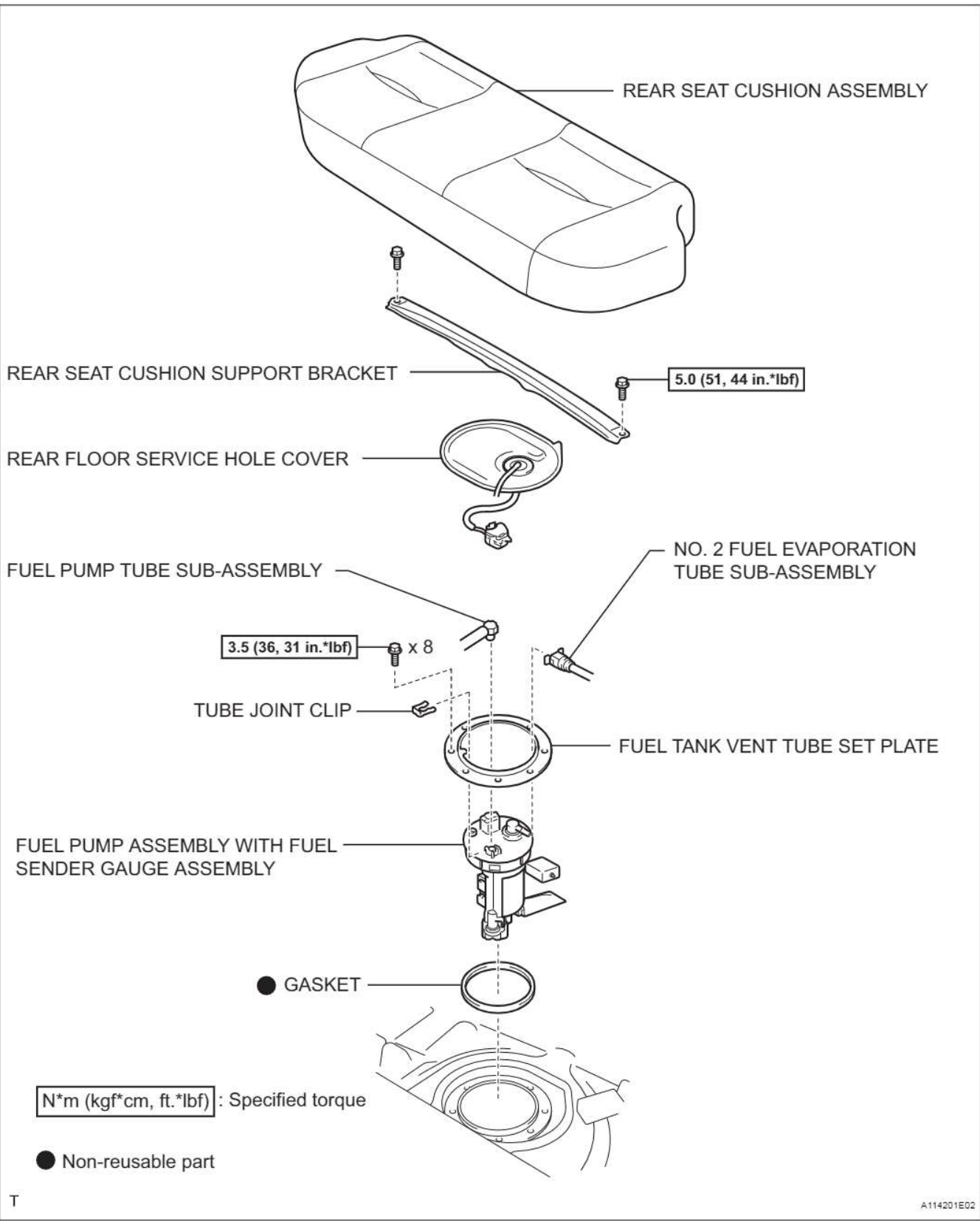
18. INSTALL REAR SEAT CUSHION ASSEMBLY (See page [SE-27](#))

FU-16

1NZ-FE FUEL – FUEL PUMP

FUEL PUMP
COMPONENTS

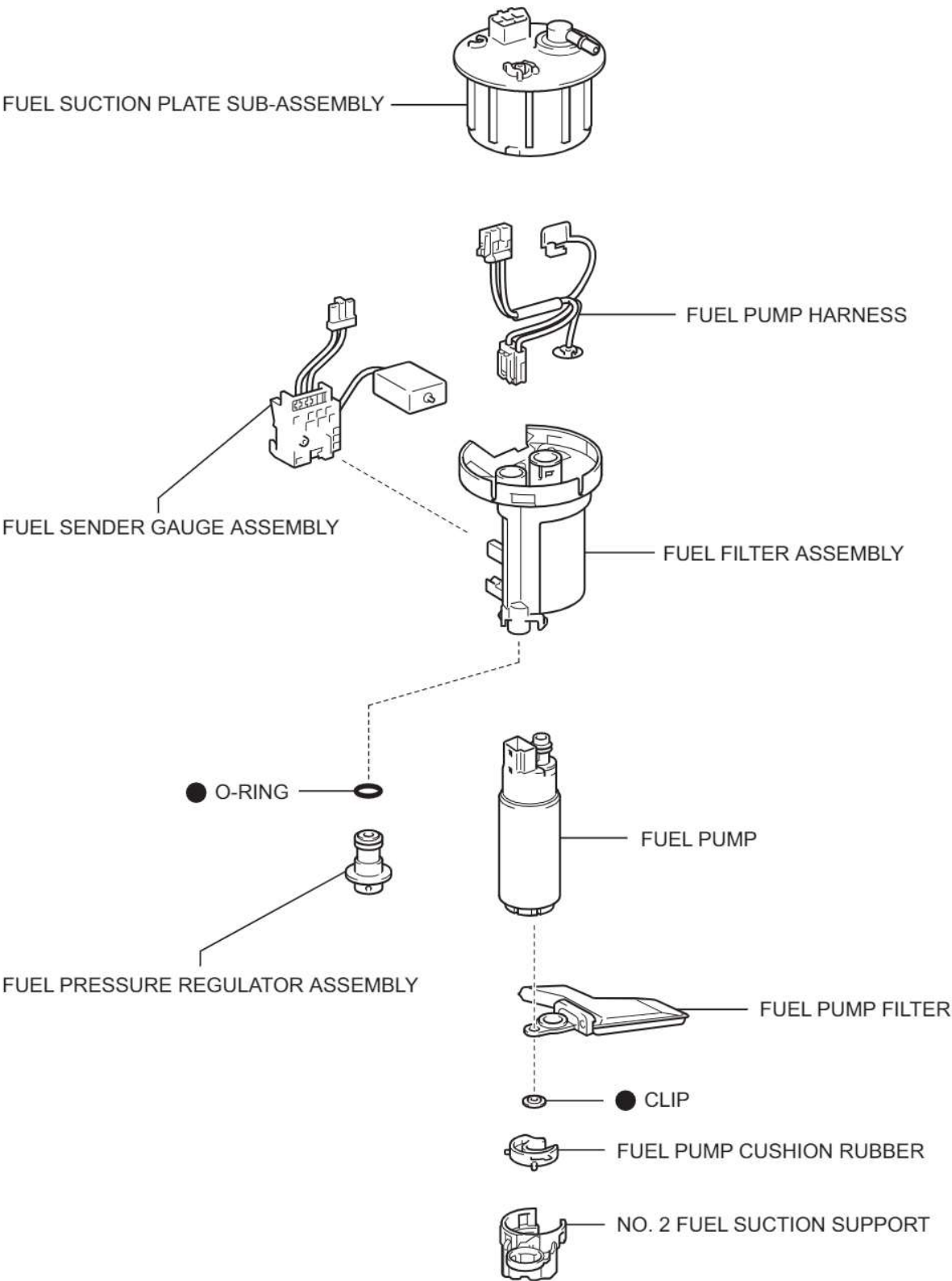
FU



1NZ-FE FUEL – FUEL PUMP

FU-17

FU



● Non-reusable part

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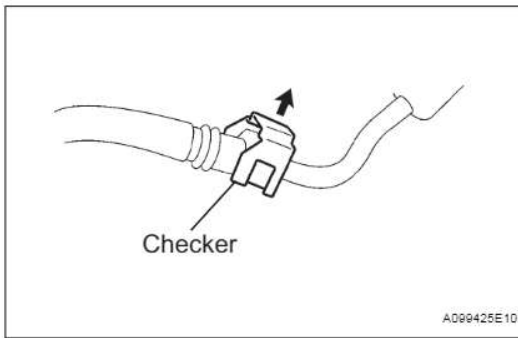
REMOVAL

1. **DISCHARGE FUEL SYSTEM PRESSURE** (See page [FU-11](#))
2. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
CAUTION:
Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.
3. **REMOVE REAR SEAT CUSHION ASSEMBLY** (See page [SE-22](#))
4. **REMOVE REAR SEAT CUSHION SUPPORT BRACKET** (See page [FU-18](#))
5. **REMOVE REAR FLOOR SERVICE HOLE COVER** (See page [FU-18](#))
6. **REMOVE FUEL PUMP TUBE SUB-ASSEMBLY** (See page [FU-19](#))
7. **REMOVE NO. 2 FUEL EVAPORATION TUBE SUB-ASSEMBLY** (See page [FU-19](#))
8. **REMOVE EXHAUST PIPE ASSEMBLY**
 - (a) Remove the exhaust pipe assembly (see page [EX-3](#)).
9. **DRAIN FUEL**
10. **DISCONNECT NO. 2 PARKING BRAKE CABLE ASSEMBLY**
 - (a) Remove the 2 bolts and disconnect the cable clamp as shown in illustration A below.
11. **DISCONNECT NO. 3 PARKING BRAKE CABLE ASSEMBLY**
 - (a) Remove the 2 bolts and disconnect the cable clamp as shown in illustration B below.
12. **REMOVE NO. 1 FUEL TANK PROTECTOR**
 - (a) Remove the 2 clips, fuel tank protector bracket and protector as shown in illustration G below.
13. **REMOVE FUEL TANK ASSEMBLY**
 - (a) Disconnect the fuel tank to filler pipe hose from the fuel tank as shown in illustration C below.
 - (b) Disconnect the fuel vapor hose from the fuel tank as shown in illustration C below.
 - (c) Disconnect the fuel tank vent hose from the canister as shown in illustration D below.
HINT:
Pull up the retainer and pull out the vent hose.

FU

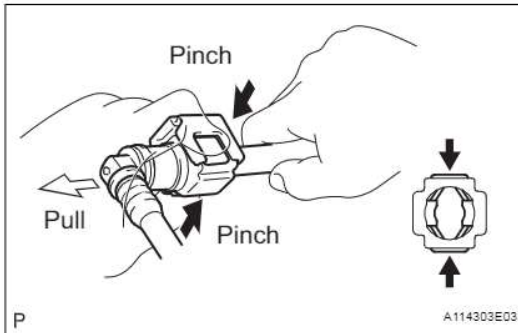
FU-32

1NZ-FE FUEL – FUEL TANK



(d) Disconnect the fuel pump tube as shown in illustration E below.

- (1) Disengage the lock claw by lifting up the checker, as shown in the illustration.

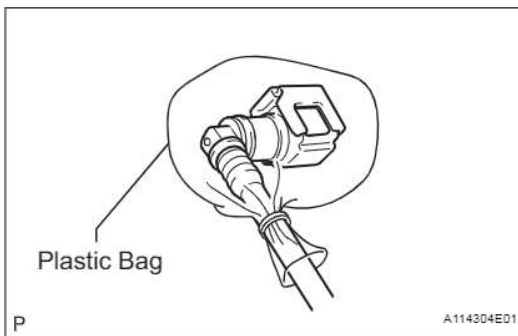


- (2) Check for dirt or mud on the pipe and around the connector before disconnection. Clean as necessary.
- (3) Disconnect the connector and pipe by hand.
- (4) If the connector and the pipe are stuck, pinch the connector, and push and pull the pipe to disconnect it.

NOTICE:

Do not use any tools.

- (5) Check for dirt or mud on the seal surface of the disconnected pipe. Clean as necessary.
- (6) To protect the disconnected pipe and connector from damage and contamination, cover it with a plastic bag.



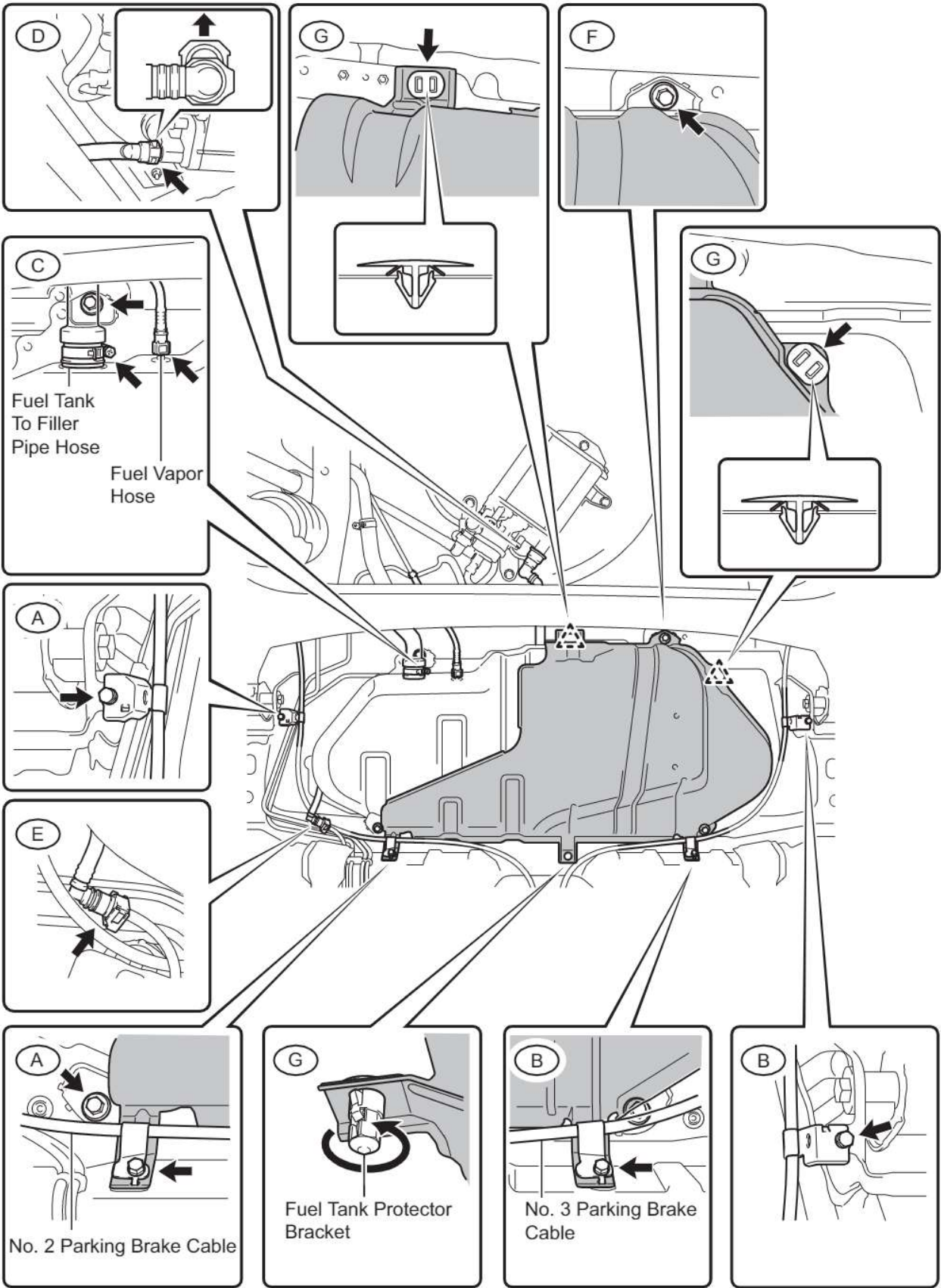
1NZ-FE FUEL – FUEL TANK**FU-33**

-
- (e) Remove the 4 bolts and fuel tank as shown in illustration A, B, C and F below.

FU

FU-34

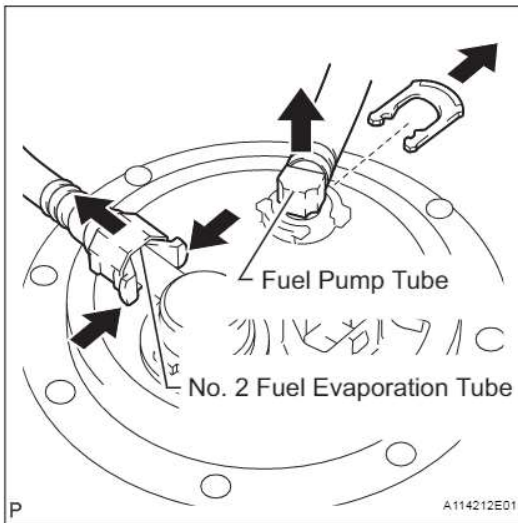
1NZ-FE FUEL – FUEL TANK



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1NZ-FE FUEL – FUEL TANK

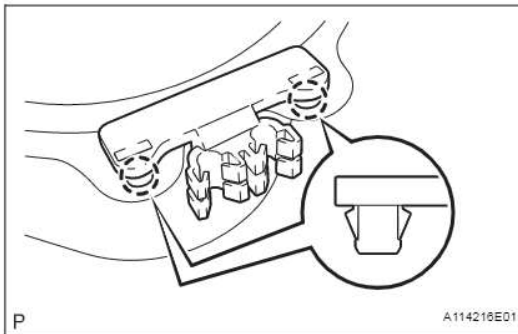
FU-35

**14. REMOVE FUEL PUMP TUBE SUB-ASSEMBLY**

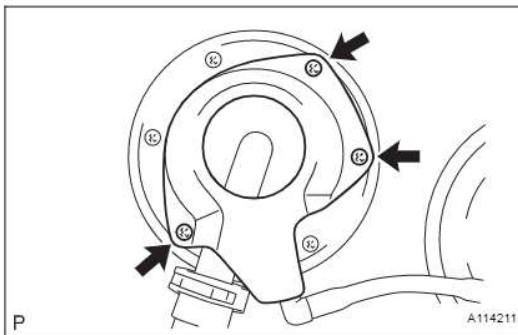
- (a) Remove the tube joint clip, and then pull out the pump tube (see page [FU-19](#)).

15. REMOVE NO. 2 FUEL EVAPORATION TUBE SUB-ASSEMBLY

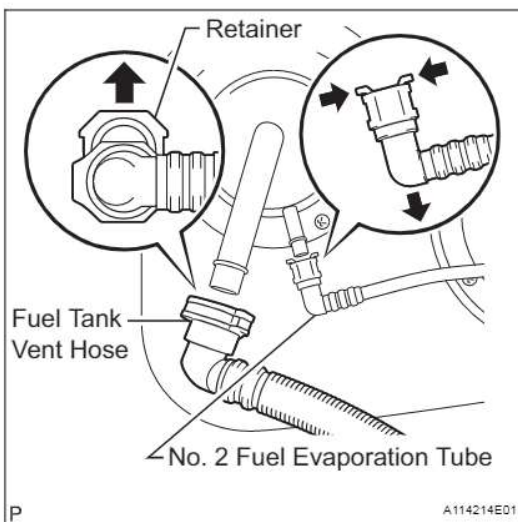
- (a) Pinch the No. 2 fuel evaporation tube clip, and then pull out the No. 2 fuel evaporation tube (see page [FU-19](#)).

**16. REMOVE NO. 3 FUEL TUBE CLAMP**

- (a) Detach the 2 claws and remove the clamp.

**17. REMOVE CHECK VALVE PROTECTOR**

- (a) Remove the 3 bolts and protector.

**18. REMOVE NO. 2 FUEL EVAPORATION TUBE SUB-ASSEMBLY**

- (a) Pinch the tube connector clip, and then pull out the evaporation tube.

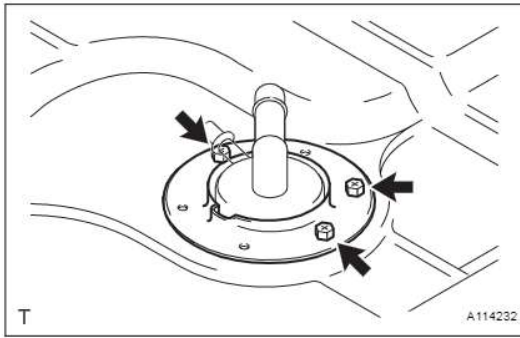
19. REMOVE FUEL TANK VENT HOSE

- (a) Pull up the retainer and pull out the vent hose.

FU

FU-36

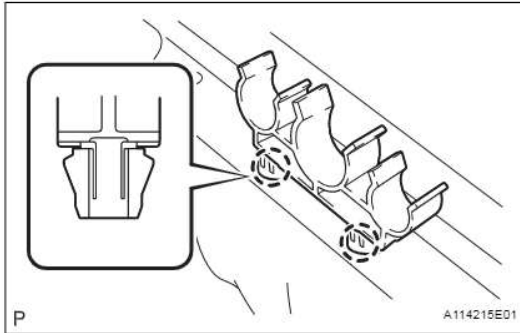
1NZ-FE FUEL – FUEL TANK

**20. REMOVE CHECK VALVE SUPPORT**

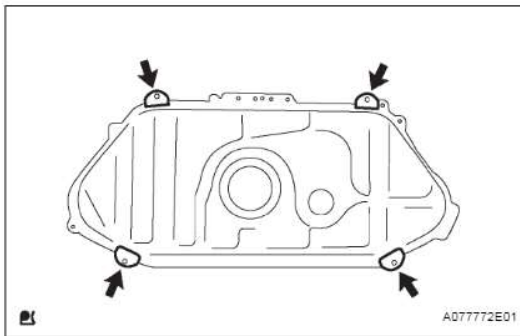
- (a) Remove the 3 bolts and valve support.

21. REMOVE FUEL TANK INLET VALVE ASSEMBLY

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

**22. REMOVE NO. 1 FUEL TUBE CLAMP**

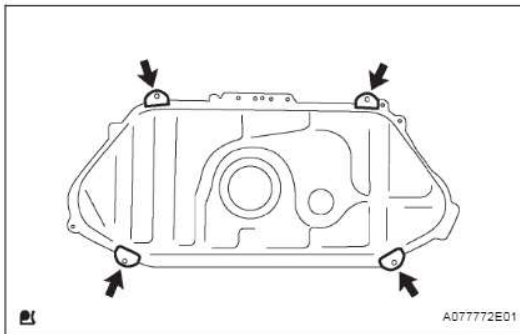
- (a) Detach the 2 claws and remove the clamp.

**23. REMOVE FUEL TANK SIDE PLATE**

- (a) Remove the side 4 plates from the fuel tank.

24. REMOVE FUEL TANK TO FILLER PIPE HOSE

- (a) Loosen the clamp.
(b) Remove the hose from the fuel tank inlet pipe.

**INSTALLATION****1. INSTALL FUEL TANK SIDE PLATE**

- (a) Install the side 4 plates to the fuel tank.

2. INSTALL NO. 1 FUEL TUBE CLAMP

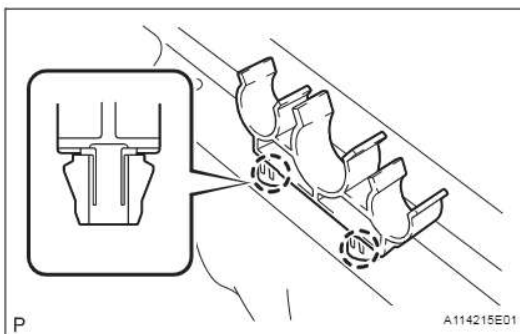
- (a) Attach the clamp to the fuel tank.

3. INSTALL FUEL TANK INLET VALVE ASSEMBLY

- (a) Install a new gasket and the inlet valve to the fuel tank.

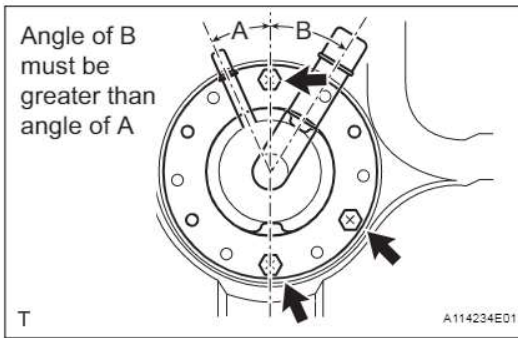
NOTICE:

When removing or installing the fuel tank inlet valve, be careful as it is made from resin and will be easily damaged.



1NZ-FE FUEL – FUEL TANK

FU-37

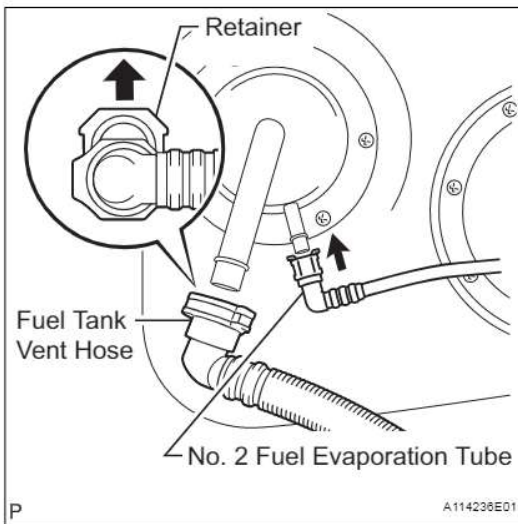
**4. INSTALL CHECK VALVE SUPPORT**

- (a) Install the valve support with the 3 bolts as shown in the illustration.

Torque: 3.5 N*m (36 kgf*cm, 31 in.*lbf)

HINT:

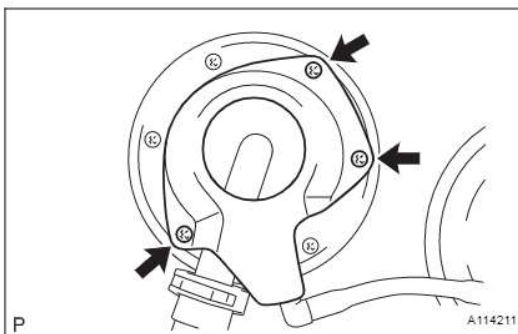
- Angle of A: Approximately 20°
- Angle of B: Approximately 25°

**5. INSTALL FUEL TANK VENT HOSE**

- (a) Pull up the retainer and install the vent hose.
(b) Connect the retainer.

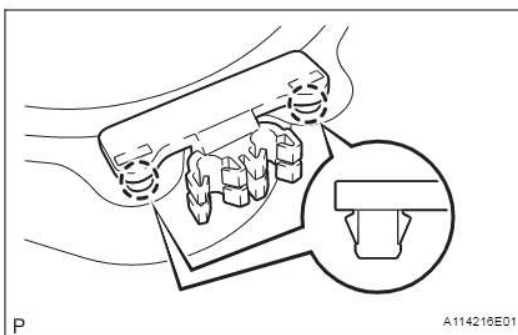
6. INSTALL NO. 2 FUEL EVAPORATION TUBE SUB-ASSEMBLY

- (a) Install the No. 2 fuel evaporation tube.

**7. INSTALL CHECK VALVE PROTECTOR**

- (a) Install the protector with the 3 bolts.

Torque: 3.5 N*m (36 kgf*cm, 31 in.*lbf)

**8. INSTALL NO. 3 FUEL TUBE CLAMP**

- (a) Attach the clamp to the fuel tank.

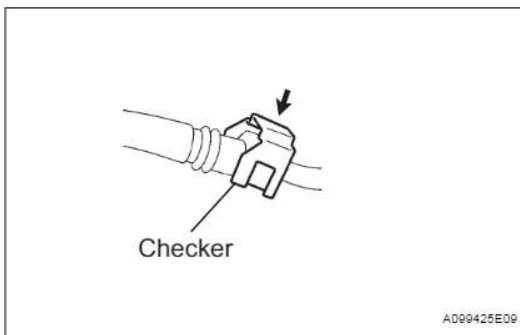
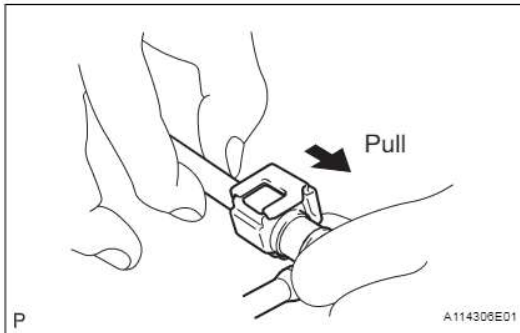
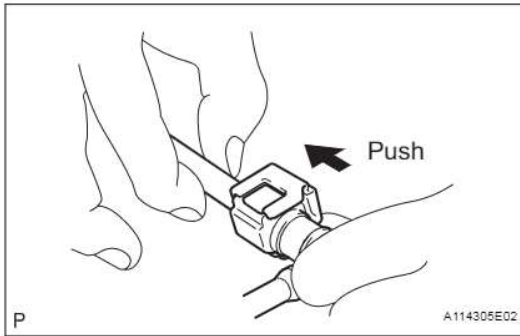
9. INSTALL FUEL PUMP ASSEMBLY WITH FUEL SENDER GAUGE ASSEMBLY (See page FU-23)**10. CONNECT NO. 2 FUEL EVAPORATION TUBE SUB-ASSEMBLY (See page FU-23)****11. INSTALL FUEL TANK VENT TUBE SET PLATE BOLT (See page FU-24)****12. CONNECT FUEL PUMP TUBE SUB-ASSEMBLY (See page FU-24)****13. INSTALL FUEL TANK ASSEMBLY**

- (a) Install the fuel tank with the 4 bolts as shown in A, B, C and F in the illustration below.

Torque: 14.3 N*m (146 kgf*cm, 11 ft.*lbf)

FU-38

1NZ-FE FUEL – FUEL TANK

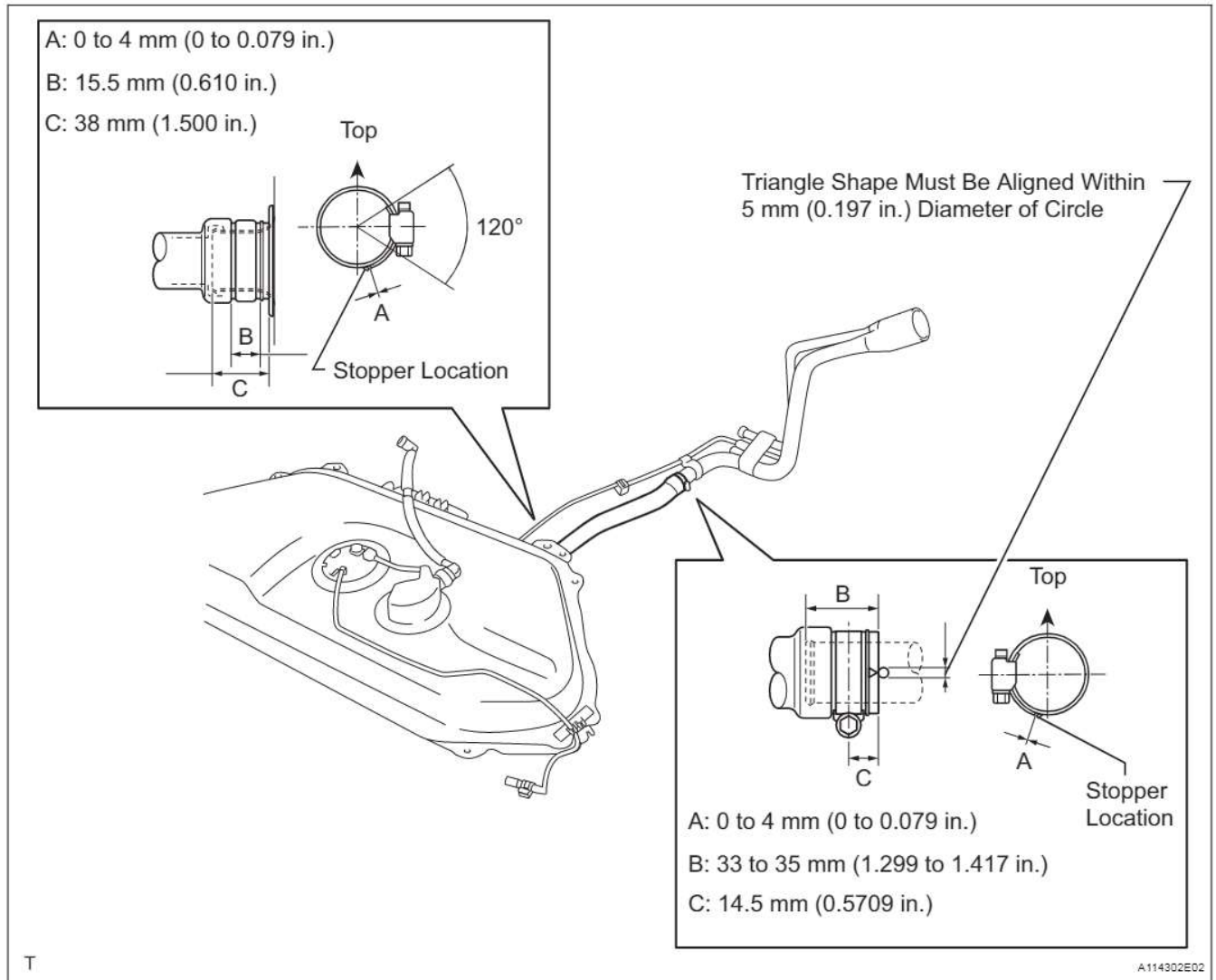


- (b) Connect the fuel pump tube as shown in illustration E below.
- (1) Check that there is no damage or contamination in the connected part of the pipe.
 - (2) Align the axis of the connector with the axis of the pipe, and push the pipe into the connector until the connector makes a "click" sound. If the connection is tight, apply a small amount of fresh engine oil to the tip of the pipe.
 - (3) After having finished the connection, try to pull apart the pipe and the connector, and confirm that they are securely connected.
 - (4) Attach the lock claws to the connector by pushing down on the checker, as shown in the illustration.
- (c) Connect the fuel tank vent hose to the canister as shown in illustration D below.
- HINT:
Pull up the retainer and install the vent hose, and then connect the retainer.
- (d) Connect the fuel vapor hose to the fuel tank as shown in illustration C below.

1NZ-FE FUEL – FUEL TANK

FU-39

- (e) Connect a new fuel tank to filler pipe hose to the fuel tank and fuel inlet pipe as shown in illustration C below.
- (1) Tighten the 2 clamps of the fuel tank to filler pipe hose as shown in the illustration.

**14. INSTALL NO. 1 FUEL TANK PROTECTOR**

- (a) Install the protector with the 2 clamps and fuel tank protector bracket as shown in illustration G below.

15. CONNECT NO. 3 PARKING BRAKE CABLE ASSEMBLY

- (a) Connect the 2 cable clamps with the 2 bolts as shown in illustration B below.
Torque: 5.4 N*m (55 kgf*cm, 48 in.*lbf)

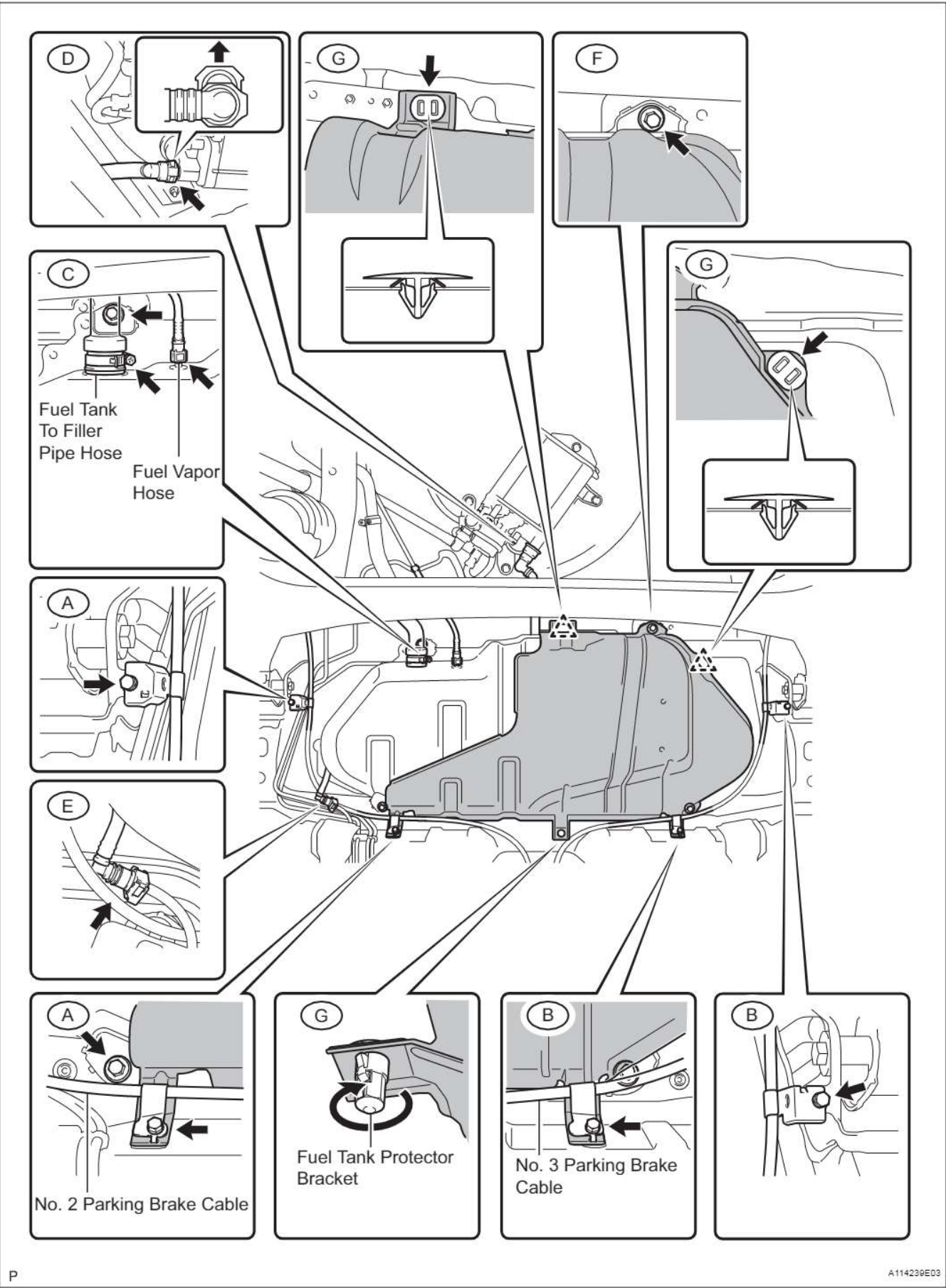
16. CONNECT NO. 2 PARKING BRAKE CABLE ASSEMBLY

- (a) Connect the 2 cable clamps with the 2 bolts as shown in illustration A below.
Torque: 5.4 N*m (55 kgf*cm, 48 in.*lbf)

FU-40

1NZ-FE FUEL – FUEL TANK

FU

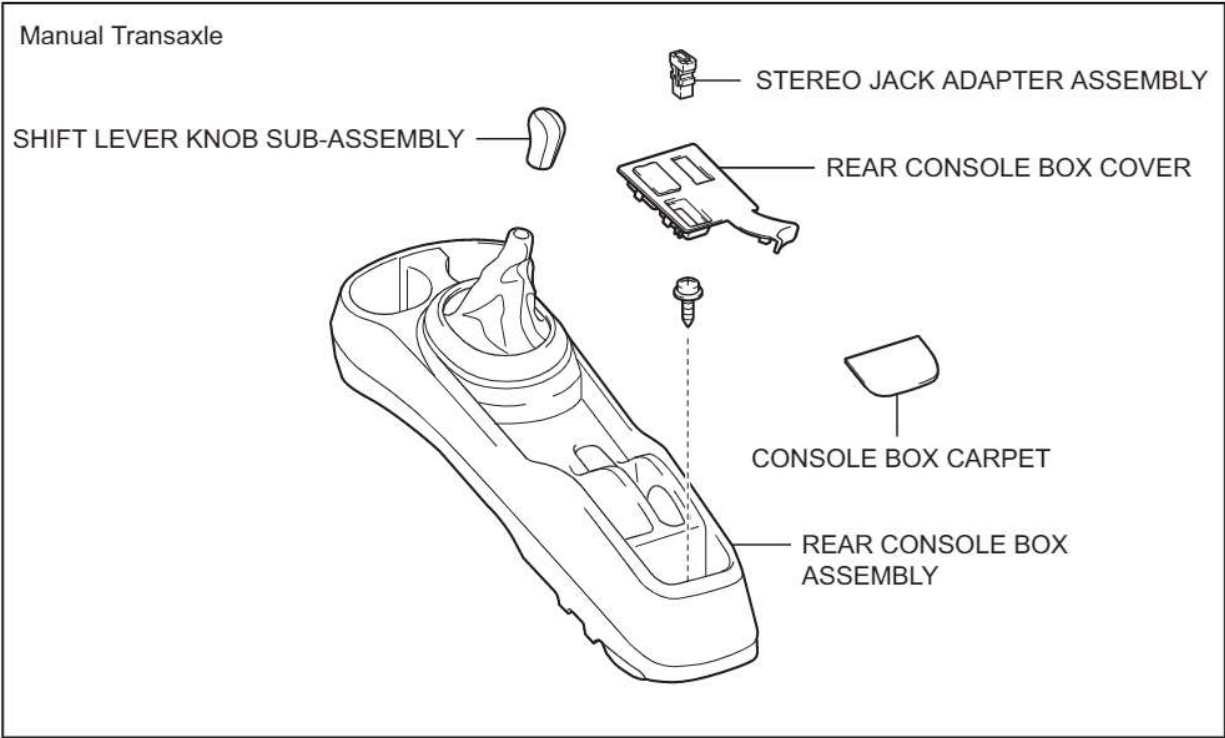
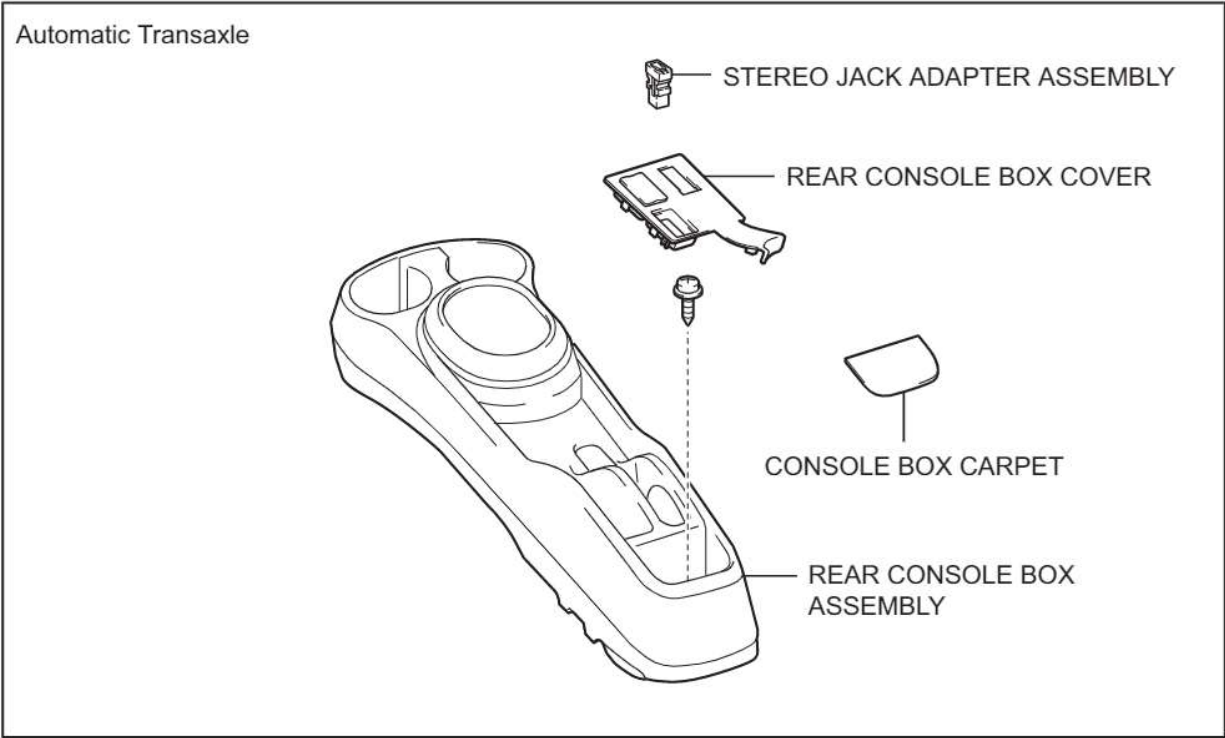


17. **INSTALL EXHAUST PIPE ASSEMBLY**
 - (a) Install the exhaust pipe (see page [EX-5](#)).
18. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**
19. **ADD FUEL**
20. **CHECK FOR FUEL LEAKS** (See page [FU-8](#))
21. **INSTALL REAR FLOOR SERVICE HOLE COVER** (See page [FU-24](#))
22. **INSTALL REAR SEAT CUSHION SUPPORT BRACKET SUB-ASSEMBLY** (See page [FU-24](#))
23. **INSTALL REAR SEAT CUSHION ASSEMBLY** (See page [SE-27](#))
24. **CHECK FOR EXHAUST GAS LEAKS**

FU

FUEL TANK

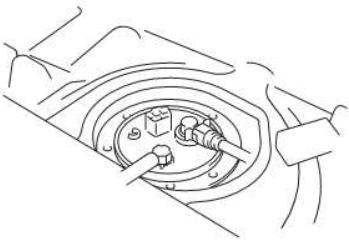
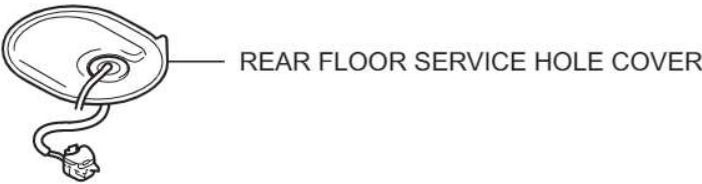
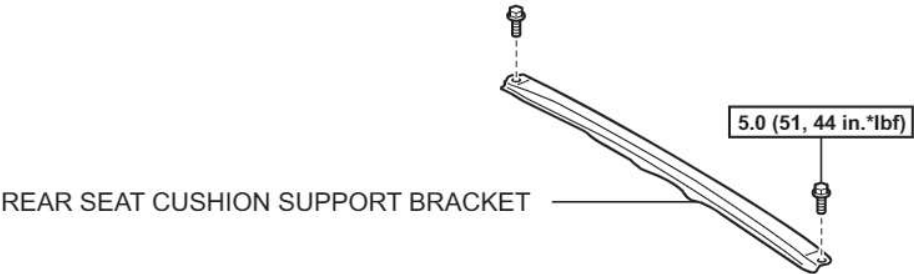
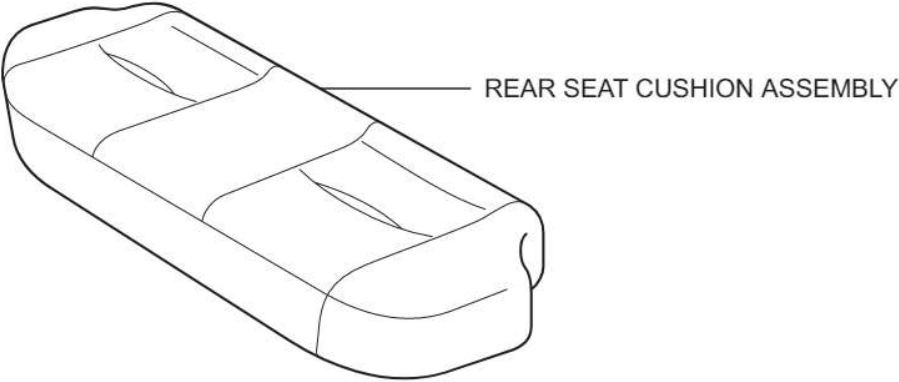
COMPONENTS



FU-26

1NZ-FE FUEL – FUEL TANK

FU



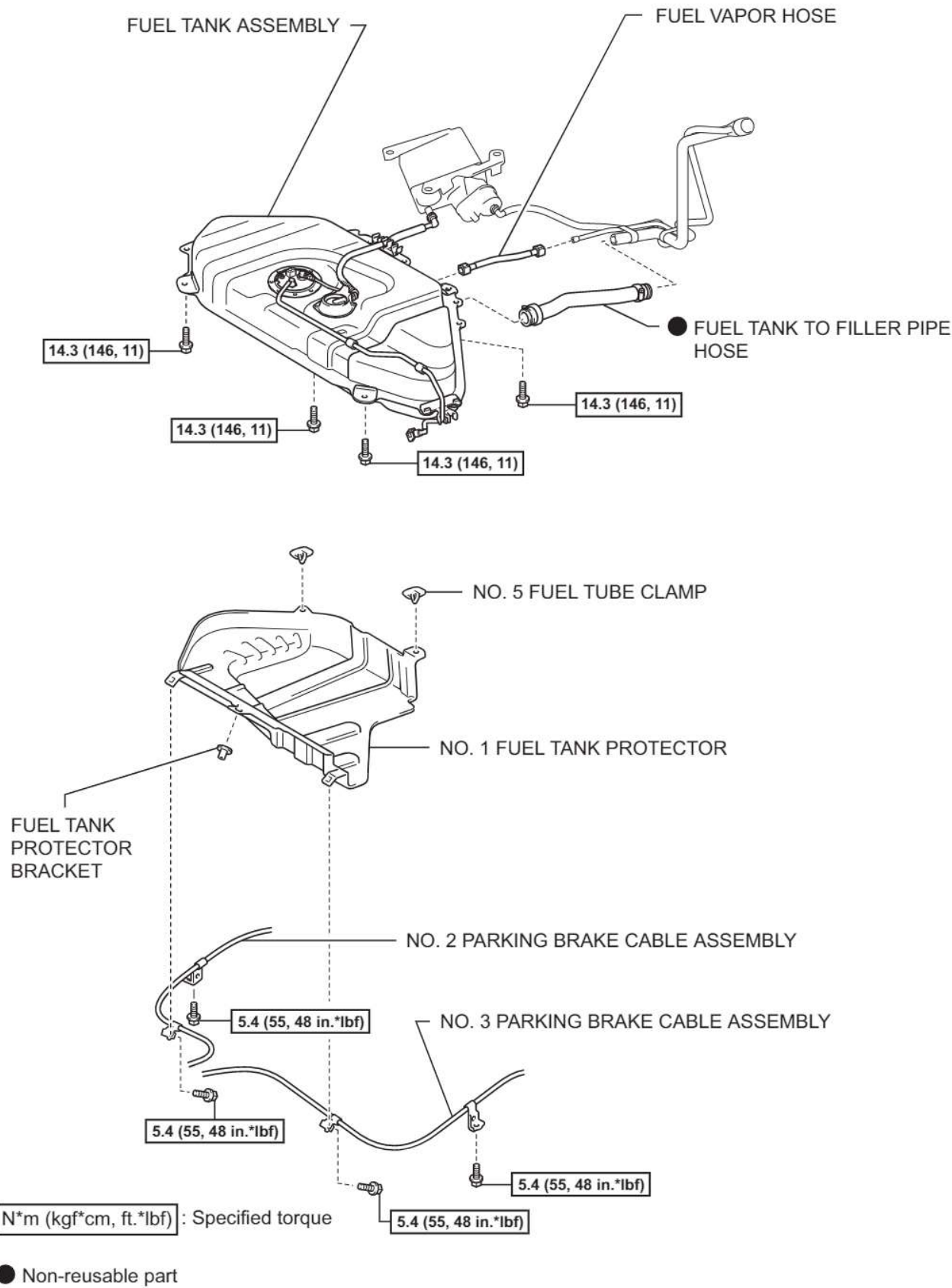
N*m (kgf*cm, ft.*lbf) : Specified torque

T

A114204E02

1NZ-FE FUEL – FUEL TANK

FU



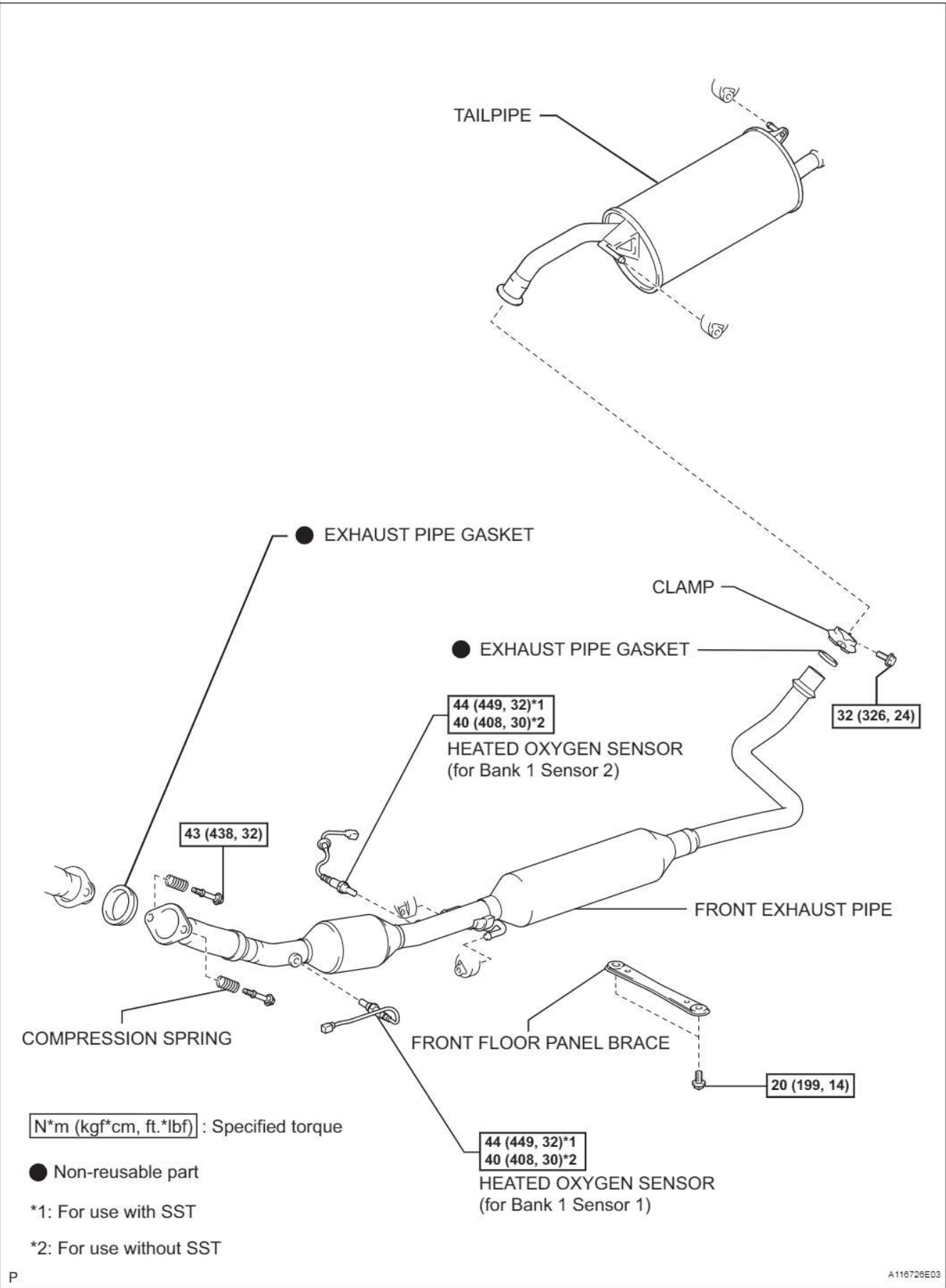
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FU-28

1NZ-FE FUEL – FUEL TANK

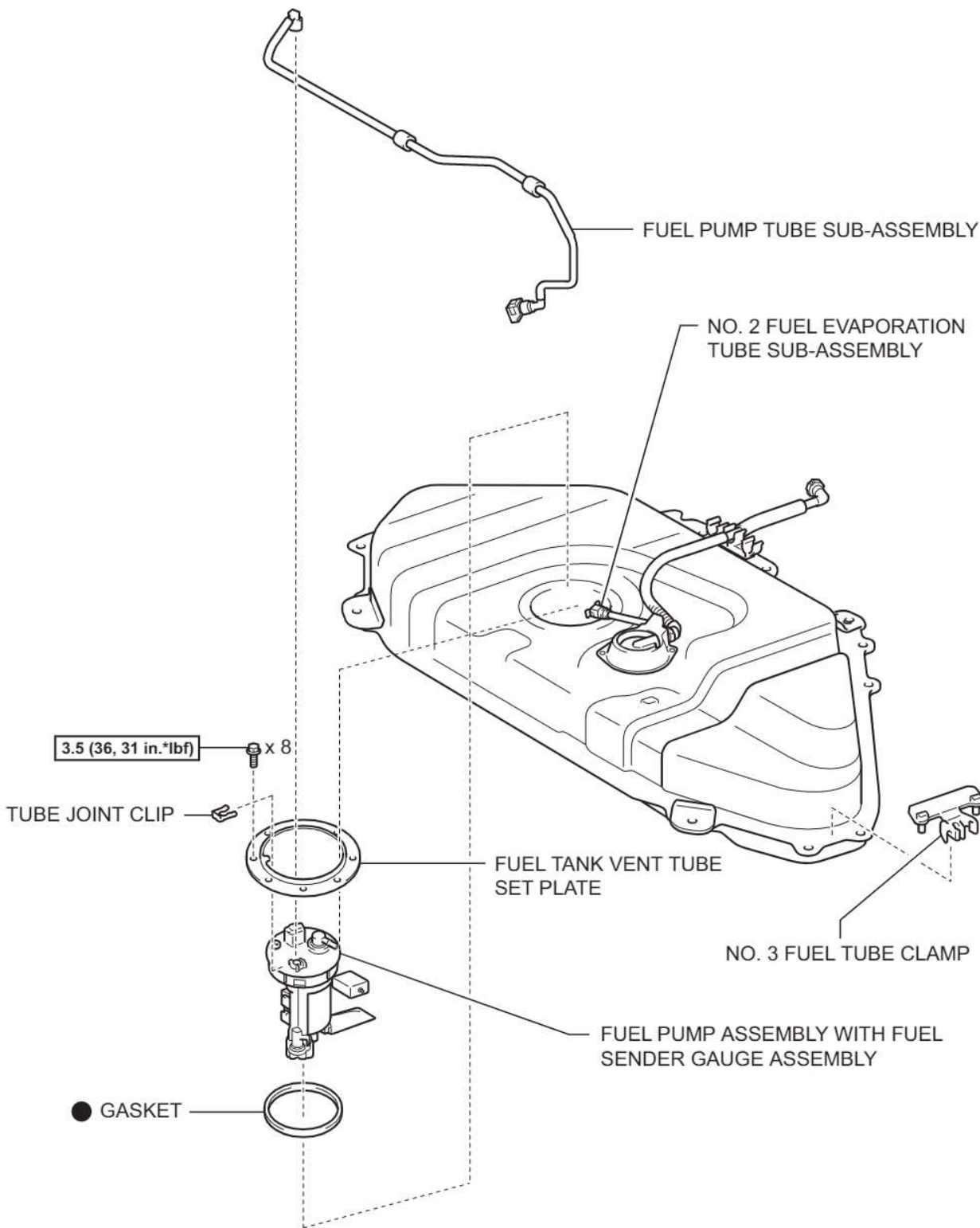
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1NZ-FE FUEL – FUEL TANK

FU-29

FU



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

● Non-reusable part

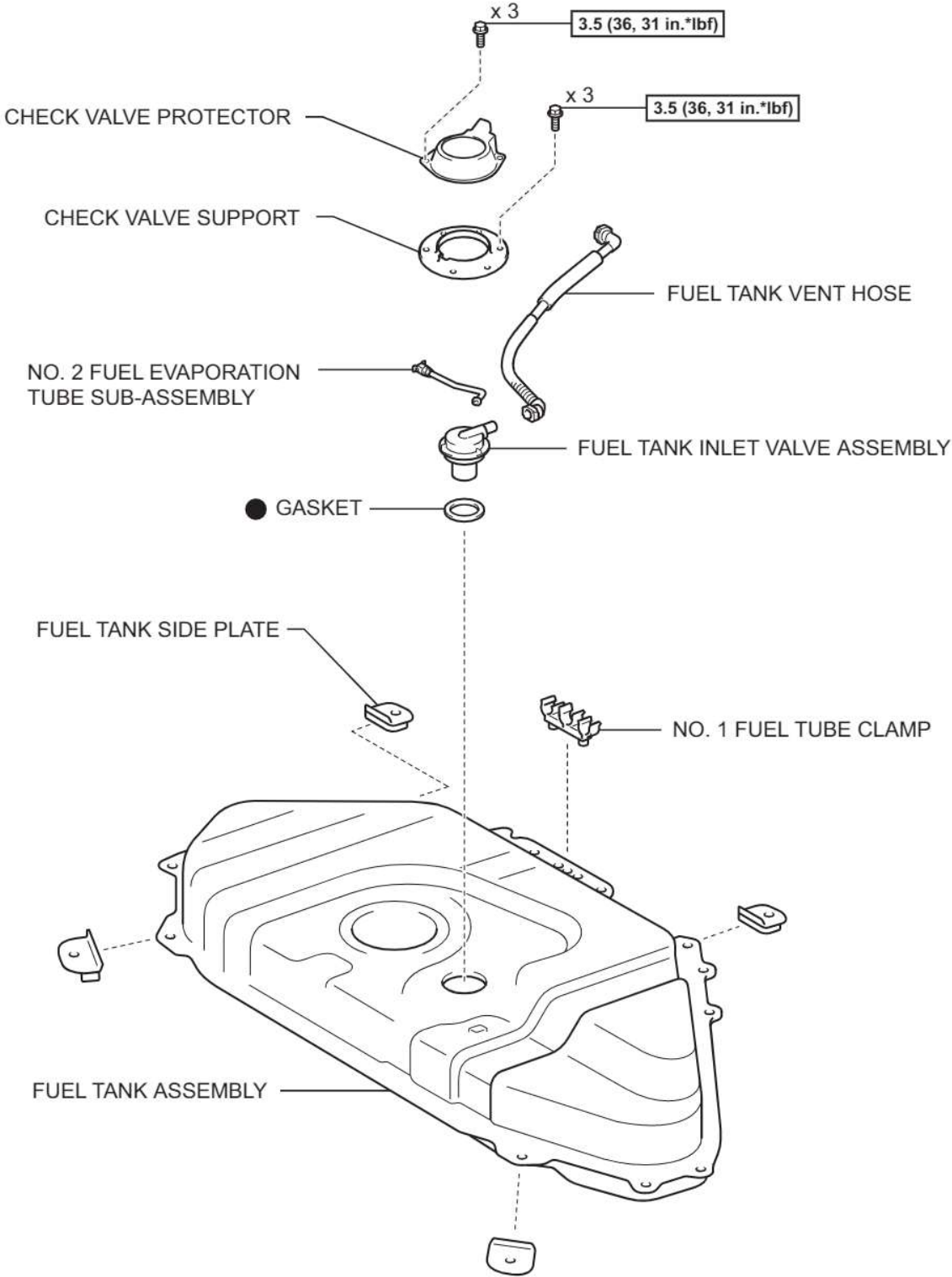
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A114210E02

FU-30

1NZ-FE FUEL – FUEL TANK

FU



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

● Non-reusable part