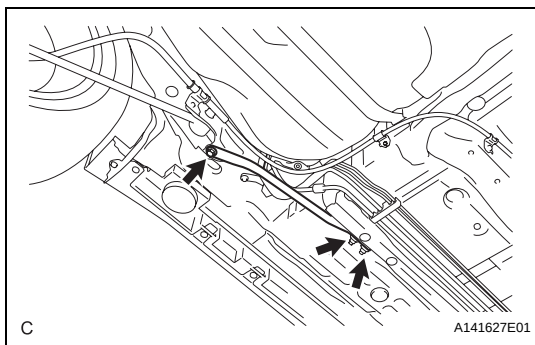
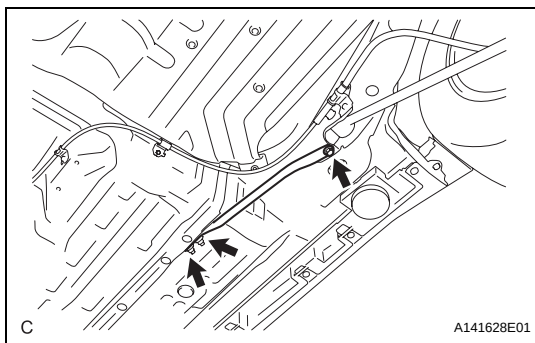
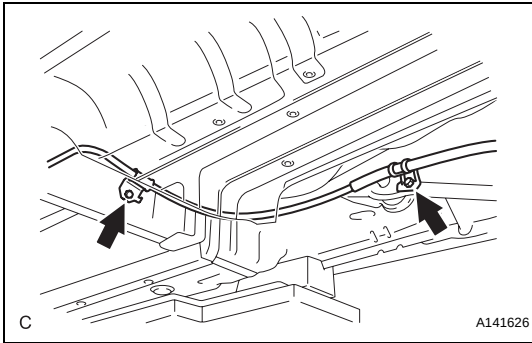


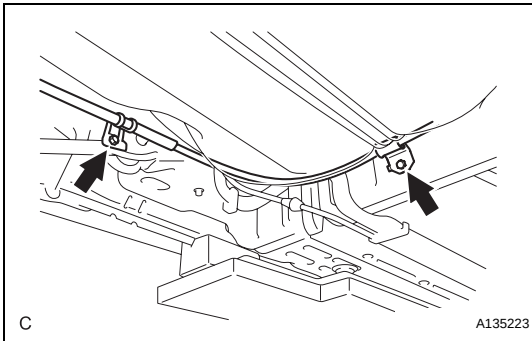
REMOVAL

1. **DISCHARGE FUEL SYSTEM PRESSURE**
HINT:
See page [FU-1](#).
2. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
3. **REMOVE REAR SEAT CUSHION ASSEMBLY** (See page [SE-113](#))
4. **REMOVE REAR FLOOR SERVICE HOLE COVER** (See page [FU-26](#))
5. **SEPARATE FUEL PUMP TUBE SUB-ASSEMBLY** (See page [FU-26](#))
6. **REMOVE FUEL TANK VENT TUBE SET PLATE** (See page [FU-26](#))
7. **REMOVE FUEL SUCTION TUBE ASSEMBLY WITH PUMP AND GAUGE** (See page [FU-27](#))
8. **DRAIN FUEL**
9. **REMOVE CENTER EXHAUST PIPE ASSEMBLY**
See page [EX-2](#)
10. **REMOVE FRONT FLOOR BRACE RH**
 - (a) Remove the bolt and 2 nuts, and remove the front floor brace RH.
11. **REMOVE FRONT FLOOR BRACE LH**
 - (a) Remove the bolt and 2 nuts, and remove the front floor brace LH.

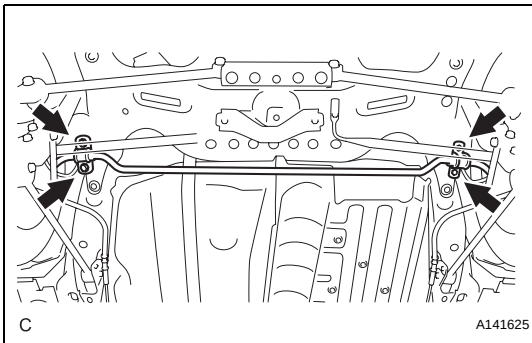


**12. DISCONNECT NO. 2 PARKING BRAKE CABLE ASSEMBLY**

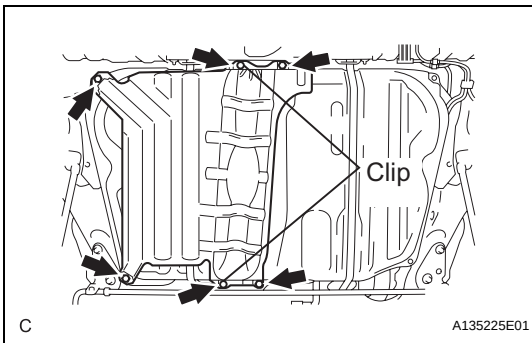
- (a) Remove the set bolt and set nut of the No. 2 parking brake cable assembly.

**13. DISCONNECT NO. 3 PARKING BRAKE CABLE ASSEMBLY**

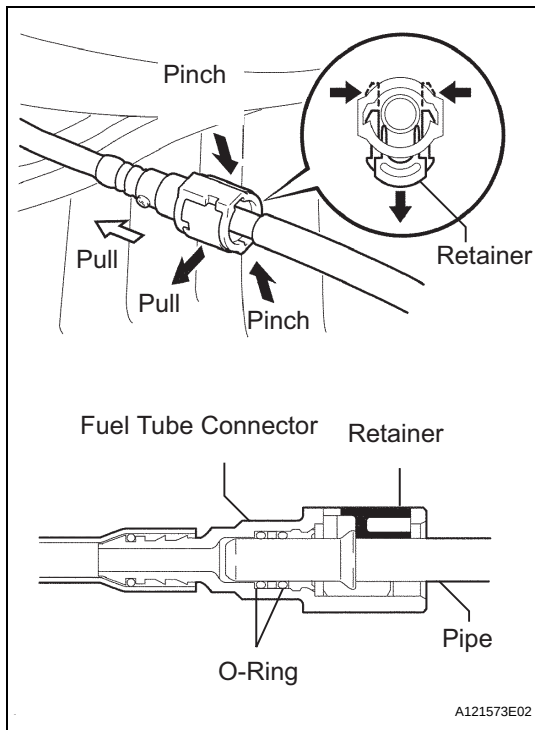
- (a) Remove the set bolt and set nut of the No. 3 parking brake cable assembly.

**14. REMOVE REAR STABILIZER BAR NO. 1 BRACKET**

- (a) Remove the 4 bolts and 2 rear stabilizer bar No. 1 brackets.

**15. REMOVE FUEL TANK PROTECTOR LOWER CENTER**

- (a) Remove the 4 bolts and 2 clips.
(b) Remove the fuel tank protector.



16. REMOVE FUEL TANK ASSEMBLY

(a) Disconnect the fuel pump tube.

- (1) Pinch the tab of the retainer to disengage the lock claws and pull it down as shown in the illustration.
- (2) Pull out the fuel tank main tube.

NOTICE:

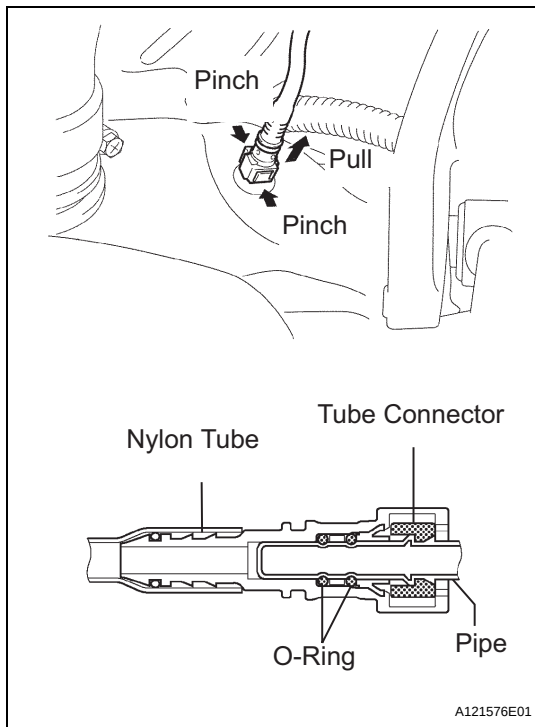
- Check that there is no dirt or other foreign objects around the connector before disconnecting it. Clean the connector if necessary.
- It is necessary to prevent mud or dirt from entering the quick connector. If mud or dirt gets in the connector, the O-rings may not seal properly.
- Only disconnect the quick connector by hand.
- Do not bend, kink or twist the nylon tubes. Protect the connector by covering it with a plastic bag.
- If the pipe and connector are stuck, carefully try wiggling or pushing and pulling the connector to release it. Pull the connector off the pipe carefully.

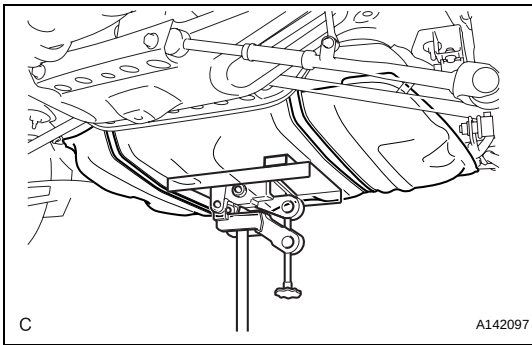
(b) Disconnect the No. 1 fuel tube.

- (1) Pinch the tube connector and then pull out the No. 1 fuel tube.

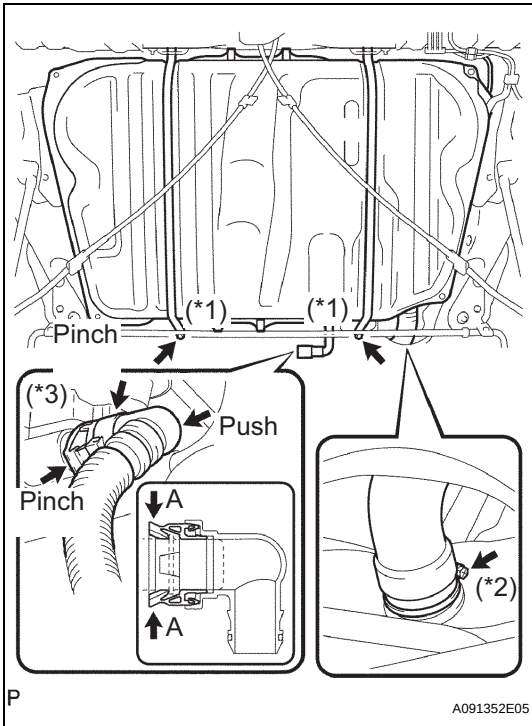
NOTICE:

- Check that there is no dirt or other foreign objects around the connector before disconnecting it. Clean the connector if necessary.
- It is necessary to prevent mud or dirt from entering the quick connector. If mud or dirt gets in the connector, the O-rings may not seal properly.
- Only disconnect the quick connector by hand.
- Do not bend, kink or twist the nylon tubes. Protect the connector by covering it with a plastic bag.
- If the pipe and connector are stuck, carefully try wiggling or pushing and pulling the connector to release it. Pull the connector off the pipe carefully.

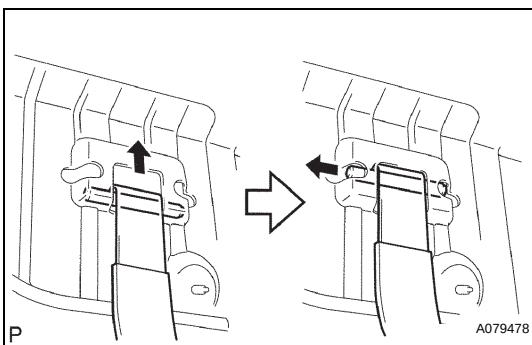




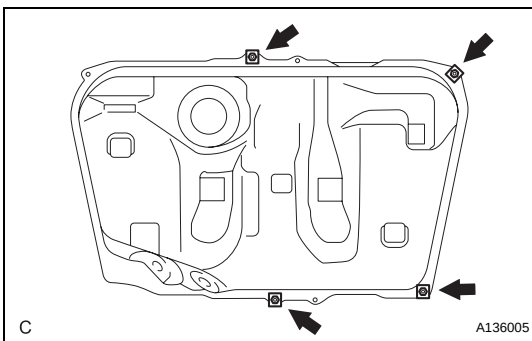
- (c) Place a transmission jack under the fuel tank assembly.



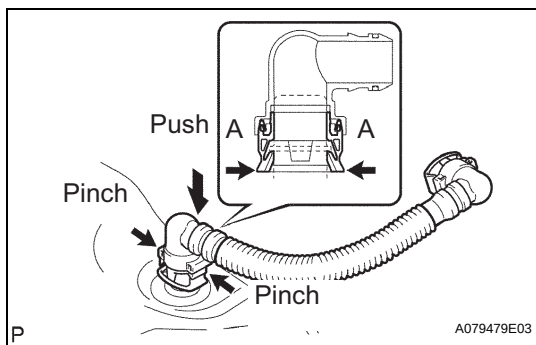
- (d) Remove the 2 set bolts of the fuel tank bands. (*1)
 (e) Remove the hose clamp and disconnect the fuel tank to filter pipe hose. (*2)
 (f) Slightly lower the transmission jack.
 (g) Disconnect the fuel tank vent hose from the charcoal canister. (*3)
 (1) Push the connector deep into the charcoal canister to release the locking pin.
 (2) Pinch portion A.
 (3) Pull out the connector.
 (h) Remove the fuel tank.



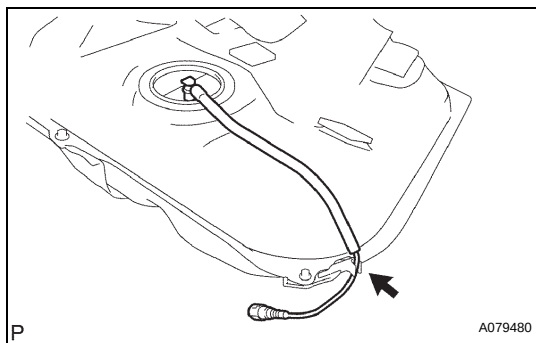
- (i) Remove the 2 pins and 2 fuel tank bands as shown in the illustration.



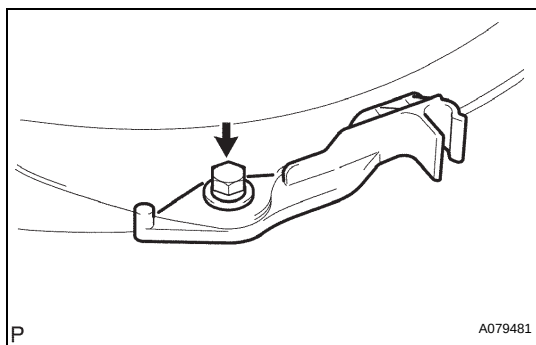
- (j) Remove the 4 clip nuts.

**17. REMOVE FUEL TANK VENT HOSE**

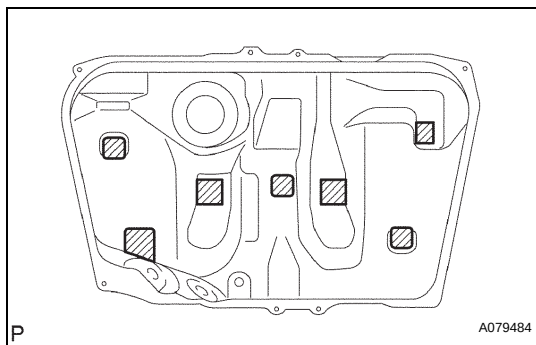
- (a) Push the connector deep into the charcoal canister to release the locking pin.
- (b) Pinch portion A.
- (c) Pull out the connector.

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

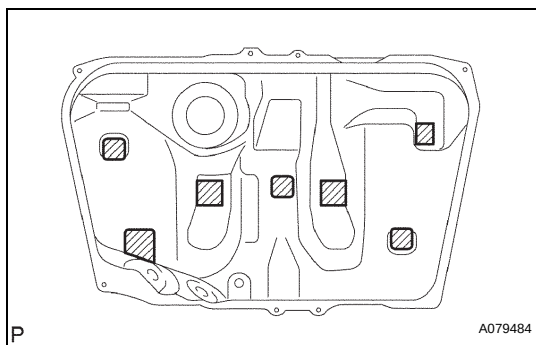
- (a) Remove the fuel pump tube from the fuel main tube support.

**19. REMOVE FUEL MAIN TUBE SUPPORT**

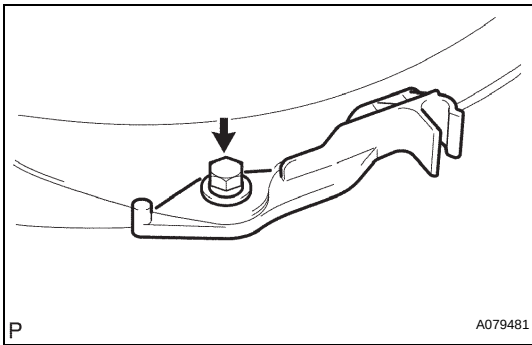
- (a) Remove the bolt and tube support.

**20. REMOVE NO. 2 FUEL TANK CUSHION**

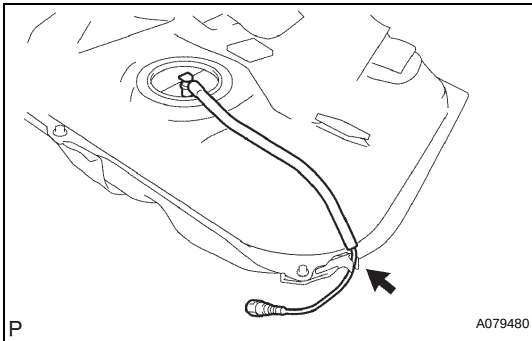
- (a) Remove the 7 No. 2 fuel tank cushions.

**INSTALLATION****1. INSTALL NO. 2 FUEL TANK CUSHION**

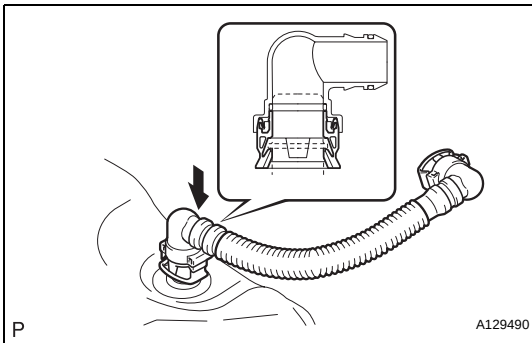
- (a) Install 7 new No. 2 fuel tank cushions to the fuel tank.

**2. INSTALL FUEL MAIN TUBE SUPPORT**

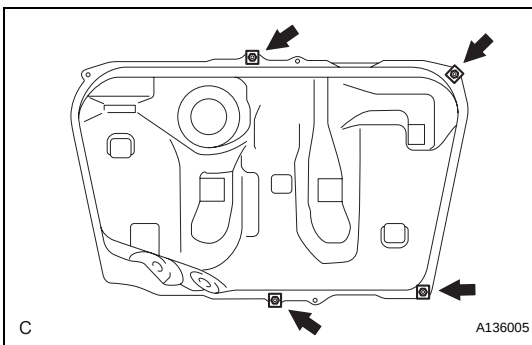
- (a) Install the fuel main tube support with the bolt.
Torque: 5.4 N*m (55 kgf*cm, 48 in.*lbf)

**3. INSTALL FUEL PUMP TUBE SUB-ASSEMBLY**

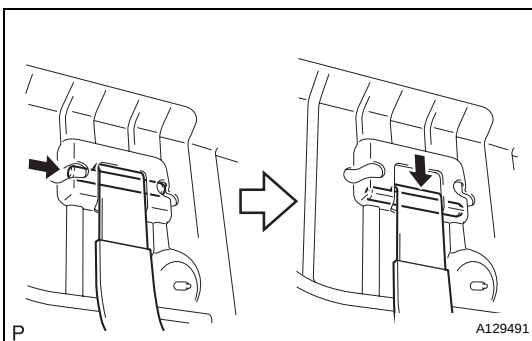
- (a) Install the fuel pump tube to the fuel main tube support.

**4. INSTALL FUEL TANK VENT HOSE**

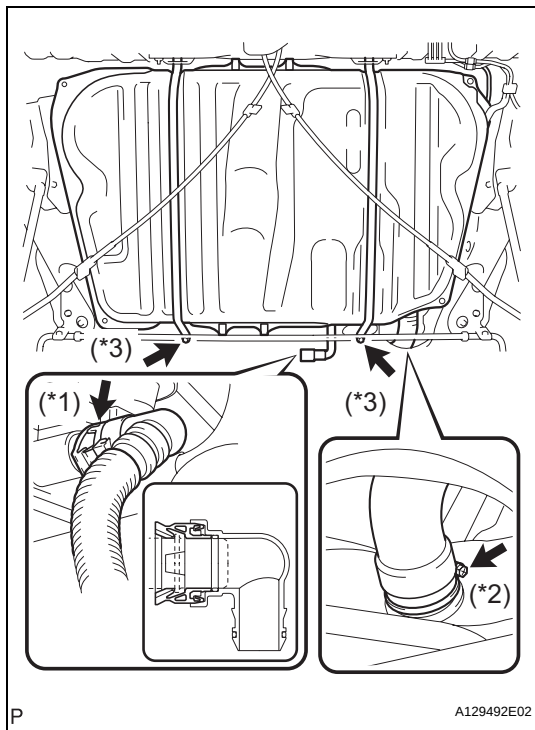
- (a) Install the fuel tank vent hose.

**5. INSTALL FUEL TANK ASSEMBLY**

- (a) Install the 4 clip nuts.



- (b) Install the 2 fuel tank bands with the 2 pins.
(c) Set the fuel tank assembly onto the transmission jack.



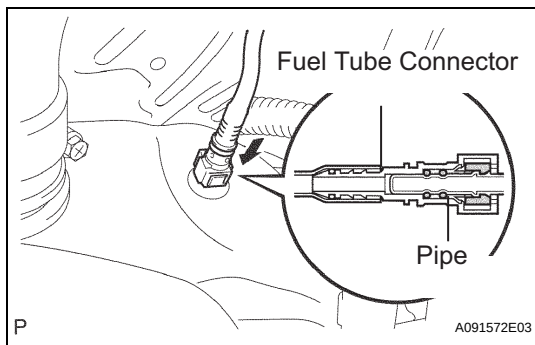
- (d) Raise the transmission jack so that the fuel tank vent hose can be connected. (*1)

NOTICE:

Slowly raise the jack to prevent the fuel tank assembly from dropping.

- (e) Connect the fuel tank inlet pipe with the fuel filter pipe clamp. (*2)
- (f) Tighten the 2 set bolts of the fuel tank bands. (*3)

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

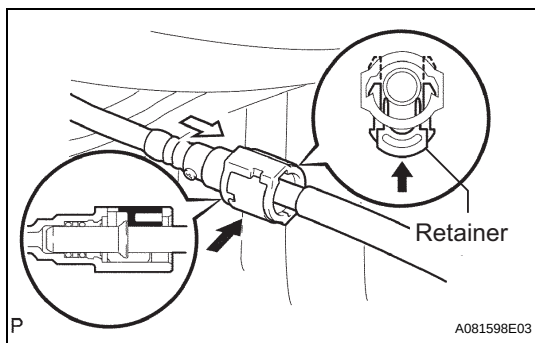


- (g) Connect the No. 1 fuel tube.

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

NOTICE:

- Before connecting the tube, make sure that it is not damaged. Make sure that there is no dirt present on any part of the connector.
- After connecting the connector, check if the fuel tube connector and the pipe are securely connected by pulling on them.

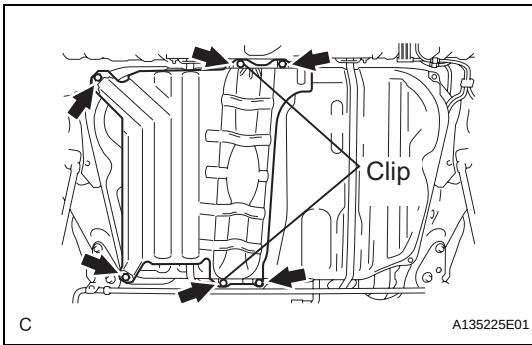


- (h) Connect the fuel pump tube.

- (1) Push the fuel tube connector into the pipe and push up the retainer so that the claws engage.

NOTICE:

- Before connecting the tube, make sure that it is not damaged. Make sure that there is no dirt present on any part of the connector.
- After connecting the connector, check if the fuel tube connector and the pipe are securely connected by pulling on them.

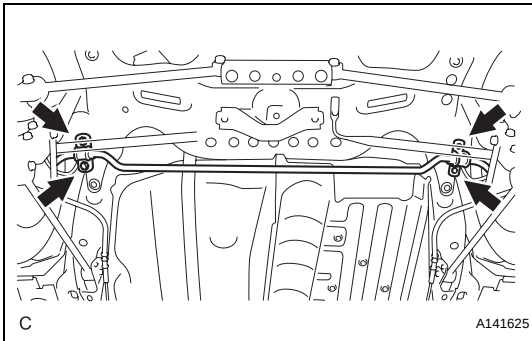


6. INSTALL FUEL TANK PROTECTOR LOWER CENTER

- (a) Install the fuel tank protector with the 4 bolts and 2 clips.

Torque: Bolt

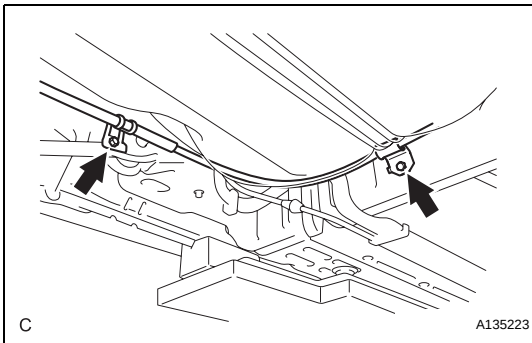
5.4 N*m (55 kgf*cm, 48 in.*lbf)



7. INSTALL REAR STABILIZER BAR NO. 1 BRACKET

- (a) Install the 2 rear stabilizer bar No. 1 brackets with the 4 bolts.

Torque: 31 N*m (316 kgf*cm, 23 ft.*lbf)



8. INSTALL NO. 3 PARKING BRAKE CABLE ASSEMBLY

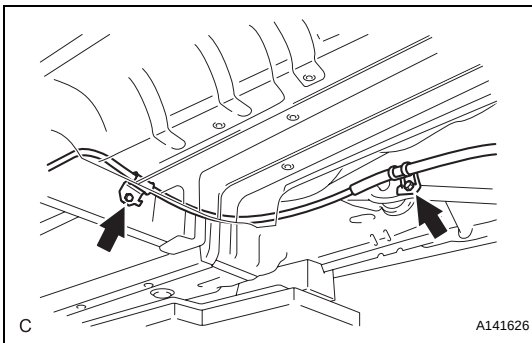
- (a) Install the No. 3 parking brake cable assembly with the bolt and nut.

Torque: Bolt

6.0 N*m (61 kgf*cm, 53 in.*lbf)

Nut

8.5 N*m (87 kgf*cm, 75 in.*lbf)



9. INSTALL NO. 2 PARKING BRAKE CABLE ASSEMBLY

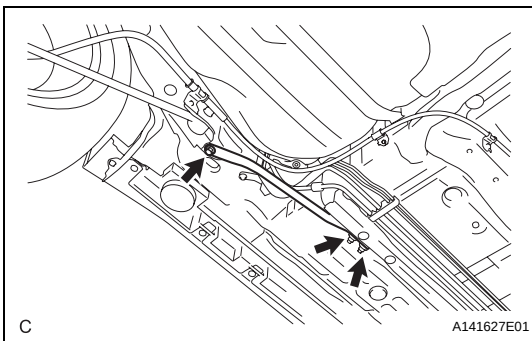
- (a) Install the No. 2 parking brake cable assembly with the bolt and nut.

Torque: Bolt

6.0 N*m (61 kgf*cm, 53 in.*lbf)

Nut

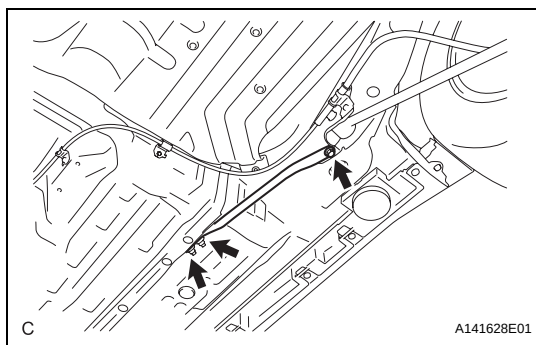
8.5 N*m (87 kgf*cm, 75 in.*lbf)



10. INSTALL FRONT FLOOR BRACE LH

- (a) Install the front floor brace LH with the bolt and 2 nuts.

Torque: 56 N*m (571 kgf*cm, 41 ft.*lbf)

**11. INSTALL FRONT FLOOR BRACE RH**

- (a) Install the front floor brace RH with the bolt and 2 nuts.

Torque: 56 N*m (571 kgf*cm, 41 ft.*lbf)

12. INSTALL CENTER EXHAUST PIPE ASSEMBLY

HINT:

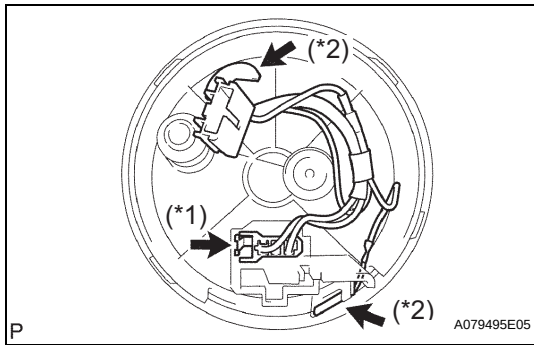
See page [EX-4](#).

13. INSTALL FUEL SUCTION TUBE ASSEMBLY WITH PUMP AND GAUGE (See page [FU-31](#))**14. INSTALL FUEL TANK VENT TUBE SET PLATE (See page [FU-31](#))****15. CONNECT FUEL PUMP TUBE SUB-ASSEMBLY (See page [FU-31](#))****16. ADD FUEL****17. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL****18. CHECK FOR FUEL LEAKS (See page [FU-7](#))****19. CHECK FOR EXHAUST GAS LEAKS****20. INSTALL REAR FLOOR SERVICE HOLE COVER (See page [FU-32](#))****21. INSTALL REAR SEAT CUSHION ASSEMBLY (See page [SE-121](#))****22. PERFORM INITIALIZATION**

- (a) Perform initialization procedures (See page [IN-33](#))

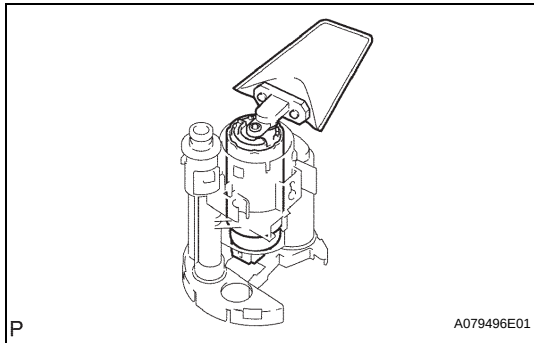
HINT:

Some systems need initialization after reconnecting the cable to the negative battery terminal.



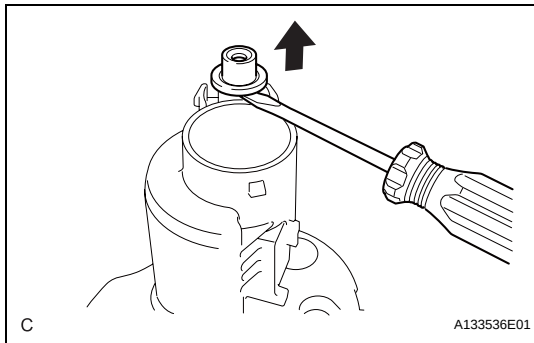
5. REMOVE FUEL PUMP HARNESS

- Disconnect the connector (*1).
- Using a screwdriver, pry out the fuel pump harness (*2).



6. REMOVE FUEL PUMP

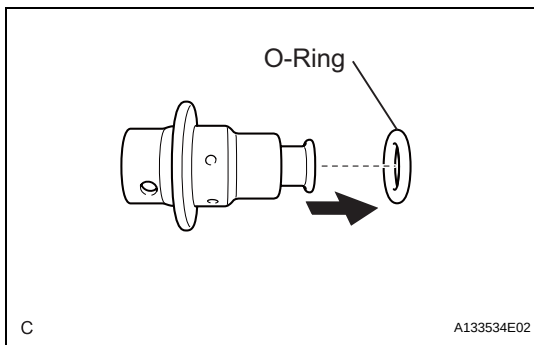
- Pull out the fuel pump from the fuel filter.



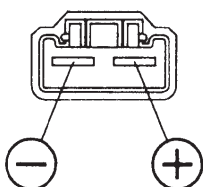
7. REMOVE FUEL PRESSURE REGULATOR ASSEMBLY

- Pull out the fuel pressure regulator from the fuel filter.

- Remove the O-ring from the fuel pressure regulator.



Component Side: Fuel Pump



INSPECTION

1. INSPECT FUEL PUMP

- Inspect fuel pump resistance.
 - Using an ohmmeter, measure the resistance between the terminals.

Resistance:

0.2 to 3.0 Ω at 20°C (68°F)

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

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

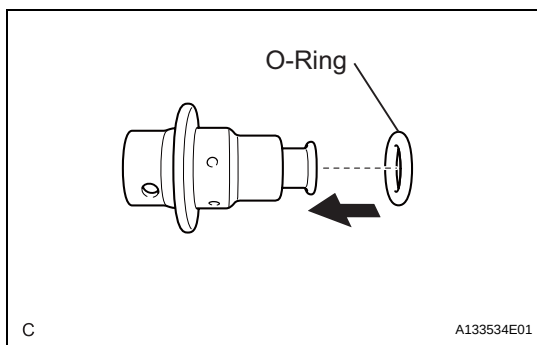
NOTICE:

- These tests must be done quickly (within 10 seconds) to prevent damage to the pump.
- Keep the fuel pump as far away from the battery as possible.
- Always switch the voltage on and off on the battery side, not on the fuel pump side.

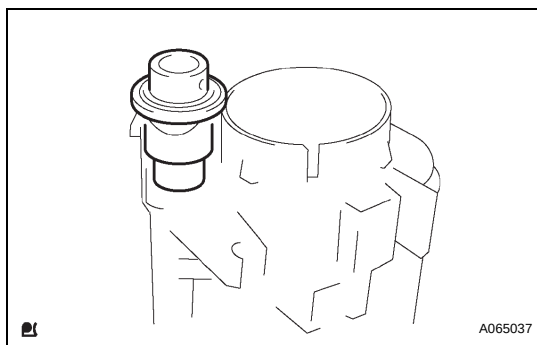
If the pump does not operate, replace the fuel pump assembly.

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

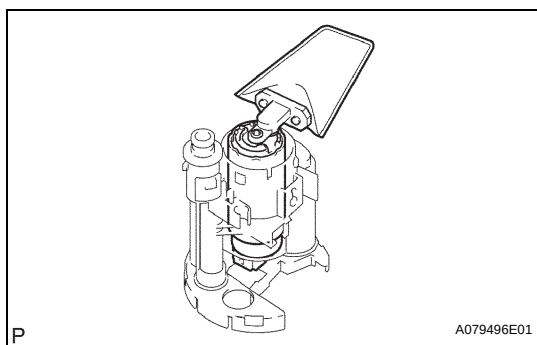
- (a) Apply a light coat of spindle oil or gasoline to a new O-ring, and install it to the fuel pressure regulator.

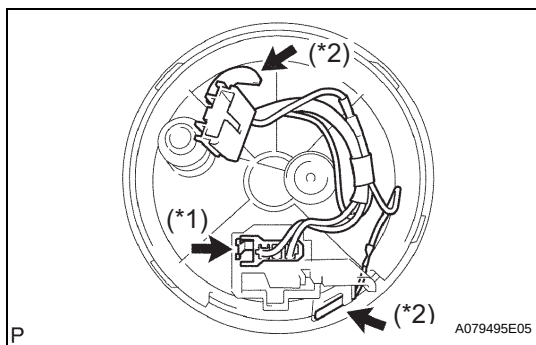
FU

- (b) Push in the fuel pressure regulator to the fuel filter.

**2. INSTALL FUEL PUMP**

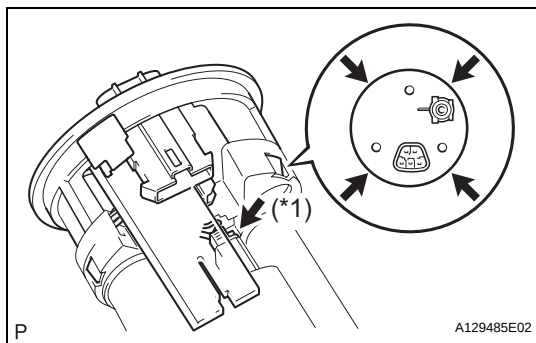
- (a) Apply a light coat of gasoline or grease to the O-ring of the fuel pump.
- (b) Push in the fuel pump to the fuel filter.





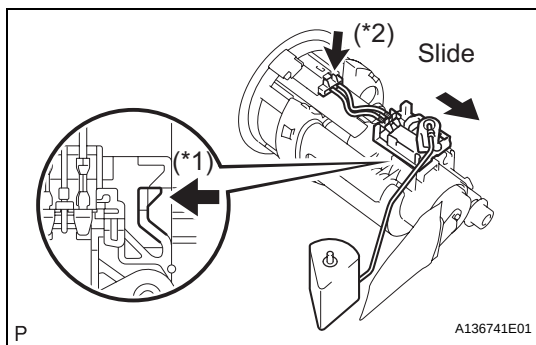
3. INSTALL FUEL PUMP HARNESS

- Connect the connector (*1).
- Install the fuel pump harness (*2).



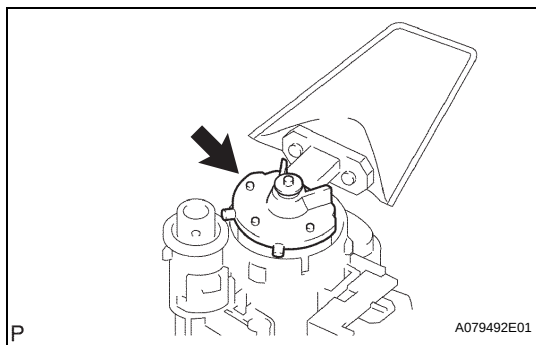
4. INSTALL FUEL SUCTION PLATE SUB-ASSEMBLY

- Connect the fuel pump connector (*1).
- Install the fuel suction plate.



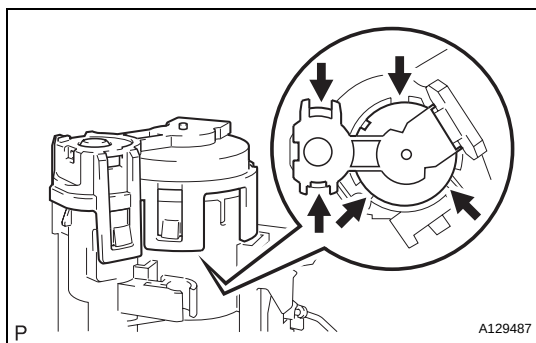
5. INSTALL FUEL SENDER GAUGE ASSEMBLY

- Slide the fuel sender gauge to engage with the claw (*1).
- Connect the fuel sender gauge connector (*2).



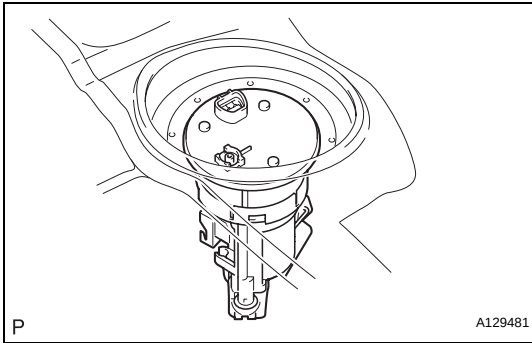
6. INSTALL FUEL PUMP CUSHION RUBBER

- Install the fuel pump cushion rubber to the fuel pump.



7. INSTALL NO. 2 FUEL SUCTION SUPPORT

- Install the No. 2 fuel suction support.



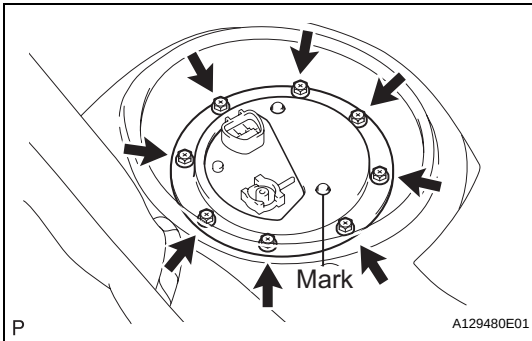
INSTALLATION

1. INSTALL FUEL SUCTION TUBE ASSEMBLY WITH PUMP AND GAUGE

- Install a new gasket to the fuel suction tube.
- Install the fuel suction tube.

NOTICE:

- Do not damage the fuel pump filter.
- Be careful that the arm of the sender gauge does not bend.



2. INSTALL FUEL TANK VENT TUBE SET PLATE

- Align the mark of the set plate with the fuel suction tube.
- Install the set plate with the 8 bolts.

Torque: 5.9 N*m (60 kgf*cm, 52 in.*lbf)

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3. CONNECT FUEL PUMP TUBE SUB-ASSEMBLY

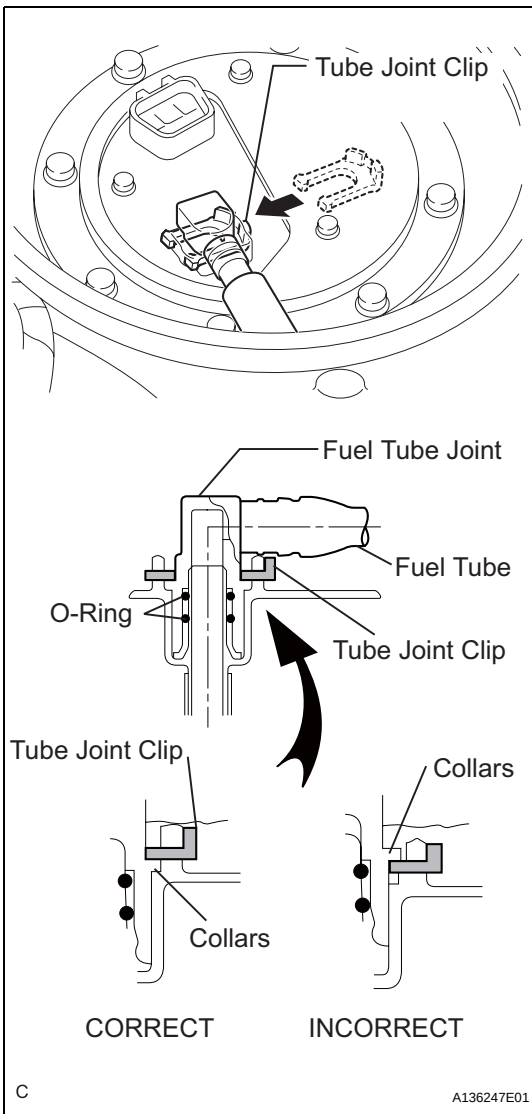
- Install the fuel pump tube with the tube joint clip.

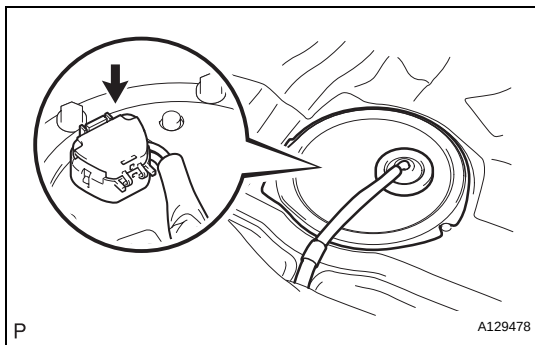
NOTICE:

- Check that there are no scratches or foreign objects on the connecting part.
- Check that the fuel tube joint is inserted securely.
- Check that the tube joint clip is correctly located on the collar of the fuel tube joint.
- After installing the tube joint clip, check that the fuel tube joint is pulled out of position.

4. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

5. CHECK FOR FUEL LEAKS (See page [FU-7](#))



**6. INSTALL REAR FLOOR SERVICE HOLE COVER**

- (a) Connect the fuel pump connector.
- (b) Install the rear floor service hole cover with new butyl tape.

7. INSTALL REAR SEAT CUSHION ASSEMBLY (See page [SE-121](#))**8. PERFORM INITIALIZATION**

- (a) Perform initialization procedures (See page [IN-33](#))

HINT:

Some systems need initialization after reconnecting the cable to the negative battery terminal.

REMOVAL

1. DISCHARGE FUEL SYSTEM PRESSURE

HINT:

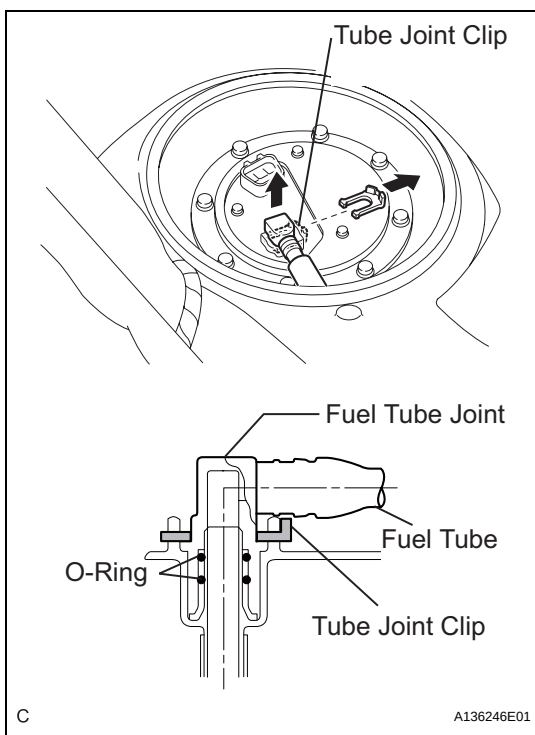
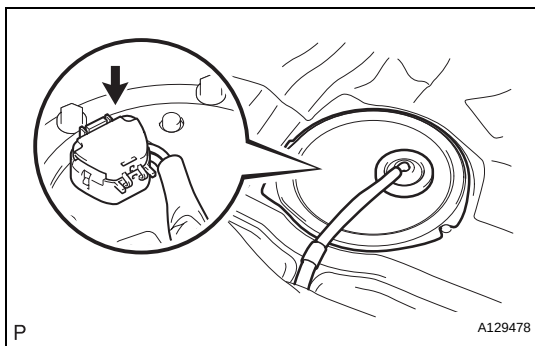
See page [FU-1](#).

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

3. REMOVE REAR SEAT CUSHION ASSEMBLY (See page [SE-113](#))

4. REMOVE REAR FLOOR SERVICE HOLE COVER

- Remove the rear floor service hole cover.
- Disconnect the fuel pump connector.



5. SEPARATE FUEL PUMP TUBE SUB-ASSEMBLY

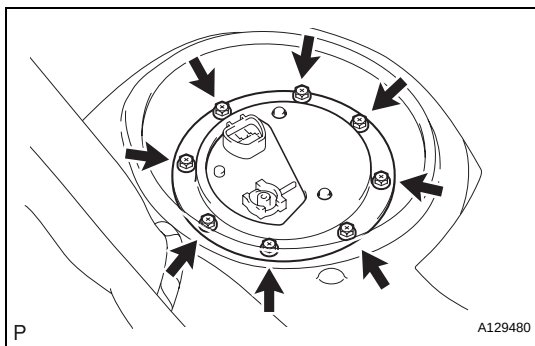
- Remove the tube joint clip, and pull out the fuel pump tube.

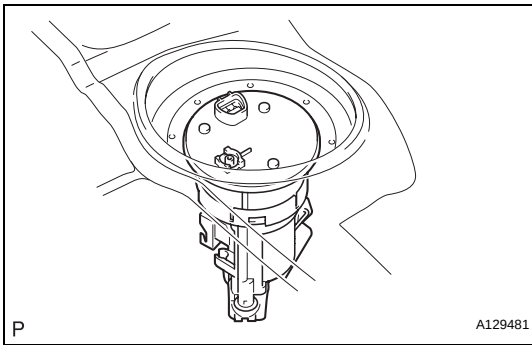
NOTICE:

- Check that there is no dirt or other foreign objects around the connector before disconnecting it. Clean the connector if necessary.
- It is necessary to prevent mud or dirt from entering the quick connector. If mud or dirt gets in the connector, the O-rings may not seal properly.
- Only disconnect the quick connector by hand.
- Do not bend, kink or twist the nylon tubes. Protect the connector by covering it with a plastic bag.
- If the pipe and connector are stuck, carefully try wiggling or pushing and pulling on the connector to release it. Pull the connector off carefully.

6. REMOVE FUEL TANK VENT TUBE SET PLATE

- Remove the 8 bolts and set plate.





7. REMOVE FUEL SUCTION TUBE ASSEMBLY WITH PUMP AND GAUGE

- (a) Pull out the fuel suction tube from the fuel tank.

NOTICE:

- Do not damage the fuel pump filter.
- Be careful that the arm of the sender gauge does not bend.

- (b) Remove the gasket from the fuel suction tube.

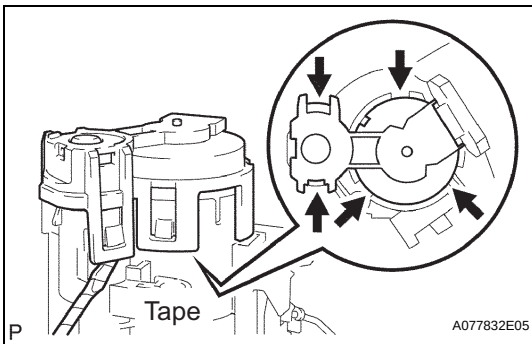
DISASSEMBLY

1. REMOVE NO. 2 FUEL SUCTION SUPPORT

- (a) Using a screwdriver with its tip wrapped with tape, disengage the 5 snap claws from the claw holes, and remove the No. 2 fuel suction support.

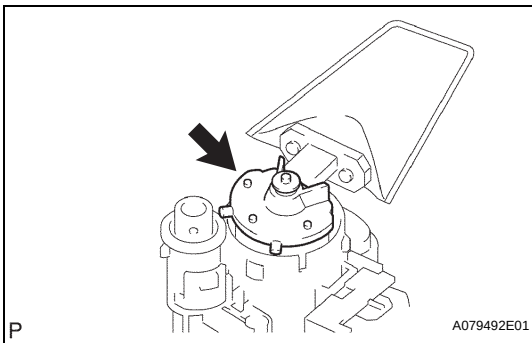
NOTICE:

Do not damage the fuel suction support.



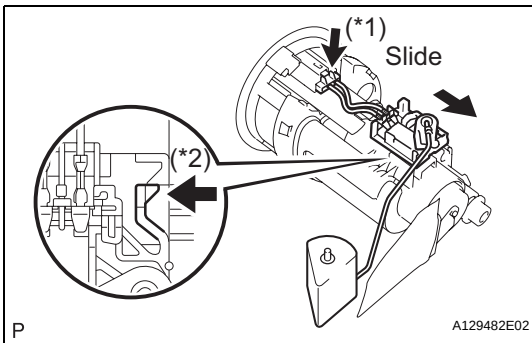
2. REMOVE FUEL PUMP CUSHION RUBBER

- (a) Remove the fuel pump cushion rubber from the fuel pump.



3. REMOVE FUEL SENDER GAUGE ASSEMBLY

- (a) Disconnect the fuel sender gauge connector (*1).
- (b) Unlock the fuel sender gauge, and slide it to remove (*2).

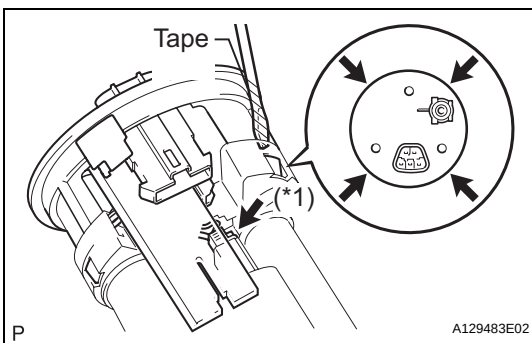


4. REMOVE FUEL SUCTION PLATE SUB-ASSEMBLY

- (a) Disconnect the fuel pump connector (*1).
- (b) Using a screwdriver with its tip wrapped with tape, disengage the 4 snap claws from the claw holes, and pull out the fuel suction plate.

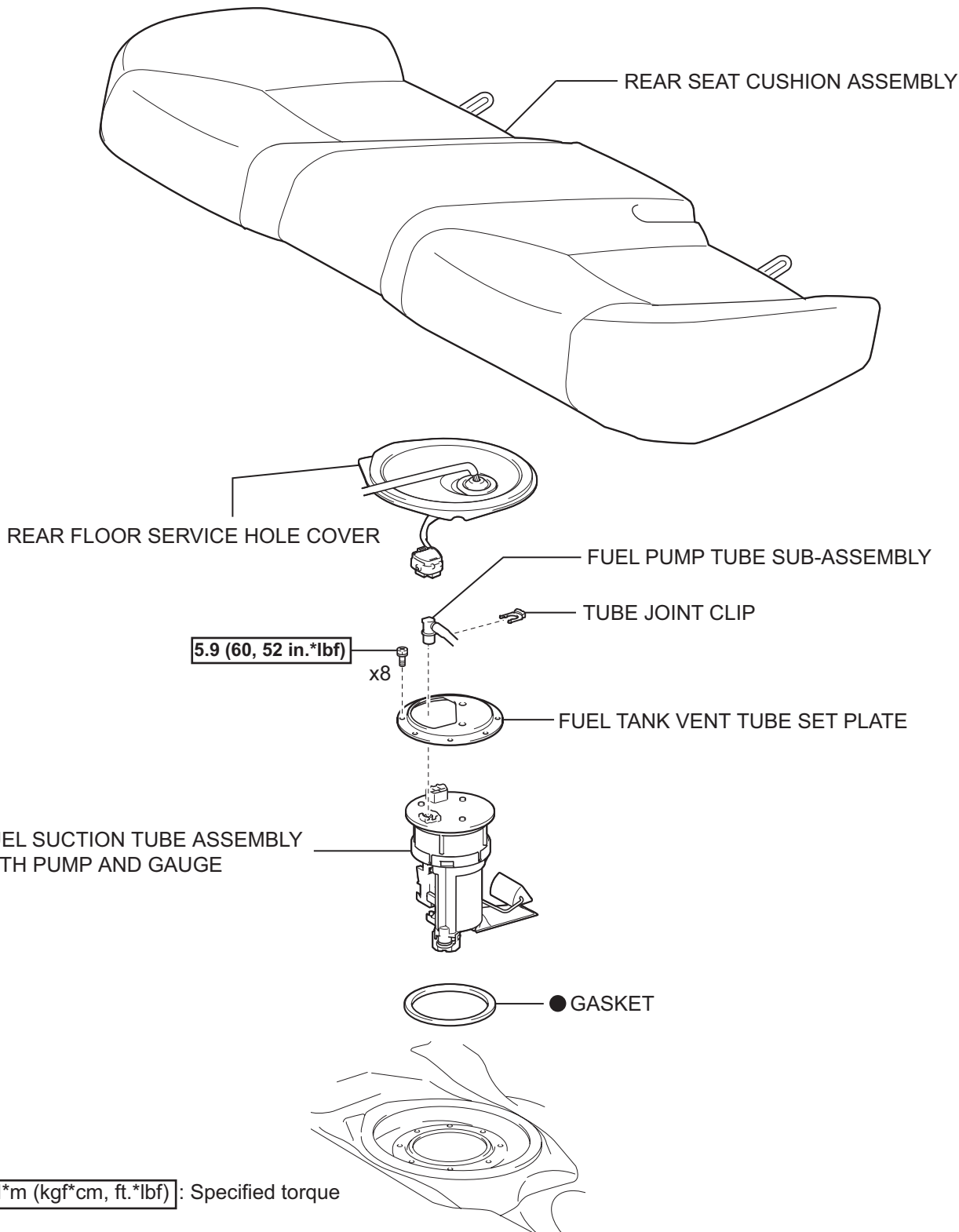
NOTICE:

Do not damage the fuel suction support.

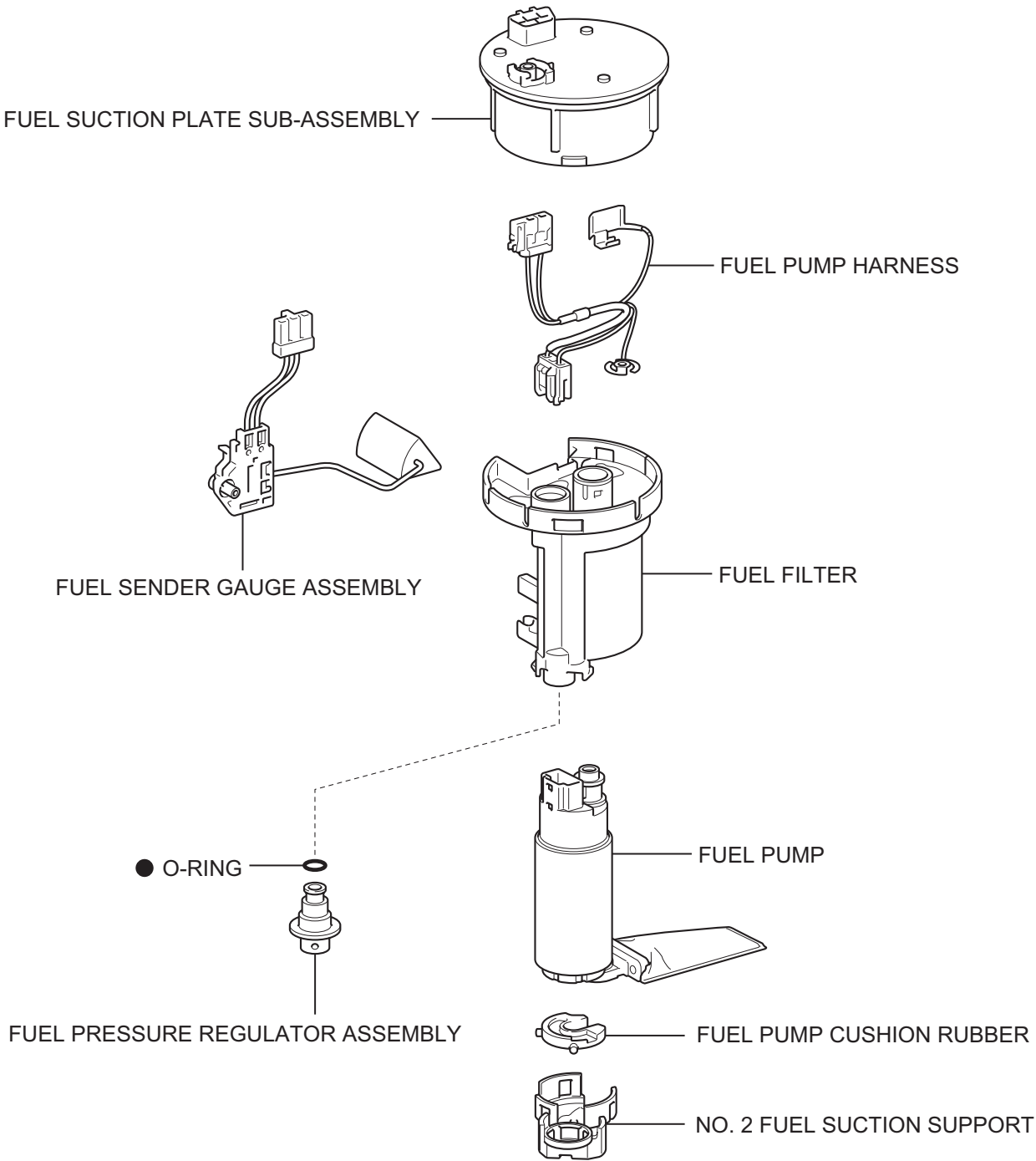


FUEL PUMP
COMPONENTS

FU



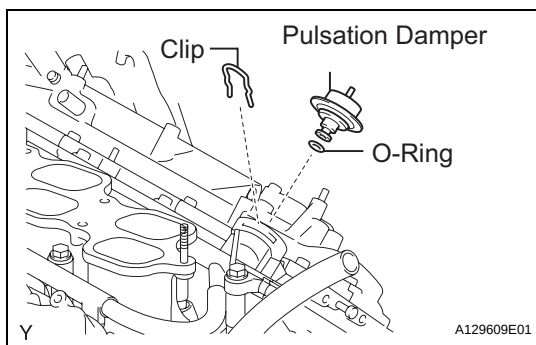
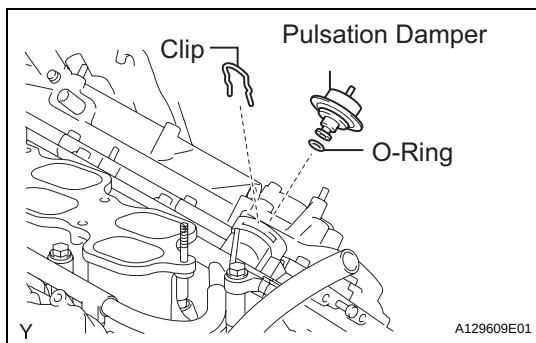
FU



● Non-reusable part

REMOVAL

1. **DISCHARGE FUEL SYSTEM PRESSURE**
HINT:
See page [FU-1](#).
2. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
3. **DRAIN ENGINE COOLANT** (See page [CO-5](#))
4. **REMOVE COOL AIR INTAKE DUCT SEAL** (See page [EM-22](#))
5. **REMOVE ENGINE ROOM SIDE COVER LH** (See page [EM-22](#))
6. **REMOVE ENGINE ROOM SIDE COVER RH** (See page [EM-22](#))
7. **REMOVE FRONT SUSPENSION CENTER UPPER BRACE**
8. **REMOVE V-BANK COVER SUB-ASSEMBLY** (See page [EM-23](#))
9. **REMOVE AIR CLEANER CAP SUB-ASSEMBLY** (See page [ES-519](#))
10. **REMOVE INTAKE AIR SURGE TANK ASSEMBLY** (See page [FU-12](#))
11. **REMOVE FUEL PRESSURE PULSATION DAMPER ASSEMBLY**
 - (a) Remove the clip.
 - (b) Pull out the fuel pressure pulsation damper from the fuel delivery pipe.
 - (c) Remove the O-ring from the fuel pressure pulsation damper.



INSTALLATION

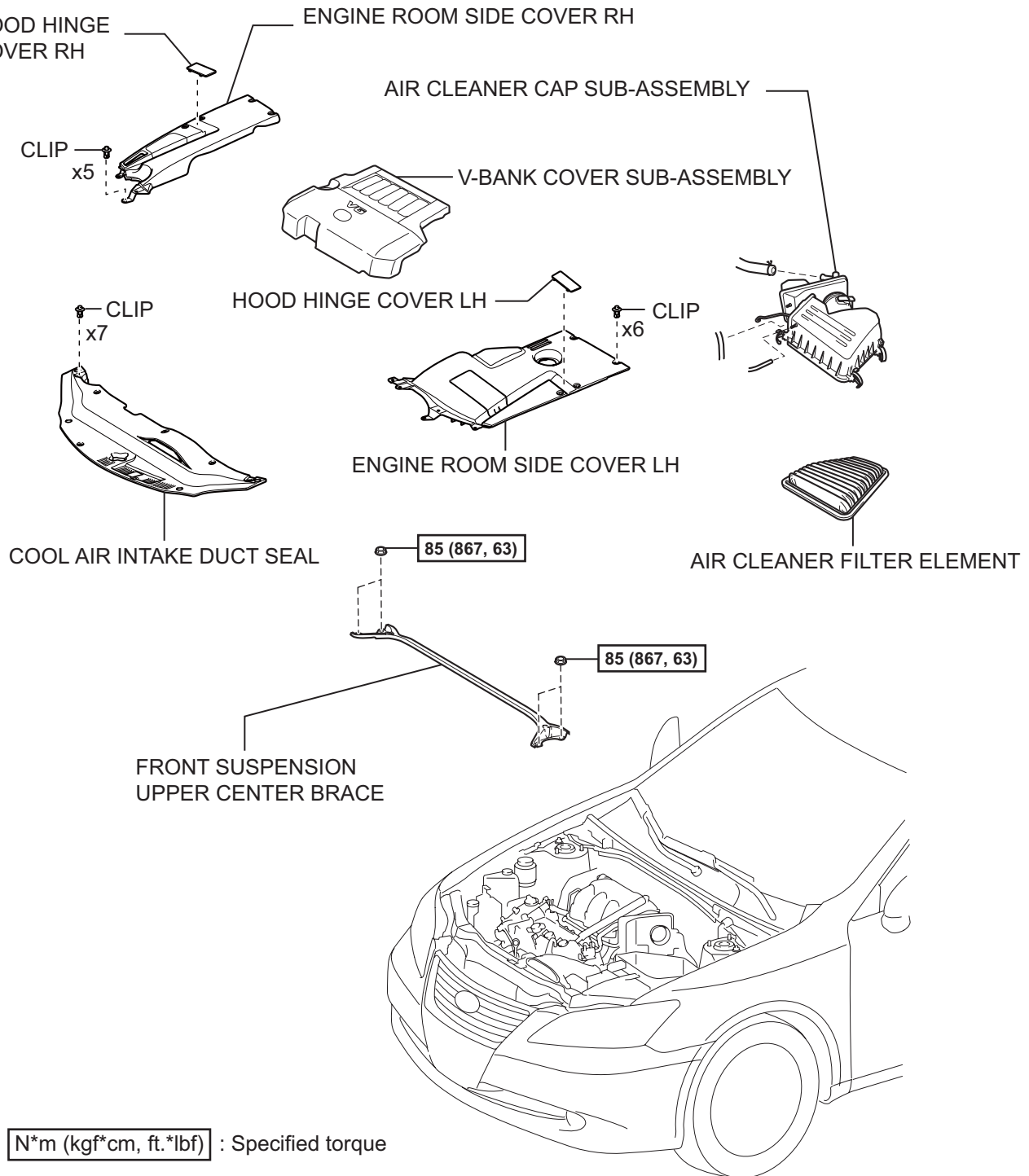
1. **INSTALL FUEL PRESSURE PULSATION DAMPER ASSEMBLY**
 - (a) Apply a light coat of spindle oil or gasoline to a new O-ring and install it to the fuel pressure pulsation damper.
 - (b) Install the fuel pressure pulsation damper to the fuel delivery pipe.
 - (c) Install the clip.
2. **INSTALL INTAKE AIR SURGE TANK ASSEMBLY** (See page [FU-17](#))
3. **INSTALL AIR CLEANER CAP SUB-ASSEMBLY** (See page [ES-522](#))
4. **ADD ENGINE COOLANT** (See page [CO-6](#))

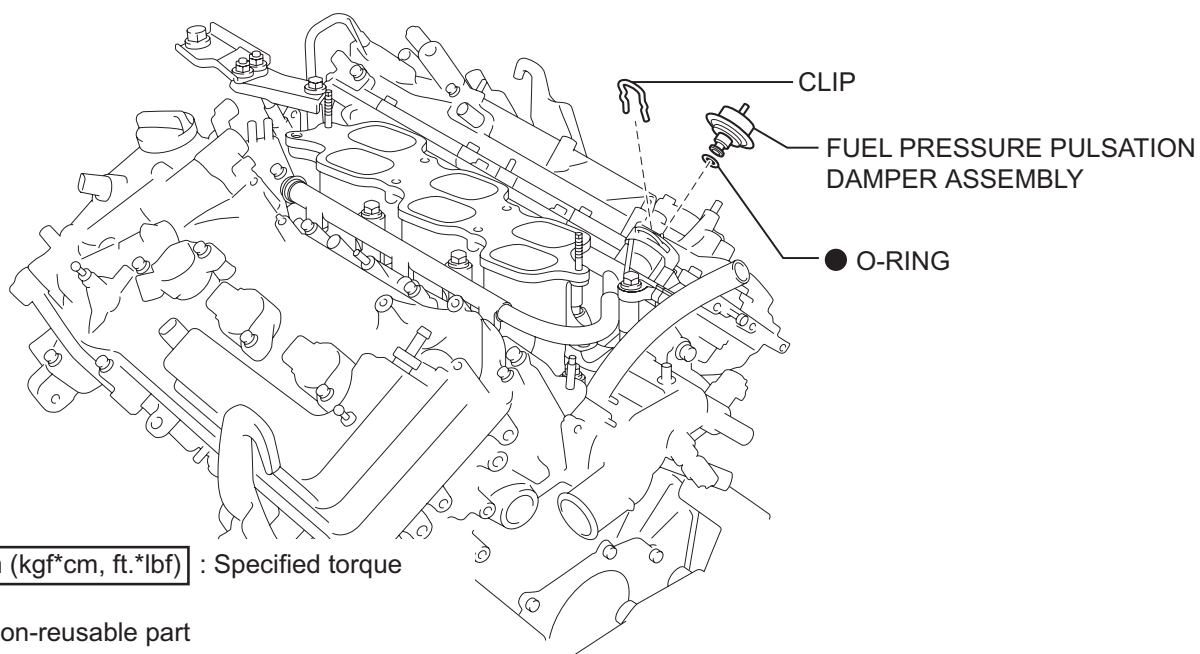
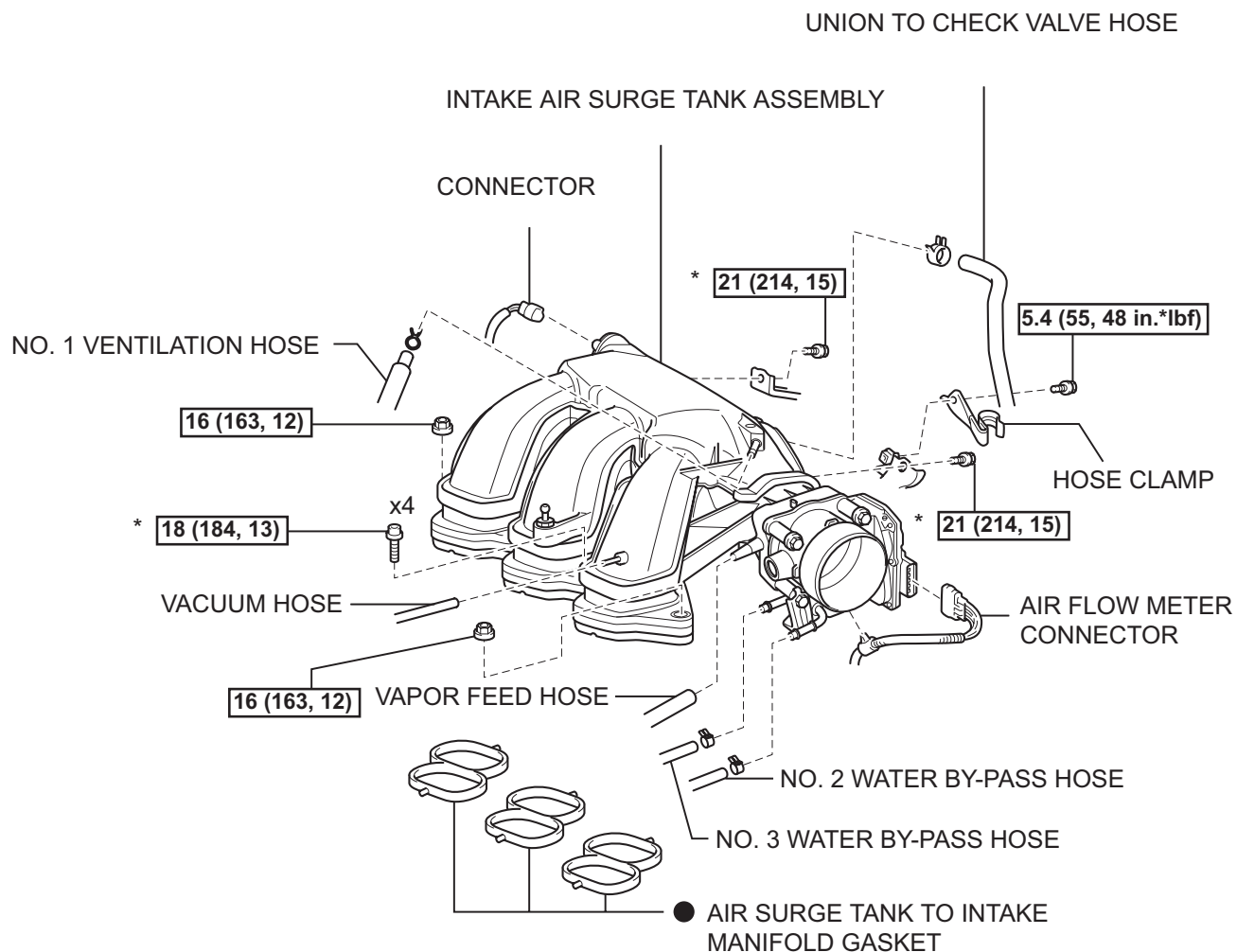
5. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**
6. **CHECK FOR ENGINE COOLANT LEAKS** (See page [CO-1](#))
7. **CHECK FOR FUEL LEAKS** (See page [FU-7](#))
8. **INSTALL V-BANK COVER SUB-ASSEMBLY** (See page [EM-49](#))
9. **INSTALL FRONT SUSPENSION CENTER UPPER BRACE**
10. **INSTALL ENGINE ROOM SIDE COVER RH** (See page [EM-50](#))
11. **INSTALL ENGINE ROOM SIDE COVER LH** (See page [EM-50](#))
12. **INSTALL COOL AIR INTAKE DUCT SEAL** (See page [EM-50](#))
13. **PERFORM INITIALIZATION**
 - (a) Perform initialization procedures (See page [IN-33](#))

HINT:
Some systems need initialization after reconnecting the cable to the negative battery terminal.

FUEL PRESSURE PULSATION DAMPER

COMPONENTS





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

● Non-reusable part

* DO NOT apply oil

INSPECTION

1. INSPECT FUEL INJECTOR ASSEMBLY

(a) Inspect injector 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 resistance is not as specified, replace the injector.

(b) Inspect the injection volume.

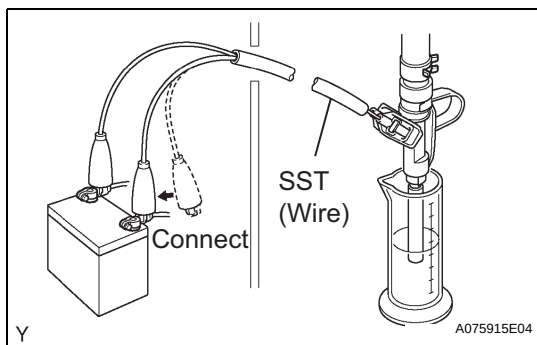
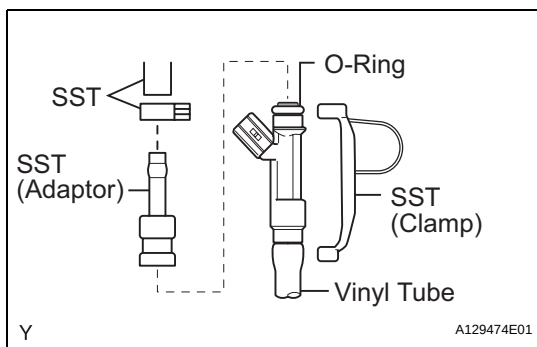
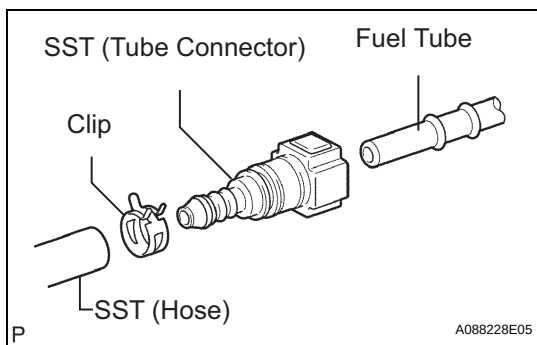
CAUTION:

This test involves high-pressure fuel and electricity. Take every precaution regarding the safe handling of both fuel and electricity. Perform this test in a safe area, and avoid any sparks or flames. Do not smoke.

- (1) Install the fuel tube connector to SST (hose), then connect the tube connector to the fuel pipe (vehicle side).

SST 09268-31011 (09268-41500, 90467-13001, 95336-08070)

- (2) Install the O-ring to the fuel injector.



- (3) Connect SST (adaptor and hose) to the injector, and hold the injector and union with SST (clamp).

SST 09268-31011 (90467-13001, 95336-08070), 09268-41140, 09268-41400

- (4) Put the injector into the graduated cylinder.

CAUTION:

Install a suitable vinyl tube onto the injector to contain gasoline spray.

- (5) Operate the fuel pump (See page [FU-7](#)).

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

SST 09842-30080

Volume:

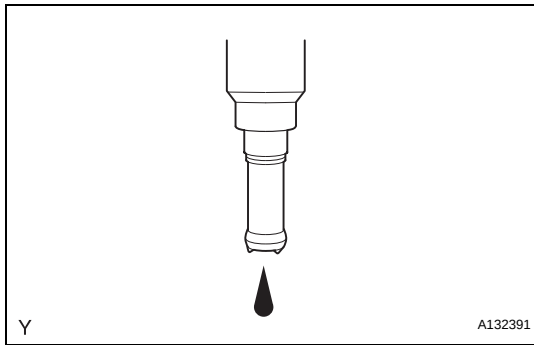
84 to 100 cm³ (5.1 to 6.0 cu in.) in 15 seconds

Difference between each injector:

16 cm³ (0.98 cu in.) or less

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

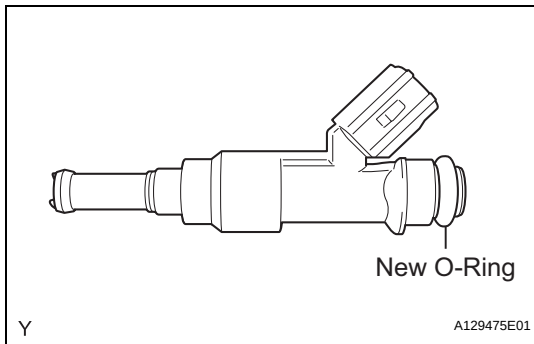
FU



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

Fuel drop:

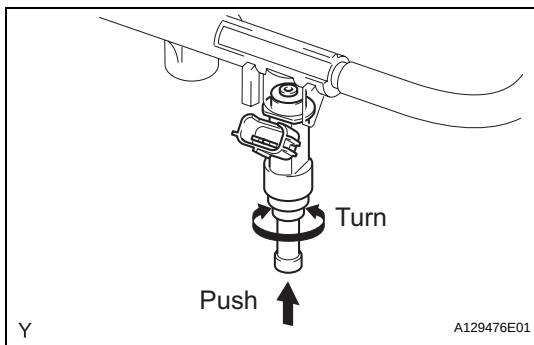
1 drop or less in 16 minutes



INSTALLATION

1. INSTALL FUEL INJECTOR ASSEMBLY

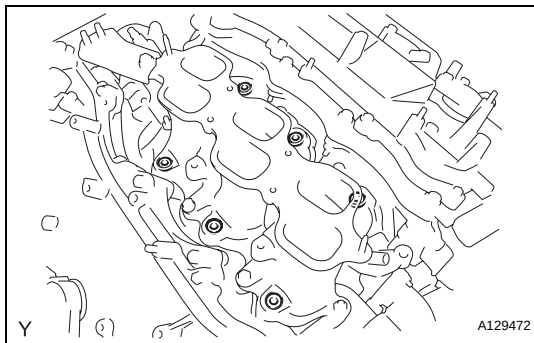
- (a) Apply a light coat of spindle oil or gasoline to new O-rings, and install them to each injector.



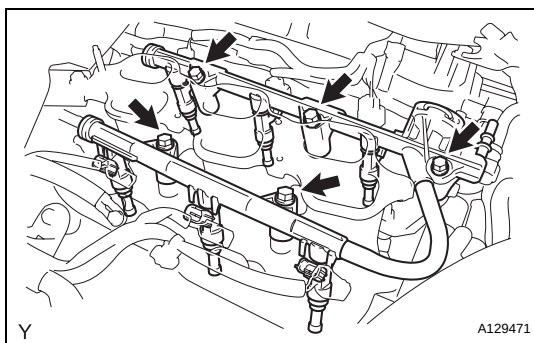
- (b) Apply a light coat of spindle oil or gasoline where the fuel delivery pipe contacts the O-ring.
 (c) Push the fuel injector while turning it to install the injector in the fuel delivery pipe.
 (d) Position the fuel injector connector outward.

NOTICE:

- Be careful not to twist the O-ring.
- After installing the fuel injector, check that it turns smoothly. If not, reinstall it with a new O-ring.



- (e) Install 6 new insulators to the intake manifold.



- (f) Place the fuel delivery pipe which has the 6 fuel injectors installed to it in position on the intake manifold.

NOTICE:

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

- (g) Temporarily install the 5 bolts which are used to hold the fuel delivery pipe to the intake manifold.

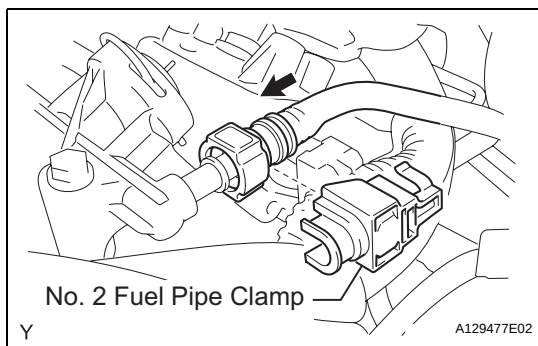
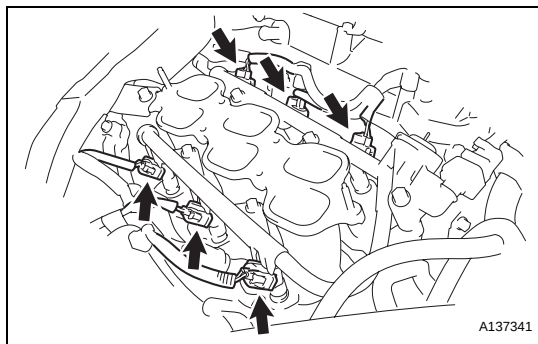
NOTICE:

After installing the fuel injectors, check that they turn smoothly. If not, reinstall the injectors with new O-rings.

- (h) Tighten the 5 bolts which are used to hold the fuel delivery pipe to the intake manifold.

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

- (i) Connect the 6 fuel injector connectors.



2. CONNECT FUEL TUBE SUB-ASSEMBLY

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

NOTICE:

- Before connecting the tube, make sure that it is not damaged. Make sure that there is no dirt present on the connecting surfaces.
- After connecting, check that the fuel tube connector and the pipe are securely connected by pulling on them.

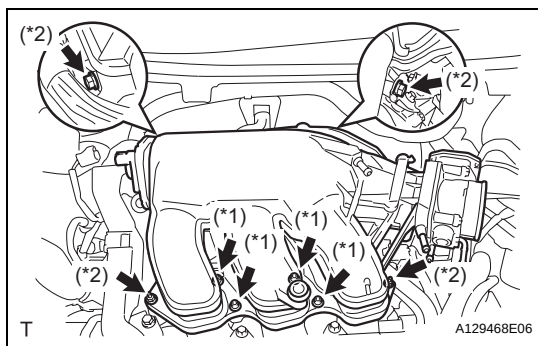
- (b) Install the No. 2 fuel pipe clamp.

3. INSTALL INTAKE AIR SURGE TANK ASSEMBLY

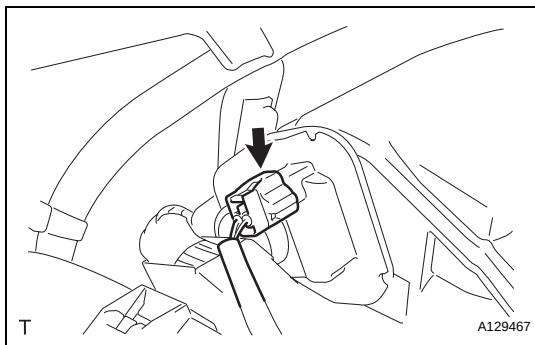
NOTICE:

DO NOT apply oil to the bolts listed below:

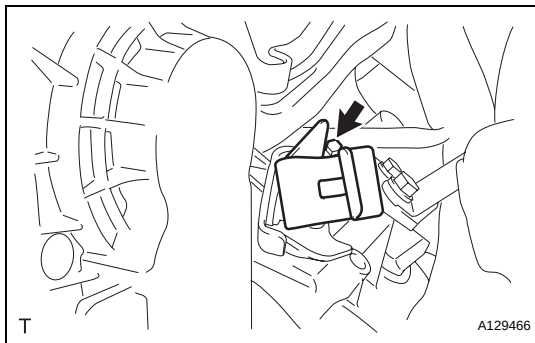
Tightening Parts
Surge Tank and Intake Manifold
No. 1 Surge Tank Stay and Surge Tank
Throttle Body Bracket and Surge Tank



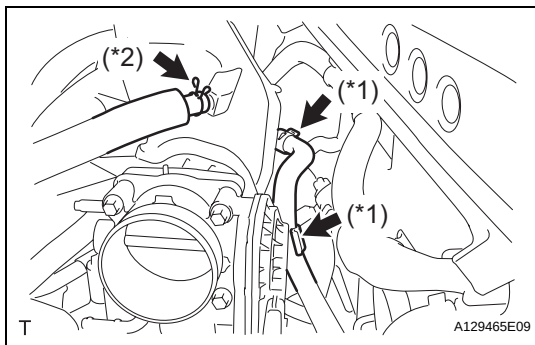
- (a) Install a new gasket to the intake air surge tank.
- (b) Using a 5 mm hexagon socket wrench, install the 4 bolts. (*1)
Torque: 18 N*m (184 kgf*cm, 13 ft.*lbf)
- (c) Install the intake air surge tank with the 2 nuts and 2 bolts. (*2)
Torque: Nut
16 N*m (163 kgf*cm, 12 ft.*lbf)
Bolt
21 N*m (214 kgf*cm, 15 ft.*lbf)



(d) Connect the connector.

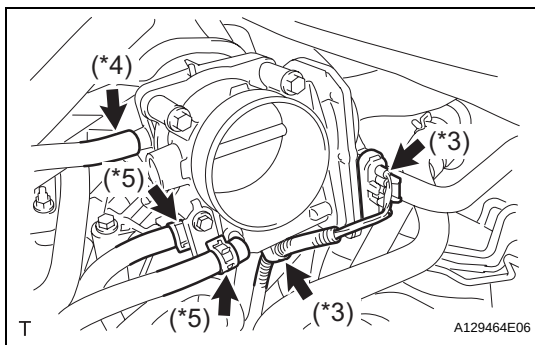


(e) Install the vacuum hose clamp with the bolt.
Torque: 5.4 N*m (55 kgf*cm, 48 in.*lbf)



(f) Connect the union to check valve hose. (*1)

(g) Connect the No. 1 ventilation hose. (*2)



(h) Install the clamp and connect the throttle with motor body assembly connector. (*3)

(i) Connect the vapor feed hose. (*4)

(j) Connect the 2 water by-pass hoses to the throttle with motor body assembly. (*5)

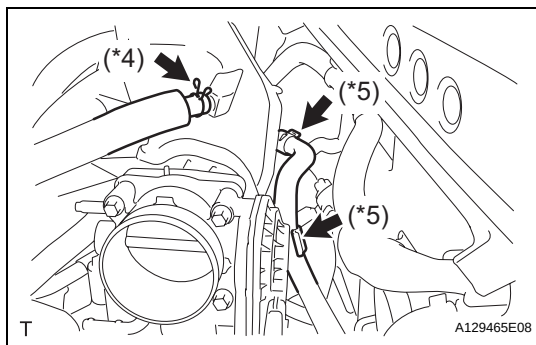
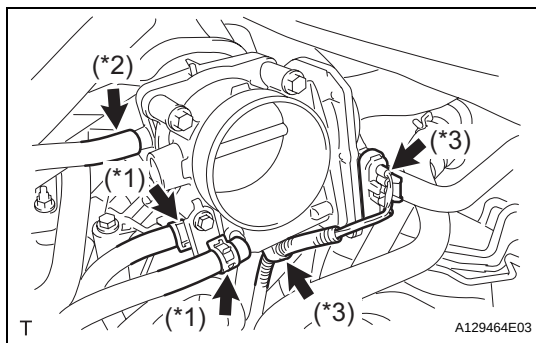
4. **INSTALL AIR CLEANER CAP SUB-ASSEMBLY** (See page [ES-522](#))
5. **ADD ENGINE COOLANT** (See page [CO-6](#))
6. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**
7. **CHECK FOR ENGINE COOLANT LEAKS** (See page [CO-1](#))
8. **CHECK FOR FUEL LEAKS** (See page [FU-7](#))
9. **INSTALL V-BANK COVER SUB-ASSEMBLY** (See page [EM-49](#))
10. **INSTALL FRONT SUSPENSION CENTER UPPER BRACE**

11. INSTALL ENGINE ROOM SIDE COVER RH (See page [EM-50](#))
12. INSTALL ENGINE ROOM SIDE COVER LH (See page [EM-50](#))
13. INSTALL COOL AIR INTAKE DUCT SEAL (See page [EM-50](#))
14. PERFORM INITIALIZATION
 - (a) Perform initialization procedures (See page [IN-33](#))

HINT:
Some systems need initialization after reconnecting the cable to the negative battery terminal.

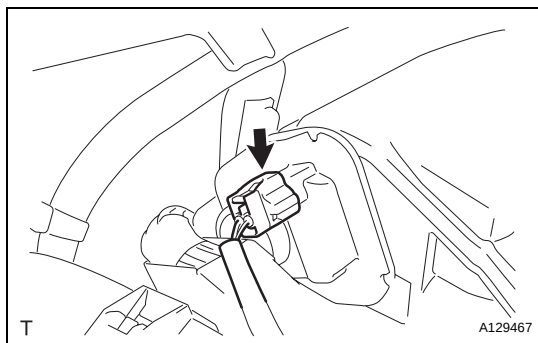
REMOVAL

1. **DISCHARGE FUEL SYSTEM PRESSURE**
HINT:
See page [FU-1](#).
2. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
3. **DRAIN ENGINE COOLANT** (See page [CO-5](#))
4. **REMOVE COOL AIR INTAKE DUCT SEAL** (See page [EM-22](#))
5. **REMOVE ENGINE ROOM SIDE COVER LH** (See page [EM-22](#))
6. **REMOVE ENGINE ROOM SIDE COVER RH** (See page [EM-22](#))
7. **REMOVE FRONT SUSPENSION CENTER UPPER BRACE**
8. **REMOVE V-BANK COVER SUB-ASSEMBLY** (See page [EM-23](#))
9. **REMOVE AIR CLEANER CAP SUB-ASSEMBLY** (See page [ES-519](#))
10. **REMOVE INTAKE AIR SURGE TANK ASSEMBLY**
 - (a) Disconnect the 2 water by-pass hoses from the throttle with motor body assembly. (*1)
 - (b) Disconnect the vapor feed hose. (*2)
 - (c) Disconnect the throttle with motor body assembly connector and clamp. (*3)
 - (d) Disconnect the No. 1 ventilation hose. (*4)
 - (e) Disconnect the union to check valve hose. (*5)

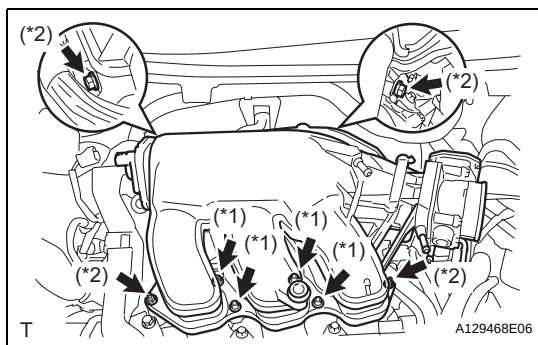




(f) Remove the bolt and vacuum hose clamp.



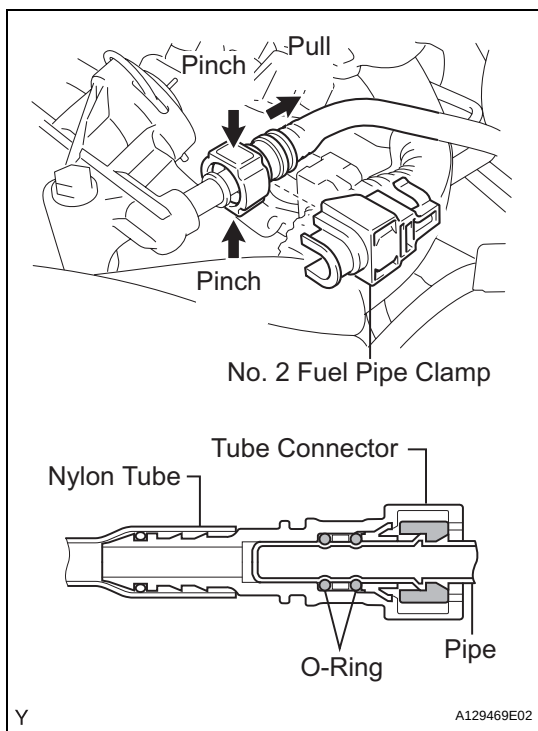
(g) Disconnect the connector.



(h) Using a 5 mm socket hexagon wrench, remove the 4 bolts. (*1)

(i) Remove the 2 nuts, 2 bolts and intake air surge tank. (*2)

(j) Remove the gasket from the intake air surge tank.



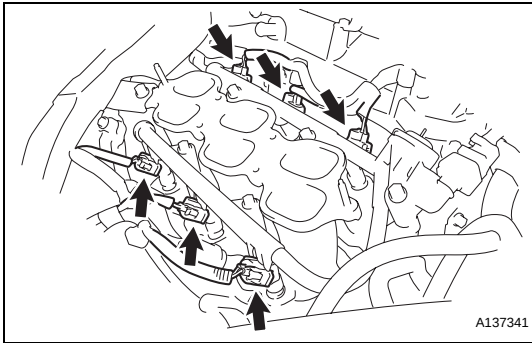
11. DISCONNECT FUEL TUBE SUB-ASSEMBLY

(a) Remove the No. 2 fuel pipe clamp.

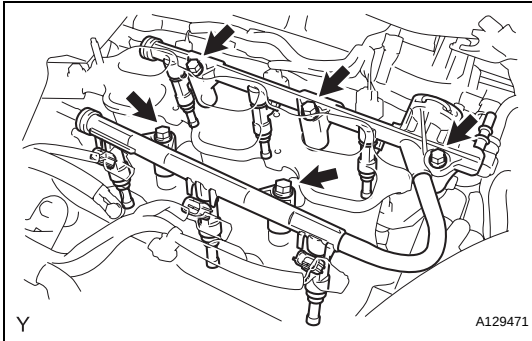
(b) Pinch the tube connector and then pull out the fuel pipe.

NOTICE:

- Check that there is no dirt or other foreign objects around the connector disconnecting it. Clean the connector as necessary.
- It is necessary to prevent mud or dirt from entering the quick connector. If mud or dirt gets in the connector, the O-rings may not seal properly.
- Only disconnect the quick connector by hand.
- Do not bend, kink or twist the nylon tubes. Protect the connector by covering it with a plastic bag.
- If the pipe and the connector are stuck, carefully try wiggling or pushing and pulling on the connector to release it. Pull the connector off the pipe carefully.

**12. REMOVE FUEL INJECTOR ASSEMBLY**

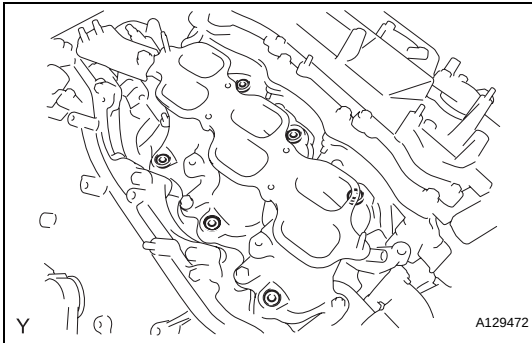
- (a) Disconnect the 6 fuel injector connectors.



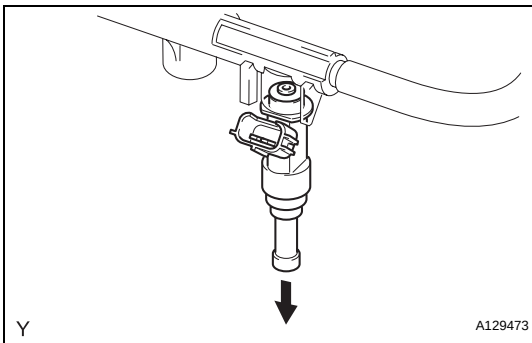
- (b) Remove the 5 bolts and fuel delivery pipe together with the 6 fuel injectors.

NOTICE:

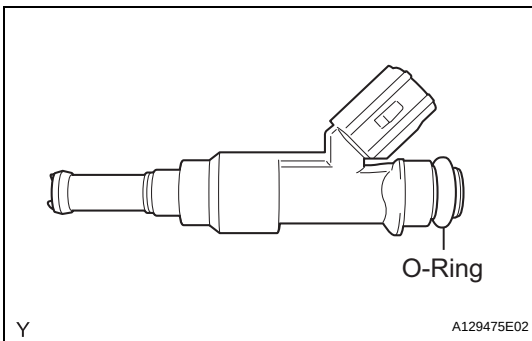
Be careful not to drop the fuel injectors when removing the fuel delivery pipe.



- (c) Remove the 6 insulators from the intake manifold.



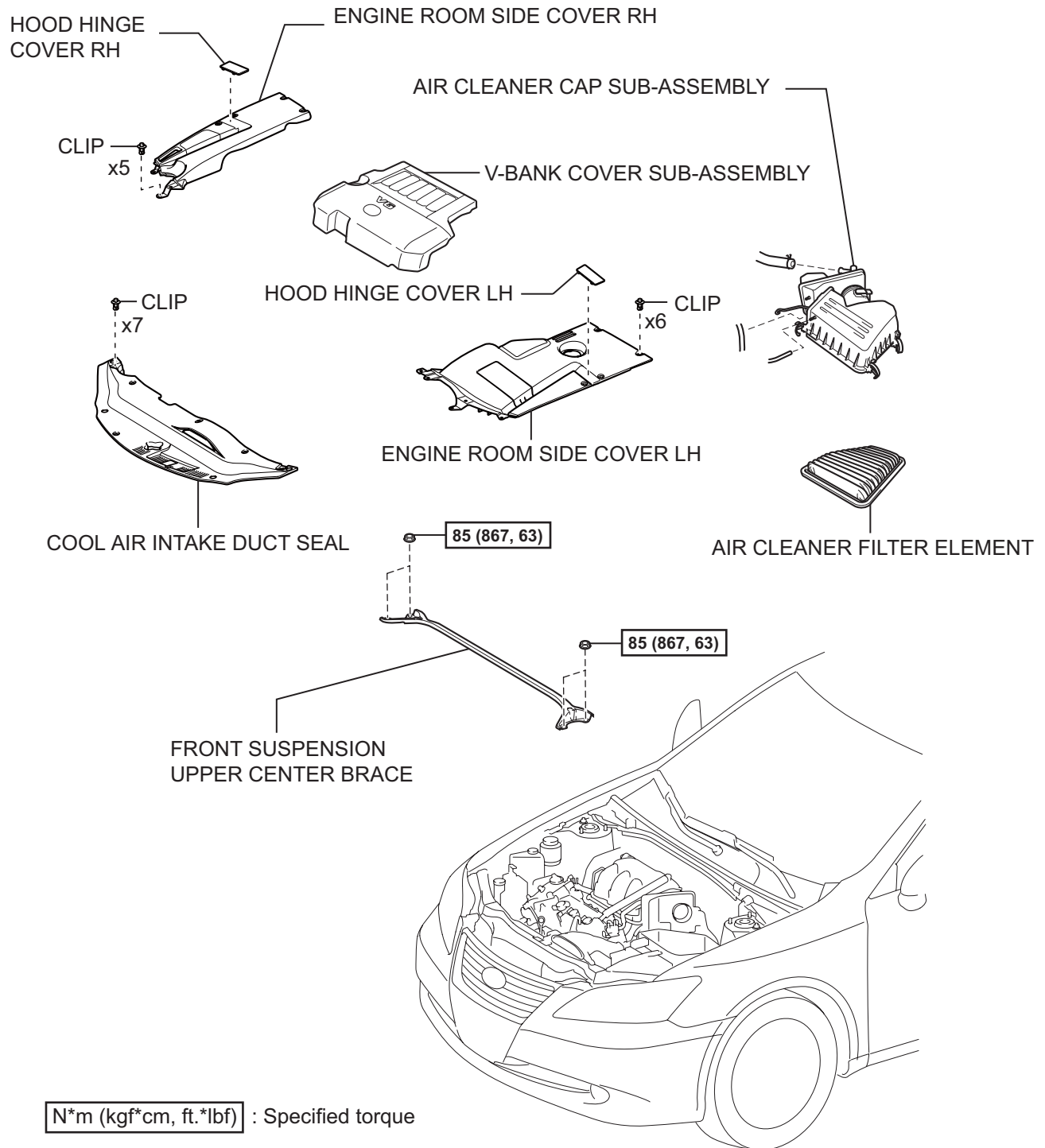
- (d) Pull out the fuel injectors from the fuel delivery pipe.



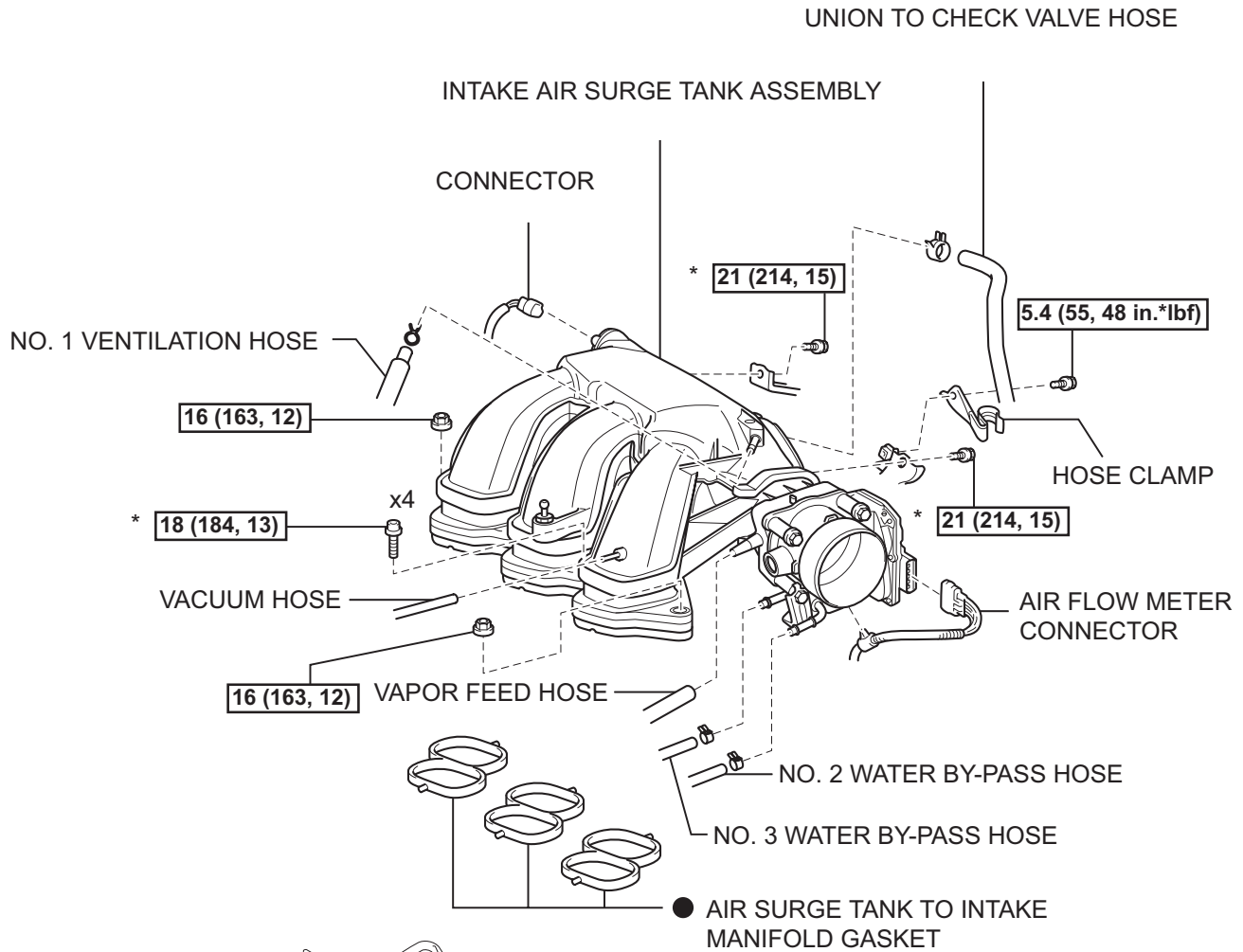
- (e) Remove the 6 O-rings from the injectors.

FUEL INJECTOR

COMPONENTS



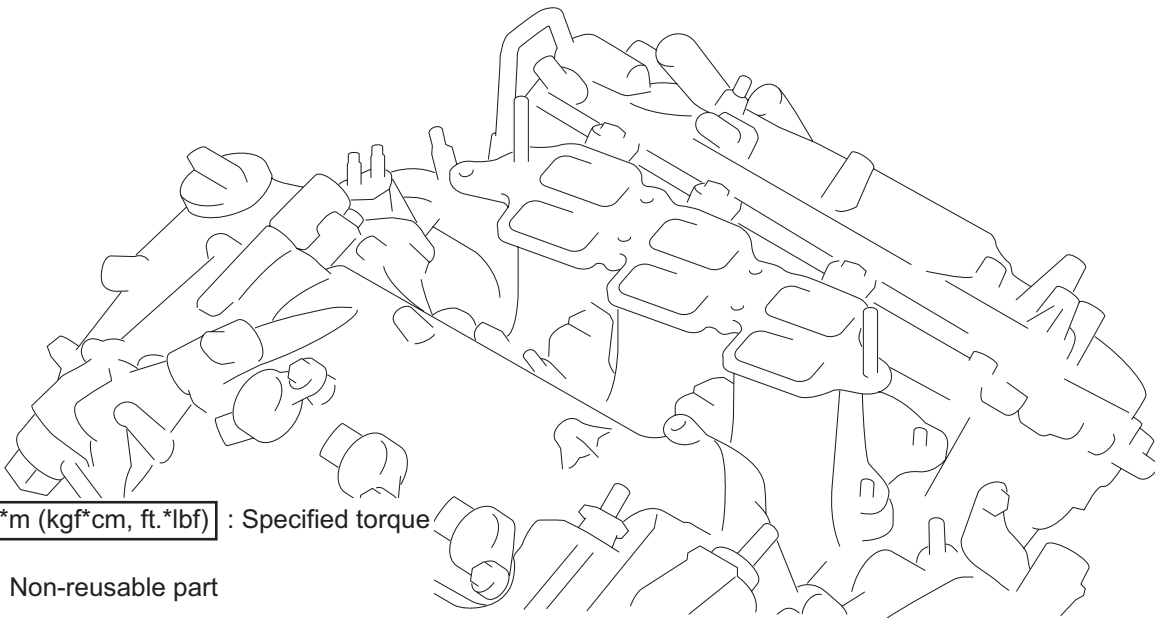
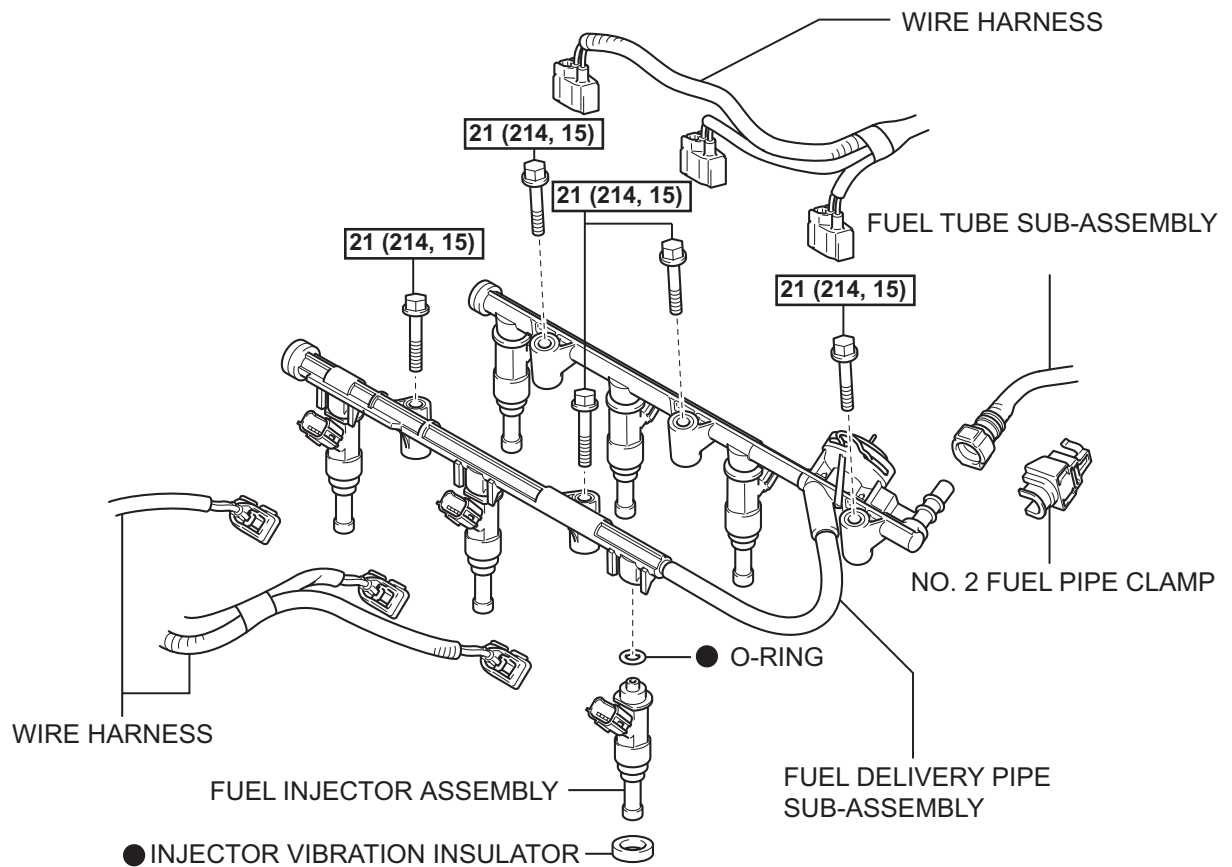
FU



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

● Non-reusable part

* DO NOT apply oil



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

● Non-reusable part

FU

ON-VEHICLE INSPECTION

1. CHECK FOR FUEL PUMP OPERATION AND FUEL LEAKS

(a) Check fuel pump operation.

(1) Connect the intelligent tester to the DLC3.

(2) Turn the engine switch on (IG) and push the intelligent tester main switch on.

NOTICE:

Do not start the engine.

(3) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / ACTIVE TEST / FUEL PUMP / SPD.

(4) Check for pressure in the fuel inlet tube from the fuel line. Check that sound of fuel flowing in the fuel tank can be heard. If no sound can be heard, check the integration relay, fuel pump, ECM and wiring connector.

(b) Check for fuel leaks.

(1) Check that there are no fuel leaks anywhere on the system after performing maintenance. If there is a fuel leak, repair or replace parts as necessary.

(c) Turn the engine switch off.

(d) Disconnect the intelligent tester from the DLC3.

2. CHECK FUEL PRESSURE

(a) Discharge the fuel system pressure (See page [FU-1](#)).

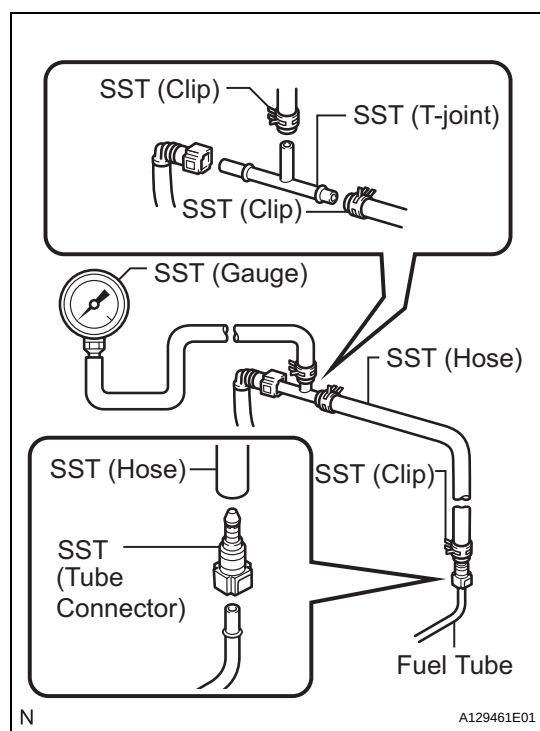
(b) Using a voltmeter, measure the battery voltage.

Standard voltage:

11 to 14 V

(c) Disconnect the cable from the negative (-) battery terminal.

(d) Disconnect the fuel hose from the fuel main tube (See page [FU-1](#)).



- (e) Install SST (pressure gauge) using SST and a fuel tube connector as shown in the illustration.
SST 09268-31011 (09268-41500, 90467-13001, 95336-08070), 09268-45014 (09268-41200, 09268-41220, 09268-41250)
- (f) Wipe up any gasoline.
- (g) Connect the cable to the negative (-) battery terminal.
- (h) Connect the intelligent tester to the DLC3.
- (i) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / ACTIVE TEST / FUEL PUMP / SPD.
- (j) Measure the fuel pressure.

Fuel pressure:

304 to 343 kPa (3.1 to 3.5 kgf*cm², 44.1 to 49.7 psi)

- If the fuel pressure is greater than the standard value, replace the fuel pressure regulator.
 - If the fuel pressure is less than the standard value, check the fuel hoses and connections, fuel pump, fuel filter and fuel pressure regulator.
- (k) Disconnect the intelligent tester from the DLC3.
 - (l) Start the engine.
 - (m) Measure the fuel pressure at idle.

Fuel pressure:

304 to 343 kPa (3.1 to 3.5 kgf*cm², 44.1 to 49.7 psi)

- (n) Stop the engine.
- (o) Check that the fuel pressure remains as specified for 5 minutes after the engine stops.

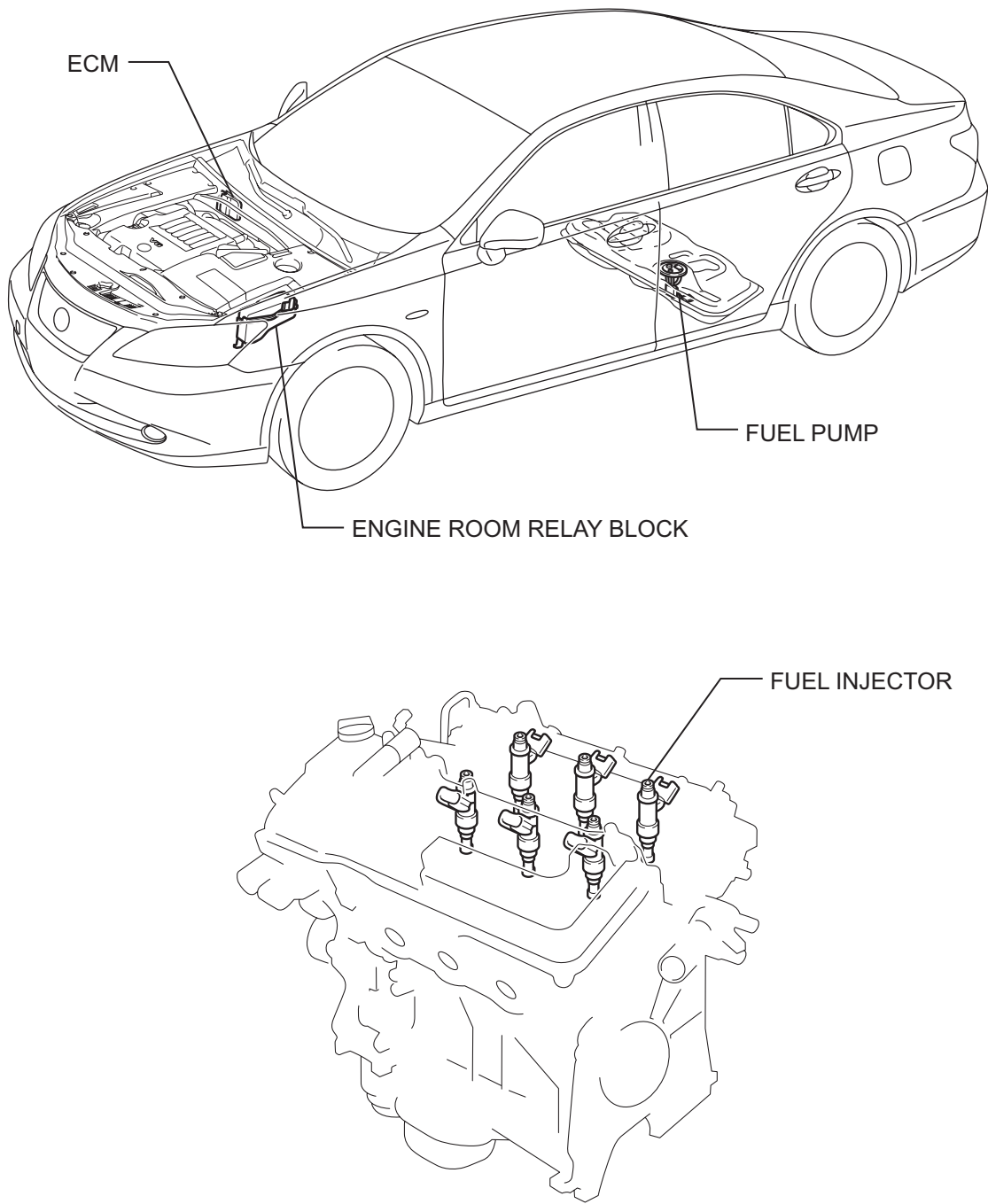
Fuel pressure:

147 kPa (1.5 kgf*cm², 21 psi) or more

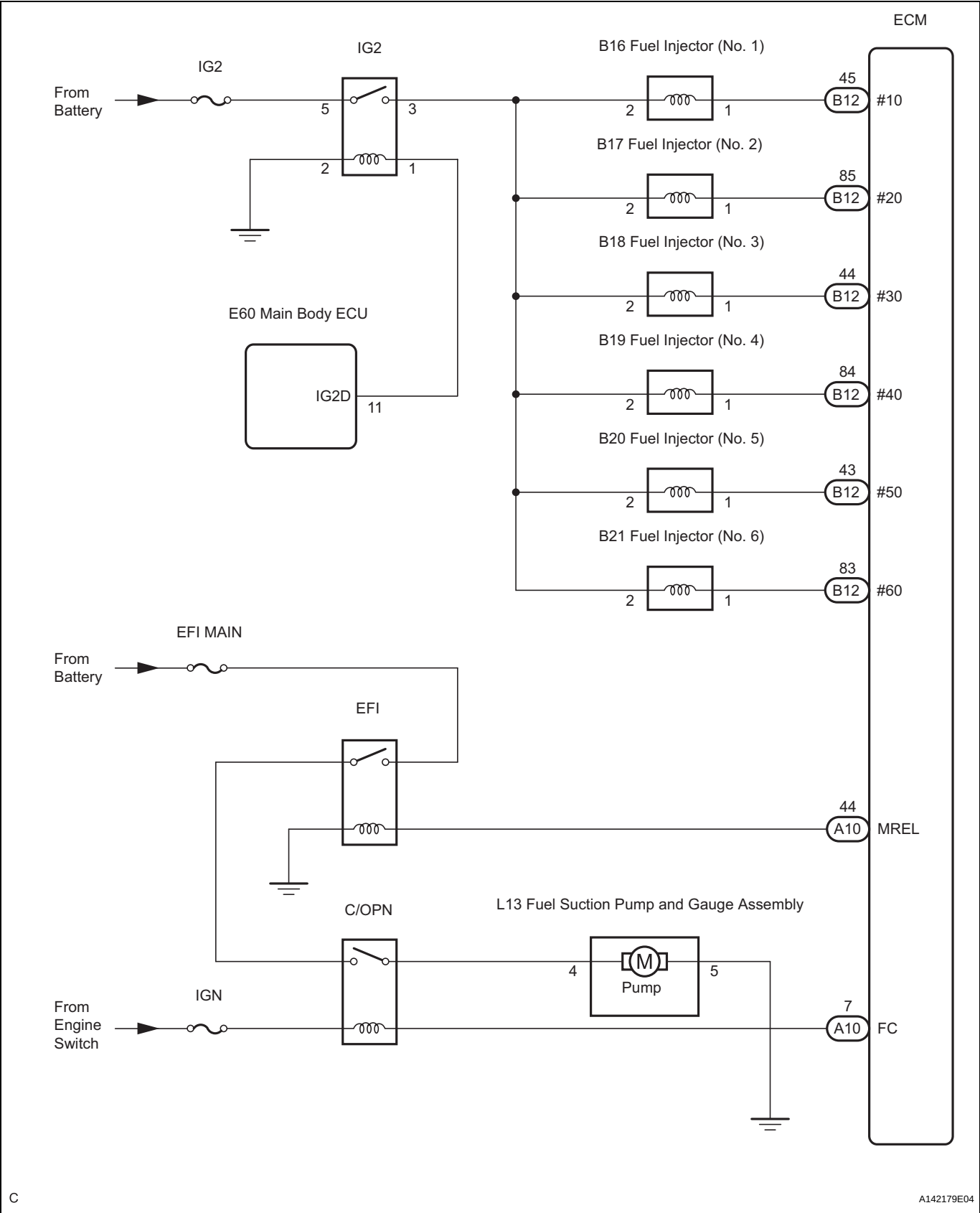
If the fuel pressure is not as specified, check the fuel pump, pressure regulator and/or fuel injectors.

- (p) After checking the fuel pressure, disconnect the cable from the negative (-) battery terminal and carefully remove the SST to prevent gasoline from splashing.
- (q) Reconnect the fuel tube to the main fuel tube (fuel tube connector).
- (r) Install the No. 1 fuel pipe clamp to the fuel tube connector.
- (s) Check for fuel leaks (step 1).

PARTS LOCATION



SYSTEM DIAGRAM



FUEL SYSTEM

PRECAUTION

1. PRECAUTION

- (a) Before inspecting and repairing the fuel system, disconnect the cable from 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

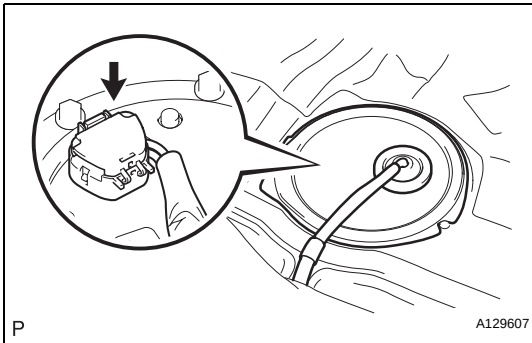
CAUTION:

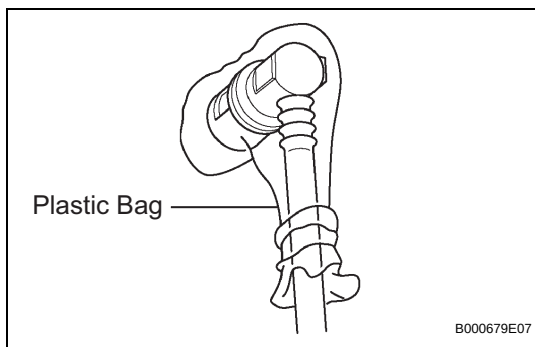
- Perform the following procedures to prevent fuel from spilling out before removing any fuel system parts.
- Pressure will still remain in the fuel line even after performing the following procedures. When disconnecting the fuel line, cover it with a shop rag or a piece of cloth to prevent fuel from spraying or coming out.

- (a) Remove the rear seat cushion assembly.
- (b) Remove the rear floor service hole cover.
- (c) Disconnect the fuel pump connector.
- (d) Start the engine.
- (e) After the engine stops, turn the engine switch off.
HINT:
DTC P0171/25 (fuel problem) may be detected.
- (f) Crank the engine again. Check that the engine does not start.
- (g) Remove the fuel tank cap to discharge pressure from the fuel tank.
- (h) Disconnect the cable from the negative (-) battery terminal.
- (i) Reconnect the fuel pump connector.
- (j) Install the rear floor service hole cover.
- (k) Install the rear seat.

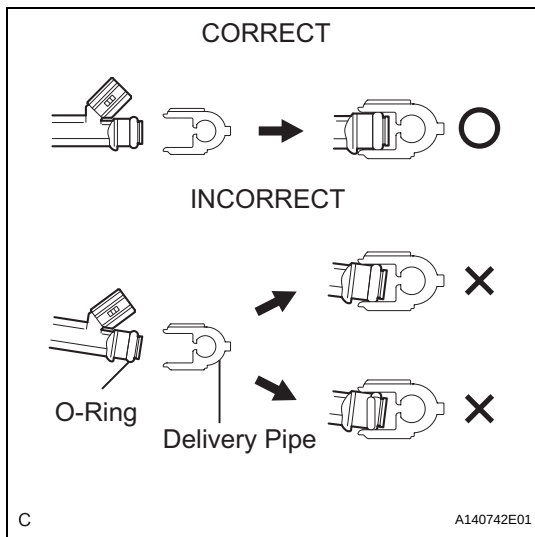
3. FUEL SYSTEM

- (a) When disconnecting the high pressure fuel line, a large amount of gasoline will spill out, so observe the following procedures:
 - (1) Discharge the fuel system pressure (step 2).
 - (2) Disconnect the fuel pump tube (See page [FU-26](#)).
 - (3) Drain the fuel that remains in the fuel pump tube.





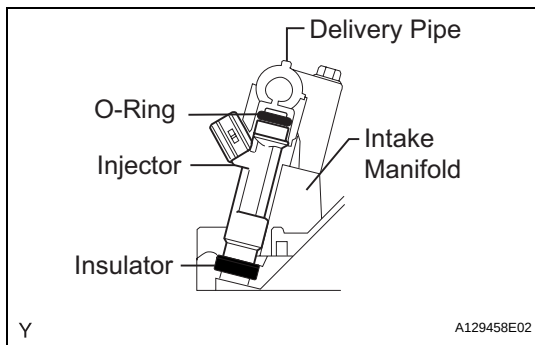
- (4) To protect the disconnected fuel pump tube from damage and contamination, cover it with a plastic bag.
- (5) Put a container under the connectors.



- (b) Observe the following precautions when removing and installing the fuel injectors:
 - (1) Never reuse an O-ring.
 - (2) When placing a new O-ring on the injector, do not damage the O-ring.
 - (3) Coat a new O-ring with spindle oil or gasoline before installing it.

NOTICE:

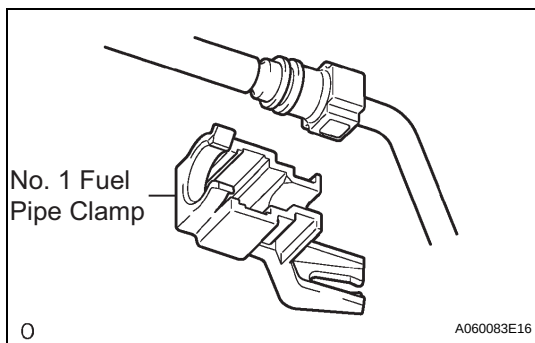
Do not use engine oil, gear oil or brake fluid.



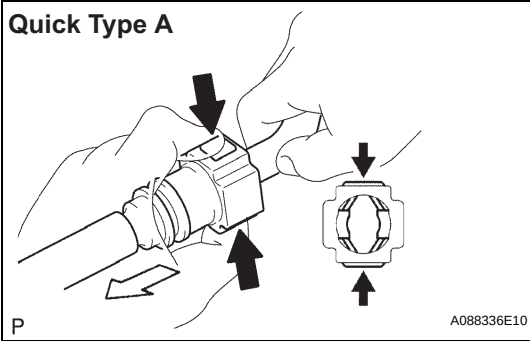
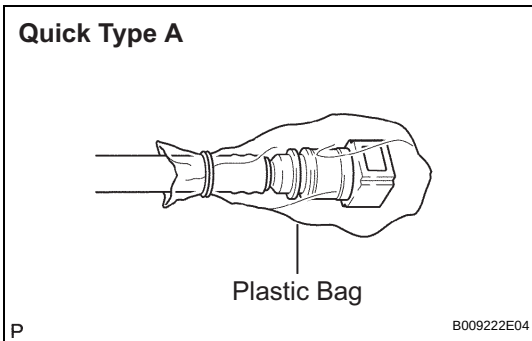
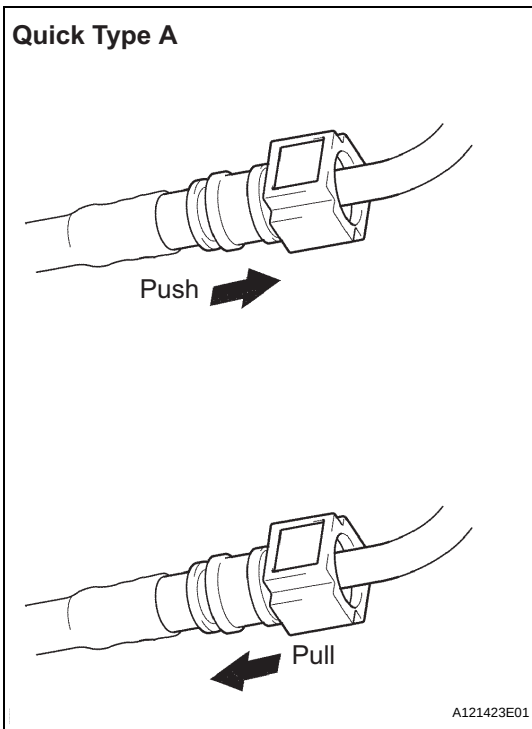
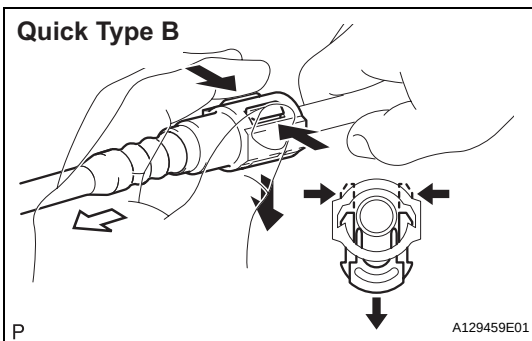
- (c) Install the injector to the delivery pipe and the lower intake manifold as shown in the illustration.

NOTICE:

Before installing the injector, be sure to apply appropriate lubricant or gasoline to the place where the delivery pipe or cylinder head contacts the injector O-rings.



- (d) Observe the following precautions when disconnecting the fuel tube connectors (Quick type A):
 - (1) Remove the No. 1 fuel pipe clamp.
 - (2) Check that there is no dirt or other foreign objects on the pipe and around the connector before disconnecting them. Clean them if necessary.

Quick Type A**Quick Type A****Quick Type A****Quick Type B**

- (3) Disconnect the connector from the pipe by hand.
- (4) If the connector and the pipe are stuck, push in and pull on the connector to release it. Pull the connector out of the pipe carefully.
- (5) Check that there is no dirt or other foreign objects on the sealing surface of the disconnected pipe. Clean the surfaces if necessary.

- (6) Do not damage the disconnected pipe or connector. Prevent entry of foreign objects by covering the connectors with plastic bags.

FU

- (e) Observe the following precautions when connecting the fuel tube connectors (Quick Type A):

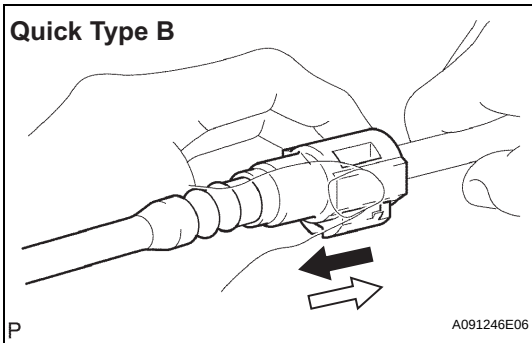
- (1) Check if there is any damage or foreign objects on the connecting parts of the pipes.
- (2) Line up the two parts of the pipes to be connected, and push them together until the connector makes a "click" sound. If the pipe is difficult to push into the connector, apply a small amount of clean engine oil to the tip of the pipe and reinsert it.
- (3) After connecting the pipes, check that the pipe and connector are securely connected by pulling on them.
- (4) Check for fuel leaks.

- (f) Observe the following precautions when disconnecting the fuel tube connector (Quick type B):

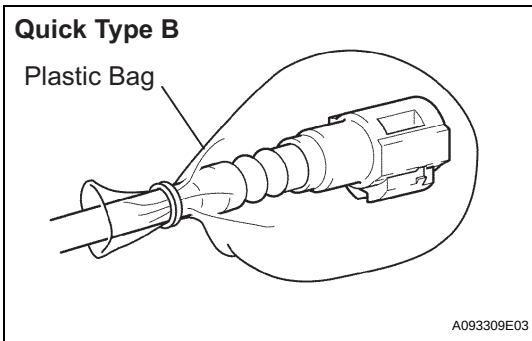
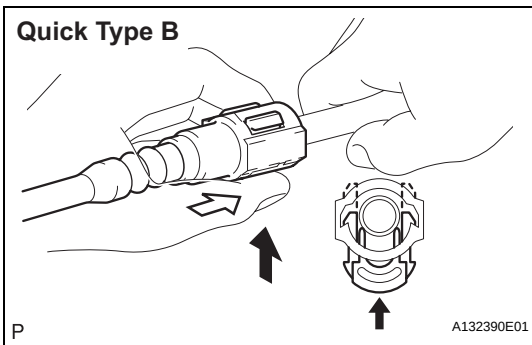
- (1) Before disconnecting the connector, clean off any dirt that may be present.
- (2) Pinch the tabs of the fuel tube retainer to disengage the 2 claws. Push the retainer down as shown in the illustration.

HINT:

Be sure to disconnect the connector by hand.

Quick Type B**Quick Type B**

Plastic Bag

**Quick Type B**

(3) If the connector and pipe are stuck, hold the fuel pipe by hand, and push and pull on the connector. Pull the two pipes apart to separate the connector.

(4) Check if there is any dirt or any other foreign objects on the sealing surfaces of the disconnected pipes. Clean the sealing surfaces if necessary.

(5) Do not damage the disconnected pipe or connector. Prevent entry of foreign objects by covering the connectors with plastic bags.

(g) Observe the following precautions when connecting the fuel tube connector (Quick Type B):

(1) Line up the two parts of the pipes to be connected, and fully push the fuel tube connector and pipe together until they are fully seated. Next, push the retainer into the connector until its claws lock. If the pipe is difficult to push in to the connector, apply a small amount of clean engine oil to the tip of the pipe and reinsert it.

(2) After connecting the pipes, check that the pipe and connector are securely connected by pulling on them.

(3) Check for fuel leaks.

(h) Observe the following precautions when handling a nylon tube:

CAUTION:

- Do not twist the connector part of the nylon tube or the quick connector when connecting them.
- Do not bend or twist the nylon tube.
- Do not remove the EPDM protector on the outside of the nylon tube.
- Do not pinch or kink the nylon tubes to prevent fuel leakage.

4. CHECK FOR FUEL LEAKS

(a) Check that there are no fuel leaks from the fuel system after doing any maintenance or repairs (See page [FU-7](#)).

INSPECTION

1. INSPECT FUEL INJECTOR ASSEMBLY

(a) Inspect injector 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 resistance is not as specified, replace the injector.

(b) Inspect the injection volume.

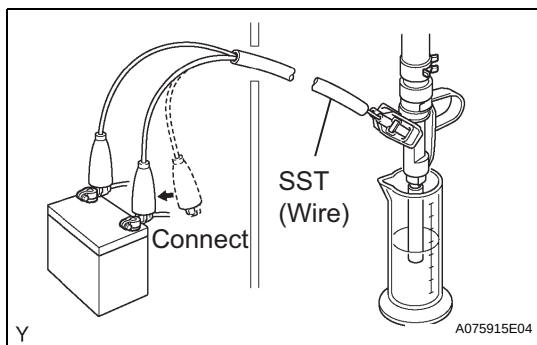
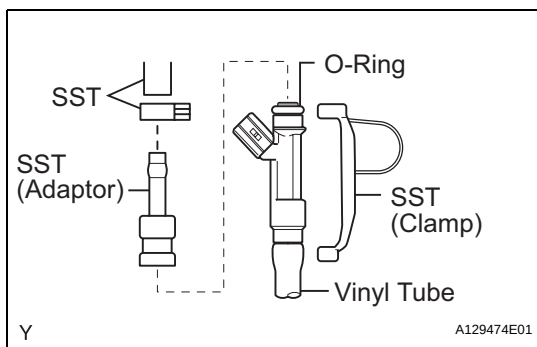
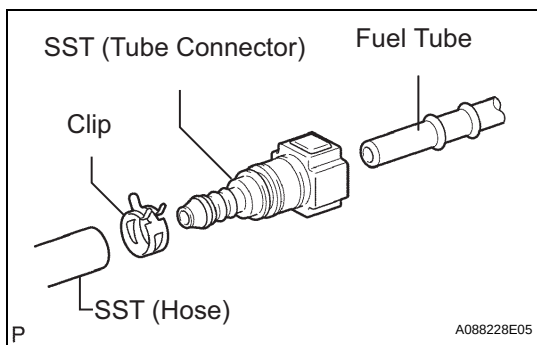
CAUTION:

This test involves high-pressure fuel and electricity. Take every precaution regarding the safe handling of both fuel and electricity. Perform this test in a safe area, and avoid any sparks or flames. Do not smoke.

- (1) Install the fuel tube connector to SST (hose), then connect the tube connector to the fuel pipe (vehicle side).

SST 09268-31011 (09268-41500, 90467-13001, 95336-08070)

- (2) Install the O-ring to the fuel injector.



- (3) Connect SST (adaptor and hose) to the injector, and hold the injector and union with SST (clamp).

SST 09268-31011 (90467-13001, 95336-08070), 09268-41140, 09268-41400

- (4) Put the injector into the graduated cylinder.

CAUTION:

Install a suitable vinyl tube onto the injector to contain gasoline spray.

- (5) Operate the fuel pump (See page [FU-7](#)).

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

SST 09842-30080

Volume:

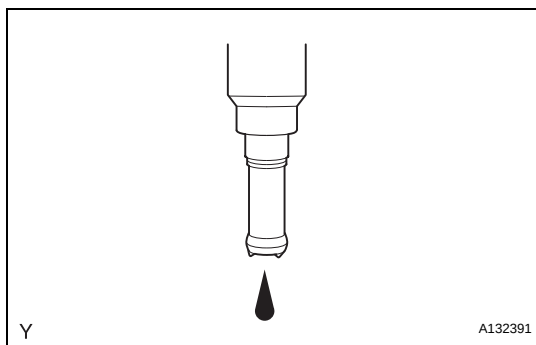
84 to 100 cm³ (5.1 to 6.0 cu in.) in 15 seconds

Difference between each injector:

16 cm³ (0.98 cu in.) or less

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

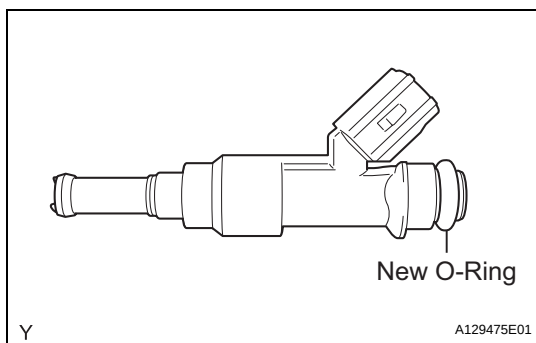
FU



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

Fuel drop:

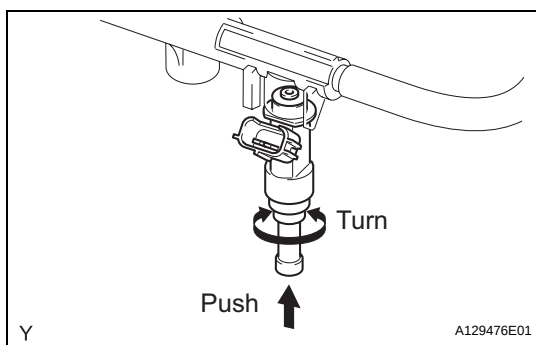
1 drop or less in 16 minutes



INSTALLATION

1. INSTALL FUEL INJECTOR ASSEMBLY

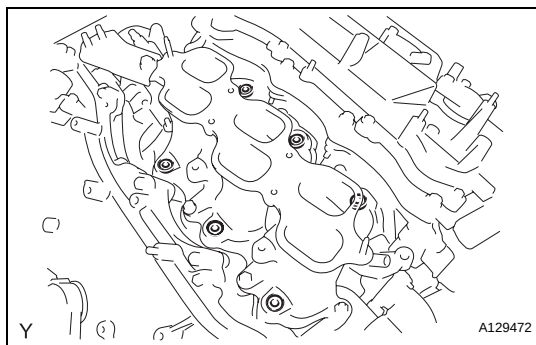
- (a) Apply a light coat of spindle oil or gasoline to new O-rings, and install them to each injector.



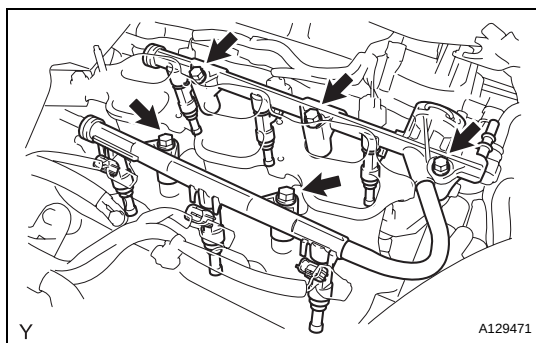
- (b) Apply a light coat of spindle oil or gasoline where the fuel delivery pipe contacts the O-ring.
 (c) Push the fuel injector while turning it to install the injector in the fuel delivery pipe.
 (d) Position the fuel injector connector outward.

NOTICE:

- Be careful not to twist the O-ring.
- After installing the fuel injector, check that it turns smoothly. If not, reinstall it with a new O-ring.



- (e) Install 6 new insulators to the intake manifold.



- (f) Place the fuel delivery pipe which has the 6 fuel injectors installed to it in position on the intake manifold.

NOTICE:

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

- (g) Temporarily install the 5 bolts which are used to hold the fuel delivery pipe to the intake manifold.

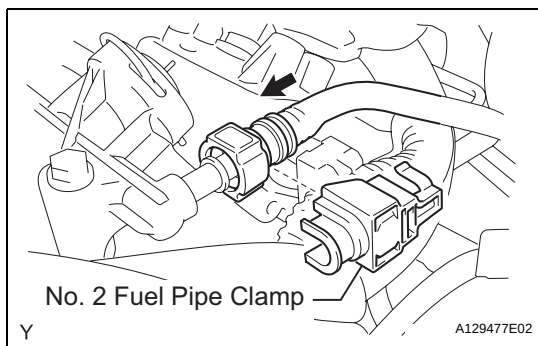
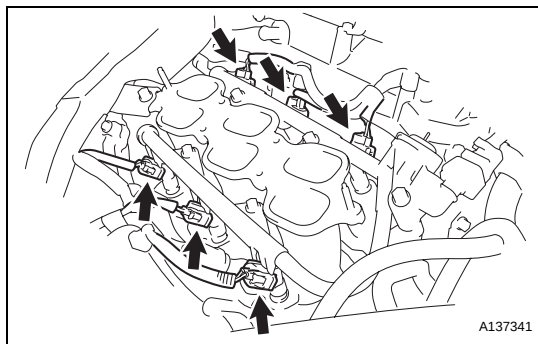
NOTICE:

After installing the fuel injectors, check that they turn smoothly. If not, reinstall the injectors with new O-rings.

- (h) Tighten the 5 bolts which are used to hold the fuel delivery pipe to the intake manifold.

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

- (i) Connect the 6 fuel injector connectors.



2. CONNECT FUEL TUBE SUB-ASSEMBLY

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

NOTICE:

- Before connecting the tube, make sure that it is not damaged. Make sure that there is no dirt present on the connecting surfaces.
- After connecting, check that the fuel tube connector and the pipe are securely connected by pulling on them.

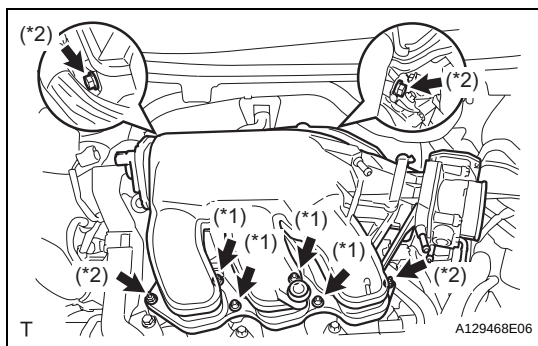
- (b) Install the No. 2 fuel pipe clamp.

3. INSTALL INTAKE AIR SURGE TANK ASSEMBLY

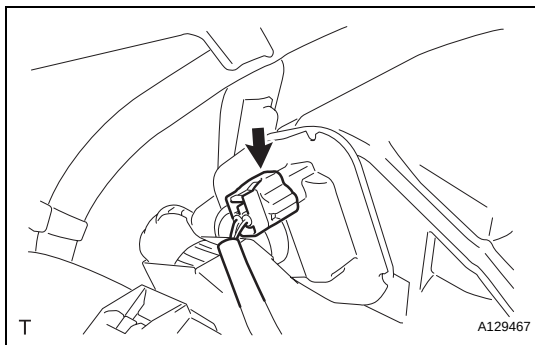
NOTICE:

DO NOT apply oil to the bolts listed below:

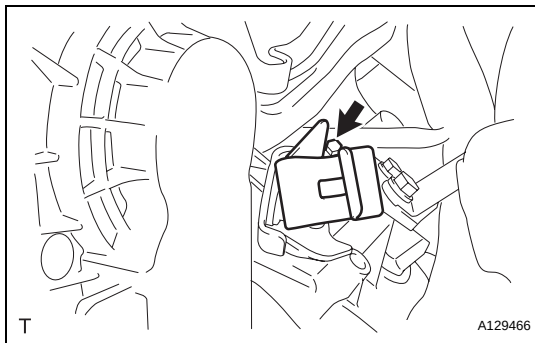
Tightening Parts
Surge Tank and Intake Manifold
No. 1 Surge Tank Stay and Surge Tank
Throttle Body Bracket and Surge Tank



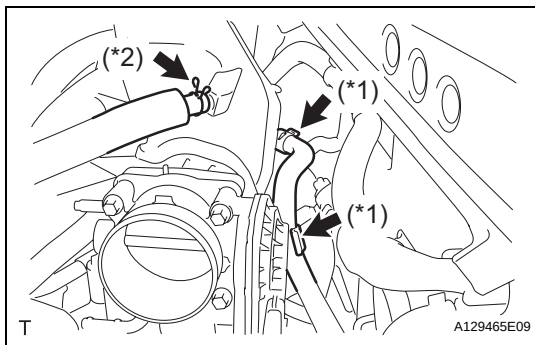
- (a) Install a new gasket to the intake air surge tank.
- (b) Using a 5 mm hexagon socket wrench, install the 4 bolts. (*1)
Torque: 18 N*m (184 kgf*cm, 13 ft.*lbf)
- (c) Install the intake air surge tank with the 2 nuts and 2 bolts. (*2)
Torque: Nut
16 N*m (163 kgf*cm, 12 ft.*lbf)
Bolt
21 N*m (214 kgf*cm, 15 ft.*lbf)



(d) Connect the connector.

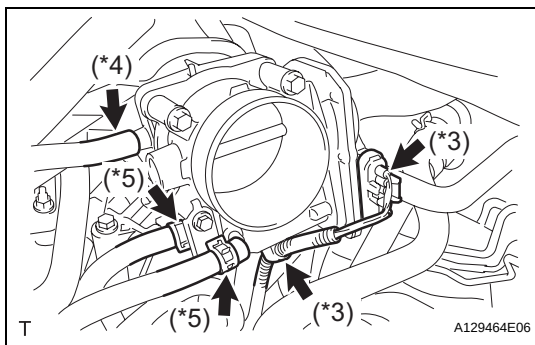


(e) Install the vacuum hose clamp with the bolt.
Torque: 5.4 N*m (55 kgf*cm, 48 in.*lbf)



(f) Connect the union to check valve hose. (*1)

(g) Connect the No. 1 ventilation hose. (*2)



(h) Install the clamp and connect the throttle with motor body assembly connector. (*3)

(i) Connect the vapor feed hose. (*4)

(j) Connect the 2 water by-pass hoses to the throttle with motor body assembly. (*5)

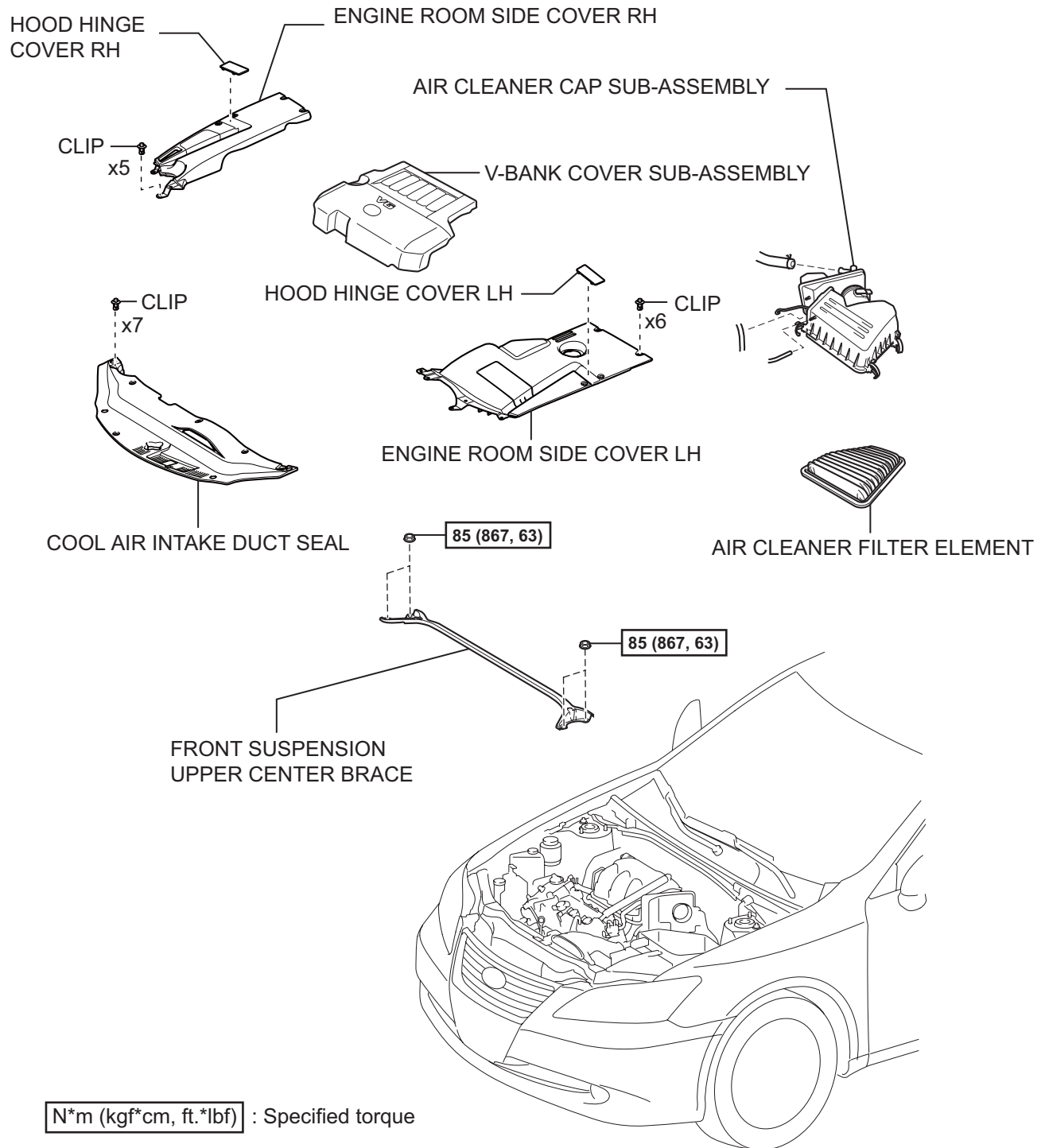
4. **INSTALL AIR CLEANER CAP SUB-ASSEMBLY** (See page [ES-522](#))
5. **ADD ENGINE COOLANT** (See page [CO-6](#))
6. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**
7. **CHECK FOR ENGINE COOLANT LEAKS** (See page [CO-1](#))
8. **CHECK FOR FUEL LEAKS** (See page [FU-7](#))
9. **INSTALL V-BANK COVER SUB-ASSEMBLY** (See page [EM-49](#))
10. **INSTALL FRONT SUSPENSION CENTER UPPER BRACE**

11. INSTALL ENGINE ROOM SIDE COVER RH (See page [EM-50](#))
12. INSTALL ENGINE ROOM SIDE COVER LH (See page [EM-50](#))
13. INSTALL COOL AIR INTAKE DUCT SEAL (See page [EM-50](#))
14. PERFORM INITIALIZATION
 - (a) Perform initialization procedures (See page [IN-33](#))

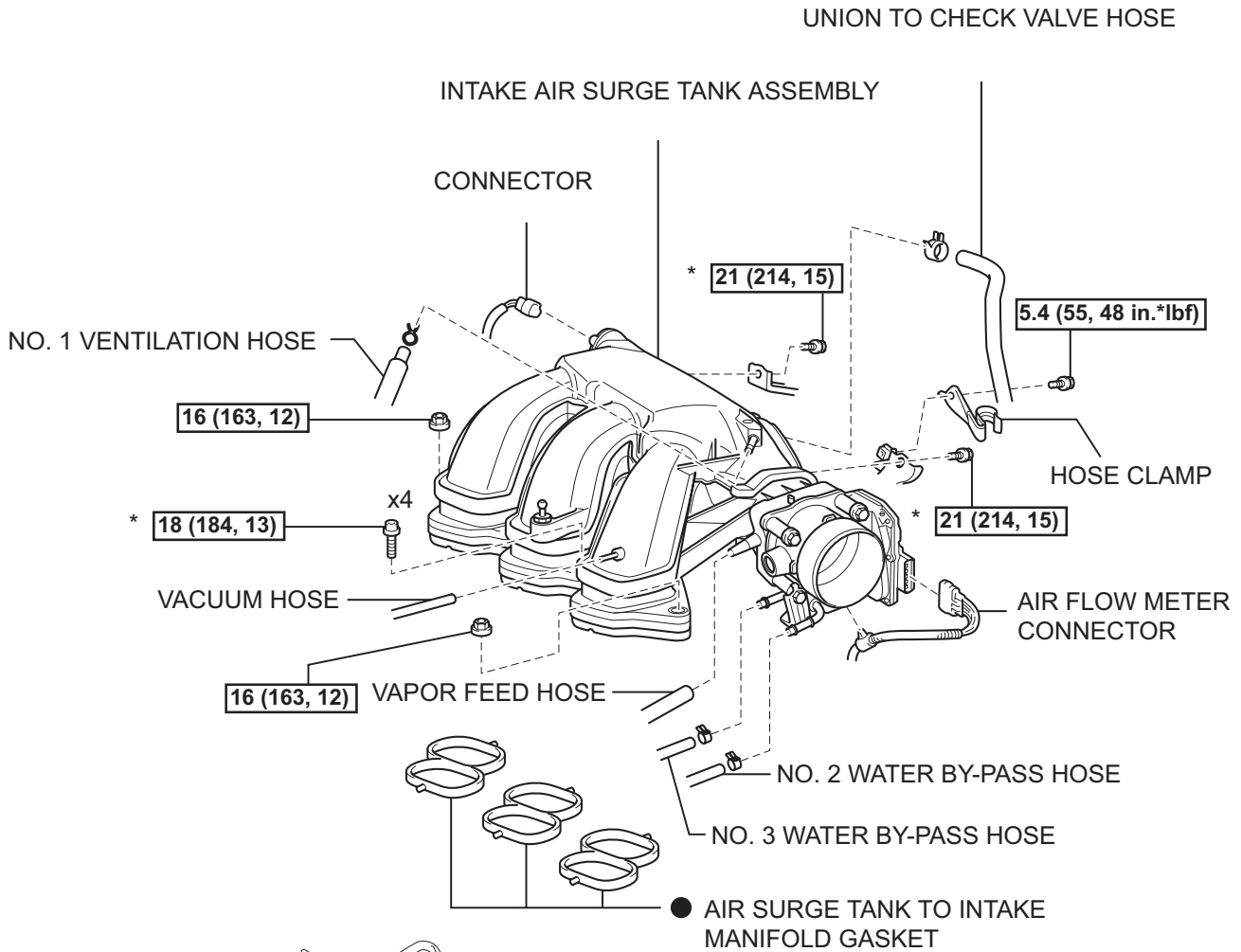
HINT:
Some systems need initialization after reconnecting the cable to the negative battery terminal.

FUEL INJECTOR

COMPONENTS



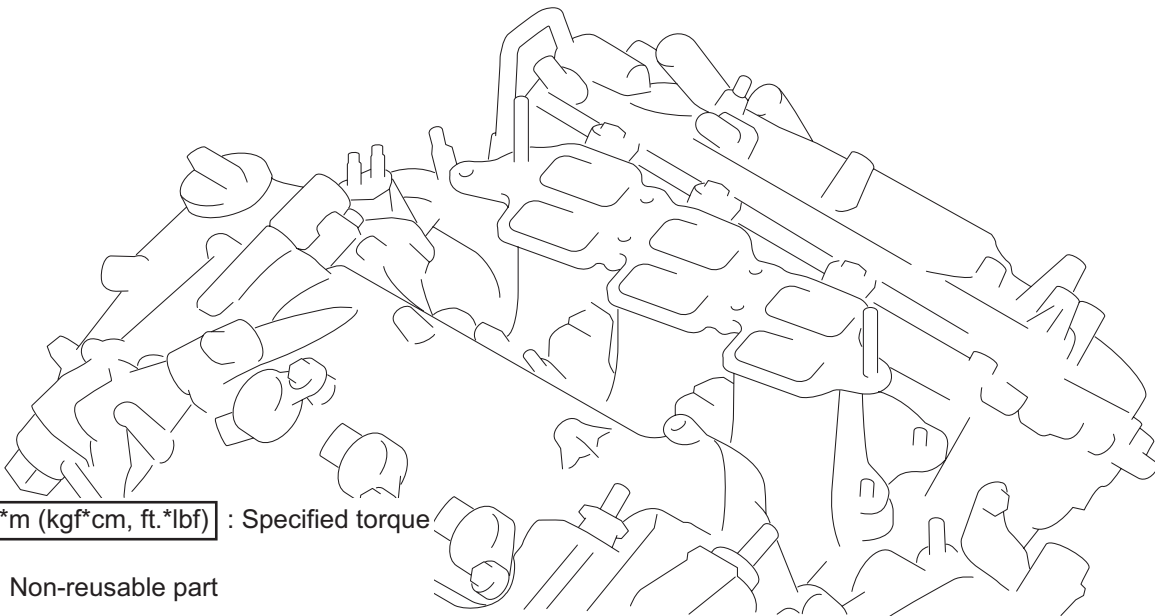
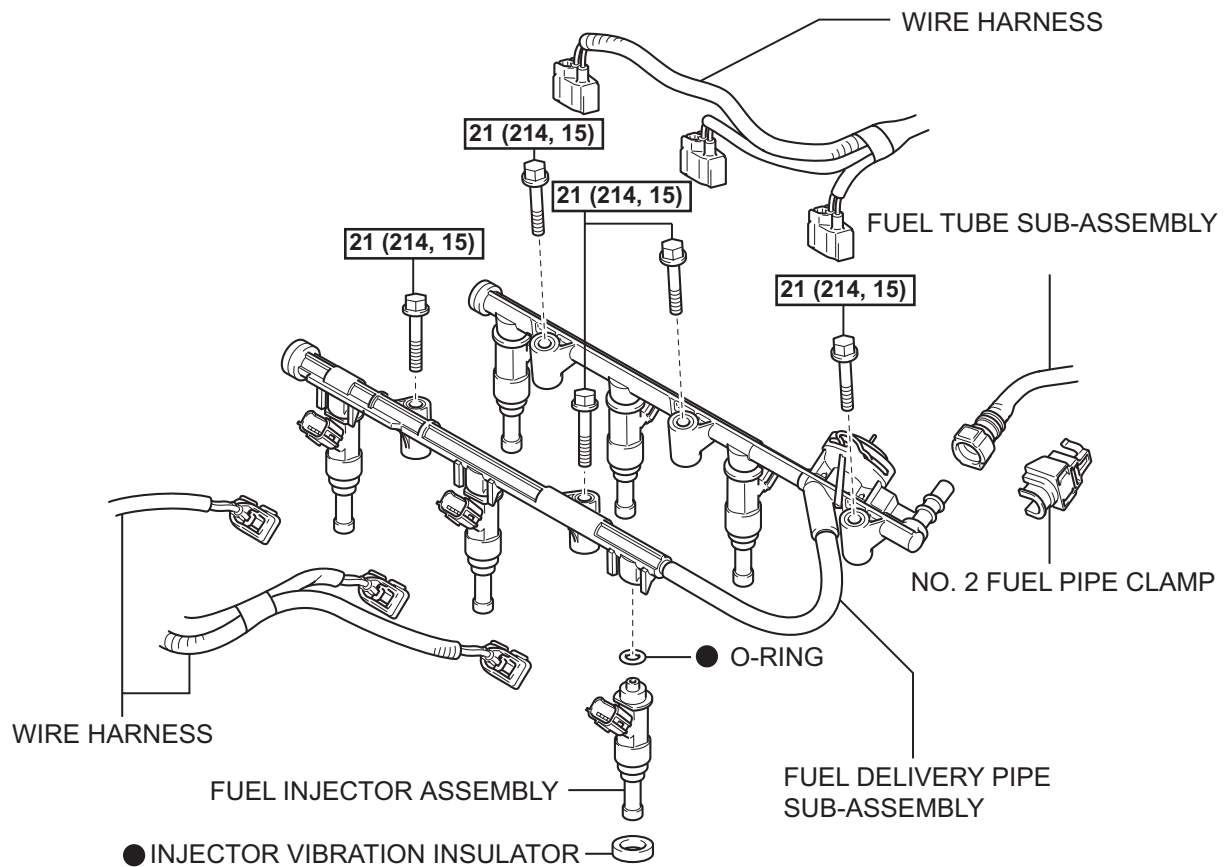
FU



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

● Non-reusable part

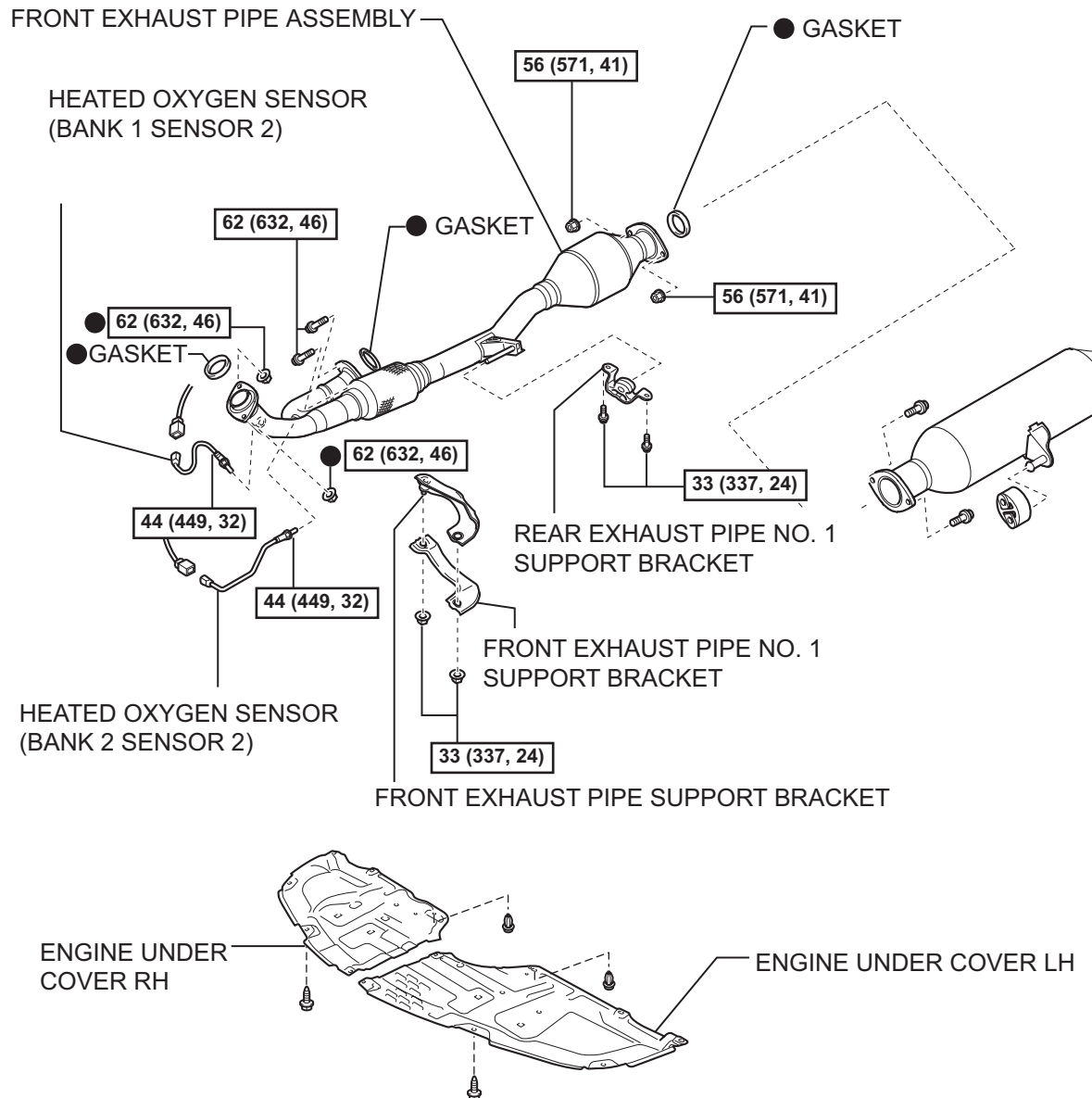
* DO NOT apply oil



FU

HEATED OXYGEN SENSOR

COMPONENTS

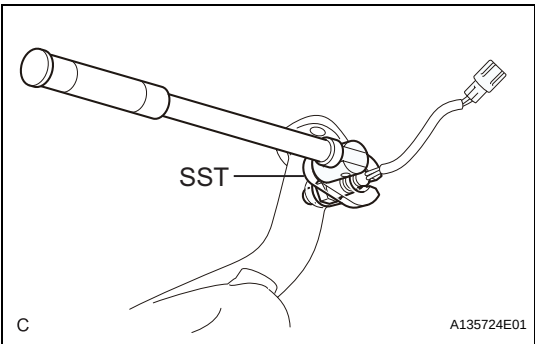
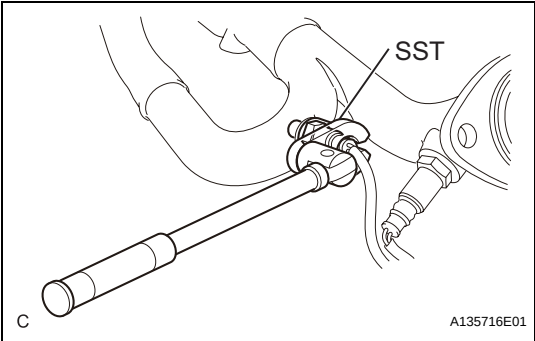


$\text{N}\cdot\text{m}$ (kgf $\cdot\text{cm}$, ft. $\cdot\text{lbf}$) : Specified torque ● Non-reusable part

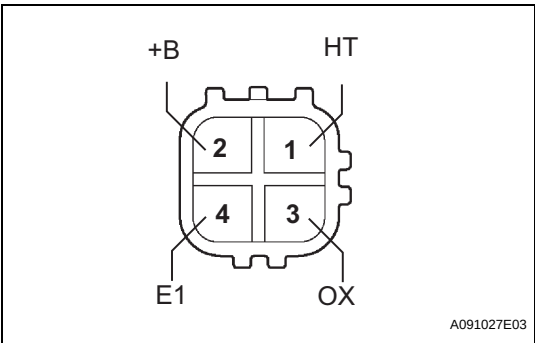
EC

REMOVAL

- 1. REMOVE ENGINE UNDER COVER LH
- 2. REMOVE ENGINE UNDER COVER RH
- 3. REMOVE EXHAUST PIPE NO. 1 SUPPORT BRACKET (See page EX-3)
- 4. REMOVE FRONT EXHAUST PIPE ASSEMBLY (See page EX-3)
- 5. REMOVE HEATED OXYGEN SENSOR (for Bank 1)
 - (a) Using SST, remove the oxygen sensor.
SST 09224-00010



- 6. REMOVE HEATED OXYGEN SENSOR (for Bank 2)
 - (a) Using SST, remove the oxygen sensor.
SST 09224-00010



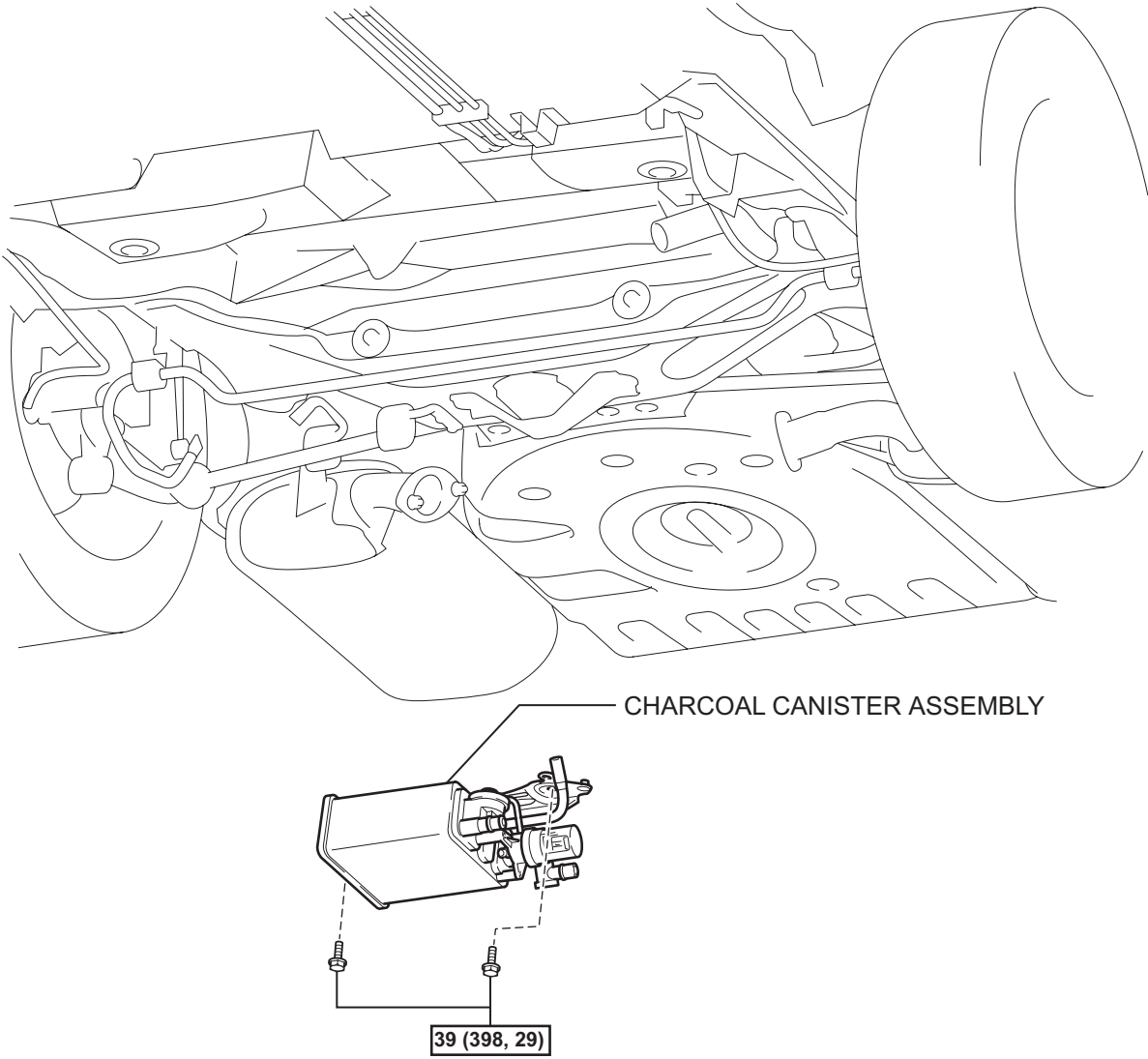
INSPECTION

- 1. INSPECT HEATED OXYGEN SENSOR
 - (a) Measure the resistance between terminals 1 (HT) and 2 (+B).
Standard resistance

Condition	Specified Condition
20°C (68°F)	11 to 16 Ω

If the result is not as specified, replace the sensor.

CANISTER
COMPONENTS



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

REMOVAL

1. REMOVE FUEL TANK ASSEMBLY

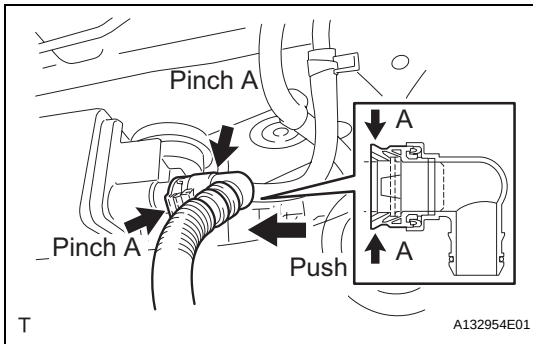
HINT:

(See page [FU-35](#))

2. REMOVE CHARCOAL CANISTER ASSEMBLY

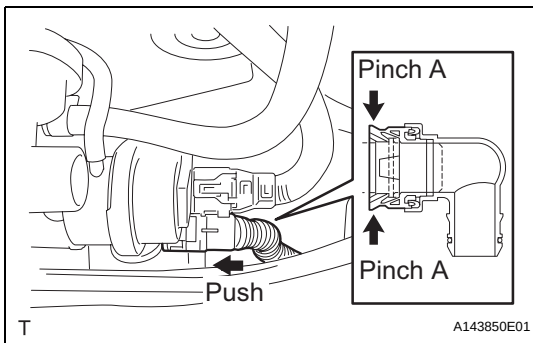
(a) Disconnect the fuel tank vent hose from the charcoal canister.

- (1) Push the connector deep inside.
- (2) Pinch portion A.
- (3) Pull out the connector.



(b) Disconnect the charcoal canister filter sub-assembly from the charcoal canister.

- (1) Push the connector deep inside.
- (2) Pinch portion A.
- (3) Pull out the connector.

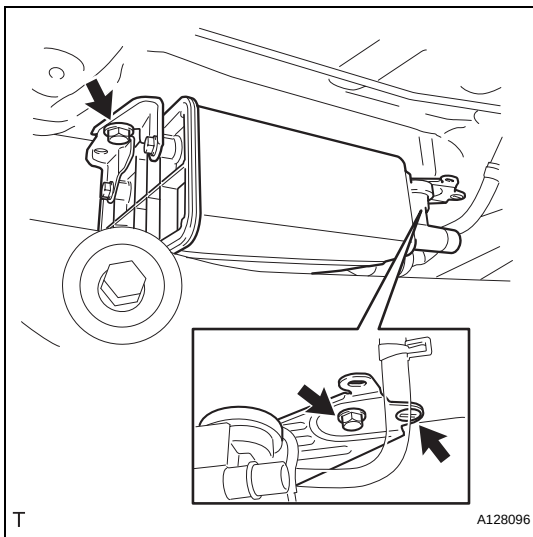


(c) Disconnect the vapor pressure sensor connector.

(d) Disconnect the wire harness clamp.

(e) Disconnect the purge line hose from the charcoal canister.

(f) Remove the 2 bolts, clip and charcoal canister.

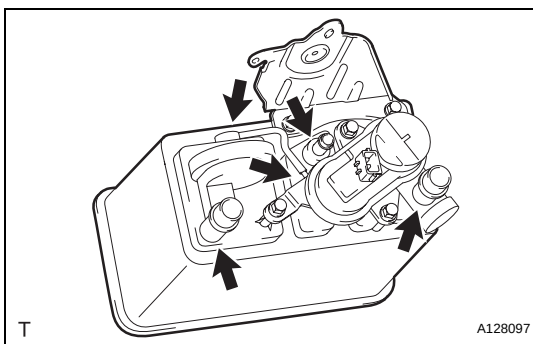


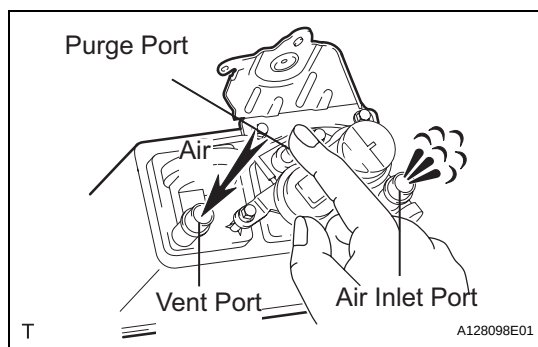
INSPECTION

1. INSPECT CHARCOAL CANISTER ASSEMBLY

(a) Visually check the charcoal canister for cracks or damage.

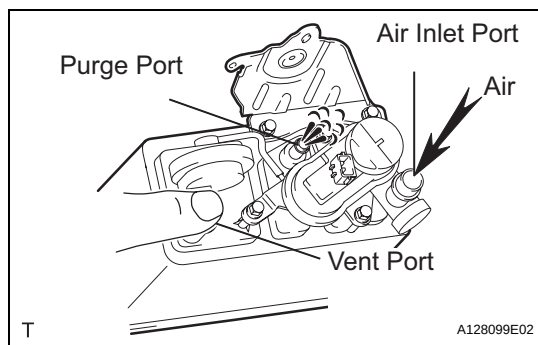
If cracks or damage are found, replace the charcoal canister assembly.



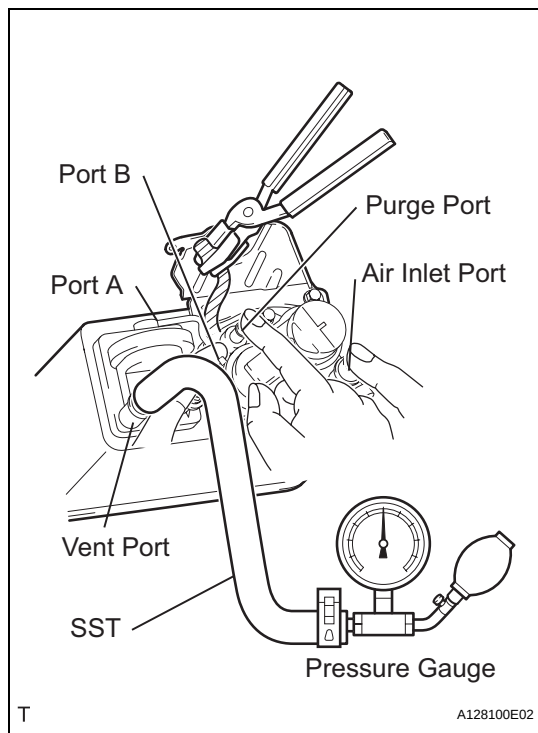


(b) Check charcoal canister operation.

- (1) With the purge port closed, blow 1.67 kPa (17.0 gf/cm², 0.24 psi) of air into the vent port, and check that air flows from the air inlet port. If the result is not as specified, replace the charcoal canister assembly.

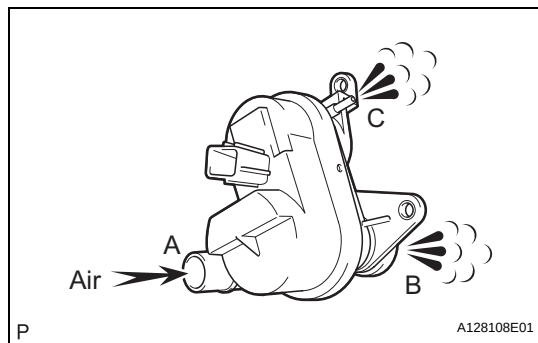


- (2) With the vent port closed, blow 1.10 kPa (11.2 gf/cm², 0.16 psi) of air to the air inlet port, and check that air flows from the purge port. If the result is not as specified, replace the charcoal canister assembly.



(c) Check for air leakage.

- (1) Remove the air hose between ports A and B.
- (2) Connect the SST (pressure gauge) to the vent port of the charcoal canister.
SST 09992-00242
- (3) While holding port B, with the purge port and the air inlet port closed and port A open, apply 19.6 kPa (0.2 kgf/cm², 2.81 psi) of pressurized air into the vent port, then confirm that pressure is retained for 1 minute. If the result is not as specified, replace the charcoal canister assembly.

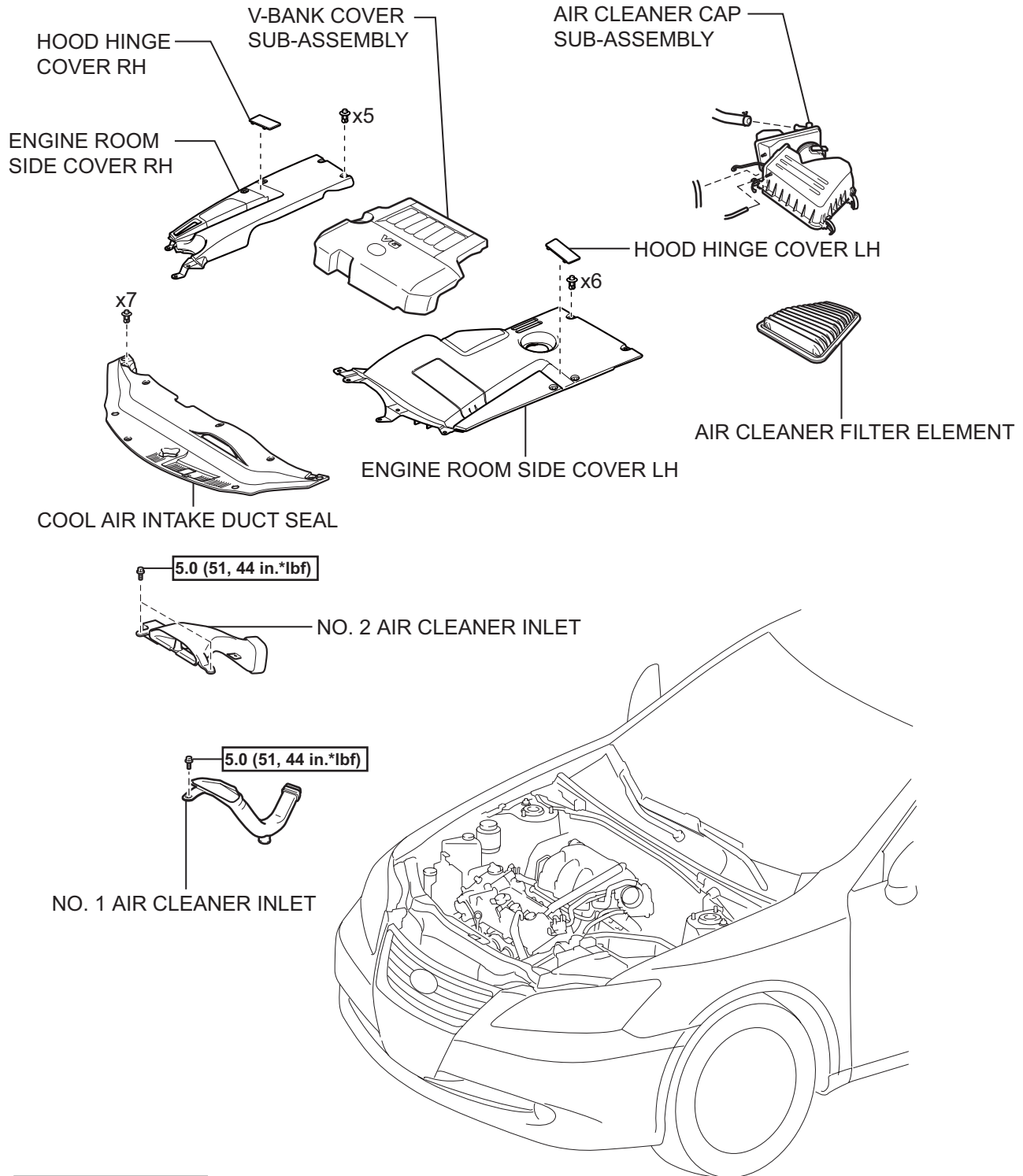


(d) Check the leak detection pump.

- (1) Remove the detection pump from the charcoal canister.
- (2) Check that air flows from port A to B and then C. If the result is not as specified, replace the charcoal canister assembly.

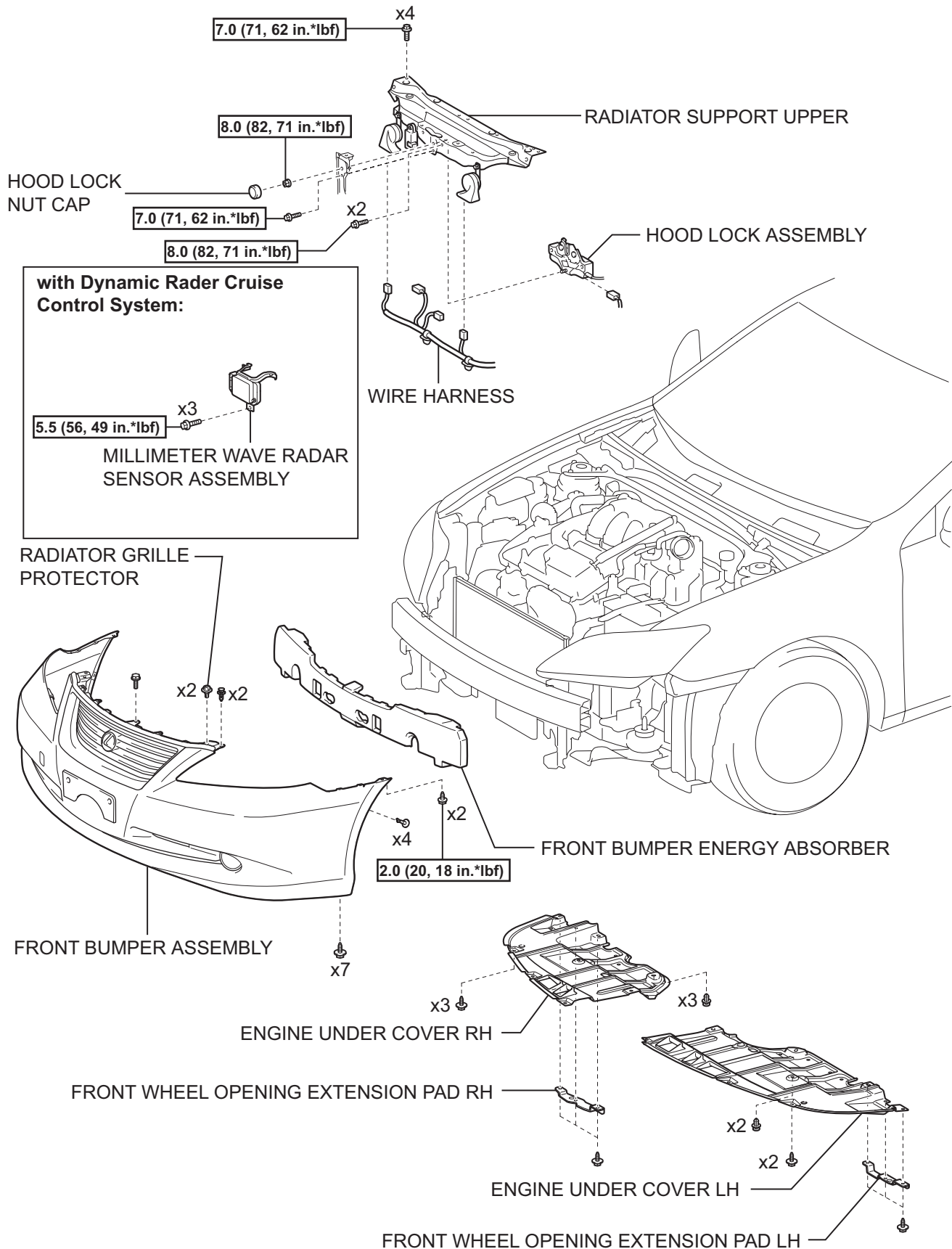
RADIATOR

COMPONENTS

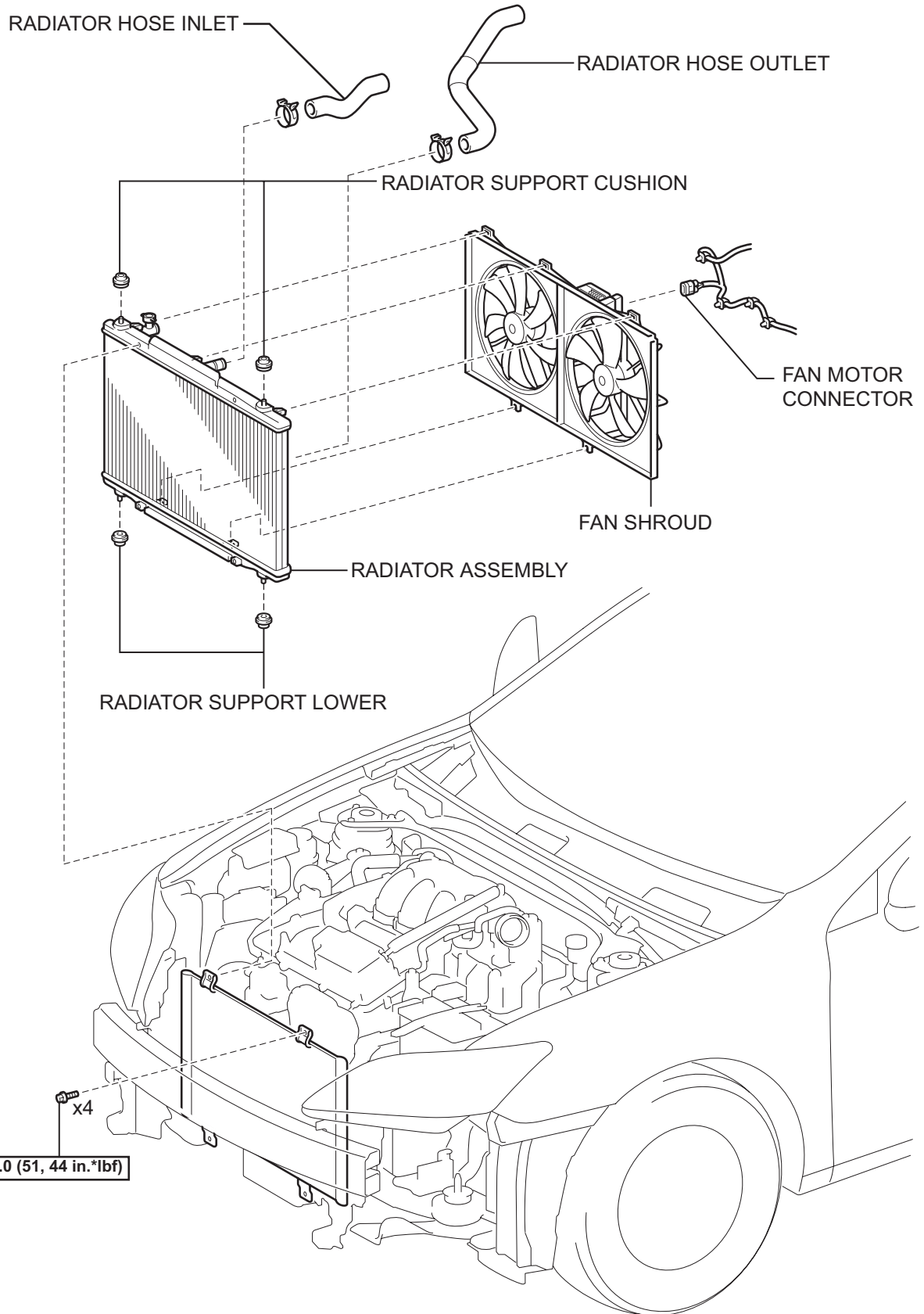


N*m (kgf*cm, ft.*lbf): Specified torque

CO



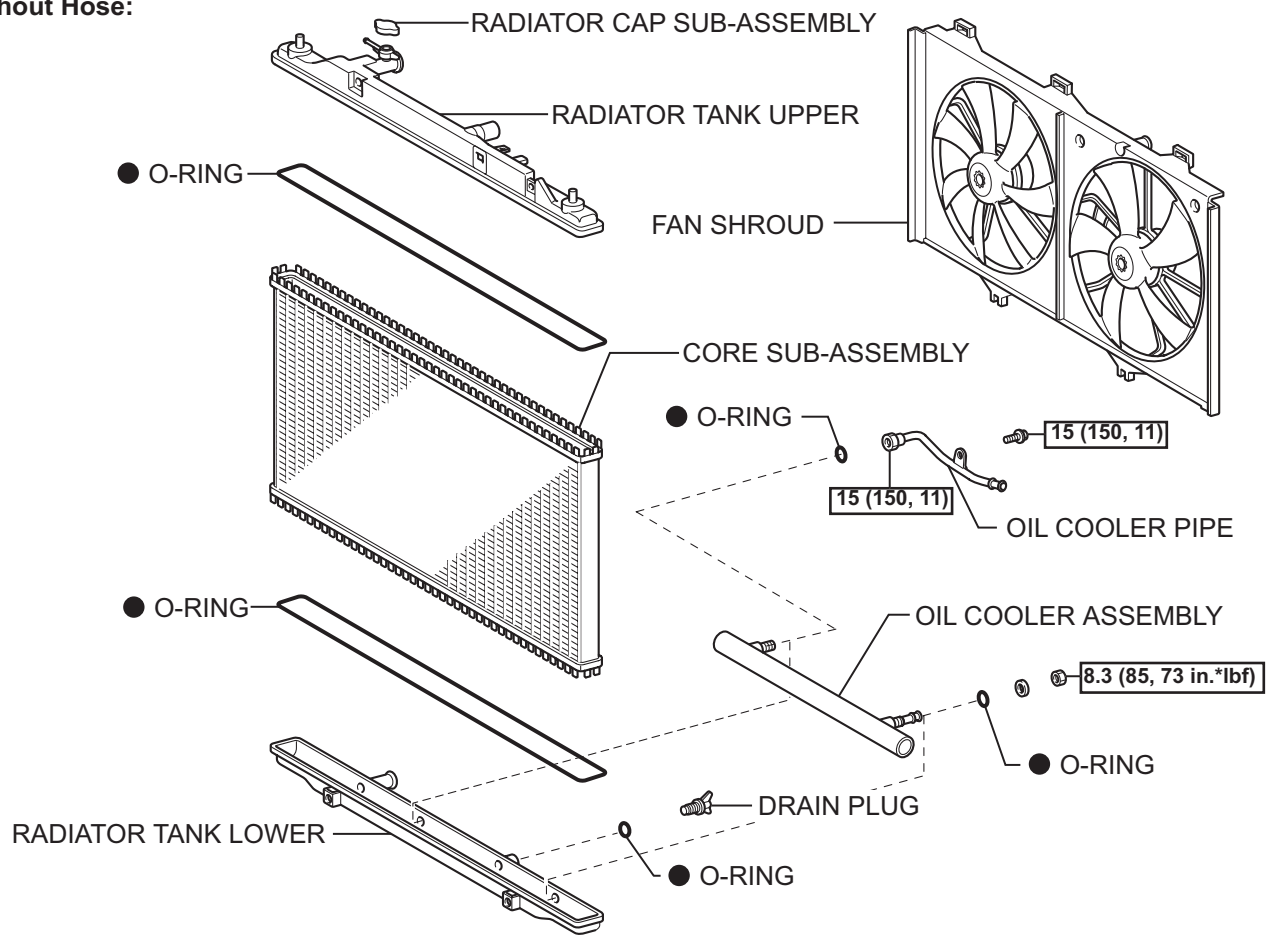
N*m (kgf*cm, ft.*lbf) : Specified torque



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

CO

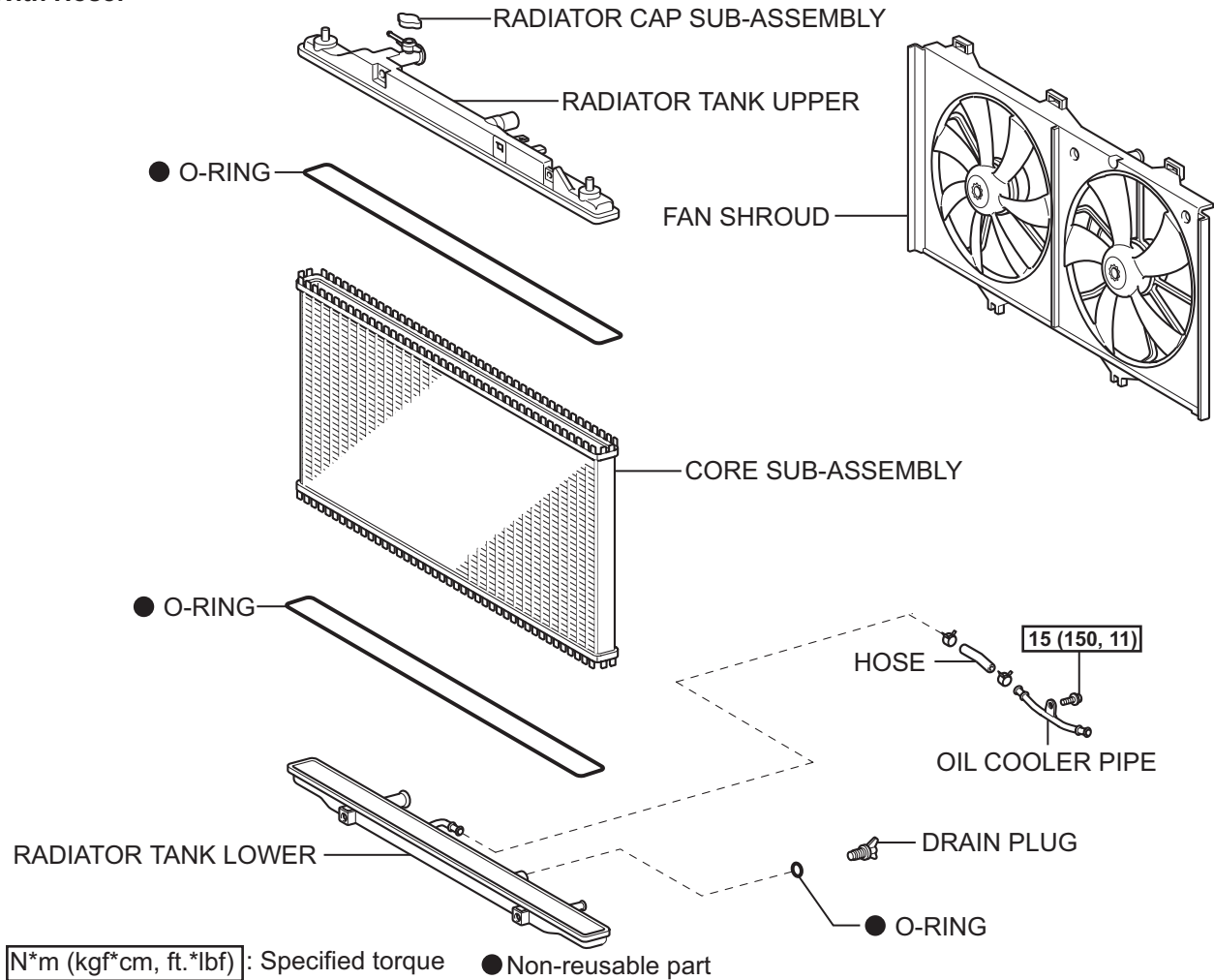
Without Hose:



N*m (kgf*cm, ft.*lbf) : Specified torque ● Non-reusable part

CO

With Hose:



CO

T

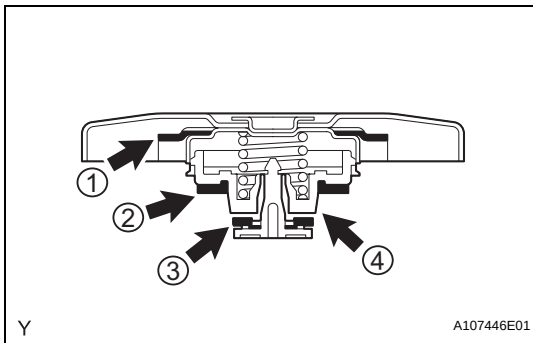
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ON-VEHICLE INSPECTION

1. CHECK RADIATOR CAP SUB-ASSEMBLY

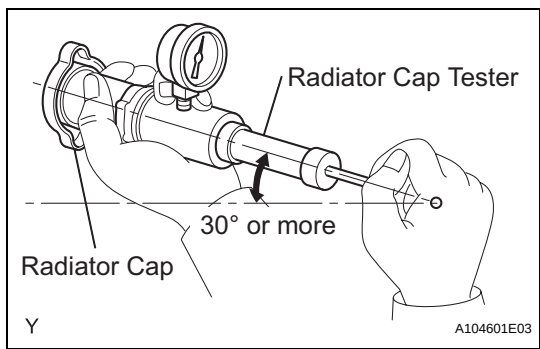
(a) Measure the valve opening pressure.

- (1) If there are water stains or foreign matter on rubber packings 1, 2 or 3, clean the part(s) with water and finger scouring.
- (2) Check that rubber packings 1, 2 and 3 are not deformed, cracked or swollen.
- (3) Check that rubber packings 3 and 4 are not stuck together.
- (4) Apply engine coolant to rubber packings 2 and 3 before using the radiator cap tester.
- (5) When using the cap tester, tilt it to 30° or more above the horizontal.



Y

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- (6) Pump the cap tester several times, and check the maximum pressure. ^{*1}

Pumping speed:
1 pump every second

^{*1}: Even if the cap cannot maintain the maximum pressure, it is not a defect.

Judgment Criteria

Item	Specified Condition
Standard valve (for brand-new cap)	93.3 to 122.7 kPa (0.95 to 1.25 kgf/cm ² , 13.5 to 17.8 psi)
Minimum standard valve (after using cap)	78.5 kPa (0.8 kgf/cm ² , 11.4 psi)

If the maximum pressure is less than the specified pressure for the minimum standard valve, replace the radiator cap sub-assembly.

ON-VEHICLE CLEANING

1. INSPECT FINS BLOCKAGE

- (a) If the fins are clogged, wash them with water or a steam cleaner. Dry with compressed air.

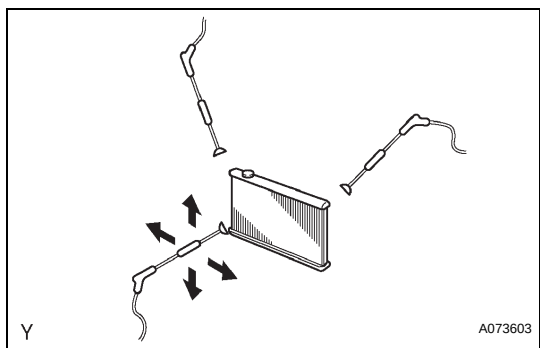
NOTICE:

- If the distance between the steam cleaner and the core is too close, the fins may become damaged. Keep the following injection distance.

Standard

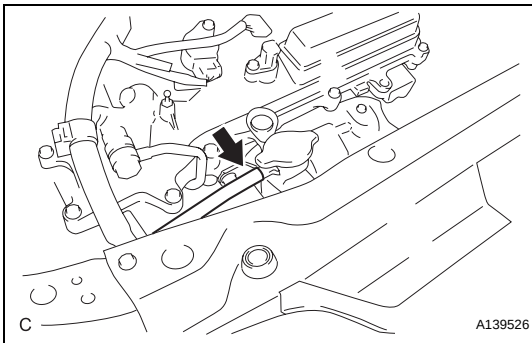
Injection Distance	Injection Pressure
300 mm (11.81 in.)	2,942 to 4,903 kPa (30 to 50 kg/cm ² , 427 to 711 psi)
500 mm (19.69 in.)	4,903 to 7,845 kPa (50 to 80 kg/cm ² , 711 to 1,138 psi)

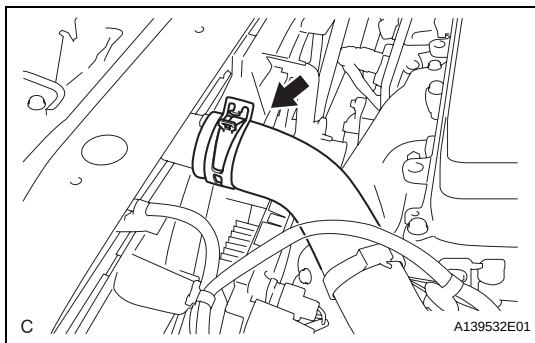
- If the fins are bent, straighten them with a screwdriver or pliers.
- Never apply water directly onto the electronic components.



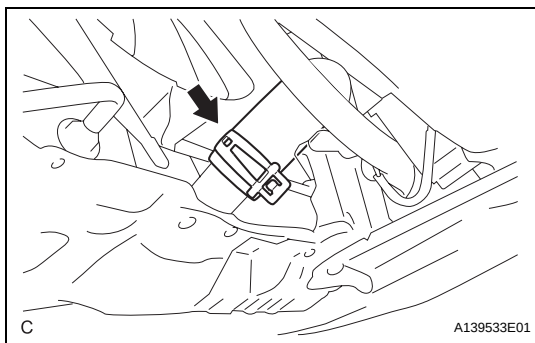
REMOVAL

1. REMOVE FRONT WHEEL OPENING EXTENSION PAD LH
2. REMOVE FRONT WHEEL OPENING EXTENSION PAD RH
3. REMOVE ENGINE UNDER COVER LH
4. REMOVE ENGINE UNDER COVER RH
5. DRAIN ENGINE COOLANT (See page [CO-5](#))
6. REMOVE V-BANK COVER SUB-ASSEMBLY (See page [EM-23](#))
7. REMOVE COOL AIR INTAKE DUCT SEAL (See page [EM-22](#))
8. REMOVE ENGINE ROOM SIDE COVER LH
9. REMOVE ENGINE ROOM SIDE COVER RH
10. REMOVE AIR CLEANER CAP SUB-ASSEMBLY (See page [ES-519](#))
11. REMOVE AIR CLEANER INLET SUB-ASSEMBLY (See page [EM-23](#))
12. REMOVE NO. 1 AIR CLEANER INLET (See page [EM-23](#))
13. REMOVE FRONT BUMPER ASSEMBLY (See page [ET-5](#))
14. REMOVE FRONT BUMPER ENERGY ABSORBER (See page [ET-9](#))
15. REMOVE MILLIMETER WAVE RADAR SENSOR ASSEMBLY (w/ Dynamic Radar Cruise Control System)
16. SEPARATE RADIATOR RESERVE TANK HOSE
 - (a) Separate the radiator reserve tank hose from the radiator assembly.

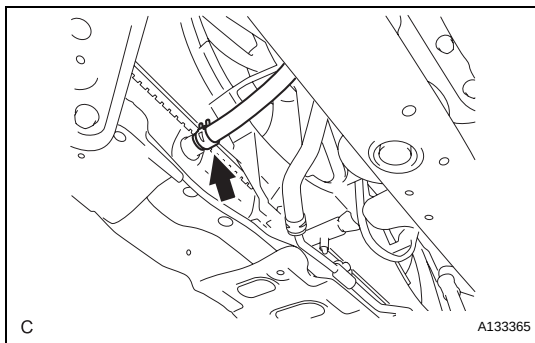


**17. DISCONNECT RADIATOR HOSE INLET**

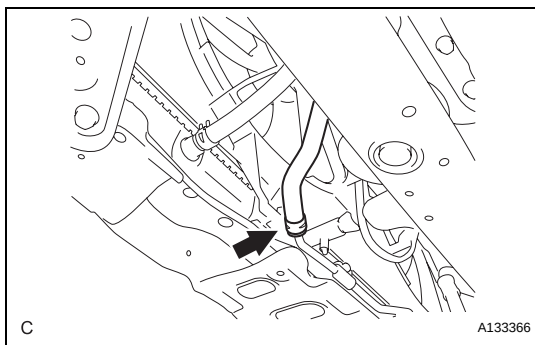
- (a) Separate the radiator hose inlet from the radiator assembly.

**18. DISCONNECT RADIATOR HOSE OUTLET**

- (a) Separate the radiator hose outlet from the radiator assembly.

**19. DISCONNECT NO. 1 OIL COOLER INLET HOSE**

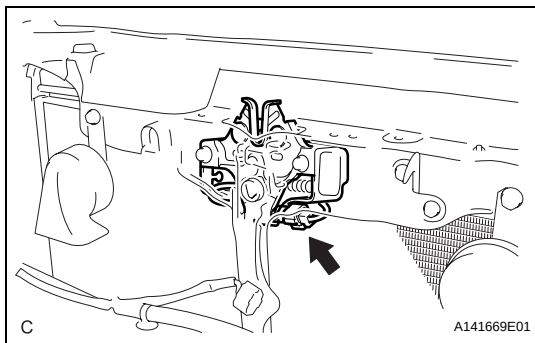
- (a) Separate the No. 1 oil cooler inlet hose from the radiator assembly.

**20. DISCONNECT NO. 1 OIL COOLER OUTLET HOSE**

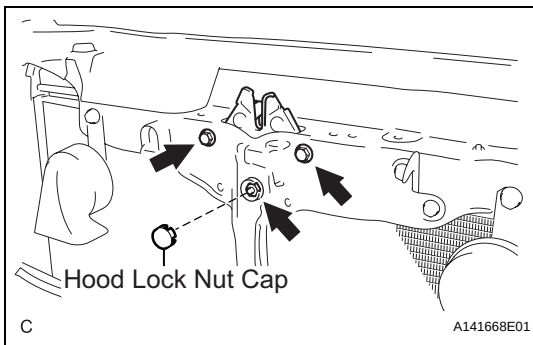
- (a) Separate the No. 1 oil cooler outlet hose from the radiator assembly.

21. REMOVE RADIATOR SUPPORT UPPER

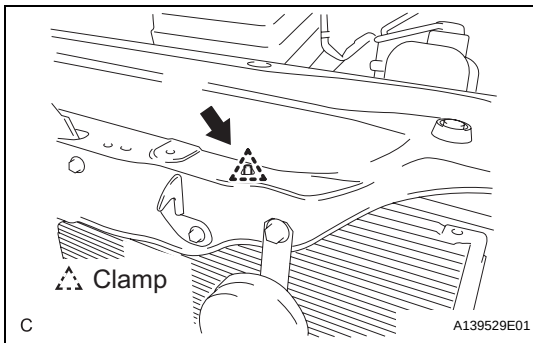
- (a) Disconnect the horn connectors.



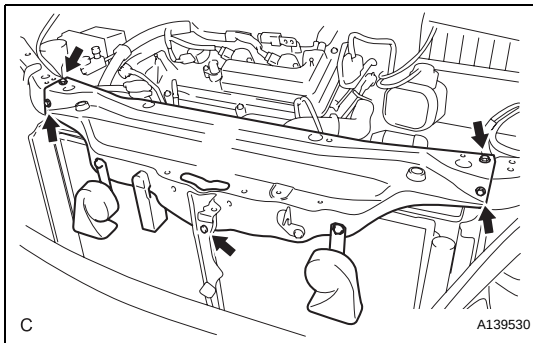
- (b) Disconnect the connector.



- (c) Using a screwdriver, remove the hood lock nut cap.
- (d) Remove the 2 bolts and nut, and separate the hood lock assembly from the radiator support upper.



- (e) Remove the clamp and separate the hood lock control cable from the radiator support upper.

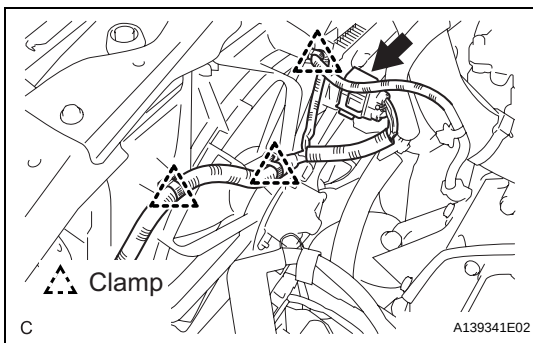


- (f) Remove the 5 bolts and radiator support upper.

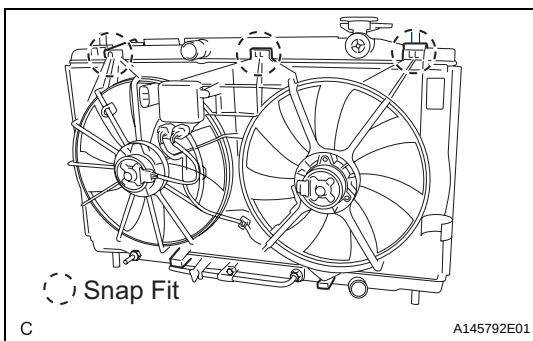
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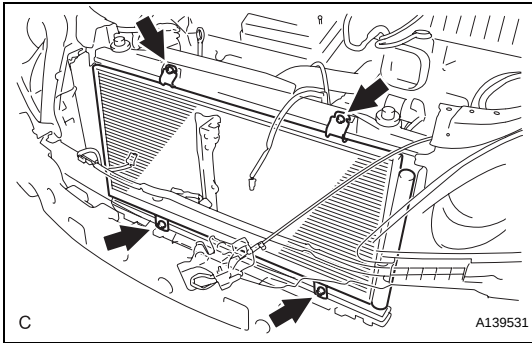
22. REMOVE FAN SHROUD

- (a) Remove the 3 clamps and connector.

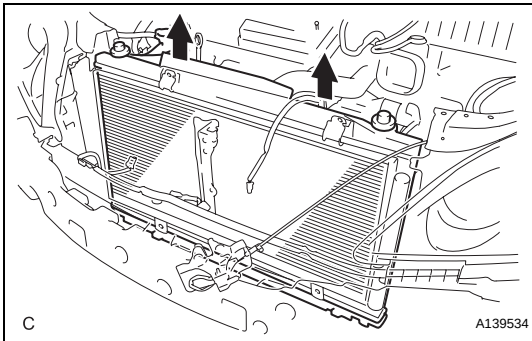


- (b) Release the 3 snap fits and lift the fan assembly with motor from the radiator.

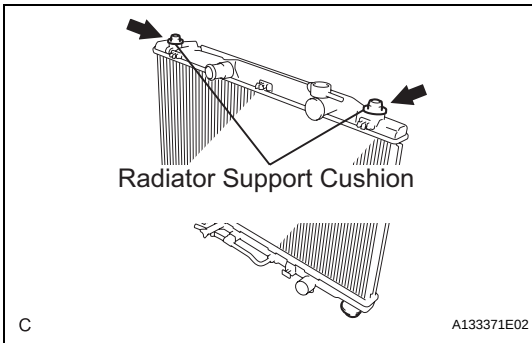


**23. REMOVE RADIATOR ASSEMBLY**

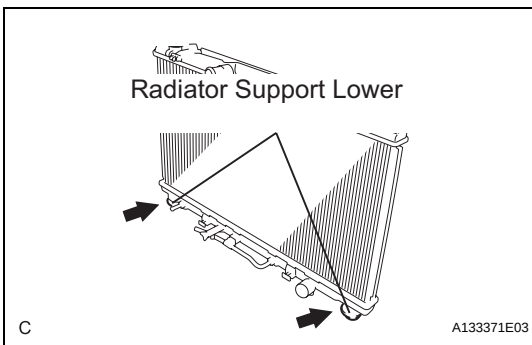
- (a) Remove the 4 bolts and separate the condenser assembly from the radiator assembly.



- (b) Remove the radiator assembly from the body.

**24. REMOVE RADIATOR SUPPORT CUSHION**

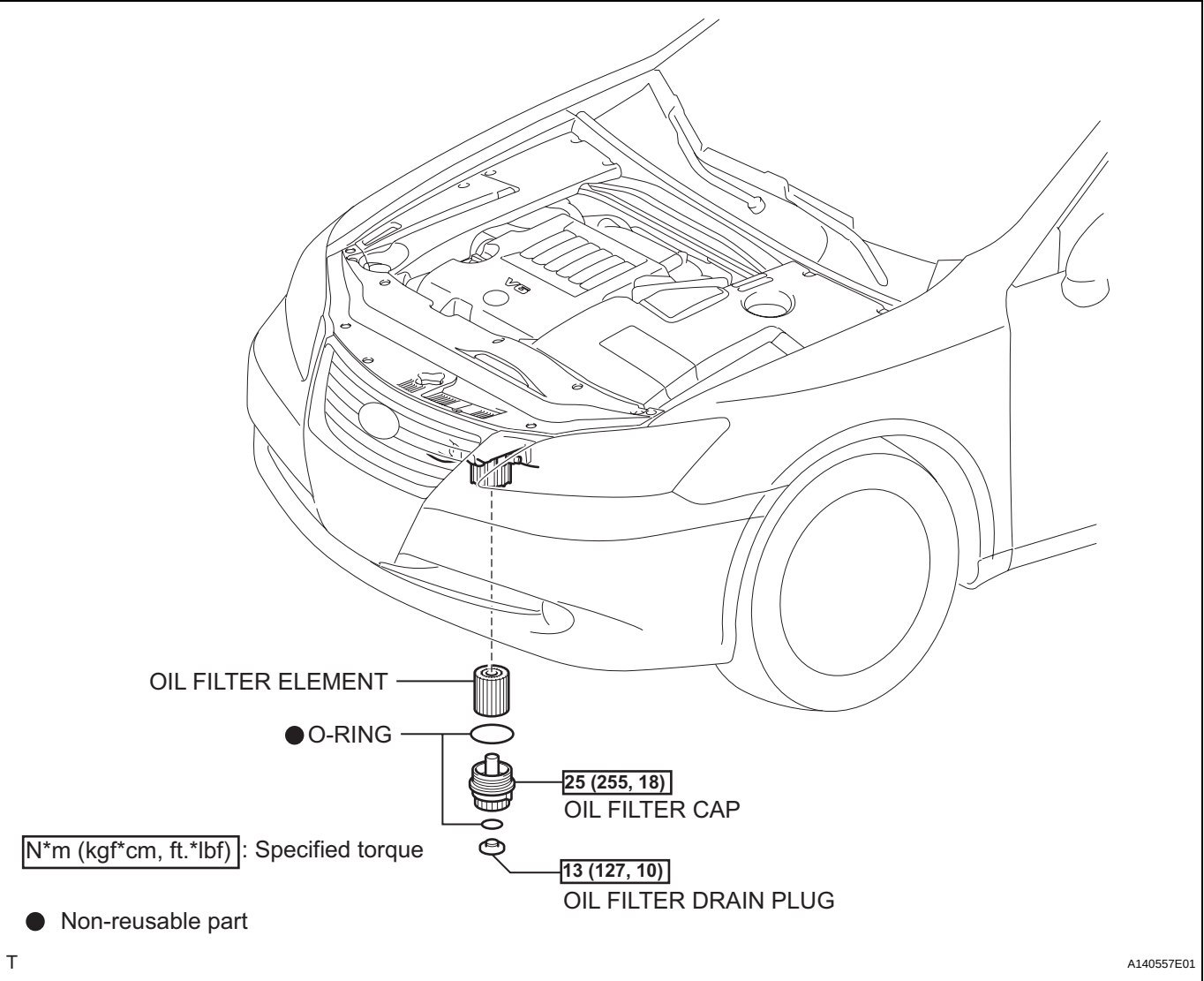
- (a) Remove the 2 radiator support cushions from the radiator assembly.

**25. REMOVE RADIATOR SUPPORT LOWER**

- (a) Remove the 2 radiator support lowers from the radiator assembly.

OIL FILTER

COMPONENTS



REPLACEMENT

CAUTION:

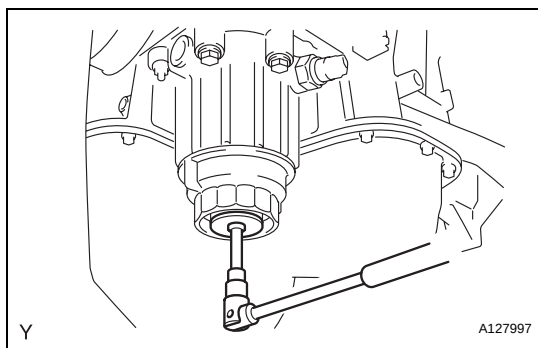
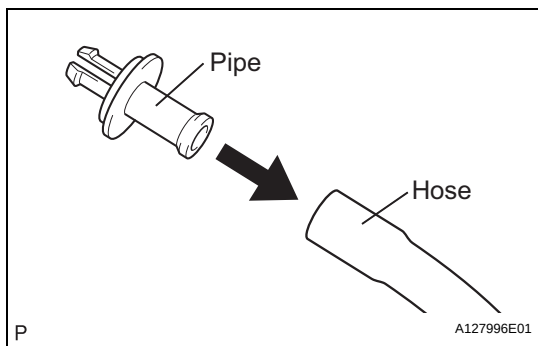
- Prolonged and repeated contact with engine oil will result in the removal of natural oils from the skin, leading to dryness, irritation and dermatitis. In addition, used engine oil contains potentially harmful contaminants which may cause skin cancer.
- Precautions should be taken when replacing engine oil to minimize the risk of your skin making contact with used engine oil. Protective clothing and gloves that cannot be penetrated by oil should be worn. The skin should be washed with soap and water, or use water-less hand cleaner, to remove any used engine oil thoroughly. Do not use gasoline, thinners, or solvents.
- In order to preserve the environment, used oil and used oil filters must be disposed of at designated disposal sites.

1. DRAIN ENGINE OIL

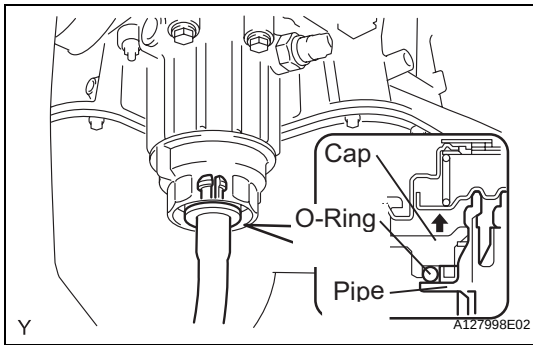
- (a) Remove the oil filler cap.
- (b) Remove the oil drain plug and drain the oil into a container.

2. REMOVE OIL FILTER ELEMENT

- (a) Connect the hose with an inside diameter of 15 mm (0.59 in.) to the pipe.



- (b) Remove the oil filter drain plug from the oil filter cap.



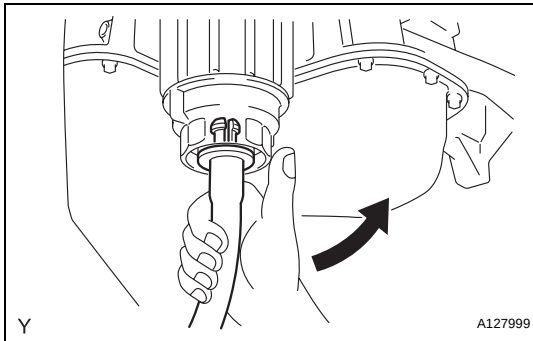
- (c) Insert the pipe with the hose into the oil filter cap.

NOTICE:

Be sure to insert the pipe with the O-ring installed on the oil filter cap side.

HINT:

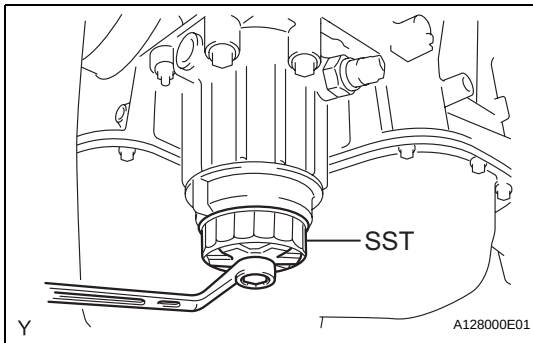
Place the hose end into a container before draining the oil from the hose.



- (d) Make sure that oil is completely drained, and remove the pipe and O-ring.

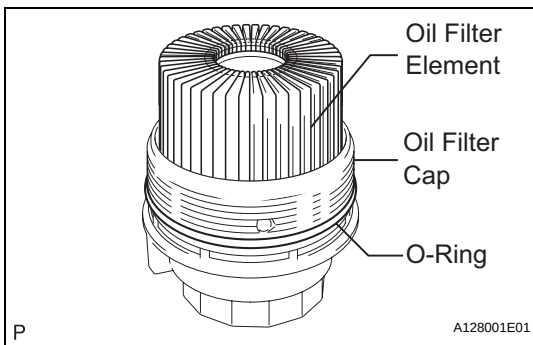
HINT:

Be sure to turn the pipe in the direction of the arrow to remove it.



- (e) Using SST, remove the oil filter cap.

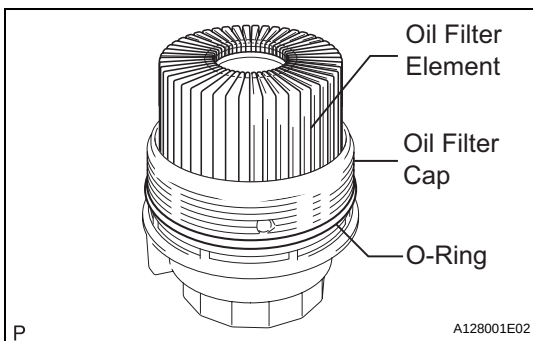
SST 09228-06501



- (f) Remove the oil filter element and O-ring from the oil filter cap.

NOTICE:

Do not use any tools to remove the O-ring in order to prevent the cap from being damaged. Be sure to remove it by hand.

**3. INSTALL OIL FILTER ELEMENT**

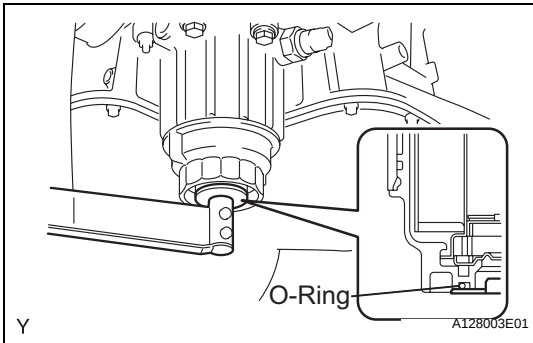
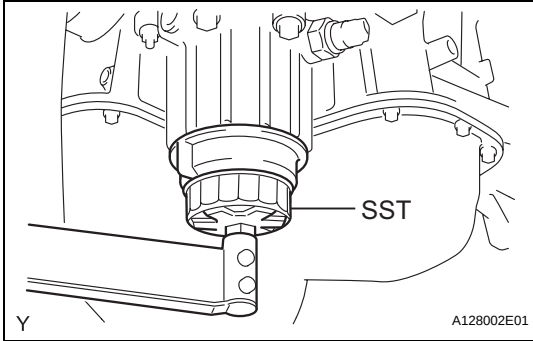
- (a) Clean the inside of the oil filter cap, threads, and O-ring groove.

- (b) Apply a light coat of engine oil to a new O-ring and install it to the oil filter cap.

NOTICE:

Make sure that the O-ring does not get twisted on the groove.

- (c) Install a new oil filter element to the oil filter cap.



- (d) Remove all dirt and foreign matter from the installation surface and the inside of the cap on the engine side.
- (e) Apply a light coat of engine oil to the O-ring again and install the oil filter cap.

NOTICE:

Make sure that the O-ring does not get caught between the parts.

- (f) Using SST, install the oil filter cap.

SST 09228-06501

Torque: 25 N*m (255 kgf*cm, 18 ft.*lbf)

NOTICE:

Make sure that there is no clearance between the parts after tightening the oil filter cap.

- (g) Apply a light coat of engine oil to a new O-ring and install it to the oil filter cap.

NOTICE:

Remove all dirt and foreign matter from the installation surface.

- (h) Install the oil filter drain plug to the oil filter cap.

Torque: 13 N*m (127 kgf*cm, 10 ft.*lbf)

NOTICE:

Make sure that the O-ring does not get caught between the parts.

4. ADD ENGINE OIL

- (a) Clean and install the oil drain plug with a new gasket.

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

- (b) Add new oil.

Standard capacity

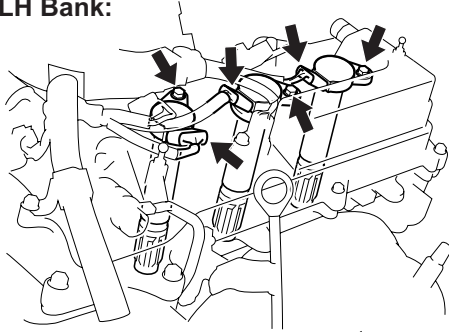
Item	Standard Condition
Drain and refill with oil filter change	6.1 liters (6.4 US qts, 5.4 Imp. qts)
Drain and refill without oil filter change	5.7 liters (6.0 US qts, 5.0 Imp. qts)
Dry fill	6.5 liters (6.9 US qts, 5.7 Imp. qts)

- (c) Install the oil filler cap.

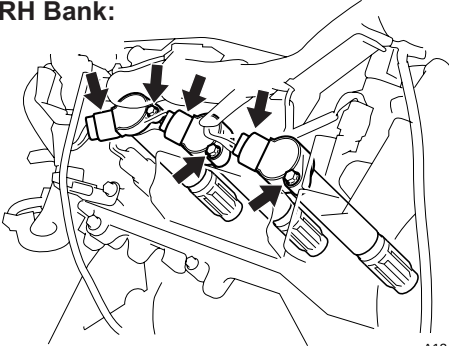
5. CHECK FOR ENGINE OIL LEAKS

- (a) Start the engine. Check for engine oil leaks from the connected parts of the oil filter cap and oil filter drain plug.

LH Bank:



RH Bank:



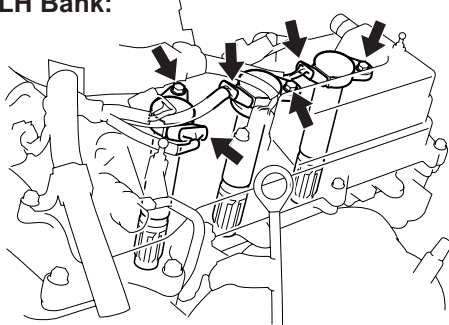
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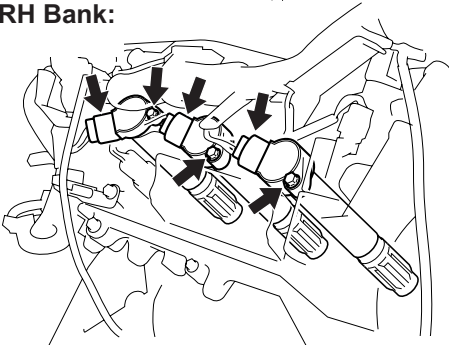
11. REMOVE IGNITION COIL ASSEMBLY

- (a) Disconnect the 6 ignition coil connectors.
- (b) Remove the 6 bolts and 6 ignition coils.

LH Bank:



RH Bank:



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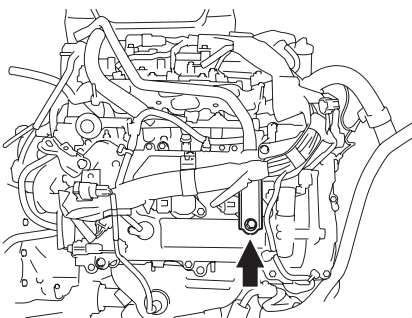
INSTALLATION**1. INSTALL IGNITION COIL ASSEMBLY**

- (a) Install the 6 ignition coils with the 6 bolts.
Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)
- (b) Connect the 6 ignition coil connectors.

2. INSTALL NO. 1 SURGE TANK STAY**NOTICE:****DO NOT** apply oil to the bolt listed below:**Tightening Parts**

No. 1 Surge tank stay and Cylinder head cover

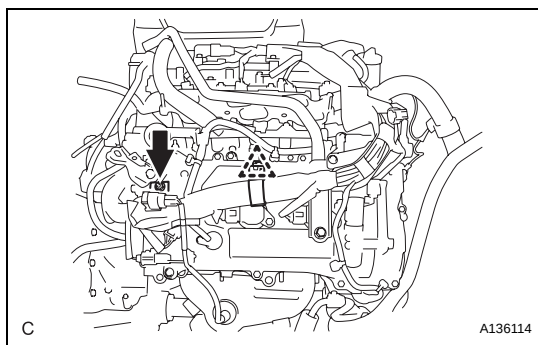
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- (a) Install the No. 1 surge tank stay with the bolt.
Torque: 21 N*m (214 kgf*cm, 15 ft.*lbf)



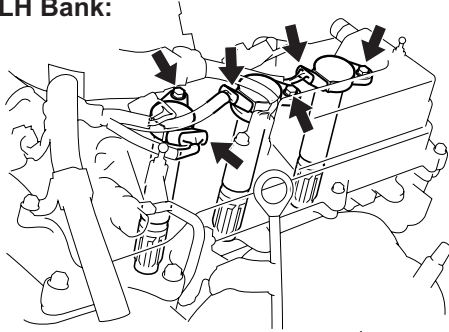
(b) Install the bolt and clamp.

Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

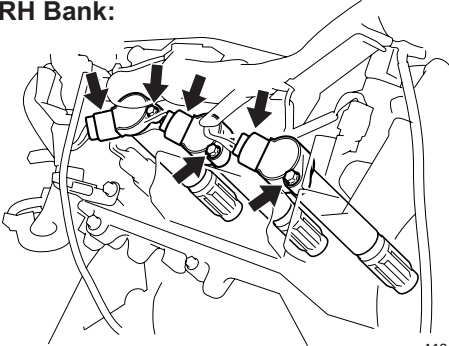
3. **INSTALL INTAKE AIR SURGE TANK ASSEMBLY** (See page [FU-17](#))
4. **INSTALL AIR CLEANER CAP SUB-ASSEMBLY** (See page [ES-522](#))
5. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL** (See page [EM-49](#))
6. **ADD ENGINE COOLANT** (See page [CO-6](#))
7. **CHECK FOR ENGINE COOLANT LEAKS** (See page [CO-1](#))
8. **INSTALL FRONT SUSPENSION UPPER CENTER BRACE** (See page [BR-25](#))
9. **INSTALL V-BANK COVER SUB-ASSEMBLY** (See page [EM-49](#))
10. **INSTALL ENGINE ROOM SIDE COVER LH** (See page [EM-50](#))
11. **INSTALL ENGINE ROOM SIDE COVER RH** (See page [EM-50](#))
12. **INSTALL COOL AIR INTAKE DUCT SEAL** (See page [EM-50](#))
13. **PERFORM INITIALIZATION**
 - (a) Perform initialization procedure (See page [IN-33](#)).

NOTICE:
Some vehicle systems require initialization after reconnecting the cable to the negative battery terminal.

LH Bank:



RH Bank:



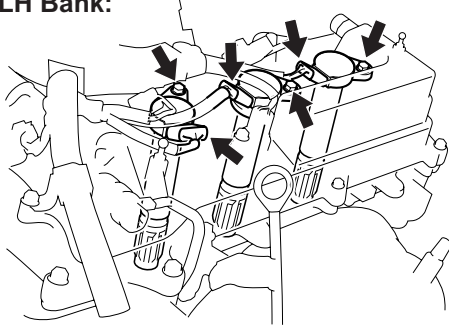
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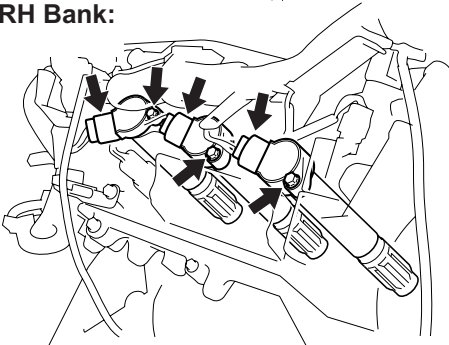
11. REMOVE IGNITION COIL ASSEMBLY

- (a) Disconnect the 6 ignition coil connectors.
- (b) Remove the 6 bolts and 6 ignition coils.

LH Bank:



RH Bank:



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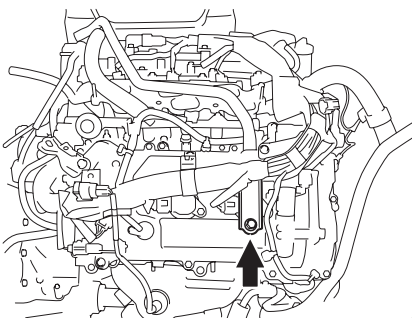
INSTALLATION**1. INSTALL IGNITION COIL ASSEMBLY**

- (a) Install the 6 ignition coils with the 6 bolts.
Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)
- (b) Connect the 6 ignition coil connectors.

2. INSTALL NO. 1 SURGE TANK STAY**NOTICE:****DO NOT** apply oil to the bolt listed below:**Tightening Parts**

No. 1 Surge tank stay and Cylinder head cover

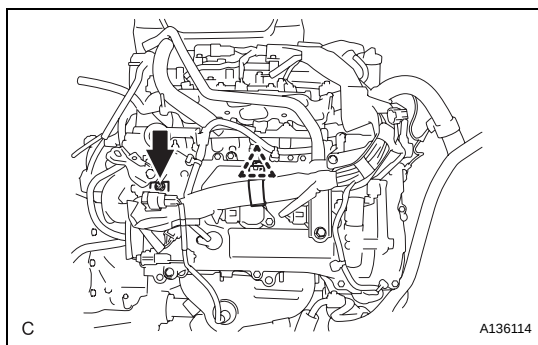
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- (a) Install the No. 1 surge tank stay with the bolt.
Torque: 21 N*m (214 kgf*cm, 15 ft.*lbf)



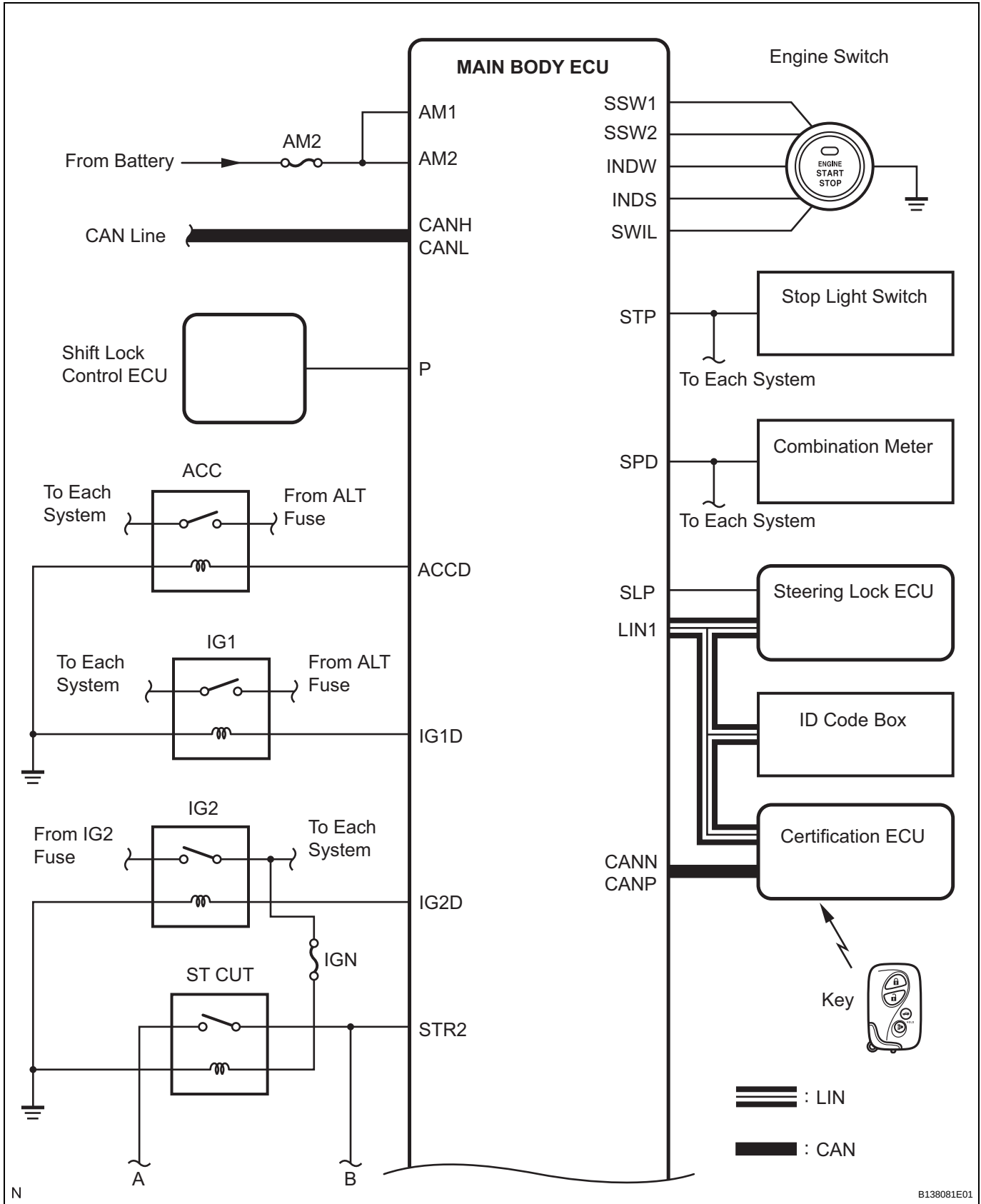
(b) Install the bolt and clamp.

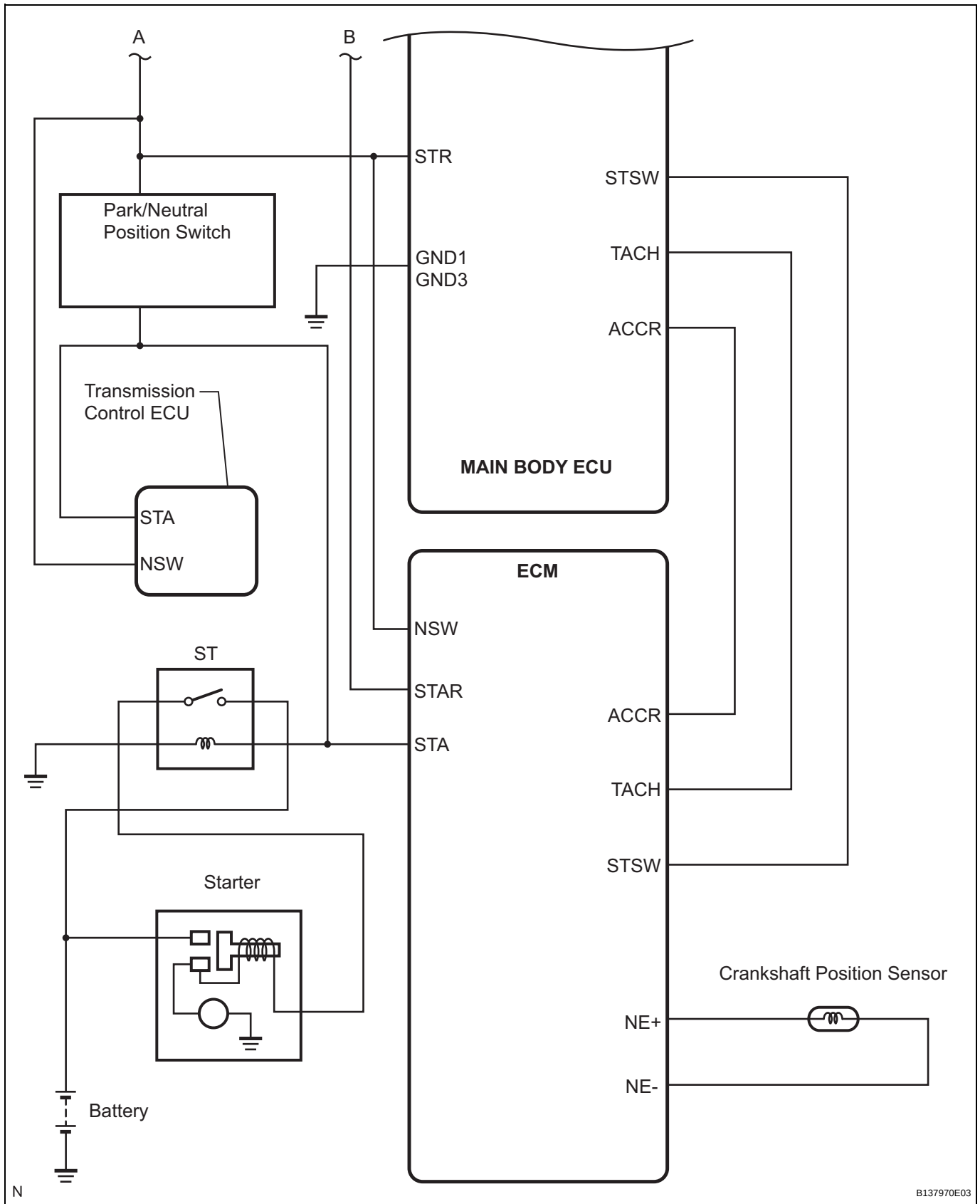
Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

3. **INSTALL INTAKE AIR SURGE TANK ASSEMBLY** (See page [FU-17](#))
4. **INSTALL AIR CLEANER CAP SUB-ASSEMBLY** (See page [ES-522](#))
5. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL** (See page [EM-49](#))
6. **ADD ENGINE COOLANT** (See page [CO-6](#))
7. **CHECK FOR ENGINE COOLANT LEAKS** (See page [CO-1](#))
8. **INSTALL FRONT SUSPENSION UPPER CENTER BRACE** (See page [BR-25](#))
9. **INSTALL V-BANK COVER SUB-ASSEMBLY** (See page [EM-49](#))
10. **INSTALL ENGINE ROOM SIDE COVER LH** (See page [EM-50](#))
11. **INSTALL ENGINE ROOM SIDE COVER RH** (See page [EM-50](#))
12. **INSTALL COOL AIR INTAKE DUCT SEAL** (See page [EM-50](#))
13. **PERFORM INITIALIZATION**
 - (a) Perform initialization procedure (See page [IN-33](#)).

NOTICE:
Some vehicle systems require initialization after reconnecting the cable to the negative battery terminal.

SYSTEM DIAGRAM





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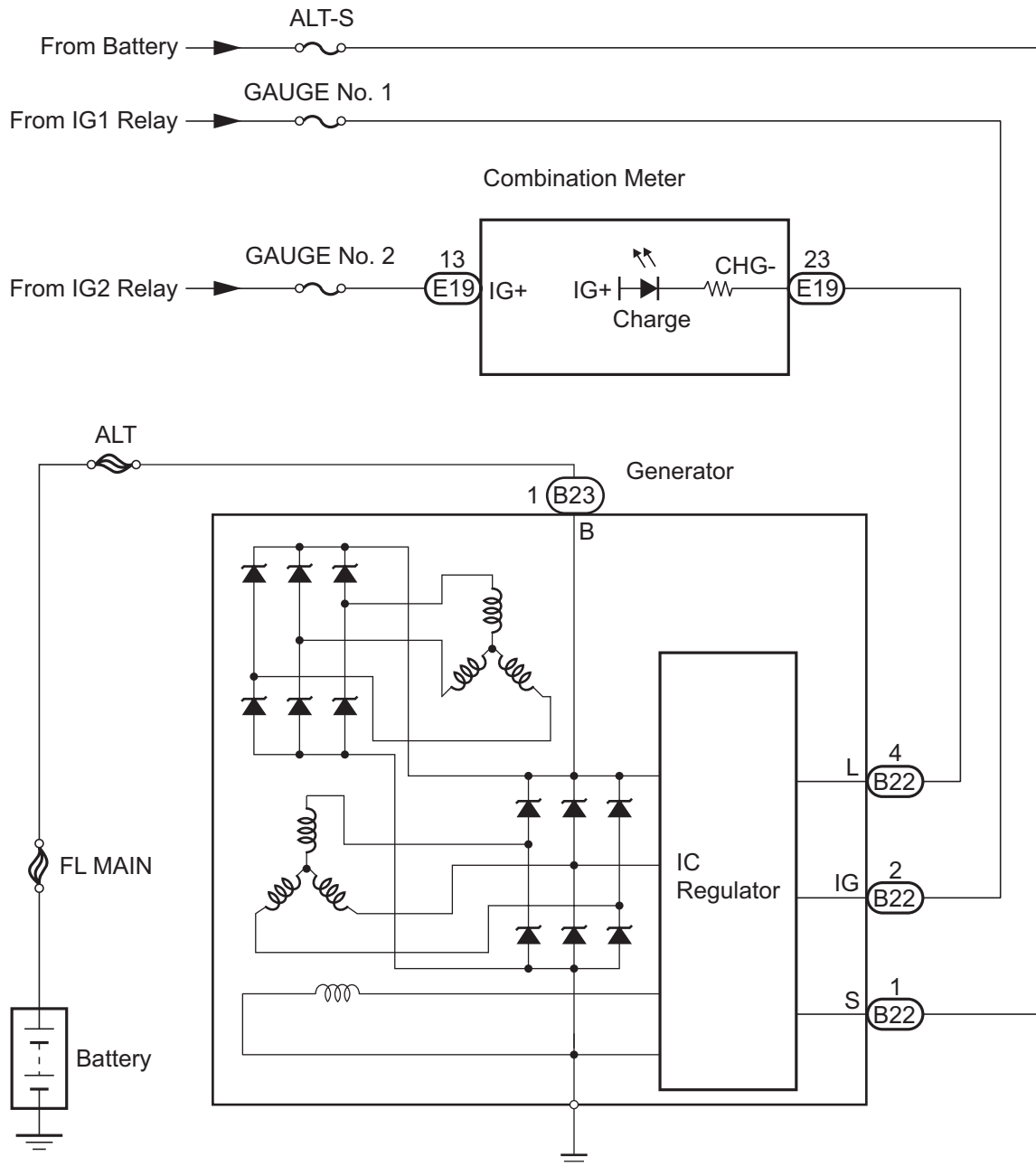
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Communication table:

Transmitting ECU (Transmitter)	Receiving ECU (Receiver)	Signal	Communication method
Combination meter	Main body ECU	Vehicle speed signal	CAN/Local communication
Steering lock ECU	Main body ECU	Steering lock/unlock signal	LIN/Local communication

Transmitting ECU (Transmitter)	Receiving ECU (Receiver)	Signal	Communication method
ECM	Main body ECU	Starter signal	CAN
		Shift position signal	
		Engine revolution speed signal	
Main body ECU	Certification ECU	Engine switch position signal	CAN
		Courtesy light switch signal	
		Wireless door lock buzzer request signal	
Main body ECU	Combination meter	Entry start key signal	CAN
Main body ECU	Combination meter	Wireless door lock buzzer request signal	CAN
Certification ECU	Main body ECU	Illumination light request signal	CAN
Certification ECU	Driver seat ECU	Memory call replay request signal	CAN
Certification ECU	Main body ECU	Light answer back signal	CAN
Certification ECU	Combination meter	Meter buzzer single-shot request signal	CAN
		Meter buzzer intermittence request signal	
		Meter buzzer continuation request signal	
		Door open display signal	
		Key loss warning signal	
		Low key battery warning signal	
		Shift position warning signal	
		Steering lock abnormal warning	
		Steering lock unlock warning	
Combination meter	Certification ECU/Main body ECU	Vehicle speed signal	CAN
Certification ECU	Main body ECU	Key ID matching request signal	LIN
Main body ECU	Certification ECU	ID required signal	LIN

SYSTEM DIAGRAM



PROBLEM SYMPTOMS TABLE

Result

Symptom	Suspected Area	See page
Charge Warning Light Comes ON while Driving	1. Clutch pulley	CH-7
	2. Generator assembly	
Noise Occurs from Generator while Engine is Running	1. V-ribbed belt	CH-8
	2. Clutch pulley	
	3. Generator assembly	