

SECTION **FL**

FUEL SYSTEM

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000009452292

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least three minutes before performing any service.

General Precaution

INFOID:000000009405635

WARNING:

When replacing fuel line parts, be sure to observe the following.

- Put a "CAUTION: FLAMMABLE" sign in the work area.
- Be sure to work in a well ventilated area and have a CO² fire extinguisher.
- Do not smoke while working on the fuel system. Keep open flames and sparks away from the work area.

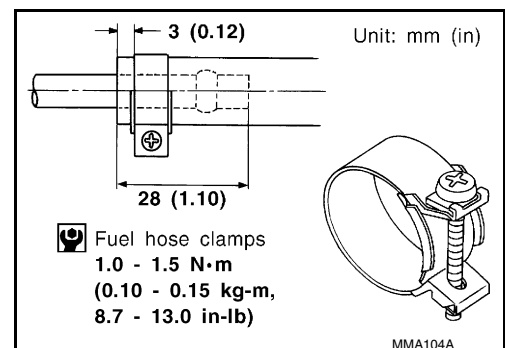
CAUTION:

- Before removing fuel line parts, carry out the following procedures:
 - Put drained fuel in an explosion-proof container and put the lid on securely. Keep the container in safe area.
 - Release fuel pressure from the fuel lines. Refer to [EC-135, "Work Procedure"](#).
 - Disconnect the battery ground cable.
- Always replace O-rings and clamps with new ones.
- Do not kink or twist tubes when they are being installed.
- Do not tighten hose clamps excessively to avoid damaging hoses.

Tighten high-pressure rubber hose clamp so that clamp end is 3 mm (0.12 in) from hose end.

Tightening torque specifications are the same for all rubber hose clamps.

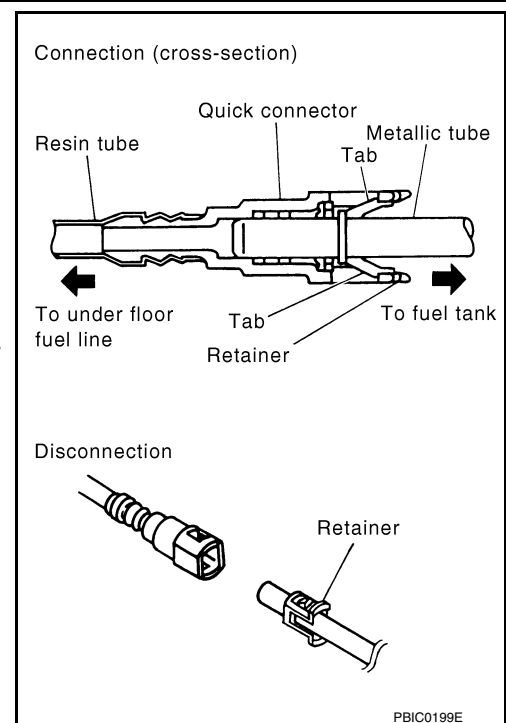
Ensure that screw does not contact adjacent parts.



PRECAUTIONS

< PRECAUTION >

- After connecting the fuel tube quick connectors, make sure the quick connectors are secure.
Check that the connector and resin tube do not contact any adjacent parts.
- a) Apply fuel pressure to the fuel system by turning the ignition switch to ON (without starting the engine). Then check for fuel leaks at the fuel tube connections.
- b) Start the engine and rev the engine, then check for fuel leaks at the fuel tube connections.
- After installing the tubes, run the engine and check for fuel leaks at the connections.
- Use only a Genuine NISSAN fuel filler cap as a replacement. If an incorrect fuel filler cap is used, the MIL may come on.
- For servicing “Evaporative Emission System” parts, refer to [EC-461, "Inspection"](#).



PREPARATION

< PREPARATION >

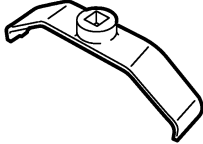
PREPARATION

PREPARATION

Special Service Tool

INFOID:000000008969003

The actual shape of the Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
KV10119900 (J-45722) Lock ring wrench  JPBIA3555ZZ	Removing and installing fuel tank lock ring

Commercial Service Tools

INFOID:000000008969004

Tool name	Description
Power tool  PIIB1407E	Loosening nuts, screws and bolts

FUEL SYSTEM

< PERIODIC MAINTENANCE >

PERIODIC MAINTENANCE

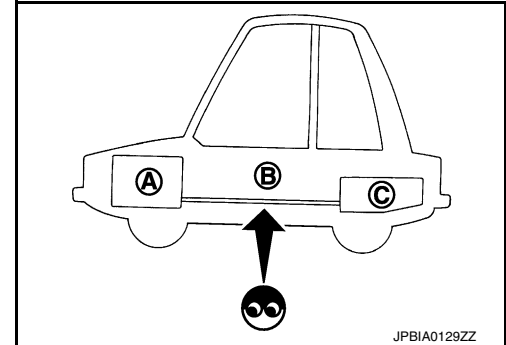
FUEL SYSTEM

Inspection

Inspect fuel lines, fuel filler cap, and fuel tank for improper attachment, leaks, cracks, damage, loose connections, chafing or deterioration.

- (A) : Engine
- (B) : Fuel line
- (C) : Fuel tank

If necessary, repair or replace damaged parts.



INFOID:000000009405636

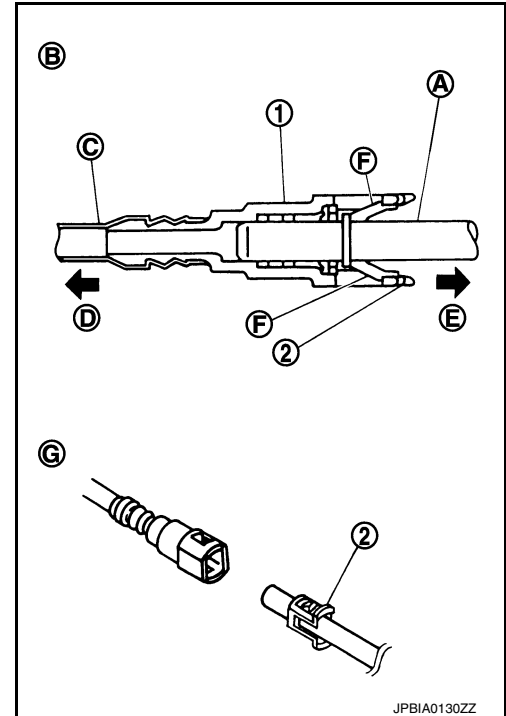
Quick Connector

CAUTION:

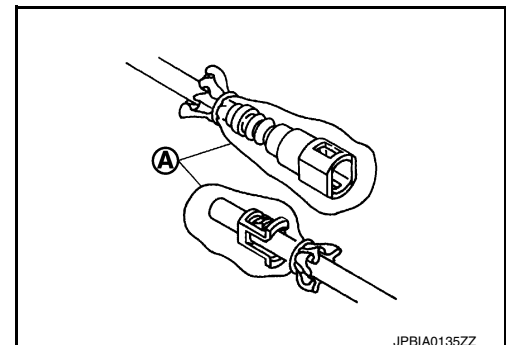
- Quick connector (1) can be disconnected when the tabs (F) are depressed completely. Do not twist it more than necessary.

- (B) : Connection (cross-section)
- (D) : To under floor fuel line
- (E) : To fuel tank
- (G) : Disconnection

- Do not use any tools to disconnected quick connector.
- Keep resin tube (C) away from heat. Be especially careful when welding near the resin tube.
- Prevent acid liquid such as battery electrolyte, etc. from getting on resin tube.
- Do not bend or twist resin tube during installation and disconnection.
- Do not remove the remaining retainer (2) on hard tube (or the equivalent) (A) except when resin tube or retainer is replaced.
- When resin tube or hard tube (or the equivalent) is replaced, also replace retainer with new one.



- To keep the connecting portion clean and to avoid damage and foreign materials, cover them completely with plastic bags (A) or something similar.



FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

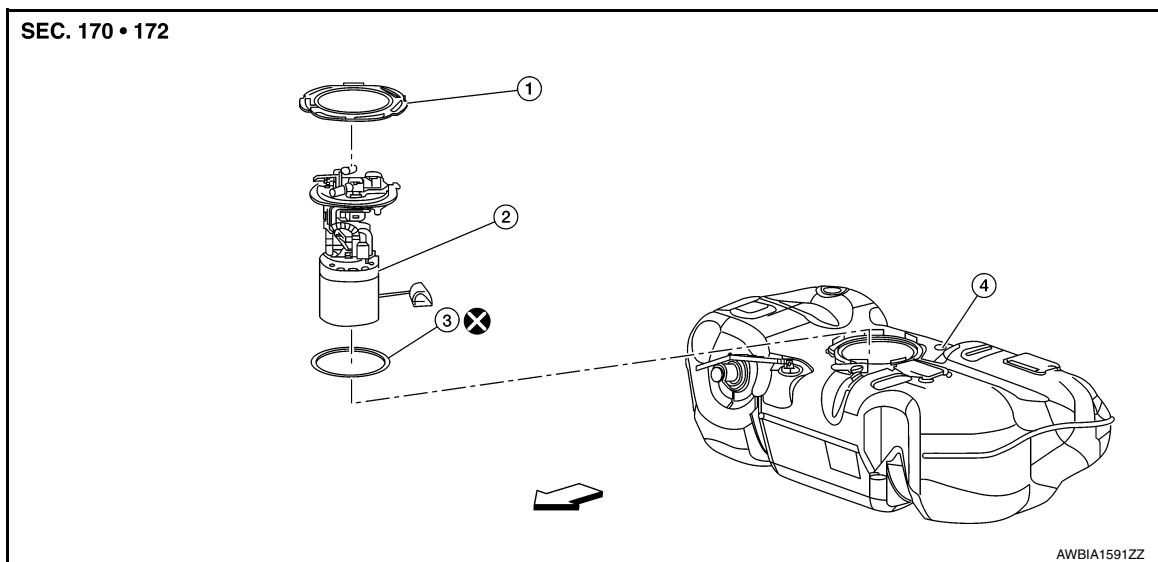
< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

Exploded View

INFOID:000000008969005



1. Lock ring 2. Fuel level sensor unit, fuel filter and fuel pump assembly 3. O-ring
4. Fuel tank

Removal and Installation

INFOID:000000009445760

WARNING:

Read “General Precautions” when working on the fuel system. Refer to [FL-2, "General Precaution"](#).

NOTE:

When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

REMOVAL

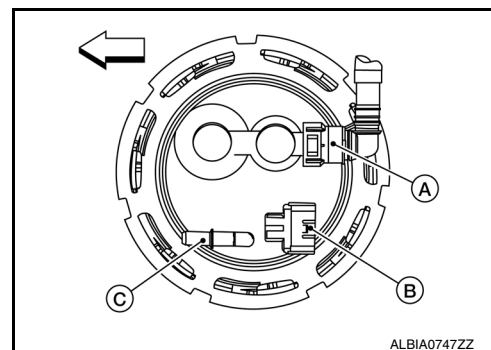
1. Release the fuel pressure from the fuel lines. Refer to [EC-135, "Work Procedure"](#).
2. Disconnect the battery negative terminal. Refer to [PG-67, "Removal and Installation \(Battery\)"](#).
3. Open fuel filler lid.
4. Open fuel filler cap and release the pressure inside fuel tank.
5. Remove the rear seat cushion. Refer to [SE-30, "SEAT CUSHION : Removal and Installation"](#).
6. Remove the inspection hole cover.

NOTE:

Inspection hole cover is held down by an adhesive.

7. Disconnect the harness connector (B), fuel feed tube (C) and EVAP tube (A).

⇐ : Front

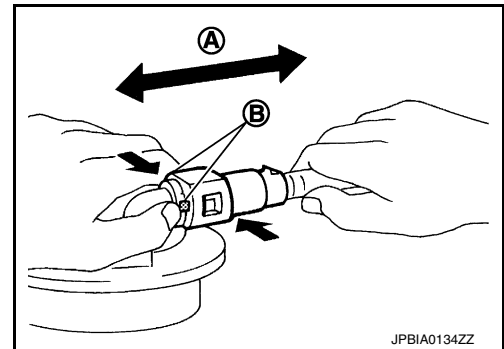


FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< REMOVAL AND INSTALLATION >

Remove the quick connector as follows:

- Hold the sides of the connector, push in tabs (B) and pull (A) out the tube.
- If the connector and the tube are stuck together, push and pull several times until they start to move. Then disconnect them by pulling.

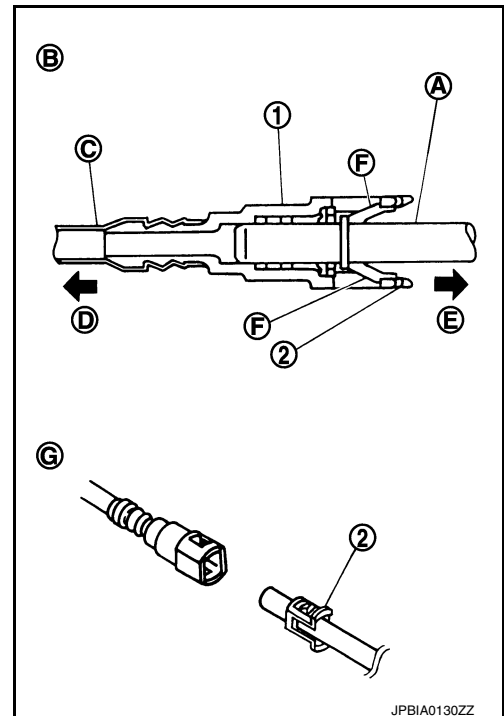


CAUTION:

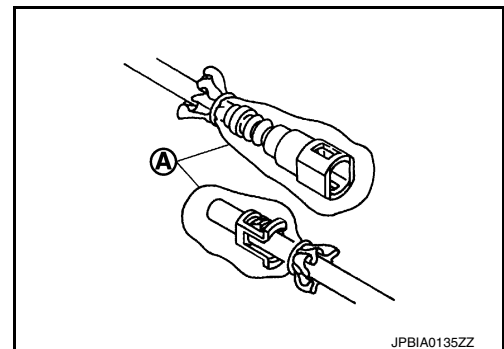
- Quick connector (1) can be disconnected when the tabs (F) are depressed completely. Do not twist it more than necessary.

- (B) : Connection (cross-section)
- (D) : To under floor fuel line
- (E) : To fuel tank
- (G) : Disconnection

- Do not use any tools to disconnected quick connector.
- Keep resin tube (C) away from heat. Be especially careful when welding near the resin tube.
- Prevent acid liquid such as battery electrolyte, etc. from getting on resin tube.
- Do not bend or twist resin tube during installation and disconnection.
- Do not remove the remaining retainer (2) on hard tube (or the equivalent) (A) except when resin tube or retainer is replaced.
- When resin tube or hard tube (or the equivalent) is replaced, also replace retainer with new one.



- To keep the connecting portion clean and to avoid damage and foreign materials, cover them completely with plastic bags (A) or something similar.

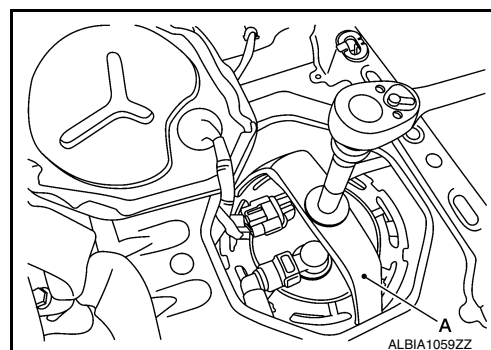


FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< REMOVAL AND INSTALLATION >

8. Remove lock ring for fuel level sensor unit, fuel filter and fuel pump assembly using Tool (A) by turning counterclockwise.

Tool number : KV10119900 (J-45722)



9. Remove fuel level sensor unit, fuel filter and fuel pump assembly.

CAUTION:

- Do not bend float arm during removal.
- Do not allow contaminants to fall inside of the fuel tank.
- Do not cause impacts such by dropping when handling components.

INSTALLATION

Installation is in the reverse order of removal.

- Install the fuel level sensor, fuel filter, and fuel pump assembly with the fuel feed tube (C) facing the front of the vehicle as shown. Use a new O-ring.

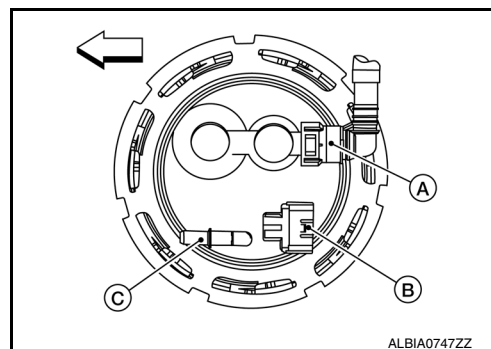
CAUTION:

Do not reuse O-ring.

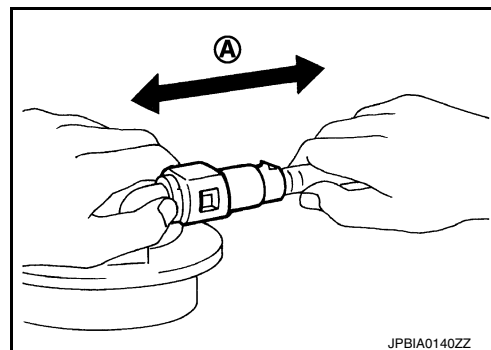
⇐ : Front

(A) : EVAP tube

(B) : Harness connector



- Connect the quick connector as follows:
 - Check the connection for damage or any foreign materials.
 - Align the connector with the tube, then insert the connector straight into the tube until a click is heard.
 - After the tube is connected, make sure the connection is secure by performing the following checks:
 - Pull (A) the tube and the connector to make sure they are securely connected.

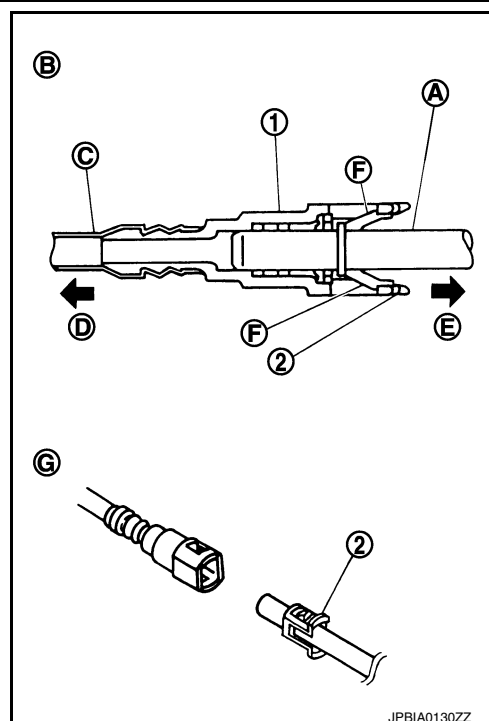


FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< REMOVAL AND INSTALLATION >

- Visually confirm that the two retainer tabs (F) are connected to the quick connector (1).

(B)	: Connection (cross-section)
(C)	: Resin tube
(D)	: To under floor fuel line
(E)	: To fuel tank
(G)	: Disconnection



Inspection

INSPECTION AFTER INSTALLATION

Use the following procedure to check for fuel leaks.

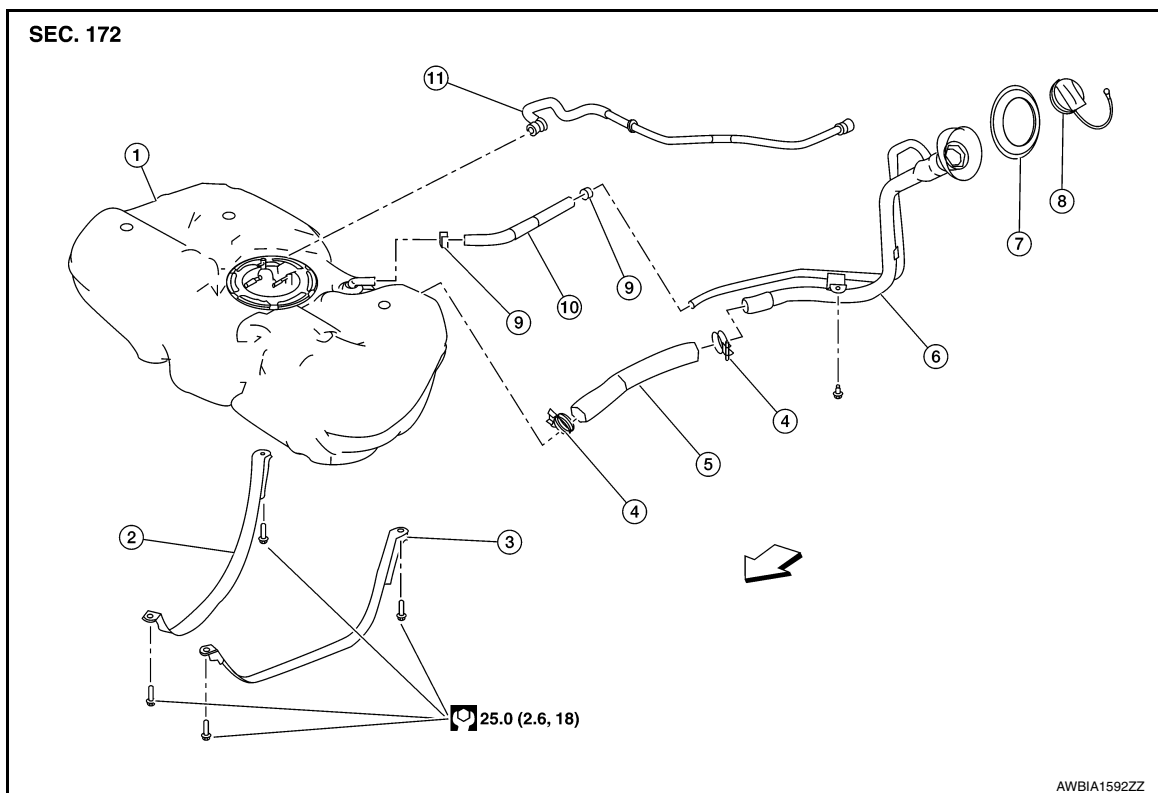
1. Turn ignition switch "ON" (with engine stopped), then check fuel system connections for leaks by applying fuel pressure to fuel piping.
2. Start engine and let it idle and check there are no fuel leaks at the fuel system connections.

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FUEL TANK

Exploded View

INFOID:0000000008969006



- | | | |
|---------------|---------------------------------|---------------------------------|
| 1. Fuel tank | 2. Fuel tank mounting band (RH) | 3. Fuel tank mounting band (LH) |
| 4. Clamp | 5. Fuel filler hose | 6. Fuel filler tube |
| 7. Grommet | 8. Fuel filler cap | 9. Clamp |
| 10. Vent hose | 11. EVAP vent line | |

Removal and Installation

INFOID:0000000009445764

WARNING:

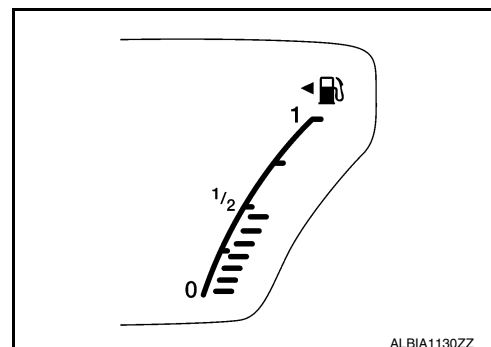
Read “General Precautions” when working on the fuel system. Refer to [FL-2, "General Precaution"](#).

NOTE:

When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

REMOVAL

1. Check the fuel level with the vehicle on a level surface. If the fuel gauge indicates more than the level as shown (1/2 full), drain the fuel from the fuel tank until the fuel gauge indicates a level at or below as shown (1/2 full).
 - In case the fuel pump does not operate, use the following procedure.
- a. Disconnect the fuel filler hose from the fuel filler tube.
- b. Insert fuel tubing of less than 20 mm (0.79 in) diameter into the fuel filler tube through the fuel filler opening to drain fuel from the fuel filler tube.
 - As a guide, if the fuel tank is full the fuel level reaches or is less than the level on the fuel gauge as shown, when approximately 20-1/2 ℓ (5-3/8 US gal, 4-1/2 Imp gal) of fuel is drained from a full fuel tank.
2. Release the fuel pressure from the fuel lines. Refer to [EC-135, "Work Procedure"](#).



FUEL TANK

< REMOVAL AND INSTALLATION >

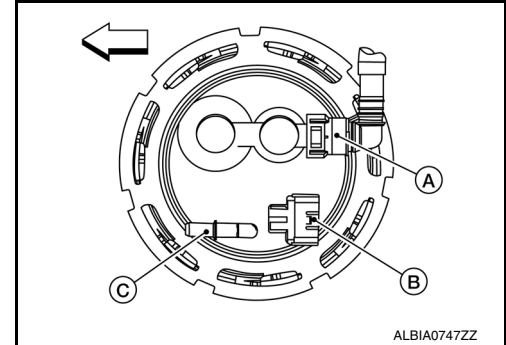
3. Open fuel filler lid.
4. Open fuel filler cap and release the pressure inside fuel tank.
5. Remove the rear seat cushion. Refer to [SE-30. "SEAT CUSHION : Removal and Installation"](#).
6. Remove the inspection hole cover.

NOTE:

Inspection hole cover is held by an adhesive.

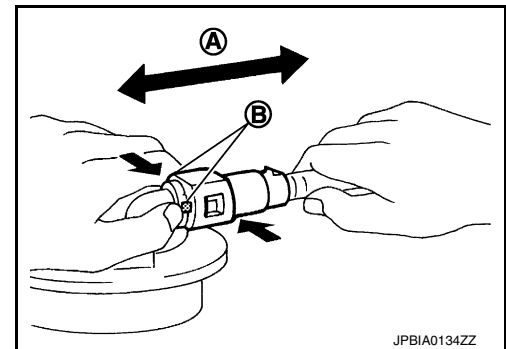
7. Disconnect the harness connector (B), fuel feed tube (C) and EVAP tube (A).

↩ : Front



Remove the quick connector as follows:

- Hold the sides of the connector, push in tabs (B) and pull (A) out the tube.
- If the connector and the tube are stuck together, push and pull several times until they start to move. Then disconnect them by pulling.



CAUTION:

- Quick connector (1) can be disconnected when the tabs (F) are depressed completely. Do not twist it more than necessary.

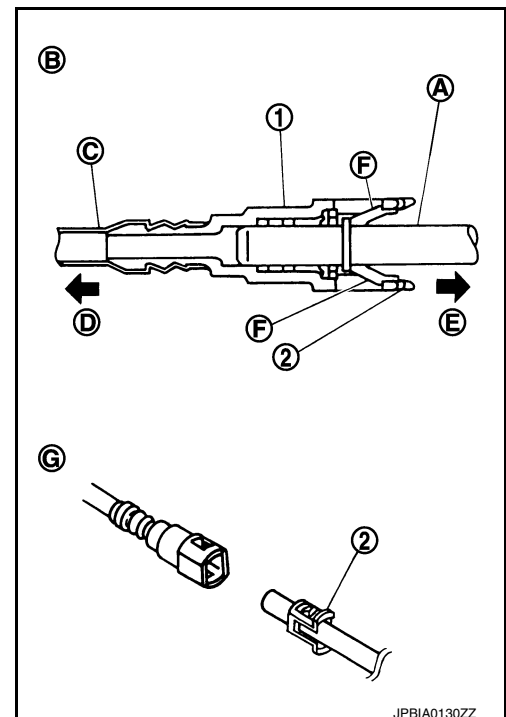
(B) : Connection (cross-section)

(D) : To under floor fuel line

(E) : To fuel tank

(G) : Disconnection

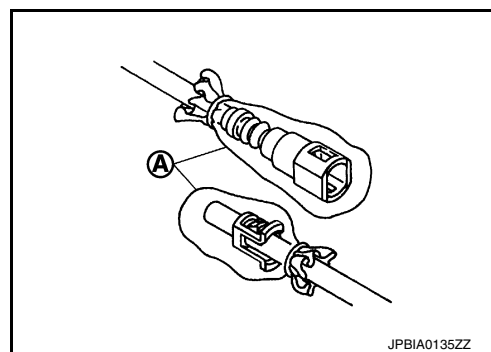
- Do not use any tools to disconnected quick connector.
- Keep resin tube (C) away from heat. Be especially careful when welding near the resin tube.
- Prevent acid liquid such as battery electrolyte, etc. from getting on resin tube.
- Do not bend or twist resin tube during installation and disconnection.
- Do not remove the remaining retainer (2) on hard tube (or the equivalent) (A) except when resin tube or retainer is replaced.
- When resin tube or hard tube (or the equivalent) is replaced, also replace retainer with new one.



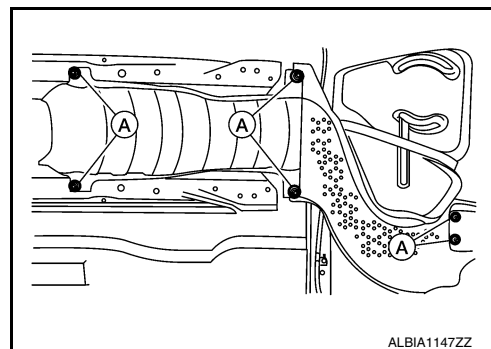
FUEL TANK

< REMOVAL AND INSTALLATION >

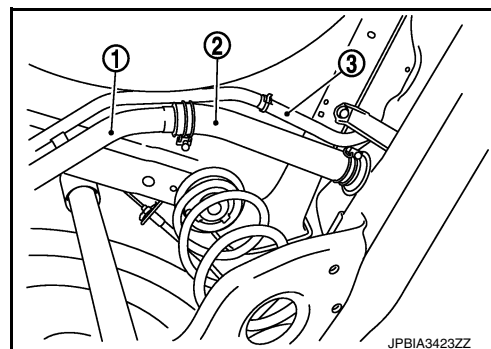
- To keep the connecting portion clean and to avoid damage and foreign materials, cover them completely with plastic bags (A) or something similar.



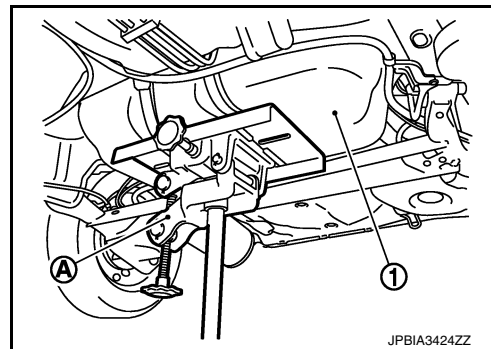
8. Remove center muffler. Refer to [EX-5, "Exploded View"](#).
9. Remove nut (A) and remove center floor insulators.



10. Disconnect the rear park brake cable brackets (LH). Refer to [PB-6, "Exploded View"](#).
11. Disconnect fuel filler hose (2) at fuel filler tube (1) side.
12. Disconnect vent hose (3) from fuel tank side.



13. Disconnect EVAP vent line. Refer to [FL-14, "Exploded View"](#).
14. Support the center part of fuel tank (1) using a suitable jack (A).



15. Remove fuel tank mounting bands (LH/RH).
16. Lower suitable jack carefully to remove fuel tank while holding it by hand.

CAUTION:

Fuel tank may be in an unstable condition because of the shape of fuel tank bottom. Be sure to hold tank securely.

FUEL TANK

< REMOVAL AND INSTALLATION >

17. If replacing the fuel tank, remove the fuel level sensor unit, fuel filter and fuel pump assembly to transfer to the new fuel tank.

CAUTION:

Do not reuse O-ring.

INSTALLATION

Installation is in the reverse order of removal.

Fuel Filler Hose

- Insert fuel filler hose to the length below.

Fuel filler hose : 35 mm (1.38 in)

The other hose : 25 mm (0.98 in)

- Be sure hose clamp is not placed on swelled area of fuel filler tube.
- Install fuel filler hose to fuel tank, paying attention to install mark.

EVAP Hose

1. Check connections for damage or foreign material.
2. Align the matching side connection part with the center of shaft, and insert connector straight until a "click" sound is heard.

Inspection

INFOID:000000009445765

INSPECTION AFTER INSTALLATION

Use the following procedure to check for fuel leaks.

1. Turn ignition switch "ON" (with engine stopped), then check fuel system connections for leaks by applying fuel pressure to fuel piping.
2. Start engine and let it idle and check there are no fuel leaks at the fuel system connections.

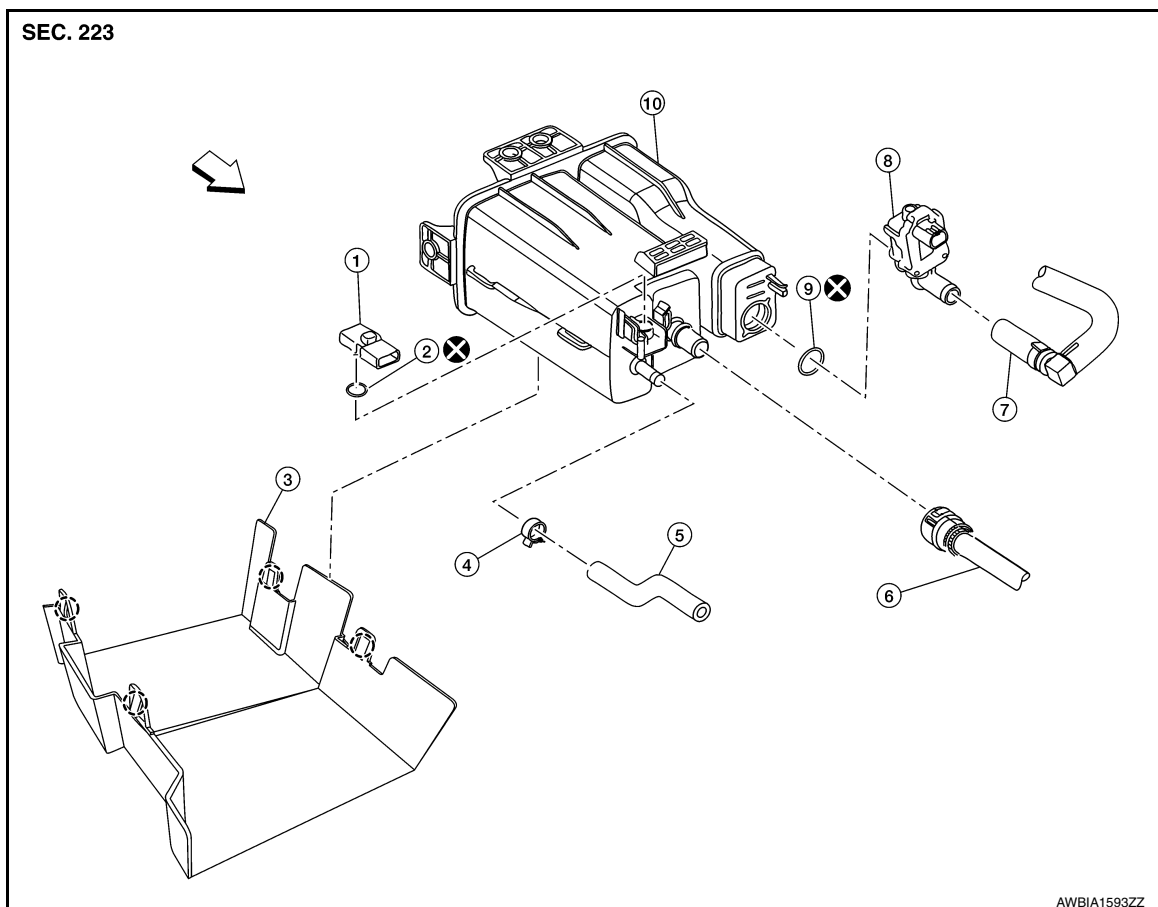
EVAP CANISTER

< REMOVAL AND INSTALLATION >

EVAP CANISTER

Exploded View

INFOID:000000009445766



- | | | |
|--|-------------------------------------|----------------------------|
| 1. EVAP control system pressure sensor | 2. O-ring | 3. EVAP canister protector |
| 4. Hose clamp | 5. EVAP canister purge hose | 6. EVAP vent line |
| 7. EVAP canister vent control valve hose | 8. EVAP canister vent control valve | 9. O-ring |
| 10. EVAP canister | ⊖ Pawl | ⇐ Front |

Removal and Installation

INFOID:000000009445767

NOTE:

The EVAP canister vent control valve and EVAP canister system pressure sensor can be removed without removing the EVAP canister.

REMOVAL

1. Release pawls and remove EVAP canister protector cover.
2. Disconnect the harness connectors from the EVAP control system pressure sensor and the EVAP canister vent control valve.
3. Disconnect the EVAP canister purge hose, the EVAP vent line, and the EVAP canister vent control valve hose.
4. Remove the EVAP canister bolt.
5. Remove the EVAP canister from the vehicle.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Do not reuse O-rings.

EVAP CANISTER

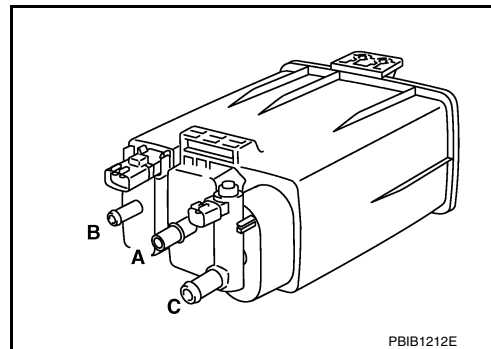
< REMOVAL AND INSTALLATION >

Inspection

INFOID:000000009445768

Check EVAP canister as follows:

1. Block port (B).
2. Blow air into port (A) and check that it flows freely out of port (C).
3. Release blocked port (B).
4. Apply vacuum pressure to port (B) and check that vacuum pressure exists at the ports (A) and (C).
5. Block port (A) and (B).
6. Apply pressure to port (C) and check that there is no leakage.



A

FL

C

D

E

F

G

H

I

J

K

L

M

N

O

P

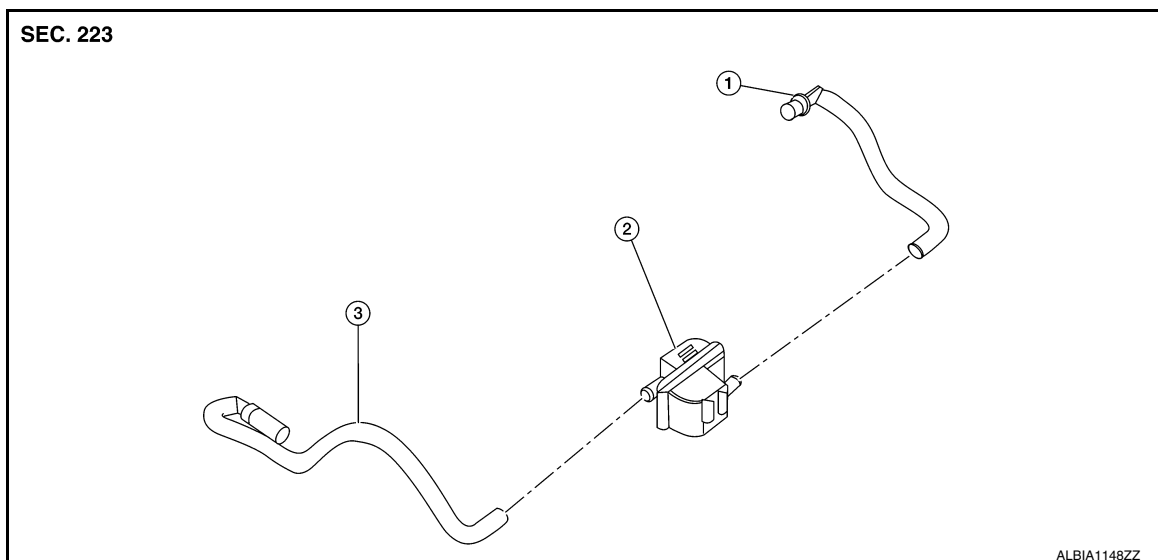
EVAP CANISTER FILTER

< REMOVAL AND INSTALLATION >

EVAP CANISTER FILTER

Exploded View

INFOID:000000009445752



1. EVAP canister filter hose

2. Evap canister filter

3. EVAP vent control valve hose

⇐ Front

Removal and Installation

INFOID:000000009445753

REMOVAL

1. Disconnect EVAP vent control valve hose from EVAP canister.
2. Remove EVAP canister filter hose from EVAP canister filter.
3. Remove EVAP canister filter.

INSTALLATION

Installation is in the reverse order of removal.

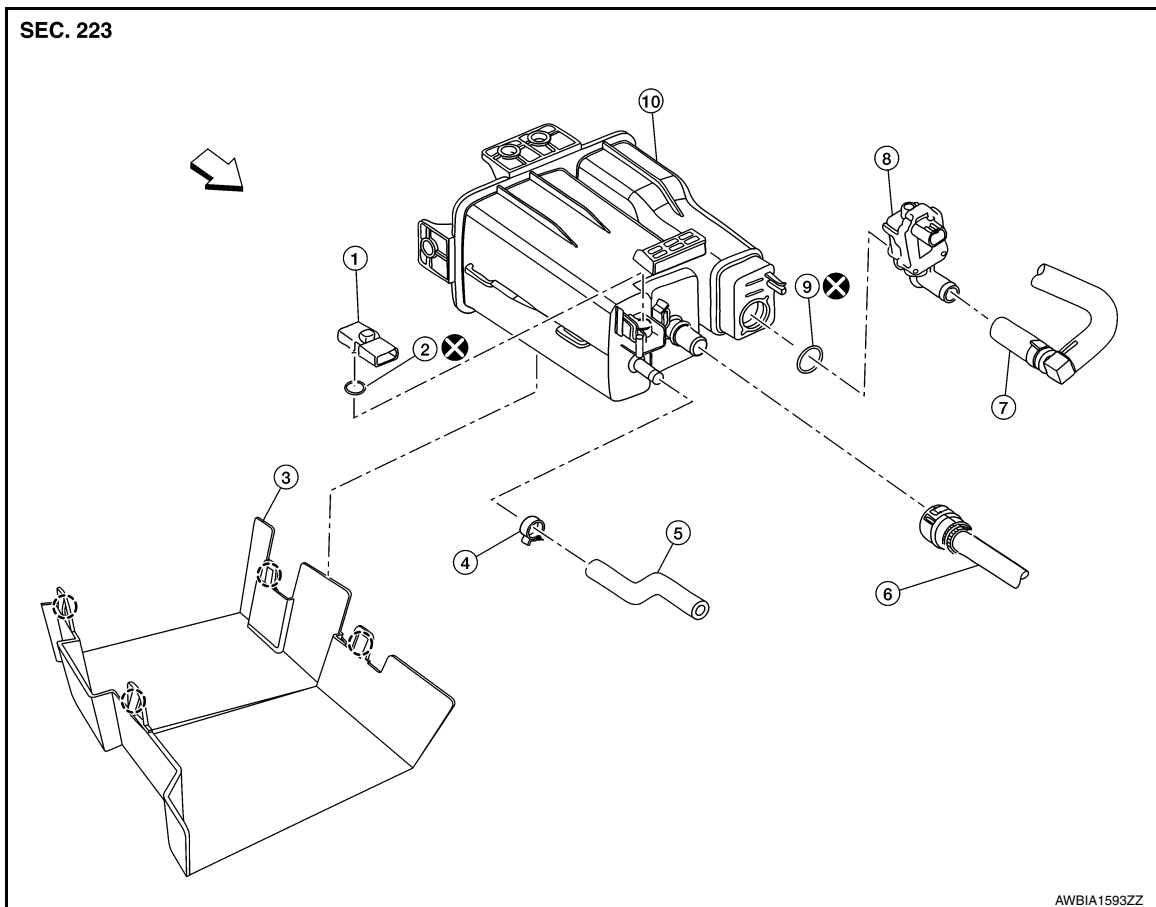
EVAP CANISTER VENT CONTROL VALVE

< REMOVAL AND INSTALLATION >

EVAP CANISTER VENT CONTROL VALVE

Exploded View

INFOID:000000009445754



- | | | |
|--|-------------------------------------|----------------------------|
| 1. EVAP control system pressure sensor | 2. O-ring | 3. EVAP canister protector |
| 4. Hose clamp | 5. EVAP canister purge hose | 6. EVAP vent line |
| 7. EVAP canister vent control valve hose | 8. EVAP canister vent control valve | 9. O-ring |
| 10. EVAP canister | ○ Pawl | ⇐ Front |

Removal and Installation

INFOID:000000009445755

NOTE:

The EVAP canister vent control valve and EVAP canister system pressure sensor can be removed without removing the EVAP canister.

REMOVAL

1. Disconnect EVAP vent control valve hose from EVAP canister.
2. Disconnect EVAP canister vent control valve harness connector.

EVAP CANISTER VENT CONTROL VALVE

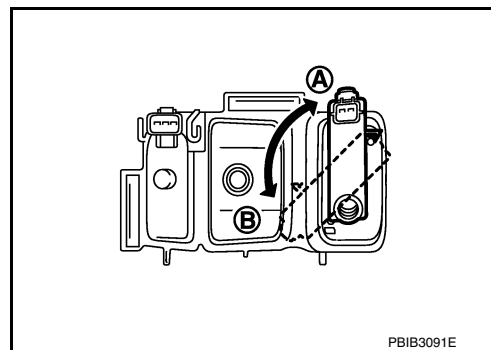
< REMOVAL AND INSTALLATION >

3. Turn EVAP canister vent control valve counterclockwise.

(A) : Lock

(B) : Unlock

4. Remove the EVAP canister vent control valve and O-ring.



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Do not reuse O-ring.

FUEL LEVEL SENSOR UNIT

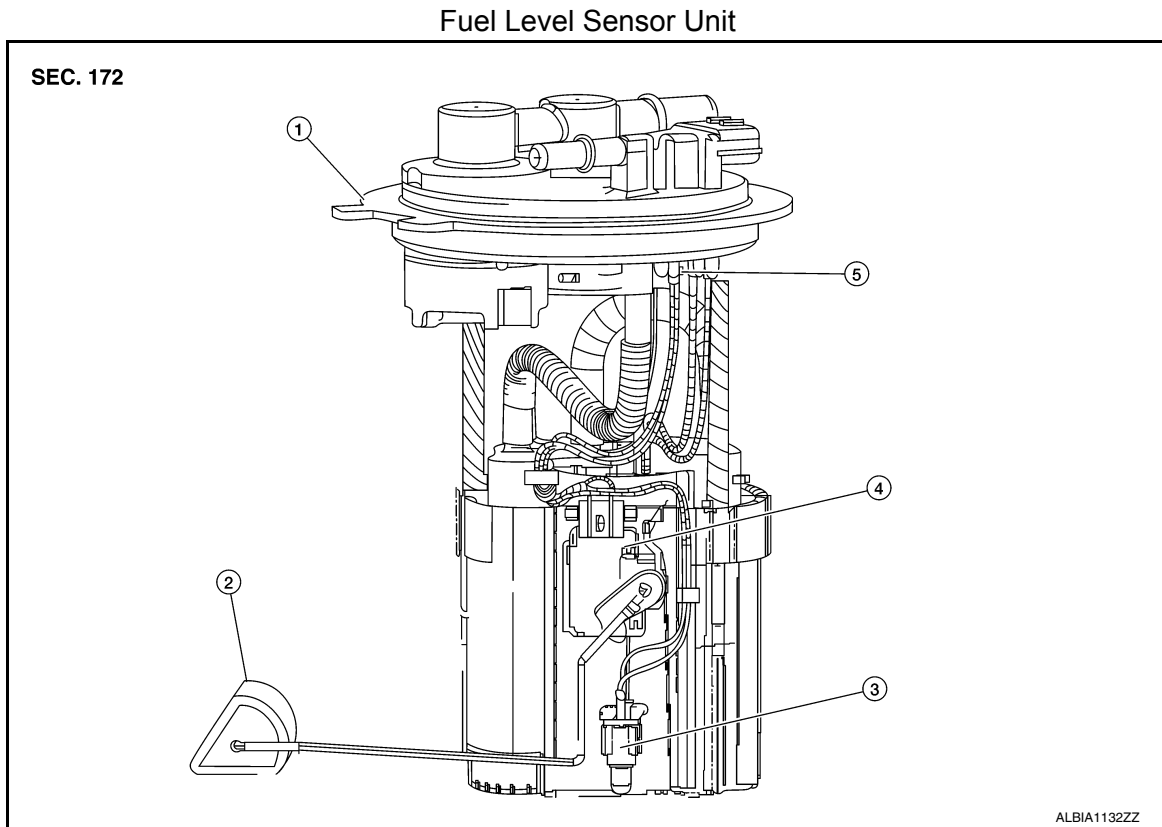
< DISASSEMBLY AND ASSEMBLY >

DISASSEMBLY AND ASSEMBLY

FUEL LEVEL SENSOR UNIT

Exploded View

INFOID:000000009405638



1. Fuel filter and pump assembly
2. Float arm assembly
3. Fuel tank temperature sensor
4. Fuel level sensor unit
5. Fuel level sensor unit/fuel tank temperature sensor harness connector

Disassembly and Assembly

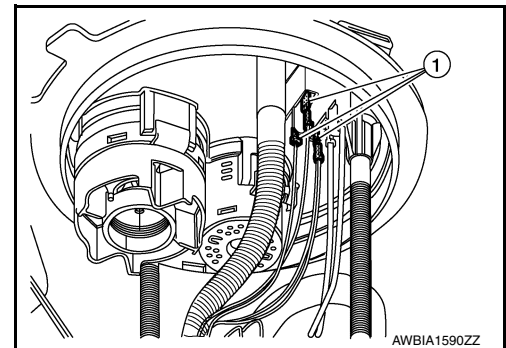
INFOID:000000009405639

DISASSEMBLY

1. Disconnect fuel level sensor unit/fuel tank temperature sensor harness connectors (1).

NOTE:

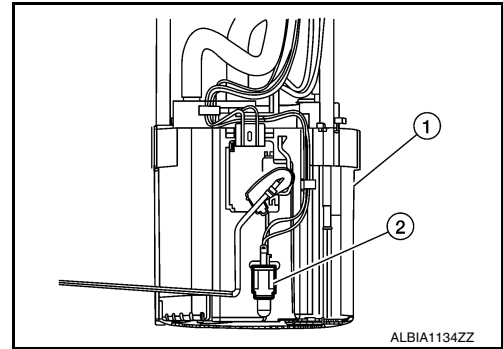
Hold connector with your fingers, because there is no tab for releasing stopper. Pull it out straight downward.



FUEL LEVEL SENSOR UNIT

< DISASSEMBLY AND ASSEMBLY >

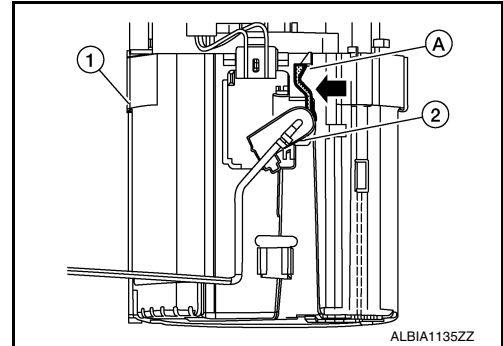
2. Remove fuel tank temperature sensor (2) from fuel filter and fuel pump assembly (1).



3. Using a suitable tool push tab (A) in the direction (←) shown and remove fuel level sensor unit (2) from fuel filter and fuel pump assembly (1).

CAUTION:

- Be careful not to damage the fuel level sensor unit.
- Do not disassemble fuel filter and fuel pump assembly.



ASSEMBLY

1. Check for damage of fuel level sensor unit installation position on the side of fuel filter and pump assembly.
2. Slide fuel level sensor unit until it aligns to installation groove, then insert it until it stops.
 - After inserting, apply force in reverse direction (removal direction) to ensure it cannot be pulled out.
3. Connect fuel level sensor unit/fuel tank temperature sensor harness connector.

INSPECTION AFTER INSTALLATION

Use the following procedure to check for fuel leaks.

1. Turn ignition switch "ON" (with engine stopped), then check fuel system connections for leaks by applying fuel pressure to fuel piping.
2. Start engine and let it idle and check there are no fuel leaks at the fuel system connections.

SERVICE DATA AND SPECIFICATIONS (SDS)

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SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Fuel Tank

INFOID:0000000008969008

Standard and Limit

Unit: ℓ (US gal, Imp gal)

Fuel tank capacity	Approx. 41.0 ℓ (10-7/8 US gal, 9.0 Imp gal)
Fuel recommendation	Refer to MA-11