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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:000000008643905

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. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. 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 3 minutes before performing any service.

General Precaution

INFOID:000000008643906

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.

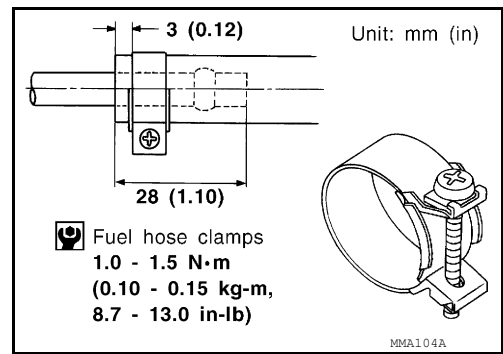
CAUTION:

- 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-593, "Inspection"](#).
 - 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.

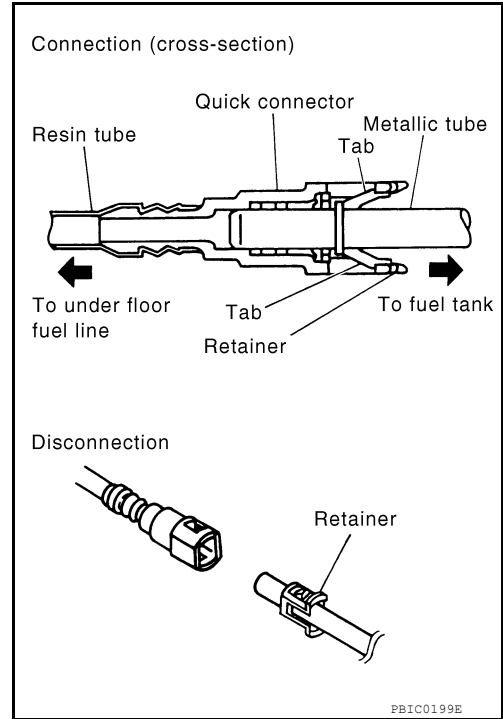
PRECAUTIONS

< PRECAUTION >

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.



- 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-92, "System Description"](#).



PREPARATION

< PREPARATION >

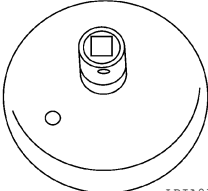
PREPARATION

PREPARATION

Special Service Tool


INFOID:000000008643907

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

Tool number (Kent-Moore No.) Tool name	Description
KV991J0090 (J-46214) Fuel tank lock ring wrench  LBIA0353E	Removing and installing fuel tank lock ring

Commercial Service Tool

INFOID:000000008643908

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

FUEL SYSTEM

< PERIODIC MAINTENANCE >

PERIODIC MAINTENANCE

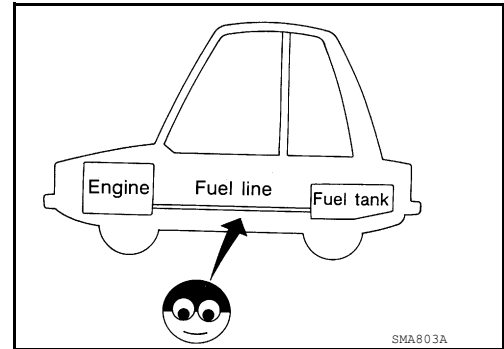
FUEL SYSTEM

Inspection

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

If necessary, repair or replace damaged parts.

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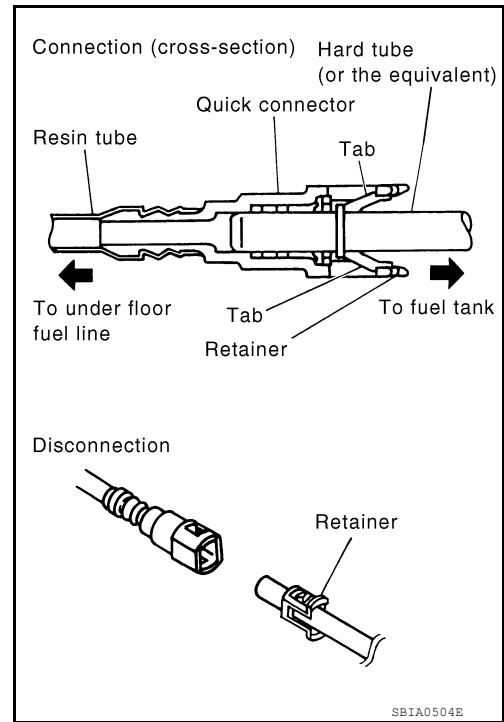


Quick Connector

CAUTION:

- After connecting fuel tube quick connectors, make sure quick connectors are secure. Ensure that connector and resin tube do not contact any adjacent parts.

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FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

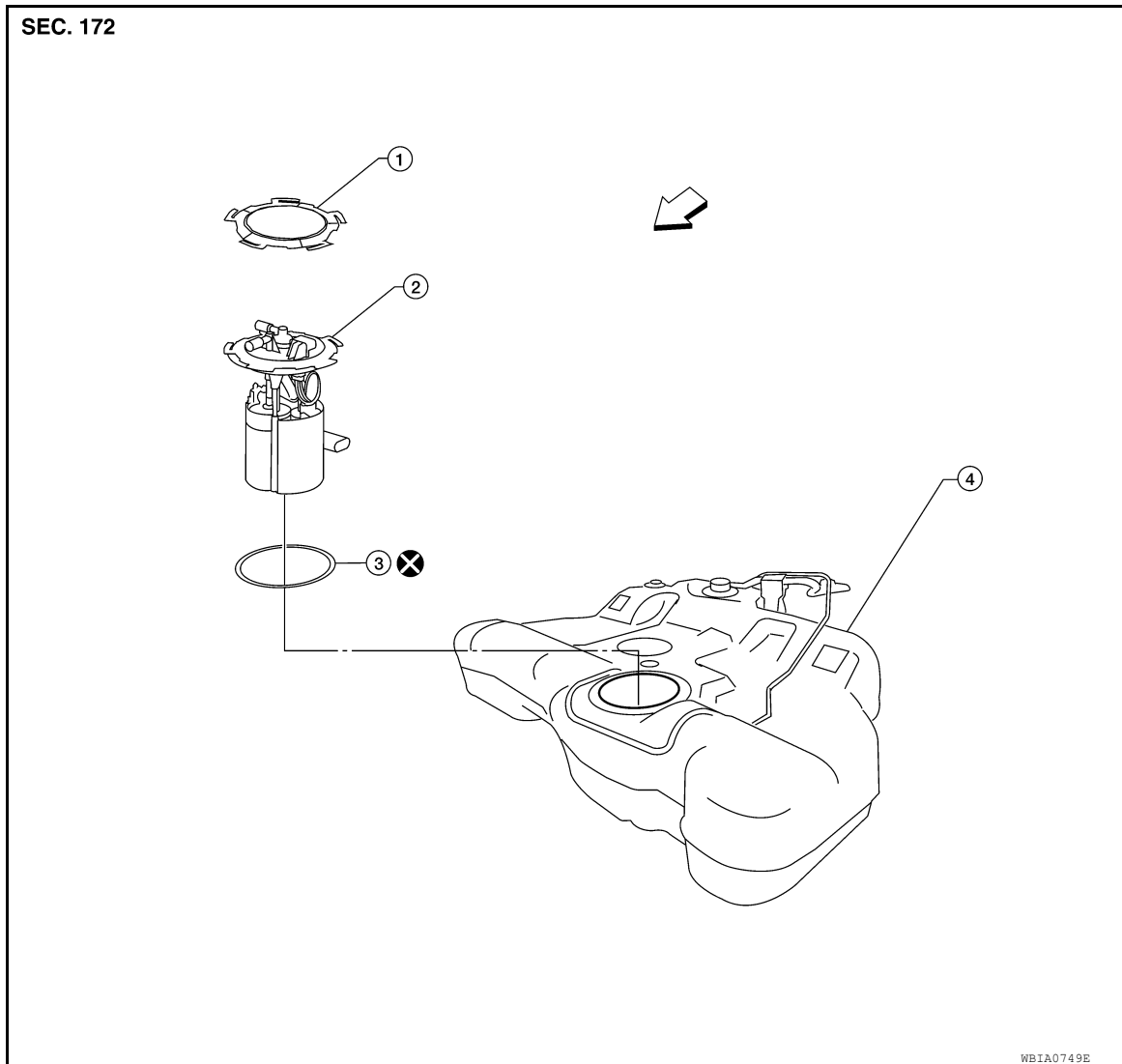
< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

Exploded View

INFOID:000000008643911



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

Removal and Installation

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NOTE:

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

REMOVAL

WARNING:

Read "General Precautions" before working on the fuel system.

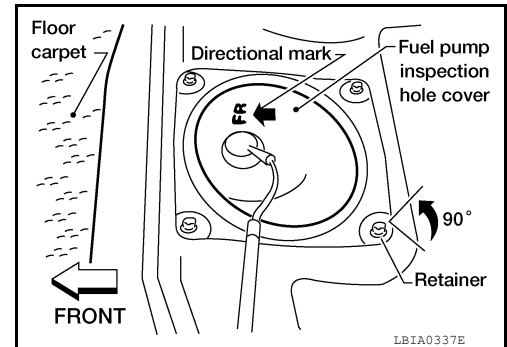
Refer to [GI-31, "General Precautions"](#).

1. Unscrew the fuel filler cap to release the pressure inside the fuel tank.
2. Release the fuel pressure from the fuel lines. Refer to [EC-593, "Inspection"](#).

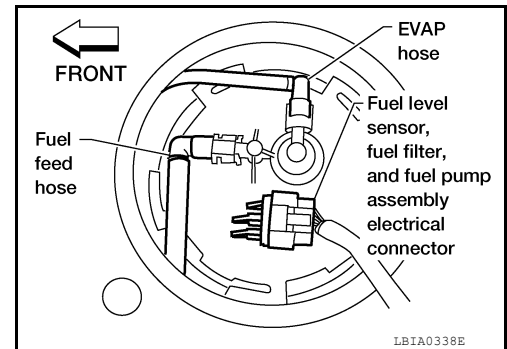
FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< REMOVAL AND INSTALLATION >

3. Disconnect the battery negative terminal.
4. Remove the rear seat cushion. Refer to [SE-71, "Removal and Installation"](#) (with fixed seatback, WITH CLIMATE CONTROLLED SEATS), [SE-74, "Removal and Installation"](#) (with split seatback, WITH CLIMATE CONTROLLED SEATS), [SE-129, "Removal and Installation"](#) (with fixed seatback, W/O CLIMATE CONTROLLED SEATS) [SE-132, "Removal and Installation"](#) (with split seatback, W/O CLIMATE CONTROLLED SEATS).
5. Turn the four retainers 90 degrees in a clockwise direction and remove the fuel pump inspection hole cover.



6. Disconnect the fuel level sensor, fuel filter, and fuel pump assembly electrical connector, EVAP hose quick connector, and the fuel feed hose quick connector from the fuel level sensor unit, fuel filter, and fuel pump assembly.

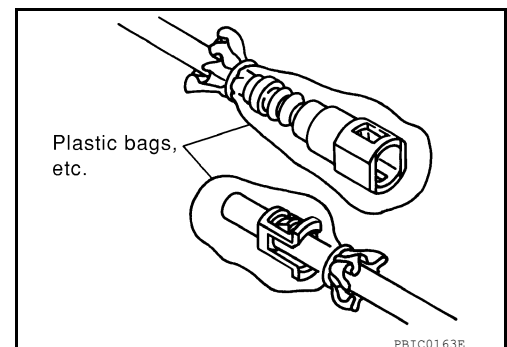
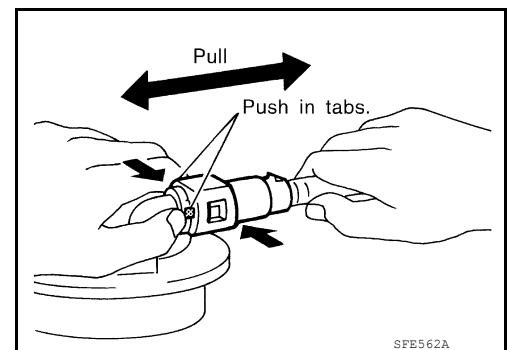


Remove the quick connector as follows:

- Hold the sides of the connector, push in tabs and pull 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:

- The tube can be removed when the tabs are completely depressed. Do not twist it more than necessary.
- Do not use any tools to remove the quick connector.
- Keep the resin tube away from heat. Be especially careful when welding near the tube.
- Prevent acid liquid such as battery electrolyte, etc. from getting on the resin tube.
- Do not bend or twist the tube during installation and removal.
- Only when the tube is replaced, remove the remaining retainer on the tube or fuel level sensor, fuel filter, and fuel pump assembly.
- When the tube or fuel level sensor, fuel filter, and fuel pump assembly is replaced, also replace the retainer with a new one (green colored retainer).
- To keep the connecting portion clean and to avoid damage and foreign materials, cover them completely with plastic bags or something similar.



FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

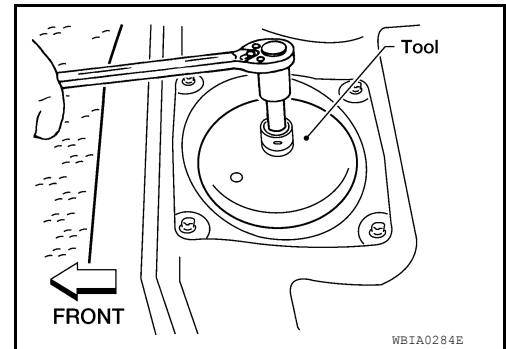
< REMOVAL AND INSTALLATION >

7. Remove the lock ring using a socket drive handle and Tool as shown.

Tool number : KV991J0090 (J-46214)

CAUTION:

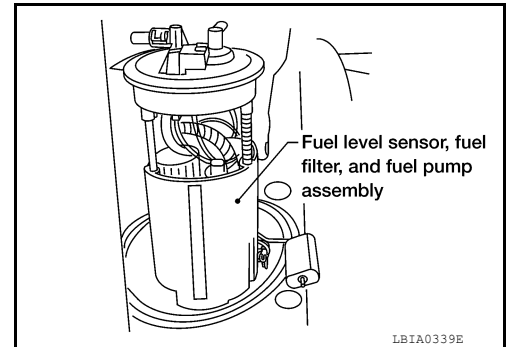
Discard the lock ring if damaged or distorted.



8. Remove the fuel level sensor, fuel filter, and fuel pump assembly and O-ring. Discard the O-ring.

CAUTION:

- Do not bend the float arm during removal.
- Do not reuse the O-ring.



INSPECTION AFTER REMOVAL

Inspect the fuel level sensor, fuel filter, and fuel pump for any defects and foreign materials. Replace as necessary.

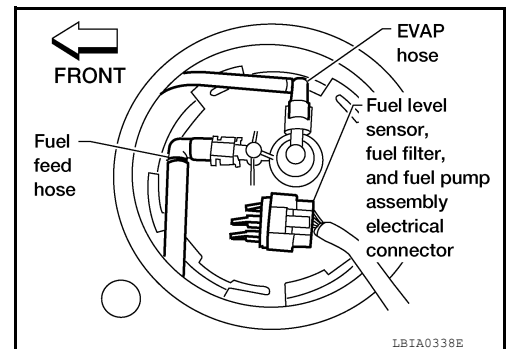
INSTALLATION

Installation is in the reverse order of removal.

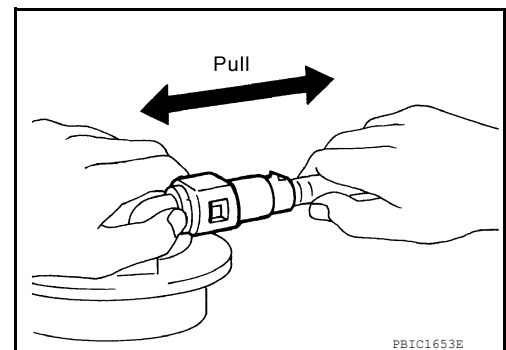
CAUTION:

Do not reuse O-ring.

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



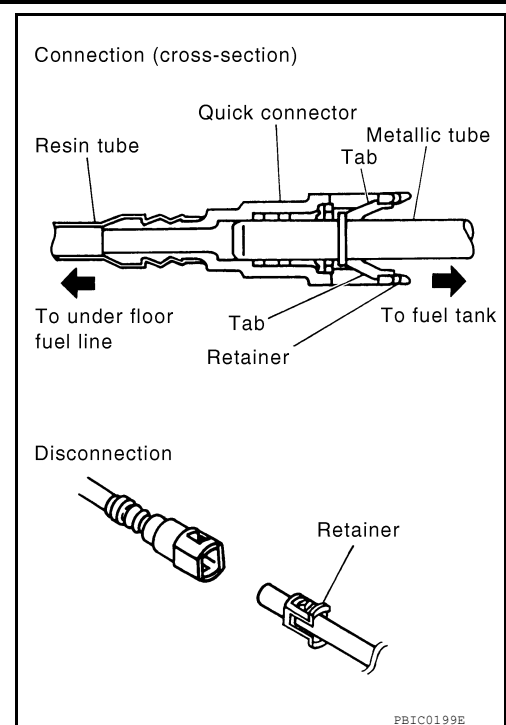
- Connect the quick connector as follows:
 - Check the connection for damage or any foreign materials.
 - Align the connector with the tube, then insert the connector straight into the tube until a click is heard.
- After the tube is connected, make sure the connection is secure by performing the following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



INSPECTION AFTER INSTALLATION

Use the following procedure to check for fuel leaks.

1. Turn the ignition switch to ON (without starting the engine) to apply fuel pressure to the fuel system, then check the connections for fuel leaks.
2. Start the engine and let it idle and check for fuel leaks at the fuel system connections.

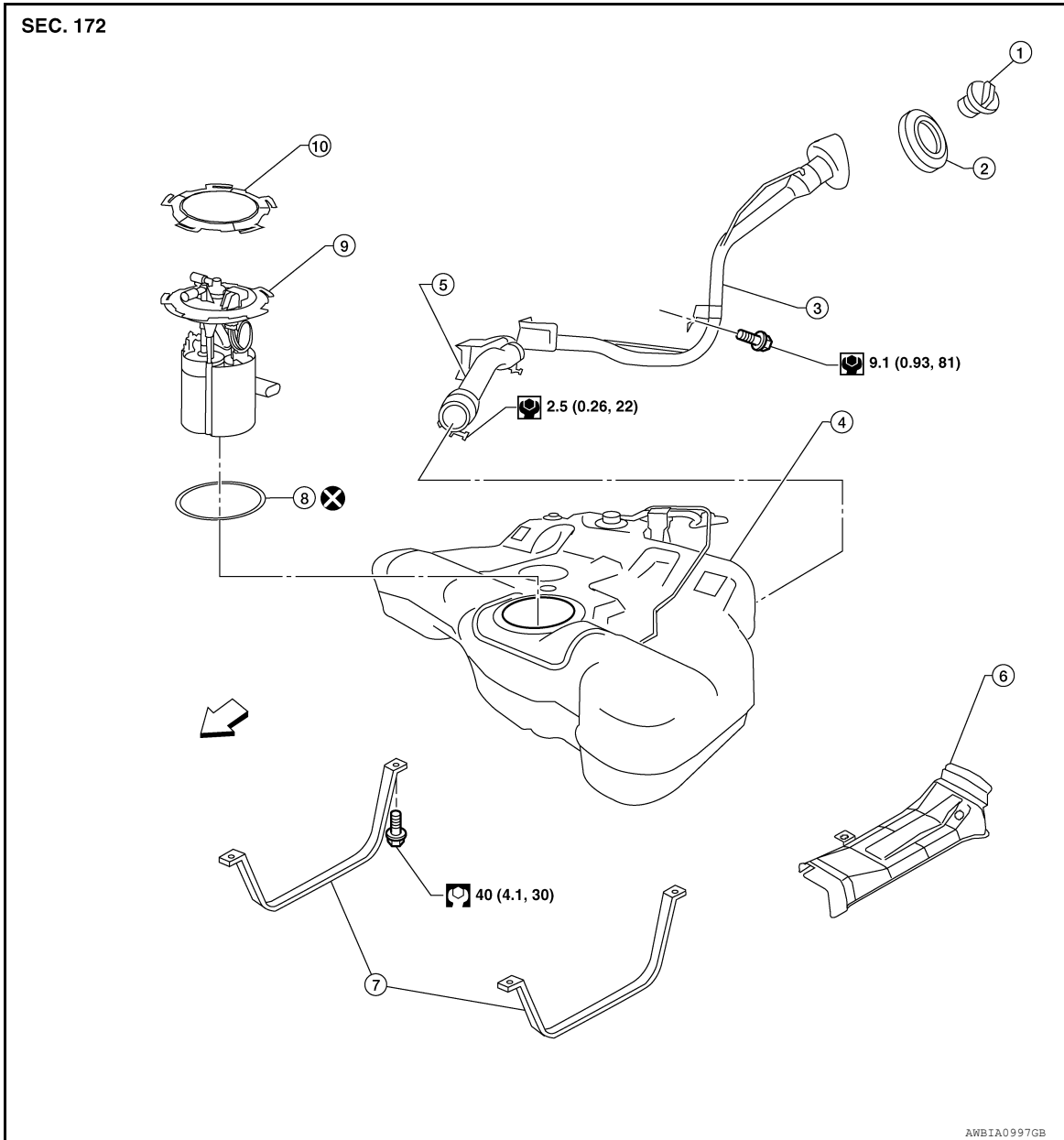
FUEL TANK

< REMOVAL AND INSTALLATION >

FUEL TANK

Exploded View

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- | | | |
|------------------------------|---------------------|--|
| 1. Fuel filler cap | 2. Grommet | 3. Fuel filler tube |
| 4. Fuel tank | 5. Fuel filler hose | 6. Fuel tank protector |
| 7. Fuel tank mounting straps | 8. O-ring | 9. Fuel level sensor, fuel filter and fuel pump assembly |
| 10. Lock ring | ← Front | |

Removal and Installation

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NOTE:

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

REMOVAL

WARNING:

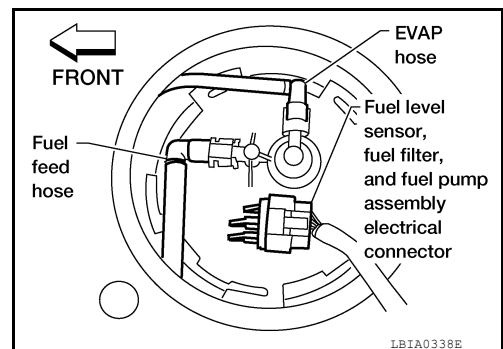
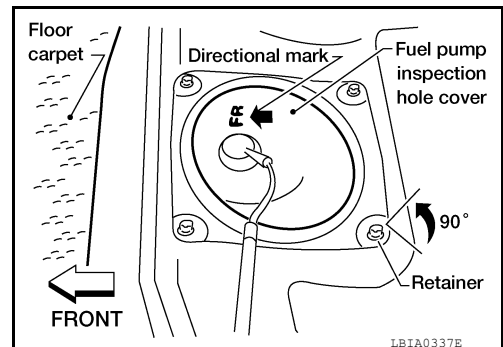
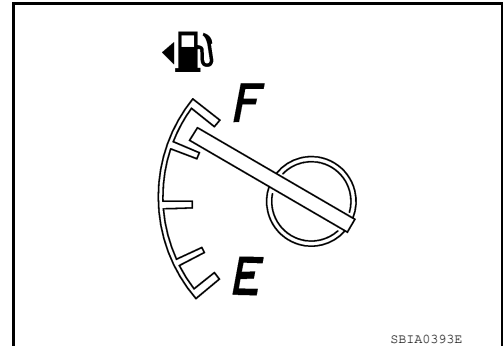
FUEL TANK

< REMOVAL AND INSTALLATION >

Read "General Precautions" before working on the fuel system.

Refer to [FL-2, "General Precaution"](#).

1. Disconnect the battery negative terminal.
2. Open the fuel filler cap to release the pressure inside the fuel tank.
3. Release fuel pressure from fuel line. Refer to [EC-593, "Inspection"](#).
4. Check the fuel level with the vehicle on a level surface. If the fuel gauge indicates more than the level as shown (7/8 full), drain the fuel from the fuel tank until the fuel gauge indicates a level at or below as shown (7/8 full).
 - In case the fuel pump does not operate, use the following procedure.
- a. Insert fuel tubing of less than 25mm (0.98in) diameter into the fuel filler tube through the fuel filler opening to drain fuel from the fuel filler tube.
- b. Disconnect the fuel filler hose from the fuel filler tube.
- c. Insert fuel tubing into the fuel tank through the fuel filler hose to drain fuel from the fuel tank.
 - As a guide, the fuel level reaches or is less than the level on the fuel gauge as shown, when approximately 10 ℓ (2 5/8 US gal, 2 1/4 Imp gal) of fuel is drained from a full fuel tank.
5. Remove the rear seat cushion. Refer to [SE-71, "Removal and Installation"](#) (with fixed seatback, WITH CLIMATE CONTROLLED SEATS), [SE-74, "Removal and Installation"](#) (with split seatback, WITH CLIMATE CONTROLLED SEATS), [SE-129, "Removal and Installation"](#) (with fixed seatback, W/O CLIMATE CONTROLLED SEATS) [SE-132, "Removal and Installation"](#) (with split seatback, W/O CLIMATE CONTROLLED SEATS).
6. Turn the four retainers 90 degrees in a clockwise direction and remove the fuel pump inspection hole cover.
7. Disconnect the fuel level sensor, fuel filter, and fuel pump assembly electrical connector, EVAP hose quick connector, and fuel feed hose quick connector.



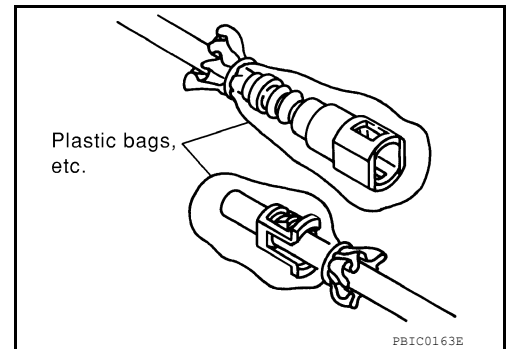
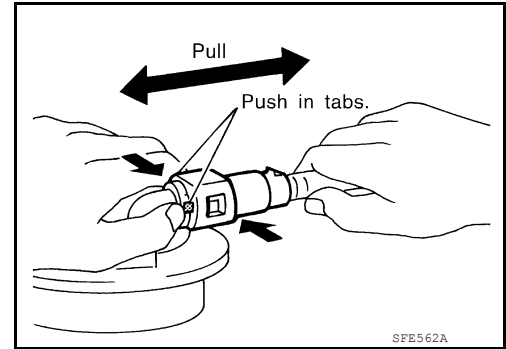
FUEL TANK

< REMOVAL AND INSTALLATION >

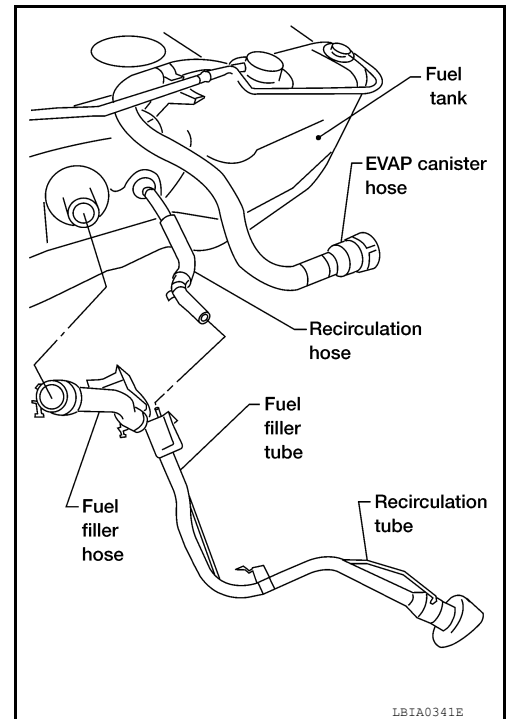
- a. Disconnect the quick connectors as follows:
- Hold the sides of the connector, push in tabs and pull out the tube.
 - If the connector and the tube are stuck together, push and pull several times until they start to move. Then disconnect them by pulling.

CAUTION:

- The tube can be removed when the tabs are completely depressed. Do not twist it more than necessary.
- Do not use any tools to remove the quick connector.
- Keep the resin tube away from heat. Be especially careful when welding near the tube.
- Prevent acid liquid such as battery electrolyte, from getting on the resin tube.
- Do not bend or twist the tube during installation and removal.
- Only when the tube is replaced, remove the remaining retainer on the tube or fuel level sensor, fuel filter, and fuel pump assembly.
- When the tube or fuel level sensor, fuel filter, and fuel pump assembly is replaced, also replace the retainer with a new one (green colored retainer).
- To keep the connecting portion clean and to avoid damage and foreign materials, cover them completely with plastic bags or something similar.



8. Remove the center exhaust tube, with muffler. Refer to [EX-5, "Removal and Installation"](#).
9. Disconnect the fuel filler hose and recirculation hose at the fuel tank side.



10. Disconnect the three parking brake cable mounting brackets on each cable and position the cables out of the way. Refer to [PB-6, "Removal and Installation"](#).
11. Remove rear stabilizer bar clamps, then allow stabilizer bar to hang. Refer to [RSU-13, "Removal and Installation"](#).

FUEL TANK

< REMOVAL AND INSTALLATION >

12. Remove EVAP canister bolts. Then without disconnecting hoses, position EVAP canister aside. Refer to [FL-14, "Removal and Installation \(EVAP Canister\)"](#).
13. Remove the fuel tank protector.
14. Remove the fuel tank mounting strap bolts and mounting straps while supporting the fuel tank with a suitable jack.
15. Remove the fuel tank.
16. If replacing the fuel tank, remove the fuel level sensor unit, fuel filter and fuel pump assembly to transfer to the new fuel tank. Remove and discard the O-ring.

CAUTION:

Do not reuse O-ring.

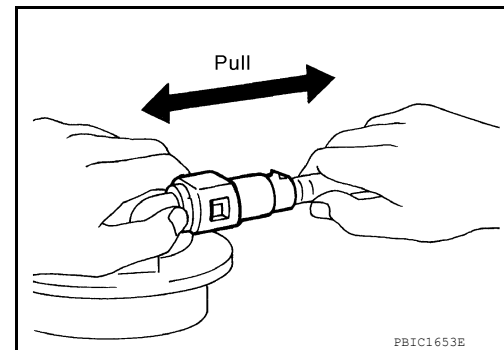
INSTALLATION

Install in the reverse order of removal paying attention to the following.

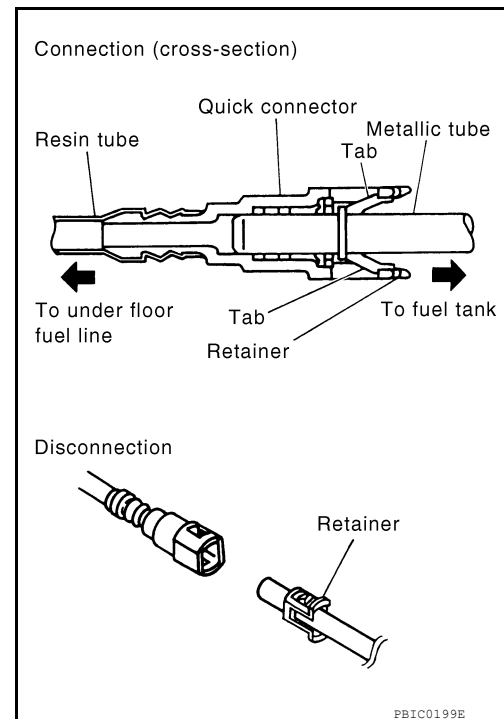
CAUTION:

Do not reuse O-ring.

- Before tightening the fuel tank mounting straps, temporarily install the filler hose and the recirculation hose. Tighten all fuel tank mounting strap bolts to specification, then tighten the hose clamps.
- 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 on the tube and the connector to make sure they are securely connected.



- Visually confirm that the two retainer tabs are connected to the quick connector.



INSPECTION AFTER INSTALLATION

Use the following procedure to check for fuel leaks.

1. Turn the ignition switch ON (without starting the engine). Then check the connections for fuel leaks by applying fuel pressure to the fuel piping.
2. Run the engine and check for fuel leaks at the fuel system tube and hose connections.

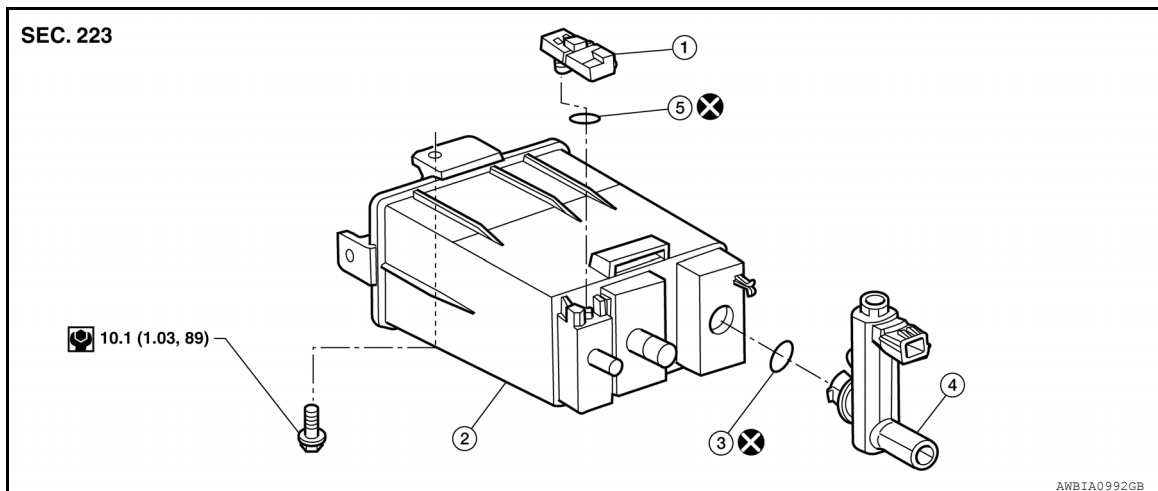
EVAP CANISTER

< REMOVAL AND INSTALLATION >

EVAP CANISTER

Removal and Installation (EVAP Canister)

INFOID:000000008643915



1. EVAP control system pressure sensor
2. EVAP canister
3. O-ring
4. EVAP canister vent control valve
5. O-ring

NOTE:

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

REMOVAL

1. Remove fuel tank. Refer to [FL-10. "Removal and Installation"](#).
2. Disconnect EVAP hose from EVAP canister.
3. Disconnect EVAP control system pressure sensor.
4. Disconnect EVAP canister vent control valve and hose.
5. Disconnect main EVAP hose from canister.
6. Remove EVAP canister.

INSTALLATION

Installation is in the reverse order of removal.

NOTE:

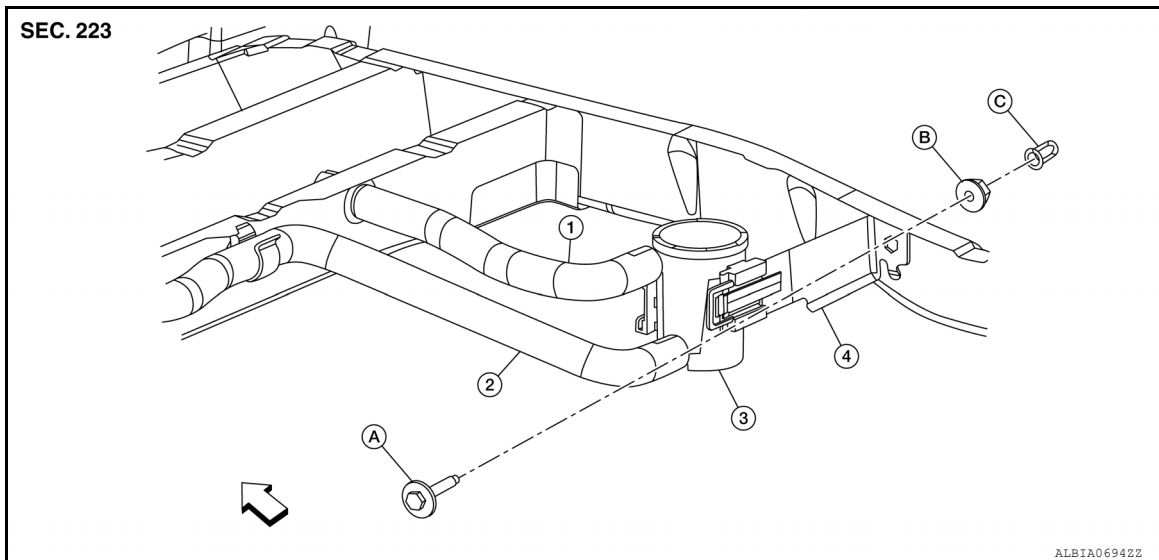
Tighten EVAP canister bolt to the specified torque.

EVAP CANISTER

< REMOVAL AND INSTALLATION >

Removal and Installation (EVAP Canister Filter)

INFOID:000000008643916



- | | | |
|------------------------|--------------|-------------------------|
| 1. Canister drain hose | 2. EVAP hose | 3. EVAP canister filter |
| 4. EVAP filter bracket | A. Bolt | B. Nut |
| C. Nut | ⇐ Front | |

REMOVAL

1. Remove rear stabilizer bar clamps and position rear stabilizer bar aside. Refer to [RSU-13, "Removal and Installation"](#).
2. Disconnect the EVAP hose from the EVAP canister filter.
3. Remove the EVAP filter bracket bolt and position the EVAP filter canister aside.
4. Remove the canister drain hose from the EVAP canister filter.
5. Remove EVAP canister filter.

INSTALLATION

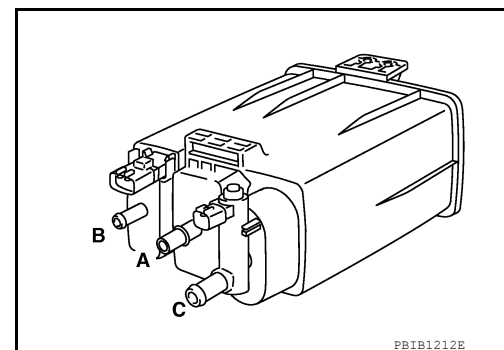
Installation is in the reverse order of removal.

Inspection

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Check EVAP canister as per the following:

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.



EVAP CANISTER VENT CONTROL VALVE

< REMOVAL AND INSTALLATION >

EVAP CANISTER VENT CONTROL VALVE

Removal and Installation

INFOID:000000008643918

REMOVAL

1. Remove rear stabilizer bar clamps and position rear stabilizer bar aside. Refer to [RSU-13. "Removal and Installation"](#).
2. Disconnect breather hose from EVAP canister.
3. Disconnect EVAP canister vent control valve.
4. Turn EVAP canister vent control valve counterclockwise.

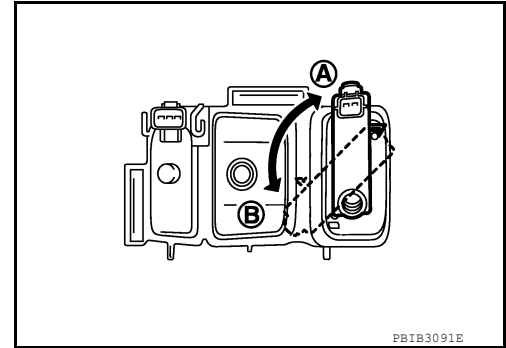
A : Lock

B : Unlock

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

CAUTION:

Do not reuse O-ring.



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Do not reuse O-ring.

EVAP CONTROL SYSTEM PRESSURE SENSOR

< REMOVAL AND INSTALLATION >

EVAP CONTROL SYSTEM PRESSURE SENSOR

Removal and Installation

INFOID:000000008643919

REMOVAL

1. Remove rear stabilizer bar clamps and position rear stabilizer bar aside. Refer to [RSU-13, "Removal and Installation"](#).
2. Disconnect EVAP hose from EVAP canister.
3. Disconnect EVAP control system pressure sensor.
4. Remove EVAP control system pressure sensor and O-ring.
CAUTION:
Do not reuse O-ring.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:
Do not reuse O-ring.

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FUEL LEVEL SENSOR UNIT

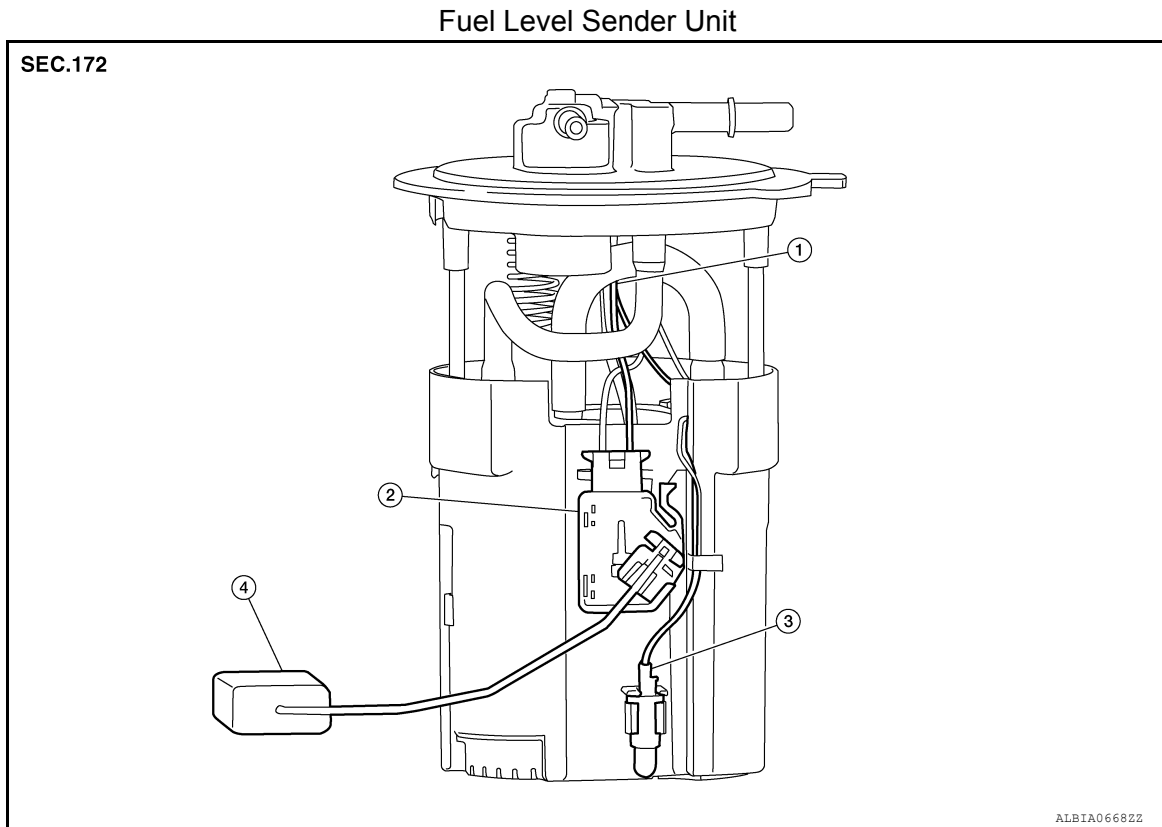
< DISASSEMBLY AND ASSEMBLY >

DISASSEMBLY AND ASSEMBLY

FUEL LEVEL SENSOR UNIT

Disassembly and Assembly

INFOID:000000008643920



1. Harness connectors
4. Float arm assembly

2. Fuel level sensor unit

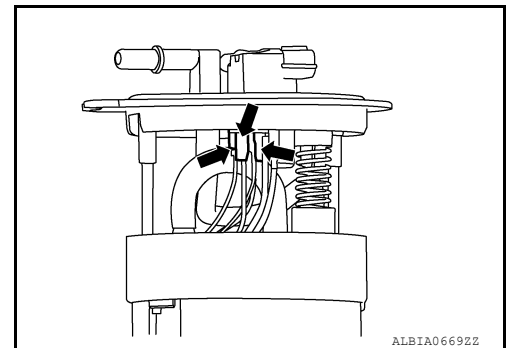
3. Fuel tank temperature sensor

Disassembly

NOTE:

Before disassembly, note the proper placement of the wires to the correct terminals and correct wire routing to the terminals.

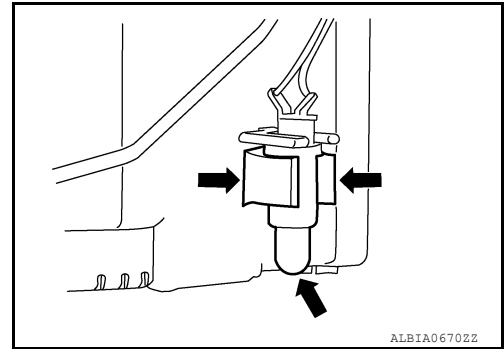
1. Disconnect the red, white, and double black wire connectors.
 - Press the tabs on the terminals to release the locking tabs.



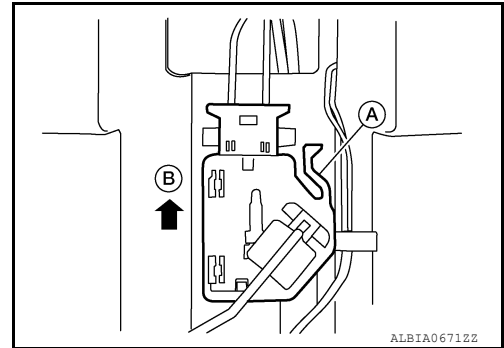
FUEL LEVEL SENSOR UNIT

< DISASSEMBLY AND ASSEMBLY >

2. Release the two clips and remove the fuel tank temperature sensor from the pump assembly.



3. Release the tab (A) and slide the fuel level sensor unit and float arm assembly (B) up to remove.



Assembly

NOTE:

Assembly is the reverse order of disassembly.

- Ensure proper placement of the wires to the correct terminals and correct wire routing to the terminals.
- After connecting terminals, ensure they are securely locked and can not be pulled out.
- When installing the fuel level sensor unit, push down until the tab is locked into place.

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Fuel Tank

INFOID:000000008643921

Standard and Limit

Fuel tank capacity	Approx. 75.6 ℓ (20 US gal, 16-5/8 Imp gal)
Fuel recommendation	Refer to MA-16. "FOR USA AND CANADA : Fluids and Lubricants" (United States and Canada), MA-17. "FOR MEXICO : Fluids and Lubricants" (Mexico)