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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:000000005463860

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.

#### Precautions Necessary for Steering Wheel Rotation after Battery Disconnect (Early Production, With Electronic Steering Column Lock)

INFOID:000000005885833

#### **NOTE:**

- Before removing and installing any control units, first turn the push-button ignition switch to the LOCK position, then disconnect both battery cables.
- After finishing work, confirm that all control unit connectors are connected properly, then re-connect both battery cables.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If a DTC is detected, perform trouble diagnosis according to self-diagnosis results.

This vehicle is equipped with a push-button ignition switch and a steering lock unit.

If the battery is disconnected or discharged, the steering wheel will lock and cannot be turned.

If turning the steering wheel is required with the battery disconnected or discharged, follow the procedure below before starting the repair operation.

#### OPERATION PROCEDURE

1. Connect both battery cables.

#### **NOTE:**

Supply power using jumper cables if battery is discharged.

2. Carry the Intelligent Key or insert it to the key slot and turn the push-button ignition switch to ACC position. (At this time, the steering lock will be released.)
3. Disconnect both battery cables. The steering lock will remain released with both battery cables disconnected and the steering wheel can be turned.
4. Perform the necessary repair operation.

## PRECAUTIONS

### < PRECAUTION >

5. When the repair work is completed, re-connect both battery cables. With the brake pedal released, turn the push-button ignition switch from ACC position to ON position, then to LOCK position. (The steering wheel will lock when the push-button ignition switch is turned to LOCK position.)
6. Perform self-diagnosis check of all control units using CONSULT-III.

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# PREPARATION

< PREPARATION >

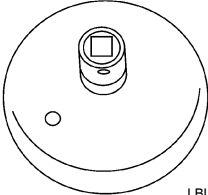
## PREPARATION

### PREPARATION

#### Special Service Tool

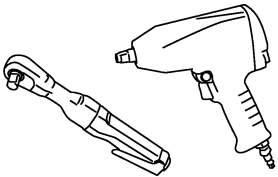
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The actual shape of the Kent-Moore tools may differ from those tools illustrated here.

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:000000005463863

Tool name	Description
Power tool  PBIC0190E	Loosening bolts and nuts

# FUEL SYSTEM

< ON-VEHICLE MAINTENANCE >

## ON-VEHICLE MAINTENANCE

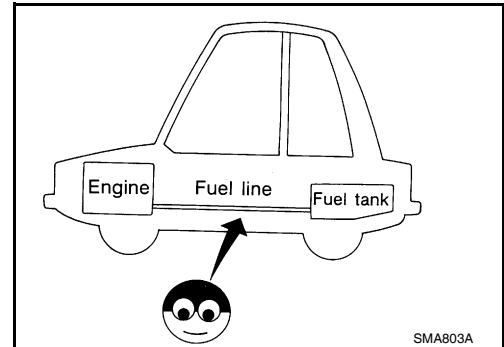
### FUEL SYSTEM

#### 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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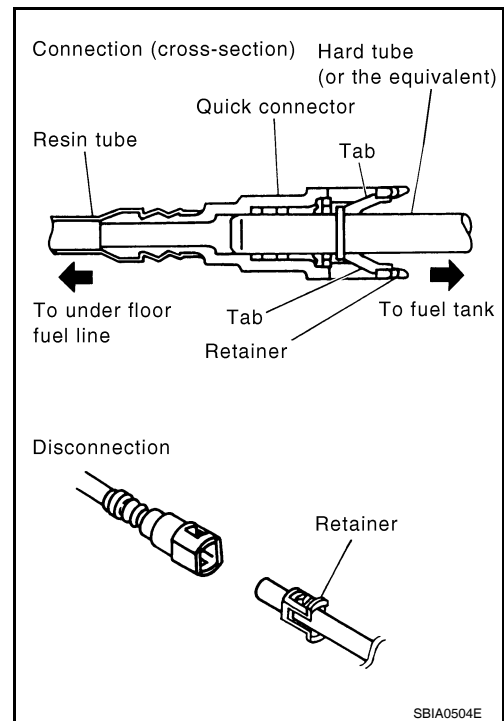


#### Quick Connector

##### 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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#### General Precaution

##### 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 CO<sup>2</sup> fire extinguisher.
- Do not smoke while working on the fuel system. Keep open flames and sparks away from the work area.

##### CAUTION:

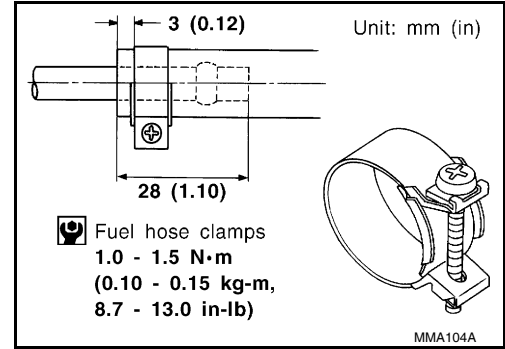
- Before removing fuel line parts, carry out the following procedures:
  - Put drained fuel in an explosion-proof container and put the lid on securely. Keep the container in safe area.
  - Release fuel pressure from the fuel lines. Refer to [EC-576, "Inspection"](#).
  - Disconnect the battery ground cable.
- Always replace O-rings and clamps with new ones.

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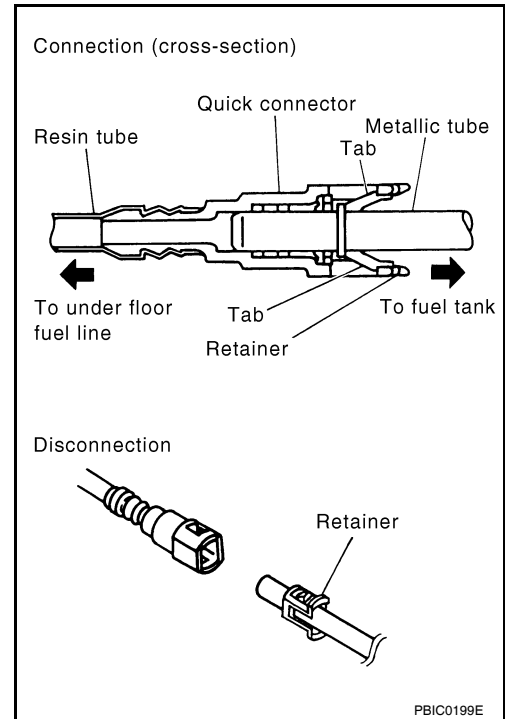
# FUEL SYSTEM

## < ON-VEHICLE MAINTENANCE >

- 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.



- 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-80, "System Description"](#).



# FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< ON-VEHICLE REPAIR >

## ON-VEHICLE REPAIR

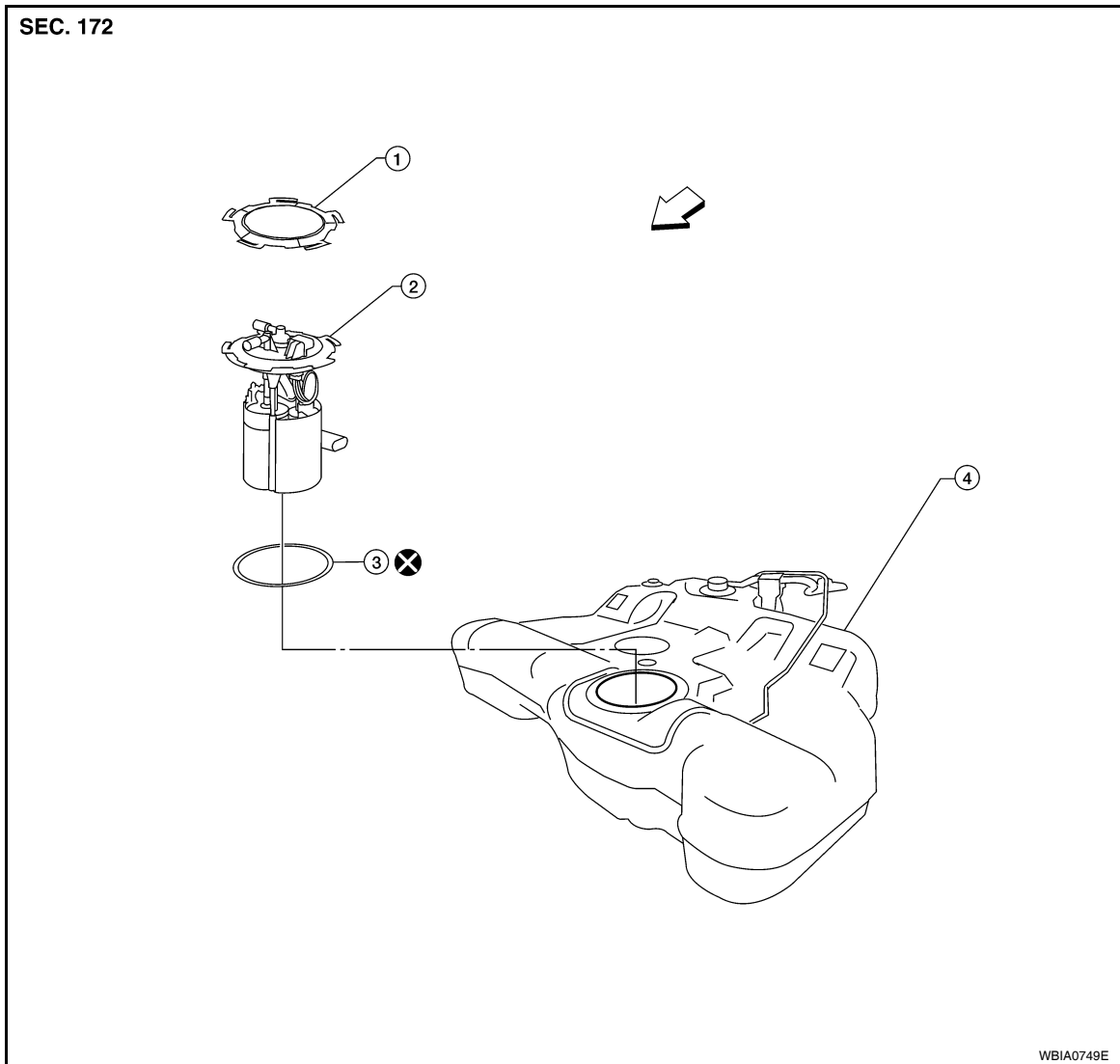
### FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

Exploded View

INFOID:000000005463867

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- 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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### REMOVAL

#### **WARNING:**

Read "General Precautions" before working on the fuel system.  
Refer to [GI-26, "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-576, "Inspection"](#).
3. Disconnect the battery negative terminal.

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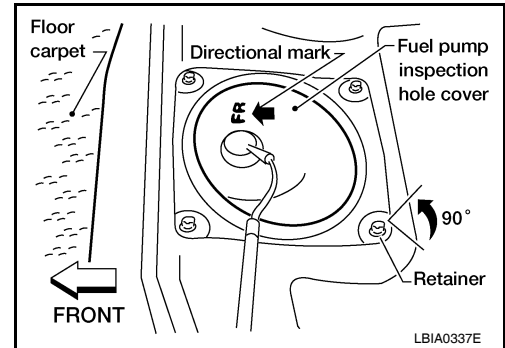
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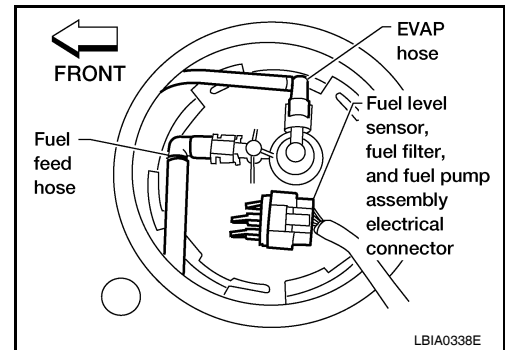
# FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

## < ON-VEHICLE REPAIR >

- Remove the rear seat bottom. Refer to [SE-68, "Removal and Installation"](#) (with climate controlled seats), [SE-110, "Removal and Installation"](#) (without climate controlled seats, with bucket seat) [SE-112, "Removal and Installation"](#) (without climate controlled seats, with bench seat).
- Turn the four retainers 90 degrees in a clockwise direction and remove the fuel pump inspection hole cover.



- 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.

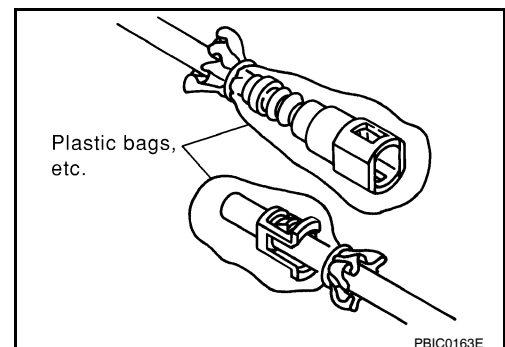
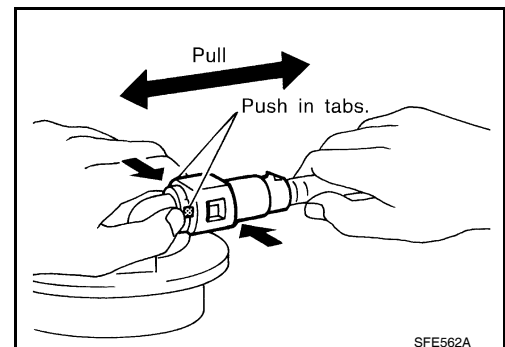


Remove the quick connector as follows:

- 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

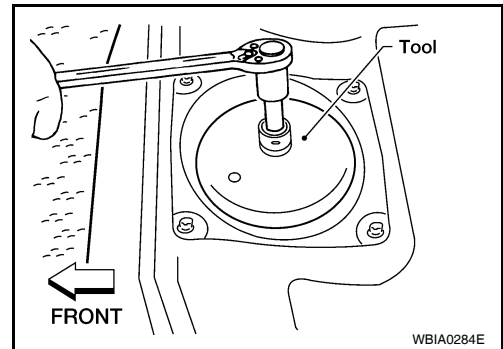
## < ON-VEHICLE REPAIR >

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

**Tool number** : KV991J0090 (J-46214)

### CAUTION:

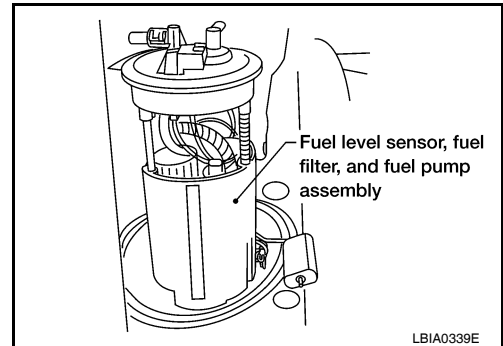
- Discard the lock ring, do not reuse the lock ring.
- Discard the ring seal, do not reuse the ring seal.



8. Remove the fuel level sensor, fuel filter, and fuel pump assembly.

### CAUTION:

- Do not bend the float arm during removal.
- Discard the ring seal, do not reuse the ring seal.



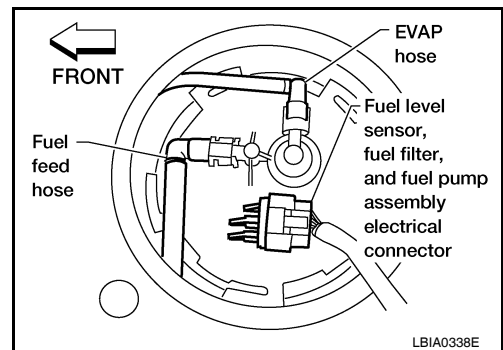
## INSPECTION AFTER REMOVAL

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

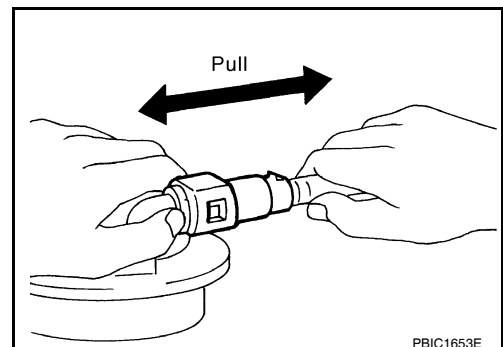
## INSTALLATION

Installation is in the reverse order of removal.

- 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 ring seal.



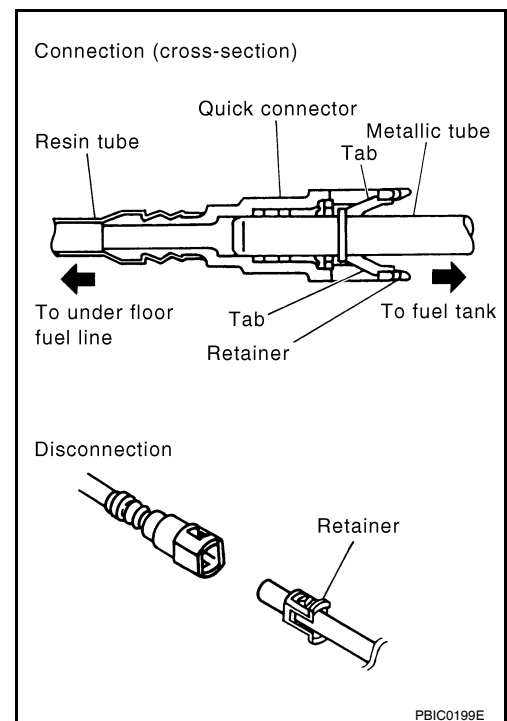
- Connect the quick connector as follows:
  - Check the connection for damage or any foreign materials.
  - Align the connector with the tube, then insert the connector straight into the tube until a click is heard.
- After the tube is connected, make sure the connection is secure by performing the following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



# FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

## < ON-VEHICLE REPAIR >

- 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.

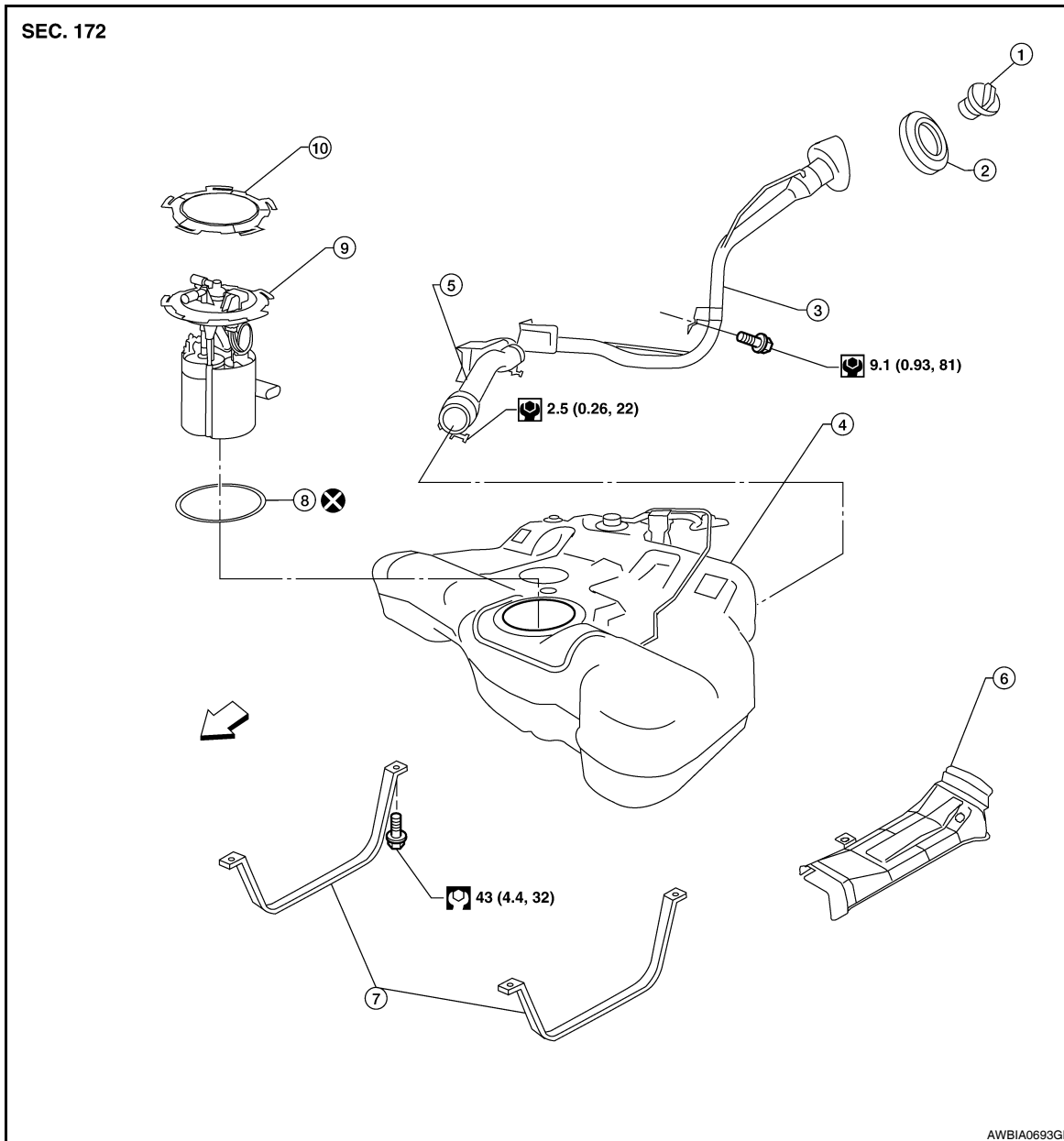
# FUEL TANK

< ON-VEHICLE REPAIR >

## FUEL TANK

### Exploded View

INFOID:000000005463869



- |                              |                     |  |
|------------------------------|---------------------|--|
| 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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### REMOVAL

#### **WARNING:**

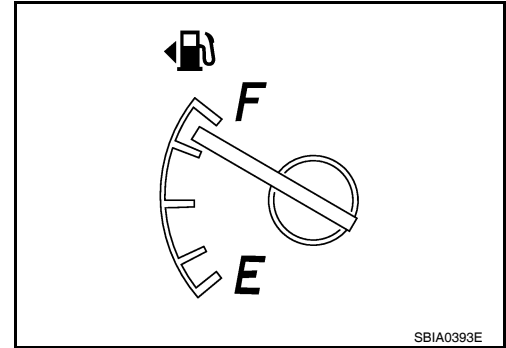
Read "General Precautions" before working on the fuel system.  
Refer to [FL-5, "General Precaution"](#).

1. Disconnect the battery negative terminal.

# FUEL TANK

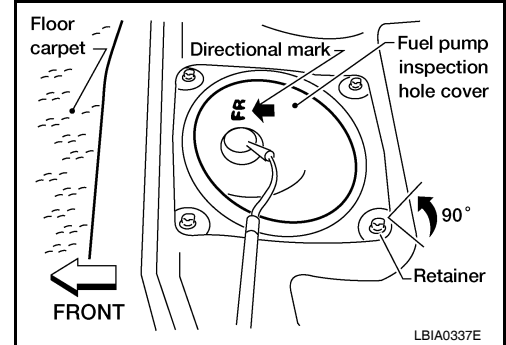
## < ON-VEHICLE REPAIR >

2. Open the fuel filler cap to release the pressure inside the fuel tank.
3. Release fuel pressure from fuel line. Refer to [EC-576, "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 rear seat bottom. Refer to [SE-68, "Removal and Installation"](#) (with climate controlled seats), [SE-110, "Removal and Installation"](#) (with out climate controlled seats, with bucket seat), [SE-112, "Removal and Installation"](#) (with out climate controlled seats, with bench seat).
6. Turn the four retainers 90 degrees in a clockwise direction and remove the fuel pump inspection hole cover.

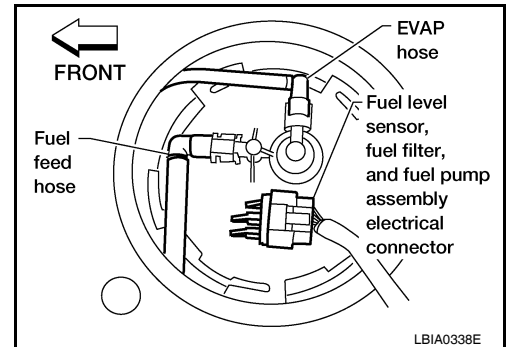


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7. Disconnect the fuel level sensor, fuel filter, and fuel pump assembly electrical connector, EVAP hose quick connector, and fuel feed hose quick connector.



LBIA0337E

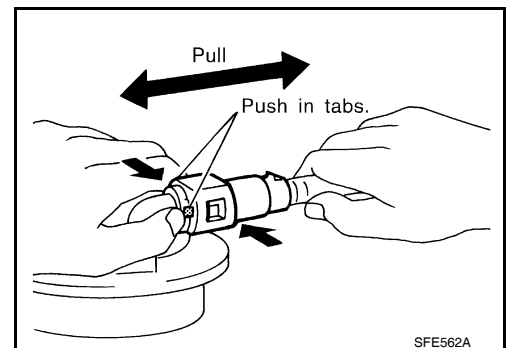


LBIA0338E

- 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.

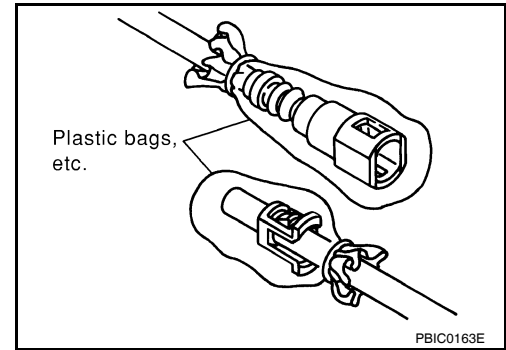


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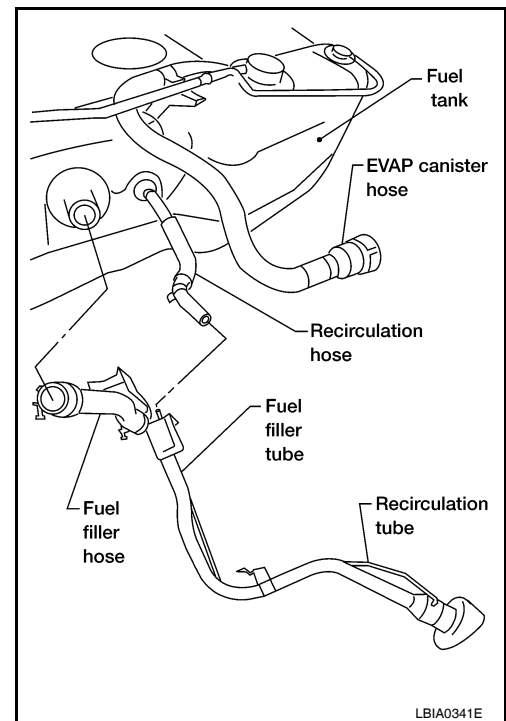
# FUEL TANK

## < ON-VEHICLE REPAIR >

- 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-6, "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-15, "Removal and Installation"](#).
12. Remove EVAP canister bolts. Then without disconnecting hoses, position EVAP canister aside. Refer to [EC-580, "Removal and Installation"](#).
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.

## INSTALLATION

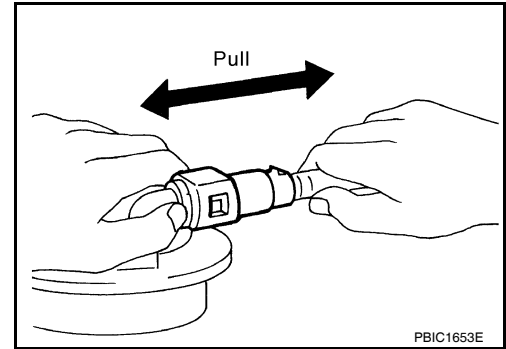
Install in the reverse order of removal paying attention to the following.

- 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.

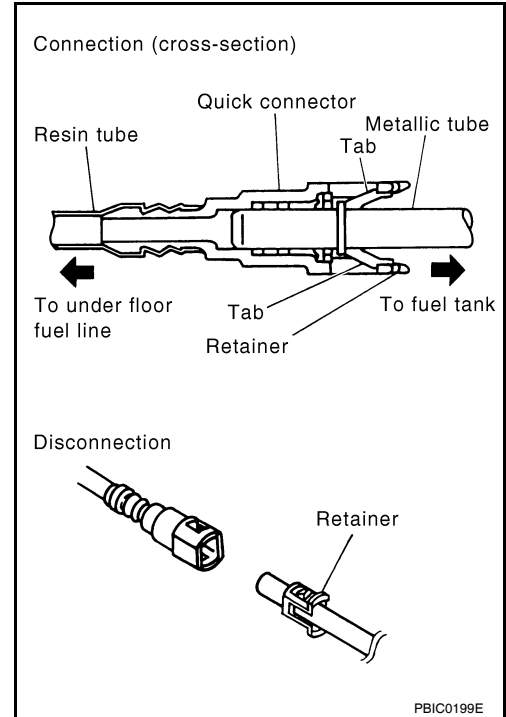
# FUEL TANK

## < ON-VEHICLE REPAIR >

- 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.

# SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Fuel Tank

INFOID:000000005463871

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Standard and Limit

Fuel tank capacity	Approx. 75.6 ℓ (20 US gal, 16-5/8 Imp gal)
Fuel recommendation	Refer to <a href="#">MA-18. "FOR NORTH AMERICA : Fluids and Lubricants"</a>

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