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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"

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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

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#### **WARNING:**

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

- Put a "CAUTION: FLAMMABLE" sign in the workshop.
- Be sure to work in a well ventilated area and furnish the workshop with a CO<sub>2</sub> fire extinguisher.
- Do not smoke while servicing the fuel system. Keep open flames and sparks away from the work area.

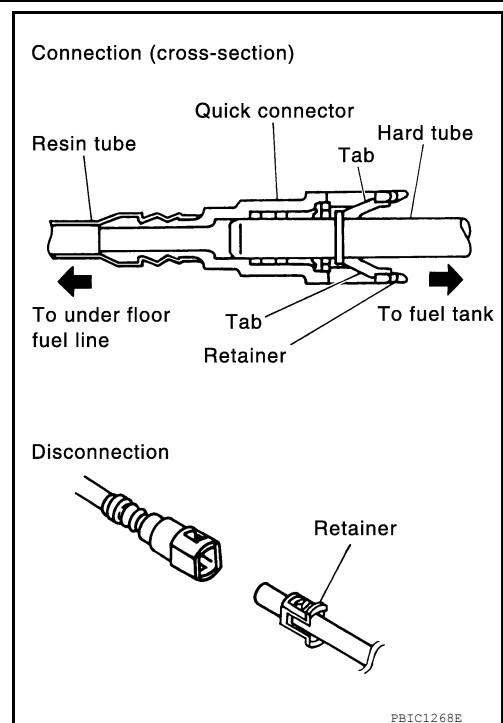
#### **CAUTION:**

- 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-447, "Fuel Pressure Check" \(QR25DE\)](#), [EC-936, "Fuel Pressure Check" \(VQ40DE\)](#).
  - Disconnect the battery negative terminal.
- Always replace O-rings and clamps with new ones.
- Do not kink or twist hoses 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.
- Ensure that clamp screw does not contact adjacent parts.

## PRECAUTIONS

### < PRECAUTION >

- After connecting the fuel tube quick connectors, make sure the quick connectors are secure. Ensure that the connector and resin tube do not contact any adjacent parts.
- After installing tubes, make sure there is no fuel leakage at connections in the following steps.
- Apply fuel pressure to fuel lines by turning ignition switch ON (with engine stopped). Then check for fuel leaks at connections.
- Start engine, raise idle, and verify there are no fuel leaks at the fuel system 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 [FL-15, "Removal and Installation"](#).
- For checking "On Board Refueling Vapor Recovery (ORVR)" parts, refer to [EC-450, "How to Detect Fuel Vapor Leakage" \(QR25DE\)](#), [EC-938, "How to Detect Fuel Vapor Leakage" \(VQ40DE\)](#).



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# PREPARATION

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## PREPARATION

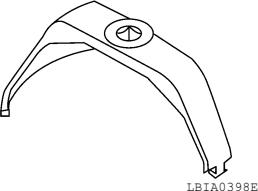
### PREPARATION

#### Special Service Tool

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

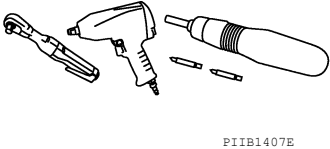
Tool number (Kent-Moore No.) Tool name	Description
— (J-45722) 130 mm lock ring tool	Removing and installing fuel tank lock ring



#### Commercial Service Tool

INFOID:000000007327151

Tool name	Description
Power tool	Loosening nuts, screws and bolts



# FUEL SYSTEM

< PERIODIC MAINTENANCE >

## PERIODIC MAINTENANCE

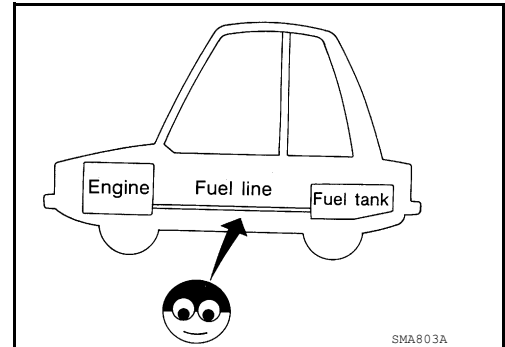
### FUEL SYSTEM

#### Checking Fuel Line

INFOID:000000007327152

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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# FUEL TANK

< REMOVAL AND INSTALLATION >

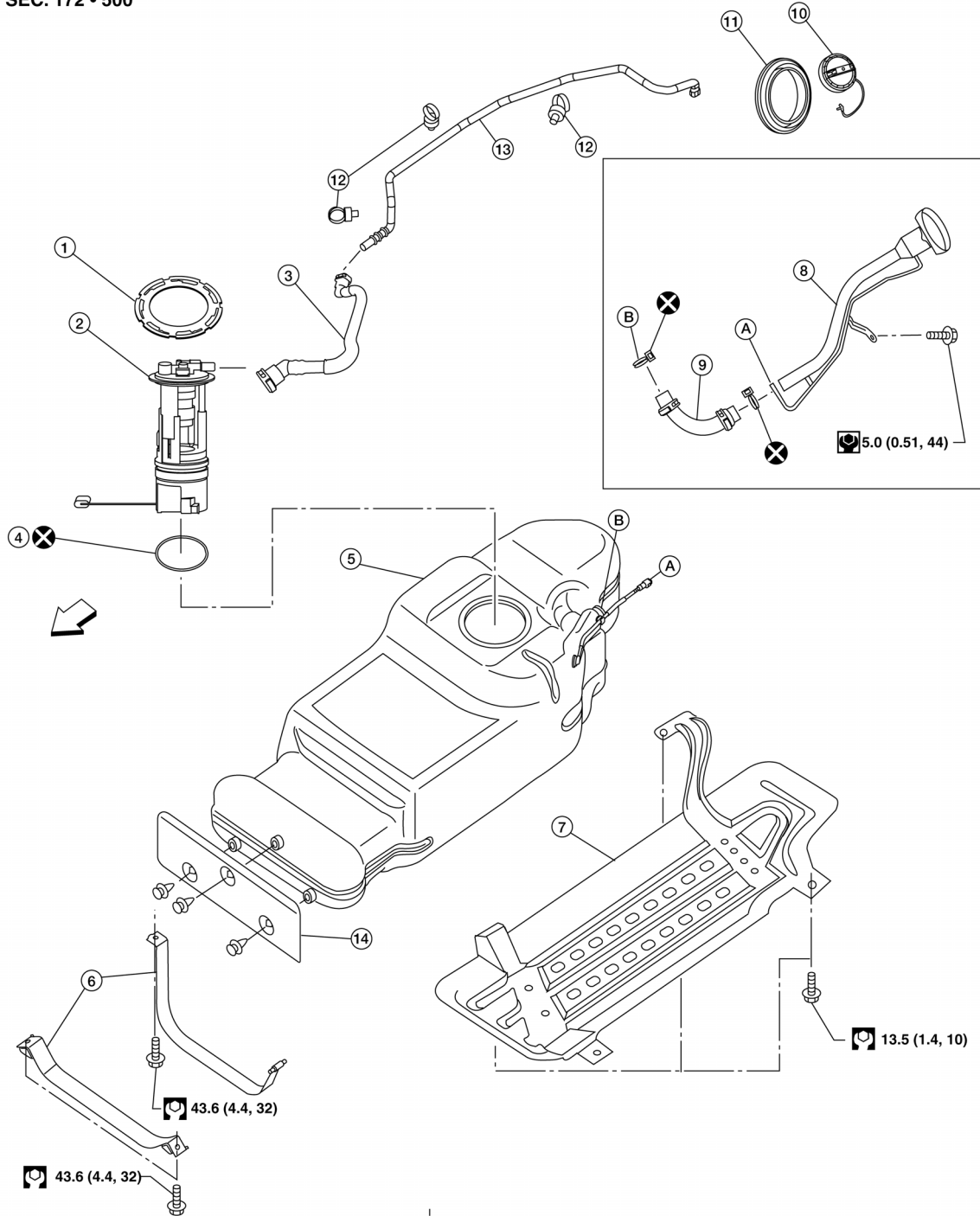
## REMOVAL AND INSTALLATION

### FUEL TANK

#### Removal and Installation

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- |                     |   |                     |
|---------------------|---|---------------------|
| 1. Lock ring        | 2. Fuel level sensor, fuel filter, and fuel pump assembly | 3. EVAP hose        |
| 4. O-ring           | 5. Fuel tank  | 6. Fuel tank straps |
| 7. Fuel tank shield | 8. Fuel filler pipe                                       | 9. Fuel filler hose |
| 10. Fuel filler cap | 11. Fuel filler pipe grommet                              | 12. Clamp           |

# FUEL TANK

## < REMOVAL AND INSTALLATION >

- |                                |                         |                                     |
|--------------------------------|-------------------------|-------------------------------------|
| 13. Evap canister hose         | 14. Fuel tank protector | A. Fuel filler hose vent connection |
| B. Fuel filler hose connection | ← Front                 |                                     |

### WARNING:

Follow the “General Precautions” before 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. Remove the fuel filler cap to release the pressure from inside the fuel tank.
2. Remove the LH rear wheel and tire. Refer to [WT-47, "Adjustment"](#).

3. Check the fuel level on level gauge. If the fuel gauge indicates more than the level as shown (half tank), drain the fuel from the fuel tank until the fuel gauge indicates the level as shown, or less.

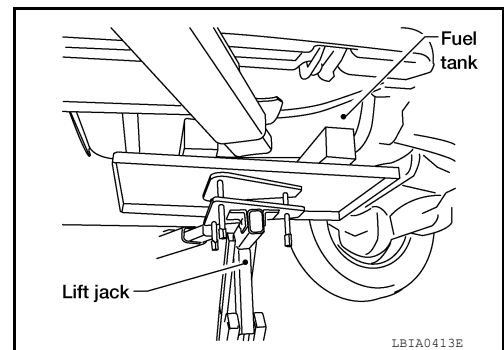
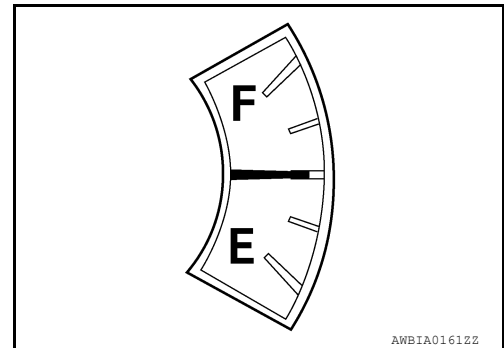
### NOTE:

Fuel will be spilled when removing the fuel level sensor, fuel filter, and fuel pump assembly for the fuel level is above the fuel level sensor, fuel filter, and fuel pump assembly fuel tank opening.

- As a guide, the fuel level reaches the fuel gauge position as shown, or less, when approximately 40 ℓ (11 5/8 US gal, 8 3/4 Imp gal) of fuel are drained from a full fuel tank.

- If the fuel pump does not operate, use the following procedure to drain the fuel to the specified level.

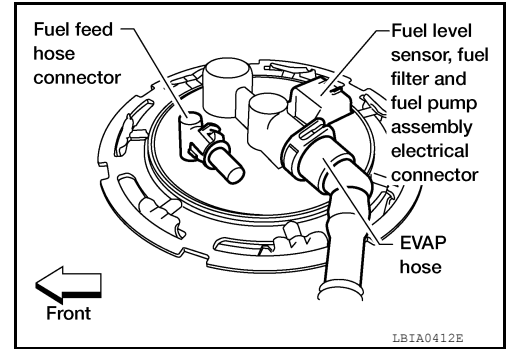
- a. Insert a suitable hose of less than 15 mm (0.59 in) diameter into the fuel filler pipe through the fuel filler opening to drain the fuel from fuel filler pipe.
  - b. Remove the fuel filler pipe shield.
  - c. Disconnect the fuel filler hose from the fuel filler pipe.
  - d. Insert a suitable hose into the fuel tank through the fuel filler hose to drain the fuel from the fuel tank.
4. Release the fuel pressure from the fuel lines. Refer to [EC-447, "Fuel Pressure Check"](#) (QR25DE), [EC-936, "Fuel Pressure Check"](#) (VQ40DE).
  5. Disconnect the battery negative terminal.
  6. Remove the fuel tank shield.
  7. Remove the fuel tank strap bolts while supporting the fuel tank with a suitable lift jack.
  8. Lower the fuel tank using a suitable lift jack to access the top of the fuel level sensor, fuel filter, and fuel pump assembly.



# FUEL TANK

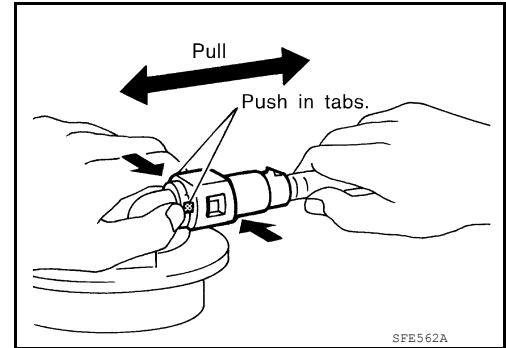
## < REMOVAL AND INSTALLATION >

9. Disconnect the fuel level sensor, fuel filter, and fuel pump assembly electrical connector, EVAP hose, and the fuel feed hose.
- Disconnect the fuel feed hose from the molded clip in the side of the fuel tank.



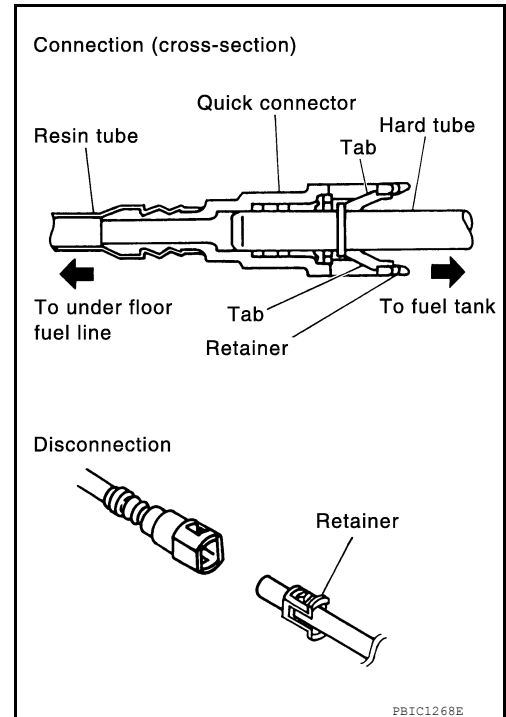
Disconnect the quick connector as follows:

- 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 quick connector can be disconnected when the tabs are completely depressed. Do not twist the quick connector more than necessary.
- Do not use any tools to disconnect the quick connector.
- Keep the resin tube away from heat. Be especially careful when welding near the tube.
- Prevent any acid liquids such as battery electrolyte, from getting on the resin tube.
- Do not bend or twist the resin tube during connection.
- Do not remove the remaining retainer on the hard tube (or the equivalent) except when the resin tube or the retainer is replaced.
- When the resin tube or hard tube, or the equivalent, is replaced, also replace the retainer with a new one (semi-transparent retainer).

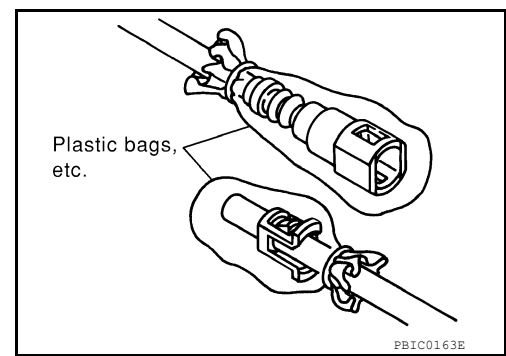




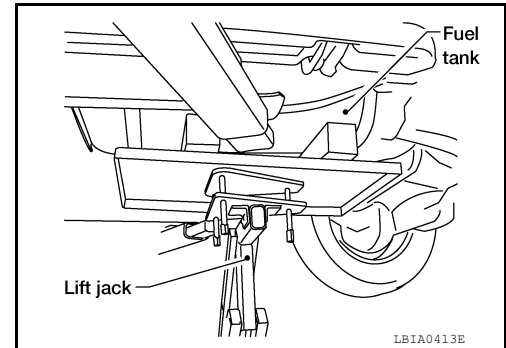
# FUEL TANK

## < REMOVAL AND INSTALLATION >

- To keep the quick connector clean and to avoid damage and contamination from foreign materials, cover the quick connector with plastic bags or suitable material as shown.



10. Lower the fuel tank using a suitable lift jack and remove it from the vehicle.



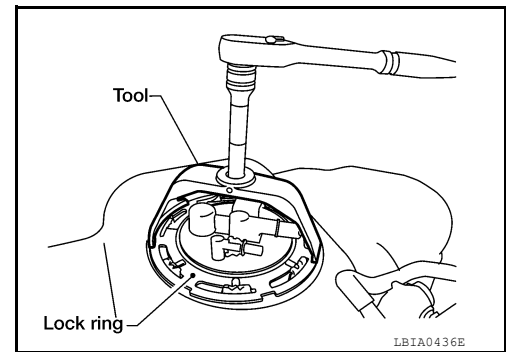
11. Remove the lock ring using Tool as shown.

**Tool number : — (J-45722)**

12. Disconnect the EVAP hose from the molded clip in the top of the fuel tank.
13. Remove the fuel level sensor, fuel filter, and fuel pump assembly. Remove and discard the O-ring.

**CAUTION:**

- Do not bend the float arm during removal.
- Avoid impacts such as dropping when handling the components.
- Discard the O-ring. Do not reuse the O-ring.



## INSTALLATION

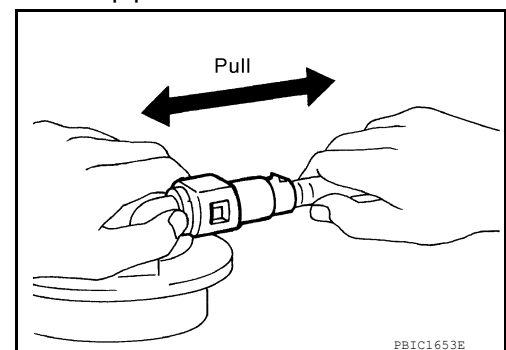
Installation is in the reverse order of removal.

- For installation, use a new O-ring.

**CAUTION:**

**Do not reuse O-ring.**

- Connect the quick connector as follows:
  - Check the connection for any damage or foreign materials.
  - Align the connector with the pipe, then insert the connector straight into the pipe until a click is heard.
  - After connecting the quick connector, make sure that the connection is secure by checking as follows:
    - Pull the tube and the connector to make sure they are securely connected.
    - Visually inspect the connector to make sure the two retainer tabs are securely connected.



## INSPECTION AFTER INSTALLATION

## FUEL TANK

### < REMOVAL AND INSTALLATION >

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1. Turn the ignition switch ON but do not start engine, then check the fuel pipes and hose connections for leaks while applying fuel pressure to the system.
2. Start engine, raise idle and verify there are no fuel leaks at the fuel system connections.

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

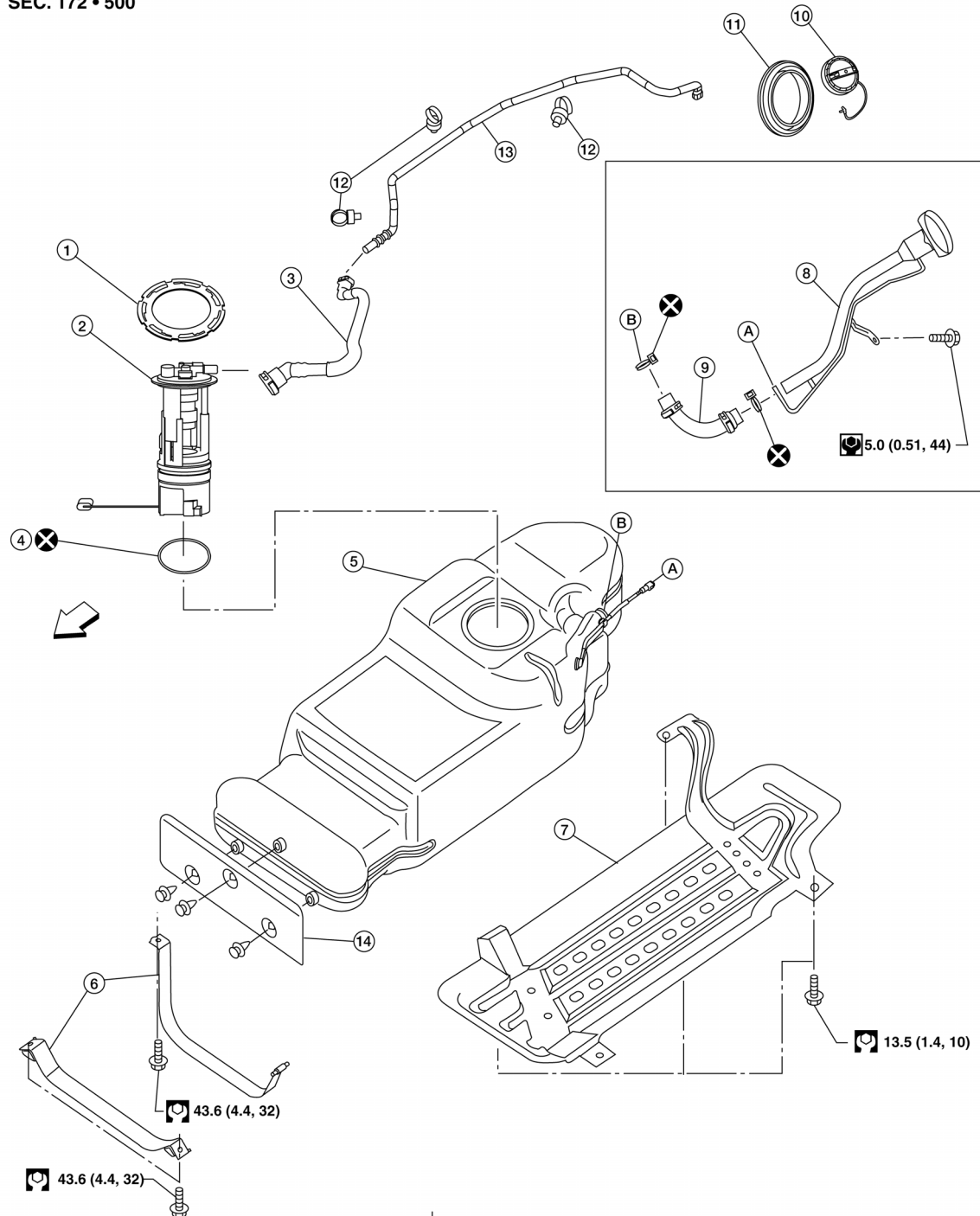
< REMOVAL AND INSTALLATION >

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

### Removal and Installation

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|--------------------------------|---|-------------------------------------|
| 1. Lock ring                   | 2. Fuel level sensor, fuel filter, and fuel pump assembly | 3. EVAP hose                        |
| 4. O-ring                      | 5. Fuel tank  | 6. Fuel tank straps                 |
| 7. Fuel tank shield            | 8. Fuel filler pipe                                       | 9. Fuel filler hose                 |
| 10. Fuel filler cap            | 11. Fuel filler pipe grommet                              | 12. Clamp                           |
| 13. Evap canister hose         | 14. Fuel tank protector                                   | A. Fuel filler hose vent connection |
| B. Fuel filler hose connection | ← Front   |                                     |

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

## < REMOVAL AND INSTALLATION >

### **WARNING:**

Follow the "General Precautions" before 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

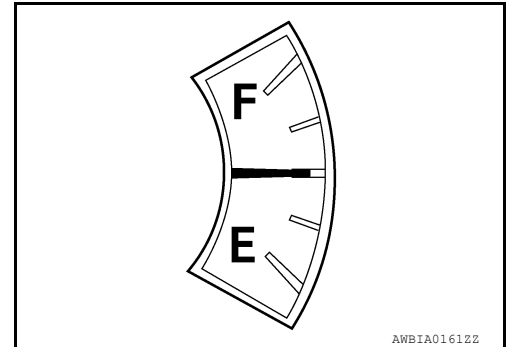
### REMOVAL

1. Remove the fuel filler cap to release the pressure from inside the fuel tank.
2. Remove the LH rear wheel and tire. Refer to [WT-47, "Adjustment"](#).
3. Check the fuel level on level gauge. If the fuel gauge indicates more than the level as shown (half tank), drain the fuel from the fuel tank until the fuel gauge indicates the level as shown, or less.

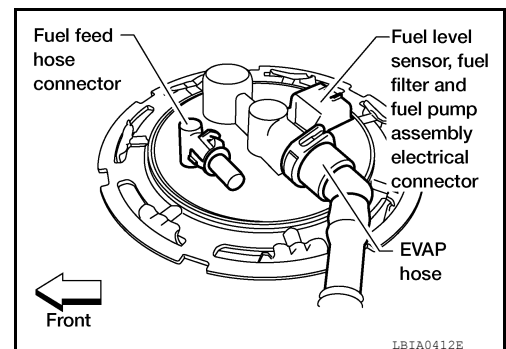
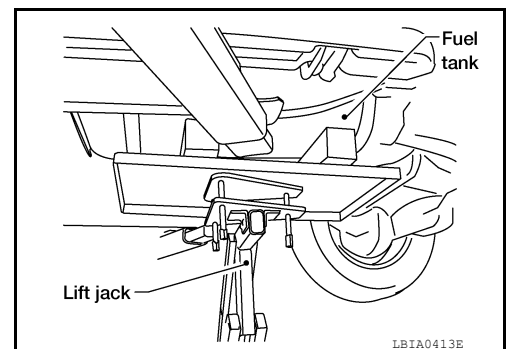
### **NOTE:**

Fuel will be spilled when removing the fuel level sensor, fuel filter, and fuel pump assembly for the fuel level is above the fuel level sensor, fuel filter, and fuel pump assembly fuel tank opening.

- As a guide, the fuel level reaches the fuel gauge position as shown, or less, when approximately 40 ℓ (10 5/8 US gal, 8 3/4 Imp gal) of fuel are drained from a full fuel tank.
  - If the fuel pump does not operate, use the following procedure to drain the fuel to the specified level.
- a. Insert a suitable hose of less than 15 mm (0.59 in) diameter into the fuel filler pipe through the fuel filler opening to drain the fuel from fuel filler pipe.
  - b. Remove the fuel filler pipe shield.
  - c. Disconnect the fuel filler hose from the fuel filler pipe.
  - d. Insert a suitable hose into the fuel tank through the fuel filler hose to drain the fuel from the fuel tank.
4. Release the fuel pressure from the fuel lines. Refer to [EC-447, "Fuel Pressure Check"](#) (QR25DE), [EC-936, "Fuel Pressure Check"](#) (VQ40DE).
  5. Disconnect the battery negative terminal.
  6. Remove the fuel tank shield.
  7. Remove the fuel tank strap bolts while supporting the fuel tank with a suitable lift jack.
  8. Lower the fuel tank using a suitable lift jack to access the top of the fuel level sensor, fuel filter, and fuel pump assembly.



9. Disconnect the fuel level sensor, fuel filter, and fuel pump assembly electrical connector, EVAP hose, and the fuel feed hose.
  - Disconnect the fuel feed hose from the molded clip in the side of the fuel tank.

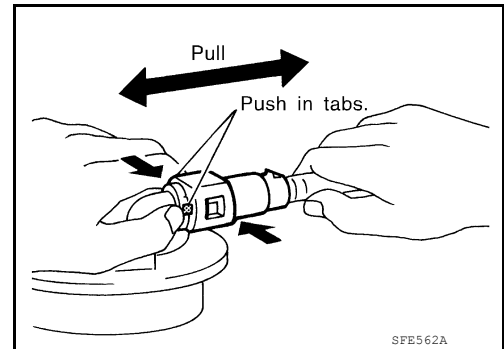


# FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

## < REMOVAL AND INSTALLATION >

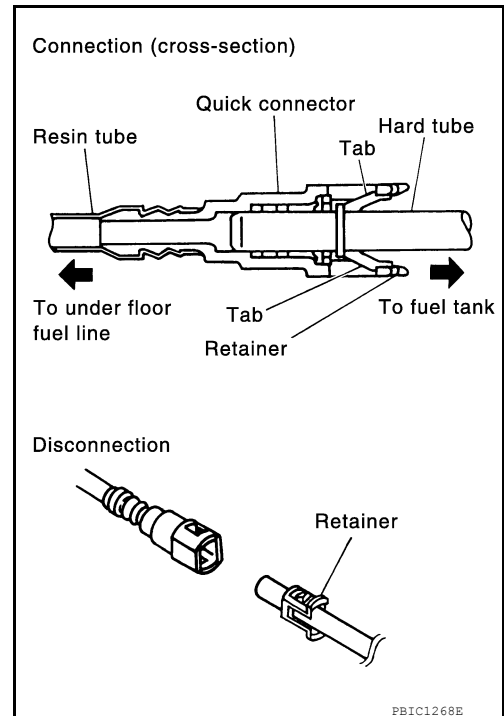
Disconnect the quick connector as follows:

- 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.

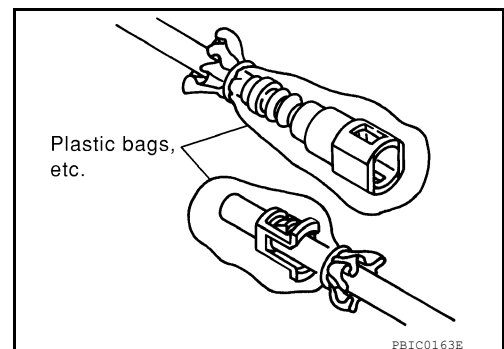


### CAUTION:

- The quick connector can be disconnected when the tabs are completely depressed. Do not twist the quick connector more than necessary.
- Do not use any tools to disconnect the quick connector.
- Keep the resin tube away from heat. Be especially careful when welding near the tube.
- Prevent any acid liquids such as battery electrolyte, from getting on the resin tube.
- Do not bend or twist the resin tube during connection.
- Do not remove the remaining retainer on the hard tube (or the equivalent) except when the resin tube or the retainer is replaced.
- When the resin tube or hard tube, or the equivalent, is replaced, also replace the retainer with a new one (semi-transparent retainer).



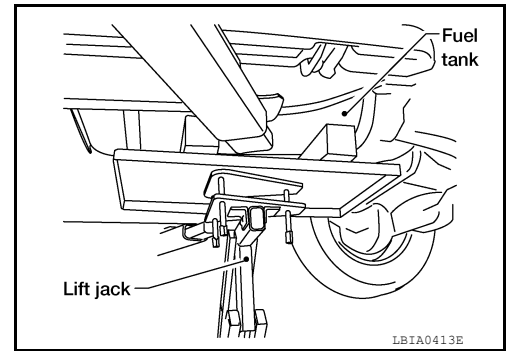
- To keep the quick connector clean and to avoid damage and contamination from foreign materials, cover the quick connector with plastic bags or suitable material as shown.



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

## < REMOVAL AND INSTALLATION >

- Lower the fuel tank using a suitable lift jack and remove it from the vehicle to gain access to the fuel level sensor, fuel filter, and fuel pump assembly.



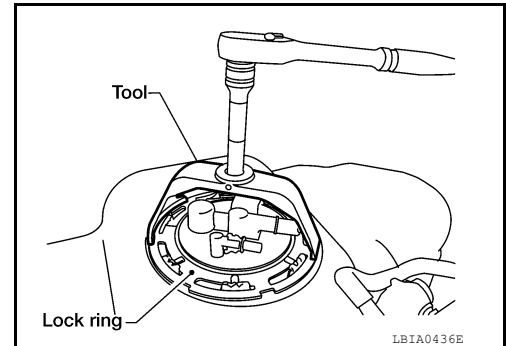
- Remove the lock ring using Tool as shown.

**Tool number : — (J-45722)**

- Disconnect the EVAP hose from the molded clip in the top of the fuel tank.
- Remove the fuel level sensor, fuel filter, and fuel pump assembly. Remove and discard the O-ring.

### **CAUTION:**

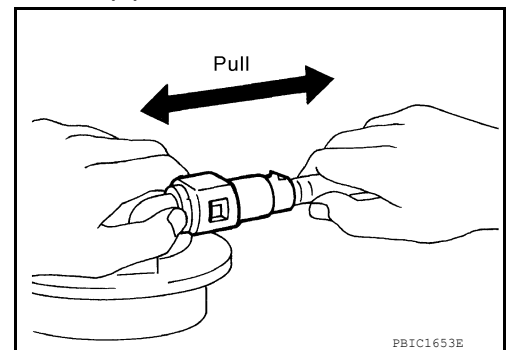
- Do not bend the float arm during removal.
- Avoid impacts such as dropping when handling the components.
- Discard the O-ring. Do not reuse the O-ring.



## INSTALLATION

Installation is in the reverse order of removal.

- For installation, use a new fuel level sensor, fuel filter, and fuel pump assembly O-ring.
- Connect the quick connector as follows:
  - Check the connection for any damage or foreign materials.
  - Align the connector with the pipe, then insert the connector straight into the pipe until a click is heard.
  - After connecting the quick connector, make sure that the connection is secure by checking as follows:
    - Pull the tube and the connector to make sure they are securely connected.
    - Visually inspect the connector to make sure the two retainer tabs are securely connected.



## INSPECTION AFTER INSTALLATION

- Turn the ignition switch ON but do not start engine, then check the fuel pipes and hose connections for leaks while applying fuel pressure to the system.
- Start engine, raise idle, and verify there are no fuel leaks at any of the fuel system connections.

# EVAP CANISTER

< REMOVAL AND INSTALLATION >

## EVAP CANISTER

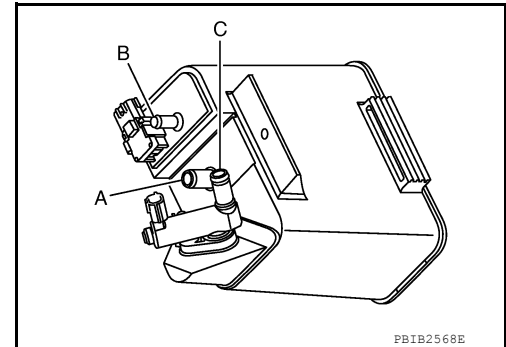
### Component Inspection

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#### EVAP CANISTER

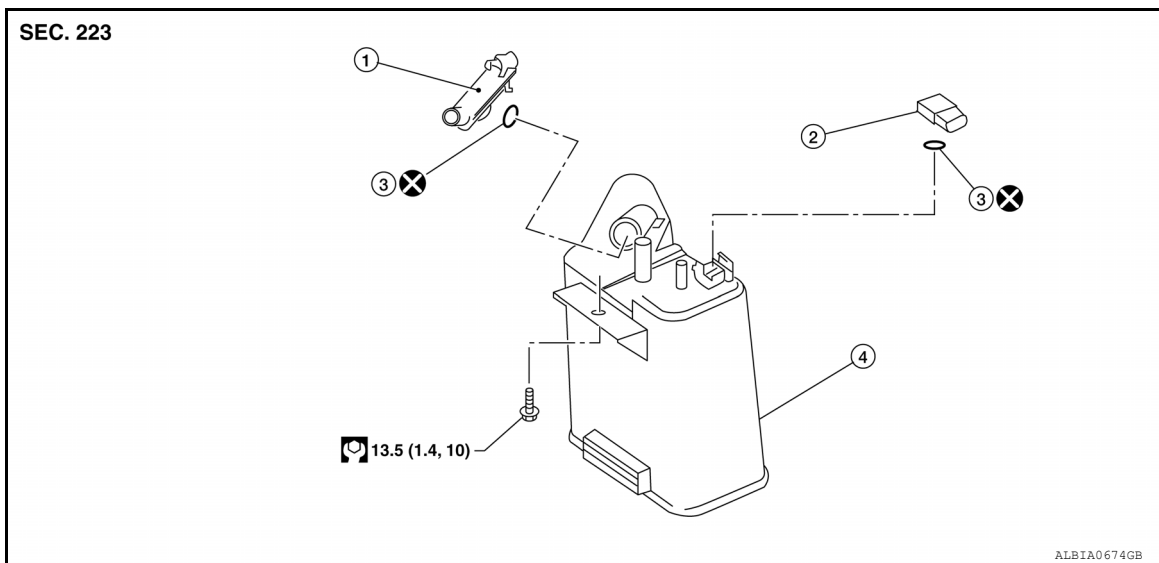
Check EVAP canister as follows:

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



### Removal and Installation

INFOID:000000007327156



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

#### EVAP CANISTER

##### Removal

1. Disconnect the EVAP control pressure sensor connector.
2. Remove the EVAP control pressure sensor and O-ring.  
**CAUTION:**  
**Do not reuse O-ring.**
3. Disconnect the EVAP canister purge hose.
4. Disconnect the EVAP vent control valve connector.
5. Remove the EVAP canister retaining bolt.
6. Disconnect the fuel tank EVAP breather hose.
7. Disconnect the EVAP vent control valve hose.
8. Remove the EVAP canister.
9. Remove the EVAP vent control valve and O-ring, if necessary.  
**CAUTION:**  
**Do not reuse O-ring.**

# EVAP CANISTER

## < REMOVAL AND INSTALLATION >

---

### Installation

Installation is in the reverse order of removal.

#### **CAUTION:**

**Do not reuse O-ring.**

## EVAP CANISTER CONTROL PRESSURE SENSOR

### Removal

1. Disconnect the EVAP control pressure sensor connector.
2. Remove the EVAP canister control 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.**

## EVAP CANISTER VENT CONTROL VALVE

### Removal

1. Disconnect the EVAP control pressure sensor connector.
2. Disconnect the EVAP canister purge hose.
3. Remove the EVAP canister retaining bolt.
4. Disconnect the fuel tank EVAP breather hose.
5. Disconnect the EVAP vent control valve connector.
6. Disconnect the EVAP vent control valve hose.
7. Reposition the EVAP canister.
8. Turn EVAP canister vent control valve counterclockwise.
9. Remove the EVAP canister vent control valve and O-ring.

#### **CAUTION:**

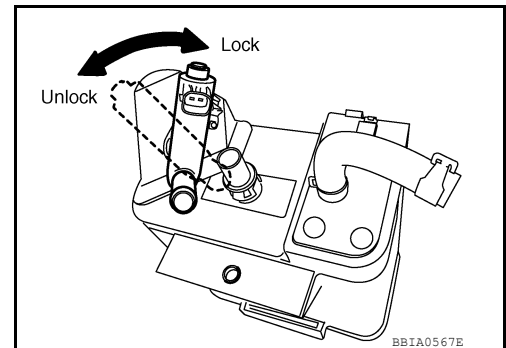
**Do not reuse O-ring.**

### Installation

Installation is in the reverse order of removal.

#### **CAUTION:**

**Do not reuse O-ring.**





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

< UNIT DISASSEMBLY AND ASSEMBLY >

## UNIT DISASSEMBLY AND ASSEMBLY

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

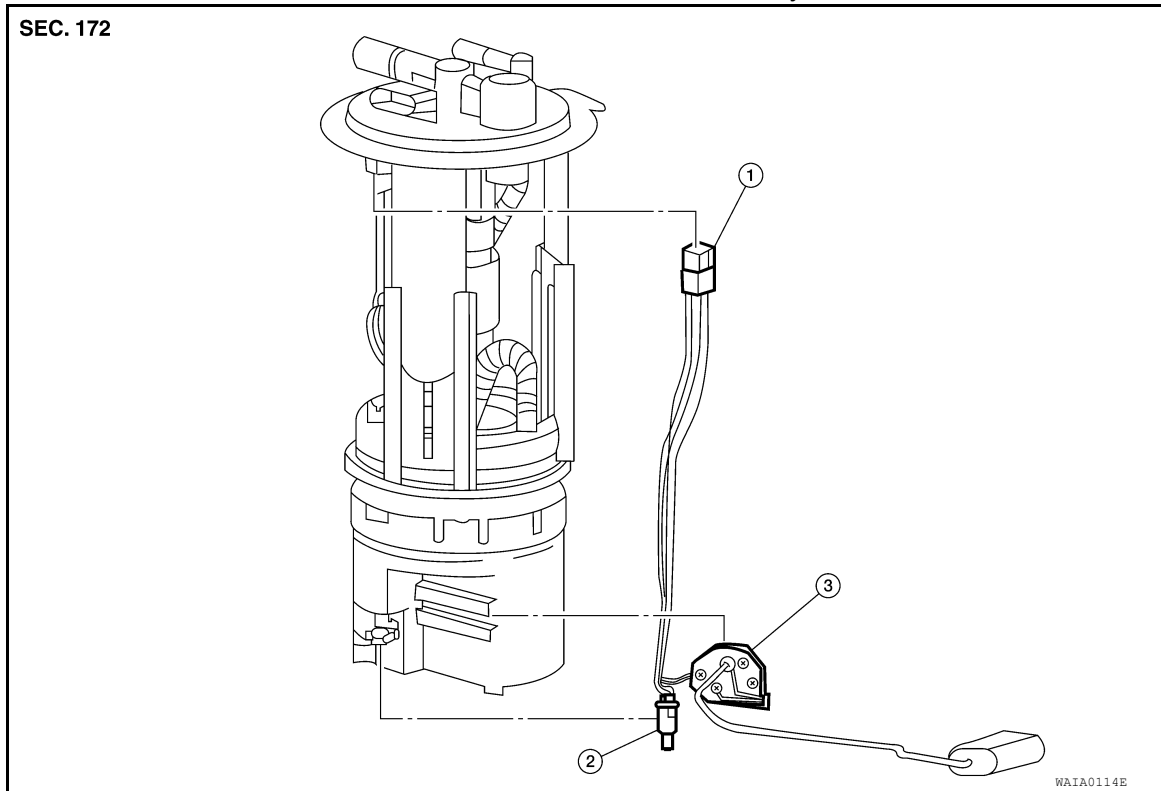
Disassembly and Assembly

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A

FL

Fuel Level Sender Unit Assembly



1. Harness connector

2. Fuel tank temperature sensor

3. Fuel level sender unit assembly

#### Disassembly

1. Disconnect the harness connector.
2. Remove the fuel tank temperature sensor.
3. Remove the fuel level sender unit assembly.

#### Assembly

Assembly is the reverse order of disassembly.

C

D

E

F

G

H

I

J

K

L

M

N

O

P

## SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

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## SERVICE DATA AND SPECIFICATIONS (SDS)

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Standard and Limit

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Fuel tank capacity	80 ℓ (21 1/8 US gal, 17 5/8 Imp gal)
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