

SECTION **FL**  
FUEL SYSTEM

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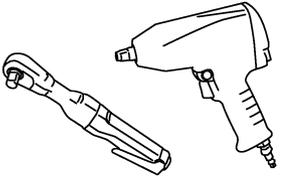
# PREPARATION

## PREPARATION

PFP:00002

### Commercial Service Tools

ABS0001T

Tool name	Description
<p data-bbox="140 310 252 338">Power tool</p>  <p data-bbox="836 512 906 532">PBIC0190E</p>	<p data-bbox="999 310 1254 338">Loosening bolts and nuts</p>

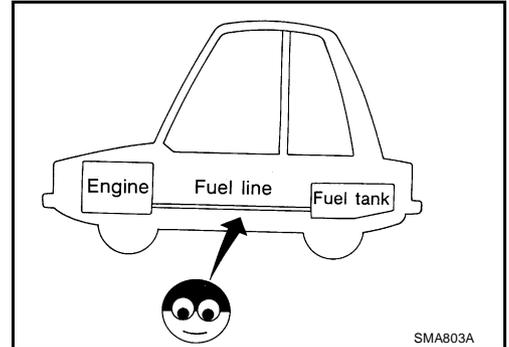
## FUEL SYSTEM

PFP:17503

### Checking Fuel Lines

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Inspect fuel lines, filler cap and tank for improper attachment, leaks, cracks, damage, loose connections, chafing or deterioration. If necessary, repair or replace damaged parts.



### General Precautions

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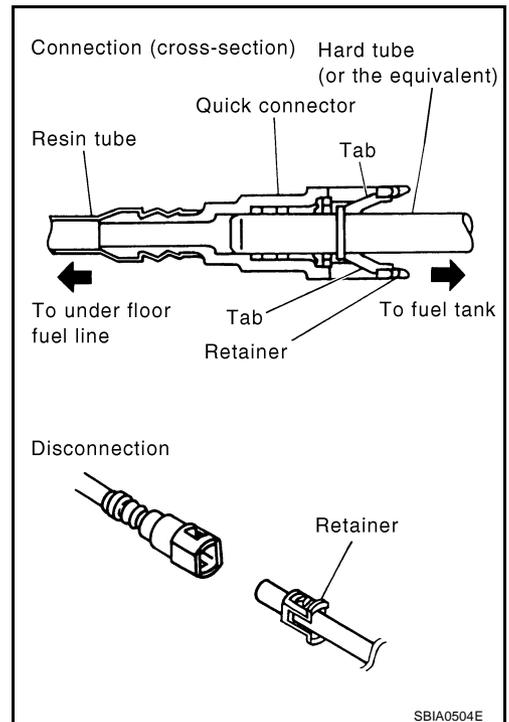
#### WARNING:

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

- Put a "CAUTION: INFLAMMABLE" sign in the workshop.
- Be sure to work in a well ventilated area and furnish workshop with a CO<sub>2</sub> fire extinguisher.
- Do not smoke while servicing 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-45, "FUEL PRESSURE RELEASE"](#) .
  - Disconnect negative battery terminal.
- Always replace O-ring 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.
- After connecting fuel tube quick connectors, make sure quick connectors are secure. Ensure that 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 with turning ignition switch "ON" (with engine stopped). Then check for fuel leaks at connections.
  - Start engine and rev it up and check for fuel leaks at 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-663, "EVAPORATIVE EMISSION SYSTEM"](#) .
- For servicing "On Board Refueling Vapor Recovery (ORVR)" parts, refer to [EC-670, "ON BOARD REFUELING VAPOR RECOVERY \(ORVR\)"](#) .



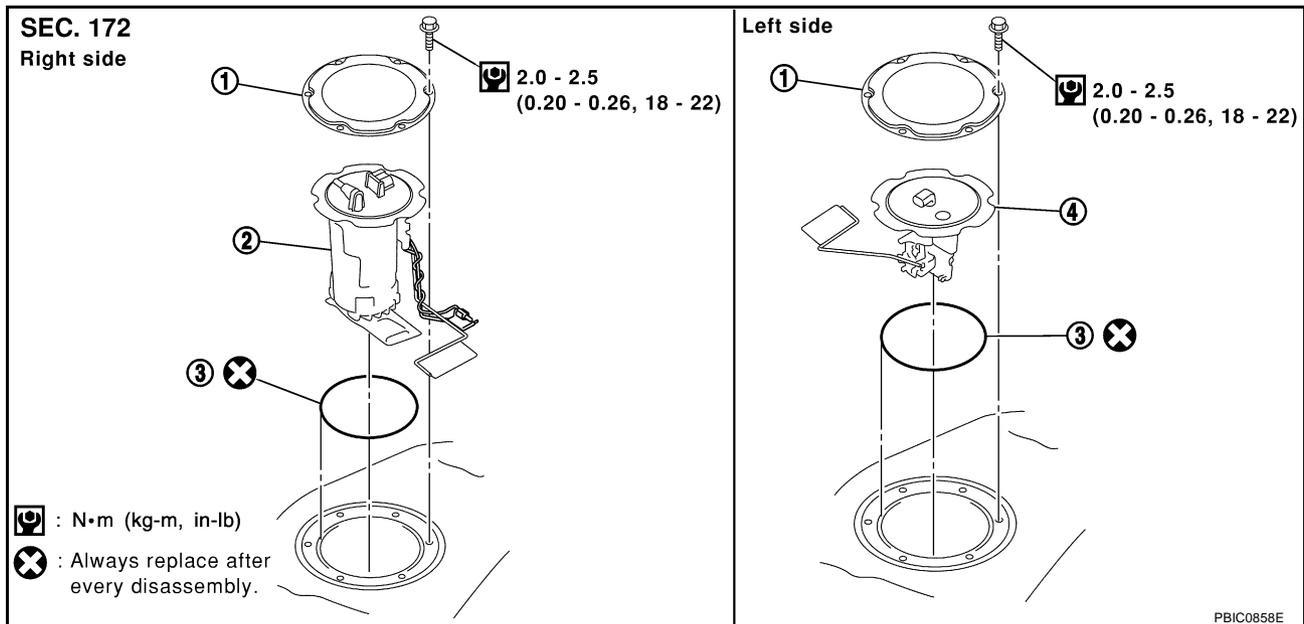
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# FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

## FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY PFP:17042

### Removal and Installation

ABS000JG



### REMOVAL

#### WARNING:

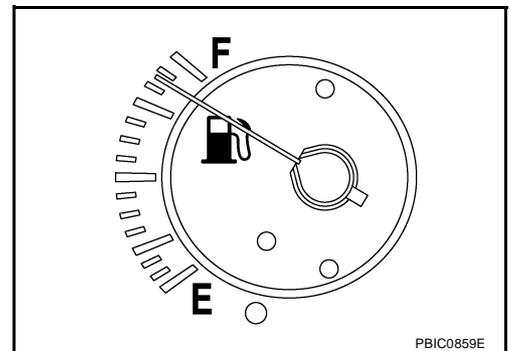
Be sure to read "General Precautions" when working on the fuel system. Refer to [FL-3, "General Precautions"](#).

1. Check fuel level on fuel gauge. If fuel gauge indicates more than the level as shown in the figure (full or almost full), drain fuel from fuel tank until fuel gauge indicates level shown in the figure or below.

#### NOTE:

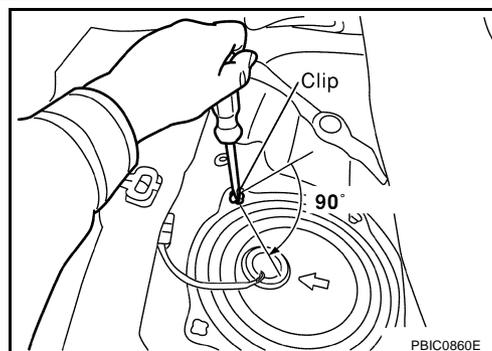
Because fuel will be spilled when removing main and sub fuel level sensor units for the top of the fuel is above the main and sub fuel level sensor units installation surface.

- As a guide, fuel level becomes the position as shown in the figure or below when approximately 20 ℓ (5-1/4 US gal, 4-3/8 Imp gal) of fuel are drained from fuel tank.
  - In case fuel pump does not operate, perform following procedure.
- a. Insert hose of less than 25 mm (0.98 in) in diameter into fuel filler tube through fuel filler opening to draw fuel from fuel filler tube.
  - b. Disconnect fuel filler hose from fuel filler tube. Refer to [FL-11, "FUEL TANK"](#).
  - c. Insert hose into fuel tank through fuel filler hose to draw fuel from fuel tank.
2. Release the fuel pressure from the fuel lines. Refer to [EC-45, "FUEL PRESSURE RELEASE"](#).
  3. Open fuel filler lid.
  4. Open fuel filler cap and release the pressure inside fuel tank.
  5. Remove rear seat cushion. Refer to [SE-71, "REAR SEAT"](#).

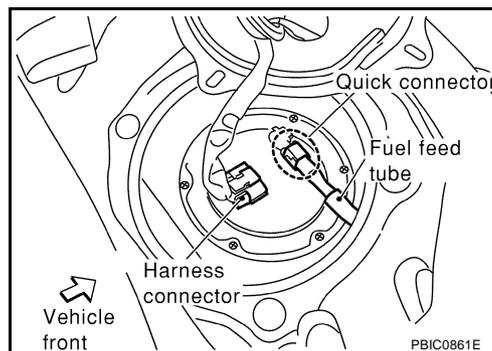


# FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

6. Peel off floor carpet, then remove inspection hole cover for main and sub fuel level sensor units by turning clips clockwise by 90 degrees.

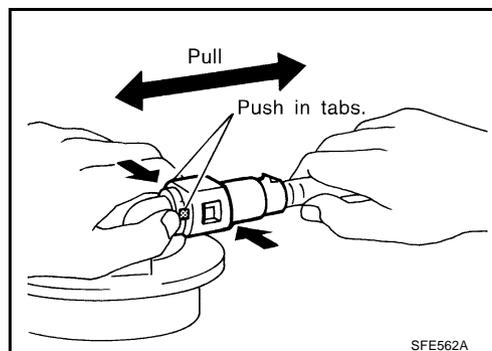


7. Disconnect harness connector and fuel feed tube.



Disconnect quick connector as follows:

- Hold the sides of connector, push in tabs and pull out fuel feed tube.
- If quick connector sticks to tube of main fuel level sensor unit, push and pull quick connector several times until they start to move. Then disconnect them by pulling.



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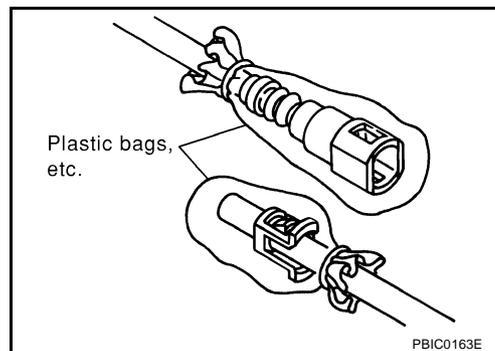
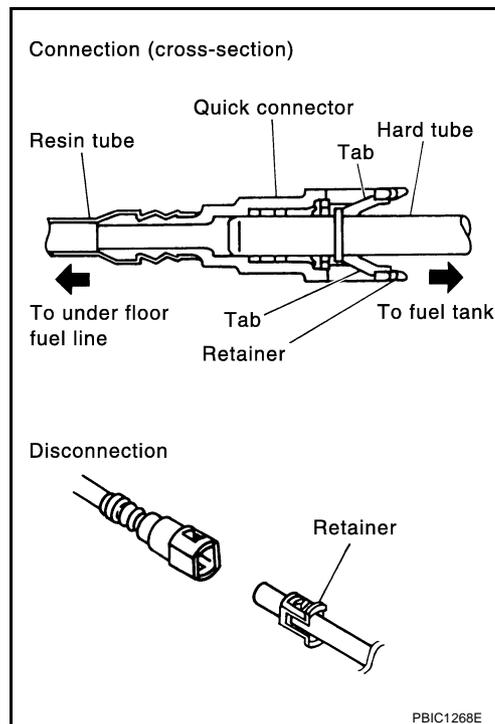
# FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

## CAUTION:

- Quick connector can be disconnected when the tabs are completely depressed. Do not twist it more than necessary.
- Do not use any tools to disconnected quick connector.
- Keep resin tube 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 on hard tube (or the equivalent) except when resin tube or retainer is replaced.
- When resin tube or hard tube (or the equivalent) is replaced, also replace retainer with a new one.

Retainer collar : Orange

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



8. Remove main fuel level sensor unit, fuel filter and fuel pump assembly, and sub fuel level sensor unit as follows:

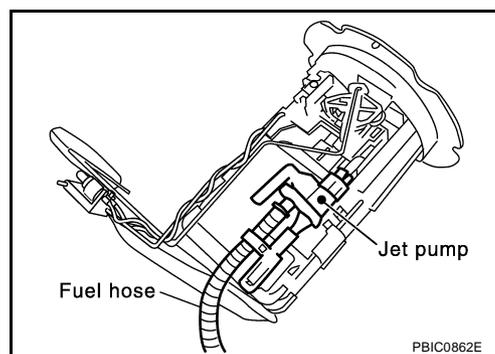
## CAUTION:

- Do not bend the float arm during removal.
  - Avoid impacts such as falling when handling components.
- a. Removal of main fuel level sensor unit, fuel filter and fuel pump assembly:
    - i. Remove retainer.
    - ii. Raise main fuel level sensor unit, fuel filter and fuel pump assembly, and then remove jet pump.
      - Leave the jet pump on the fuel tank with the fuel hose.

## CAUTION:

Do not disassemble the jet pump, fuel hose and jet pump inlet assembly. If necessary, replace as a set of fuel tank.

- b. Removal of sub fuel level sensor unit:
  - i. Remove retainer.
  - ii. Raise and release sub fuel level sensor unit to remove.



## INSPECTION AFTER REMOVAL

Make sure fuel pump strainer is free from foreign materials. If any are found, remove them.

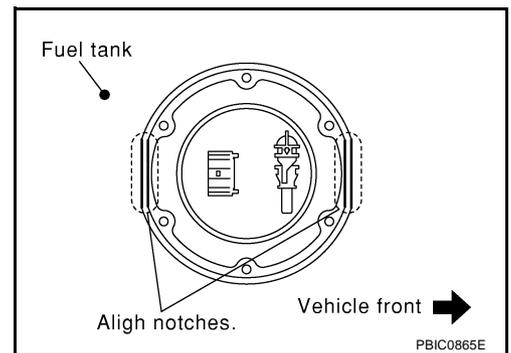
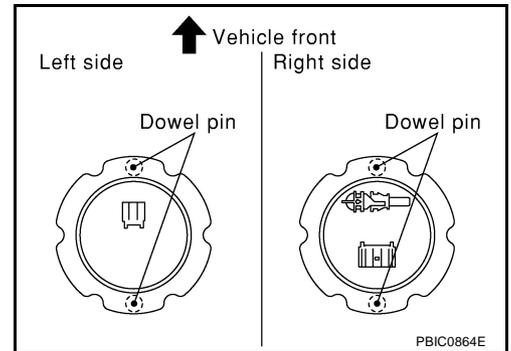
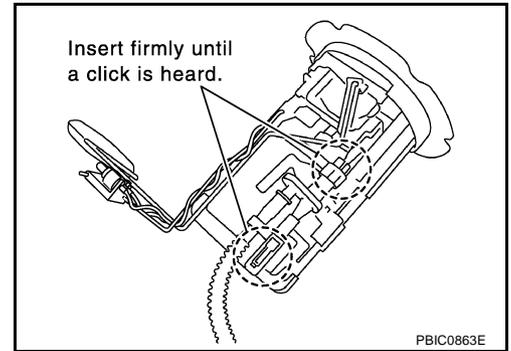
# FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

## INSTALLATION

Note to the following, and install in the reverse order of removal.

### Main and Sub Fuel level Sensor Units

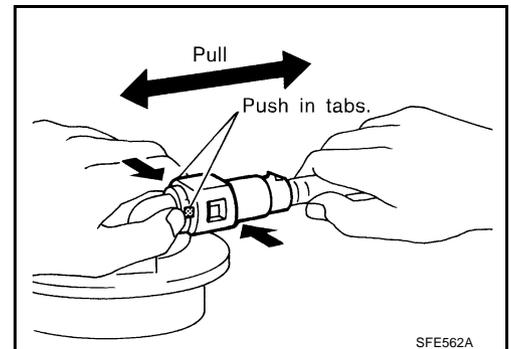
- When installing jet pump, insert them fully until a click sound of full stopper engagement is heard.
- Face main and sub fuel level sensor units as shown in figure, and install it with dowel pin on back aligned with pin hole on fuel tank.
- Install retainer so that its notch becomes parallel with notch on fuel tank.
- Tighten retainer mounting bolts evenly.



### Quick Connector

Connect quick connector as follows:

1. Check the connection for damage or any foreign materials.
2. Align the connector with the tube, then insert the connector straight into the tube until a click sound is heard.
3. After connecting, make sure that the connection is secure by following method.
  - Pull the tube and the connector to make sure they are securely connected.
  - Visually confirm that the two retainer tabs are connected to the connector.



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

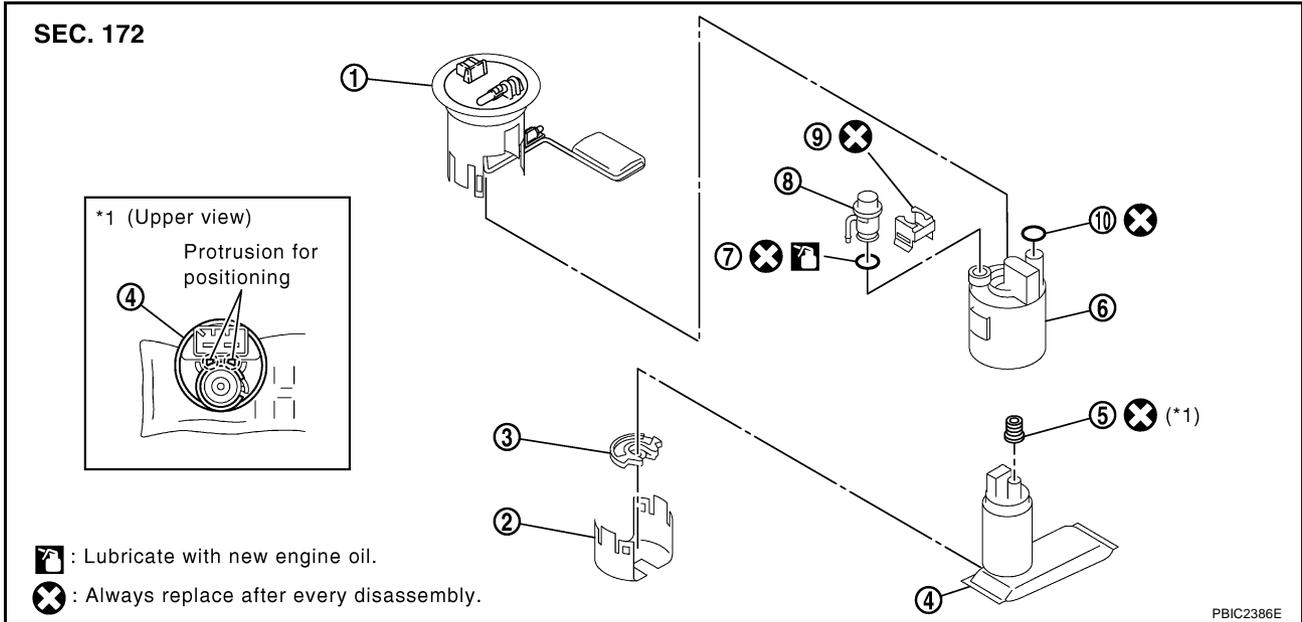
## INSPECTION AFTER INSTALLATION

Use the following procedure to check for fuel leaks.

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

## Disassembly and Assembly

ABS000JF



- |                                |                       |                |
|--------------------------------|-----------------------|----------------|
| 1. Main fuel level sensor unit | 2. Bracket            | 3. Rubber      |
| 4. Fuel pump                   | 5. Packing            | 6. Fuel filter |
| 7. O-ring                      | 8. Pressure regulator | 9. Clip        |
| 10. O-ring                     |                       |                |

### CAUTION:

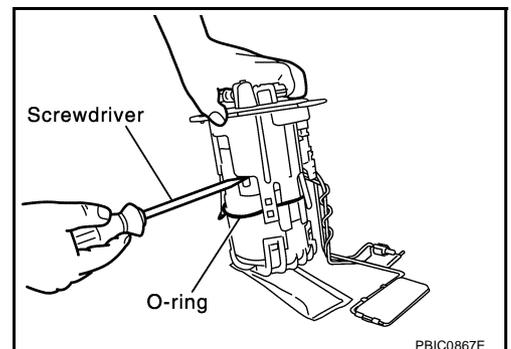
Sub fuel level sensor unit cannot be disassembled and should be replaced as a unit.

### DISASSEMBLY

1. Separate main fuel level sensor unit as follows:
  - a. Fit a used O-ring into space between main fuel level sensor unit and fuel filter. Undo catches and separate main fuel level sensor unit and fuel filter.
    - For reference when reassembling, put a mating mark on outer edges of main fuel level sensor unit and fuel filter with some means which cannot be erased by fuel.
  - b. Insert flat-blade screwdriver to the gap between the fuel filter and main fuel level sensor unit to separate them.

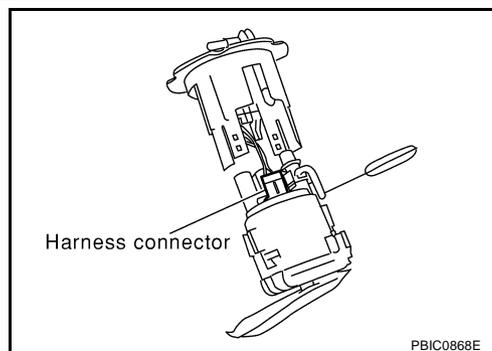
### CAUTION:

- Put cloth or similar one on the edge of flat-blade screwdriver not to damage the inserted portion.
- Separate main fuel level sensor unit by pulling it straight. If lateral force is applied, inner resin tube (between main fuel level sensor unit and fuel filter) may break.

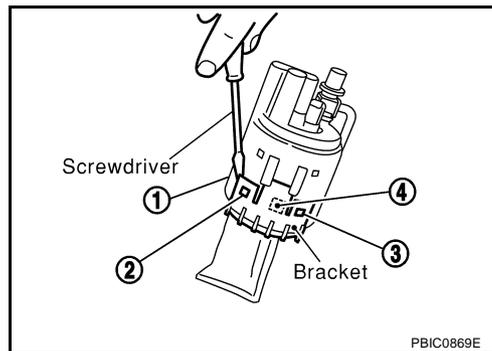


# FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

2. Disconnect the harness connector from fuel pump side.



3. Separate bracket and fuel pump from fuel filter.
  - Using flat-blade screwdriver, remove the snap fit portion of bracket in the order of (1), (2), (3) and (4) as shown in the figure.
  - For reference when reassembling, put a mating mark on outer edges of fuel filter and bracket with some means which cannot be erased by fuel.



4. Remove pressure regulator from fuel filter as follows:
  - a. Open and remove the clip.
  - b. Pull pressure regulator straight out during removal.

### CAUTION:

- Handle fuel tube carefully and avoid damaging it.
- Avoid impacts such as falling during removal.
- Do not disassemble or adjust.

## ASSEMBLY

Note to the following, and assemble in the reverse order of disassembly.

### Fuel Filter and Fuel Pump

- Install fuel filter and fuel pump with the tabs aligned, make sure a click sound of secure engagement is heard.
- Securely connect harness connector of fuel pump.

### Pressure Regulator

Install pressure regulator as follows:

1. Install O-ring.

### CAUTION:

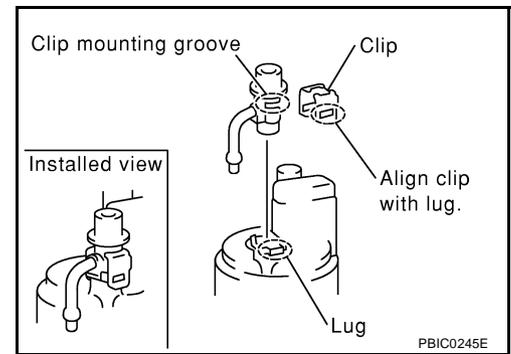
- Do not reuse O-ring. Replace it with a new one.
- Handle O-ring with bare hands. Do not wear gloves.
- Visually check O-ring, mounting parts and mating parts for foreign materials and flaws.
- Before installing, lubricate new engine oil.
- To avoid damage, do not apply an excessive force (pulling or stretching).

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

2. Insert the clip to the groove of the regulator.

**CAUTION:**

**Do not reuse clip. Replace it with a new one.**



3. With the clip installed, insert pressure regulator straight by matching the fuel filter protrusion and the clip notch.
4. Make sure that the fuel filter protrusion and clip notch are securely engaged.

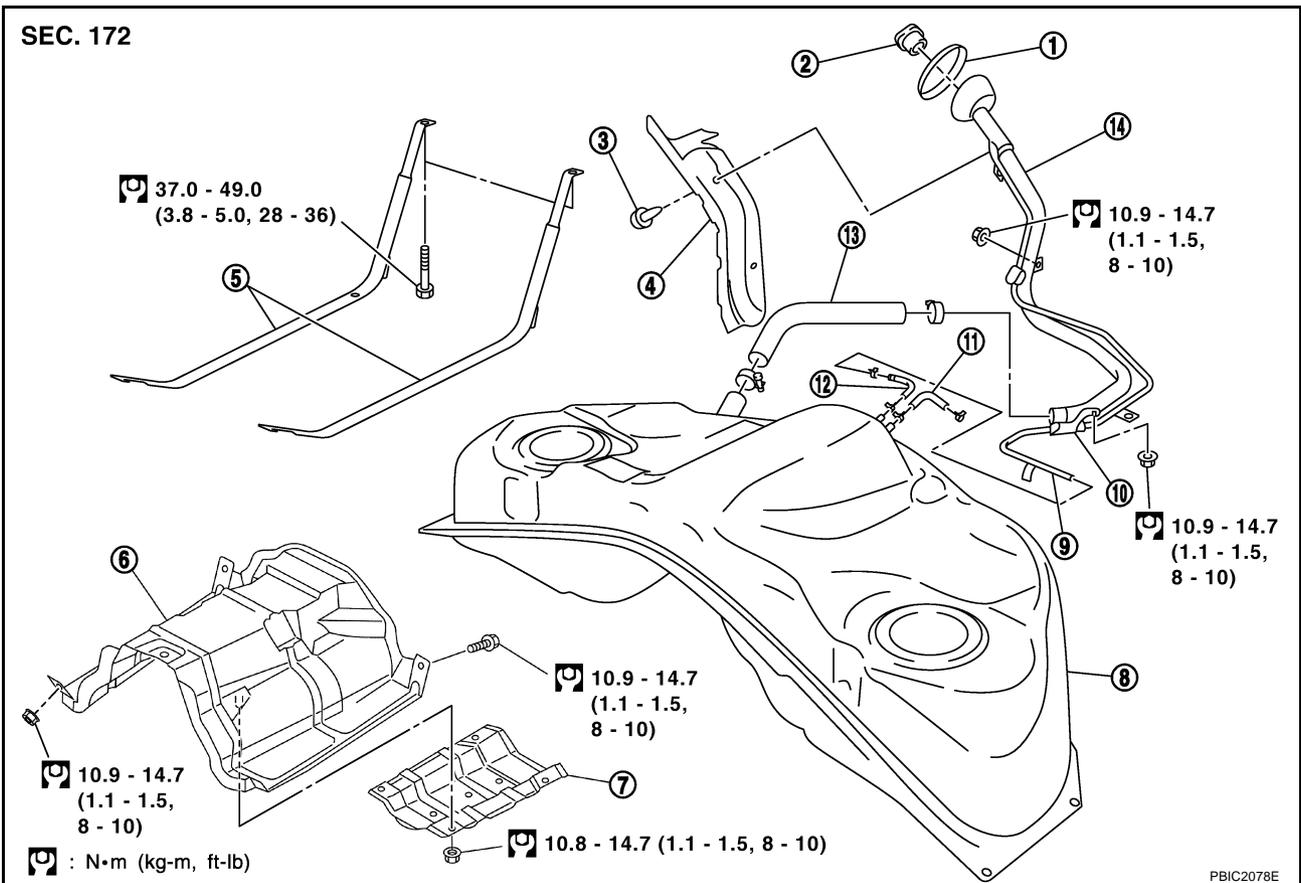
# FUEL TANK

PFP:17202

ABS0001X

## FUEL TANK

### Removal and Installation



- |                               |                            |                        |
|-------------------------------|----------------------------|------------------------|
| 1. Grommet                    | 2. Fuel filler cap         | 3. Clip                |
| 4. Fuel filler tube protector | 5. Fuel tank mounting band | 6. Fuel tank protector |
| 7. Insulator                  | 8. Fuel tank               | 9. Vent tube           |
| 10. Vent hose                 | 11. EVAP hose              | 12. Vent hose          |
| 13. Fuel filler hose          | 14. Fuel filler tube       |                        |

### REMOVAL

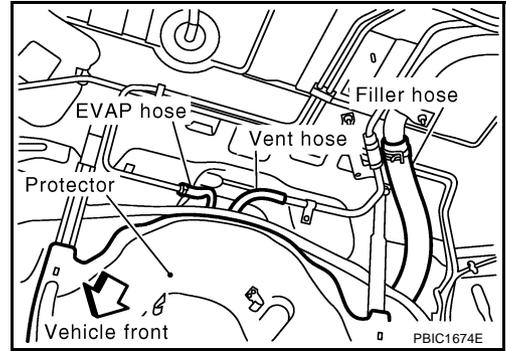
#### WARNING:

Be sure to read "General Precautions" when working on the fuel system. Refer to [FL-3, "General Precautions"](#).

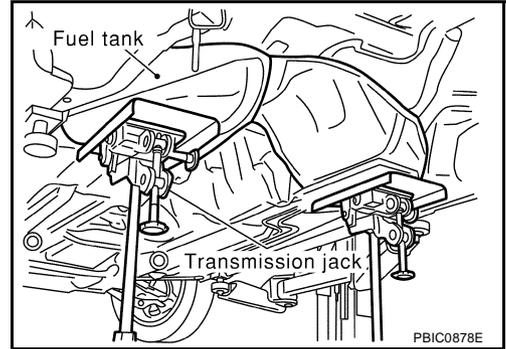
- Drain fuel from fuel tank if necessary.
  - Perform work on level place.
1. Perform steps 2 to 7 of "REMOVAL" in "FUEL LEVEL SENSOR UNIT, FUEL FILTER, AND FUEL PUMP ASSEMBLY" on main and sub fuel level sensor units. Refer to [FL-4, "REMOVAL"](#).
  2. Remove exhaust front tube, center muffler and main muffler. Refer to [EX-3, "EXHAUST SYSTEM"](#).
  3. Remove insulator then propeller shaft. Refer to [PR-4, "REAR PROPELLER SHAFT"](#) (2WD models) or [PR-16, "REAR PROPELLER SHAFT"](#) (AWD models).
  4. Remove parking brake cables. Refer to [PB-5, "PARKING BRAKE CONTROL"](#).
  5. Remove rear suspension assembly. Refer to [RSU-5, "REAR SUSPENSION ASSEMBLY"](#).
  6. Remove fuel tank protector.

# FUEL TANK

7. Disconnect fuel filler hose, vent hose and EVAP hoses at fuel tank side.



8. Remove fuel tank mounting band bolts while supporting fuel tank.



9. Remove the fuel tank.

## INSTALLATION

Note to the following, and install in the reverse order of removal.

- Surely clamp fuel hoses and insert hose to the length below.

**Fuel filler hose : 35 mm (1.38 in)**

**The other hoses : 25 mm (0.98 in)**

- Be sure hose clamp is not placed on swelled area of fuel tube.
- Tighten clamp (fuel tank side) of the fuel filler hose so that the remaining length of screw thread becomes 8 to 12 mm (0.31 to 0.47in).
- Tighten clamp (fuel filler tube side) of fuel filler hose so that the remaining length of screw thread becomes 5.7 to 9.7mm (0.22 to 0.38 in).
- To connect quick connector, Refer to [FL-7, "Quick Connector"](#) .

## INSPECTION AFTER INSTALLATION

Use the following procedure to check for fuel leaks.

1. Turn ignition switch "ON" (with engine stopped), and check connections for leakage by applying fuel pressure to fuel piping.
2. Start engine and check for fuel leaks at the fuel system tube and hose connections.

# SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

PFP:00030

### Standard and Limit

ABS000JM

Fuel tank capacity

Approx. 76 ℓ (20-1/8 US gal, 16-3/4 Imp gal)

### Tightening Torque

ABS000JN

Unit: N·m (kg-m, ft.-lb)  
Unit: N·m (kg-m, in.-lb)\*

Main fuel level sensor unit, fuel filter and fuel pump assembly	2.0 - 2.5 (0.20 - 0.26, 18 - 22)*
Sub fuel level sensor unit	2.0 - 2.5 (0.20 - 0.26, 18 - 22)*
Fuel tank mounting band	37.0 - 49.0 (3.8 - 5.0, 28 - 36)
Fuel filler tube	10.9 - 14.7 (1.1 - 1.5, 8 - 10)
Fuel tank protector	10.9 - 14.7 (1.1 - 1.5, 8 - 10)

# SERVICE DATA AND SPECIFICATIONS (SDS)

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