

SECTION **FL**
FUEL SYSTEM

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PREPARATION

PREPARATION

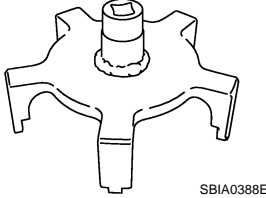
PFP:00002

Special Service Tools

ABS0047F

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

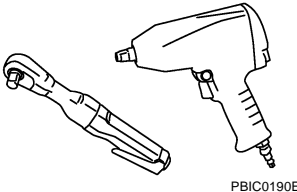
(Kent-Moore No.) Tool name	Description
(J-46211) Fuel tank lock ring wrench	Removing and installing fuel tank retainer



Commercial Service Tools

ABS0033Y

Tool name	Description
Power tool	Loosening bolts and nuts



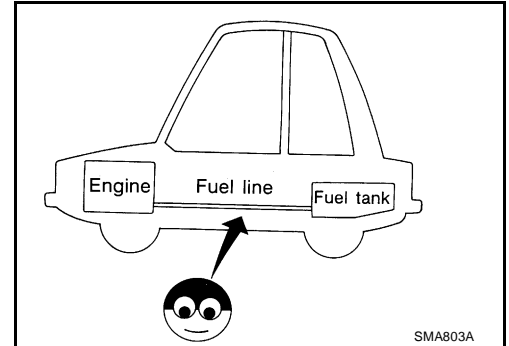
FUEL SYSTEM

PPF:17503

Checking Fuel Lines

ABS0033Z

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

ABS00340

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 CO₂ fire extinguisher.
- Do not smoke while servicing fuel system. Keep open flames and sparks away from the work area.

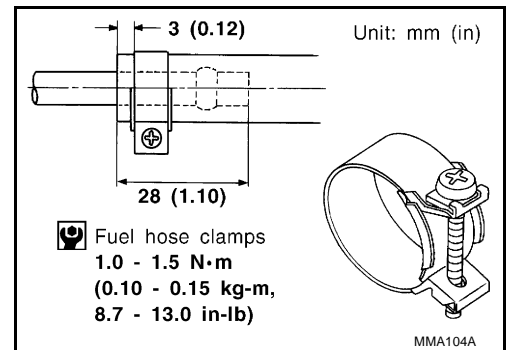
CAUTION:

- Before removing fuel line parts, carry out the following procedures:
 - a) Put drained fuel in an explosion-proof container and put the lid on securely. Keep the container in safe area.
 - b) Release fuel pressure from the fuel lines. Refer to [EC-66, "FUEL PRESSURE RELEASE"](#).
 - c) Disconnect the battery ground cable.
- Always replace O-rings and clamps with new ones.
- Do not kink or twist tubes when they are being installed.
- Do not tighten hose clamps excessively to avoid damaging hoses.

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

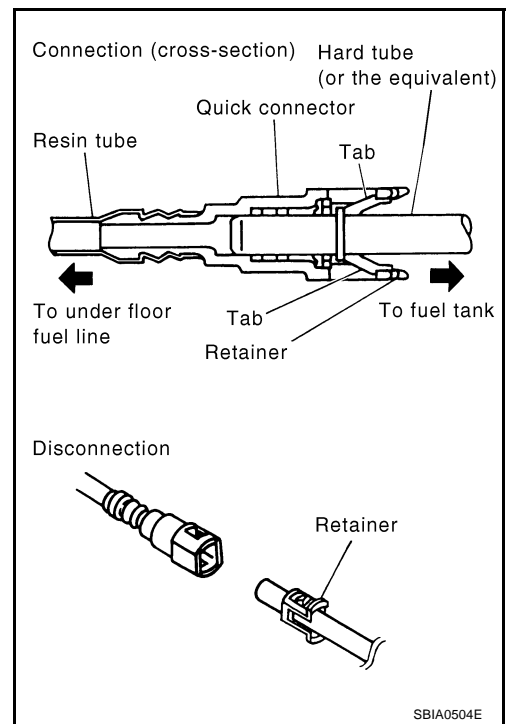
Tightening torque specifications are the same for all rubber hose clamps.

Ensure that screw does not contact adjacent parts.



FUEL SYSTEM

- 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.
 - a) Apply fuel pressure to fuel lines with turning ignition switch "ON" (with engine stopped). Then check for fuel leaks at connections.
 - b) Start the 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-652, "EVAPORATIVE EMISSION SYSTEM"](#) .
- For servicing "On Board Refueling Vapor Recovery (ORVR)" parts, refer to [EC-659, "ON BOARD REFUELING VAPOR RECOVERY \(ORVR\)"](#) .



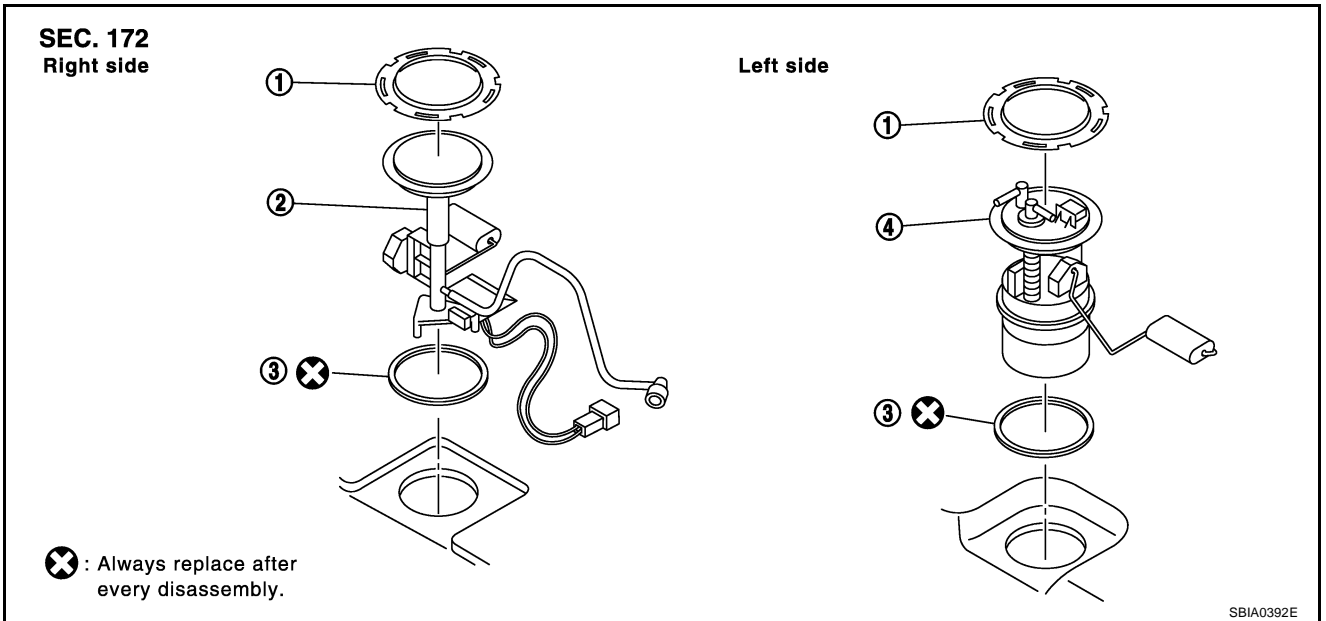
FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

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

Removal and Installation

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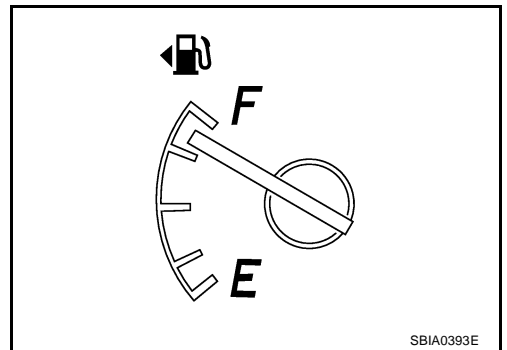
1. Retainer
2. Sub fuel level sensor unit
3. O-ring
4. Main fuel level sensor unit, fuel filter and fuel pump assembly

REMOVAL

WARNING:

Read "General Precautions" before working on the fuel system. Refer to [FL-3, "General Precautions"](#) .

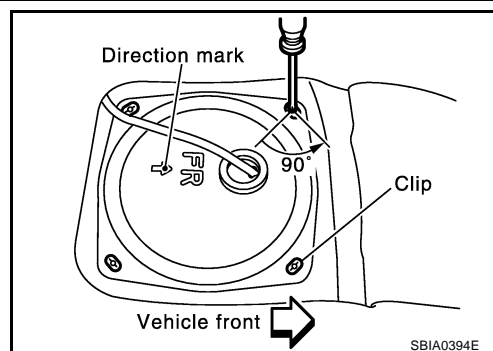
1. Check fuel level on level place. If gauge indicates more than the level shown in figure (full or almost full), drain fuel from fuel tank until gauge indicates level shown in figure or below.
 - In case fuel pump does not operate, take following procedure.
- a. Insert fuel tube of less than 25 mm (0.98 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.
- c. Insert fuel tube into fuel tank through fuel filler hose to draw fuel from fuel tank.
 - As a guide, fuel level becomes the position shown in figure or below when approximately 20 liter (5-1/4 US gal, 4-3/8 Imp gal) of fuel are drained from fuel tank.



2. Release the fuel pressure from the fuel lines. Refer to [EC-66, "FUEL PRESSURE RELEASE"](#) .
3. Open the fuel filler lid.
4. Open the filler cap and release the pressure inside the fuel tank.
5. Remove the rear seat cushion trim and pad bolts, then lift up rear seat cushion. Refer to [SE-129, "REAR SEAT"](#) .

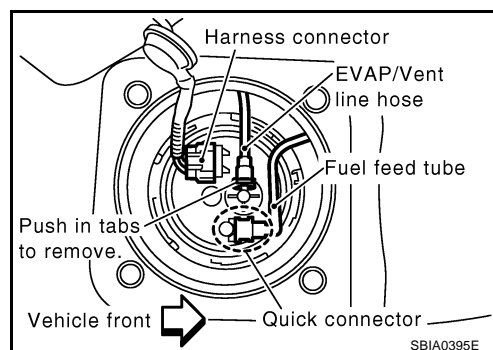
FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

6. Remove the inspection hole cover for main and sub fuel level sensor unit by turning clips counterclockwise by 90°.

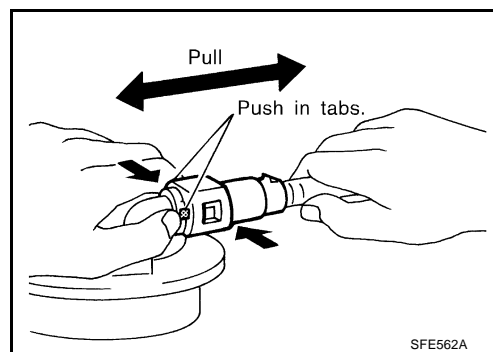


7. Disconnect the harness connector and quick connectors for EVAP/Vent line hose and fuel feed tube

- Disconnect EVAP/Vent line hose connector (push in tabs and pull out).



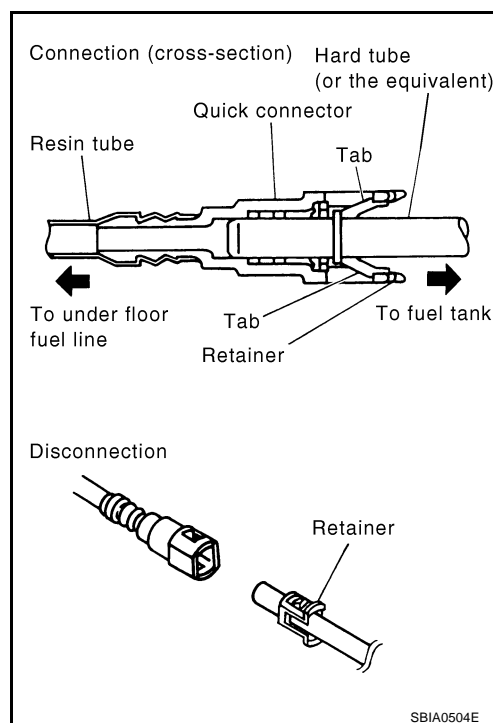
- Disconnect the quick connector for fuel feed tube as follows:



CAUTION:

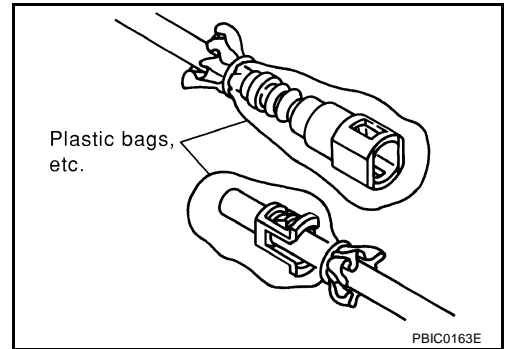
- The quick connector can be disconnected when the tabs are completely depressed. Do not twist it more than necessary.
- Do not use any tools to disconnect the quick connector.
- Keep the resin tube away from heat. Be especially careful when welding near the tube.
- Prevent acid liquid such as battery electrolyte etc. from getting on the resin tube.
- Do not bend or twist the resin tube during installation and disconnection.
- 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.

Retainer color: Green

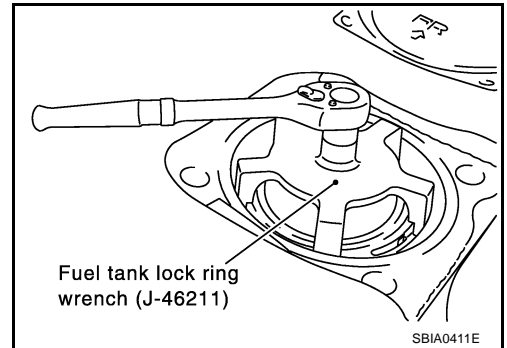


FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

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

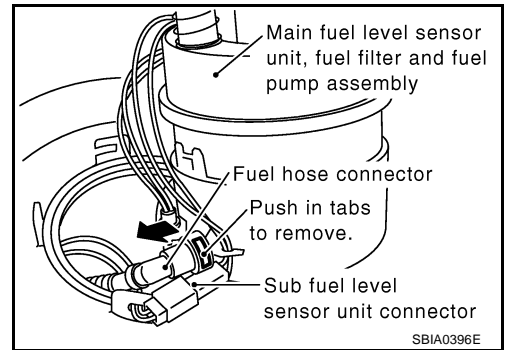


8. Remove the retainer for main and sub fuel level sensor unit with fuel tank lock ring wrench (SST) by turning counterclockwise.



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

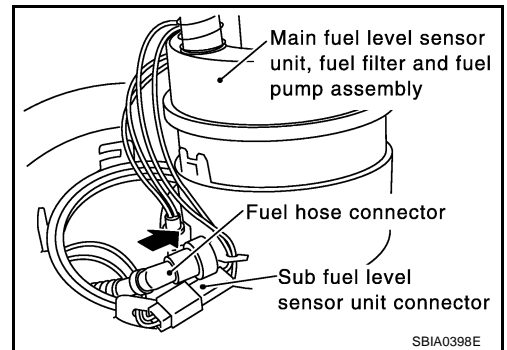
- Raise the main fuel level sensor unit, fuel filter and fuel pump assembly, and disconnect the fuel hose connector (push in tabs and pull out) and sub fuel level sensor unit harness connector.
- Raise and release the sub fuel level sensor unit to remove.



INSTALLATION

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

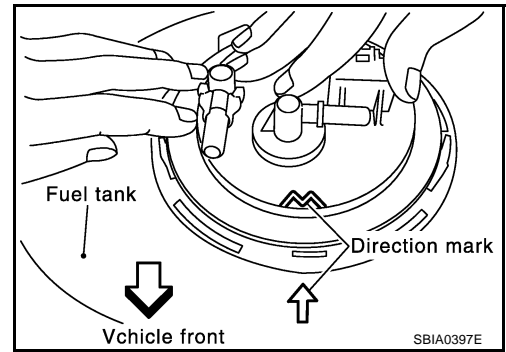
- Connect fuel hose connector (push in until it stops) and sub fuel level sensor unit harness connector.



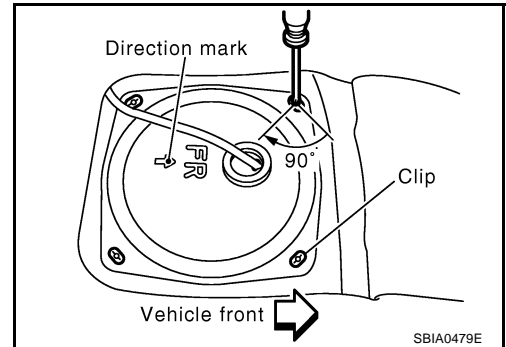
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FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

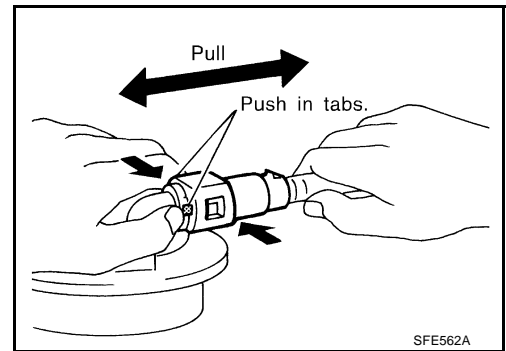
- Align the direction mark on main and sub fuel level sensor unit with that on fuel tank as shown in the figure.



- Install the inspection hole cover with front mark (arrow) facing front of the vehicle (Both for RH and LH). Lock the clips by turning clockwise.



- Connect the 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 is heard.
 3. After connecting, make sure that the connection is secure by following method.
 4. 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.



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 the engine and let it idle and make sure there are no fuel leaks at the fuel system connections.

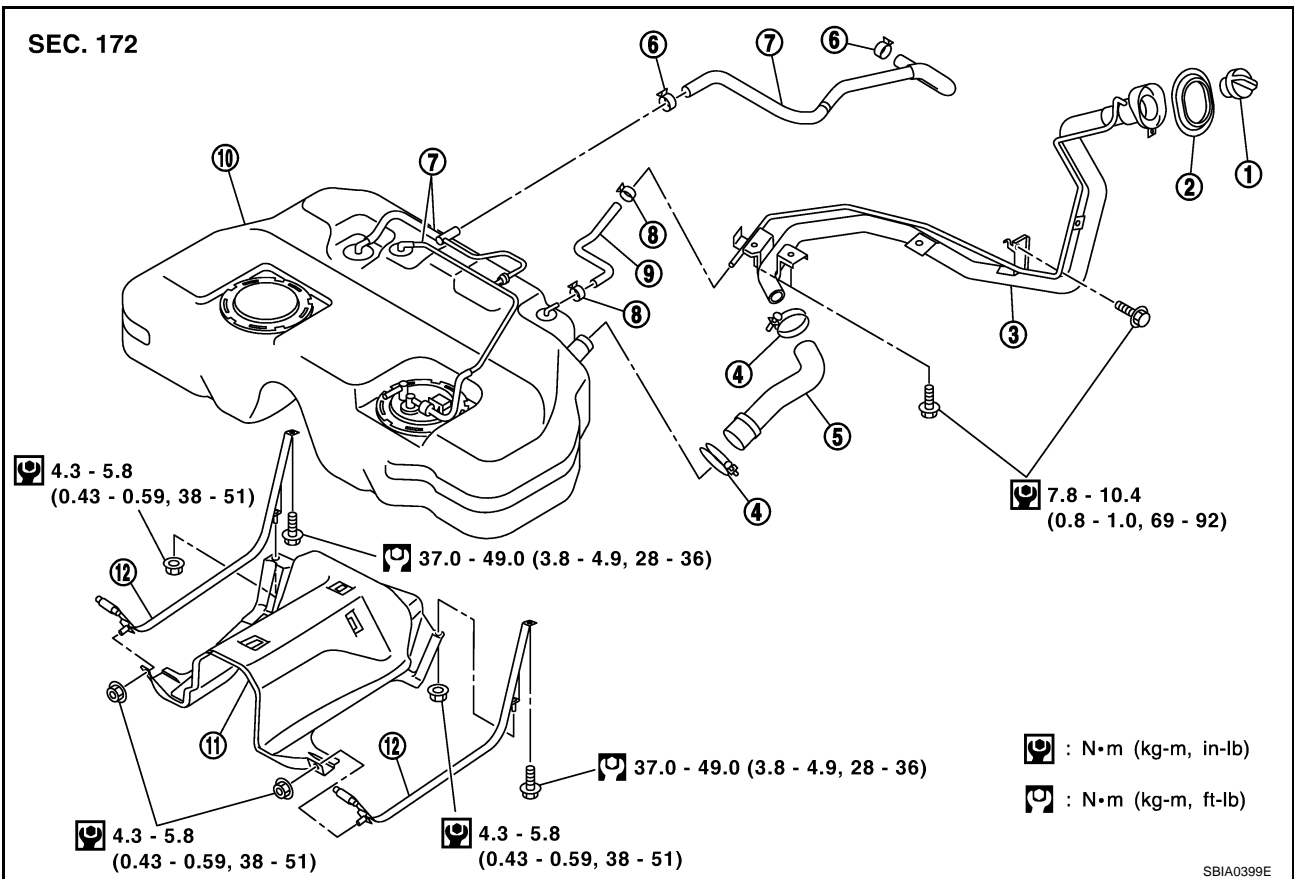
FUEL TANK

PFP:17202

FUEL TANK

Removal and Installation

ABS005ZD



- | | | |
|------------------------|-------------------------|------------------------------|
| 1. Fuel filler cap | 2. Grommet | 3. Fuel filler tube |
| 4. Hose clamp | 5. Fuel filler hose | 6. Hose clamp |
| 7. EVAP/Vent line hose | 8. Hose clamp | 9. EVAP (Recirculation) hose |
| 10. Fuel tank | 11. Fuel tank protector | 12. Fuel tank mounting band |

REMOVAL

WARNING:

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

- Drain fuel from the fuel tank if necessary. Refer to step 1 of "REMOVAL" in "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY". Refer to [FL-5, "REMOVAL"](#).

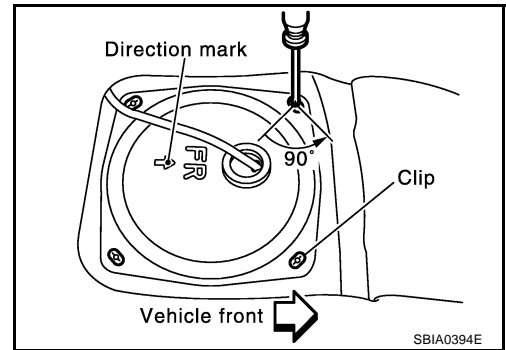
CAUTION:

For the safety work and to maintain fuel tank gravity at center, drain fuel to the level where fuel tank weight at left and right becomes equal.

- Perform work on level place.
 1. Release fuel pressure from fuel line. Refer to [EC-66, "FUEL PRESSURE RELEASE"](#).
 2. Open the fuel filler lid.
 3. Open the fuel filler cap and release the pressure inside the fuel tank.
 4. Remove the rear seat cushion trim and pad bolts, then lift up rear seat cushion. Refer to [SE-129, "REAR SEAT"](#).

FUEL TANK

5. Remove the inspection hole cover for main fuel level sensor unit, fuel filter and fuel pump assembly (Left side) by turning clips counterclockwise by 90°.



6. Disconnect harness connector and quick connector for fuel feed tube.

- Disconnect the quick connector, refer to [FL-5, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY"](#).

7. Remove the center muffler. Refer to [EX-3, "EXHAUST SYSTEM"](#).

8. Remove the rear propeller shaft (AWD model). Refer to [PR-4, "REAR PROPELLER SHAFT"](#).

9. Remove the parking brake cables. Refer to [PB-2, "PARKING BRAKE SYSTEM"](#).

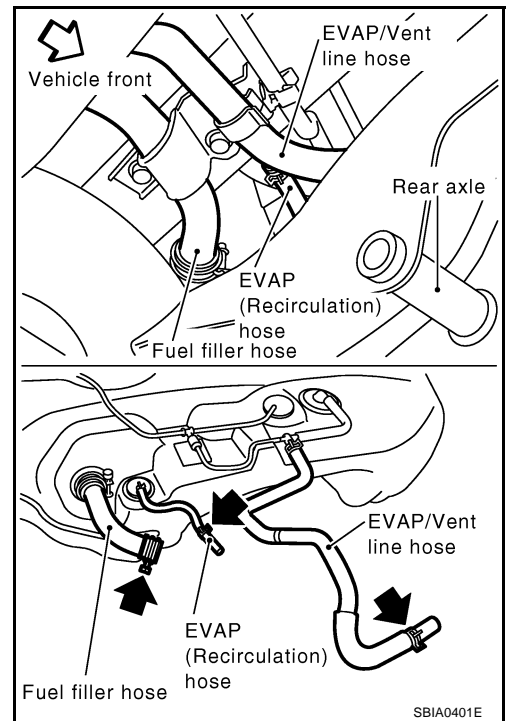
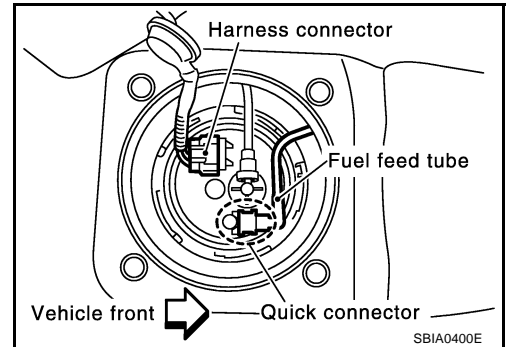
10. Remove the rear final drive assembly (AWD model).

- Using a transmission jack, support the bottom of the rear final drive assembly. Refer to [RFD-10, "REAR FINAL DRIVE ASSEMBLY"](#).

11. Remove the mounting nuts on the rear suspension member, and lower the transmission jack carefully until just before the rear suspension member is removed from the stud bolts on the vehicle (AWD model). Refer to [RSU-5, "REAR SUSPENSION ASSEMBLY"](#).

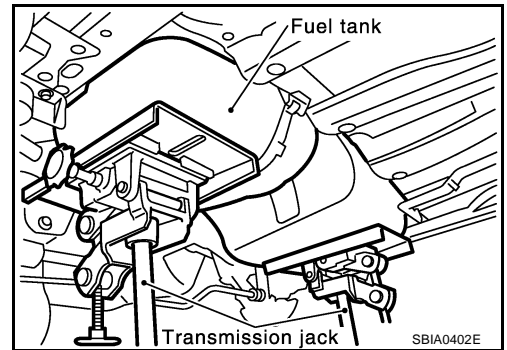
12. Remove the fuel tank protector.

13. Disconnect fuel filler hose, EVAP/Vent line hose and EVAP (Recirculation) hose at the other end than fuel tank side.



FUEL TANK

14. Remove fuel tank mounting band bolts while supporting fuel tank.
15. Remove fuel tank.



INSTALLATION

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

- 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 fuel hose clamp so that the distance between its lugs becomes to the following.

Fuel tank side : 2 - 6 mm (0.08 - 0.24 in)

Fuel filler tube side : 5 - 9 mm (0.20 - 0.35 in)

- Push the fuel tank mounting band pin to the vehicle side securely.
- Before fixing the fuel tank, temporarily install the filler tube.

CAUTION:

Use genuine fuel filler tube mounting bolts or equivalent. Make sure to tighten them to the specified torque.

- To connect the quick connector, refer to [FL-5, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY"](#).

INSPECTION AFTER INSTALLATION

Make sure there is no fuel leakage at connections in the following steps.

1. Apply fuel pressure to fuel lines with turning ignition switch "ON" (with engine stopped). Then check for fuel leaks at connections.
2. Start the engine and rev it up and check for fuel leaks at connections.

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

PFP:00030

Standard and Limit

ABS00349

Fuel tank capacity	Approx. 82 ℓ (21-5/8 US gal, 18 Imp gal)
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Tightening Torque

ABS0034A

Unit: N·m (kg·m, ft·lb)

Unit: N·m (kg·m, in·lb)*

Fuel tank mounting band	37.0 - 49.0 (3.8 - 4.9, 28 - 36)
Fuel filler tube	7.8 - 10.4 (0.8 - 1.0, 69 - 92)*
Fuel tank protector	4.3 - 5.8 (0.43 - 0.59, 38 - 51)*