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SECTION **FL**

FUEL SYSTEM

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

General Precautions

INFOID:000000006205688

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 workshop with a CO2 fire extinguisher.
- Never smoke while servicing fuel system. Keep open flames and sparks away from the work area.

CAUTION:

- Use gasoline required by the regulations for octane number. Refer to [GI-33, "Fuel"](#).
- Before removing fuel line parts, perform 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-632, "Inspection"](#).
 - Disconnect the battery cable from the negative terminal.
- Always replace O-ring and clamps with new ones.
- Never kink or twist tubes when they are being installed.
- Never tighten hose clamps excessively to avoid damaging hoses.
- After installing tubes, check 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 leakage at connections.
 - Start engine and rev it up and check for fuel leakage 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 “On Board Refueling Vapor Recovery (ORVR)” parts, refer to [EC-531, "Description"](#).

PREPARATION

< PREPARATION >

PREPARATION

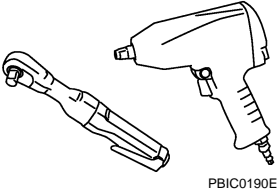
PREPARATION

Commercial Service Tools

INFOID:000000006205689

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Tool name	Description
<p data-bbox="162 411 272 436">Power tool</p>  <p data-bbox="828 630 901 646">PBIC0190E</p>	<p data-bbox="1015 411 1263 436">Loosening nuts and bolts</p>

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FUEL SYSTEM

< PERIODIC MAINTENANCE >

PERIODIC MAINTENANCE

FUEL SYSTEM

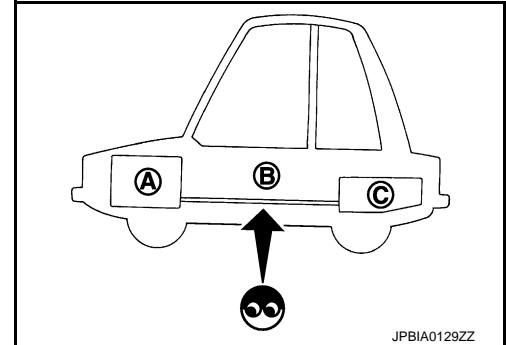
Inspection

INFOID:000000006205690

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

- A : Engine
- B : Fuel line
- C : Fuel tank

If necessary, repair or replace damaged parts.



Quick Connector

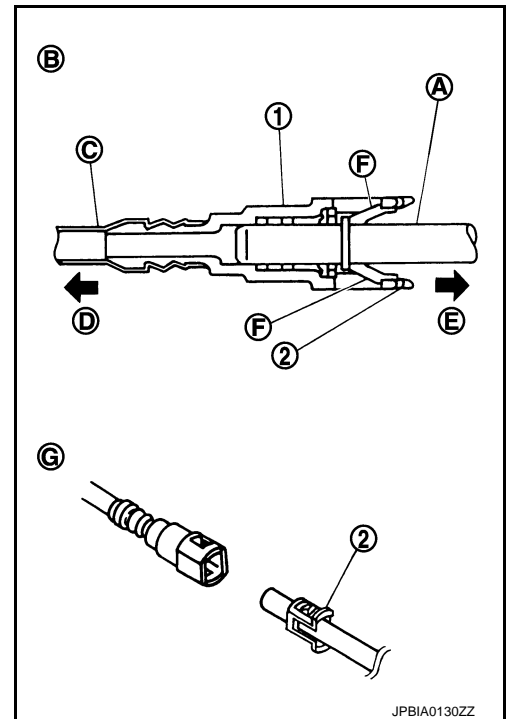
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CAUTION:

- After connecting fuel tube quick connectors, check quick connectors are secure.

- 1 : Quick connector
- 2 : Retainer
- A : Hard tube (or the equivalent)
- B : Connection (cross-section)
- C : Resin tube
- D : To under floor fuel line
- E : To fuel tank
- F : Tab
- G : Disconnection

- Ensure that connector and resin tube never contact any adjacent parts.



FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

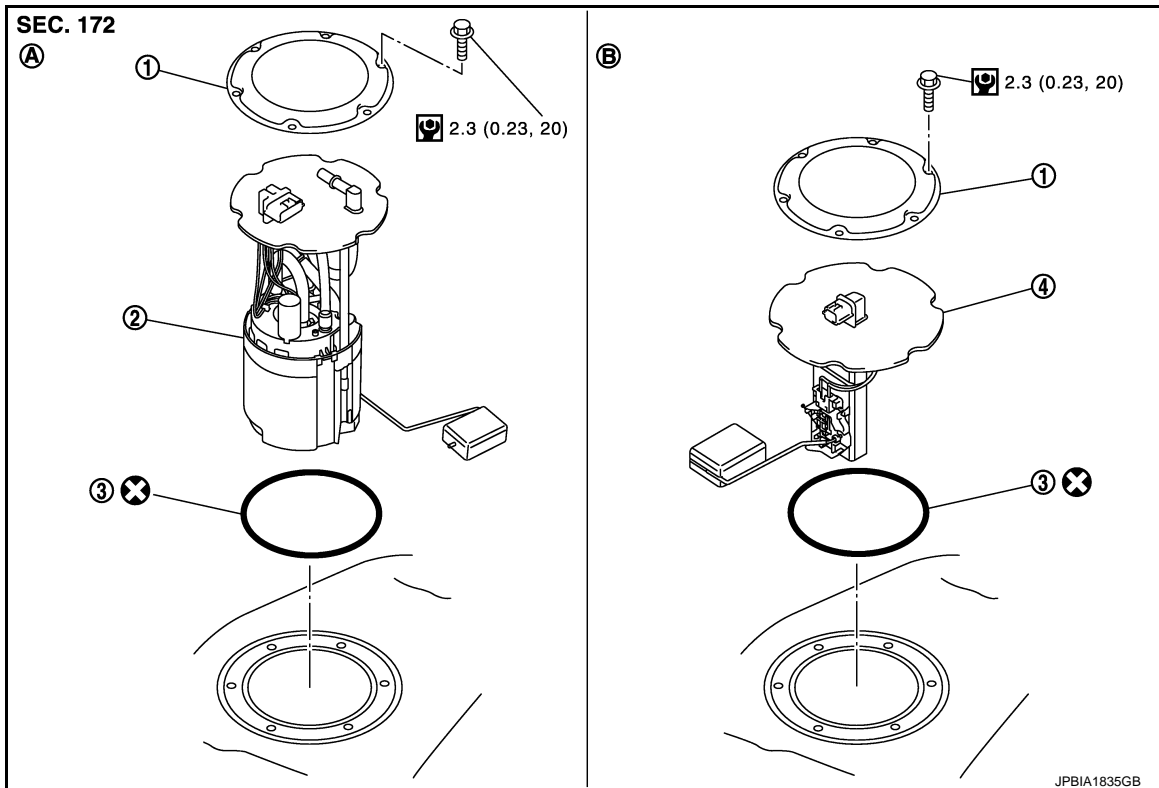
< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

Exploded View

INFOID:000000006205692



- | | | |
|-------------------------------|--|-----------|
| 1. Retainer | 2. Main fuel level sensor unit, fuel filter and fuel pump assembly | 3. O-ring |
| 4. Sub fuel level sensor unit | | |
| A. Right side | B. Left side | |

Refer to [GI-4, "Components"](#) for symbols in the figure.

Removal and Installation

INFOID:000000006205693

WARNING:

Read "General Precautions" when working on the fuel system. Refer to [FL-2, "General Precautions"](#).

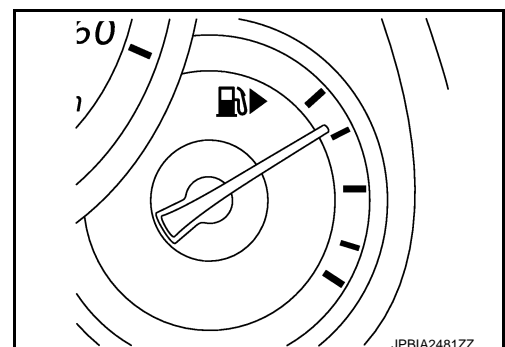
REMOVAL

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 as shown in the figure or below.

NOTE:

The above instructions must be followed since fuel spills when removing the fuel level sensor unit if the fuel level exceeds the mounting 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 a case that fuel pump does not operate, perform the following procedure.



FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< REMOVAL AND INSTALLATION >

- a. Insert hose of less than 22 mm (0.87 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-10, "Exploded View"](#).
- c. Insert fuel tube 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-1183, "Inspection"](#) (VQ25HR) or [EC-632, "Inspection"](#) (VQ37VHR).
3. Open fuel filler lid.
4. Open filler cap and release the pressure inside fuel tank.
5. Remove rear seat cushion. Refer to [SE-132, "Exploded View"](#).
6. Peel off floor carpet, then remove inspection hole cover (1) units by turning clips (2) clockwise by 90 degrees.

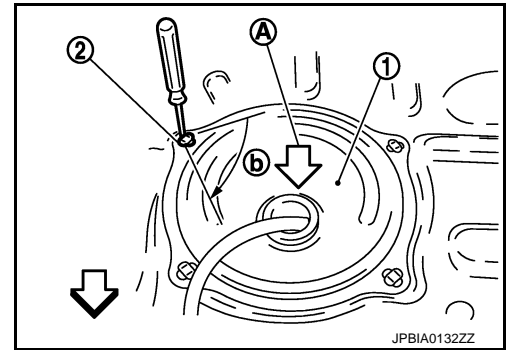
A : Direction mark

b : 90°

⇐ : Vehicle front

Right side : Main fuel level sensor unit, fuel filter and fuel pump assembly

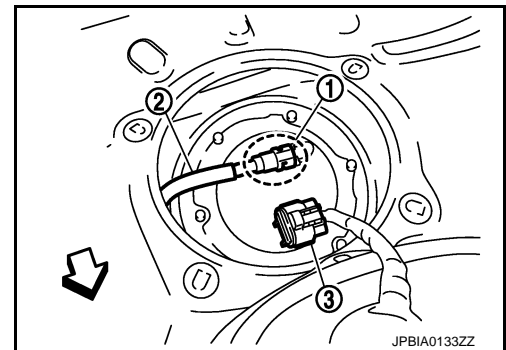
Left side : Sub fuel level sensor unit



7. Disconnect harness connector (3) and fuel feed tube (2).

1 : Quick connector

⇐ : Vehicle front



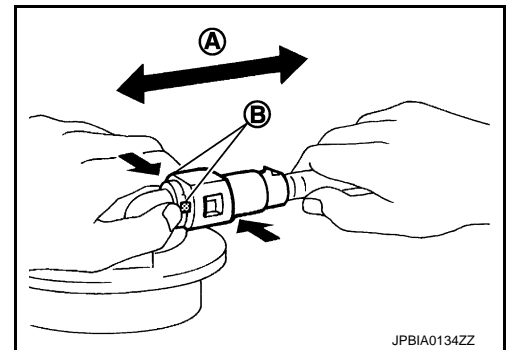
Disconnect quick connector as follows:

- Hold the sides of connector, push in tabs and pull out fuel feed tube.

A : Pull

B : Push in tabs

- 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.



CAUTION:

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< REMOVAL AND INSTALLATION >

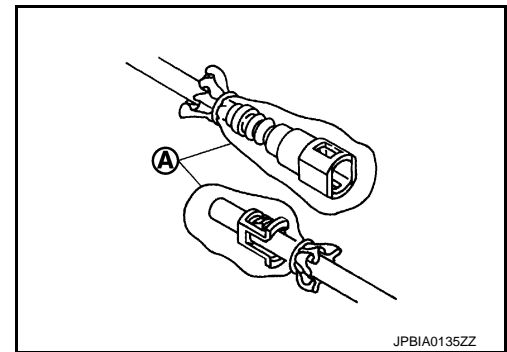
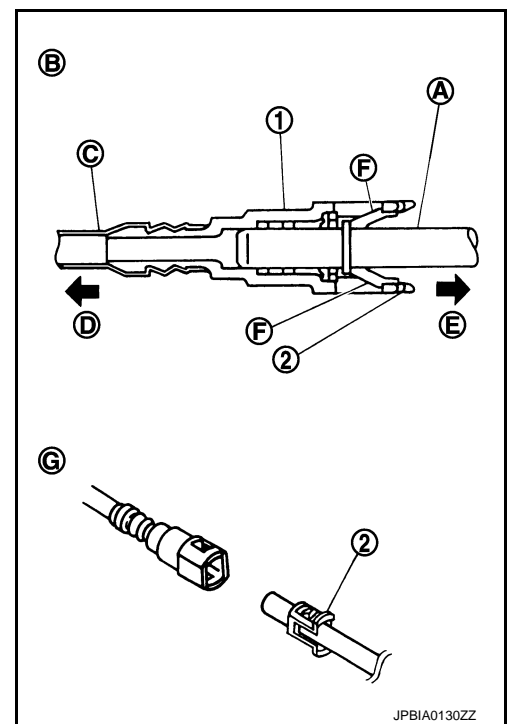
- **Quick connector (1) can be disconnected when the tabs (F) are completely depressed. Never twist it more than necessary.**

B : Connection (Cross-section)
 D : To under floor fuel line
 E : To fuel tank
 G : Disconnection

- **Never use any tools to disconnected quick connector.**
- **Keep resin tube (C) 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.**
- **Never bend or twist resin tube during installation and disconnection.**
- **Never remove the remaining retainer (2) on hard tube (or the equivalent) (A) except when resin tube or retainer is replaced.**
- **When resin tube or hard tube (or the equivalent) is replaced, also replace retainer with new one.**

Retainer color : Natural

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

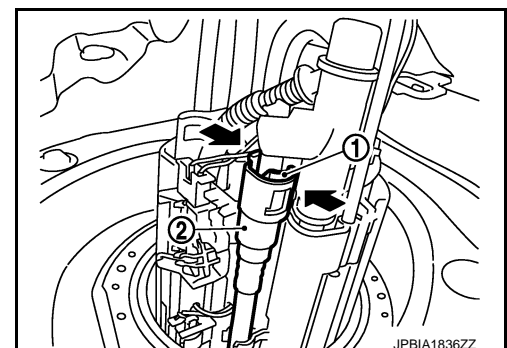


- Remove main fuel level sensor unit, fuel filter and fuel pump assembly, and sub fuel level sensor unit as follows:

CAUTION:

- **Never bend float arm during removal.**
- **Avoid impacts such as falling when handling components.**

- Removal of main fuel level sensor unit, fuel filter and fuel pump assembly:
 - Remove retainer.
 - Raise main fuel level sensor unit, fuel filter and fuel pump assembly, and disconnect quick connector as follows:
 - Push in tabs (1) and pull out fuel tube (2).
- Removal of sub fuel level sensor unit:
 - Remove retainer.
 - Raise and release sub fuel level sensor unit to remove.



INSTALLATION

CAUTION:

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< REMOVAL AND INSTALLATION >

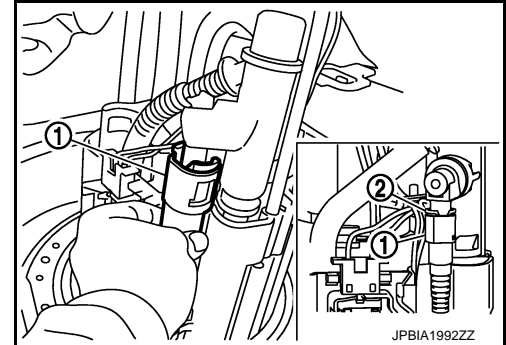
Do not reuse O-rings.

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

Fuel hose

- When installing fuel hose connector (1), refer to “Quick Connector”.

2 : Retainer



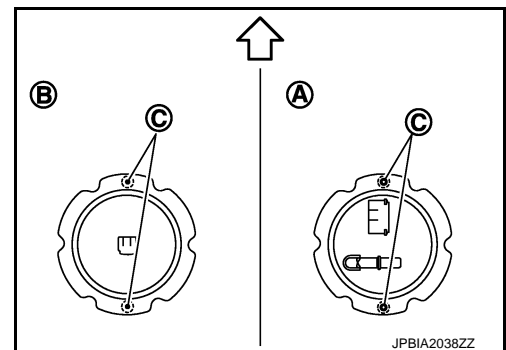
Main and Sub Fuel Level Sensor Unit

- Face main and sub fuel level sensor units as shown in the figure, and install them with the knock pin (C) on back aligned with pin hole on fuel tank.

A : Right side

B : Left side

⇐ : Vehicle front

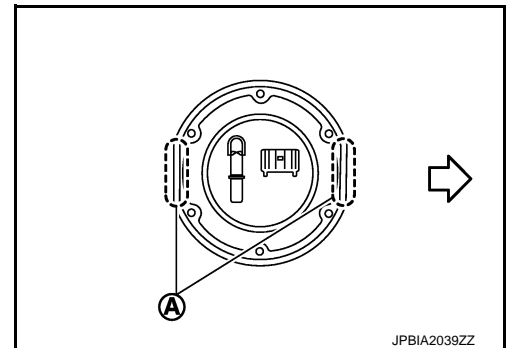


- Install retainer so that its notch becomes parallel with the notch on fuel tank.

A : Align notches

⇐ : Vehicle front

- Tighten retainer mounting bolts evenly.



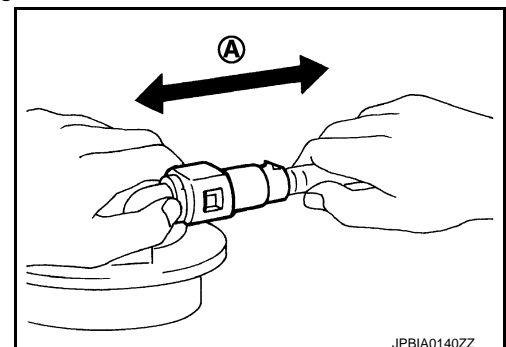
Quick Connector

- 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, check that the connection is secure by following method.
 - Pull the tube and the connector to check they are securely connected.

A : Pull

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



FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< REMOVAL AND INSTALLATION >

Inspection

INFOID:000000006205694

A

INSPECTION AFTER INSTALLATION

Use the following procedure to check for fuel leakage.

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

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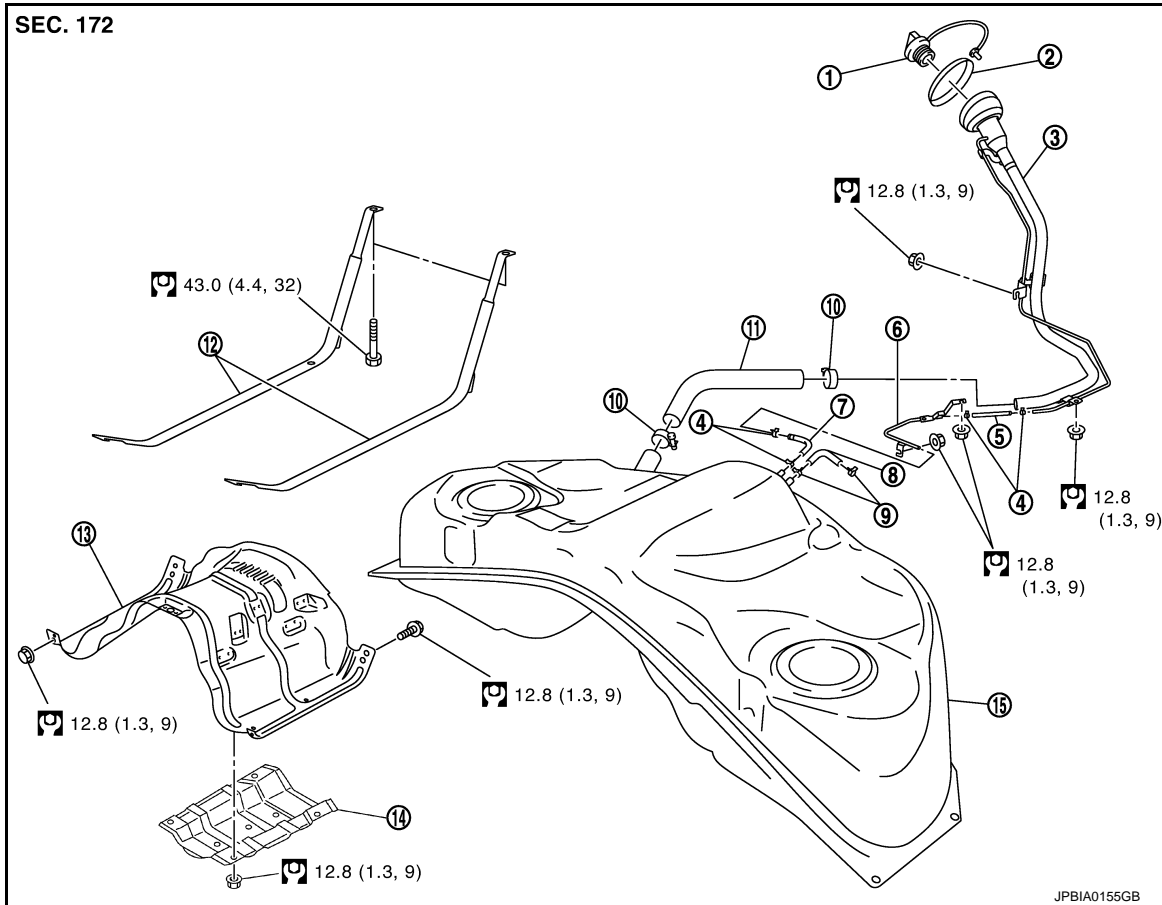
FUEL TANK

< REMOVAL AND INSTALLATION >

FUEL TANK

Exploded View

INFOID:000000006205695



- | | | |
|-------------------------|----------------------|-----------------------------|
| 1. Fuel filler cap | 2. Grommet | 3. Fuel filler tube |
| 4. Clamp | 5. Vent hose | 6. Vent tube |
| 7. Vent hose | 8. EVAP hose | 9. Clamp |
| 10. Clamp | 11. Fuel filler hose | 12. Fuel tank mounting band |
| 13. Fuel tank protector | 14. Insulator | 15. Fuel tank |

Refer to [GI-4, "Components"](#) for to symbols in the figure.

Removal and Installation

INFOID:000000006205696

WARNING:

Be sure to read "General Precautions" when working on the fuel system. Refer to [FL-2, "General Precautions"](#).

REMOVAL

- Drain fuel from fuel tank if necessary. Refer to [FL-10, "Exploded View"](#).
 - 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-5, "Exploded View"](#).
 2. Remove exhaust front tube, center muffler, and main muffler. Refer to [EX-5, "Exploded View"](#).
 3. Remove propeller shaft. Refer to followings.
 - VQ25HR 2WD models or VQ37VHR M/T models: Refer to [DLN-94, "Exploded View"](#).
 - VQ37VHR 2WD A/T models: Refer to [DLN-102, "Exploded View"](#).
 - AWD models: Refer to [DLN-110, "Exploded View"](#).

FUEL TANK

< REMOVAL AND INSTALLATION >

4. Remove parking rear brake cables. Refer to [PB-6. "PEDAL TYPE : Exploded View"](#) (PEDAL TYPE) or [PB-7. "LEVER TYPE : Exploded View"](#) (LEVER TYPE).
5. Remove rear suspension assembly. Refer to [RSU-23. "Exploded View"](#).

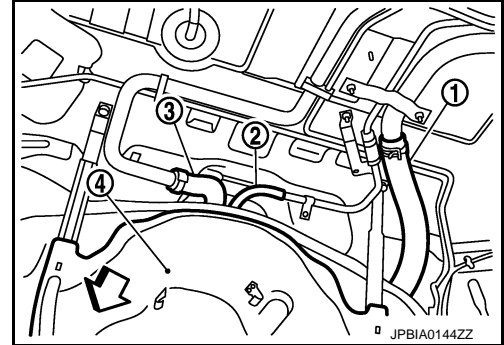
NOTE:

For this service, drive shaft, final drive, and rear suspension member are required not to be separate one another during removal.

6. Disconnect fuel filler hose (1), vent hose (2), and EVAP hoses (3) at fuel tank side.

4 : Fuel tank protector

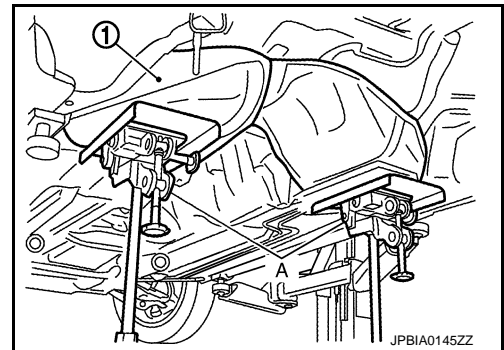
↶ : Vehicle front



7. Remove fuel tank protector.
8. Support the lower part of fuel tank (1) with transmission jack (A).

CAUTION:

Support the position that fuel tank mounting bands never engage.



9. Remove fuel tank mounting bands.
10. Supporting with hands, descend transmission jack carefully, and remove fuel tank.

CAUTION:

- Check that all connection points have been disconnected.
- Confirm there is no interference with vehicle.

11. Remove fuel filler tube if necessary.

INSTALLATION

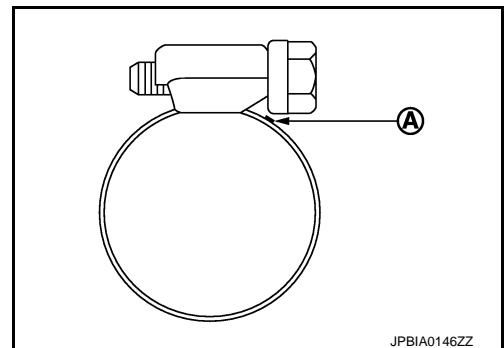
Note the following, and install in the reverse order of removal.

- 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 the clamp hand with the top mark (A) until the mark is on the bolt head flange.



- To connect quick connector, refer to [FL-4. "Quick Connector"](#).

FUEL TANK

< REMOVAL AND INSTALLATION >

Inspection

INFOID:000000006205697

INSPECTION AFTER INSTALLATION

Use the following procedure to check for fuel leakage.

1. Turn ignition switch "ON" (with engine stopped), and check connections for leakage by applying fuel pressure to fuel piping.
 2. Start engine and rev it up and check there are no fuel leakage at the fuel system tube and hose connections.
- After removing/installing rear suspension assembly, check to adjust wheel alignment. Refer to [RSU-6. "Inspection"](#).

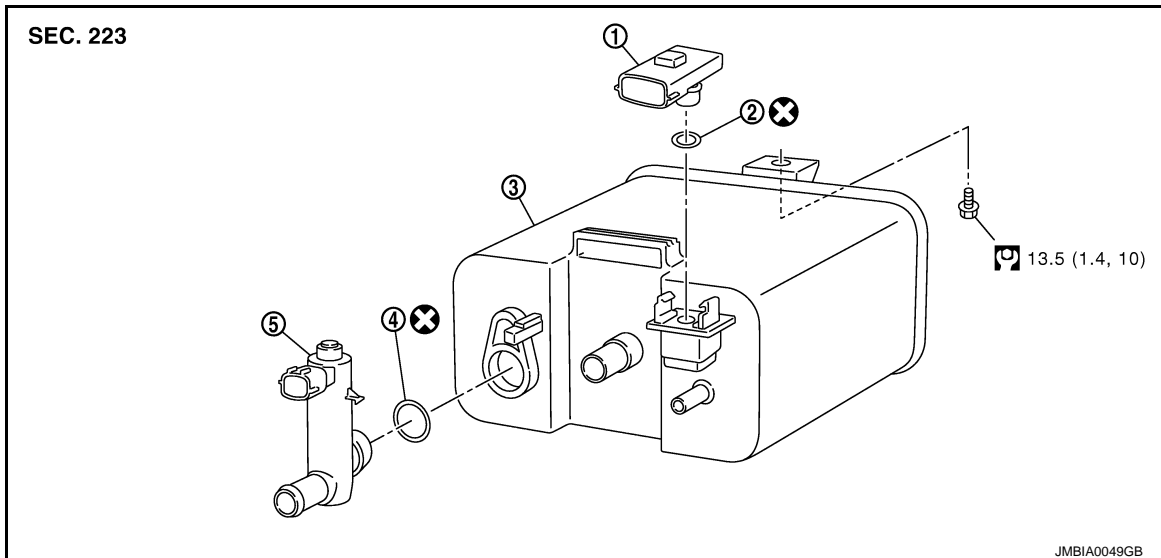
EVAP CANISTER

< REMOVAL AND INSTALLATION >

EVAP CANISTER

Exploded View

INFOID:000000006653651



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

Refer to [GI-4, "Components"](#) for symbols not described on the above.

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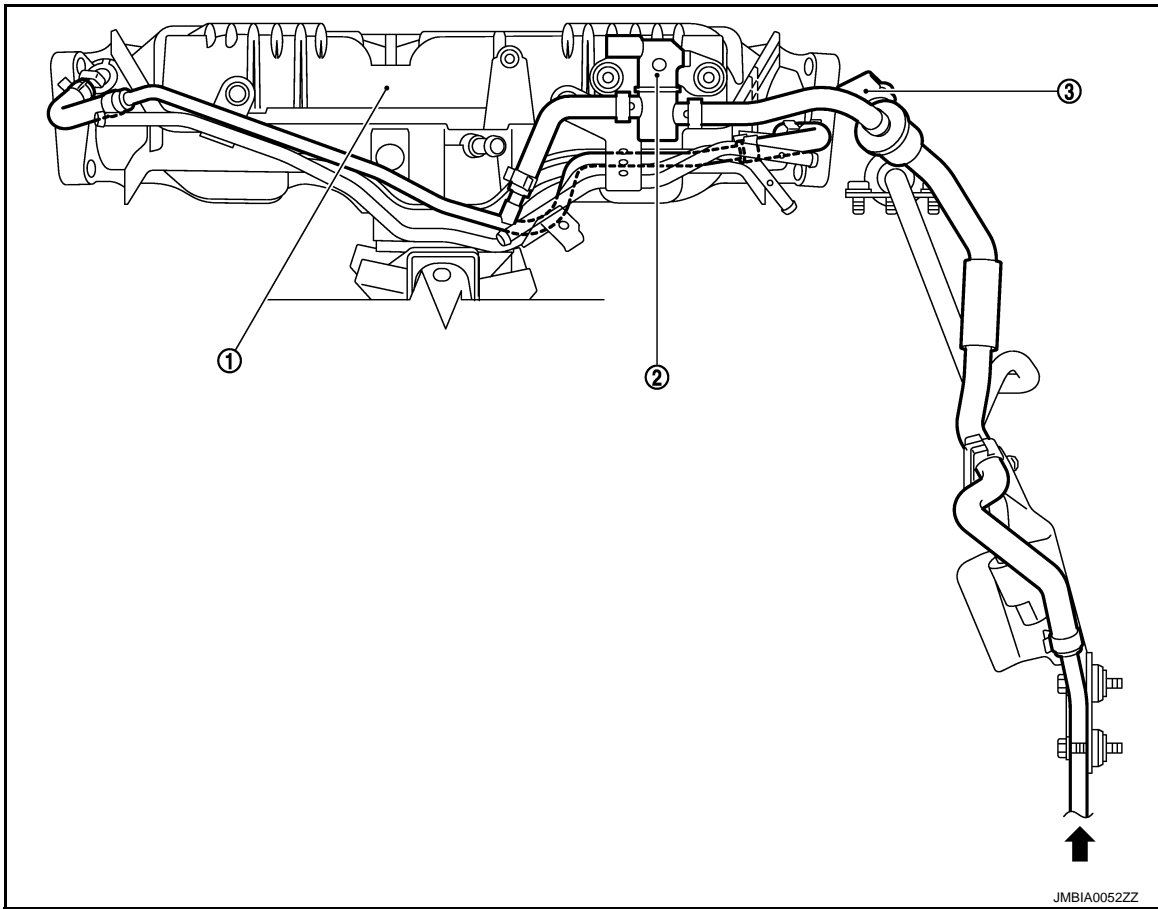
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EVAP CANISTER

< REMOVAL AND INSTALLATION >

Hydraulic Layout

INFOID:000000006653652



1. Intake manifold collector

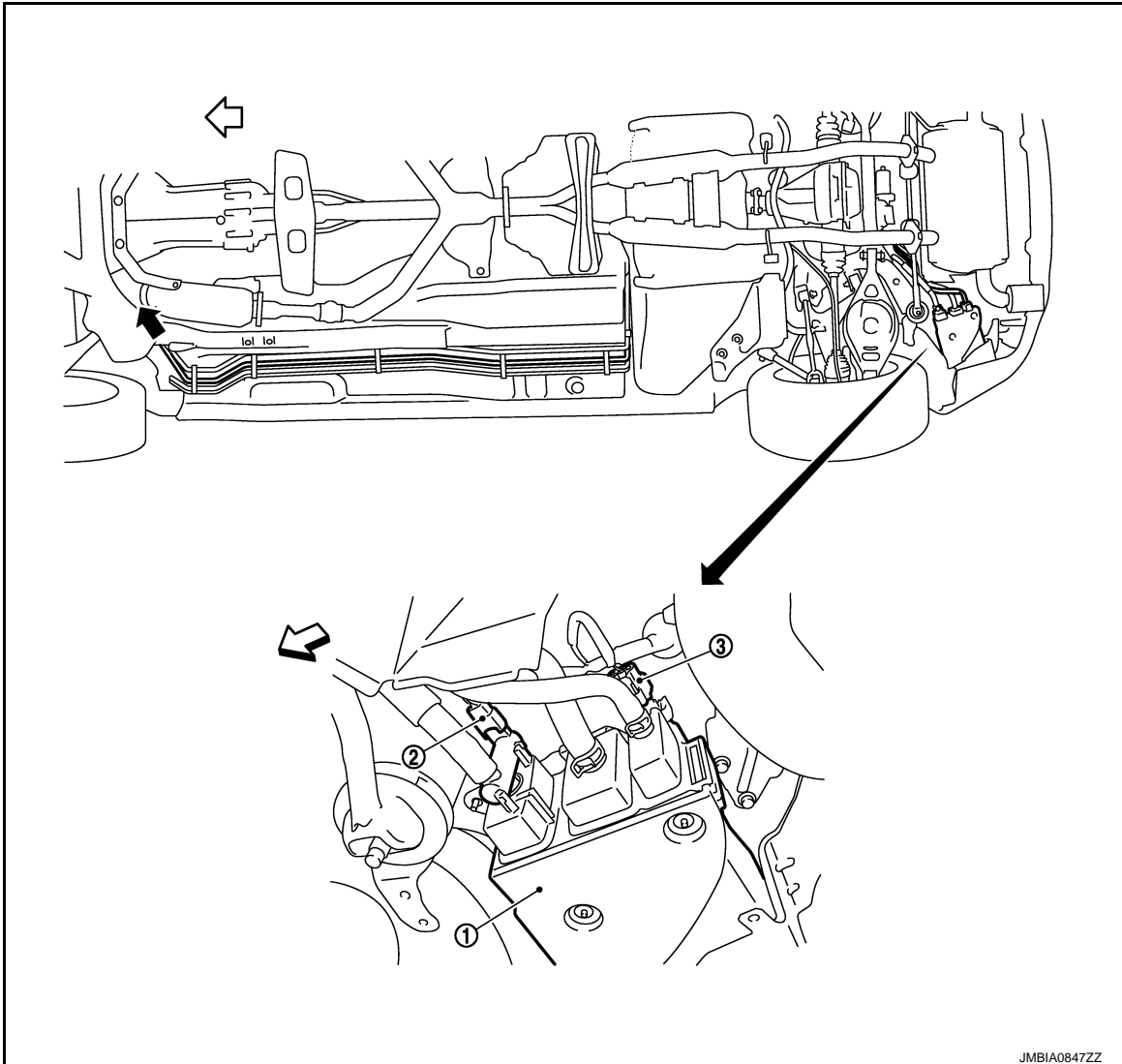
2. EVAP canister purge volume control

3. EVAP service port solenoid valve

←: From next figure

EVAP CANISTER

< REMOVAL AND INSTALLATION >



1. EVAP canister 2. EVAP canister vent control valve 3. EVAP control system pressure sensor

⇐: Vehicle front

←: To previous figure

NOTE:

Do not use soapy water or any type of solvent while installing vacuum hose or purge hoses.

Removal and Installation

INFOID:000000006653653

REMOVAL

1. Lift up the vehicle.
2. Remove EVAP canister fixing bolt.
3. Remove EVAP canister.

NOTE:

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

INSTALLATION

Install in the reverse order of removal.

NOTE:

Tighten EVAP canister fixing bolt to the specified torque.

EVAP CANISTER

< REMOVAL AND INSTALLATION >

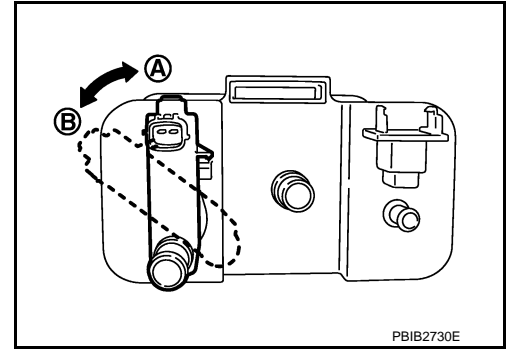
DISASSEMBLY

1. Turn EVAP canister vent control valve counterclockwise.

A : Lock

B : Unlock

2. Remove the EVAP canister vent control valve.



ASSEMBLY

Assemble in the reverse order of disassembly.

CAUTION:

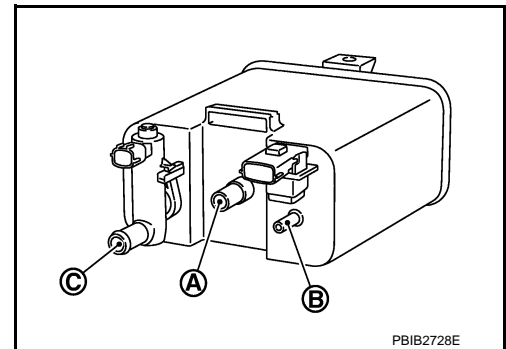
Always replace O-ring with a new one.

Inspection

INFOID:000000006653654

Check EVAP canister as follows:

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.



FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

UNIT DISASSEMBLY AND ASSEMBLY

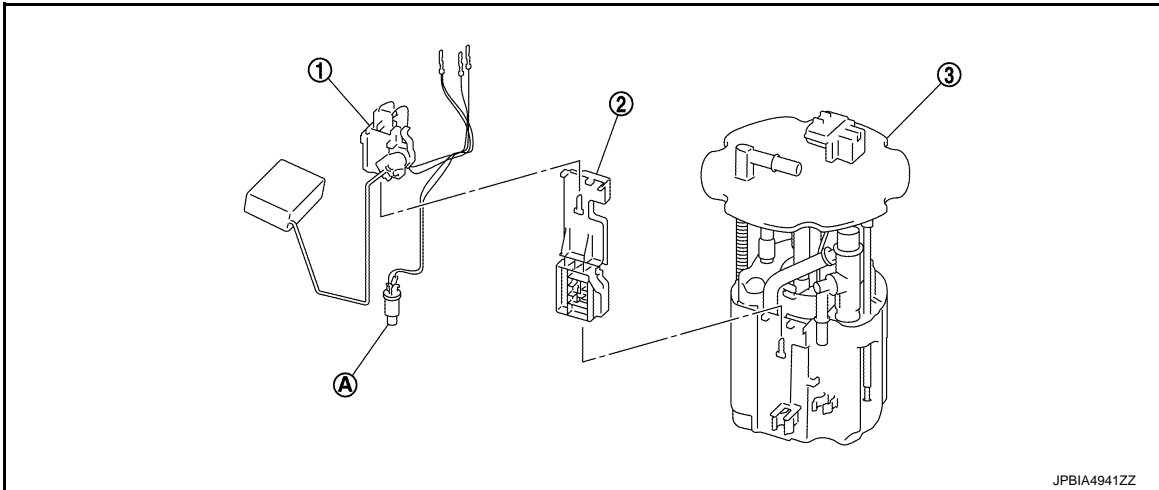
FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

Exploded View

INFOID:000000006205698

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1. Main fuel level sensor unit
A. Fuel temperature sensor

2. Adapter

3. Fuel filter and fuel pump assembly

Disassembly

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CAUTION:

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

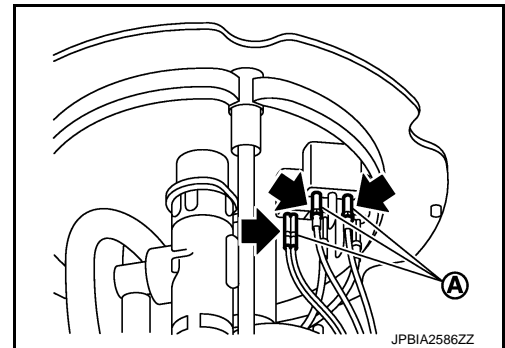
DISASSEMBLY

CAUTION:

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

Remove main fuel level sensor unit as follows:

1. Disconnect harness connector (A).
 - a. Hold connector by fingers and push stopper release tab.
 - b. Pull it out connector.



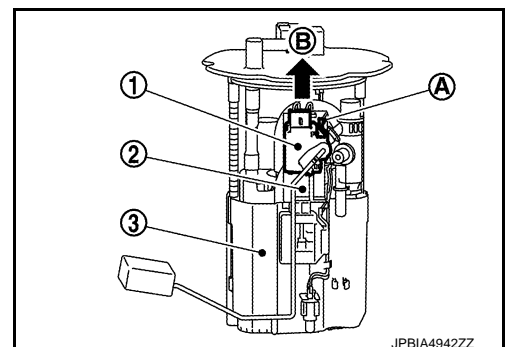
2. Remove main fuel level sensor unit (1) from adapter (2) as follows:

3 : Fuel filter and fuel pump assembly

- a. Push in tab (A) to release the lock.
- b. After fixing tabs are disengaged, slide main fuel level sensor unit out in direction shown by the arrow (B).

CAUTION:

- Be careful not to damage the main fuel level sensor unit.
- Never disassemble fuel filter and fuel pump assembly.



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FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

3. Remove adapter from the fuel filter and fuel pump assembly, if necessary, in the same procedure used in removing main fuel level sensor unit.

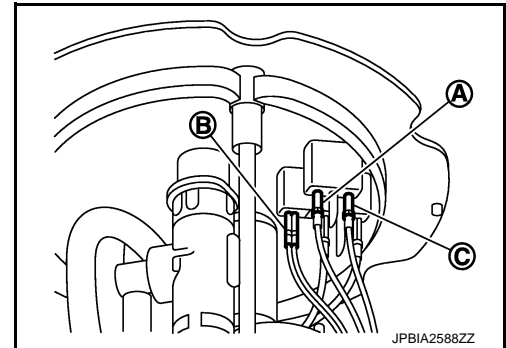
Assembly

INFOID:000000006205700

CAUTION:

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

1. Check for damage of main fuel level sensor unit installation position on the side of fuel filter and fuel pump assembly.
2. Slide main fuel level sensor unit until it aligns to installation groove, then insert it until it stops.
 - After inserting, apply force in reverse direction (removal direction) to ensure it cannot be pulled out.
3. Connect the white (A), black (B), and red (C) harnesses so that they are in the positions shown in the figure.
 - Securely insert harness connector until it stops.



SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Fuel Tank

INFOID:000000006205701

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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 GI-33

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