

SECTION **FL**
FUEL SYSTEM

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

General Precautions

INFOID:000000000956364

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.
- Do not 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-29, "FUEL : Unleaded Premium Gasoline Recommended"](#).
- 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-543, "Inspection"](#).
 - Disconnect the battery cable from the negative 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 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-77, "Component Parts Location"](#).
- For servicing “On Board Refueling Vapor Recovery (ORVR)” parts, refer to [EC-472, "Description"](#).

PREPARATION

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PREPARATION

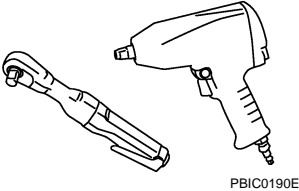
PREPARATION

Commercial Service Tools

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Tool name	Description
<p data-bbox="162 415 272 441">Power tool</p>  <p data-bbox="852 630 922 646">PBIC0190E</p>	<p data-bbox="1015 415 1263 441">Loosening nuts and bolts</p>

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FUEL SYSTEM

< ON-VEHICLE MAINTENANCE >

ON-VEHICLE MAINTENANCE

FUEL SYSTEM

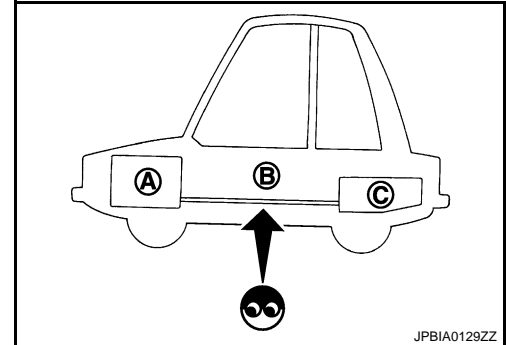
Inspection

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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.

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



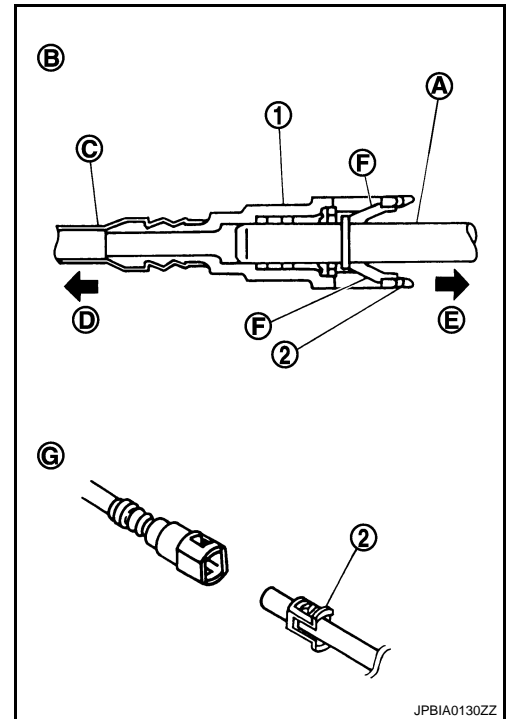
Quick Connector

INFOID:000000000956367

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.

- 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



FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

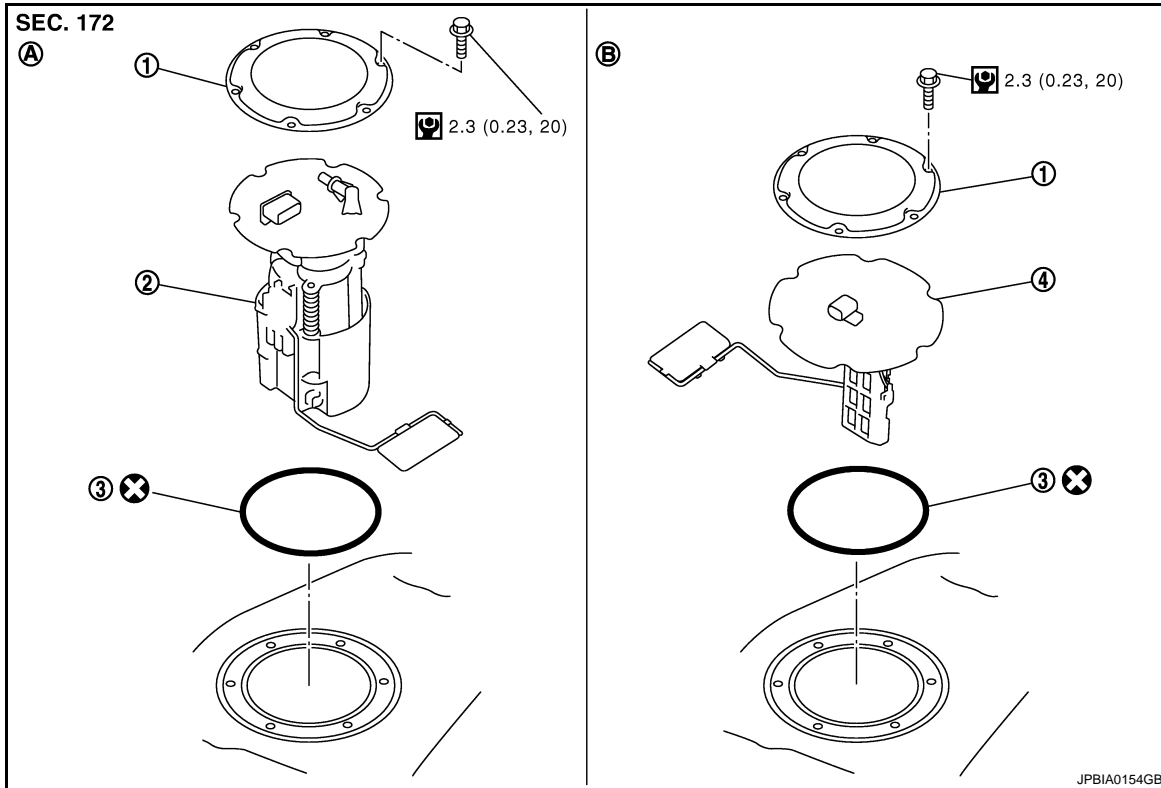
< ON-VEHICLE REPAIR >

ON-VEHICLE REPAIR

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

Exploded View

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- | | | |
|-------------------------------|--|-----------|
| 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 symbol marks in the figure.

Removal and Installation

INFOID:000000000956369

WARNING:

Read "General Precautions" when working on the fuel system. Refer to [GI-26, "General Precautions"](#).

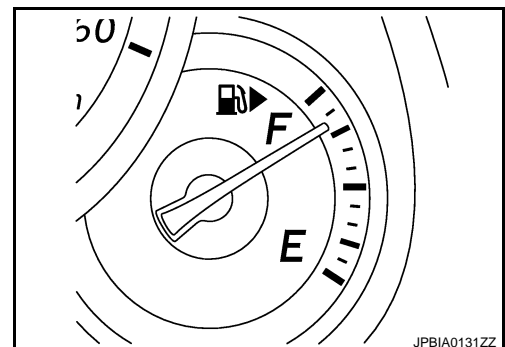
REMOVAL

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:

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 a case that fuel pump does not operate, perform the following procedure.



FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< ON-VEHICLE REPAIR >

- 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-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-543, "Inspection"](#).
 3. Open fuel filler lid.
 4. Open filler cap and release the pressure inside fuel tank.
 5. Remove rear seat cushion. Refer to [SE-104, "Exploded View"](#).
 6. Peel off floor carpet, then remove inspection hole cover (1) units by turning clips (2) clockwise by 90 degrees.

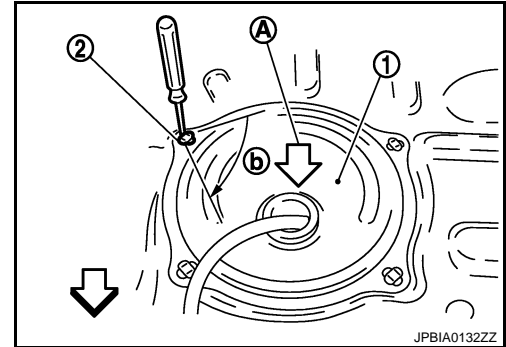
Right side : Main fuel level sensor unit, fuel filter and fuel pump assembly

Left side : Sub fuel level sensor unit

A : Direction mark

b : 90°

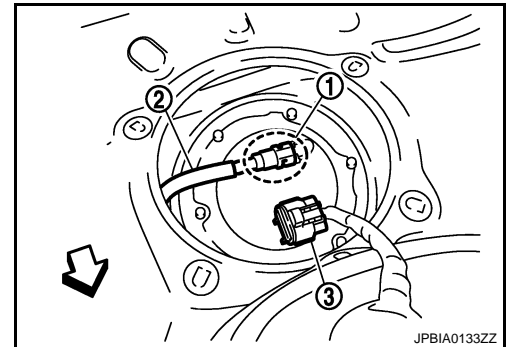
⇐ : Vehicle front



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

1 : Quick connector

⇐ : Vehicle front

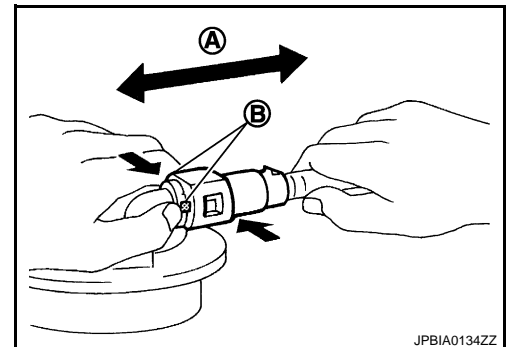


Disconnect quick connector as follows:

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

A : Pull

B : Push in tabs



CAUTION:

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< ON-VEHICLE REPAIR >

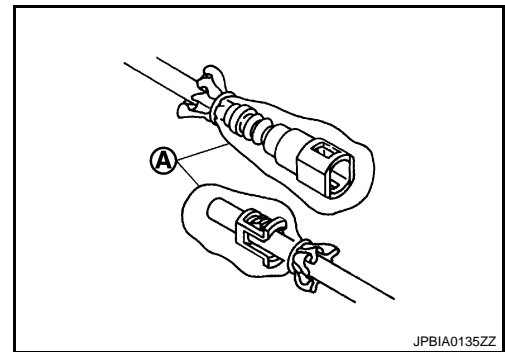
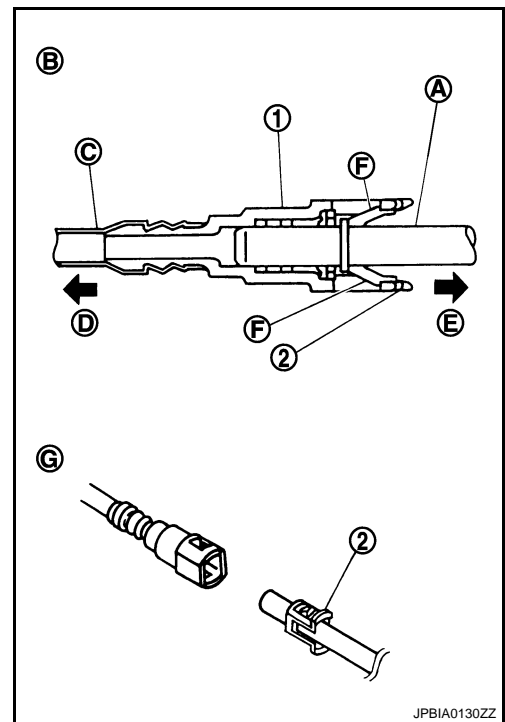
- Quick connector (1) can be disconnected when the tabs (F) are completely depressed. Do not twist it more than necessary.

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

- Do not 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.
- Do not bend or twist resin tube during installation and disconnection.
- Do not 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: Green

- 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:

- Do not 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:

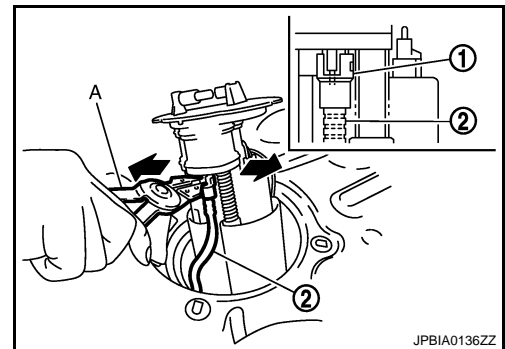
- Remove retainer.
- Raise main fuel level sensor unit, fuel filter and fuel pump assembly, and using snap ring pliers (A), remove fuel hose connector (1).

2 : Fuel hose

CAUTION:

Be careful not to damage fuel hose connector by expanding them excessively.

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



INSTALLATION

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

Fuel hose

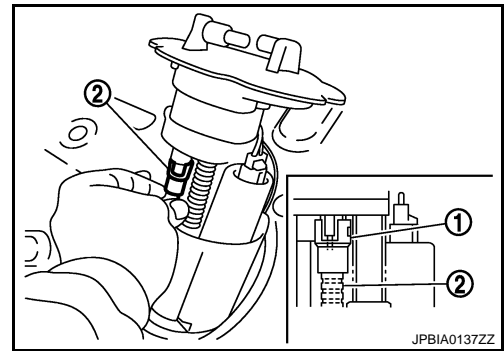
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FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< ON-VEHICLE REPAIR >

- When installing fuel hose connector (1) insert them fully until a click sound of full stopper engagement is heard.

2 : Fuel hose



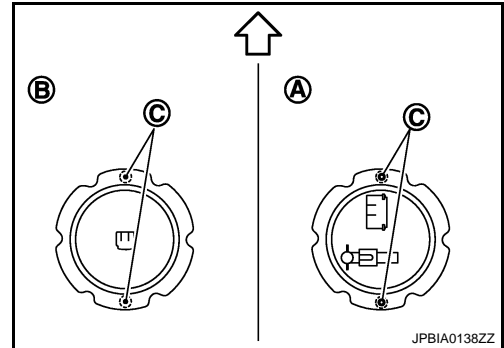
Main and Sub Fuel Level Sensor Unit

- 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

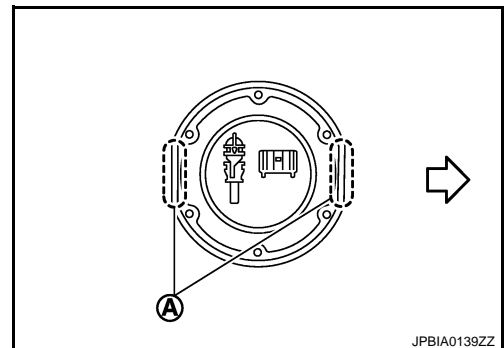
↔ : Vehicle front



- Install retainer so that its notch becomes parallel with the notch on fuel tank.
- Tighten retainer mounting bolts evenly.

A : Align notches

↔ : Vehicle front

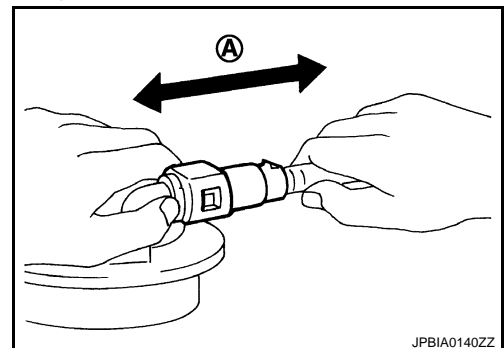


Quick Connector

- 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.

A : Pull



Inspection

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INSPECTION AFTER INSTALLATION

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< ON-VEHICLE REPAIR >

Use the following procedure to check for fuel leaks.

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 make sure there are no fuel leaks at the fuel system connections.

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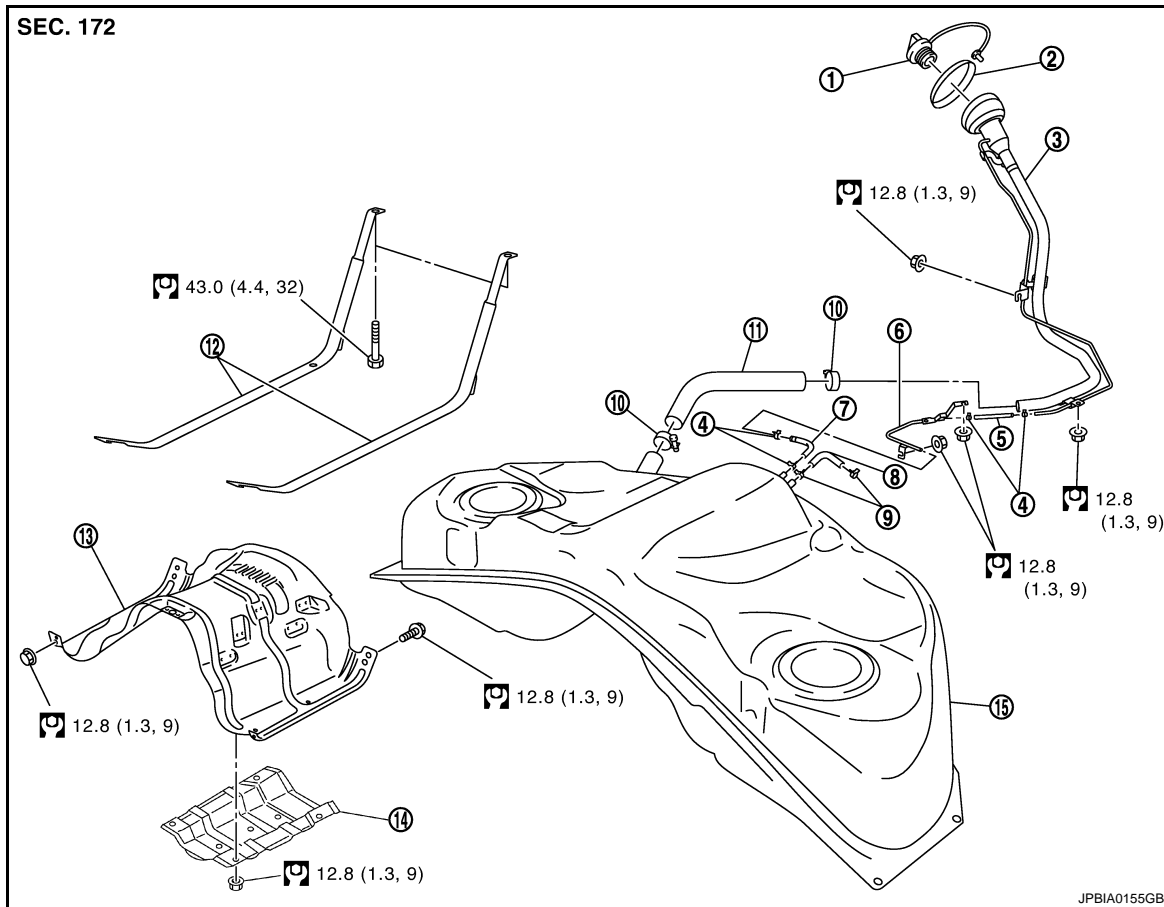
FUEL TANK

< ON-VEHICLE REPAIR >

FUEL TANK

Exploded View

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|-------------------------|----------------------|-----------------------------|
| 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 symbol marks in the figure.

Removal and Installation

INFOID:000000000956372

WARNING:

Be sure to read "General Precautions" when working on the fuel system. Refer to [GI-26, "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 [DLN-86, "Exploded View"](#) (M/T 2WD models) or [DLN-93, "Exploded View"](#) (A/T 2WD models) or [DLN-101, "Exploded View"](#) (A/T AWD models).
 4. Remove parking rear brake cables. Refer to [PB-9, "Exploded View"](#).
 5. Remove rear suspension assembly. Refer to [RSU-17, "Exploded View"](#).

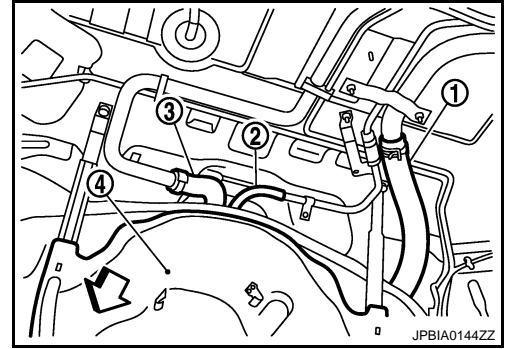
FUEL TANK

< ON-VEHICLE REPAIR >

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

4 : Fuel tank protector

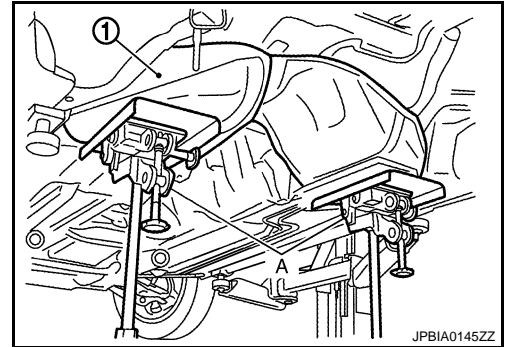
↔ : Vehicle front



- Support the lower part of fuel tank (1) with transmission jack (A).

CAUTION:

Support the position that fuel tank mounting bands do not engage.



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

CAUTION:

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

- Remove fuel filler tube, as necessary.

INSTALLATION

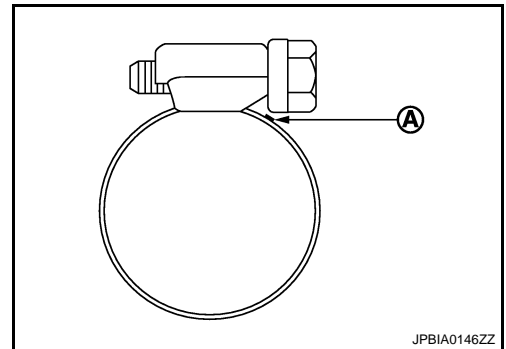
Note the following, and install in the reverse order of removal.

- 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 until the mark is on the bolt head flange "A".



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

Inspection

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INSPECTION AFTER INSTALLATION

Use the following procedure to check for fuel leaks.

FUEL TANK

< ON-VEHICLE REPAIR >

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 make sure there are no fuel leaks at the fuel system tube and hose connections.
- After removing/installing rear suspension assembly, make sure to adjust wheel alignment and then, adjust neutral position of steering angle sensor. Refer to [RSU-6, "Wheel Alignment Inspection"](#) and [STC-27, "4WAS FRONT ACTUATOR NEUTRAL POSITION ADJUSTMENT : Description"](#).

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

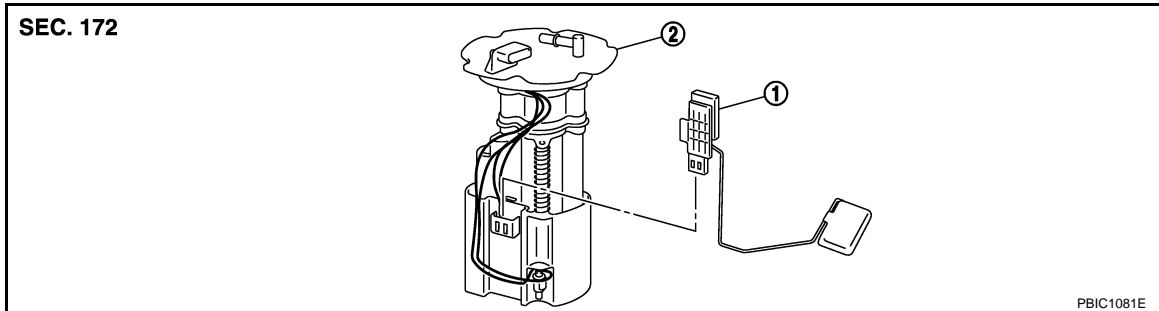
< DISASSEMBLY AND ASSEMBLY >

DISASSEMBLY AND ASSEMBLY

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

Exploded View

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1. Fuel level sensor unit

2. Fuel filter and fuel pump assembly

Disassembly

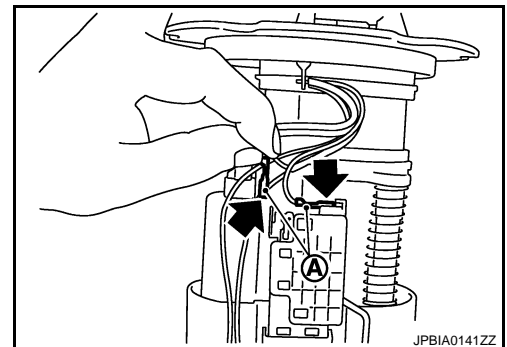
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CAUTION:

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

Remove fuel level sensor unit as follows:

1. Disconnect harness connector (A).
 - Hold connector by fingers and pull it out, because there is no stopper release tab.



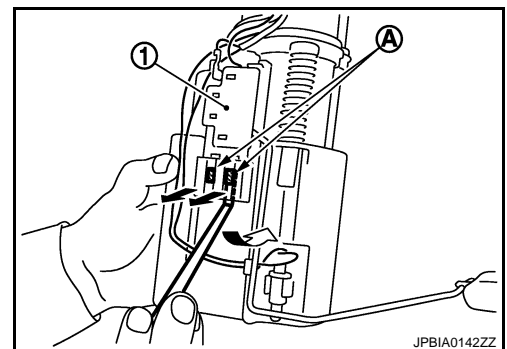
2. Using suitable tool, pull up tabs points as shown in the figure (two points) to release the lock.

1 : Fuel level sensor unit

A : Pull up tabs

CAUTION:

Be careful not to damage it.



FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

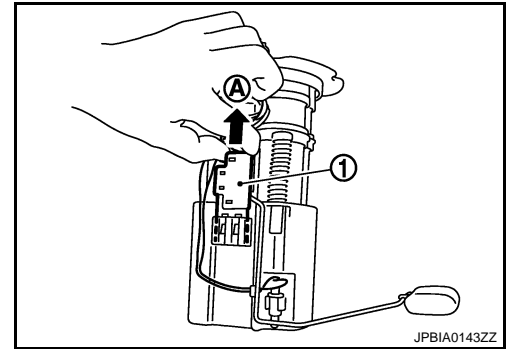
< DISASSEMBLY AND ASSEMBLY >

3. After fixing tabs are disengaged, slide fuel level sensor unit (1) out in direction shown by the arrow.

A : Pull

CAUTION:

Do not disassemble fuel filter and fuel pump assembly.



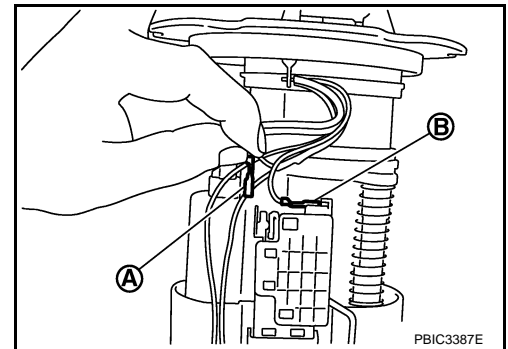
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Assembly

CAUTION:

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

1. Check for damage of fuel level sensor unit installation position on the side of fuel filter and fuel pump assembly.
2. Slide 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 black (A) and white (B) 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:000000000956377

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Standard and Limit

Fuel tank capacity	Approx. 76 ℓ (20 US gal, 16-5/8 Imp gal)
Fuel recommendation	Refer to GI-29

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