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# SECTION **FL**

## FUEL SYSTEM

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# HOW TO USE THIS MANUAL

## APPLICATION NOTICE

### How to Check Vehicle Type

INFOID:000000008279559



Check the model variation code of the vehicle to confirm the service information in FL section. Refer to [GI-23](#), "[Model Variation](#)".

Destination	12th digit of model variation code	Service information
Except for Mexico	Except for "J"	Type 1
Mexico	"J"	Type 2

A  
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# PRECAUTION

## PRECAUTIONS

### General Precautions

INFOID:000000008279560

**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-36, "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-461, "Inspection"](#).
  - Disconnect the battery cable from the negative terminal.
- Always replace O-ring and clamps with new ones.
- Never bend or twist tubes when they are being installed.
- Never tighten hose clamps excessively to avoid damaging hoses.
- After installing tubes, check that 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 “Evaporative Emission System” parts. Refer to [EC-79, "System Diagram"](#).

# PREPARATION

< PREPARATION >

[TYPE 1]

## PREPARATION

### PREPARATION

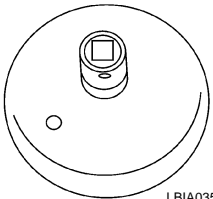
#### Special Service Tool

INFOID:000000008279561

A

FL

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	C
KV991J0090 (J-46214) Lock ring wrench  LBIA0353E	Removing and Installing lock ring	D
		E
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		G
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		L
		M
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## PERIODIC MAINTENANCE

### FUEL SYSTEM

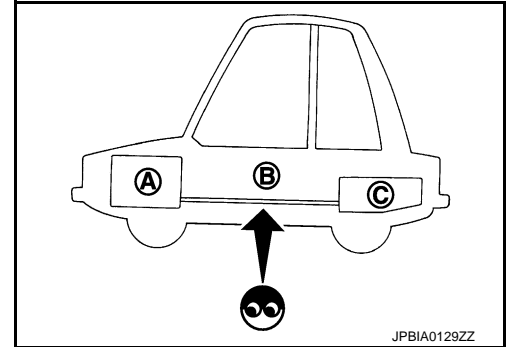
#### Inspection

INFOID:000000008279562

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.



JPBIA0129ZZ

#### Quick Connector

INFOID:000000008279563

#### **CAUTION:**

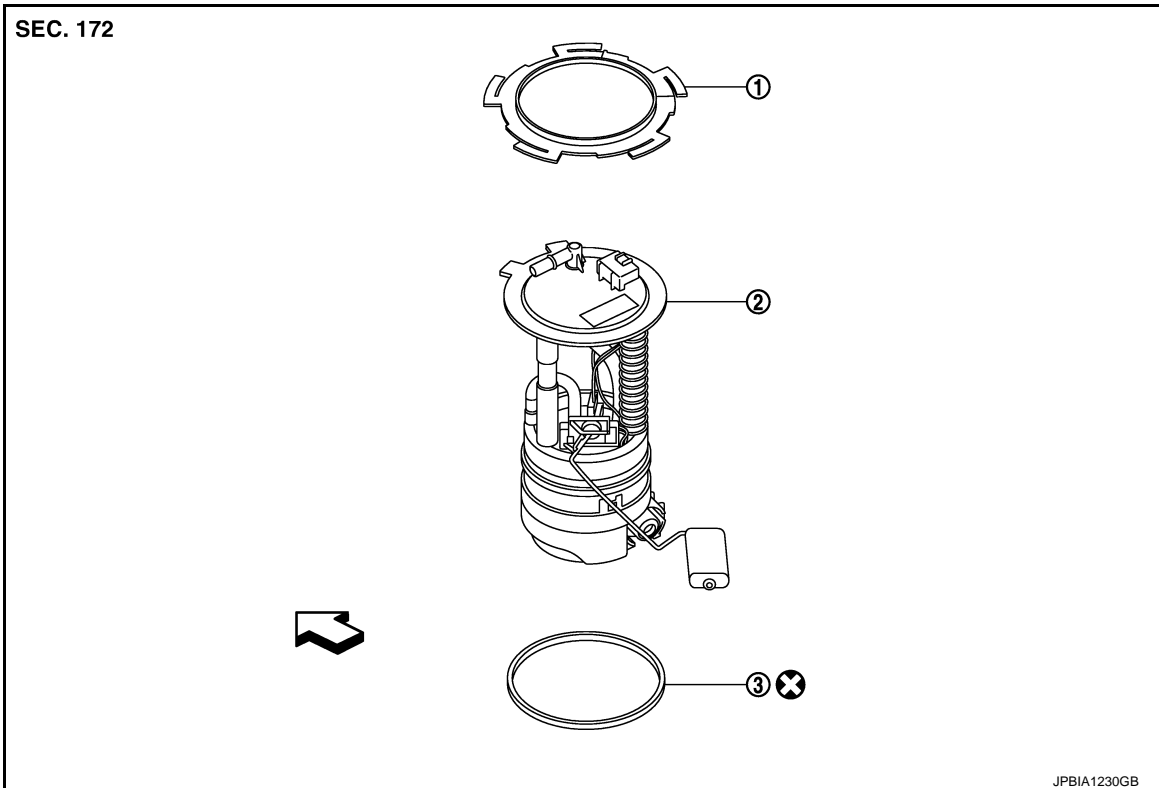
- After connecting fuel tube quick connectors, check that quick connectors are secure.
- Ensure that connector and resin tube never contact any adjacent parts.

REMOVAL AND INSTALLATION

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY  
2WD

2WD : Exploded View

INFOID:000000008279564



- 1. Lock ring
- 2. Fuel level sensor unit, fuel filter and fuel pump assembly
- 3. O-ring

↶ : Vehicle front

⊗ : Always replace after every disassembly.

**CAUTION:**

Never remove or disassemble parts unless instructed as shown in the figure.

2WD : Removal and Installation

INFOID:000000008279565

REMOVAL

**WARNING:**

Be sure to read "General Precautions" before working on the fuel system. Refer to [FL-4, "General Precautions"](#).

1. Check fuel level on a level ground. If the fuel level is 7/8 of the fuel tank (full or nearly full), draw appropriate amount of fuel from the fuel tank.

**Guideline** : Draw approximately 15 liters (3-1/4 Imp gal) from a full-tank condition.

- In the event of malfunction in fuel pump, insert a hose measuring 20 mm (0.79 in) in diameter into the filler opening to draw approximately 15 liters (3-1/4 Imp gal) fuel.
2. Release the fuel pressure from the fuel lines. Refer to [EC-461, "Inspection"](#).
  3. Open fuel filler lid.

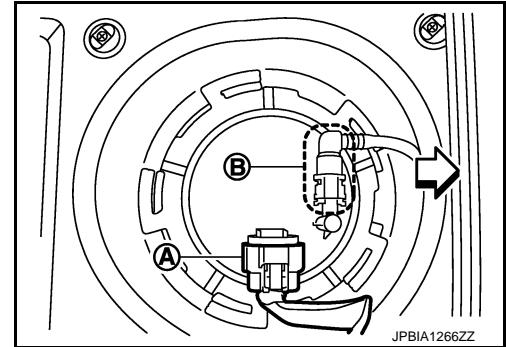
# FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

## < REMOVAL AND INSTALLATION >

[TYPE 1]

4. Open fuel filler cap and release the pressure inside the fuel tank.
5. Remove rear seat cushion. Refer to [SE-30, "Exploded View"](#).
6. Remove inspection hole cover.
  - Using a screwdriver, remove it by turning clips clockwise by 90 degrees.
7. Disconnect harness connector (A) and quick connector (B).

↔ : Vehicle front

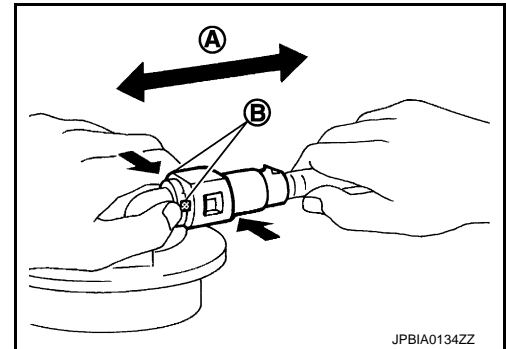


Disconnect quick connector as follows:

- Hold the sides of connector, press 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 connectors several times until they start to move. Then disconnect them by pulling.



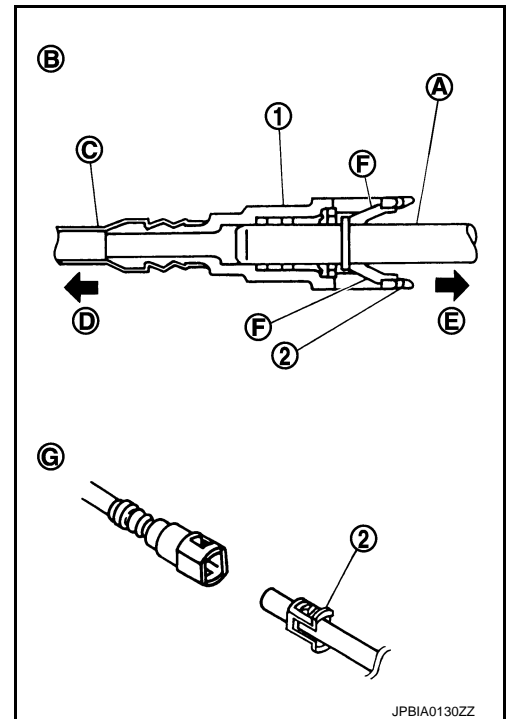
### CAUTION:

- **Quick connector (1) can be disconnected when the tabs (F) are depressed completely. 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 : White



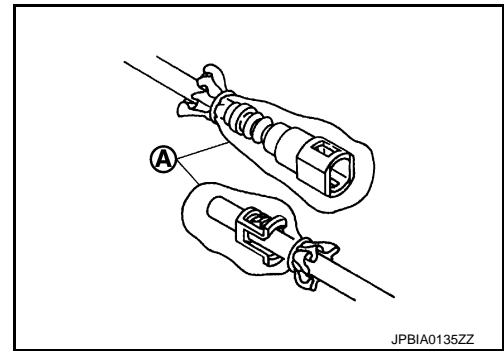


# FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< REMOVAL AND INSTALLATION >

[TYPE 1]

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

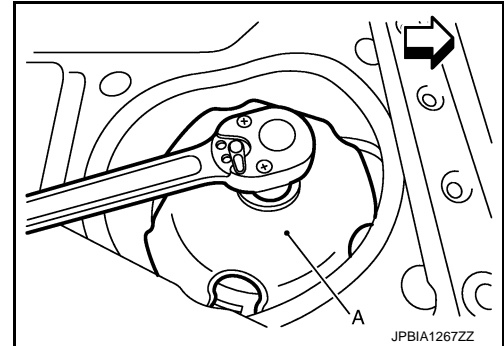


- Use lock ring wrench [SST: KV991J0090 (J-46214)] (A) to remove lock ring.

← : Vehicle front

**NOTE:**

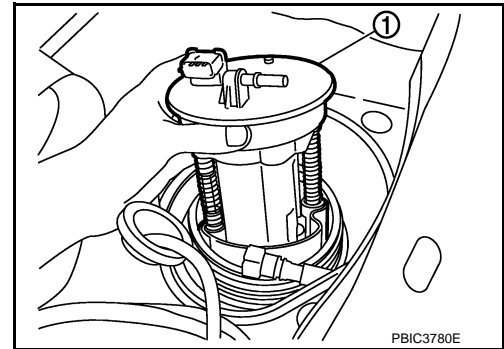
For reference when installing, put a matching mark on lock ring, fuel pump assembly and fuel tank.



- Raise fuel level sensor unit, fuel filter and fuel pump assembly (1), and disconnect fuel tube and harness connector.

**CAUTION:**

- Never bend float arm during removal.
- Never pollute the inside by residue fuel. Draw out avoiding inclination by supporting with a cloth.
- Never cause impacts such by dropping when handling components.



## INSTALLATION

**CAUTION:**

**Do not reuse O-ring.**

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

Fuel Level Sensor Unit, Fuel Filter and Fuel Pump Assembly

- Install O-ring to fuel tank without any twist.

**CAUTION:**

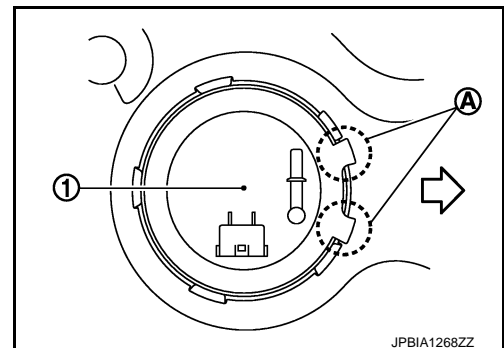
**Do not reuse O-ring.**

- Align (A) with vehicle front as shown in the figure. Install fuel level sensor unit (1) to fuel tank.

← : Vehicle front

- Connect quick connector of fuel feed tube as per following procedures.

- Check the connection for damage or any foreign materials.
- Align the connector with the tube, then insert the connector straight into the tube until a “click” sound is heard.
- After connecting, check that the connection is secured with following procedures.
  - Visually confirm that the two tabs are connected to the connector.



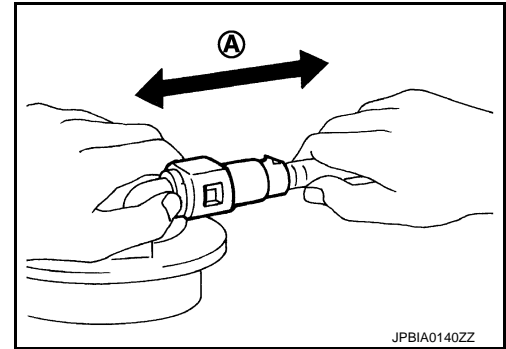
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# FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

## < REMOVAL AND INSTALLATION >

[TYPE 1]

- Pull (A) the tube and the connector to check that they are securely connected.



### Inspection Hole Cover

- Before installing inspection hole cover, check that the connecting part has no fuel leakage. Refer to [FL-10](#), "[2WD : Inspection](#)".
1. Install inspection hole covers with the front mark (arrow) facing front of vehicle.
  2. Lock clips by turning counterclockwise.

### 2WD : Inspection

INFOID:000000008279566

### INSPECTION AFTER INSTALLATION

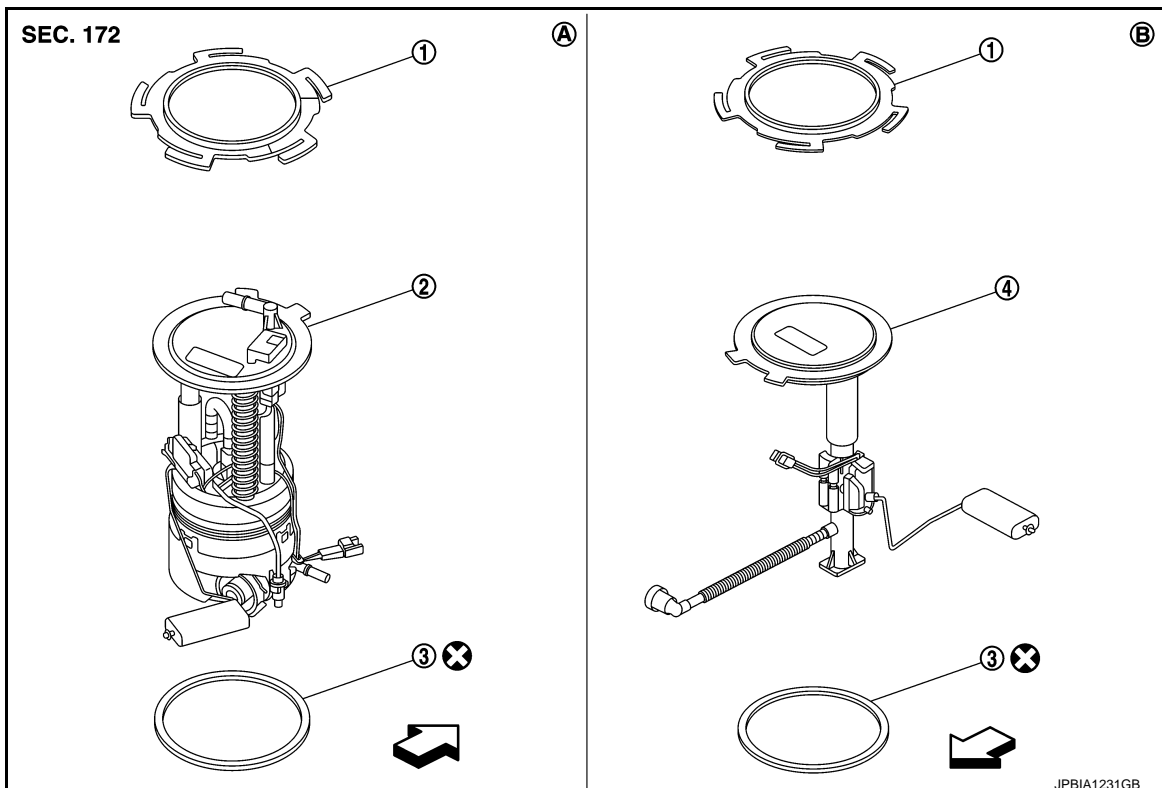
Use the following procedure to check for fuel leakage.

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

### AWD

### AWD : Exploded View

INFOID:000000008279567



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

< REMOVAL AND INSTALLATION >

[TYPE 1]

1. Lock ring
  2. Fuel level sensor unit, fuel filter and fuel pump assembly
  3. O-ring
4. Sub fuel level sensor assembly
- A. Right side      B. Left side
- ↔ : Vehicle front

⊗ : Always replace after every disassembly.

## CAUTION:

Never remove or disassemble parts unless instructed as shown in the figure.

AWD : Removal and Installation

INFOID:000000008279568

## REMOVAL

### WARNING:

Be sure to read "General Precautions" before working on the fuel system. Refer to [FL-4, "General Precautions"](#).

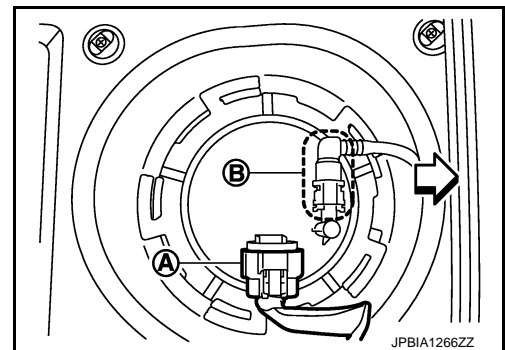
Fuel Level Sensor Unit, Fuel Filter And Fuel Pump Assembly

1. Check fuel level on a level ground. If the fuel level is 7/8 of the fuel tank (full or nearly full), draw appropriate amount of fuel from the fuel tank.

**Guideline** : Draw approximately 15 liters (3-1/4 Imp gal) from a full-tank condition.

- In the event of malfunction in fuel pump, insert a hose measuring 20 mm (0.79 in) in diameter into the filler opening to draw approximately 15 liters (3-1/4 Imp gal) fuel.
2. Release the fuel pressure from the fuel lines. Refer to [EC-461, "Inspection"](#).
  3. Open fuel filler lid.
  4. Open fuel filler cap and release the pressure inside the fuel tank.
  5. Remove rear seat cushion. Refer to [SE-30, "Exploded View"](#).
  6. Remove inspection hole cover.
    - Using a screwdriver, remove it by turning clips clockwise by 90 degrees.
  7. Disconnect harness connector (A) and quick connector (B).

↔ : Vehicle front

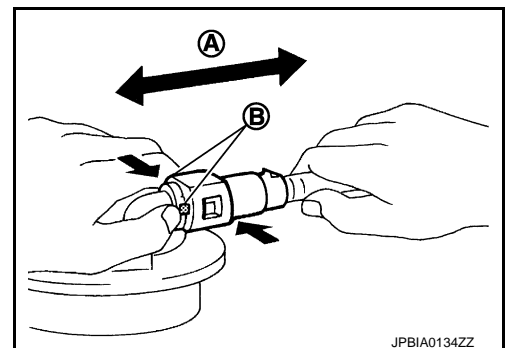


Disconnect quick connector as follows:

- Hold the sides of connector, press 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 connectors several times until they start to move. Then disconnect them by pulling.



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

< REMOVAL AND INSTALLATION >

[TYPE 1]

**CAUTION:**

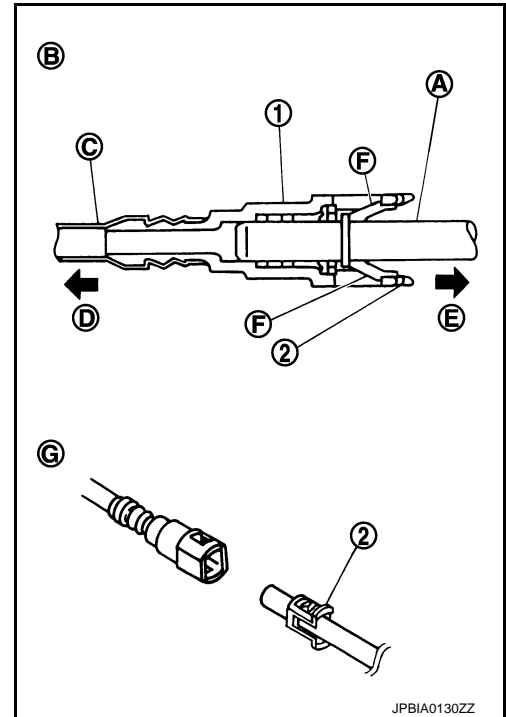
- Quick connector (1) can be disconnected when the tabs (F) are depressed completely. Never twist it more than necessary.

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

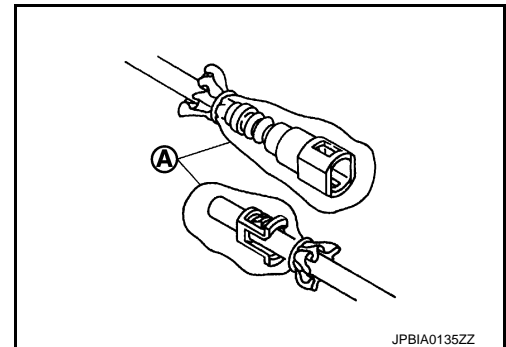
- Never use any tools to disconnected quick connector.
- Keep resin tube (C) away from heat. Be especially careful when welding near the resin tube.
- Prevent acid liquid such as battery electrolyte, etc. from getting on resin tube.
- Never bend or twist resin tube during installation and disconnection.
- 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 : White

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



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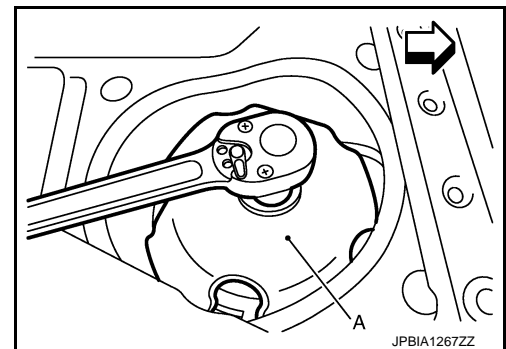
JPBIA0135ZZ

8. Use lock ring wrench [SST: KV991J0090 (J-46214)] (A) to remove lock ring.

**NOTE:**

For reference when installing, put a matching mark on lock ring, fuel pump assembly and fuel tank.

← : Vehicle front

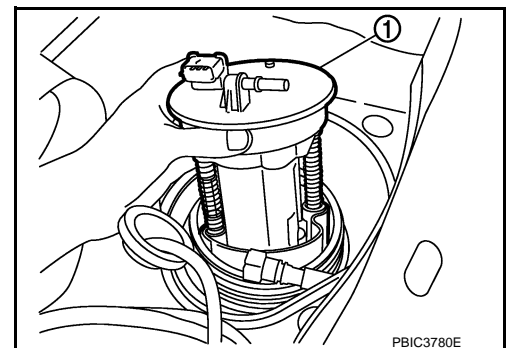


JPBIA1267ZZ

9. Raise fuel level sensor unit, fuel filter and fuel pump assembly (1), and disconnect fuel tube and harness connector.

**CAUTION:**

- Never bend float arm during removal.
- Never pollute the inside by residue fuel. Draw out avoiding inclination by supporting with a cloth.
- Never cause impacts such by dropping when handling components.



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

< REMOVAL AND INSTALLATION >

[TYPE 1]

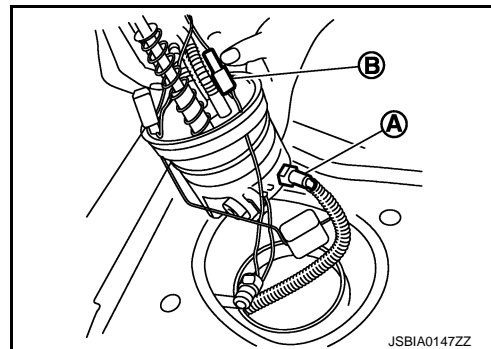
10. Separate fuel tube as per following steps to remove fuel level sensor unit, fuel filter and fuel pump assembly.

- Pinch quick connector (A) square-part with your fingers, and pull out the quick connector by hand.
- If quick connector and tube on sender unit are stuck, push several times until they move, and pull out.

**NOTE:**

When separating the fuel tube, tie a gasoline-resistance rope to the tip of the fuel tube and leave the rope on the fuel tank side to easily pull the fuel tube for installation.

- Disconnect harness connector (B).



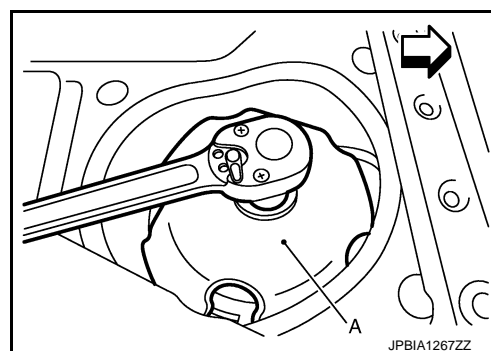
## Sub Fuel Level Sensor Assembly

1. Remove fuel level sensor unit, fuel filter and fuel pump assembly.
2. Use lock ring wrench [SST: KV991J0090 (J-46214)] (A) to remove lock ring.

**NOTE:**

For reference when installing, put a matching mark on lock ring, fuel pump assembly and fuel tank.

↔ : Vehicle front



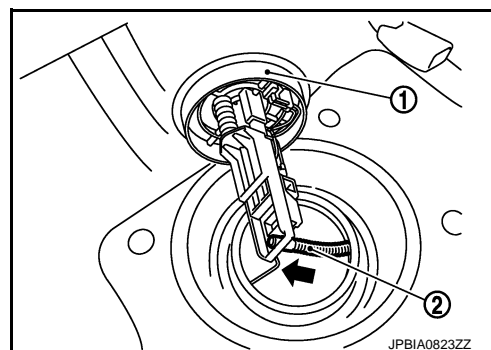
3. Remove sub fuel level sensor assembly (1).

**CAUTION:**

- **Never disassemble a fuel tube (2) from sub fuel sensor assembly.**
- **Never bend float arm during removal.**
- **Never pollute the inside by residue fuel. Draw out avoiding inclination by supporting with a cloth.**
- **Never cause impacts such by dropping when handling components.**

**NOTE:**

Tie a gasoline-resistance rope to a tip of the tube. Draw and leave the rope to the fuel tank side so that the rope can be the guide for installation.



## INSTALLATION

**CAUTION:**

**Do not reuse O-ring.**

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

### Fuel Level Sensor Unit, Fuel Filter and Fuel Pump Assembly and Sub Fuel Level Sensor Assembly

1. Install O-ring to fuel tank without any twist.

**CAUTION:**

**Do not reuse O-ring.**

2. Using the rope left on the fuel tank side at removal, run the fuel tube inside the fuel tank to install the sub fuel level sensor assembly to the fuel tank.

**CAUTION:**

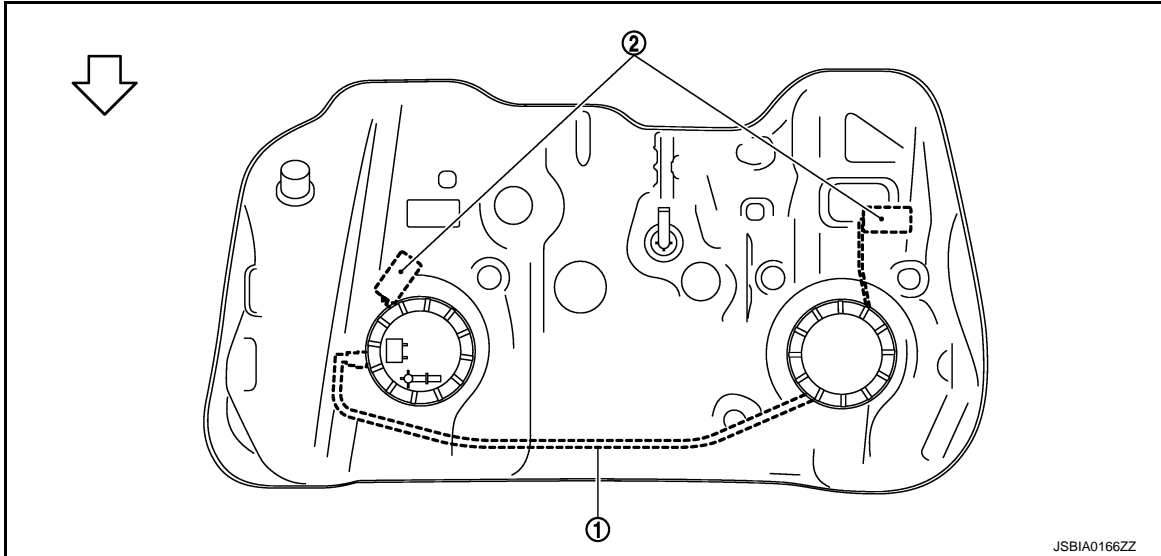
- **Never bend float arm during installation.**

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

< REMOVAL AND INSTALLATION >

[TYPE 1]

- To install, fuel tube (1) must run to the front (↔) of the vehicle to avoid the interference with the float arm (2), as shown in the figure.

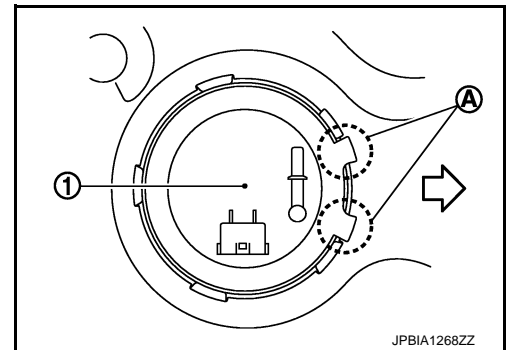


3. Align (A) with vehicle front as shown in the figure. Install fuel level sensor unit (1) to fuel tank.

↔ : Vehicle front

## NOTE:

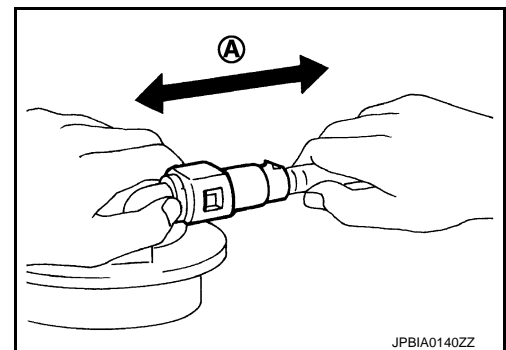
Figure shows fuel level sensor unit, fuel filter and fuel pump assembly side of fuel tank.



## Quick Connector

Connect quick connector of fuel feed tube as per following procedures.

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 secured with following procedures.
  - Visually confirm that the two tabs are connected to the connector.
  - Pull (A) the tube and the connector to check that they are securely connected.



## Inspection Hole Cover

- Before installing inspection hole cover, check that the connecting part has no fuel leakage. Refer to [FL-15, "AWD : Inspection"](#).
1. Install inspection hole covers with the front mark (arrow) facing front of vehicle.
  2. Lock clips by turning counterclockwise.

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

< REMOVAL AND INSTALLATION >

[TYPE 1]

AWD : Inspection

INFOID:000000008279569

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. Then let it idle and check that there is no fuel leakage at the fuel system connections.

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# FUEL TANK

< REMOVAL AND INSTALLATION >

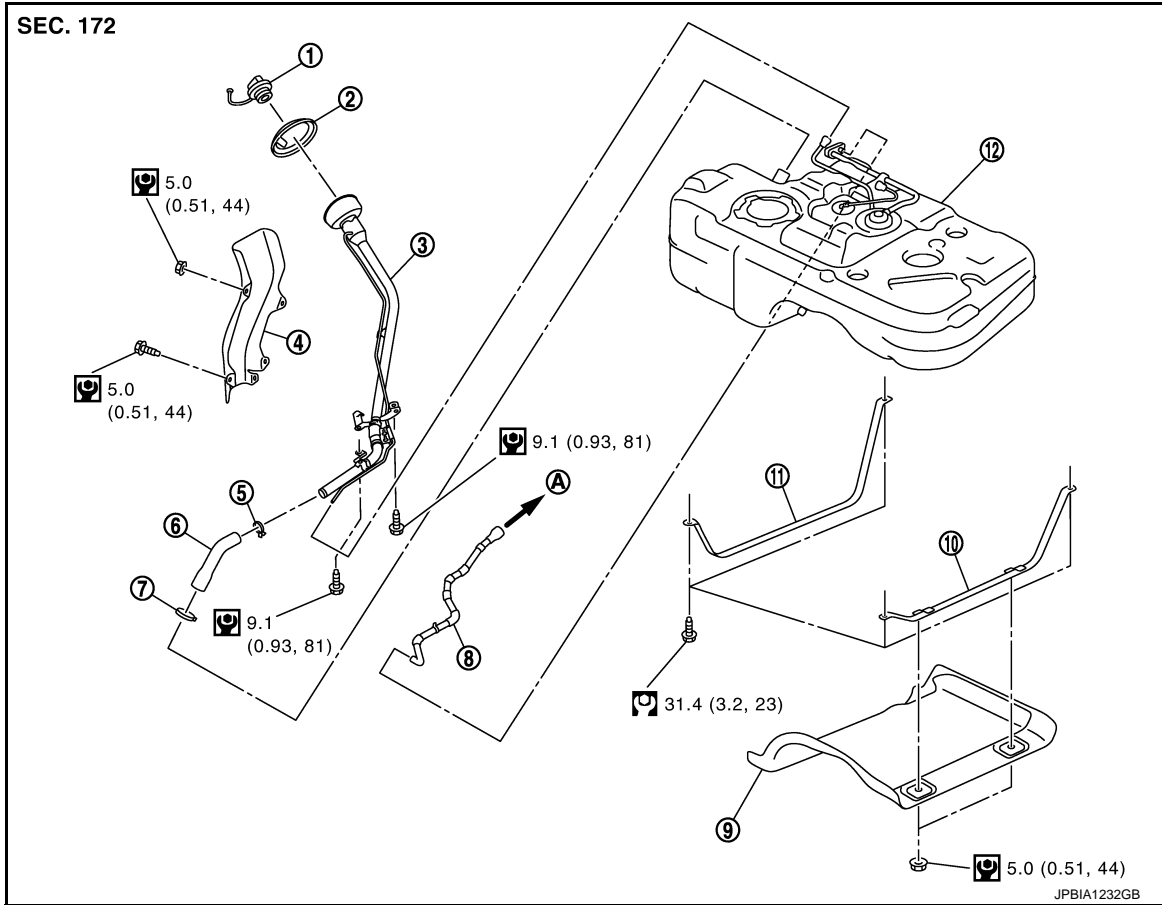
[TYPE 1]

## FUEL TANK

2WD

2WD : Exploded View

INFOID:000000008279570



- |                         |                         |                     |
|-------------------------|-------------------------|---------------------|
| 1. Fuel filler cap      | 2. Grommet              | 3. Fuel filler tube |
| 4. Cover                | 5. Clamp                | 6. Fuel filler hose |
| 7. Clamp                | 8. Vent hose            | 9. Protector        |
| 10. Fuel tank band (LH) | 11. Fuel tank band (RH) | 12. Fuel tank       |
- A. To EVAP canister

: N·m (kg·m, in·lb)

2WD : Removal and Installation

INFOID:000000008279571

### REMOVAL

#### WARNING:

Be sure to read "General Precautions" when working on the fuel system. Refer to [FL-4, "General Precautions"](#).

1. Perform the steps 2 to 7 of "REMOVAL" in " FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY". Refer to [FL-7, "2WD : Removal and Installation"](#).
2. Drain fuel from fuel tank if necessary. Refer to [FL-7, "2WD : Removal and Installation"](#).

#### CAUTION:

- Because fuel tank forwardly inclines and becomes unstable when installing/removing, fuel should be drained if found the remaining quantity.
- Situate vehicle on a flat and solid surface.

3. Remove muffler assembly. Refer to [EX-4, "Exploded View"](#).



# FUEL TANK

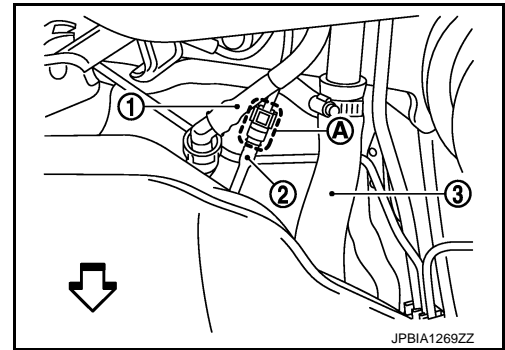
[TYPE 1]

## < REMOVAL AND INSTALLATION >

4. Remove protector from fuel tank.
5. Remove vent hose (1) at rear side of fuel tank.

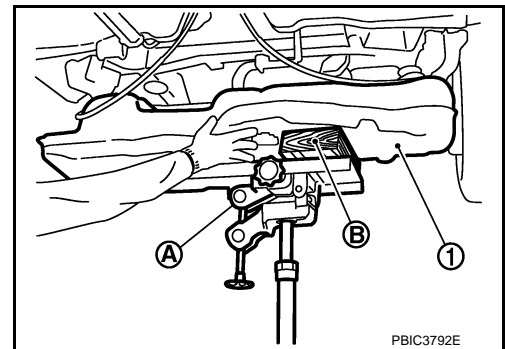
↶: Vehicle front

6. Disconnect EVAP tube (2) at rear side of fuel tank.
  - Instruction for quick connector (A) of EVAP tube. Refer to [FL-7](#), "2WD : Removal and Installation".
7. Remove fuel filler hose (3) at fuel filler tube side.



8. Remove rear suspension member. Refer to [RSU-20](#), "Exploded View".
9. Remove parking brake cable mounting bolts and separate parking brake cable from suspension arm. Refer to [PB-6](#), "Exploded View".

10. Support center of fuel tank (1) with transmission jack (A).  
**CAUTION:**  
Securely support the fuel tank with a piece of wood (B).



11. Remove fuel tank band (RH and LH).
12. Lower transmission jack carefully to remove fuel tank while holding it by hand.  
**CAUTION:**  
Fuel tank may be in an unstable condition because of the shape of fuel tank bottom. Never rely on jack too much. Be sure to hold tank securely.

## INSTALLATION

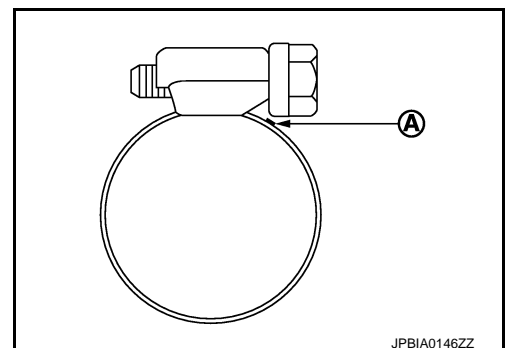
Note the following, and install in the reverse order of removal.

### Fuel Filler Hose

- Insert fuel filler hose to the length below.

**: 35 mm (1.38 in)**

- Be sure hose clamp is not placed on swelled area of fuel filler tube.
- Tighten the clamp hand with the top mark (A) until the mark is on the bolt head flange.



### EVAP Hose

1. Check connections for damage or foreign material.
2. Align the matching side connection part with the center of shaft, and insert connector straight until it clicks.

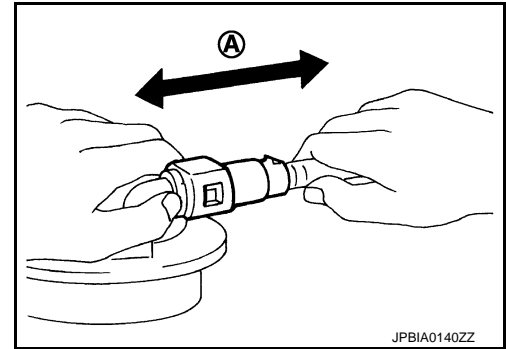
# FUEL TANK

## < REMOVAL AND INSTALLATION >

[TYPE 1]

- After connecting, pull out quick connector and centralized under-floor piping by hand. Check connections are secure.

A : Pull



## 2WD : Inspection

INFOID:000000008279572

### INSPECTION AFTER INSTALLATION

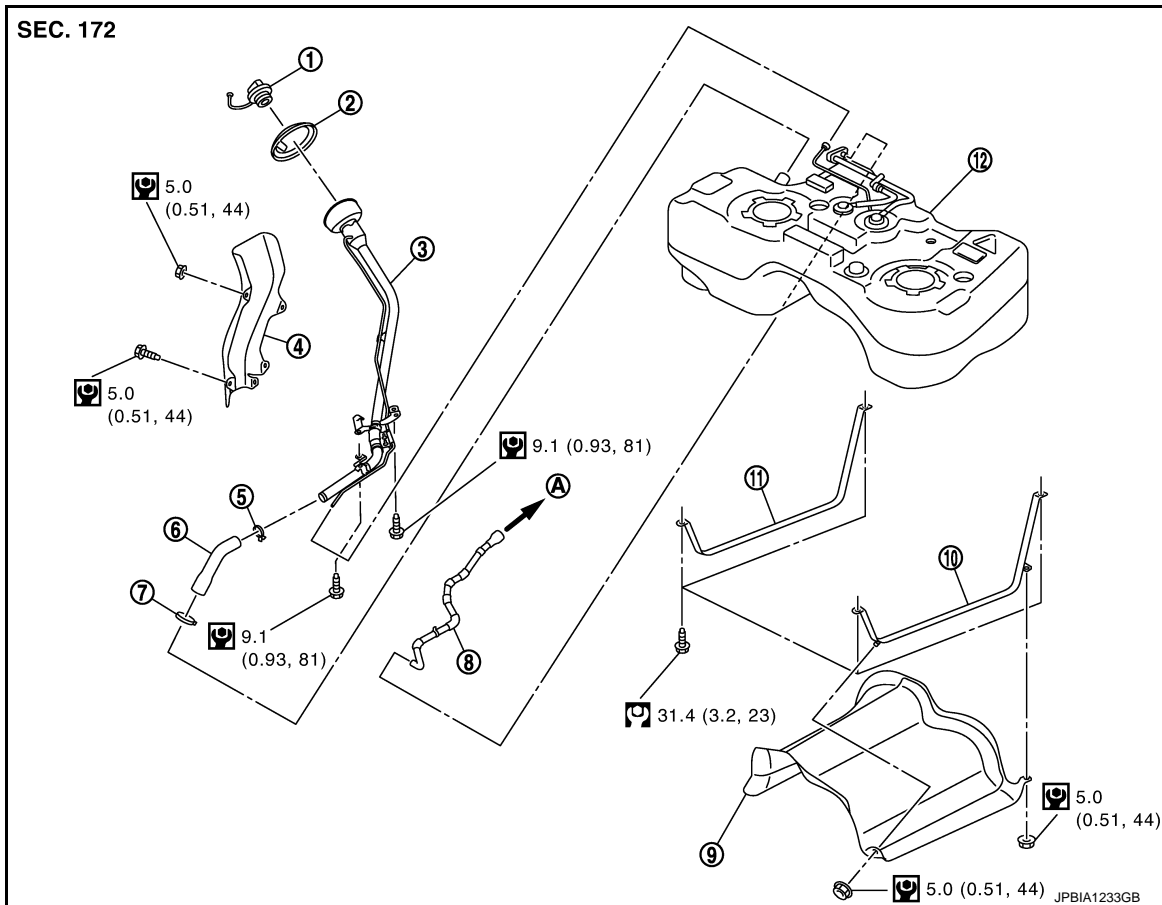
Use the following procedure to check for fuel leakage.

- Turn ignition switch "ON" (with engine stopped), and check connections for leakage by applying fuel pressure to fuel piping.
- Start engine and rev it up and check that there is no fuel leakage at the fuel system tube and hose connections.

## AWD

## AWD : Exploded View

INFOID:000000008279573




- |                    |              |                     |
|--------------------|--------------|---------------------|
| 1. Fuel filler cap | 2. Grommet   | 3. Fuel filler tube |
| 4. Cover           | 5. Clamp     | 6. Fuel filler hose |
| 7. Clamp           | 8. Vent hose | 9. Protector        |

# FUEL TANK

## < REMOVAL AND INSTALLATION >

[TYPE 1]

10. Fuel tank band (LH)                      11. Fuel tank band (RH)                      12. Fuel tank  
A. To EVAP canister

 : N·m (kg·m, in·lb)

### AWD : Removal and Installation

INFOID:000000008279574

#### REMOVAL

##### **WARNING:**

Be sure to read “General Precautions” when working on the fuel system. Refer to [FL-4, "General Precautions"](#).

1. Perform the steps 2 to 7 of “REMOVAL” in “ FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY”. Refer to [FL-11, "AWD : Removal and Installation"](#).
2. Drain fuel from fuel tank if necessary. Refer to [FL-11, "AWD : Removal and Installation"](#).

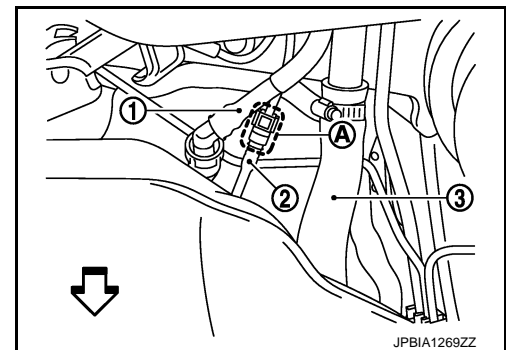
##### **CAUTION:**

- Because fuel tank forwardly inclines and becomes unstable when installing/removing, fuel should be drained if found the remaining quantity.
- Situate vehicle on a flat and solid surface.

3. Remove muffler assembly. Refer to [EX-4, "Exploded View"](#).
4. Remove propeller shaft. Refer to [DLN-85, "Exploded View"](#).
5. Remove protector from fuel tank.
6. Remove vent hose (1) at rear side of fuel tank.

 : Vehicle front

7. Disconnect EVAP tube (2) at rear side of fuel tank.
  - Instruction for quick connector (A) of EVAP tube. Refer to [FL-11, "AWD : Removal and Installation"](#).
8. Remove fuel filler hose (3) at fuel filler tube side.



9. Remove rear suspension member. Refer to [RSU-20, "Exploded View"](#).
10. Remove parking brake cable mounting bolts and separate parking brake cable from suspension arm. Refer to [PB-6, "Exploded View"](#).
11. Disconnect AWD solenoid harness connector and harness clip. Refer to [DLN-100, "Exploded View"](#).

# FUEL TANK

[TYPE 1]

## < REMOVAL AND INSTALLATION >

12. Loosen final drive mounting nut (A) at rear suspension member (1). Refer to [DLN-104, "Exploded View"](#).

⇐ : Vehicle front

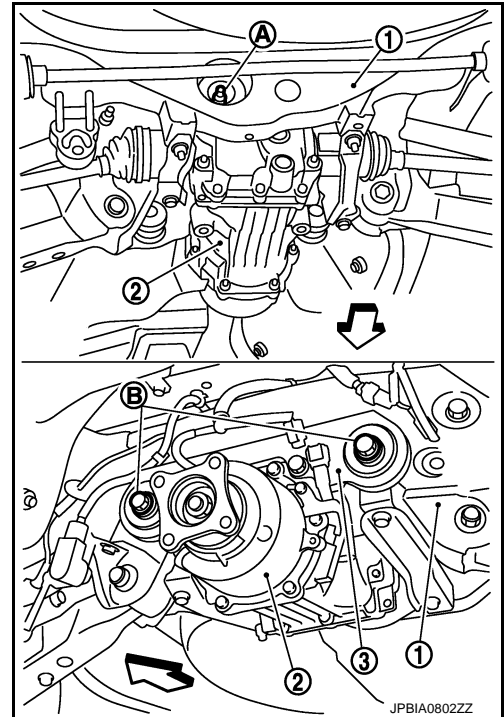
**CAUTION:**

**Never remove final drive mounting nut.**

13. Remove final drive mounting bolts (B) from final drive mounting bracket (3) to tilt final drive assembly (2). Refer to [DLN-104, "Exploded View"](#).

**NOTE:**

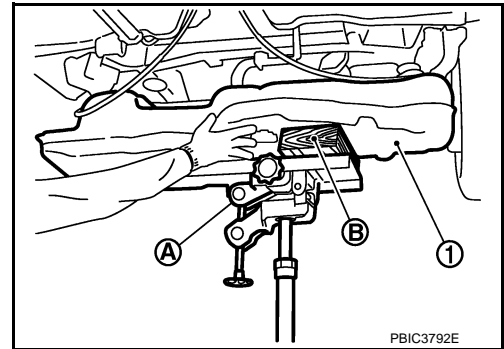
Final drive assembly does not have to be removed from the vehicle.



14. Support center of fuel tank (1) with transmission jack (A).

**CAUTION:**

**Securely support the fuel tank with a piece of wood (B).**



15. Remove fuel tank band (RH and LH).

16. Lower transmission jack carefully to remove fuel tank while holding it by hand.

**CAUTION:**

**Fuel tank may be in an unstable condition because of the shape of fuel tank bottom. Never rely on jack too much. Be sure to hold tank securely.**

## INSTALLATION

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

Fuel Filler Hose

- Insert fuel filler hose to the length below.

**: 35 mm (1.38 in)**

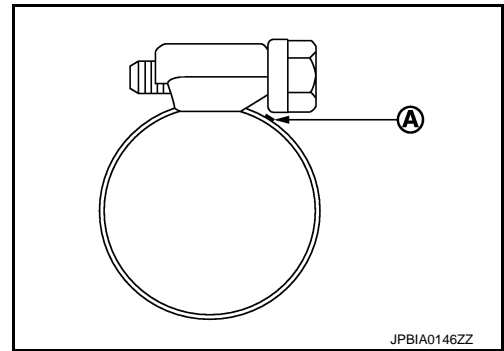
- Be sure hose clamp is not placed on swelled area of fuel filler tube.

# FUEL TANK

[TYPE 1]

## < REMOVAL AND INSTALLATION >

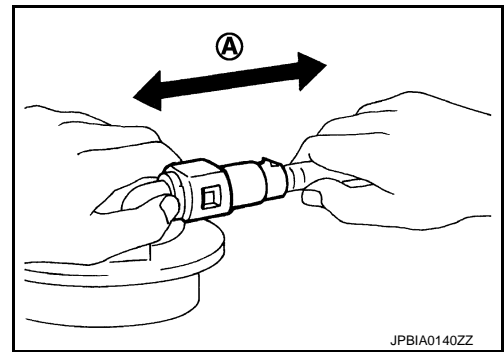
- Tighten the clamp hand with the top mark (A) until the mark is on the bolt head flange.



### EVAP Hose

1. Check connections for damage or foreign material.
2. Align the matching side connection part with the center of shaft, and insert connector straight until it clicks.
3. After connecting, pull out quick connector and centralized under-floor piping by hand. Check connections are secure.

A : Pull



### AWD : Inspection

INFOID:000000008279575

### 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 that there is no fuel leakage at the fuel system tube and hose connections.

# EVAP CANISTER

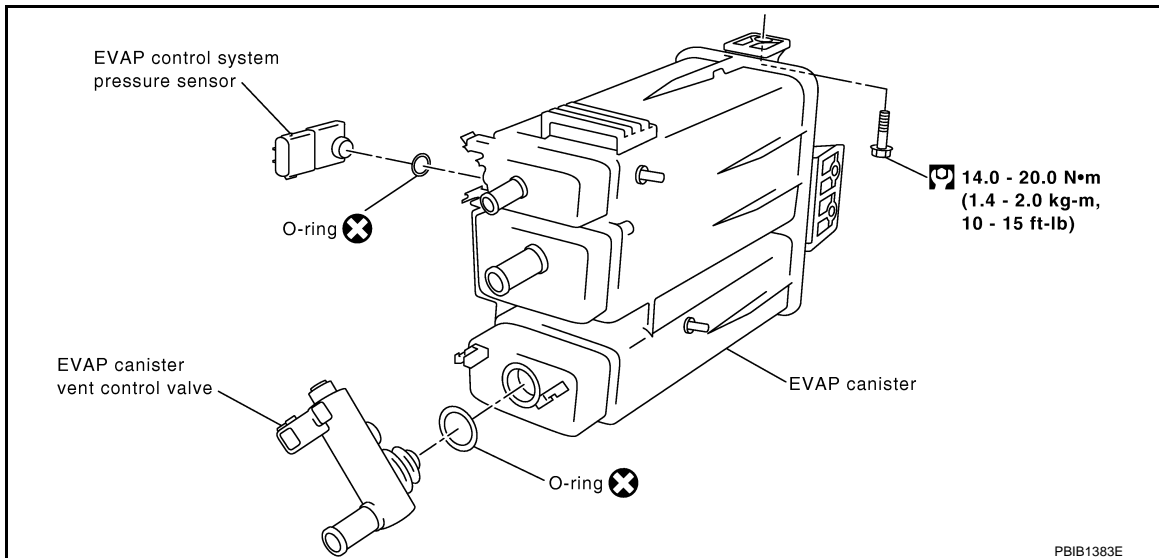
< REMOVAL AND INSTALLATION >

[TYPE 1]

## EVAP CANISTER

### Exploded View

INFOID:000000008279576



### Removal and Installation

INFOID:000000008279577

#### 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

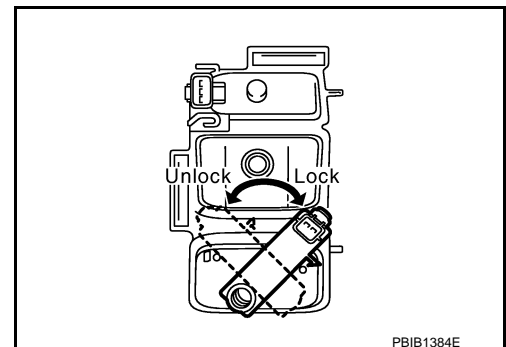
Install in the reverse order of removal.

#### NOTE:

Tighten EVAP canister fixing bolt to the specified torque.

#### DISASSEMBLY

1. Turn EVAP canister vent control valve counterclockwise.
2. Remove the EVAP canister vent control valve.



#### ASSEMBLY

#### CAUTION:

**Do not reuse O-rings.**

Assemble in the reverse order of disassembly.

#### CAUTION:

**Always replace O-ring with a new one.**

# EVAP CANISTER

< REMOVAL AND INSTALLATION >

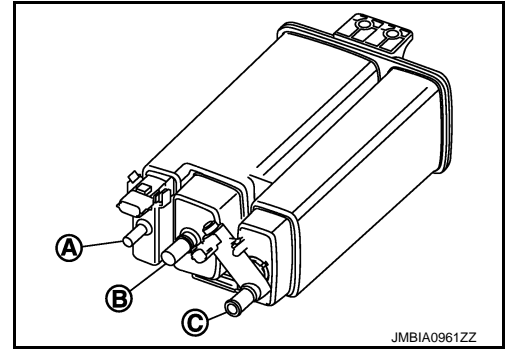
[TYPE 1]

INFOID:000000008279578

## Inspection

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.



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# SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

[TYPE 1]

## SERVICE DATA AND SPECIFICATIONS (SDS)

### SERVICE DATA AND SPECIFICATIONS (SDS)

#### Fuel Tank

INFOID:000000008279579

#### Standard and Limit

Fuel tank capacity	Approx. 60 ℓ (15-7/8 US gal, 13-1/4 Imp gal)
Fuel recommendation	Refer to <a href="#">GI-36</a>



# PRECAUTION

## PRECAUTIONS

### General Precautions

INFOID:000000008279580

A

FL

**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-36, "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-800, "Inspection"](#).
  - Disconnect the battery cable from the negative terminal.
- Always replace O-ring and clamps with new ones.
- Never bend or twist tubes when they are being installed.
- Never tighten hose clamps excessively to avoid damaging hoses.
- After installing tubes, check that 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 “Evaporative Emission System” parts. Refer to [EC-520, "System Diagram"](#).

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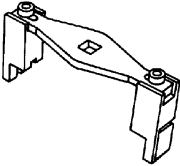
P

PREPARATION

PREPARATION

Commercial Service Tools

INFOID:000000008279581

Tool name	Description
Lock ring wrench  ZZA0122D	Removing and Installing lock ring

## PERIODIC MAINTENANCE

### FUEL SYSTEM

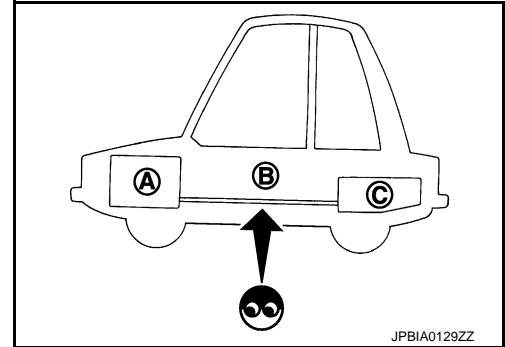
#### Inspection

INFOID:000000008279582

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.



INFOID:000000008279583

#### Quick Connector

##### **CAUTION:**

- After connecting fuel tube quick connectors, check that quick connectors are secure.
- Ensure that connector and resin tube never contact any adjacent parts.

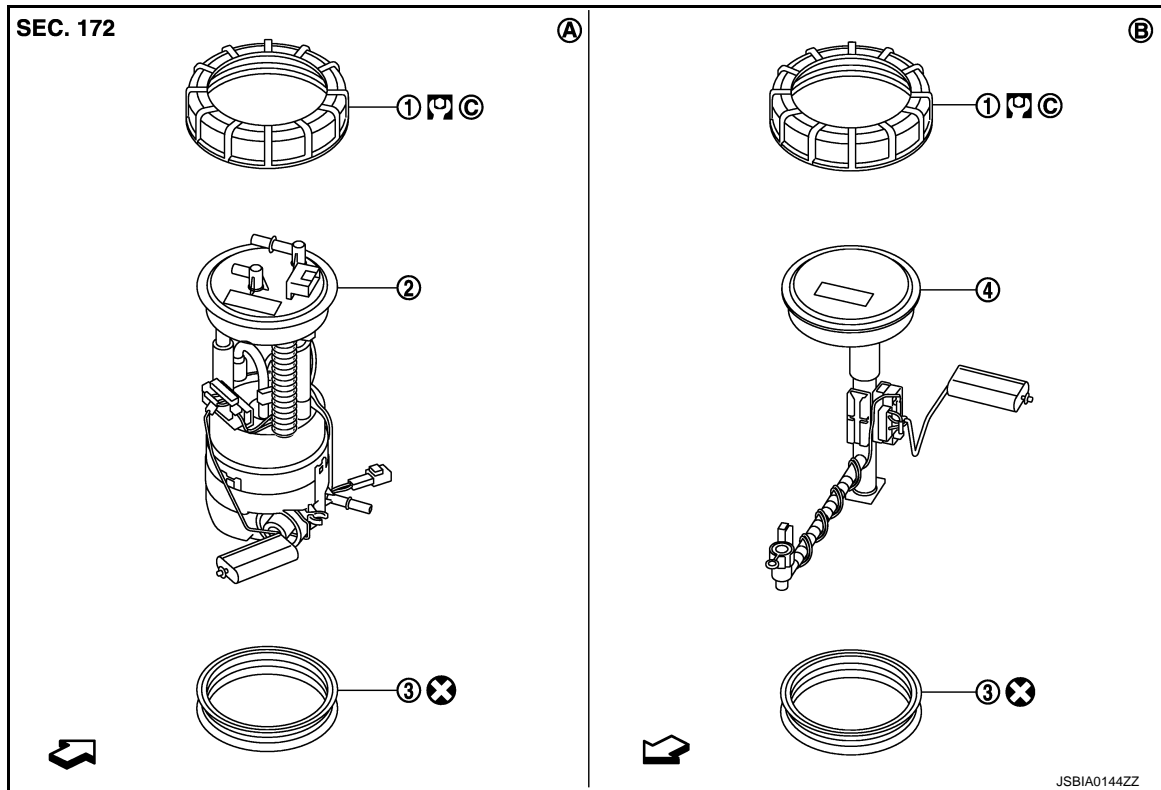
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# REMOVAL AND INSTALLATION

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

Exploded View

INFOID:000000008279584



- 1. Lock ring
- 2. Fuel level sensor unit, fuel filter and fuel pump assembly
- 3. O-ring
- 4. Sub fuel level sensor assembly
- A. Right side
- B. Left side
- C. Comply with the assembly procedure when tightening. Refer to [FL-28](#)

← : Vehicle front

⊗ : Always replace after every disassembly.

⊞ : N·m (kg·m, ft·lb)

**CAUTION:**

Never remove or disassemble parts unless instructed as shown in the figure.

### Removal and Installation

INFOID:000000008279585

#### REMOVAL

**WARNING:**

Be sure to read “General Precautions” before working on the fuel system. Refer to [FL-25, "General Precautions"](#).

Fuel Level Sensor Unit, Fuel Filter and Fuel Pump Assembly

1. Check fuel level on a level ground. If the fuel level is 7/8 of the fuel tank (full or nearly full), draw appropriate amount of fuel from the fuel tank.

**Guideline** : Draw approximately 15 liters (3-1/4 Imp gal) from a full-tank condition.

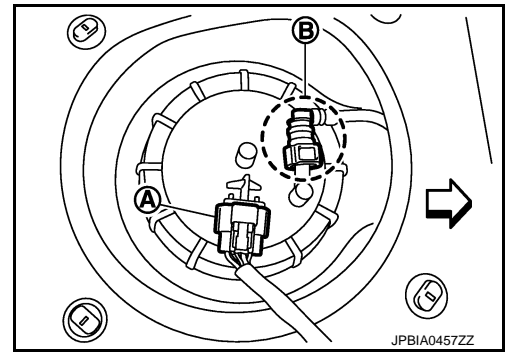
# FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

## < REMOVAL AND INSTALLATION >

[TYPE 2]

- In the event of malfunction in fuel pump, insert a hose measuring 20 mm (0.79 in) in diameter into the filler opening to draw approximately 15 liters (3-1/4 Imp gal) fuel.
2. Release the fuel pressure from the fuel lines. Refer to [EC-800, "Inspection"](#).
3. Open fuel filler lid.
4. Open fuel filler cap and release the pressure inside the fuel tank.
5. Remove rear seat cushion. Refer to [SE-30, "Exploded View"](#).
6. Remove inspection hole cover.
  - Using a screwdriver, remove it by turning clips clockwise by 90 degrees.
7. Disconnect harness connector (A) and quick connector (B).

↔ : Vehicle front

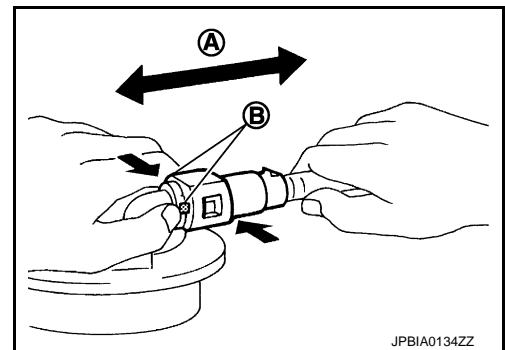


Disconnect quick connector as follows:

- Hold the sides of connector, press 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 connectors 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 >

[TYPE 2]

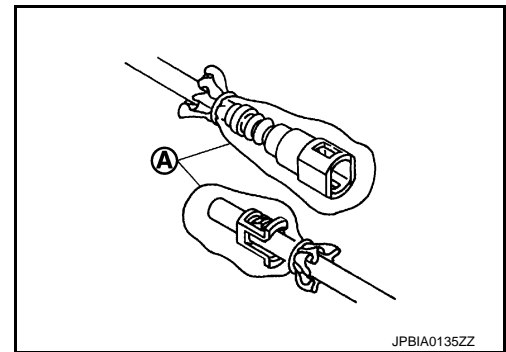
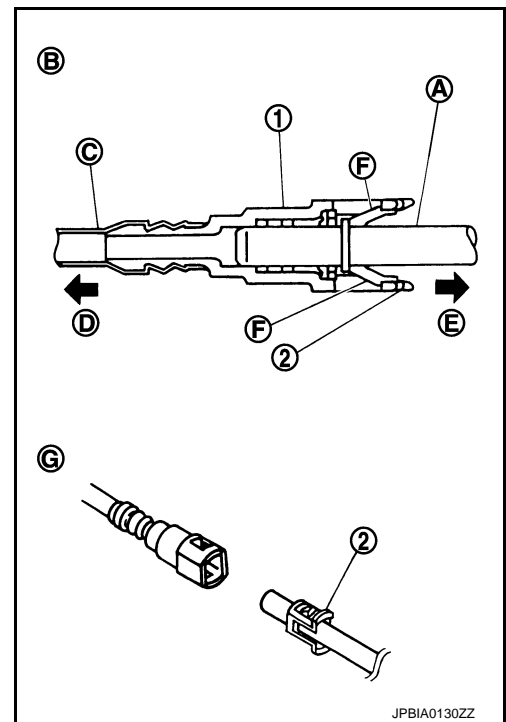
- Quick connector (1) can be disconnected when the tabs (F) are depressed completely. Never twist it more than necessary.

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

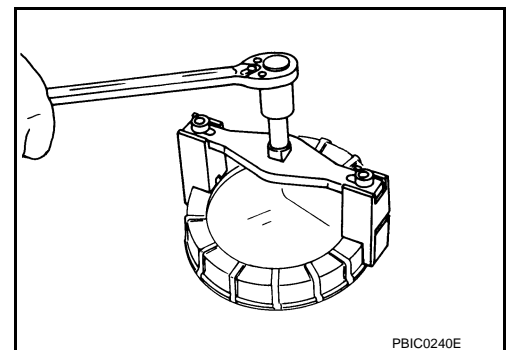
- Never use any tools to disconnected quick connector.
- Keep resin tube (C) away from heat. Be especially careful when welding near the resin tube.
- Prevent acid liquid such as battery electrolyte, etc. from getting on resin tube.
- Never bend or twist resin tube during installation and disconnection.
- 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 : White

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



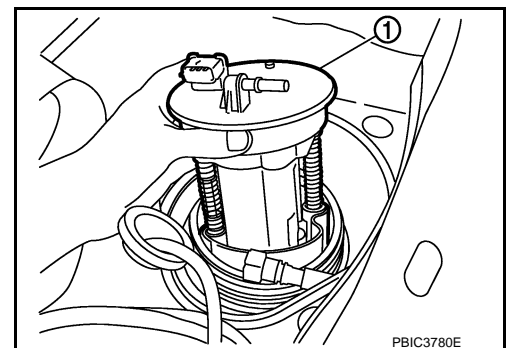
8. Use lock ring wrench (commercial service tool) to remove lock ring.



9. Raise fuel level sensor unit, fuel filter and fuel pump assembly (1), and disconnect fuel tube and harness connector.

**CAUTION:**

- Never bend float arm during removal.
- Never pollute the inside by residue fuel. Draw out avoiding inclination by supporting with a cloth.
- Never cause impacts such as by dropping when handling components.



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

< REMOVAL AND INSTALLATION >

[TYPE 2]

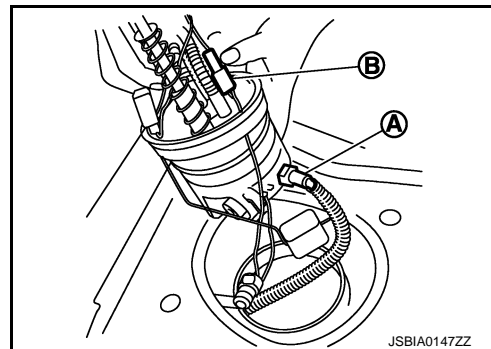
10. Separate fuel tube as per the following steps to remove fuel level sensor unit, fuel filter and fuel pump assembly.

- Pinch quick connector (A) square-part with your fingers, and pull out the quick connector by hand.
- If quick connector and tube on sender unit are stuck, push several times until they move, and pull out.

**NOTE:**

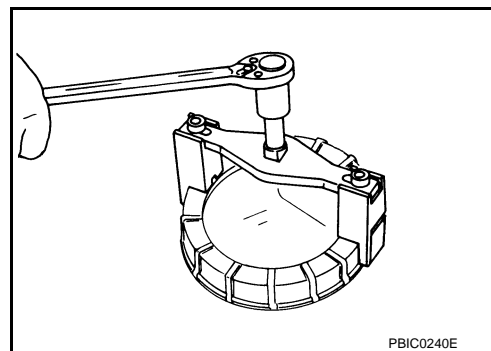
When separating the fuel tube, tie a gasoline-resistance rope to the tip of the fuel tube and leave the rope on the fuel tank side to easily pull the fuel tube for installation.

- Disconnect harness connector (B).



## Sub Fuel Level Sensor Assembly

1. Remove fuel level sensor unit, fuel filter and fuel pump assembly.
2. Use lock ring wrench (commercial service tool) to remove lock ring.



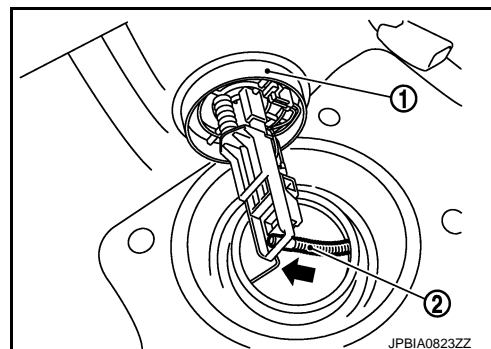
3. Remove sub fuel level sensor assembly (1).

**CAUTION:**

- Never disassemble a fuel tube (2) from sub fuel sensor assembly.
- Never bend float arm during removal.
- Never pollute the inside by residue fuel. Draw out avoiding inclination by supporting with a cloth.
- Never cause impacts such by dropping when handling components.

**NOTE:**

Tie a gasoline-resistance rope to a tip of the tube. Draw and leave the rope to the fuel tank side so that the rope can be the guide for installation.



## INSTALLATION

**CAUTION:**

**Do not reuse O-ring.**

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

### Sub Fuel Level Sensor Assembly

1. Install O-ring to fuel tank without any twist.

**CAUTION:**

**Do not reuse O-ring.**

2. Using the rope left on the fuel tank side at removal, run the fuel tube inside the fuel tank to install the sub fuel level sensor assembly to the fuel tank.

**CAUTION:**

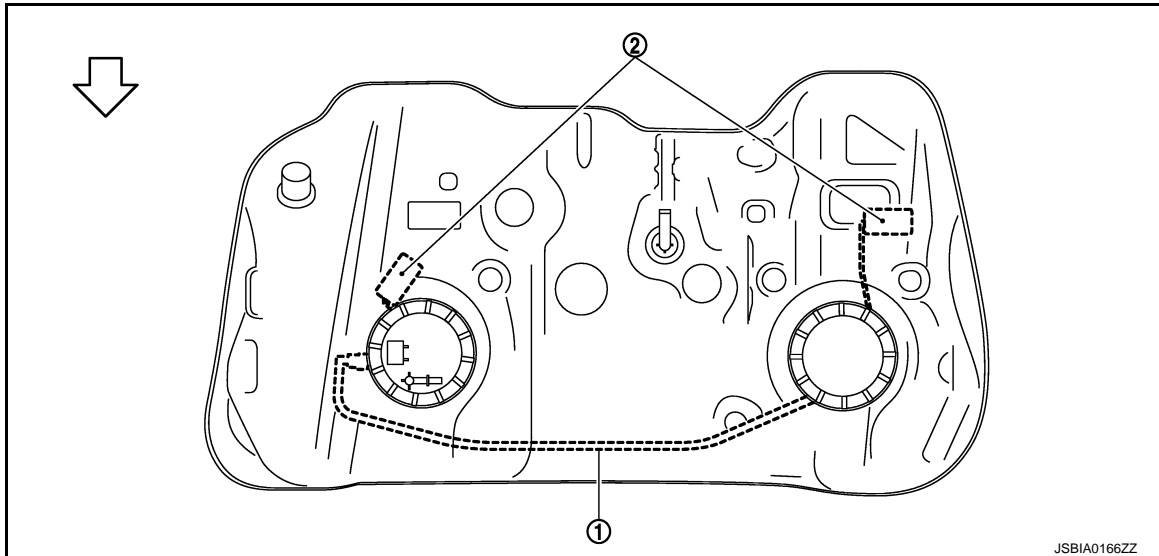
- Never bend float arm during installation.

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

< REMOVAL AND INSTALLATION >

[TYPE 2]

- To install, fuel tube (1) must run to the front (↔) of the vehicle to avoid the interference with the float arm (2), as shown in the figure.

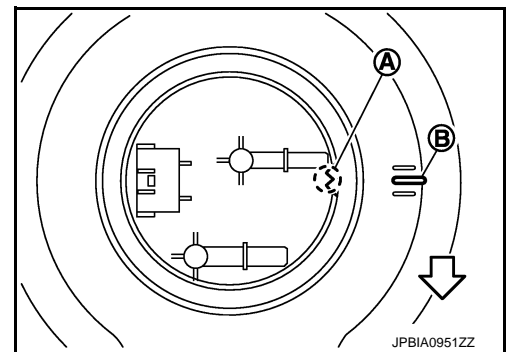


3. Install sub fuel level sensor assembly with its matching mark (A) aligned with fuel tank matching mark (B) as shown in the figure.

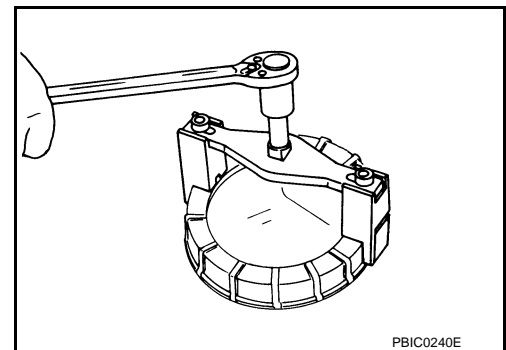
↔ : Vehicle front

**NOTE:**

- Figure shows fuel level sensor unit, fuel filter and fuel pump assembly side of fuel tank.
- For sub fuel level sensor assembly matching mark is located on the fuel tank of the vehicle front side.



4. Use lock ring wrench (commercial service tool) to remove lock ring as per the following steps.

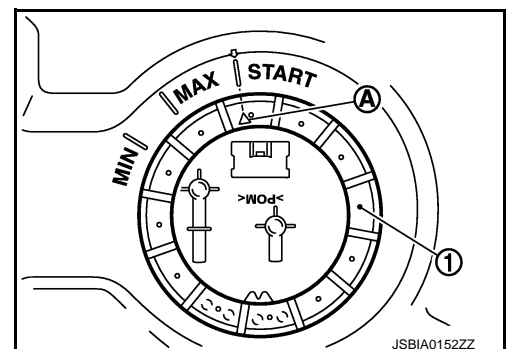


- a. Align the “△” mark located on the rim of the lock ring (1) with the “START” position of the fuel tank. Press the locking ring horizontally to prevent the lock ring from tilting.

**NOTE:**

- Figure shows fuel level sensor unit, fuel filter and fuel pump assembly side of fuel tank.
- For sub fuel level sensor assembly matching mark is located on the fuel tank of the vehicle front side.

- b. After aligning the “△” mark with “START” slightly turn the lock ring counterclockwise and realign the “△” mark with “START” to engage the lock ring with the fuel tank screw.





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

< REMOVAL AND INSTALLATION >

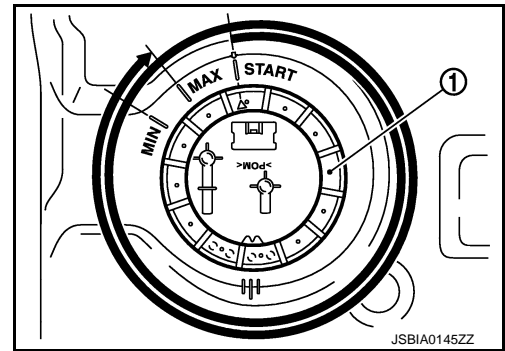
[TYPE 2]

- c. Tighten the lock ring (1) in the "START" position of the fuel tank.

**Tightening angle : 670 - 690°**

**NOTE:**

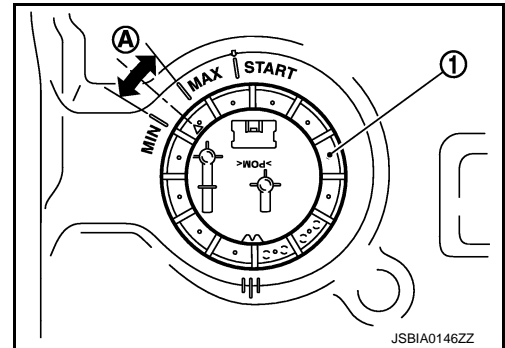
- Figure shows fuel level sensor unit, fuel filter and fuel pump assembly side of fuel tank.
- For sub fuel level sensor assembly matching mark is located on the fuel tank of the vehicle front side.



- d. Check that the "Δ" mark of the lock ring (1) is between MIN and MAX [i.e. within (A)].

**NOTE:**

- Figure shows fuel level sensor unit, fuel filter and fuel pump assembly side of fuel tank.
- For sub fuel level sensor assembly matching mark is located on the fuel tank of the vehicle front side.



## Fuel Level Sensor Unit, Fuel Filter and Fuel Pump Assembly

**CAUTION:**

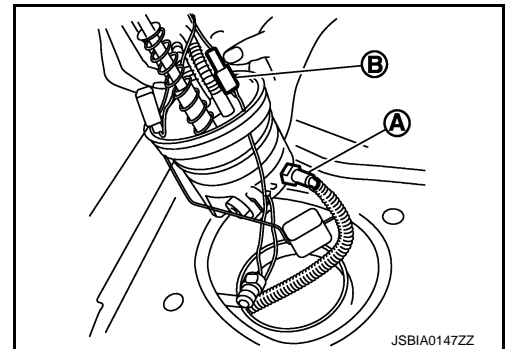
**Do not reuse O-ring.**

1. Temporarily install the O-ring to the fuel level sensor unit fuel filter and fuel pump assembly.

**CAUTION:**

**Do not reuse O-ring.**

2. Connect the fuel tube as per the following steps.
- Insert the quick connector (A) straight to the fuel level sensor unit fuel filter and fuel pump assembly.
  - Judge a good fit from connecting sound and tactile feedback.
  - Pull the fuel tube by hand to check a secure fit.
3. Connect harness connector (B).



4. Insert the fuel level sensor unit fuel filter and fuel pump assembly to the fuel tank, and then install the temporarily installed O-ring (Step 1) to the opening of the fuel tank.

**CAUTION:**

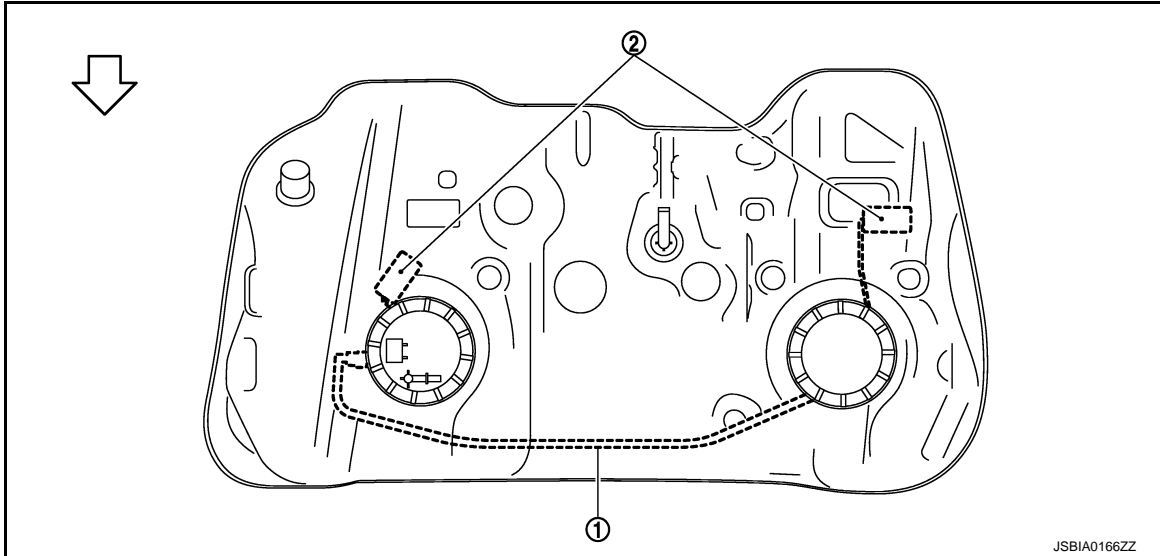
- **Never bend float arm during installation.**
- **Do not reuse O-ring.**

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

< REMOVAL AND INSTALLATION >

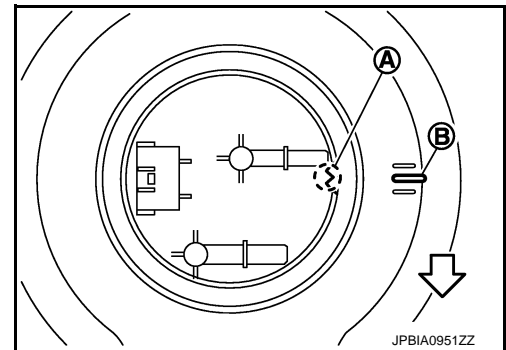
[TYPE 2]

- To install, fuel tube (1) must run to the front (↔) of the vehicle to avoid the interference with the float arm (2), as shown in the figure.

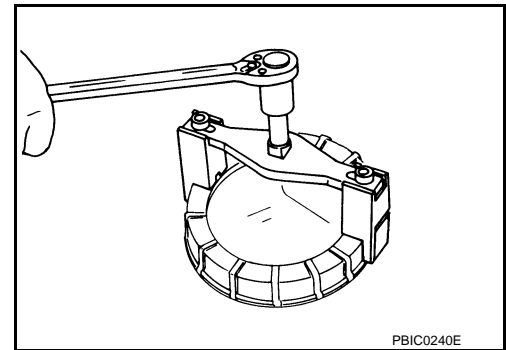


5. Install fuel level sensor unit fuel filter and fuel pump assembly with its matching mark (A) aligned with fuel tank matching mark (B) as shown in the figure.

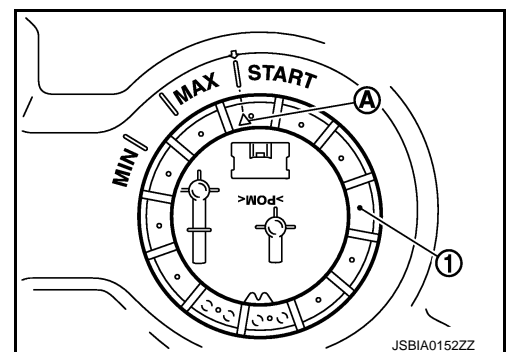
↔ : Vehicle front



6. Use lock ring wrench (commercial service tool) to remove lock ring as per the following steps.



- a. Align the “△” mark located on the rim of the lock ring (1) with the “START” position of the fuel tank. Press the locking ring horizontally to prevent the lock ring from tilting.
- b. After aligning the “△” mark with “START” slightly turn the lock ring counterclockwise and realign the “△” mark with “START” to engage the lock ring with the fuel tank screw.



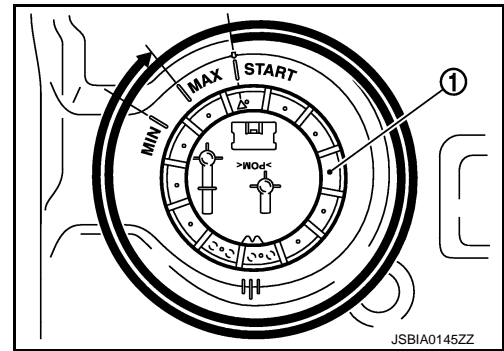
# FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< REMOVAL AND INSTALLATION >

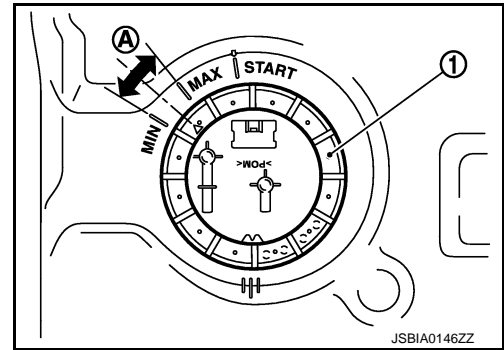
[TYPE 2]

- c. Tighten the lock ring (1) in the "START" position of the fuel tank.

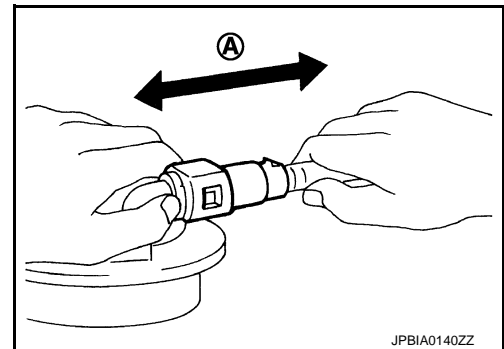
**Tightening angle : 670 - 690°**



- d. Check that the "△" mark of the lock ring (1) is between MIN and MAX [i.e. within (A)].



7. Connect quick connector of fuel feed tube as per following procedures.
- Check the connection for damage or any foreign materials.
  - Align the connector with the tube, then insert the connector straight into the tube until a "click" sound is heard.
  - After connecting, check that the connection is secured with following procedures.
    - Visually confirm that the two tabs are connected to the connector.
    - Pull (A) the tube and the connector to check that they are securely connected.
8. Connect harness connector.



## Inspection Hole Cover

- Before installing inspection hole cover, check that the connecting part has no fuel leakage. Refer to [FL-35](#), "[Inspection](#)".

- Install inspection hole covers with the front mark (arrow) facing front of vehicle.
- Lock clips by turning counterclockwise.

## Inspection

INFOID:000000008279586

## INSPECTION AFTER INSTALLATION

Use the following procedure to check for fuel leakage.

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

# FUEL TANK

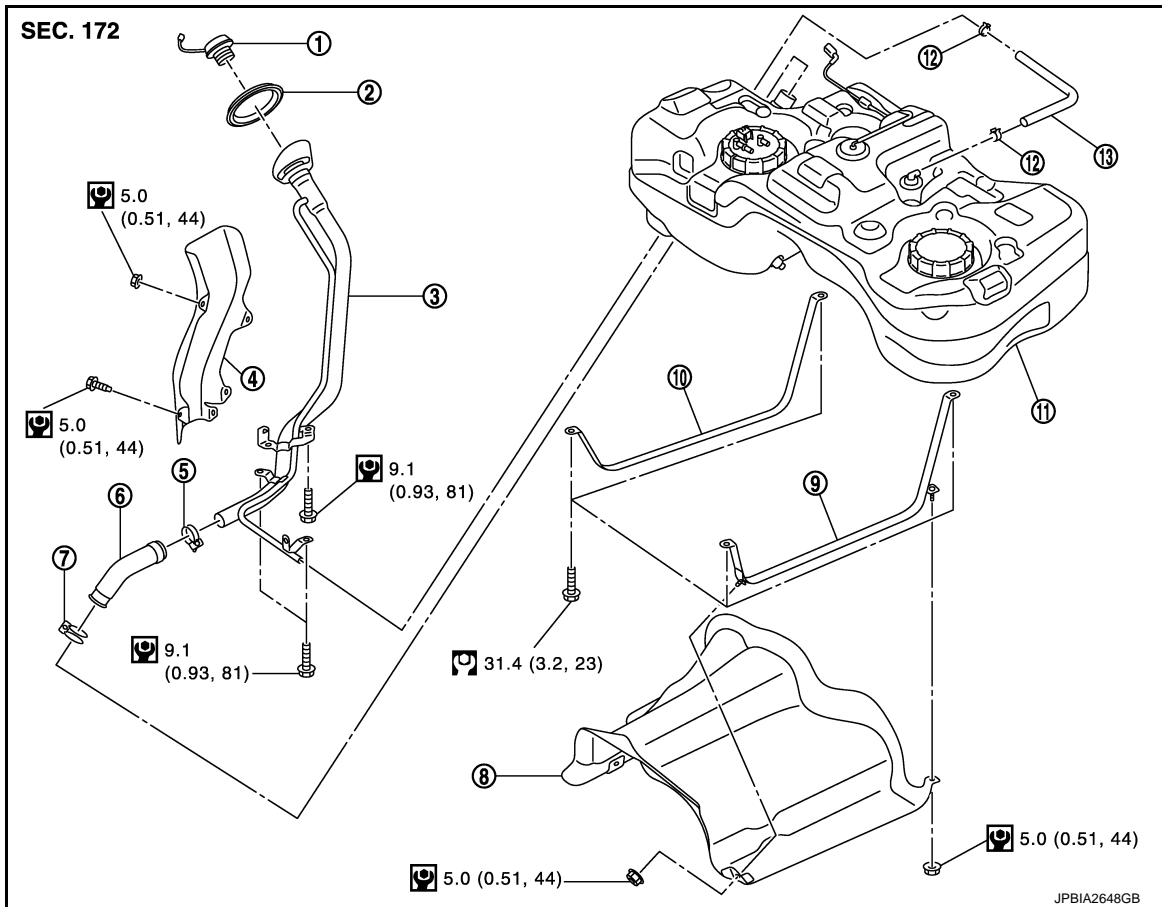
< REMOVAL AND INSTALLATION >

[TYPE 2]


## FUEL TANK

Exploded View

INFOID:000000008279587



- |                         |               |                        |
|-------------------------|---------------|------------------------|
| 1. Fuel filler cap      | 2. Grommet    | 3. Fuel filler tube    |
| 4. Cover                | 5. Clamp      | 6. Fuel filler hose    |
| 7. Clamp                | 8. Protector  | 9. Fuel tank band (LH) |
| 10. Fuel tank band (RH) | 11. Fuel tank | 12. Clamp              |
| 13. Vent hose           |               |                        |

 : N·m (kg·m, in·lb)

## Removal and Installation

INFOID:000000008279588

### REMOVAL

#### **WARNING:**

Be sure to read "General Precautions" when working on the fuel system. Refer to [FL-25, "General Precautions"](#).

1. Perform the steps 2 to 7 of "REMOVAL" in " FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY". Refer to [FL-28, "Removal and Installation"](#).
2. Drain fuel from fuel tank if necessary. Refer to [FL-28, "Removal and Installation"](#).

#### **CAUTION:**

- Because fuel tank forwardly inclines and becomes unstable when installing/removing, fuel should be drained if found the remaining quantity.
- Situate vehicle on a flat and solid surface.

3. Remove main muffler. Refer to [EX-4, "Exploded View"](#).
4. Remove propeller shaft. Refer to [DLN-85, "Exploded View"](#) (AWD models).

# FUEL TANK

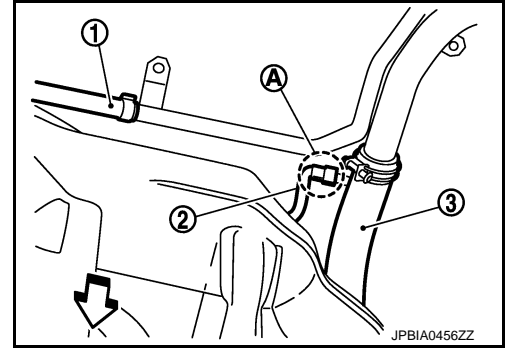
[TYPE 2]

## < REMOVAL AND INSTALLATION >

5. Remove protector from fuel tank.
6. Remove vent hose (1) at rear side of fuel tank.

↔ : Vehicle front

7. Disconnect EVAP tube (2) at rear side of fuel tank.
  - Instruction for quick connector (A) of EVAP tube. Refer to [FL-28, "Removal and Installation"](#).
8. Remove fuel filler hose (3) at fuel filler tube side.



9. Remove rear suspension member. Refer to [RSU-12, "Exploded View"](#) (AWD models).
10. Remove parking brake cable mounting bolts and separate parking brake cable from suspension arm. Refer to [PB-6, "Exploded View"](#) (AWD models).
11. Disconnect AWD solenoid harness connector and harness clip (AWD models). Refer to [DLN-100, "Exploded View"](#).
12. Loosen final drive mounting nut (A) at rear suspension member (1). Refer to [DLN-104, "Exploded View"](#) (AWD models).

↔ : Vehicle front

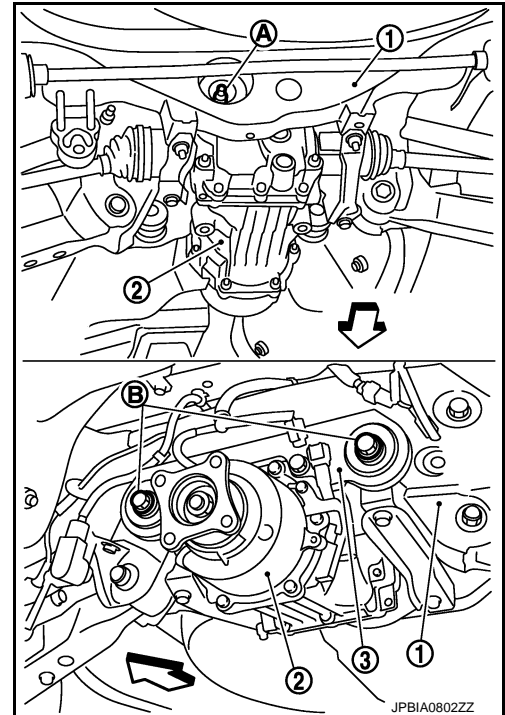
### CAUTION:

**Never remove final drive mounting nut.**

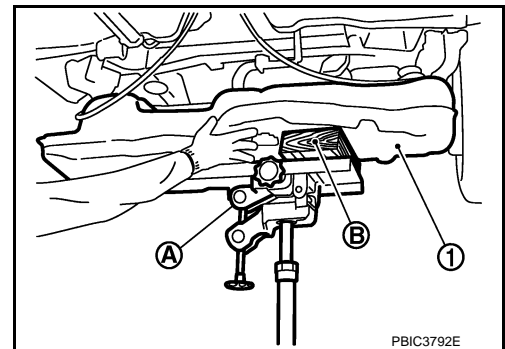
13. Remove final drive mounting bolts (B) from final drive mounting bracket (3) to tilt final drive assembly (2). Refer to [DLN-104, "Exploded View"](#) (AWD models).

### NOTE:

Final drive assembly does not have to be removed from the vehicle.



14. Support center of fuel tank (1) with transmission jack (A).  
**CAUTION:**  
**Securely support the fuel tank with a piece of wood (B).**



15. Remove fuel tank band (RH and LH).
16. Lower transmission jack carefully to remove fuel tank while holding it by hand.

### CAUTION:

# FUEL TANK

< REMOVAL AND INSTALLATION >

[TYPE 2]

**Fuel tank may be in an unstable condition because of the shape of fuel tank bottom. Never rely on jack too much. Be sure to hold tank securely.**

## INSTALLATION

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

### Fuel Filler Hose

- Insert fuel filler hose to the length below.

**: 35 mm (1.38 in)**

- Be sure hose clamp is not placed on swelled area of fuel filler tube.
- Tighten fuel filler hose clamp so that the remaining length of screw thread becomes to the following.

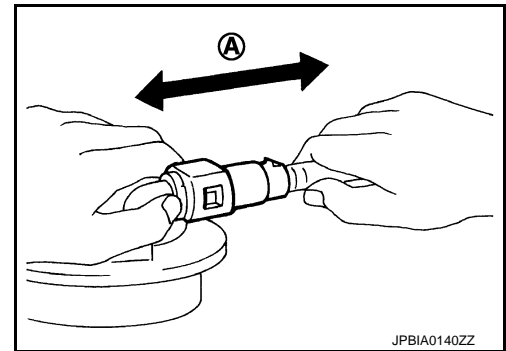
**Fuel filler tube side : 7 - 11 mm (0.28 - 0.43 in)**

**Fuel tank side : 5 - 9 mm (0.20 - 0.35 in)**

### EVAP Hose

1. Check connections for damage or foreign material.
2. Align the matching side connection part with the center of shaft, and insert connector straight until it clicks.
3. After connecting, pull out quick connector and centralized under-floor piping by hand. Check connections are secure.

A : Pull



## Inspection

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### 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 that there is no fuel leakage at the fuel system tube and hose connections.

# SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

[TYPE 2]

## SERVICE DATA AND SPECIFICATIONS (SDS)

### SERVICE DATA AND SPECIFICATIONS (SDS)

#### Fuel Tank

INFOID:000000008279590

A

FL

#### Standard and Limit

Fuel tank capacity	Approx. 65 ℓ (17-1/8 US gal, 14-1/4 Imp gal)
Fuel recommendation	Refer to <a href="#">GI-36</a>

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