

SECTION

FL

FL

FUEL SYSTEM

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# PRECAUTIONS

< PRECAUTION >

## PRECAUTION

### PRECAUTIONS

#### Precaution for Battery Service

INFOID:000000004642598

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

#### Titanium Muffler Handling

INFOID:000000005413954

##### **CAUTION:**

- Never touch the titanium muffler directly with bare hands or allow oils to adhere to it during inspection, removal, and installation.
- Always wear new thick cotton gloves or working gloves. (Never use oil-adhered gloves.)
- After oil adhesion, immediately remove oil with parts cleaner.
- Always use genuine parts cleaner (dry type) or the equivalent.
- When cleaning oil in on-board condition, apply parts cleaner to a waste to wipe out oil. By doing so, peripheral parts can be protected from parts cleaner adhesion.
- Be careful not to cut fingers with the insulator edge or the main muffler cooling fin.

#### General Precautions (NHPC)

INFOID:000000004642599

##### **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-34, "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, referring to the following items. For vehicle type, refer to [EC-20, "How to Check Vehicle Type"](#).
- TYPE 1: [EC-594, "Inspection \(NHPC\)"](#)
- TYPE 2: [EC-1131, "Inspection \(NHPC\)"](#)
- TYPE 3: [EC-1561, "Inspection \(NHPC\)"](#)
- 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 that there is no fuel leakage at connections in the following steps.
- Apply fuel pressure to fuel lines while 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 "MI" may come on.
- For servicing "Evaporative Emission System" parts, refer to the following:
  - TYPE1: [EC-92, "System Diagram \(NHPC\)"](#)
  - TYPE2: [EC-671, "System Diagram \(NHPC\)"](#)
  - TYPE3: [EC-1205, "System Diagram \(NHPC\)"](#)
- For servicing "On Board Refueling Vapor Recovery (ORVR)" parts, refer to [EC-514, "Description \(NHPC\)"](#). (For Taiwan models)

PREPARATION

< PREPARATION >

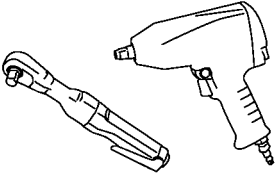
PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000004642600

FL

Tool name	Description
Power tool	Loosening bolts and nuts
 PBIC0190E	

A  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P

# FUEL SYSTEM

< PERIODIC MAINTENANCE >

## PERIODIC MAINTENANCE

### FUEL SYSTEM

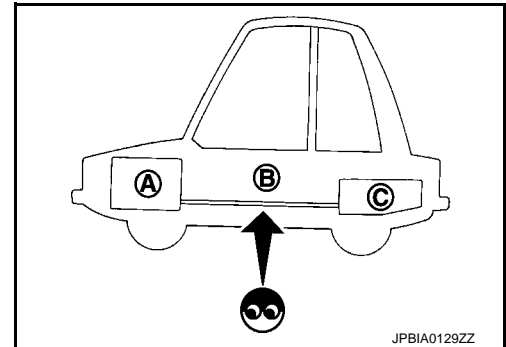
#### Inspection (NHPC)

INFOID:000000004642601

- Check 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 (NHPC)

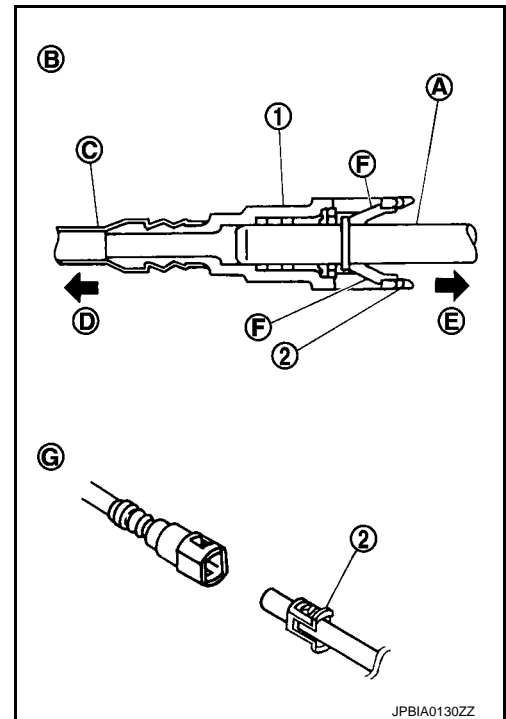
INFOID:000000004642602

#### CAUTION:

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

- 1 : Quick connector
- 2 : Quick connector 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

- Never allow that connector and resin tube to contact any adjacent parts.



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

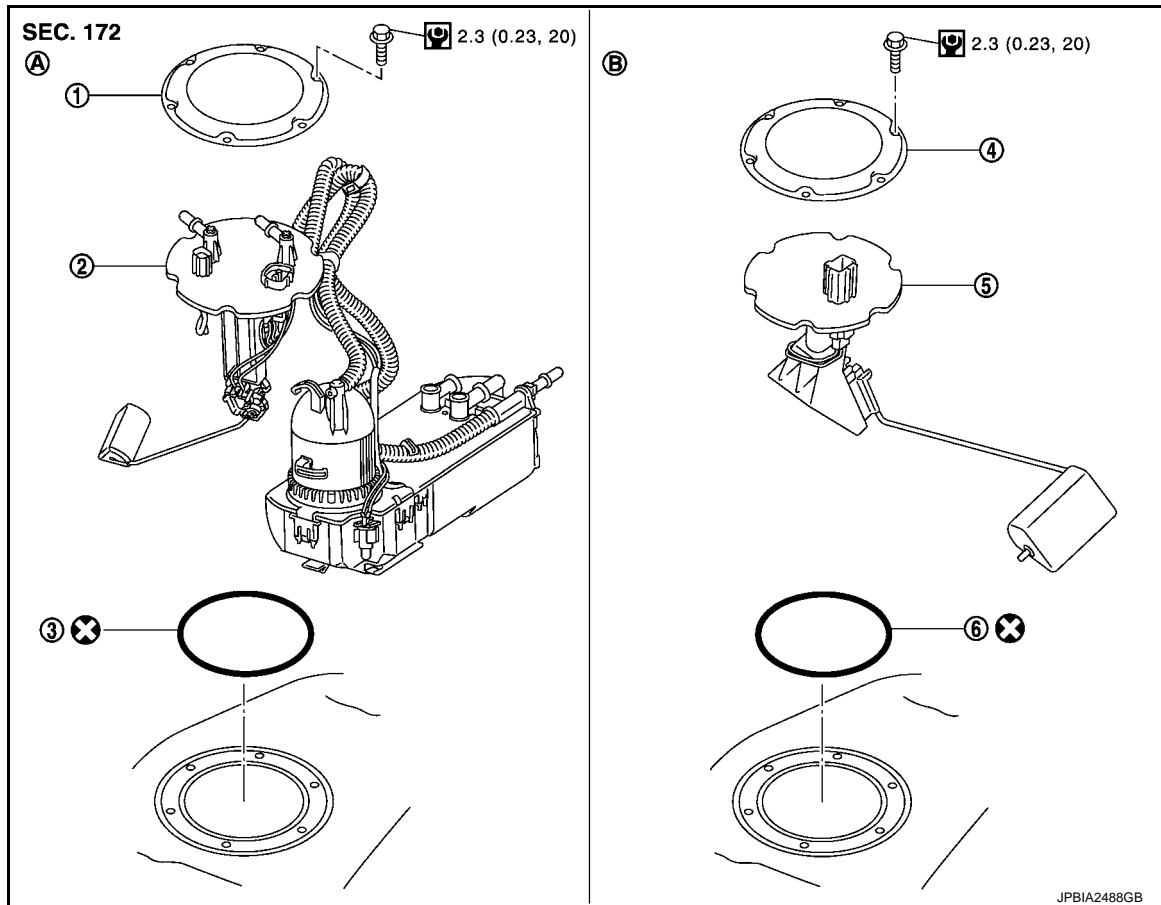
< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION

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

Exploded View (NHPC)

INFOID:000000004642603



- |               |  |           |
|---------------|--|-----------|
| 1. Retainer   | 2. Main fuel level sensor unit, fuel filter and fuel pump assembly | 3. O-ring |
| 4. Retainer   | 5. Sub fuel level sensor unit                                      | 6. O-ring |
| A. Right side | B. Left side   |           |

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

### Removal and Installation (NHPC)

INFOID:000000004642604

#### **WARNING:**

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

#### REMOVAL

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

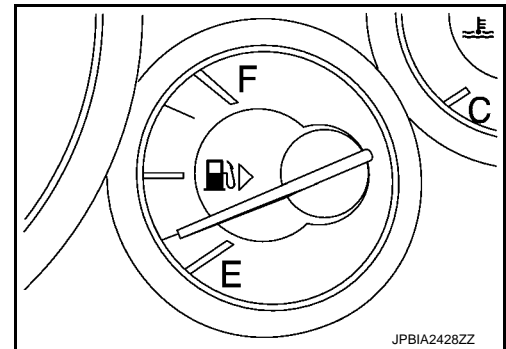
## < REMOVAL AND INSTALLATION >

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

### NOTE:

Because fuel is spilled when removing main and sub fuel level sensor units if the top of the fuel exceeds the main and sub fuel level sensor units installation surface.

- As a guide, fuel level becomes the position as shown in the figure or less when approximately 50 ℓ (11 Imp gal) of fuel are drained from fuel tank.



2. Release the fuel pressure from the fuel lines. Refer to the following:

- TYPE 1: [EC-594, "Inspection \(NHPC\)"](#)
- TYPE 2: [EC-1131, "Inspection \(NHPC\)"](#)
- TYPE 3: [EC-1561, "Inspection \(NHPC\)"](#)

### NOTE:

To identify vehicle type, refer to [EC-20, "How to Check Vehicle Type"](#).

3. Open fuel filler lid.
4. Open filler cap and release the pressure inside fuel tank.
5. Remove rear seat cushion. Refer to [SE-82, "Exploded View"](#).
6. Peel off floor carpet, and then remove inspection hole cover (1) units by turning clips (2) clockwise by 90 degrees.

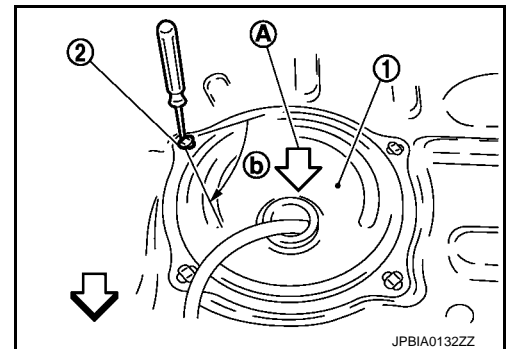
A : Direction mark

b : 90°

⇐ : Vehicle front

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

**Left side** : Sub fuel level sensor unit

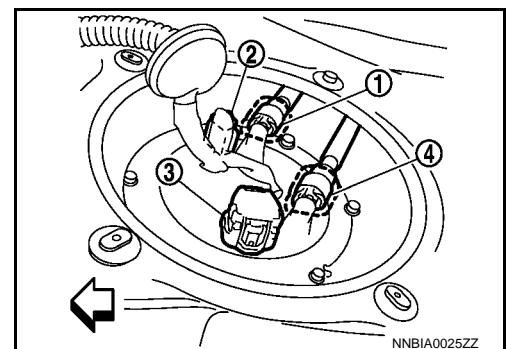


7. Disconnect harness connectors (2), (3), fuel feed tube (4), and fuel return tube (1).

⇐ : Vehicle front

### CAUTION:

- Put a matching mark onto each tube for reference during installation.
- Use a shop cloth to prevent fuel from splashing when disconnecting each fuel tube.



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

## < REMOVAL AND INSTALLATION >

- Disconnect quick connector (1) as follows:

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

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

### CAUTION:

- Quick connector can be disconnected when the tabs are completely depressed. Never twist it more than necessary.
- Never use any tools to disconnect 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 quick connector retainer (2) on hard tube (or the equivalent) except when resin tube or quick connector retainer is replaced.
- When resin tube or fuel level sensor unit is replaced, also replace quick connector retainer with a new one. Replace same color quick connector retainer as before replacing.

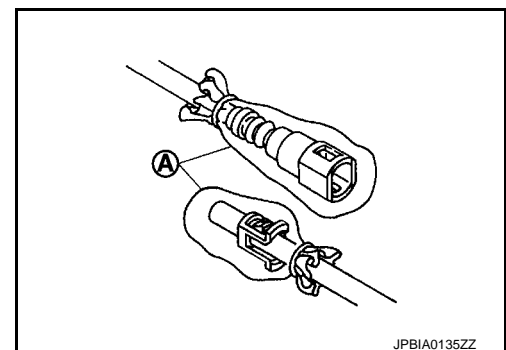
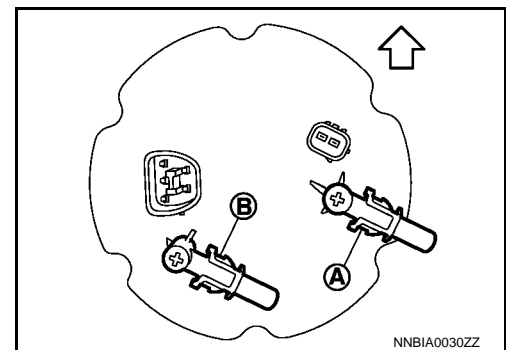
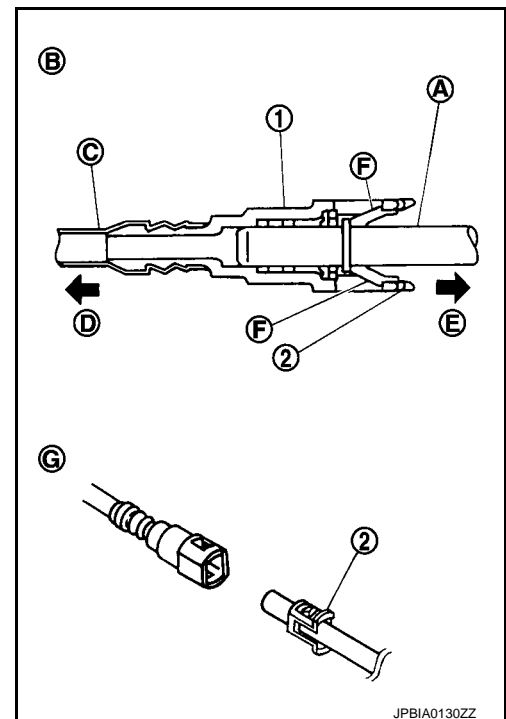
⇐ : Vehicle front

### Quick connector color

Fuel return side (A) : Translucent

Fuel feed side (B) : White

- 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 impact or drop them when handling components.

- Removal of main fuel level sensor unit, fuel filter and fuel pump assembly:
  - Remove retainer.

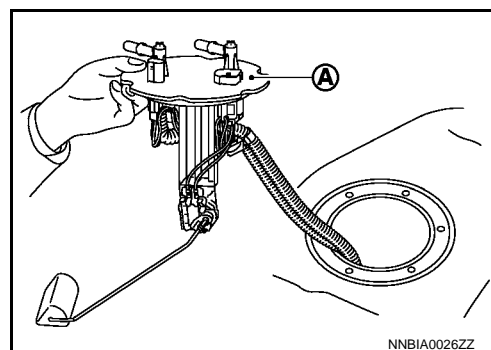
# FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

## < REMOVAL AND INSTALLATION >

- ii. Raise main fuel level sensor unit (A).

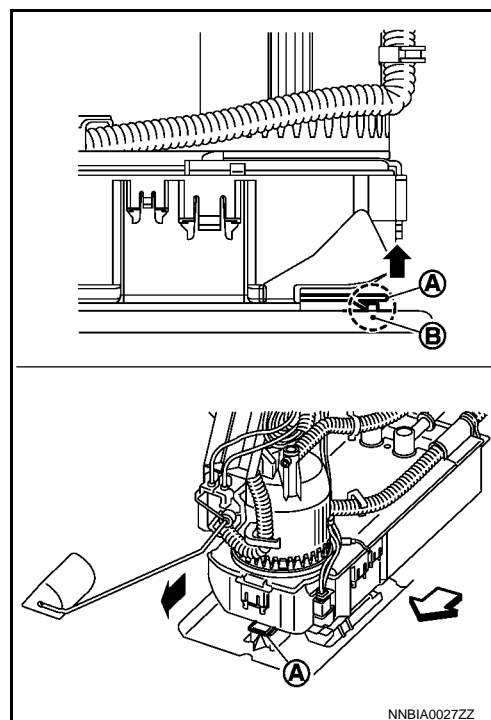
**CAUTION:**

- Because fuel tubes and harness are still attached, cover the opening of fuel tank to protect the tubes and harness from damage before removing main fuel level sensor unit.
- Never bend float arm during removal.



- iii. Disengage the engagement (B) by lifting the pawl (A) of the fuel filter and fuel pump to slide it into the front side of the vehicle for removal.

⇐ : Vehicle front



- iv. Pull out fuel filter and fuel pump from fuel tank.

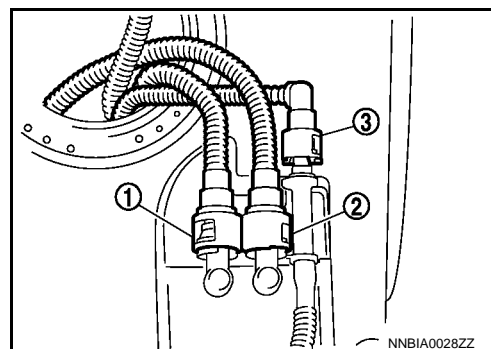
**CAUTION:**

- Because fuel tubes (transfer) are still attached, cover the opening of fuel tank to protect the tubes from damage before removing fuel filter and fuel pump.
- Because remaining fuel spills from fuel filter and fuel pump, use a shop cloth for holding the lower part. Never tilt fuel filter and fuel pump during the removal.

- v. Disconnect fuel tubes (transfer) from fuel filter and fuel pump.

- 1 : Fuel feed tube (transfer)
- 2 : Fuel feed tube (transfer)
- 3 : Fuel return tube (transfer)

- To disconnect quick connectors, refer to step 7 "REMOVAL".



- b. Removal of sub fuel level sensor unit:

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

## INSTALLATION

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



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

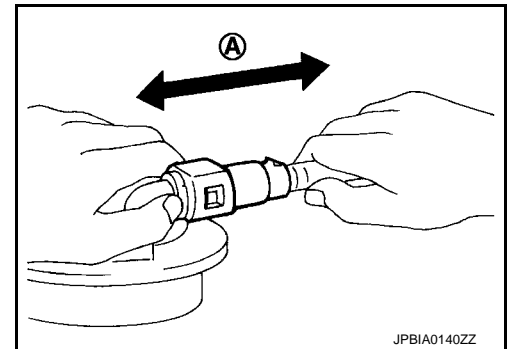
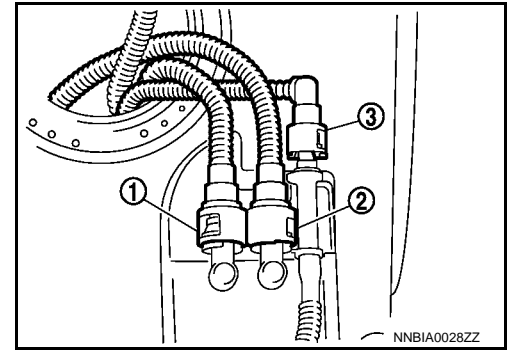
## < REMOVAL AND INSTALLATION >

Fuel Feed Tube (Transfer) and Fuel Return Tube (Transfer)

- Connect quick connectors of fuel tube as follows:

- 1 : Fuel feed tube (transfer)
- 2 : Fuel feed tube (transfer)
- 3 : Fuel return tube (transfer)

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



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

1. Install fuel filter and fuel pump.
  - After installing fuel filter and fuel pump, check the following items.

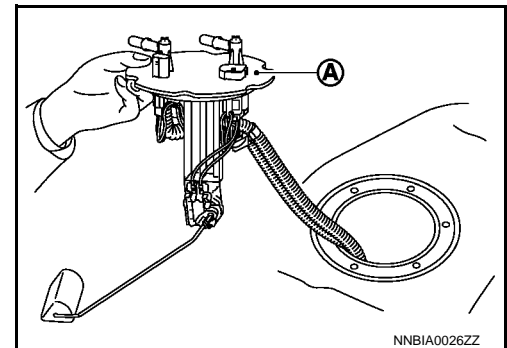
### CAUTION:

- Move fuel filter and fuel pump back and forth and around to check that it is no half-fit.
- Check that the fuel feed tubes (transfer) and fuel return tube (transfer) never interfere with the fuel shutter in the fuel tank. If there is (a possibility of) interference, remove fuel filter and fuel pump first, and reinstall it by turning the connection of quick connector in the direction that interference does not occur.

2. Install main fuel level sensor unit (A) and sub fuel level sensor unit.

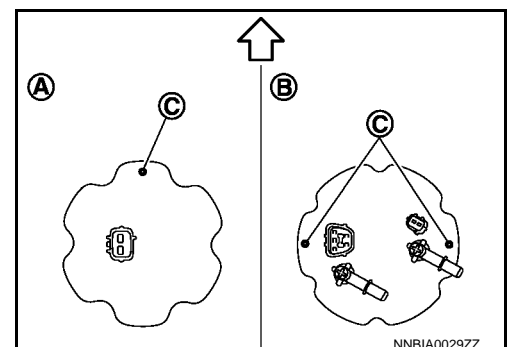
### CAUTION:

- Because fuel tubes and harness are attached, cover the opening of fuel tank to protect the tubes and harness from damage before installing main fuel level sensor unit.
- Never bend float arm during installation.



- 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 : Left side
- B : Right side
- ↔ : Vehicle front



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

## < REMOVAL AND INSTALLATION >

- Tighten retainer mounting bolts evenly.

### CAUTION:

**Only use genuine parts for retainer mounting bolts.**

3. Connect quick connectors as follows:
  - a. Check the installation position of fuel feed tube and fuel return tube.

↩ : Vehicle front

### Quick connector color

**Fuel return side (A) : Translucent**

**Fuel feed side (B) : White**

- b. Check the connection for damage or any foreign material
- c. Install the fuel feed tube (4) and fuel return tube (1), aligning matching marks marked when removing.

2 : Harness connector

3 : Harness connector

↩ : Vehicle front

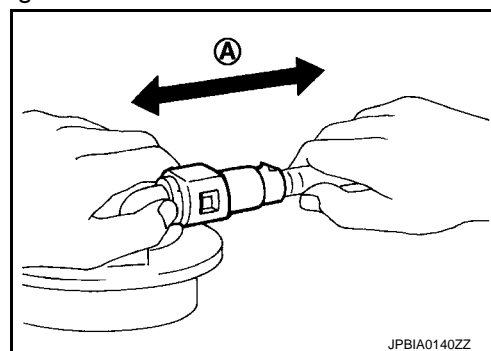
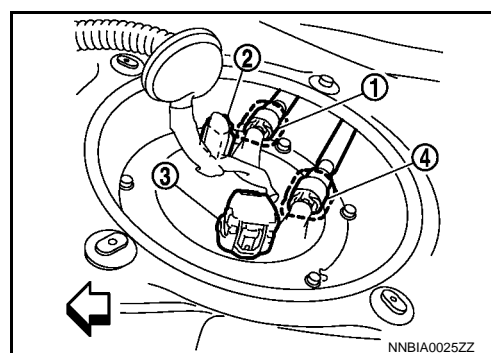
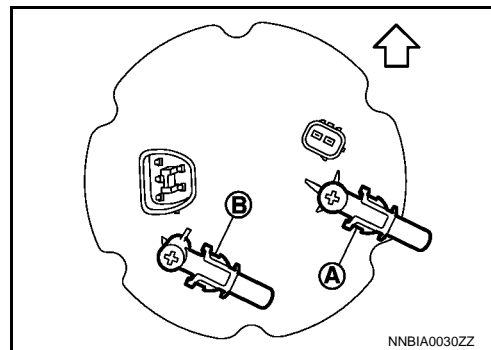
### CAUTION:

**Be careful not to install a wrong tube because the shape of the quick connectors of each tube is identical.**

### NOTE:

Install the tube with larger diameter on the fuel feed side.

- Align the quick connector with the tube, then insert the quick connector straight into the tube until a click sound is heard.
- After connecting, check that the connection is secure by following method.
  - Pull (A) the tube and the connector to check they are securely connected.
  - Visually confirm that the two retainer tabs are connected to the quick connector.

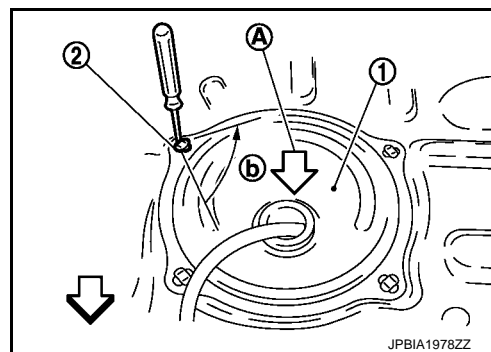


### Inspection Hole Cover

1. Install inspection hole cover (1) with front mark (A) facing front of vehicle (Both RH and LH).

↩ : Vehicle front

2. Lock clips (2) by turning 90 degrees (b) counterclockwise.



### Inspection (NHPC)

### INSPECTION AFTER INSTALLATION

INFOID:000000004642605

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

## < REMOVAL AND INSTALLATION >

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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.

A

FL

C

D

E

F

G

H

I

J

K

L

M

N

O

P

# FUEL TANK

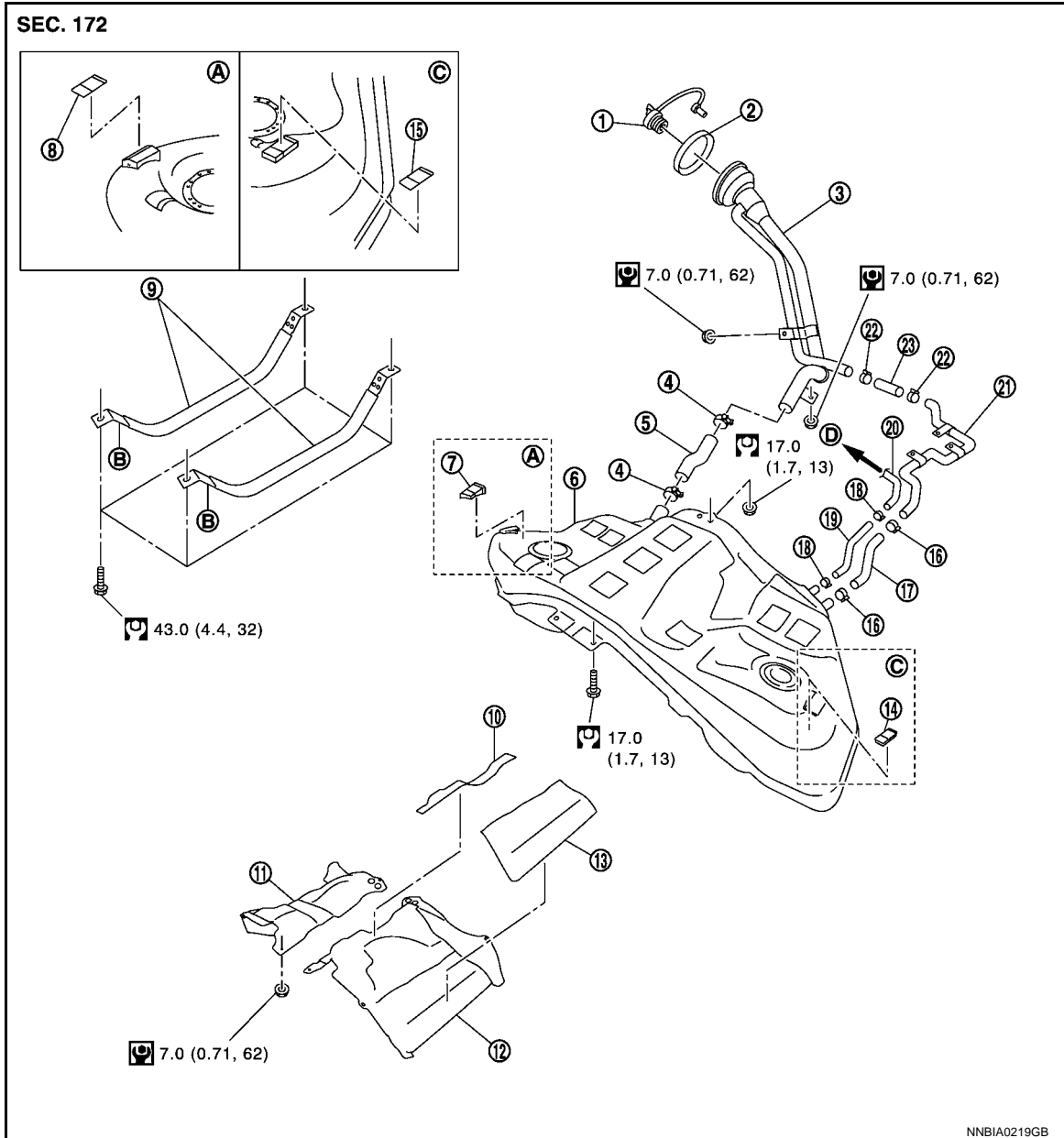
< REMOVAL AND INSTALLATION >

## FUEL TANK

Exploded View (SpecV NHPC)

INFOID:000000004642606

Except for Taiwan models



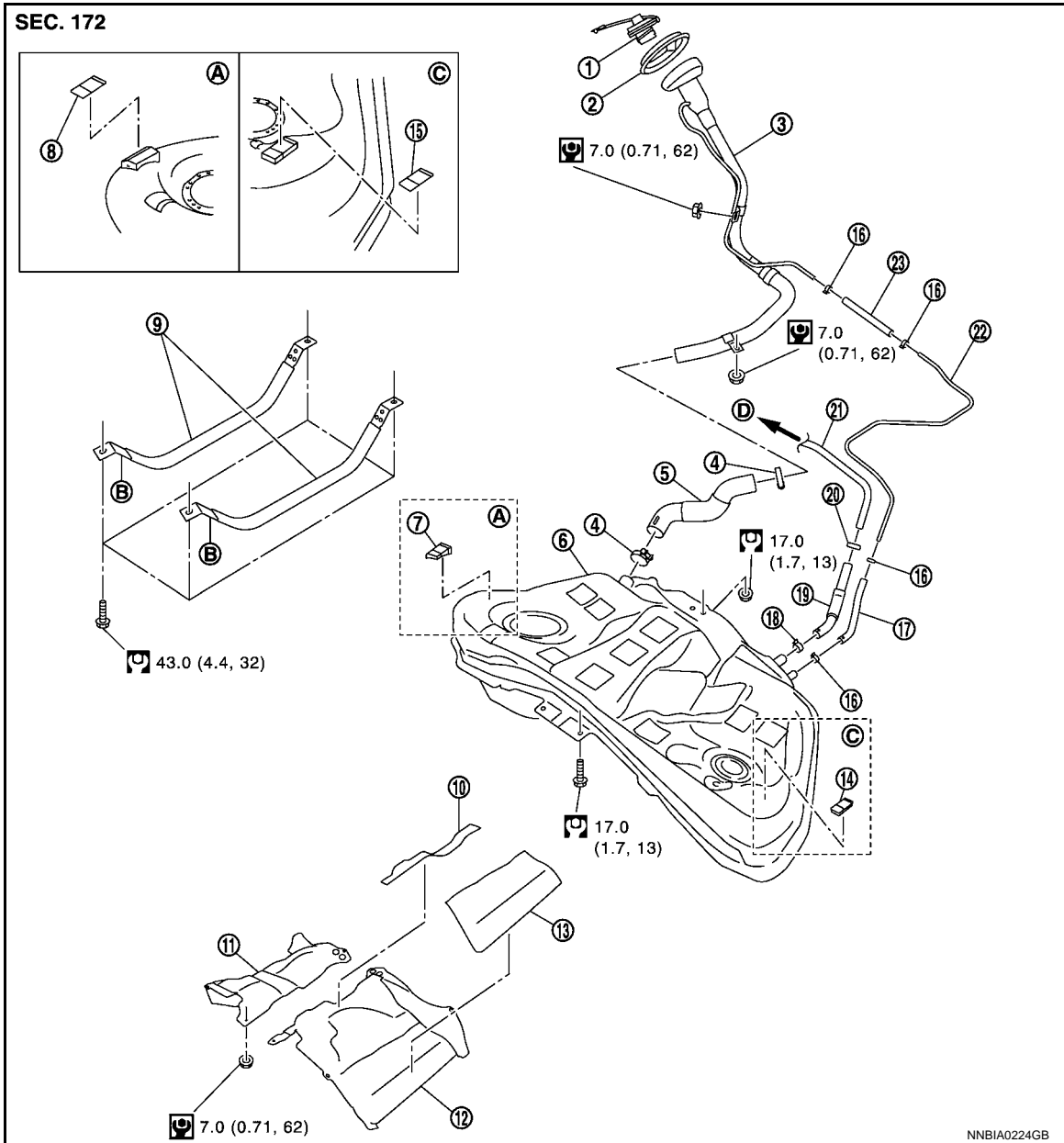
- |                            |                              |                              |
|----------------------------|------------------------------|------------------------------|
| 1. Fuel filler cap         | 2. Grommet                   | 3. Fuel filler tube          |
| 4. Clamp                   | 5. Fuel filler hose          | 6. Fuel tank                 |
| 7. Fuel tank shim assembly | 8. Fuel tank shim            | 9. Fuel tank mounting band   |
| 10. Insulator (RH)         | 11. Fuel tank protector (RH) | 12. Fuel tank protector (LH) |
| 13. Insulator (LH)         | 14. Fuel tank shim assembly  | 15. Fuel tank shim           |
| 16. Clamp                  | 17. Vent hose                | 18. Clamp                    |
| 19. EVAP hose              | 20. EVAP tube                | 21. Vent tube                |
| 22. Clamp                  | 23. Vent hose                |                              |
| A. Right side              | B. Front mark                | C. Left side                 |
| D. To EVAP tube            |                              |                              |

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

# FUEL TANK

< REMOVAL AND INSTALLATION >

For Taiwan models



- |                            |                              |                              |
|----------------------------|------------------------------|------------------------------|
| 1. Fuel filler cap         | 2. Grommet                   | 3. Fuel filler tube          |
| 4. Clamp                   | 5. Fuel filler hose          | 6. Fuel tank                 |
| 7. Fuel tank shim assembly | 8. Fuel tank shim            | 9. Fuel tank mounting band   |
| 10. Insulator (RH)         | 11. Fuel tank protector (RH) | 12. Fuel tank protector (LH) |
| 13. Insulator (LH)         | 14. Fuel tank shim assembly  | 15. Fuel tank shim           |
| 16. Clamp                  | 17. EVAP hose                | 18. Clamp                    |
| 19. Vent hose              | 20. Clamp                    | 21. Vent tube                |
| 22. EVAP tube              | 23. EVAP hose                |                              |
| A. Right side              | B. Front mark                | C. Left side                 |
| D. To EVAP tube            |                              |                              |

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

## Removal and Installation (SpecV NHPC)

INFOID:000000004642607

### WARNING:

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

# FUEL TANK

## < REMOVAL AND INSTALLATION >

### REMOVAL

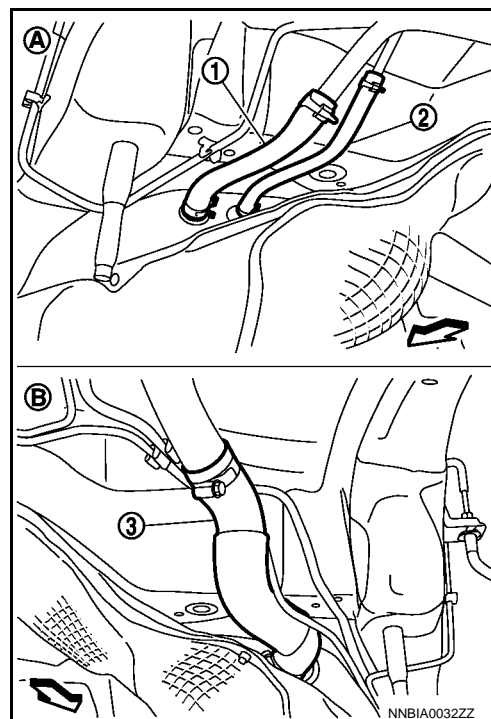
- Drain fuel from fuel tank if necessary. Refer to [FL-5. "Removal and Installation \(NHPC\)"](#).
  - Perform work on level place.
1. Perform steps 2 to 7 of "REMOVAL" in " FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" on main and sub fuel level sensor units. Refer to [FL-5. "Removal and Installation \(NHPC\)"](#).
  2. Remove exhaust sub muffler and main muffler assembly. Refer to [EX-5. "Exploded View"](#) (except SpecV) or [EX-13. "Exploded View"](#) (SpecV).
  3. Separate main propeller shaft and front propeller shaft. Refer to [DLN-74. "Exploded View"](#) and [DLN-64. "Exploded View"](#).
  4. Remove transmission and rear suspension member assembly. Refer to [RSU-29. "Exploded View"](#).

#### NOTE:

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

5. Disconnect EVAP hose, vent hose, and fuel filler hose at fuel tank side.
  - Except for Taiwan models

- 1 : Vent hose
- 2 : EVAP hose
- 3 : Fuel filler hose
- A : Vehicle left side
- B : Vehicle right side
- ⇐ : Vehicle front



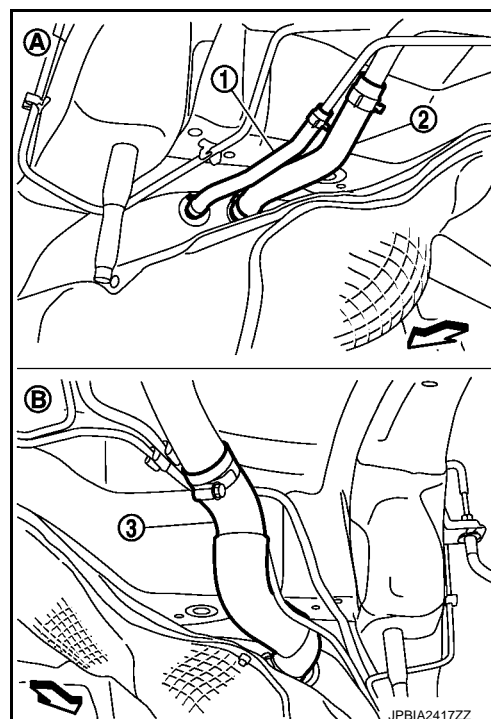
# FUEL TANK

## < REMOVAL AND INSTALLATION >

- For Taiwan models

- 1 : EVAP hose
- 2 : Vent hose
- 3 : Fuel filler hose
- A : Vehicle left side
- B : Vehicle right side
- ⇐ : Vehicle front

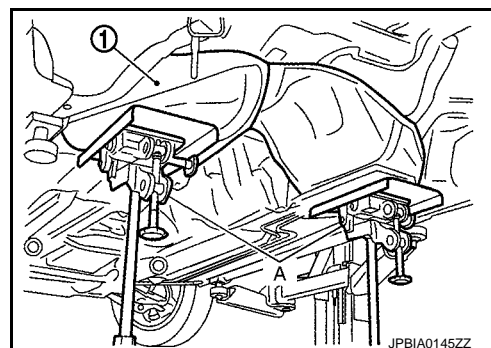
- To disconnect quick connector, refer to [FL-5, "Removal and Installation \(NHPC\)"](#).



- Remove fuel tank protector.
- Support the lower part of fuel tank (1) using transmission jack (A).

### CAUTION:

To secure the support, place wooden blocks or something at the position where fuel tank mounting bands never engage.



- Remove fuel tank mounting bands.
  - Remove fuel tank mounting bolts and nuts.
  - Supporting fuel tank with hands, descend transmission jack carefully, and remove fuel tank.
- CAUTION:**
- Check that all connection points are disconnected.
  - Check that there is no interference with vehicle.
- Remove fuel filler tube if necessary.

## INSTALLATION

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

- Insert hose to the length specified below and fix it by hose clamp.

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

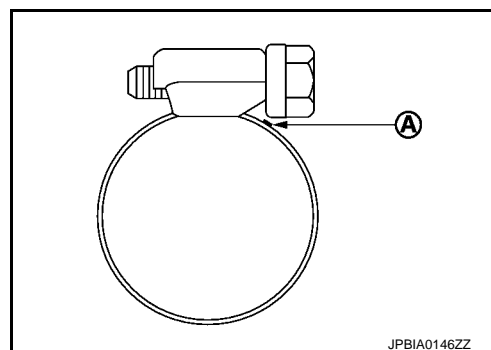
**The other hoses : 25 mm (0.98 in)**

- Check that hose clamp is not placed on swelled area of fuel tube.

## FUEL TANK

### < REMOVAL AND INSTALLATION >

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



- To connect quick connector, refer to [FL-5. "Removal and Installation \(NHPC\)"](#).

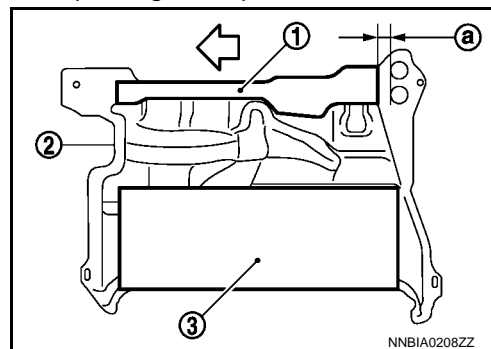
### Inspection (SpecV NHPC)

INFOID:000000004642608

#### INSPECTION AFTER REMOVAL

- Check that insulator on the top surface of fuel tank protector (LH) has no peeling or displacement.
- If insulator has a peeling or displacement, replace insulator, referring to the figure.

- 1 : Insulator (RH)
- 2 : Fuel tank protector (LH)
- 3 : Insulator (LH)
- a : 20 mm (0.79 in)
- ↔ : Vehicle front



- Check that there is no malfunction on the baffle plate in the fuel tank.

#### 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 and adjust the wheel alignment. Refer to [RSU-10. "Inspection"](#).



SERVICE DATA AND SPECIFICATIONS (SDS)

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Fuel Tank (NHPC)

INFOID:0000000004642609

FL

Standard and Limit

Fuel tank capacity	Approx. 73.8 ℓ (16-1/4 Imp gal)
Fuel recommendation	Refer to <a href="#">GI-34</a>

A  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P