SECTION FL
FUEL SYSTEM

CONTENTS

PRECAUTION 2

PRECAUTIONS 2
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 2
General Precautions 2

PREPARATION 3

PREPARATION 3
Special Service Tool 3
Commercial Service Tools 3

PERIODIC MAINTENANCE 4

FUEL SYSTEM 4
Inspection 4
Quick Connector 4

REMOVAL AND INSTALLATION 5

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY 5
Exploded View 5
Removal and Installation 5

FUEL TANK 9
Exploded View 9
Removal and Installation 9
Inspection 11

EVAP CANISTER 12
Exploded View 12
Removal and Installation 12
Inspection 13

EVAP CANISTER FILTER 14
Exploded View 14
Removal and Installation 14

EVAP CANISTER VENT CONTROL VALVE 15
Exploded View 15
Removal and Installation 15

EVAP CONTROL SYSTEM PRESSURE SENSOR 16
Exploded View 16
Removal and Installation 16

UNIT DISASSEMBLY AND ASSEMBLY 17

FUEL LEVEL SENSOR UNIT 17
Disassembly and Assembly 17

SERVICE DATA AND SPECIFICATIONS (SDS) 19

SERVICE DATA AND SPECIFICATIONS (SDS) 19
Fuel Tank 19

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000007774250

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- **When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

General Precautions

INFOID:0000000007221922

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 CO_2 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-26, "Fuel (Regular Unleaded Gasoline Recommended) HR16DE".**
- **Before removing fuel line parts, perform 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-126, "Work Procedure".**
- **Disconnect the battery cable from the negative terminal.**
- **Always replace O-ring and clamps with new ones.**
- **Never kink or twist tubes when they are being installed.**
- **Never tighten hose clamps excessively to avoid damaging hoses.**
- **After installing tubes, check there is no fuel leakage at connections in the following steps.**
- **Apply fuel pressure to fuel lines with turning ignition switch “ON” (with engine stopped). Then check for fuel leakage at connections.**
- **Start engine and rev it up and check for fuel leakage at connections.**
- **Use only a genuine NISSAN fuel filler cap as a replacement. If an incorrect fuel filler cap is used, the MIL may come on.**
- **For servicing “EVAPORATIVE EMISSION SYSTEM” parts, refer to EC-39, "EVAPORATIVE EMISSION SYSTEM : System Diagram".**

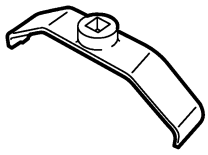
PREPARATION

PREPARATION

Special Service Tool

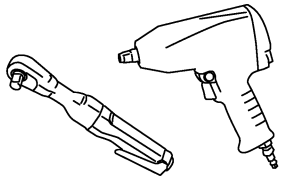
INFOID:0000000007221923

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

Tool number (Kent-Moore No.) Tool name	Description
KV10119900 (—) Lock ring wrench  JPBIA3555ZZ	Removing and Installing lock ring

Commercial Service Tools

INFOID:0000000007221924

Tool name	Description
Power tools  PBIC0190E	Loosening bolts and nuts

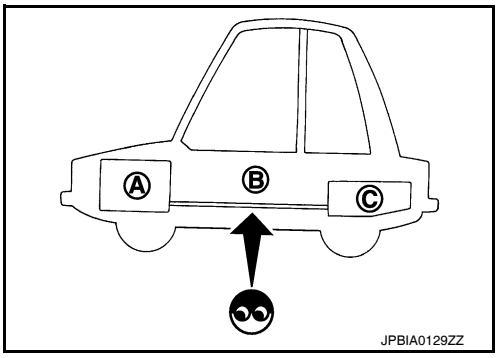
PERIODIC MAINTENANCE

FUEL SYSTEM

Inspection

INFOID:0000000007221925

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



A : Engine
B : Fuel line
C : Fuel tank

If necessary, repair or replace damaged parts.

Quick Connector

INFOID:0000000007221926

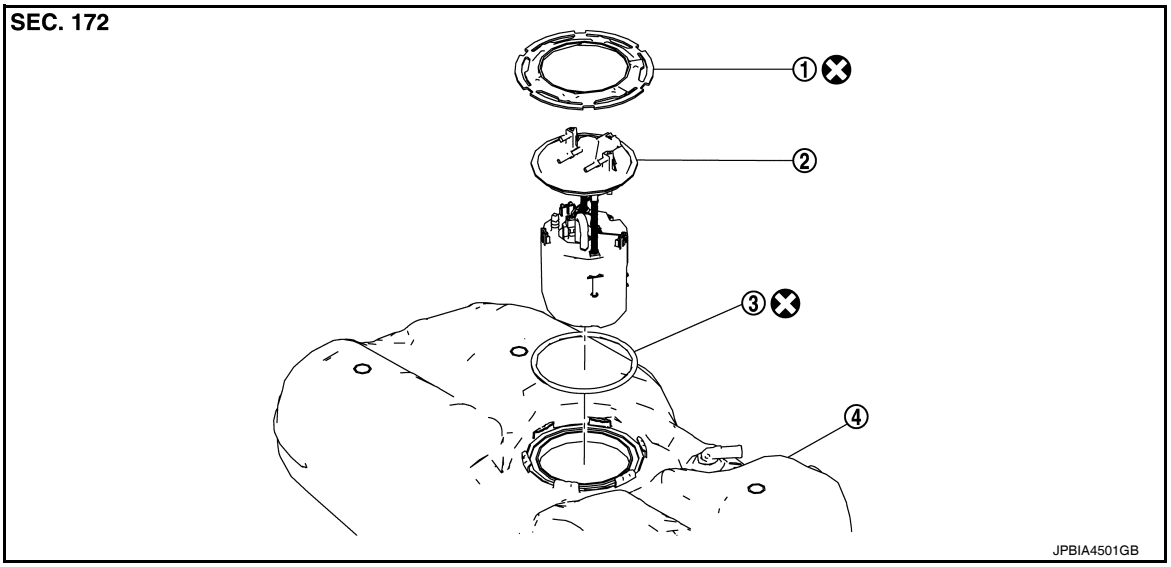
CAUTION:
- **After connecting fuel tube quick connectors, check quick connectors are secure.**
- **Ensure that connector and resin tube never contact any adjacent parts.**

REMOVAL AND INSTALLATION

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

Exploded View

INFOID:0000000007221927



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

Removal and Installation

INFOID:0000000007221928

WARNING:
Be sure to read “General Precautions” before working on the fuel system. Refer to FL-2, "General Precautions".

REMOVAL

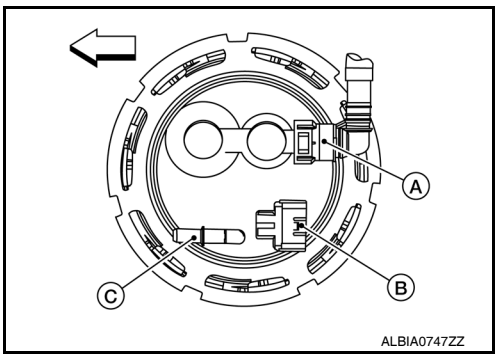
1. Release the fuel pressure from the fuel lines. Refer to EC-126, "Work Procedure".
2. Check fuel level with vehicle on a level surface. If the fuel level is 7/8 of the fuel tank (full or nearly full), draw appropriate amount of fuel from the fuel tank.

   Guideline : Draw approximately 10 liters (2-5/8 US gal, 2-1/4 Imp gal) from a full-tank condition.

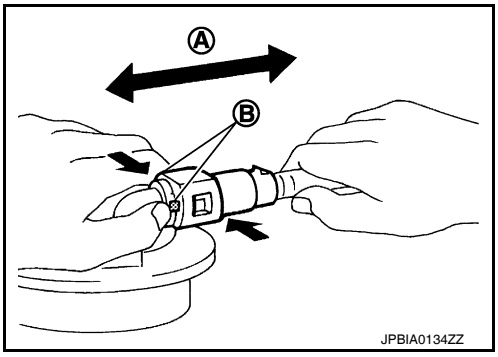
   - In the event of malfunction in fuel pump, insert a hose measuring 20mm (0.79 in) in diameter into the filler opening to draw approximately 10 liters (2-5/8 US gal, 2-1/4 Imp gal) fuel.
3. Open fuel filler lid.
4. Open fuel filler cap and release the pressure inside fuel tank.
5. Remove the rear seat cushion. Refer to SE-22, "Removal and Installation - Seat Cushion".
6. Remove the inspection hole cover.

7. Disconnect the wiring harness connector (B), fuel feed tube (C) and EVAP tube (A).

⇦ : Vehicle front

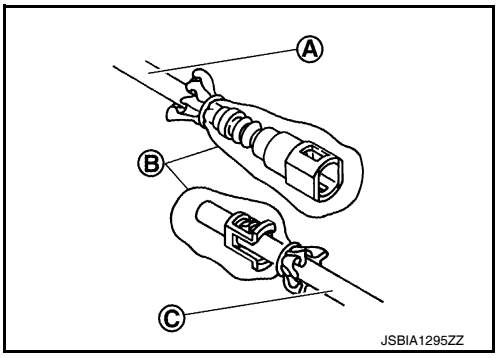


Remove the quick connector as follows:
- Hold the sides of the connector, push in tabs (B) and pull (A) out the tube.
- If the connector and the tube are stuck together, push and pull several times until they start to move. Then disconnect them by pulling.



CAUTION:
- **The tube can be removed when the tabs are completely depressed. Do not twist it more than necessary.**
- **Do not use any tools to remove the quick connector.**
- **Keep the resin tube away from heat. Be especially careful when welding near the tube.**
- **Prevent acid liquid such as battery electrolyte, etc. from getting on the resin tube.**
- **Do not bend or twist the tube during installation and removal.**
- **Only when the tube is replaced, remove the remaining retainer on the tube or fuel level sensor, fuel filter, and fuel pump assembly.**
- **When the tube or fuel level sensor, fuel filter, and fuel pump assembly is replaced, also replace the retainer with a new one (green colored retainer).**
- **To keep the connecting portion clean and to avoid damage and foreign materials, cover them completely with plastic bags (B) or something similar.**

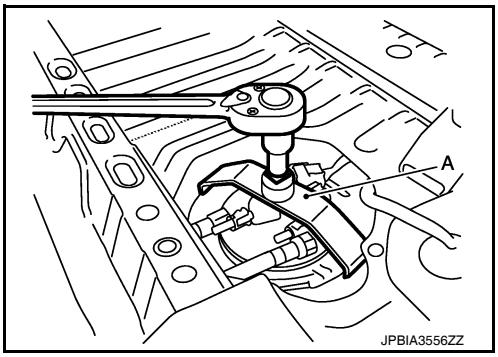
A : Fuel feed hose
C : Fuel tube



8. Remove the lock ring using Tool (A).

Tool number : KV10119900 (—)

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



9. Remove fuel level sensor unit, fuel filter and fuel pump assembly. Remove and discard the O-ring.
CAUTION:
- **Do not bend the float arm during removal.**
- **Discard the O-ring. Do not reuse O-ring.**

INSPECTION AFTER REMOVAL

Inspect the fuel level sensor, fuel filter, and fuel pump assembly for any defects and foreign materials. Replace as necessary.

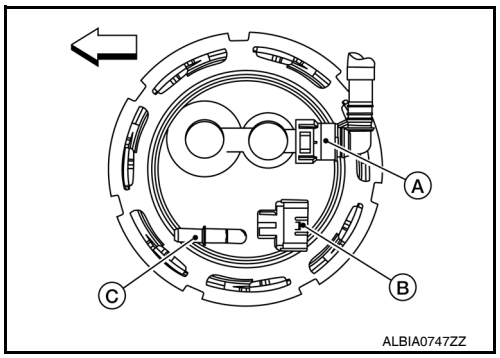
INSTALLATION

Installation is in the reverse order of removal.

- Install the fuel level sensor, fuel filter, and fuel pump assembly with the fuel feed tube (C) facing the front of the vehicle as shown. Use a new O-ring.

CAUTION:
Do not reuse O-ring.

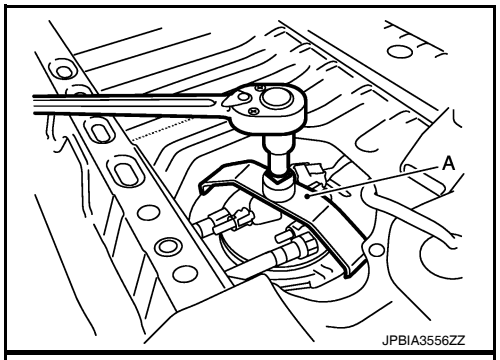
⇦ : Vehicle front
A : EVAP tube
B : Wiring harness connector



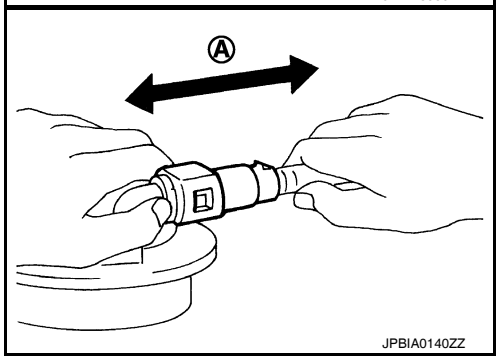
- Install the lock ring using Tool (A).

Tool number : KV10119900 (—)

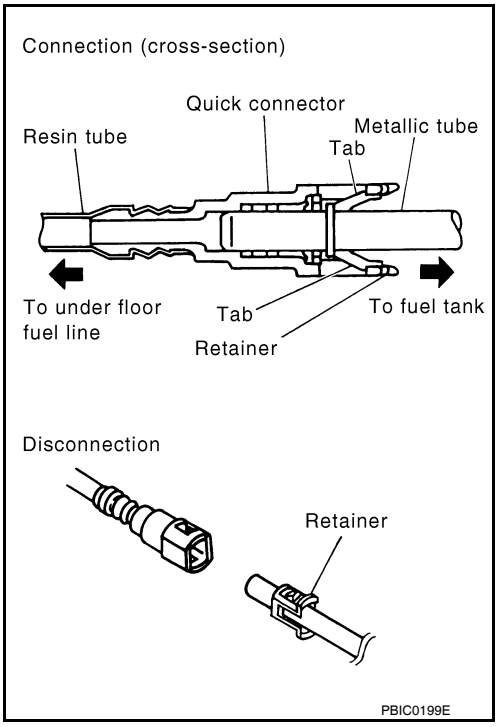
NOTE:
For reference when installing, align the matching marks on lock ring, fuel pump assembly and fuel tank.



- Connect the quick connector as follows:
- 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 is heard.
- After the tube is connected, make sure the connection is secure by performing the following checks:
- Pull (A) the tube and the connector to make sure they are securely connected.



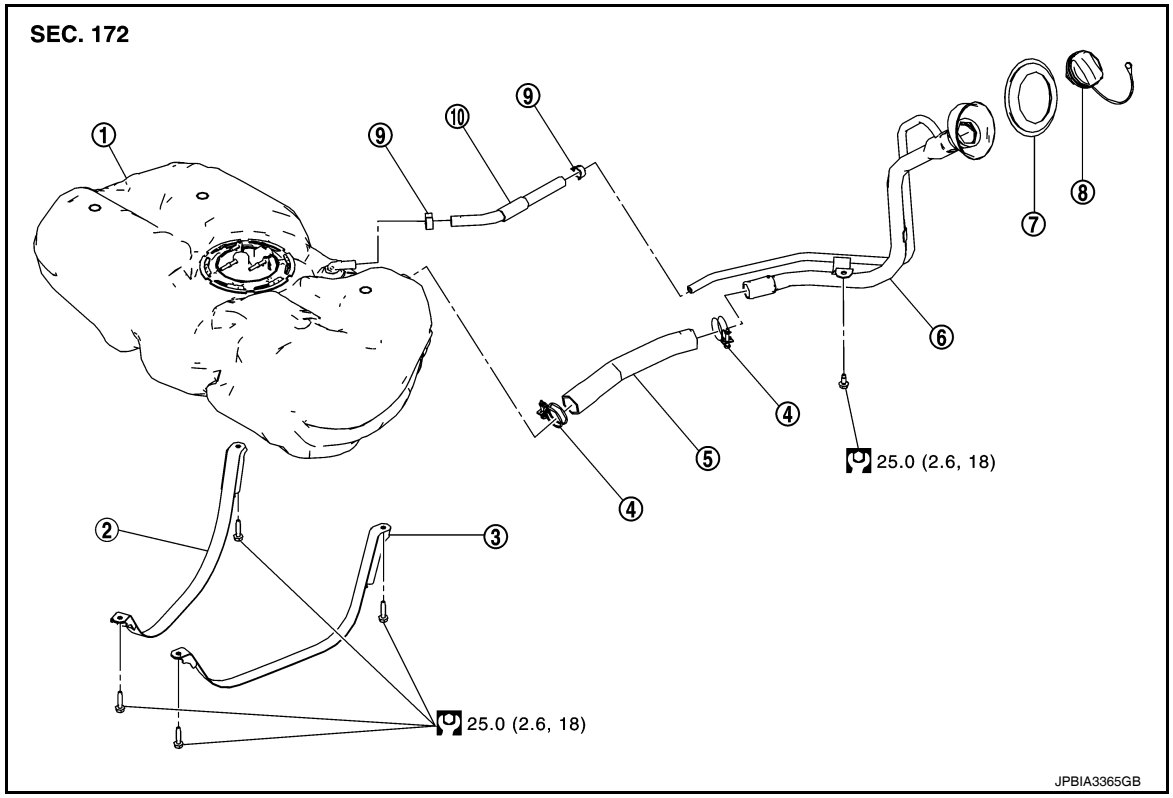
- Visually confirm that the two retainer tabs are connected to the quick connector.



FUEL TANK

Exploded View

INFOID:0000000007221931



1. Fuel tank
2. Fuel tank mounting band (RH)
3. Fuel tank mounting band (LH)
4. Clamp
5. Fuel filler hose
6. Fuel filler tube
7. Grommet
8. Fuel filler cap
9. Clamp
10. Vent hose

Removal and Installation

INFOID:0000000007221932

WARNING:
Be sure to read “General Precautions” before working on the fuel system. Refer to FL-2, "General Precautions".

REMOVAL

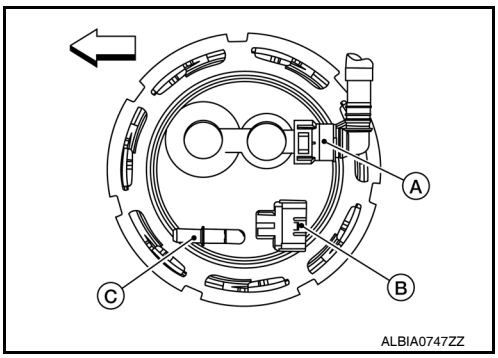
1. Release the fuel pressure from the fuel lines. Refer to EC-126, "Work Procedure".
2. Check fuel level with vehicle on a level surface. If the fuel level is 7/8 of the fuel tank (full or nearly full), draw appropriate amount of fuel from the fuel tank.

   Guideline : Draw approximately 10 liters (2-5/8 US gal, 2-1/4 imp gal) from a full-tank condition.

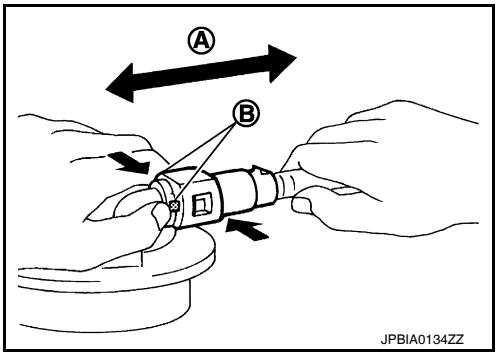
   - In the event of malfunction in fuel pump, insert a hose measuring 20mm (0.79 in) in diameter into the filler opening to draw approximately 10 liters (2-5/8 US gal, 2-1/4 Imp gal) fuel.
3. Open fuel filler lid.
4. Open fuel filler cap and release the pressure inside fuel tank.
5. Remove the rear seat cushion. Refer to SE-22, "Removal and Installation - Seat Cushion".
6. Remove the inspection hole cover.

7. Disconnect the wiring harness connector (B), fuel feed tube (C) and EVAP tube (A).

⇦ : Vehicle front

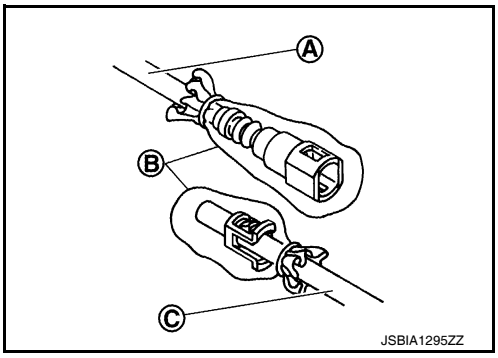


Remove the quick connector as follows:
- Hold the sides of the connector, push in tabs (B) and pull (A) out the tube.
- If the connector and the tube are stuck together, push and pull several times until they start to move. Then disconnect them by pulling.



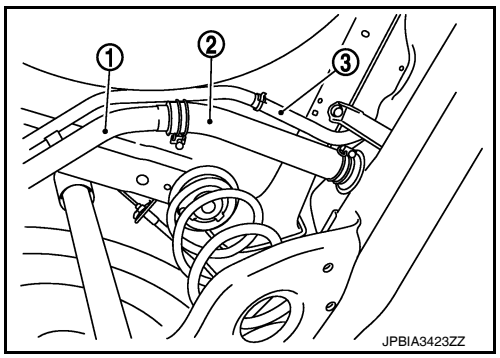
CAUTION:
- **The tube can be removed when the tabs are completely depressed. Do not twist it more than necessary.**
- **Do not use any tools to remove the quick connector.**
- **Keep the resin tube away from heat. Be especially careful when welding near the tube.**
- **Prevent acid liquid such as battery electrolyte, etc. from getting on the resin tube.**
- **Do not bend or twist the tube during installation and removal.**
- **Only when the tube is replaced, remove the remaining retainer on the tube or fuel level sensor, fuel filter, and fuel pump assembly.**
- **When the tube or fuel level sensor, fuel filter, and fuel pump assembly is replaced, also replace the retainer with a new one (green colored retainer).**
- **To keep the connecting portion clean and to avoid damage and foreign materials, cover them completely with plastic bags (B) or something similar.**

A : Fuel feed hose
C : Fuel tube



8. Remove center muffler and main muffler. Refer to EX-5, "Exploded View".
9. Disconnect the LH rear park brake cable brackets. Refer to PB-6, "Exploded View".
10. Remove the rear floor insulator located above center and main mufflers.

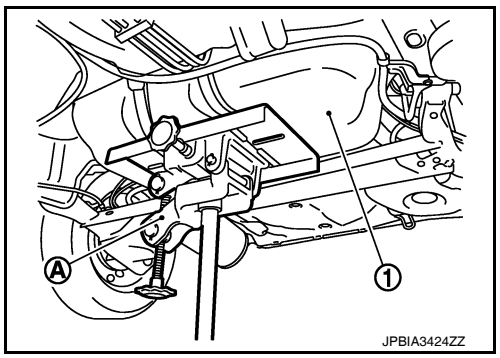
11. Disconnect fuel filler hose at fuel filler tube side.



1 : Fuel filler tube
2 : Fuel filler hose
3 : Vent hose

12. Disconnect vent hose from fuel tank side.

13. Support the center part of fuel tank (1) using a suitable jack (A).



14. Remove fuel tank mounting bands (RH and LH).
15. 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. Be sure to hold tank securely.

INSTALLATION

Installation is in the reverse order of removal.

Fuel Filler Hose

- Insert fuel filler hose to the length below.

Fuel filler hose : 35 mm (1.38 in)
The other hose : 25 mm (0.98 in)

- Be sure hose clamp is not placed on swelled area of fuel filler tube.
- Install fuel filler hose to fuel tank, paying attention to install mark.
- Tighten fuel filler hose clamp so that the remaining length of screw thread becomes to the following.

Fuel tank side hose clamp : 7 - 11 mm (0.28 - 0.43 in)
Fuel filler tube side hose clamp : 8 - 12mm (0.31 - 0.47 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 a "click" sound is heard.

Inspection

INFOID:0000000007221933

INSPECTION AFTER INSTALLATION

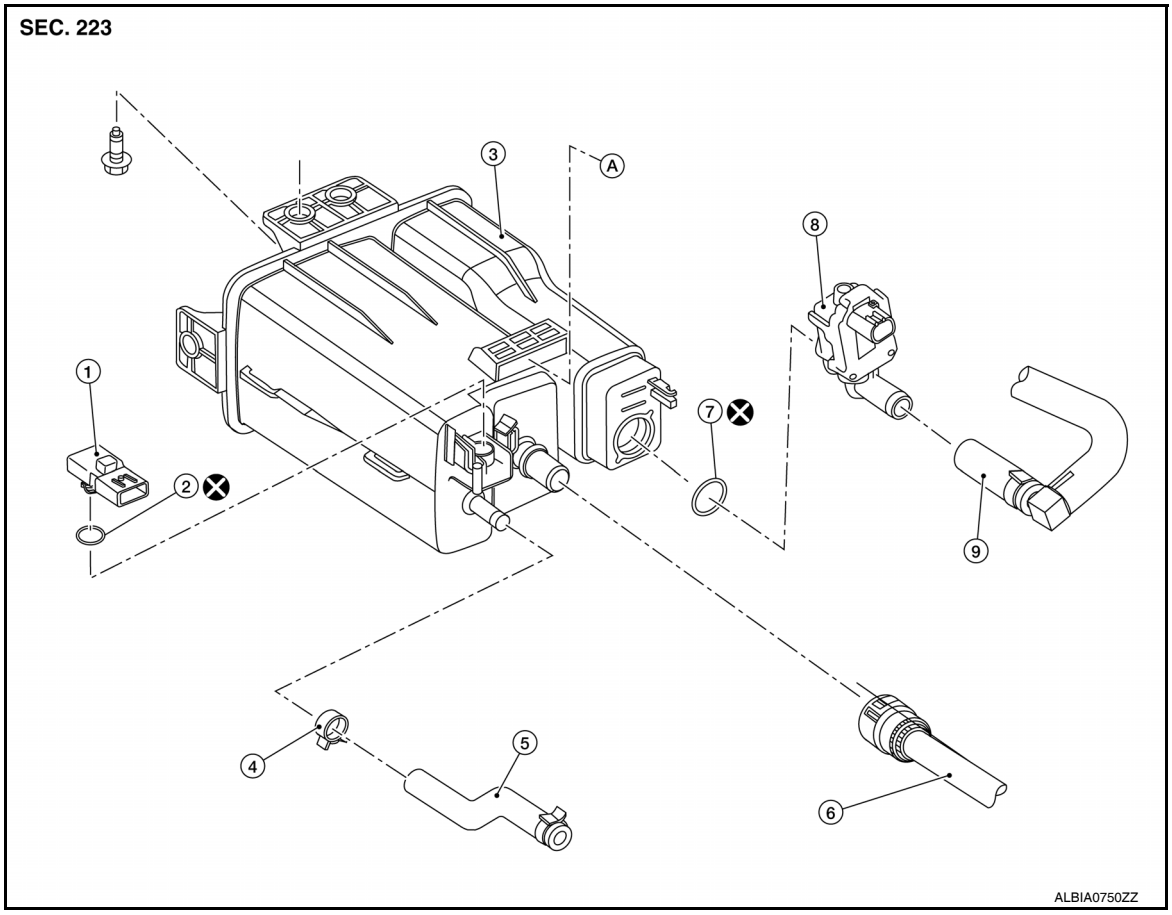
Use the following procedure to check for fuel leakage.

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.

EVAP CANISTER

Exploded View

INFOID:0000000007759123



1. EVAP control system pressure sensor
2. O-ring
3. EVAP canister
4. Hose clamp
5. EVAP canister purge hose
6. EVAP vent line
7. O-ring
8. EVAP canister vent control valve
9. EVAP canister vent control valve hose

A. Mount to vehicle bracket

Removal and Installation

INFOID:0000000007759124

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

REMOVAL

1. Remove the EVAP canister protector cover.
2. Disconnect the EVAP control system pressure sensor harness connector and the EVAP canister vent control valve harness connector.
3. Disconnect the EVAP canister purge hose, the EVAP vent line, and the EVAP canister vent control valve hose.
4. Remove the EVAP canister bolt.
5. Remove the EVAP canister from the vehicle.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

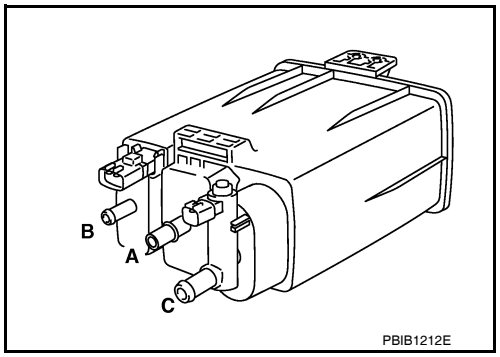
During service requiring removal of O-rings, always replace each O-ring with a new one during installation.

Inspection

INFOID:0000000007759125

Check EVAP canister as follows:

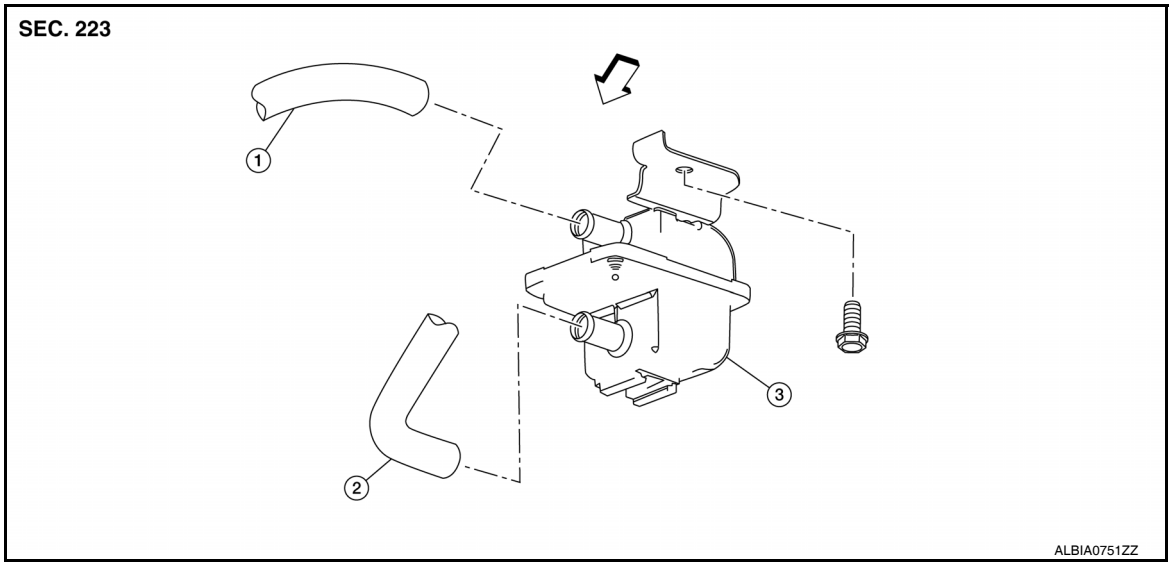
1. Block port (B).
2. Blow air into port (A) and check that it flows freely out of port (C).
3. Release blocked port (B).
4. Apply vacuum pressure to port (B) and check that vacuum pressure exists at the ports (A) and (C).
5. Block port (A) and (B).
6. Apply pressure to port (C) and check that there is no leakage.



EVAP CANISTER FILTER

Exploded View

INFOID:0000000007759126



1. EVAP canister vent control valve hose
2. Canister drain hose
3. EVAP canister filter

⇦ Vehicle front

Removal and Installation

INFOID:0000000007759127

REMOVAL

1. Remove the EVAP canister protector cover.
2. Disconnect EVAP canister vent control valve hose from EVAP canister filter.
3. Disconnect canister drain hose from EVAP canister filter.
4. Remove the bolt and the EVAP canister filter.

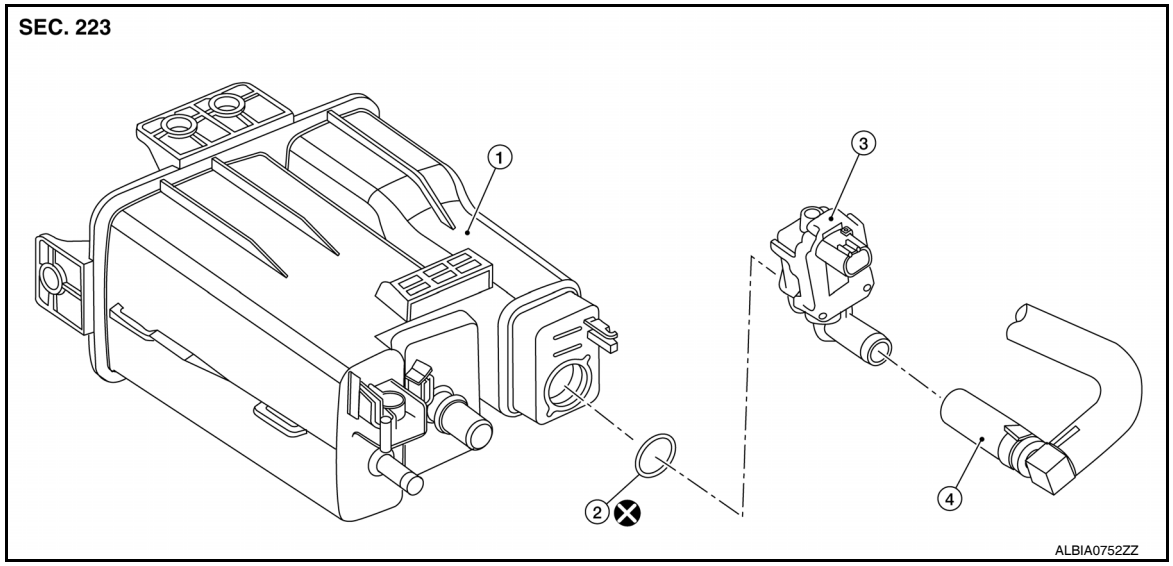
INSTALLATION

Installation is in the reverse order of removal.

EVAP CANISTER VENT CONTROL VALVE

Exploded View

INFOID:0000000007759128



1. EVAP canister
2. O-ring
3. EVAP canister vent control valve
4. EVAP canister vent control valve hose

Removal and Installation

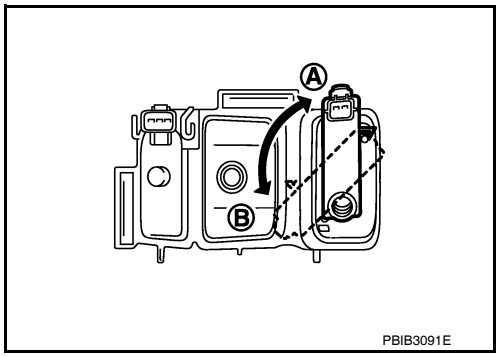
INFOID:0000000007759129

NOTE:
The EVAP canister vent control valve can be removed without removing the EVAP canister.

REMOVAL

1. Remove the EVAP canister protector cover.
2. Disconnect EVAP canister vent control valve hose from EVAP canister.
3. Disconnect EVAP canister vent control valve harness connector.
4. Turn EVAP canister vent control valve counterclockwise.

   A : Lock
   B : Unlock



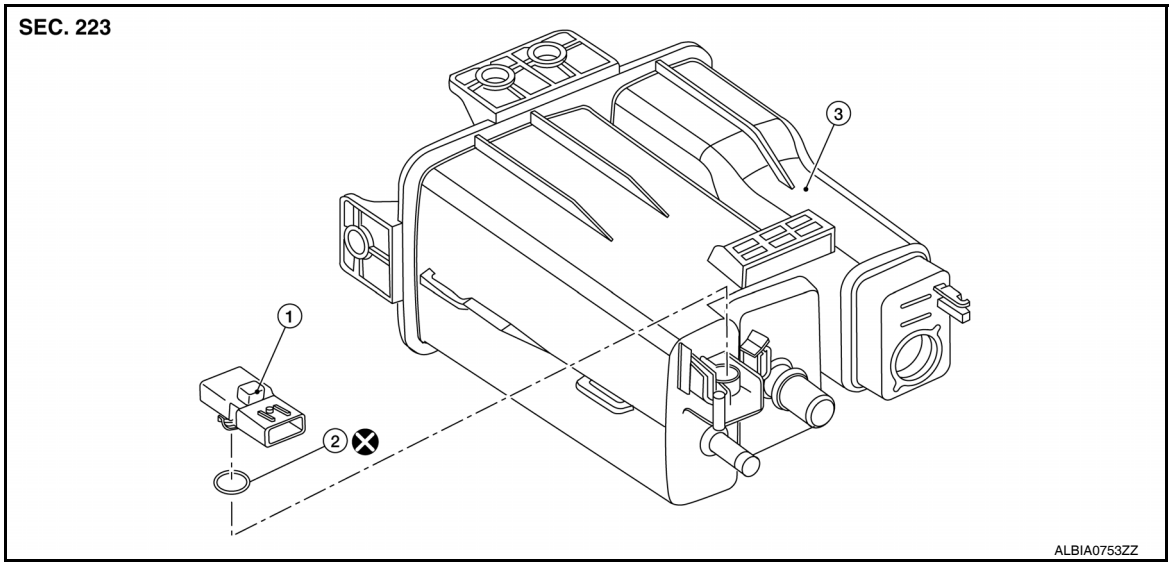
5. Remove the EVAP canister vent control valve and O-ring.
   CAUTION:
   Discard the O-ring. Do not reuse O-ring.

INSTALLATION
Installation is in the reverse order of removal.
CAUTION:
Do not reuse O-ring.

EVAP CONTROL SYSTEM PRESSURE SENSOR

Exploded View

INFOID:0000000007759130



1. EVAP control system pressure sensor
2. O-ring
3. EVAP canister

Removal and Installation

INFOID:0000000007759131

NOTE:
The EVAP canister system pressure sensor can be removed without removing the EVAP canister.

REMOVAL

1. Remove the EVAP canister protector cover.
2. Disconnect EVAP canister purge hose from EVAP canister.
3. Disconnect EVAP control system pressure sensor.
4. Remove EVAP control system pressure sensor and O-ring.
   CAUTION:
   Discard the O-ring. Do not reuse O-ring.

INSTALLATION

Installation is in the reverse order of removal.
CAUTION:
Do not reuse O-ring.

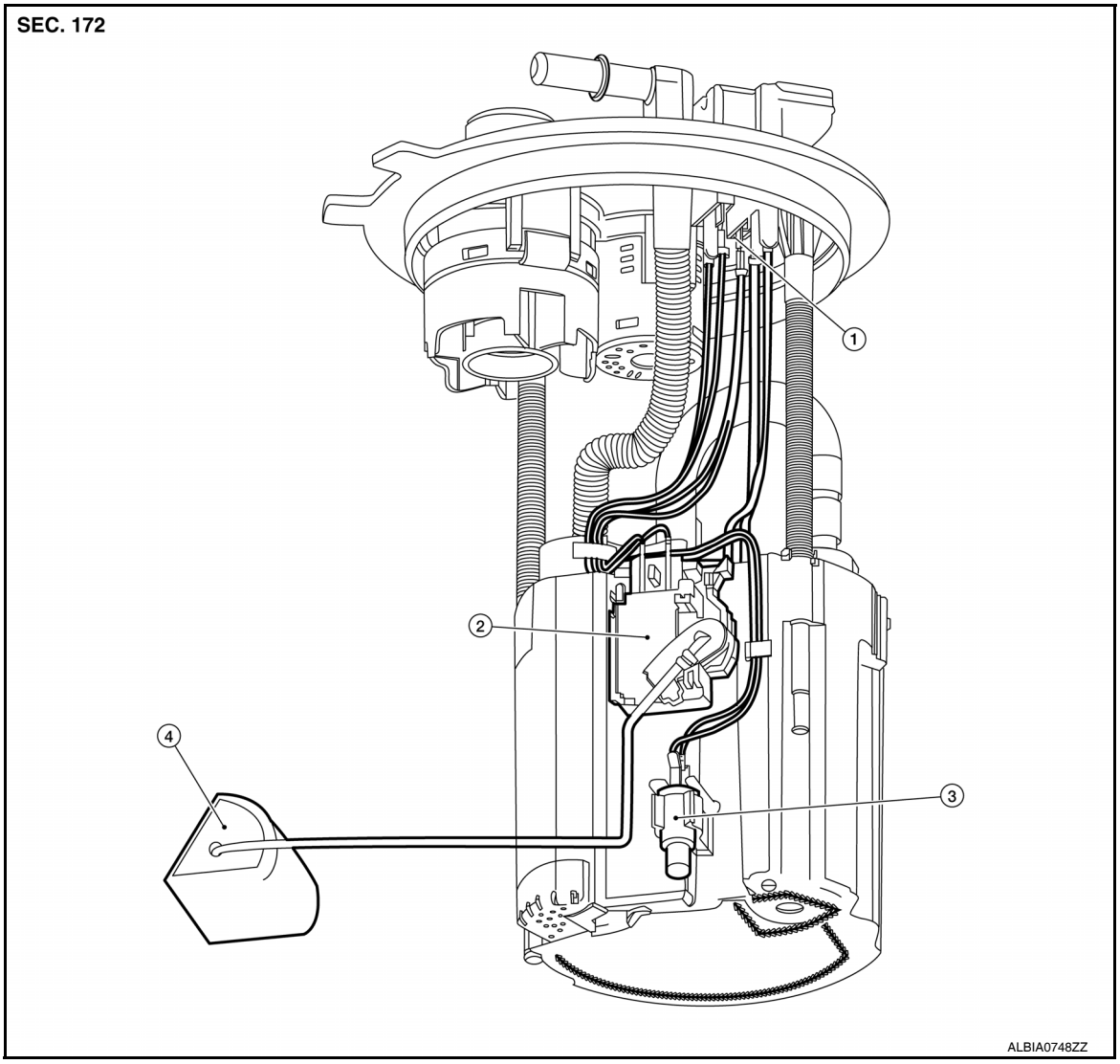
UNIT DISASSEMBLY AND ASSEMBLY

FUEL LEVEL SENSOR UNIT

Disassembly and Assembly

INFOID:0000000007759132

Fuel Level Sender Unit



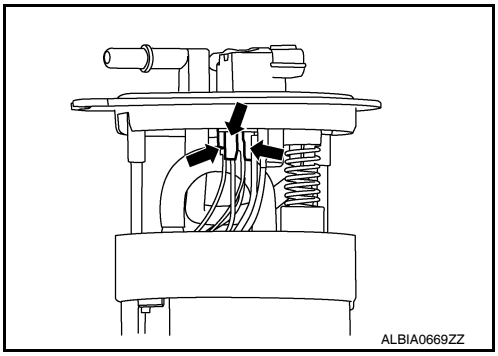
1. Harness connectors
2. Level sending unit module
3. Fuel temperature sensor
4. Float arm assembly

Disassembly

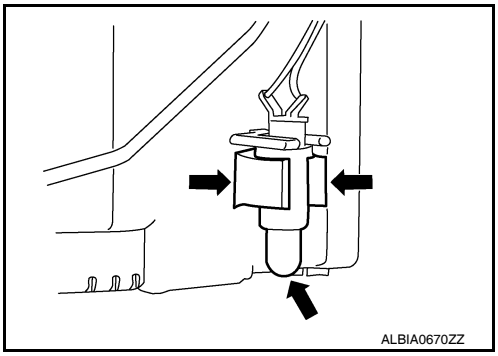
NOTE:
Before disassembly, note the proper placement of the wires to the correct terminals and correct wire routing to the terminals.

1. Disconnect the red, white, and double black wire connectors.

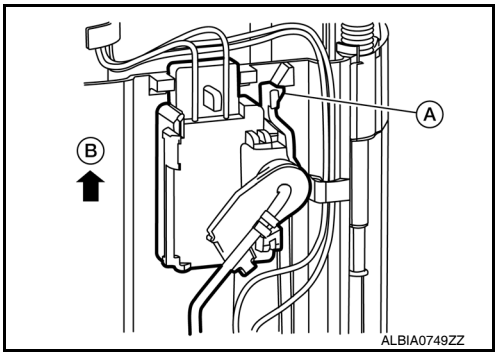
- Press the tabs on the terminals to release the locking tabs.



2. Release the two clips and remove the fuel temperature sensor from the pump assembly.



3. Release the tab (A) and slide the level sending unit module and float arm assembly up (B) to remove.



Assembly

Assembly is in the reverse order of disassembly.

NOTE:

- Ensure proper placement of the wires to the correct terminals and correct wire routing to the terminals.
- After connecting terminals, ensure they are securely locked and can not be pulled out.
- When installing the level sending unit, push down until the tab is locked into place.

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Fuel Tank

INFOID:0000000007221934

STANDARD AND LIMIT

Fuel tank capacity	Approx. 42.6 ℓ (11-1/4 US gal, 9-3/8 Imp gal)
Fuel recommendation	Refer to GI-26, "Fuel (Regular Unleaded Gasoline Recommended) HR16DE".