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SECTION **FL**

FUEL SYSTEM

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000012524940

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 three minutes before performing any service.

General Precaution

INFOID:000000012524941

WARNING:

When replacing fuel line parts, be sure to observe the following.

- Put a "CAUTION: FLAMMABLE" sign in the workshop.
- Be sure to work in a well ventilated area and furnish workshop with a CO₂ fire extinguisher.
- Do not smoke while servicing fuel system. Keep open flames and sparks away from the work area.

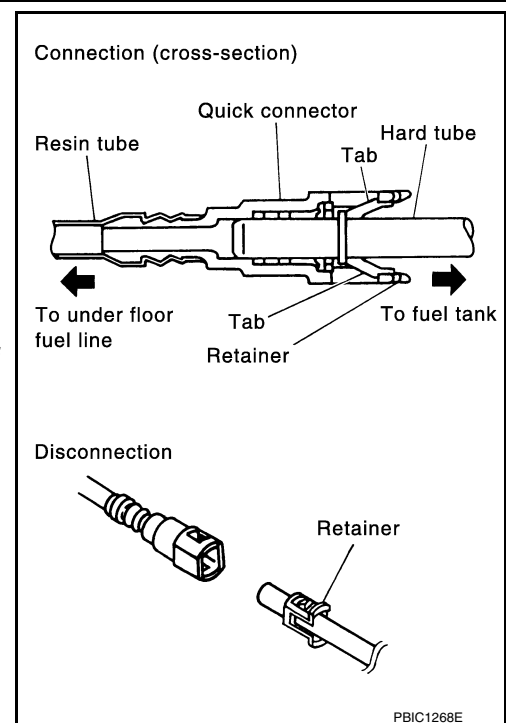
CAUTION:

- Before removing fuel line parts, carry 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-146, "Work Procedure"](#) (VQ40DE), [EC-596, "Work Procedure"](#) (VK56DE).
 - Disconnect the battery negative terminal.
- Always replace O-rings and clamps with new ones.
- Do not kink or twist hoses when they are being installed.

PRECAUTIONS

< PRECAUTION >

- After connecting the fuel tube quick connectors, make sure the quick connectors are secure. Ensure that the connector and resin tube do not contact any adjacent parts.
- After installing tubes, make sure there is no fuel leakage at connections in the following steps.
- Apply fuel pressure to fuel lines with turning ignition switch ON (with engine stopped). Then check for fuel leaks at connections.
- Start the engine and rev it up and check for fuel leaks at connections.
- Use only a Genuine NISSAN fuel filler cap as a replacement. If an incorrect fuel filler cap is used, the MIL may come on.
- For servicing “Evaporative Emission System” parts, refer to [FL-13, "Component Inspection"](#).
- For checking “On Board Refueling Vapor Recovery (ORVR)” parts, refer to [EC-459, "Inspection"](#) (VQ40DE), [EC-901, "Inspection"](#) (VK56DE).



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PREPARATION

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PREPARATION

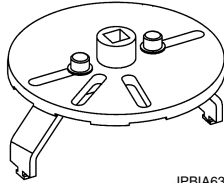
PREPARATION

Special Service Tool

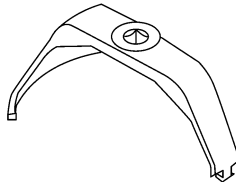
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The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
KV101207S0 (—) Unified fuel lock ring wrench	Removing and installing fuel tank lock ring
— (J-46536) Fuel lock ring wrench	



JPBIA6384ZZ



LBIA0398E

Commercial Service Tool

INFOID:000000012524943

Tool name	Description
Power tool	Loosening nuts, screws and bolts



PIIB1407E

FUEL SYSTEM

< BASIC INSPECTION >

BASIC INSPECTION

FUEL SYSTEM

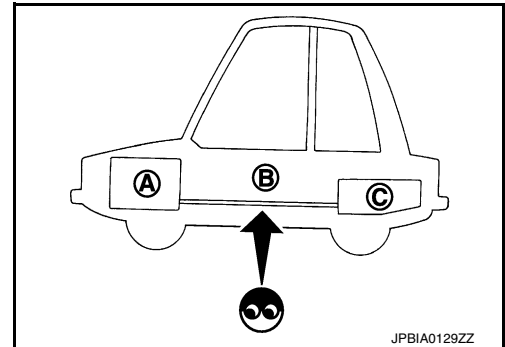
Checking Fuel Line

INFOID:000000012524944

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

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

If necessary, repair or replace damaged parts.



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FUEL TANK

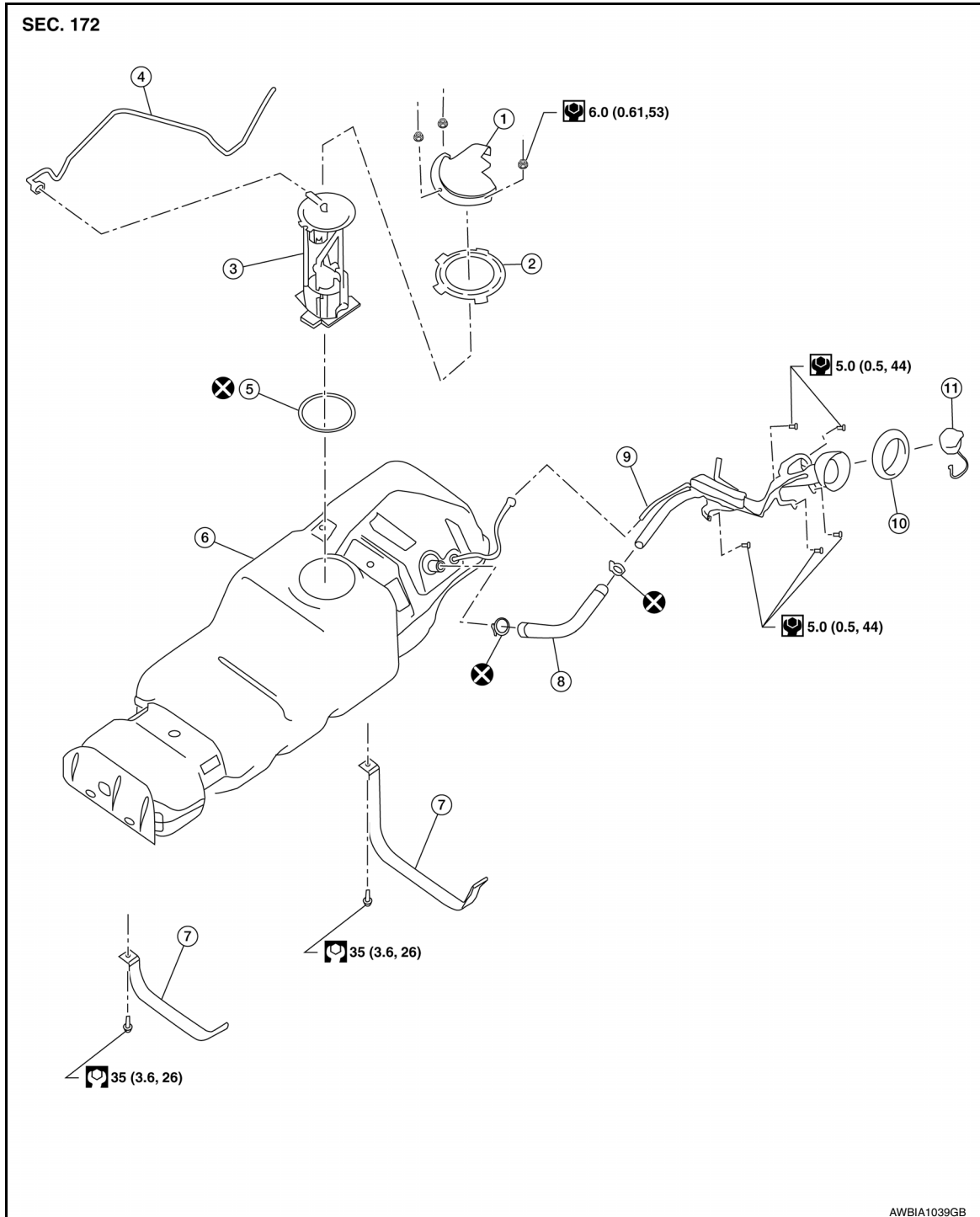
< UNIT REMOVAL AND INSTALLATION >

UNIT REMOVAL AND INSTALLATION

FUEL TANK

Removal and Installation

INFOID:000000012524945



- | | | |
|------------------------------|---------------------|---|
| 1. Fuel line pump protector | 2. Lock ring | 3. Fuel level sensor, fuel filter, and fuel pump assembly |
| 4. EVAP vent hose | 5. O-ring | 6. Fuel tank |
| 7. Fuel tank strap | 8. Fuel filler hose | 9. Fuel filler pipe |
| 10. Fuel filler hose grommet | 11. Fuel filler cap | |

FUEL TANK

< UNIT REMOVAL AND INSTALLATION >

REMOVAL

WARNING:

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

NOTE:

When removing components such as hoses, tubes, lines, etc., cap or plug openings to prevent fluid from spilling.

1. Remove the fuel filler cap to release the pressure from inside the fuel tank.
2. Check the fuel level on level gauge. If the fuel gauge indicates more than the level as shown (half), drain the fuel from the fuel tank until the fuel gauge indicates the level as shown, or less.

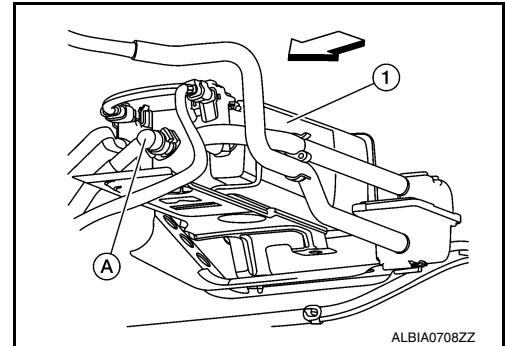
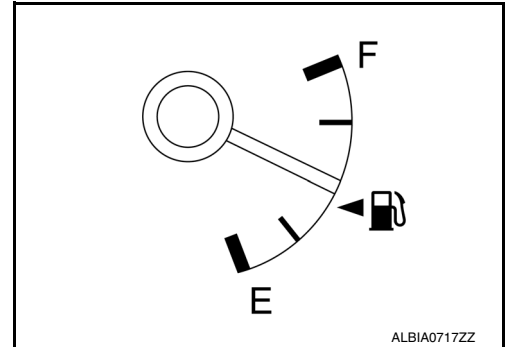
NOTE:

Fuel may be spilled through the fuel filler hose opening when lowering the fuel tank if the level is above "half".

- As a guide, the fuel level reaches the fuel gauge position as shown, or less, when approximately 52.9 ℓ (14 US gal, 11 5/8 Imp gal) of fuel is drained from a full fuel tank.
- If the fuel pump does not operate, use the following procedure to drain the fuel to the specified level.

- a. Loosen the clamp and disconnect the lower end of the fuel filler hose from the fuel tank.
 - b. Insert a suitable hose of less than 15 mm (0.59 in) diameter into the fuel tank through the fuel filler opening to drain the fuel.
3. Release the fuel pressure from the fuel lines. Refer to [EC-146, "Work Procedure"](#) (VQ40DE), [EC-596, "Work Procedure"](#) (VK56DE).
 4. Disconnect the battery negative terminal. Refer to [PG-95, "Removal and Installation"](#).
 5. Disconnect the fuel filler vent hose from the fuel filler vent pipe.
 6. Disconnect the EVAP vent hose (A) at the EVAP canister (1).

⇐ : Front



7. Remove the propeller shaft. Refer to [DLN-7, "Removal and Installation"](#) (3S1355), [DLN-20, "Removal and Installation"](#) (3S1415).
8. Support the fuel tank with a suitable lift jack.
9. Remove the two fuel tank straps.
10. Lower the fuel tank position in the vehicle enough to gain access to the fuel line pump protector, fuel pipe and fuel level sensor unit, fuel filter and fuel pump assembly harness connector.

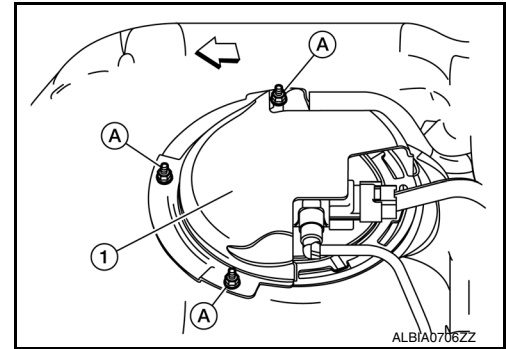
WARNING:

Be sure not to lower the fuel tank so that stress to the fuel pipe and the fuel pump wiring harness occurs as this will damage components.

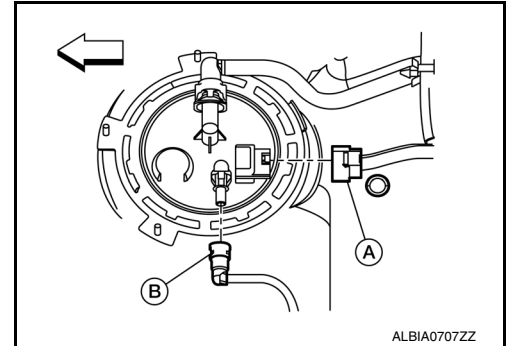
FUEL TANK

< UNIT REMOVAL AND INSTALLATION >

11. Remove the 3 nuts (A) and the fuel line pump protector (1).

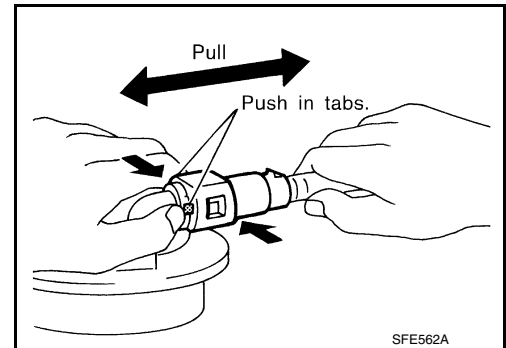


12. Disconnect the harness connector (A) and the fuel feed hose (B) from the fuel level sensor, fuel filter and fuel pump assembly.



Disconnect the quick connector as follows:

- Hold the sides of the connector, push in tabs and pull 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.

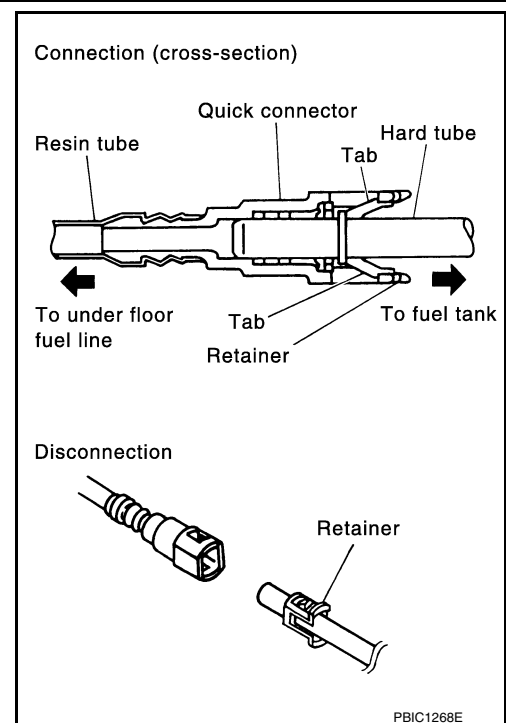


CAUTION:

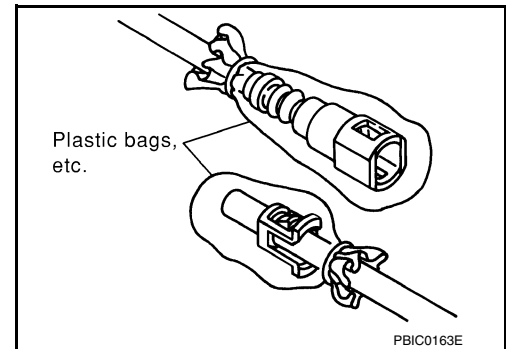
FUEL TANK

< UNIT REMOVAL AND INSTALLATION >

- The quick connector can be disconnected when the tabs are completely depressed. Do not twist the quick connector more than necessary.
- Do not use any tools to disconnect the quick connector.
- Keep the resin tube away from heat. Be especially careful when welding near the tube.
- Prevent any acid liquids such as battery electrolyte, from getting on the resin tube.
- Do not bend or twist the resin tube during connection.
- Do not remove the remaining retainer on the hard tube (or the equivalent) except when the resin tube or the retainer is replaced.
- When the resin tube or hard tube, or the equivalent, is replaced, also replace the retainer with a new one (white colored retainer).



- To keep the quick connector clean and to avoid damage and contamination from foreign materials, cover the quick connector with plastic bags or suitable material as shown.



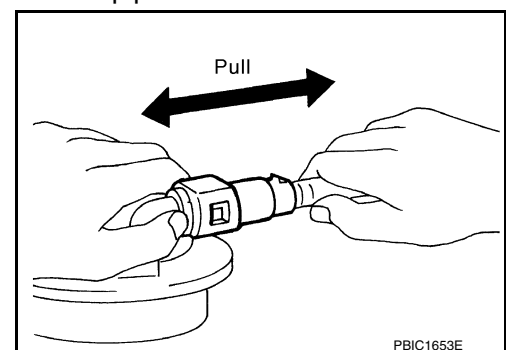
13. Lower the fuel tank from the vehicle using a suitable lift jack.

14. If necessary, remove the fuel level sensor unit, fuel filter and fuel pump assembly. Refer to [FL-11](#), "[Removal and Installation](#)".

INSTALLATION

Installation is in the reverse order of removal.

- Connect the quick connector as follows:
 - Check the connection for any damage or foreign materials.
 - Align the connector with the pipe, then insert the connector straight into the pipe until a click is heard.
 - After connecting the quick connector, make sure that the connection is secure by checking as follows:
 - Pull the tube and the connector to make sure they are securely connected.
 - Visually inspect the connector to make sure the two retainer tabs are securely connected.



INSPECTION AFTER INSTALLATION

1. Turn the ignition switch ON but do not start engine, then check the fuel pipe and hose connections for leaks while applying fuel pressure to the system.

FUEL TANK

< UNIT REMOVAL AND INSTALLATION >

2. Start the engine, raise idle, and verify there are no fuel leaks at any of the fuel system connections.

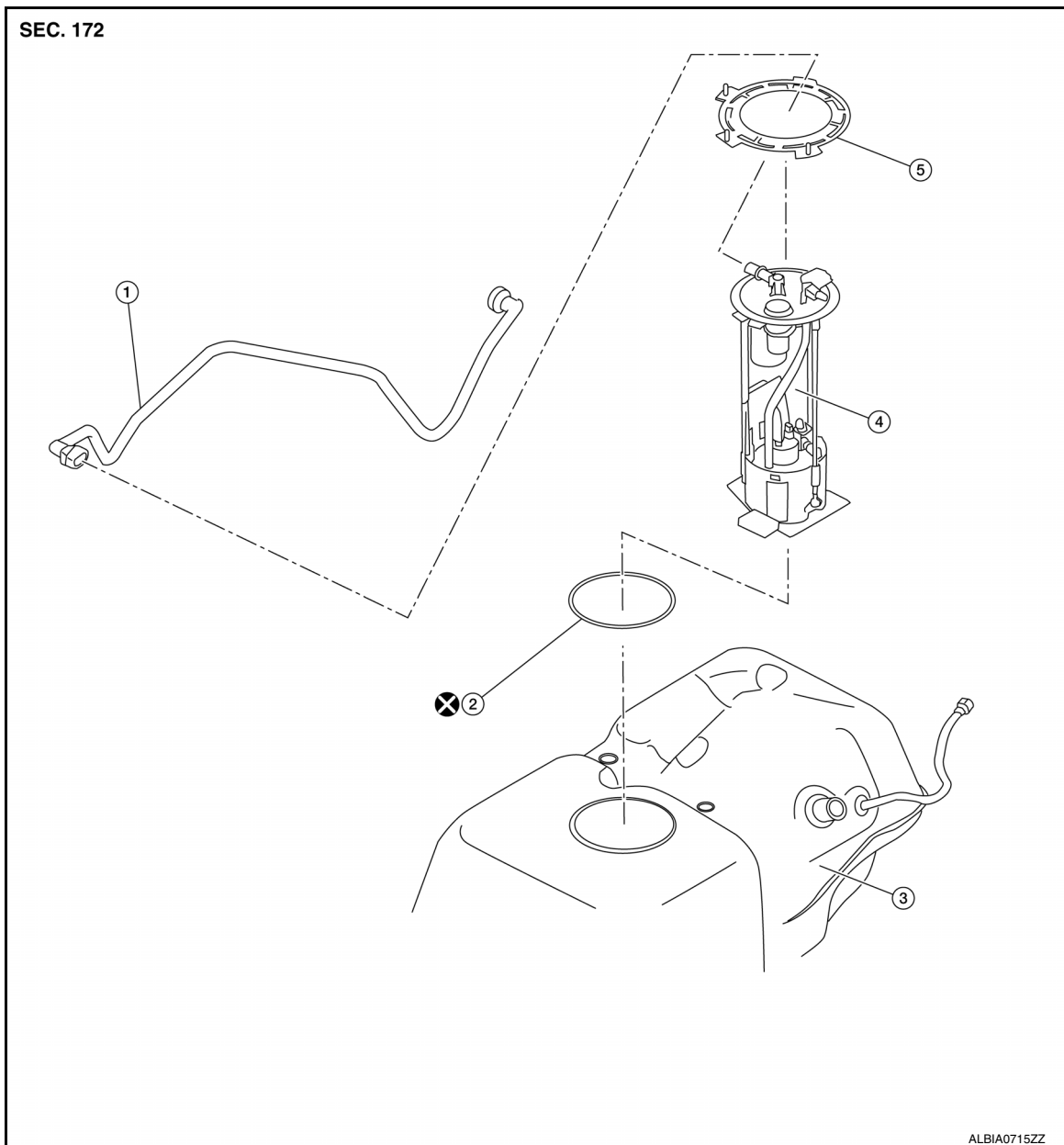
FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< UNIT REMOVAL AND INSTALLATION >

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

Removal and Installation

INFOID:000000012524946



- | | | |
|--|--------------|--------------|
| 1. EVAP vent hose | 2. O-ring | 3. Fuel tank |
| 4. Fuel level sensor, fuel filter and fuel pump assembly | 5. Lock ring | |

REMOVAL

WARNING:

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

NOTE:

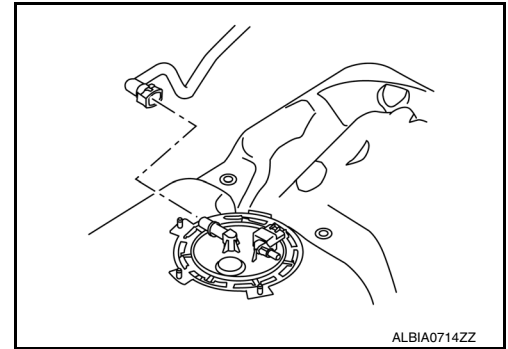
When removing components such as hoses, tubes, lines, etc., cap or plug openings to prevent fluid from spilling.

1. Remove the fuel tank from the vehicle. Refer to [FL-6, "Removal and Installation"](#).

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< UNIT REMOVAL AND INSTALLATION >

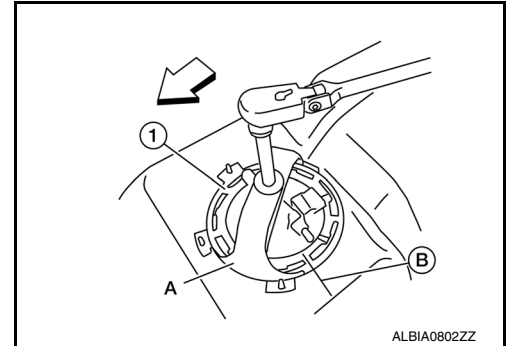
2. Disconnect the EVAP vent hose from the fuel level sensor, fuel filter and fuel pump assembly.



3. Place a matching location mark (B) on the lock ring and the fuel tank. This will aid with alignment during installation of the lock ring.
4. Remove the lock ring (1) using Tool (A) as shown.

Tool number (A) : — (J-46536) (shown)
: KV101207S0 (—)

↔ : Front



5. Remove the fuel level sensor, fuel filter and fuel pump assembly. Remove and discard the O-ring.

CAUTION:

- Do not bend the float arm during removal.
- Avoid impacts such as dropping when handling the components.
- Do not reuse O-ring.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Do not reuse O-ring.

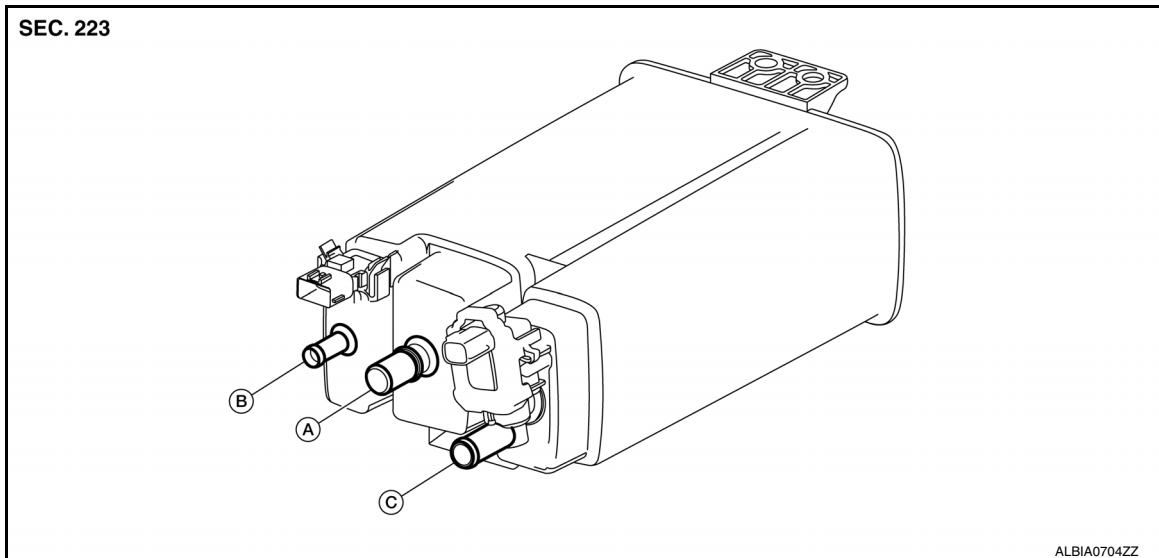
EVAP CANISTER

< UNIT REMOVAL AND INSTALLATION >

EVAP CANISTER

Component Inspection

INFOID:000000012524947



A. EVAP vent line port

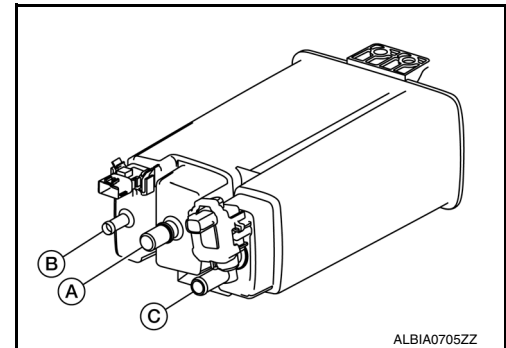
B. EVAP canister purge port

C. EVAP canister vent control valve port

EVAP CANISTER

Check EVAP canister as follows:

1. Block the EVAP canister purge port (B).
2. Blow air into the EVAP vent line port (A) and check that it flows freely out of the EVAP canister vent control valve port (C).
3. Release blocked EVAP canister purge port (B).
4. Apply vacuum pressure to the EVAP canister purge port (B) and check that vacuum pressure exists at the EVAP vent line port (A) and the EVAP canister vent control valve port (C).
5. Block the EVAP vent line port (A) and the EVAP canister purge port (B).
6. Apply pressure to the EVAP canister vent control valve port (C) and check that no leakage exists.



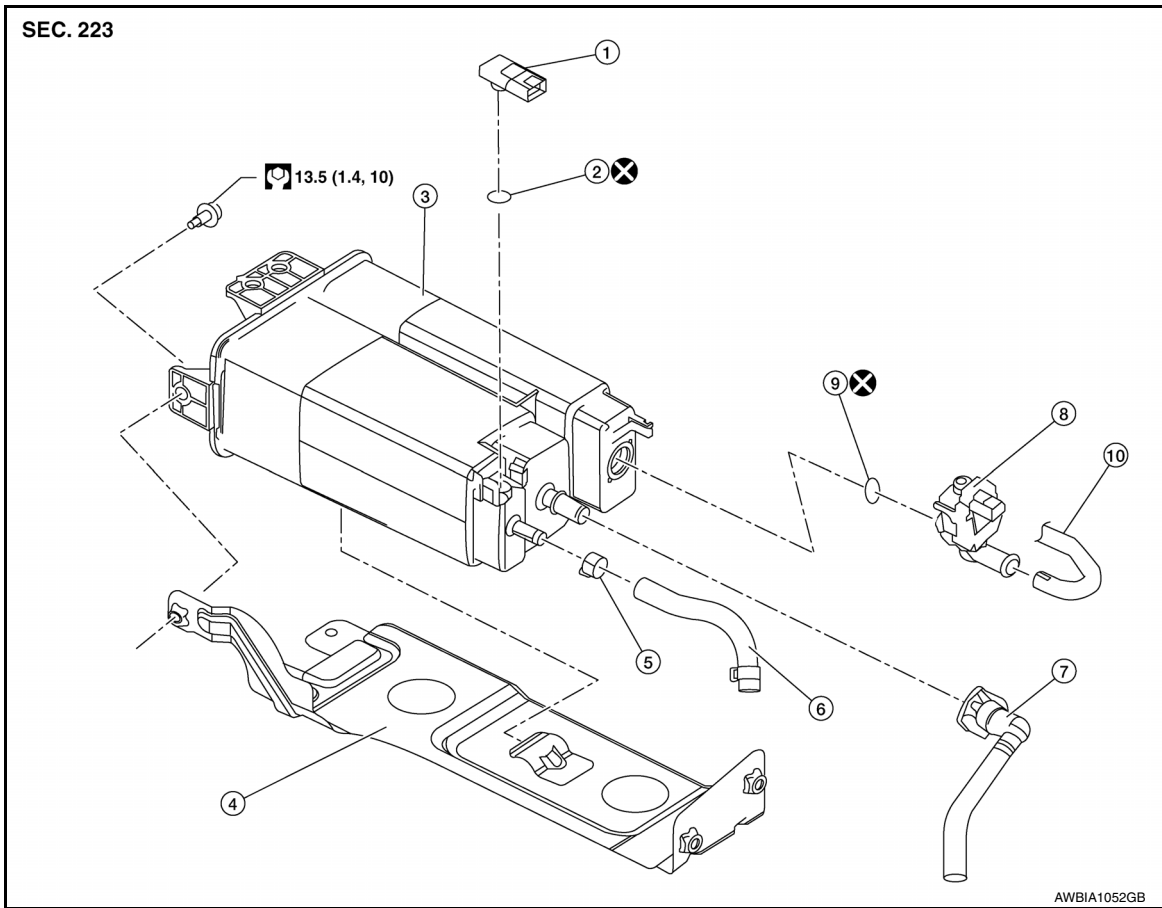
Removal and Installation

INFOID:000000012524948

EVAP CANISTER

EVAP CANISTER

< UNIT REMOVAL AND INSTALLATION >



- | | | |
|---|-------------------------------------|-----------------------------|
| 1. EVAP control system pressure sensor | 2. O-ring | 3. EVAP canister |
| 4. EVAP canister bracket | 5. Hose clamp | 6. EVAP canister purge hose |
| 7. EVAP vent line | 8. EVAP canister vent control valve | 9. O-ring |
| 10. EVAP canister vent control valve hose | | |

Removal

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

Installation

Installation is in the reverse order of removal.

CAUTION:

Do not reuse O-rings.

EVAP CANISTER VENT CONTROL VALVE

< UNIT REMOVAL AND INSTALLATION >

EVAP CANISTER VENT CONTROL VALVE

Removal and Installation

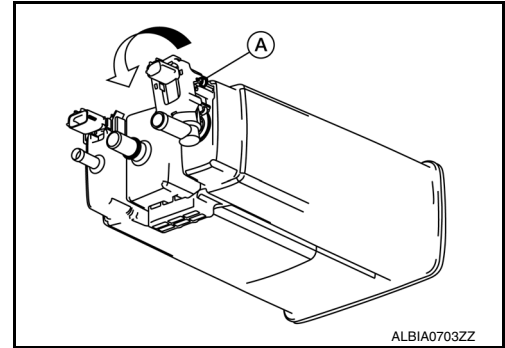
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EVAP CANISTER VENT CONTROL VALVE

Removal

1. Disconnect the harness connector from the EVAP canister vent control valve.
2. Disconnect the EVAP canister vent control valve hose.
3. Release the locking tab (A) and turn EVAP canister vent control valve counterclockwise.
4. Remove the EVAP canister vent control valve and O-ring.

CAUTION:
Do not reuse O-ring.



Installation

Installation is in the reverse order of removal.

CAUTION:
Do not reuse O-ring.

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EVAP CANISTER FILTER

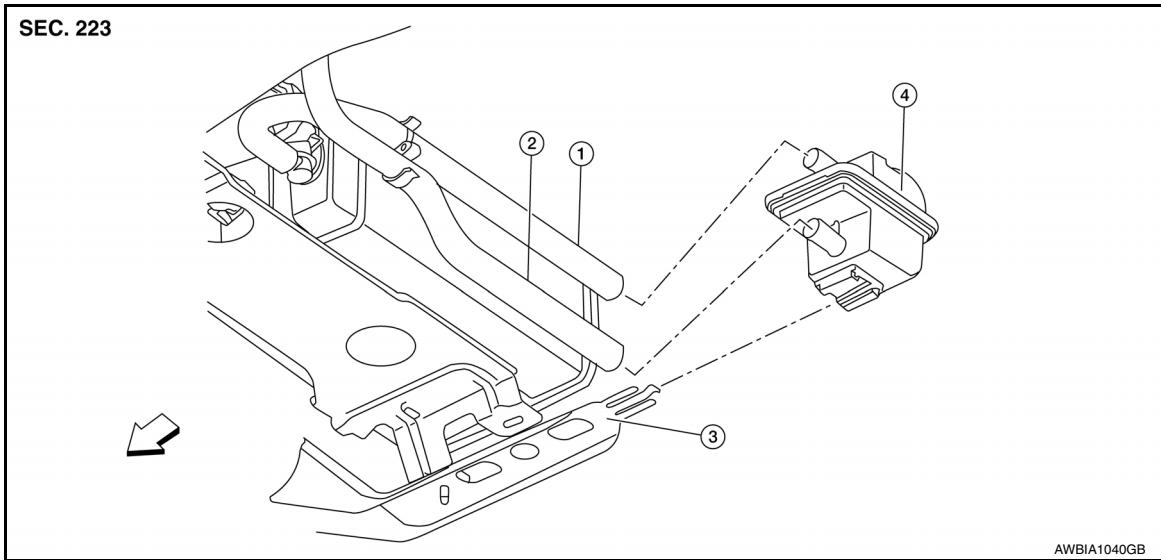
< UNIT REMOVAL AND INSTALLATION >

EVAP CANISTER FILTER

Removal and Installation

INFOID:000000012524950

EVAP CANISTER FILTER



1. EVAP canister vent control valve hose
 2. EVAP vent hose
 3. EVAP canister bracket
 4. EVAP canister filter
- ← Front

Removal

1. From underneath the vehicle, disconnect the EVAP canister vent control valve hose and the EVAP vent hose from the EVAP canister filter.
2. Remove the EVAP canister filter from the EVAP canister bracket.

Installation

Installation is in the reverse order of removal.

EVAP CONTROL SYSTEM PRESSURE SENSOR

< UNIT REMOVAL AND INSTALLATION >

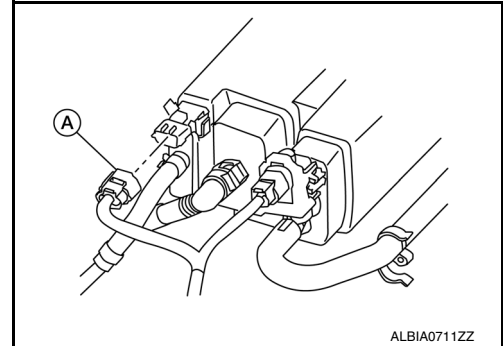
EVAP CONTROL SYSTEM PRESSURE SENSOR

Removal and Installation

INFOID:000000012524951

REMOVAL

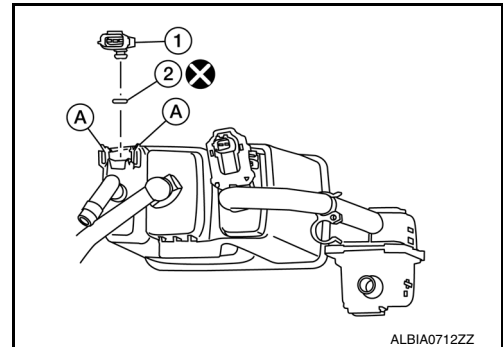
1. Disconnect the harness connector (A) from the EVAP control system pressure sensor.



2. Release the locking tabs (A) and remove the EVAP control system pressure sensor (1) and O-ring (2).

CAUTION:

Do not reuse O-ring.



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Do not reuse O-ring.

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FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

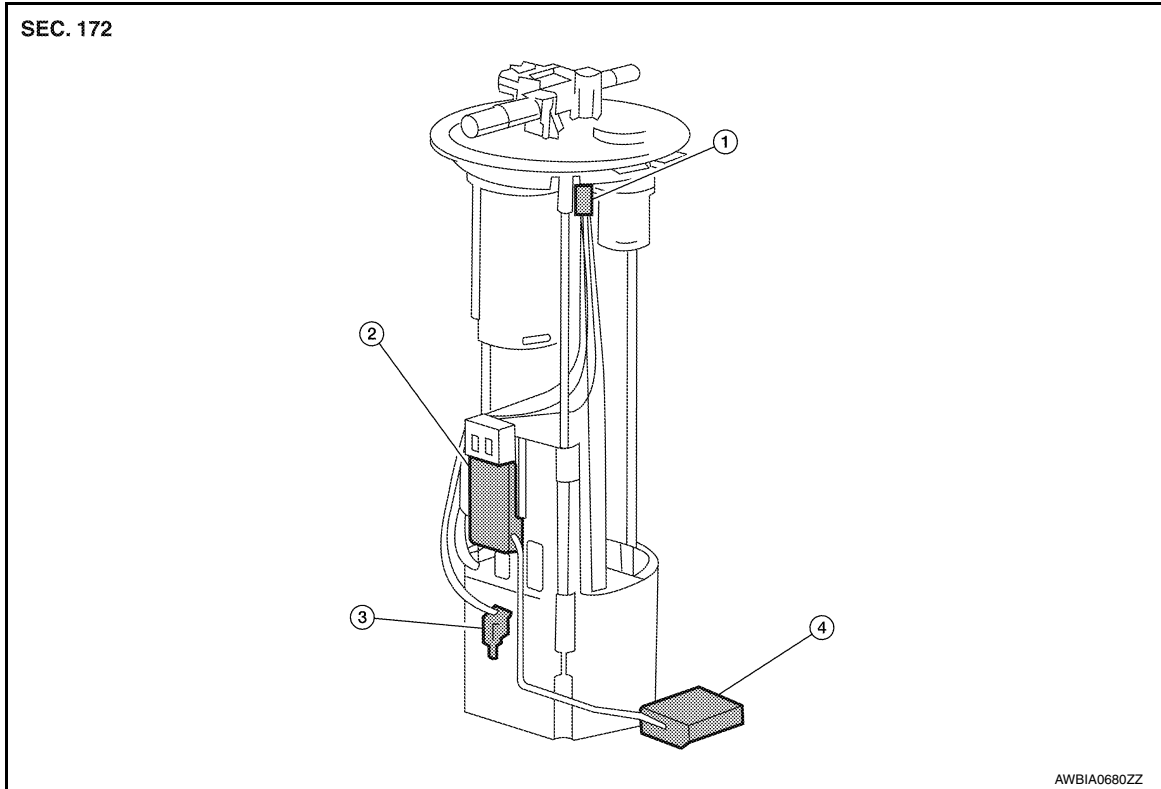
UNIT DISASSEMBLY AND ASSEMBLY

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

Disassembly and Assembly

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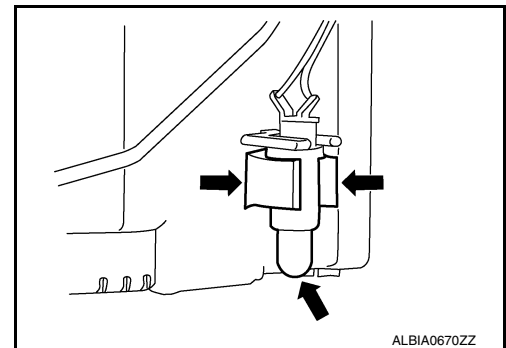
Fuel Level Sensor Unit



1. Harness connector
2. Sending unit module
3. Fuel temperature sensor
4. Float arm assembly

Disassembly

1. Disconnect the harness connector.
2. Remove the tie wrap from the harness.
3. Release the two clips and remove the fuel temperature sensor.
4. Release the clips, remove the sending unit module and float arm assembly from the fuel pump assembly.



Assembly

Assembly is in the reverse order of disassembly.

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Standard and Limit

INFOID:0000000012524953

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Fuel tank capacity	105.8 ℓ (28 US gal, 23-1/4 Imp gal)
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