

SECTION **FL**
FUEL SYSTEM

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PREPARATION

PREPARATION

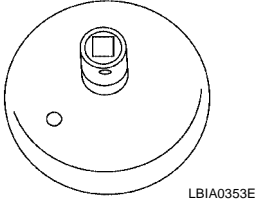
PFP:00002

Special Service Tools

EBS00J8B

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

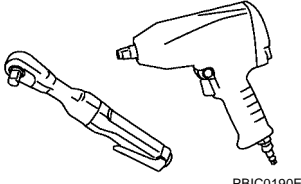
Tool number (Kent-Moore No.) Tool name	Description
KV991J0090 (J-46214) Fuel tank lock ring wrench	Removing and installing fuel tank lock ring



Commercial Service Tools

EBS00J8C

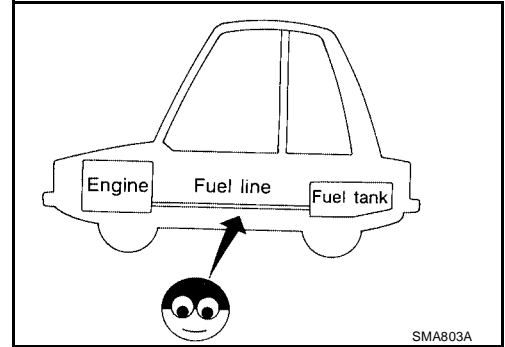
Tool name	Description
Power tool	Loosening bolts and nuts



FUEL SYSTEM

Checking Fuel Lines

Inspect fuel lines, filler cap and tank for improper attachment, leaks, cracks, damage, loose connections, chafing or deterioration. If necessary, repair or replace faulty parts as necessary.



General Precautions

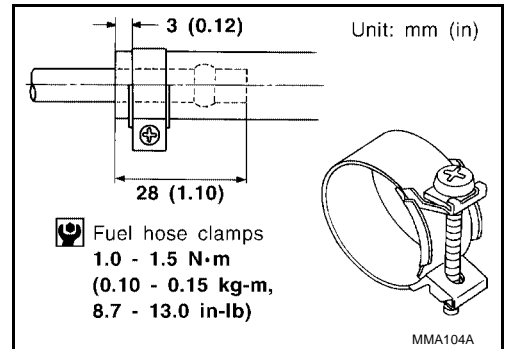
WARNING:

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

- Put a “CAUTION: FLAMMABLE” sign in the work area.
- Be sure to work in a well ventilated area and have a CO² fire extinguisher.
- Do not smoke while working on the fuel system. Keep open flames and sparks away from the work area.

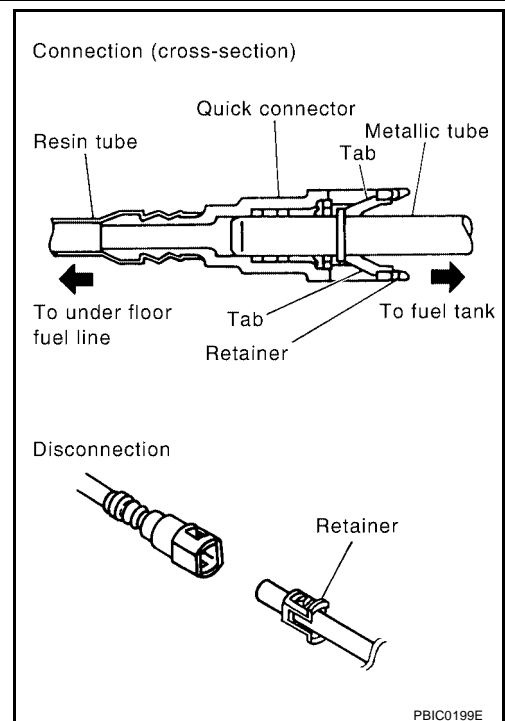
CAUTION:

- 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-95, "FUEL PRESSURE RELEASE" \(QR25DE\)](#), [EC-714, "FUEL PRESSURE RELEASE" \(VQ35DE\)](#).
 - Disconnect the battery ground cable.
- Always replace O-rings and clamps with new ones.
- Do not kink or twist tubes when they are being installed.
- Do not tighten hose clamps excessively to avoid damaging hoses. Tighten high-pressure rubber hose clamp so that clamp end is 3 mm (0.12 in) from hose end. Tightening torque specifications are the same for all rubber hose clamps. Ensure that screw does not contact adjacent parts.



FUEL SYSTEM

- After connecting the fuel tube quick connectors, make sure the quick connectors are secure. Check that the connector and resin tube do not contact any adjacent parts.
- a) Apply fuel pressure to the fuel system by turning the ignition switch to ON (without starting the engine). Then check for fuel leaks at the fuel tube connections.
- b) Start the engine and rev the engine, then check for fuel leaks at the fuel tube connections.
- After installing the tubes, run the engine and check for fuel leaks at the 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-37, "EVAPORATIVE EMISSION SYSTEM" \(QR25DE\)](#), [EC-651, "EVAPORATIVE EMISSION SYSTEM" \(VQ35DE\)](#).
- For servicing "On Board Refueling Vapor Recovery (ORVR)" parts, refer to [EC-44, "ON BOARD REFUELING VAPOR RECOVERY \(ORVR\)" \(QR25DE\)](#), [EC-660, "ON BOARD REFUELING VAPOR RECOVERY \(ORVR\)" \(VQ35DE\)](#).

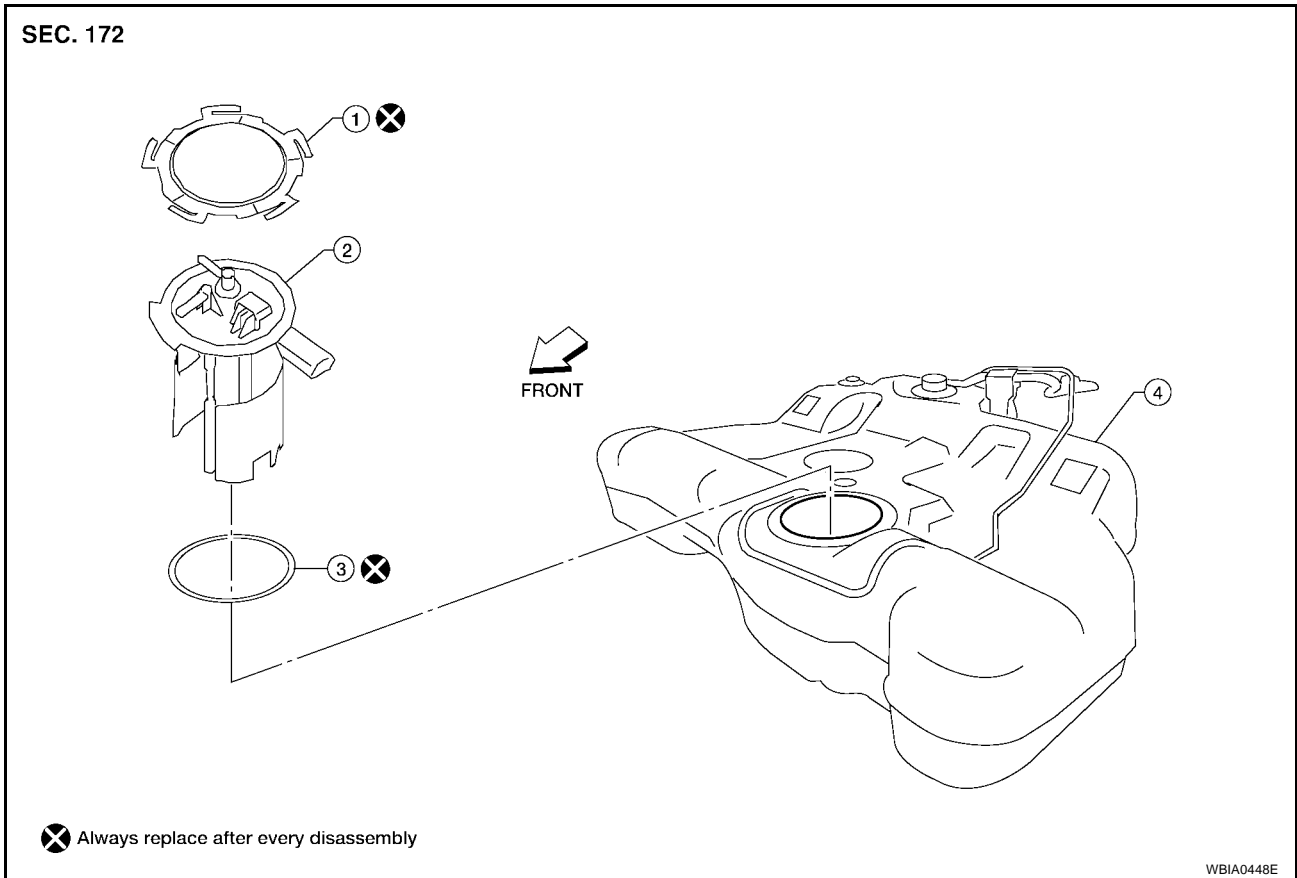


FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY PFP:17042

Removal and Installation For All Models Except PZEV

EBS00J8F



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

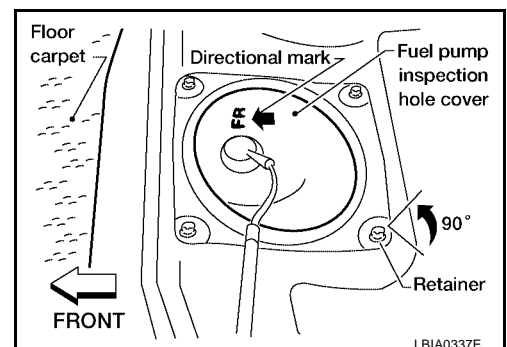
REMOVAL

WARNING:

Read "General Precautions" before working on the fuel system.

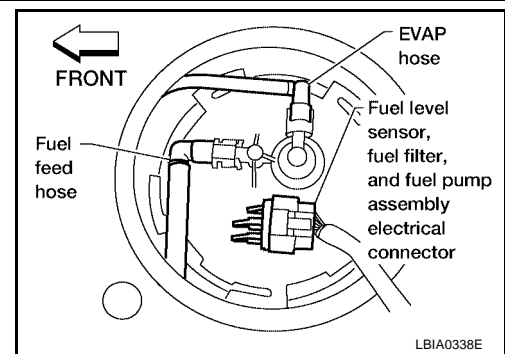
Refer to [FL-3, "General Precautions"](#).

1. Unscrew the fuel filler cap to release the pressure inside the fuel tank.
2. Release the fuel pressure from the fuel lines. Refer to [EC-95, "FUEL PRESSURE RELEASE"](#) (QR25DE), [EC-714, "FUEL PRESSURE RELEASE"](#) (VQ35DE).
3. Disconnect the battery negative terminal.
4. Remove the rear seat bottom. Refer to [SE-22, "Removal and Installation"](#).
5. Turn the four retainers 90° in a clockwise direction and remove the fuel pump inspection hole cover.



FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

6. Disconnect the fuel level sensor, fuel filter, and fuel pump assembly electrical connector, EVAP hose quick connector, and the fuel feed hose quick connector from the fuel level sensor unit, fuel filter, and fuel pump assembly.

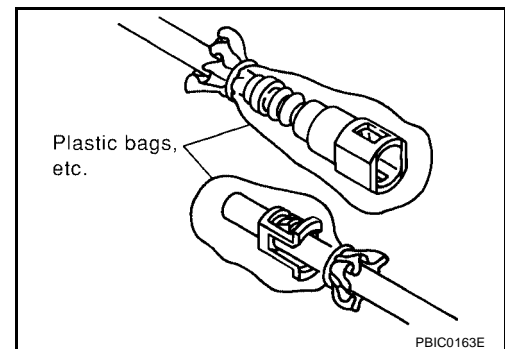
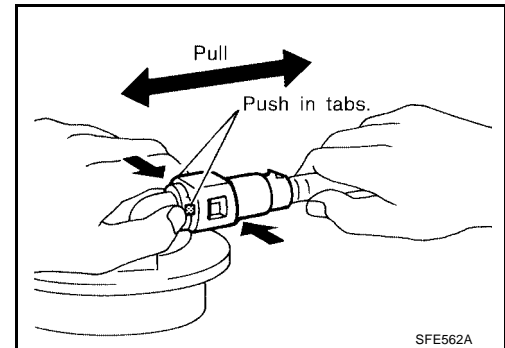


Remove the quick connector as follows:

- 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:

- 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 or something similar.

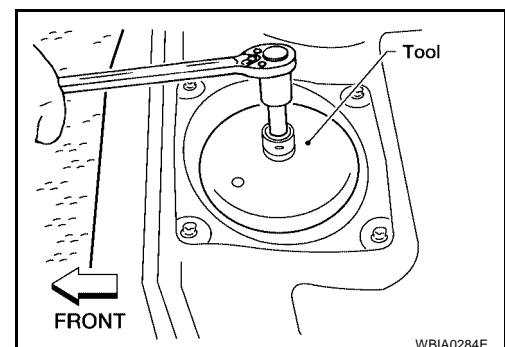


7. Remove the lock ring using Tool as shown.

Tool number : KV991J0090 (J-46214)

CAUTION:

- Discard the lock ring, do not reuse the lock ring.
- Discard the ring seal, do not reuse the ring seal.

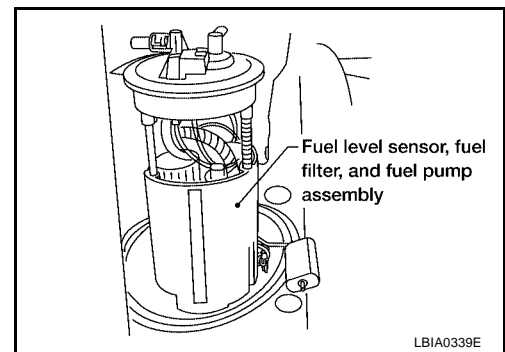


FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

8. Remove the fuel level sensor, fuel filter, and fuel pump assembly.

CAUTION:

- Do not bend the float arm during removal.
- Discard the ring seal, do not reuse the ring seal.



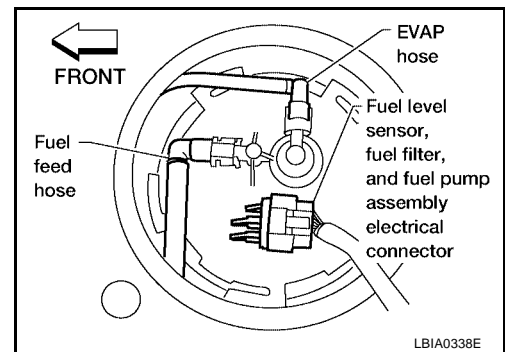
INSPECTION AFTER REMOVAL

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

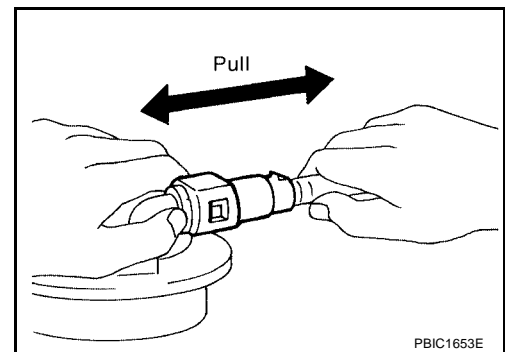
INSTALLATION

Installation is in the reverse order of removal.

- Install the fuel level sensor, fuel filter, and fuel pump assembly with the fuel feed hose facing the front of the vehicle as shown. Use a new ring seal.



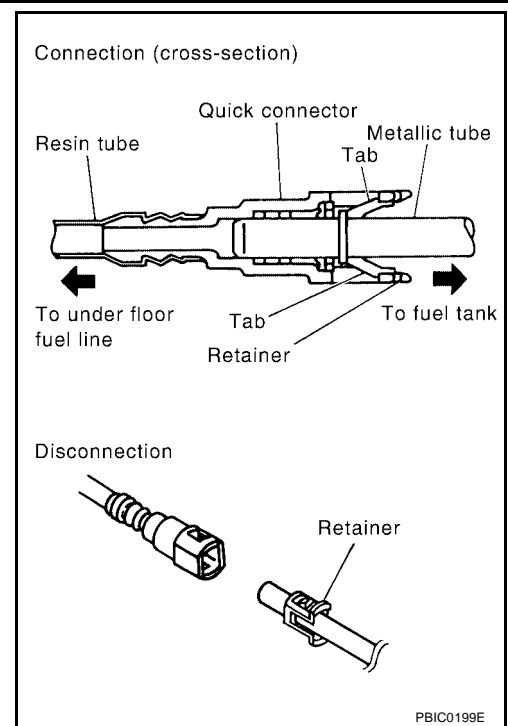
- Connect the quick connector as follows:
 - Check the connection for damage or any foreign materials.
 - Align the connector with the tube, then insert the connector straight into the tube until a click is heard.
- After the tube is connected, make sure the connection is secure by performing the following checks:
 - Pull the tube and the connector to make sure they are securely connected.



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FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

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



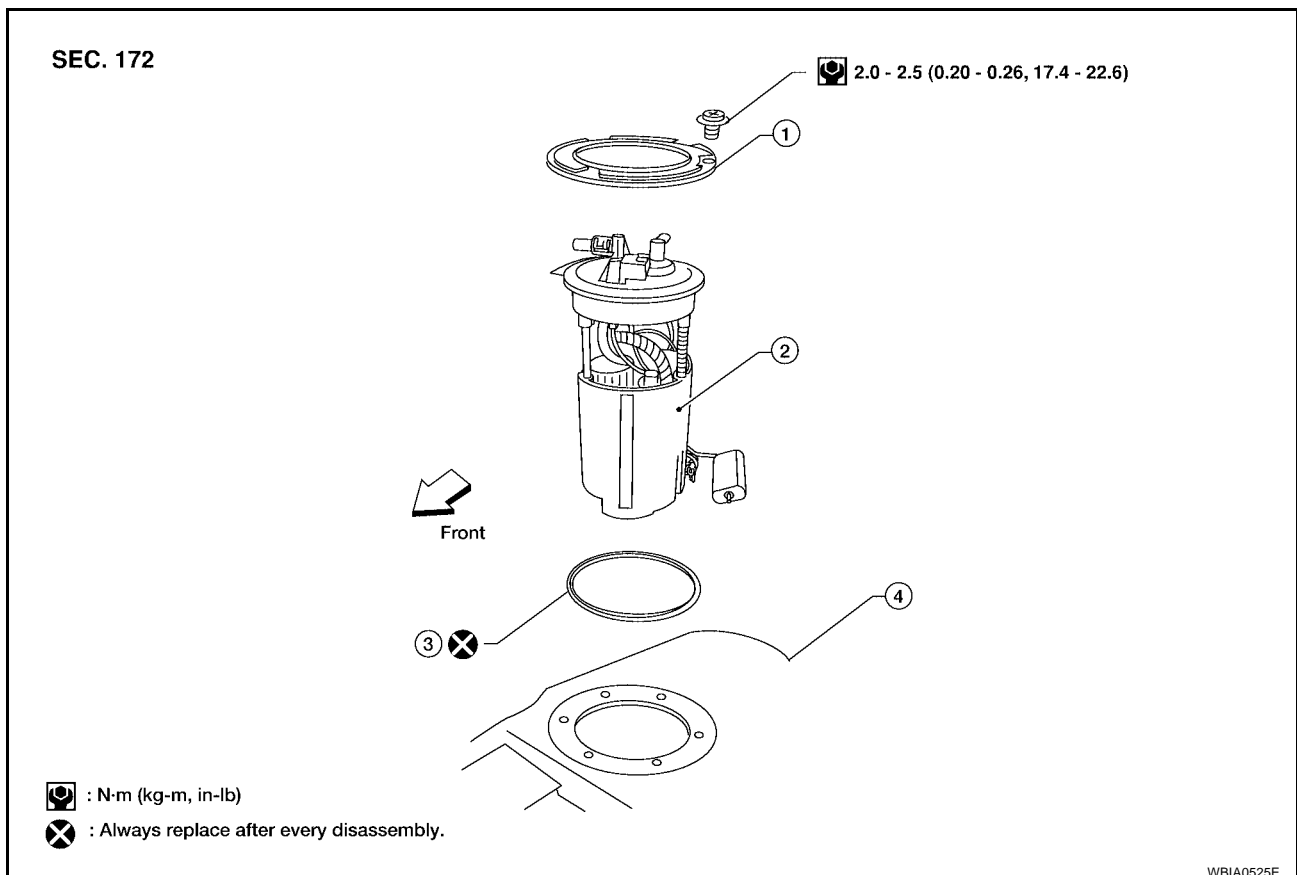
INSPECTION AFTER INSTALLATION

Use the following procedure to check for fuel leaks.

1. Turn the ignition switch to ON (without starting the engine) to apply fuel pressure to the fuel system, then check the connections for fuel leaks.
2. Start the engine and let it idle and check for fuel leaks at the fuel system connections.

Removal and Installation For PZEV Models Only

EBS00J8G



FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

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

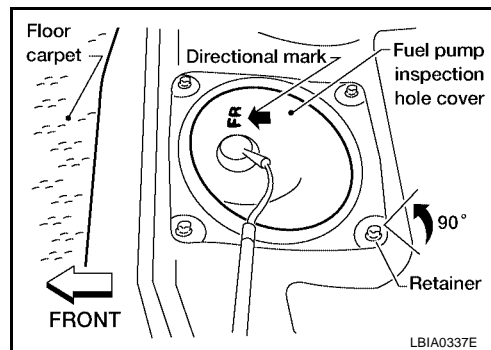
REMOVAL

WARNING:

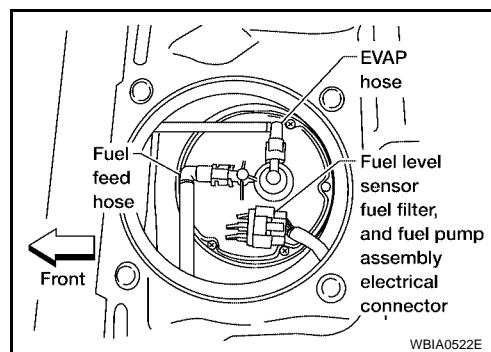
Read "General Precautions" before working on the fuel system.

Refer to [FL-3, "General Precautions"](#).

1. Unscrew the fuel filler cap to release the pressure inside the fuel tank.
2. Release the fuel pressure from the fuel lines. Refer to [EC-95, "FUEL PRESSURE RELEASE"](#).
3. Disconnect the battery negative terminal.
4. Remove the rear seat bottom. Refer to [SE-22, "Removal and Installation"](#).
5. Turn the four retainers 90° in a clockwise direction and remove the fuel pump inspection hole cover.



6. Disconnect the fuel level sensor, fuel filter, and fuel pump assembly electrical connector, EVAP hose quick connector, and the fuel feed hose quick connector from the fuel level sensor unit, fuel filter, and fuel pump assembly.

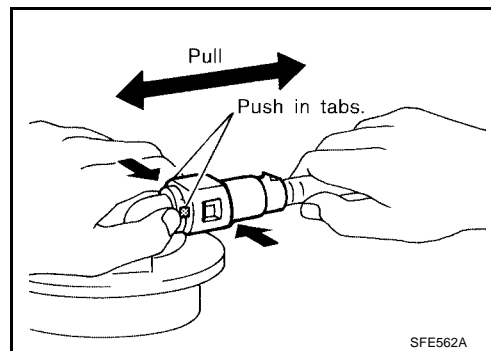


Remove the quick connector as follows:

- 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.

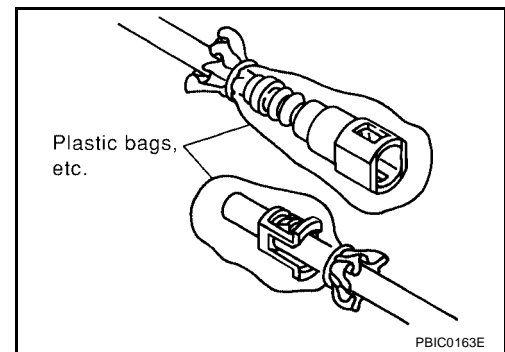
CAUTION:

- 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).

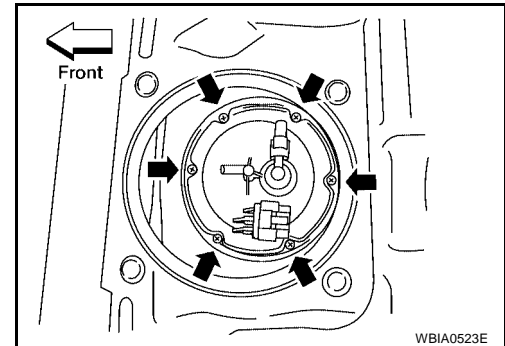


FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

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



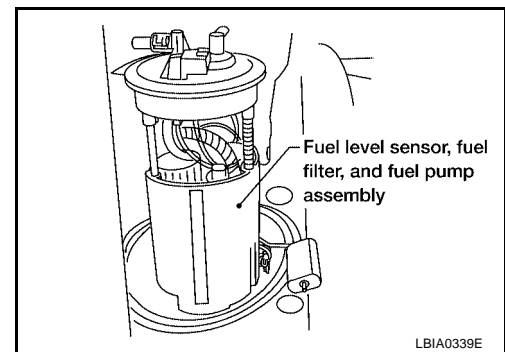
7. Remove the six screws and remove the lock ring as shown.



8. Remove the fuel level sensor, fuel filter, and fuel pump assembly.

CAUTION:

- Do not bend the float arm during removal.
- Discard the ring seal, do not reuse the ring seal.



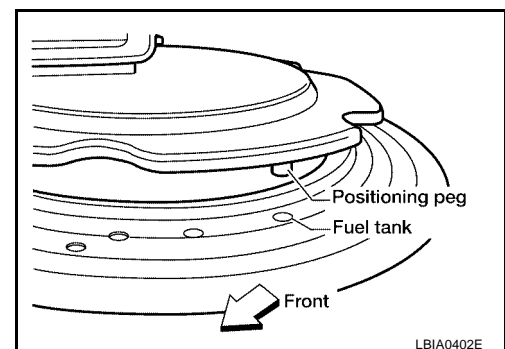
INSPECTION AFTER REMOVAL

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

INSTALLATION

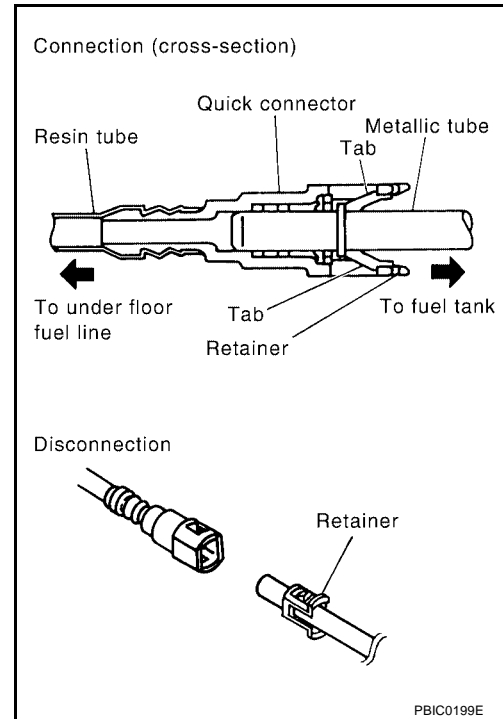
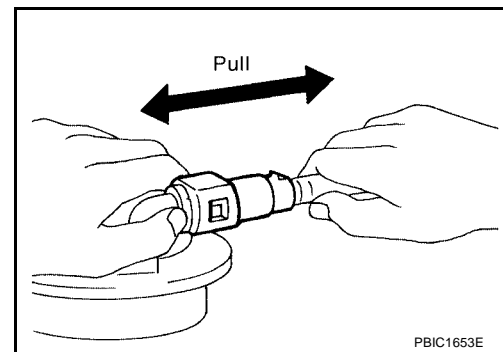
Installation is in the reverse order of removal.

- Install the fuel level sensor unit, fuel filter and fuel pump assembly with the positioning pegs seated in the fuel tank (and the quick connector pointing to the front) as shown. Use a new ring seal.



FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

- 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 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.



INSPECTION AFTER INSTALLATION

Use the following procedure to check for fuel leaks.

1. Turn the ignition switch to ON (without starting the engine) to apply fuel pressure to the fuel system, then check the connections for fuel leaks.
2. Start the engine and let it idle and check for fuel leaks at the fuel system connections.

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FUEL TANK

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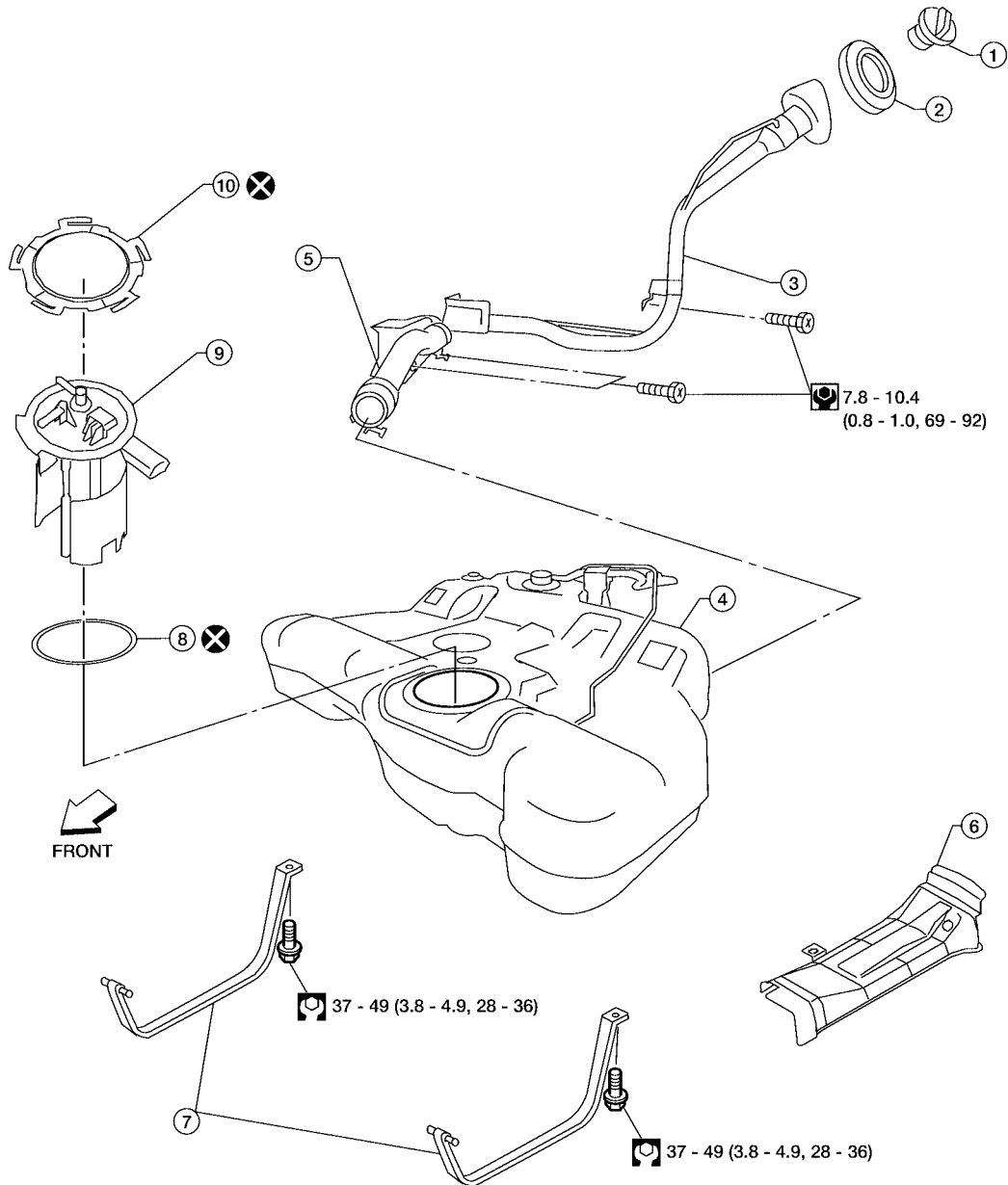
EBS00J8H

FUEL TANK

Removal and Installation

All Except PZEV Models

SEC. 172



N-m (kg-m, in-lb)

N-m (kg-m, ft-lb)

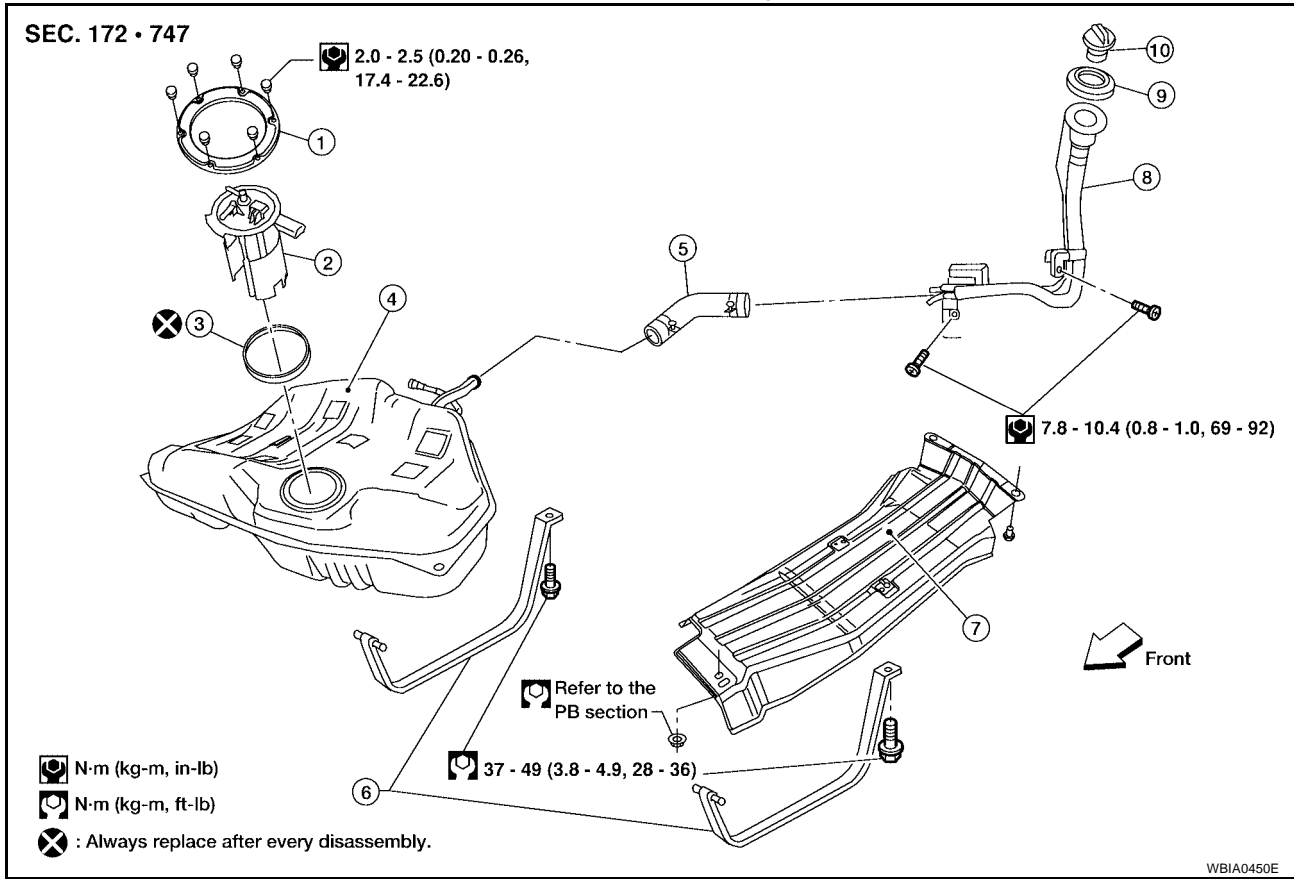
Always replace after every disassembly

- | | | |
|------------------------------|---------------------|---|
| 1. Fuel filler cap | 2. Grommet | 3. Fuel filler tube |
| 4. Fuel tank | 5. Fuel filler hose | 6. Fuel tank protector |
| 7. Fuel tank mounting straps | 8. Ring seal | 9. Fuel level sensor, fuel filter, and fuel pump assembly |
| 10. Lock ring | | |

WBIA0449E

FUEL TANK

PZEV Models Only



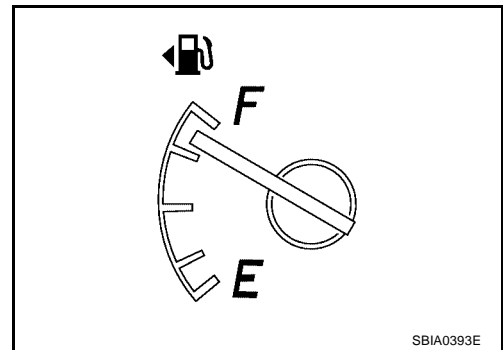
- | | | |
|------------------------|---|------------------------------|
| 1. Lock ring | 2. Fuel level sensor, fuel filter, and fuel pump assembly | 3. Ring seal |
| 4. Fuel tank | 5. Fuel filler hose | 6. Fuel tank mounting straps |
| 7. Fuel tank protector | 8. Fuel filler tube | 9. Grommet |
| 10. Fuel filler cap | | |

REMOVAL

WARNING:

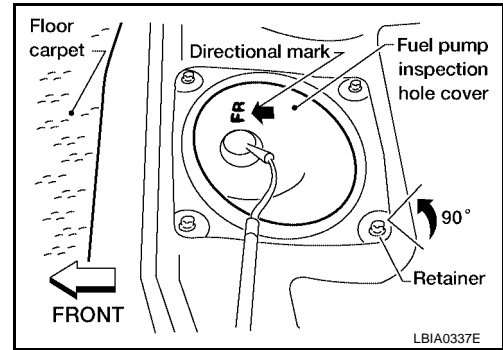
Read "General Precautions" before working on the fuel system. Refer to [FL-3, "General Precautions"](#).

- Disconnect the battery negative terminal.
- Check the fuel level with the vehicle on a level surface. If the fuel gauge indicates more than the level as shown (7/8 full), drain the fuel from the fuel tank until the fuel gauge indicates a level at or below as shown (7/8 full).
 - In case the fuel pump does not operate, use the following procedure.
 - Insert fuel tubing of less than 25mm (0.98in) diameter into the fuel filler tube through the fuel filler opening to drain fuel from the fuel filler tube.
 - Disconnect the fuel filler hose from the fuel filler tube.
 - Insert fuel tubing into the fuel tank through the fuel filler hose to drain fuel from the fuel tank.
 - As a guide, the fuel level reaches or is less than the level on the fuel gauge as shown, when approximately 10 ℓ (2 5/8 US gal, 2 1/4 Imp gal) of fuel is drained from a full fuel tank.
- Open the fuel filler cap to release the pressure inside the fuel tank.
- Release fuel pressure from fuel line, Refer to [EC-95, "FUEL PRESSURE RELEASE"](#) (QR25DE), [EC-714, "FUEL PRESSURE RELEASE"](#) (VQ35DE).

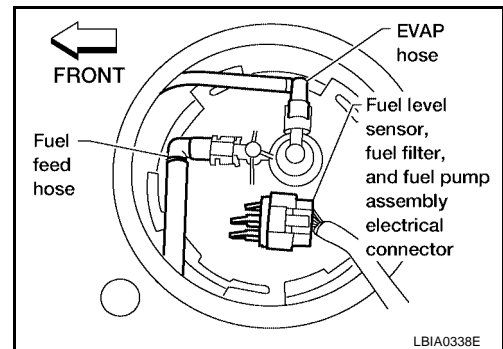


FUEL TANK

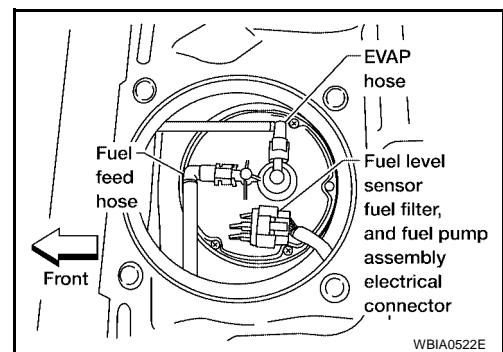
5. Remove rear seat bottom. Refer to [SE-22. "Removal and Installation"](#).
6. Remove the fuel pump inspection hole cover.



7. Disconnect the fuel level sensor, fuel filter, and fuel pump assembly electrical connector, EVAP hose quick connector, and fuel feed hose quick connector.
 - For non-PZEV models.



- For PZEV models.

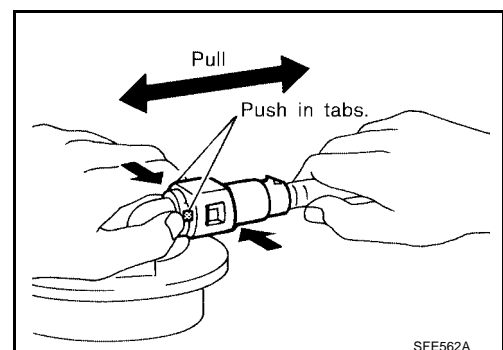


- a. Disconnect the quick connectors as follows:

- 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.

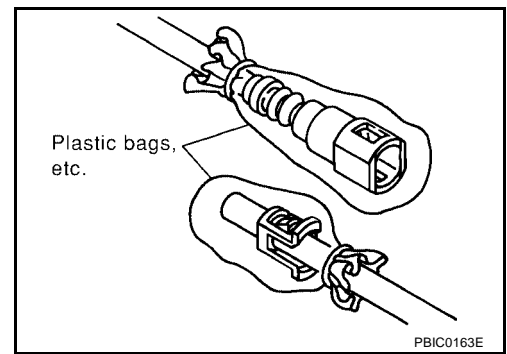
CAUTION:

- 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, 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).



FUEL TANK

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

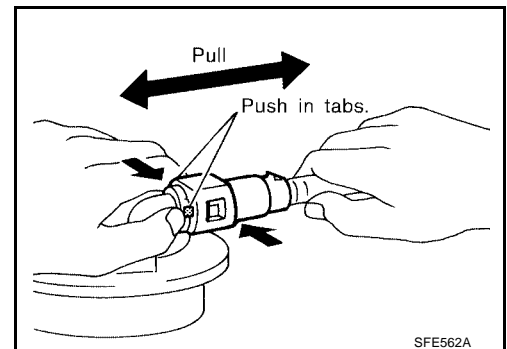


8. Remove the center exhaust tube, with muffler(s). Refer to [EX-7, "Removal and Installation"](#).
9. Disconnect the fuel filler hose and the recirculation hose at the fuel tank side.
10. Disconnect the three parking brake cable mounting brackets on each cable and position the cables out of the way. Refer to [PB-2, "Removal and Installation"](#).
11. Remove the fuel tank protector.
12. Disconnect the fuel tank mounting straps while supporting the fuel tank.
13. Remove the fuel tank.
14. If replacing the fuel tank, remove the fuel level sensor, fuel filter and fuel pump assembly to transfer to the new fuel tank.

INSTALLATION

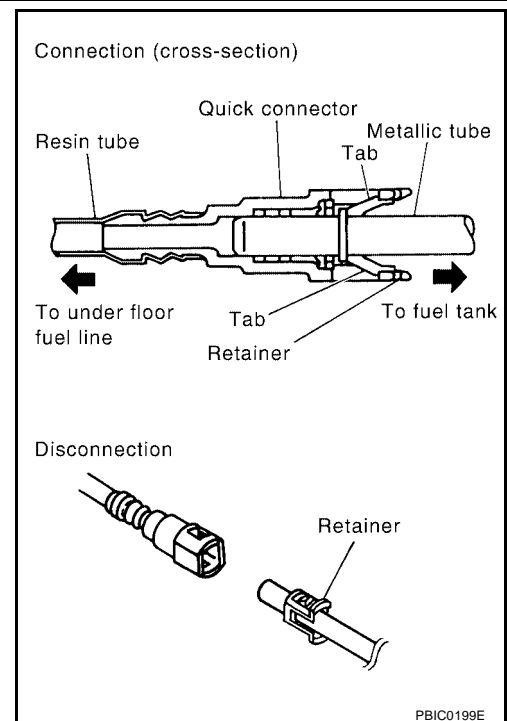
Install in the reverse order of removal paying attention to the following.

- Before tightening the fuel tank mounting straps, temporarily install the filler hose and the recirculation hose. Tighten all fuel tank mounting strap bolts to specification, then tighten the hose clamps.
- 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 pulling on the tube and the connector to make sure they are securely connected.



FUEL TANK

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



INSPECTION AFTER INSTALLATION

- Use the following procedure to check for fuel leaks.
 1. Turn the ignition switch ON (without starting the engine). Then check the connections for fuel leaks by applying fuel pressure to the fuel piping.
 2. Run the engine and check for fuel leaks at the fuel system tube and hose connections.

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

PDF:00030

Standard and Limit QR25DE

EBS0081

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Unit: ℓ (US gal, Imp gal)

Fuel tank capacity	75.6 (20, 16 5/8)
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FL

VQ35DE

Unit: ℓ (US gal, Imp gal)

Fuel tank capacity	75.6 (20, 16 5/8)
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SERVICE DATA AND SPECIFICATIONS (SDS)
