

SECTION

FL

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:000000001722973

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 SR 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 SRS 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.

PREPARATION

< PREPARATION >

PREPARATION

PREPARATION

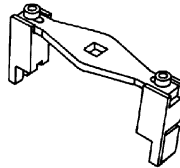
Special Service Tool

INFOID:000000001722974

A

FL

Tool number Tool name	Description
KV993G0010 (MOT. 1397) Lock ring wrench	Removing and installing lock ring



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P

FUEL SYSTEM

< ON-VEHICLE MAINTENANCE >

ON-VEHICLE MAINTENANCE

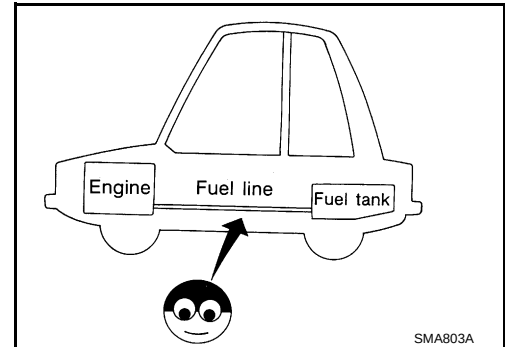
FUEL SYSTEM

Checking Fuel Line

INFOID:000000001722976

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

If necessary, repair or replace damaged parts.



General Precaution

INFOID:000000001722977

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.
- Put drained fuel in an explosion-proof container and put the lid on securely. Keep the container in safe area.

CAUTION:

- Use gasoline required by the regulations for octane number. Refer to [GI-45, "Precaution for Fuel \(Unleaded Regular Gasoline Recommended\)"](#).
- Before removing fuel line parts, perform the following procedures:
 - Release fuel pressure from the fuel lines if necessary. Refer to [EC-379, "Inspection"](#) (HR16DE with Euro-OBD), [EC-681, "Inspection"](#) (HR16DE without Euro-OBD), [EC-1035, "Inspection"](#) (MR18DE).
 - 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.
- Perform work on level surface.
- Do not tighten hose clamps excessively to avoid damaging hoses.
- After connecting fuel tube quick connectors, make sure quick connectors are secure. Ensure that 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 by turning ignition switch ON (without starting the engine). Then check for fuel leaks at the fuel tube connections.
 - Start 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 [EC-379, "Inspection"](#) (HR16DE with Euro-OBD), [EC-683, "Inspection"](#) (HR16DE without Euro-OBD), [EC-1037, "Inspection"](#) (MR18DE).

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< ON-VEHICLE REPAIR >

ON-VEHICLE REPAIR

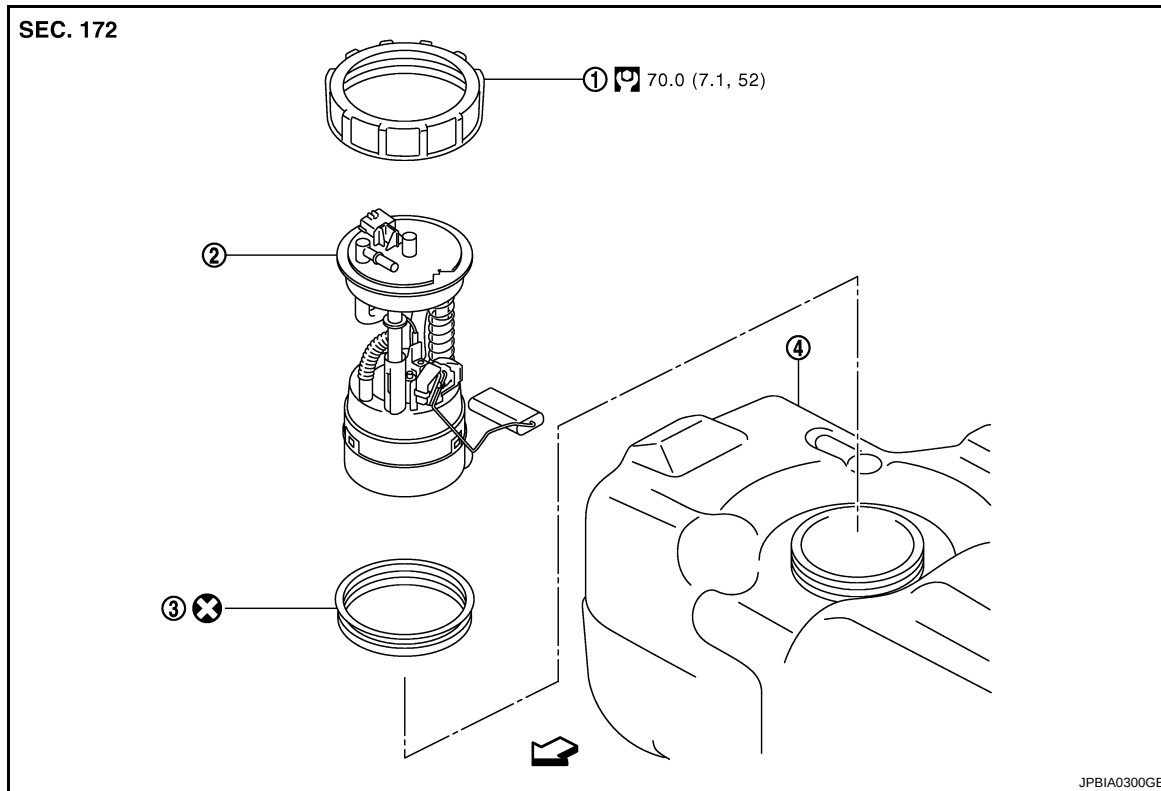
FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

HR16DE, HR18DE

INFOID:000000001723038

Exploded View

INFOID:000000001723039



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

Removal and Installation

INFOID:000000001722979

REMOVAL

WARNING:

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

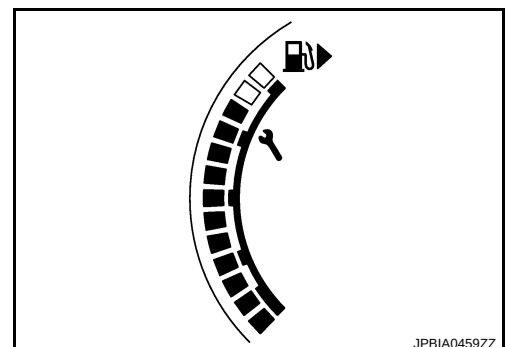
1. Check fuel level with the vehicle on a level surface. If the fuel gauge indicates more than the level in the figure (full or almost full), drain fuel from the fuel tank until the fuel gauge indicates level as shown in the figure or below.

NOTE:

Fuel will be spilled when removing fuel pump assembly if fuel level is above the fuel pump assembly installation surface.

- As a guide, fuel level is at the level as shown or below when approximately 15 ℓ (3-1/4 Imp gal) of fuel is drained from fuel tank.
- In case fuel pump does not operate, perform the following procedure.

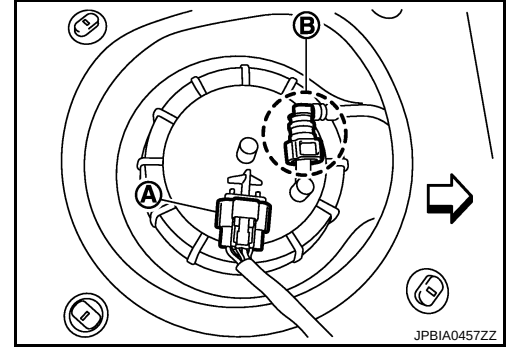
- a. Insert fuel tubing of less than 20 mm (0.79 in) in diameter into fuel filler tube through fuel filler opening to drain fuel from fuel filler tube.



FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< ON-VEHICLE REPAIR >

- b. Disconnect fuel filler hose from fuel filler tube. Refer to [FL-10, "HR16DE, HR18DE"](#).
- c. Insert fuel tubing into fuel tank through fuel filler hose to drain fuel from fuel tank.
2. Release the fuel pressure from the fuel lines. Refer to [EC-377, "Inspection"](#) (HR16DE with EURO-OBD), [EC-681, "Inspection"](#) (HR16DE without EURO-OBD), [EC-1035, "Inspection"](#) (MR18DE).
3. Open fuel filler lid.
4. Open fuel door and unscrew the fuel filler cap to release the pressure inside the fuel tank.
5. Remove rear seat bottom. Refer to [SE-18, "Removal and Installation"](#).
6. Turn the four retainers 90° in a clockwise direction and remove the fuel pump inspection hole cover.
7. Disconnect electrical connector (A) and fuel feed hose quick connector (B).
 - ⇐ : Vehicle front

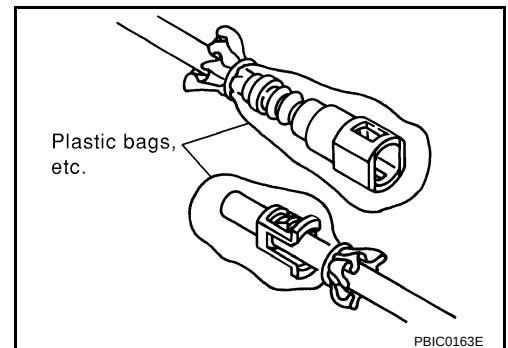
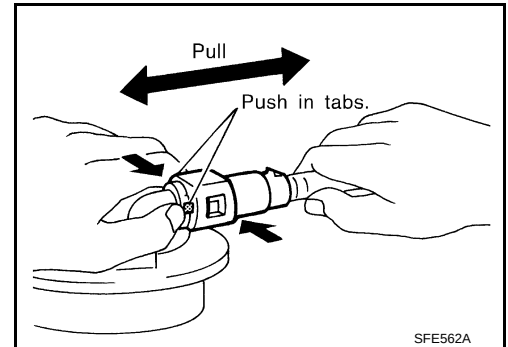


- Disconnect the quick connector using the following procedure.

- Hold the sides of the connector, push in tabs and pull out the tube.
- If quick connector and tube on fuel pump assembly are stuck, push and pull several times until they move. Disconnect them by pulling.

CAUTION:

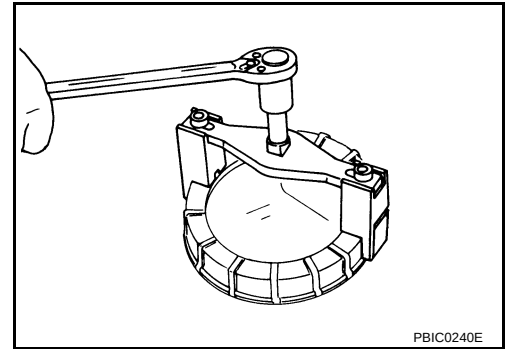
- The tube can be removed when the tabs are completely depressed. Do not twist it more than necessary.
- Do not use any tools to remove the quick connector.
- Keep resin tube away from heat. Be especially careful when welding near the resin tube.
- Prevent acid liquid such as battery electrolyte, from getting on resin tube.
- Do not bend or twist resin tube during installation and removal.
- To keep the connecting portion clean, free of foreign materials and to avoid damage, cover them completely with plastic bags or something similar.
- Do not insert plug to prevent damage to O-ring in quick connector.



FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< ON-VEHICLE REPAIR >

8. Remove the lock ring using tool as shown.



9. Remove fuel level sensor unit, fuel filter and fuel pump assembly (1).

CAUTION:

- Do not bend float arm during removal.
- Do not allow foreign materials to fall into fuel tank. Use a lint free cloth when handling components.
- Avoid impacts such as dropping when handling components.

INSPECTION AFTER REMOVAL

Make sure that the fuel level sensor unit, fuel filter and fuel pump is free from defects and foreign materials.

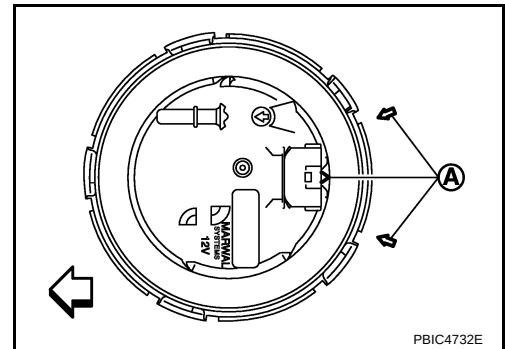
INSTALLATION

Installation is in the reverse order of removal.

Fuel Level Sensor Unit, Fuel Filter and Fuel Pump Assembly

1. Install O-ring to fuel tank without twisting.
2. Install fuel level sensor unit with aligning mating marks (A) on fuel tank and fuel level sensor unit as shown.

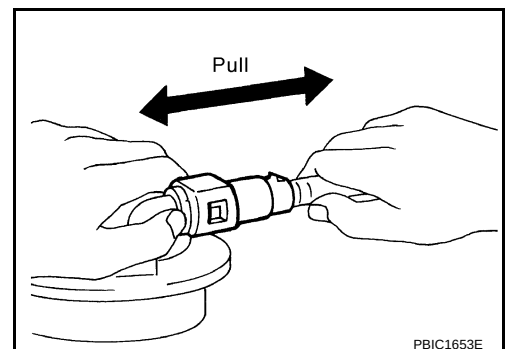
← : Vehicle front



Quick Connector

Connect fuel feed tube quick connector using the following procedure.

1. Check the connection for damage or any foreign materials.
2. Align the connector with the tube, then insert the connector straight into the tube until a “click” sound is heard.
3. After connecting, make sure that the connection is secure using the following procedure.
 - Visually confirm that the two retainer tabs are secured to the connector.
 - Pull the tube and the connector to make sure they are securely connected.



4. Connect electrical harness connector.

Inspection Hole Cover

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< ON-VEHICLE REPAIR >

- Before installing inspection hole cover, confirm that there are no fuel leaks. Refer to "INSPECTION AFTER INSTALLATION".
1. Install inspection hole cover with the front mark (arrow) facing front of vehicle.
 2. Lock clips by turning counterclockwise.

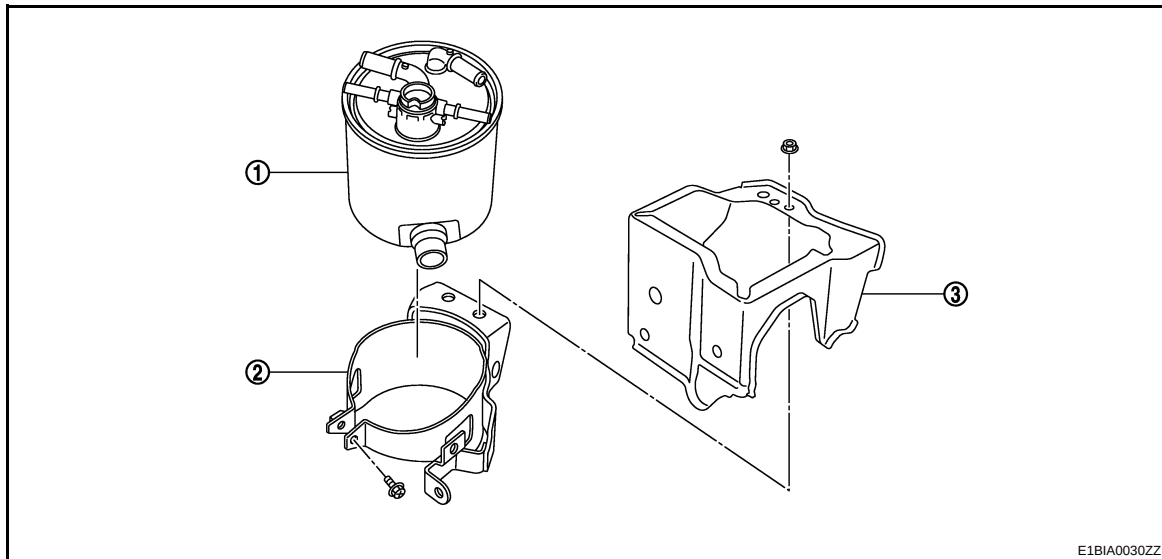
K9K

INFOID:000000001723040

Exploded View

INFOID:000000001723041

Fuel Filter

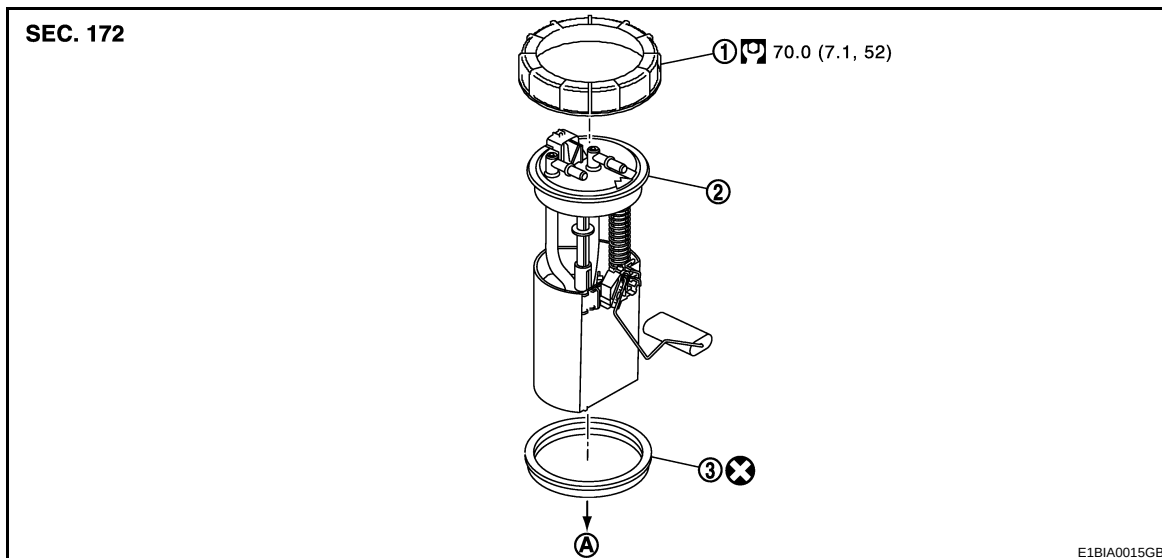


1. Fuel filter

2. Fuel filter bracket

3. Fuel filter protector

Fuel Level Sensor Unit



1. Lock ring

2. Fuel level sensor unit

3. O-ring

A. To fuel tank

Removal and Installation

INFOID:000000001723059

REMOVAL

WARNING:

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

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

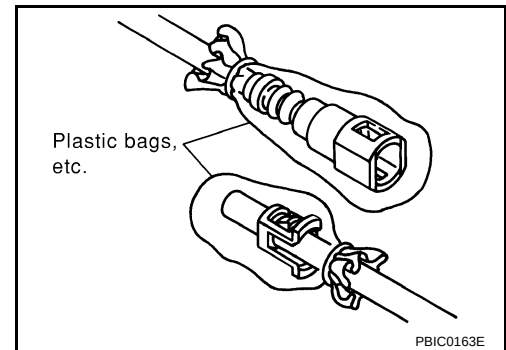
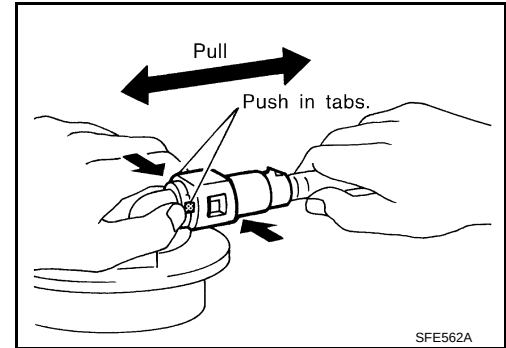
< ON-VEHICLE REPAIR >

1. Disconnect battery ground cable.
2. Open fuel filler lid and filler cap to release the pressure inside the fuel tank.
3. Remove rear seat cushion. Refer to [SE-18. "Removal and Installation"](#).
4. Remove the fuel pump inspection hole cover.
5. Disconnect electrical connector.
6. Disconnect the quick connector.

- Hold the sides of the connector, push in tabs and pull out the tube.
- If quick connector and tube on fuel pump assembly are stuck, push and pull several times until they move. Disconnect them by pulling.

CAUTION:

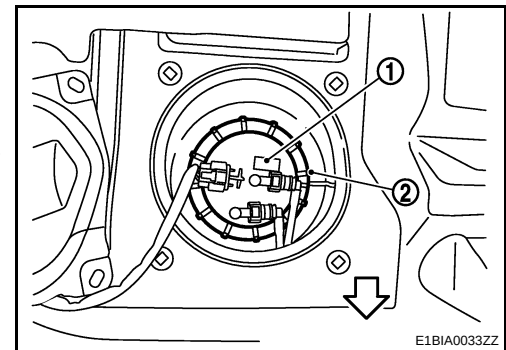
- The tube can be removed when the tabs are completely depressed. Do not twist it more than necessary.
- Do not use any tools to remove the quick connector.
- Keep resin tube away from heat. Be especially careful when welding near the resin tube.
- Prevent acid liquid such as battery electrolyte, from getting on resin tube.
- Do not bend or twist resin tube during installation and removal.
- To keep the connecting portion clean, free of foreign materials and to avoid damage, cover them completely with plastic bags or something similar.
- Do not insert plug to prevent damage to O-ring in quick connector.



7. Using lock ring wrench, remove lock ring (2).
8. Remove fuel level sensor unit (1).

CAUTION:

- Do not bend float arm during removal.
- Do not allow foreign materials to fall into fuel tank. Use a lint free cloth when handling components.
- Avoid impacts such as dropping when handling components.



INSPECTION AFTER REMOVAL

Make sure that the fuel level sensor unit, fuel filter and fuel pump is free from defects and foreign materials.

INSTALLATION

Installation is in the reverse order of removal.

FUEL TANK

< ON-VEHICLE REPAIR >

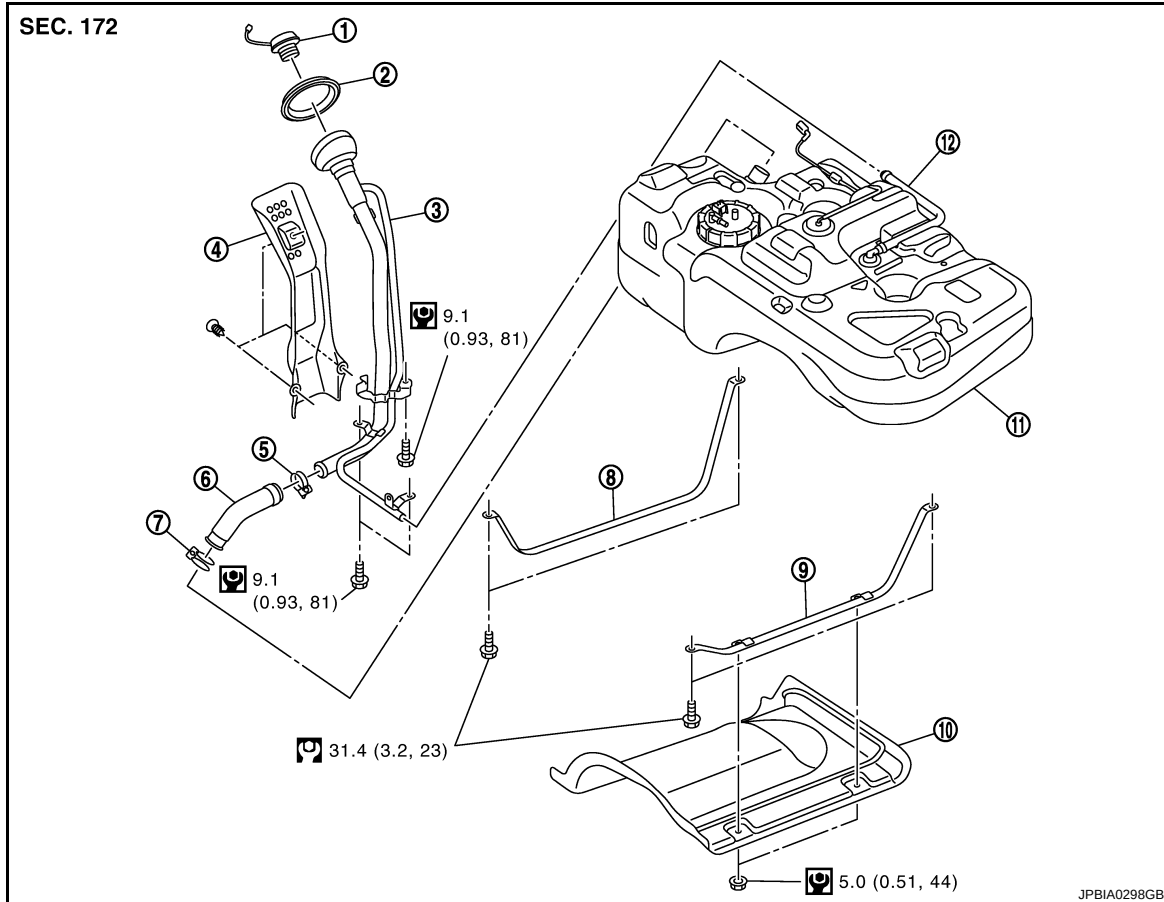
FUEL TANK

HR16DE, HR18DE

INFOID:000000001723029

Exploded View

INFOID:000000001723030



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

Removal and Installation

INFOID:000000001723064

REMOVAL

WARNING:

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

1. Remove fuel pump. Refer to [FL-5, "Removal and Installation"](#).
2. Drain fuel from fuel tank if necessary. Refer to [FL-5, "Removal and Installation"](#).

CAUTION:

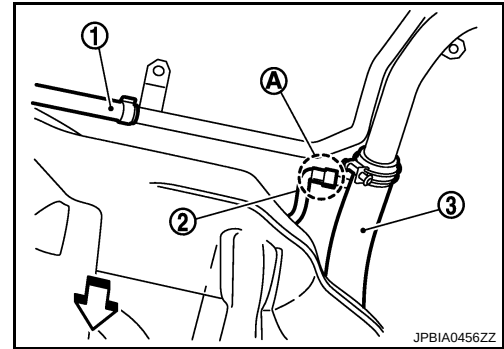
- Because fuel tank becomes unstable when installing/removing, fuel should be drained if the level exceeds specification [FL-5, "Removal and Installation"](#).
- Situate vehicle on a flat and solid surface.

3. Remove muffler. Refer to [EX-5, "Removal and Installation"](#) (HR16DE) or [EX-10, "Removal and Installation"](#) (MR20DE). [EX-10, "Removal and Installation"](#)
4. Remove fuel tank shield.
5. Remove rear seat bottom. Refer to [SE-18, "Removal and Installation"](#).

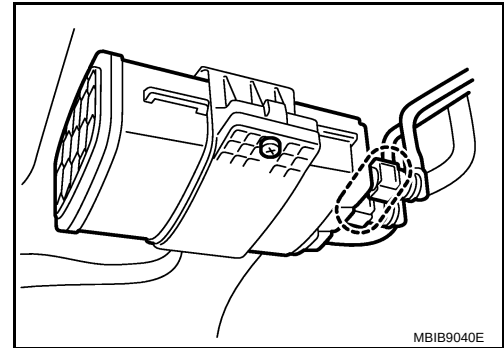
FUEL TANK

< ON-VEHICLE REPAIR >

6. Disconnect EVAP tube (2) at rear side of fuel tank.
 - Vent hose (1)
 - ⇐ : Vehicle front
7. Remove fuel filler hose (3) at fuel filler tube side.



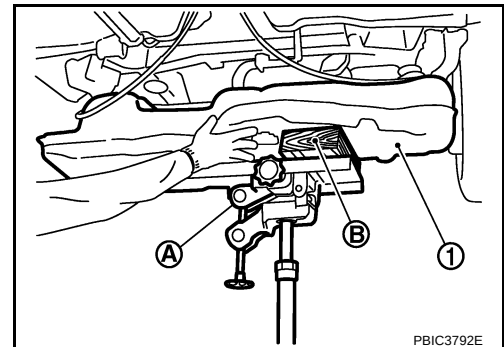
8. If necessary, remove mounting screw and quick connectors and slide the EVAP canister rearward to remove it from the fuel tank.



9. Support center of fuel tank (1) with transmission jack (A).
10. Remove fuel tank straps (RH and LH).
11. Lower transmission jack carefully to remove fuel tank while supporting it by hand.

CAUTION:

Fuel tank may be in an unstable position because of the shape of fuel tank bottom. Be sure to support tank securely.

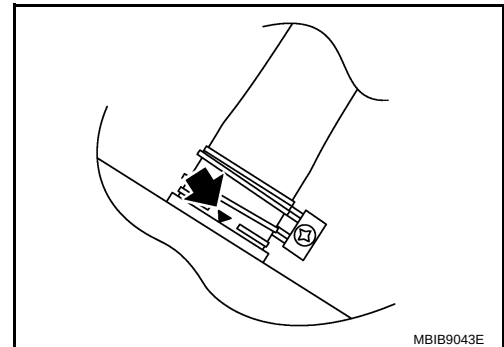


INSTALLATION

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

Fuel Filler Hose

- Install fuel filler hose to fuel tank, paying attention to install mark. Marking faces downward



FUEL TANK

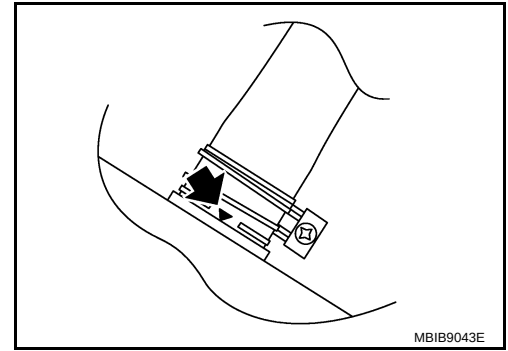
< ON-VEHICLE REPAIR >

- Install fuel filler hose (2) to fuel filler tube (1), paying attention to install mark. Marking faces rightward.
- Insert filler hose to the length below.

: 35mm (1.38 in)

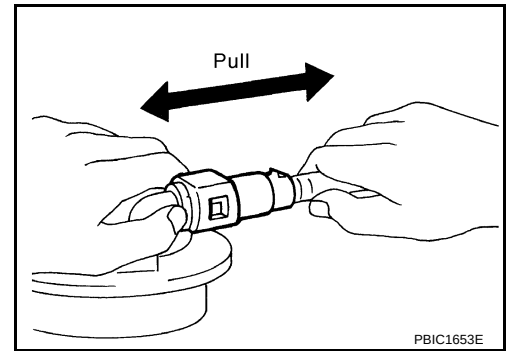
- When installing clamp, do not allow clamp to contact the bulge (bump) part of the tube.
- Tighten the clamp of filler hose so that the remaining length of the screw becomes the following.

: 5 - 9mm (0.20 - 0.35 in)



EVAP Hose

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



Installation of Fuel Tank Mounting Strap

- Install them in the proper position by referring to the identification stamp mark "R" and "L1" on the end.

INSPECTION AFTER INSTALLATION

Use the following procedure to check for fuel leaks.

1. Turn ignition switch "ON" (without starting the engine), to check the connections for fuel leaks with the electric fuel pump applying pressure to the fuel piping.
2. Start the engine and let it idle to check that there are no fuel leaks at the fuel system connections.

FUEL TANK

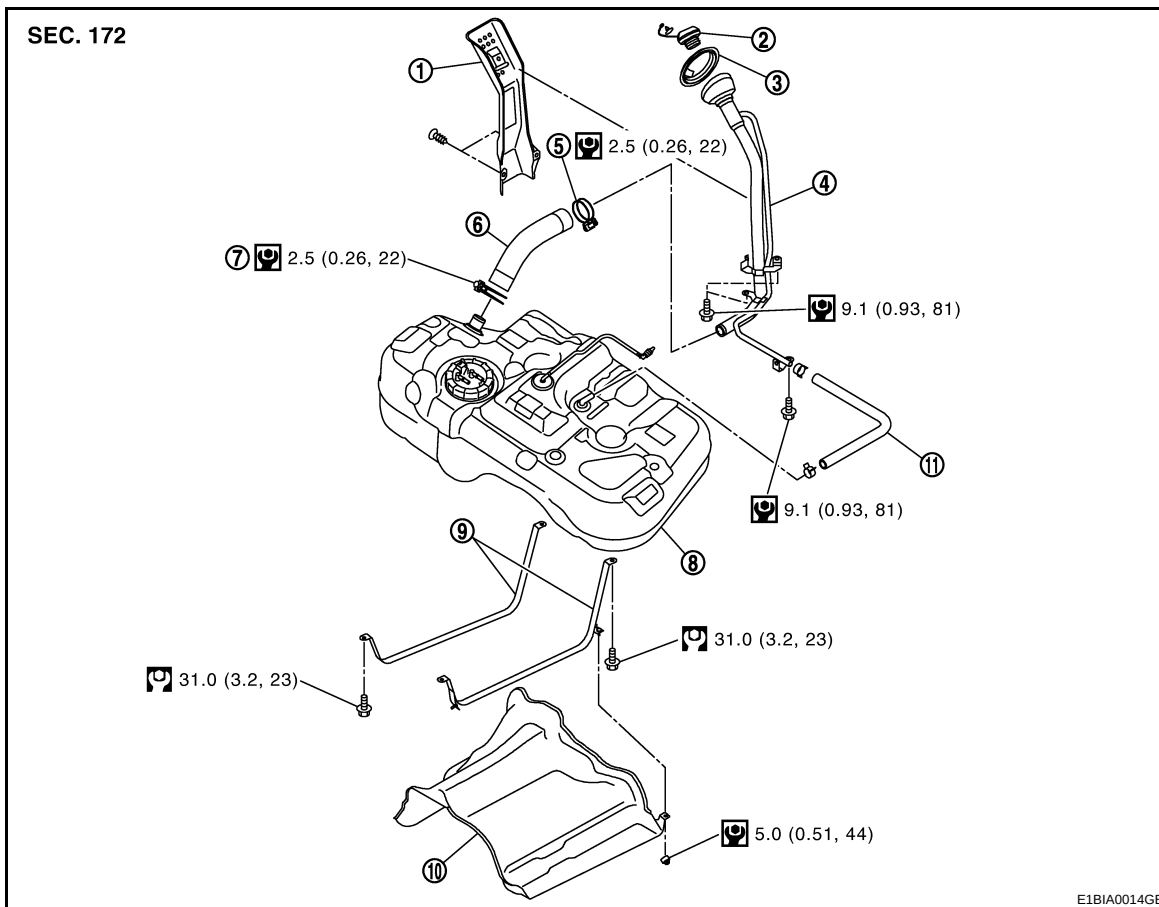
< ON-VEHICLE REPAIR >

K9K

INFOID:000000001723031

Exploded View

INFOID:000000001723037



- | | | |
|-------------------------------|--------------------|------------------------------|
| 1. Fuel filler tube protector | 2. Fuel filler cap | 3. Fuel filler cap protector |
| 4. Fuel filler tube | 5. Hose clamp | 6. Fuel filler hose |
| 7. Hose clamp | 8. Fuel tank | 9. Fuel tank mounting straps |
| 10. Fuel tank shield | 11. Vent hose | |

Removal and Installation

INFOID:000000001722981

REMOVAL

WARNING:

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

1. Remove RH rear wheel.
2. Remove fuel level sensor unit. Refer to [FL-8, "Removal and Installation"](#).

CAUTION:

- If fuel tank bottom face is not level, and remaining fuel level is high, tank position becomes unstable, causing a danger. Drain fuel further than that in step 1 of the referenced procedure until tank can be held by hand even if the balance is lost..

3. Remove muffler. Refer to [EX-14, "Removal and Installation"](#)
4. Remove vehicle side insulator on upper center muffler and main muffler..
5. Move parking brake cable from the lower face of fuel tank. Then remove clips for parking brake cable. .

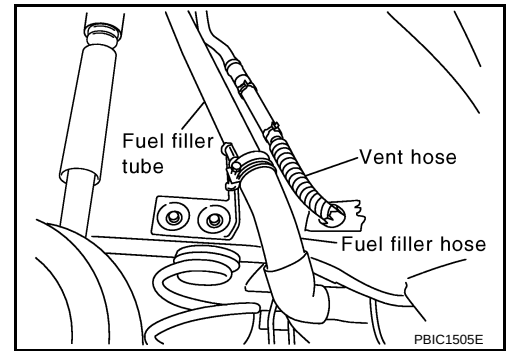
FUEL TANK

< ON-VEHICLE REPAIR >

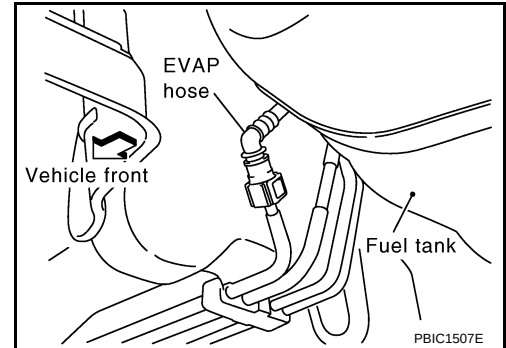
6. Disconnect fuel filler hose on fuel tank side.

CAUTION:

- If fuel tank bottom face is not level, and remaining fuel level is high, tank position becomes unstable, causing a danger. Drain fuel further than that in step 1 of the referenced procedure until tank can be held by hand even if the balance is lost..



7. Remove vent hose at RH rear wheelwell side.
8. Remove EVAP hose at front side of fuel tank.

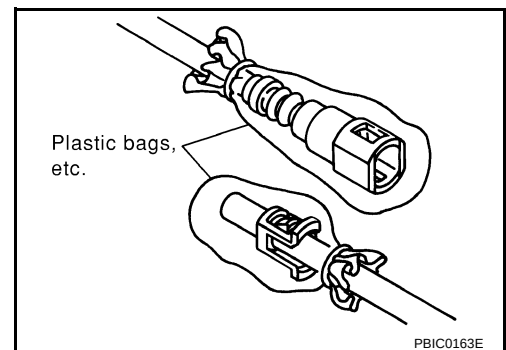
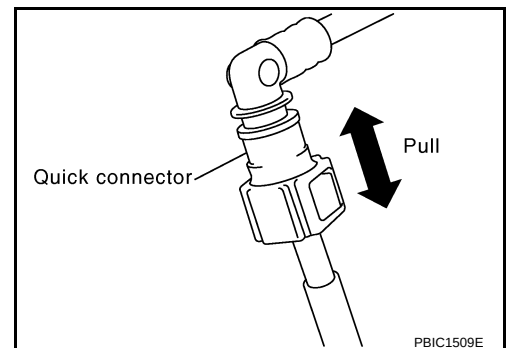


- Disconnect the quick connector using the following procedure.

- Pinch quick connector square-parts with your fingers, and pull out the quick connector by hand.
- If quick connector and tube on vehicle are stuck, push and pull several times until they move, and pull out..

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 resin tube away from heat. Be especially careful when welding near the resin tube.
- Prevent acid liquid such as battery electrolyte, from getting on resin tube.
- Do not bend or twist resin tube during installation and removal.
- To keep the connecting portion clean, free of foreign materials and to avoid damage, cover them completely with plastic bags or something similar.
- Do not insert plug to prevent damage to O-ring in quick connector.



FUEL TANK

< ON-VEHICLE REPAIR >

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

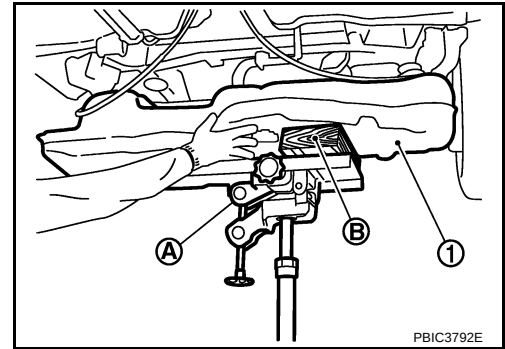
CAUTION:

Securely support the fuel tank with a suitable tool (B).

- Remove fuel tank mounting straps.
- Lower transmission jack carefully to remove fuel tank while supporting it by hand. Perform the following works at the same time.
 - Pull out vent hose from through hole of vehicle.
 - Avoid interference with tank by pulling parking brake cable by hand.

CAUTION:

Fuel tank may be in an unstable position because of the shape of fuel tank bottom. Be sure to support tank securely.

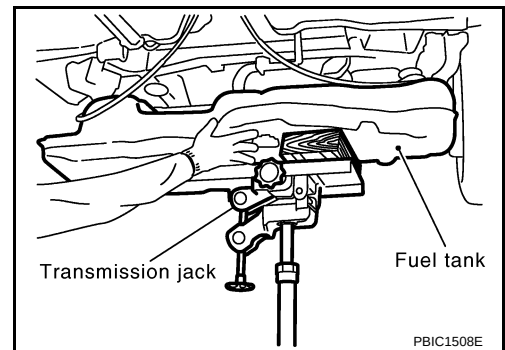


INSTALLATION

Installation is in the reverse order of removal.

EVAP Hose

- Check connections for damage or foreign material.
- Align the mating side connection part with the center of shaft, and insert connector straight until it clicks.
- After connecting, pull out quick connector by hand. Make sure connections are secure.



Installation of Vent Hose

- Push vent hose into through hole of vehicle.
- Insert vent hose into vent rubber hose, and secure it with clamp.

Installation of Fuel Tank Mounting Strap

- Install them in the proper position by referring to the identification stamp mark "R" and "L1" on the end.

Fuel Filler Hose

- Insert fuel filler hose to the length below.

: 35mm (1.38 in)

- When installing clamp, do not allow clamp to contact the bulge (bump) part of the tube.
- Tighten the clamp of filler hose.

Filler hose clamp : 2.5 N·m (0.26 kg-m, 22 in-lb)

INSPECTION AFTER INSTALLATION

Use the following procedure to check for fuel leaks.

- Turn ignition switch "ON" (without starting the engine), to check the connections for fuel leaks with the electric fuel pump applying pressure to the fuel piping.
- Start the engine and let it idle to check that there are no fuel leaks at the fuel system connections.

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Standard and Limit

INFOID:0000000001722982

FUEL TANK

Unit: ℓ (Imp gal)

Fuel tank capacity	52.0 (11 1/2)
Fuel recommendation	Refer to MA-19