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SECTION **FL**

FUEL SYSTEM

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PRECAUTIONS

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SERVICE INFORMATION

PRECAUTIONS

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

INFOID:000000007402912

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 SRS 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 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.

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.

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:000000007402913

NOTE:

- This Procedure is applied only to models with Intelligent Key system and NATS (NISSAN ANTI-THEFT SYSTEM).
- Remove and install all control units after disconnecting both battery cables with the ignition knob in the "LOCK" position.
- Always use CONSULT to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.

For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.

If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.

NOTE:

Supply power using jumper cables if battery is discharged.

2. Use the Intelligent Key or mechanical key to turn the ignition switch to the "ACC" position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.

PRECAUTIONS

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5. When the repair work is completed, return the ignition switch to the "LOCK" position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT.

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PREPARATION

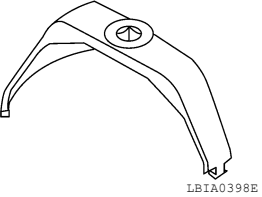
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PREPARATION

Special Service Tool

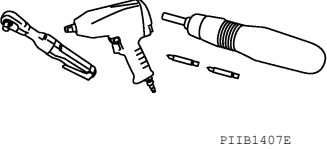
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The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
— (J-45722) 130 mm lock ring tool 	Removing and installing fuel tank lock ring

Commercial Service Tool

INFOID:000000007402915

Tool name	Description
Power tool 	Loosening nuts, screws and bolts

FUEL SYSTEM

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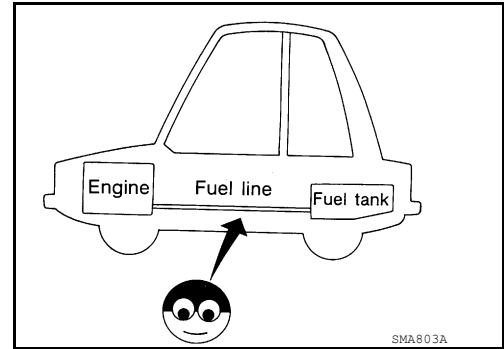
FUEL SYSTEM

Checking Fuel Line

INFOID:000000007402916

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:000000007402917

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-4, "Precaution for Fuel \(Unleaded Regular Gasoline Recommended\) MR20DE and QR25DE Except SE-R Spec-V"](#) or [GI-5, "Precaution for Fuel \(Unleaded Premium Gasoline Required\) QR25DE SE-R Spec-V Only"](#).
- Before removing fuel line parts, perform the following procedures:
 - Release fuel pressure from the fuel lines. Refer to [EC-45, "Description" MR20DE \(California\), EC-605, "Description" MR20DE \(except California\), or EC-1208, "Fuel Pressure Check" QR25DE.](#)
 - 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-45, "Description" MR20DE \(California\), EC-605, "Description" MR20DE \(except California\), or EC-1150, "Description" QR25DE.](#)
- For servicing "On Board Refueling Vapor Recovery (ORVR)" parts, refer to [EC-49, "System Description" MR20DE \(California\), EC-609, "System Description" MR20DE \(except California\), or EC-1155, "System Description" QR25DE.](#)

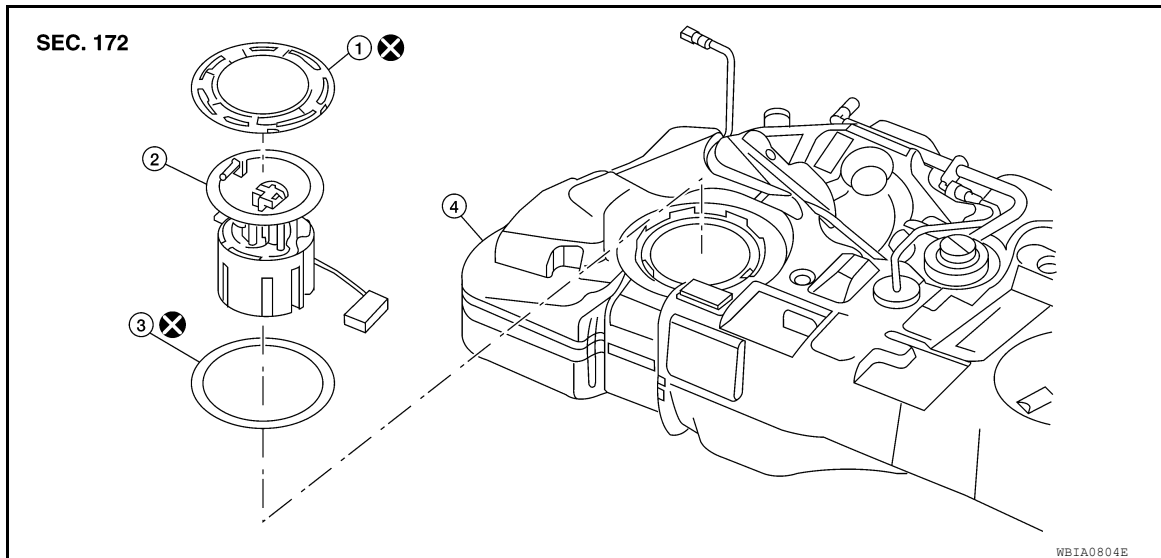
FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< SERVICE INFORMATION >

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

Component

INFOID:000000007402918



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

Removal and Installation

INFOID:000000007402919

NOTE:

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

REMOVAL

WARNING:

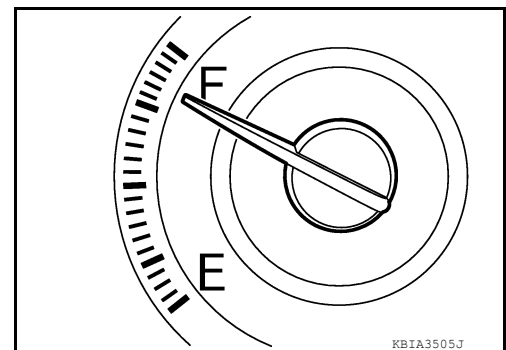
Be sure to read "General Precautions" before working on the fuel system. Refer to [GI-3, "General Precaution"](#).

1. Check fuel level with the vehicle on a level surface. If the fuel gauge indicates more than the level as shown (7/8 full), drain fuel from the fuel tank until the fuel gauge indicates level as shown (7/8 full).

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 12 ℓ (3 1/8 US gal, 2 5/8 Imp gal) of fuel is drained from a full fuel tank.
- In case fuel pump does not operate, perform the following procedure.

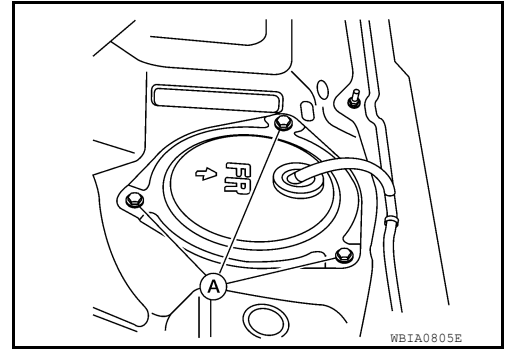


- a. Insert fuel tubing of less than 25 mm (0.98 in) in diameter into fuel filler tube through fuel filler opening to drain fuel from fuel filler tube.
 - b. Disconnect fuel filler hose from fuel filler tube. Refer to [FL-10](#).
 - c. Insert fuel tubing into fuel tank through fuel filler hose to drain fuel from fuel tank.
2. Open fuel door and unscrew the fuel filler cap to release the pressure inside the fuel tank.
 3. Release the fuel pressure from the fuel lines. Refer to [EC-102, "Fuel Pressure Check"](#) MR20DE (California), [EC-662, "Fuel Pressure Check"](#) MR20DE (except California), or [EC-1208, "Fuel Pressure Check"](#) QR25DE.
 4. Disconnect battery negative terminal. Refer to [SC-7, "Removal and Installation \(MR20DE Battery\)"](#) (MR20DE) or [SC-8, "Removal and Installation \(QR25DE Battery\)"](#) (QR25DE).

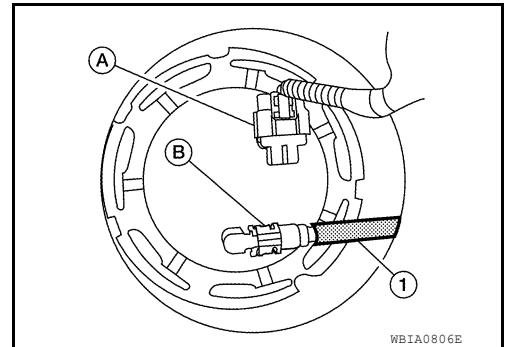
FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< SERVICE INFORMATION >

- Remove rear seat cushion. Refer to [SE-25, "Exploded View - 60:40 Split Fold Down Seat"](#) 60/40 Split Fold Down Seat or [SE-30, "Exploded View - Fixed Back Seat"](#) Fixed Back Seat.
- Turn the three retainers (A) 90° in a clockwise direction and remove the fuel pump inspection hole cover.



- Disconnect electrical connector (A) and fuel feed hose quick connector (B).
 - Fuel feed hose (1)

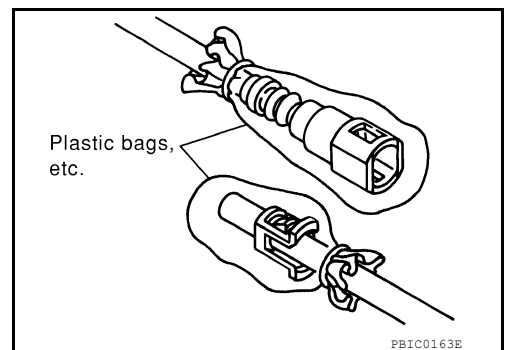
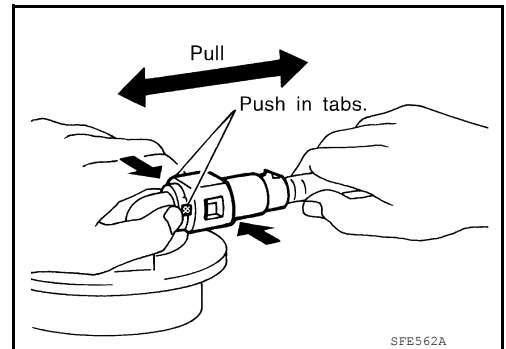


- Disconnect the quick connector using the following procedure.

- 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.

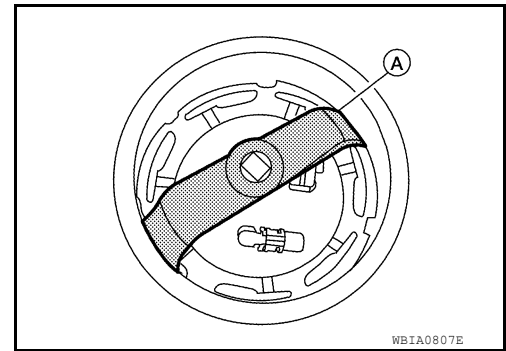


FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< SERVICE INFORMATION >

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

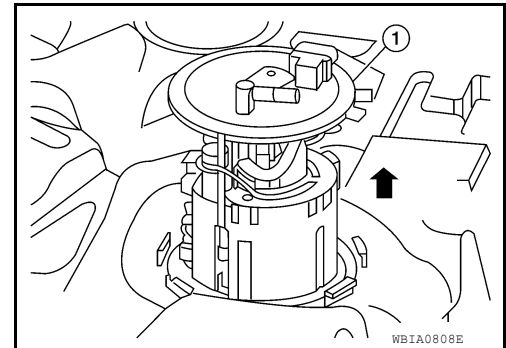
Tool number : — (J-45722)



9. Remove fuel level sensor unit, fuel filter and fuel pump assembly (1). Remove and discard the O-ring.

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.
- Discard the O-ring. Do not reuse O-ring.



INSPECTION AFTER REMOVAL

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

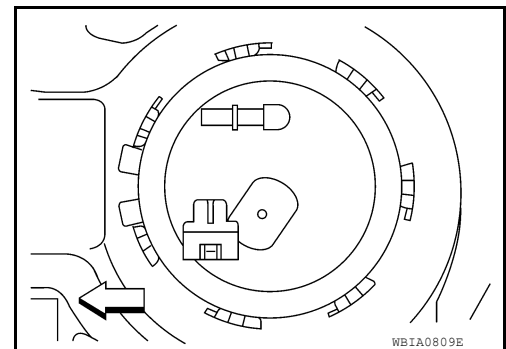
INSTALLATION

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, fuel filter and fuel pump assembly as shown.

⇐ : Vehicle front

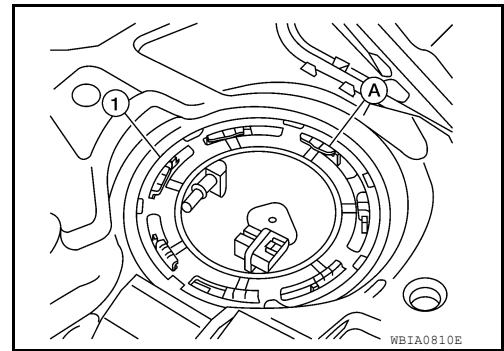


FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

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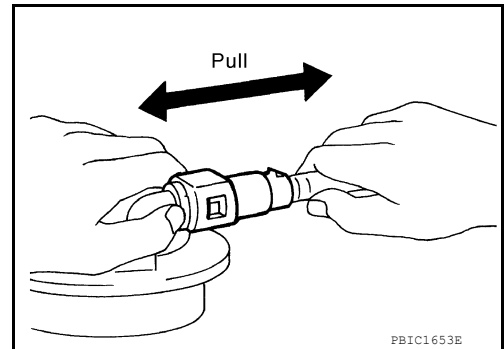
- Turn the lock ring (1) using Tool until the lock ring is fully rotated into the fuel tank lock tabs (A) as shown.

Tool number : — (J-45722)



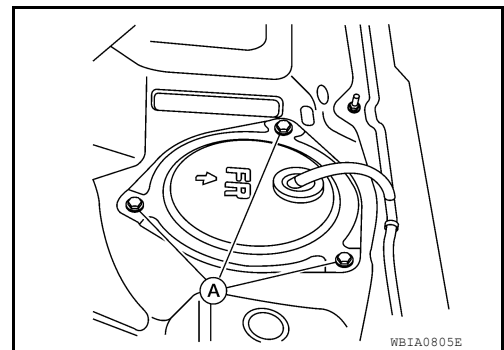
Quick Connector

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.



Inspection Hole Cover

1. Before installing inspection hole cover, confirm that there are no fuel leaks. Refer to [FL-10. "Removal and Installation"](#).
2. Install inspection hole cover with the front mark (arrow) facing front of vehicle.
3. Lock clips (A) by turning counterclockwise.



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.

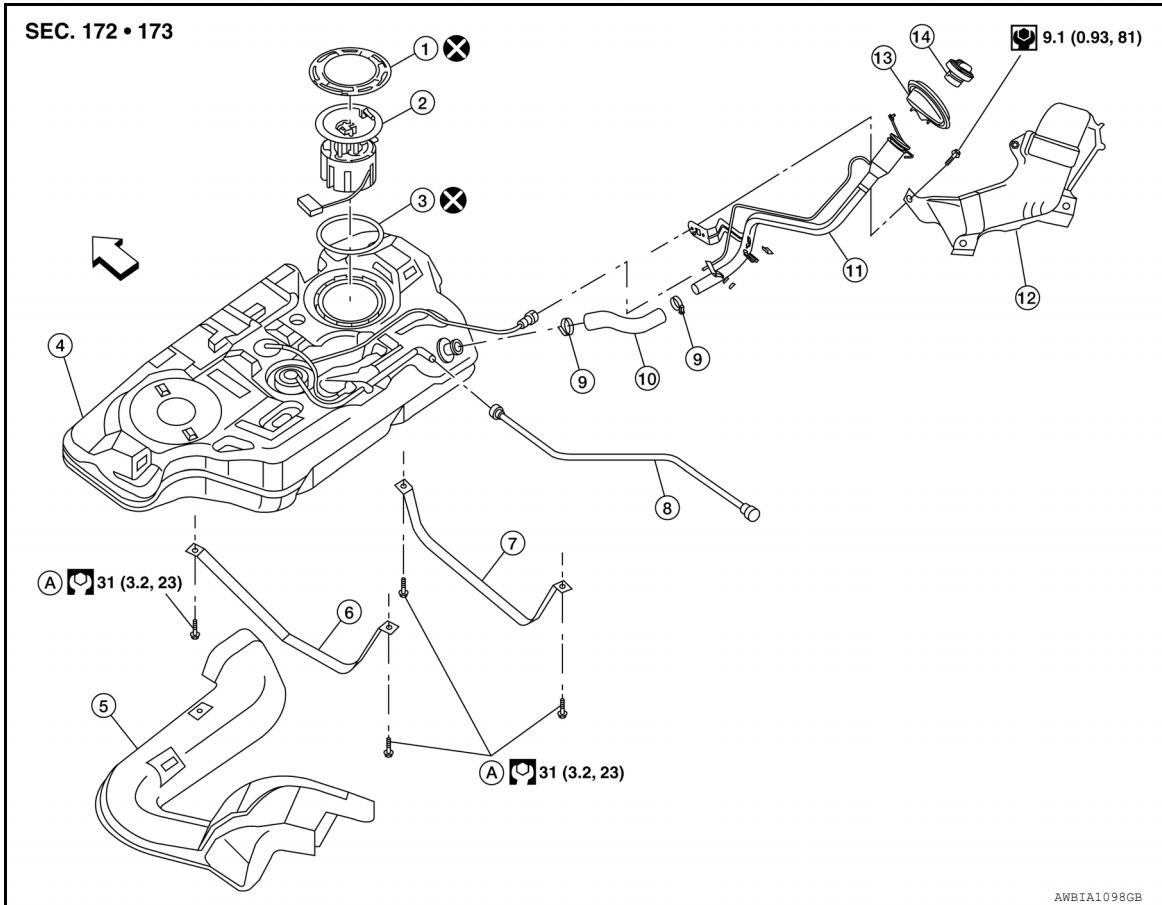
FUEL TANK

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FUEL TANK

Exploded View

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- | | | |
|------------------------|---|--------------------------|
| 1. Lock ring | 2. Fuel level sensor unit, fuel filter and fuel pump assembly | 3. O-ring |
| 4. Fuel tank | 5. Fuel tank protector | 6. Fuel tank band (LH) |
| 7. Fuel tank band (RH) | 8. EVAP hose | 9. Hose clamp |
| 10. Fuel filler hose | 11. Fuel filler tube | 12. Fuel filler shield |
| 13. Grommet | 14. Fuel filler cap | A. Refer to installation |

⇐ Front

Removal and Installation

INFOID:000000007402921

NOTE:

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

REMOVAL

WARNING:

Be sure to read "General Precautions" when working on the fuel system. Refer to [FL-5. "General Precaution"](#).

1. Drain fuel from fuel tank if necessary. Refer to [FL-6. "Removal and Installation"](#).

CAUTION:

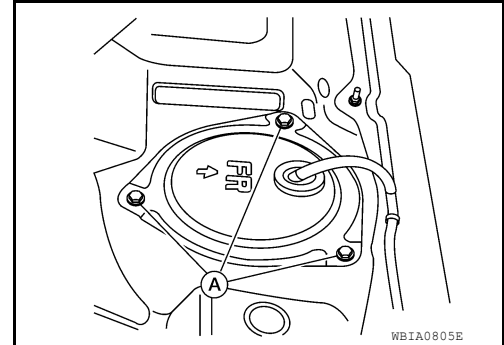
- Because fuel tank becomes unstable when installing/removing, fuel should be drained if the level exceeds specification.
- Situate vehicle on a flat and solid surface.

2. Open fuel door and unscrew the fuel filler cap to release the pressure inside the fuel tank.

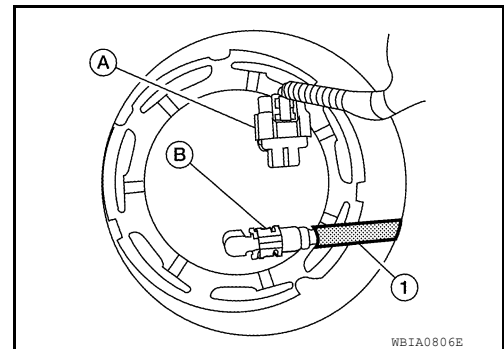
FUEL TANK

< SERVICE INFORMATION >

3. Release the fuel pressure from the fuel lines. Refer to [EC-102, "Fuel Pressure Check" MR20DE](#) (California), [EC-662, "Fuel Pressure Check" MR20DE](#) (except California), or [EC-1208, "Fuel Pressure Check" QR25DE](#).
4. Disconnect battery negative terminal. Refer to [SC-7, "Removal and Installation \(MR20DE Battery\)"](#) (MR20DE) or [SC-8, "Removal and Installation \(QR25DE Battery\)"](#) (QR25DE).
5. Remove rear seat cushion. Refer to [SE-25, "Exploded View - 60:40 Split Fold Down" 60/40 Split Fold Down Seat](#) or [SE-30, "Exploded View - Fixed Back Seat" Fixed Back Seat](#).
6. Turn the three retainers (A) 90° in a clockwise direction and remove the fuel pump inspection hole cover.

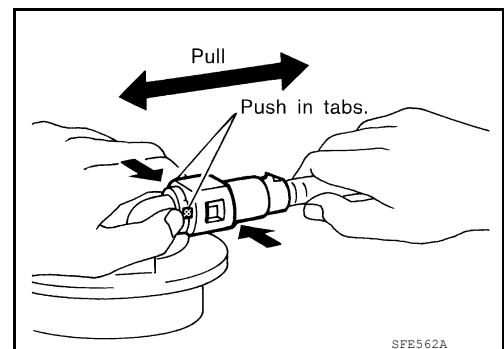


7. Disconnect electrical connector (A) and fuel feed hose quick connector (B).
 - Fuel feed hose (1)



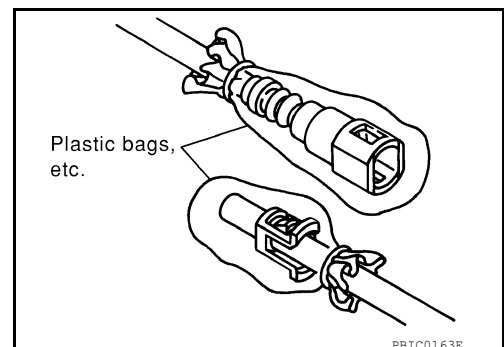
- Disconnect the quick connector using the following procedure.

- 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 TANK

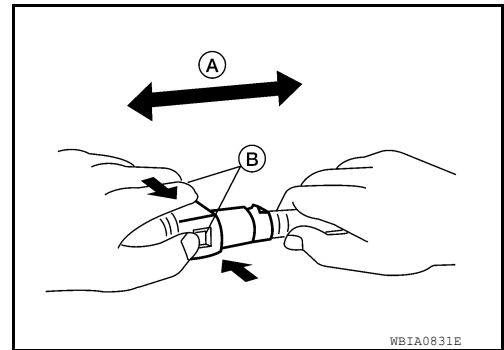
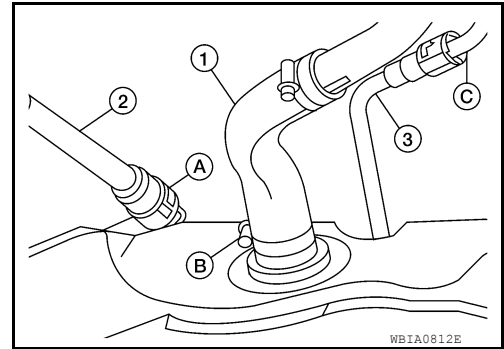
< SERVICE INFORMATION >

8. Remove center exhaust tube. Refer to [EX-5. "Component"](#) MR20DE, or [EX-11. "Component"](#) QR25DE.
9. Remove fuel tank protector.
10. Loosen fuel filler hose clamp (B) and remove fuel filler hose (1).

CAUTION:

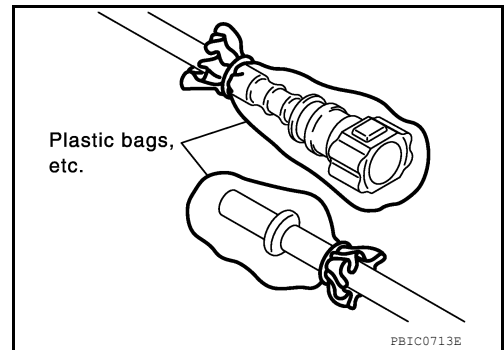
Do not remove fuel filler hose (1) from fuel filler tube. When removing fuel filler hose (1) at the fuel filler tube, mark components for alignment.

11. Remove vent hose (3) and EVAP hose (2) at rear of fuel tank.
 - Disconnect vent hose and EVAP hose quick connectors using the following procedures.
- a. Pinch retaining tabs (C) of vent hose quick connector and remove vent hose (3).
- b. Pinch retaining tabs (A) of EVAP hose quick connector and remove EVAP hose (2).
 - If hoses are stuck, push and pull (A) several times until they move freely, and disconnect by holding side of connector and pushing in the tabs (B).



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.
- Do not insert plug that may cause damage to O-ring in quick connector.
- To keep the connecting portion clean and to avoid damage and foreign materials, cover them completely with plastic bags or something similar.



12. Support center of fuel tank (1) with transmission jack (A) as shown.

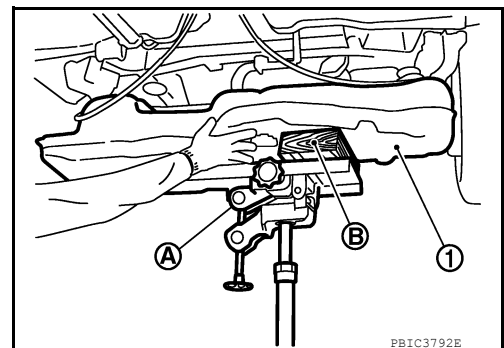
CAUTION:

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

13. Remove fuel tank bands (RH and LH).
14. Lower transmission jack carefully to remove fuel tank while supporting it by hand as shown.

CAUTION:

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



FUEL TANK

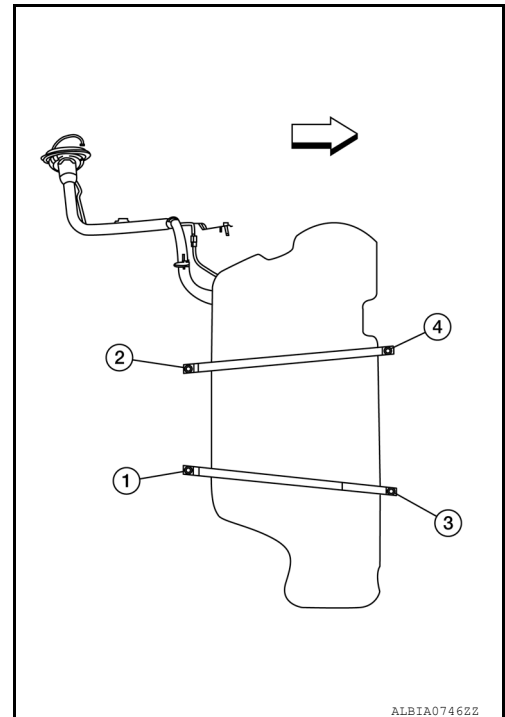
< SERVICE INFORMATION >

INSTALLATION

Installation is in the reverse order of removal.

Fuel Tank Bands

1. Install the fuel tank bands in the proper position on the vehicle by referencing the identification stamp mark "R" or "L" on the end of each band.
2. While supporting the fuel tank, install the bolts and tighten in the order shown to the specified torque.



EVAP Canister

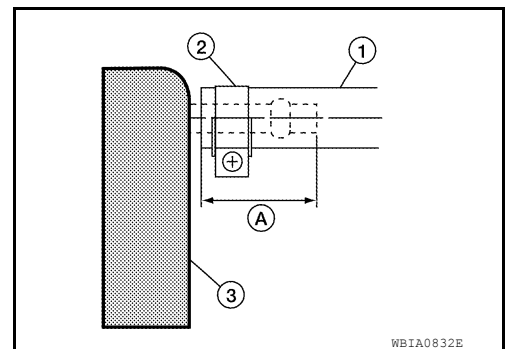
1. Check the connection for damage or any foreign materials.
2. Align the connector with the tube, then insert the connector straight into the tube until a "click" sound is heard.
3. After connecting, make sure that the connection is secure.
 - Pull the tube and the connector to make sure they are securely connected.

Fuel Filler Hose

- Insert fuel filler hose (1) to the length (A) below on the fuel tank (3).

**Fuel filler hose installation : 35mm (1.38 in)
on fuel tank (A)**

- Be sure hose clamp (2) is not placed on swelled area of fuel filler hose (1).

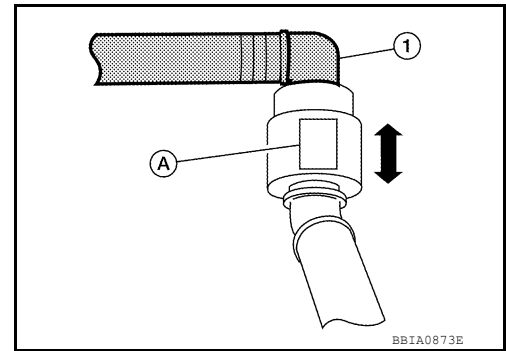


EVAP Hose

FUEL TANK

< SERVICE INFORMATION >

1. Check connections for damage or foreign material.
2. Align the matching quick connector (A) with the center of EVAP hose (1), and insert quick connector (A) straight until it clicks.
3. After connecting, pull on quick connector (A) and EVAP hose (1) by hand. Make sure connections are secure.



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.

EVAPORATIVE EMISSION SYSTEM

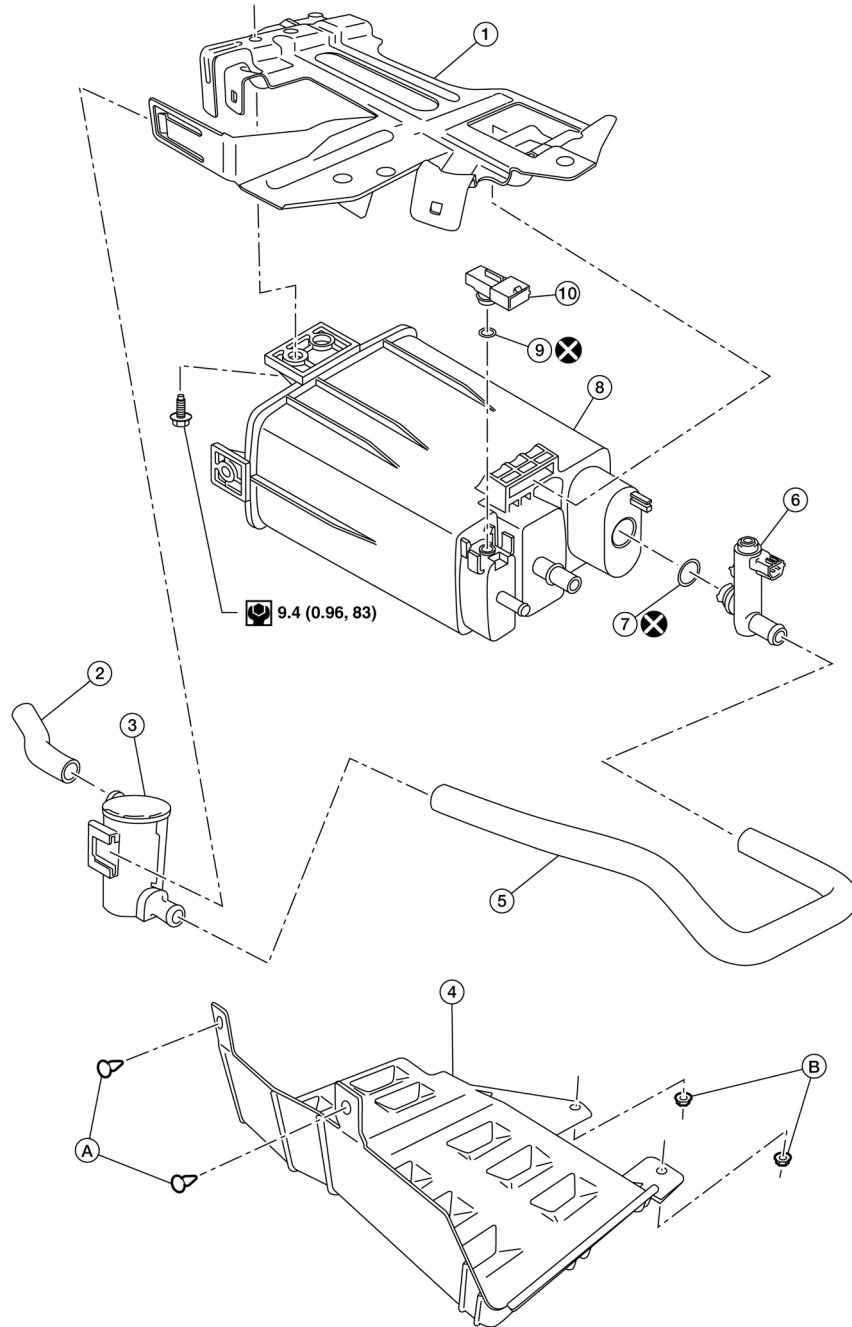
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EVAPORATIVE EMISSION SYSTEM

Exploded View

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|---|------------------------------------|-------------------------------------|
| 1. EVAP canister bracket | 2. EVAP canister filter drain hose | 3. EVAP canister filter |
| 4. EVAP canister protector | 5. EVAP hose | 6. EVAP canister vent control valve |
| 7. O-ring | 8. EVAP canister | 9. O-ring |
| 10. EVAP canister control pressure sensor | A. Clip | B. Nut |

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EVAPORATIVE EMISSION SYSTEM

< SERVICE INFORMATION >

Removal and Installation

INFOID:000000007402922

EVAP CANISTER

Removal

1. Remove EVAP canister protector.
2. Disconnect the EVAP canister control pressure sensor electrical connector.
3. Remove the EVAP canister control pressure sensor and O-ring, if necessary.

CAUTION:

Discard the O-ring. Do not reuse O-ring.

4. Disconnect EVAP canister purge hose.
5. Remove the EVAP canister retaining bolt.
6. Disconnect fuel tank EVAP breather hose.
7. Disconnect EVAP vent control valve connector.
8. Disconnect the EVAP vent control valve hose.
9. Remove the EVAP canister.
10. Remove the EVAP vent control valve and O-ring, if necessary.

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 CANISTER CONTROL PRESSURE SENSOR

Removal

1. Remove EVAP canister protector.
2. Disconnect the EVAP control pressure sensor connector.
3. Remove the EVAP canister control 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.

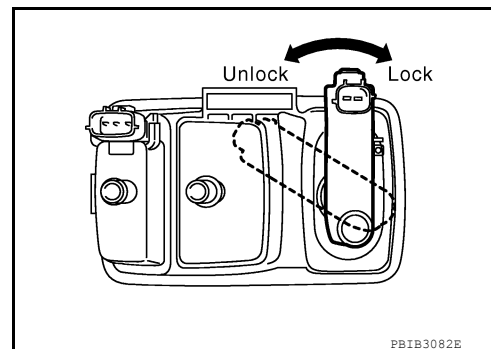
EVAP CANISTER VENT CONTROL VALVE

Removal

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

EVAPORATIVE EMISSION SYSTEM

< SERVICE INFORMATION >

CAUTION:

Do not reuse O-ring.

EVAP CANISTER FILTER

Removal

1. Disconnect the EVAP canister filter drain hose.
2. Disconnect the EVAP hose.
3. Remove the EVAP canister filter.

Installation

Installation is in the reverse order of removal.

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SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE INFORMATION >

SERVICE DATA AND SPECIFICATIONS (SDS)

Standard and Limit

INFOID:000000007402923

FUEL TANK

Fuel tank capacity	55.0 ℓ (14-1/2 US gal, 12-1/8 Imp gal)
Fuel specification	Refer to MA-15