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(SDS)	42
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SERVICE DATA AND SPECIFICATIONS (SDS)

(SDS)	
Fuel Tank	

INFOID:000000013600640

< PRECAUTION > PRECAUTION PRECAUTIONS

Precautions for Removing Battery Terminal

When disconnecting the battery terminal, pay attention to the following.

- Always use a 12V battery as power source.
- Never disconnect battery terminal while engine is running.
- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
- For vehicles with the engine listed below, remove the battery terminal after a lapse of the specified time:

BR08DE	: 4 minutes	V9X engine	: 4 minutes
D4D engine	: 20 minutes	YD25DDTi	: 2 minutes
HR09DET	: 12 minutes	YS23DDT	: 4 minutes
HRA2DDT	: 12 minutes	YS23DDTT	: 4 minutes
K9K engine	: 4 minutes	ZD30DDTi	: 60 seconds
M9R engine	: 4 minutes	ZD30DDTT	: 60 seconds
R9M engine	: 4 minutes		



NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

• After high-load driving, if the vehicle is equipped with the V9X engine, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery terminal.

NOTE:

- Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.
- Example of high-load driving
- Driving for 30 minutes or more at 140 km/h (86 MPH) or more.
- Driving for 30 minutes or more on a steep slope.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
 NOTE:

The removal of 12V battery may cause a DTC detection error.

General Precautions

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.
- Never smoke while servicing fuel system. Keep open flames and sparks away from the work area. CAUTION:
- Use gasoline required by the regulations for octane number. Refer to <u>GI-29, "Fuel"</u>.
- Before removing fuel line parts, perform 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 <u>EC6-279, "Work Procedure"</u> (FOR USA AND CAN-ADA) or <u>EC6-1212, "Work Procedure"</u> (FOR MEXICO).
- Disconnect the battery cable from the negative terminal.
- Always replace O-ring and clamps with new ones.
- Never kink or twist tubes when they are being installed.
- Never tighten hose clamps excessively to avoid damaging hoses.
- After installing tubes, check there is no fuel leakage at connections in the following steps.

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PRECAUTIONS

< PRECAUTION >

- Apply fuel pressure to fuel lines with turning ignition switch "ON" (with engine stopped). Then check for fuel leakage at connections.
- Start engine and rev it up and check for fuel leakage at connections.
- Use only a genuine NISSAN fuel filler cap as a replacement. If an incorrect fuel filler cap is used, the "MIL" may come on.
- For servicing "On Board Refueling Vapor Recovery (ORVR)" parts, refer to <u>EC6-56, "On Board Refueling Vapor Recovery (ORVR)"</u> (FOR USA AND CANADA).

PREPARATION

PREPARATION PREPARATION

< PREPARATION >

Commercial Service Tools

Tool name		Description	0
Power tool		Loosening nuts and bolts	
			C
	PBIC0190E		E

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SYSTEM

< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION SYSTEM WARNING/INDICATOR/CHIME LIST

WARNING/INDICATOR/CHIME LIST : Warning lamps/Indicator lamps

Name	Design	Arrangement/Function
Low fuel warning lamp		Regarding the arrangement. Refer to <u>MWI-9, "METER SYSTEM : De-</u> sign".
	U	Regarding the function. Refer to <u>MWI-32, "WARNING LAMPS/INDI-</u> CATOR LAMPS : Low fuel warning lamp".

FUEL SYSTEM

< PERIODIC MAINTENANCE >

PERIODIC MAINTENANCE **FUEL SYSTEM**

Hydraulic Layout



- $\overline{7}$ EVAP canister
- <□ : Vehicle front

Inspection

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

- (A): Engine
- : Fuel line B
- : Fuel tank \bigcirc

If necessary, repair or replace damaged parts.



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[VR30DDTT]

< PERIODIC MAINTENANCE >

Quick Connector

CAUTION:

- After connecting fuel tube quick connectors, check quick connectors are secure.
 - (1) : Quick connector
 - (2) : Retainer
 - (A) : Hard tube (or the equivalent)
 - (B) : Connection (cross-section)
 - © : Resin tube
 - (D) : To under floor fuel line
 - E : To fuel tank
 - (F) : Tab
 - G : Disconnection
- Ensure that connector and resin tube never contact any adjacent parts.



FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY [VR30DDTT] < REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

Exploded View

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FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY [VR30DDTT] < REMOVAL AND INSTALLATION >



- Main fuel level sensor unit (\mathbf{f})
- Fuel tank temperature sensor **(A)**

NOTE:

Sub fuel level sensor unit cannot be disassembled and should be replaced as a unit.

Removal and Installation

INFOID:000000013582048

WARNING:

Read "General Precautions" when working on the fuel system. Refer to FL-3, "General Precautions".

REMOVAL

1. Check fuel level on a level ground. If the fuel level is 7/8 of the fuel tank (full or nearly full), draw appropriate amount of fuel from the fuel tank.

Guideline: Draw approximately 15 liters (4 US gal, 3-2/8 Imp gal) from a full-tank condition.

- In the event of malfunction in fuel pump, insert a hose measuring 20 mm (0.79 in) in diameter into the filler opening to draw approximately 15 liters (4 US gal, 3-2/8 Imp gal) fuel.
- 2. Release the fuel pressure from the fuel lines. Refer to EC6-279, "Work Procedure" (FOR USA AND CAN-ADA) or EC6-1212, "Work Procedure" (FOR MEXICO).
- 3. Open fuel filler lid.
- 4. Open filler cap and release the pressure inside fuel tank.
- 5. Remove rear seat cushion. Refer to SE-101, "SEAT CUSHION : Removal and Installation" (Bench seat models) or SE-110, "SEAT CUSHION : Removal and Installation" (6:4 separate seat models).
- 6. Peel off floor carpet.
- 7. Remove mounting nuts (A), and then inspection hole cover.

(B) : Direction mark

: Vehicle front

: Main fuel level sensor unit, fuel filter, **Right side** and fuel pump assembly

Left side : Sub fuel level sensor unit



FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< REMOVAL AND INSTALLATION >

- 8. Disconnect harness connector (3) and fuel feed tube (2).
 - (1) : Quick connector
 - ⟨□ : Vehicle front

NOTE:

- · Fuel does not return to the fuel tank.
- The sub fuel level sensor unit includes a harness connector only.
- Figure shows main fuel level sensor unit, fuel filter and fuel pump assembly side of fuel tank.

Disconnect quick connector as follows:

- Hold the sides of connector, push in tabs and pull out fuel feed tube.
 - (A) : Pull
 - (B) : Push in tabs
- If quick connector sticks to tube of main fuel level sensor unit, push and pull quick connector several times until they start to move. Then disconnect them by pulling.



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CAUTION:

- Quick connector ① can be disconnected when the tabs ④ are completely depressed. Never twist it more than necessary.
 - (B) : Connection (Cross-section)
 - : To under floor fuel line \bigcirc
 - : To fuel tank (E)
 - : Disconnection ര
- Never use any tools to disconnected quick connector.
- Keep resin tube (C) away from heat. Be especially careful when welding near the resin tube.
- Prevent acid liquid such as battery electrolyte, etc. from getting on resin tube.
- Never bend or twist resin tube during installation and disconnection.
- Never remove the remaining retainer (2) on hard tube (or the equivalent) (A) except when resin tube or retainer is replaced.
- When resin tube or hard tube (or the equivalent) is replaced, also replace retainer with new one.



FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY [VR30DDTT]

< REMOVAL AND INSTALLATION >

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



Remove main fuel level sensor unit, fuel filter and fuel pump assembly, and sub fuel level sensor unit as 9. follows:

CAUTION:

- Never bend float arm during removal.
- Avoid impacts such as falling when handling components.
- Removal of main fuel level sensor unit, fuel filter and fuel pump assembly: a.
- i. Remove retainer.
- ii. Raise main fuel level sensor unit, fuel filter and fuel pump assembly, and disconnect quick connector as follows:
 - Push in tabs (1) and pull out fuel tube (2).
- Removal of sub fuel level sensor unit: b.
- i. Remove retainer.
- ii. Raise and release sub fuel level sensor unit to remove.



INSTALLATION Note the following, and install in the reverse order of removal. **CAUTION:** Do not reuse O-rings.

Fuel hose

When installing fuel hose connector (1), refer to "Quick Connector".

(2) : Retainer



Quick Connector

- Connect quick connector as follows:
- 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, check that the connection is secure by following method.

FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< REMOVAL AND INSTALLATION >

 Pull the tube and the connector to check they are securely connected.

(A) : Pull

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



[VR30DDTT]

INFOID:000000013582049

Disassembly and Assembly

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DISASSEMBLY

CAUTION:

Sub fuel level sensor unit cannot be disassembled and should be replaced as a unit. Remove main fuel level sensor unit as follows:

1. Disconnect harness connector (A).



2. Remove main fuel level sensor unit (1) from adapter (2) as follows:



- a. Push in tab (A) to release the lock.
- b. After fixing tabs are disengaged, slide main fuel level sensor unit out in direction shown by the arrow (B). CAUTION:
 - Be careful not to damage the main fuel level sensor unit.
 - Never disassemble fuel filter and fuel pump assembly.
- 3. Remove adapter from the fuel filter and fuel pump assembly, if necessary, in the same procedure used in removing main fuel level sensor unit.

ASSEMBLY

CAUTION:

Sub fuel level sensor unit cannot be disassembled and should be replaced as a unit. Note to the following, and install in the reverse order of removal.

- Install adapter, if removed. 1.
- Check for damage of main fuel level sensor unit installation gposition on the side of fuel filter and fuel 2. pump assembly.
- 3. Slide main fuel level sensor unit until it aligns to installation groove, then insert it until it stops.
 - After inserting, apply force in reverse direction (removal direction) to ensure it cannot be pulled out.



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FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY

< REMOVAL AND INSTALLATION >

4. Connect the bharness connector (A).



Inspection

INFOID:000000013582050

INSPECTION AFTER INSTALLATION

Use the following procedure to check for fuel leakage.

- 1. Turn ignition switch "ON" (with engine stopped), then check connections for leakage by applying fuel pressure to fuel piping.
- 2. Start engine and let it idle and check there are no fuel leakage at the fuel system connections.

Exploded View

INFOID:000000013582051

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[VR30DDTT]



WARNING:

Be sure to read "General Precautions" when working on the fuel system. Refer to <u>FL-3, "General Pre-cautions"</u>.

REMOVAL

- Drain fuel from fuel tank if necessary. Refer to <u>FL-15, "Exploded View"</u>.
- Perform work on level place.
- 1. Perform steps 2 to 8 of "REMOVAL" in "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" on main and sub fuel level sensor units. Refer to <u>FL-9</u>, "Exploded View".
- 2. Remove center muffler and main muffler. Refer to EX-6, "Exploded View".

< REMOVAL AND INSTALLATION >

- 3. Remove propeller shaft. Refer to <u>DLN-111, "2WD : Exploded View"</u> (2WD models) or <u>DLN-115, "AWD :</u> <u>Exploded View"</u> (AWD models).
- 4. Remove parking rear brake cables. Refer to PB-9, "Exploded View".
- 5. Remove rear suspension assembly. Refer to <u>RSU-24, "Exploded View"</u>. **NOTE:**

For this service, drive shaft, final drive, and rear suspension member are required not to be separate one another during removal.

- 6. Disconnect fuel filler hose ①, EVAP hose ②, and vent hose ③ at fuel tank side.
 - (4) : Fuel tank protector



- 7. Remove fuel tank protector.
- 8. Support the lower part of fuel tank ① with transmission jack (A). CAUTION:

Support the position that fuel tank mounting bands never engage.



- 9. Remove fuel tank mounting bands.
- 10. Supporting with hands, descend transmission jack carefully, and remove fuel tank.
 - CAUTION:
 - Check that all connection points have been disconnected.
 - Confirm there is no interference with vehicle.
- 11. Remove fuel filler tube if necessary.

INSTALLATION

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

- Surely clamp fuel hoses and insert hose to the length below.
 - Fuel filler hose
 - The other hoses

: 35 mm (1.38 in) : 25 mm (0.98 in)

- Be sure hose clamp is not placed on swelled area of fuel tube.
- Tighten the clamp hand with the top mark (A) until the mark is on the bolt head flange.



< REMOVAL AND INSTALLATION >

• To connect quick connector, refer to FL-8, "Quick Connector".

Inspection

INSPECTION AFTER INSTALLATION

Use the following procedure to check for fuel leakage.

- 1. Turn ignition switch "ON" (with engine stopped), and check connections for leakage by applying fuel pressure to fuel piping.
- 2. Start engine and rev it up and check there are no fuel leakage at the fuel system tube and hose connections.
- After removing/installing rear suspension assembly, check to adjust wheel alignment and then, adjust neutral
 position of steering angle sensor. Refer to <u>RSU-6</u>, "Inspection" and <u>ST-18</u>, "Inspection".

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< REMOVAL AND INSTALLATION >

EVAP CANISTER

Exploded View

INFOID:000000013582054



: Always replace after every disassembly.

< REMOVAL AND INSTALLATION >

Hydraulic Layout

[VR30DDTT] INFOID:000000013582055

А FL D (5) 2 Ε 4 F 3 Н 6 0JSBIB0092ZZ EVAP canister purge volume control (3) EVAP line 1 (2) EVAP service port solenoid valve Κ Fuel line Fuel tank Fuel filler neck 4 (5) 6 EVAP canister \overline{O} L **Removal and Installation** INFOID:000000013582056 Μ REMOVAL 1. Disconnect each hoses and connectors. 2. Remove EVAP canister fixing bolt. Ν 3. Remove EVAP canister. **INSTALLATION** Install in the reverse order of removal. Ο **Disassembly and Assembly** INFOID:000000013582057 Ρ DISASSEMBLY

< REMOVAL AND INSTALLATION >

1. Disengage the pawl and turn EVAP canister vent control valve counterclockwise.

- Lock
- Unlock
- 2. Remove the EVAP canister vent control valve.
- 3. Remove the EVAP control system pressure sensor.



ASSEMBLY Assemble in the reverse order of disassembly. CAUTION: Always replace O-ring with a new one.

Inspection

Check EVAP canister as per the following:

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



[VR30DDTT]

SERVICE DATA AND SPECIFICATIONS (SDS) [VR30DDTT] < SERVICE DATA AND SPECIFICATIONS (SDS) SERVICE DATA AND SPECIFICATIONS (SDS) А SERVICE DATA AND SPECIFICATIONS (SDS) **Fuel Tank** INFOID:000000013582059 Standard and Limit С Fuel tank capacity Approx. 75.6 ℓ (20 US gal, 16-5/8 lmp gal)

Refer to GI-29, "Fuel"

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Fuel recommendation

< PRECAUTION > PRECAUTION PRECAUTIONS

Precautions for Removing Battery Terminal

When disconnecting the battery terminal, pay attention to the following.

- Always use a 12V battery as power source.
- Never disconnect battery terminal while engine is running.
- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
- For vehicles with the engine listed below, remove the battery terminal after a lapse of the specified time:

BR08DE	: 4 minutes	V9X engine	: 4 minutes
D4D engine	: 20 minutes	YD25DDTi	: 2 minutes
HR09DET	: 12 minutes	YS23DDT	: 4 minutes
HRA2DDT	: 12 minutes	YS23DDTT	: 4 minutes
K9K engine	: 4 minutes	ZD30DDTi	: 60 seconds
M9R engine	: 4 minutes	ZD30DDTT	: 60 seconds
R9M engine	: 4 minutes		



NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

After high-load driving, if the vehicle is equipped with the V9X engine, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery terminal.

NOTE:

- Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.
- Example of high-load driving
- Driving for 30 minutes or more at 140 km/h (86 MPH) or more.
- Driving for 30 minutes or more on a steep slope.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
 NOTE:

The removal of 12V battery may cause a DTC detection error.

General Precautions

INFOID:000000013501737

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.

• Never smoke while servicing fuel system. Keep open flames and sparks away from the work area. CAUTION:

- Use gasoline required by the regulations for octane number. Refer to GI-29, "Fuel".
- Before removing fuel line parts, perform 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 EC4-220, "Work Procedure".
- Disconnect the battery cable from the negative terminal.
- Always replace O-ring and clamps with new ones.
- Never kink or twist tubes when they are being installed.
- Never tighten hose clamps excessively to avoid damaging hoses.
- After installing tubes, check there is no fuel leakage at connections in the following steps.
- Apply fuel pressure to fuel lines with turning ignition switch "ON" (with engine stopped). Then check for fuel leakage at connections.

< PRECAUTION >

- Start engine and rev it up and check for fuel leakage at connections.
- Use only a genuine NISSAN fuel filler cap as a replacement. If an incorrect fuel filler cap is used, the A "MIL" may come on.
- For servicing "On Board Refueling Vapor Recovery (ORVR)" parts, refer to <u>EC4-43, "On Board Refueling Vapor Recovery (ORVR)</u>".

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< PREPARATION > PREPARATION

PREPARATION

Commercial Service Tools

Tool name		Description
Power tool		Loosening bolts and nuts
	PBIC0190E	

SYSTEM DESCRIPTION STRUCTURE AND OPERATION FUEL TRANSPORTATION IN FUEL TANK

FUEL TRANSPORTATION IN FUEL TANK : System Description

The electric fuel pump and the transfer jet pump are integrated with the fuel level sensor unit, fuel filter and fuel pump assembly. This is installed to the fuel tank.

The transfer jet pumps draw up fuel using a flow of discarded fuel. The transfer jet pump (sub side) transfers fuel from the sub side to inside of the fuel pump assembly. The transfer jet pump (main side) transfers fuel from the main side to inside of the fuel pump assembly. The fuel sent to fuel pump assembly is supplied to the engine by an electric fuel pump.

NOTE:

Fuel on the sub side is consumed first.



G Feed line

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< SYSTEM DESCRIPTION > SYSTEM

WARNING/INDICATOR/CHIME LIST

WARNING/INDICATOR/CHIME LIST : Warning lamps/Indicator lamps

Name	Design	Arrangement/Function
Low fuel warning lamp		Regarding the arrangement. Refer to <u>MWI-9, "METER SYSTEM : De-sign"</u> .
		Regarding the function. Refer to <u>MWI-32</u> , "WARNING LAMPS/INDI- CATOR LAMPS : Low fuel warning lamp".

< PERIODIC MAINTENANCE > PERIODIC MAINTENANCE **FUEL SYSTEM**

Hydraulic Layout

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INFOID:000000012958236



Inspection

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

- : Engine (A)
- : Fuel line **B**
- \bigcirc : Fuel tank

If necessary, repair or replace damaged parts.



Quick Connector

INFOID:000000012958238

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INFOID:0000000012958237

CAUTION:

After connecting fuel tube quick connectors, check quick connectors are secure.

< PERIODIC MAINTENANCE >

- Type A

- (1) : Quick connector
- 2 : Retainer
- (A) : Hard tube (or the equivalent)
- B : Connection (cross-section)
- © : Resin tube
- ① : To under floor fuel line
- (E) : To fuel tank
- (F) : Tab
- (G) : Disconnection



- Type B

- (1) : Quick connector
- (2) : Hard tube (or the equivalent)
- (A) : Disconnection
- (B) : Connection (cross-section)
- © : Condition
- D : Retainer
- (E) : O-ring
- (F) : Lock
- G : Unlock



• Ensure that connector and resin tube never contact any adjacent parts.

FUEL LEVEL SENSOR UNIT AND FUEL PUMP ASSEMBLY [2.0L TURBO GASOLINE ENGINE] < REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION FUEL LEVEL SENSOR UNIT AND FUEL PUMP ASSEMBLY

Exploded View

REMOVAL

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(T) NOTE:

Sub fuel level sensor unit cannot be disassembled and should be replaced as a unit.

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< REMOVAL AND INSTALLATION >

Removal and Installation

INFOID:000000012958240

[2.0L TURBO GASOLINE ENGINE]

WARNING:

Read "General Precautions" when working on the fuel system. Refer to <u>FL-22, "General Precautions"</u>. REMOVAL

1. Check fuel level on a level ground. If the fuel level is 7/8 of the fuel tank (full or nearly full), draw appropriate amount of fuel from the fuel tank.

Guideline: Draw approximately 15 liters (3-2/8 Imp gal) from a full-tank condition.

- In the event of malfunction in fuel pump, insert a hose measuring 20 mm (0.79 in) in diameter into the filler opening to draw approximately 15 liters (3-2/8 Imp gal) fuel.
- 2. Check DTC using CONSULT. NOTE:

Before starting the work procedure, check if there is already-detected DTC to distinguish it from DTC detected during fuel pressure release.

- 3. Release fuel pressure as follows:
- a. Remove fuel pump 15A fuse (No.101) located in fuse and fusible link holder-2. Refer to <u>PG-199, "Fuse</u> <u>and Fusible Link Arrangement"</u>.
- b. Start the engine.
- c. After engine stalls, crank it two or three times to release all fuel pressure.
- d. Turn ignition switch OFF.
- 4. Open fuel filler lid.
- 5. Open filler cap and release the pressure inside fuel tank.
- Remove rear seat cushion. Refer to <u>SE-98, "Exploded View"</u> (Bench seat models) or <u>SE-103, "Exploded View"</u> (6:4 separate seat models).
- 7. Peel off floor carpet.
- 8. Remove mounting nuts (A), and then inspection hole cover.
 - B : Direction mark

Right side : Main fuel level sensor unit, fuel filter, and fuel pump assembly

Left side : Sub fuel level sensor unit

- 9. Disconnect harness connector (3) and fuel feed tube (2)
 - $\textcircled{1} : \mathsf{Quick \ connector}$

NOTE:

- The sub fuel level sensor unit includes a harness connector and fuel tubes.
- Figure shows main fuel level sensor unit, fuel filter and fuel pump assembly side of fuel tank.

Disconnect quick connector as follows:





< REMOVAL AND INSTALLATION >

- Hold the sides of connector, push in tabs and pull out fuel tube.
 - A : Pull
 - (B) : Push in tabs
- If quick connector sticks to tube of sub fuel level sensor unit, push and pull quick connector several times until they start to move. Then disconnect them by pulling.



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CAUTION:

- Quick connector ① can be disconnected when the tabs (F) are completely depressed. Never twist it more than necessary.
 - B : Connection (Cross-section)
 - (D) : To under floor fuel line
 - (E) : To fuel tank
 - (G) : Disconnection
- Never use any tools to disconnected quick connector.
- Keep resin tube © away from heat. Be especially careful when welding near the resin tube.
- Prevent acid liquid such as battery electrolyte, etc. from getting on resin tube.
- Never bend or twist resin tube during installation and disconnection.
- Never remove the retainer ② on hard tube (or the equivalent) (A) except when resin tube or retainer is replaced.
- When resin tube or hard tube (or the equivalent) is replaced, also replace retainer with new one.
- To keep the connecting portion clean and to avoid damage and foreign materials, cover them completely with plastic bags (A) or something similar.



10. Remove main fuel level sensor unit, fuel filter and fuel pump assembly, and sub fuel level sensor unit as follows:

CAUTION:

- Never bend float arm during removal.
- Avoid impacts such as falling when handling components.
- a. Removal of main fuel level sensor unit, fuel filter and fuel pump assembly:
- i. Remove retainer.

[2.0L TURBO GASOLINE ENGINE]

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< REMOVAL AND INSTALLATION >

- ii. Raise main fuel level sensor unit, fuel filter and fuel pump assembly, and disconnect quick connector (A) as follows:
 - (1) : Transfer tube
 - 2 : Feed tube
 - (3) : Tab





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1. Remove feed tube ① from the mounting groove of fuel pump ②. (Rotate feed tube counterclockwise.)

2. Push tab (A) and rotate feed tube (1) counterclockwise with pawl (B) of quick connector unlatched.

 Push tab (A) and pull out quick connector (1) from fuel pump with pawl (B) of quick connector unlatched.
 NOTE: Before pulling out quick connector, check that pawl (C) is unlatched.

- b. Removal of sub fuel level sensor unit:
- i. Remove retainer.
- ii. Raise sub fuel level sensor unit, and disconnect quick connector (A) as follows:



< REMOVAL AND INSTALLATION >

• Push in tabs (2) and pull out feed tube (1).

Erase DTC detected while releasing fuel pressure.

[2.0L TURBO GASOLINE ENGINE]



Sub fuel level sensor unit

: Transfer tube

: Feed tube

: Tab

INSTALLATION

• Do not reuse O-rings. Check DTC and erase DTC.

CAUTION:

NOTE:

Fuel hose

(1)

2

3

- (\mathbf{f}) : Feed tube
- : Retainer (2)
- : Connection (A)
- : Housing side (B)
- \bigcirc : Bulge

- Main and Sub Fuel Level Sensor Unit
- Face main and sub fuel level sensor units as shown in the figure, and install them with the knock pin (C) on back aligned with pin hole on fuel tank.
 - : Left side (A)
 - : Right side **B**
 - \triangleleft : Vehicle front



< REMOVAL AND INSTALLATION >

[2.0L TURBO GASOLINE ENGINE]

- Install retainer so that its notch becomes parallel with the notch on fuel tank.
 - (A) : Align notches
- Tighten retainer mounting bolts evenly.



Quick Connector

Connect quick connector as follows:

- 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, check that the connection is secure by following method.
 - Pull the tube and the connector to check they are securely connected.

(A) : Pull

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



INFOID:000000012958241

Disassembly and Assembly

DISASSEMBLY

CAUTION:

Sub fuel level sensor unit cannot be disassembled and should be replaced as a unit. Remove main fuel level sensor unit as follows:

- 1. Disconnect harness connector (A).
- a. Hold connector by fingers and push stopper release tab.
- b. Pull it out connector.



< REMOVAL AND INSTALLATION >

 Remove main fuel level sensor unit ① from adapter ② as follows:

(3) : Fuel filter and fuel pump assembly

- a. Push in tab (A) to release the lock.
- After fixing tabs are disengaged, slide main fuel level sensor unit out in direction shown by the arrow (B).
 CAUTION:
 - Be careful not to damage the main fuel level sensor unit.
 - Never disassemble fuel filter and fuel pump assembly.
- Remove adapter from the fuel filter and fuel pump assembly in the same procedure used in removing main fuel level sensor unit if necessary.
- Е ASSEMBLY CAUTION: Sub fuel level sensor unit cannot be disassembled and should be replaced as a unit. Note to the following, and install in the reverse order of removal. F 1. Check for damage of main fuel level sensor unit installation position on the side of adapter. Slide main fuel level sensor unit aligns to installation groove, then insert it until it stops. 2. After inserting, apply force in reverse direction (removal direction) to ensure it cannot be pulled out. Connect the harness connector. Inspection INFOID:000000012958242 Н **INSPECTION AFTER INSTALLATION** Use the following procedure to check for fuel leakage. Turn ignition switch "ON" (with engine stopped), then check connections for leakage by applying fuel pres-1. sure to fuel piping. 2. Start engine and let it idle and check there are no fuel leakage at the fuel system connections. Κ L Μ Ν



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[2.0L TURBO GASOLINE ENGINE]

< REMOVAL AND INSTALLATION >

Exploded View

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Removal and Installation

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WARNING:

Be sure to read "General Precautions" when working on the fuel system. Refer to <u>FL-22, "General Pre-</u> <u>cautions"</u>.

REMOVAL

- Drain fuel from fuel tank if necessary. Refer to FL-36, "Exploded View".
- Perform work on level place.
- 1. Perform steps 2 to 9 of "REMOVAL" in "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" on main and sub fuel level sensor units. Refer to <u>FL-30</u>, "Removal and Installation".
- 2. Remove center muffler and main muffler. Refer to EX-12. "Exploded View".
- 3. Remove propeller shaft. Refer to <u>DLN-111, "2WD : Exploded View"</u>.
- 4. Remove parking rear brake cables.

[2.0L TURBO GASOLINE ENGINE]

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< REMOVAL AND INSTALLATION > Refer to PB-9, "Exploded View".

Remove rear suspension assembly. Refer to <u>RSU-8, "Exploded View"</u>. NOTE:

For this service, drive shaft, final drive, and rear suspension member are required not to be separate one another during removal.

- Disconnect fuel filler hose (1), vent hose (2), and EVAP hose (3) at 6 fuel tank side.
 - (4) : Fuel tank protector



- 7. Remove fuel tank protector.
- Support the lower part of fuel tank (1) with transmission jack (A). 8. CAUTION:

Support the position that fuel tank mounting bands never engage.



- Remove fuel tank mounting bands.
- 10. Supporting with hands, descend transmission jack carefully, and remove fuel tank. **CAUTION:**
 - Check that all connection points have been disconnected.
 - Confirm there is no interference with vehicle.
- 11. Remove fuel filler tube if necessary.

INSTALLATION

Note the following, and install in the reverse order of removal. Surely clamp fuel hoses and insert hose to the length below.

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

- Be sure hose clamp is not placed on swelled area of fuel tube.
- Tighten the clamp hand with the top mark (A) until the mark is on the bolt head flange.



To connect quick connector, refer to <u>FL-27, "Quick Connector"</u>.

< REMOVAL AND INSTALLATION >

Inspection

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INSPECTION AFTER INSTALLATION

Use the following procedure to check for fuel leakage.

- 1. Turn ignition switch "ON" (with engine stopped), and check connections for leakage by applying fuel pressure to fuel piping.
- 2. Start engine and rev it up and check there are no fuel leakage at the fuel system tube and hose connections.
- After removing/installing rear suspension assembly, check to adjust wheel alignment and then, adjust neutral
 position of steering angle sensor. Refer to <u>ST-18</u>, "Inspection" (without DIRECT ADAPTIVE STEERING) or
 <u>ST-114</u>, "Inspection" (with DIRECT ADAPTIVE STEERING).

< REMOVAL AND INSTALLATION >

EVAP CANISTER

Exploded View

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[2.0L TURBO GASOLINE ENGINE]



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< REMOVAL AND INSTALLATION >

[2.0L TURBO GASOLINE ENGINE]

Hydraulic Layout

INFOID:000000013296777



- ④ Fuel pressure sensor
- 7 Fuel tank
- 10 EVAP canister

Removal and Installation

REMOVAL

- 1. Disconnect each hoses and connectors.
- 2. Remove EVAP canister fixing bolt.
- 3. Remove EVAP canister.

INSTALLATION

Install in the reverse order of removal.

Disassembly and Assembly

DISASSEMBLY

- 1. Disengage the pawl and turn EVAP canister vent control valve counterclockwise.
 - Lock (A)
 - Unlock

 B
- 2. Remove the EVAP canister vent control valve.
- 3. Remove the EVAP control system pressure sensor.



ASSEMBLY Assemble in the reverse order of disassembly. CAUTION: Always replace O-ring with a new one.

- (5) Fuel line
- Main fuel level sensor, fuel filter and fuel pump assembly
- 6 EVAP line
 - (9) Fuel filler neck

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< REMOVAL AND INSTALLATION >

Inspection

Check EVAP canister as per the following:

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

FL-41



[2.0L TURBO GASOLINE ENGINE]

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SERVICE DATA AND SPECIFICATIONS (SDS) SERVICE DATA AND SPECIFICATIONS (SDS)

Fuel Tank

INFOID:000000012958252

Standard and Limit

Fuel tank capacity	Approx. 76.0 ℓ (20 US gal, 16-5/8 Imp gal)
Fuel recommendation	Refer to GI-29, "Fuel"