

GROUP 13C

FUEL SUPPLY

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GENERAL INFORMATION

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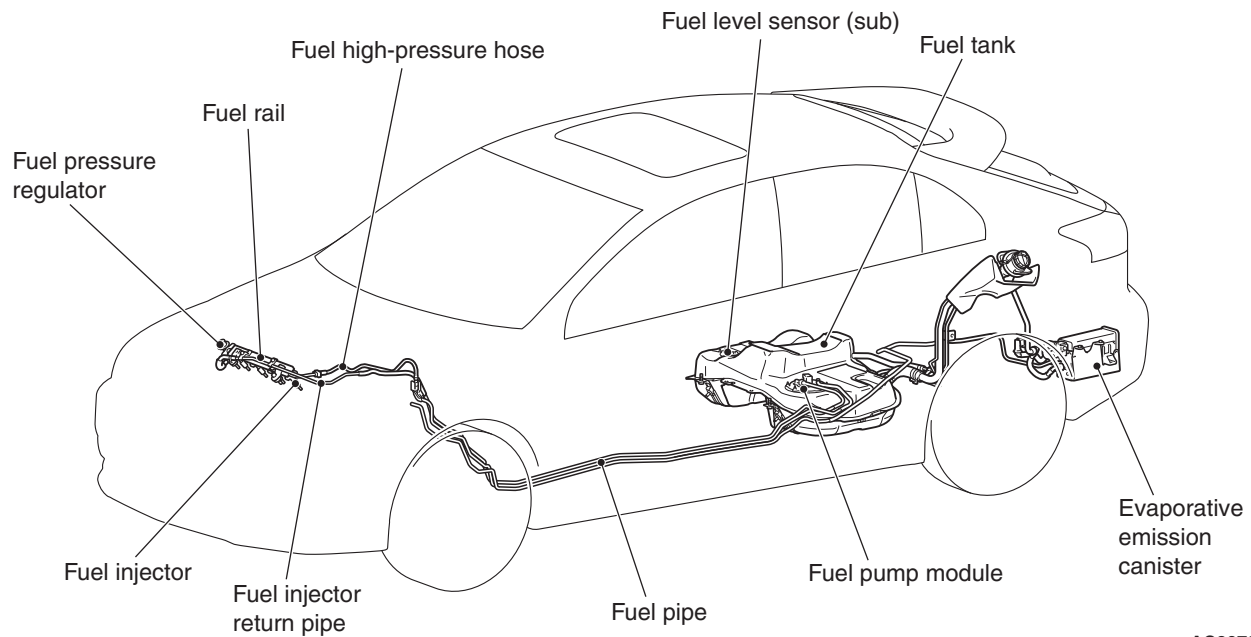
This fuel system is designed with consideration for global environment protection to ensure safety at a collision, reduce weight, and improve reliability and quality. This system has the following features:

- A quick-joint connector of a plastic tube is used for the fuel high-pressure hoses in the engine compartment to reduce the permeation of fuel evaporative emission.

- The surface of underfloor fuel pipes is coated with 1 mm (0.04 inch) thick plastic to improve resistance to corrosion and chipping.
- A returnless fuel system eliminates returned fuel from the engine. The heat that fuel receives from the engine is reduced, minimizing fuel temperature in the fuel tank and controlling the amount of evaporated gas. <2.4L ENGINE>

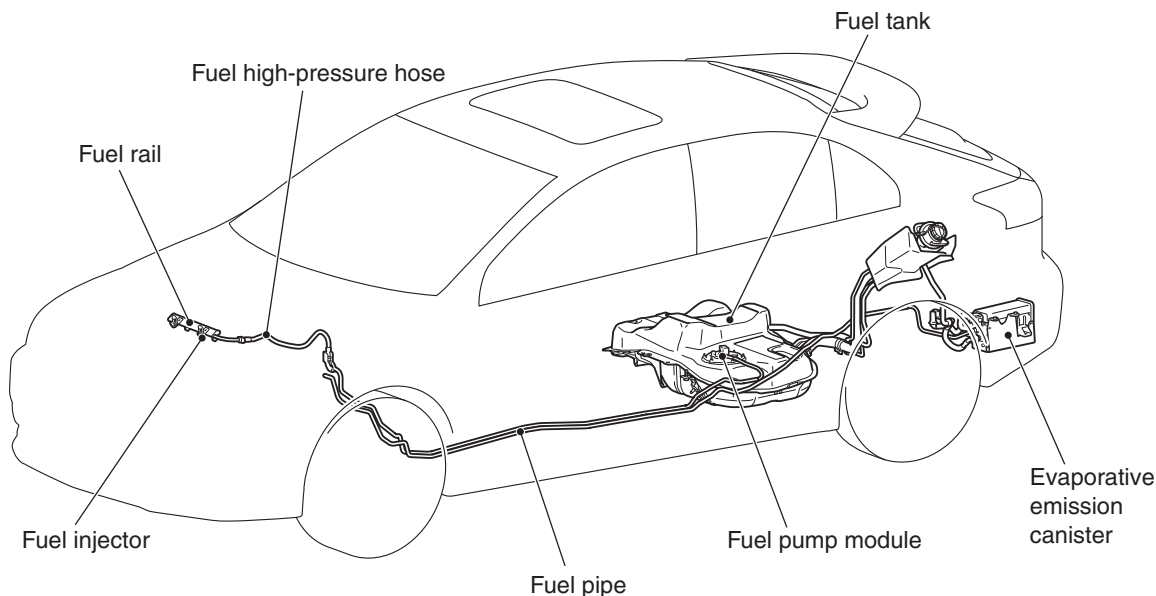
CONSTRUCTION DIAGRAM

<2.0L ENGINE>



AC807655AB

<2.4L ENGINE>



AC807656AC

SERVICE SPECIFICATION

M1135000300376

Item	Standard value
Fuel tank differential pressure sensor terminal voltage V	2.0 –3.0

FUEL SUPPLY DIAGNOSIS

INTRODUCTION

The fuel system is used to supply an appropriate fuel mixture to the engine. The system consists of the fuel tank, fuel filter, fuel pump and fuel pipes. An evaporative emission system is provided to prevent evaporated fuel from escaping into the atmosphere.

Engine malfunctions caused by insufficient fuel supply and evaporative emission system operation malfunctions can be caused by faults in the vapor line, fuel pipe, hose, or fuel tank pressure control valve, etc.

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TROUBLESHOOTING STRATEGY

Use these steps to plan your diagnostic strategy. If you follow them carefully, you will be sure to find most of the fuel supply faults.

1. Gather information from the customer.

2. Verify that the condition described by the customer exists.
3. Find the malfunction by following the Symptom Procedure.
4. Verify malfunction is eliminated.

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SYMPTOM PROCEDURES

Inspection Procedure 1: Engine Malfunctions Due to Insufficient Fuel Supply.

TROUBLESHOOTING HINTS (The most likely causes for this case:)

- Injector failed.
- Open or shorted injector circuit, or loose connector.
- Bent, twisted or clogged fuel pipe or hose.
- Malfunction of the fuel pump module.

DIAGNOSIS**Required Special Tools:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
 - MB991824: V.C.I.
 - MB991827: USB Cable
 - MB991910: Main Harness A

STEP 1. Using scan tool MB991958, read the MFI system diagnostic trouble code.**⚠ CAUTION**

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Ensure that the ignition switch is at the "LOCK" (OFF) position.
- (2) Start up the personal computer.
- (3) Connect special tool MB991827 to special tool MB991824 and the personal computer.
- (4) Connect special tool MB991910 to special tool MB991824.
- (5) Connect special tool MB991910 to the data link connector.
- (6) Turn the power switch of special tool MB991824 to the "ON" position.

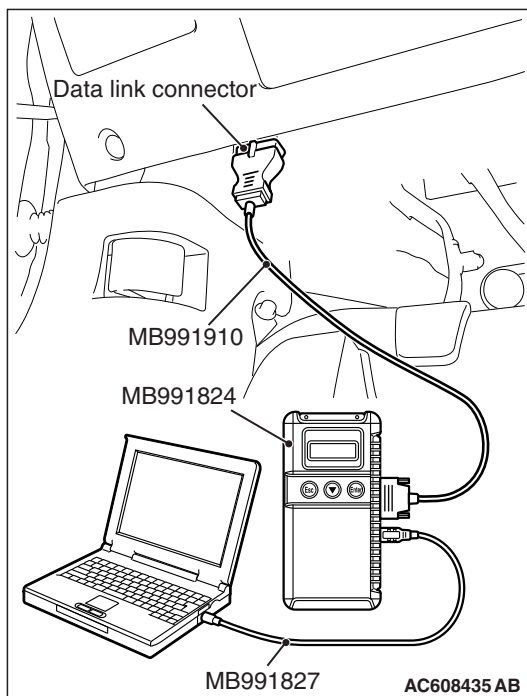
NOTE: When special tool MB991824 is energized, special tool MB991824 indicator light will be illuminated in a green color.

- (7) Start the M.U.T.-III system on the personal computer.
- (8) Turn the ignition switch to the "ON" position.
- (9) Check for MFI system diagnostic trouble code (Refer to GROUP 13A, MFI Diagnosis –Diagnostic Function [P.13A-10](#)) <2.0L ENGINE> or (Refer to GROUP 13B, MFI Diagnosis –Diagnostic Function [P.13B-12](#)) <2.4L ENGINE.>

Q: Is the DTC set?

YES : Repair MFI system (Refer to GROUP 13A, MFI Diagnosis –Diagnostic Trouble Code Chart [P.13A-50](#)) <2.0L ENGINE> or (Refer to GROUP 13B, MFI Diagnosis –Diagnostic Trouble Code Chart [P.13B-51](#)) <2.4L ENGINE> Then go to Step 6.

NO : Go to Step 2.



STEP 2. Check the fuel pressure.

Release residual pressure from the fuel line to prevent fuel spray (Refer to GROUP 13A, On-vehicle Service –Fuel Pressure Test [P.13A-870](#)) <2.0L ENGINE> or (Refer to GROUP 13B, On-vehicle Service –Fuel Pressure Test [P.13B-997](#)) <2.4L ENGINE>

Q: Is the fuel pressure in good condition?

YES : Go to Step 5.

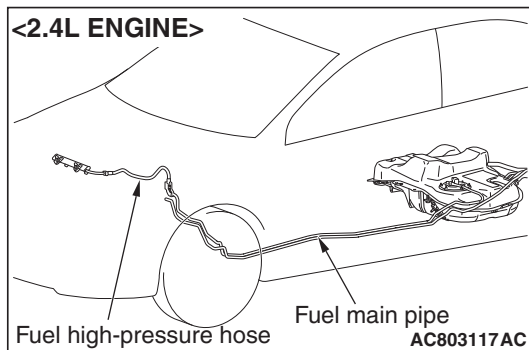
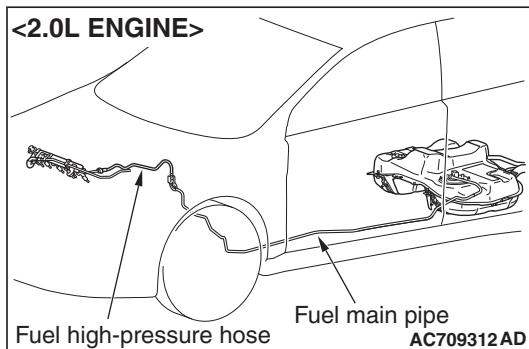
NO : Repair or replace. Then go to Step 3.

STEP 3. Check for bending, twisting or clogging of the fuel main pipe and fuel high-pressure hose.

Q: Are the fuel main pipe and fuel high-pressure hose in good condition?

YES : Go to Step 4.

NO : Repair or replace the fuel main pipe and fuel high-pressure hose. Then go to Step 6 .



STEP 4. Check the fuel pump module operation.

Refer to GROUP 13A, On-vehicles Service –Fuel Pump Operation Check [P.13A-874](#) <2.0L ENGINE.>

Refer to GROUP 13B, On-vehicles Service –Fuel Pump Operation Check [P.13B-1001](#) <2.4L ENGINE.>

Q: Is the fuel pump module operation in good condition?

YES : Then go to Step 5.

NO : Replace the fuel pump module (Refer to [P.13C-8](#)) <2.0L ENGINE> or (Refer to [P.13C-10](#)) <2.4L ENGINE.> Then go to Step 6.

STEP 5. Check the inside of the fuel tank for contamination and rust.

Remove the fuel tank (Refer to [P.13C-14](#)) <2.0L ENGINE> or (Refer to [P.13C-24](#)) <2.4L ENGINE.>

Q: Is the fuel tank in good condition?

YES : Go to Step 6.

NO : Replace the fuel filter, and clean the fuel tank and fuel line. Then go to Step 6.

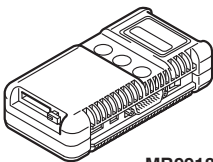
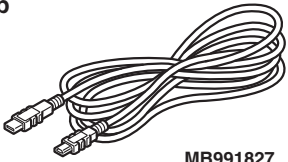
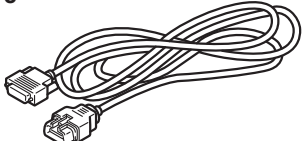
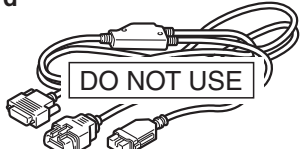
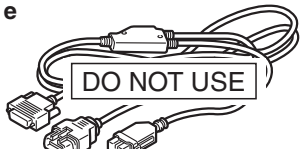
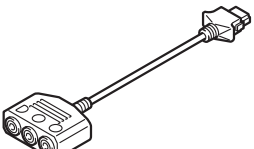
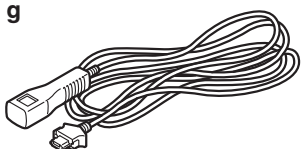
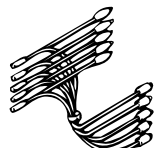
STEP 6. Retest the system.**Q: Is the engine malfunction eliminated?**

YES : The procedure is complete.

NO : Return to Step 1.

SPECIAL TOOLS

M113500601035

Tool	Tool number and name	Supersession	Application
<p>a</p>  <p>MB991824</p> <p>b</p>  <p>MB991827</p> <p>c</p>  <p>MB991910</p> <p>d</p>  <p>MB991911</p> <p>e</p>  <p>MB991914</p> <p>f</p>  <p>MB991825</p> <p>g</p>  <p>MB991826 MB991958</p>	<p>MB991958 Scan tool (M.U.T.-III sub assembly)</p> <p>a: MB991824 Vehicle communication interface (V.C.I.)</p> <p>b: MB991827 M.U.T.-III USB cable</p> <p>c: MB991910 M.U.T.-III main harness A (Vehicles with CAN communication system)</p> <p>d: MB991911 M.U.T.-III main harness B (Vehicles without CAN communication system)</p> <p>e: MB991914 M.U.T.-III main harness C (for Chrysler models only)</p> <p>f: MB991825 M.U.T.-III adapter harness</p> <p>g: MB991826 M.U.T.-III trigger harness</p>	<p>MB991824-KIT</p> <p><i>NOTE: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.</i></p>	<p>CAUTION</p> <p>For vehicles with CAN communication, use M.U.T.-III main harness A to send simulated vehicle speed. If you connect M.U.T.-III main harness B instead, the CAN communication does not function correctly. Checking MFI system DTC</p>
 <p>MB991658</p>	<p>MB991658 Test harness set</p>	<p>Tool not available</p>	<p>Fuel tank differential pressure sensor check</p>

ON-VEHICLE SERVICE**FUEL PUMP OPERATION CHECK**

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Refer to GROUP 13A, On-vehicle Service –Fuel Pump Operation Check [P.13A-874](#) <2.0L ENGINE.>

Refer to GROUP 13B, On-vehicle Service –Fuel Pump Operation Check [P.13B-1001](#) <2.4L ENGINE.>

FUEL LEVEL SENSOR CHECK

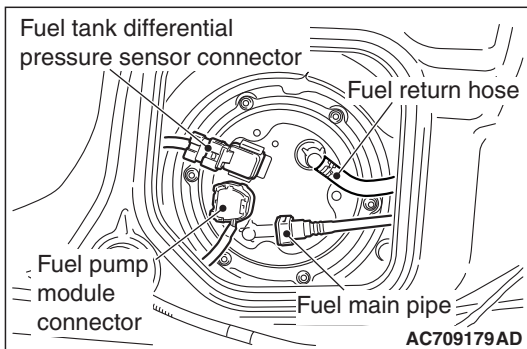
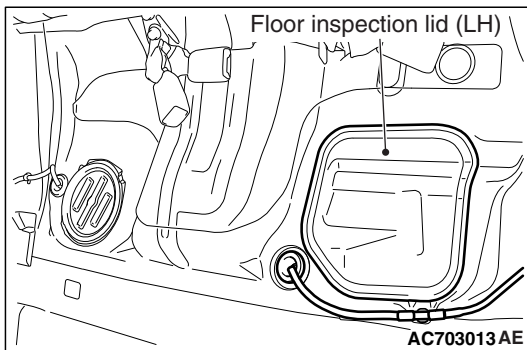
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Refer to GROUP 54A, Combination Meter –On-vehicle Service –Fuel Level Sensor Check [P.54A-114](#).

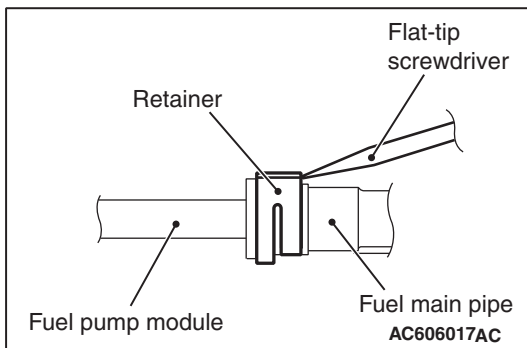
FUEL PUMP MODULE REPLACEMENT <2.0L ENGINE>

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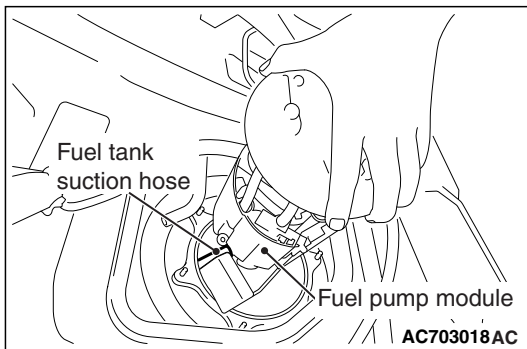
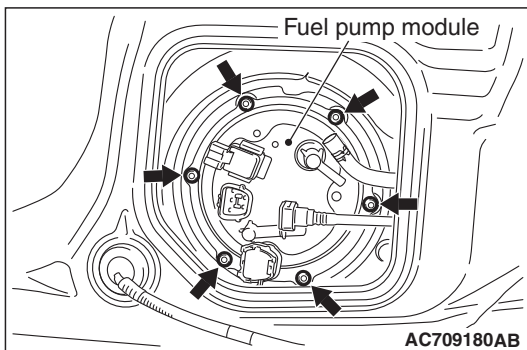
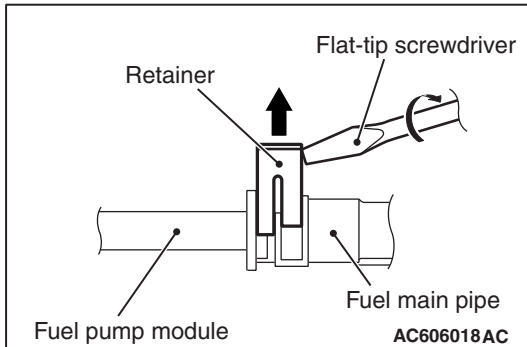
1. Remove the rear seat cushion assembly (Refer to GROUP 52A, Rear Seat Assembly [P.52A-28](#).)
2. Remove the floor inspection lid (LH.)



3. Disconnect the fuel pump module connector and fuel tank differential pressure sensor connector.
4. Release the fuel pressure in the fuel line (Refer to GROUP 13A, On-vehicle Service –How to Reduce Pressurized Fuel Lines [P.13A-874](#).)
5. Disconnect the fuel return hose.



6. Insert a flat-tip screwdriver [6mm (0.24 inch) wide and 1mm (0.04 inch) thick] into the retainer of the fuel main pipe connector.



⚠ CAUTION

When pushing up the retainer of the fuel main pipe connector, pay attention to avoid damage to the retainer.

7. Turn the flat-tipped screwdriver inserted into the retainer by 90 degrees angle to push up the retainer and unlock the fuel main pipe.
8. Disconnect the fuel main pipe from the fuel pump module.

9. Remove the fuel pump module mounting nuts.

⚠ CAUTION

Pay attention not to damage the fuel level sensor and float of the fuel pump module when removing it from the fuel tank through the service hole.

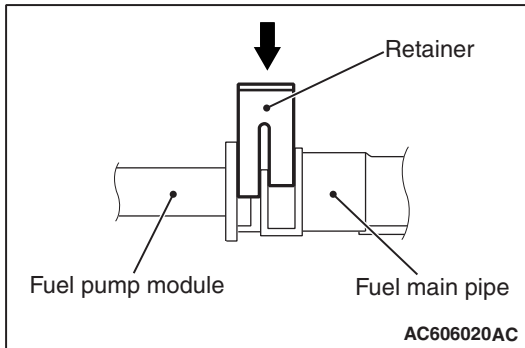
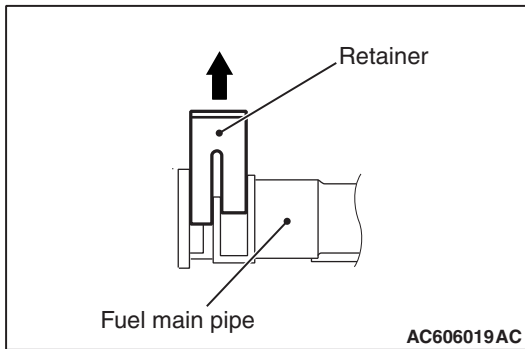
10. Disconnect the fuel tank suction hose while removing the fuel pump module from the service hole, and then remove the fuel pump module from the service hole.
11. Replace the fuel pump module gasket with a new one.

⚠ CAUTION

- Pay attention not to damage the fuel level sensor and the float of the fuel pump module when installing it to the fuel tank through the service hole. In addition, be careful that the float of the fuel pump module does not catch the fuel tank suction hose in the fuel tank.
- When installing the fuel pump module to the fuel tank, check that the float of the fuel pump module moving area moves smoothly.

12. While inserting the fuel pump module into the fuel tank from the service hole, connect the fuel tank suction hose, and install the fuel pump module to the fuel tank.
13. Tighten the fuel pump module mounting nuts to the specified torque.

Tightening torque: 2.5 ± 0.4 N·m (22 ± 4 in-lb)



14. Before the installation, push up the retainer of the fuel main pipe connector.

15. Connect the connector of fuel main pipe to the fuel pump module securely.

CAUTION

- When pushing in the retainer of the fuel high-pressure hose connector, pay attention to avoid damage to the retainer.
- After the installation of the fuel high-pressure hose, slightly pull the fuel high-pressure hose to check that it is connected securely. At this time, also check that there is approximately 1 mm (0.04inch) play.

16. Push in the retainer of the fuel main pipe connector to lock the fuel main pipe and fuel pump module.

17. Connect the fuel return hose.

18. Connect the fuel pump module connector and fuel tank differential pressure sensor connector.

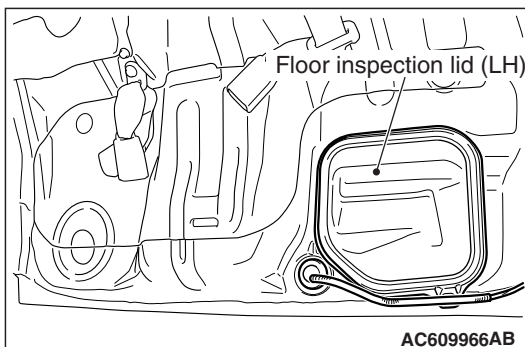
19. Install the floor inspection lid (LH.)

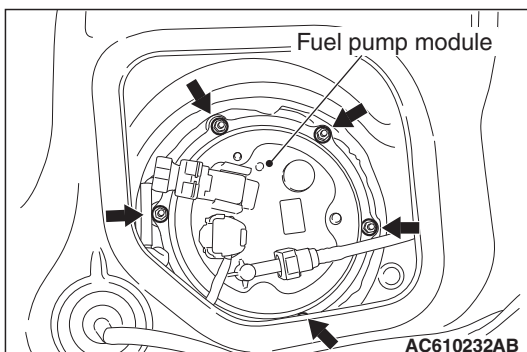
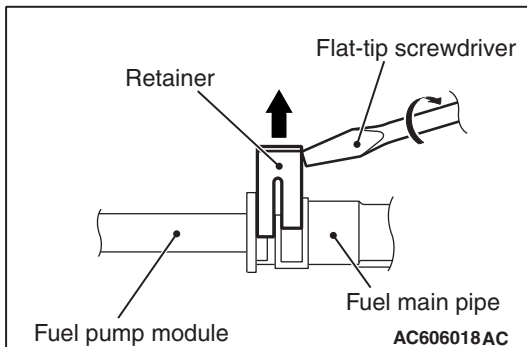
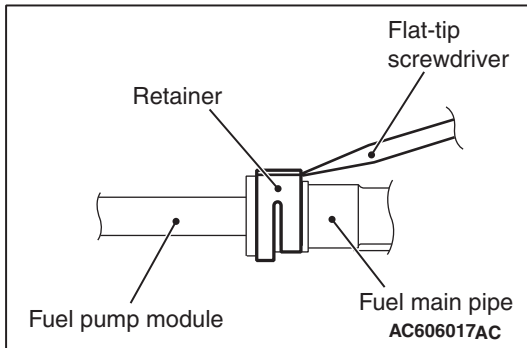
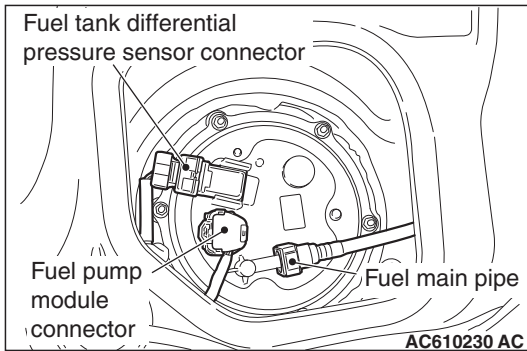
20. Install the rear seat cushion assembly (Refer to GROUP 52A, Rear Seat Assembly [P.52A-28.](#))

FUEL PUMP MODULE REPLACEMENT <2.4L ENGINE>

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1. Remove the rear seat cushion assembly (Refer to GROUP 52A, Rear Seat Assembly [P.52A-28.](#))
2. Remove the floor inspection lid (LH.)





3. Disconnect the fuel pump module connector and fuel tank differential pressure sensor connector.
4. Release the fuel pressure in the fuel line (Refer to GROUP 13B, On-vehicle Service - How to Reduce Pressurized Fuel Lines P.13B-1000.)

5. Insert a flat-tip screwdriver [6mm (0.24 inch) wide and 1mm (0.04 inch) thick] into the retainer of the fuel main pipe connector.

⚠ CAUTION

When pushing up the retainer of the fuel main pipe connector, pay attention to avoid damage to the retainer.

6. Turn the flat-tipped screwdriver inserted into the retainer by 90 degree angle to push up the retainer and unlock the fuel main pipe.
7. Disconnect the fuel main pipe from the fuel pump module.

8. Remove the fuel pump module mounting nuts.

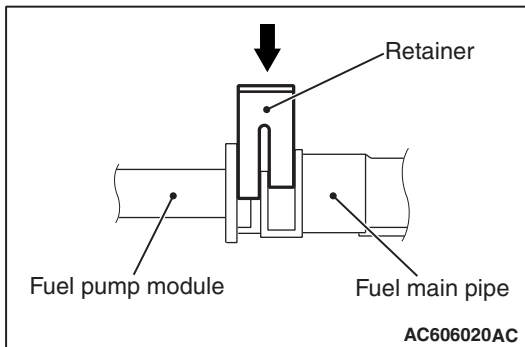
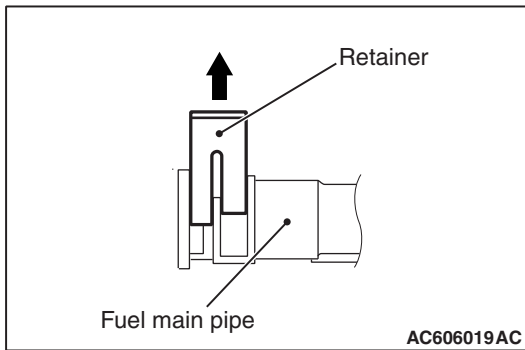
⚠ CAUTION

Pay attention not to damage the fuel level sensor and float of the fuel pump module when removing it from the fuel tank through the service hole.

9. Remove the fuel pump module from service hole.
10. Replace the fuel pump module gasket with a new one.

⚠ CAUTION

- Pay attention not to damage the fuel level sensor and the float of the fuel pump module when installing it to the fuel tank through the service hole.
- When installing the fuel pump module to the fuel tank, check that the float of the fuel pump module moving area moves smoothly.



11. Install the fuel pump module to the fuel tank through the service hole, and tighten the fuel pump module mounting nuts to the specified torque.

Tightening torque: $2.5 \pm 0.4 \text{ N} \cdot \text{m}$ ($22 \pm 4 \text{ in-lb}$)

12. Before the installation, push up the retainer of the fuel main pipe connector.

13. Connect the connector of fuel main pipe to the fuel pump module securely.

CAUTION

- When pushing in the retainer of the fuel high-pressure hose connector, pay attention to avoid damage to the retainer.
- After the installation of the fuel high-pressure hose, slightly pull the fuel high-pressure hose to check that it is connected securely. At this time, also check that there is approximately 1 mm (0.04inch) play.

14. Push in the retainer of the fuel main pipe connector to lock the fuel main pipe and fuel pump module.

15. Connect the fuel pump module connector and fuel tank differential pressure sensor connector.

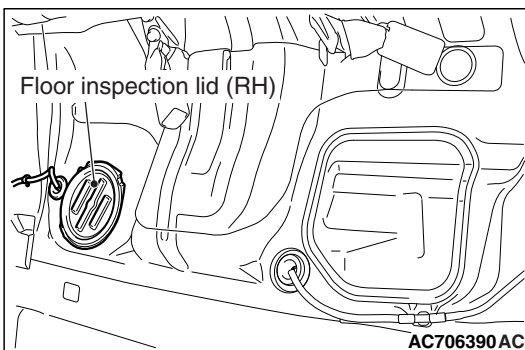
16. Install the floor inspection lid (LH.)

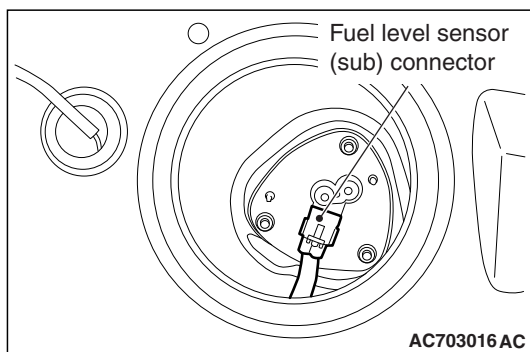
17. Install the rear seat cushion assembly (Refer to GROUP 52A, Rear Seat Assembly [P.52A-28.](#))

FUEL LEVEL SENSOR (SUB) REPLACEMENT <2.0L ENGINE>

M1135005600101

1. Remove the rear seat cushion assembly (Refer to GROUP 52A, Rear Seat Assembly [P.52A-28.](#))
2. Remove the floor inspection lid (RH.)





3. Disconnect the fuel level sensor (sub) connector.

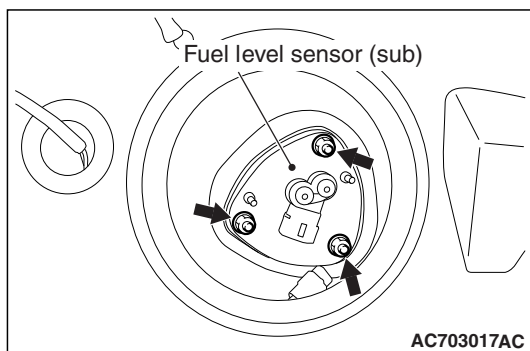
⚠ CAUTION

Pay attention not to damage the fuel level sensor (sub) and the float of the fuel level sensor (sub) when removing it from the fuel tank through the service hole.

4. Remove the fuel level sensor (sub) mounting nuts, and remove the fuel level sensor (sub) from the service hole.
5. Replace the fuel level sensor (sub) gasket with a new one.

⚠ CAUTION

- Pay attention not to damage the fuel level sensor (sub) and the float of the fuel level sensor (sub) when installing it to the fuel tank through the service hole.
- When installing the fuel level sensor (sub) to the fuel tank, check that the float of the fuel level sensor (sub) moving area moves smoothly.



6. Install the fuel level sensor (sub) to the fuel tank through the service hole, and tighten the mounting nuts to the specified torque.

Tightening torque: 2.5 ± 0.4 N·m (22 ± 4 in-lb)

7. Connect the fuel level sensor (sub) connector.
8. Install the floor inspection lid (RH.)
9. Install the rear seat cushion assembly (Refer to GROUP 52A, Rear Seat Assembly [P.52A-28.](#))

FUEL TANK <2.0L ENGINE>

REMOVAL AND INSTALLATION

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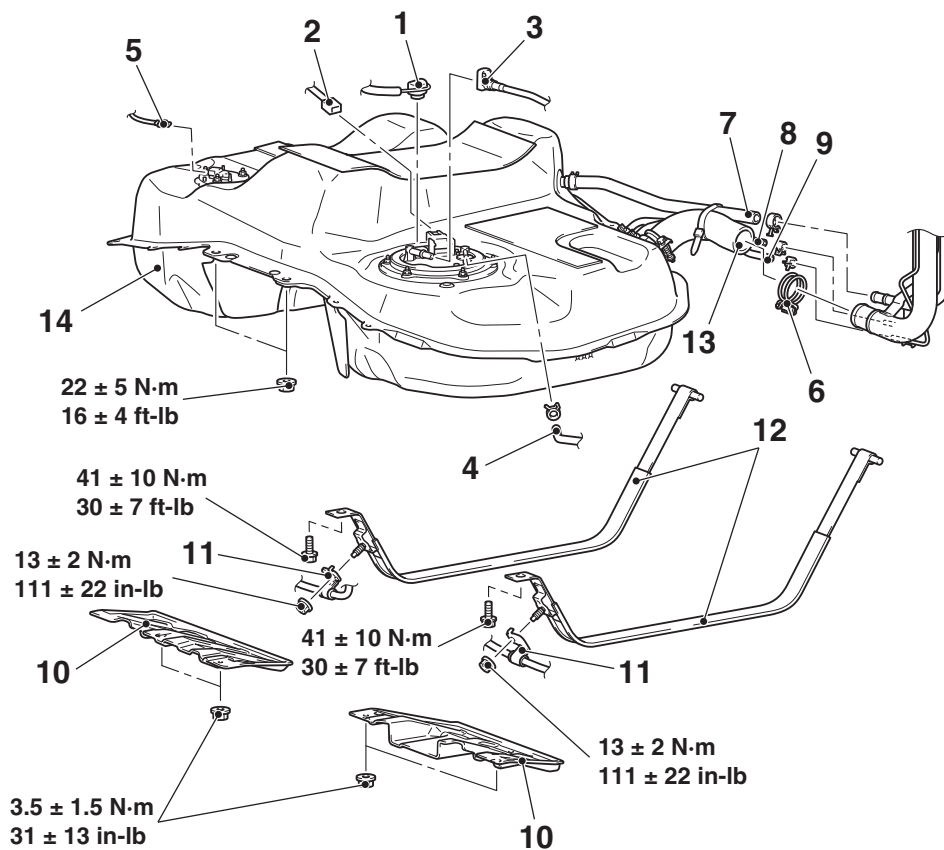
<FUEL TANK ASSEMBLY>

Pre-removal operation

- Fuel Line Pressure Reduction (Refer to GROUP 13A, On-vehicle Service –How to Reduce Pressurized Fuel Lines P.13A-874.)
- Fuel Draining.
- Propeller Shaft Removal (Refer to GROUP 25, Propeller Shaft P.25-7.)
- Center Exhaust Pipe Removal (Refer to GROUP 15, Exhaust Pipe, Main Muffler and Catalytic Converter P.15-28.)
- Rear Seat Cushion Assembly Removal (Refer to GROUP 52A, Rear Seat Assembly P.52A-28.)

Post-installation operation

- Rear Seat Cushion Assembly Installation (Refer to GROUP 52A, Rear Seat Assembly P.52A-28.)
- Center Exhaust Pipe Installation (Refer to GROUP 15, Exhaust Pipe, Main Muffler and Catalytic Converter P.15-28.)
- Propeller Shaft Installation (Refer to GROUP 25, Propeller Shaft P.25-7.)
- Fuel Refilling.
- Fuel Leak Check.



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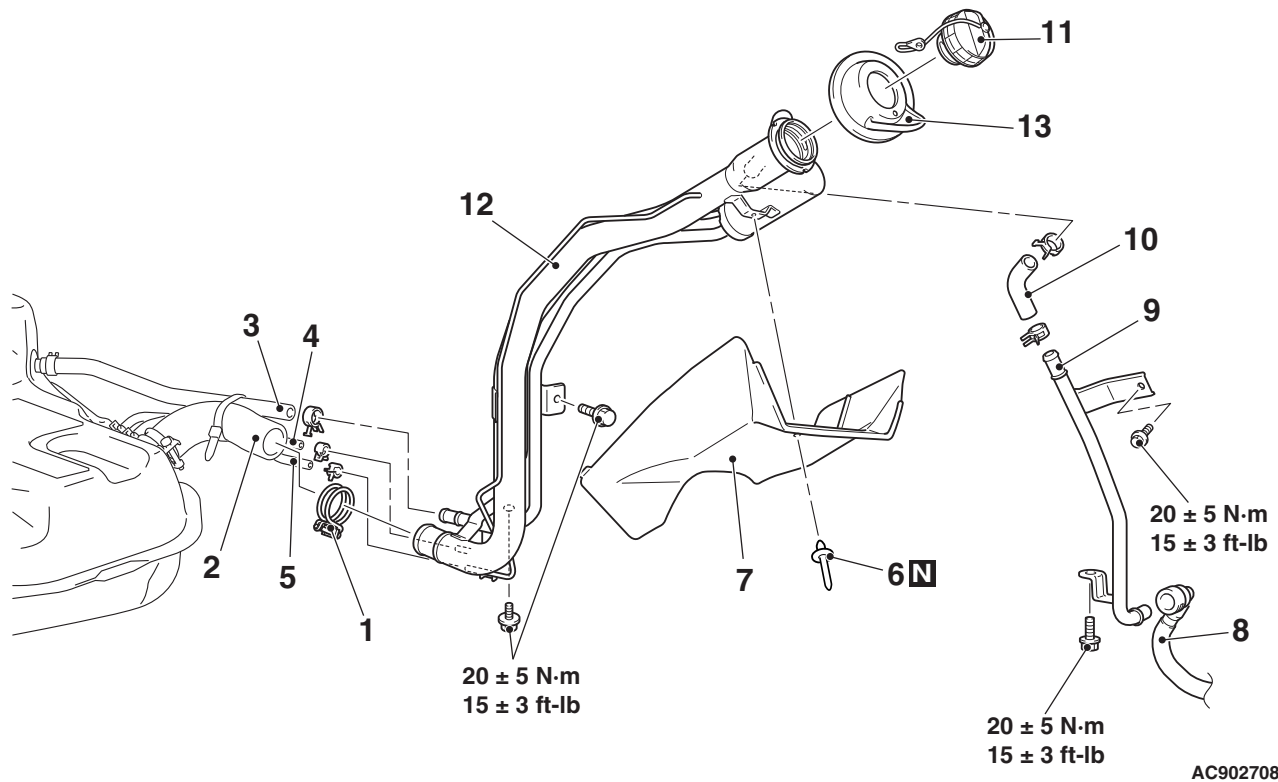
Removal steps

- <<A>> 1. Fuel pump module connector connection
- <<A>> 2. Fuel tank differential pressure sensor connector connection
- <<A>> >>C<< 3. Fuel main pipe connection
- <<A>> 4. Fuel return pipe connection
- <> 5. Fuel level sensor (sub) connector connection <<C>>
- >>B<< 6. Hose clamp <<C>>

Removal steps (Continued)

- 7. Fuel leveling hose connection
- 8. Fuel tank vapor hose connection
- 9. Fuel tank vapor hose connection
- 10. Front floor under cover
- 11. Parking brake rear cable clamp connection
- 12. Fuel tank band
- 13. Fuel filler hose connection
- 14. Fuel tank assembly

<FUEL TANK FILLER TUBE ASSEMBLY>



AC902708 AB

Removal steps

- >>B<<
1. Hose clamp
 2. Fuel filler hose connection
 3. Fuel leveling hose connection
 4. Fuel vapor hose connection
 5. Fuel vapor hose connection
- <<D>> >>A<<
6. Rivet
 7. Fuel filler hose protector

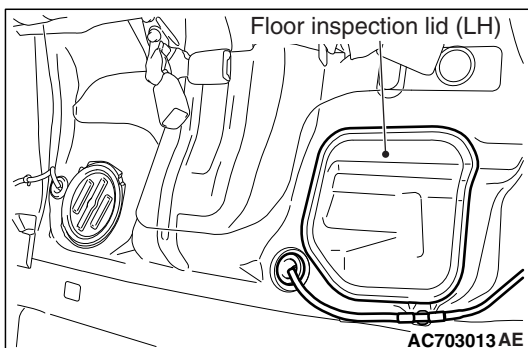
Removal steps (Continued)

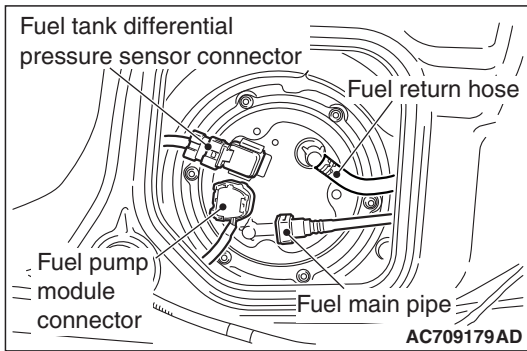
8. Fuel vapor tube connection
9. Fuel leveling pipe
10. Fuel tank filler tube breather hose
11. Fuel cap
12. Fuel tank filler tube assembly
13. Fuel tank filler tube boots

REMOVAL SERVICE POINTS

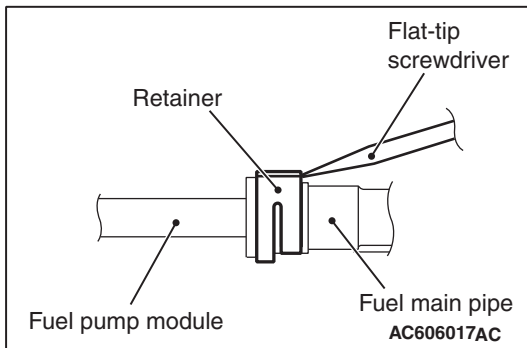
<<A>> FUEL PUMP MODULE CONNECTOR/FUEL TANK DIFFERENTIAL PRESSURE SENSOR CONNECTOR/FUEL MAIN PIPE/FUEL RETURN PIPE DISCONNECTION

1. Remove the floor inspection lid (LH.)





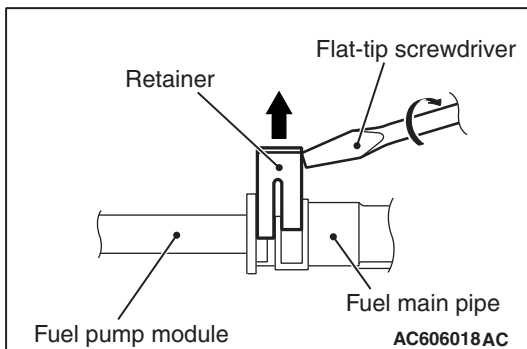
2. Disconnect the fuel pump module connector and fuel tank differential pressure sensor connector.
3. Disconnect the fuel return hose.



4. Insert a flat-tip screwdriver [6mm (0.24 inch) wide and 1mm (0.04 inch) thick] into the retainer of the fuel main pipe connector.

⚠ CAUTION

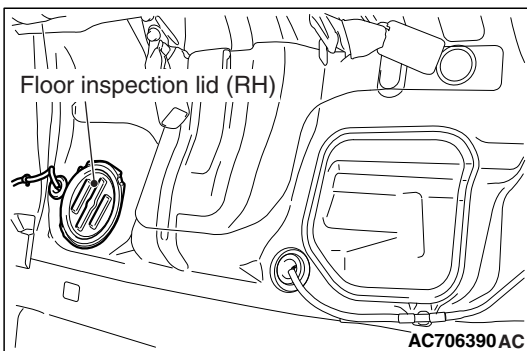
When pushing up the retainer of the fuel main pipe connector, pay attention to avoid damage to the retainer.

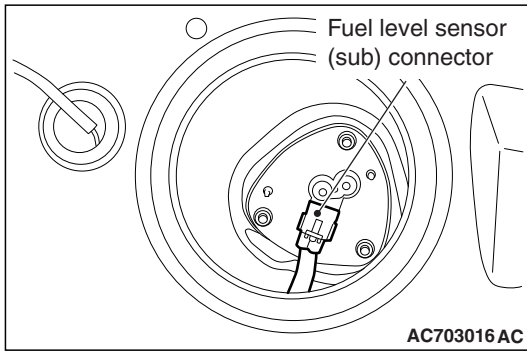


5. Turn the flat-tipped screwdriver inserted into the retainer by 90 degrees angle to push up the retainer and unlock the fuel main pipe.
6. Disconnect the fuel main pipe from the fuel pump module.

<> FUEL LEVEL SENSOR (SUB) REMOVAL

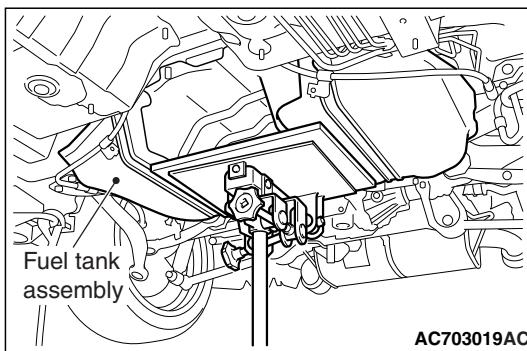
1. Remove the floor inspection lid (RH.)





2. Disconnect the fuel level sensor (sub) connector.

<<C>> FUEL TANK BAND/FUEL FILLER HOSE DISCONNECTION/FUEL TANK ASSEMBLY REMOVAL



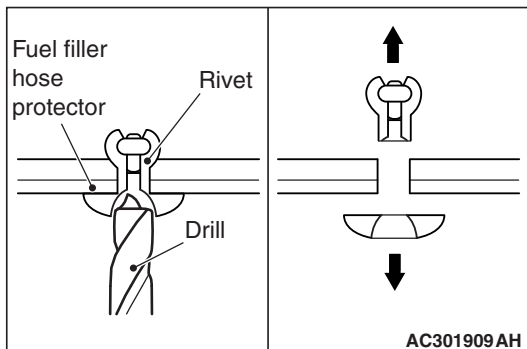
1. Support the fuel tank assembly with a transmission jack to remove the connecting bolts of fuel tank band and the connecting nuts of fuel tank assembly.
2. Lower the transmission jack slightly and disconnect the fuel filler hose.
3. Tilt the fuel tank assembly, and remove the fuel tank assembly while avoiding the rear differential carrier.

<<D>> RIVET REMOVAL

CAUTION

Be careful not to score the heat protector by drill.

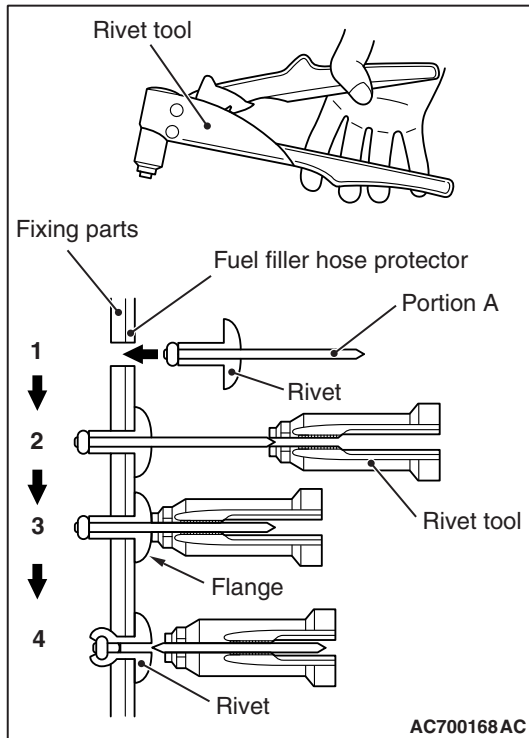
Use a 6.0 / diameter / mm drill to make a hole in the rivet to break it, and then remove the rivet.



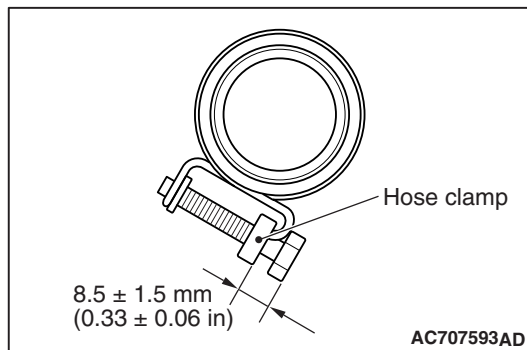
INSTALLATION SERVICE POINTS**>>A<< RIVET INSTALLATION**

Use a rivet tool shown in the illustration to connect the parts with rivets by the following procedures.

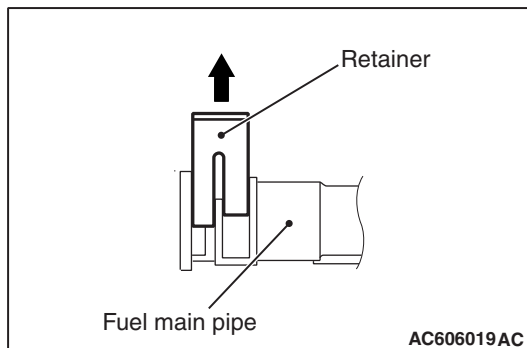
1. Insert the rivet into a corresponding location.
2. Set the rivet tool at a portion A of rivet.
3. While pushing the flange surface of the rivet onto parts to be fixed with the rivet tool, press the handle of the tool.
4. Thin part of portion A of the rivet will be cut off and the parts is fixed in position.

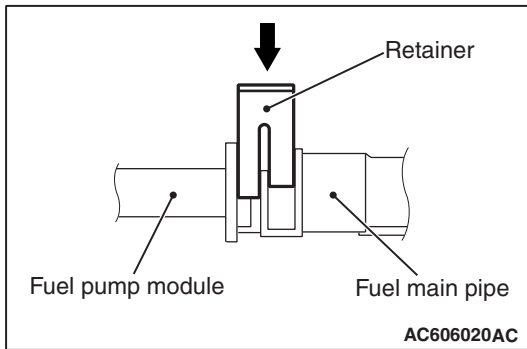
**>>B<< HOSE CLAMP INSTALLATION**

Connect the fuel filler hose, and tighten the bolt of hose clamp so that the bolt tightening dimension of the hose clamp becomes 8.5 ± 1.5 mm (0.33 ± 0.06 inch.)

**>>C<< FUEL MAIN PIPE CONNECTION**

1. Before the installation, push up the retainer of the fuel main pipe connector.





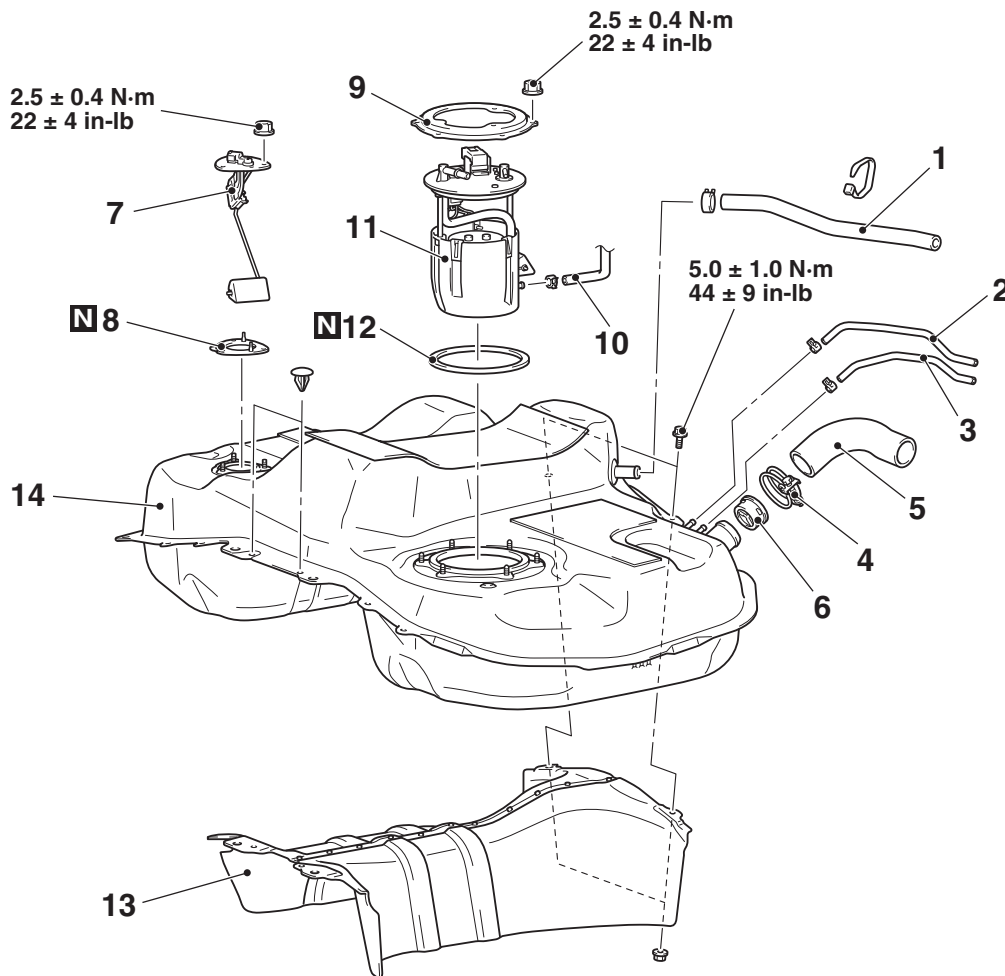
2. Connect the connector of fuel main pipe to the fuel pump module securely.

CAUTION

- When pushing in the retainer of the fuel high-pressure hose connector, pay attention to avoid damage to the retainer.
 - After the installation of the fuel high-pressure hose, slightly pull the fuel high-pressure hose to check that it is connected securely. At this time, also check that there is approximately 1 mm (0.04inch) play.
3. Push in the retainer of the fuel main pipe connector to lock the fuel main pipe and fuel pump module.

DISASSEMBLY AND ASSEMBLY
<FUEL TANK ASSEMBLY>

M1135006800443



AC709132AB

Disassembly steps

- | | | | |
|-------|----------------------------|-------|-------|
| | 1. Fuel leveling hose | | |
| | 2. Fuel tank vapor hose | | |
| >>C<< | 3. Fuel tank vapor hose | <> | >>A<< |
| | 4. Hose clamp | <> | >>A<< |
| | 5. Fuel filler hose | | |
| | 6. Fuel shut-off valve | | |
| <<A>> | 7. Fuel level sensor (sub) | | |

Disassembly steps (Continued)

- | |
|--------------------------------------|
| 8. Fuel level sensor (sub) gasket |
| 9. Plate |
| 10. Fuel tank suction hose connector |
| 11. Fuel pump module |
| 12. Fuel pump module gasket |
| 13. Fuel tank lower protector |
| 14. Fuel tank |

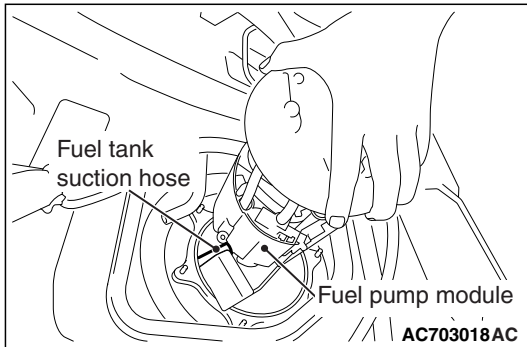
DISASSEMBLY SERVICE POINTS**<<A>> FUEL LEVEL SENSOR (SUB) REMOVAL****⚠ CAUTION**

When removing the fuel level sensor (sub) from the fuel tank, be careful not to damage the gauge unit and float of fuel level sensor (sub.)

<> FUEL TANK SUCTION HOSE DISCONNECTION/FUEL PUMP MODULE REMOVAL**⚠ CAUTION**

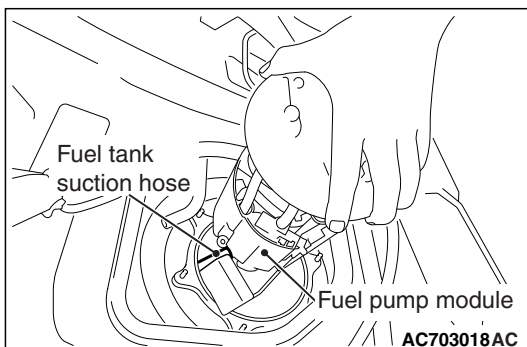
When removing the fuel pump module from the fuel tank, be careful not to damage the gauge unit and float of fuel pump module.

While removing the fuel pump module from the fuel tank, disconnect the fuel tank suction hose from the fuel pump module, and remove the fuel pump module from the fuel tank.

**ASSEMBLY SERVICE POINTS****>>A<< FUEL PUMP MODULE INSTALLATION****⚠ CAUTION**

- When installing the fuel pump module into the fuel tank from the service hole, be careful not to damage the gauge unit and the float of the fuel pump module. In addition, be careful that the float does not catch the fuel tank suction hose in the fuel tank.
- When installing the fuel pump module into the fuel tank from the service hole, check that the moving part of the gauge works smoothly.

While inserting the fuel pump module into the fuel tank from the service hole, connect the fuel tank suction hose, and install the fuel pump module to the fuel tank.



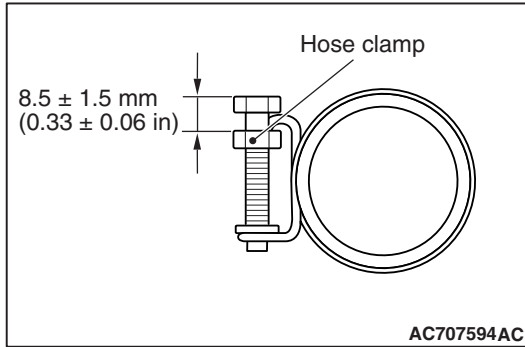
>>B<< FUEL LEVEL SENSOR (SUB) INSTALLATION

CAUTION

When installing the fuel level sensor (sub) into the fuel tank, be careful not to damage the gauge unit and float of fuel level sensor (sub.)

>>C<< HOSE CLAMP INSTALLATION

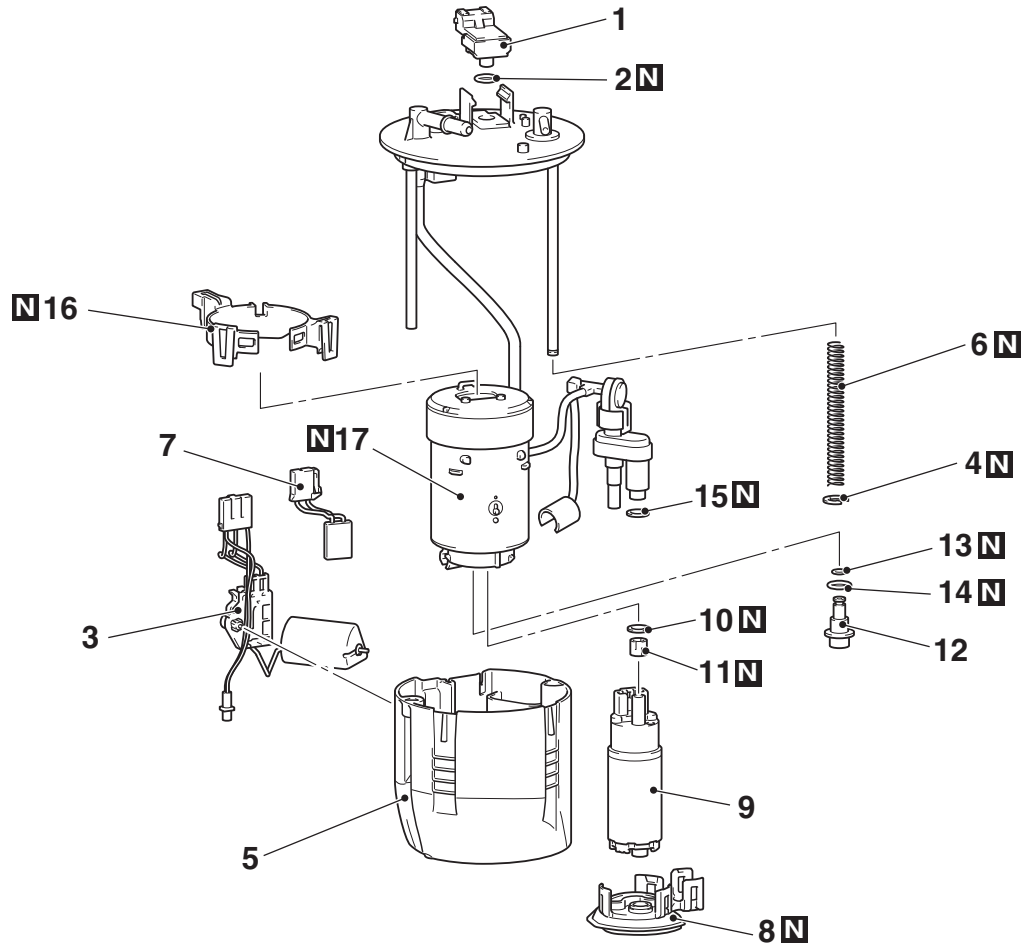
Connect the fuel filler hose, and tighten the bolt of hose clamp so that the bolt tightening dimension of the hose clamp becomes 8.5 ± 1.5 mm (0.33 ± 0.06 inch.)



DISASSEMBLY AND ASSEMBLY

<FUEL PUMP MODULE>

NOTE: For installation and removal, refer to Fuel Pump Module Replacement in On-vehicle Service (refer to P.13C-8.)



AC711219AD

Disassembly steps

- 1. Fuel tank differential pressure sensor
- 2. O-ring
- 3. Fuel gauge unit
- 4. Clip
- 5. Subtank assembly
- 6. Spring
- 7. Fuel pump wiring harness
- 8. Fuel filter

Disassembly steps (Continued)

- 9. Fuel pump assembly
- 10. O-ring
- 11. Spacer
- 12. Fuel filter cap sub assembly
- 13. O-ring
- 14. O-ring
- 15. O-ring
- 16. Bracket
- 17. Fuel flange and filter assembly

ASSEMBLY SERVICE POINT

>>A<< O-RING INSTALLATION

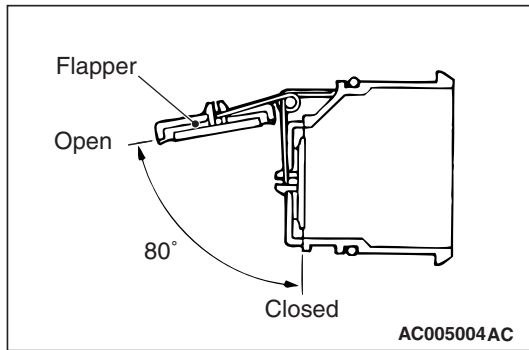
To avoid twisting and damage, apply gasoline before installation of the O-ring.

FUEL TANK INSPECTION

M1135002000467

FUEL SHUT-OFF VALVE CHECK

Check that the flapper of the fuel shut-off valve opens and closes as shown in the illustration.



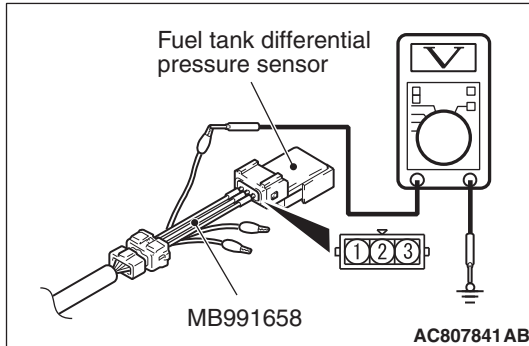
FUEL TANK DIFFERENTIAL PRESSURE SENSOR CHECK

Required Special Tool:

- MB991658: Test Harness Set

1. Disconnect the fuel tank differential pressure sensor connector and connect special tool MB991658 between the terminals of the disconnected connector.
2. Turn the ignition switch to "ON" position and measure the voltage between terminal number 1 and ground.

Standard value: 2.0 –3.0 V



FUEL TANK <2.4L ENGINE>

REMOVAL AND INSTALLATION

M1135001903477

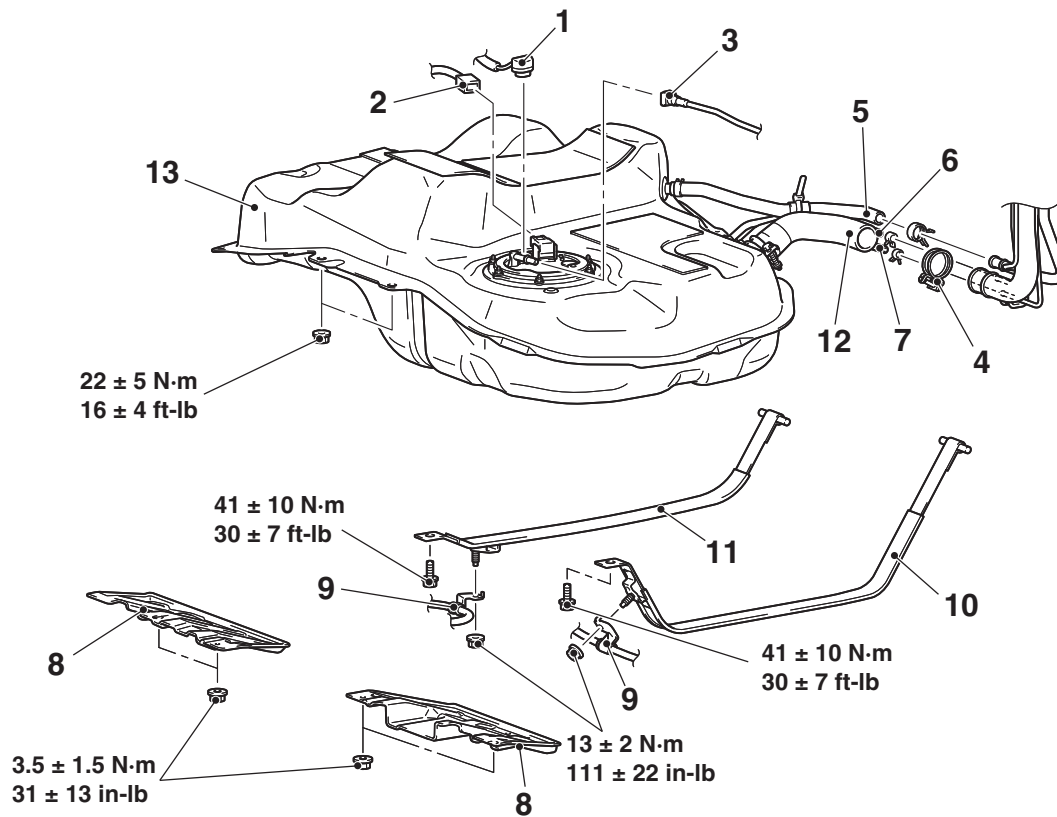
<FUEL TANK ASSEMBLY>

Pre-removal operation

- Fuel Line Pressure Reduction (Refer to GROUP 13B, On-vehicle Service –How to Reduce Pressurized Fuel Lines P.13B-1000.)
- Fuel Draining.
- Center Exhaust Pipe Removal (Refer to GROUP 15, Exhaust Pipe and Main Muffler P.15-31.)
- Rear Seat Cushion Assembly Removal (Refer to GROUP 52A, Rear Seat Assembly P.52A-28.)

Post-installation operation

- Rear Seat Cushion Assembly Installation (Refer to GROUP 52A, Rear Seat Assembly P.52A-28.)
- Center Exhaust Pipe Installation (Refer to GROUP 15, Exhaust Pipe and Main Muffler P.15-31.)
- Fuel Refilling.
- Fuel Leak Check.



AC710546 AC

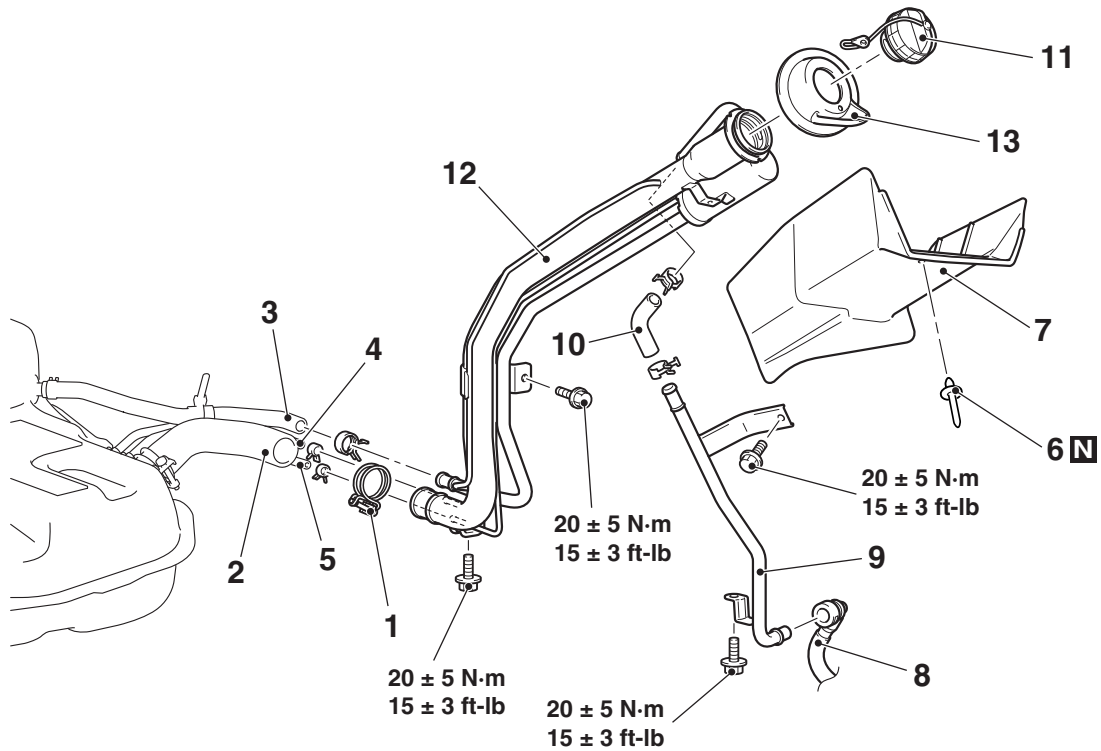
Removal steps

- <<A>> 1. Fuel pump module connector connection
- <<A>> 2. Fuel tank differential pressure sensor connector connection
- <<A>> >>C<< 3. Fuel main pipe connection
- >>B<< 4. Hose clamp
- 5. Fuel leveling hose connection
- 6. Fuel tank vapor hose connection

Removal steps (Continued)

- 7. Fuel tank vapor hose connection
- 8. Front floor under cover
- 9. Parking brake rear cable clamp connection
- <> 10. Fuel tank band (LH)
- <> 11. Fuel tank band (RH)
- <<C>> 12. Fuel filler hose connection
- <<C>> 13. Fuel tank assembly

<FUEL TANK FILLER TUBE ASSEMBLY>



AC902707AB

Removal steps

- >>B<< 1. Hose clamp
2. Fuel filler hose connection
3. Fuel leveling hose connection
4. Fuel vapor hose connection
5. Fuel vapor hose connection
- <<D>> >>A<< 6. Rivet
7. Filler filler hose protector

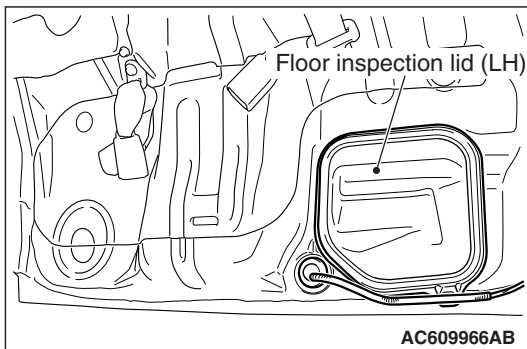
Removal steps (Continued)

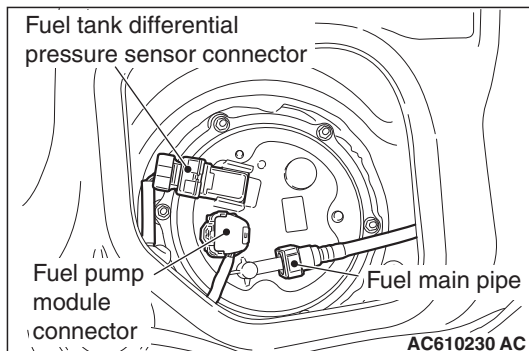
8. Fuel vapor tube connection
9. Fuel leveling pipe
10. Fuel tank filler tube breather hose
11. Fuel cap
12. Fuel tank filler tube assembly
13. Fuel tank filler tube boots

REMOVAL SERVICE POINTS

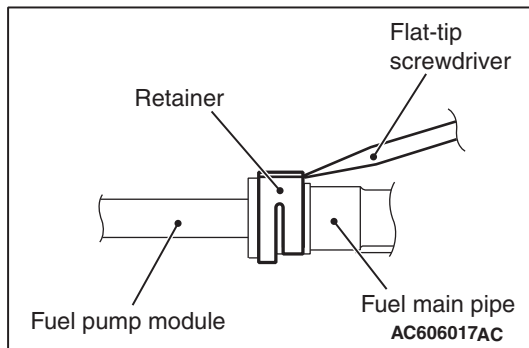
<<A>> FUEL PUMP MODULE CONNECTOR/FUEL TANK DIFFERENTIAL PRESSURE SENSOR CONNECTOR/FUEL MAIN PIPE DISCONNECTION

1. Remove the floor inspection lid (LH.)

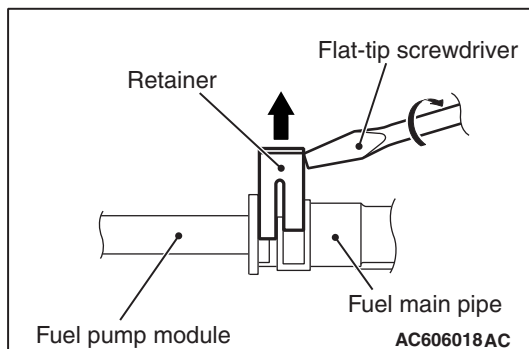




2. Disconnect the fuel pump module connector and fuel tank differential pressure sensor connector.



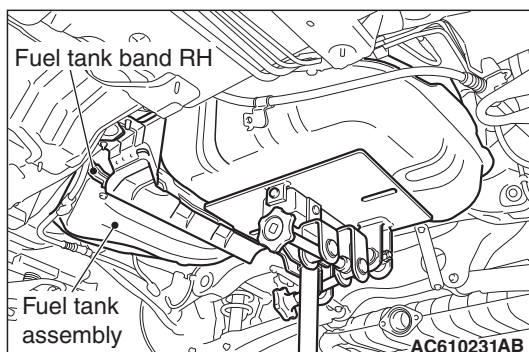
3. Insert a flat-tip screwdriver [6mm (0.24 inch) wide and 1mm (0.04 inch) thick] into the retainer of the fuel main pipe connector.



⚠ CAUTION

When pushing up the retainer of the fuel main pipe connector, pay attention to avoid damage to the retainer.

4. Turn the flat-tipped screwdriver inserted into the retainer by 90 degree angle to push up the retainer and unlock the fuel main pipe.
5. Disconnect the fuel main pipe from the fuel pump module.



<> FUEL TANK BAND (LH)/FUEL TANK BAND (RH) REMOVAL

1. Remove the fuel tank band (LH.)
2. Hold the fuel tank assembly with the transmission jack, and remove the fuel tank band (RH.)

<<C>> FUEL FILLER HOSE CONNECTION/FUEL TANK ASSEMBLY REMOVAL

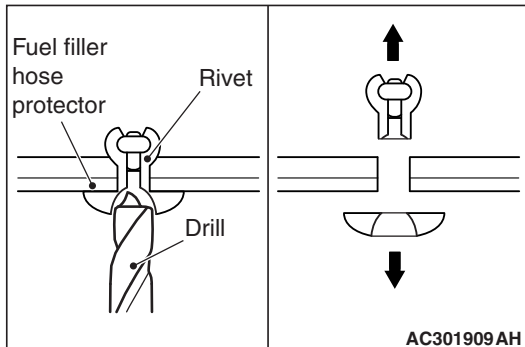
1. Hold the fuel tank assembly using the transmission jack, and remove the mounting nuts.
2. Disconnect the fuel filler hose connection, and remove the fuel tank assembly.

<<D>> RIVET REMOVAL

⚠ CAUTION

Be careful not to score the heat protector by drill.

Use a 6.0 / diameter / mm drill to make a hole in the rivet to break it, and then remove the rivet.

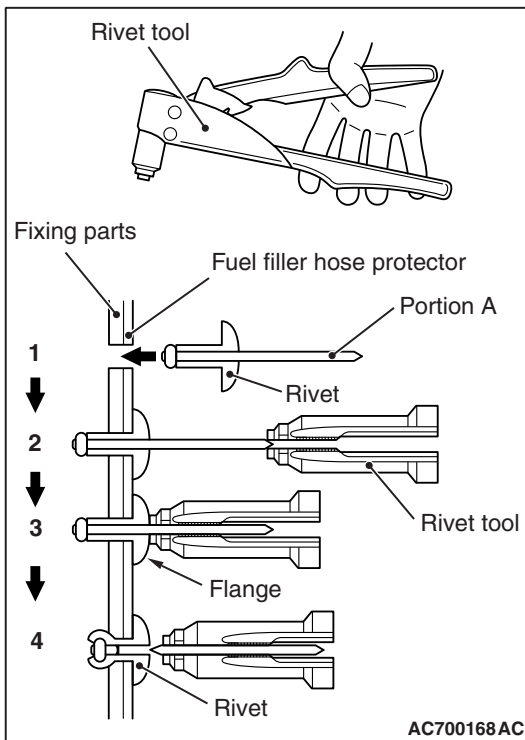


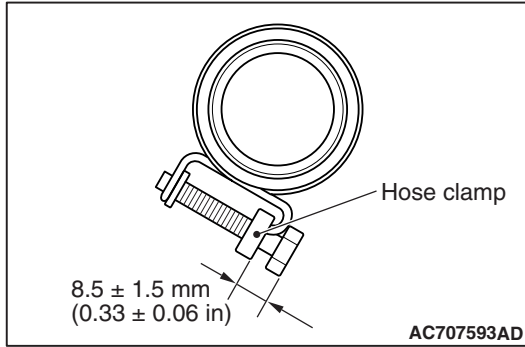
INSTALLATION SERVICE POINTS

>>A<< RIVET INSTALLATION

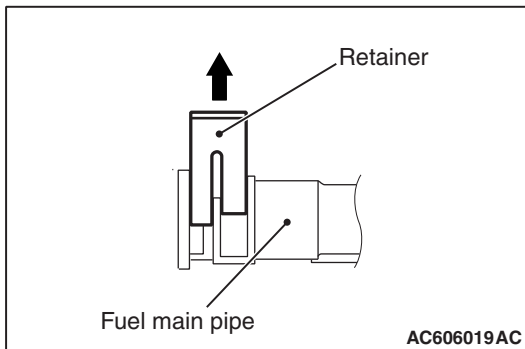
Use a rivet tool shown in the illustration to connect the parts with rivets by the following procedures.

1. Insert the rivet into a corresponding location.
2. Set the rivet tool at a portion A of rivet.
3. While pushing the flange surface of the rivet onto parts to be fixed with the rivet tool, press the handle of the tool.
4. Thin part of portion A of the rivet will be cut off and the parts is fixed in position.

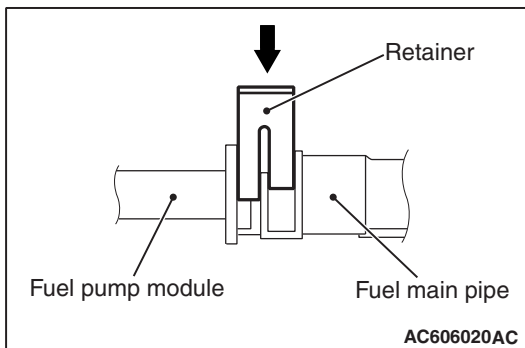


**>>B<< HOSE CLAMP INSTALLATION**

Connect the fuel filler hose, and tighten the bolt of hose clamp so that the bolt tightening dimension of the hose clamp becomes $8.5 \pm 1.5 \text{ mm}$ ($0.33 \pm 0.06 \text{ inch.}$)

**>>C<< FUEL MAIN PIPE CONNECTION**

1. Before the installation, push up the retainer of the fuel main pipe connector.



2. Connect the connector of fuel main pipe to the fuel pump module securely.

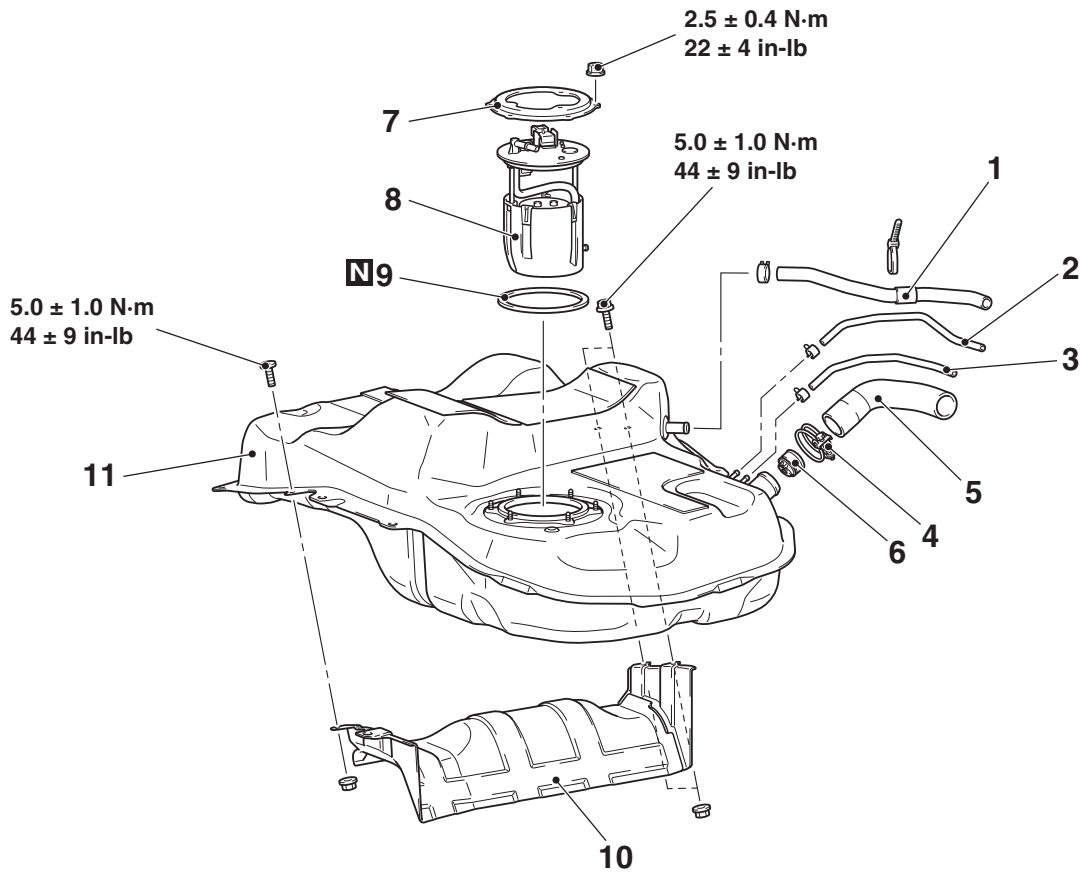
⚠ CAUTION

- When pushing in the retainer of the fuel high-pressure hose connector, pay attention to avoid damage to the retainer.
 - After the installation of the fuel high-pressure hose, slightly pull the fuel high-pressure hose to check that it is connected securely. At this time, also check that there is approximately 1 mm (0.04inch) play.
3. Push in the retainer of the fuel main pipe connector to lock the fuel main pipe and fuel pump module.

DISASSEMBLY AND ASSEMBLY

M1135006800454

<FUEL TANK ASSEMBLY>



AC610228AB

Disassembly steps

1. Fuel leveling hose
2. Fuel tank vapor hose
3. Fuel tank vapor hose
4. Hose clamp
5. Fuel filler hose
6. Fuel shut-off valve

>>B<<

<<A>> >>A<<

Disassembly steps (Continued)

7. Plate
8. Fuel pump module
9. Fuel pump module gasket
10. Fuel tank lower protector
11. Fuel tank

DISASSEMBLY SERVICE POINT**<<A>> FUEL PUMP MODULE REMOVAL****⚠ CAUTION**

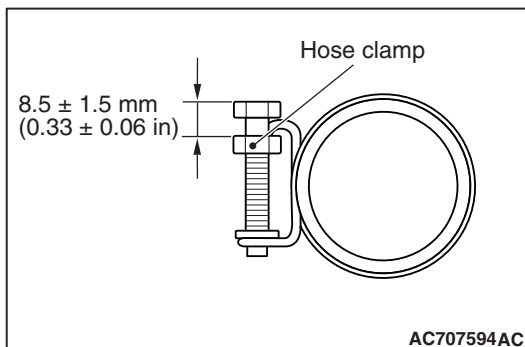
Pay attention not to damage the fuel level sensor and float of the fuel pump module when removing it from the fuel tank.

ASSEMBLY SERVICE POINTS**>>A<< FUEL PUMP MODULE INSTALLATION****⚠ CAUTION**

- Pay attention not to damage the fuel level sensor and the float of the fuel pump module when installing it to the fuel tank.
- When installing the fuel pump module to the fuel tank, check that the float of the fuel pump module moving area moves smoothly.

>>B<< HOSE CLAMP INSTALLATION

Connect the fuel filler hose, and tighten the bolt of hose clamp so that the bolt tightening dimension of the hose clamp becomes 8.5 ± 1.5 mm (0.33 ± 0.06 inch.)

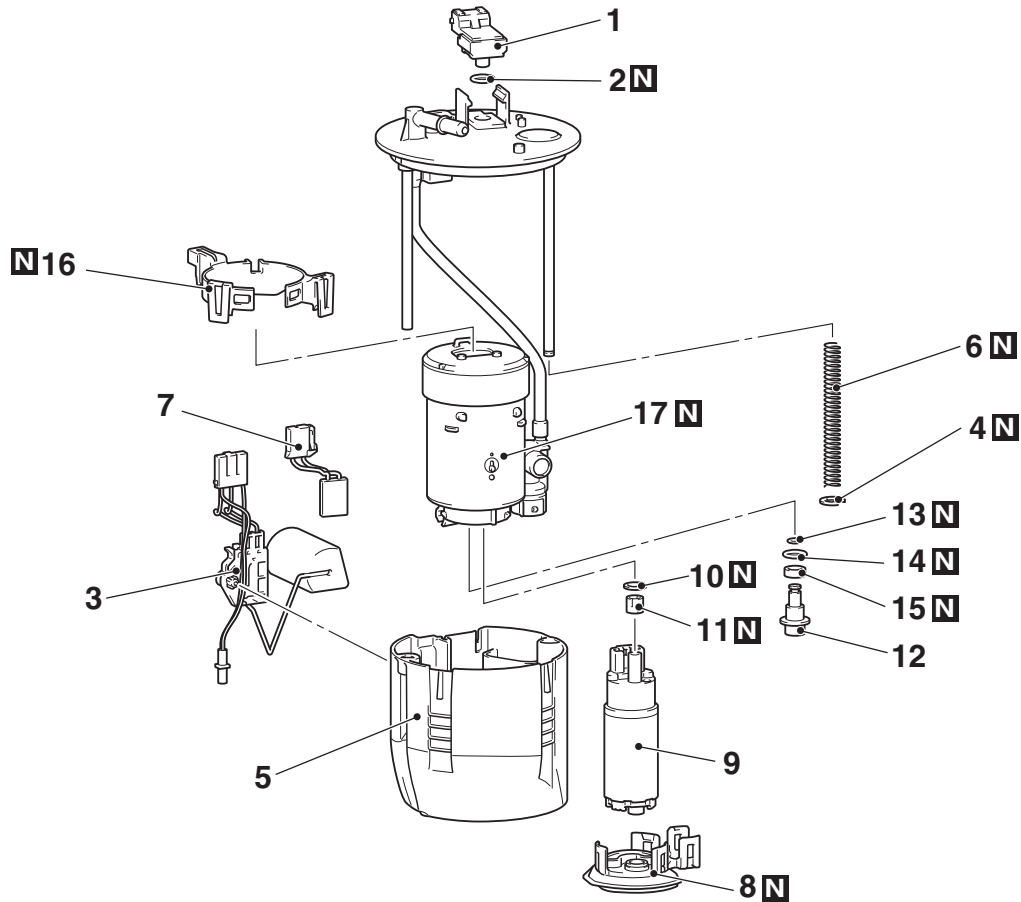


DISASSEMBLY AND ASSEMBLY

M1135004601606

<FUEL PUMP MODULE>

NOTE: For installation and removal, refer to Fuel Pump Module Replacement in On-vehicle Service (refer to P.13C-10.)



AC710551 AD

Disassembly steps

- >>A<<
1. Fuel tank differential pressure sensor
 2. O-ring
 3. Fuel gauge unit
 4. Clip
 5. Subtank assembly
 6. Spring
 7. Fuel pump wiring harness
 8. Fuel filter
 9. Fuel pump assembly

Disassembly steps (Continued)

- >>A<<
10. O-ring
 11. Spacer
 12. Fuel tank pump pressure regulator
 - >>A<<
 13. O-ring
 - >>A<<
 14. O-ring
 15. Back up ring
 16. Bracket
 17. Fuel flange and filter assembly

ASSEMBLY SERVICE POINT**>>A<< O-RING INSTALLATION**

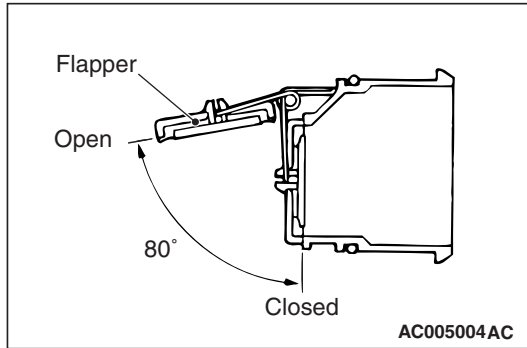
To avoid twisting and damage, apply gasoline before installation of the O-ring.

FUEL TANK INSPECTION

M1135002000478

FUEL SHUT-OFF VALVE CHECK

Check that the flapper of the fuel shut-off valve opens and closes as shown in the illustration.

**FUEL TANK DIFFERENTIAL PRESSURE SENSOR CHECK****Required Special Tool:**

- MB991658: Test Harness Set

1. Disconnect the fuel tank differential pressure sensor connector and connect special tool MB991658 between the terminals of the disconnected connector.
2. Turn the ignition switch to "ON" position and measure the voltage between terminal number 1 and ground.

Standard value: 2.0 –3.0 V

