

## GROUP 13B

# FUEL SUPPLY

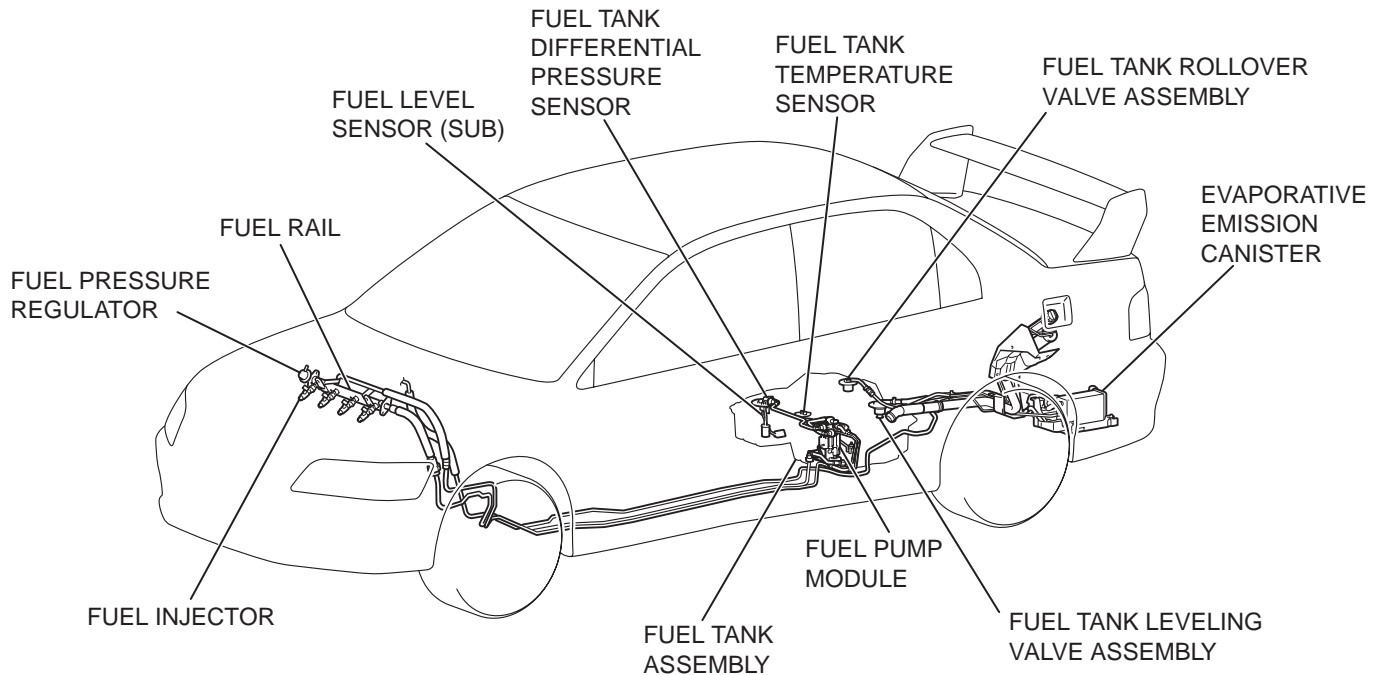
## CONTENTS

<b>GENERAL DESCRIPTION</b> .....	<b>13B-2</b>	FUEL PUMP MODULE REPLACEMENT ..	13B-10
<b>FUEL SUPPLY DIAGNOSIS</b> .....	<b>13B-2</b>	FUEL LEVEL SENSOR CHECK .....	13B-11
INTRODUCTION TO FUEL SUPPLY		FUEL LEVEL SENSOR REPLACEMENT ..	13B-11
DIAGNOSIS .....	13B-2	FUEL TANK LEVELING VALVE CHECK ..	13B-13
FUEL SUPPLY DIAGNOSTIC		<b>FUEL TANK</b> .....	<b>13B-14</b>
TROUBLESHOOTING STRATEGY .....	13B-2	REMOVAL AND INSTALLATION .....	13B-14
SYMPTOM CHART.....	13B-2	FUEL PUMP MODULE DISASSEMBLY AND	
SYMPTOM PROCEDURES .....	13B-3	ASSEMBLY.....	13B-18
<b>SPECIAL TOOLS</b> .....	<b>13B-9</b>	INSPECTION.....	13B-20
<b>ON-VEHICLE SERVICE</b> .....	<b>13B-10</b>	<b>SPECIFICATIONS</b> .....	<b>13B-22</b>
FUEL PUMP OPERATION CHECK .....	13B-10	FASTENER TIGHTENING	
		SPECIFICATIONS.....	13B-22
		SERVICE SPECIFICATION .....	13B-22

## GENERAL DESCRIPTION

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- The fuel tank is located under the floor of the rear seats to provide increased protection and a more luggage space.
- A fuel tank rollover valve assembly has been adopted to prevent fuel from leaking out in case of a collision.
- A fuel pump module, including fuel pump, fuel filter, reservoir cup and fuel level sensor (main), has been adopted to lighten weight and improve serviceability.



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## FUEL SUPPLY DIAGNOSIS

### INTRODUCTION TO FUEL SUPPLY DIAGNOSIS

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

Engine malfunctions caused by insufficient fuel supply and evaporative emission control 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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### FUEL SUPPLY DIAGNOSTIC 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 Chart.
4. Verify malfunction is eliminated.

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### SYMPTOM CHART

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SYMPTOM	INSPECTION PROCEDURE	REFERENCE PAGE
Engine malfunctions due to insufficient fuel supply	1	<a href="#">P.13B-3</a>

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## SYMPTOM PROCEDURES

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### INSPECTION PROCEDURE 1 : Engine Malfunctions Due to Insufficient Fuel Supply

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

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

#### **DIAGNOSIS**

##### **Required Special Tools:**

- MB991502: Scan Tool (MUT-II)
- MB991958: Scan Tool (MUT-III Sub Assembly)
  - MB991824: V.C.I.
  - MB991827: USB Cable
  - MB991911: Main Harness B
- MB991637: Fuel Pressure Gauge Set
- MD998709: Adaptor Hose
- MD998742: Hose Adaptor

**STEP 1.** Using scan tool MB991502 or MB991958, read the diagnostic trouble code (DTC).

**⚠ CAUTION**

To prevent damage to scan tool MB991502 or MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991502 or MB991958.

- (1) Ensure that the ignition switch is at the "LOCK" (OFF) position.
- (2) When scan tool MB991502 is used, connect scan tool MB991502 to the data link connector.
- (3) If scan tool MB991958 is used, connect it as described below.
  - a. Start up the personal computer.
  - b. Connect special tool MB991827 to special tool MB991824 and the personal computer.
  - c. Connect special tool MB991911 to special tool MB991824.
  - d. Connect special tool MB991911 to the data link connector.
  - e. Turn the power switch of special tool MB991824 to the "ON" position.

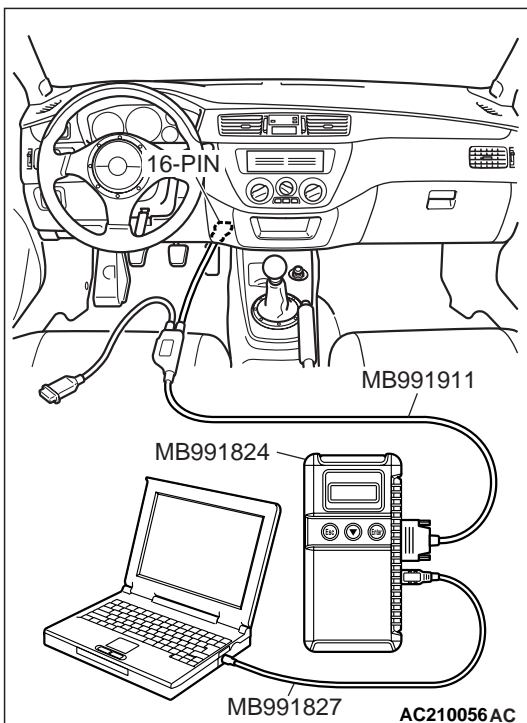
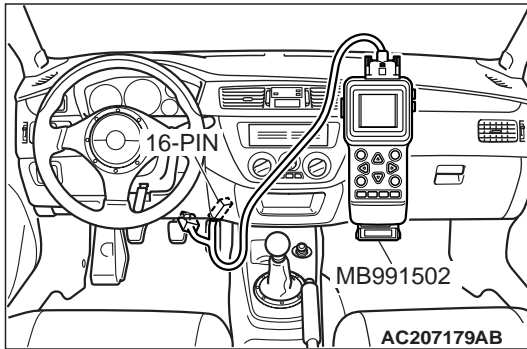
*NOTE: When special tool MB991824 is energized, special tool MB991824 indicator light will be illuminated in a green color.*

- f. Start the MUT-III system on the personal computer.
- (4) Turn the ignition switch to the "ON" position.
- (5) Check for MFI system diagnostic trouble code. (refer to GROUP 13A, MFI Diagnosis - How to Read and Erase Diagnostic Trouble Code [P.13A-6](#)).
- (6) Turn the ignition switch to the "LOCK" (OFF) position.

**Q: Is any DTC set?**

**YES :** Remove scan tool MB991502 or MB991958 in a reverse of the installation procedure. Refer to GROUP 13A, MFI Diagnosis – Diagnostic Trouble Code Chart [P.13A-25](#).

**NO :** Go to Step 2 .



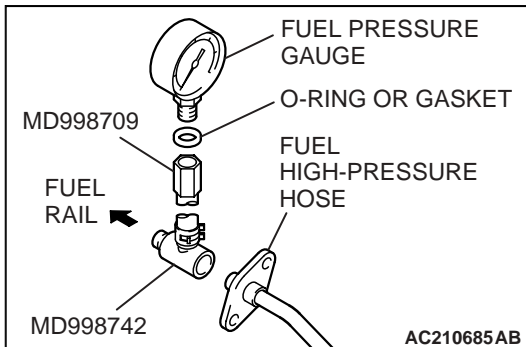
**STEP 2. Check the fuel pressure.**

- (1) Release residual pressure from the fuel line to prevent fuel spray. (Refer to GROUP 13A, On-Vehicle Service – Fuel Pump Connector Disconnection (How to Reduce Pressurized Fuel Lines P.13A-765).

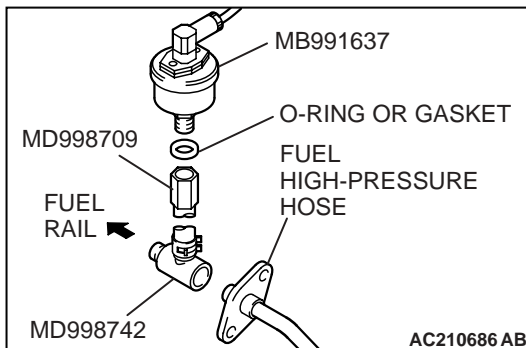
**⚠ WARNING**

**To prevent a fire, cover the hose connection with shop towels to prevent splashing of fuel that could be caused by some residual pressure in the fuel pipe line.**

- (2) Disconnect the fuel high-pressure hose at the fuel rail side.
- (3) Assemble the fuel pressure measurement tools as follows.

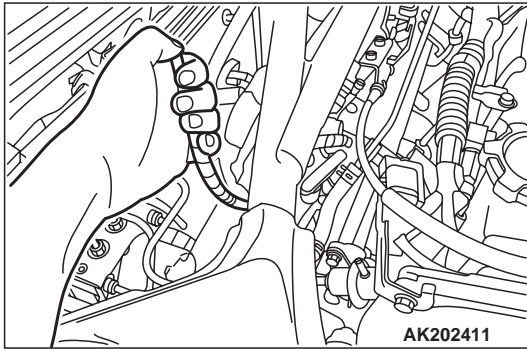


- (4) When using the fuel pressure gauge
  - a. Remove the union joint and bolt from special tool MD998709 (adaptor hose) and instead attach special tool MD998742 (hose adaptor) to the adaptor hose.
  - b. Place a suitable O-ring or gasket on assembled special tools MD998709 and MD998742 and install the fuel pressure gauge.
  - c. Install the assembled fuel pressure measurement tools between the fuel rail and fuel high-pressure hose.



- (5) When using the special tool MB991637 (fuel pressure gauge set)
  - a. Remove the union joint and bolt from special tool MD998709 (adaptor hose) and instead attach special tool MD998742 (hose adaptor) to the adaptor hose.
  - b. Install special tool MB991637 (fuel pressure gauge set) to assembled special tools MD998709 and MD998742 via a gasket.
  - c. Install the assembled fuel pressure measurement tools between the fuel rail and the fuel high-pressure hose.
- (6) Turn the ignition switch to the "ON" position.
- (7) Use scan tool MB991502 or MB991958, check the MFI system Actuator test 07 to drive the fuel pump. Check that there is no fuel leaking from any section when the fuel pump is operating.
- (8) Stop the fuel pump.
- (9) Start the engine and run at idle.
- (10) Measure fuel pressure while the engine is running at idle.

**Standard value: Approximately 230 kPa (33 psi) at curb idle**



(11) Disconnect the vacuum hose from the fuel pressure regulator and measure fuel pressure with the hose end closed with your finger.

**Standard value: 289 – 309 kPa (42 – 45 psi) at curb idle**

(12) Check to see that fuel pressure at idle does not drop even after the engine has been revved several times.

(13) Revving the engine repeatedly, hold the fuel return hose lightly with your fingers to feel that fuel pressure is present in the return hose.

*NOTE: If the fuel flow rate is low, there will be no fuel pressure in the return hose.*

(14) If any of fuel pressure measured in steps 10 to 13 is out of specification, troubleshoot and repair according to the table below.

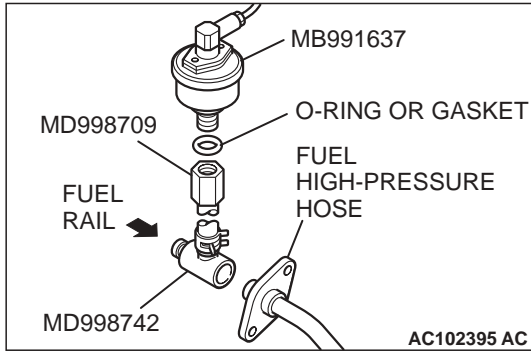
SYMPTOM	PROBABLE CAUSE	REMEDY
<ul style="list-style-type: none"> <li>Fuel pressure too low</li> <li>Fuel pressure drops after racing</li> <li>No fuel pressure in fuel return hose</li> </ul>	Clogged fuel filter	Replace fuel filter
	Fuel leaking to return side due to poor fuel regulator valve seating or settled spring	Replace fuel pressure regulator
	Low fuel pump delivery pressure	Replace fuel pump
Fuel pressure too high	Binding valve in fuel pressure regulator	Replace fuel pressure regulator
	Clogged fuel return hose or pipe	Clean or replace hose or pipe
Same fuel pressure when vacuum hose is connected and when disconnected	Damaged vacuum hose or clogged nipple	Replace vacuum hose or clean nipple
	Defective fuel pressure regulator	Replace fuel pressure regulator

(15) Stop the engine and observe fuel pressure gauge reading. It is normal if the reading does not drop within two minutes. If it does, observe the rate of drop and troubleshoot and repair according to the table below. Start, then stop the engine.

- a. Squeeze the fuel return line closed to confirm leak-down occurs from defective fuel pressure regulator.
- b. Squeeze the fuel supply line closed to confirm leak-down occurs from defective fuel pump check valve.
- c. If pressure continues to drop with both fuel lines squeezed closed, fuel injector(s) are leaking.

SYMPTOM	PROBABLE CAUSE	REMEDY
Fuel pressure drops gradually after engine is stopped	Leaky fuel injector	Replace fuel injector
	Leaky fuel regulator valve seat	Replace fuel pressure regulator
Fuel pressure drops sharply immediately after engine is stopped	Check valve in fuel pump is held open	Replace fuel pump

(16) Release residual pressure from the fuel pipe line. [Refer to GROUP 13A, On-vehicle Service – Fuel Pump Connector Disconnection (How to Reduce Pressurized Fuel Lines P.13A-765).]



**⚠ WARNING**

**Cover the hose connection with shop towels to prevent splash of fuel that could be caused by some residual pressure in the fuel pipe line.**

- (17) Remove the fuel pressure gauge or special tool MB991637, and special tools MD998709 and MD998742 from the fuel rail.
- (18) Replace the O-ring at the end of the fuel high-pressure hose with a new one.
- (19) Fit the fuel high-pressure hose into the fuel rail and tighten the bolts to specified torque.

**Tightening torque: 5.0 ± 1.0 N·m (44 ± 9 in-lb)**

- (20) Check for fuel leaks.
  - a. Use scan tool MB991502 or MB991958 to operate the fuel pump.
  - b. Check the fuel line for leaks, and repair as needed.
- (21) Turn the ignition switch to the "LOCK" (OFF) position.

**Q: Are the fuel pressure test in good condition?**

**YES :** Go to Step 3 .

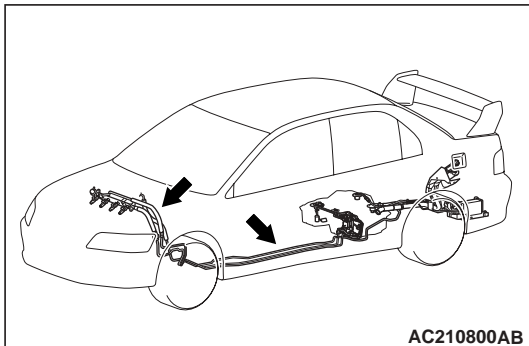
**NO :** Remove scan tool MB991502 or MB991958 in a reverse of the installation procedure. Repair or replace damage parts. Then go to Step 6 .

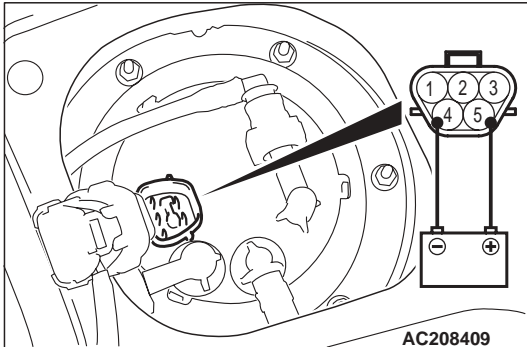
**STEP 3. Check for bending, twisting or clogging of the fuel pipe or hose.**

**Q: Are the fuel pipe and hose in good condition?**

**YES :** Go to Step 4 .

**NO :** Remove scan tool MB991502 or MB991958 in a reverse of the installation procedure. Repair or replace the damage fuel pipe or hose. Then go to Step 6 .






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**STEP 4. Check the fuel pump module operation.**

- (1) Turn the ignition switch to the "ON" position.
- (2) Check the operating of the fuel pump by using scan tool MB991502 or MB991958 to force-drive the fuel pump.
- (3) If the fuel pump will not operate, check by using the following procedure. If normal, check the fuel pump drive circuit.
  - a. Turn the ignition switch to the "LOCK" (OFF) position.
  - b. Remove the rear seat assembly. (Refer to GROUP 52A, Rear Seat Assembly P.52A-22).
  - c. Remove the service hole cover.
  - d. Disconnect the fuel pump module connector.
  - e. When the fuel pump drive connector is attached directly to the battery, check if the sound of the fuel pump operation can be heard.
 

*NOTE: As the fuel pump is an in-tank type, the fuel pump sound is hard to hear. Remove the fuel tank filler tube cap and check from the tank inlet.*
  - f. Check for fuel pressure by pinching the fuel hose with fingertips.
  - g. Connect the fuel pump module connector.
  - h. Install the service hole cover.
  - i. Install the rear seat assembly. (Refer to GROUP 52A, Rear Seat Assembly P.52A-22).
- (4) Turn the ignition switch to the "LOCK" (OFF) position, and then remove scan tool MB991502 or MB991958 in the reverse order of installation.

**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.13B-10).  
Then go to Step 6 .

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

- (1) Drain fuel.
- (2) Remove the fuel tank. (Refer to P.13B-14).
- (3) Check the inside of the fuel tank.

**Q: Is the fuel tank in good condition?**

**YES** : Install the fuel tank. (Refer to P.13B-14). Go to Step 6

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

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

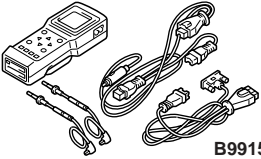
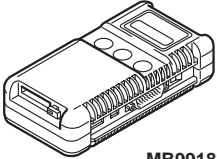
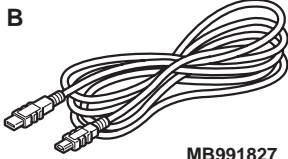
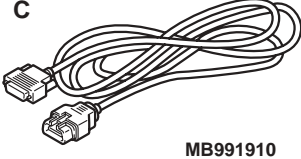
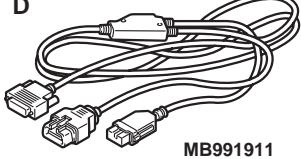
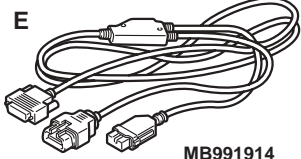
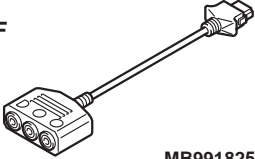
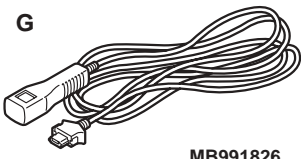
**YES** : Finish.

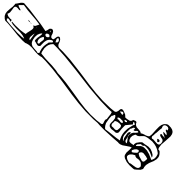



**NO** : Return to Step 1 .



**SPECIAL TOOLS**

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TOOL	TOOL NUMBER AND NAME	SUPERSESION	APPLICATION
 <p>B991502</p>	<p>MB991502 Scan tool &lt;MUT-II&gt;</p>	<p>MB991496-OD</p>	<ul style="list-style-type: none"> <li>• Reading diagnostic trouble code</li> <li>• MFI system inspection</li> </ul>
<p><b>A</b></p>  <p>MB991824</p> <p><b>B</b></p>  <p>MB991827</p> <p><b>C</b></p>  <p>MB991910</p> <p><b>D</b></p>  <p>MB991911</p> <p><b>E</b></p>  <p>MB991914</p> <p><b>F</b></p>  <p>MB991825</p> <p><b>G</b></p>  <p>MB991826 MB991958</p>	<p>MB991958 A: MB991824 B: MB991827 C: MB991910 D: MB991911 E: MB991914 F: MB991825 G: MB991826 MUT-III Sub Assembly A: Vehicle Communication Interface (V.C.I). B: MUT-III USB Cable C: MUT-III Main Harness A (Vehicles with CAN communication system) D: MUT-III Main Harness B (Vehicles without CAN communication system) E: MUT-III Main Harness C (for Chrysler models only) F: MUT-III Adapter Harness G: MUT-III Trigger Harness</p>		<ul style="list-style-type: none"> <li>• Reading diagnostic trouble code</li> <li>• MFI system inspection</li> </ul>

TOOL	TOOL NUMBER AND NAME	SUPERSESION	APPLICATION
	MD998709 Adaptor hose	MIT210196	Measurement of fuel pressure
	MD998742 Hose adaptor	MD998742-01	
 MB991637	MB991637 Fuel pressure gauge set	Tool not available	Fuel tank differential pressure sensor check
 MB991348	MB991348 Test harness set	MB991348-01	

## ON-VEHICLE SERVICE

### FUEL PUMP OPERATION CHECK

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Refer to GROUP 13A, On-vehicle Service [P.13A-766](#).

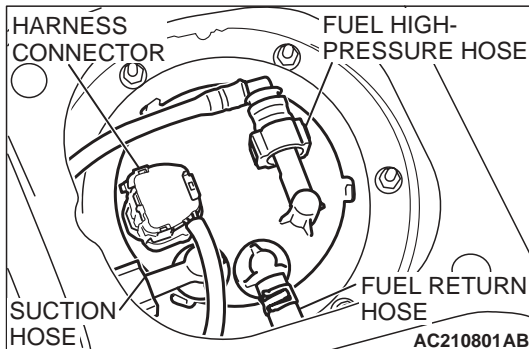
### FUEL PUMP MODULE REPLACEMENT

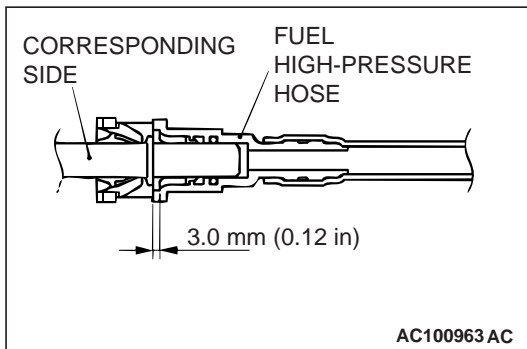
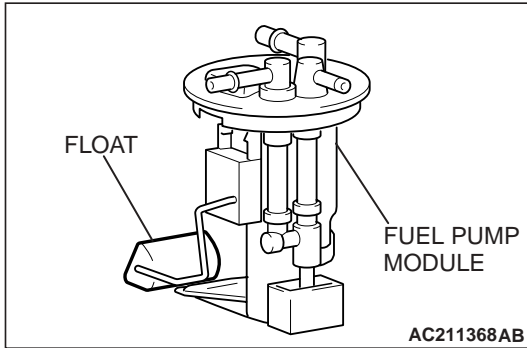
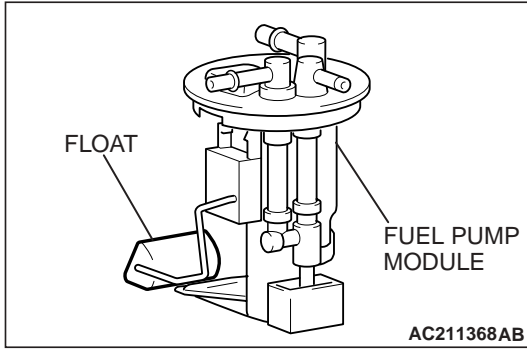
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1. Remove the rear seat cushion assembly. (Refer to GROUP 52A, Rear Seat Assembly [P.52A-22](#)).
2. Remove the service hole cover.
3. Disconnect the harness connector.

*NOTE: Check the fuel pump (Refer to GROUP 13A, On-vehicle Service [P.13A-766](#)). If defective, replace the fuel pump, which is incorporated in the fuel pump module.*

4. Disconnect fuel high-pressure hose, suction hose and fuel return hose.





**CAUTION**

When withdrawing the fuel pump module from the fuel tank, be careful not damage the module unit and the float.

5. Unscrew the mounting nuts to remove the fuel pump module.
6. Replace the fuel pump (Refer to P.13B-18).

**CAUTION**

When installing the fuel pump module into the fuel tank, be careful not damage the module unit and the float.

7. Install the fuel pump module. Tighten the mounting nuts to the specified torque.

**Tightening torque: 2.5 ± 0.5 N·m (23 ± 4 in-lb)**

**CAUTION**

Snap the fuel high-pressure hose one-touch joint into place, then pull back slightly on the hose to assure it is secure. However, the connection should have a play of approximately 3.0 mm (0.12 inch).

8. Connect the harness connector, fuel high-pressure hose, suction hose and fuel return hose.
9. Retain the service hole cover.
10. Install the rear seat cushion assembly (Refer to GROUP 52A, Rear Seat Assembly P.52A-22).

**FUEL LEVEL SENSOR CHECK**

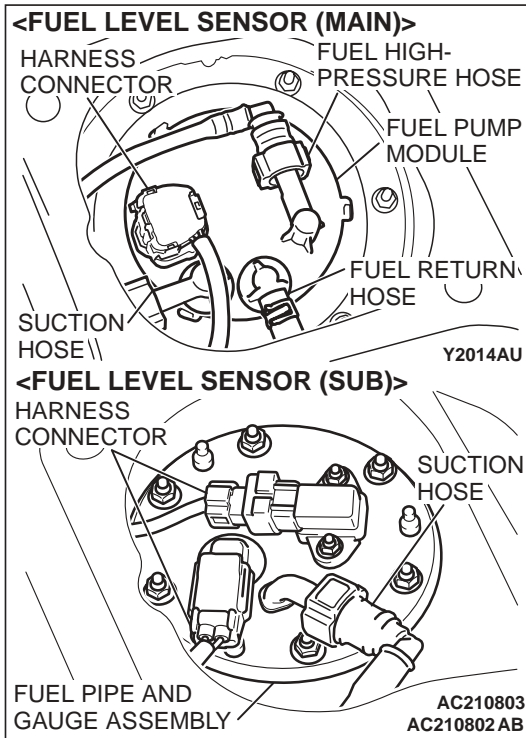
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Refer to GROUP 54A, Combination Meter Assembly and Vehicle Speed Sensor – On-vehicle Service P.54A-78.

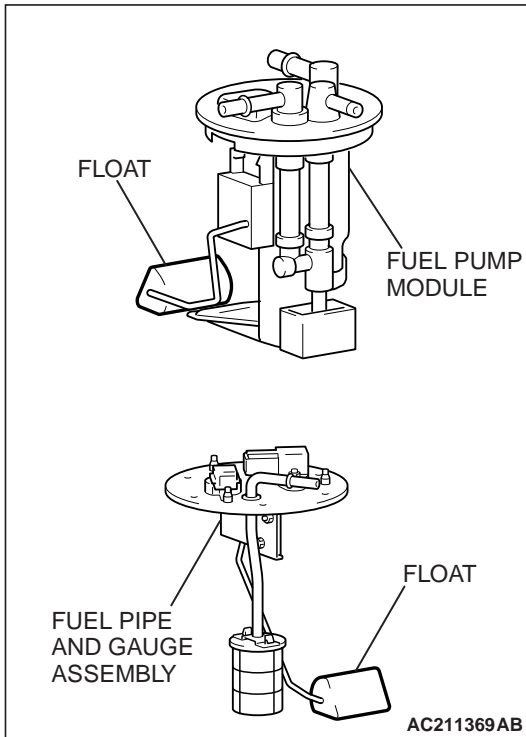
**FUEL LEVEL SENSOR REPLACEMENT**

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1. Remove the rear seat cushion assembly. (Refer to GROUP 52A, Rear Seat Assembly P.52A-22).
2. Remove the service hole cover.



3. Disconnect the harness connector, fuel high-pressure hose, suction hose and fuel return hose.

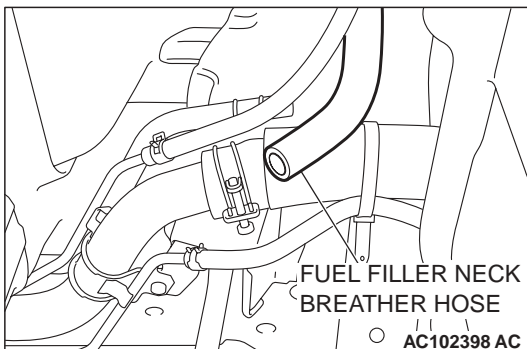
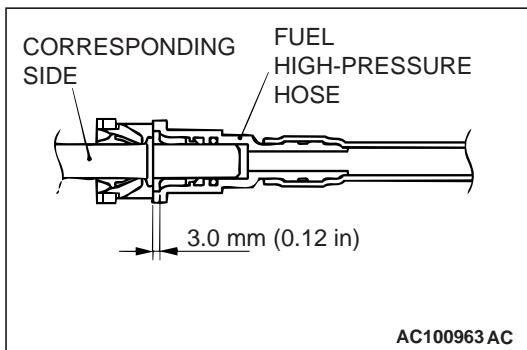
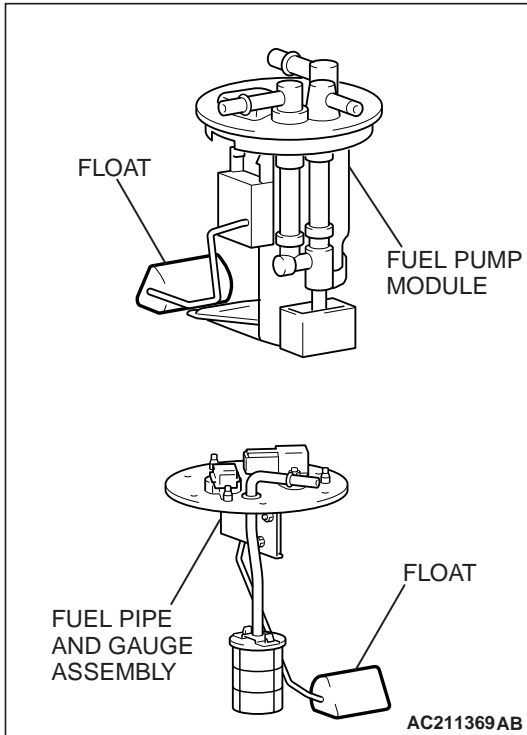


### **CAUTION**

When withdrawing the fuel pump module or fuel pipe and gauge assembly from the fuel tank, be careful not damage the sensor unit and the float.

4. Unscrew the mounting nuts to remove the fuel pump module or fuel pipe and gauge assembly.

*NOTE: Check the fuel level sensor (Refer to GROUP 54A, Combination Meter Assembly and Vehicle Speed Sensor – On-vehicle Service P.54A-78). If defective, replace it. (Refer to P.13B-18).*



**CAUTION**

When inserting the fuel pump module or fuel pipe and gauge assembly into the fuel tank, be careful not damage the sensor unit and the float.

5. Install the fuel pump module or fuel pipe and gauge assembly. Tighten the mounting nuts to the specified torque.

**Tightening torque: 2.5 ± 0.5 N·m (23 ± 4 in-lb)**

**CAUTION**

Snap the fuel high-pressure hose one-touch joint into place, then pull back slightly on the hose to assure it is secure. However, the connection should have a play of approximately 3.0 mm (0.12 inch).

6. Connect the harness connector, fuel high-pressure hose, suction hose and fuel return hose.
7. Retain the service hole cover.
8. Install the rear seat cushion assembly. (Refer to GROUP 52A, Rear Seat Assembly P.52A-22).

**FUEL TANK LEVELING VALVE CHECK**

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1. Place a drain pan, and disconnect the fuel filler neck breather hose at pipe side.

*NOTE: If fuel leaks from the fuel filler neck breather hose at this stage, the fuel tank leveling valve may be defective.*

2. Open the fuel tank filler cap, and fill the fuel tank up.
3. If fuel does not leak from the fuel tank filler neck breather hose with the fuel tank full, the fuel tank leveling valve is normal. If not so, the fuel tank leveling valve may be defective. Lower the fuel tank from the vehicle and replace the fuel tank leveling valve.

4. Reconnect the fuel filler neck breather hose at the pipe side.

# FUEL TANK

## REMOVAL AND INSTALLATION

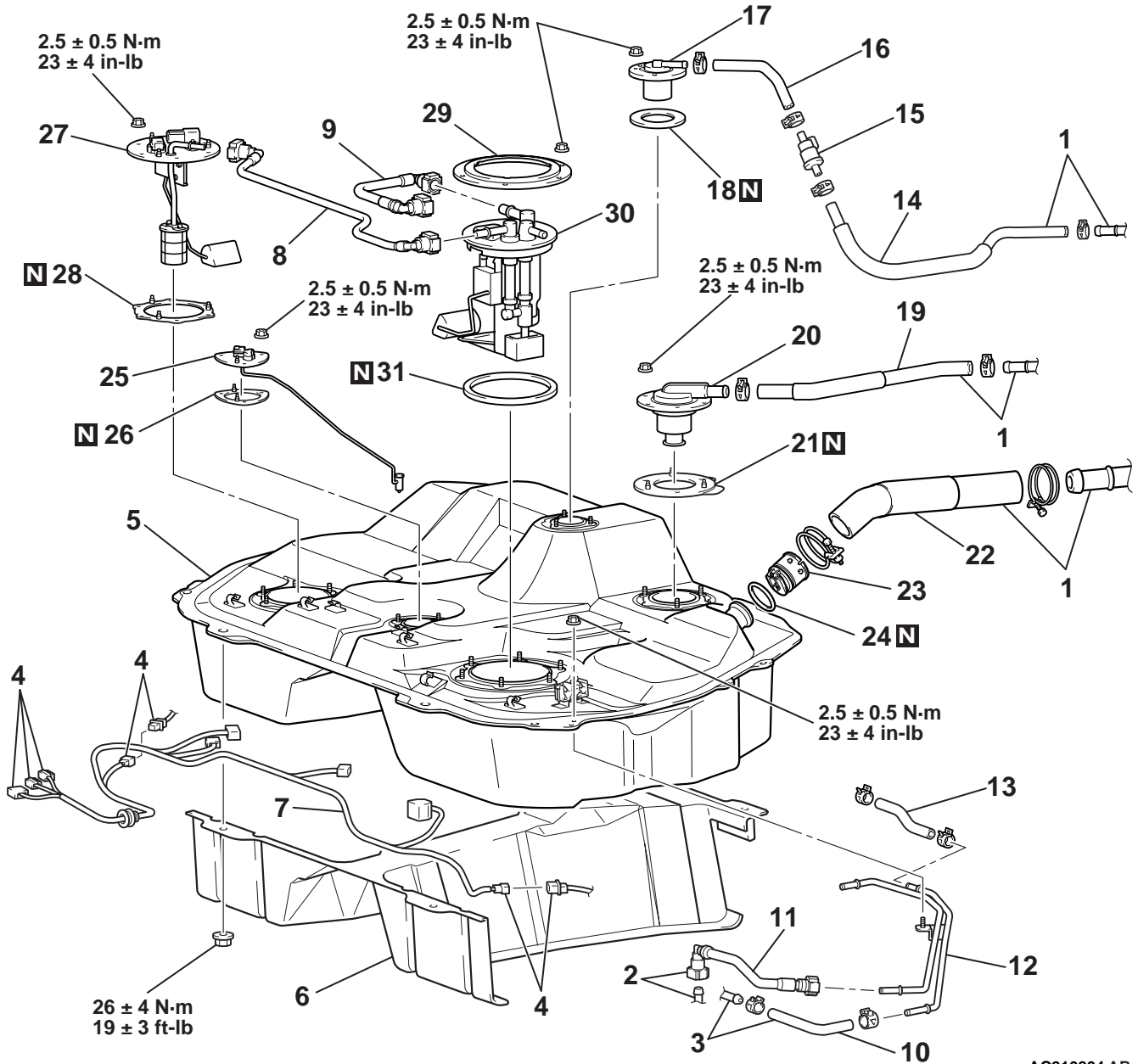
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### Pre-removal Operation

- Draining Fuel
- Fuel Pump Connector Disconnection (How to Reduce Fuel Pressure). (Refer to GROUP 13A, On-vehicle Service P.13A-765).
- Center Exhaust Pipe Removal (Refer to GROUP 15, Exhaust Pipe and Main Muffler P.15-23).
- Propeller Shaft Removal (Refer to GROUP 25, Propeller Shaft P.25-4).

### Pre-installation Operation

- Propeller Shaft Installation (Refer to GROUP 25, Propeller Shaft P.25-4).
- Center Exhaust Pipe Installation (Refer to GROUP 15, Exhaust Pipe and Main Muffler P.15-23).
- Refilling Fuel
- Checking for Fuel Leaks



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### REMOVAL STEPS

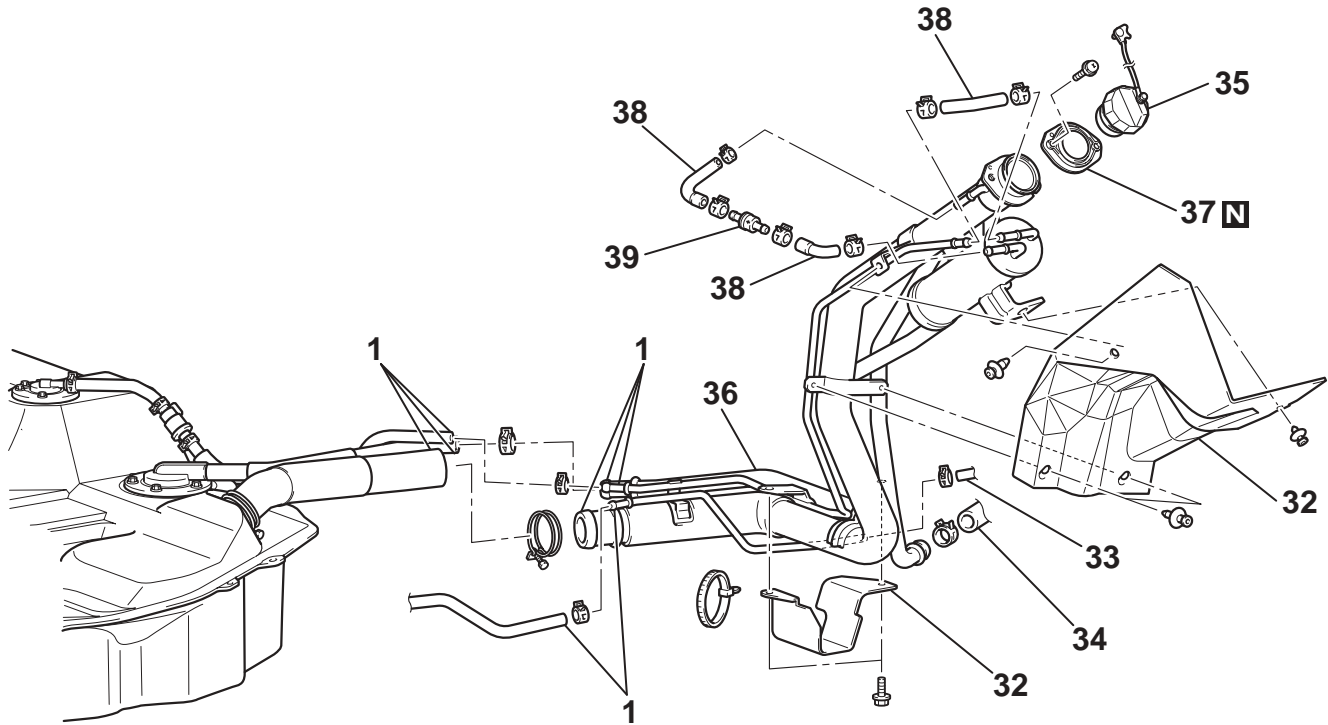
1. FUEL TANK FILLER TUBE CONNECTION
- >>B<< 2. FUEL HIGH-PRESSURE HOSE CONNECTION

### REMOVAL STEPS (Continued)

3. FUEL RETURN HOSE CONNECTION
4. FUEL TANK HARNESS CONNECTOR

**REMOVAL STEPS (Continued)**

- PARKING BRAKE CABLE CLAMP CONNECTION (REFER TO GROUP 36, PARKING BRAKE CABLE P.36-7).
  - REAR WHEEL SPEED SENSOR HARNESS CONNECTOR AND HARNESS CLAMP CONNECTION (REFER TO GROUP 35B, WHEEL SPEED SENSOR).
- <<A>> 5. FUEL TANK ASSEMBLY  
6. FUEL TANK HEAT PROTECTOR  
7. FUEL TANK HARNESS
- >>B<< 8. SUCTION HOSE  
>>B<< 9. FUEL HIGH-PRESSURE HOSE  
10. FUEL RETURN HOSE
- >>B<< 11. FUEL HIGH-PRESSURE HOSE  
12. FUEL TANK PIPE ASSEMBLY  
13. FUEL TANK RETURN HOSE  
14. FUEL VAPOR HOSE  
15. FUEL TANK VAPOR 1WAY VALVE  
16. FUEL TANK VAPOR HOSE  
17. FUEL TANK ROLLOVER VALVE ASSEMBLY  
18. PACKING  
19. FUEL TANK FILLER TUBE BREATHER HOSE  
20. FUEL TANK LEVERING VALVE ASSEMBLY  
21. PACKING  
22. FUEL FILLER HOSE  
23. FUEL TANK SHUT-OFF VALVE  
24. O-RING  
25. FUEL TEMPERATURE SENSOR  
26. PACKING
- <<B>> >>A<< 27. FUEL PIPE AND GAUGE ASSEMBLY  
28. PACKING  
29. RETAINER PLATE
- <<B>> >>A<< 30. FUEL PUMP MODULE  
31. PACKING



AC210870 AB

**REMOVAL STEPS**

- 32. FUEL TANK FILLER TUBE PROTECTOR
- 33. PURGE HOSE B CONNECTION
- 34. VAPOR HOSE CONNECTION
- 35. FUEL TANK FILLER CAP

**REMOVAL STEPS (Continued)**

- 36. FUEL TANK FILLER TUBE ASSEMBLY
- 37. PACKING
- 38. FUEL FILLER TUBE VAPOR HOSE
- 39. FUEL FILLER TUBE VAPOR 1WAY VALVE

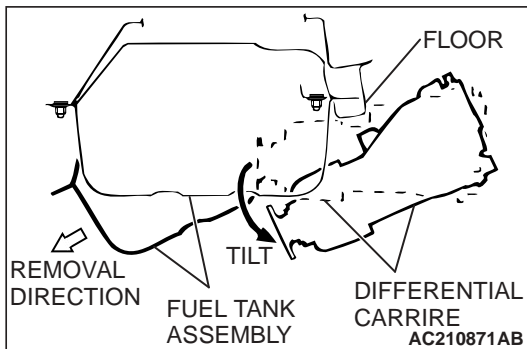
**Required Special Tool:**

- MB991348: Test Harness Set

**REMOVAL SERVICE POINTS**

**<<A>> FUEL TANK ASSEMBLY REMOVAL**

1. Remove the differential support member and tilt the differential carrier. (Refer to group 27B, Differential Carrier P.27-28).
2. Hold the fuel tank assembly with a transaxle jack and remove the nuts connected to the fuel tank assembly.
3. Remove the fuel tank assembly in the tilting direction to avoid contact with the differential carrier.

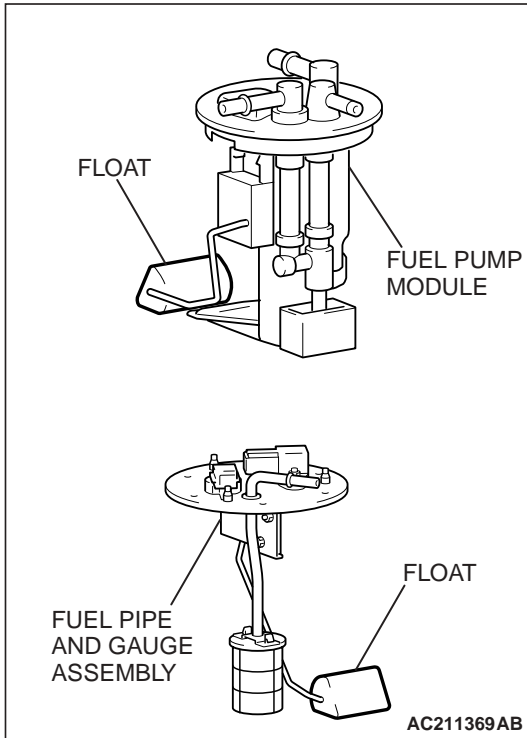




<<B>> FUEL PIPE AND GAUGE ASSEMBLY/FUEL PUMP  
MODULE REMOVAL

**⚠ CAUTION**

When withdrawing the fuel pipe and gauge assembly and fuel pump module from the fuel tank, be careful not damage the sensor unit and the float.

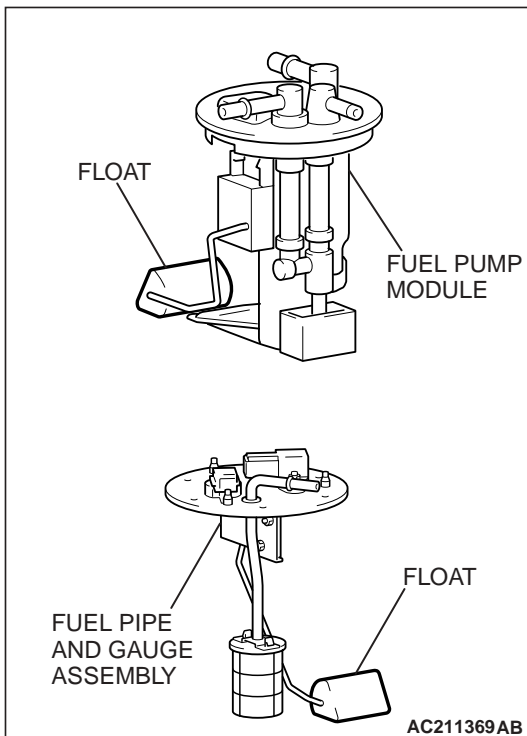


INSTALLATION SERVICE POINTS

>>A<< FUEL PUMP MODULE/FUEL PIPE AND GAUGE  
ASSEMBLY INSTALLATION

**⚠ CAUTION**

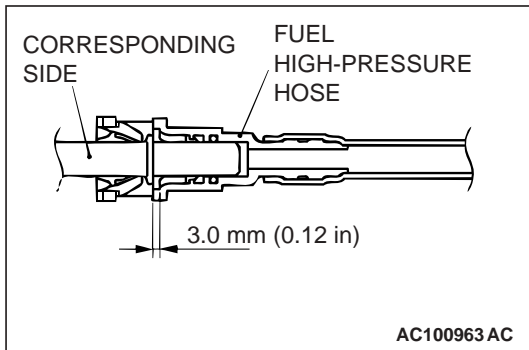
When inserting the fuel pump module and fuel pipe and gauge assembly into the fuel tank, be careful not damage the sensor unit and the float.



>>B<< FUEL HIGH-PRESSURE HOSE INSTALLATION

**CAUTION**

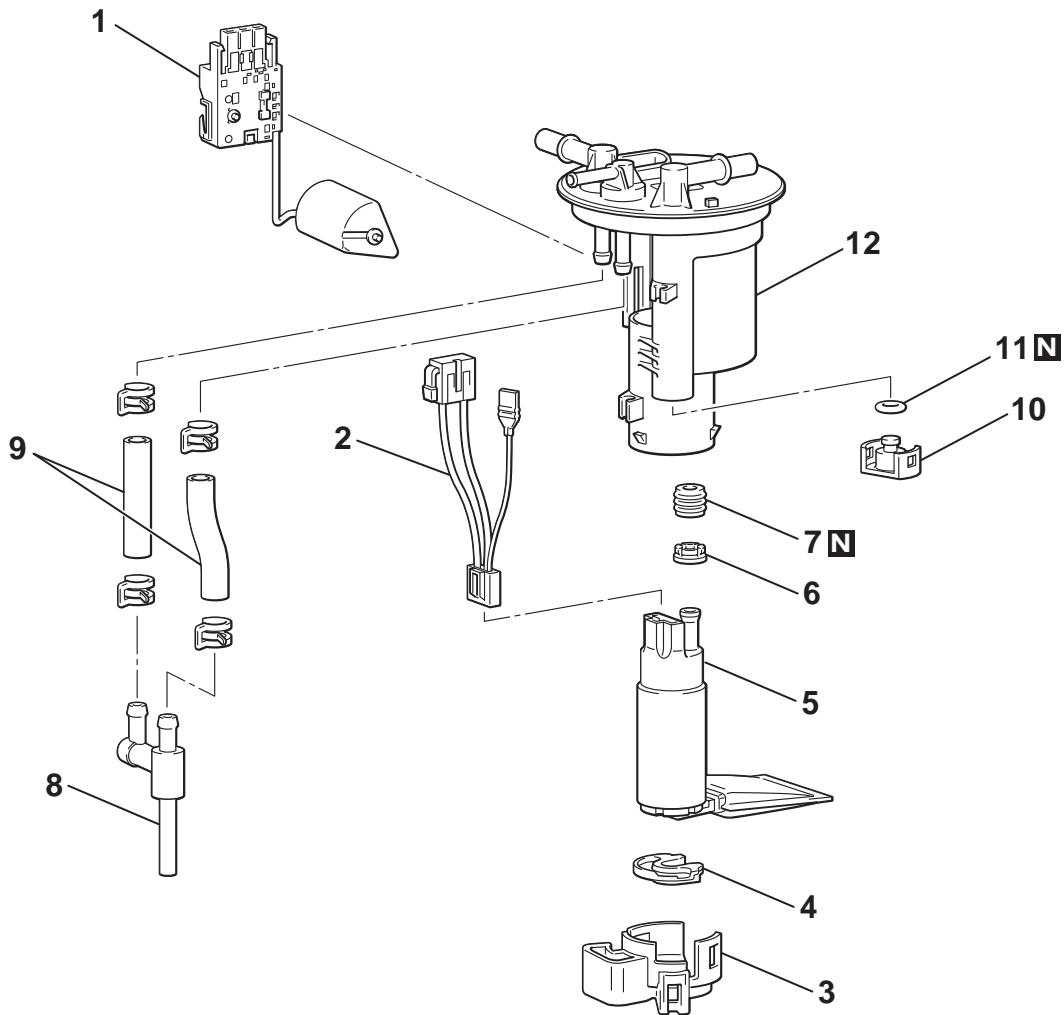
After connecting the quick action joint of the fuel high-pressure hose, pull the joint lightly away from the quick action joint to confirm that it is secure. In addition, confirm that there is a play of approximately 3.0 mm (0.12 inch) at the joint.



FUEL PUMP MODULE DISASSEMBLY AND ASSEMBLY

M1135004600238

<FUEL PUMP MODULE>



AC210872AB

**DISASSEMBLY STEPS**

1. FUEL LEVEL SENSOR (MAIN)
2. FUEL PUMP HARNESS
3. FUEL PUMP BRACKET
4. FUEL PUMP CUSHION
5. FUEL PUMP

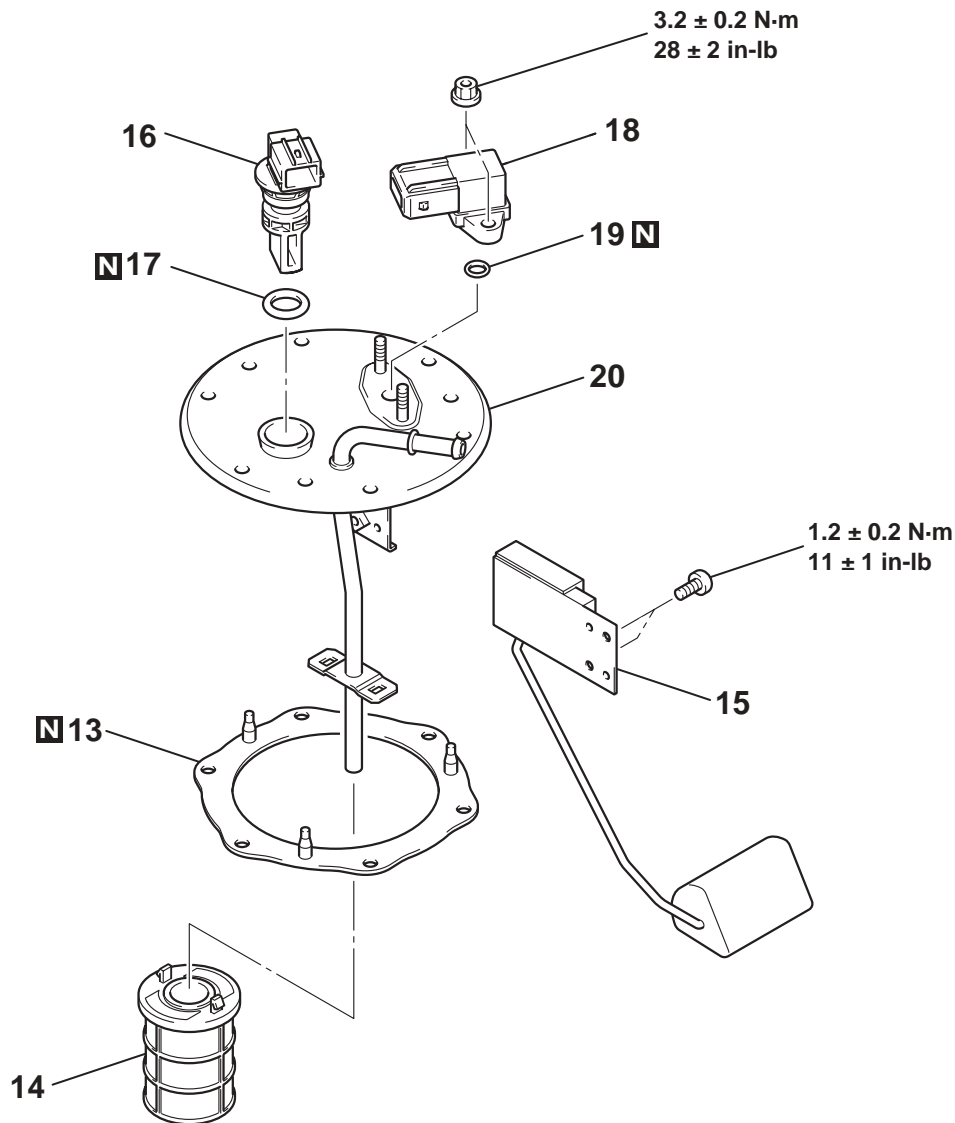
**DISASSEMBLY STEPS**

- >>A<<
6. SPACER
  7. GROMMET
  8. FUEL FEED ASSIST PUMP
  9. FUEL HOSE
  10. CAP

**DISASSEMBLY STEPS**

- >>A<< 11. O-RING  
12. FUEL FILTER ASSEMBLY

**<FUEL PIPE AND GAUGE ASSEMBLY>**



AC210938AB

**DISASSEMBLY STEPS**

13. PACKING  
14. FUEL FILTER  
15. FUEL LEVEL SENSOR (SUB)  
16. CONNECTOR  
17. O-RING

**DISASSEMBLY STEPS**

18. FUEL TANK DIFFERENTIAL  
PRESSURE SENSOR  
19. PACKING  
20. FUEL PIPE ASSEMBLY

**ASSEMBLY SERVICE POINT**

**>>A<< O-RING/GROMMET INSTALLATION**

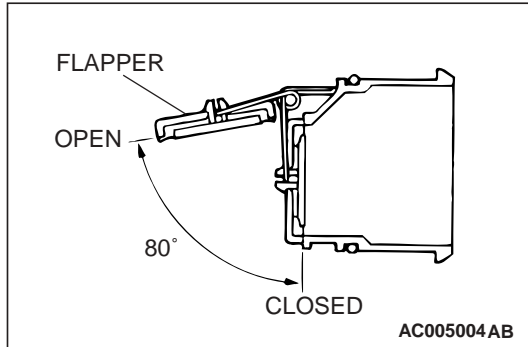
Apply gasoline on the O-ring and the grommet before mounting them to prevent damage or twisting.

## INSPECTION

M1135002000218

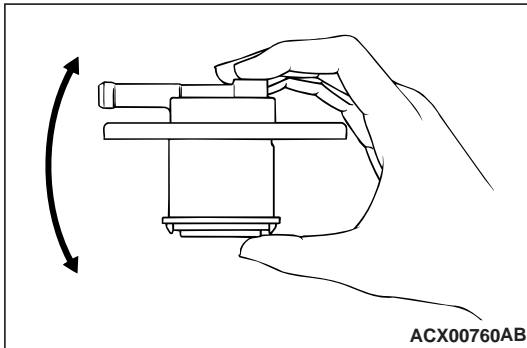
## FUEL SHUT-OFF VALVE CHECK

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

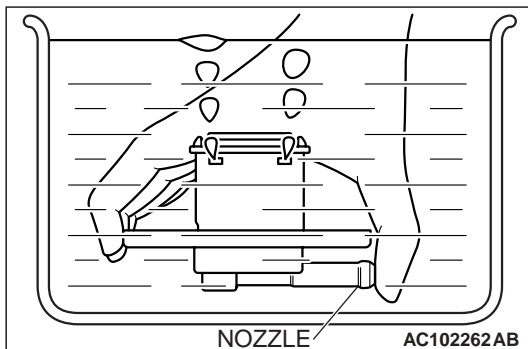


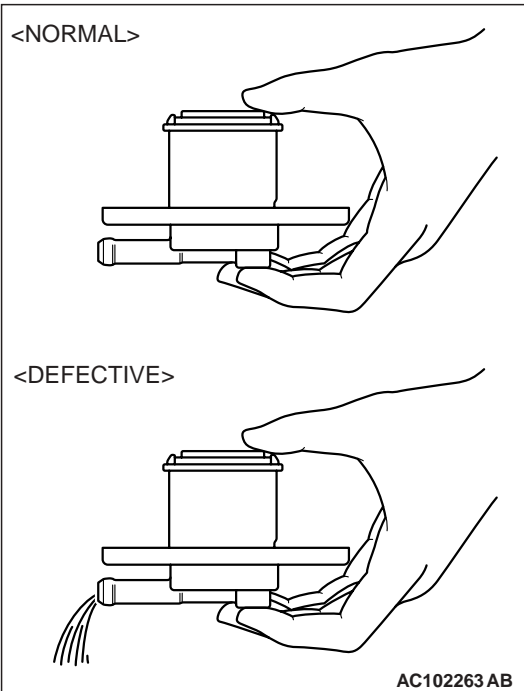
## FUEL TANK ROLLOVER VALVE ASSEMBLY CHECK

1. Shake the fuel tank rollover valve assembly up and down to check the float inside the fuel tank rollover valve assembly is not seized.



2. Obtain a container, which is full of water.
3. Invert the fuel tank rollover valve assembly, and submerge it slowly in the water while placing your fingers over the nozzle.
4. Check that no more air bubbles appears from the fuel tank rollover valve assembly, and withdraw it slowly.



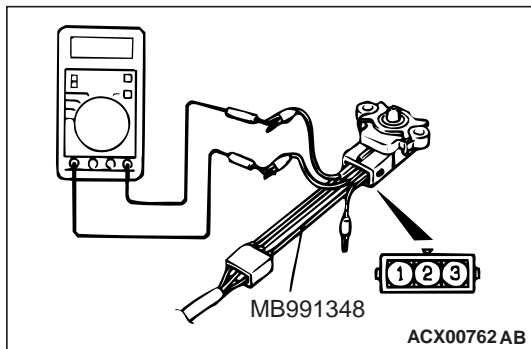


5. Open the fuel tank rollover valve assembly nozzle. If no water flows out from the nozzle aperture, the valve is normal. If water flows out, the float or spring inside the fuel tank rollover valve is defective. Replace the fuel tank rollover valve assembly.

### FUEL TANK DIFFERENTIAL PRESSURE SENSOR CHECK

1. Disconnect the fuel tank differential pressure sensor connector and connect special tool MB991348 between the terminals of the disconnected connector.
2. Turn the ignition switch to "ON" and measure the output voltage between terminals 2 and 3.

**Standard value: 2.0 – 3.0 V**



**SPECIFICATIONS****FASTENER TIGHTENING SPECIFICATIONS**

M1135003900270

ITEMS	SPECIFICATIONS
Fuel high-pressure hose bolt	5.0 ± 1.0 N·m (44 ± 9 in-lb)
Fuel level sensor (sub) screw	1.2 ± 0.2 N·m (11 ± 1 in-lb)
Fuel pipe and gauge assembly nut	2.5 ± 0.5 N·m (23 ± 4 in-lb)
Fuel pump module nut	2.5 ± 0.5 N·m (23 ± 4 in-lb)
Fuel tank differential pressure sensor nut	3.2 ± 0.2 N·m (28 ± 2 in-lb)
Fuel tank levelling valve assembly nut	2.5 ± 0.5 N·m (23 ± 4 in-lb)
Fuel tank nut	26 ± 4 N·m (19 ± 3 in-lb)
Fuel tank pipe assembly nut	2.5 ± 0.5 N·m (23 ± 4 in-lb)
Fuel tank rollover valve assembly nut	2.5 ± 0.5 N·m (23 ± 4 in-lb)
Fuel temperature sensor nut	2.5 ± 0.5 N·m (23 ± 4 in-lb)

**SERVICE SPECIFICATION**

M113500300213

ITEMS	STANDARD VALUE	
Fuel pressure kPa (psi)	Vacuum hose connected	Approximately 230 (33) at curb idle
	Vacuum hose disconnected	289 – 309 (42 – 45) at curb idle
Fuel tank differential pressure sensor output voltage V	2.0 – 3.0	