

EXPLANATION OF MANUAL CONTENTS

Denotes tightening torque. For bolts and nuts which do not have a tightening torque listed, refer to the "Standard Parts tightening-torque Table"

Indicates the section title.

Indicates the group title.

Indicates the group number.

Indicates the page number.

BASIC BRAKE SYSTEM
FRONT DISC BRAKE ASSEMBLY

35A-19

FRONT DISC BRAKE ASSEMBLY

REMOVAL AND INSTALLATION

Pre-removal Operation

- Brake Fluid Draining

Post-installation Operation

- Brake Fluid Supplying and Air Bleeding (Refer to .)

M1351006000366

Brake caliper kit

Pad set

Shim kit

Seal and boot repair kit

Removal steps

>>A<< 1. Brake hose connection
2. Gasket

>>B<< 3. Brake caliper assembly
4. Brake disc

Component diagram

A diagram of the component parts is provided near the front of each section in order to give the reader a better understanding of the installed condition of component parts.

Mark **N** denotes nonreusable part.

Repair kit or parts sets are shown. (Only very frequently used parts are shown.)

Maintenance and servicing procedures

The numbers provided within the diagram indicate the sequence for maintenance and servicing procedures.

● Removal steps :

The part designation number corresponds to the number in the illustration to indicate removal steps.

● Disassembly steps :

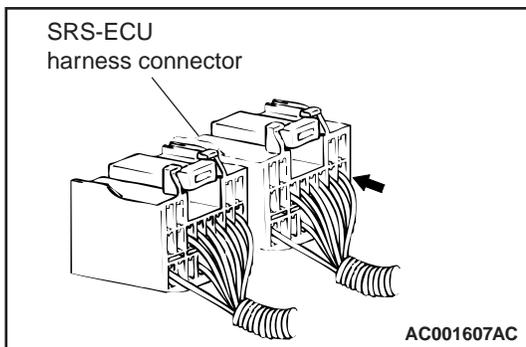
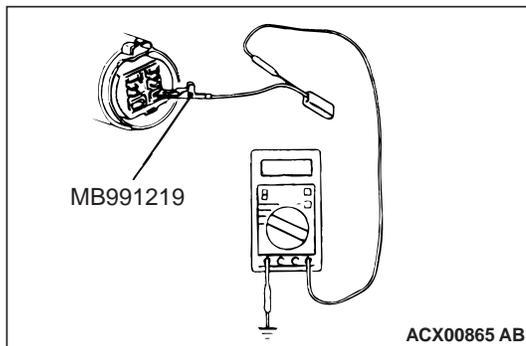
The part designation number corresponds to the number in the illustration to indicate disassembly steps.

● Installation steps :

Specified in case installation is impossible in reverse order of removal steps. Omitted if installation is possible in reverse order of removal steps.

● Reassembly steps :

Specified in case installation is impossible in reverse order of removal steps. Omitted if reassembly is possible in reverse order of disassembly steps.



The inspection harness for connector pin contact pressure should be used. The test probe should never be forcibly inserted, as it may cause a defective contact.

- From back side of the connector (SRS-ECU harness side connector)
Since the SRS-ECU harness connector is plated to improve conductivity, observe the warning below when checking this connector.

⚠ WARNING

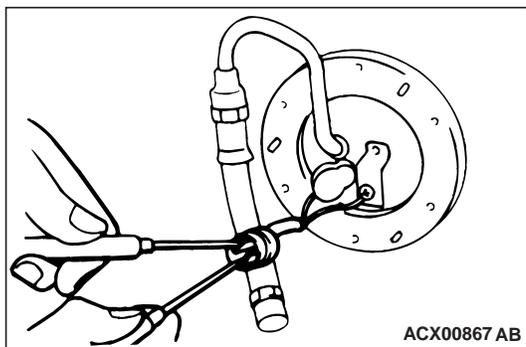
Insert the backprobing tool into the connector from the harness side, and connect the tester to the backprobing tool. If any tool other than the backprobing tool is used, it may cause damage to the harness and other components. Furthermore, measurement should not be carried out by touching the backprobing tool directly against the terminals from the front of the connector. The terminals are plated to increase their conductivity, so that if they are touched directly by the backprobing tool, the plating may break, which will decrease reliability.

<When Inspecting a Male Pin>

⚠ CAUTION

At this time, be careful not to short the connector pins with the test probes. Doing so may damage the circuits inside the ECU.

Touch the pin directly with the test probe.



Application		3M™/three bond No.	Loctite®/permatex®No.
BODY SEALANTS	Sealing of sheet metal joints, floor, side panels, front panel, liftgate hinge	3M™ AAD Part No. 8531 Heavy Drip-Check Sealer (gray) 3M™ ADD Part No. 8646 or 3M™ AAD Part No. 8302 Ultrapro Autobody Sealant (clear) or 3M™ AAD Part No. 8361 Urethane A/B Sealant (gray or white) or 3M™ AAD Part No. 8531 Heavy drip check sealer, 3M™ AAD Part No. 8646 Automotive joint and seam sealer	-
	Miscellaneous body sealants (original mounted w/adhesive tape) <ul style="list-style-type: none"> Waterproof door film Rear combination light 	3 M™ADD Part No. 8625 or 3M™ AAD Part No. 8633 Windo-weld Resealant	-
CHASSIS SEALANT	Sealant of various flange faces and threaded parts. Packing of fuel gauge unit	3M™ AAD Part No. 8730 High Strength Red Threadlock or 3M™ AAD Part No. 8731 Medium Strength Blue Threadlocker	Loctite®272 High Strength and High Temperature 27200
	Sealing of various threaded parts, dust covers. Differential carrier packing, dust covers and ball joint and linkage. Packing and shims of steering box, sealing of rack support cover and top cover of steering box housing, seal of junction face of knuckle arm flange	3M™ AAD Part No. 8672 Ultrapro High Temp. Silicone Gasket or 3M™ AAD Part No. 8679 (black) or 3M™ AAD Part No. 8678 (black) Press-In-Place Silicone gasket strips 3M™ AAD Part No. 8661 or 3M™ AAD Part No. 8663 Super Silicone sealant	Permatex® The Right Stuff No.25223
QUICK FIX ADHESIVE	-	3M™ AAD Part No. 8155 Quick Fix Adhesive	Loctite®Quicktite Super Glue 21309
ANAEROBIC STRONG SEALING AGENT	Fixing of various threads, bolts, screws. Fixing of differential drive gear bolt, Connecting of tilt steering bolt. Fan, pulley, gear Sealing of small gaps and flange faces	3M™ AAD Part No. 8730 High Strength Threadlocker or 3M™ AAD Part No. 8731 Medium Strength Threadlocker	Loctite®271, High-Strength Threadlocker 27100 or 27200

STEP 2. Measure the sensor output voltage at engine coolant temperature sensor connector by backprobing.

- (1) Do not disconnect the connector.
- (2) Turn the ignition switch to the "ON" position.
- (3) Measure the voltage between terminal WTS line and ground by backprobing.
 - When engine coolant temperature is -20°C (-4°F), voltage should be between 3.9 and 4.5 volts.
 - When engine coolant temperature is 0°C (32°F), voltage should be between 3.2 and 3.8 volts.
 - When engine coolant temperature is 20°C (68°F), voltage should be between 2.3 and 2.9 volts.
 - When engine coolant temperature is 40°C (104°F), voltage should be between 1.3 and 1.9 volts.
 - When engine coolant temperature is 60°C (140°F), voltage should be between 0.7 and 1.3 volts.
 - When engine coolant temperature is 80°C (176°F), voltage should be between 0.3 and 0.9 volt.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the measured voltage within the specified range?

YES : Go to Step 3.

NO : Go to Step 4.

STEP 3. Using scan tool (M.U.T.-III), check data list item 6: Engine Coolant Temperature Sensor.

- (1) Turn the ignition switch to the "ON" position.
- (2) Set scan tool (M.U.T.-III) to the data reading mode for item 6, Engine Coolant Temperature Sensor.
 - The engine coolant temperature and temperature shown with the scan tool should approximately match.
- (3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the sensor operating properly?

YES : It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunctions [P.00-13](#).

NO : Replace the ECM (Refer to, Removal and Installation [P.13A-656](#)). Then go to Step 9.

STEP 4. Measure the sensor supply voltage at engine coolant temperature sensor harness side connector.

- (1) Disconnect the connector and measure at the harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Measure the voltage between terminal WTS line and ground.
 - Voltage should be between 4.5 and 4.9 volts.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the measured voltage between 4.5 and 4.9 volts?

YES : Go to Step 5.

NO : Replace the ECM (Refer to, Removal and Installation [P.13A-656](#)). Then go to Step 9.

STEP 1. Using scan tool (M.U.T.-III), check data list.**⚠ CAUTION**

To prevent damage to scan tool (M.U.T.-III), always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool (M.U.T.-III).

- (1) Connect scan tool (M.U.T.-III). Refer to HOW TO CONNECT THE SCAN TOOL (M.U.T.-III) [P.13A-10](#).
- (2) Turn the ignition switch to the "ON" position.
- (3) Check the following items in the data list. Refer to Data List Reference Table [P.13A-599](#).
 - a. Item 172: A/C Pressure Sensor (Voltage)
 - b. Item 175: A/C Pressure Sensor (Pressure)
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the sensor operating properly?

YES : It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunctions [P.00-13](#).

NO : Go to Step 2.

STEP 2. Measure the resistance at A/C pressure sensor harness side connector.

- (1) Disconnect the connector and measure at the harness side.
- (2) Measure the resistance between terminal ACPE&BVSE line and ground.
 - Continuity (2 ohms or less)

Q: Does continuity exist?

YES : Go to Step 5.

NO : Go to Step 3.

STEP 3. Check of open circuit and damage in ACPE&BVSE line between A/C pressure sensor connector and ECM connector.**Q: Is the harness wire in good condition?**

YES : Go to Step 4.

NO : Repair the connector(s) or wiring harness. Then go to Step 7.

STEP 4. Using scan tool (M.U.T.-III), check data list.

- (1) Turn the ignition switch to the "ON" position.
- (2) Check the following items in the data list. Refer to Data List Reference Table [P.13A-599](#).
 - a. Item 172: A/C Pressure Sensor (Voltage)
 - b. Item 175: A/C Pressure Sensor (Pressure)
- (3) Turn the ignition switch to the "LOCK" (OFF) position.

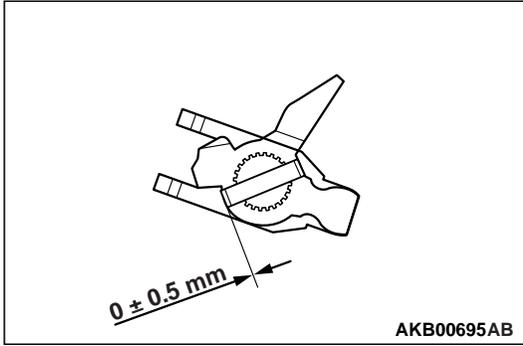
Q: Is the sensor operating properly?

YES : It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunctions [P.00-13](#).

NO : Replace the ECM. Then go to Step 7.

>>D<<SPRING PIN INSTALLATION

Using special tool installer lock pin (MD998245), install the spring pin.

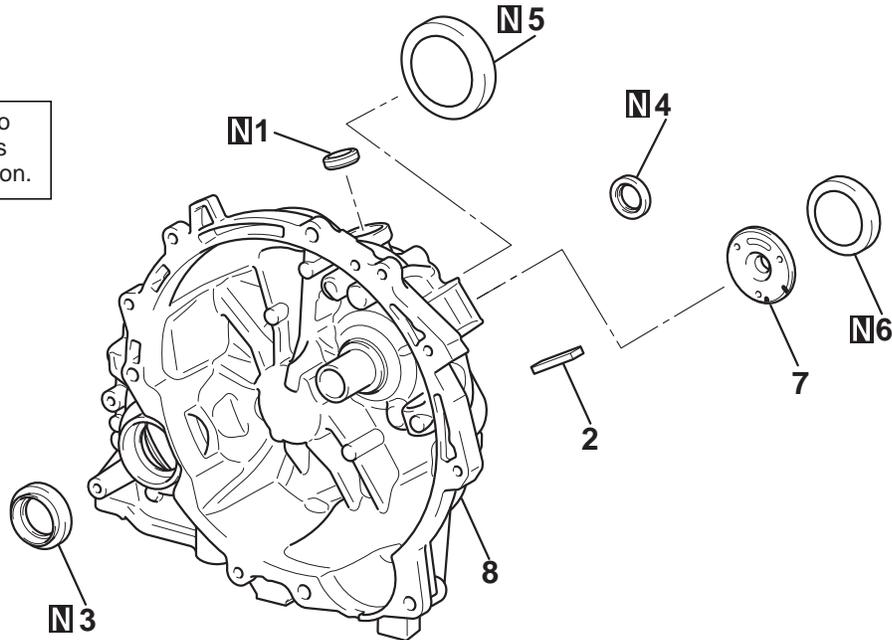


CLUTCH HOUSING

DISASSEMBLY AND REASSEMBLY

M1222003700853

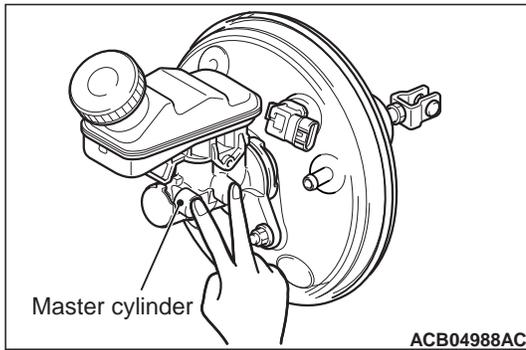
Apply gear oil to all moving parts before installation.



AKB00685AB

- Disassembly steps**
- >>F<< 1. Oil seal
 - 2. Magnet
 - >>E<< 3. Oil seal
 - >>D<< 4. Oil seal

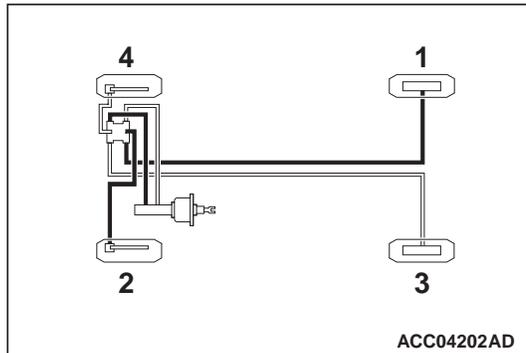
- Disassembly steps (Continued)**
- <<A>> >>C<< 5. Outer race
 - <> >>B<< 6. Outer race
 - >>A<< 7. Oil guide
 - 8. Clutch housing



3. Have another person cover the master cylinder outlet with a finger.
4. With the outlet still closed, release the brake pedal.
5. Repeat Steps 2 – 4 three or four times to fill the inside of the master cylinder with brake fluid.

BLEEDING OF BRAKE PIPELINE

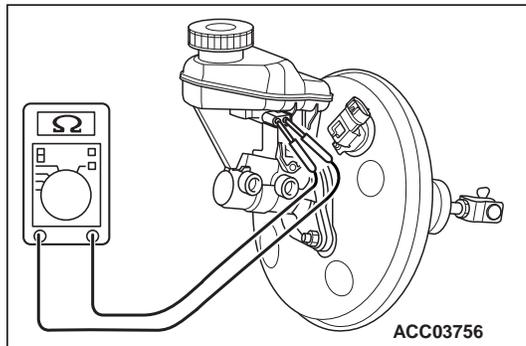
Perform the bleeding in the order shown in the figure.



BRAKE FLUID LEVEL SENSOR CHECK

M1351009101020

The brake fluid level sensor is in good condition if there is no continuity when the float surface is above "MIN" and if there is continuity when the float surface is below "MIN".



SYMPTOM PROCEDURES <CENTRAL DOOR LOCKING SYSTEM>

INSPECTION PROCEDURE 1: Central door locking system does not work at all.

⚠ CAUTION

Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

OPERATION

The ETACS-ECU controls the central door locking system, locking or unlocking all the doors by activating the door lock relay or the door unlock relay (built in the ETACS-ECU). The ETACS-ECU uses input signals from the front door lock actuator (driver's side).

COMMENTS ON TROUBLE SYMPTOM

If the central door locking system does not work at all, a malfunction of the front door lock actuator (driver's side) or ETACS-ECU is suspected.

PROBABLE CAUSES

- Malfunction of the front door lock actuator (driver's side)
- Malfunction of ETACS-ECU
- Damaged wiring harness and connectors

DIAGNOSIS

STEP 1. Using scan tool MB991958, DTC check.

Check that ETACS-ECU stores a diagnostic trouble code.

Q: Is the diagnostic trouble code stored?

YES : Refer to GROUP 54A – Diagnostic Trouble Code Chart [P.54A-218](#).

NO : Go to Step 2.

STEP 4. Retest the system.

Check that the central door locking system works normally.

Q: Is the check result normal?

STEP 2. Using scan tool MB991958, check data list.

Check the ETACS-ECU service items related to the central door locking system operation.

- Inside handle lock knob (driver's side): Unlock → Lock.

Item No.	Item name	Normal condition
20	Driver's door unlock switch	ON → OFF
21	Driver's door lock switch	OFF → ON

- Inside handle lock knob (driver's side): Lock → Unlock.

Item No.	Item name	Normal condition
20	Driver's door unlock switch	OFF → ON
21	Driver's door lock switch	ON → OFF

OK: Normal conditions are displayed for all the items.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Refer to GROUP 54A – Inspection Procedure 4 "The front door lock actuator (driver's side) signal is not received. [P.54A-243](#)".

STEP 3. Check of short to power supply, short to ground, and open circuit in ETACS +B1 line between ETACS-ECU connector and fusible link (2).

Q: Is the check result normal?

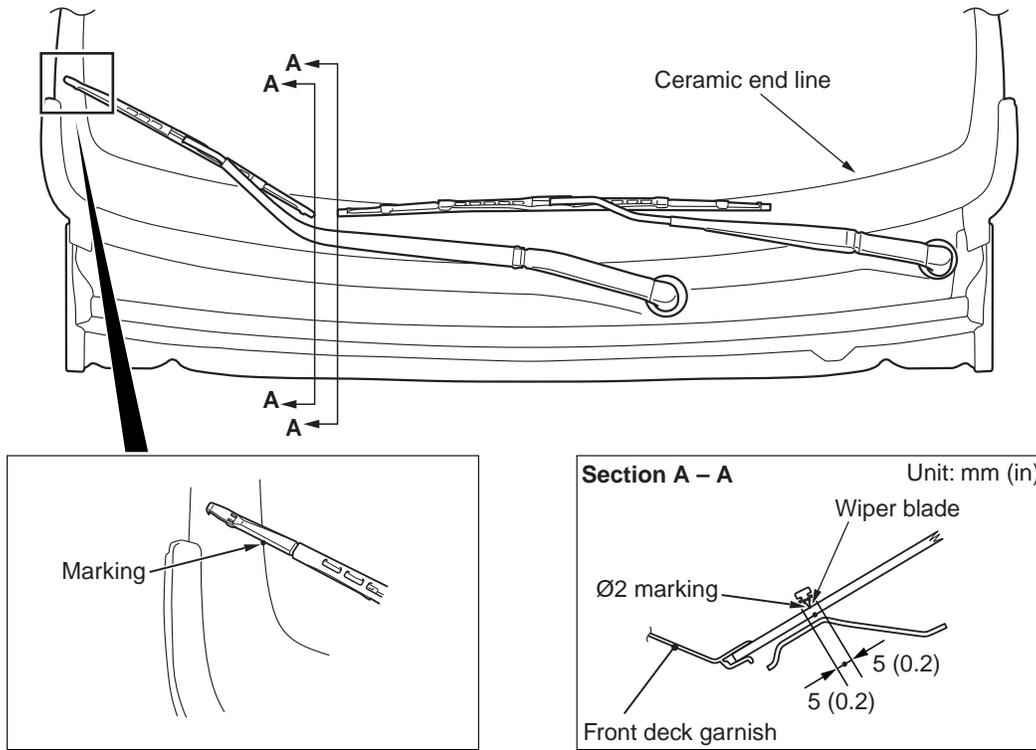
YES : Go to Step 4.

NO : Repair the wiring harness.

YES : No action is necessary and testing is complete.

NO : Replace ETACS-ECU.

>>C<< WIPER ARM AND BLADE ASSEMBLY
INSTALLATION



ACC06285AB

Set the wiper arm and blade assembly at the specified positions.

A: ϕ 2 marking \pm 5 mm (0.2 inch)

DTC B1438: Side impact sensor (LH) communication error

DTC B1439: Side impact sensor (LH) communication impossible

CAUTION

If the diagnostic trouble code B1438 or B1439 is set to SRS-ECU, be sure to diagnose the CAN bus line.

CIRCUIT OPERATION

The side impact sensor transmits acceleration data to the SRS-ECU. The SRS-ECU then determines if the side and/or curtain air bags should be inflated, and then sends an ignition signal. The side impact sensor also diagnoses itself, and sends a diagnostic trouble code to the SRS-ECU if a problem occurs.

DTC SET CONDITIONS

The diagnostic trouble code is set if the communication between the side impact sensor (LH) and SRS-ECU is abnormal (No. B1438), or impossible (No. B1439).

TROUBLESHOOTING HINTS

- Damaged wiring harnesses or connectors
- Malfunction of the side impact sensor (LH)
- Malfunction of the SRS-ECU

DIAGNOSIS

STEP 1. Using scan tool (M.U.T.-III), diagnose the CAN bus line.

CAUTION

To prevent damage to scan tool (M.U.T.-III), always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool (M.U.T.-III).

- (1) Connect scan tool (M.U.T.-III). Refer to "How to connect the scan tool P.52B-11."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-12).

STEP 2. Recheck for diagnostic trouble code.

Check again if the DTC is set.

- (1) Erase the DTC.
- (2) Turn the ignition switch to the "ON" position.
- (3) Check if the DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Go to Step 3.

NO : There is an intermittent malfunction such as poor engaged connector(s) or open circuit (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-13).

STEP 5. Recheck for diagnostic trouble code.

Check again if the DTC is stored.

- (1) Erase the DTC.
- (2) Turn the ignition switch to the "ON" position.
- (3) Check if the DTC is stored.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is DTC B1408 or B1409 stored?

YES : Replace SRS-ECU (Refer to [P.52B-229](#)).

NO : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction [P.00-13](#)).

DTC B1410: Passenger's (front) air bag module (1st squib) system (short circuit between squib circuit terminals)

DTC B1490: Passenger's (front) air bag module (2nd squib) system (short circuit between squib circuit terminals)

⚠ CAUTION

- If DTC B1410 <1st squib> or B1490 <2nd squib> is stored in the SRS-ECU, always diagnose the CAN main bus line.
- When DTC B1410 is stored in the following diagnosis, check the 1st squib circuit. When DTC B1490 is stored, check the 2nd squib circuit.

CIRCUIT OPERATION

- The SRS-ECU judges how severe a collision is by detecting signals from the front impact sensors and the analog G-sensor in the SRS-ECU. If the impact is over a predetermined level, the SRS-ECU sends an ignition signal. At this time, the SRS air bag will inflate.
- The ignition signal is input to the air bag module to inflate the air bag.

DTC SET CONDITIONS

This DTC is stored if there is abnormal resistance between the input terminals of the passenger's side air bag module (squib).

TROUBLESHOOTING HINTS

- Improper engaged connector or defective short spring*
- Short circuit between the passenger's air bag module (squib) circuit terminals
- Damaged connector(s)
- Malfunction of the SRS-ECU

*NOTE: *: The squib circuit connectors integrate a "short" spring (which prevents the air bag from deploying unintentionally due to static electricity by shorting the positive wire to the ground wire in the squib circuit when the connectors are disconnected). Therefore, if connector is damaged or improperly engaged, the short spring may not be released when the connector is connected.*

REMOVAL SERVICE POINTS

<<A>> NEGATIVE (-) BATTERY CABLE DISCONNECTION

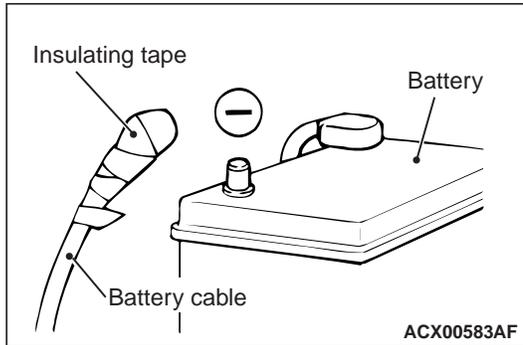
⚠ DANGER

Wait at least 60 seconds after disconnecting the battery cable before doing any further work (Refer to P.52B-5).

⚠ WARNING

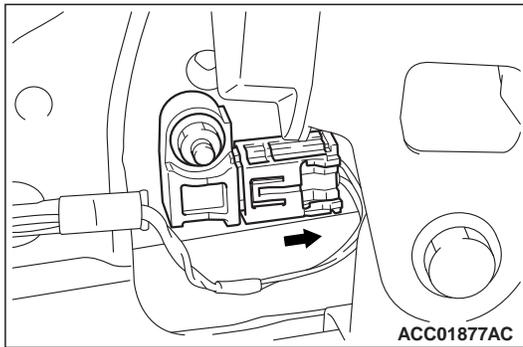
Battery posts, terminals and related accessories contain lead and lead compounds. WASH HANDS AFTER HANDLING.

Disconnect the negative (-) battery cable from the battery and tape the terminal to prevent accidental connection and air bag(s) deployment.



<> SIDE IMPACT SENSOR CONNECTOR REMOVAL

Slide the outer housing of the side impact sensor connector in the arrow direction shown, and disconnect the connector.



INSTALLATION SERVICE POINTS

>>A<< PRE-INSTALLATION INSPECTION

Even when installing a new side impact sensor, perform an inspection before the installation (Refer to P.52B-257).

>>B<< SIDE IMPACT SENSOR INSTALLATION

⚠ WARNING

If the side impact sensor is not installed securely and correctly, the side-air bag may not operate normally. Securely connect the connector.

>>C<< POST-INSTALLATION INSPECTION

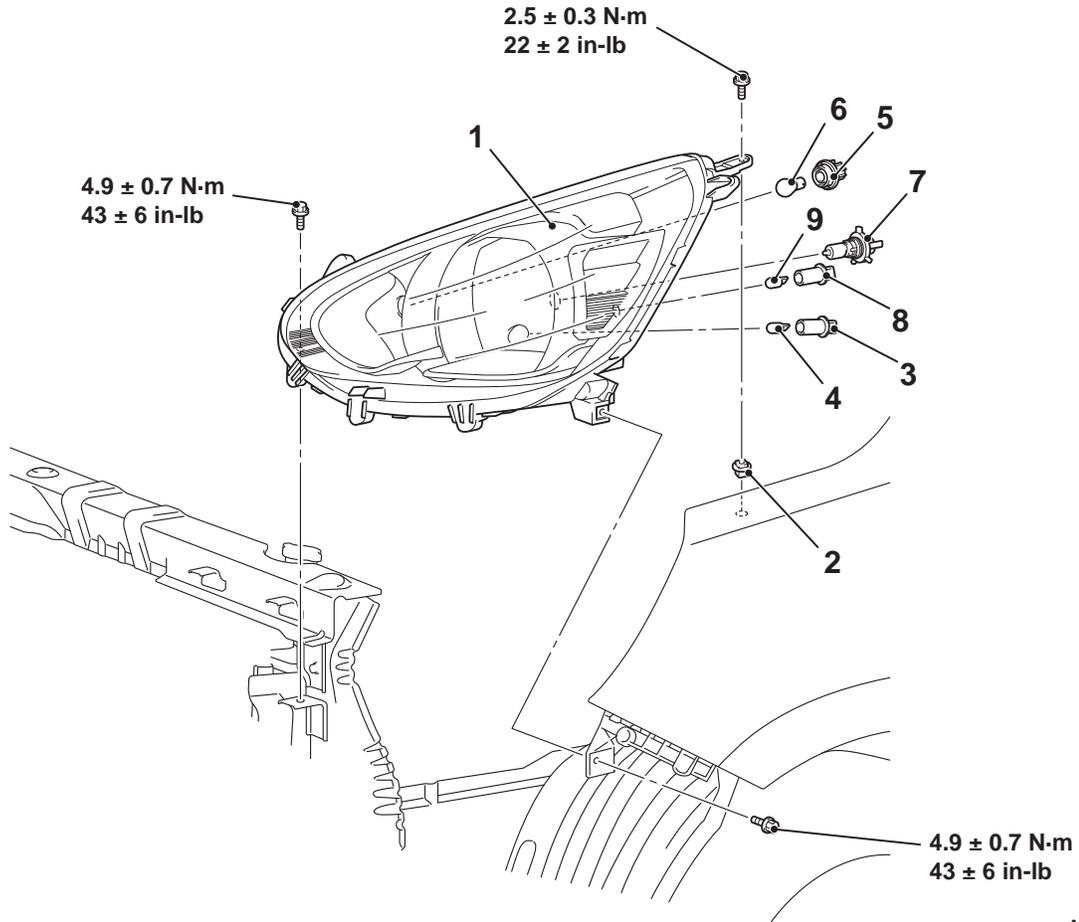
1. Turn the ignition switch to the "ON" position.

HEADLIGHT

HEADLIGHT REMOVAL AND INSTALLATION

M1540101000874

<p>Pre-removal Operation Front bumper assembly removal (Refer to GROUP 51 – Front Bumper Assembly P.51-3.)</p>	<p>Post-installation Operation</p> <ul style="list-style-type: none"> • Front bumper assembly installation (Refer to GROUP 51 – Front Bumper Assembly P.51-3.) • Check the beam direction of the headlight (Refer to Headlight Aiming P.54A-93).
---	---



ACC06849AB

Removal Steps

1. Headlight assembly
2. Grommet
3. Socket
4. Position light bulb
5. Socket

Removal Steps (Continued)

6. Front turn-signal light bulb
7. Headlight bulb
8. Socket
9. Front side-marker light bulb

TROUBLESHOOTING HINTS

- The multivision display may be defective
- The speaker may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS**Required Special Tools:**

- MB992006: Extra fine probe
- MB991223: Harness set

STEP 1. Check a trouble spot.

Check which speaker does not sound.

Q: Which speaker does not sound?

NO (No speakers sound.) : Go to Step 2.

NO (No sound is heard from one of the speakers.) : Go to Step 5.

STEP 2. Check the multivision display operation.**Q: Check the sources from which the sound is not output.**

No sound only from radio : Perform Inspection Procedure 4 "The radio broadcasting can not be received."
(Refer to [P.54A-174.](#))

No sound only when the CD/DVD is played : Perform Inspection Procedure 5 "CD/DVD cannot be played."
(Refer to [P.54A-175.](#))

No sound only when the USB memory/iPod is played : Perform Inspection Procedure 6 "An audio file, which is stored in the SD memory card/USB memory/iPod, cannot be played." (Refer to [P.54A-176.](#))

No sound only when the SD memory card is played : Perform Inspection Procedure 7 "An audio file, which is stored in the SD memory card, cannot be played." (Refer to [P.54A-177.](#))

No sound from any of the sources : Go to Step 3.

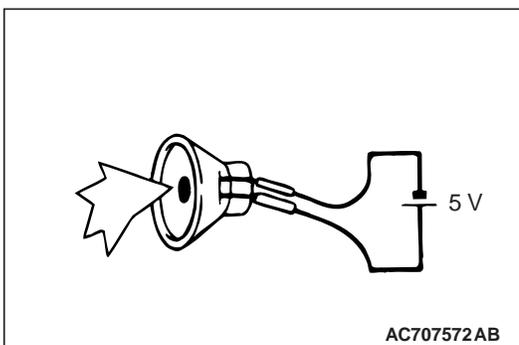
STEP 3. Check the speaker.

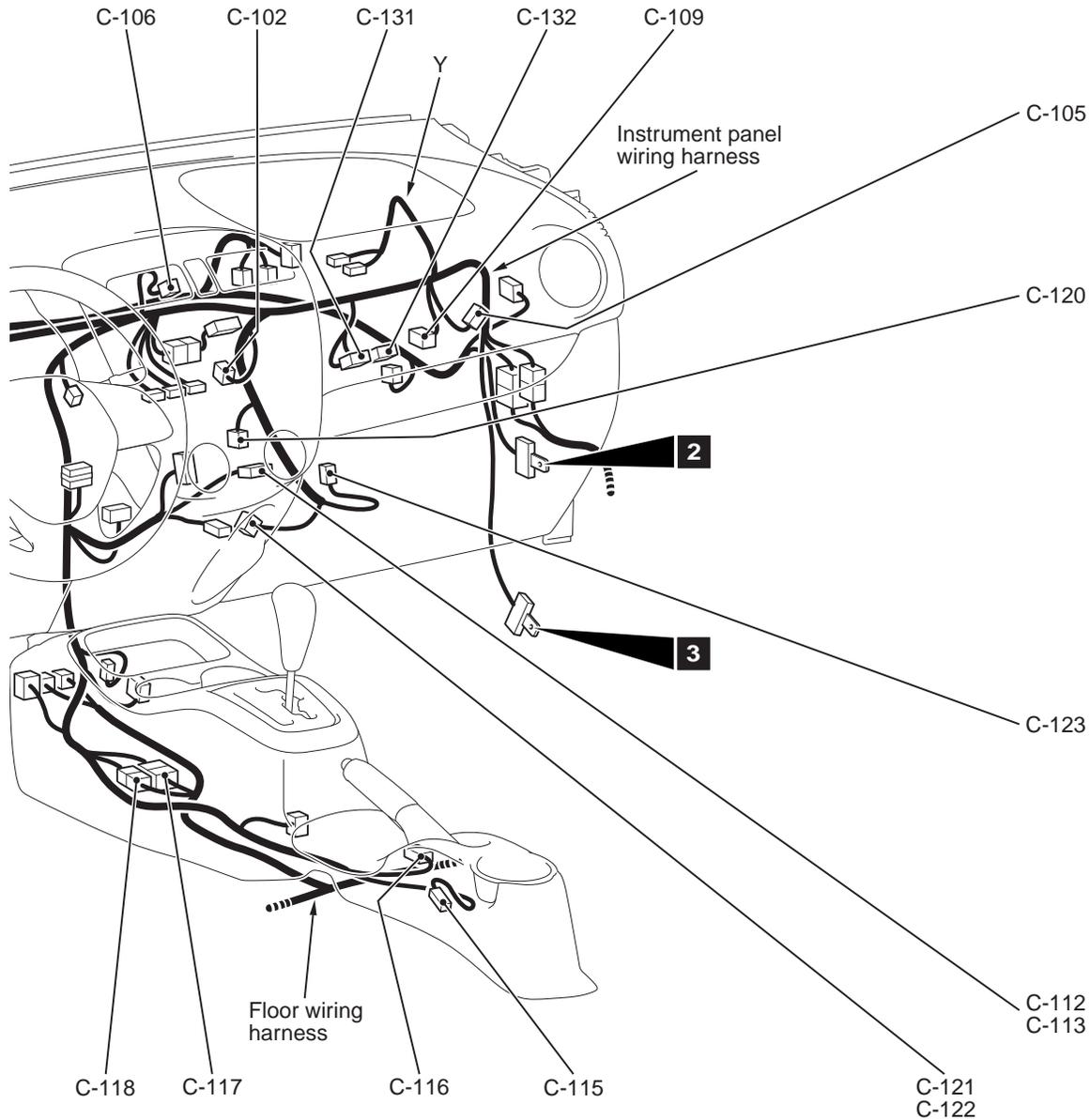
- (1) Remove the speaker. Refer to [P.54A-211.](#)
- (2) Check that the speaker outputs the noise when the voltage of 5 V is applied to the speaker connector terminal.

Q: Do the speaker output the noise?

YES : Go to Step 4.

NO : Replace the speaker.





ACD03457AC

- | | | | |
|-------------|--|---------------|--|
| C-119 (5-G) | Air mixing damper control motor and potentiometer | C-124 (22) | Instrument panel wiring harness and floor wiring harness combination |
| C-120 (2) | Fin thermo sensor <Vehicles with air conditioning system> | C-125 (12-GR) | Joint connector (6) and floor wiring harness combination |
| C-121 (4) | Heater resistor <Vehicles without automatic air conditioning system> | C-126 (12-GR) | Joint connector (6) and instrument panel wiring harness combination |
| C-122 (4) | Power transistor <Vehicles with automatic air conditioning system> | C-129 (5) | ASC off switch |
| C-123 (2) | Blower motor | C-131 (32) | KOS and OSS-ECU |
| | | C-132 (16) | KOS and OSS-ECU |