

GROUP 55

HEATING AND AIR CONDITIONING

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WARNINGS REGARDING SERVICING OF SUPPLEMENTAL RESTRAINT SYSTEM (SRS) EQUIPPED VEHICLES

WARNING

- *Improper service or maintenance of any component of the SRS, or any SRS-related component, can lead to personal injury or death to service personnel (from inadvertent firing of the air bag) or to the driver and passenger (from rendering the SRS inoperative).*
- *Service or maintenance of any SRS component or SRS-related component must be performed only at an authorized MITSUBISHI dealer.*
- *MITSUBISHI dealer personnel must thoroughly review this manual, and especially its GROUP 52B - Supplemental Restraint System (SRS) before beginning any service or maintenance of any component of the SRS or any SRS-related component.*

NOTE

The SRS includes the following components: SRS air bag control unit, SRS warning light, front impact sensors, air bag module, clock spring, and interconnecting wiring. Other SRS-related components (that may have to be removed/installed in connection with SRS service or maintenance) are indicated in the table of contents by an asterisk (*).

**HEATER UNIT, HEATER CORE,
BLOWER ASSEMBLY AND
EVAPORATOR UNIT* 55-108**

REMOVAL AND INSTALLATION 55-108

HEATER UNIT DISASSEMBLY AND
ASSEMBLY 55-109BLOWER ASSEMBLY DISASSEMBLY AND
ASSEMBLY 55-110**BLOWER ASSEMBLY AND
RESISTOR 55-111**

REMOVAL AND INSTALLATION 55-111

INSPECTION 55-112

EVAPORATOR ASSEMBLY 55-114

REMOVAL AND INSTALLATION 55-114

INSPECTION 55-115

**COMPRESSOR ASSEMBLY AND
TENSION PULLEY 55-116**

REMOVAL AND INSTALLATION 55-116

INSPECTION 55-119

DISASSEMBLY AND ASSEMBLY 55-120

INSPECTION 55-122

**CONDENSER AND CONDENSER FAN
MOTOR 55-123**

REMOVAL AND INSTALLATION 55-123

INSPECTION 55-124

REFRIGERANT LINE 55-125

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VENTILATORS 55-127

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SPECIFICATIONS 55-129

FASTENER TIGHTENING

SPECIFICATIONS 55-129

GENERAL SPECIFICATIONS 55-129

SERVICE SPECIFICATIONS 55-129

LUBRICANTS 55-129

GENERAL DESCRIPTION

M1552000100395

The heater system uses a two-way-flow full-air-mix system that features high performance and low operating noise. It includes an independent face air blowing function. In addition, an air purifier has been included.

| Items | | Specifications |
|---------------------------------|----------------------|--|
| Heater unit | Type | Two-way-flow full-air-mix system |
| Heater control assembly | | Dial type |
| Compressor | Model | Scroll type <MSC90C> |
| Dual pressure switch kPa (psi) | High-pressure switch | ON to OFF: 2,942 (426.7), OFF to ON: 2,354 (341.4) |
| | Low-pressure switch | ON to OFF: 196 (28.4), OFF to ON: 221 (32.1) |
| Refrigerant and quantity g (oz) | | R-134a (HFC-134a), Approximately 480 – 520 (16.93 – 18.34) |

SAFETY PRECAUTIONS

⚠ WARNING

Wear safety goggles and gloves when servicing the refrigeration system to prevent severe damage to eyes and hands.

Because R-134a refrigerant is a hydro fluorocarbon (HFC) which contains hydrogen atoms in place of chlorine atoms, it will not cause damage to the ozone layer.

Ozone filters out harmful radiation from the sun. To assist in protecting the ozone layer, Mitsubishi Motors Corporation recommends an R-134a refrigerant recycling device.

Refrigerant R-134a is transparent and colorless in both the liquid and vapor state. Since it has a boiling point of -29.8°C (-21.64°F) at atmospheric pressure, it will be a vapor at all normal temperatures and pressures. The vapor is heavier than air, non-flammable, and non-explosive. The following precautions must be observed when handling R-134a.

⚠ WARNING

Do not heat R-134a above 40°C (104.0°F) or it may catch fire and explode.

R-134a evaporates so rapidly at normal atmospheric pressures and temperatures that it tends to freeze anything it contacts. For this reason, extreme care must be taken to prevent any liquid refrigerant from contacting the skin and especially the eyes. Always wear safety goggles when servicing the refrigeration part of the A/C system. Keep a bottle of sterile mineral oil handy when working on the refrigeration system.

1. Should any liquid refrigerant get into the eyes, use a few drops of mineral oil to wash them out. R-134a is rapidly absorbed by the oil.
2. Next splash the eyes with plenty of cold water.
3. Call your doctor immediately even though irritation has ceased after treatment.

⚠ CAUTION

Keep R-134a containers upright when charging the system.

In most instances, moderate heat is required to bring the pressure of the refrigerant in its container above the pressure of the system when charging or adding refrigerant.

A bucket or large pan of hot water not over 40°C (104.0°F) is all the heat required for this purpose. Do not heat the refrigerant container with a blow torch or any other means that would raise temperature and pressure above this temperature. Do not weld or steam clean on or near the system components or refrigerant lines.

⚠ WARNING

The leak detector for R-134a should be used to check for refrigerant gas leaks.

⚠ CAUTION

Do not allow liquid refrigerant to touch bright metal or it will be stained.

When metering R-134a into the refrigeration system keep the supply tank or cans in an upright position. If the refrigerant container is on its side or upside down, liquid refrigerant will enter the system and damage the compressor.

Refrigerant will tarnish bright metal and chrome surfaces, and in combination with moisture can severely corrode all metal surfaces.

OPERATION**CONDENSER FAN AND RADIATOR FAN CONTROL**

For the operation of each fan, refer to GROUP 14, Diagnosis - Symptom Chart [P.14-4](#).

COMPRESSOR CONTROL**When operating the air conditioning switch**

- The air thermo sensor, which senses the temperature of the air flowing out of the evaporator, deactivates the compressor at 5 °C (41.0 °F) or below.
- The dual pressure switch turns OFF when the refrigerant pressure becomes excessively high or low, thus protecting the compressor circuit. (See Table below.)

- When the air thermo sensor is activated, the dual pressure switch is ON, and the ignition switch, blower switch, and air conditioning switch are ON, the A/C compressor clutch relay is energized.

When operating the air outlet changeover control knob

- When the air outlet changeover control knob is moved to DEFROSTER or DEFROSTER/FOOT position, the defroster switch, which is connected in series to the air conditioning switch, is turned on. The other compressor control than the above is the same as that when operating the air conditioning switch.

A/c Compressor Clutch Relay ON Conditions

| | | | |
|--|---|----|---|
| Ignition switch (IG2) | | ON | <i>NOTE: A/C compressor clutch relay is de-energized when any one switch, sensor or control unit shown on the left turns off.</i> <i>NOTE: The * marked device measures the temperature of the outlet air, and according to the control characteristics of the A/C Compressor Clutch for the compressor, the automatic compressor controller outputs the "HI" signal (12V). When air of 5 °C (41.0 °F) or less blows out of the evaporator, the compressor A/C Compressor Clutch will be turned off.</i> |
| Blower switch | | ON | |
| Air conditioning switch or defroster switch | | ON | |
| Air thermo sensor | | * | |
| Dual pressure switch | Low-pressure side 221 kPa (32.1 psi) or higher | ON | |
| | High-pressure side 2,354 kPa (341.4 psi) or below | ON | |
| A/C compressor clutch relay driving transistor (within engine control module <M/T>, powertrain control module <A/T>) | | ON | |

MANUAL A/C DIAGNOSIS

INTRODUCTION TO HEATER, AIR CONDITIONING AND VENTILATION DIAGNOSIS

M1552012200162

With this system, after the outside air or inside air is taken in through the damper, it is fed to the evaporator by the blower fan and motor and cooled. The air cooled by the air mix damper is mixed appropriately with the warmed air to achieve a comfortable temperature. If the A/C does not operate or the cooled air is not discharged, the machine components or relay may be faulty.

HEATER, AIR CONDITIONING AND VENTILATION DIAGNOSTIC TROUBLESHOOTING STRATEGY

M1552009600171

Use these steps to plan your diagnostic strategy. If you follow them carefully, you will be sure that you have exhausted most of the possible ways to find a heater, air conditioning and ventilation fault.

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.

SYMPTOM CHART

M1552009900525

| SYMPTOMS | INSPECTION PROCEDURE | REFERENCE PAGE |
|---|----------------------|-------------------------------------|
| When the Ignition switch is "ON" the A/C does not. | 1 | P.55-6 |
| When the air outlet changeover control knob is moved to DEFROSTER or DEFROSTER/FOOT position, the A/C or the inside/outside air changeover damper motor does not operate. | 2 | P.55-6 |
| Inside/Outside air changeover not possible. | 3 | P.55-8 |
| When the A/C is operating, temperature inside the passenger compartment does not decrease (cool air is not emitted). <2.0 L> | 4 | P.55-14 |
| When the A/C is operating, temperature inside the passenger compartment does not decrease (cool air is not emitted). <2.4 L> | 5 | P.55-39 |
| Blower fan and motor does not turn. | 6 | P.55-64 |
| Blower air amount cannot be changed | 7 | P.55-76 |
| Defroster function does not operate. | 8 | P.55-81 |
| Defroster Timer function does not operate. | 9 | P.55-92 |
| Malfunction of the A/C-ECU Power Supply system. | 10 | P.55-92 |
| Condenser fan does not operate. | - | Refer to GROUP 14, Diagnosis P.14-4 |

SYMPTOM PROCEDURES

INSPECTION PROCEDURE 1: When the Ignition Switch is "ON" the A/C does not operate.

TECHNICAL DESCRIPTION (COMMENT)

The blower system or the compressor system may be defective if there is no cool air coming from the spit hole.

TROUBLESHOOTING HINTS

- Malfunction of blower motor
- Malfunction of A/C compressor

DIAGNOSIS

STEP 1. Check that the blower motor operation when the blower switch is moved to the "HI" position.

- (1) Turn the ignition switch to the "ON" position.
- (2) Turn the blower switch to the "4" position.

Q: Does the blower motor operate when the blower switch is moved to the "HI" position?

YES <2000> : Refer to Inspection procedure 4 "When the A/C is operating, Temperature inside the Passenger compartment does not decrease (cool air not emitted)[P.55-14.](#)"

YES <2400> : Refer to Inspection procedure 5 "When the A/C is operating, Temperature inside the Passenger compartment does not decrease (cool air not emitted)[P.55-39.](#)"

NO : Refer to Inspection procedure 6 "Blower fan and motor does not turn"[P.55-64.](#)"

INSPECTION PROCEDURE 2: When the Air Outlet Changeover Control Knob is Moved to Defroster or Defroster/Foot Position, the A/C or the Inside/outside Air Changeover Damper Motor does not operate.

TECHNICAL DESCRIPTION (COMMENT)

If the inside/outside air changeover damper motor does not operate normally, the inside/outside air changeover damper motor system may be defective.

TROUBLESHOOTING HINTS

- Malformation of the A/C-ECU
- Malformation of the inside/outside air changeover damper motor
- Damaged harness wires or connectors

DIAGNOSIS

STEP 1. Check operations of the outside/inside air selection damper control motor.

- (1) Turn the ignition switch to the "ON" position.
- (2) Outside/Inside Air Selection Damper Motor Switch: This is used to switch from the inside air to outside air or vice version.
- (3) Check to see that the outside/inside air selection damper motor operates normally.

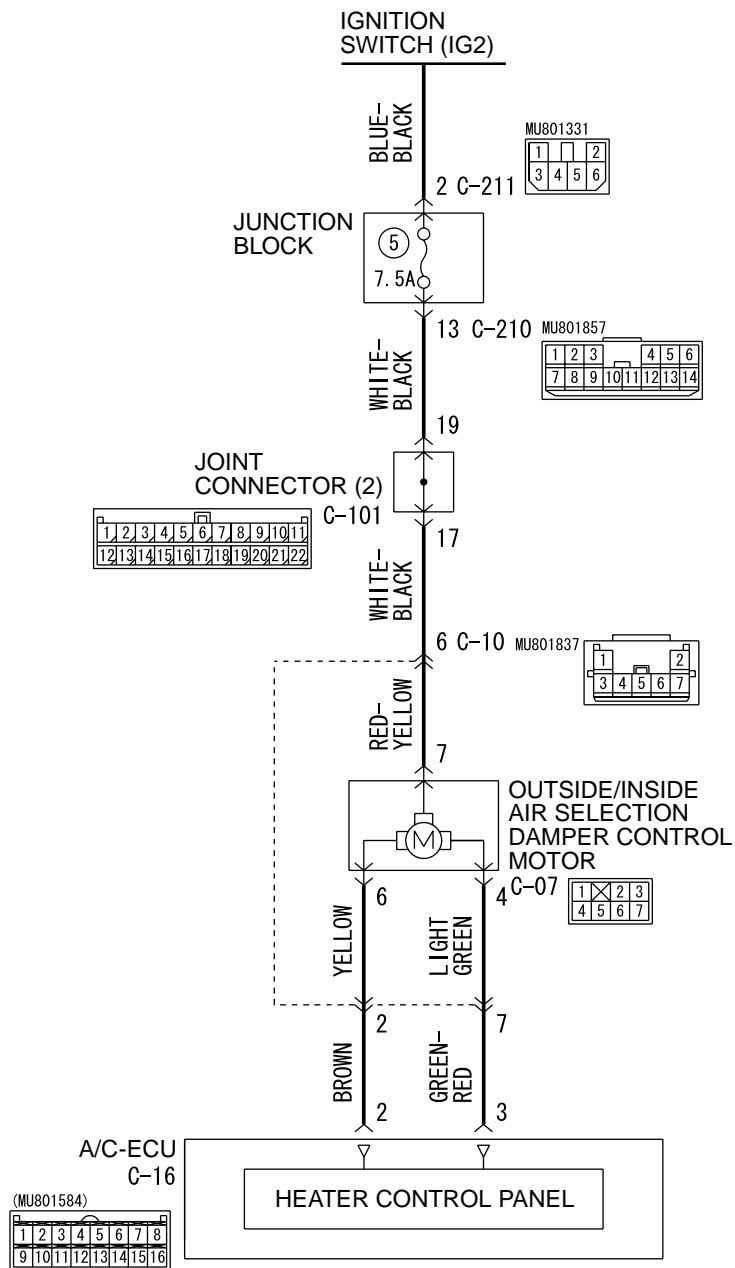
Q: Does outside/inside air selection damper control motor work normally?

YES : Replace the A/C-ECU.

NO : Refer to Inspection procedure 3 "Inside/Outside Air changeover is not possible [P.55-8](#)."

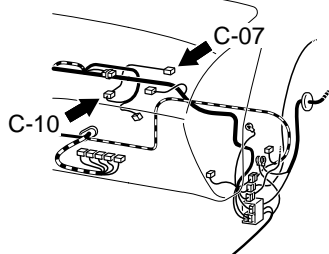
INSPECTION PROCEDURE 3: Inside/Outside Air Changeover is not possible.

Inside/Outside Air Changeover Damper Motor Circuit



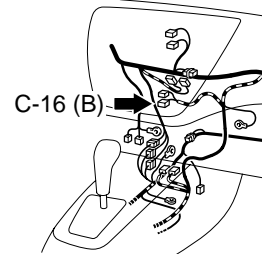
W4J55M11AA

CONNECTOR: C-07, C-10



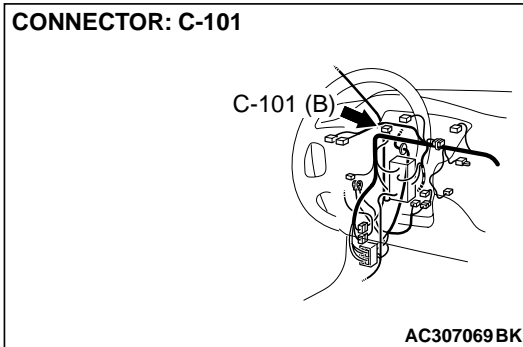
AC307073AV

CONNECTOR: C-16

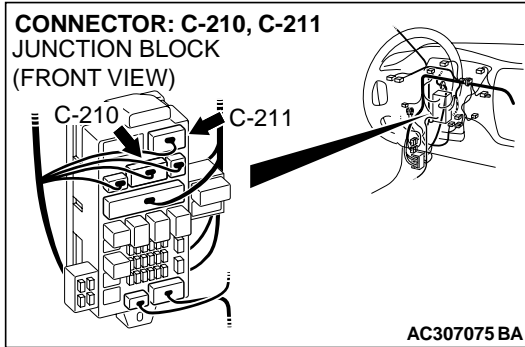


AC307071AQ

CONNECTOR: C-101



**CONNECTOR: C-210, C-211
JUNCTION BLOCK
(FRONT VIEW)**



CIRCUIT OPERATION

The inside/outside air changeover damper motor is energized through the ignition switch (IG2). The motor is controlled by the A/C-ECU.

TECHNICAL DESCRIPTION

If the inside/outside air changeover damper motor does not operate normally, the inside/outside air changeover damper motor system may be defective.

TROUBLESHOOTING HINTS

- Malformation of the inside/outside air changeover damper motor
- Malformation of the A/C-ECU
- Damaged harness wires or connectors

DIAGNOSIS

Required Special Tool:

- MB991223: Test Harness Set

STEP 1. Check the defogger and A/C operations.

Q: Do the defogger and A/C work normally?

YES : Go to Step 2.

NO : Refer to Inspection procedure 10 "Malfunction of the A/C-ECU Power Supply system" [P.55-92.](#)

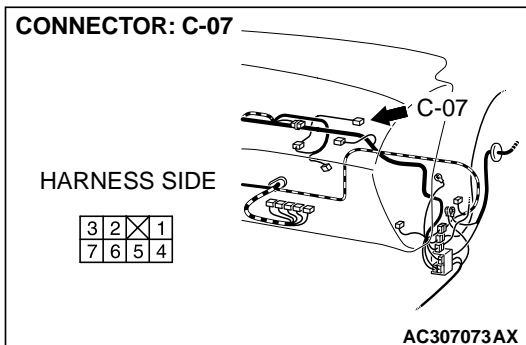
STEP 2. Check outside/inside air selection damper control motor connector C-07 for damage.

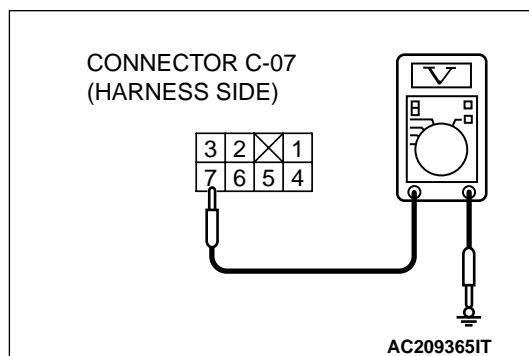
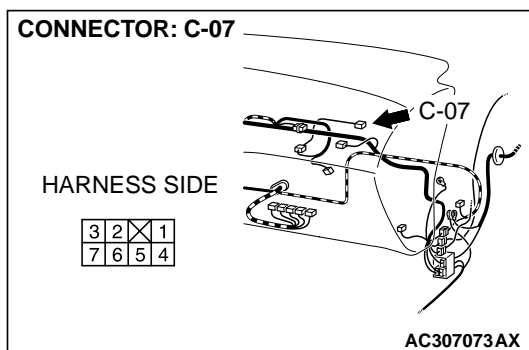
Q: Is outside/inside air selection damper control motor connector C-07 in good condition?

YES : Go to Step 3.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the outside/inside air selection damper control motor works normally.

CONNECTOR: C-07





STEP 3. Measure the voltage at outside/inside air selection damper control motor connector C-07.

- (1) Disconnect outside/inside air selection damper control motor connector C-07, and measure the voltage at the harness side.
- (2) Turn the ignition switch to the "ON" position.

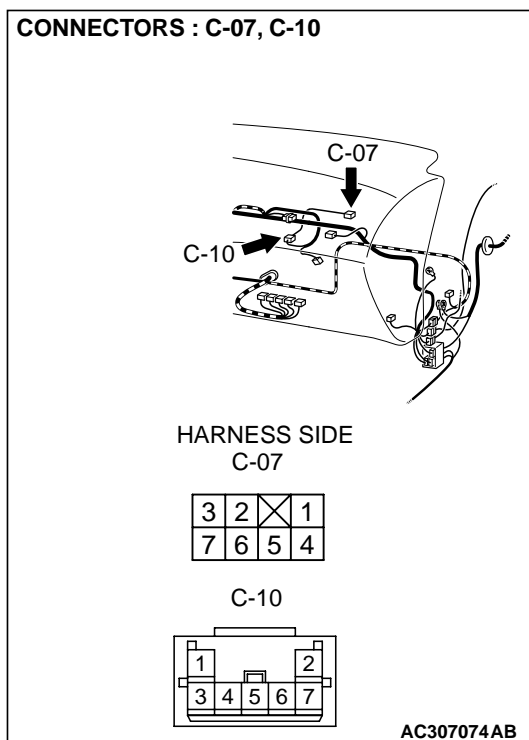
- (3) Measure the voltage between terminal 7 and ground.
 - The measured value should be approximately 12 volts (battery positive voltage).

Q: Does the measured voltage correspond with this range?

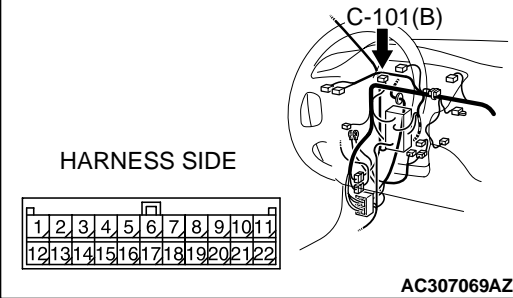
YES : Go to Step 5.

NO : Go to Step 4.

STEP 4. Check the wiring harness between outside/inside air selection damper control motor connector C-07 (terminal 7) and the ignition switch (IG2).



CONNECTOR : C-101



NOTE: Also check intermediate connector C-10, joint connector (2) C-101, junction block connectors C-210 and C-211. If intermediate connector C-10, joint connector (2) C-101, junction block connectors C-210 or C-211 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between outside/inside air selection damper control motor connector C-07 (terminal 7) and the ignition switch (IG2) in good condition?

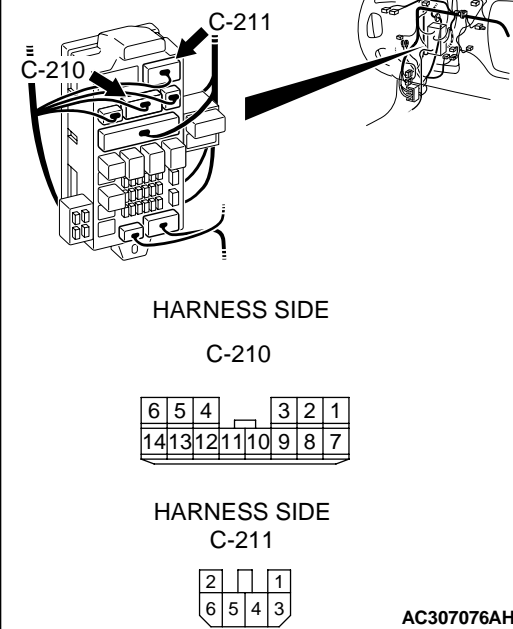
YES : It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use

Troubleshooting/Inspection Service Points [P.00-6](#).

NO : Repair the wiring harness. Check that the outside/inside air selection damper control motor works normally.

CONNECTORS : C-210, C-211

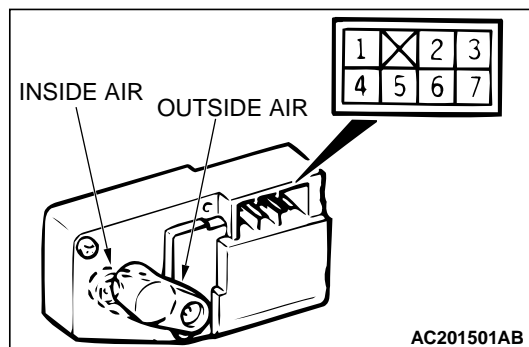
JUNCTION BLOCK
(FRONT VIEW)



STEP 5. Check the outside/inside air selection damper control motor**⚠ CAUTION**

Cut off the battery voltage when the damper is in the inside or outside air position.

Check the outside/inside air selection damper control motor by the following procedures.



| LEVER POSITION | BATTERY CONNECTION | LEVER OPERATION |
|-------------------------|--|--|
| At the inside position | <ul style="list-style-type: none"> Connect terminal 7 to the positive battery terminal Connect terminal 6 to the negative battery terminal | The lever moves from the inside position to the outside position |
| At the outside position | <ul style="list-style-type: none"> Connect terminal 7 to the positive battery terminal Connect terminal 4 to the negative battery terminal | The lever moves from the outside position to the inside position |

Q: Does outside/inside air selection damper control motor work normally?

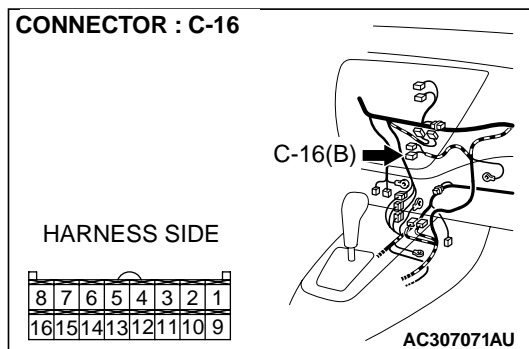
YES : Go to Step 6.

NO : Replace the outside/inside air selection damper control motor. Check that the outside/inside air selection damper control motor works normally.

STEP 6. Check A/C-ECU connector C-16 for damage.**Q: Is A/C-ECU connector C-16 in good condition?**

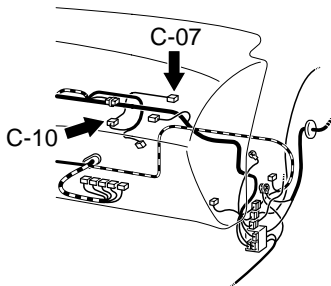
YES : Go to Step 7.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the outside/inside air selection damper control motor works normally.



STEP 7. Check the wiring harness between outside/inside air selection damper control motor connector C-07 (terminals 6 and 4) and A/C-ECU C-16 (terminals 2 and 3).

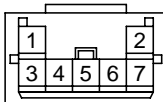
CONNECTORS : C-07, C-10



HARNESS SIDE
C-07

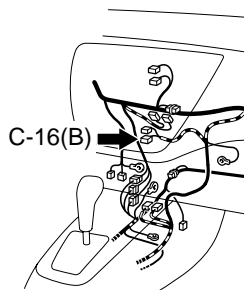
| | | |
|---|---|---|
| 3 | 2 | 1 |
| 7 | 6 | 5 |

C-10



AC307074AB

CONNECTOR : C-16



HARNESS SIDE

| | | | | | | | |
|----|----|----|----|----|----|----|---|
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 |

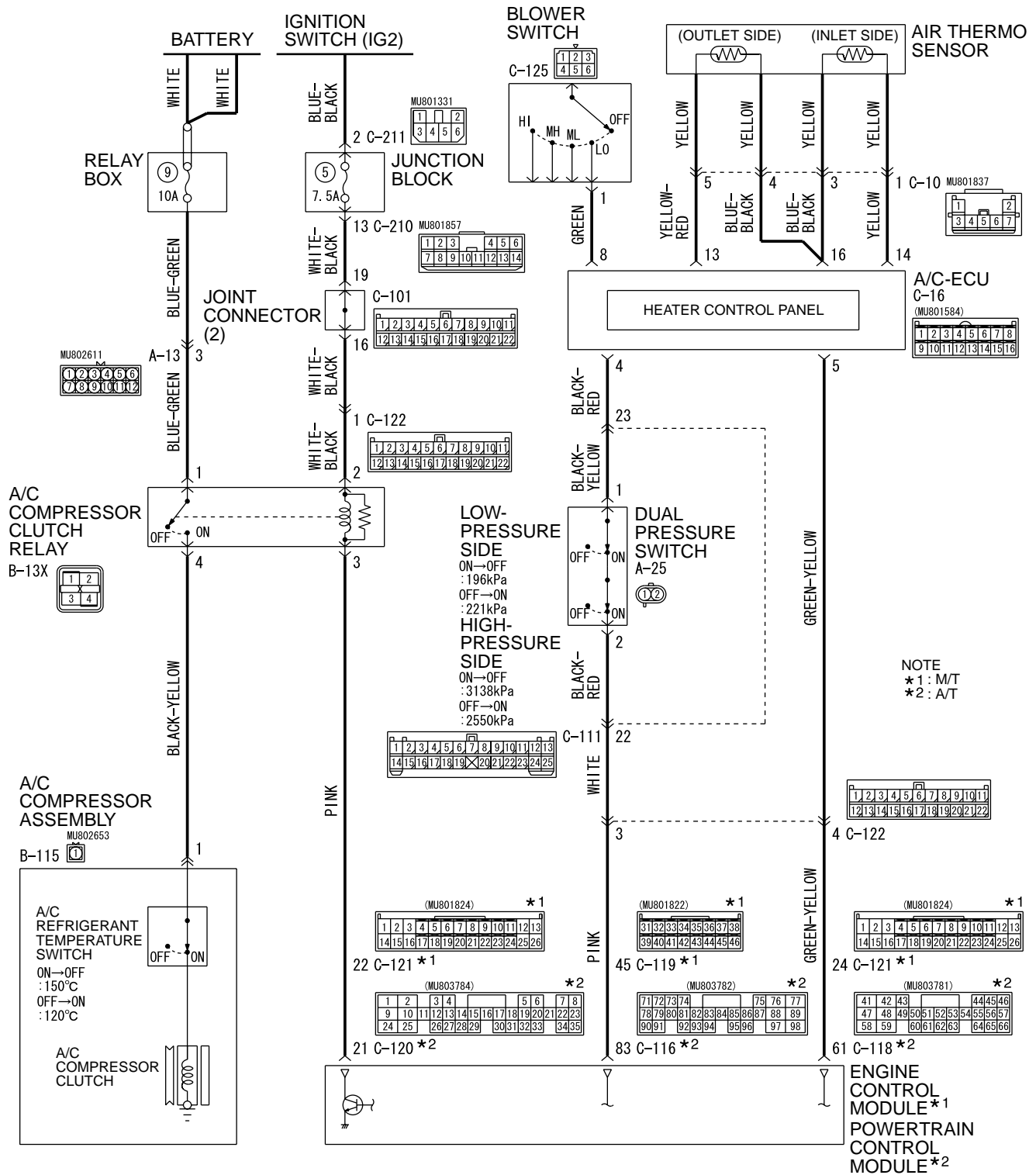
AC307071AU

NOTE: Also check intermediate connector C-10. If intermediate connectors C-10 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between outside/inside air selection damper control motor connector C-07 (terminal 6 and 4) and A/C-ECU C-16 (terminal 2 and 3) in good condition?

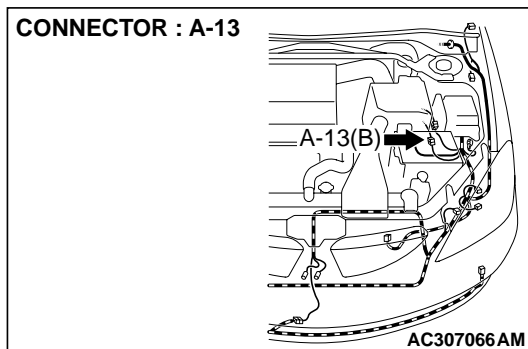
YES : Replace the A/C-ECU, and check that the outside/inside air selection damper control motor works normally.

NO : Repair the wiring harness. Check that the outside/inside air selection damper control motor works normally.

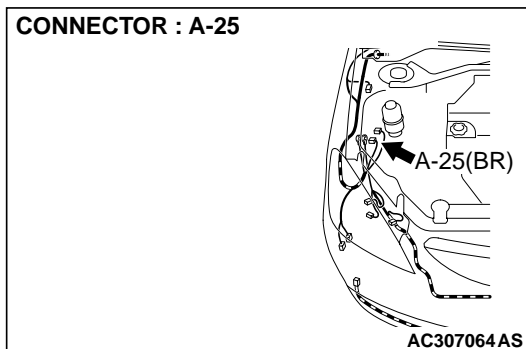
INSPECTION PROCEDURE 4: When the A/C is Operating, Temperature Inside the Passenger Compartment does not Decrease (Cool Air is not Emitted). <2.0 L>**A/C Compressor and Air Thermo Sensor Circuit**

W4J55M09AA

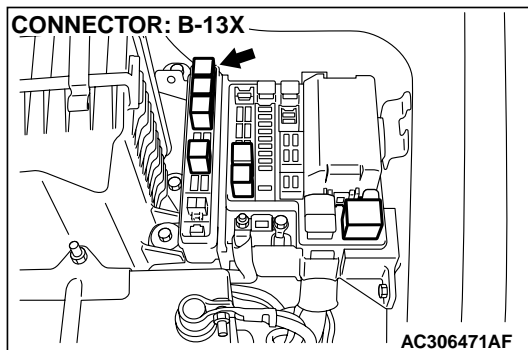
CONNECTOR : A-13



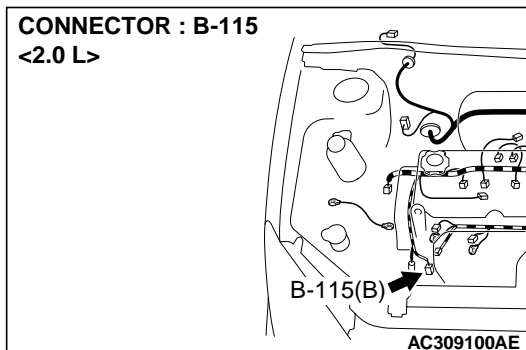
CONNECTOR : A-25



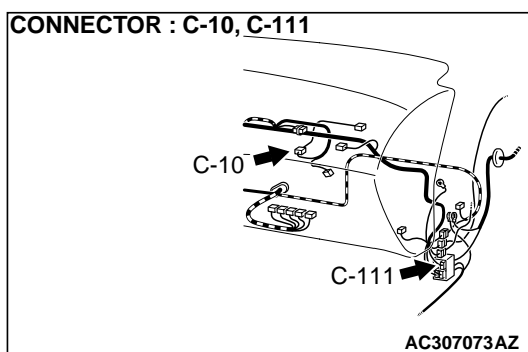
CONNECTOR: B-13X



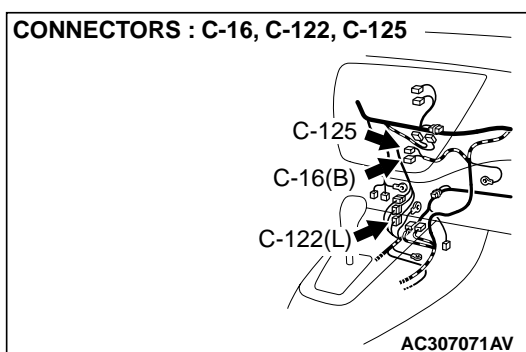
CONNECTOR : B-115
<2.0 L>



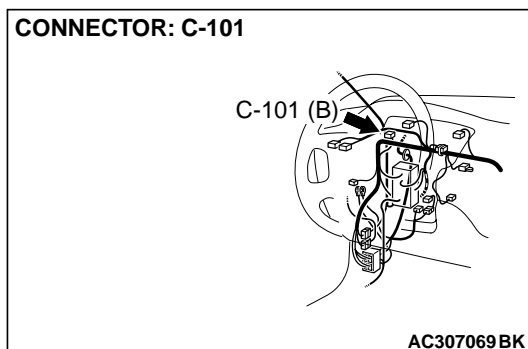
CONNECTOR : C-10, C-111



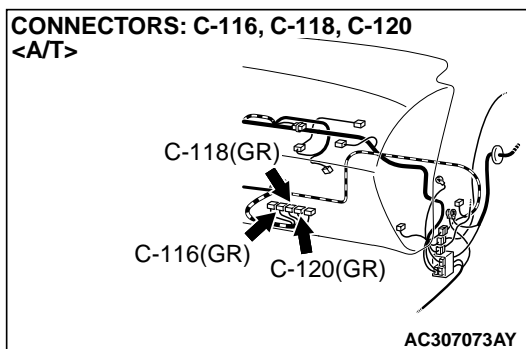
CONNECTORS : C-16, C-122, C-125

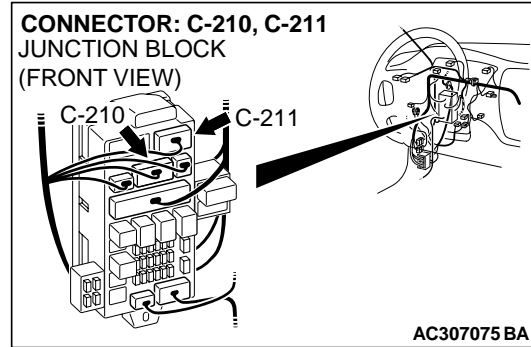
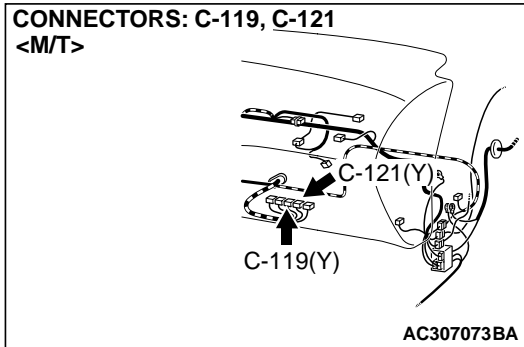


CONNECTOR: C-101



CONNECTORS: C-116, C-118, C-120
<A/T>



**TECHNICAL DESCRIPTION (COMMENT)**

If cool air is not distributed when the A/C switch is on, the air thermo sensor or the A/C compressor clutch relay system may be defective.

TROUBLESHOOTING HINTS

- Malformation of the air thermo sensor

- Malformation of the dual pressure switch
- Malformation of the A/C compressor clutch relay
- Malformation of the A/C refrigerant temperature switch
- Malformation of the A/C/ compressor clutch
- Malformation of the A/C-ECU
- Malformation of the ECM or PCM

DIAGNOSIS**Required Special Tool:**

- MB991223: Test Harness Set

STEP 1. Check the defogger and outside/inside air selection damper control motor operation.

Q: Do the defogger and outside/inside air selection damper control motor work normally?

YES : Go to Step 2.

NO : Refer to Inspection procedure 10 "Malfunction does not operate [P.55-92](#)."

STEP 2. Check the blower motor operation.

Q: Does the blower motor work normally?

YES : Go to Step 3.

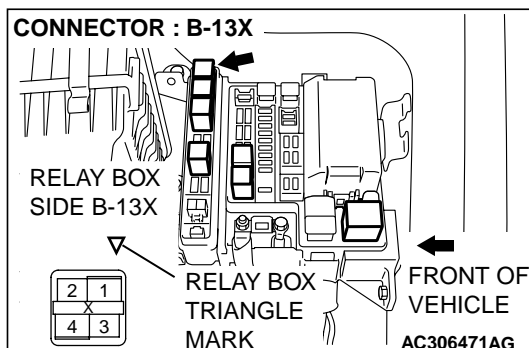
NO : Refer to Inspection procedure 6 "Blower Fan and motor does not turn [P.55-64](#)."

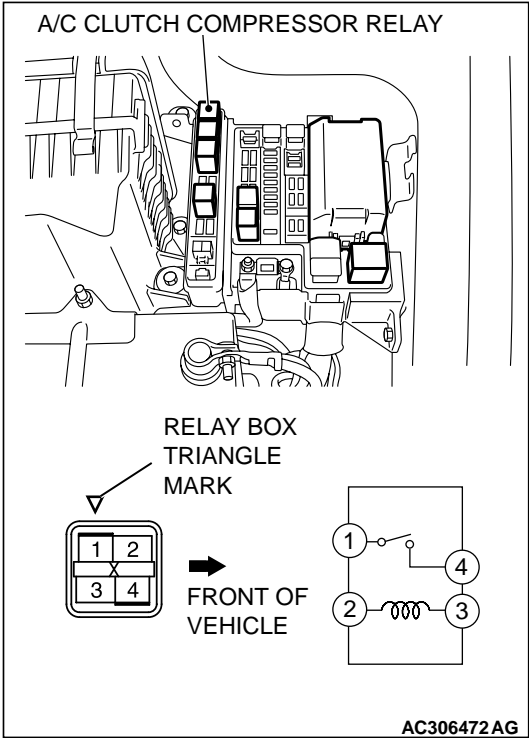
STEP 3. Check A/C compressor clutch relay connector B-13X for damage.

Q: Is A/C compressor clutch relay connector B-13X in good condition?

YES : Go to Step 4.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the air conditioning works normally.





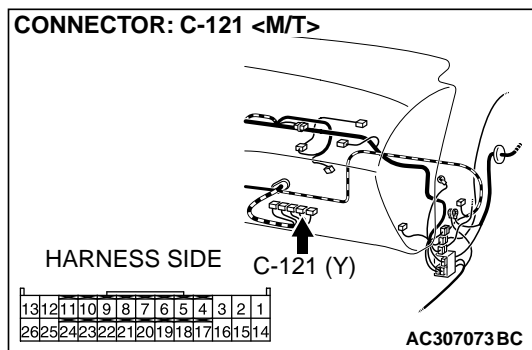
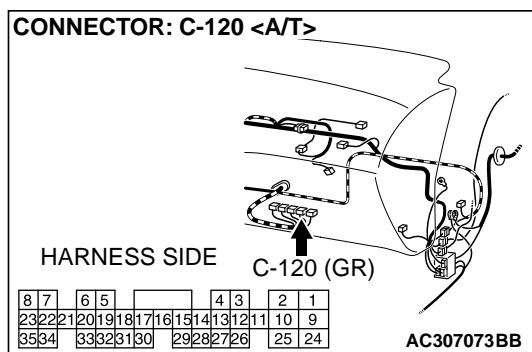
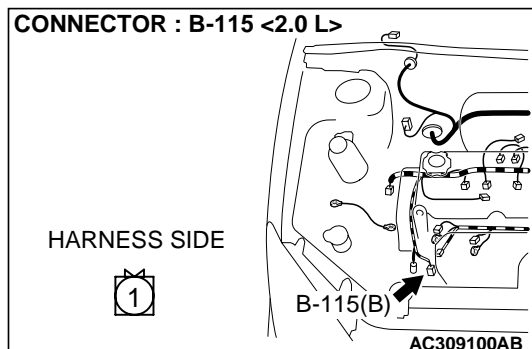
STEP 4. Check the A/C compressor clutch relay continuity.
Follow the table below to check the A/C compressor clutch relay for continuity.

| BATTERY VOLTAGE | TESTER CONNECTION | SPECIFIED CONDITION |
|---|-------------------|---------------------|
| Not applied | 1 – 4 | Open circuit |
| <ul style="list-style-type: none">Connect terminal 2 to the positive battery terminalConnect terminal 3 to the negative battery terminal | 1 – 4 | Less than 2 ohms |

Q: Is the A/C compressor clutch relay in good condition?

YES : Go to Step 5.

NO : Replace the A/C compressor clutch relay. Check that the air conditioning works normally.

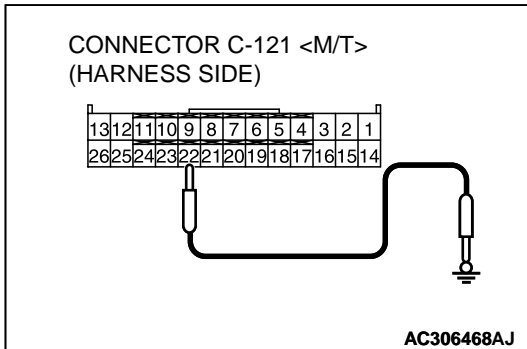
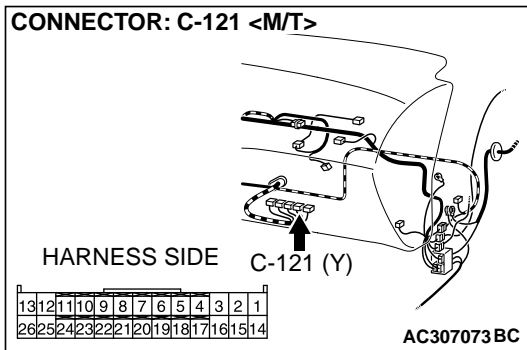
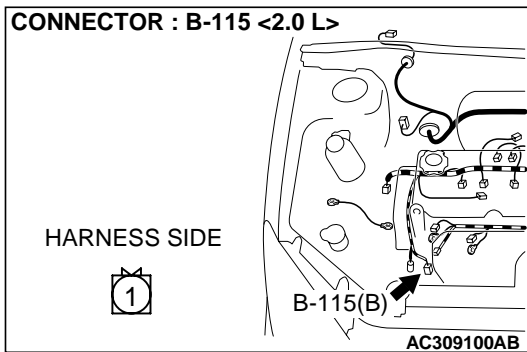


STEP 5. Check A/C compressor connector B-115 and engine control module connector C-121 <M/T> or powertrain control module connector C-120 <A/T> for damage.

Q: Are A/C compressor connector B-115 and engine control module connector C-121 <M/T> or powertrain control module connector C-120 <A/T> in good condition?

YES : Go to Step 6.

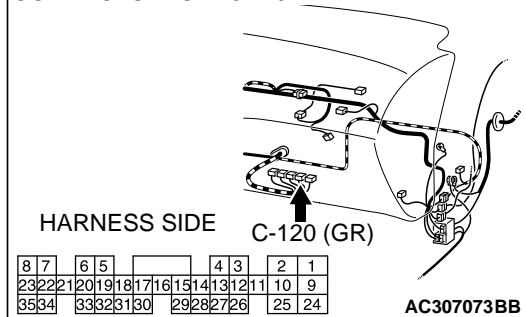
NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the air conditioning works normally.



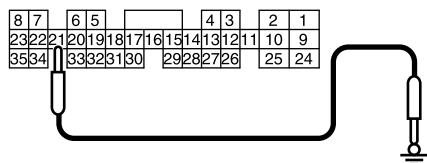
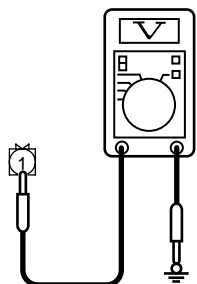
STEP 6. Measure the voltage at A/C compressor connector B-115.

(1) Disconnect A/C compressor connector B-115 and measure the voltage at the harness side.

(2) Disconnect engine control module connector C-121 and ground harness side terminal No.22. <M/T>

CONNECTOR: C-120 <A/T>

- (3) Disconnect powertrain control module connector C-120 and ground harness side terminal No.21. <A/T>
 (4) Turn the ignition switch to the "ON" position.

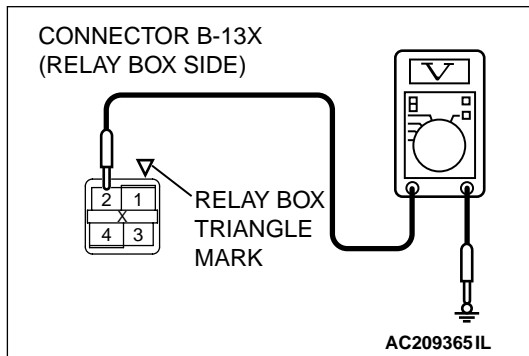
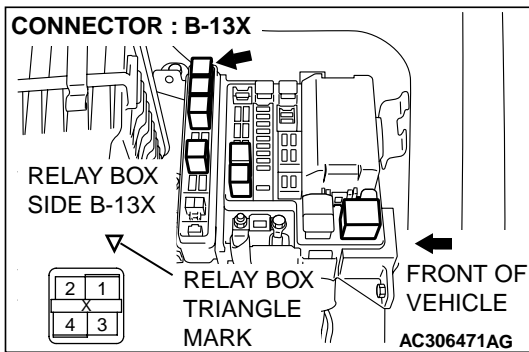
**CONNECTOR C-120 <A/T>
(HARNESS SIDE)****CONNECTOR B-115
(HARNESS SIDE)**

- (5) Measure the voltage between terminal 1 and ground.
 • The measured value should be approximately 12 volts (battery positive voltage).

Q: Does the measured voltage correspond with this range?

YES : Go to Step 14.

NO : Go to Step 7.



STEP 7. Measure the voltage at A/C compressor clutch relay connector B-13X.

(1) Disconnect A/C compressor connector B-13X and measure the voltage at the relay box side.

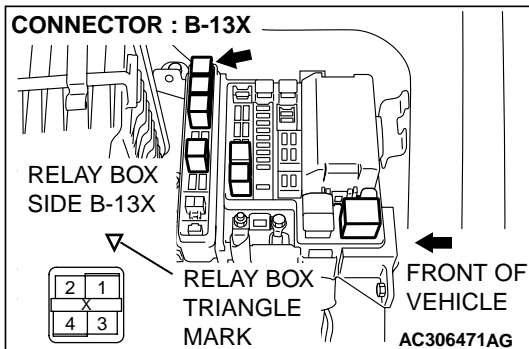
(2) Measure the voltage between terminal 2 and ground.

- The measured value should be approximately 12 volts (battery positive voltage).

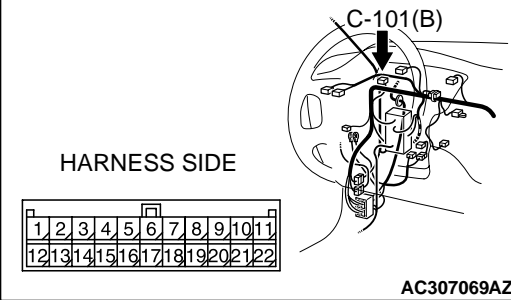
Q: Does the measured voltage correspond with this range?

YES : Go to Step 9.

NO : Go to Step 8.



STEP 8. Check the wiring harness between A/C compressor clutch relay connector B-13X (terminal 2) and the ignition switch (IG2).

CONNECTOR : C-101

NOTE: Also check intermediate connector C-122, joint connector (2) C-101, junction block connectors C-210 and C-211. If intermediate connector C-122, joint connector (2) C-101, or junction block connectors C-210 or C-211 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

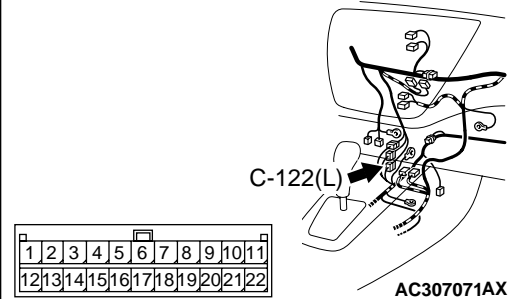
Q: Is the wiring harness between A/C compressor clutch relay connector B-13X (terminal 2) and the ignition switch (IG2) in good condition?

YES : It can be assumed that this malfunction is intermittent.

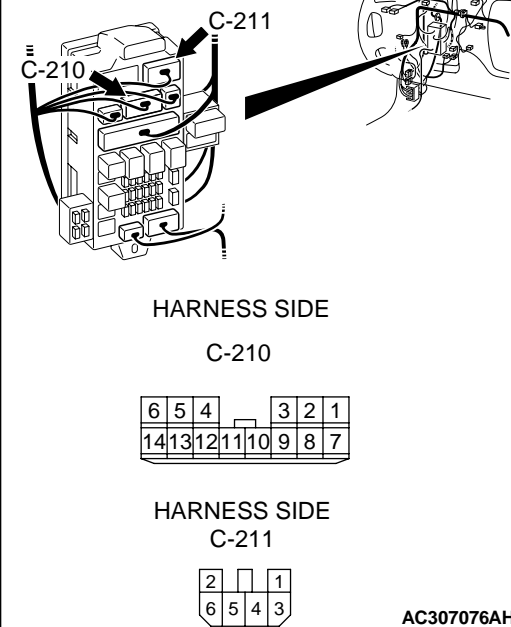
Refer to GROUP 00, How to Use

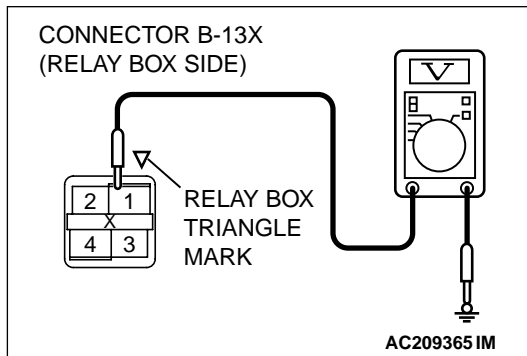
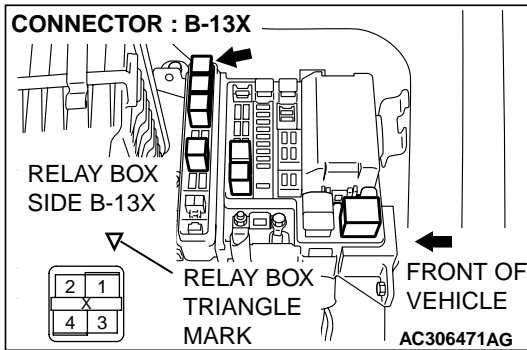
Troubleshooting/Inspection Service Points [P.00-6](#).

NO : Repair the wiring harness. Check that the air conditioning works normally.

CONNECTOR : C-122**CONNECTORS : C-210, C-211**

JUNCTION BLOCK
(FRONT VIEW)





STEP 9. Measure the voltage at A/C compressor clutch relay connector B-13X.

(1) Disconnect A/C compressor connector B-13X and measure the voltage at the relay box side.

(2) Measure the voltage between terminal 1 and ground.

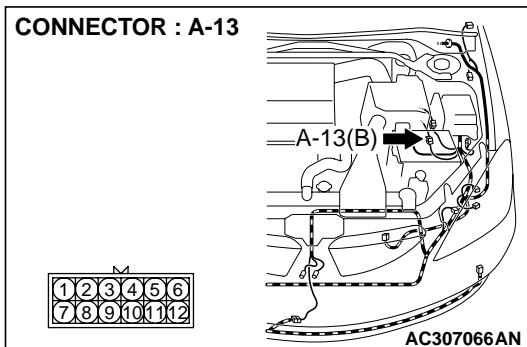
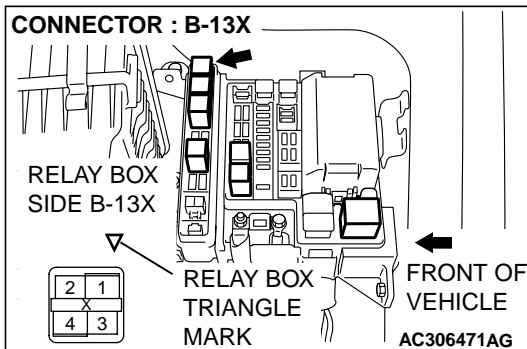
- The measured value should be approximately 12 volts (battery positive voltage).

Q: Does the measured voltage correspond with this range?

YES : Go to Step 11.

NO : Go to Step 10.

STEP 10. Check the wiring harness between A/C compressor clutch relay connector B-13X (terminal 1) and the battery.

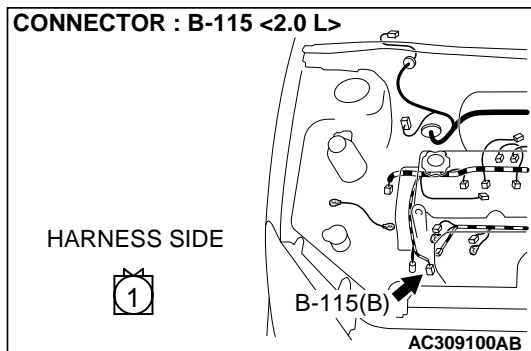
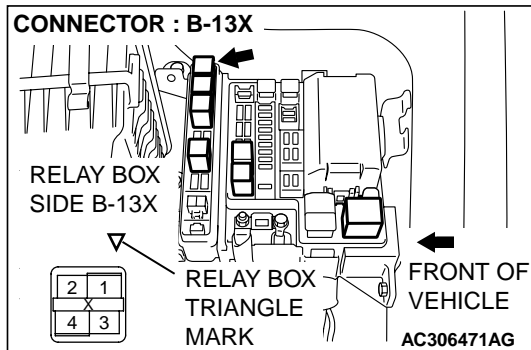


NOTE: Also check intermediate connector A-13. If intermediate connectors A-13 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between A/C compressor clutch relay connector B-13X (terminal 1) and the battery in good condition?

YES : Check that the air conditioning works normally.

NO : Repair the wiring harness. Check that the air conditioning works normally.



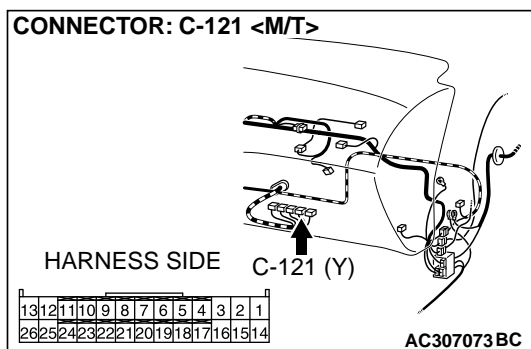
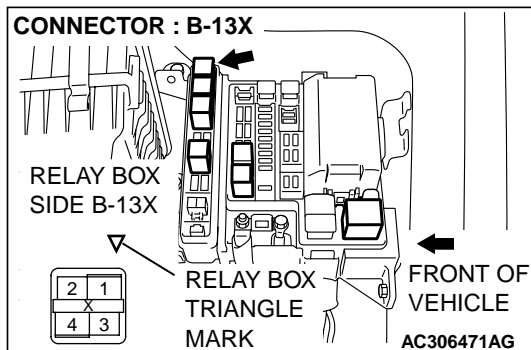
STEP 11. Check the wiring harness between A/C compressor clutch relay connector B-13X (terminal 4) and A/C compressor connector B-115 (terminal 1).

Q: Is the wiring harness between A/C compressor clutch relay connector B-13X (terminal 4) and A/C compressor connector B-115 (terminal 1) in good condition?

YES <M/T> : Go to Step 12.

YES <A/T> : Go to Step 13.

NO : Repair the wiring harness. Check that the air conditioning works normally.

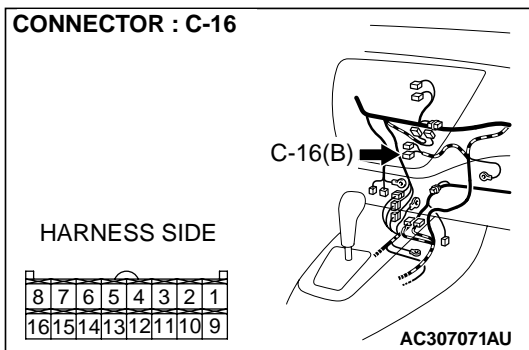
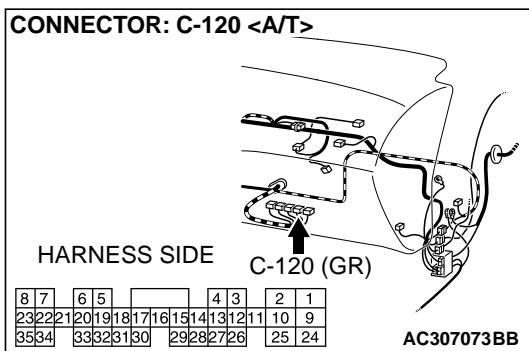
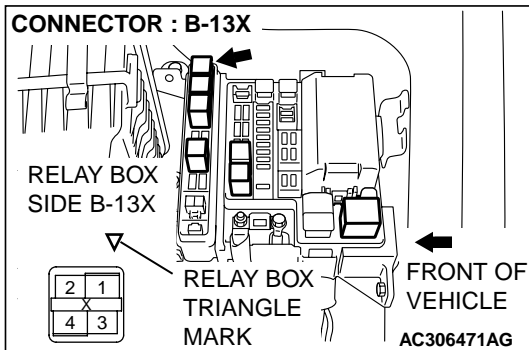


STEP 12. Check the wiring harness between engine control module connector C-121 (terminal 22) and A/C compressor clutch relay connector B-13X (terminal 3).

Q: Is the wiring harness between engine control module connector C-121 (terminal 22) and A/C compressor clutch relay connector B-13X (terminal 3) in good condition?

YES : It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#).

NO : Repair the wiring harness. Check that the air conditioning works normally.



STEP 13. Check the wiring harness between powertrain control module connector C-120 (terminal 21) and A/C compressor clutch relay connector B-13X (terminal 3).

Q: Is the wiring harness between powertrain control module connector C-120 (terminal 21) and A/C compressor clutch relay connector B-13X (terminal 3) in good condition?

YES : It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#).

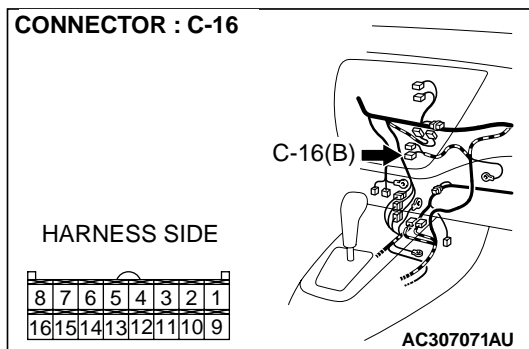
NO : Repair the wiring harness. Check that the air conditioning works normally.

STEP 14. Check A/C-ECU connector C-16 for damage.

Q: Is A/C-ECU connector C-16 in good condition?

YES : Go to Step 15.

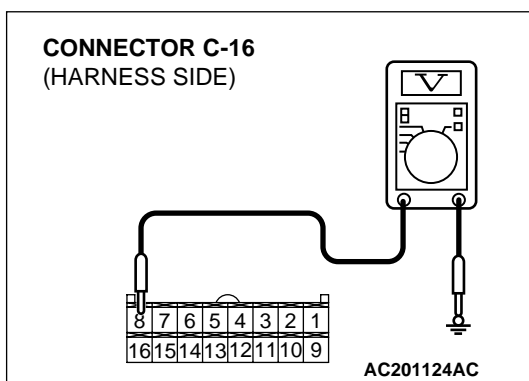
NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the air conditioning works normally.

CONNECTOR : C-16

HARNESS SIDE

| | | | | | | | |
|----|----|----|----|----|----|----|---|
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 |

AC307071AU

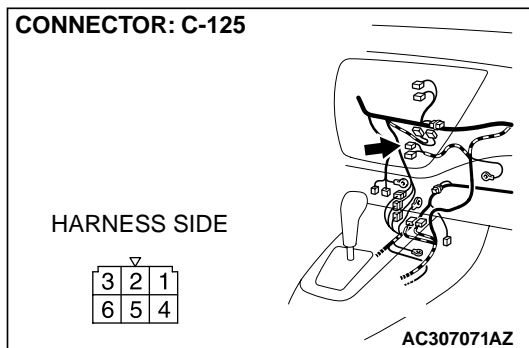
**CONNECTOR C-16
(HARNESS SIDE)**

AC201124AC

STEP 15. Measure the voltage at A/C-ECU connector C-16.

- (1) Disconnect A/C-ECU connector C-16 and measure the voltage at the relay box side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Turn the Blower switch to the "ON" position.

- (4) Measure the voltage between terminal 8 and ground.
 - The measured value should be approximately 12 volts (battery positive voltage).

Q: Does the measured voltage correspond with this range?**YES :** Go to Step 18.**NO :** Go to Step 16.**CONNECTOR: C-125**

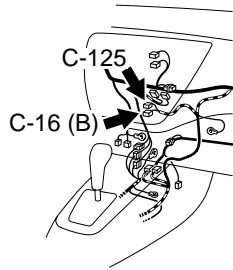
HARNESS SIDE

| | | |
|---|---|---|
| 3 | 2 | 1 |
| 6 | 5 | 4 |

AC307071AZ

STEP 16. Check blower switch connector C-125 for damage.**Q: Is blower switch connector C-125 in good condition?****YES :** Go to Step 17.**NO :** Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the air conditioning works normally.

CONNECTORS: C-16, C-125



HARNESS SIDE
C-16

| | | | | | | | |
|----|----|----|----|----|----|----|---|
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 |

HARNESS SIDE
C-125

| | | |
|---|---|---|
| 3 | 2 | 1 |
| 6 | 5 | 4 |

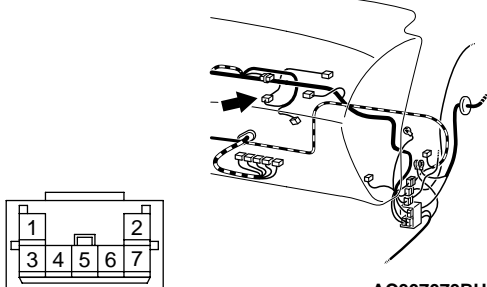
AC307072 AD

STEP 17. Check the wiring harness between blower switch connector C-125 (terminal 1) and A/C-ECU connector C-16 (terminal 8).

Q: Is the wiring harness between blower switch connector C-125 (terminal 1) and A/C-ECU connector C-16 (terminal 8) in good condition?

- YES :** It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#).
- NO :** Repair the wiring harness. Check that the air conditioning works normally.

CONNECTOR : C-10

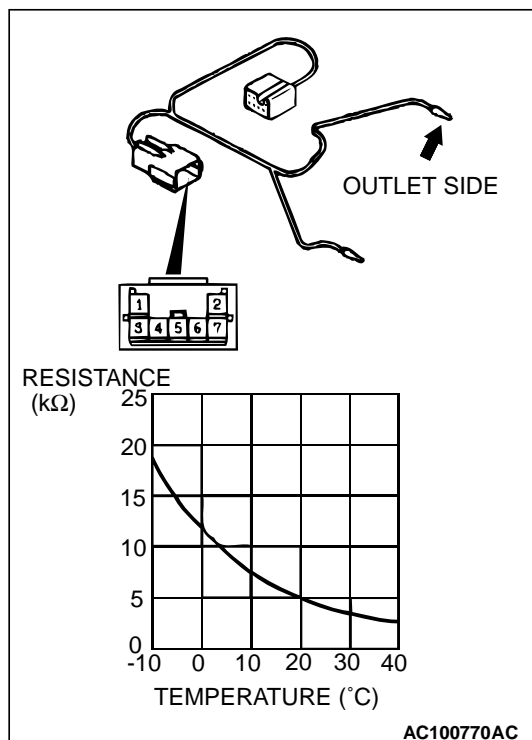


AC307073BH

STEP 18. Check air thermo sensor connector C-10 for damage.

Q: Is air thermo sensor connector C-10 in good condition?

- YES :** Go to Step 19.
- NO :** Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the air conditioning works normally.

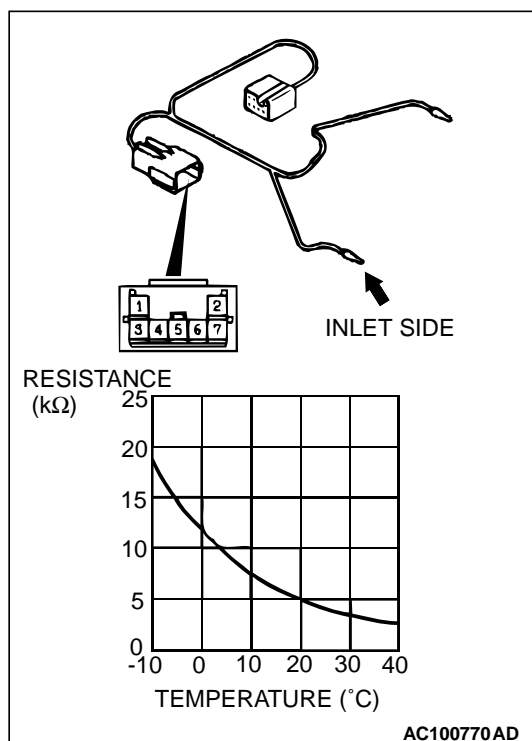
**STEP 19. Check the air thermo sensor (outlet side)**

- (1) Measure the resistance between air thermo sensor (outlet side) terminal numbers 4 and 5 at two points or more.
- (2) Check that the measured value corresponds with approximately the shown value.

Q: Is the air thermo sensor (outlet side) in good condition?

YES : Go to Step 20.

NO : Replace the air thermo sensor. Check that the air conditioning works normally.

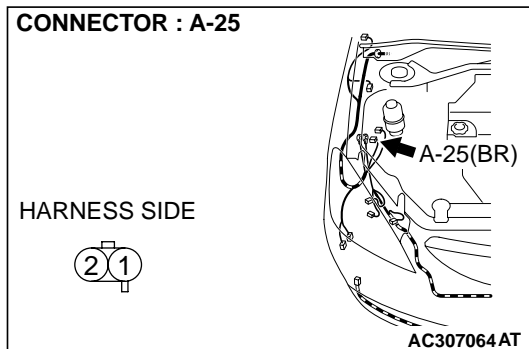
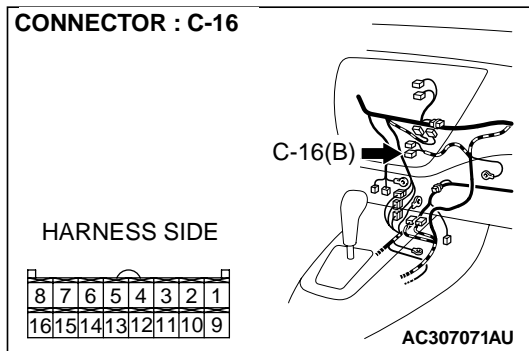
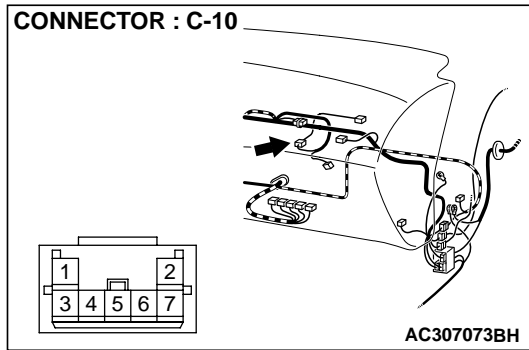
**STEP 20. Check the air thermo sensor (inlet side)**

- (1) Measure the resistance between air thermo sensor (inlet side) terminal numbers 1 and 3 at two points or more.
- (2) Check that the measured value corresponds with approximately the shown value.

Q: Is the air thermo sensor (inlet side) in good condition?

YES : Go to Step 21.

NO : Replace the air thermo sensor. Check that the air conditioning works normally.



STEP 21. Check the wiring harness between air thermo sensor connector C-10 (terminals 1, 3, 4 and 5) and A/C-ECU connector C-16 (terminals 14, 16 and 13).

Q: Are the wiring harness between air thermo sensor connector C-10 (terminals 1, 3, 4 and 5) and A/C-ECU connector C-16 (terminals 14, 16 and 13) in good condition?

YES : Go to Step 22.

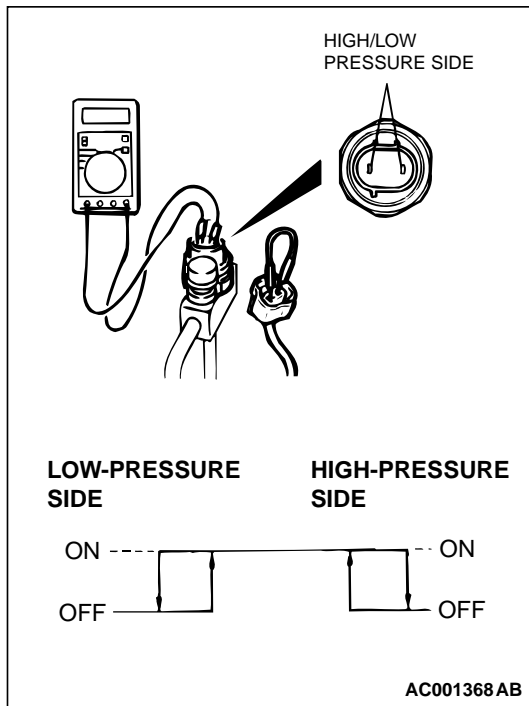
NO : Repair the wiring harness. Check that the air conditioning works normally.

STEP 22. Check dual pressure switch connector A-25 for damage.

Q: Is dual pressure switch connector A-25 in good condition?

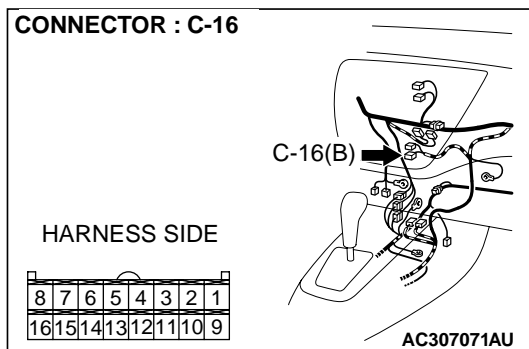
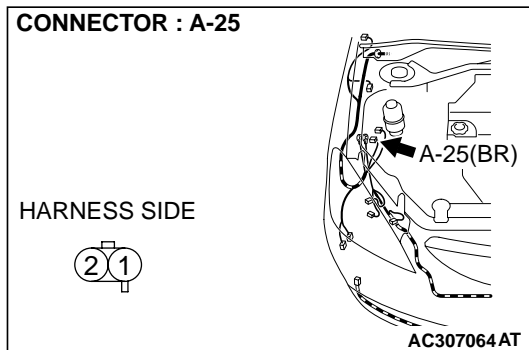
YES : Go to Step 23.

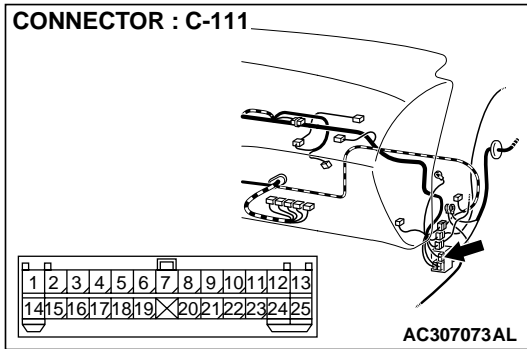
NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the air conditioning works normally.

**STEP 23. Check the dual pressure switch operation.**

- (1) Remove the dual pressure switch connector and connect the high/low pressure side terminals located on the harness side as shown in the illustration.
- (2) Install a gauge manifold to the high-pressure side service valve of the refrigerant line. (Refer to P.55-125.)
- (3) When the high/low pressure sides of the dual pressure switch are at operation pressure (ON), the resistance should be less than two ohms between the terminals. If open circuit, replace the switch.

| ITEM | OFF to ON | ON to OFF |
|------------------------------|-------------|-------------|
| Low-pressure side kPa (psi) | 220 (31.9) | 196 (28.4) |
| High-pressure side kPa (psi) | 2,550 (370) | 3,138 (455) |

Q: Is the dual pressure switch operating properly?**YES :** Go to Step 24.**NO :** Replace the dual pressure switch. Check that the air conditioning works normally.**STEP 24. Check the wiring harness between dual pressure switch connector A-25 (terminal 2) and A/C-ECU connector C-16 (terminal 4).**



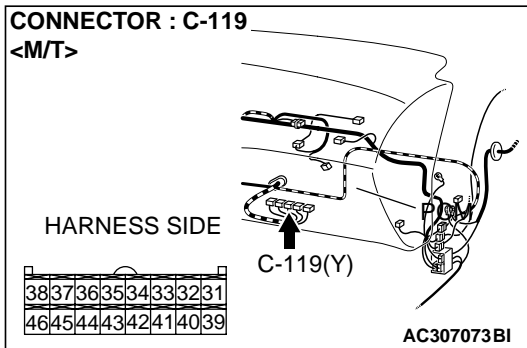
NOTE: Also check intermediate connector C-111. If intermediate connectors C-111 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between dual pressure switch connector A-25 (terminal 2) and A/C-ECU connector C-16 (terminal 4) in good condition?

YES <M/T> : Go to Step 25.

YES <A/T> : Go to Step 28.

NO : Repair the wiring harness. Check that the air conditioning works normally.



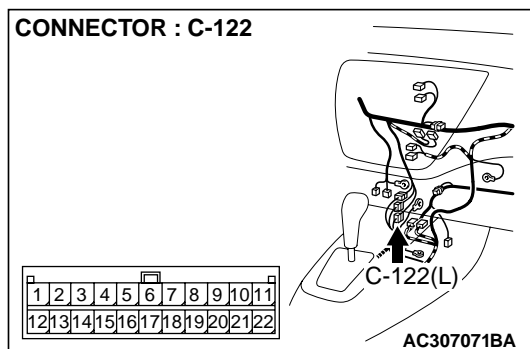
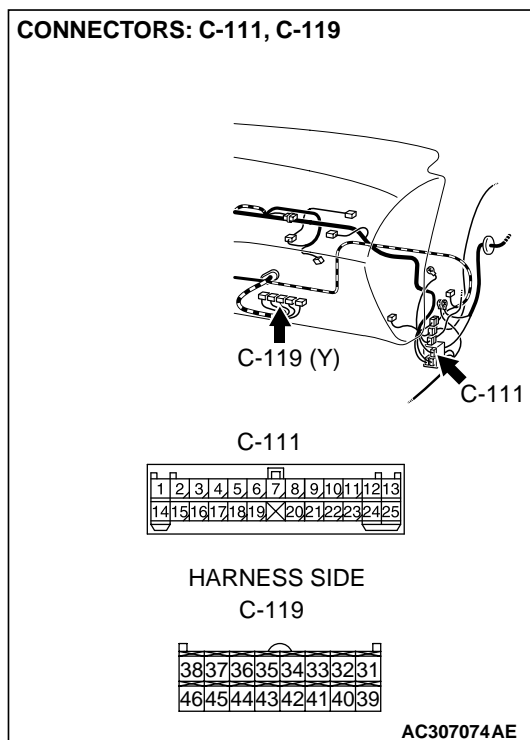
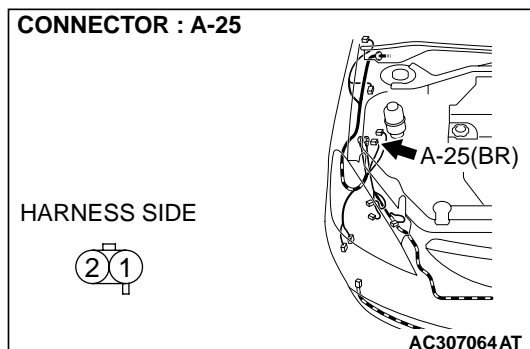
STEP 25. Check engine control module connector C-119 for damage.

Q: Is engine control module connector C-119 in good condition?

YES : Go to Step 26.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the air conditioning works normally.

STEP 26. Check the wiring harness between dual pressure switch connector A-25 (terminal 1) and engine control module connector C-119 (terminal 45).



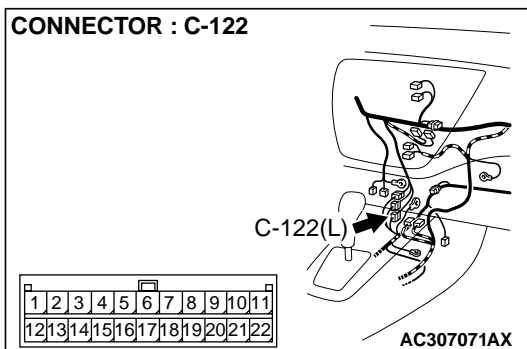
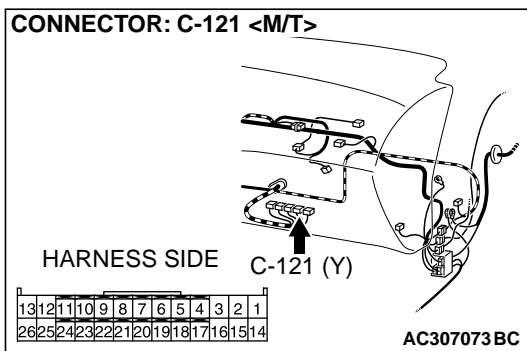
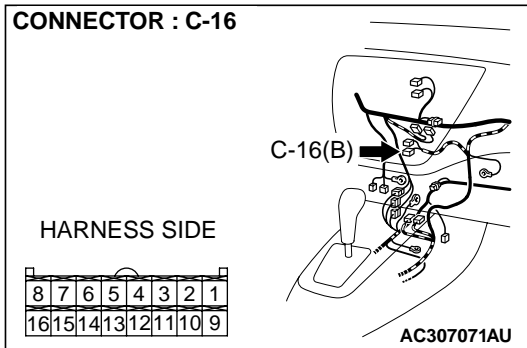
NOTE: Also check intermediate connectors C-111 and C-122. If intermediate connectors C-111 and C-122 are damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between dual pressure switch connector A-25 (terminal 1) and engine control module connector C-119 (terminal 45) in good condition?

YES : Go to Step 27.

NO : Repair the wiring harness. Check that the air conditioning works normally.

STEP 27. Check the wiring harness between A/C-ECU connector C-16 (terminal 5) and engine control module connector C-121 (terminal 24).

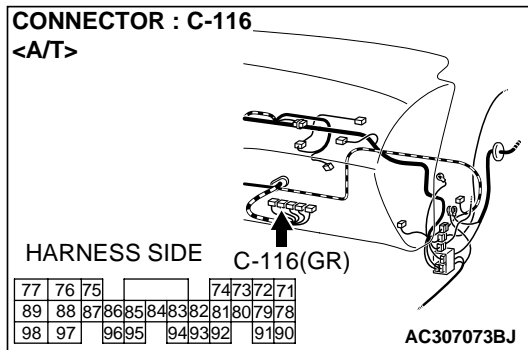


NOTE: Also check intermediate connector C-122. If intermediate connector C-122 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between A/C-ECU connector C-16 (terminal 5) and engine control module connector C-121 (terminal 24) in good condition?

YES : Go to Step 32.

NO : Repair the wiring harness. Check that the air conditioning works normally.

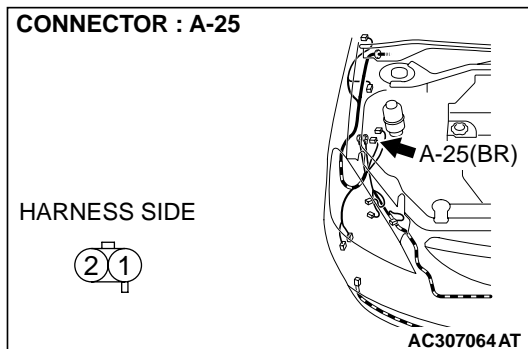


STEP 28. Check powertrain control module connector C-116 for damage.

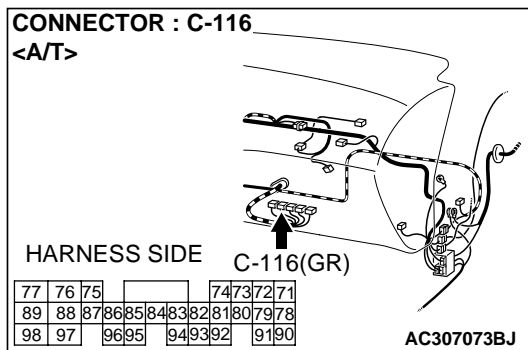
Q: Is powertrain control module connector C-116 in good condition?

YES : Go to Step 29.

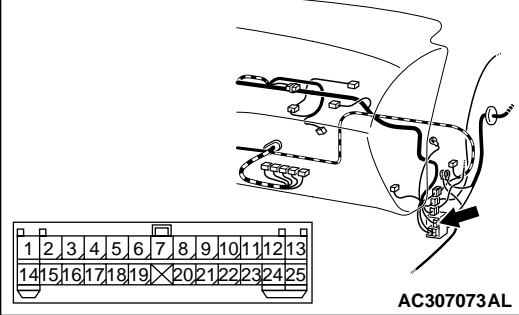
NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the air conditioning works normally.



STEP 29. Check the wiring harness between dual pressure switch connector A-25 (terminal 1) and powertrain control module connector C-116 (terminal 83).



CONNECTOR : C-111



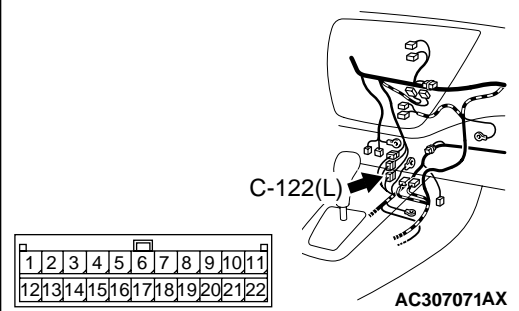
NOTE: Also check intermediate connectors C-111 and C-122. If intermediate connectors C-111 or C-122 are damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between dual pressure switch connector A-25 (terminal 1) and powertrain control module connector C-116 (terminal 83) in good condition?

YES : Go to Step 30.

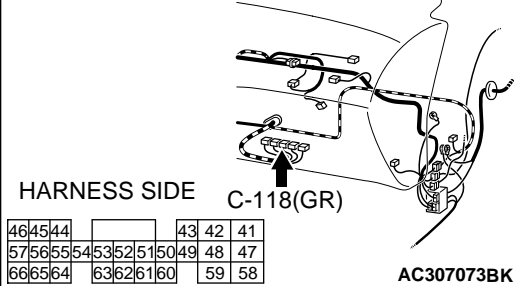
NO : Repair the wiring harness. Check that the air conditioning works normally.

CONNECTOR : C-122



CONNECTOR : C-118

<A/T>



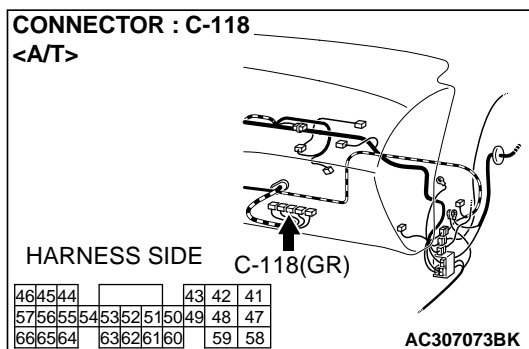
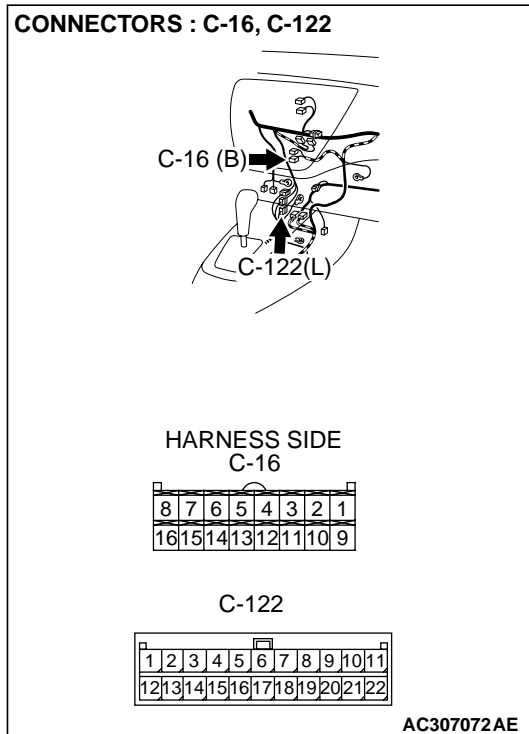
STEP 30. Check powertrain control module connector C-118 for damage.

Q: Is powertrain control module connector C-118 in good condition?

YES : Go to Step 31.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the air conditioning works normally.

STEP 31. Check the wiring harness between A/C-ECU connector C-16 (terminal 5) and powertrain control module connector C-118 (terminal 61).

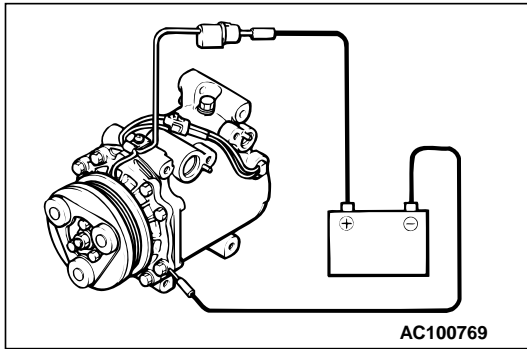


NOTE: Also check intermediate connector C-122. If intermediate connector C-122 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between A/C-ECU connector C-16 (terminal 5) and powertrain control module connector C-118 (terminal 61) in good condition?

YES : Go to Step 32.

NO : Repair the wiring harness. Check that the air conditioning works normally.



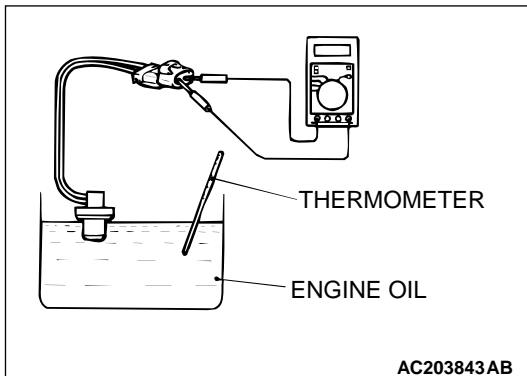
STEP 32. Check the a/c compressor clutch operation.

Connect the positive battery terminal to the compressor a/c compressor clutch connector terminal and ground the battery (-) terminal to the body of the compressor.

Q: Can the sound of the a/c compressor clutch (click) be heard?

YES : Go to Step 33.

NO : Replace the compressor magnet clutch. Check that the air conditioning works normally.



STEP 33. Check the refrigerant temperature switch.

⚠ CAUTION

Does not heat the sensor probe than necessary.

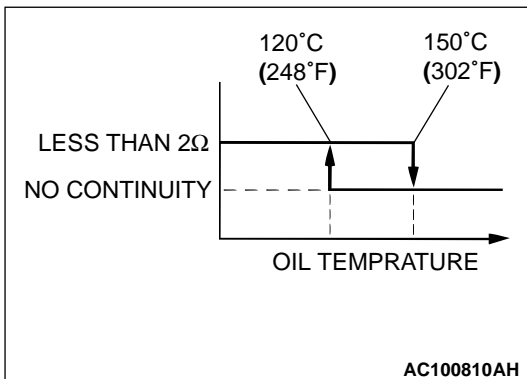
(1) Immerse the refrigerant temperature sensor probe into engine oil to heat the sensor probe.

(2) If the oil temperature reaches the standard value, there should be continuity between the switch terminals.

Q: Is the refrigerant temperature switch operating properly?

YES : Go to Step 34.

NO : Replace the refrigerant temperature switch. Check that the air conditioning works normally.

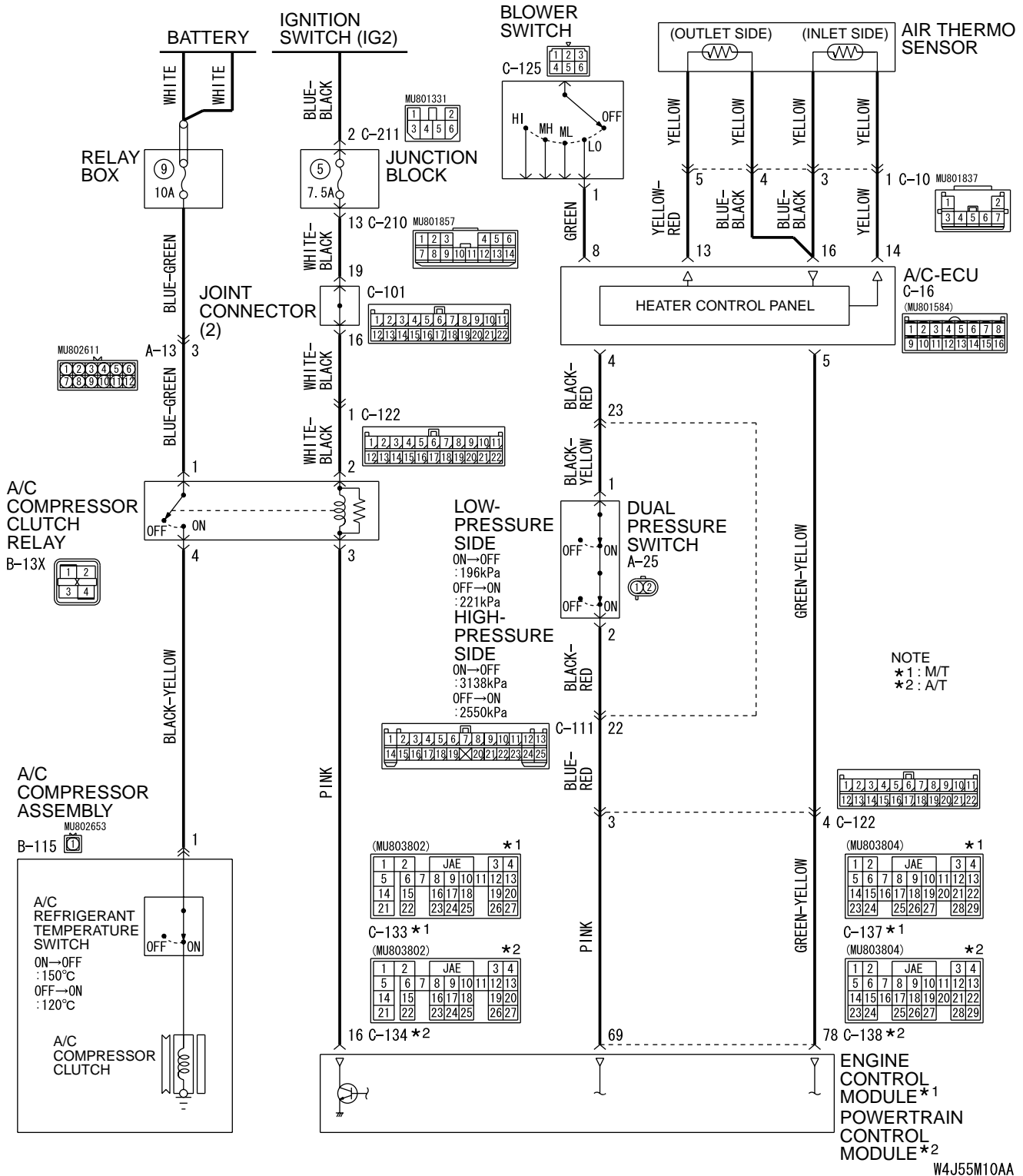


STEP 34. Check the refrigerant level.**Q: Is the refrigerant level correct?****YES** : Go to Step 35..**NO** : Correct the refrigerant level. (Refer to On-vehicle Service [P.55-98](#)) Check that the air conditioning works normally.

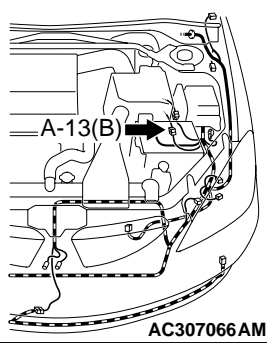
STEP 35. Replace the A/C-ECU.**Q: Do the air conditioning work normally?****YES** : No action is necessary and testing is complete.**NO** : Replace the engine control module <M/T> or powertrain control module <A/T>. Check that the air conditioning works normally.

INSPECTION PROCEDURE 5: When the A/C is Operating, Temperature Inside the Passenger Compartment does not Decrease (Cool Air is not Emitted). <2.4 L>

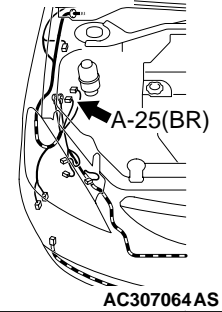
A/C Compressor and Air Thermo Sensor Circuit



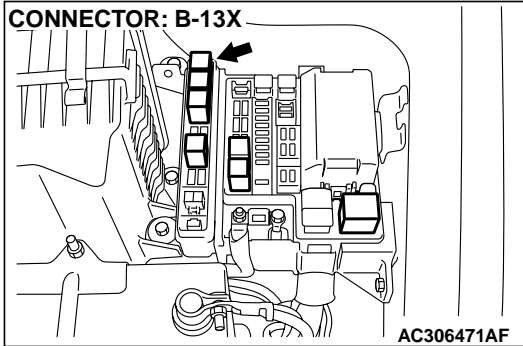
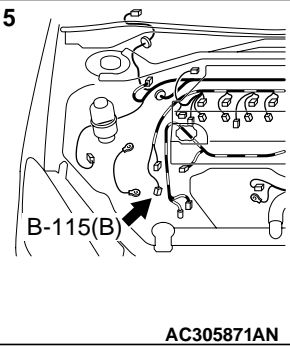
CONNECTOR : A-13



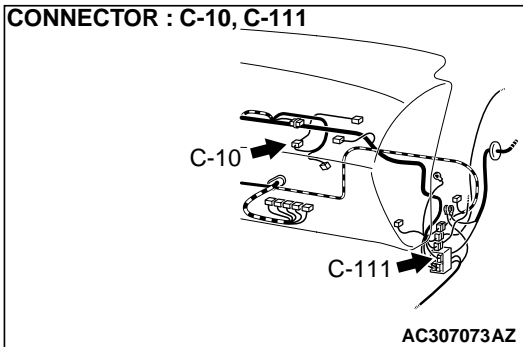
CONNECTOR : A-25



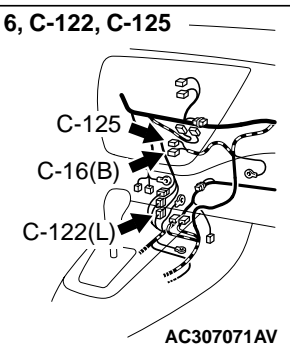
CONNECTOR: B-13X

CONNECTOR : B-115
<2.4 L>

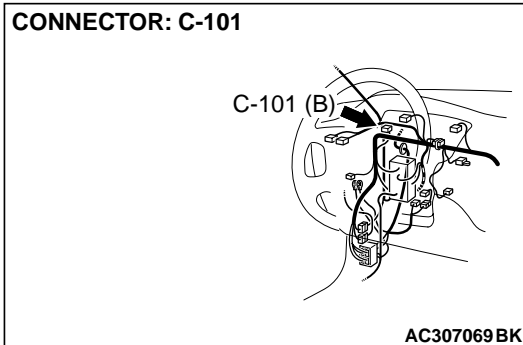
CONNECTOR : C-10, C-111



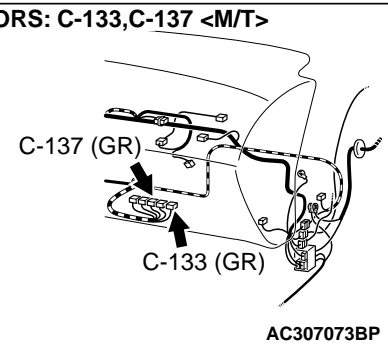
CONNECTORS : C-16, C-122, C-125

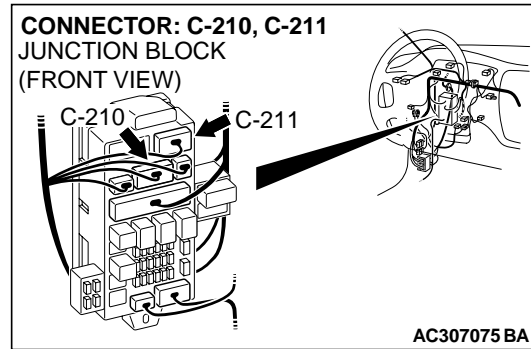
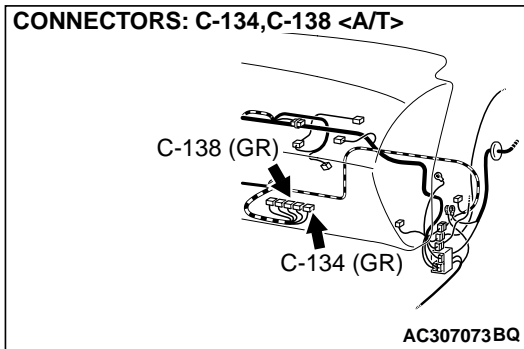


CONNECTOR: C-101



CONNECTORS: C-133, C-137 <M/T>





TECHNICAL DESCRIPTION (COMMENT)

If cool air is not distributed when the A/C switch is on, the air thermo sensor or the A/C compressor clutch relay system may be defective.

TROUBLESHOOTING HINTS

- Malformation of the air thermo sensor

- Malformation of the dual pressure switch
- Malformation of the A/C compressor clutch relay
- Malformation of the A/C refrigerant temperature switch
- Malformation of the A/C compressor clutch
- Malformation of the A/C-ECU
- Malformation of the ECM or PCM

DIAGNOSIS

Required Special Tool:

- MB991223: Test Harness Set

STEP 1. Check the defogger and outside/inside air selection damper control motor operation.

Q: Do the defogger and outside/inside air selection damper control motor work normally?

YES : Go to Step 2.

NO : Refer to Inspection procedure 10 "Malfunction does not operate [P.55-92](#)."

STEP 2. Check the blower motor operation.

Q: Does the blower motor work normally?

YES : Go to Step 3.

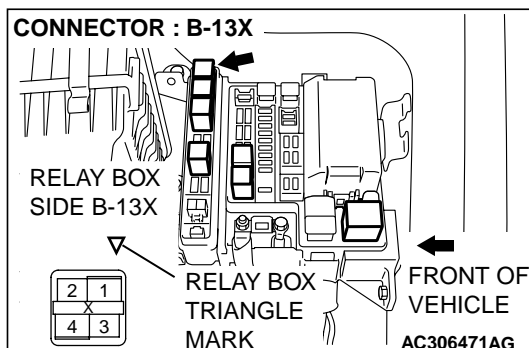
NO : Refer to Inspection procedure 6 "Blower Fan and motor does not turn [P.55-64](#)."

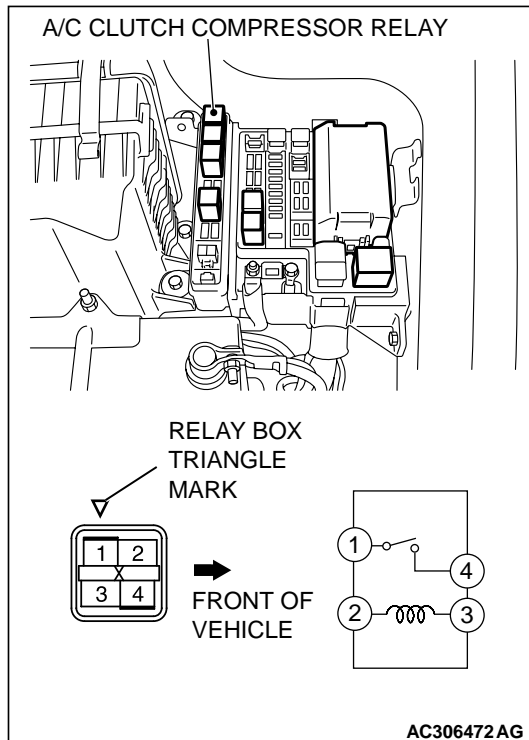
STEP 3. Check A/C compressor clutch relay connector B-13X for damage.

Q: Is A/C compressor clutch relay connector B-13X in good condition?

YES : Go to Step 4.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the air conditioning works normally.





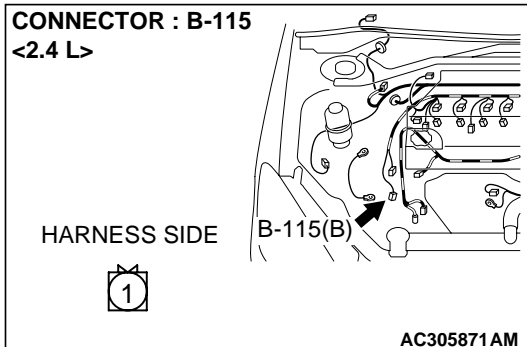
STEP 4. Check the A/C compressor clutch relay continuity.
Follow the table below to check the A/C compressor clutch relay for continuity.

| BATTERY VOLTAGE | TESTER CONNECTION | SPECIFIED CONDITION |
|---|-------------------|---------------------|
| Not applied | 1 – 4 | Open circuit |
| <ul style="list-style-type: none">Connect terminal 2 to the positive battery terminalConnect terminal 3 to the negative battery terminal | 1 – 4 | Less than 2 ohms |

Q: Is the A/C compressor clutch relay in good condition?

YES : Go to Step 5.

NO : Replace the A/C compressor clutch relay. Check that the air conditioning works normally.

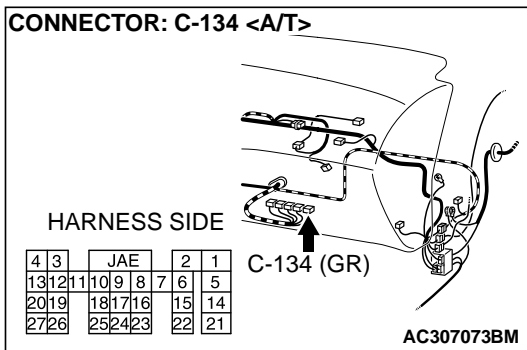
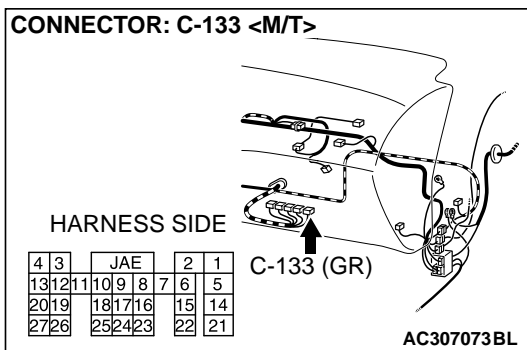


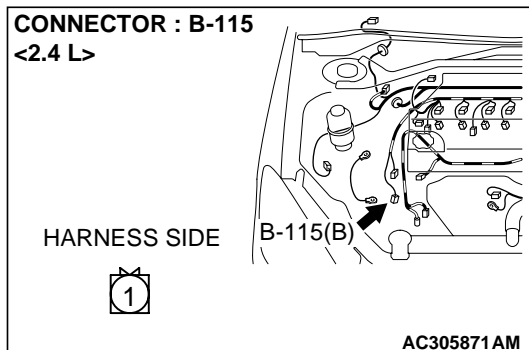
STEP 5. Check A/C compressor connector B-115 and engine control module connector C-133 <M/T> or powertrain control module connector C-134 <A/T> for damage.

Q: Are A/C compressor connector B-115 and engine control module connector C-133 <M/T> or powertrain control module connector C-134 <A/T> in good condition?

YES : Go to Step 6.

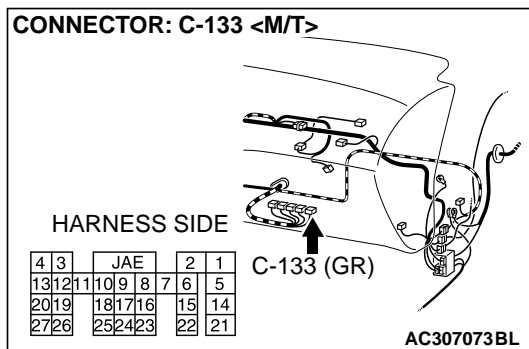
NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the air conditioning works normally.



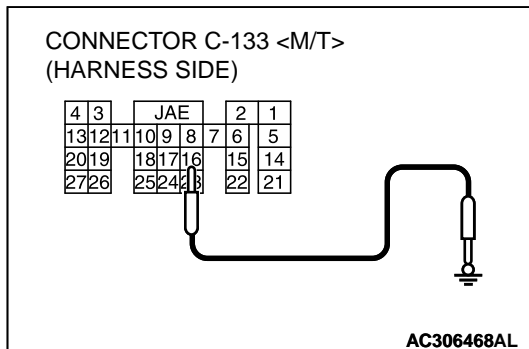


STEP 6. Measure the voltage at A/C compressor connector B-115.

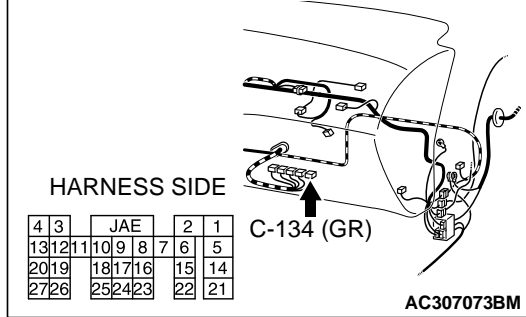
- (1) Disconnect A/C compressor connector B-115 and measure the voltage at the harness side.



- (2) Disconnect engine control module connector C-133 and ground harness side terminal No.16. <M/T>

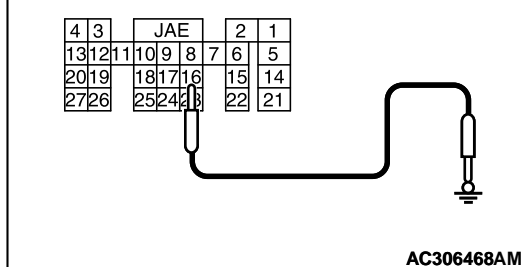


CONNECTOR: C-134 <A/T>

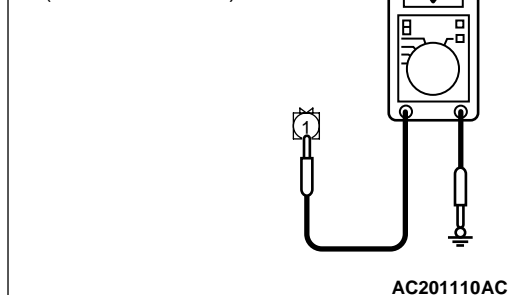


- (3) Disconnect powertrain control module connector C-134 and ground harness side terminal No.16. <A/T>
- (4) Turn the ignition switch to the "ON" position.

**CONNECTOR C-134 <A/T>
(HARNESS SIDE)**



**CONNECTOR B-115
(HARNESS SIDE)**

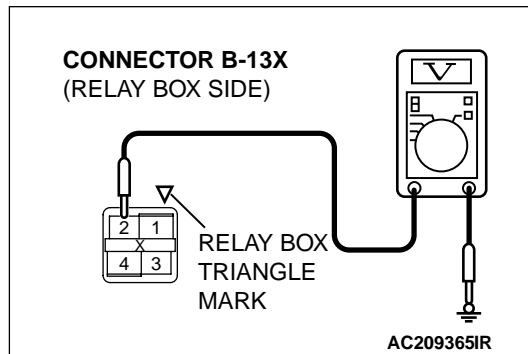
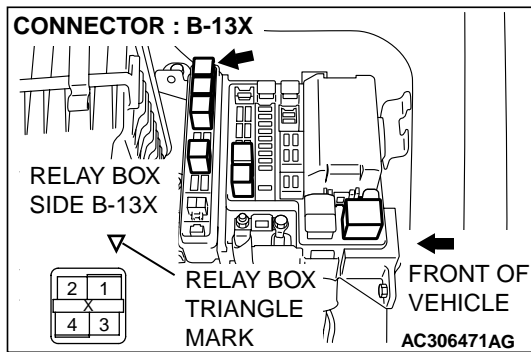


- (5) Measure the voltage between terminal 1 and ground.
 - The measured value should be approximately 12 volts (battery positive voltage).

Q: Does the measured voltage correspond with this range?

YES : Go to Step 14.

NO : Go to Step 7.

**STEP 7. Measure the voltage at A/C compressor clutch relay connector B-13X.**

(1) Disconnect A/C compressor connector B-13X and measure the voltage at the relay box side.

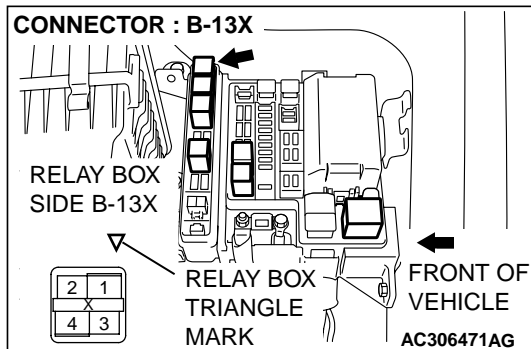
(2) Measure the voltage between terminal 2 and ground.

- The measured value should be approximately 12 volts (battery positive voltage).

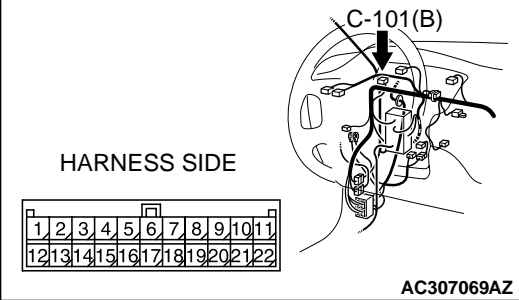
Q: Does the measured voltage correspond with this range?

YES : Go to Step 9.

NO : Go to Step 8.

**STEP 8. Check the wiring harness between A/C compressor clutch relay connector B-13X (terminal 2) and the ignition switch (IG2).**

CONNECTOR : C-101



NOTE: Also check intermediate connector C-122, joint connector (2) C-101, junction block connectors C-210 and C-211. If intermediate connector C-122, joint connector (2) C-101, or junction block connectors C-210 or C-211 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between A/C compressor clutch relay connector B-13X (terminal 2) and the ignition switch (IG2) in good condition?

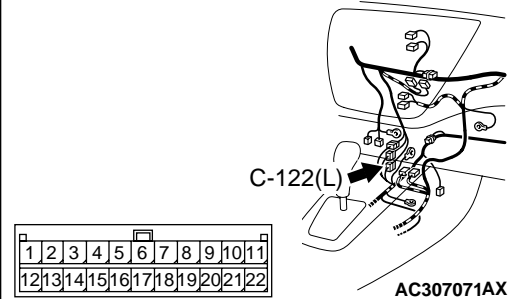
YES : It can be assumed that this malfunction is intermittent.

Refer to GROUP 00, How to Use

Troubleshooting/Inspection Service Points [P.00-6](#).

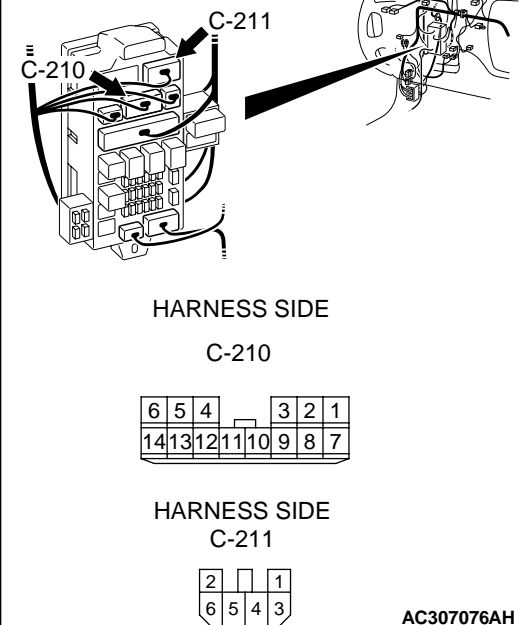
NO : Repair the wiring harness. Check that the air conditioning works normally.

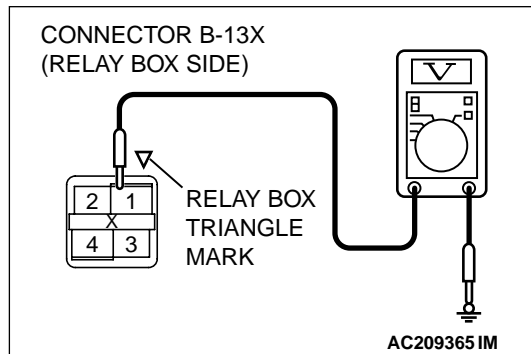
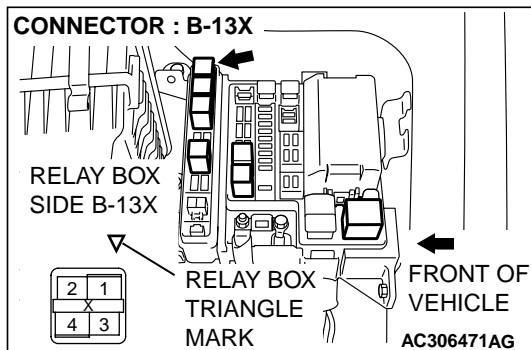
CONNECTOR : C-122



CONNECTORS : C-210, C-211

JUNCTION BLOCK
(FRONT VIEW)





STEP 9. Measure the voltage at A/C compressor clutch relay connector B-13X.

(1) Disconnect A/C compressor connector B-13X and measure the voltage at the relay box side.

(2) Measure the voltage between terminal 1 and ground.

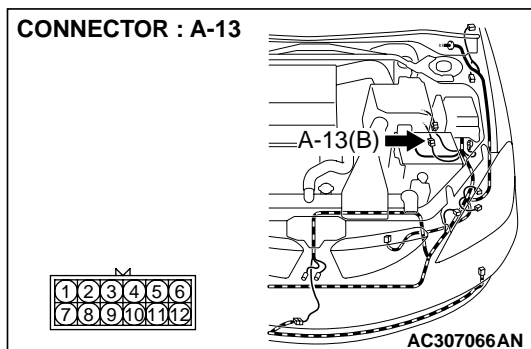
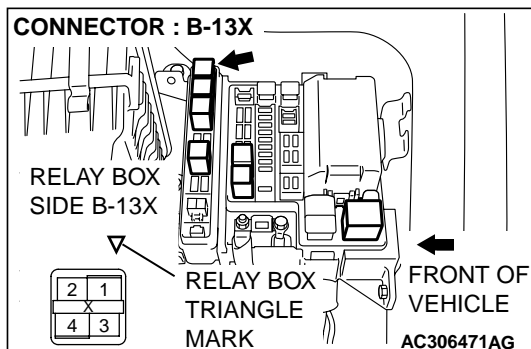
- The measured value should be approximately 12 volts (battery positive voltage).

Q: Does the measured voltage correspond with this range?

YES : Go to Step 11.

NO : Go to Step 10.

STEP 10. Check the wiring harness between A/C compressor clutch relay connector B-13X (terminal 1) and the battery.

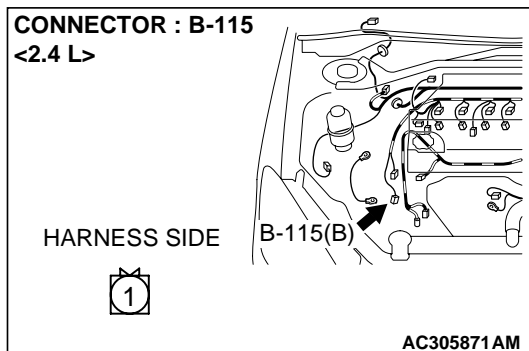
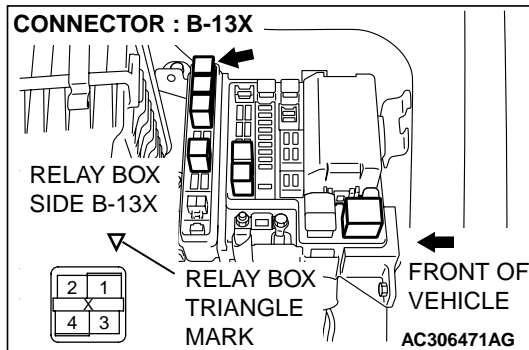


NOTE: Also check intermediate connector A-13. If intermediate connectors A-13 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between A/C compressor clutch relay connector B-13X (terminal 1) and the battery in good condition?

YES : It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#).

NO : Repair the wiring harness. Check that the air conditioning works normally.



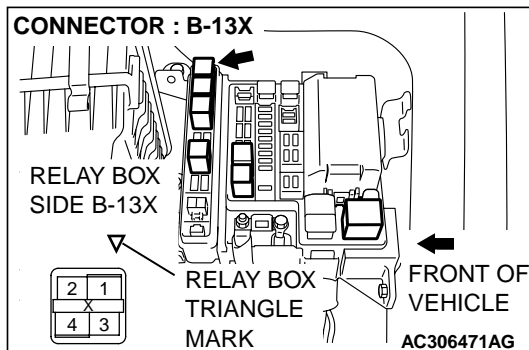
STEP 11. Check the wiring harness between A/C compressor clutch relay connector B-13X (terminal 4) and A/C compressor connector B-115 (terminal 1).

Q: Is the wiring harness between A/C compressor clutch relay connector B-13X (terminal 4) and A/C compressor connector B-115 (terminal 1) in good condition?

YES <M/T> : Go to Step 12.

YES <A/T> : Go to Step 13.

NO : Repair the wiring harness. Check that the air conditioning works normally.

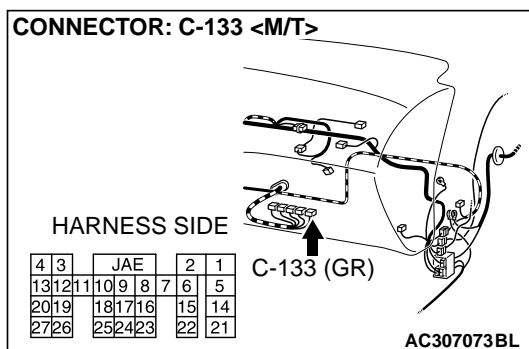


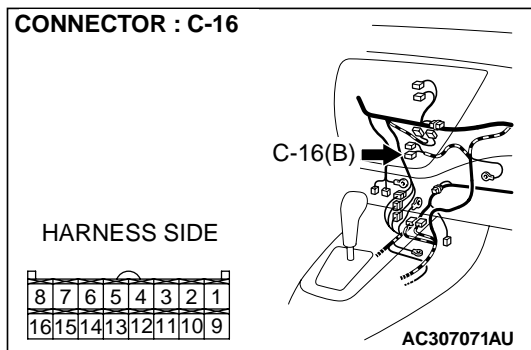
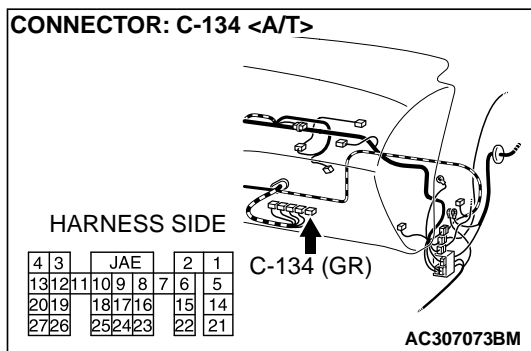
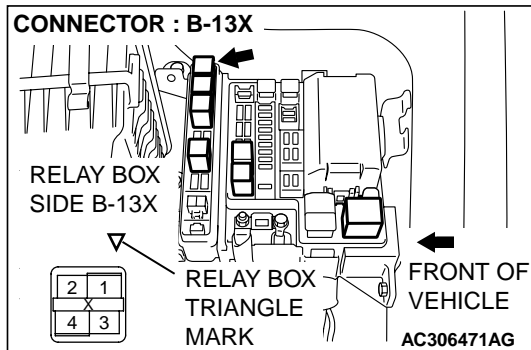
STEP 12. Check the wiring harness between engine control module connector C-133 (terminal 16) and A/C compressor clutch relay connector B-13X (terminal 3).

Q: Is the wiring harness between engine control module connector C-133 (terminal 16) and A/C compressor clutch relay connector B-13X (terminal 3) in good condition?

YES : It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#).

NO : Repair the wiring harness. Check that the air conditioning works normally.





STEP 13. Check the wiring harness between powertrain control module connector C-134 (terminal 21) and A/C compressor clutch relay connector B-13X (terminal 3).

Q: Is the wiring harness between powertrain control module connector C-134 (terminal 21) and A/C compressor clutch relay connector B-13X (terminal 3) in good condition?

YES : It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#).

NO : Repair the wiring harness. Check that the air conditioning works normally.

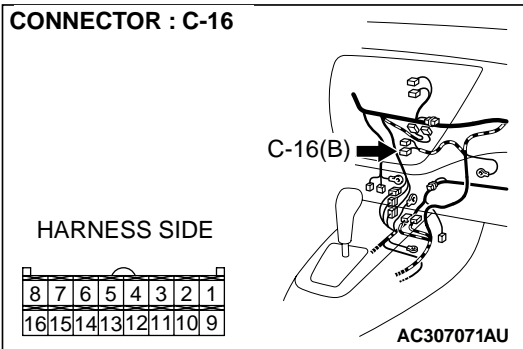
STEP 14. Check A/C-ECU connector C-16 for damage.

Q: Is A/C-ECU connector C-16 in good condition?

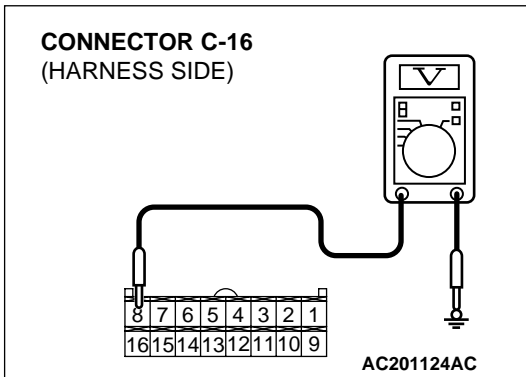
YES : Go to Step 15.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the air conditioning works normally.

CONNECTOR : C-16



CONNECTOR C-16
(HARNESS SIDE)



STEP 15. Measure the voltage at A/C-ECU connector C-16.

- (1) Disconnect A/C-ECU connector C-16 and measure the voltage at the relay box side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Turn the Blower switch to the "ON" position.

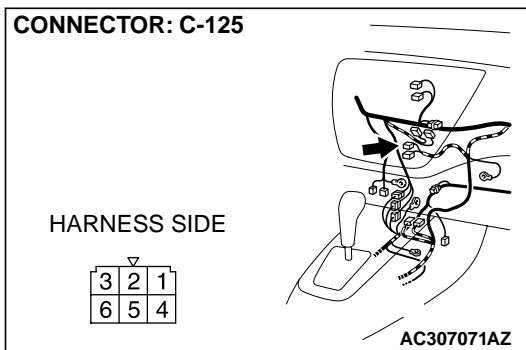
- (4) Measure the voltage between terminal 8 and ground.
 - The measured value should be approximately 12 volts (battery positive voltage).

Q: Does the measured voltage correspond with this range?

YES : Go to Step 18.

NO : Go to Step 16.

CONNECTOR: C-125



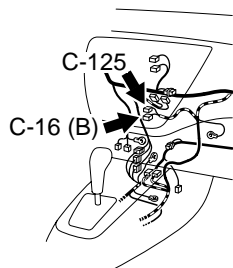
STEP 16. Check blower switch connector C-125 for damage.

Q: Is blower switch connector C-125 in good condition?

YES : Go to Step 17.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the air conditioning works normally.

CONNECTORS: C-16, C-125



HARNESS SIDE

C-16

| | | | | | | | |
|----|----|----|----|----|----|----|---|
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 |

HARNESS SIDE

C-125

| | | |
|---|---|---|
| 3 | 2 | 1 |
| 6 | 5 | 4 |

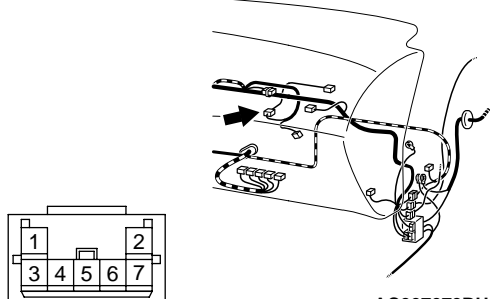
AC307072 AD

STEP 17. Check the wiring harness between blower switch connector C-125 (terminal 1) and A/C-ECU connector C-16 (terminal 8).

Q: Is the wiring harness between blower switch connector C-125 (terminal 1) and A/C-ECU connector C-16 (terminal 8) in good condition?

- YES :** It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#).
- NO :** Repair the wiring harness. Check that the air conditioning works normally.

CONNECTOR : C-10

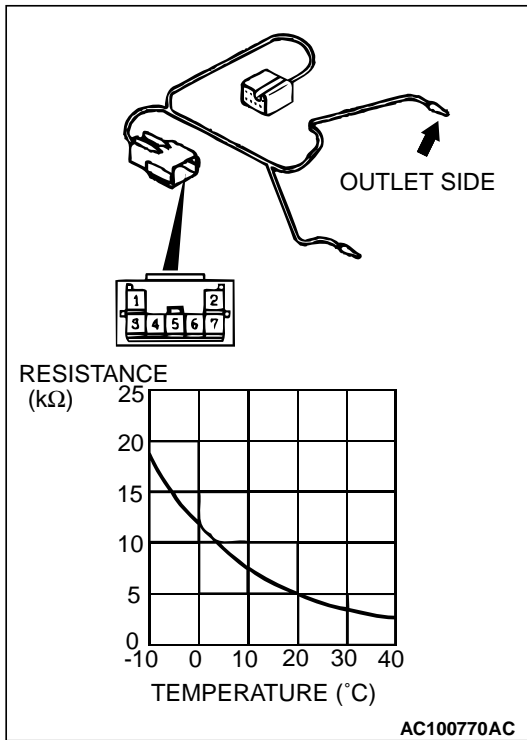


AC307073BH

STEP 18. Check air thermo sensor connector C-10 for damage.

Q: Is air thermo sensor connector C-10 in good condition?

- YES :** Go to Step 19.
- NO :** Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the air conditioning works normally.



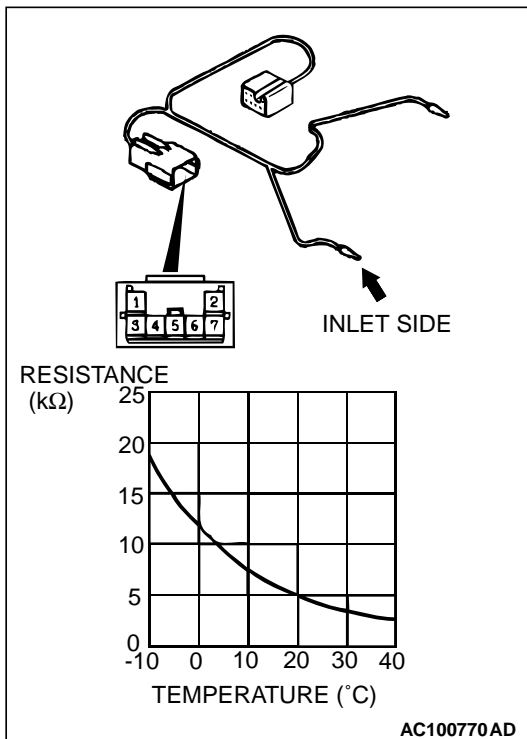
STEP 19. Check the air thermos sensor (outlet side)

- (1) Measure the resistance between air thermo sensor (outlet side) terminal numbers 4 and 5 at two points or more.
- (2) Check that the measured value corresponds with approximately the shown value.

Q: Is the air thermos sensor (outlet side) in good condition?

YES : Go to Step 20.

NO : Replace the air thermo sensor. Check that the air conditioning works normally.



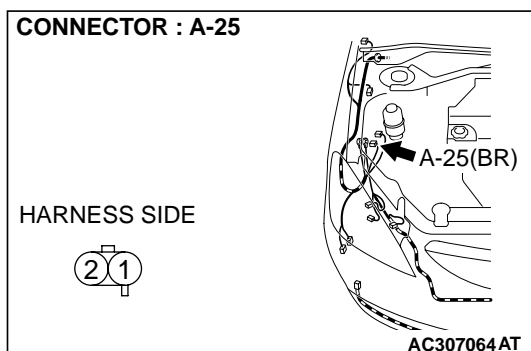
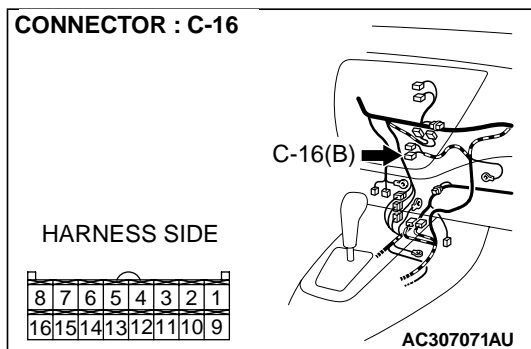
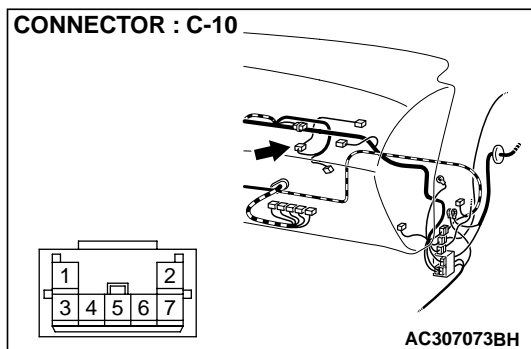
STEP 20. Check the air thermo sensor (inlet side)

- (1) Measure the resistance between air thermo sensor (inlet side) terminal numbers 1 and 3 at two points or more.
- (2) Check that the measured value corresponds with approximately the shown value.

Q: Is the air thermo sensor (inlet side) in good condition?

YES : Go to Step 21.

NO : Replace the air thermo sensor. Check that the air conditioning works normally.



STEP 21. Check the wiring harness between air thermo sensor connector C-10 (terminals 1, 3, 4 and 5) and A/C-ECU connector C-16 (terminals 14, 16 and 13).

Q: Are the wiring harness between air thermo sensor connector C-10 (terminals 1, 3, 4 and 5) and A/C-ECU connector C-16 (terminals 14, 16 and 13) in good condition?

YES : Go to Step 22.

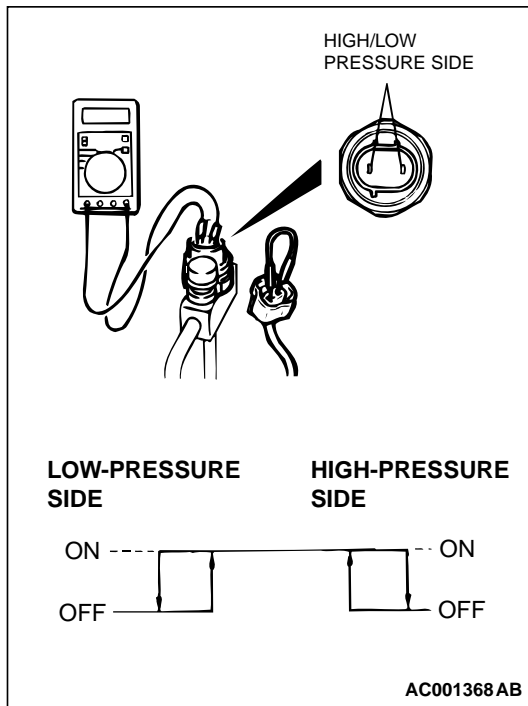
NO : Repair the wiring harness. Check that the air conditioning works normally.

STEP 22. Check dual pressure switch connector A-25 for damage.

Q: Is dual pressure switch connector A-25 in good condition?

YES : Go to Step 23.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the air conditioning works normally.



STEP 23. Check the dual pressure switch operation.

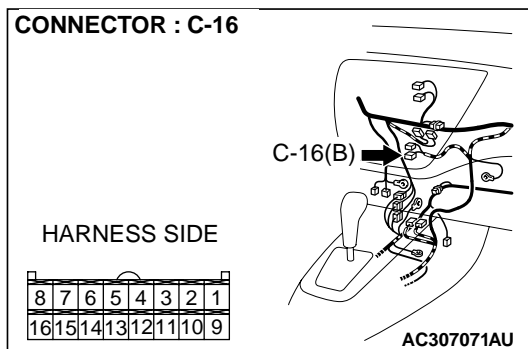
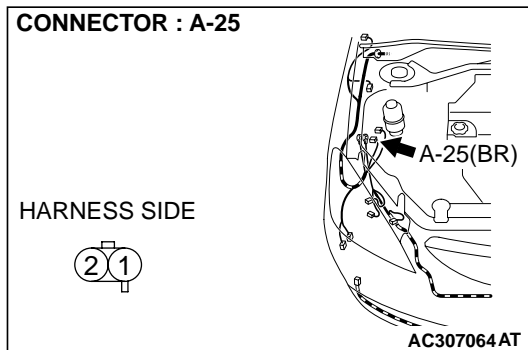
- (1) Remove the dual pressure switch connector and connect the high/low pressure side terminals located on the harness side as shown in the illustration.
- (2) Install a gauge manifold to the high-pressure side service valve of the refrigerant line. (Refer to P.55-125.)
- (3) When the high/low pressure sides of the dual pressure switch are at operation pressure (ON), the resistance should be less than two ohms between the terminals. If open circuit, replace the switch.

| ITEM | OFF to ON | ON to OFF |
|------------------------------|-------------|-------------|
| Low-pressure side kPa (psi) | 220 (31.9) | 196 (28.4) |
| High-pressure side kPa (psi) | 2,550 (370) | 3,138 (455) |

Q: Is the dual pressure switch operating properly?

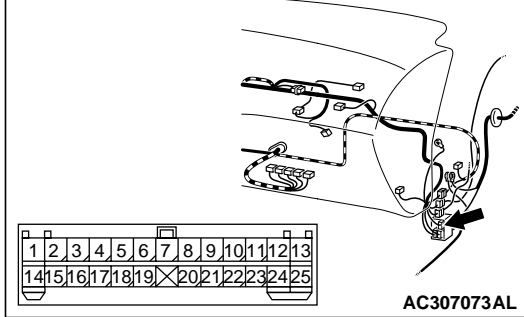
YES : Go to Step 24.

NO : Replace the dual pressure switch. Check that the air conditioning works normally.



STEP 24. Check the wiring harness between dual pressure switch connector A-25 (terminal 1) and A/C-ECU connector C-16 (terminal 4).

CONNECTOR : C-111



NOTE: Also check intermediate connector C-111. If intermediate connectors C-111 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between dual pressure switch connector A-25 (terminal 2) and A/C-ECU connector C-16 (terminal 4) in good condition?

YES <M/T> : Go to Step 25.

YES <A/T> : Go to Step 28.

NO : Repair the wiring harness. Check that the air conditioning works normally.

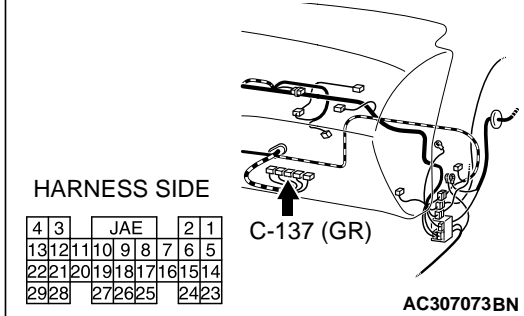
STEP 25. Check engine control module connector C-137 for damage.

Q: Is engine control module connector C-137 in good condition?

YES : Go to Step 26.

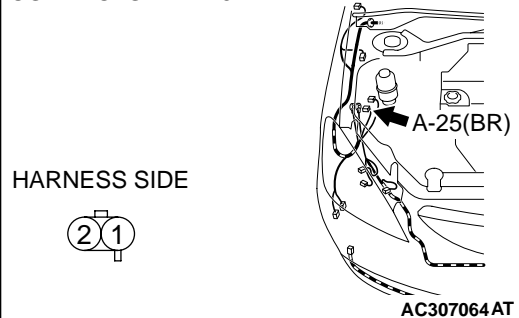
NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the air conditioning works normally.

CONNECTOR: C-137 <M/T>

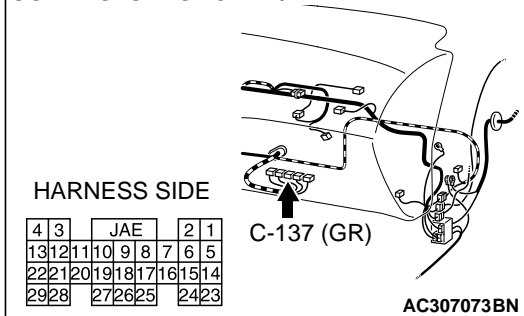


STEP 26. Check the wiring harness between dual pressure switch connector A-25 (terminal 2) and engine control module connector C-137 (terminal 69).

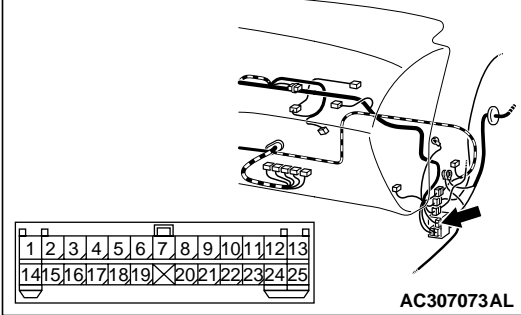
CONNECTOR : A-25



CONNECTOR: C-137 <M/T>



CONNECTOR : C-111



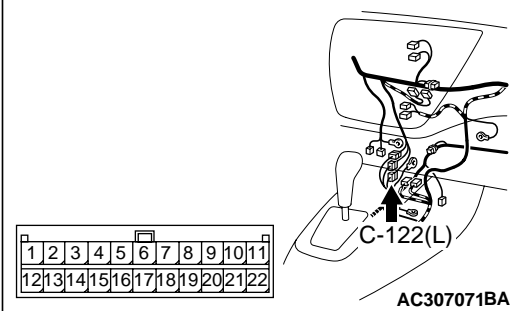
NOTE: Also check intermediate connectors C-111 and C-122. If intermediate connectors C-111 and C-122 are damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between dual pressure switch connector A-25 (terminal 2) and engine control module connector C-137 (terminal 69) in good condition?

YES : Go to Step 27.

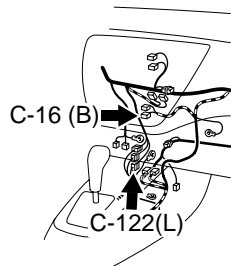
NO : Repair the wiring harness. Check that the air conditioning works normally.

CONNECTOR : C-122



STEP 27. Check the wiring harness between A/C-ECU connector C-16 (terminal 5) and engine control module connector C-137 (terminal 78).

CONNECTORS : C-16, C-122



**HARNESS SIDE
C-16**

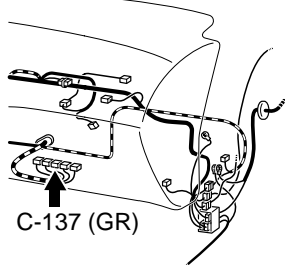
| | | | | | | | |
|----|----|----|----|----|----|----|---|
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 |

C-122

| | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |

AC307072AE

CONNECTOR: C-137 <M/T>



HARNESS SIDE

| | | | | | | |
|----|----|----|-----|----|----|----|
| 4 | 3 | | JAE | | 2 | 1 |
| 13 | 12 | 11 | 10 | 9 | 8 | 7 |
| 22 | 21 | 20 | 19 | 18 | 17 | 16 |
| 29 | 28 | 27 | 26 | 25 | 24 | 23 |

C-137 (GR)

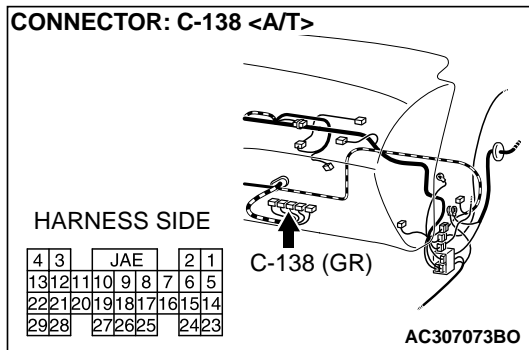
AC307073BN

NOTE: Also check intermediate connector C-122. If intermediate connector C-122 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between A/C-ECU connector C-16 (terminal 5) and engine control module connector C-137 (terminal 78) in good condition?

YES : Go to Step 31.

NO : Repair the wiring harness. Check that the air conditioning works normally.

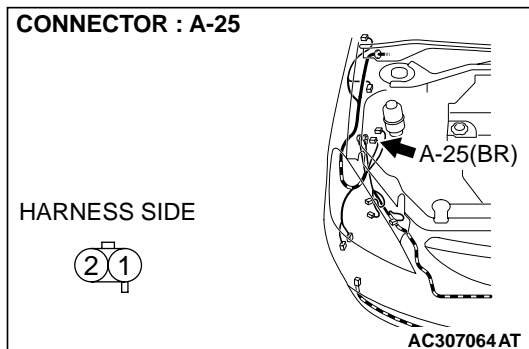


STEP 28. Check powertrain control module connector C-138 for damage.

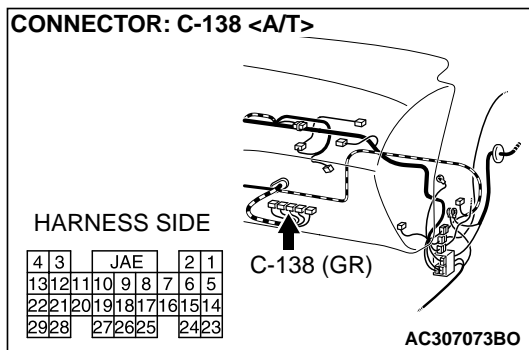
Q: Is powertrain control module connector C-138 in good condition?

YES : Go to Step 29.

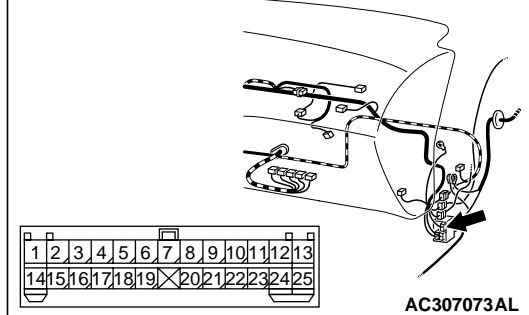
NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the air conditioning works normally.



STEP 29. Check the wiring harness between dual pressure switch connector A-25 (terminal 2) and powertrain control module connector C-138 (terminal 69).



CONNECTOR : C-111



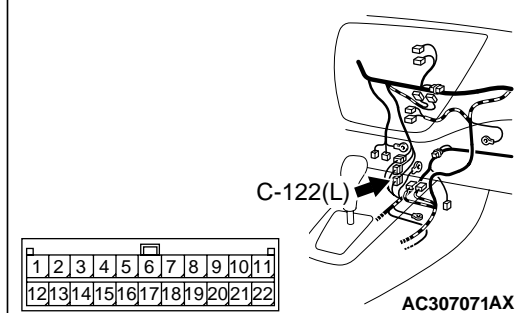
NOTE: Also check intermediate connectors C-111 and C-122. If intermediate connectors C-111 or C-122 are damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between dual pressure switch connector A-25 (terminal 2) and powertrain control module connector C-138 (terminal 69) in good condition?

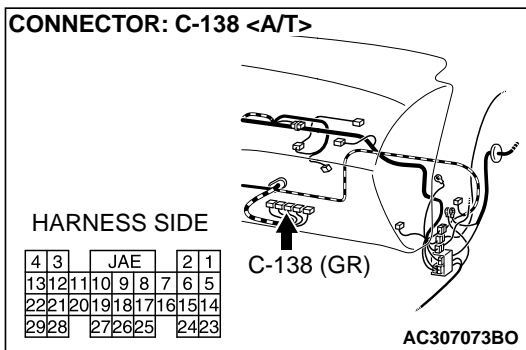
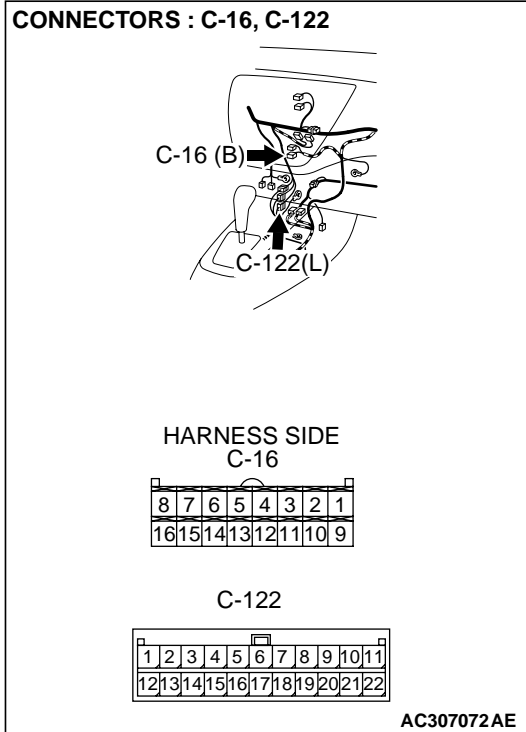
YES : Go to Step 30.

NO : Repair the wiring harness. Check that the air conditioning works normally.

CONNECTOR : C-122



STEP 30. Check the wiring harness between A/C-ECU connector C-16 (terminal 5) and powertrain control module connector C-138 (terminal 78).

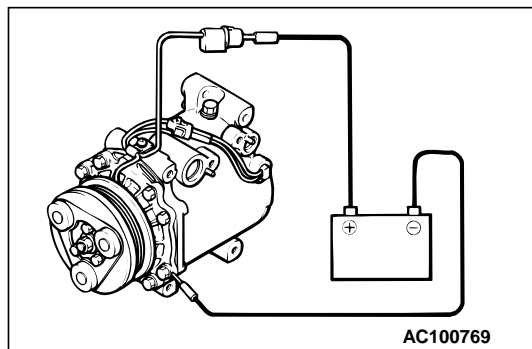


NOTE: Also check intermediate connector C-122. If intermediate connector C-122 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between A/C-ECU connector C-16 (terminal 5) and powertrain control module connector C-138 (terminal 78) in good condition?

YES : Go to Step 31.

NO : Repair the wiring harness. Check that the air conditioning works normally.

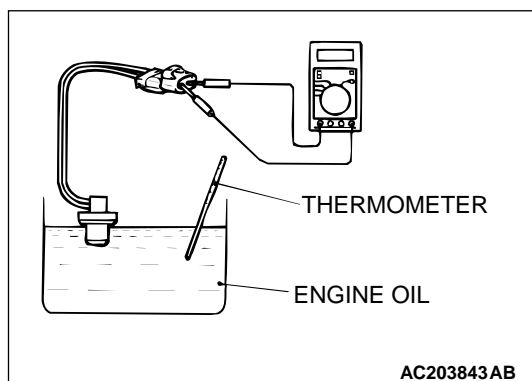
**STEP 31. Check the a/c compressor clutch operation.**

Connect the positive battery terminal to the compressor a/c compressor clutch connector terminal and ground the battery (-) terminal to the body of the compressor.

Q: Can the sound of the a/c compressor clutch (click) be heard?

YES : Go to Step 32.

NO : Replace the compressor magnet clutch. Check that the air conditioning works normally.

**STEP 32. Check the refrigerant temperature switch.**

(1) Immerse the refrigerant temperature sensor probe into engine oil to heat the sensor probe.

CAUTION

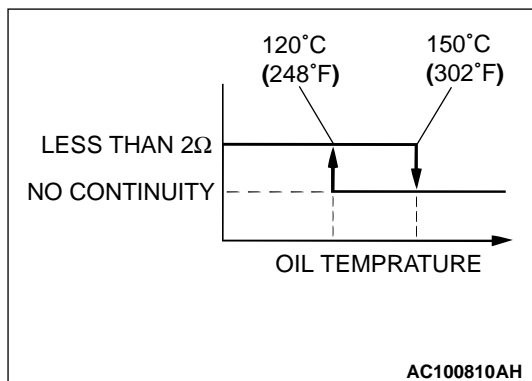
Does not heat the sensor probe than necessary.

(2) If the oil temperature reaches the standard value, there should be continuity between the switch terminals.

Standard value:

| ITEM | TEMPERATURE |
|------------------|------------------------------|
| Less than 2 ohms | Slightly below 150°C (302°F) |
| No continuity | 150°C (302°F) or more |

NOTE: When the oil temperature is 150°C (302°F) or more and there is no continuity, the resistance will not be 2Ω or lower until the oil temperature reduces to 120°C (248°F) or less.



Q: Is the refrigerant temperature switch operating properly?

YES : Go to Step 33.

NO : Replace the refrigerant temperature switch. Check that the air conditioning works normally.

STEP 33. Check the refrigerant level.

Q: Is the refrigerant level correct?

YES : Go to Step 34.

NO : Correct the refrigerant level. (Refer to On-vehicle Service [P.55-98](#)) Check that the air conditioning works normally.

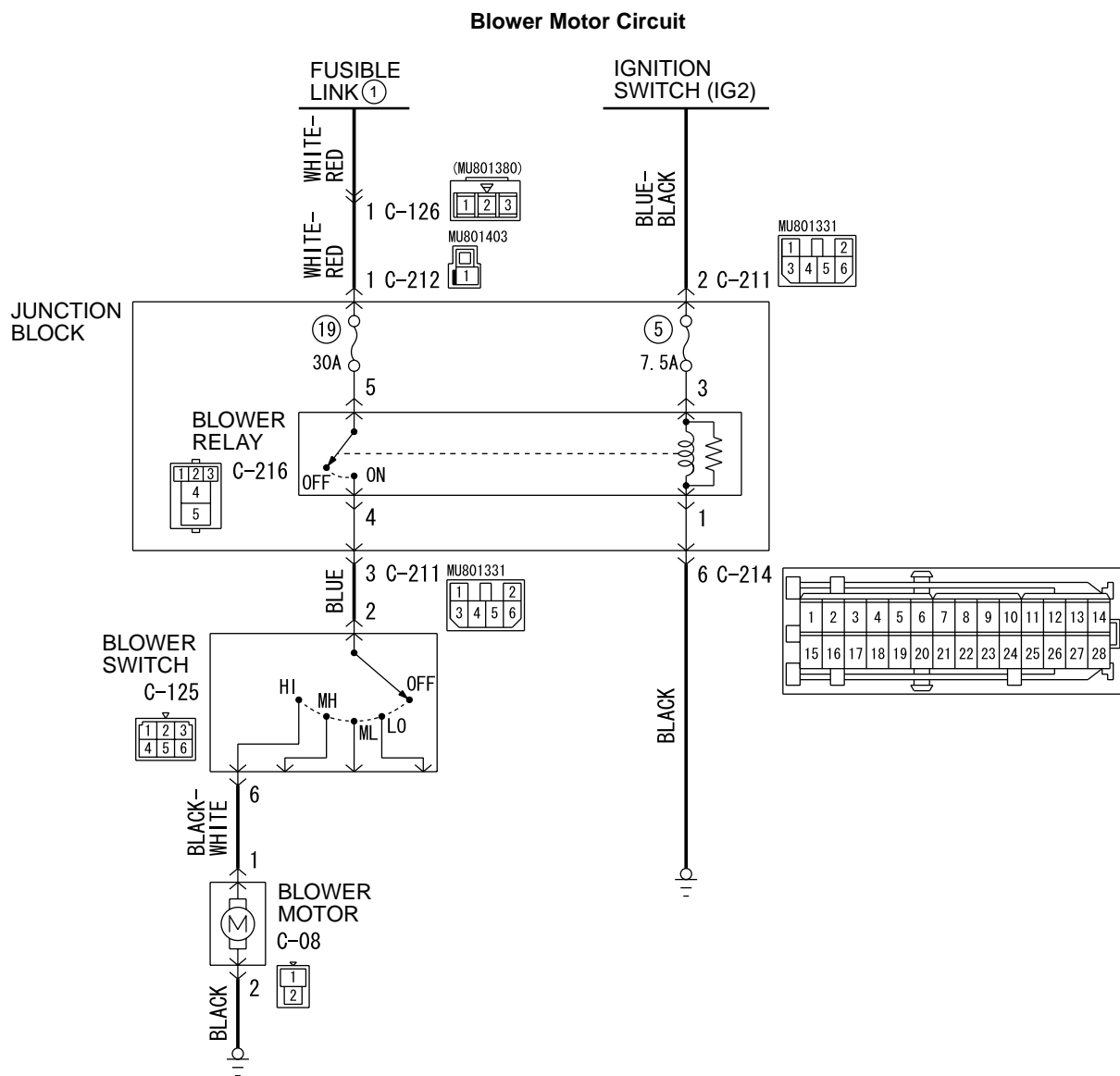
STEP 34. Replace the A/C-ECU.

Q: Do the air conditioning work normally?

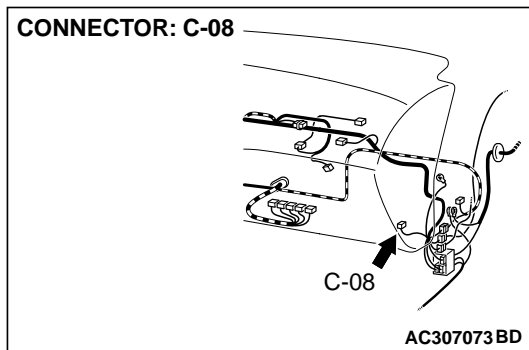
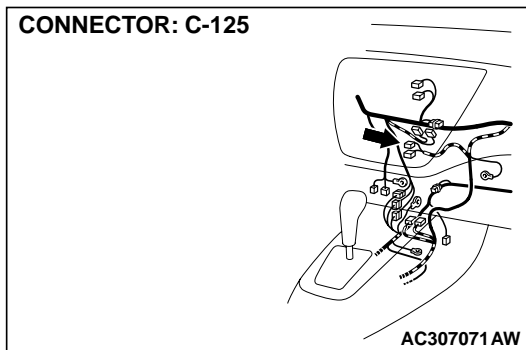
YES : No action is necessary and testing is complete.

NO : Replace the engine control module connector <M/T> or powertrain control module <A/T>. Check that the air conditioning works normally.

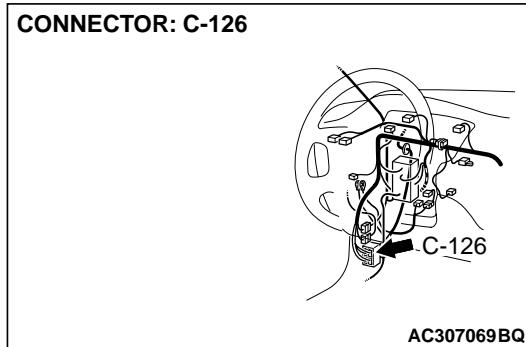
INSPECTION PROCEDURE 6: Blower Fan and Motor does not Turn.



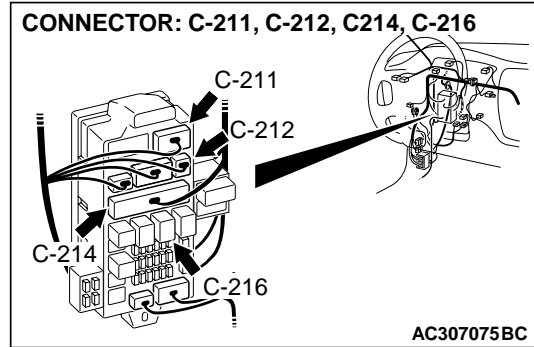
W4J55M08AA

CONNECTOR: C-08**CONNECTOR: C-125**

CONNECTOR: C-126



CONNECTOR: C-211, C-212, C214, C-216



TECHNICAL DESCRIPTION (COMMENT)

If the blower fan and motor does not turn when the blower switch is operated, the blower switch may be defective.

TROUBLESHOOTING HINTS

- Malfunction of the blower relay
- Malfunction of the blower switch
- Malfunction of the blower motor
- Damaged harness wires or connectors

DIAGNOSIS

Required Special Tool:

- MB991223: Test Harness Set

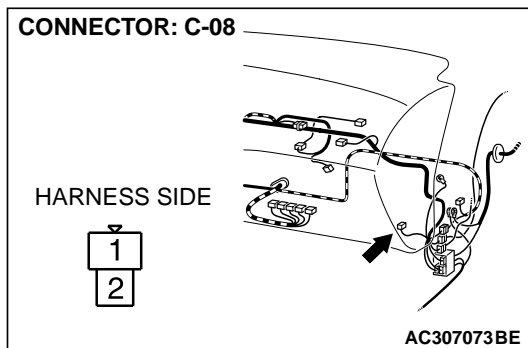
STEP 1. Check blower motor connector C-08 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

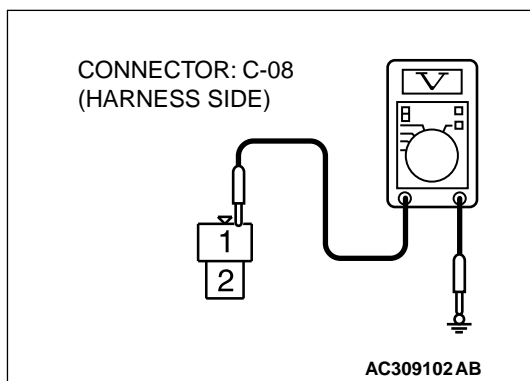
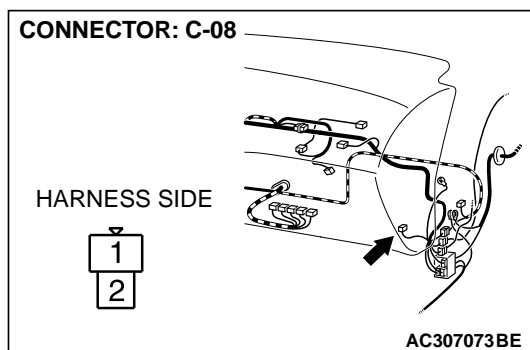
Q: Is blower motor connector C-08 in good condition?

YES : Go to Step 2.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). The blower motor should operate normally.

CONNECTOR: C-08





STEP 2. Measure the voltage at blower switch connector C-08.

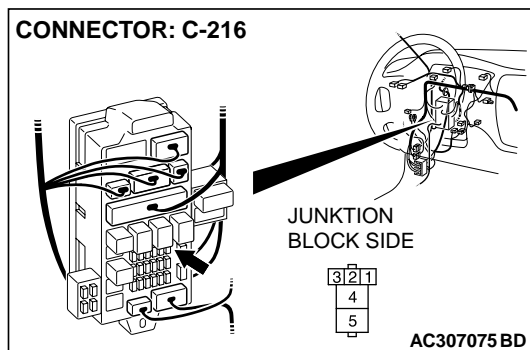
- (1) Disconnect blower switch connector C-08, and measure the voltage at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Turn the blower switch to the "4 (HI)" position.

- (4) Measure the voltage between terminal 1 and ground.
 - The measured value should be approximately 12 volts (battery positive voltage).

Q: Does the measured voltage correspond with this range?

YES : Go to Step 15.

NO : Go to Step 3.

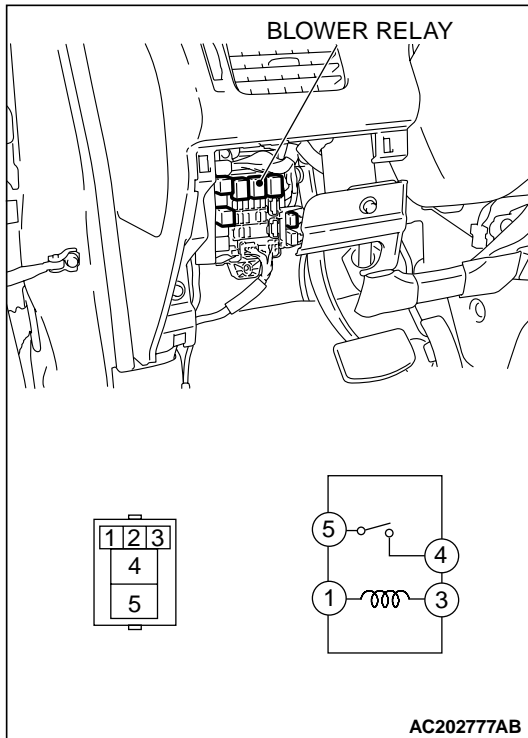


STEP 3. Check blower relay connector C-216 for damage.

Q: Is blower relay connector C-216 in good condition?

YES : Go to Step 4.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). The blower motor should operate normally.



STEP 4. Check the blower relay continuity.

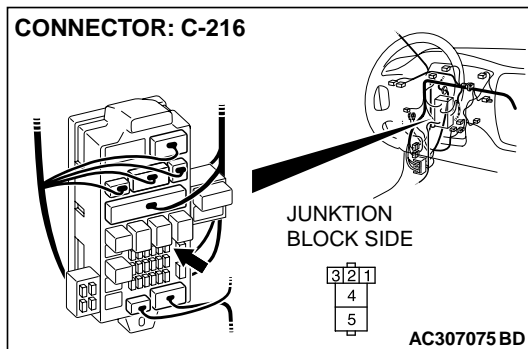
Follow the table below to check the blower relay for continuity.

| BATTERY VOLTAGE | TESTER CONNECTION | SPECIFIED CONDITION |
|--|-------------------|---------------------|
| Not applied | 4 – 5 | Open circuit |
| <ul style="list-style-type: none"> Connect terminal 1 to the positive battery terminal Connect terminal 3 to the negative battery terminal | 4 – 5 | Less than 2 ohms |

Q: Is the blower relay continuity in good condition?

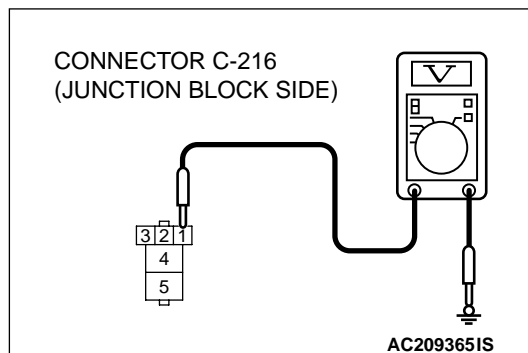
YES : Go to Step 5.

NO : Replace the blower relay. The blower motor should operate normally.



STEP 5. Measure the voltage at blower relay connector C-216.

- (1) Disconnect blower relay connector C-216, and measure the voltage at the junction block side.
- (2) Turn the ignition switch to the "ON" position.



- (3) Measure the voltage between terminal 1 and ground.

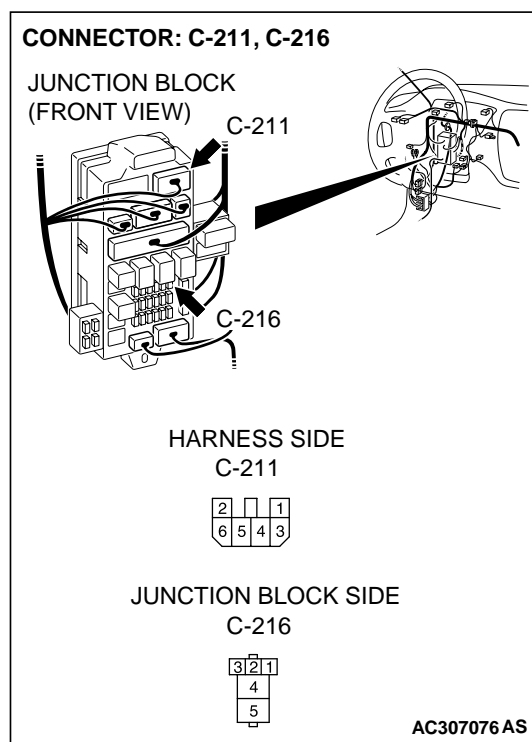
- The measured value should be approximately 12 volts (battery positive voltage).

Q: Does the measured voltage correspond with this range?

YES : Go to Step 7.

NO : Go to Step 6.

STEP 6. Check the wiring harness between blower relay connector C-216 (terminal 3) and the ignition switch (IG2).



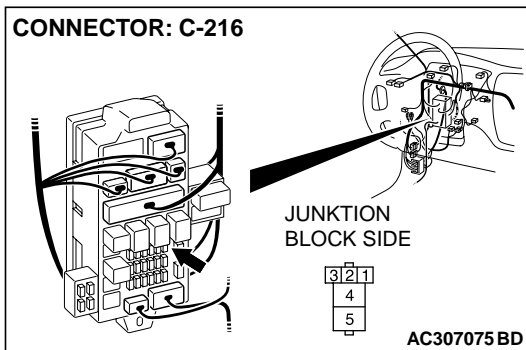
NOTE: Also check junction block connector C-211. If junction block connector C-211 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between blower relay connector C-216 (terminal 3) and the ignition switch (IG2) in good condition?

YES : It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#).

NO : Repair the wiring harness. The blower motor should operate normally.

CONNECTOR: C-216



STEP 7. Measure the resistance at blower relay connector C-216.

(1) Disconnect connector C-216, and measure the resistance at the junction block side.

(2) Measure the resistance value between terminal 1 and ground.

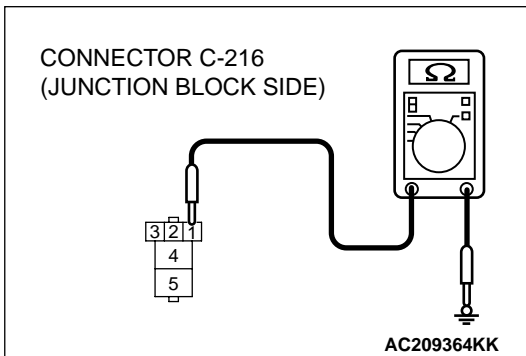
- The measured value should be 2 ohms or less.

Q: Does the measured resistance value correspond with this range?

YES : Go to Step 9.

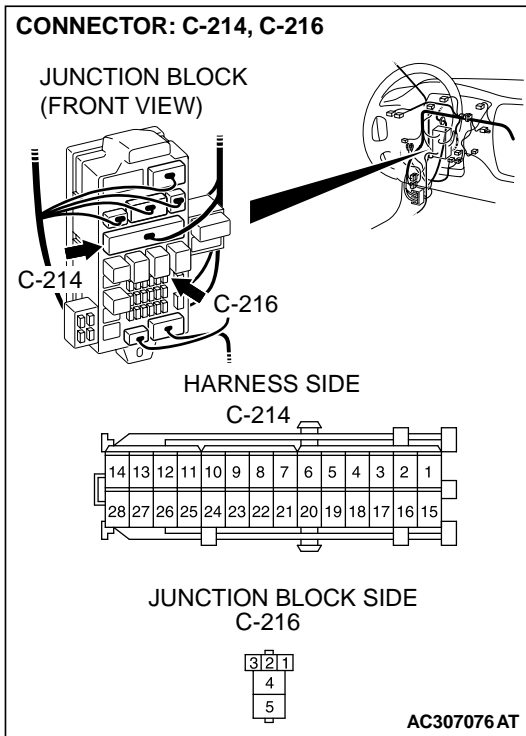
NO : Go to Step 8.

**CONNECTOR C-216
(JUNCTION BLOCK SIDE)**



STEP 8. Check the wiring harness between blower relay connector C-216 (terminal 3) and ground.

CONNECTOR: C-214, C-216



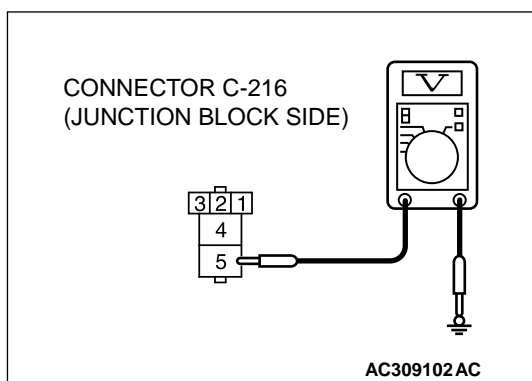
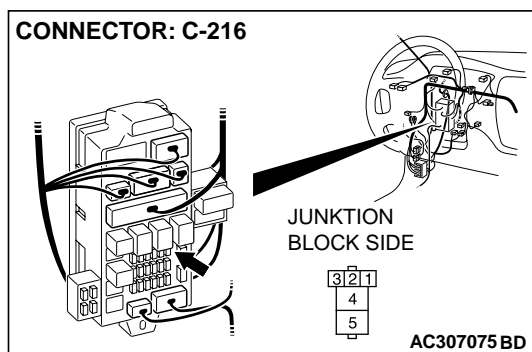
NOTE: Also check junction block connector C-214. If junction block connector C-214 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between blower relay connector C-216 (terminal 3) and ground in good condition?

- YES :** It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#).
- NO :** Repair the wiring harness. The blower motor should operate normally.

STEP 9. Measure the voltage at blower relay connector C-216.

- (1) Disconnect blower relay connector C-216, and measure the voltage at the junction block side.

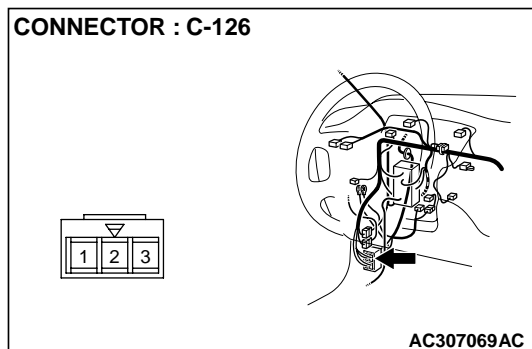


- (2) Measure the voltage between terminal 5 and ground.
- The measured value should be approximately 12 volts (battery positive voltage).

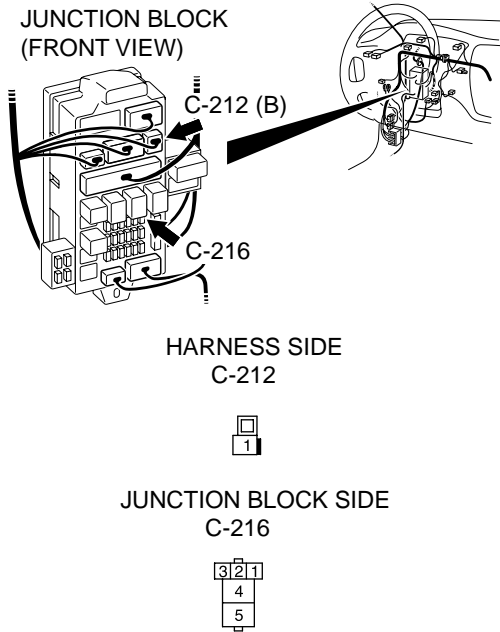
Q: Does the measured voltage correspond with this range?

- YES :** Go to Step 11.
- NO :** Go to Step 10.

STEP 10. Check the wiring harness between blower relay connector C-216 (terminal 5) and fusible link (1).



CONNECTOR: C-212, C-216



NOTE: Also check intermediate connector C-126 and junction block connector C-212. If intermediate connector C-126 or junction block connector C-212 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between blower relay connector C-216 (terminal 5) and fusible link (1) in good condition?

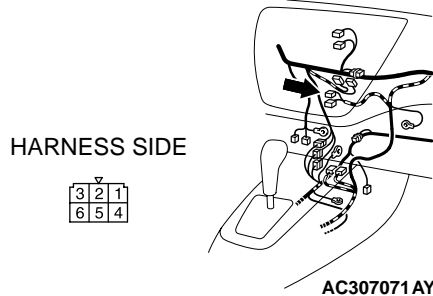
YES : It can be assumed that this malfunction is intermittent.

Refer to GROUP 00, How to Use

Troubleshooting/Inspection Service Points [P.00-6](#).

NO : Repair the wiring harness. The blower motor should operate normally.

CONNECTOR: C-125

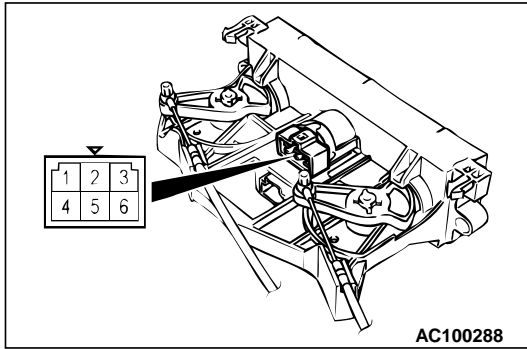


STEP 11. Check blower switch connector C-125 for damage.

Q: Is blower switch connector C-125 in good condition?

YES : Go to Step 12.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). The blower motor should operate normally.

**STEP 12. Check the blower switch continuity.**

Follow the table below to check the blower switch for continuity.

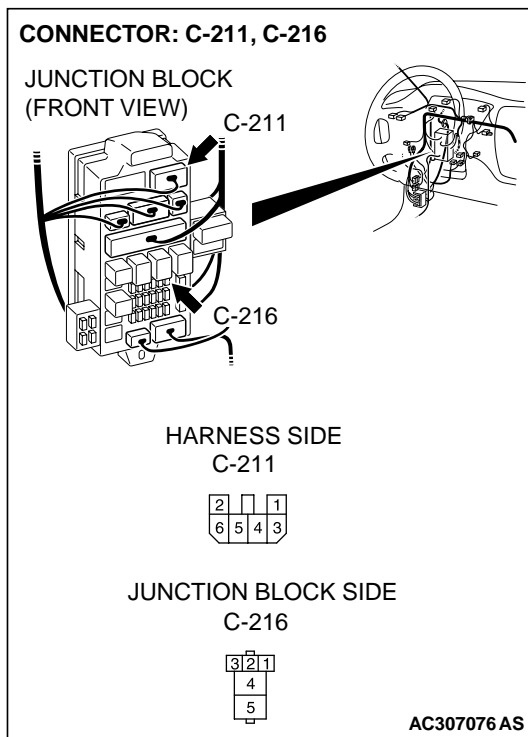
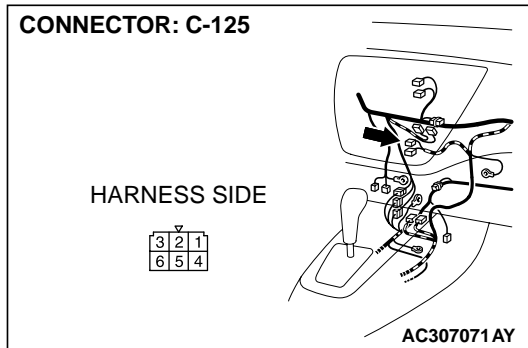
| SWITCH POSITION | TESTER CONNECTION (CONNECTOR A) | SPECIFIED CONDITION |
|-----------------|---------------------------------|---------------------|
| 0 (OFF) | 1 – 2, 2 – 4, 2 – 5, 2 – 6 | Open circuit |
| 1 (LO) | 1 – 2 | Less than 2 ohms |
| 2 (ML) | 2 – 4 | Less than 2 ohms |
| 3 (MH) | 2 – 5 | Less than 2 ohms |
| 4 (HI) | 2 – 6 | Less than 2 ohms |

Q: Is the blower switch continuity in good condition?

YES : Go to Step 13.

NO : Replace the blower switch. The blower motor should operate normally.

STEP 13. Check the wiring harness between blower switch connector C-125 (terminal 2) and blower relay connector C-216 (terminal 4).

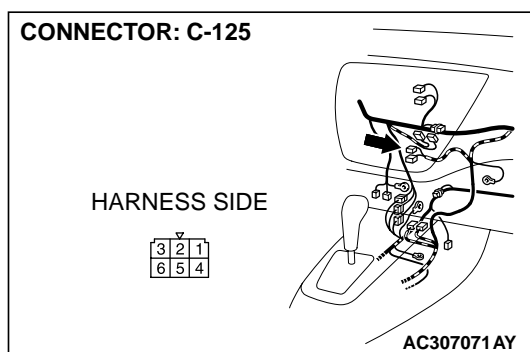
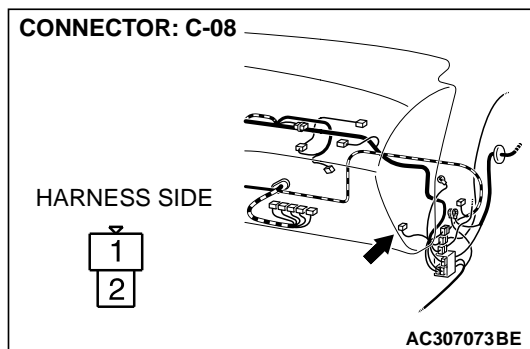


NOTE: Also check junction block connector C-211. If junction block connector C-211 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between blower switch connector C-125 (terminal 2) and blower relay connector C-216 (terminal 4) in good condition?

YES : Go to Step 14.

NO : Repair the wiring harness. The blower motor should operate normally.

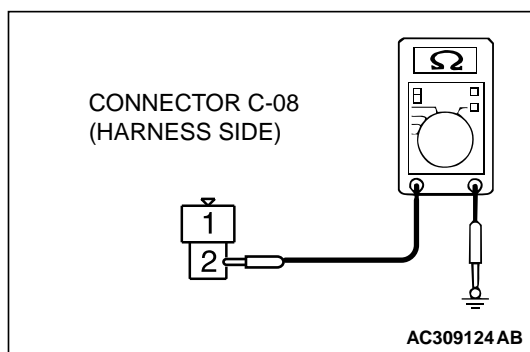
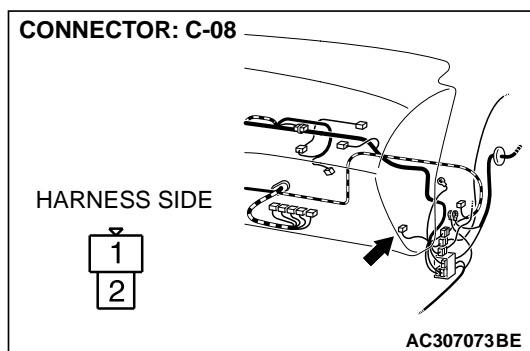


STEP 14. Check the wiring harness between blower switch connector C-125 (terminal 6) and blower motor connector C-08 (terminal 1).

Q: Is the wiring harness between blower switch connector C-125 (terminal 6) and blower motor connector C-08 (terminal 1) in good condition?

YES : It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#).

NO : Repair the wiring harness. The blower motor should operate normally.



STEP 15. Measure the resistance at blower motor connector C-08.

(1) Disconnect blower motor connector C-08, and measure the voltage at the wiring harness side.

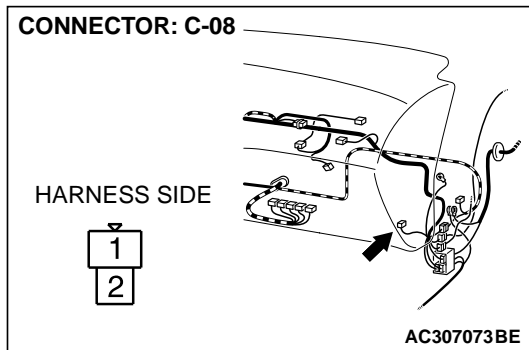
(2) Measure the resistance value between terminal 2 and ground.

- The measured value should be 2 ohms or less.

Q: Does the measured resistance value correspond with this range?

YES : Go to Step 17.

NO : Go to Step 16.



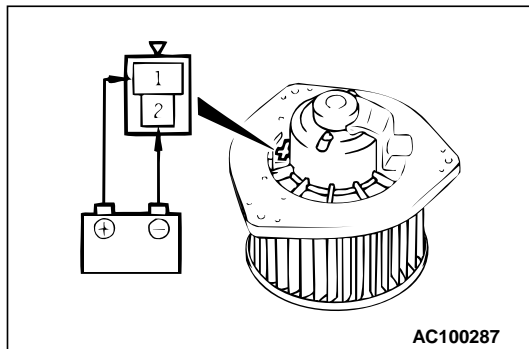
STEP 16. Check the wiring harness between blower motor connector C-08 (terminal 2) and ground.

Q: Is the wiring harness between blower motor connector C-08 (terminal 2) and ground in good condition?

YES : It can be assumed that this malfunction is intermittent.
Refer to GROUP 00, How to Use

Troubleshooting/Inspection Service Points [P.00-6](#).

NO : Repair the wiring harness. The blower motor should operate normally.



STEP 17. Check the blower fan and motor operation.

When battery voltage is applied between the terminals, check that the motor operates.

Q: Is there any abnormal noise?

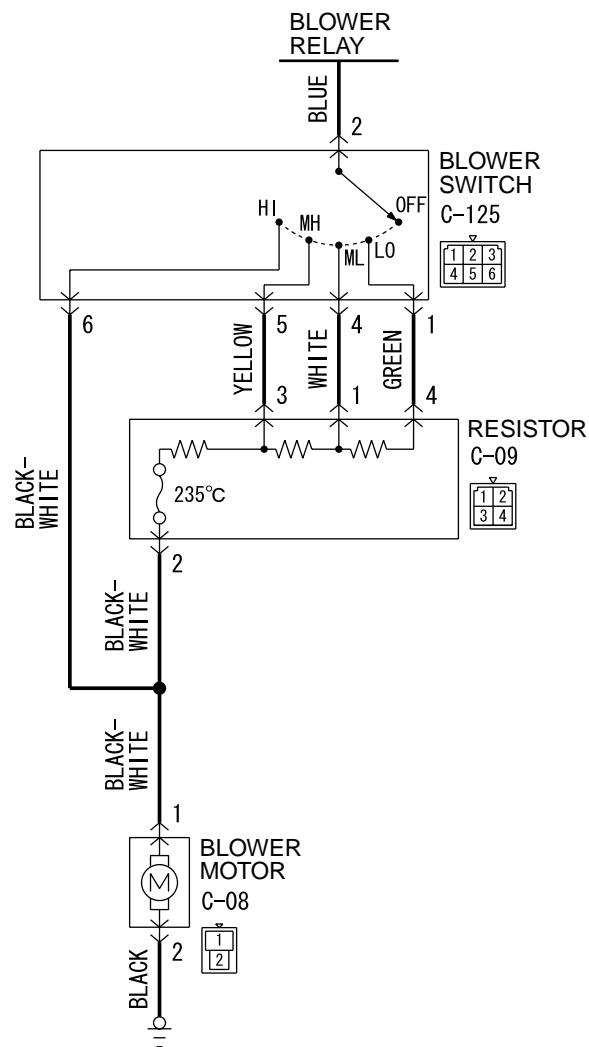
YES : It can be assumed that this malfunction is intermittent.
Refer to GROUP 00, How to Use

Troubleshooting/Inspection Service Points [P.00-6](#).

NO : Replace the blower relay. The blower motor should operate normally.

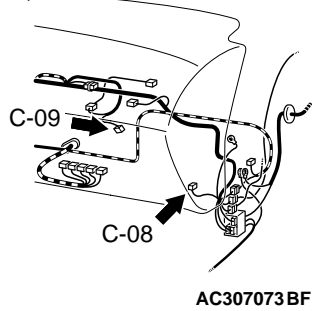
INSPECTION PROCEDURE 7: Blower Air Amount cannot be Changed.

Blower Switch and Resistor Circuit

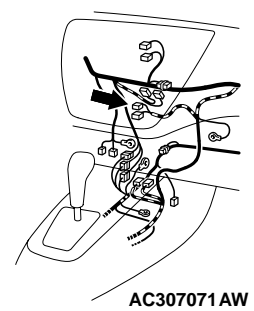


W4J55M12AA

CONNECTOR: C-08, C-09



CONNECTOR: C-125

**TECHNICAL DESCRIPTION (COMMENT)**

If the blower air amount can not be changed when the blower switch is operated, the blower switch may be defective.

TROUBLESHOOTING HINTS

- Malfunction of the resistor
- Malfunction of the blower switch
- Damaged harness wires or connectors

DIAGNOSIS

Required Special Tool:

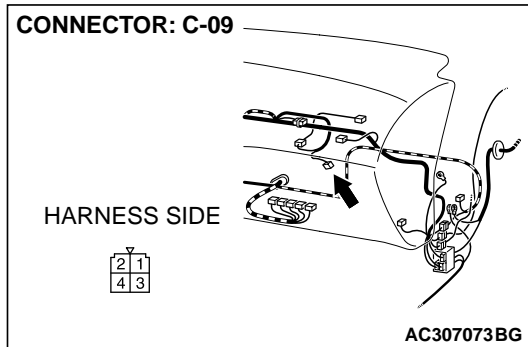
- MB991223: Test Harness Set

STEP 1. Check resistor connector C-09 for damage.

Q: Is resistor connector C-09 in good condition?

YES : Go to Step 2.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). The blower motor should operate normally.



STEP 2. Check the resistor resistance value.

Use an ohmmeter to measure the resistance between the terminals as indicated below. Check that the measured value is at the standard value.

Standard value:

| MEASUREMENT TERMINAL | STANDARD VALUE Ω |
|--------------------------------|-------------------------|
| Between terminals 2 and 4 (LO) | 2.54 |
| Between terminals 1 and 2 (ML) | 1.24 |
| Between terminals 3 and 2 (MH) | 0.6 |

Q: Is the measured value at the standard value?

YES : Go to Step 3.

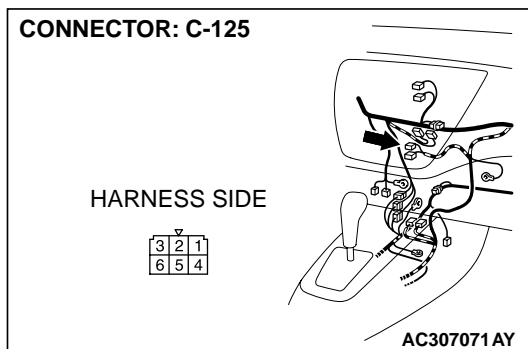
NO : Replace the resistor. The blower motor should operate normally.

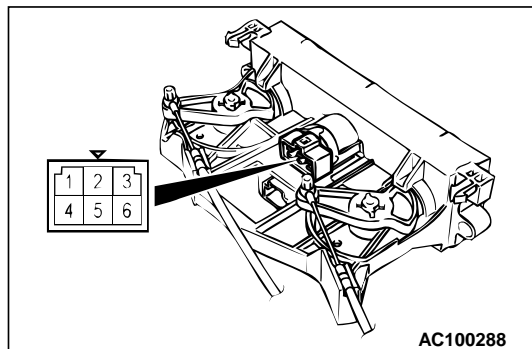
STEP 3. Check blower switch connector C-125 for damage.

Q: Are blower switch connector C-125 in good condition?

YES : Go to Step 4.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). The blower motor should operate normally.



**STEP 4. Check the blower switch continuity.**

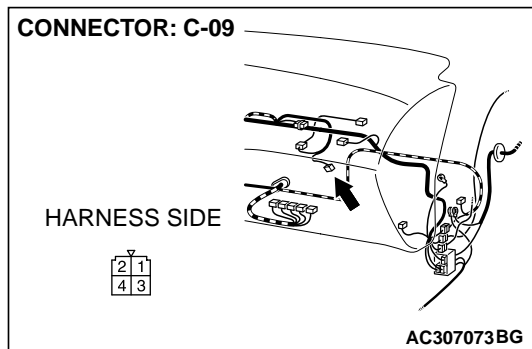
Follow the table below to check the blower switch for continuity.

| SWITCH POSITION | TESTER CONNECTION (CONNECTOR A) | SPECIFIED CONDITION |
|-----------------|---------------------------------|---------------------|
| 0 (OFF) | 1 – 2, 2 – 4, 2 – 5, 2 – 6 | Open circuit |
| 1 (LO) | 1 – 2 | Less than 2 ohms |
| 2 (ML) | 2 – 4 | Less than 2 ohms |
| 3 (MH) | 2 – 5 | Less than 2 ohms |
| 4 (HI) | 2 – 6 | Less than 2 ohms |

Q: Is the blower switch continuity in good condition?

YES : Go to Step 5.

NO : Replace the blower switch. The blower motor should operate normally.

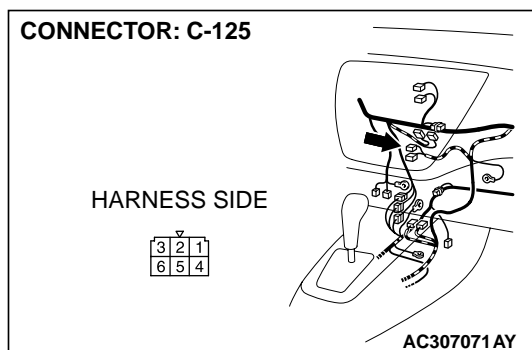


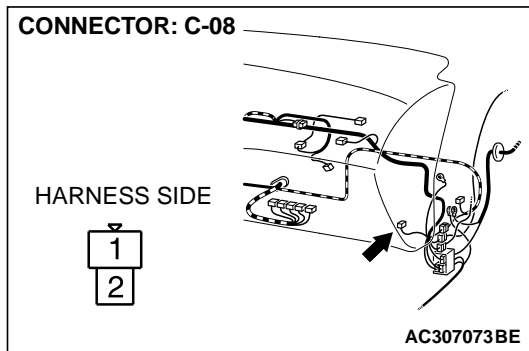
STEP 5. Check the wiring harness between blower switch connector C-125 (terminals 1, 4 and 5) and resistor connector C-09 (terminals 4, 1 and 3).

Q: Is the wiring harness between blower switch connector C-125 (terminals 1, 4 and 5) and resistor connector C-09 (terminals 4, 1 and 3) in good condition?

YES : Go to Step 6.

NO : Repair the wiring harness. The blower motor should operate normally.



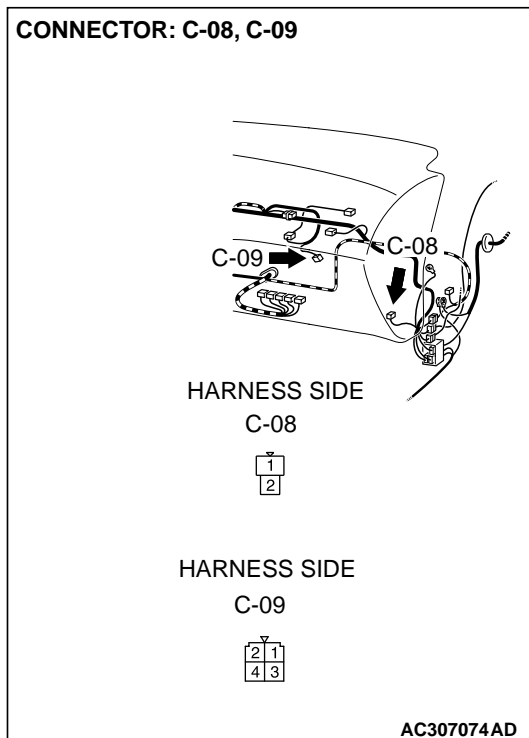


STEP 6. Check blower motor connector C-08 for damage.

Q: Is blower motor connector C-08 in good condition?

YES : Go to Step 7.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). The blower motor should operate normally.

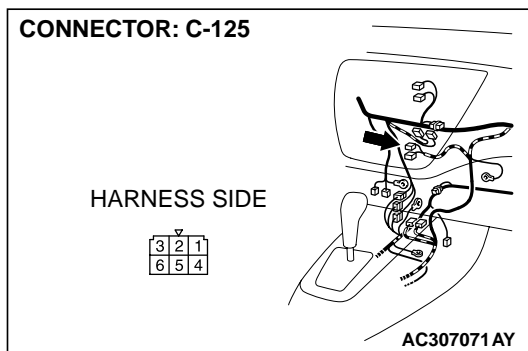
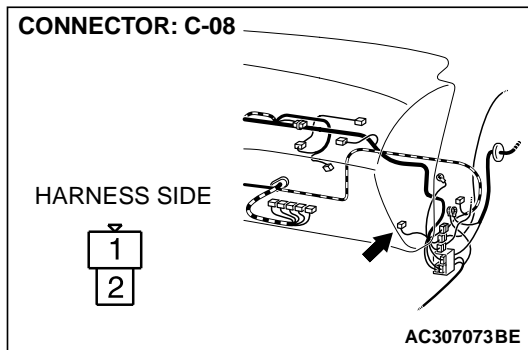


STEP 7. Check the wiring harness between blower motor connector C-08 (terminal 1) and resistor connector C-09 (terminal 2).

Q: Is the wiring harness between blower motor connector C-08 (terminal 1) and resistor connector C-09 (terminal 2) in good condition?

YES : Go to Step 8.

NO : Repair the wiring harness. The blower motor should operate normally.



STEP 8. Check the wiring harness between blower switch connector C-125 (terminal 6) and blower motor connector C-08 (terminal 1).

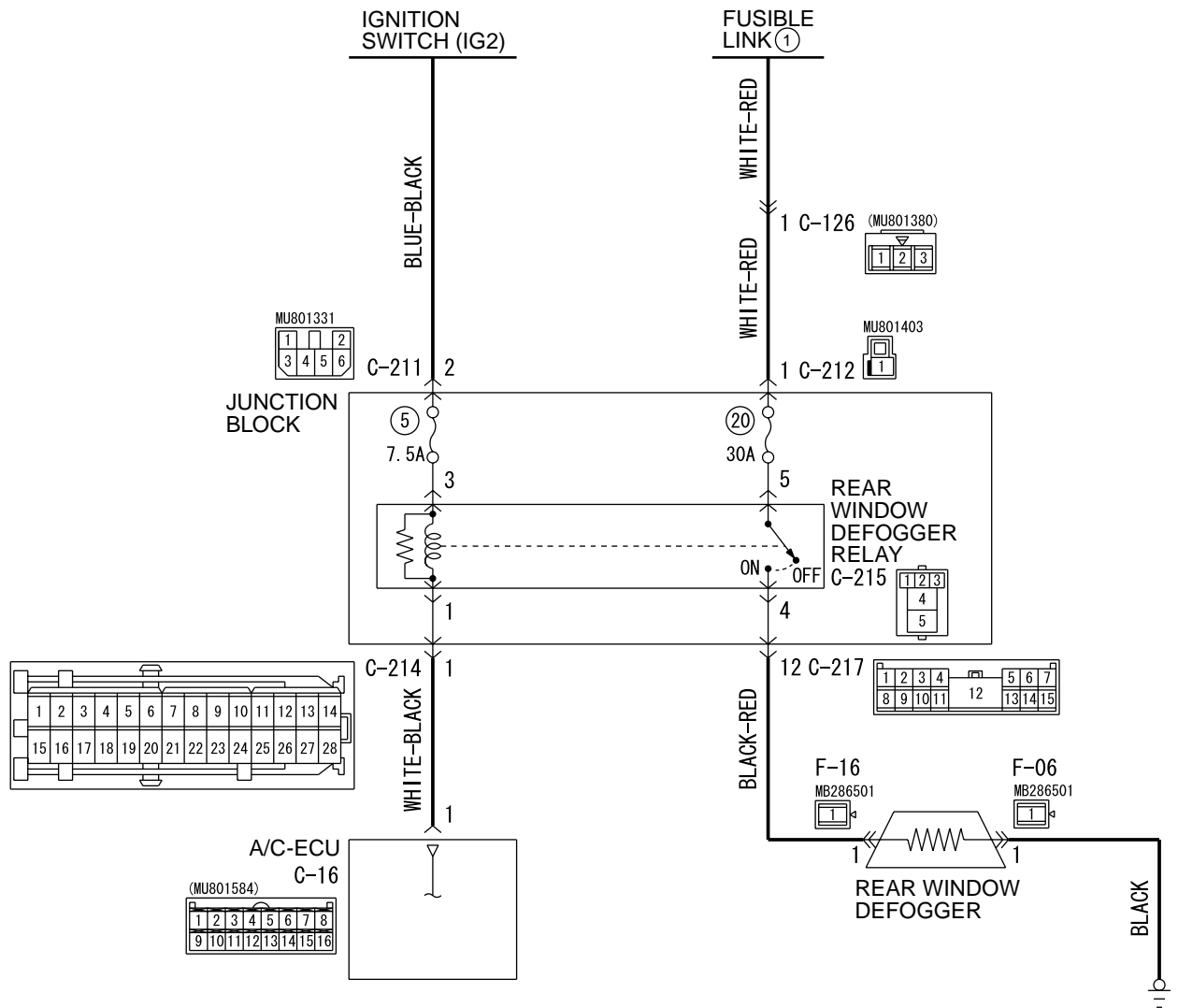
Q: Is the wiring harness between blower switch connector C-125 (terminal 6) and blower motor connector C-08 (terminal 1) in good condition?

YES : It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#).

NO : Repair the wiring harness. The blower motor should operate normally.

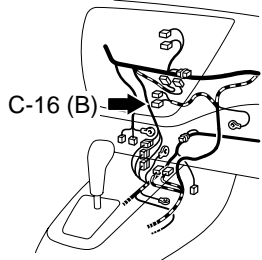
INDPECTION PROCEDURE 8: Defroster Function does not Operate.

Rear Window Defogger Circuit



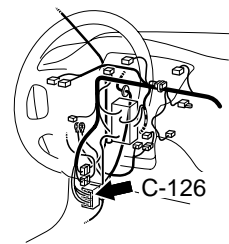
W4J55M07AA

CONNECTOR: C-16

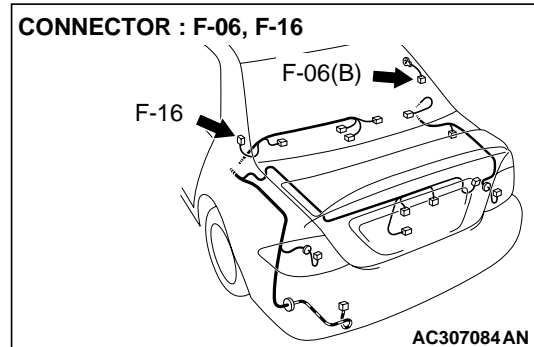
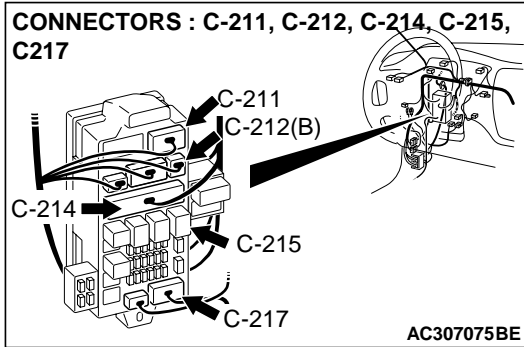


AC307071AQ

CONNECTOR: C-126



AC307069BQ

**TECHNICAL DESCRIPTION (COMMENT)**

If the rear window defogger does not operate when the rear window defogger switch is turned on, the rear window defogger relay system may be defective.

TROUBLESHOOTING HINTS

- Malfunction of the A/C-ECU
- Malfunction of the rear window defogger relay
- Damaged harness wires or connectors

DIAGNOSIS**Required Special Tool:**

- MB991223: Test Harness Set

STEP 1. Check the A/C and outside/inside air selection damper control motor operation.

Q: Do the A/C and outside/inside air selection damper control motor work normally?

YES : Go to Step 2.

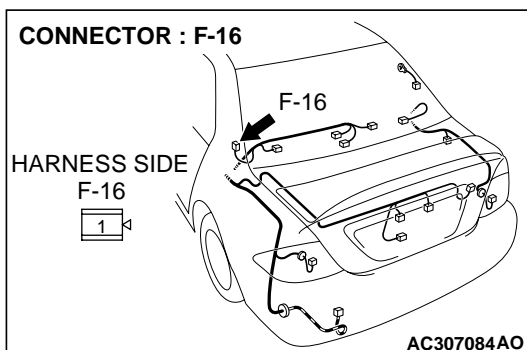
NO : Refer to Inspection procedure 10 "Malfunction of the A/C-ECU Power Supply system [P.55-92](#)."

STEP 2. Check rear window defogger connector F-16 for damage.

Q: Is rear window defogger connector F-16 in good condition?

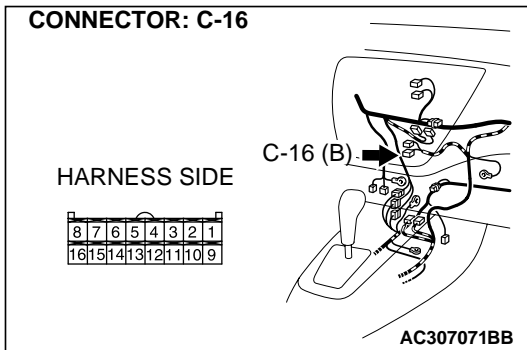
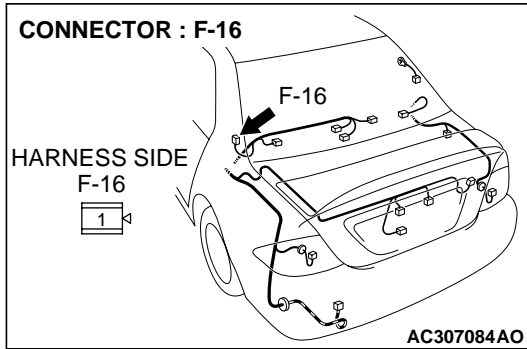
YES : Go to Step 3.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the rear window defogger system works normally.

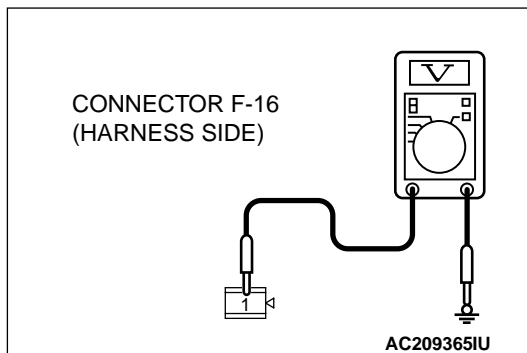
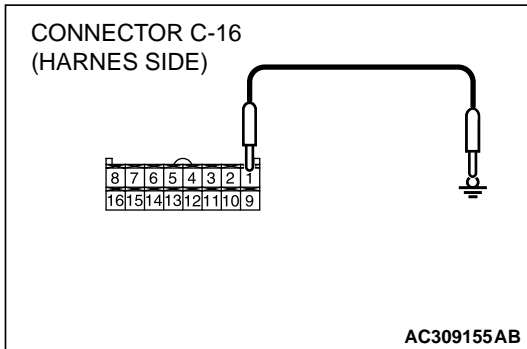


STEP 3. Measure the voltage at rear window defogger connector F-16.

- (1) Disconnect rear window defogger connector F-16.
- (2) Turn the ignition switch to the "ON" position.



- (3) Disconnect A/C-ECU connector C-16 and ground harness side terminal No.1.

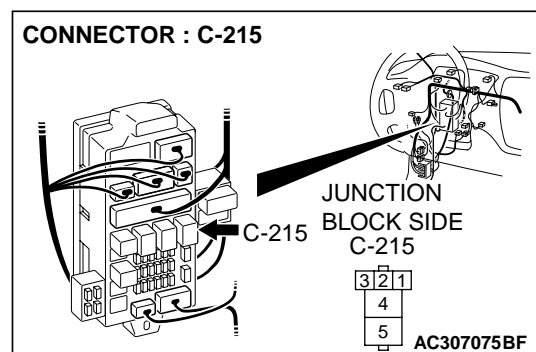


- (4) Measure the voltage between terminal 1 and ground.
 - The measured value should be approximately 12 volts (battery positive voltage).

Q: Does the measured voltage correspond with this range?

YES : Go to Step 13.

NO : Go to Step 4.

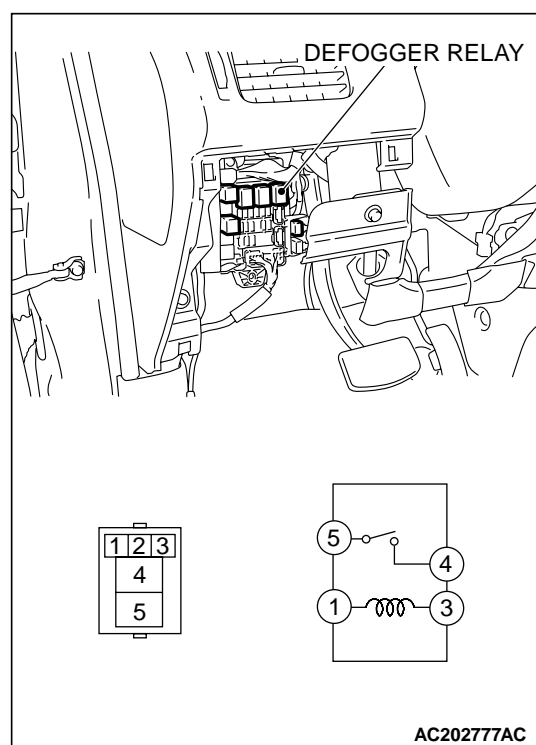


STEP 4. Check rear window defogger relay connector C-215 for damage.

Q: Is rear window defogger relay connector C-215 in good condition?

YES : Go to Step 5.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). The rear window defogger system should work normally.



STEP 5. Check the rear window defogger relay continuity.

Follow the table below to check the rear window defogger relay for continuity.

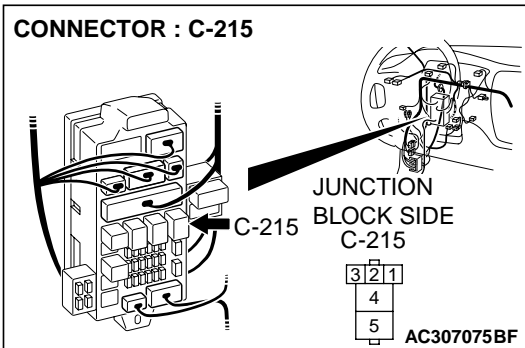
| BATTERY VOLTAGE | TESTER CONNECTION | SPECIFIED CONDITION |
|--|-------------------|---------------------|
| Not applied | 4 – 5 | Open circuit |
| <ul style="list-style-type: none"> Connect terminal 1 to the positive battery terminal Connect terminal 3 to the negative battery terminal | 4 – 5 | Less than 2 ohms |

Q: Is the rear window defogger relay continuity in good condition?

YES : Go to Step 6.

NO : Replace the rear window defogger relay. The rear window defogger system should work normally.

CONNECTOR : C-215



STEP 6. Measure the voltage at rear window defogger relay connector C-215.

(1) Disconnect rear window defogger relay connector C-215, and measure the voltage at the junction block side.

(2) Measure the voltage between terminal 5 and ground.

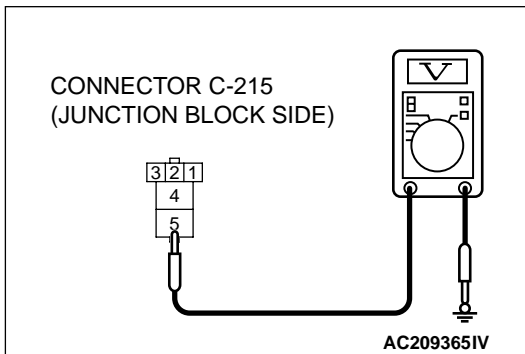
- The measured value should be approximately 12 volts (battery positive voltage).

Q: Does the measured voltage correspond with this range?

YES : Go to Step 8.

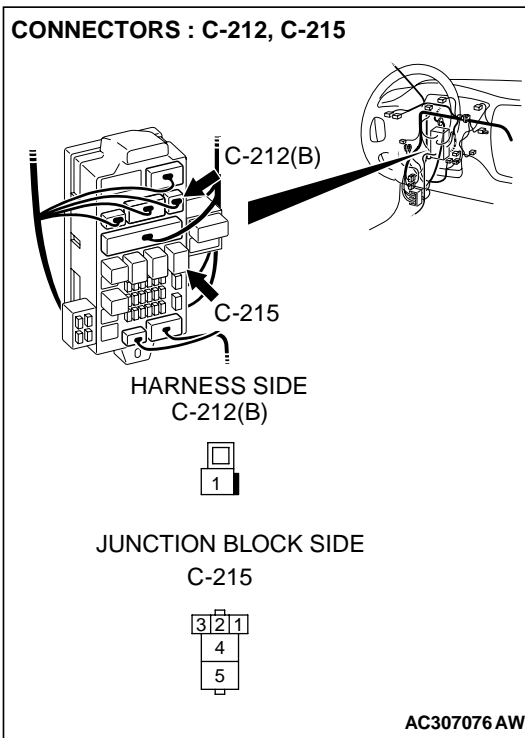
NO : Go to Step 7.

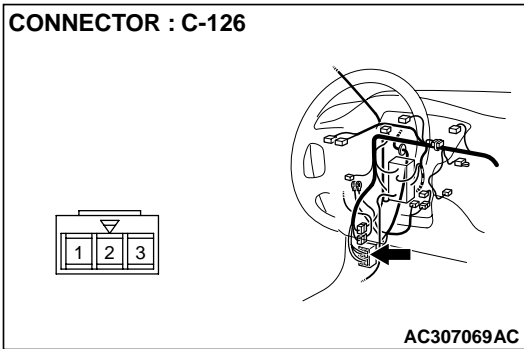
**CONNECTOR C-215
(JUNCTION BLOCK SIDE)**



STEP 7. Check the wiring harness between rear window defogger relay connector C-215 (terminal 5) and the fusible link (1).

CONNECTORS : C-212, C-215



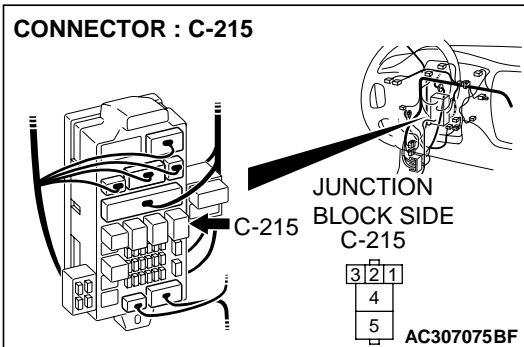
CONNECTOR : C-126

NOTE: Also check junction block connector C-212 and intermediate connector C-126. If junction block connector C-212 or intermediate connector C-126 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between rear window defogger relay connector C-215 (terminal 5) and the fusible link (1) in good condition?

YES : It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#).

NO : Repair the wiring harness. Check that the rear window defogger system works normally.

CONNECTOR : C-215

STEP 8. Measure the voltage at rear window defogger relay connector C-215.

- (1) Disconnect rear window defogger relay connector C-215, and measure the voltage at the junction block side.
- (2) Turn the ignition switch to the "ON" position.

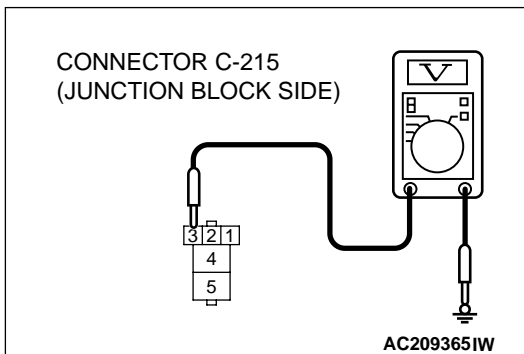
- (3) Measure the voltage between terminal 3 and ground.
 - The measured value should be approximately 12 volts (battery positive voltage).

Q: Does the measured voltage correspond with this range?

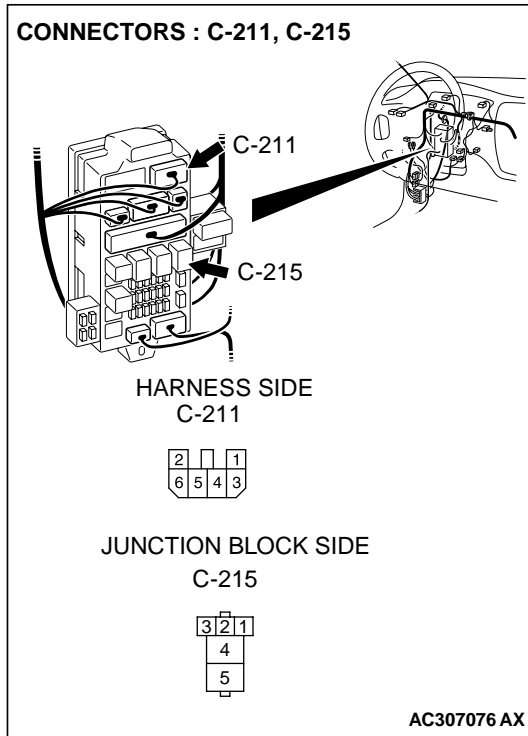
YES : Go to Step 10.

NO : Go to Step 9.

**CONNECTOR C-215
(JUNCTION BLOCK SIDE)**



STEP 9. Check the wiring harness between rear window defogger relay connector C-215 (terminal 1) and ignition switch.



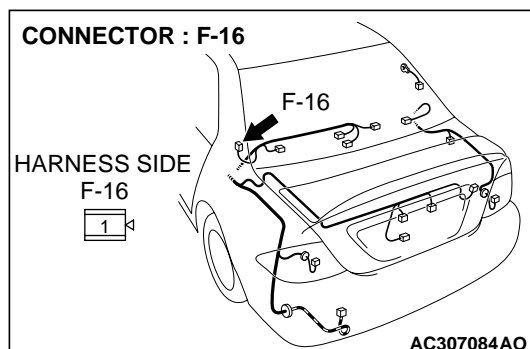
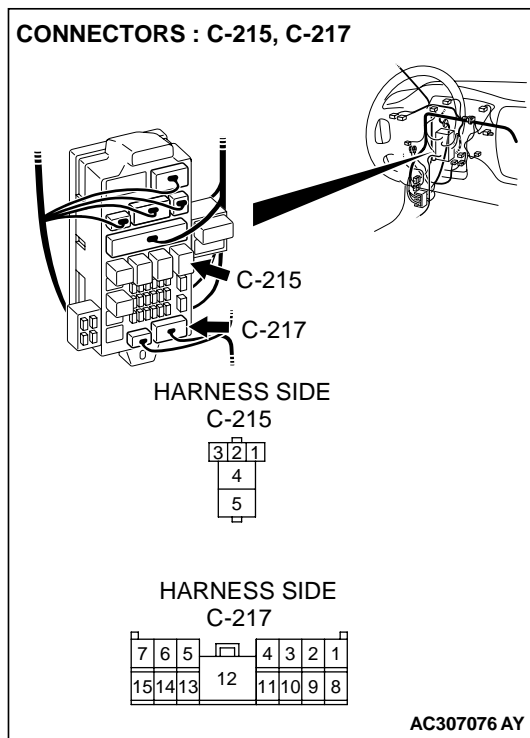
NOTE: Also check junction block connector C-211. If junction block connector C-211 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between rear window defogger relay connector C-215 (terminal 1) and ignition switch in good condition?

YES : It can be assumed that this malfunction is intermittent.
Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#).

NO : Repair the wiring harness. Check that the rear window defogger system works normally.

STEP 10. Check the wiring harness between rear window defogger relay connector C-215 (terminal 4) and rear window defogger connector F-16 (terminal 1).

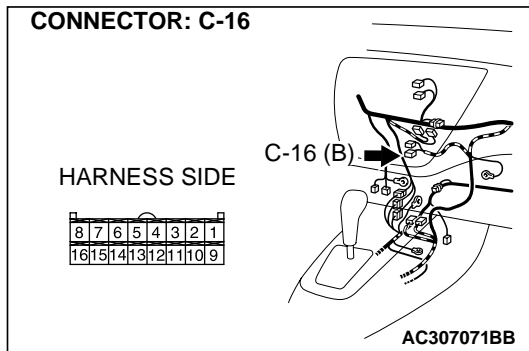


NOTE: Also check junction block connector C-217. If junction block connector C-217 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between rear window defogger relay connector C-215 (terminal 4) and rear window defogger connector F-16 (terminal 1) in good condition?

YES : Go to Step 11.

NO : Repair or replace the wiring harness. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the rear window defogger system works normally.

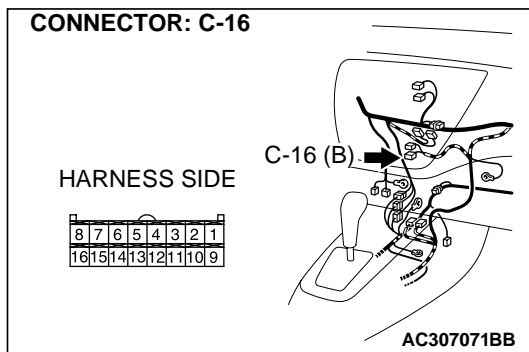


STEP 11. Check A/C-ECU connector C-16 for damage.

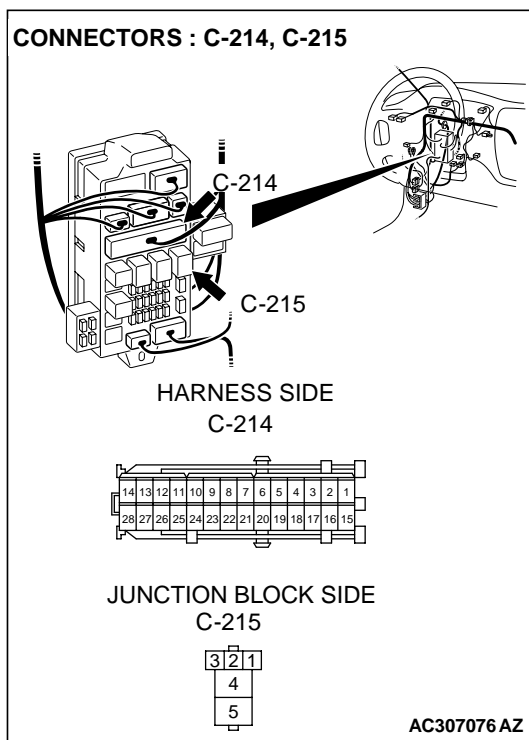
Q: Is A/C-ECU connector C-16 in good condition?

YES : Go to Step 12.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the rear window defogger system works normally.



STEP 12. Check the wiring harness between rear window defogger relay connector C-215 (terminal 1) and A/C-ECU connector C-16 (terminal 1).



NOTE: Also check junction block connector C-214. If junction block connector C-214 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between rear window defogger relay connector C-215 (terminal 1) and A/C-ECU connector C-16 (terminal 1) in good condition?

YES : Replace the A/C-ECU. The rear window defogger should operate normally.

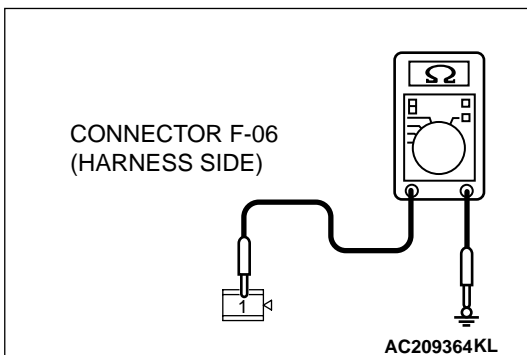
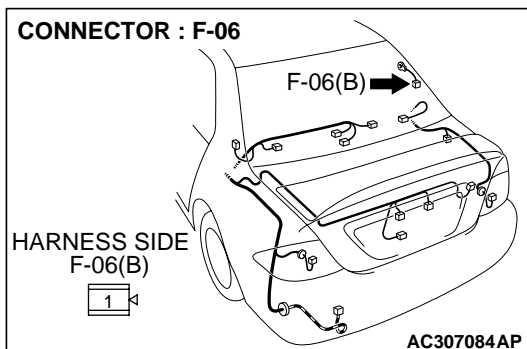
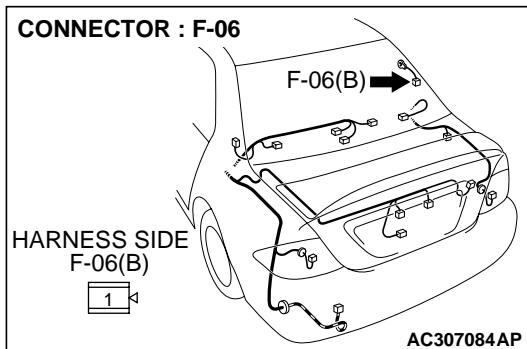
NO : Repair or replace the wiring harness. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the rear window defogger system works normally.

STEP 13. Check rear window defogger connector F-06 for damage.

Q: Is rear window defogger connector F-06 in good condition?

YES : Go to Step 14.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the rear window defogger system works normally.



STEP 14. Measure the resistance at rear window defogger connector F-06 in order to check the ground circuit to the rear window defogger connector.

(1) Disconnect rear window defogger connector F-06, and measure at the wiring harness side.

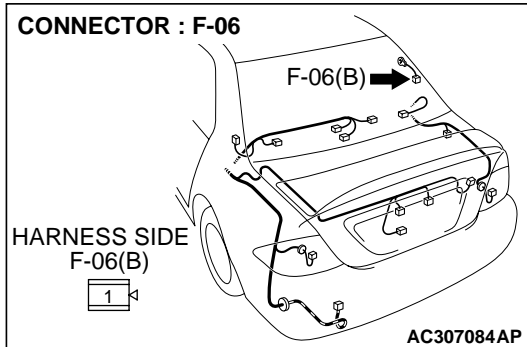
(2) Measure the resistance value between terminal 1 and ground.

- The measured value should be 2 ohms or less.

Q: Does the measured resistance value correspond with this range?

YES : Go to Step 16.

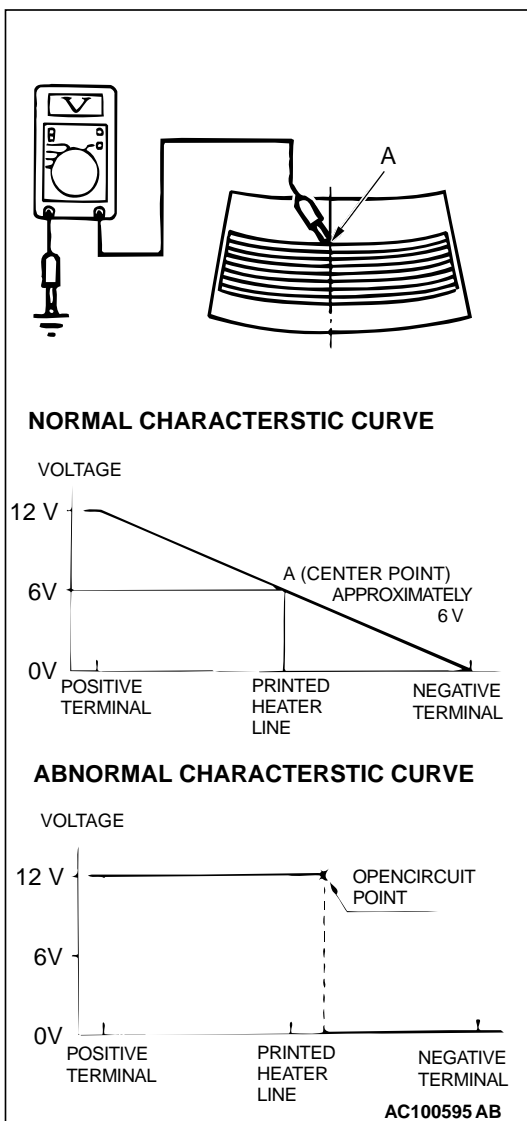
NO : Go to Step 15.



STEP 15. Check the wiring harness between rear window defogger connector F-06 (terminal 1) and ground.

Q: Is the wiring harness between rear window defogger connector F-06 (terminal 1) and ground in good condition?

- YES :** It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#).
- NO :** Repair or replace the wiring harness. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the rear window defogger system works normally.



STEP 16. Check the rear window defogger.

- (1) Let the engine run at 2,000 r/min, and check the printed heater with the battery fully charged.
- (2) Turn on the rear window defogger switch, and use a voltmeter to measure the voltage in each printed heater at middle point A on the rear window glass.
 - The value should be approximately 6 volts.

Q: Does the rear window defogger work normally?

- YES :** It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#).
- NO :** Repair the rear window defogger. Check that the rear window defogger system works normally.

INSPECTION PROCEDURE 9: DEFOGGER TIMER FUNCTION DOES NOT OPERATE.**TECHNICAL DESCRIPTION (COMMENT)**

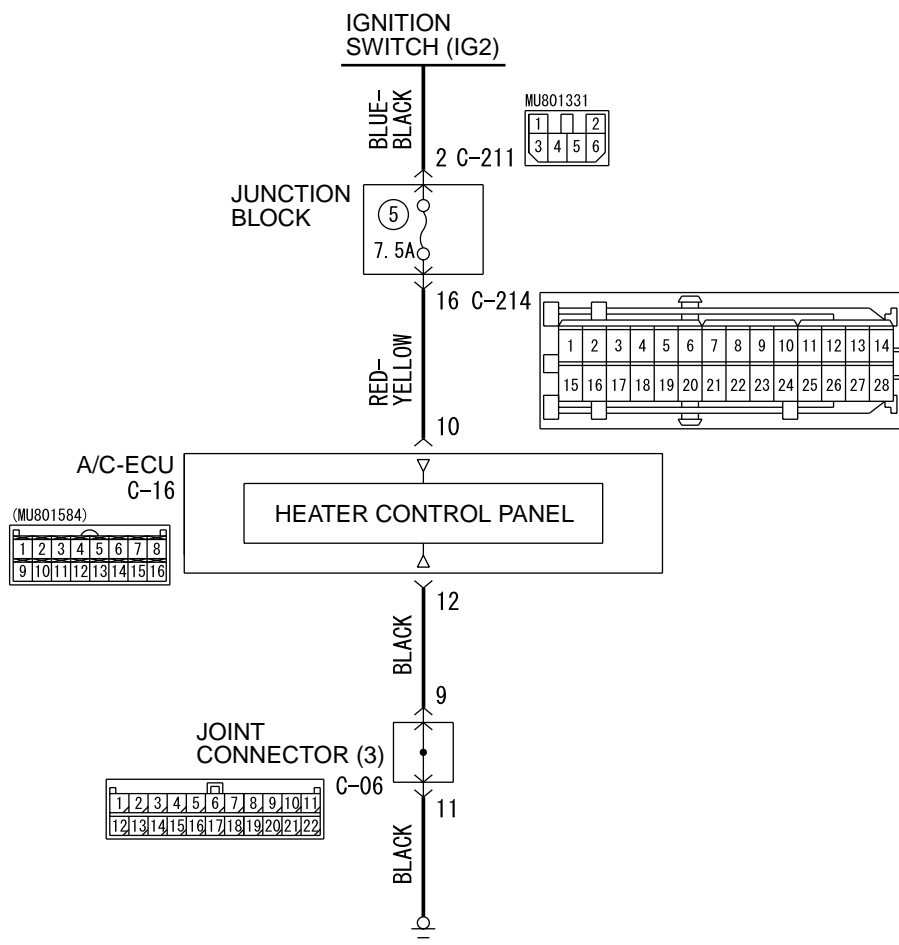
Turn ON the defogger switch. If the defogger does not shut off after roughly 20 minutes then the defogger timer is malfunctioning.

TROUBLESHOOTING HINTS

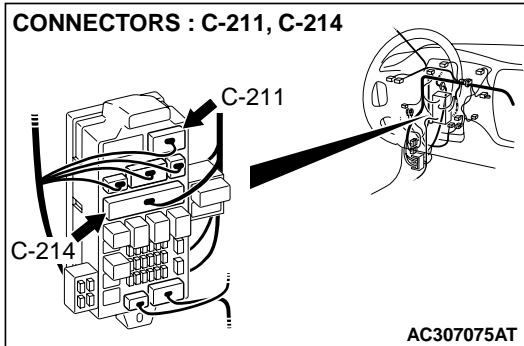
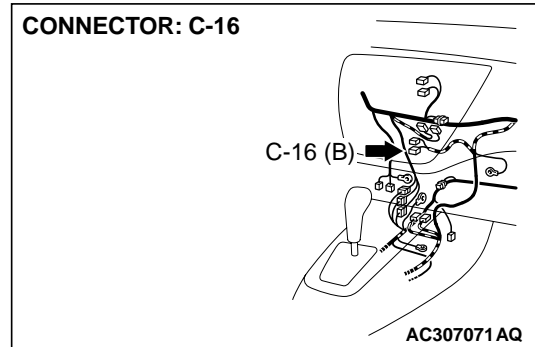
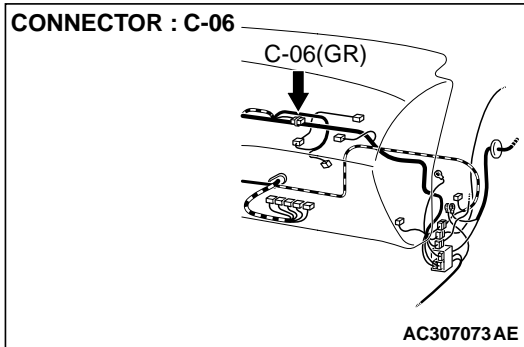
- Malformation of the A/C-ECU

DIAGNOSIS

Replace the A/C-ECU.

INSPECTION PROCEDURE 10: Malfunction of the A/C-ECU Power supply system.**A/C-ECU Power Supply Circuit**

W4J55M13AA



TECHNICAL DESCRIPTION (COMMENT)

The A/C-ECU power system may be defective if the air conditioner, defogger, and outside/inside air changeover damper motor all do not operate normally.

TROUBLESHOOTING HINTS

- Malformation of the A/C-ECU
- Damaged harness wires or connectors

DIAGNOSIS

Required Special Tool:

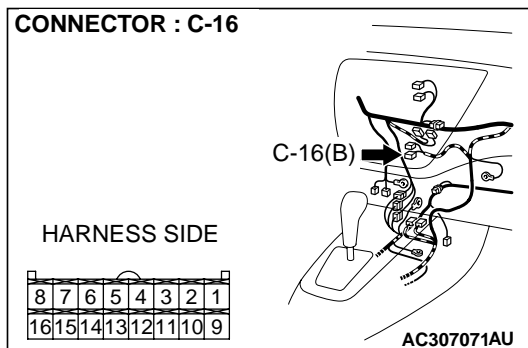
- MB991223: Test Harness Set

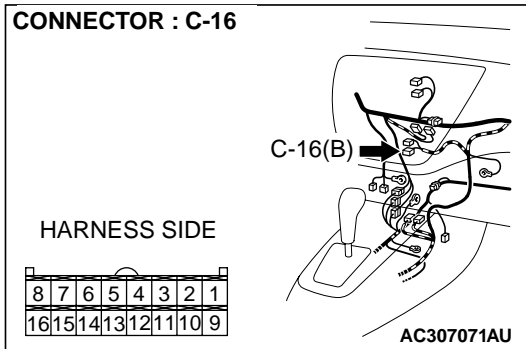
STEP 1. Check A/C-ECU connector C-16 for damage.

Q: Is A/C-ECU connector C-16 in good condition?

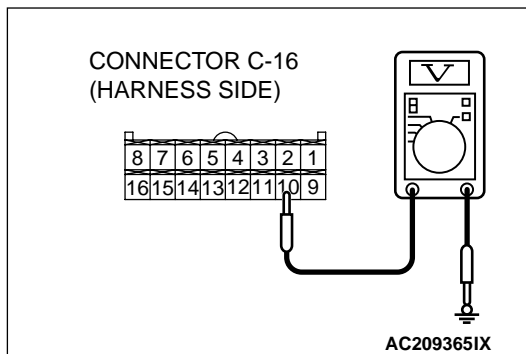
YES : Go to Step 2.

NO : Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). Check that the air conditioning works normally.



CONNECTOR : C-16**STEP 2. Measure the voltage at A/C-ECU connector C-16.**

- (1) Disconnect A/C-ECU connector C-16 and measure the voltage at the harness side.
- (2) Turn the ignition switch to the "ON" position.

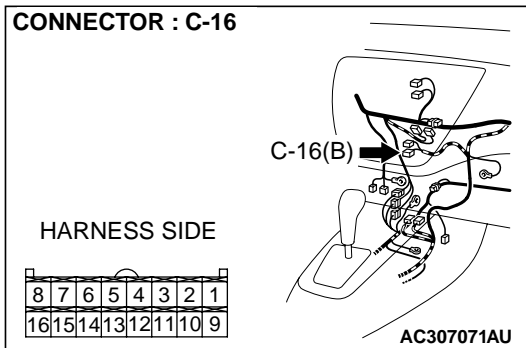


- (3) Measure the voltage between terminal 10 and ground.
 - The measured value should be approximately 12 volts (battery positive voltage).

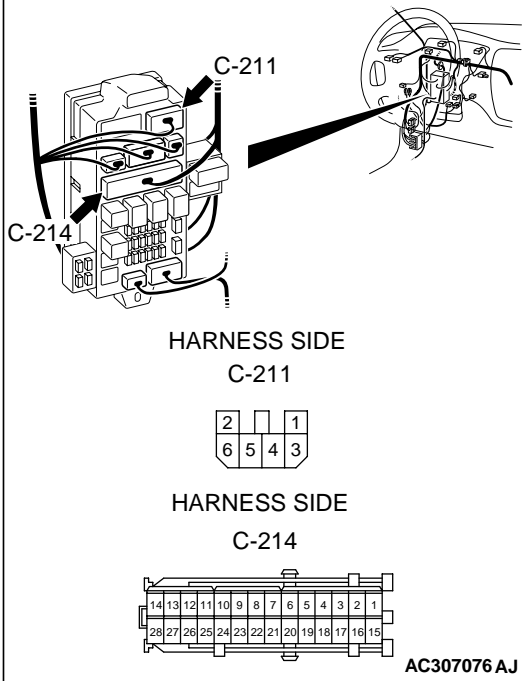
Q: Does the measured voltage correspond with this range?

YES : Go to Step 4.

NO : Go to Step 3.

CONNECTOR : C-16**STEP 3. Check the wiring harness between A/C-ECU connector C-16 (terminal 10) and the ignition switch (IG2).**

CONNECTORS : C-211, C-214

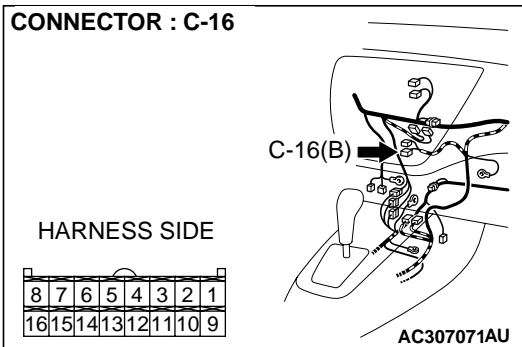


NOTE: Also check junction block connectors C-214 and C-211. If junction block connectors C-214 or C-211 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between A/C-ECU connector C-16 (terminal 10) and the ignition switch (IG2) in good condition?

- YES :** It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#).
- NO :** Repair the wiring harness. Check that the air conditioning works normally.

CONNECTOR : C-16



STEP 4. Measure the resistance at A/C-ECU connector C-16.

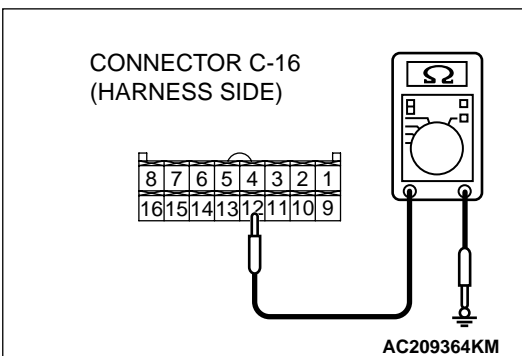
(1) Disconnect A/C-ECU connector C-16, and measure at the wiring harness side.

(2) Measure the resistance between terminal 12 and ground.

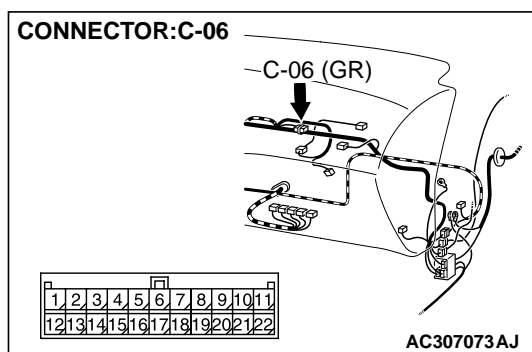
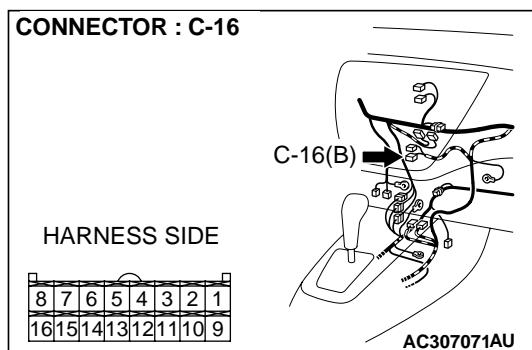
- The measured value should be 2 ohms or less.

Q: Does the measured resistance value correspond with this range?

- YES :** Replace the A/C-ECU, and check that the air conditioning works normally.
- NO :** Go to Step 5.



STEP 5. Check the wiring harness between A/C-ECU connector C-16 (terminal 12) and the ground.



NOTE: Also check joint connector (3) connectors C-06. If joint connector (3) connectors C-06 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

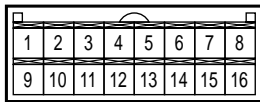
Q: Is the wiring harness between A/C-ECU connector C-16 (terminal 12) and the ground in good condition?

YES : Replace the A/C-ECU, and check that the air conditioning works normally.

NO : Repair the wiring harness. Check that the air conditioning works normally.

CHECK AT ECU TERMINAL

M1552010300312

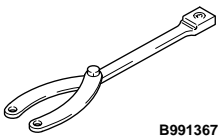
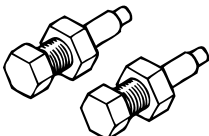


AC100607A

| TERMINAL NO. | CHECK ITEM | CHECKING REQUIREMENT | NORMAL CONDITION |
|--------------|--|--|--------------------------|
| 1 | Rear defogger relay | Defogger switch: ON | 0 V |
| | | Defogger switch: OFF | Battery positive voltage |
| 2 | Inside/outside air changeover damper motor (outside air) | When the damper is moved to the inside air recirculation position | 0 V |
| | | When the damper is moved to the outside air inside air intake position | Battery positive voltage |
| 3 | Inside/outside air changeover damper motor (inside air) | When the damper is moved to the inside air recirculation position | Battery positive voltage |
| | | When the damper is moved to the outside air inside air intake position | 0 V |
| 4 | Output to the ECM or the PCM (A/C1) | A/C stopped | 0 V |
| | | A/C switch: ON, blower switch: ON (room temperature) | Battery positive voltage |
| 5 | Output to the ECM or the PCM (A/C2) | When the A/C is under low load | Battery positive voltage |
| | | When the A/C is under high load | 0 V |
| 6 | Power supply to the A/C illumination | Lighting switch: ON | Battery positive voltage |
| 7 | - | - | - |
| 8 | Blower switch (lo) | blower switch: lo | Battery positive voltage |
| 9 | - | - | - |
| 10 | Power supply to the ignition switch (IG2) | Ignition switch: ON | Battery positive voltage |
| 11 | Ground to the A/C illumination | Always | 0 V |
| 12 | Ground | Always | 0 V |
| 13 | Air thermo sensor (outlet side) | Sensor probe temperature 25°C (1.5k ohm) | 2.2 V |
| 14 | Air thermo sensor (inlet side) | Sensor probe temperature 25°C (1.5k ohm) | 2.2 V |
| 15 | - | - | - |
| 16 | Ground to the air thermo sensor | Always | 0 V |

SPECIAL TOOLS

M1552000600118

| TOOL | TOOL NUMBER AND NAME | REPLACED BY MILLER TOOL NUMBER | APPLICATION |
|--|-----------------------------|--------------------------------|--|
|  B991367 | MB991367 Special spanner | MB991367-01 | Armature mounting nut of compressor removal and installation |
|  B991386 | MB991386 Pin | MIT217213 | Armature mounting nut of compressor removal and installation |

ON-VEHICLE SERVICE

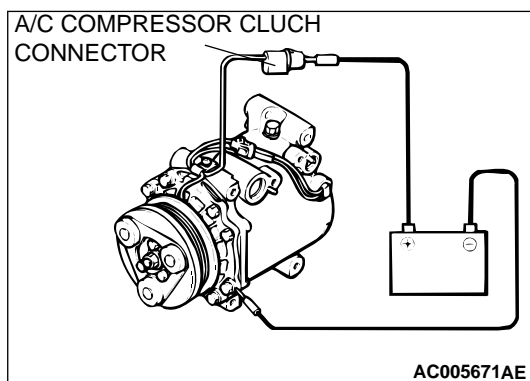
REFRIGERANT LEVEL TEST

M1552008400420

Use the refrigerant recovery station to remove all of the refrigerant, and then calculate the amount of the refrigerant and charge it.

A/C COMPRESSOR CLUTCH TEST

M1552019900065



1. Disconnect the magnetic clutch connector.
2. Connect positive battery voltage directly to the connector for the magnetic clutch.
3. If the magnetic clutch is normal, there will be "click." If the pullet and armature do not make contact ("click"), there is a malfunction.

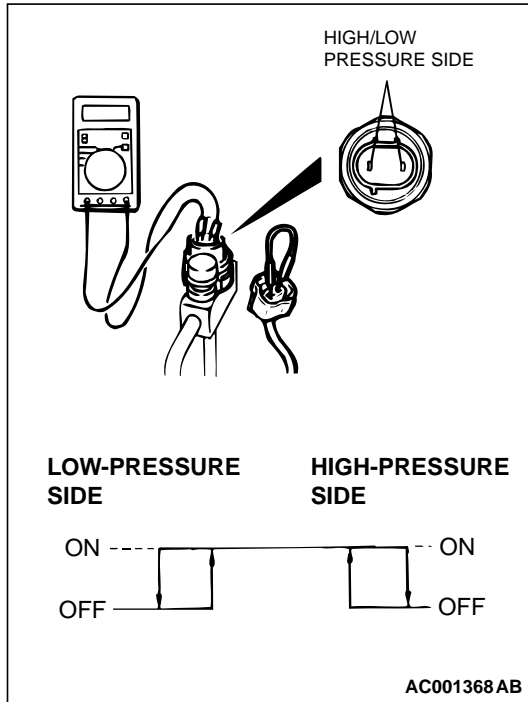
RECEIVER DRIER TEST

M1552008600093

Operate the unit and check the piping temperature by touching the receiver drier outlet and inlet.

If there is a difference in the temperatures, the receiver drier is restricted.

Replace the receiver drier.



PRESSURE SWITCH CHECK

M1552010400256

1. Remove the dual pressure switch connector and connect the high/low pressure side terminals located on the harness side as shown in the illustration.
2. Install a gauge manifold to the high-pressure side service valve of the refrigerant line. (Refer to [P.55-125.](#))
3. When the high/low pressure sides of the dual pressure switch are at operation pressure (ON) the resistance should be less than two ohms between the terminals. If open circuit, replace the switch.

| ITEMS | SWITCH POSITION | |
|------------------------------|-----------------|---------------|
| | OFF to ON | ON to OFF |
| Low-pressure side kPa (psi) | 221 (32.1) | 196 (28.4) |
| High-pressure side kPa (psi) | 2,354 (341.4) | 2,942 (426.7) |

COMPRESSOR DRIVE BELT ADJUSTMENT

M1552001000379

Refer to GROUP 00, Maintenance Service – Drive Belts
[P.00-45.](#)

CHARGING

M1552001200425

Use the refrigerant recovery station to charge the refrigerant.

METHOD BY USING REFRIGERANT RECOVERY AND RECYCLING UNIT

Using the refrigerant recovery and recycling unit, refill the refrigerant.

NOTE: Refer to that Refrigerant Recovery and Recycling Unit Instruction Manual for operation of the unit.

DISCHARGING SYSTEM

Use the refrigerant recovery unit to discharge refrigerant gas from the system.

NOTE: Refer to that Refrigerant Recovery and Recycling Unit Instruction Manual for operation of the unit.

REFILLING OF OIL IN THE A/C SYSTEM

Too little oil will provide inadequate compressor lubrication and cause a compressor failure. Too much oil will increase discharge air temperature.

When a compressor is installed at the factory, it contains 140 cm³ (4.7 floz) <2.0 L> or 120 cm³ (4.0 floz) <2.4 L> of refrigerant oil. While the A/C system is in operation, the oil is carried through the entire system by the refrigerant. Some of this oil will be trapped and retained in various parts of the system. When the following system components are changed, it is necessary to add oil to the system to replace the oil being removed with the component.

Compressor oil: SUN PAG 56

Quantity:

- **Evaporator: 60 cm³ (2.0 floz)**
- **Condenser: 15 cm³ (0.5 floz)**
- **Suction hose: 10 cm³ (0.3 floz)**

PERFORMANCE TEST

M1552001400407

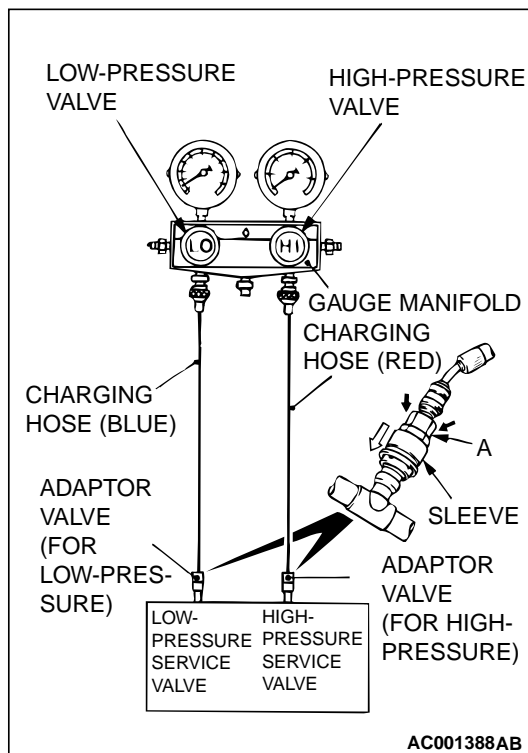
1. The vehicles to be tested should be in a place that is not in direct sunlight.
2. Close the high and low-pressure valve of the gauge manifold.
3. Connect the charging hose (blue) to the low-pressure valve and connect the charging hose (red) to the high-pressure valve of the gauge manifold.
4. Install the quick joint (for low-pressure) to the charging hose (blue), and connect the quick joint (for high-pressure) to the charging hose (red).

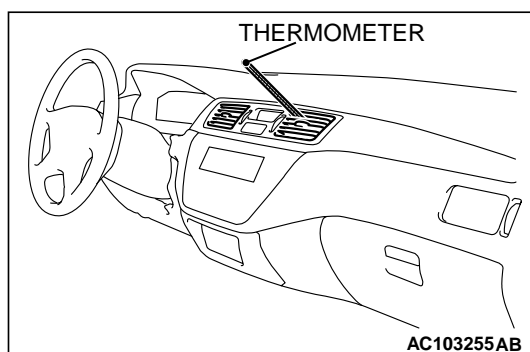
⚠ CAUTION

- **To connect the quick joint, press section A firmly against the service valve until a click is heard.**
- **When connecting, run your hand along the hose while pressing to ensure that there are no bends in the hose.**

NOTE: The high-pressure service valve is on the liquid pipe A and the low-pressure service valve is on the suction hose.

5. Connect the quick joint (for low-pressure) to the low-pressure service valve and connect the quick joint (for high-pressure) to the high-pressure service valve.
6. Start the engine.
7. Set the A/C controls as follows:
 - A/C switch: A/C – ON position
 - Mode selection: FACE position
 - Temperature control: MAXIMUM COOLING position
 - Air selection: RECIRCULATION position
 - Blower switch: "4" (HI) position
8. Adjust engine speed to 1,500 r/min with A/C clutch engaged.
9. Engine should be warmed up with doors and windows closed.





10. Insert a thermometer in the center air outlet and operate the engine for 20 minutes.

NOTE: If the clutch cycles, take the reading before the clutch disengages.

11. Note the discharge air temperature.

Performance Temperature Chart

| GARAGE AMBIENT TEMPERATURE °C (°F) | 20 (68) | 25 (77) | 30 (86) | 35 (95) |
|------------------------------------|-------------------------|-------------------------|---------------------------|---------------------------|
| Discharge air temperature °C (°F) | 8.0 – 11.0 (46 – 52) | 12.0 – 16.0 (54 – 61) | 17.0 – 21.0 (63 – 70) | 22.5 – 27.5 (73 – 82) |
| Compressor high pressure kPa (psi) | 740 – 840 (107 – 122) | 950 – 1,050 (138 – 152) | 1,160 – 1,300 (168 – 189) | 1,360 – 1,550 (197 – 225) |
| Compressor low pressure kPa (psi) | 150 – 190 (21.8 – 27.6) | 190 – 240 (27.6 – 34.8) | 240 – 300 (34.8 – 43.5) | 300 – 375 (43.5 – 54.4) |

REFRIGERANT LEAK REPAIR PROCEDURE

M1552001500318

LOST CHARGE

If the system has lost all charge due to a leak:

1. Evacuate the system. (Refer to P.55-99.)
2. Charge the system with approximately 0.453 kg (1 pound) of refrigerant.
3. Check for leaks.
4. Discharge the system.
5. Repair leaks.

CAUTION

Replacement filter-drier units must be sealed while in storage. The drier used in these units will saturate water quickly upon exposure to the atmosphere. When installing a drier, have all tools and supplies ready for quick assembly to avoid keeping the system open any longer than necessary.

6. Replace receiver drier.
7. Evacuate and charge system.

LOW CHARGE

If the system has not lost all of its refrigerant charge; locate and repair all leaks. If it is necessary to increase the system pressure to find the leak (because of an especially low charge) add refrigerant. If it is possible to repair the leak without discharging the refrigerant system, use the procedure for correcting low refrigerant level.

HANDLING TUBING AND FITTINGS

Kinks in the refrigerant tubing or sharp bends in the refrigerant hose lines will greatly reduce the capacity of the entire system. High pressures are produced in the system when it is operating. Extreme care must be exercised to make sure that all connections are pressure tight. Dirt and moisture can enter the system when it is opened for repair or replacement of lines or components. The following precautions must be observed. The system must be completely discharged before opening any fitting of connection in the refrigeration system. Open fittings with caution even after the system has been discharged. If any pressure is noticed as a fitting is loosened, allow trapped pressure to bleed off very slowly. Never attempt to rebend formed lines to fit. Use the correct line for the installation you are servicing. A good rule for the flexible hose lines is keep the radius of all bends at least 10 times the diameter of the hose.

Sharper bends will reduce the flow of refrigerant. The flexible hose lines should be routed so that they are at least 80 mm (3.1 inches) from the exhaust manifold. It is good practice to inspect all flexible hose lines at least once a year to make sure they are in good condition and properly routed.

On standard plumbing fittings with O-rings, these O-rings are not reusable.

COMPRESSOR NOISE CHECK

M1552008700313

You must first know the conditions when the noise occurs. These conditions are: weather, vehicle speed, in gear or neutral, engine temperature or any other special conditions.

Noises that develop during A/C operation can often be misleading. For example: what sounds like a failed front bearing or connecting rod, may be caused by loose bolts, nuts, mounting brackets, or a loose clutch assembly. Verify accessory drive belt tension (power steering or generator).

Improper accessory drive belt tension can cause a misleading noise when the compressor is engaged and little or no noise when the compressor is disengaged.

Drive belts are speed-sensitive. That is, at different engine speeds, and depending upon belt tension, belts can develop unusual noises that are often mistaken for mechanical problems within the compressor.

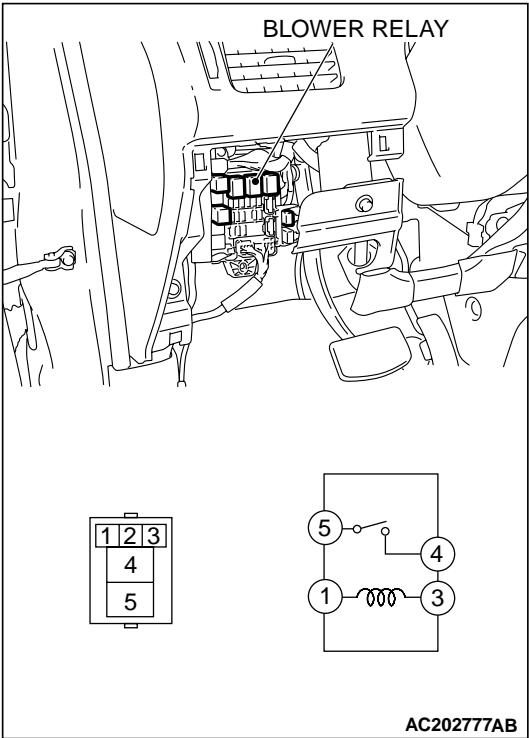
ADJUSTMENT

1. Select a quiet area for testing. Duplicate conditions as much as possible. Switch compressor on and off several times to clearly identify compressor noise. To duplicate high ambient conditions (high head pressure), restrict air flow through condenser. Install manifold gauge set to make sure discharge pressure doesn't exceed 2,070 kPa (300.2 psi).
2. Tighten all compressor mounting bolts, clutch mounting bolt, and compressor drive belt. Check to assure clutch coil is tight (no rotation or wobble).
3. Check refrigerant hoses for rubbing or interference that can cause unusual noises.
4. Check refrigerant charge. (Refer to [P.55-99](#).)
5. Recheck compressor noise as in Step 1.
6. If noise still exists, loosen compressor mounting bolts and retighten. Repeat Step 1.
7. If noise continues, replace compressor and repeat Step 1.

INSPECTION

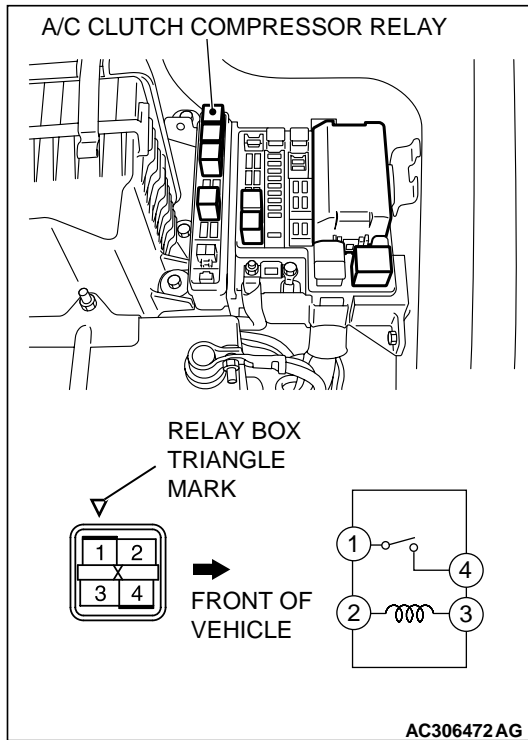
M1552014301254

BLOWER RELAY CONTINUITY CHECK



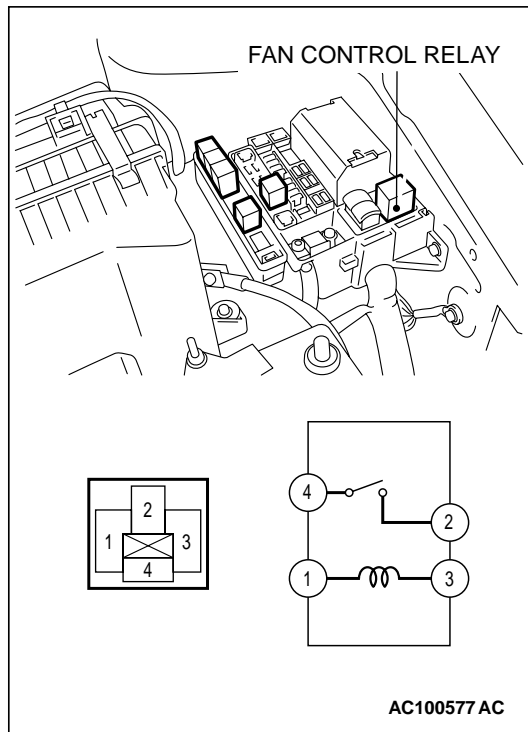
| BATTERY VOLTAGE | TESTER CONNECTION | SPECIFIED CONDITION |
|---|-------------------|---------------------|
| Not applied | 4 – 5 | Open circuit |
| <ul style="list-style-type: none">• Connect terminal 1 to the positive battery terminal• Connect terminal 3 to the negative battery terminal | 4 – 5 | Less than 2 ohms |

A/C COMPRESSOR CLUTCH RELAY CONTINUITY CHECK



| BATTERY VOLTAGE | TESTER CONNECTION | SPECIFIED CONDITION |
|--|-------------------|---------------------|
| Not applied | 1 – 4 | Open circuit |
| <ul style="list-style-type: none"> Connect terminal 2 to the positive battery terminal Connect terminal 3 to the negative battery terminal | 1 – 4 | Less than 2 ohms |

FAN CONTROL RELAY CONTINUITY CHECK



| BATTERY VOLTAGE | TESTER CONNECTION | SPECIFIED CONDITION |
|--|-------------------|---------------------|
| Not applied | 2 – 4 | Open circuit |
| <ul style="list-style-type: none"> Connect terminal 1 to the positive battery terminal Connect terminal 3 to the negative battery terminal | 2 – 4 | Less than 2 ohms |

IDLE-UP OPERATION CHECK

M1552001600412

1. Before inspection and adjustment, set vehicle in the following condition:
 - Engine coolant temperature: 80 – 90 °C (176.0 - 194.0 °F)
 - Lights, electric cooling fan and accessories: Set to OFF
 - Transmission: Neutral ("N" or "P" for vehicles with A/T)
 - Steering wheel: Straightforward
2. Check whether or not the idle speed is the standard value.
Refer to GROUP 11A, On-vehicle Service – Curb Idle Speed Check [P.11C-14](#). <2.0 L>
Refer to GROUP 11C, On-vehicle Service – Curb Idle Speed Check [P.11A-14](#). <2.4 L>

Standard value: 700 ± 100 r/min

3. When the A/C is running after turning the A/C switch to ON, and the blower switch to the 3(MH) or 4(HI) position, check to be sure that the idle speed is at the standard value.

Standard value: 850 ± 100 r/min

NOTE: The engine control module <M/T>/the powertrain control module <A/T> determines whether the A/C load is low or high according to the output signal from the automatic compressor controller.

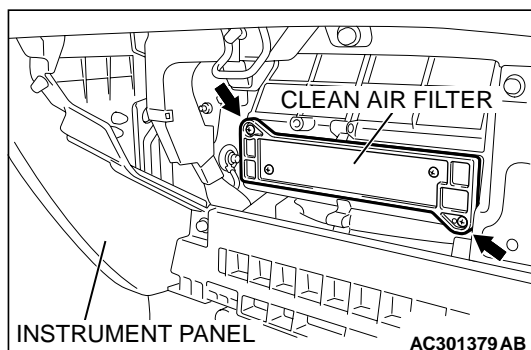
NOTE: It is not necessary to make an adjustment, because the idling speed is automatically adjusted by the ISC system. If, however, a deviation from the standard value occurs for some reason, check the ISC system.

NOTE: Check 4 minutes after idling begins.

CLEAN AIR FILTER REPLACEMENT
PROCEDURE

M1552020100052

1. Remove the glove box. (Refer to GROUP 52A – Instrument Panel [P.52A-3](#))
2. Remove the two screws as shown, and replace the clean air filter.
3. Remove the clean air filter.
4. Install the glove box.



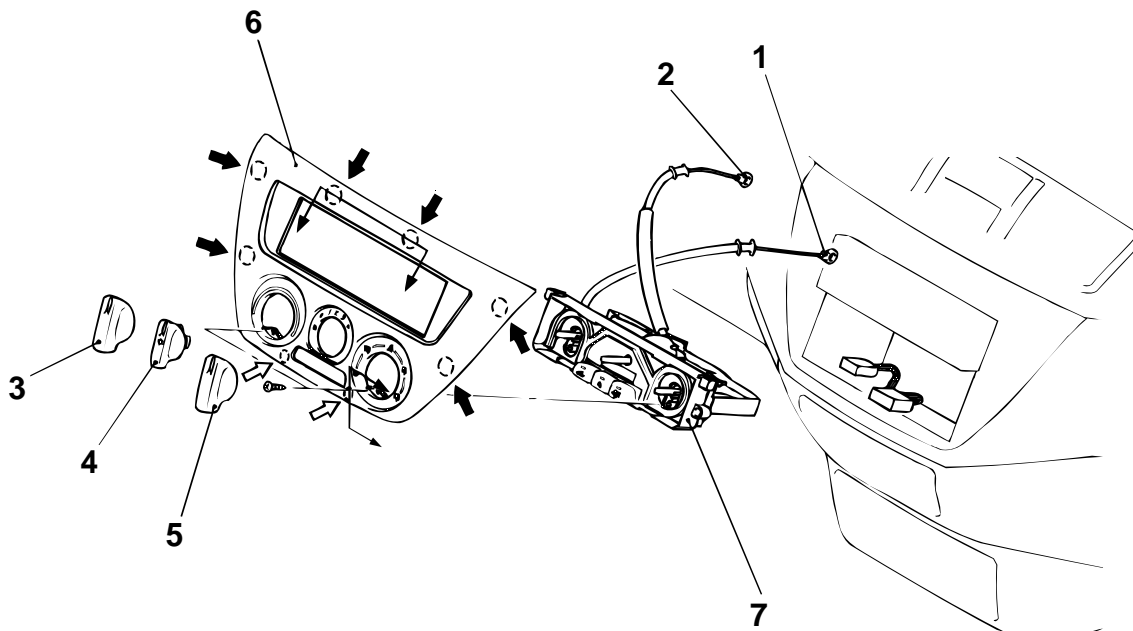
HEATER CONTROL ASSEMBLY AND A/C SWITCH

REMOVAL AND INSTALLATION

M1552002400381

Pre-removal and Post-installation Operation

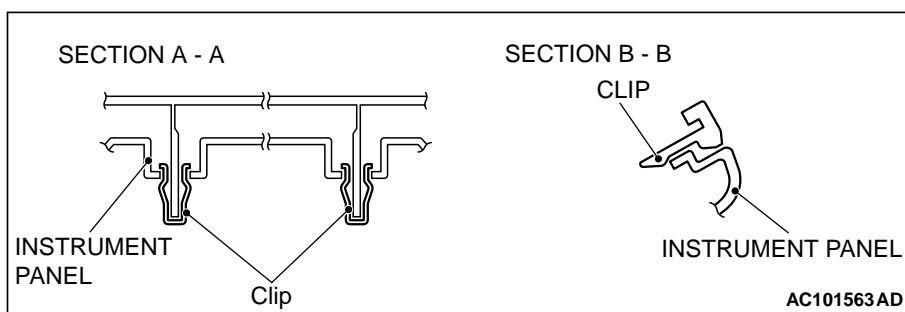
- Front Driver's Side Under Cover Removal and Installation (Refer to GROUP 52A, Instrument Panel [P.52A-3.](#))
- Foot Duct (LH) Removal and Installation (Refer to [P.55-127.](#))



NOTE

- (1) ➡ CLIP LOCATION
(2) ⇨ CLAW LOCATION

AC203835AE



AC101563AD

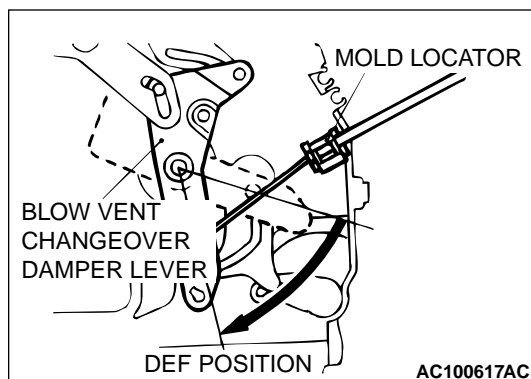
REMOVAL STEPS

- >>B<< 1. AIR MIX DOOR CABLE CONNECTION
- >>A<< 2. BLOW VENT CHANGEOVER DAMPER CABLE CONNECTION
3. TEMPERATURE ADJUSTMENT KNOB
4. AIR VOLUME ADJUSTMENT KNOB

REMOVAL STEPS (Continued)

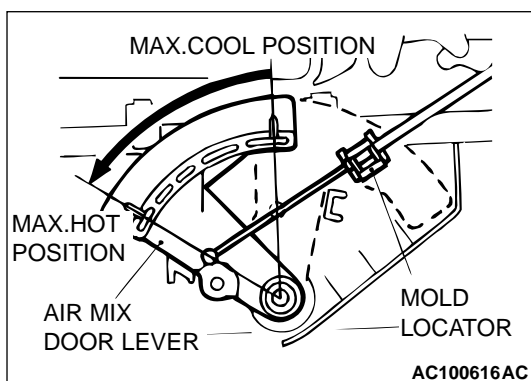
5. BLOW VENT SWITCHING KNOB
6. CENTER PANEL
- RADIO AND TAPE PLAYER (REFER TO GROUP 54A, RADIO AND CD PLAYER [P.54A-116.](#))
7. CONTROL PANEL ASSEMBLY

INSTALLATION SERVICE POINTS



>>A<< BLOW VENT CHANGEOVER DAMPER CABLE

1. Set the heater control assembly's blow vent changeover knob to the DEF position.
2. Set the heater unit's blow vent changeover damper lever to the DEF position (turn the damper relay to the left until it stops) and install the cable.
3. Set the mold locator to the heater unit case and secure with a clip.



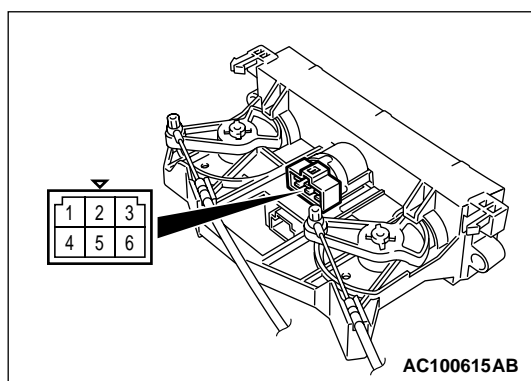
>>B<< AIR MIX DOOR CABLE CONNECTION

1. Turn the heater control assembly's temperature adjustment knob all the way to the HOT side.
2. Set the heater unit's air mix door lever to the MAX HOT position (turn the damper lever as the left illustration) and attach the cable.
3. Set the mold locator to the heater unit case and secure with a clip.

INSPECTION

M1551006300372

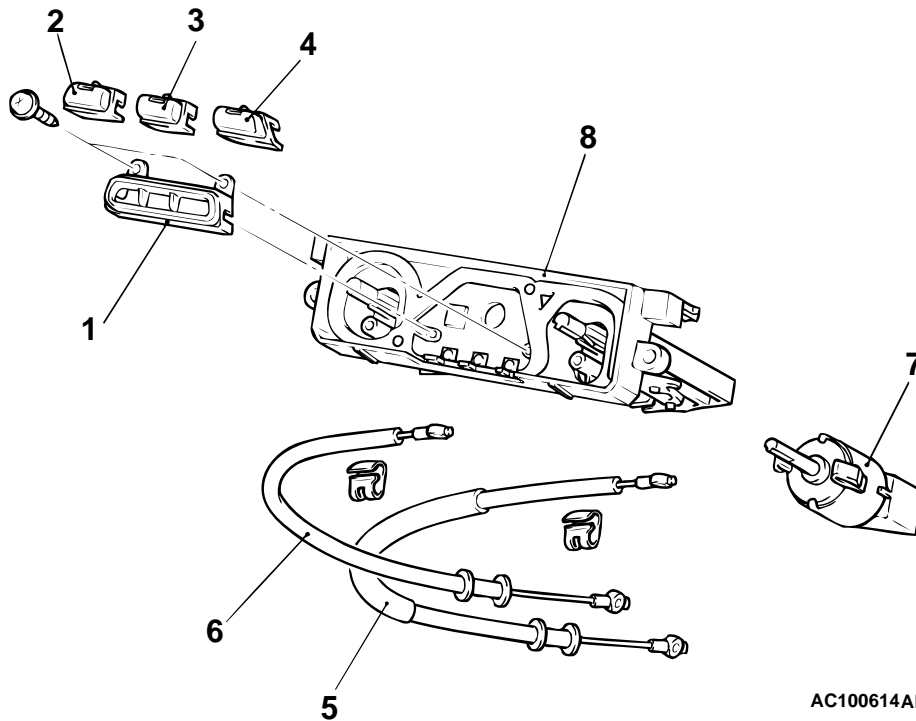
BLOWER SWITCH CONTINUITY CHECK



| SWITCH POSITION | TESTER CONNECTION | SPECIFIED CONDITION |
|-----------------|----------------------------|---------------------|
| 0 (OFF) | 1 – 2, 2 – 4, 2 – 5, 2 – 6 | Open circuit |
| 1 (LO) | 1 – 2 | Less than 2 ohms |
| 2 (ML) | 2 – 4 | Less than 2 ohms |
| 3 (MH) | 2 – 5 | Less than 2 ohms |
| 4 (HI) | 2 – 6 | Less than 2 ohms |

DISASSEMBLY AND ASSEMBLY

M1552014200209



DISASSEMBLY STEPS

1. SWITCH PANEL
2. REAR WINDOW DEFOGGER SWITCH
3. AIR CONDITIONER SWITCH
4. INSIDE/OUTSIDE AIR CHANGEOVER SWITCH

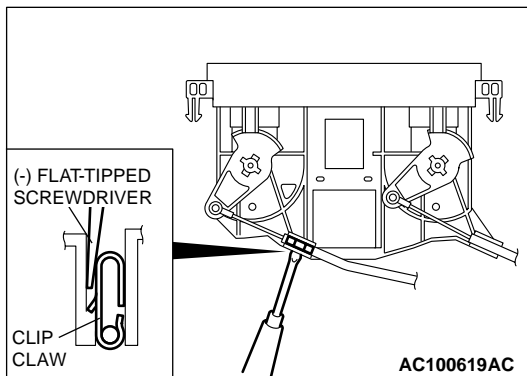
DISASSEMBLY STEPS

- <<A>> 5. BLOW VENT CHANGEOVER DAMPER CABLE
- <<A>> 6. AIR MIX DAMPER CABLE
7. BLOWER SWITCH ASSEMBLY
8. MANUAL AIR CONDITIONER CONTROL PANEL (A/C-ECU)

DISASSEMBLY SERVICE POINT

<<A>> BLOW VENT CHANGEOVER DAMPER CABLE AND AIR MIX DAMPER CABLE REMOVAL

Insert a flat-tipped screwdriver into the clip through the inside of the control base and prize out the clip claw to disconnect the cables.



HEATER UNIT, HEATER CORE, BLOWER ASSEMBLY AND EVAPORATOR UNIT

REMOVAL AND INSTALLATION

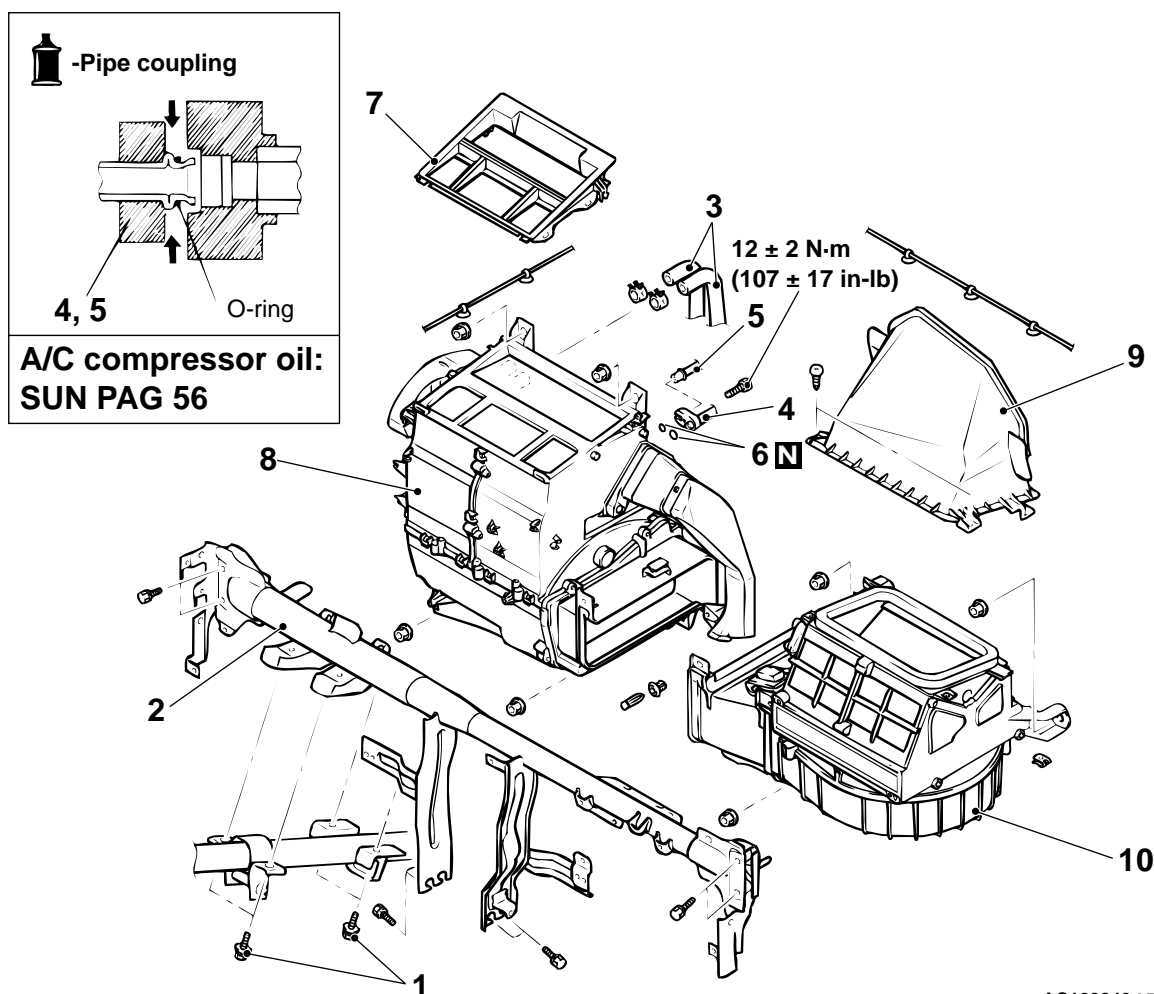
M1552011600190

⚠ WARNING

When removing and installing the heater unit, do not let it bump against the SRS-ECU or the components.

Pre-removal and Post-installation Operation

- Refrigerant draining and Refilling (Refer to P.55-99.)
- Engine coolant Draining and Refilling (Refer to GROUP 00, Engine Coolant P.00-56.)
- Instrument Panel Removal and Installation (Refer to GROUP 52A, Instrument Panel Assembly P.52A-3.)
- Front Seat Removal and Installation (Refer to GROUP 52A, Front Seat Assembly P.52A-21.)
- Front Floor Console Removal and Installation (Refer to GROUP 52A, Front Floor Console P.52A-8.)
- Floor Carpet Removal and Installation



AC103840AB

REMOVAL STEPS

1. STEERING SHAFT ATTACHMENT BOLT
2. FRONT DECK CROSSMEMBER

<<A>>

REMOVAL STEPS (Continued)

3. HEATER HOSE CONNECTION
4. FLEXIBLE SUCTION HOSE CONNECTION

- <<A>> REMOVAL STEPS (Continued)
5. LIQUID PIPE B CONNECTION
 6. O-RING
 7. CENTER DUCT
 8. HEATER UNIT
 9. INTAKE DUCT
 10. BLOWER ASSEMBLY

REMOVAL SERVICE POINT

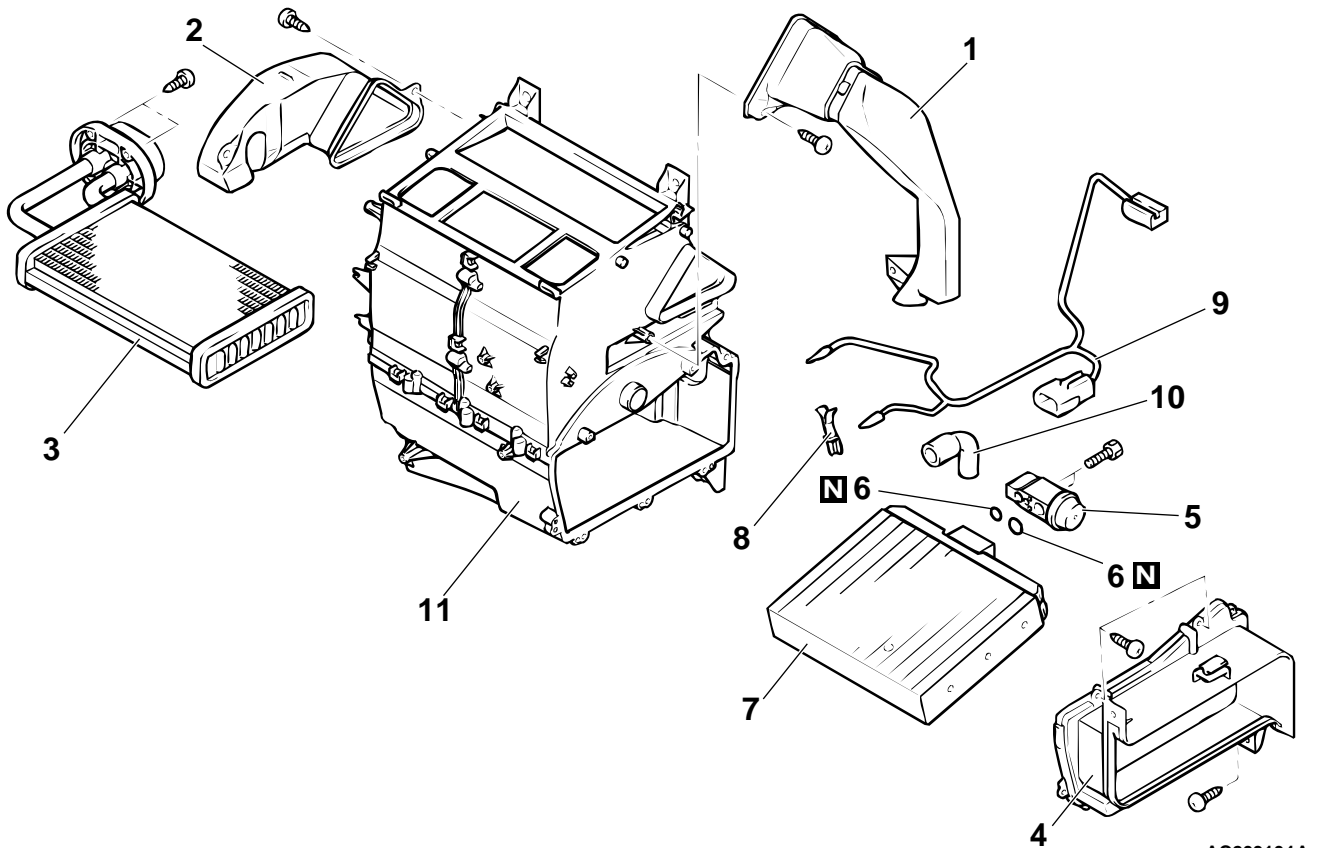
<<A>> FLEXIBLE SUCTION HOSE AND LIQUID PIPE B DIS-CONNECTION

CAUTION

As the compressor oil and receiver are highly moisture absorbent, use a non-porous material to hose and nipples. To prevent the entry of dust or other foreign bodies, plug the dismantled hose and the nipples of the expansion valves.

HEATER UNIT DISASSEMBLY AND ASSEMBLY

M1551005400279



DISASSEMBLY STEPS

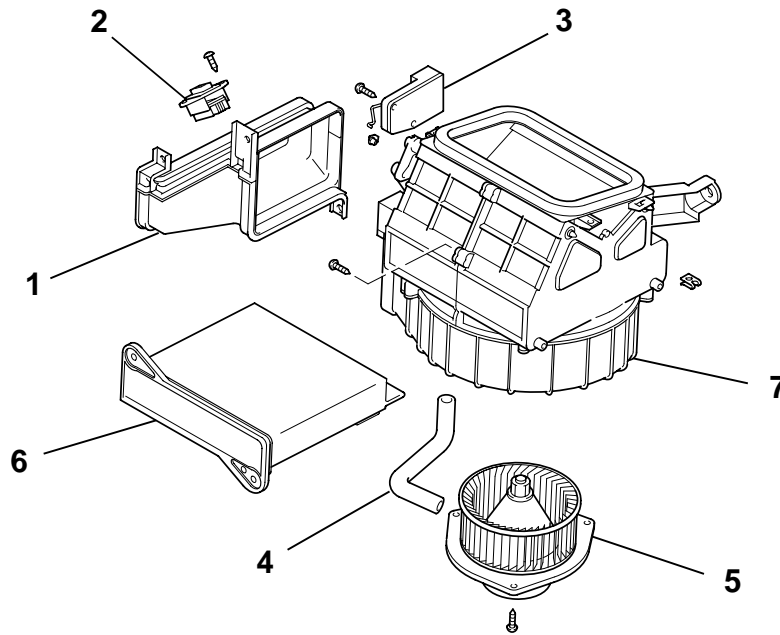
1. RIGHT-HAND FOOT DUCT
2. LEFT-HAND FOOT DUCT
3. HEATER CORE
4. EVAPORATOR COVER
5. EXPANSION VALVE
6. O-RING

DISASSEMBLY STEPS

7. EVAPORATOR
8. AIR THERMO SENSOR CLIP
9. AIR THERMO SENSOR
10. DRAIN PLUG
11. HEATER CASE

BLOWER ASSEMBLY DISASSEMBLY AND ASSEMBLY

M1551005500210



AC308190AB

DISASSEMBLY STEPS

1. JOINT DUCT
2. RESISTOR
3. INSIDE/OUTSIDE AIR SELECTION DAMPER MOTOR
4. HOSE

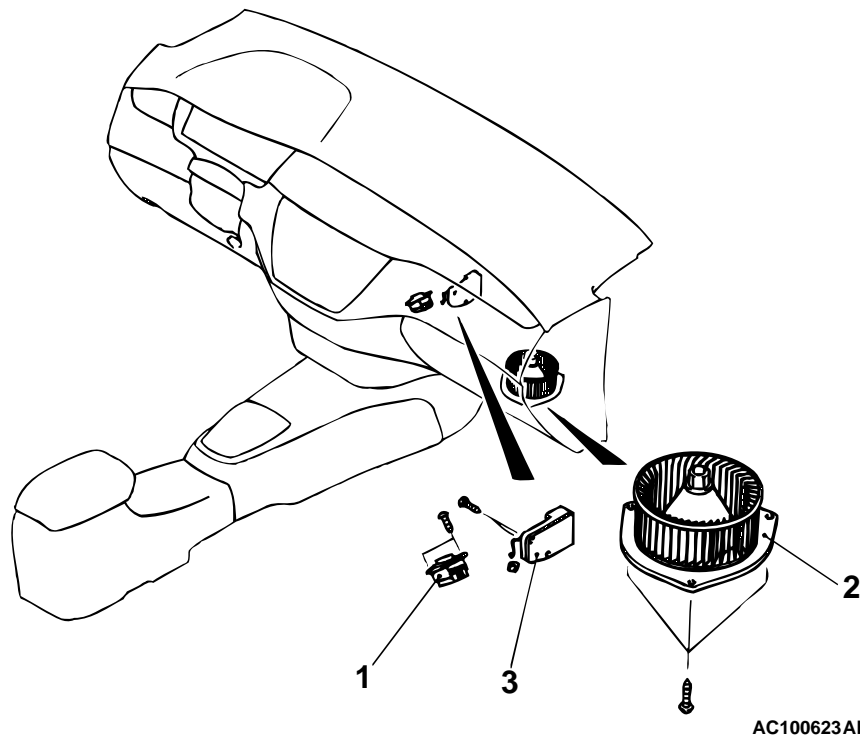
DISASSEMBLY STEPS

5. BLOWER MOTOR
6. CLEAN AIR FILTER
7. BLOWER CASE

BLOWER ASSEMBLY AND RESISTOR

REMOVAL AND INSTALLATION

M1551002800342



REMOVAL STEPS

- GLOVE BOX (OUTER AND INNER) (REFER TO GROUP 52A, INSTRUMENT PANEL [P.52A-3.](#))
- ECM or PCM
- 1. RESISTOR
- 2. BLOWER MOTOR

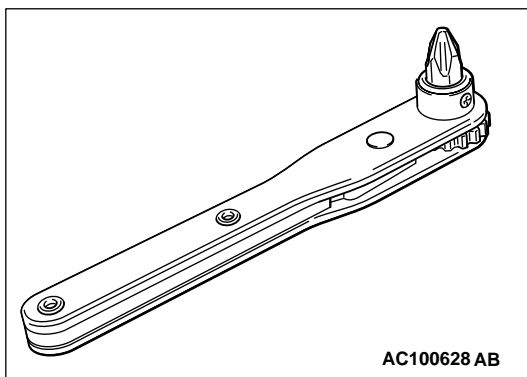
INSIDE/OUTSIDE AIR CHANGEOVER DAMPER MOTOR REMOVAL STEPS

- GLOVE BOX (OUTER AND INNER) (REFER TO GROUP 52A, INSTRUMENT PANEL [P.52A-3.](#))
- ECM or PCM
- 3. INSIDE/OUTSIDE AIR
CHANGEOVER DAMPER MOTOR

<<A>>

REMOVAL SERVICE POINT

<<A>> BLOWER MOTOR REMOVAL



NOTE: A normal plate-type ratchet driver is recommended.

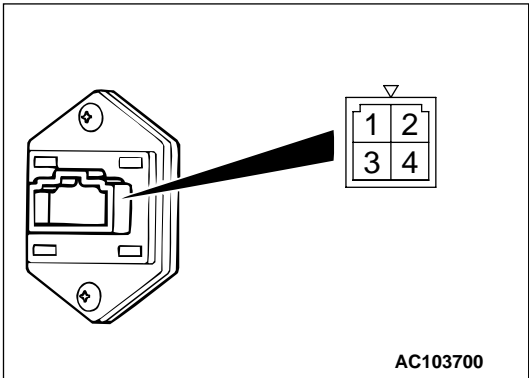
INSPECTION

RESISTOR CHECK

Use an ohmmeter to measure the resistance between the terminals. Check that the measured value is at the standard value.

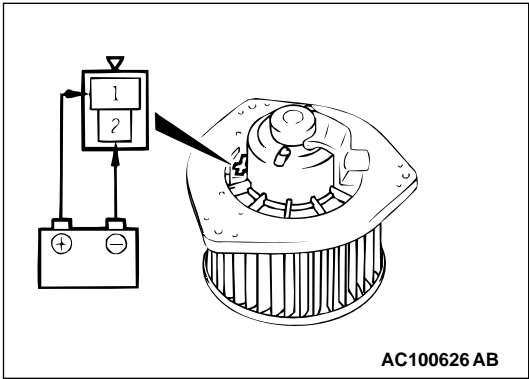
Standard value:

| MEASUREMENT TERMINAL | STANDARD VALUE Ω |
|--------------------------------|-------------------------|
| Between terminals 2 and 4 (LO) | 2.54 |
| Between terminals 1 and 2 (ML) | 1.24 |
| Between terminals 2 and 3 (MH) | 0.6 |



BLOWER FAN AND MOTOR CHECK

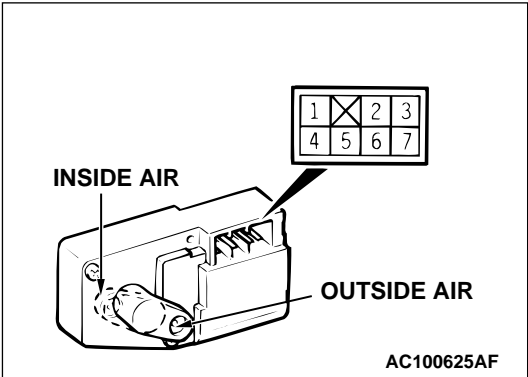
When battery voltage is applied between the terminals, check that the motor operates. Also, check that there is no abnormal noise.



INSIDE/OUTSIDE AIR CHANGEOVER DAMPER
MOTOR CHECK

⚠ CAUTION

Cut off the battery voltage when the damper is in the inside or outside air position.

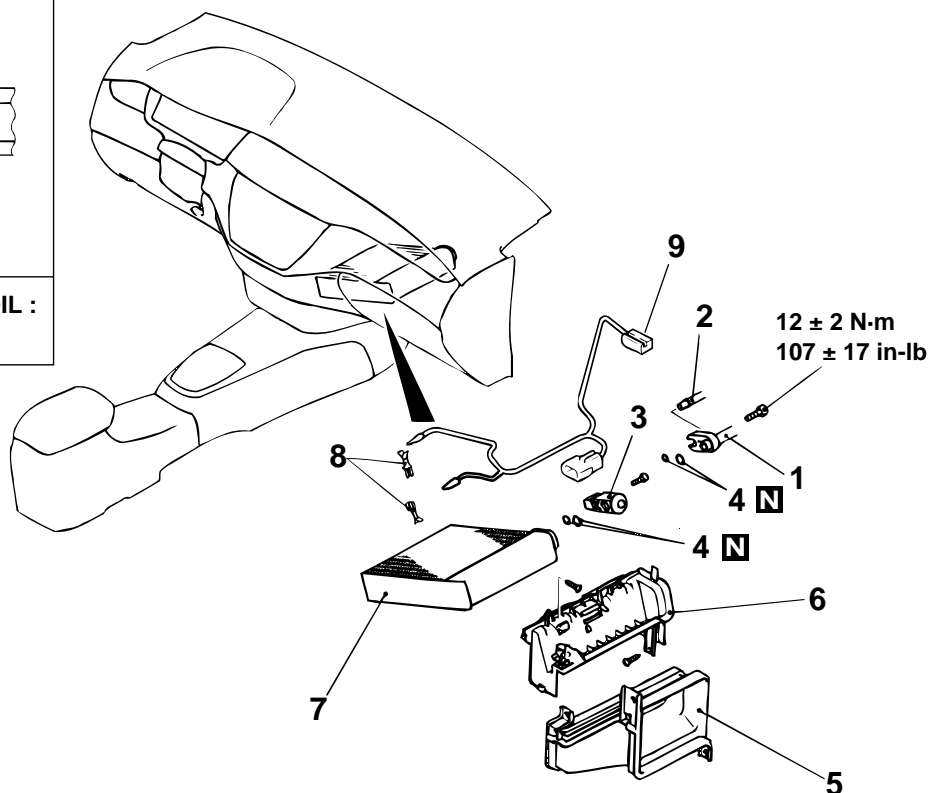
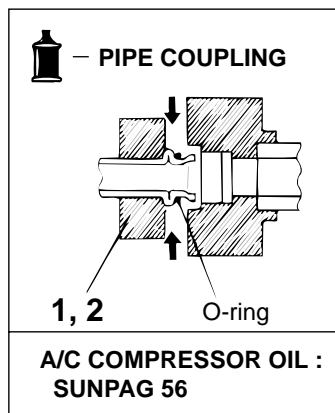


| LEVER POSITION | BATTERY CONNECTION | LEVER OPERATION |
|-------------------------|---|--|
| At the inside position | <ul style="list-style-type: none">• Connect terminal 7 to the positive battery terminal• Connect terminal 6 to the negative battery terminal | The lever moves from the inside position to the outside position |
| At the outside position | <ul style="list-style-type: none">• Connect terminal 7 to the positive battery terminal• Connect terminal 4 to the negative battery terminal | The lever moves from the outside position to the inside position |

EVAPORATOR ASSEMBLY

REMOVAL AND INSTALLATION

M1552003600258



AC203115 AC

REMOVAL STEPS

- REFRIGERANT DRAINING AND REFILLING (REFER TO P.55-99.)
- GLOVE BOX (REFER TO GROUP 52A, INSTRUMENT PANEL P.52A-3.)
- ECM or PCM
- 1. FLEXIBLE SUCTION HOSE CONNECTION

<<A>>

<<A>>

<<A>>

<> >>A<<

REMOVAL STEPS (Continued)

- 2. LIQUID PIPE B CONNECTION
- 3. EXPANSION VALVE
- 4. O-RING
- 5. JOINT DUCT
- 6. EVAPORATOR COVER
- 7. EVAPORATOR
- 8. AIR THERMO SENSOR CLIP
- 9. AIR THERMO SENSOR

REMOVAL SERVICE POINT

<<A>> FLEXIBLE SUCTION HOSE, LIQUID PIPE B, AND THE EXPANSION DISCONNECTION

CAUTION

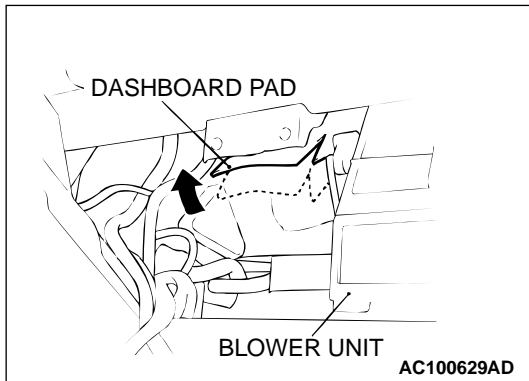
As the compressor oil and receiver are highly moisture absorbent, use a non-porous material to hose and nipples. To prevent the entry of dust or other foreign bodies, plug the dismantled hose and the nipples of the expansion valves.

<> EVAPORATOR REMOVAL

⚠ CAUTION

Do not cut the upper side of the pad.

1. When removing the evaporator, cut and fold back the dashboard pad as in the diagram. (The thickness of the pad interferes with the removal of the evaporator.)
2. Remove the evaporator.



INSTALLATION SERVICE POINTS

>>A<< EVAPORATOR INSTALLATION

After installing the evaporator, glue the cut dashboard panel pad with an adhesive agent.

INSPECTION

M1552014301232

AIR THERMO SENSOR INSPECTION

INLET SIDE

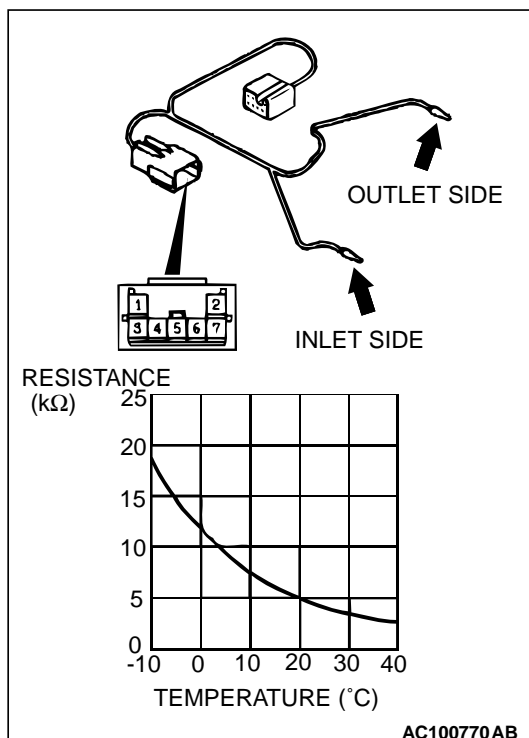
Measure the resistance between connector terminals 1 and 3 under at least two different temperatures. The resistance values should generally match those in the graph.

NOTE: The temperature at the check should not exceed the range in the graph.

OUTLET SIDE

Measure the resistance between connector terminals 4 and 5 under at least two different temperatures. The resistance values should generally match those in the graph.

NOTE: The temperature at the check should not exceed the range in the graph.



COMPRESSOR ASSEMBLY AND TENSION PULLEY

REMOVAL AND INSTALLATION

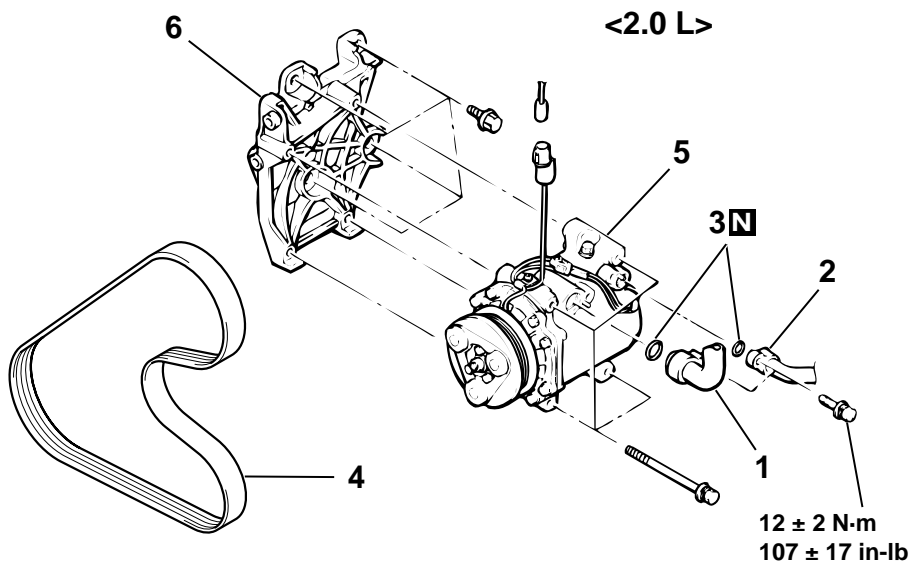
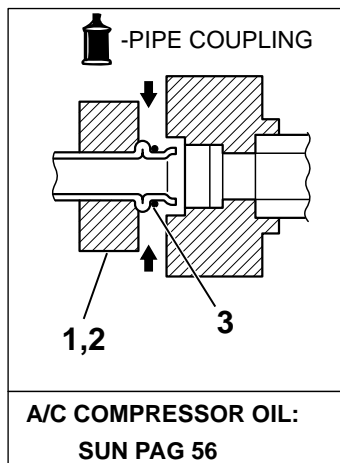
M1552004100308

Pre-removal Operation

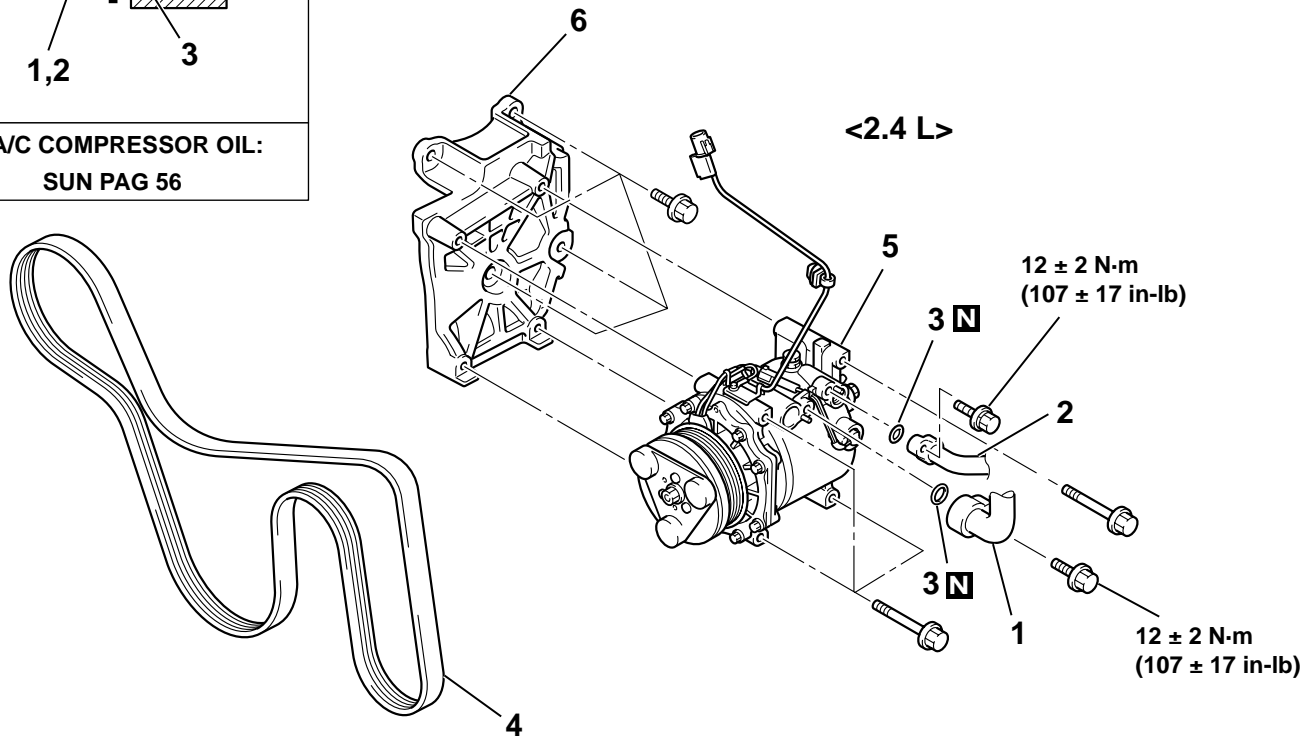
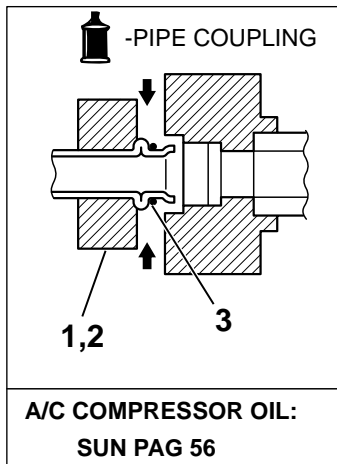
- Refrigerant Discharging (Refer to [P.55-99.](#))

Post-installation Operation

- Drive Belt Tension Adjustment (Refer to GROUP 00, Maintenance Service – Drive Belt [P.00-45.](#))
- Refrigerant Charging (Refer to [P.55-99.](#))



AC309173AB



AC309177AB

<<A>>

REMOVAL STEPS

1. FLEXIBLE SUCTION HOSE CONNECTION
2. FLEXIBLE DISCHARGE HOSE CONNECTION

<<A>>

<>

<<C>> >>A<<

REMOVAL STEPS (Continued)

3. O-RING
4. DRIVE BELT
5. COMPRESSOR
6. COMPRESSOR BRACKET

REMOVAL SERVICE POINTS

<<A>> FLEXIBLE SUCTION HOSE AND FLEXIBLE DIS-
CHARGE HOSE DISCONNECTION**⚠ CAUTION**

As the compressor oil and receiver are highly moisture absorbent, use a non-porous material to plug the hose and nipples.

To prevent the entry of dust or other foreign bodies, plug the dismantled hoses and compressor nipples.

<> DRIVE BELT REMOVAL <2.4 L>

The following operations will be needed due to the introduction of the serpentine drive system with the drive belt auto-tensioner.

1. Securely insert the spindle handle or ratchet handle with a 12.7 mm (1/2-inch) insertion angle into the jig hole of the auto-tensioner.
2. Rotate the auto-tensioner counterclockwise and align hole A with hole B.

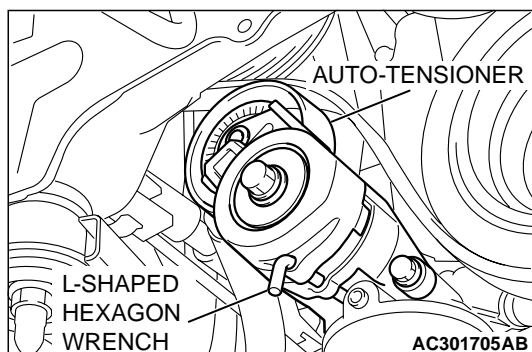
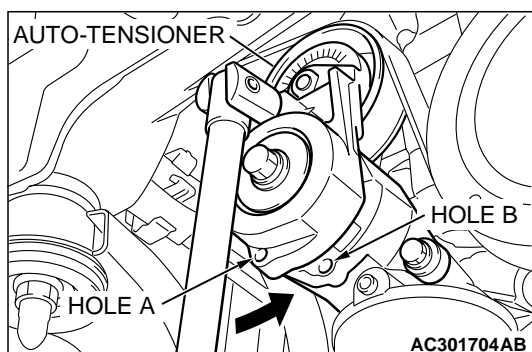
⚠ CAUTION

To reuse the drive belt, draw an arrow indicating the rotating direction (clockwise) on the back of the belt using chalk, etc.

3. Insert an L-shaped hexagon wrench, etc. into the hole to fix and then remove the drive belt.

<<C>> COMPRESSOR REMOVAL

Take care not to spill any compressor oil when removing the compressor.



INSTALLATION SERVICE POINT

>>A<< COMPRESSOR INSTALLATION

If a new compressor is installed, first adjust the amount of oil according to the procedures described below, and then install the compressor.

1. Measure the amount [$X \text{ cm}^3$ ($X \text{ floz}$)] of oil within the removed compressor.
2. Drain (from the new compressor) the amount [$Y \text{ cm}^3$ ($Y \text{ floz}$)] of oil calculated according to the following formula, and then install the new compressor.

New compressor oil amount = 140 cm^3 (4.7 floz) <2.0 L>

New compressor oil amount = 120 cm^3 (4.0 floz) <2.4 L>

$140 \text{ cm}^3 - X \text{ cm}^3 = Y \text{ cm}^3$ (4.7 floz - $X \text{ floz} = Y \text{ floz}$) <2.0 L>

$120 \text{ cm}^3 - X \text{ cm}^3 = Y \text{ cm}^3$ (4.0 floz - $X \text{ floz} = Y \text{ floz}$) <2.4 L>

NOTE: $Y \text{ cm}^3$ ($Y \text{ floz}$) indicates the amount of oil in the refrigerant line, the condenser, the evaporator, etc.

NOTE: When replacing the following parts at the same times as the compressor, subtract the rated oil amount of the each part from $Y \text{ cm}^3$ ($Y \text{ floz}$) and discharge from the new compressor.

Quantity:

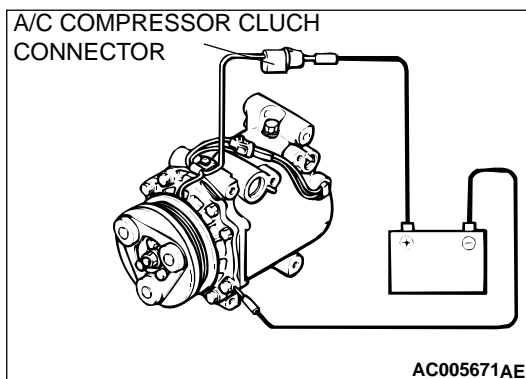
- Evaporator: 60 cm^3 (2.0 floz)
- Condenser: 15 cm^3 (0.5 floz)
- Suction hose: 10 cm^3 (0.3 floz)
- Receiver: 10 cm^3 (0.3 floz)

INSPECTION

M1552014301243

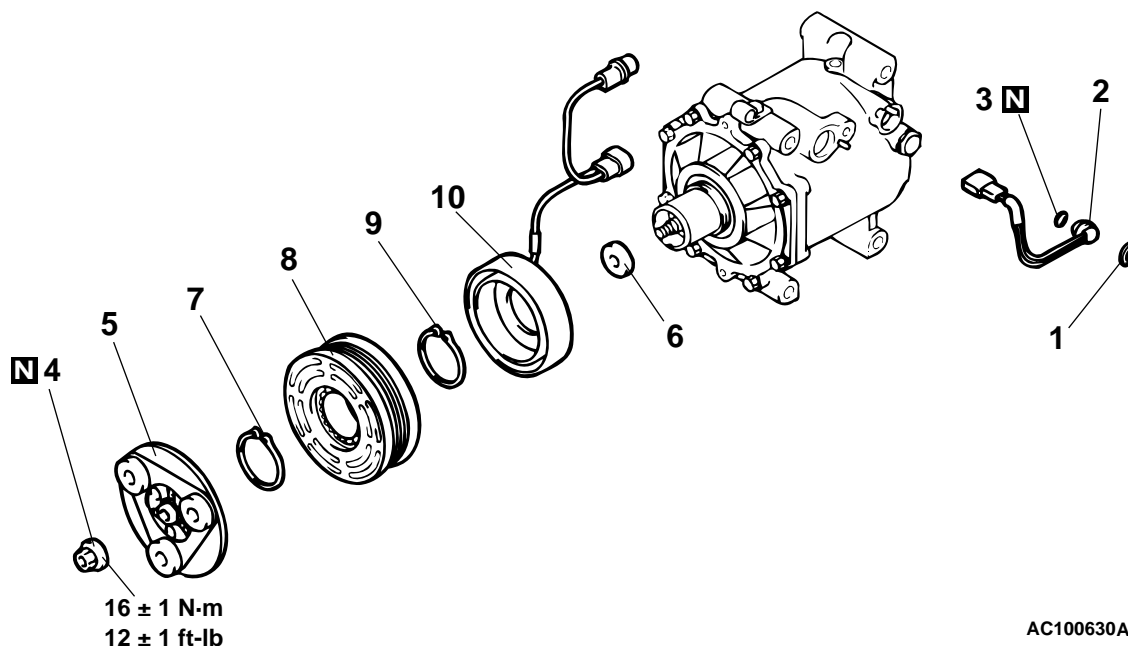
A/C COMPRESSOR CLUTCH OPERATION CHECK

Connect the compressor connector terminal to the battery positive (+) terminal and ground the battery's negative (-) terminal to the compressor unit. At that time, the magnetic clutch should make a definite operating sound.



DISASSEMBLY AND ASSEMBLY

M1552004600507

**COOLING TEMPERATURE
SWITCH DISASSEMBLY STEPS**

1. SNAP RING
2. COOLING TEMPERATURE SWITCH
3. O-RING

**MAGNETIC CLUTCH
DISASSEMBLY**

- <<A>> >>D<< • AIR GAP ADJUSTMENT
- <<A>> >>C<< 4. SELF-LOCKING NUT
5. ARMATURE
6. SHIM

**MAGNETIC CLUTCH
DISASSEMBLY (Continued)**

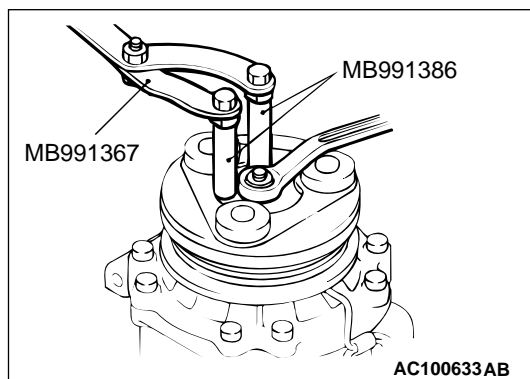
- >>B<< 7. SNAP RING
8. ROTOR
9. SNAP RING
- >>A<< 10. FIELD CORE

Required Special Tools:

- MB991367: Special Spanner
- MB991386: Pin

DISASSEMBLY SERVICE POINT

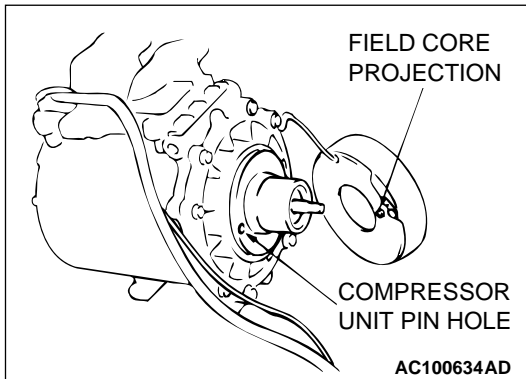
<<A>> SELF-LOCKING NUT REMOVAL



ASSEMBLY SERVICE POINTS

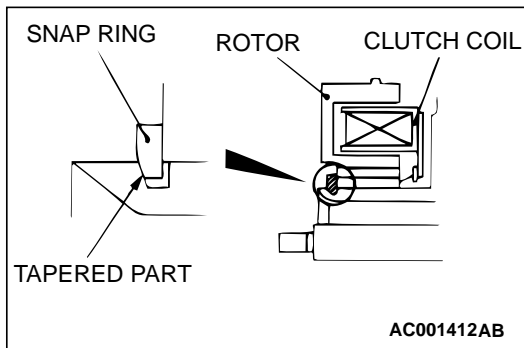
>>A<< FIELD CORE ATTACHMENT

Line up the pin hole on the compressor unit with the field core projection and attach.



>>B<< SNAP RING INSTALLATION

Using snap ring pliers, fit the snap ring so that the snap ring's tapered part is on the outside.



>>C<< SELF-LOCKING NUT INSTALLATION

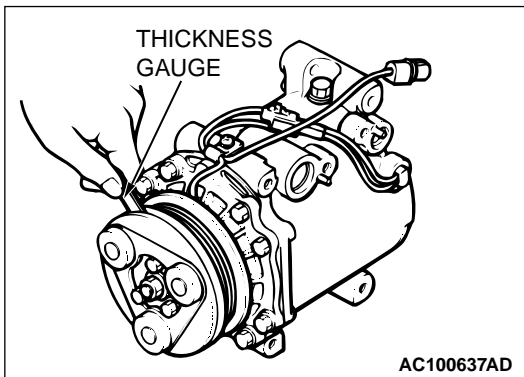
Using a special tool, as when removing the nut, secure the armature and tighten the self-locking nut.

>>D<< AIR GAP ADJUSTMENT

Apply voltage from the battery to the magnetic clutch and check that the clutch air gap is inside the standard value. If outside the standard value, use a shim to adjust the gap.

Standard value: 0.3 – 0.5 mm (0.012 – 0.020 inch)

NOTE: The shims are available in 0.05 mm steps across the thickness range 0.35 - 0.70 mm, and in 0.1 mm steps of thickness.



INSPECTION

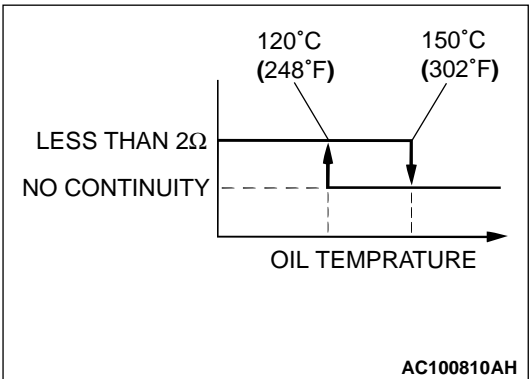
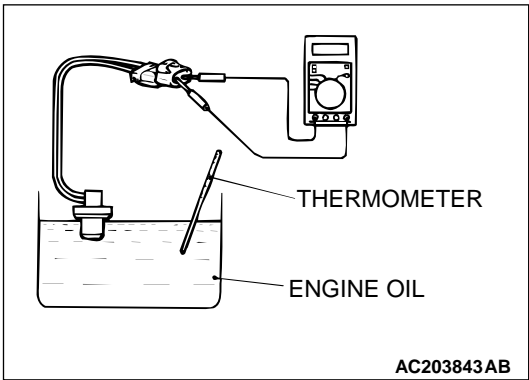
M1552014301221

REFRIGERANT TEMPRATURE SWITCH

CAUTION

Do not heat more than necessary.

1. Dip the metal part of the refrigerant temperature switch into engine oil and increase the oil temperature using a gas burner or similar.



2. When the oil temperature reaches the standard value, check that voltage is supplied between the terminals.

Standard value:

| ITEM | TEMPERATURE |
|------------------|------------------------------|
| Less than 2 ohms | Slightly below 150°C (302°F) |
| No continuity | 150°C (302°F) or more |

NOTE: When the oil temperature is 150°C (302°F) or more and there is no continuity, the resistance will not be 2Ω or lower until the oil temperature reduces to 120°C (248°F) or less.

CONDENSER AND CONDENSER FAN MOTOR

REMOVAL AND INSTALLATION

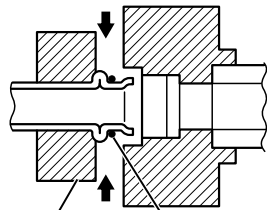
M1552006700436

Pre-removal and Post-installation Operation

- Refrigerant Draining and Refilling (Refer to P.55-99.)
- Air Cleaner Removal and Installation (Refer to GROUP 15 Air Cleaner P.15-4.)



PIPE COUPLING



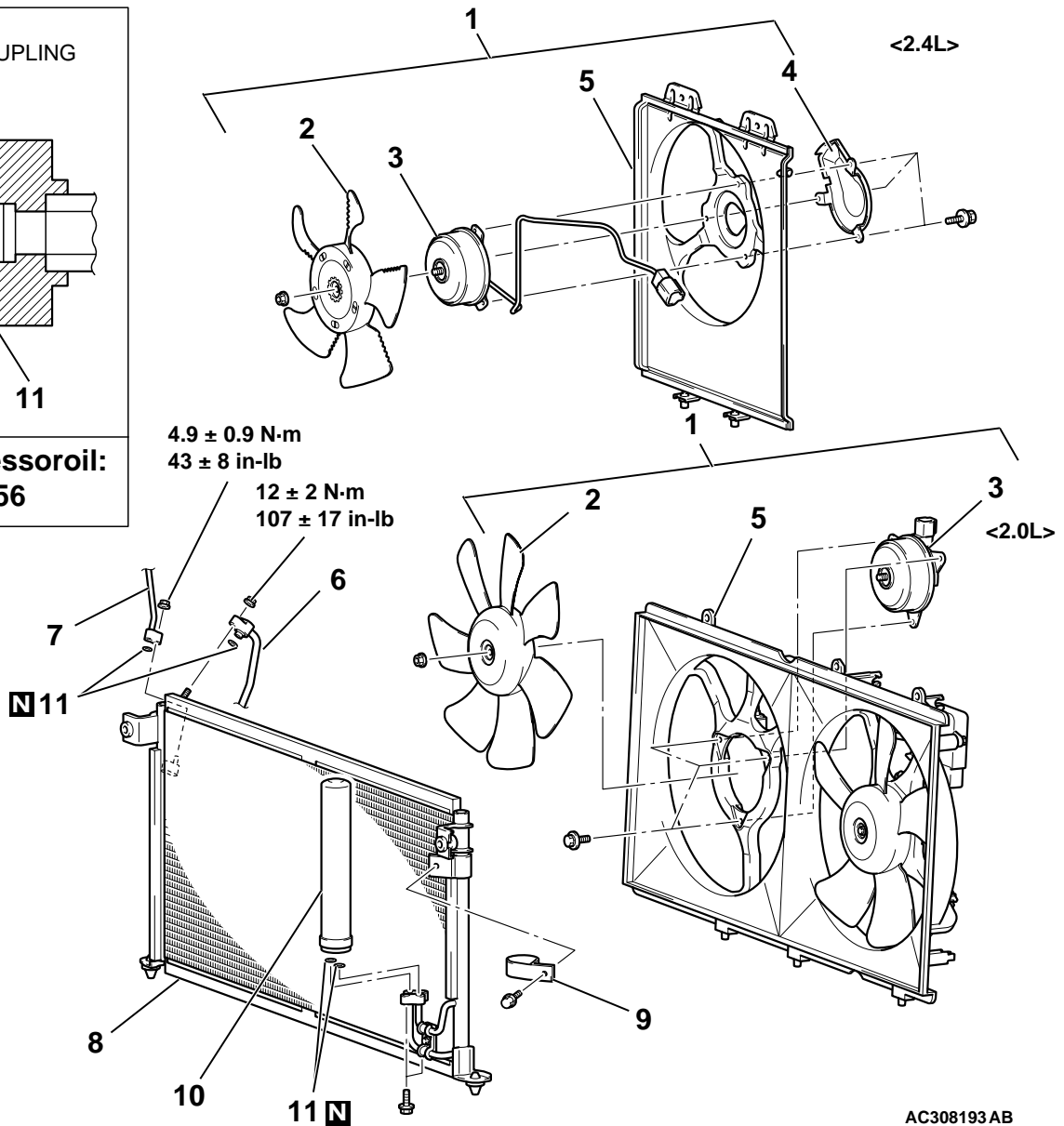
6, 7, 10

11

A/C compressor oil:
SUN PAG 56

$4.9 \pm 0.9 \text{ N}\cdot\text{m}$
 $43 \pm 8 \text{ in}\cdot\text{lb}$

$12 \pm 2 \text{ N}\cdot\text{m}$
 $107 \pm 17 \text{ in}\cdot\text{lb}$



AC308193 AB

FAN SHROUD ASSEMBLY REMOVAL STEPS

1. FAN SHROUD ASSEMBLY
2. FAN
3. FAN MOTOR
4. HEAT PROTECTOR
5. FAN SHROUD

<<A>>

<<A>>

>>A<<

CONDENSER REMOVAL STEPS

6. FLEXIBLE DISCHARGE HOSE CONNECTION
7. LIQUID PIPE A CONNECTION
8. CONDENSER
9. CLAMP
10. RECEIVER
11. O-RING

REMOVAL SERVICE POINT

<<A>> FLEXIBLE SUCTION HOSE AND LIQUID PIPE A DIS-
CONNECTION

⚠ CAUTION

As the compressor oil and receiver are highly moisture absorbent, use a non-porous material to plug the hose and nipples.

To prevent the entry of dust or other foreign bodies, plug the dismantled hose and condenser assembly nipples.

INSTALLATION SERVICE POINT**>>A<< CONDENSER INSTALLATION**

When replacing the condenser, refill it with a specified amount of compressor oil and install it. (to the vehicle).

Compressor oil: **SUN PAG 56**

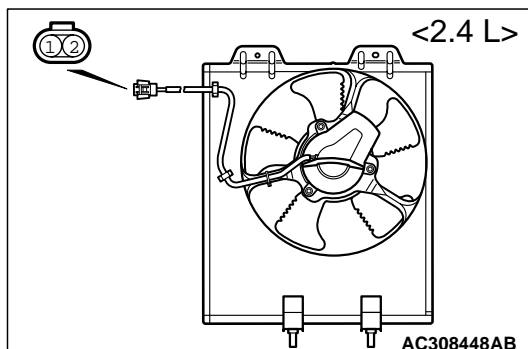
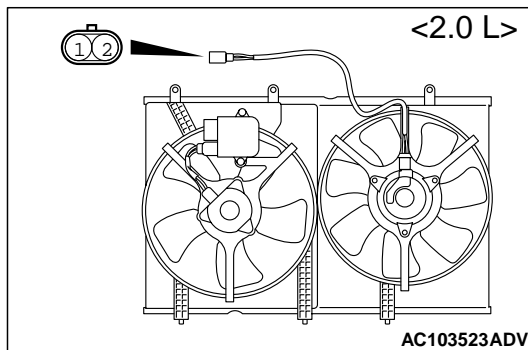
Quantity: 15 cm³ (0.5 floz)

INSPECTION

M1552014301210

CONDENSER FAN MOTOR CHECK

Check to be sure that the condenser fan motor operates when battery voltage is applied to terminal 2 and terminal 1 grounded.



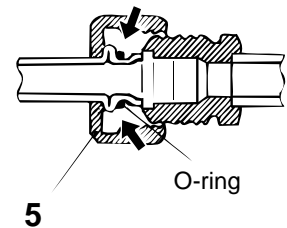
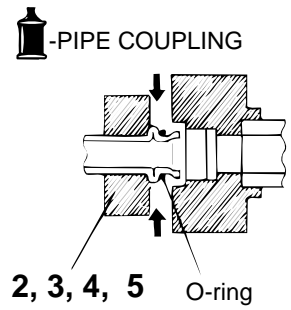
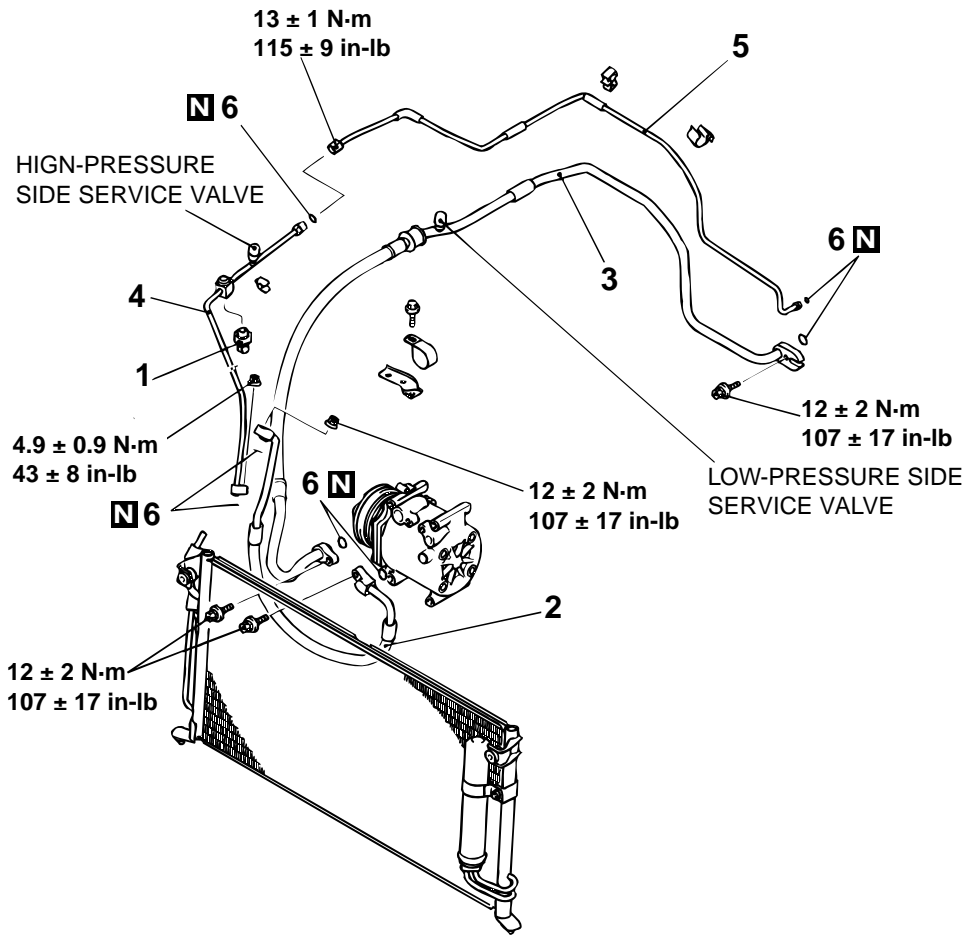
REFRIGERANT LINE

REMOVAL AND INSTALLATION

M1552006400468

Pre-removal and Post-installation Operation

- Refrigerant Draining and Refilling (Refer to P.55-99.)
- Air Cleaner Removal and Installation (Refer to GROUP 15, Air Cleaner P.15-4.)
- Radiator Grille Removal and Installation (Refer to GROUP 51, Front Bumper P.51-2.)



A/C COMPRESSOR OIL:
SUN PAG 56

AC100638AE

REMOVAL STEPS

- <<A>> 1. DUAL PRESSURE SWITCH
<<A>> 2. FLEXIBLE DISCHARGE HOSE
<<A>> >>A<< 3. FLEXIBLE SUCTION HOSE

<<A>>

REMOVAL STEPS (Continued)

4. LIQUID PIPE A
5. LIQUID PIPE B
6. O-RING

REMOVAL SERVICE POINT**<<A>> HOSE/PIPE DISCONNECTION**

As the compressor oil and receiver are highly moisture absorbent, use a non-porous material to plug the hose and nipples.

To prevent the entry of other foreign bodies, plug the condenser, compressor, and expansion valve nipples.

INSTALLATION SERVICE POINT**>>A<< SUCTION HOSE INSTALLATION**

When replacing the suction hose, refill them with a specified amount of compressor oil, and then install them.

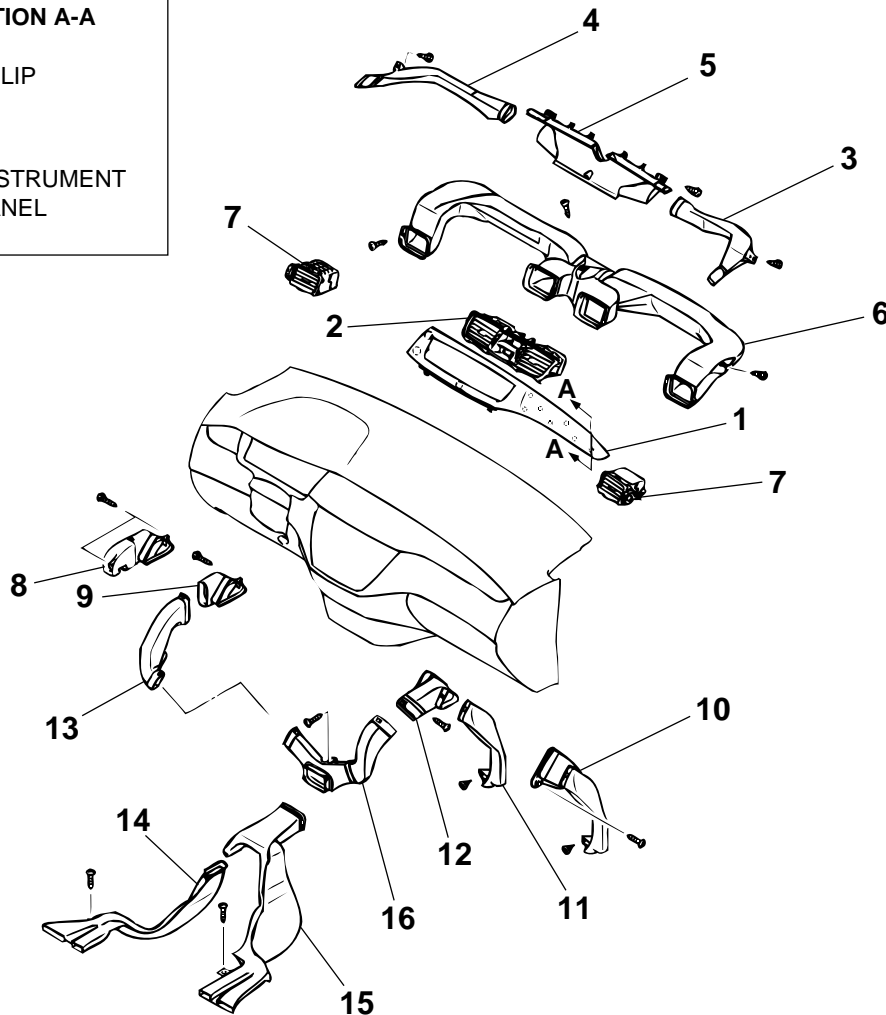
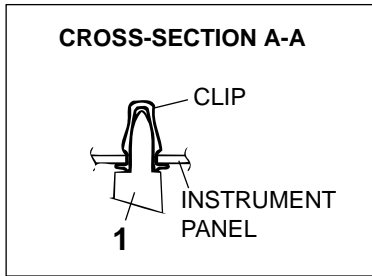
Compressor oil: SUN PAG 56

Quantity: 10 cm³ (0.3 floz)

VENTILATORS

REMOVAL AND INSTALLATION

M1553001600374



AC201882AC

AIR OUTLET REMOVAL STEPS

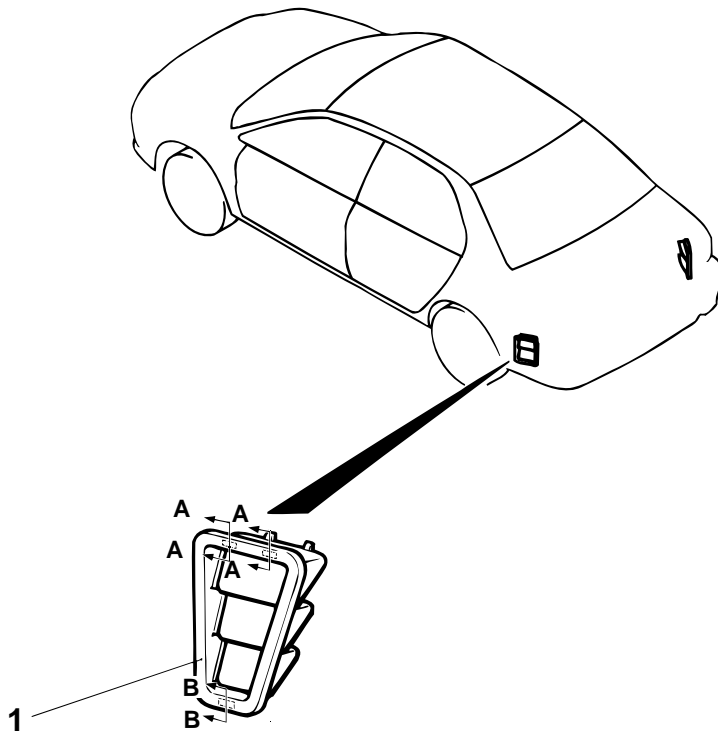
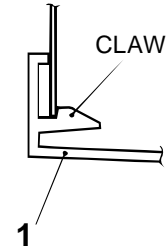
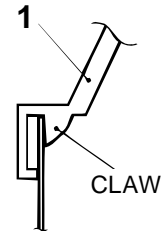
1. CENTER AIR OUTLET PANEL
 2. CENTER AIR OUTLET
- ### DEFROSTER NOZZLE AND DISTRIBUTION DUCT REMOVAL STEPS
- INSTRUMENT PANEL (REFER TO GROUP 52A, INSTRUMENT PANEL [P.52A-3.](#))
 - 3. RIGHT-HAND SIDE DEFROSTER DUCT
 - 4. LEFT -HAND SIDE DEFROSTER DUCT
 - 5. DEFROSTER NOZZLE
 - 6. DISTRIBUTION DUCT
 - 7. SIDE AIR OUTLET

FOOT DUCT REMOVAL STEPS

- CONSOLE COVER AND GLOVE BOX (REFER TO GROUP 52A, INSTRUMENT PANEL [P.52A-3.](#))
- 8. LEFT -HAND FOOT DUCT
- 9. FOOT DUCT LH
- UNDER COVER (REFER TO GROUP 52A, INSTRUMENT PANEL [P.52A-3.](#))
- 10. RIGHT-HAND FOOT DUCT
- 11. FOOT DUCT RH
- 12. REAR HEATER DUCT A RH UPPER SIDE

**REAR HEATER DUCT REMOVAL
STEPS**

- CONSOLE COVER (REFER TO GROUP 52A, INSTRUMENT PANEL [P.52A-3.](#))
 - FRONT SEAT (REFER TO GROUP 52A, INSTRUMENT PANEL [P.52A-3.](#))
 - FLOOR CARPET AND FLOOR PADS
13. REAR HEATER DUCT A LH
 14. LEFT -HAND REAR HEATER DUCT B
 15. RIGHT-HAND REAR HEATER DUCT B
 16. REAR HEATER DUCT A RH LOWER SIDE

**CROSS-SECTION A-A****CROSS-SECTION B-B**

AC100641AC

1. REAR VENTILATION DUCT

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

M1552012100295

| ITEM | SPECIFICATION |
|--|------------------------------|
| A/C pipe mounting bolt (heater/cooler unit side) | 12 ± 2 N·m (107 ± 17 in-lb) |
| A/C pipe mounting bolt (condenser side) | 4.9 ± 1.0 N·m (44 ± 8 in-lb) |
| A/C pipe mounting nut (suction hose side) | 13 ± 1 N·m (109 ± 21 in-lb) |
| Discharge hose mounting bolt (compressor side) | 12 ± 2 N·m (107 ± 17 in-lb) |
| Discharge hose mounting nut (condenser side) | 4.9 ± 1.0 N·m (44 ± 8 in-lb) |
| Suction hose mounting bolt (compressor side) | 12 ± 2 N·m (107 ± 17 in-lb) |

GENERAL SPECIFICATIONS

M1552000200284

| ITEM | | | MANUAL AIR CONDITIONING |
|--------------------------------|----------------------|-----------|--|
| Heater/cooler unit | | | Full-air mix type providing stratified cool and warm air flows |
| Heater control | | | Dial type |
| Air conditioning switch | | | Push-button type |
| Compressor | | | MSC90C (Scroll type) |
| Dual pressure switch kPa (psi) | High-pressure switch | ON to OFF | 2,942 (426.7) |
| | | OFF to ON | 2,354 (341.4) |
| | Low-pressure switch | ON to OFF | 196 (28.4) |
| | | OFF to ON | 221 (32.1) |
| Refrigerant | Type | | R134a (HFC-134a) |
| | Amount g (oz) | | Approximately 480 – 520 (16.93 – 18.34) |

SERVICE SPECIFICATIONS

M1552000300366

| ITEM | | STANDARD VALUE |
|---|-------|---------------------------|
| Idle speed r/min | 2.0 L | 700 ± 100 |
| | 2.4 L | 700 ± 100 |
| Idle-up speed r/min | | 850 ± 100 |
| Resistor (for blower motor) Ω | LO | 2.54 |
| | ML | 1.24 |
| | MH | 0.6 |
| Air gap (A/C compressor clutch) mm (in) | | 0.3 – 0.5 (0.012 – 0.020) |

LUBRICANTS

M1552000400352

| ITEM | SPECIFIED LUBRICANT | QUANTITY | |
|--|---------------------|-------------|-----------|
| Each connection of refrigerant line | SUN PAG 56 | As required | |
| Compressor refrigerant unit lubricant cm ³ (floz) | SUN PAG 56 | 2.0 L | 140 (4.7) |
| | | 2.4 L | 120 (4.0) |

NOTES