

GROUP 55

HEATER, AIR CONDITIONER AND VENTILATION

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SERVICE SPECIFICATIONS

M1552000300515

Item		Standard value
Idle speed r/min		850 ± 50
Idle-up speed r/min		850 ± 50
Air gap (magnetic clutch) mm		0.3 – 0.5
Resistance value for air mixing damper control motor and potentiometer kΩ		Approximately 0.65 – 5.35
Resistance value for mode selection damper control motor and potentiometer kΩ		Approximately 0.65 – 5.35
A/C refrigerant temperature switch operating temperature °C	Being turned off	150
	Being turned on	120

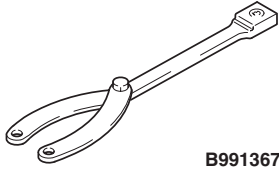
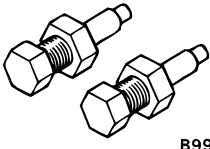
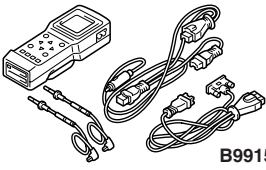
LUBRICANTS

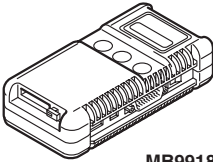
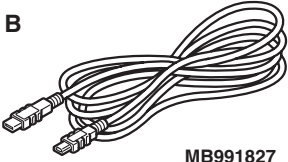
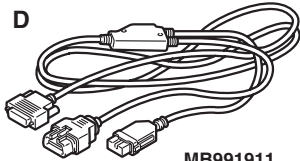
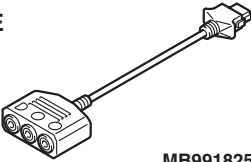
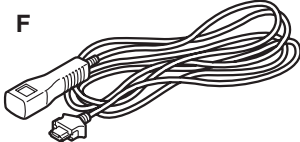
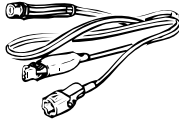
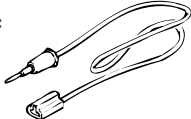
M1552000400396

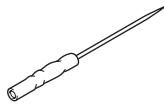
Item	Specified lubricant	Quantity
Compressor refrigerant unit lubricant	SUN PAG 56	120 mL
Each connection of refrigerant line	SUN PAG 56	As required
Refrigerant	R134a (HFC-134a)	480 – 520 g

SPECIAL TOOLS

M1552000600505

Tool	Number	Name	Use
 B991367	MB991367	Special spanner	Armature mounting nut of compressor removal and installation
 B991386	MB991386	Pin	
 B991502	MB991502	M.U.T.-II sub-assembly	Automatic A/C check

Tool	Number	Name	Use
A  MB991824 B  MB991827 C  MB991910 D  MB991911 E  MB991825 F  MB991826 MB991955	MB991955 A: MB991824 B: MB991827 C: MB991910 D: MB991911 E: MB991825 F: MB991826	M.U.T.-III sub-assembly A: Vehicle Communication Interface (V. C. I.) B: M.U.T.-III USB cable C: M.U.T.-III main harness A (Vehicles with CAN communication system) D: M.U.T.-III main harness B (Vehicles without CAN communication system) E: M.U.T.-III measurement adapter F: M.U.T.-III trigger harness	Automatic A/C check CAUTION M.U.T.-III main harness B (MB991911) should be used. M.U.T.-III main harness A should not be used for this vehicle.
a  b  c  d  MB991223	MB991223 a. MB991219 b. MB991220 c. MB991221 d. MB991222	Harness set a. Check harness b. LED harness c. LED harness adapter d. Probe	Continuity check and voltage measurement at harness wire or connector a. For checking connector pin contact pressure b. For checking power supply circuit c. For checking power supply circuit d. For connecting a locally sourced tester

Tool	Number	Name	Use
 MB992006	MB992006	Extra fine probe	Continuity check and voltage measurement at harness wire or connector

TROUBLESHOOTING

DIAGNOSIS TROUBLESHOOTING FLOW

M1554004700102

Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-5](#).

DIAGNOSIS FUNCTION

M1554004800176

How to read diagnosis code

Connect the M.U.T.-II/III to the 16-pin diagnosis connector to read diagnosis code (Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-5](#)).

How to erase diagnosis code

Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-5](#).

DIAGNOSIS CODE CHART

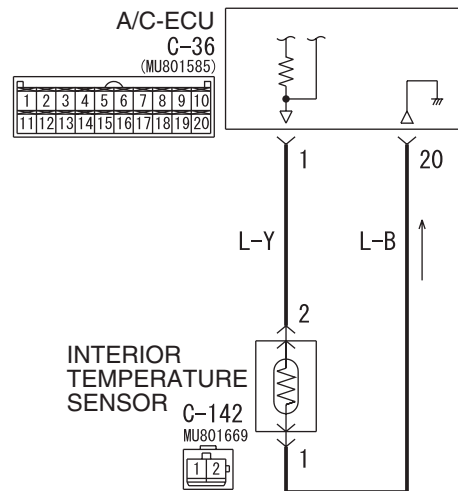
M1554004900537

Code No.	Diagnostic item	Reference page
11	Interior temperature sensor system (open circuit)	P.55-6
12	Interior temperature sensor system (short circuit)	
13	Outside thermo sensor system (open circuit)	P.55-8
14	Outside thermo sensor system (short circuit)	
15	Heater water temperature sensor system (open circuit)	P.55-11
16	Heater water temperature sensor system (short circuit)	
21	Air thermo sensor system (open circuit)	P.55-14
22	Air thermo sensor system (short circuit)	
31	Air mixing damper control motor and potentiometer sensor system	P.55-17
32	Mode selection damper control motor and potentiometer sensor system	P.55-20
41	Air mixing damper control motor and potentiometer activating system	P.55-23
42	Mode selection damper control motor and potentiometer activating system	P.55-26

DIAGNOSTIC TROUBLE CODE
PROCEDURES

Code No.11, 12: Interior Temperature Sensor System

Interior Temperature Sensor Circuit



Wire colour code

B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
 BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

W6J55E009A

COMMENTS ON TROUBLE SYMPTOM

This code is set when the interior temperature sensor circuit is open (Code No.11) or is short (Code No.12).

PROBABLE CAUSES

- Malfunction of the interior temperature sensor
- Damaged the wiring harness or connectors
- Malfunction of the automatic A/C control panel (A/C-ECU)

DIAGNOSIS PROCEDURE

STEP 1. Check the interior temperature sensor.

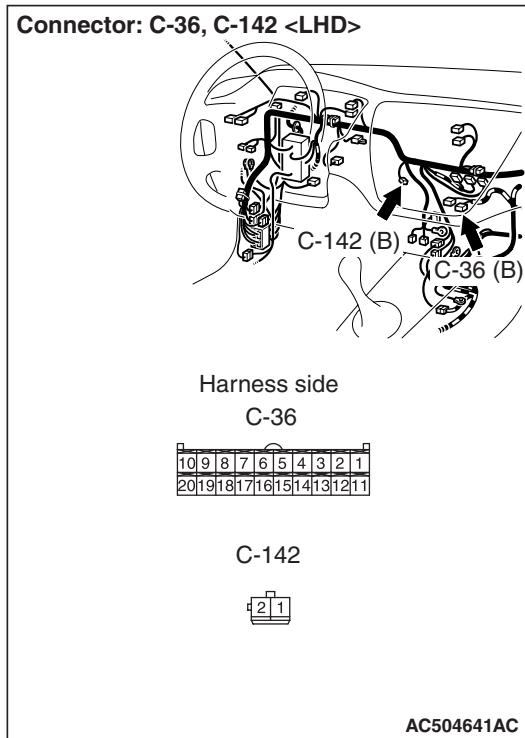
Refer to [P.55-117](#).

Q: Is the check result normal?

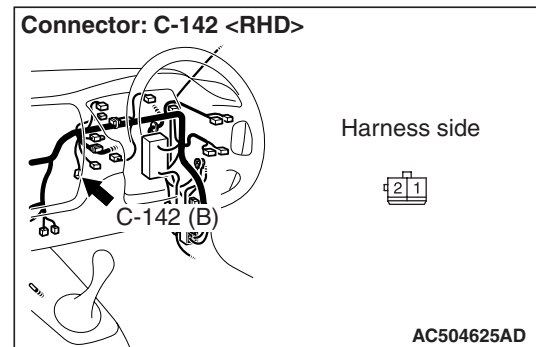
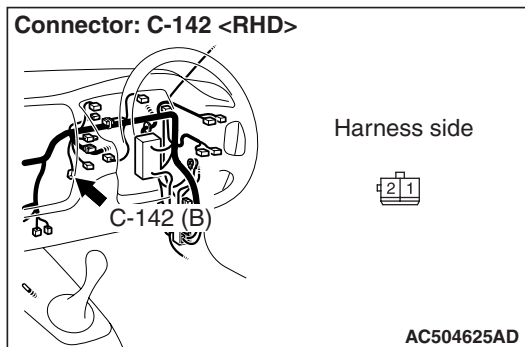
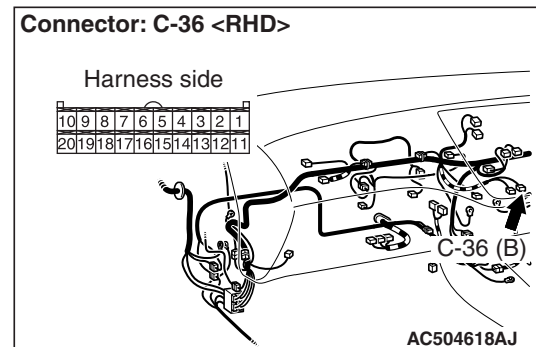
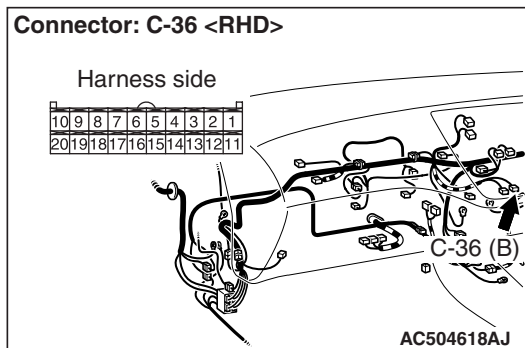
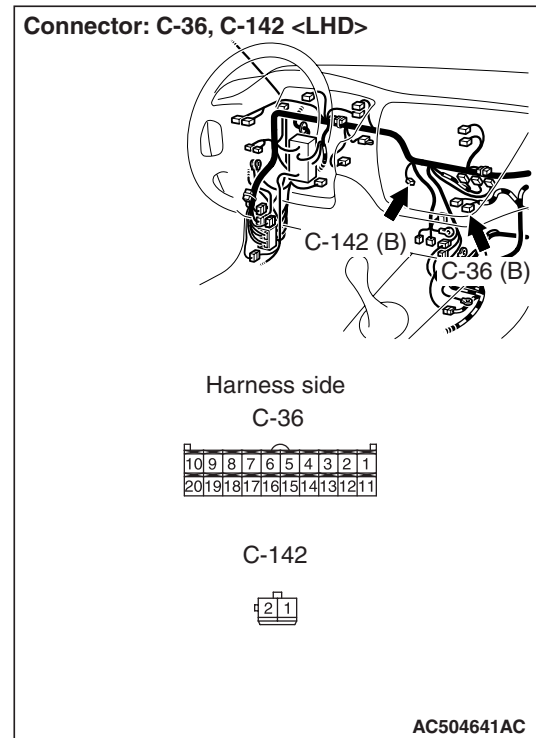
YES : Go to Step 2.

NO : Replace the interior temperature sensor.

STEP 2. Connector check: C-36 A/C-ECU connector and C-142 interior temperature sensor connector



STEP 3. Check the wiring harness between C-36 A/C-ECU connector (terminals 1 and 20) and C-142 interior temperature sensor connector (terminals 2 and 1).



Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the connector.

- Check the sensor signal line and earth line for open or short circuit.

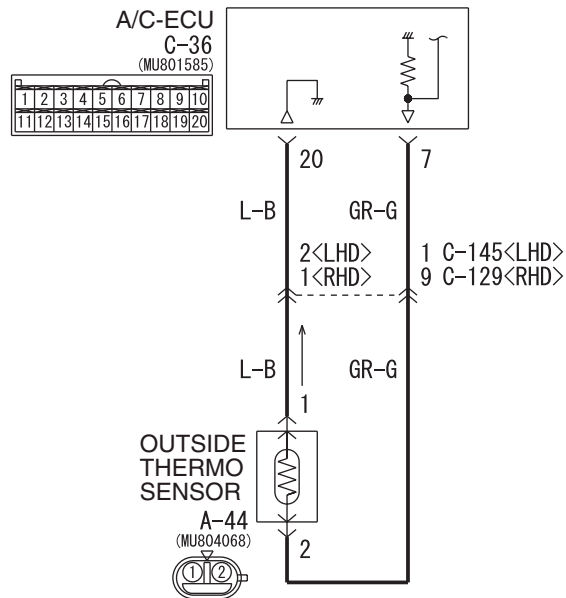
Q: Is the check result normal?

YES : Replace the automatic A/C control panel (A/C-ECU)

NO : Repair the wiring harness.

Code No.13, 14: Outside Thermo Sensor System

Outside Thermo Sensor Circuit



Wire colour code

B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

W6J55E010A

COMMENTS ON TROUBLE SYMPTOM

This code is set when the outside thermo sensor circuit is open (Code No.13) or is short (Code No.14).

PROBABLE CAUSES

- Malfunction of the outside thermo sensor
- Damaged the wiring harness and connectors
- Malfunction of the automatic A/C control panel (A/C-ECU)

DIAGNOSIS PROCEDURE**STEP 1. Check the outside thermo sensor.**

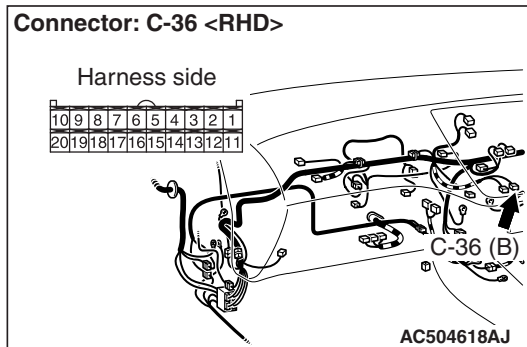
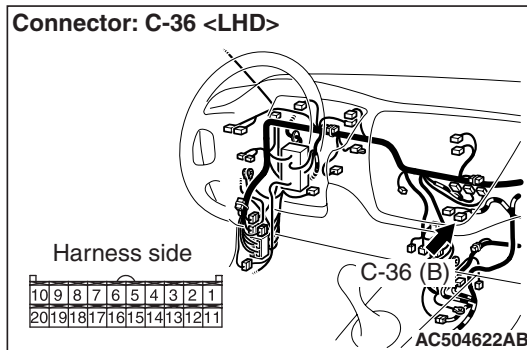
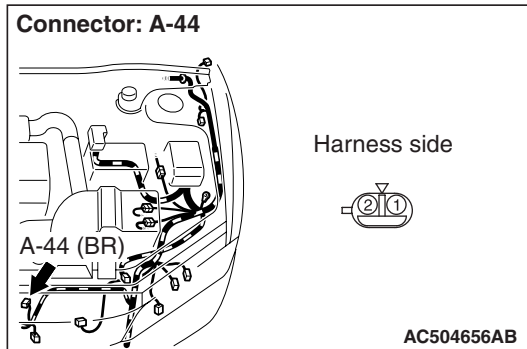
Refer to [P.55-121](#).

Q: Is the check result normal?

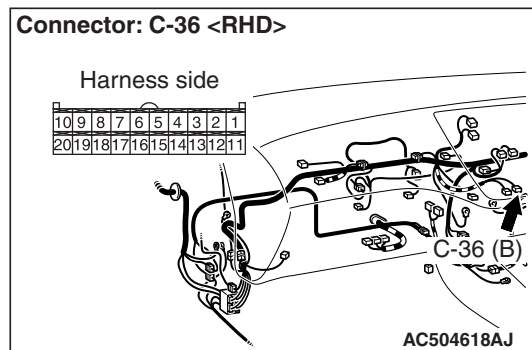
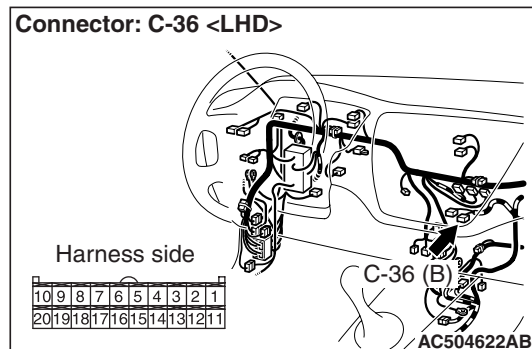
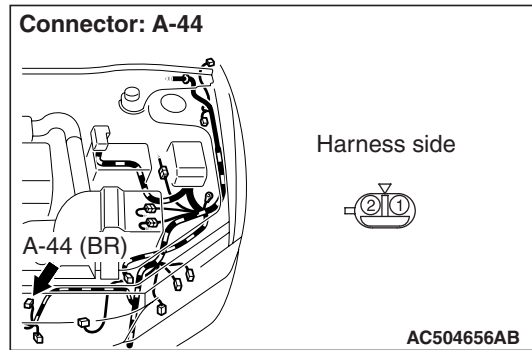
YES : Go to Step 2.

NO : Replace the outside thermo sensor.

STEP 2. Connector check: A-44 outside thermo sensor connector and C-36 A/C-ECU connector



STEP 3. Check the wiring harness between A-44 outside thermo sensor connector (terminals 1 and 2) and C-36 A/C-ECU connector (terminals 20 and 7).



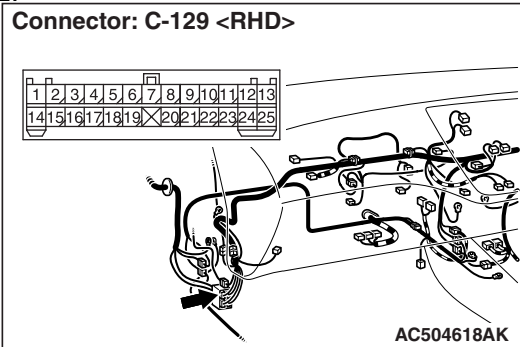
Q: Is the check result normal?

YES : Go to Step 3.

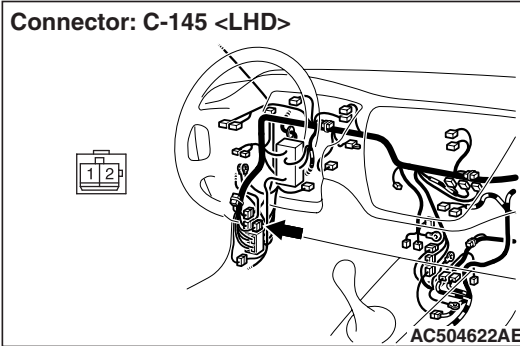
NO : Repair the connector.

NOTE:

Connector: C-129 <RHD>



Connector: C-145 <LHD>



Prior to the wiring harness inspection, check intermediate connector C-145 <LH drive vehicles> or C-129 <RH drive vehicles>, and repair if necessary.

- Check the sensor signal line and earth line for open or short circuit.

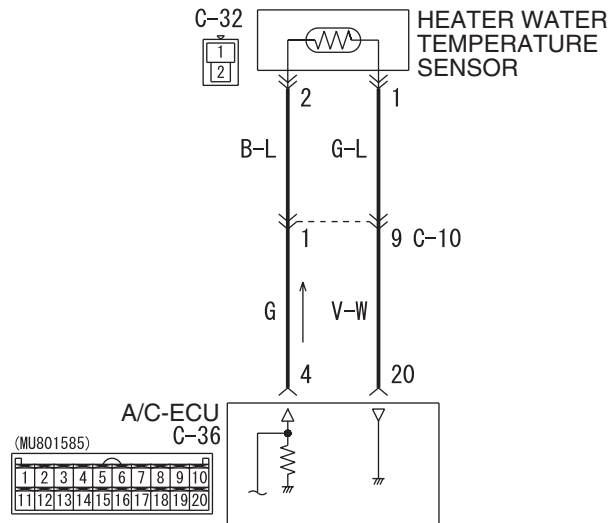
Q: Is the check result normal?

YES : Replace the automatic A/C control panel (A/C-ECU)

NO : Repair the wiring harness.

Code No.15, 16: Heater Water Temperature Sensor System

Heater Water Temperature Sensor Circuit



Wire colour code

B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

W6J55E011A

COMMENTS ON TROUBLE SYMPTOM

This code is set when the heater water temperature sensor circuit is open (Code No.15) or is short (Code No.16).

PROBABLE CAUSES

- Malfunction of the heater water temperature sensor
- Damaged the wiring harness or connectors
- Malfunction of the automatic A/C control panel (A/C-ECU)

DIAGNOSIS PROCEDURE

STEP 1. Check the heater water temperature sensor.

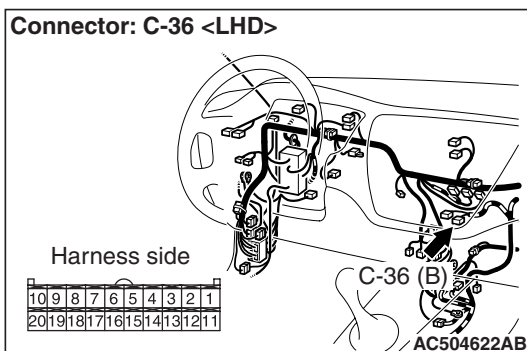
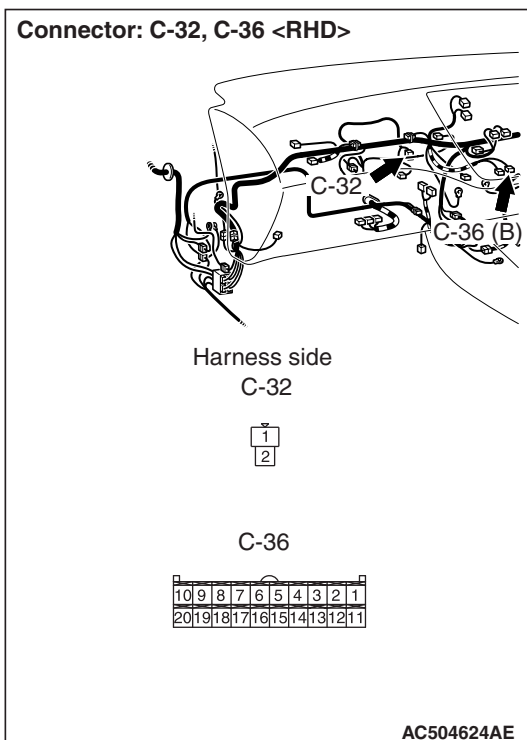
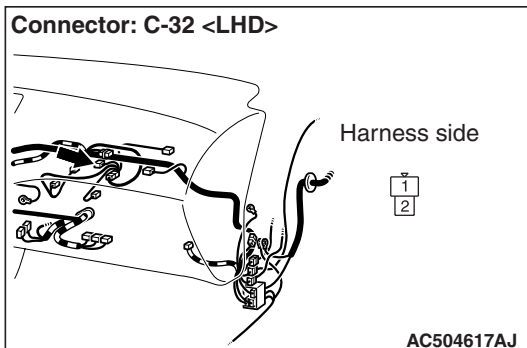
Refer to [P.55-117](#).

Q: Is the check result normal?

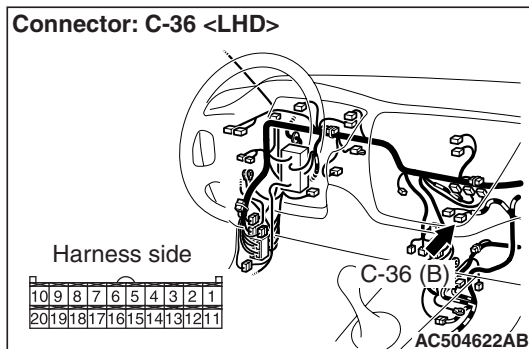
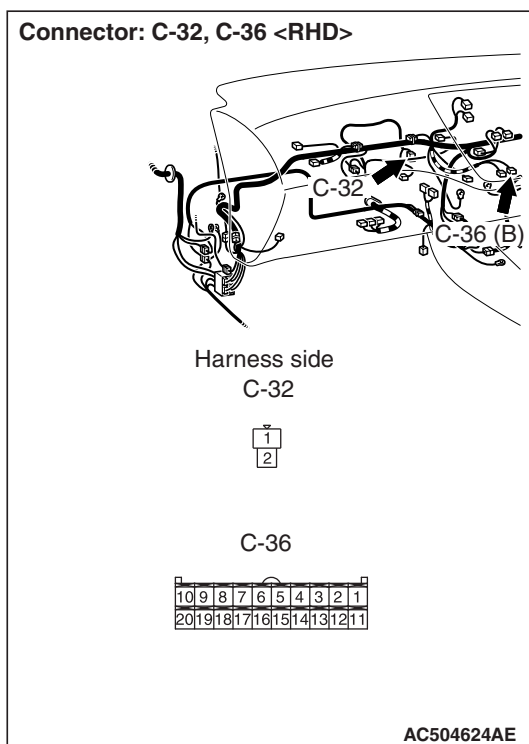
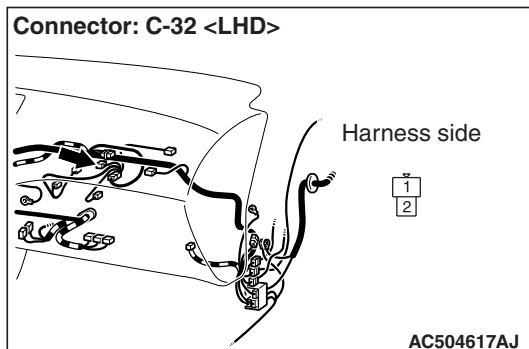
YES : Go to Step 2.

NO : Replace the heater water temperature sensor.

STEP 2. Connector check: C-36 A/C-ECU connector and C-32 heater water temperature connector



STEP 3. Check the wiring harness between C-36 A/C-ECU connector (terminals 4 and 20) and C-32 heater water temperature sensor connector (terminals 2 and 1).

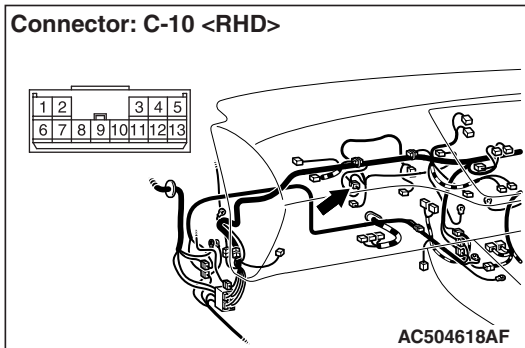
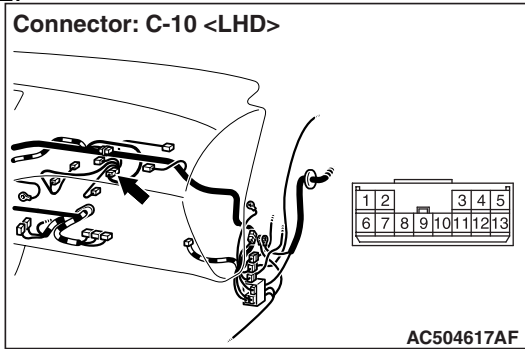


Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the connector.

NOTE:



Prior to the wiring harness inspection, check intermediate connector C-10, and repair if necessary.

- Check the sensor signal line and earth line for open or short circuit.

Q: Is the check result normal?

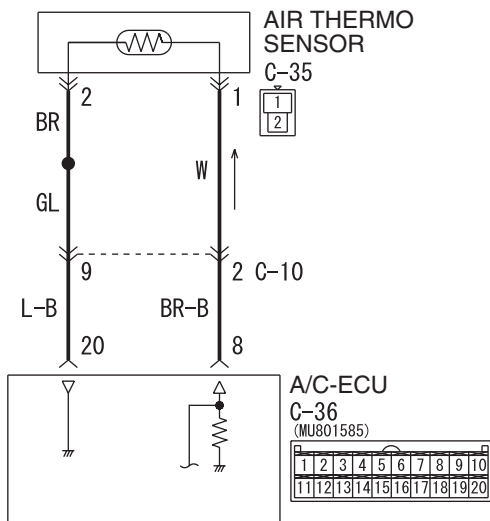
YES : Replace the automatic A/C control panel (A/C-ECU)

NO : Repair the wiring harness.

Code No.21, 22: Air Thermo Sensor System

<LHD>

Air Thermo Sensor Circuit



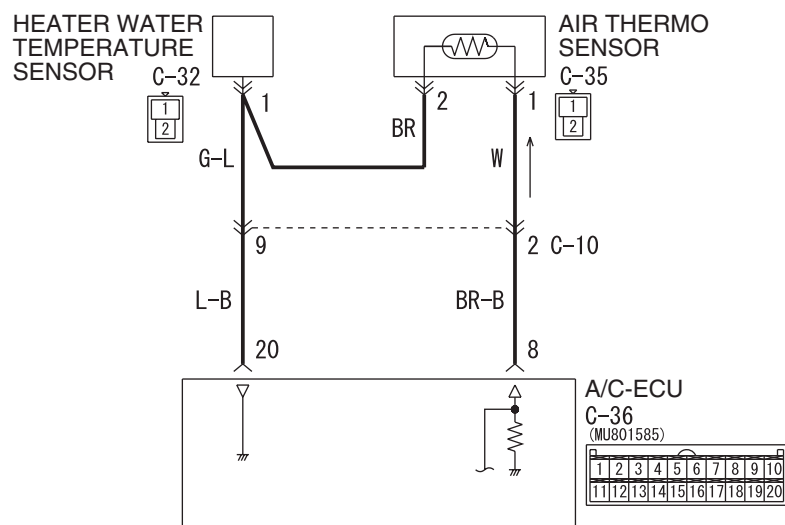
Wire colour code

B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
 BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

W6J55E012A

<RHD>

Air Thermo Sensor Circuit



Wire colour code

B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
 BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

W6J55E013A

COMMENTS ON TROUBLE SYMPTOM

This code is set when the air thermo sensor circuit is open (Code No.21) or is short (Code No.22).

PROBABLE CAUSES

- Malfunction of the air thermo sensor
- Damaged the wiring harness or connectors
- Malfunction of the automatic A/C control panel (A/C-ECU)

DIAGNOSIS PROCEDURE

STEP 1. Check the air thermo sensor.

Refer to [P.55-120](#).

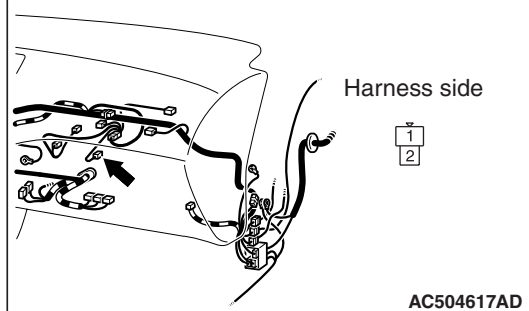
Q: Is the check result normal?

YES : Go to Step 2.

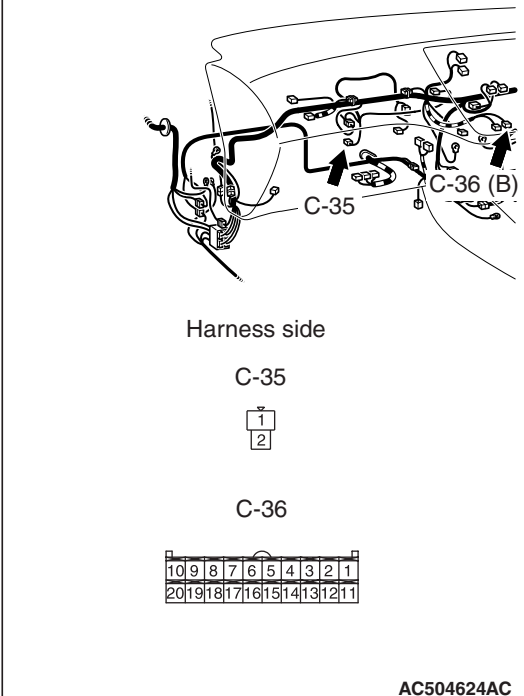
NO : Replace the air thermo sensor.

STEP 2. Connector check: C-36 A/C-ECU connector and C-35 air thermo sensor connector

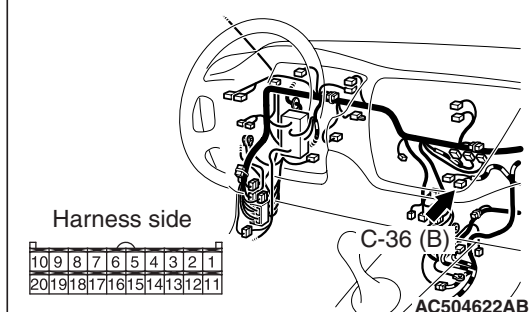
Connector: C-35 <LHD>



Connectors: C-35, C-36 <RHD>



Connector: C-36 <LHD>



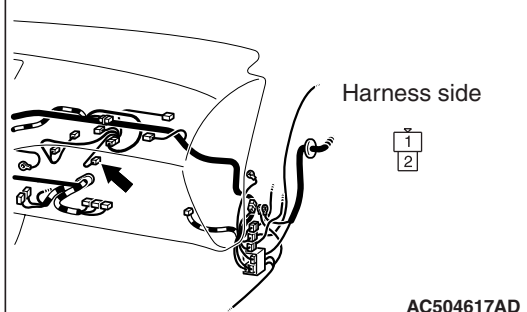
Q: Is the check result normal?

YES : Go to Step 3.

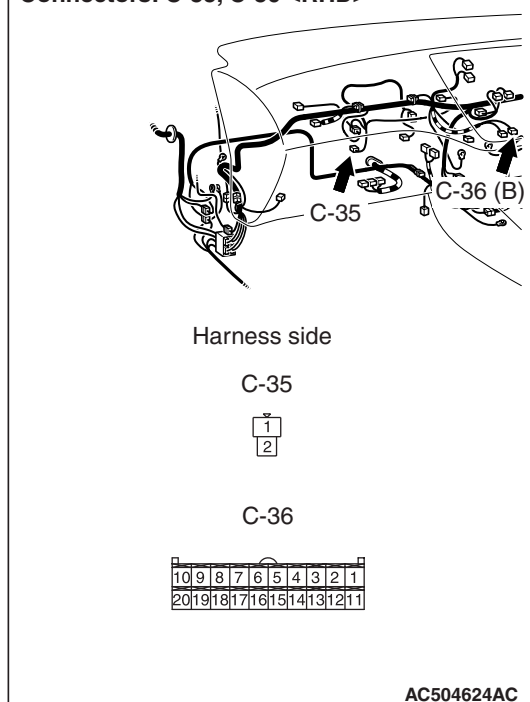
NO : Repair the connector.

STEP 3. Check the wiring harness between C-36 A/C-ECU connector (terminals 8 and 20) and C-35 air thermo sensor connector (terminals 1 and 2).

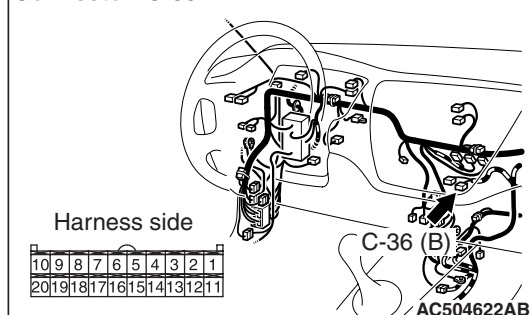
Connector: C-35 <LHD>



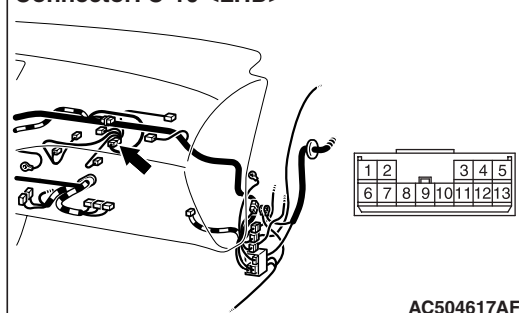
Connectors: C-35, C-36 <RHD>



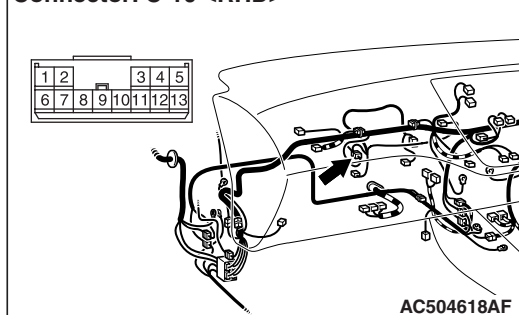
Connector: C-36 <LHD>

**NOTE:**

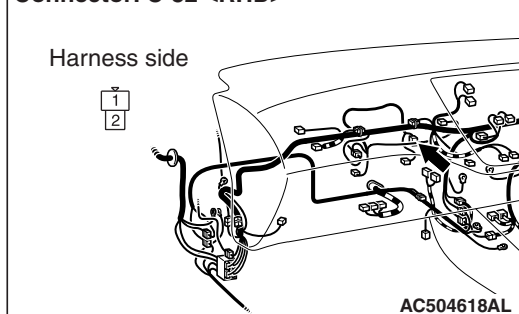
Connector: C-10 <LHD>



Connector: C-10 <RHD>



Connector: C-32 <RHD>



Prior to the wiring harness inspection, check intermediate connector C-10 and heater water temperature sensor connector C-32 <RH drive vehicles>, and repair if necessary.

- Check the sensor signal line and earth line for open or short circuit.

Q: Is the check result normal?

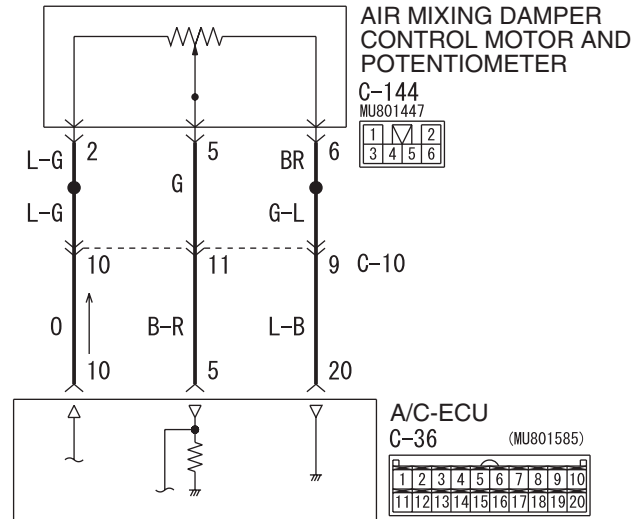
YES : Replace the automatic A/C control panel (A/C-ECU)

NO : Repair the wiring harness.

Code No.31: Air Mixing Damper Control Motor Potentiometer System

<LHD>

Air Mixing Damper Control Motor Potentiometer Circuit



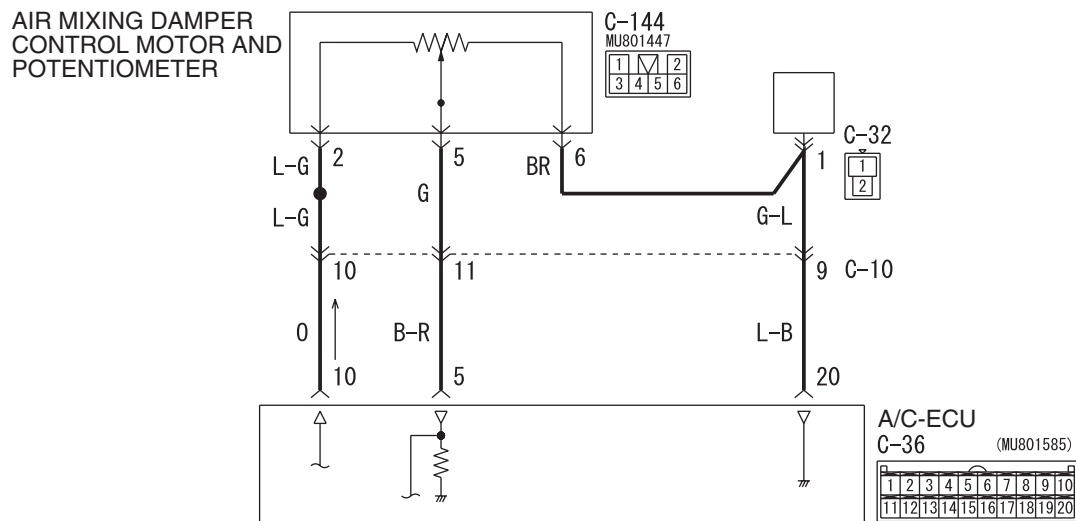
Wire colour code

B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

W6J55E014A

<RHD>

Air Mixing Damper Control Motor Potentiometer Circuit



Wire colour code

B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

W6J55E015A

COMMENTS ON TROUBLE SYMPTOM

This code is set when the air mixing damper control motor potentiometer does not send any signal to the A/C-ECU due to short or open circuit.

PROBABLE CAUSES

- Malfunction of the air mixing damper control motor and potentiometer
- Damaged the wiring harness or connectors
- Malfunction of the automatic A/C control panel (A/C-ECU)

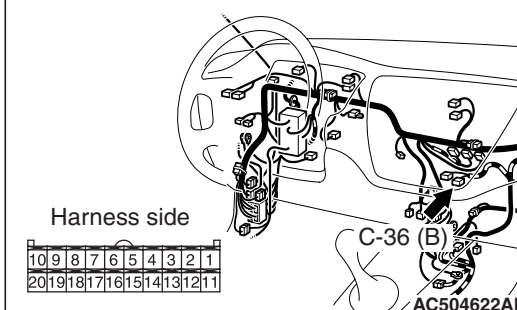
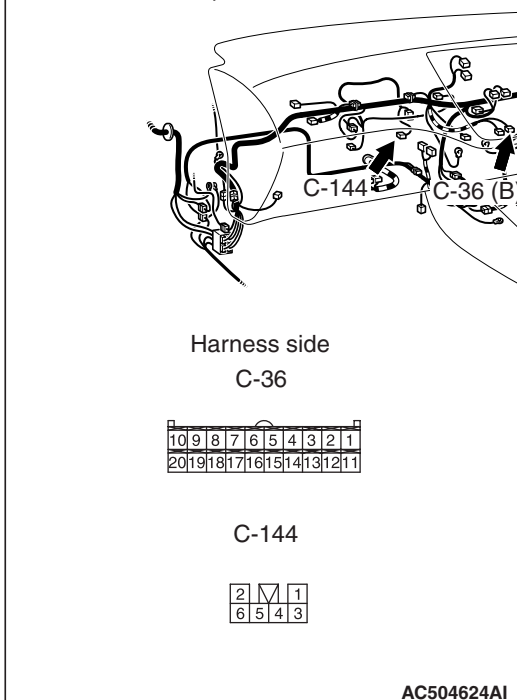
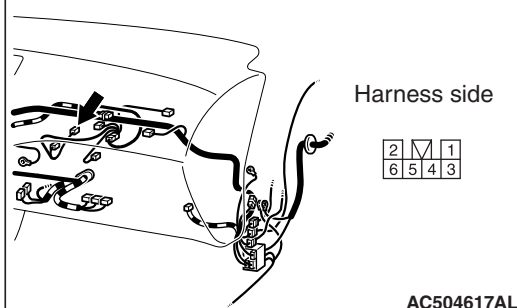
DIAGNOSIS PROCEDURE**STEP 1. Check the air mixing damper control motor and potentiometer.**

Refer to [P.55-114](#).

Q: Is the check result normal?

YES : Go to Step 2.

NO : Replace the air mixing damper control motor and potentiometer.

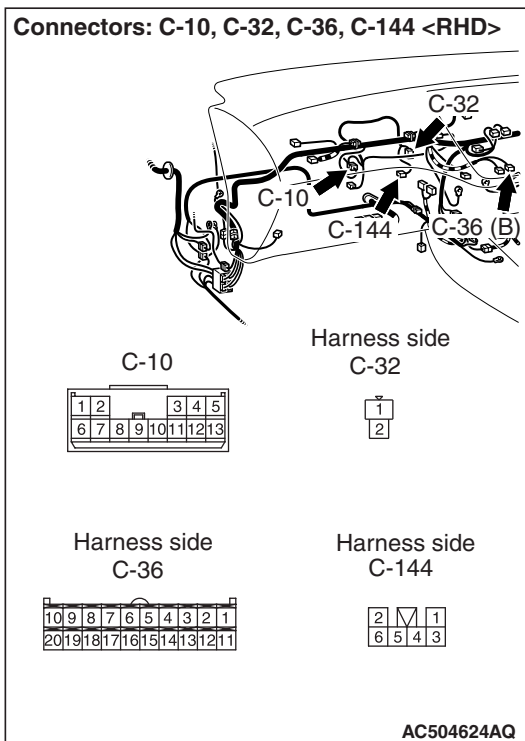
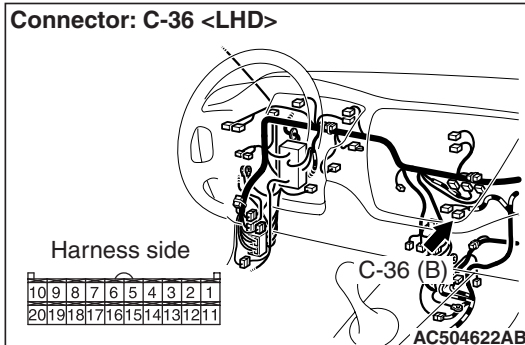
STEP 2. Connector check: C-36 A/C-ECU connector and C-144 air mixing damper control motor and potentiometer connector**Connector: C-36 <LHD>****Connectors: C-36, C-144 <RHD>****Connector: C-144 <LHD>**

Q: Is the check result normal?

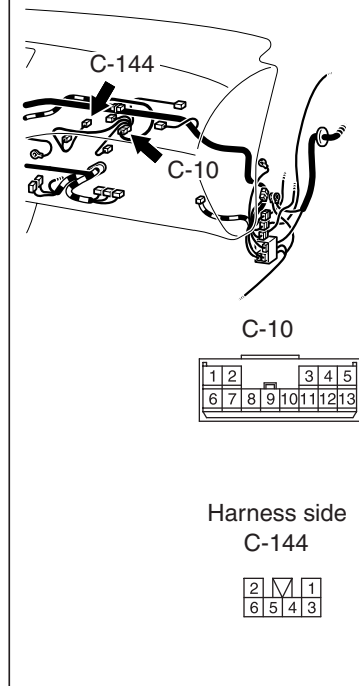
YES : Go to Step 3.

NO : Repair the connector.

STEP 3. Check the wiring harness between C-36 A/C-ECU connector (terminals 10, 5 and 20) and C-144 air mixing damper control motor and potentiometer connector (terminals 2, 5 and 6).



Connectors: C-10, C-144 <LHD>



NOTE: Prior to the wiring harness inspection, check intermediate connector C-10, and heater water temperature sensor connector C-32 <RH drive vehicles>, and repair if necessary.

- Check the potentiometer power supply, earth and signal line for open or short circuit.

Q: Is the check result normal?

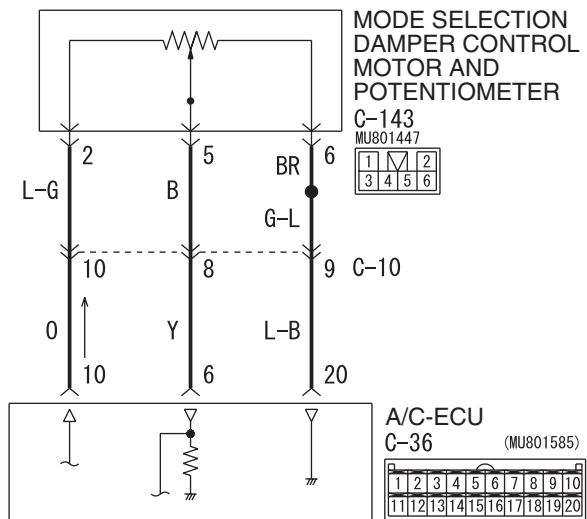
YES : Replace the automatic A/C control panel (A/C-ECU).

NO : Repair the wiring harness.

Code No.32: Mode Selection Damper Control Motor Potentiometer System

<LHD>

Mode Selection Damper Control Motor Potentiometer Circuit



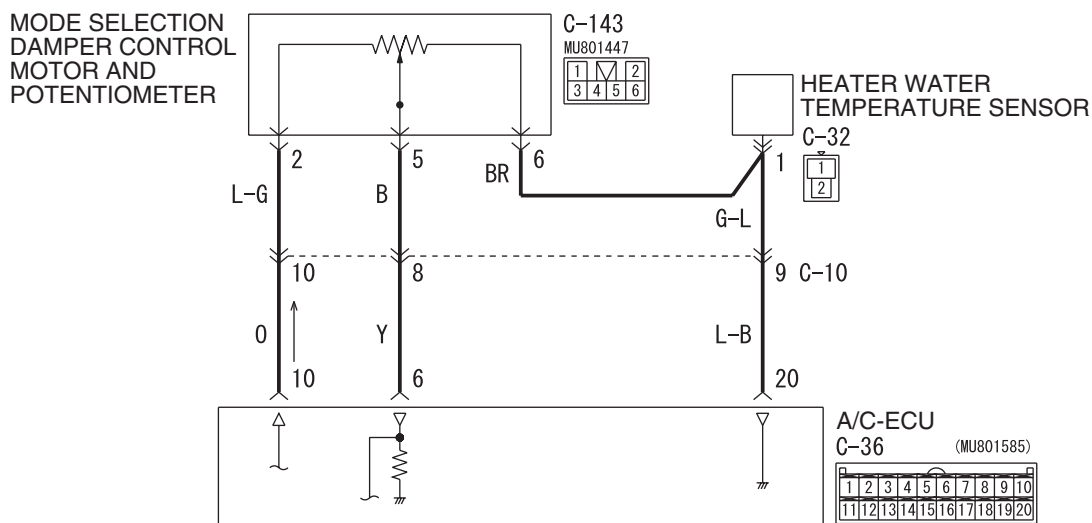
Wire colour code

B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
 BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

W6J55E016A

<RHD>

Mode Selection Damper Control Motor Potentiometer Circuit



Wire colour code

B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
 BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

W6J55E017A

COMMENTS ON TROUBLE SYMPTOM

This code is set when the mode selection damper control motor potentiometer does not send any signal to the A/C-ECU due to short or open circuit.

PROBABLE CAUSES

- Malfunction of the mode selection damper control motor and potentiometer
- Malfunction of the automatic A/C control panel (A/C-ECU)
- Damaged the wiring harness or connectors

DIAGNOSIS PROCEDURE

STEP 1. Check the mode selection damper control motor and potentiometer.

Refer to [P.55-114](#).

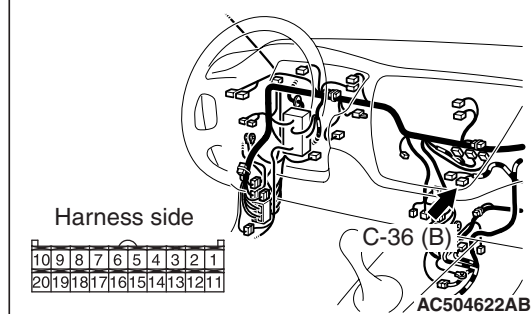
Q: Is the check result normal?

YES : Go to Step 2.

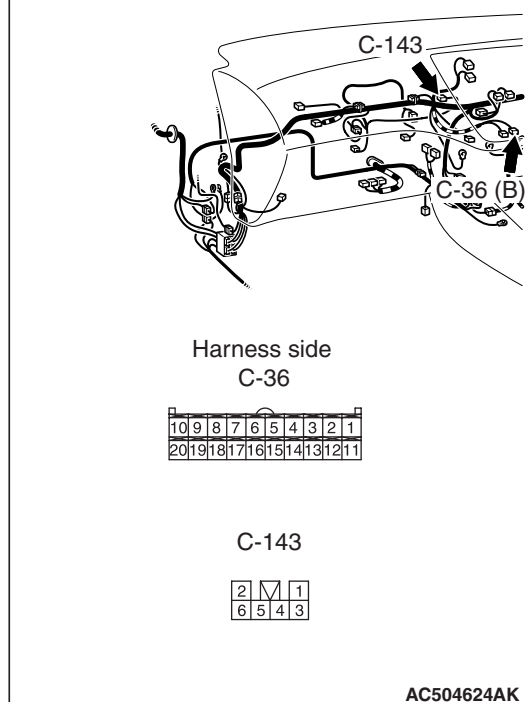
NO : Replace the mode selection damper control motor and potentiometer.

STEP 2. Connector check: C-36 A/C-ECU connector and C-143 mode selection damper control motor and potentiometer connector

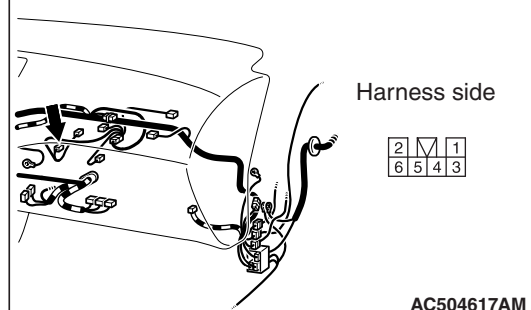
Connector: C-36 <LHD>



Connectors: C-36, C-143 <RHD>



Connector: C-143 <LHD>



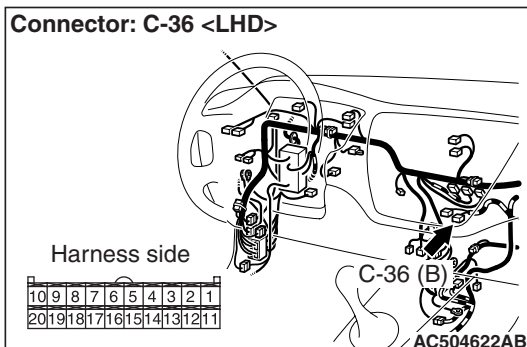
Q: Is the check result normal?

YES : Go to Step 3.

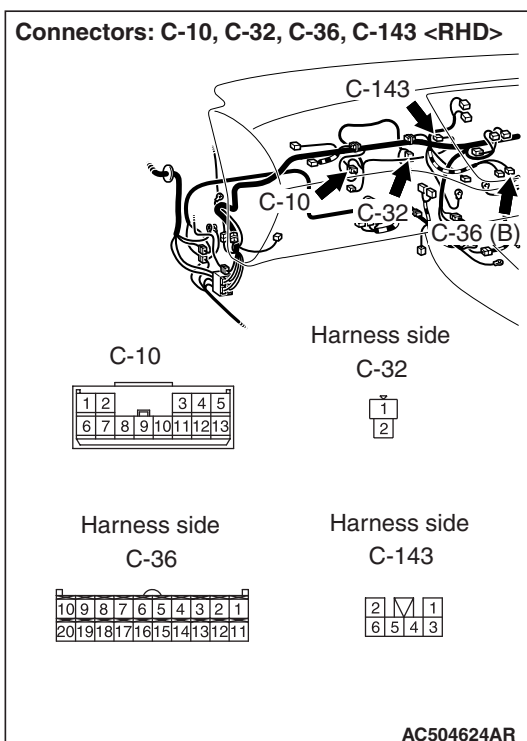
NO : Repair the connector.

STEP 3. Check the wiring harness between C-36 A/C-ECU connector (terminals 10, 6 and 20) and C-143 mode selection damper control motor and potentiometer connector (terminals 2, 5 and 6).

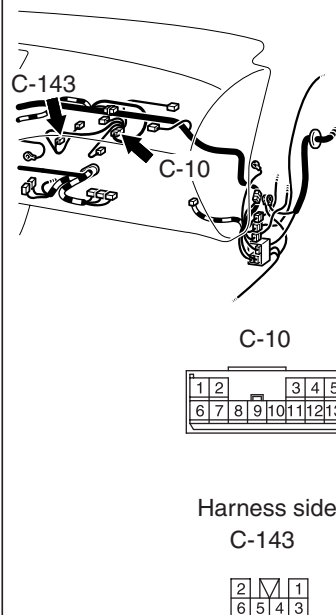
Connector: C-36 <LHD>



Connectors: C-10, C-32, C-36, C-143 <RHD>



Connectors: C-10, C-143 <LHD>



NOTE: Prior to the wiring harness inspection, check intermediate connector C-10 and heater water temperature sensor connector C-32 <RH drive vehicles>, and repair if necessary.

- Check the potentiometer power supply, earth and signal line for open or short circuit.

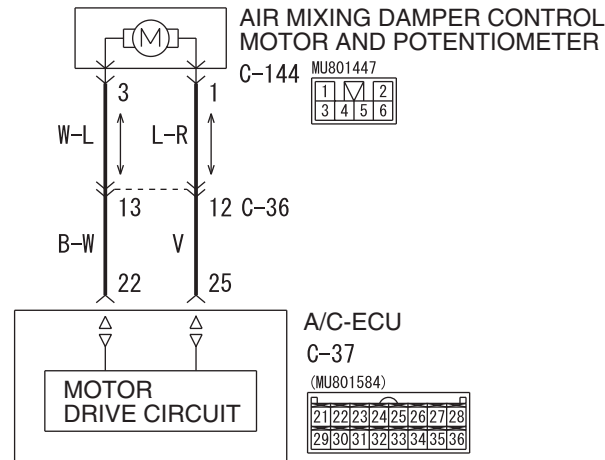
Q: Is the check result normal?

YES : Malfunction of the automatic A/C control panel (A/C-ECU)

NO : Repair the wiring harness.

Code No.41: Air Mixing Damper Control Motor System

Air Mixing Damper Control Motor Circuit



Wire colour code

B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

W6J55E018A

COMMENTS ON TROUBLE SYMPTOM

This code is set when the air mixing damper cannot be rotated to the preset opening angle.

PROBABLE CAUSES

- Malfunction of the air mixing damper control motor and potentiometer
- Malfunction of the automatic A/C control panel (A/C-ECU)
- Damaged the wiring harness or connectors

DIAGNOSIS PROCEDURE

STEP 1. Check the air mixing damper control motor and potentiometer.

Refer to P.55-114.

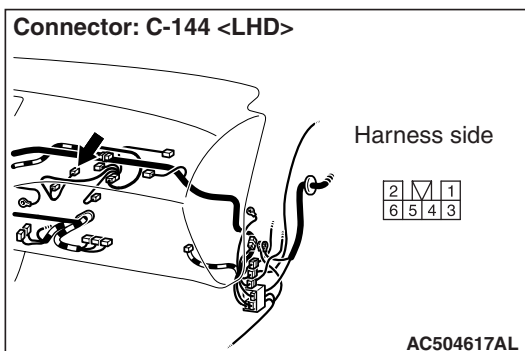
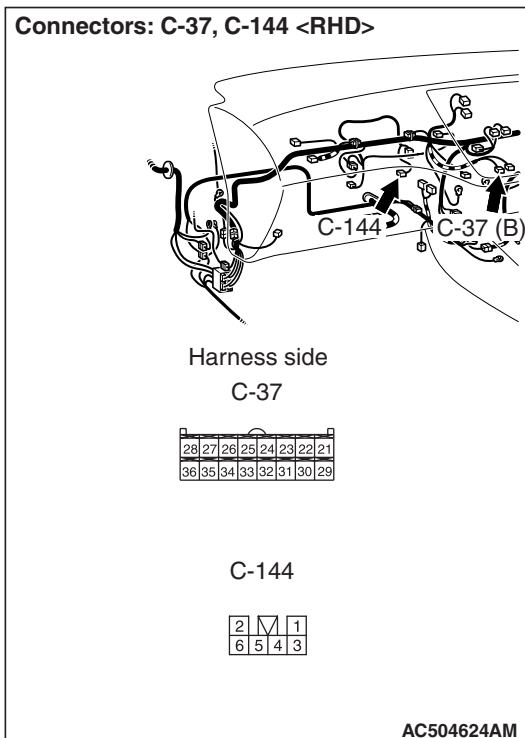
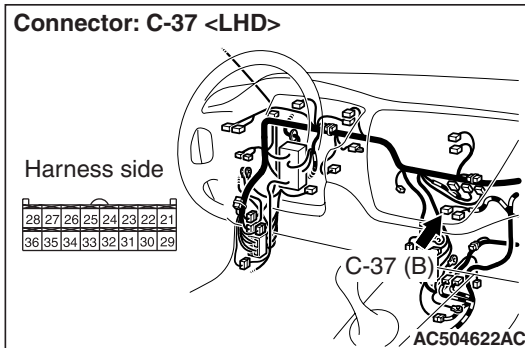
Q: Is the check result normal?

YES : Go to Step 2.

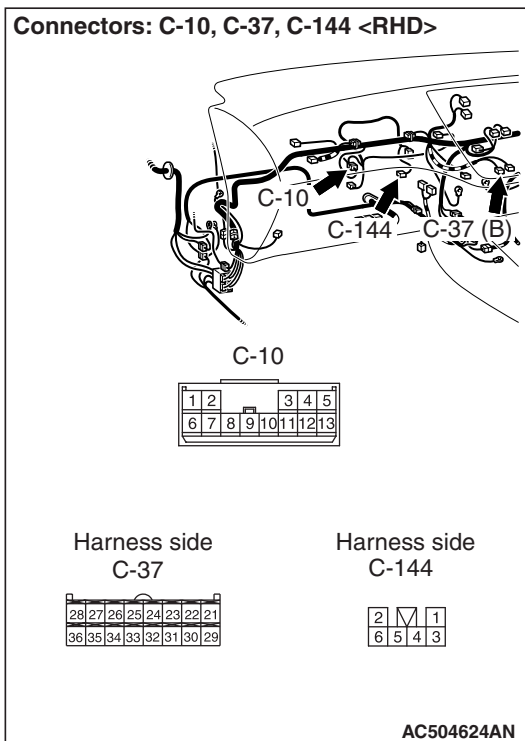
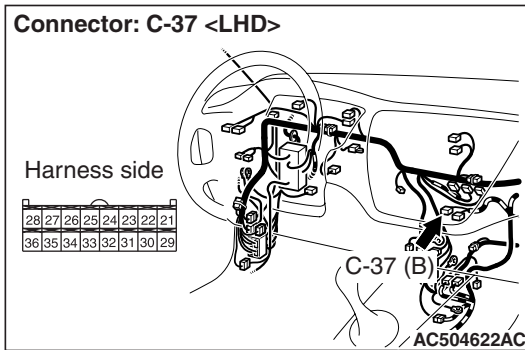
NO : Replace the air mixing damper control motor and potentiometer.

STEP 2. Connector check: C-37 A/C-ECU connector and C-144 air mixing damper control motor and potentiometer connector

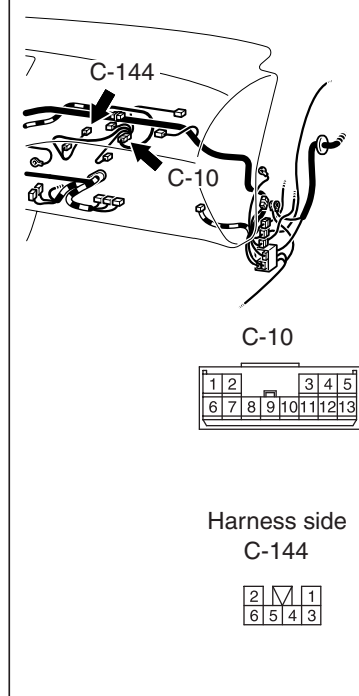
Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the connector.



STEP 3. Check the wiring harness between C-37 A/C-ECU connector (terminals 22 and 25) and C-144 air mixing damper control motor and potentiometer connector (terminals 3 and 1).



Connectors: C-10, C-144 <LHD>



NOTE: Prior to the wiring harness inspection, check intermediate connector C-10, and repair if necessary.

- Check the motor activating lines for open or short circuit.

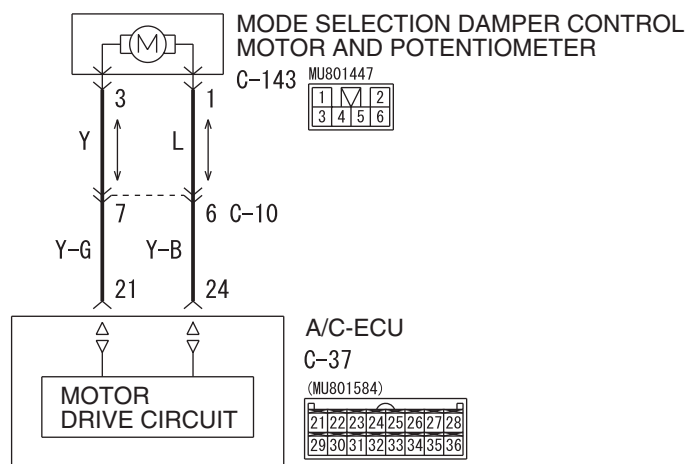
Q: Is the check result normal?

YES : Malfunction of the automatic A/C control panel (A/C-ECU)

NO : Repair the wiring harness.

Code No.42: Mode Selection Damper Control Motor and Potentiometer Activating System

Mode Selection Damper Control Motor and Potentiometer Circuit



Wire colour code

B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

W6J55E019A

COMMENTS ON TROUBLE SYMPTOM

This code is set when the mode selection damper cannot be rotated to the preset opening angle.

PROBABLE CAUSES

- Malfunction of the mode selection damper control motor and potentiometer
- Malfunction of the automatic A/C control panel (A/C-ECU)
- Damaged the wiring harness or connectors

DIAGNOSIS PROCEDURE

STEP 1. Check the mode selection damper control motor and potentiometer.

Refer to [P.55-114](#).

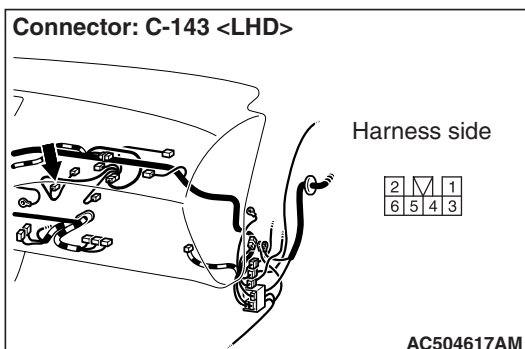
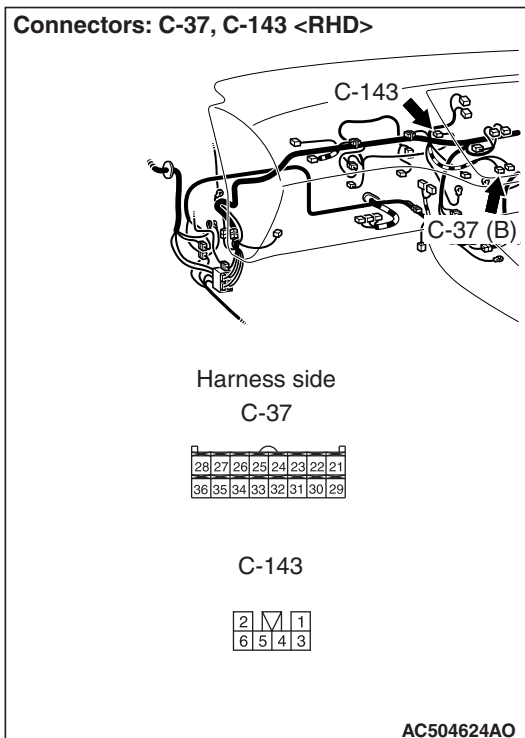
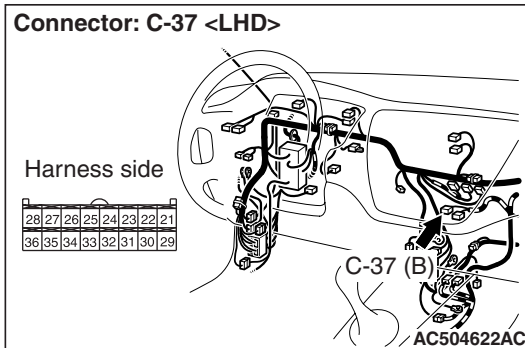
Q: Is the check result normal?

YES : Go to Step 2.

NO : Replace the mode selection damper control motor and potentiometer.

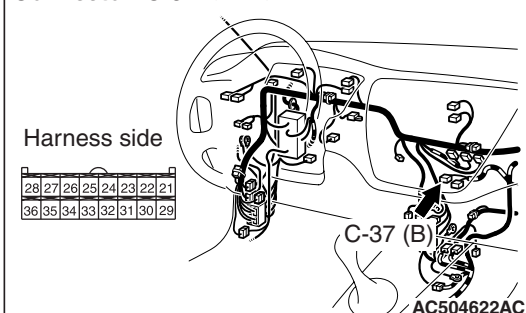
STEP 2. Connector check: C-37 A/C-ECU connector and C-143 mode selection damper control motor and potentiometer connector

Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the connector.

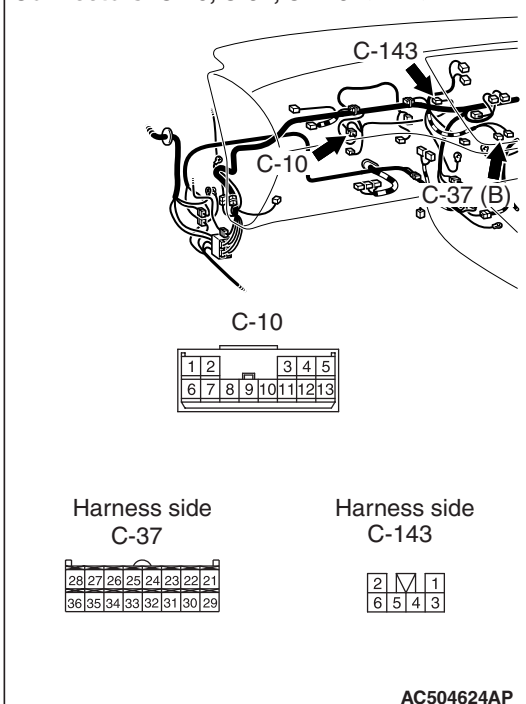


STEP 3. Check the wiring harness between C-37 A/C-ECU connector (terminals 21 and 24) and C-143 mode selection damper control motor and potentiometer connector (terminals 3 and 1).

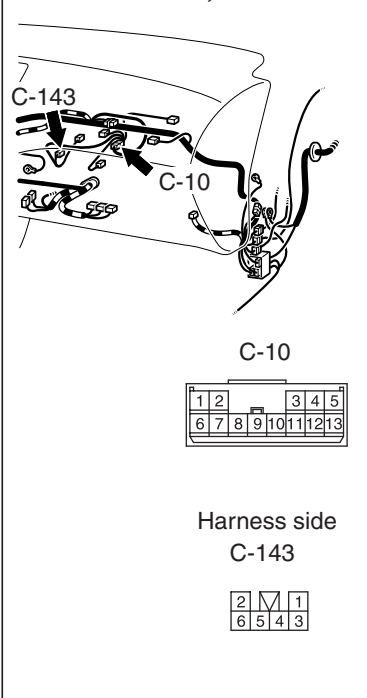
Connector: C-37 <LHD>



Connectors: C-10, C-37, C-143 <RHD>



Connectors: C-10, C-143 <LHD>



NOTE: Prior to the wiring harness inspection, check intermediate connector C-10, and repair if necessary.

- Check the motor activating lines for open or short circuit.

Q: Is the check result normal?

YES : Replace the automatic A/C control panel (A/C-ECU).

NO : Repair the wiring harness.

TROUBLE SYMPTOM CHART

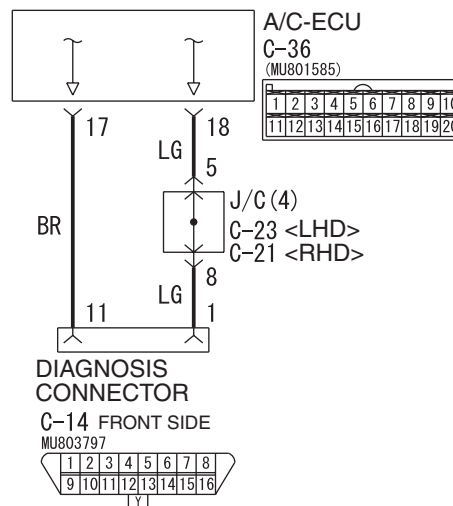
M1554005000571

Symptom	Inspection procedure number	Reference page
Communication with the M.U.T.-II/III is not possible.	1	P.55-29
When the A/C is operating, temperature inside the passenger compartment does not decrease (cool air is not emitted).	2	P.55-32
A/C outlet air temperature cannot be set.	3	P.55-41
The blower does not work.	4	P.55-42
The blower air volume cannot be changed.	5	P.55-54
When sunlight intensity changes, blower air temperature does not change.	6	P.55-56
The outside/inside air changeover is impossible.	7	P.55-58
Rear window defogger function does not operate.	8	P.55-63
Malfunction of the A/C-ECU power supply system.	9	P.55-73
A/C compressor power supply system.	10	P.55-79
Condenser fan does not operate.	11	P.55-86

SYMPTOM PROCEDURES

Inspection Procedure 1: Communication with the M.U.T.-II/III is not Possible.

Diagnosis Connector Circuit



COMMENTS ON TROUBLE SYMPTOM

If communication with all other systems is not possible, there is a high possibility that there is a malfunction of the diagnosis line. If only the A/C system can not communicate with the M.U.T.-II/III, the diagnosis line between the A/C-ECU and the diagnosis connector may be defective.

PROBABLE CAUSES

- Damaged the wiring harness or connectors
- Malfunction of the automatic A/C control panel (A/C-ECU)

DIAGNOSIS PROCEDURE**STEP 1. Check the communication with other systems.**

Q: Is the communication with the other systems possible using the M.U.T.-II/III?

YES : Go to Step 2.

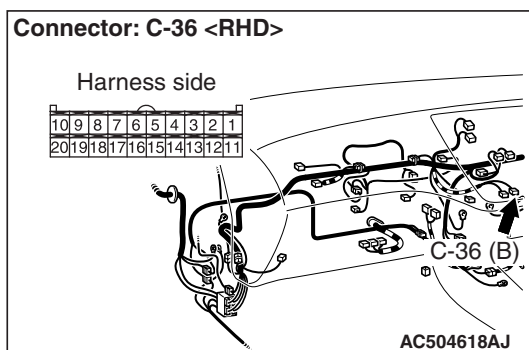
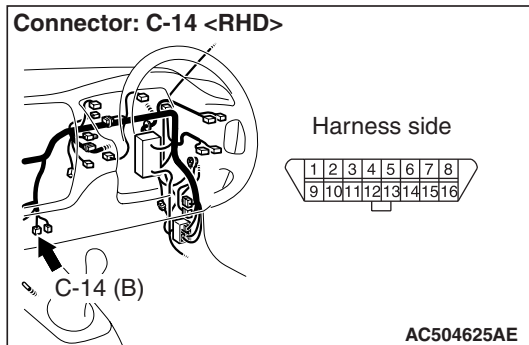
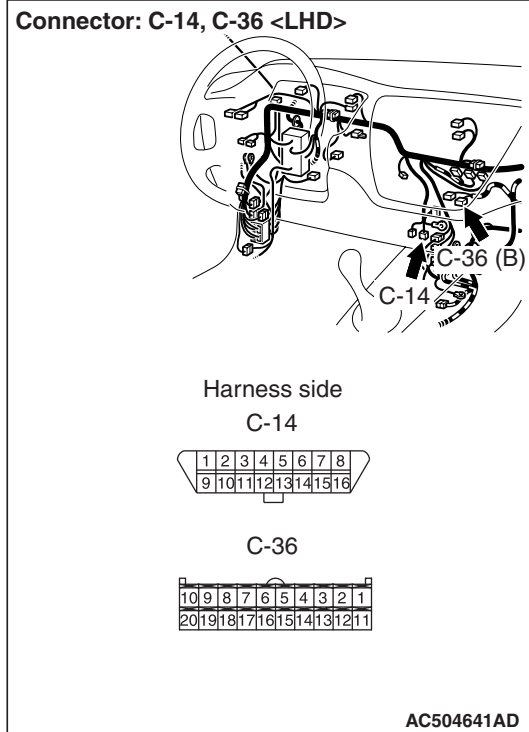
NO : Check the diagnosis line using the M.U.T.-II/III, and repair if necessary.

STEP 2. Check operations of the A/C, rear window defogger and outside/inside air selection damper control motor.

Q: Does the A/C, rear window defogger or outside/inside air selection damper control motor operate?

YES : Go to Step 3.

NO : Refer to Inspection procedure 9 "Malfunction of the A/C-ECU power supply system [P.55-73](#)."

STEP 3. Connector check: C-36 A/C-ECU connector and C-14 diagnosis connector

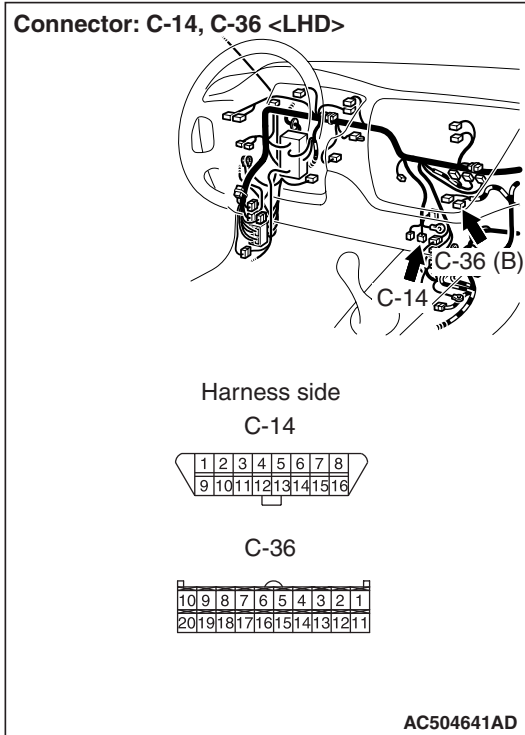
Q: Is the check result normal?

YES : Go to Step 4.

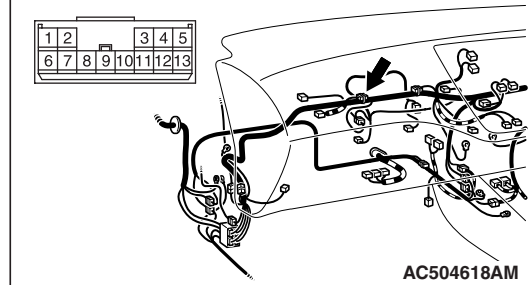
NO : Repair the connector.

STEP 4. Check the wiring harness between C-36 A/C-ECU connector (terminal 17 and 18) and C-14 diagnosis connector (terminal 11 and 1).

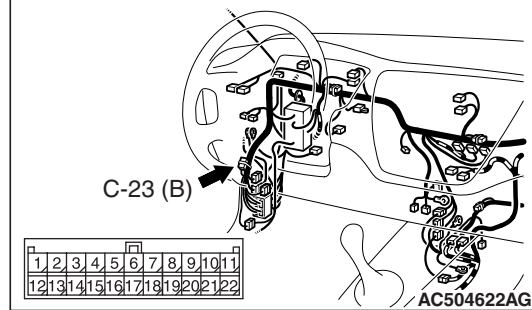
NOTE:



Connector: C-21 <RHD>



Connector: C-23 <LHD>



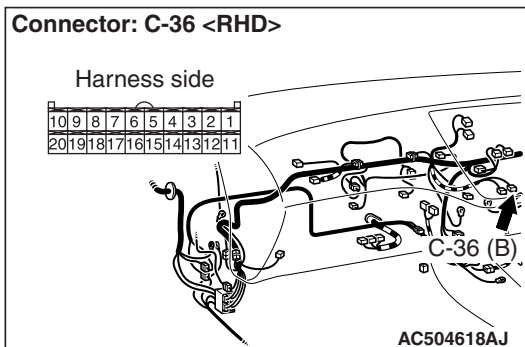
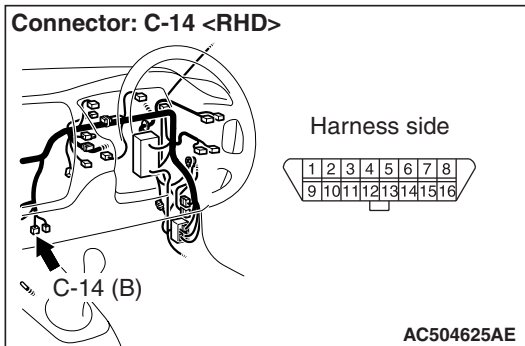
Prior to the wiring harness inspection, check joint connector C-23 <LH drive vehicles> or C-21 <RH drive vehicles> , and repair if necessary.

- Check the communication lines for open or short circuit.

Q: Is the check result normal?

YES : Replace the automatic A/C control panel (A/C-ECU).

NO : Repair the wiring harness.



A/C-ECU System Circuit



COMMENTS ON TROUBLE SYMPTOM

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

PROBABLE CAUSES

- Improper amount of refrigerant
- Malfunction of the air thermo sensor
- Malfunction of the dual pressure switch
- Malfunction of the A/C compressor relay
- Malfunction of the A/C refrigerant temperature switch
- Malfunction of the magnetic clutch
- Malfunction of the manual air conditioner control panel (A/C-ECU)
- Damaged the wiring harness or connectors
- Malfunction of the engine-ECU

DIAGNOSIS PROCEDURE

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

- Q: Do the rear window defogger and outside/inside air selection damper control motor work normally?**
YES : Go to Step 2.
NO : Refer to Inspection procedure 9
 "Malfunction of the A/C-ECU power supply system [P.55-73](#) ."

STEP 2. Check the blower motor operation.

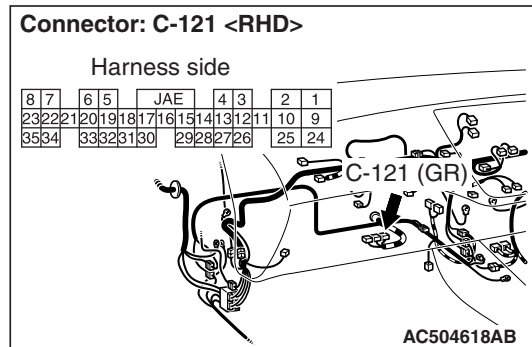
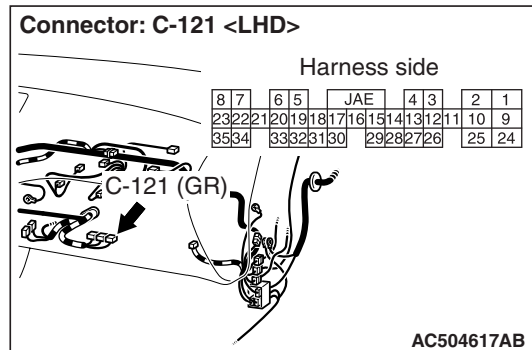
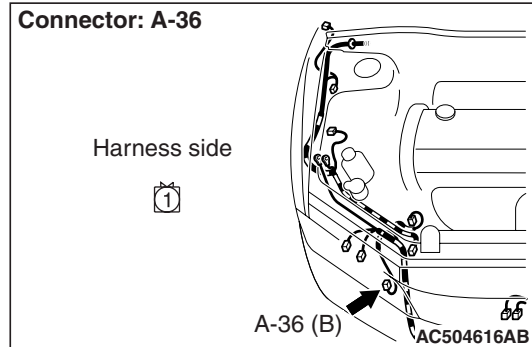
- Q: Does the blower motor work normally?**
YES : Go to Step 3.
NO : Refer to Inspection procedure 4 "The blower does not work [P.55-42](#)."

STEP 3. Check the A/C compressor.

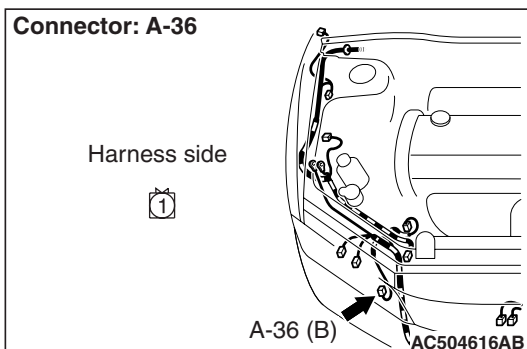
Check the A/C compressor for compressor oil leaks.

- Q: Is the check result satisfactory?**
YES : Go to Step 4.
NO : Replace the A/C compressor or the expansion valve.

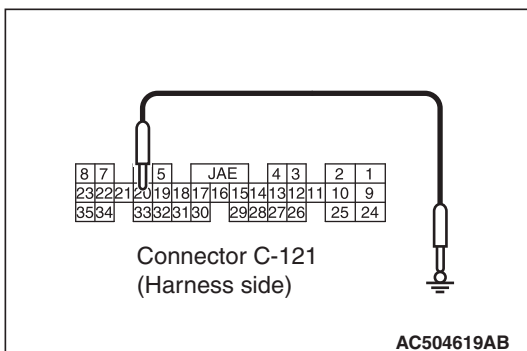
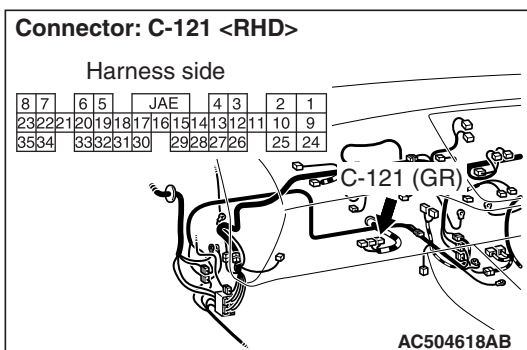
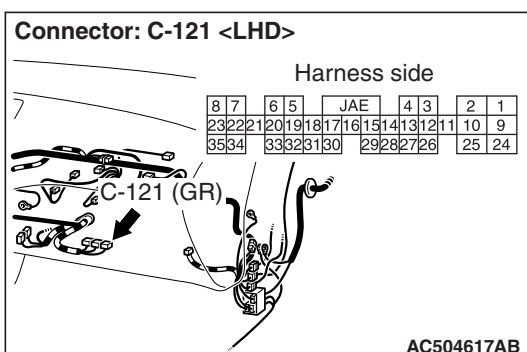
STEP 4. Connector check: A-36 A/C compressor connector and C-121 engine-ECU connector



- Q: Is the check result normal?**
YES : Go to Step 5.
NO : Repair the connector.

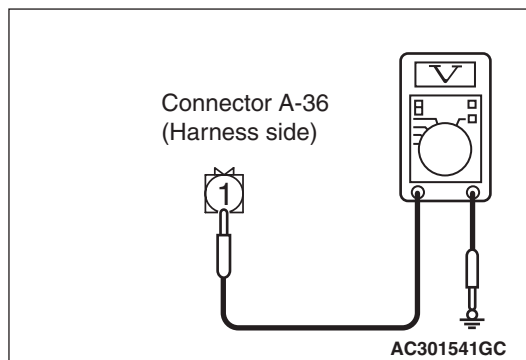
STEP 5. Voltage measurement at the A-36 A/C compressor connector.

- (1) Disconnect the connector, and measure at the wiring harness side.



- (2) Disconnect engine-ECU connector C-121, and earth terminal 20.

- (3) Turn the ignition switch to the "ON" position.



- (4) Measure the voltage between terminal 1 and body earth.

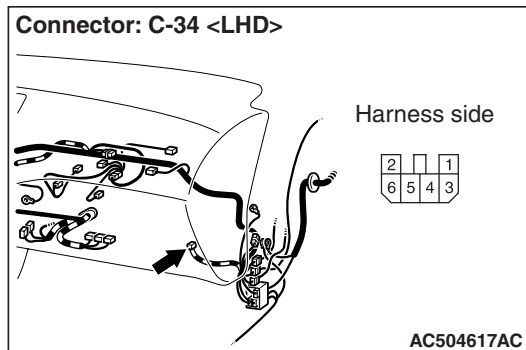
OK: System voltage

Q: Is the check result normal?

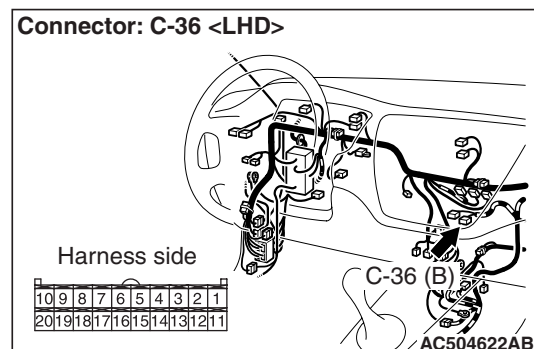
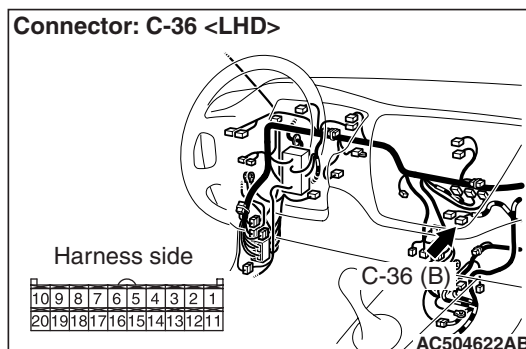
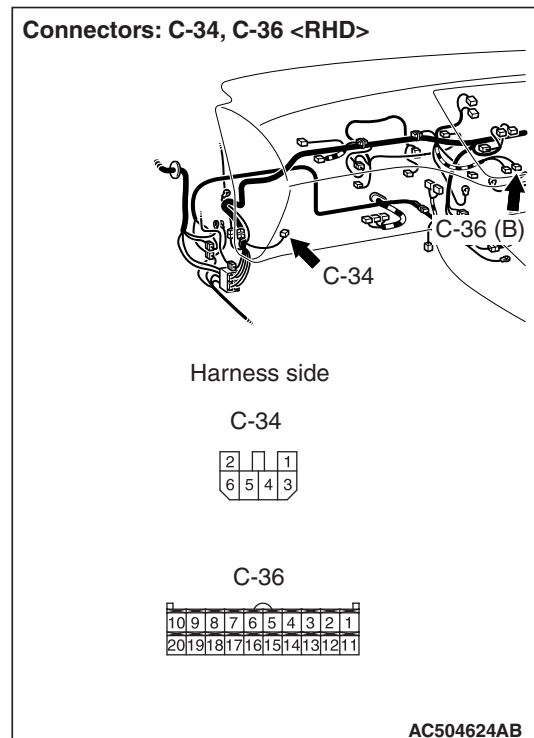
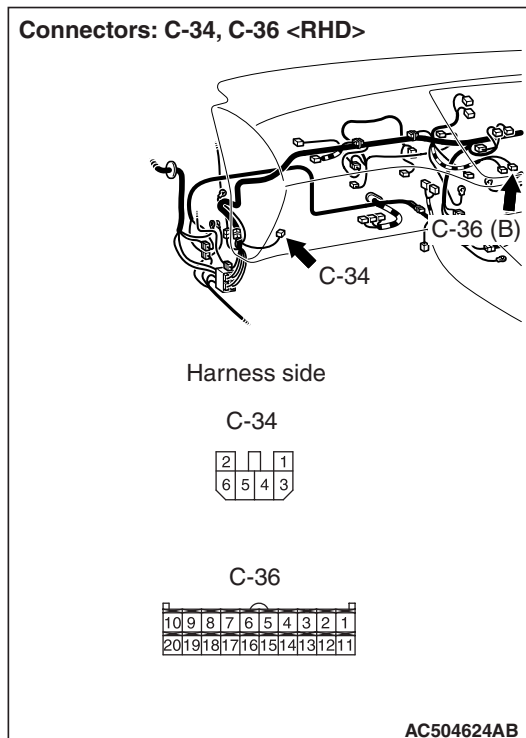
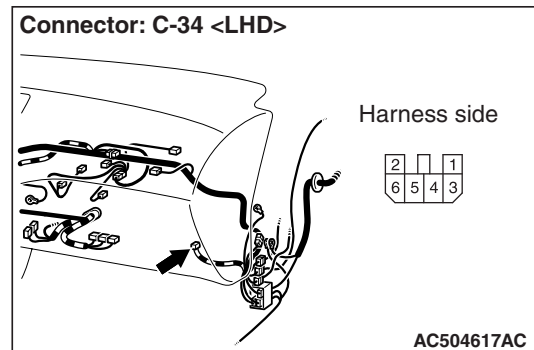
YES : Go to Step 6.

NO : Refer to Inspection procedure 10 "A/C Compressor power supply system P.55-79."

STEP 6. Connector check: C-36 A/C-ECU connector and C-34 blower liner controller connector

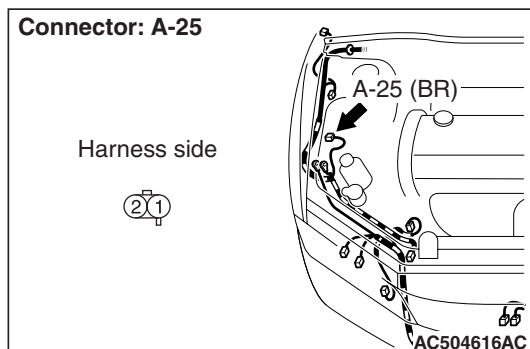


STEP 7. Check the wiring harness between C-34 blower liner controller connector terminal No.5 and C-36 A/C-ECU connector terminal No.2.



Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the connector.

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the wiring harness.

STEP 8. Connector check: A-25 dual pressure switch connector

Q: Is the check result normal?

YES : Go to Step 9.

NO : Repair the connector.

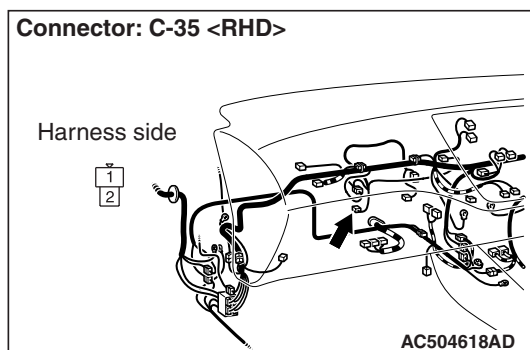
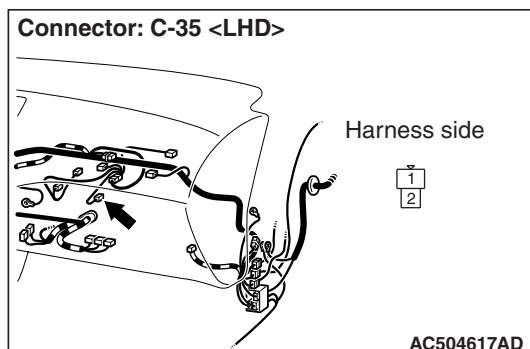
STEP 9. Check the dual pressure switch operation.

Refer to [P.55-104](#).

Q: Is the dual pressure switch operating properly?

YES : Go to Step 10.

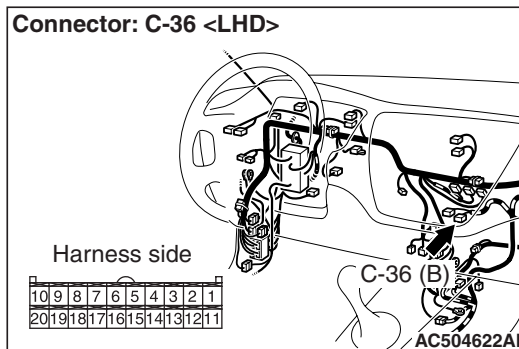
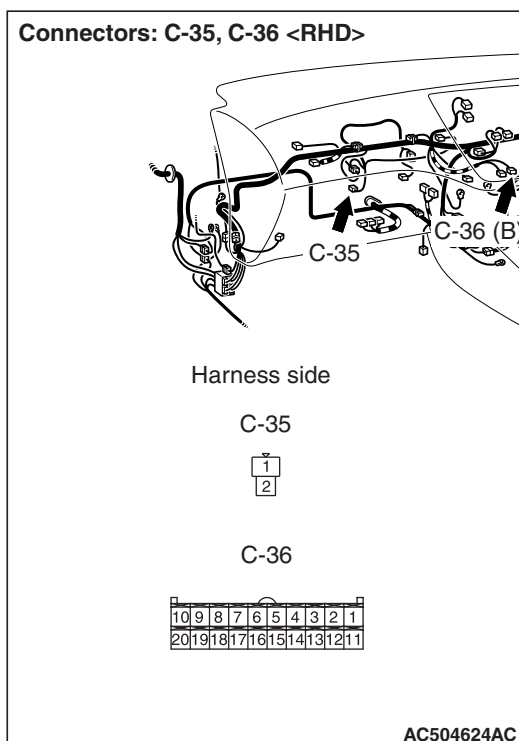
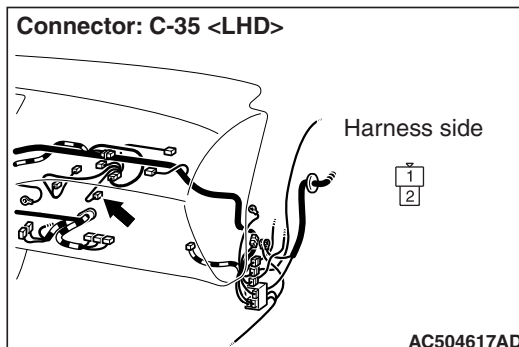
NO : Replace the dual pressure switch.

STEP 10. Connector check: C-35 air thermo sensor connector

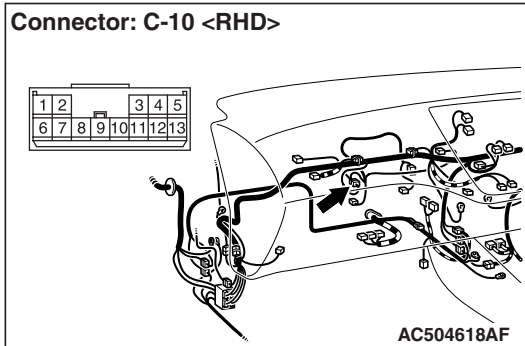
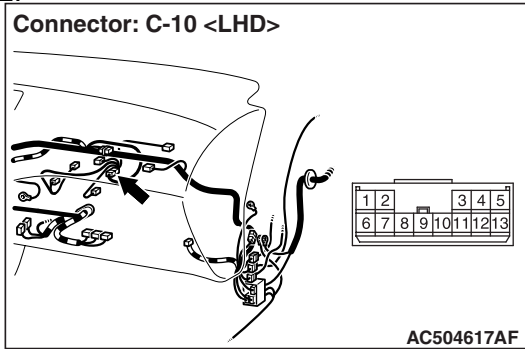
Q: Is the check result normal?

YES : Go to Step 11.

NO : Repair the connector.

STEP 11. Check the wiring harness between C-35 air thermo sensor connector (terminals 4 and 5) and C-36 A/C-ECU connector (terminals 8 and 10).

NOTE:



Prior to the wiring harness inspection, check intermediate connector C-10, and repair if necessary.

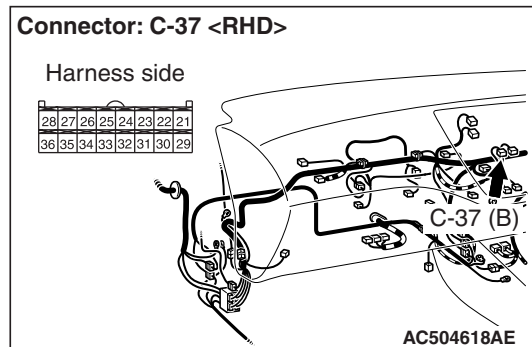
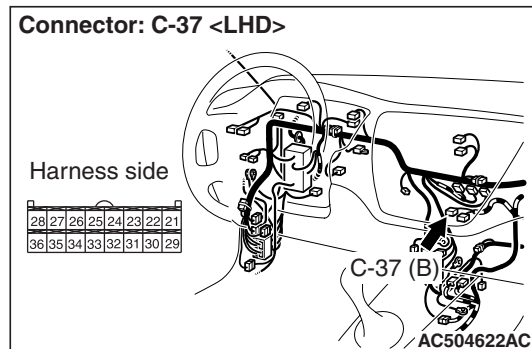
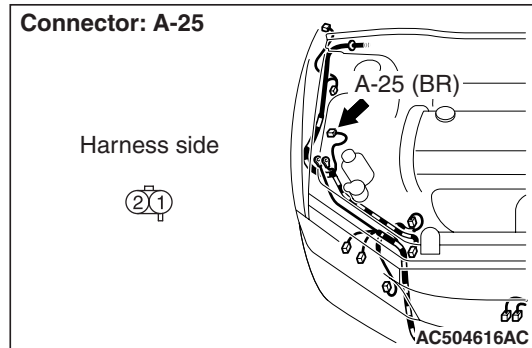
- Check the air thermo sensor output and earth line for open or short circuit.

Q: Is the check result normal?

YES : Go to Step 12.

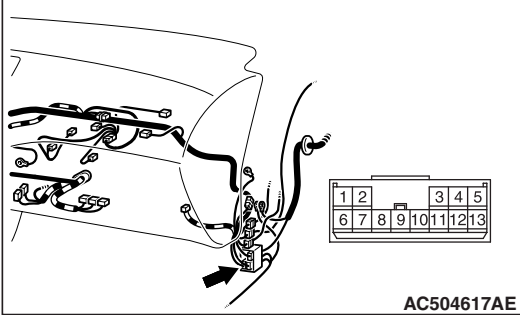
NO : Repair the wiring harness.

STEP 12. Check the wiring harness between A-25 dual pressure switch connector terminal No.1 and C-37 A/C-ECU connector terminal No.34.

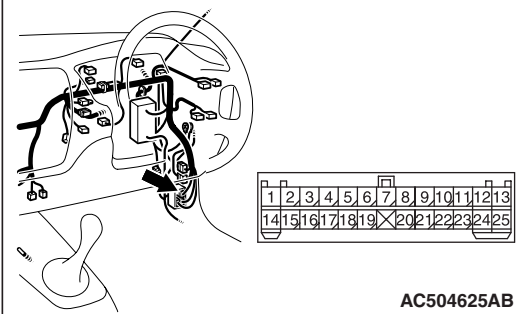


NOTE:

Connector: C-111 <LHD>



Connector: C-111 <RHD>



Prior to the wiring harness inspection, check intermediate connector C-111, and repair if necessary.

- Check the dual pressure switch output line for open or short circuit.

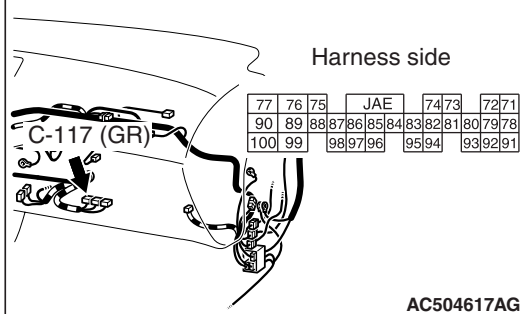
Q: Is the check result normal?

YES : Go to Step 13.

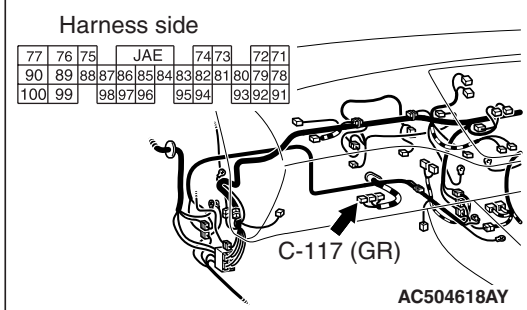
NO : Repair the wiring harness.

STEP 13. Connector check: C-117 engine-ECU connector

Connector: C-117 <LHD>



Connector: C-117

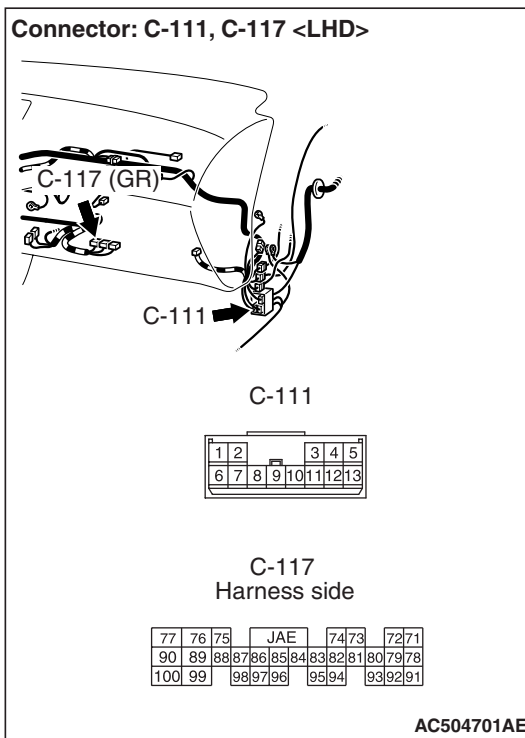
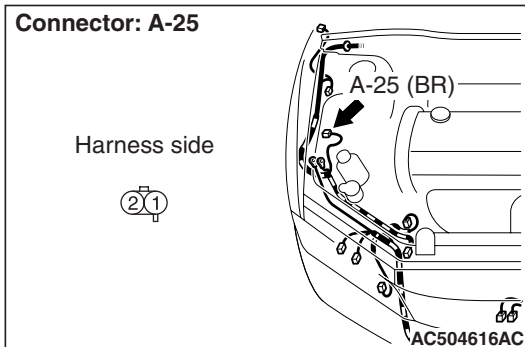


Q: Is the check result normal?

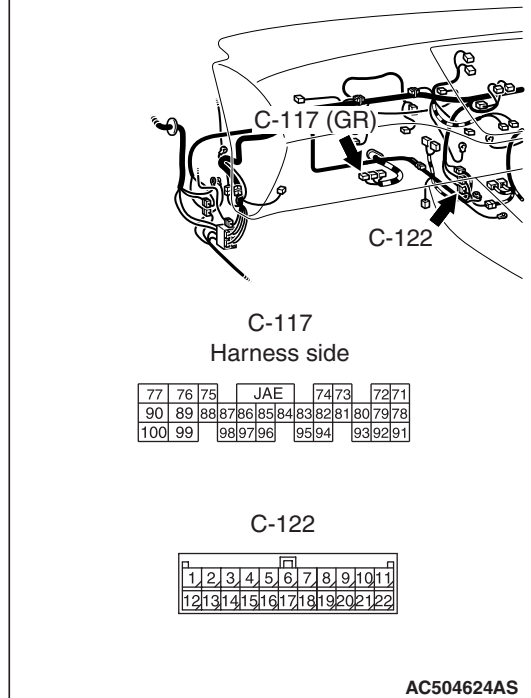
YES : Go to Step 14.

NO : Repair the connector.

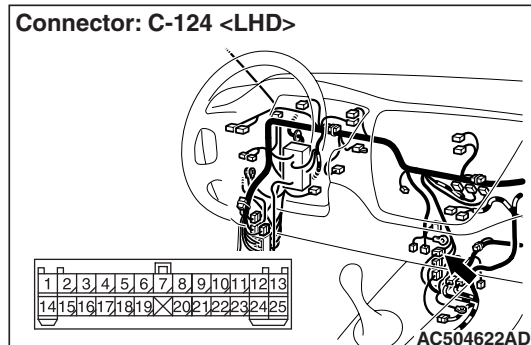
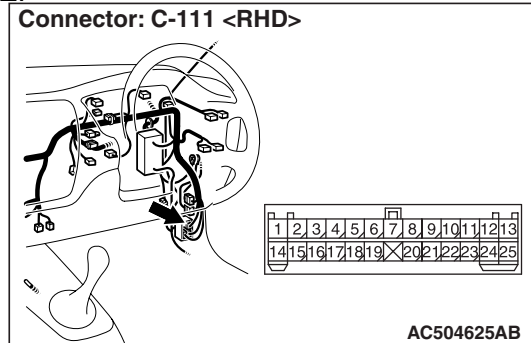
STEP 14. Check the wiring harness between C-117 engine-ECU connector terminal No.83 and A-25 dual pressure switch connector terminal No.2.



Connector: C-117, C-122 <RHD>



NOTE:



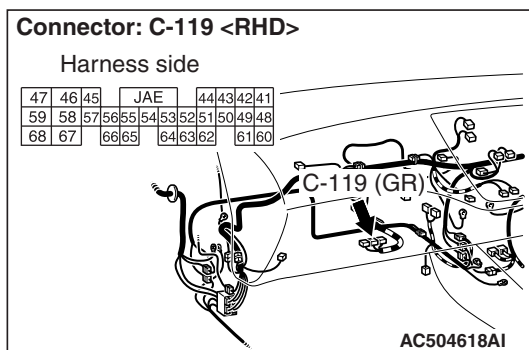
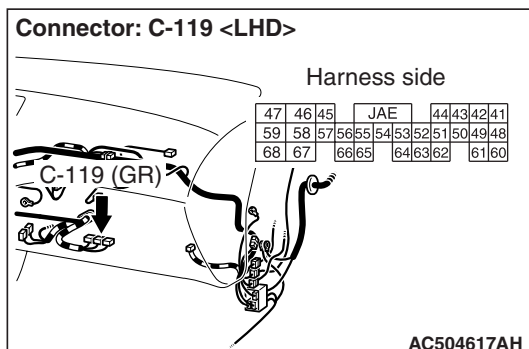
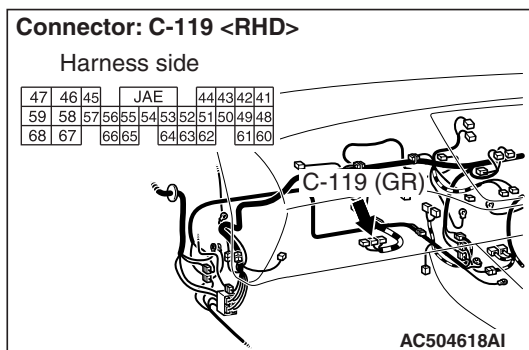
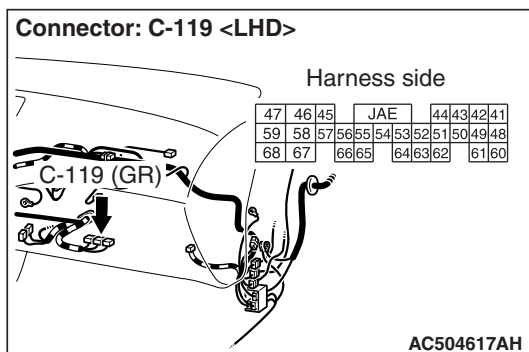
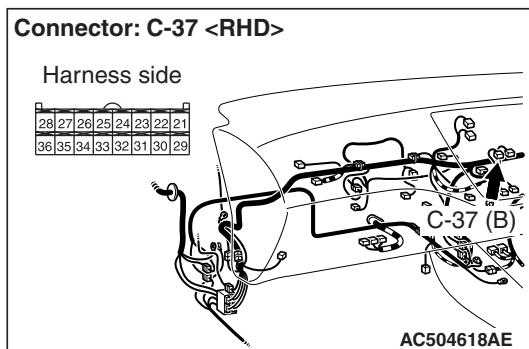
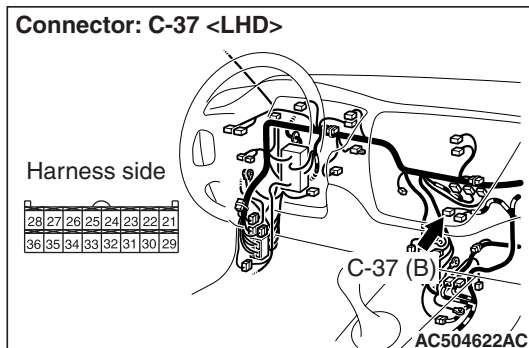
Prior to the wiring harness inspection, check intermediate connector C-111 and C-124 <LH drive vehicles> or C-122 <RH drive vehicles>, and repair if necessary.

- Check the communication line for open or short circuit.

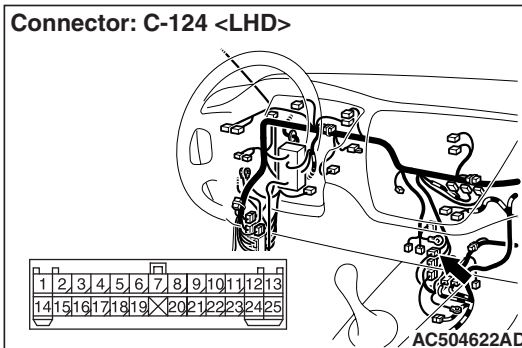
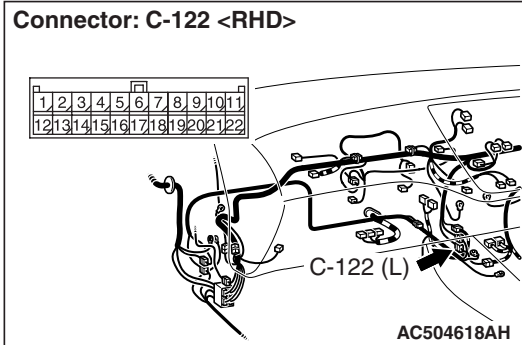
Q: Is the check result normal?

YES : Go to Step 15.

NO : Repair the wiring harness.

STEP 15. Connector check: C-119 engine-ECU connector**Q: Is the check result normal?****YES :** Go to Step 16.**NO :** Repair the connector.**STEP 16. Check the wiring harness between C-119 engine-ECU connectors terminal No.65 and C-37 A/C-ECU connector terminal No.32.**

NOTE:



Prior to the wiring harness inspection, check intermediate connector C-124 <LH drive vehicles> or C-122 <RH drive vehicles>, and repair if necessary.

- Check the communication line for open or short circuit.

Q: Is the check result normal?

YES : Go to Step 17.

NO : Repair the wiring harness.

STEP 17. Check the magnetic clutch operation.

Refer to [P.55-123](#).

Q: Can the sound of the magnetic clutch (click) be heard?

YES : Go to Step 18.

NO : Replace the compressor magnet clutch.

STEP 18. Check the refrigerant temperature switch.

Refer to [P.55-125](#).

Q: Is the refrigerant temperature switch operating properly?

YES : Go to Step 19.

NO : Replace the refrigerant temperature switch.

STEP 19. Check the air thermo sensor.

Refer to [P.55-120](#).

Q: Is the air thermo sensor in good condition?

YES : Go to Step 20.

NO : Replace the air thermo sensor.

STEP 20. Check the refrigerant level.

Refer to [P.55-104](#).

Q: Is the refrigerant level correct?

YES : Go to Step 21.

NO : Correct the refrigerant level (Refer to [P.55-104](#)).

STEP 21. Replace the A/C-ECU.

Check that the air conditioner works normally.

Q: Is the check result normal?

YES : The procedure is complete.

NO : Replace the engine-ECU.

Inspection Procedure 3: A/C Outlet Air Temperature cannot be set.

COMMENTS ON TROUBLE SYMPTOM

When the blower air temperature can not be changed even if the preset temperature is changed, the sensors, the air mixing damper control motor and potentiometer or the A/C-ECU may be defective.

PROBABLE CAUSE

- Malfunction of the A/C-ECU

DIAGNOSIS PROCEDURE

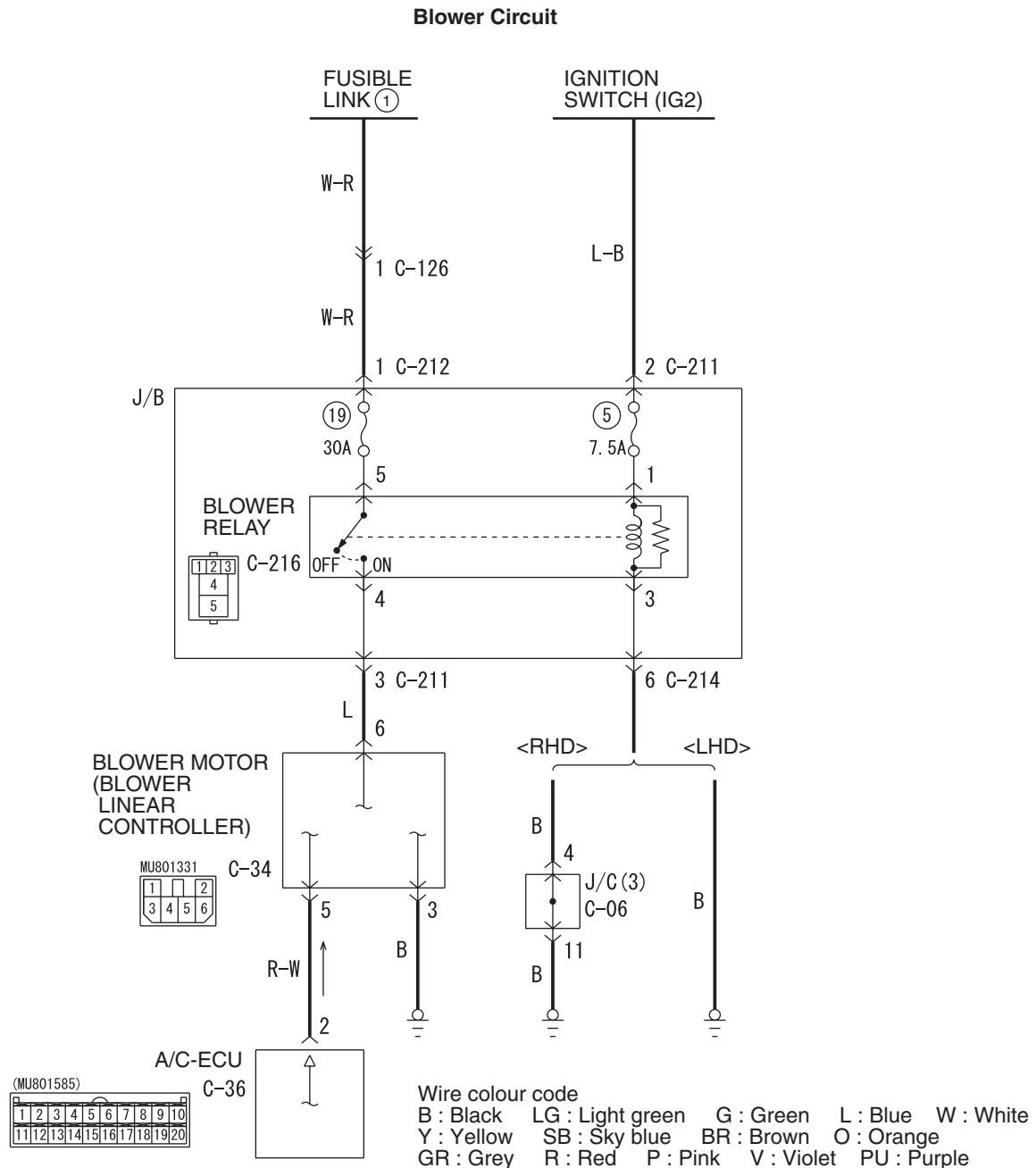
M.U.T.-II/III diagnosis code

Q: Is the diagnosis code set?

YES : Refer to diagnosis code chart [P.55-5](#).

NO : Replace the automatic A/C control panel (A/C-ECU).

Inspection Procedure 4: The Blower does not work.



W6J55E002A

COMMENTS ON TROUBLE SYMPTOM

If the blower motor does not operate, the blower motor circuit system may be defective.

PROBABLE CAUSES

- Malfunction of the blower motor (blower linear controller).
- Malfunction of the automatic A/C control panel (A/C-ECU)
- Damaged the wiring harness or connectors

DIAGNOSIS PROCEDURE**STEP 1. M.U.T.-II/III actuator test**

Carry out the actuator test. (Refer to [P.55-101](#))

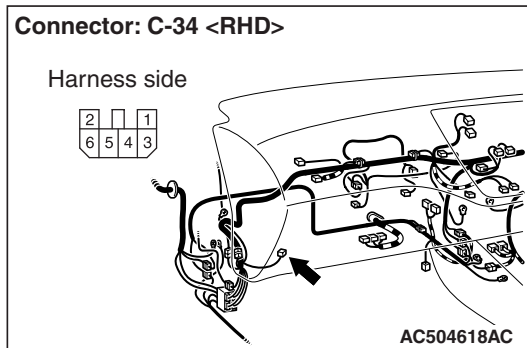
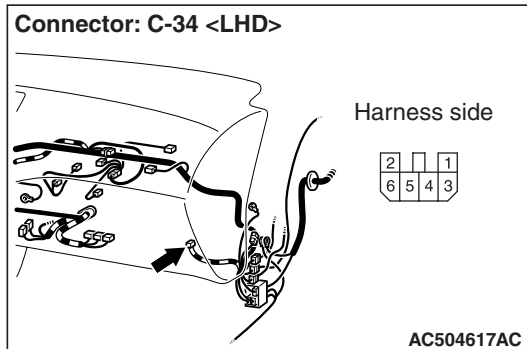
- Item 01, 02, 03, 04: Blower motor

Q: Does the blower motor work normally?

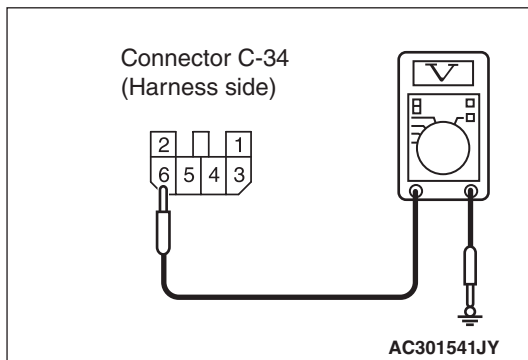
YES : Replace the automatic A/C control panel (A/C-ECU).

NO : Go to Step 2.

STEP 2. Voltage measurement at the C-34 blower linear controller connector.



- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the ignition switch to the ON position.



- (3) Measure the voltage between terminal 6 and body earth.

OK: System voltage

Q: Is the check result normal?

YES : Go to Step 15.

NO : Go to Step 3.

STEP 3. Check the blower relay.

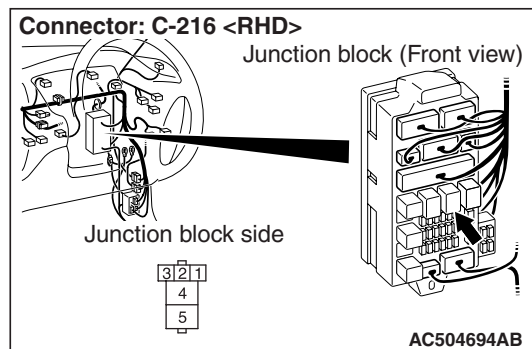
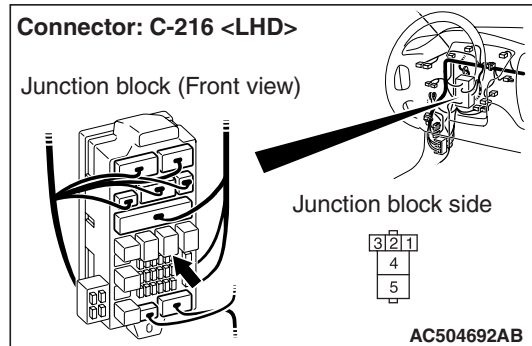
Refer to GROUP 55A, On-vehicle Service – Power relay check [P.55-107](#).

Q: Is the blower relay in good condition?

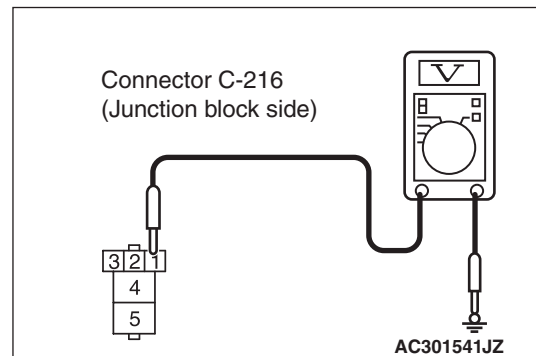
YES : Go to Step 4.

NO : Replace the blower relay.

STEP 4. Voltage measurement at C-216 blower relay connector.



- (1) Remove the relay, and measure at the junction block side.
- (2) Turn the ignition switch to the ON position.



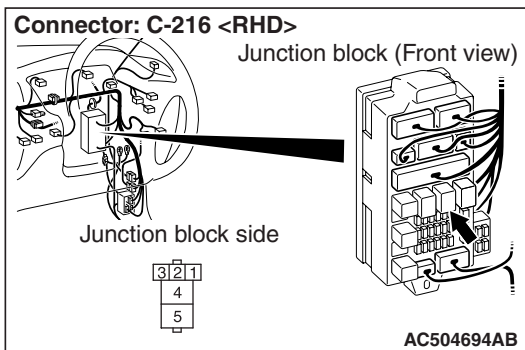
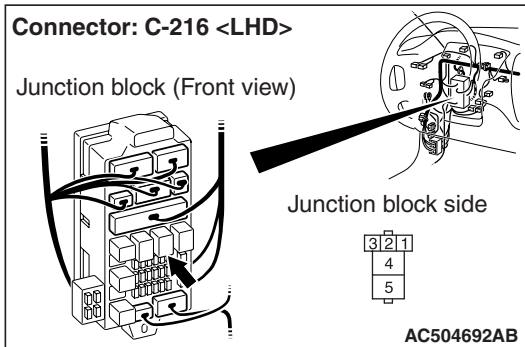
- (3) Voltage between terminal 1 and body earth.

OK: System voltage

Q: Is the check result normal?

YES : Go to Step 7.

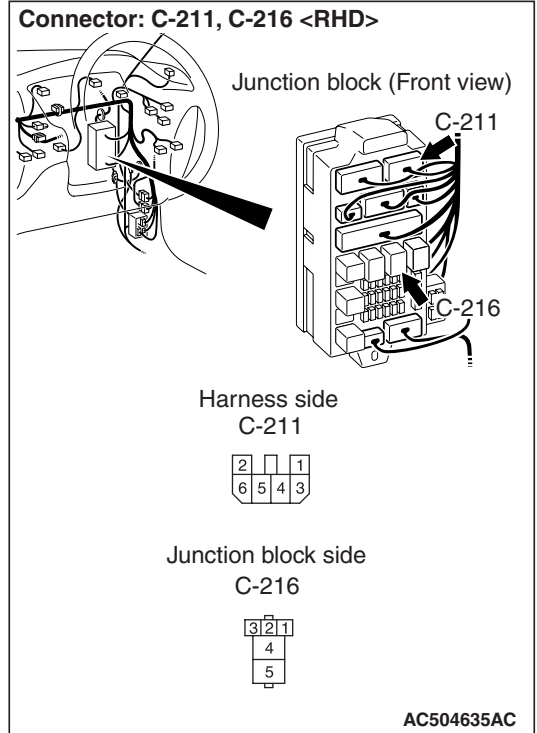
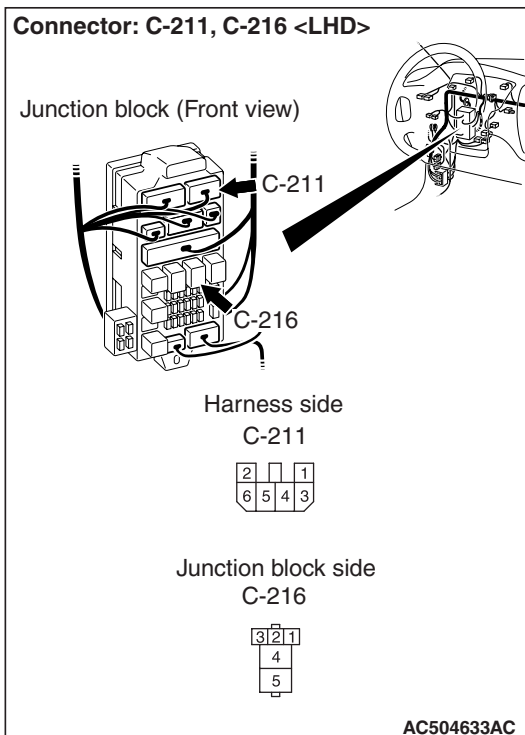
NO : Go to Step 5.

STEP 5. Connector check: C-216 blower relay connector

Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the connector.

STEP 6. Check the wiring harness between C-216 blower relay connector terminal No.1 and the ignition switch (IG2).

NOTE: Prior to the wiring harness inspection, check junction block connector C-211, and repair if necessary.

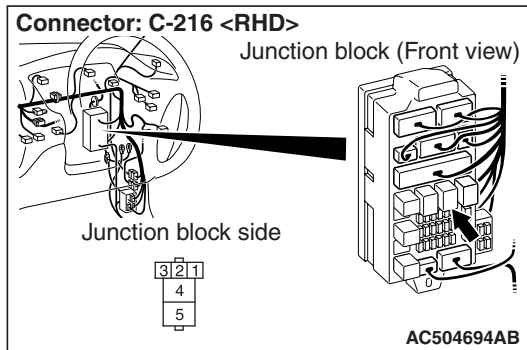
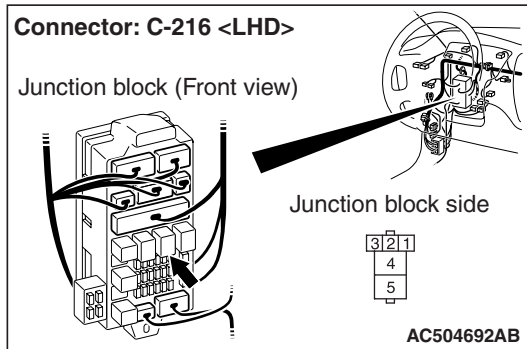
- Check the blower relay power supply line for open circuit.

Q: Is the check result normal?

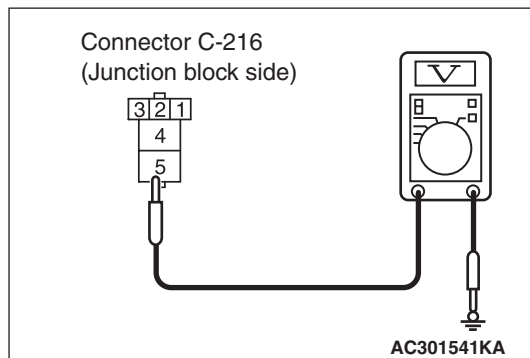
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).

NO : Repair the wiring harness.

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



- (1) Remove the relay, and measure at the junction block side.



- (2) Voltage between terminal 5 and body earth.

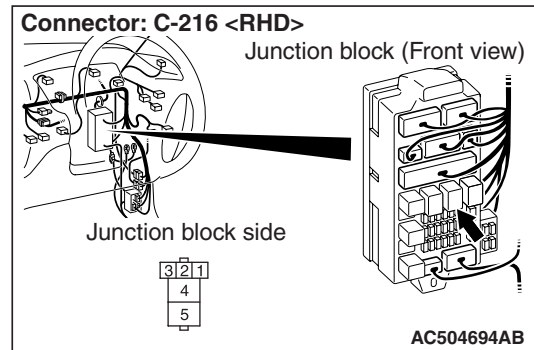
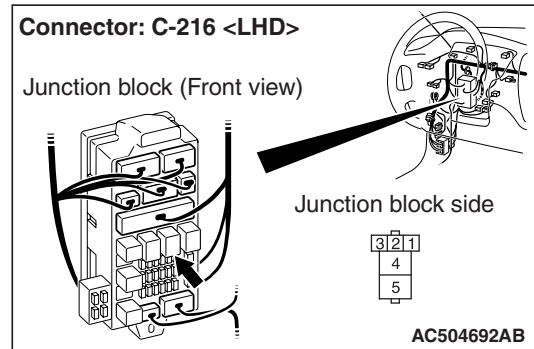
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 10.

NO : Go to Step 8.

STEP 8. Connector check: C-216 blower relay connector

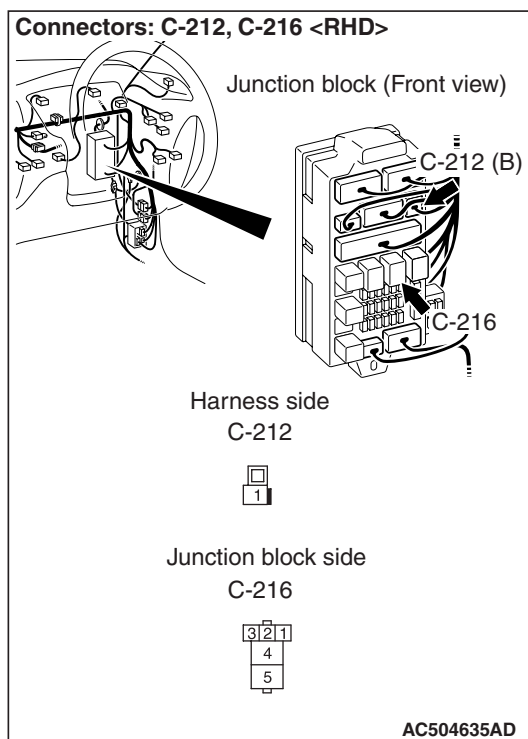
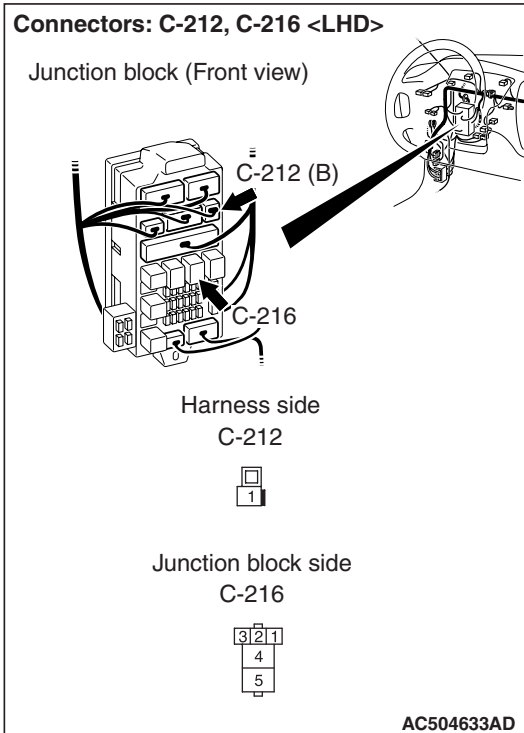


Q: Is the check result normal?

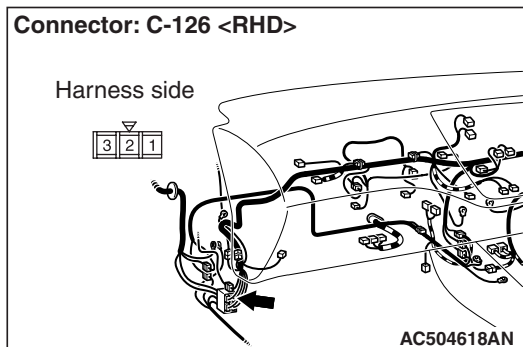
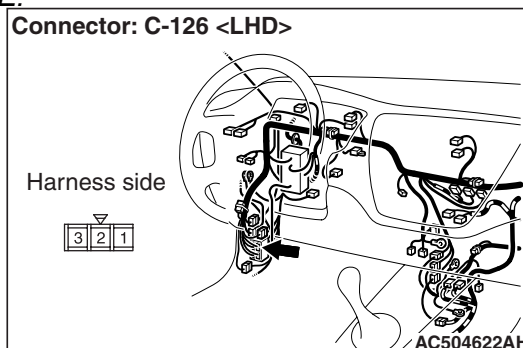
YES : Go to Step 9.

NO : Repair the connector.

STEP 9. Check the wiring harness between C-216 blower relay connector terminal No.5 and fusible link (1).



NOTE:



Prior to the wiring harness inspection, check intermediate connectors C-126 and junction block connector C-212, and repair if necessary.

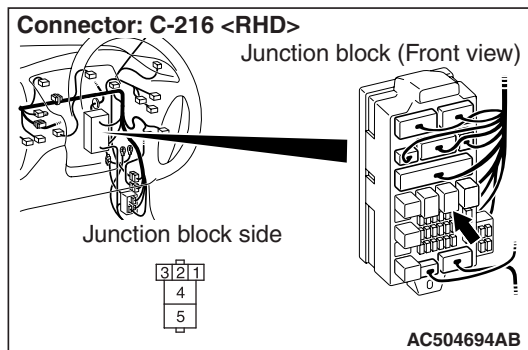
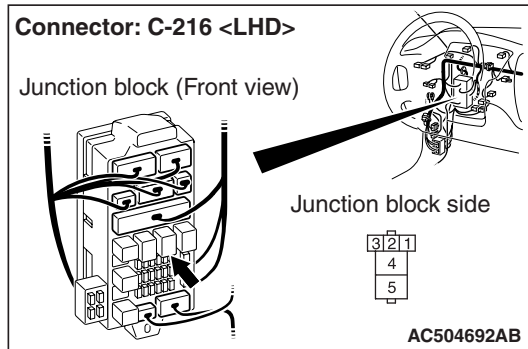
- Check the blower relay power supply line for open circuit.

Q: Is the check result normal?

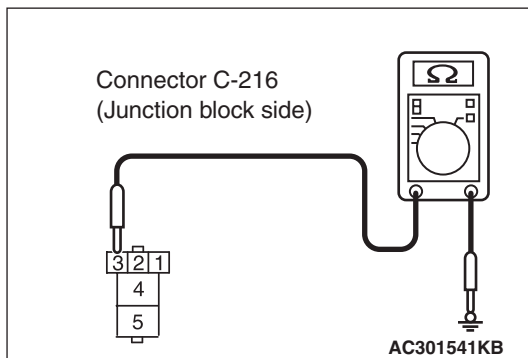
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).

NO : Repair the wiring harness.

STEP 10. Resistance measurement at C-216 blower relay connector.



- (1) Remove the relay, and measure at the junction block side.



- (2) Measure the resistance between terminal 3 and body earth

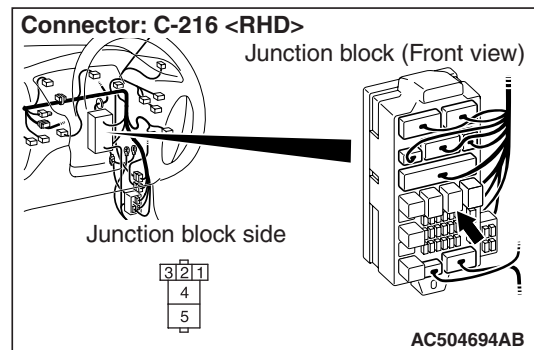
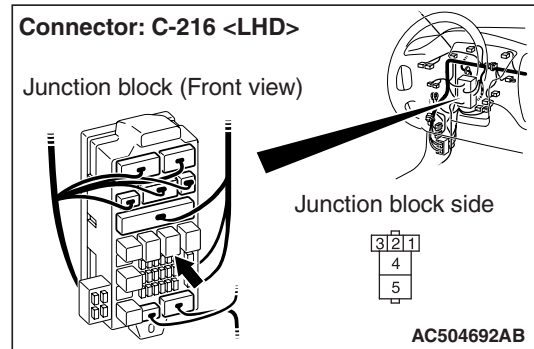
OK: 2Ω or less

Q: Is the check result normal?

YES : Go to Step 13.

NO : Go to Step 11.

STEP 11. Connector check: C-216 blower relay connector



Q: Is the check result normal?

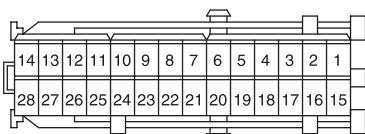
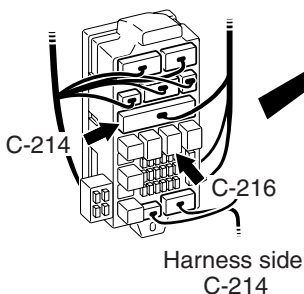
YES : Go to Step 12.

NO : Repair the connector.

STEP 12. Check the wiring harness between C-216 blower relay connector terminal No.3 and body earth.

Connectors: C-214, C-216 <LHD>

Junction block (Front view)



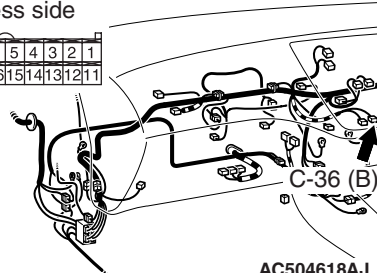
Junction block side
C-216



AC504633AE

Connector: C-36 <RHD>

Harness side



AC504618AJ

NOTE: Prior to the wiring harness inspection, check junction block connector C-214 and joint connector C-36 <RH drive vehicles>, and repair if necessary.

- Check the blower relay earth wires for open circuit.

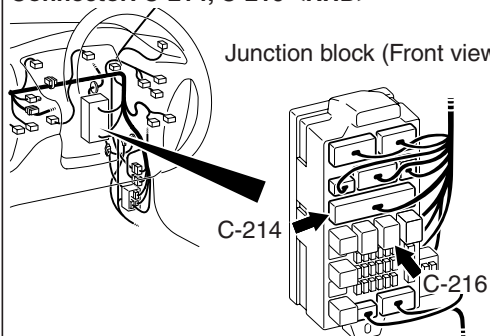
Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).

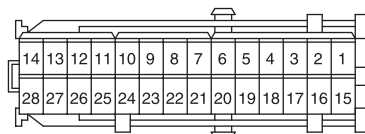
NO : Repair the wiring harness.

Connector: C-214, C-216 <RHD>

Junction block (Front view)



Harness side
C-214



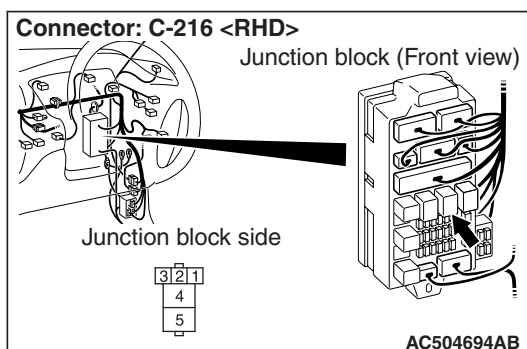
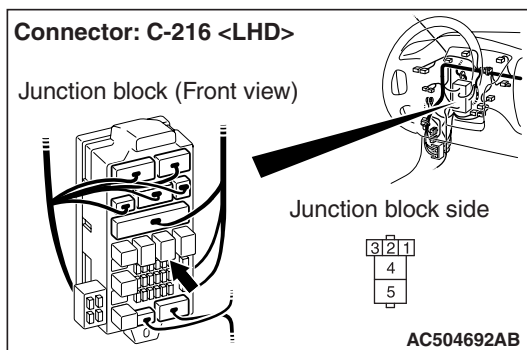
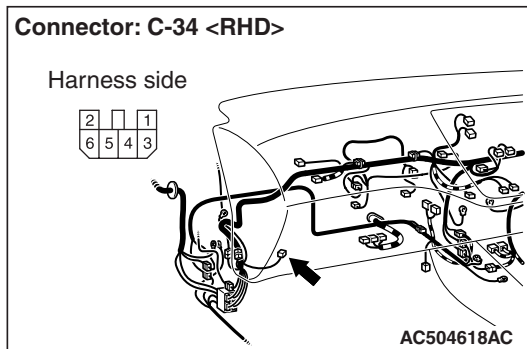
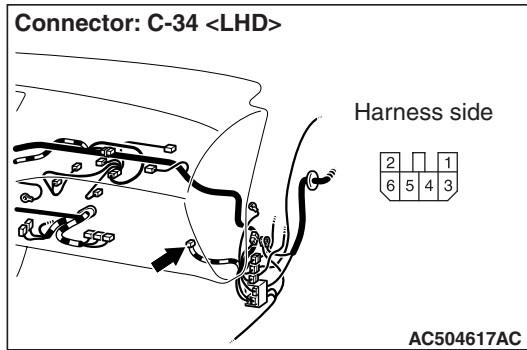
Junction block side
C-216



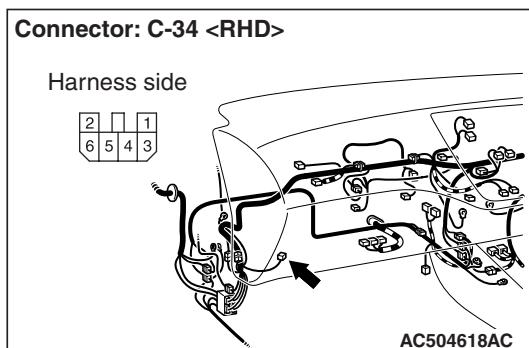
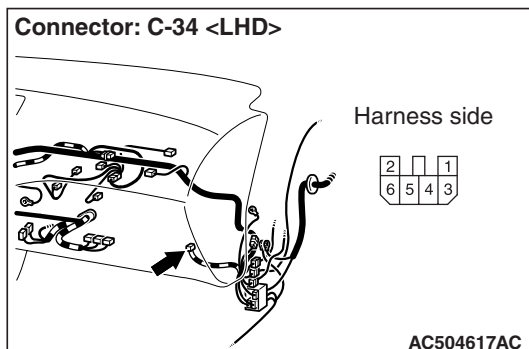
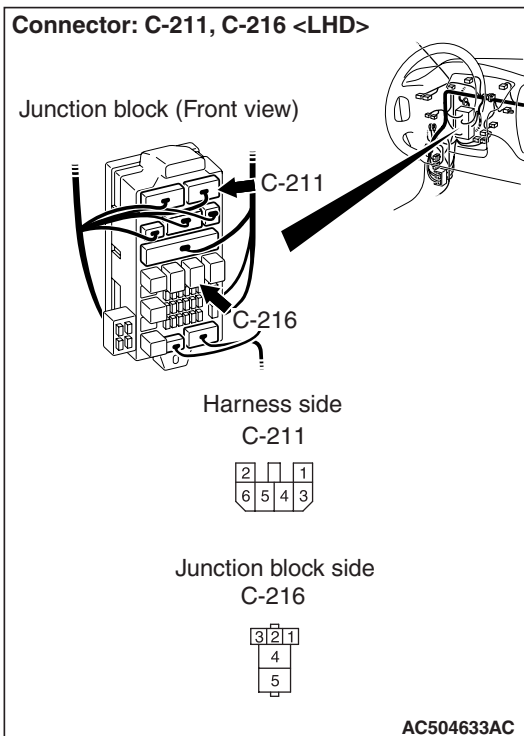
AC504635AE

STEP 13. Connector check: C-216 blower relay connector and C-34 blower linear controller connector

Q: Is the check result normal?
YES : Go to Step 14.
NO : Repair the connector.



STEP 14. Check the wiring harness between C-216 blower relay connector terminal No.4 and C-34 blower linear controller connector terminal No.6.



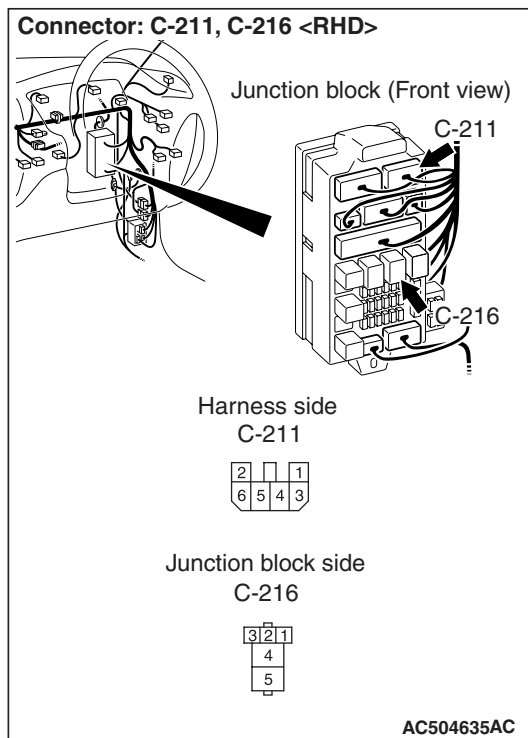
NOTE: Prior to the wiring harness inspection, check junction block connector C-211, and repair if necessary.

- Check the blower linear controller power supply line for open circuit.

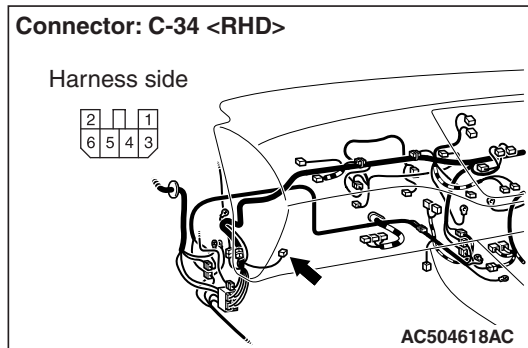
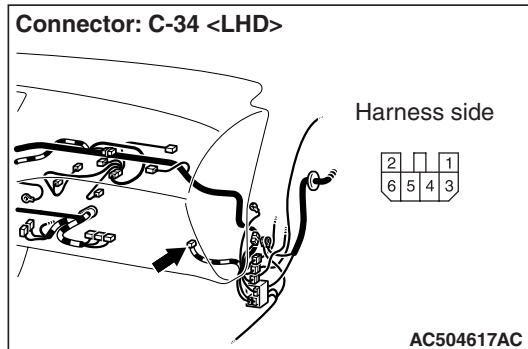
Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).

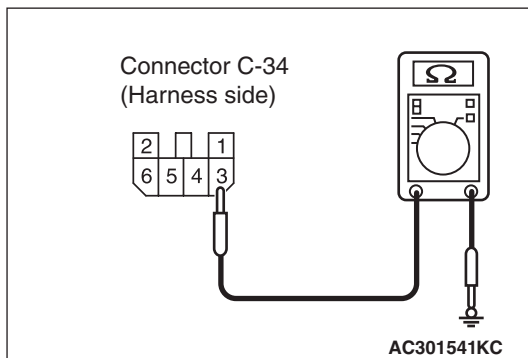
NO : Repair the wiring harness.



STEP 15. Resistance measurement at the C-34 blower linear controller connector.



- (1) Disconnect the connector, and measure at the wiring harness side.



- (2) Continuity between terminal 3 and body earth

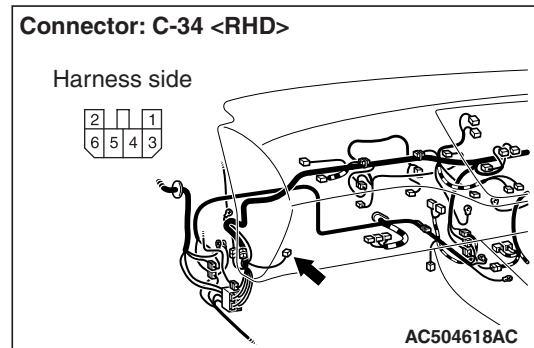
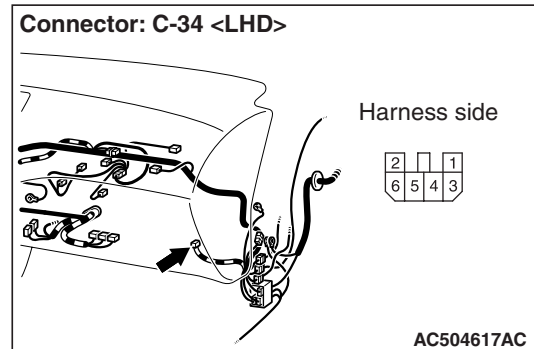
OK: 2Ω or less

Q: Is the check result normal?

YES : Go to Step 18.

NO : Go to Step 16.

STEP 16. Connector check: C-34 blower liner controller

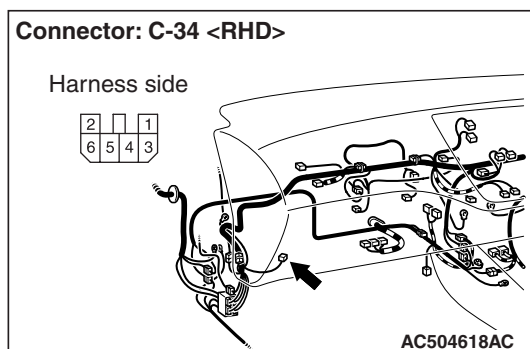
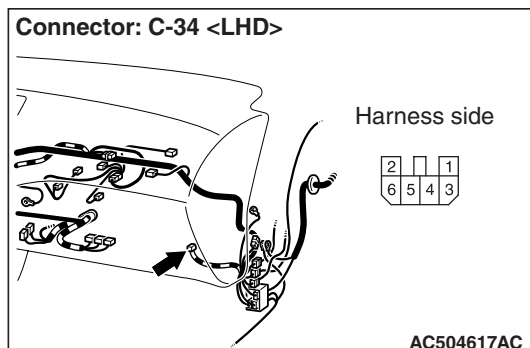


Q: Is the check result normal?

YES : Go to Step 17.

NO : Repair the connector.

STEP 17. Check the wiring harness between C-34 blower linear controller connector terminal No.3 and body earth.



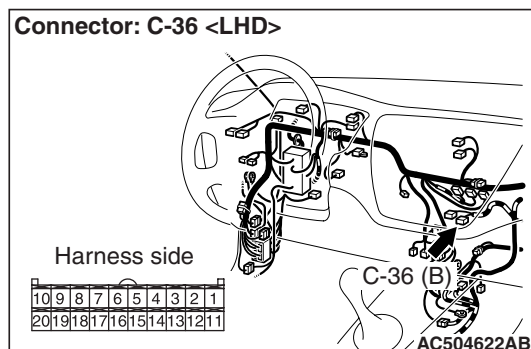
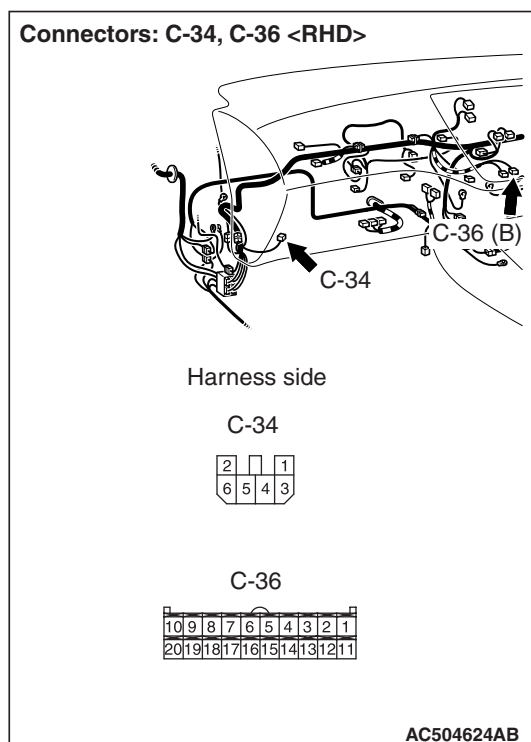
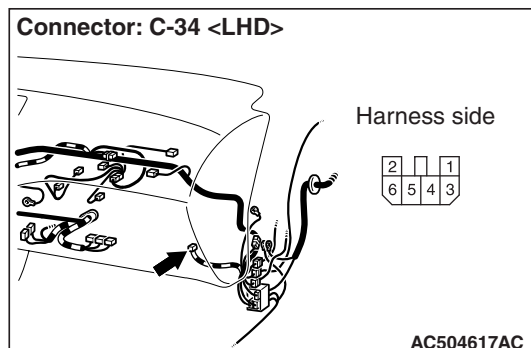
- Check the blower linear controller earth line for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).

NO : Repair the wiring harness.

STEP 18. Connector check: C-36 A/C-ECU connector and C-34 blower linear controller connector



Q: Is the check result normal?

YES : Go to Step 19.

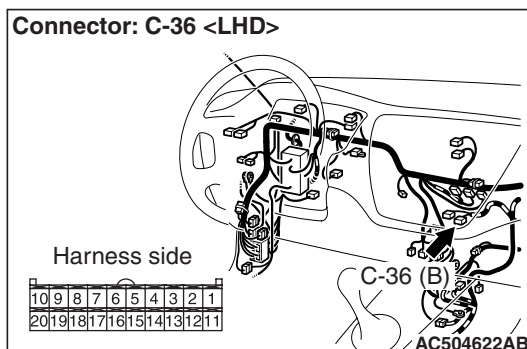
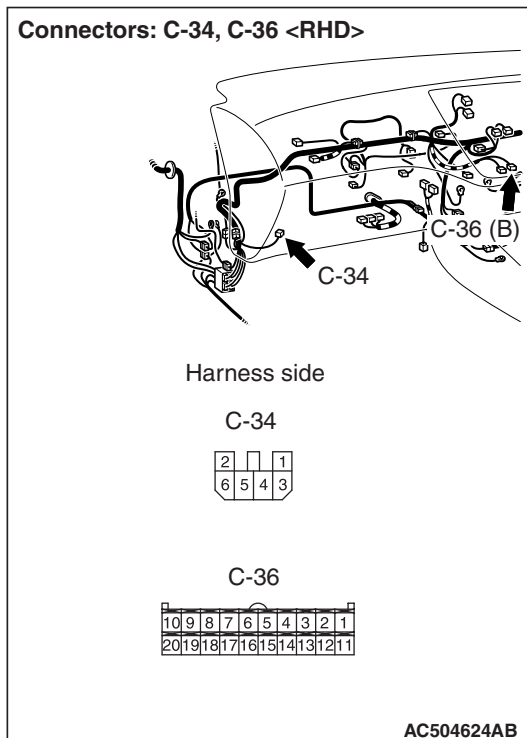
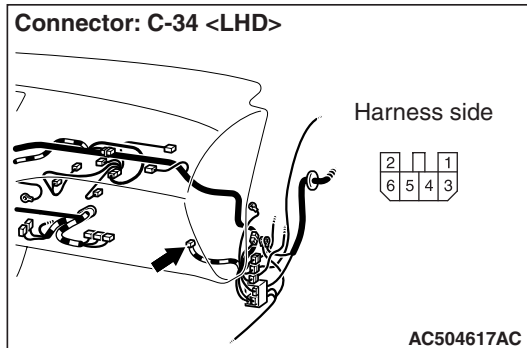
NO : Repair the connector.

STEP 19. Check the wiring harness between C-36 A/C-ECU connector terminal No.2 and C-34 blower linear controller connector terminal No.5.

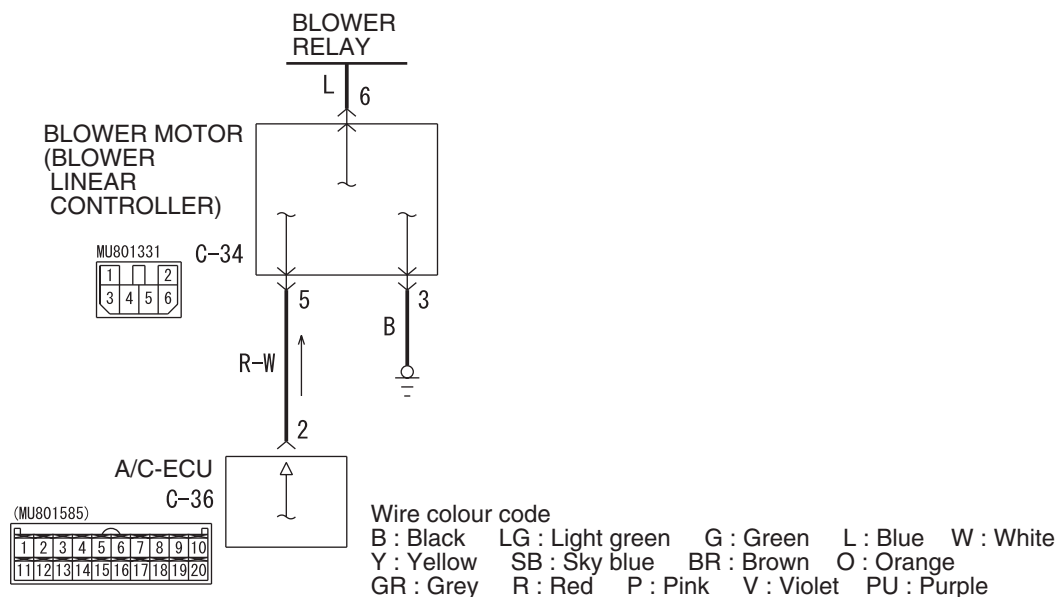
Q: Is the check result normal?

YES : Replace the A/C control panel (A/C-ECU) or the blower motor (blower linear controller).

NO : Repair the wiring harness.



- Check the communication line for open or short circuit.

Inspection Procedure 5: The Blower Air Volume cannot be changed.**Blower Motor Circuit**

W6J55E003A

COMMENTS ON TROUBLE SYMPTOM

If the blower air volume can not be changed when the blower switch is operated, the circuit between blower motor (blower linear controller) and A/C-ECU may be defective.

POSSIBLE CAUSES

- Blower motor (blower linear controller)
- Damaged the wiring harness or connectors
- Malfunction of the automatic A/C control panel (A/C-ECU)

DIAGNOSIS PROCEDURE**STEP 1. M.U.T.-II/III actuator test**

Carry out the actuator test.

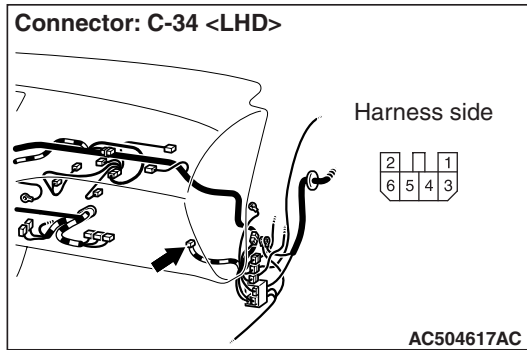
- Items 01, 02, 03, 04: Blower motor

Q: Does the blower motor work normally?

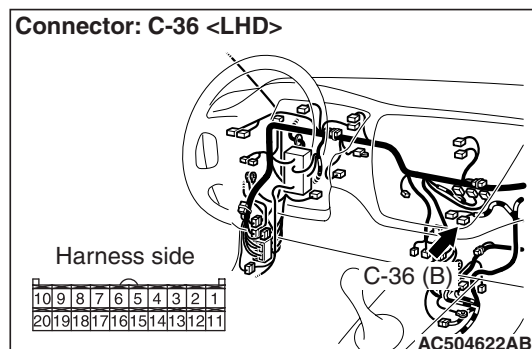
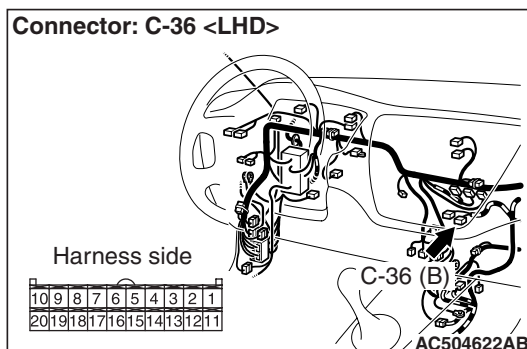
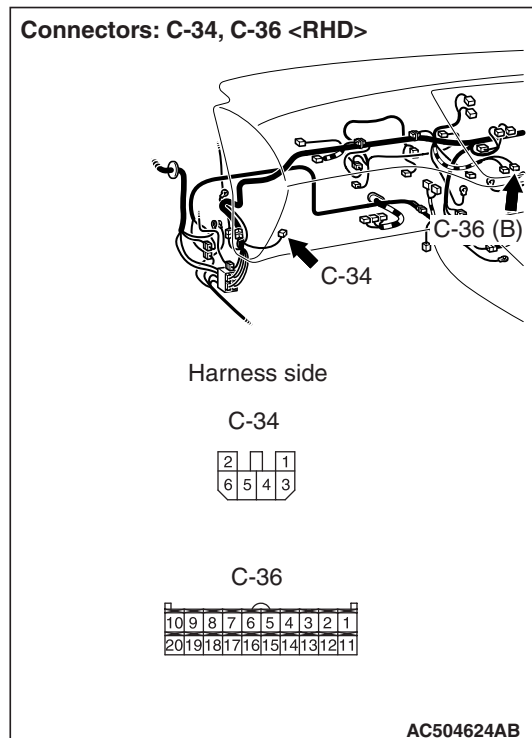
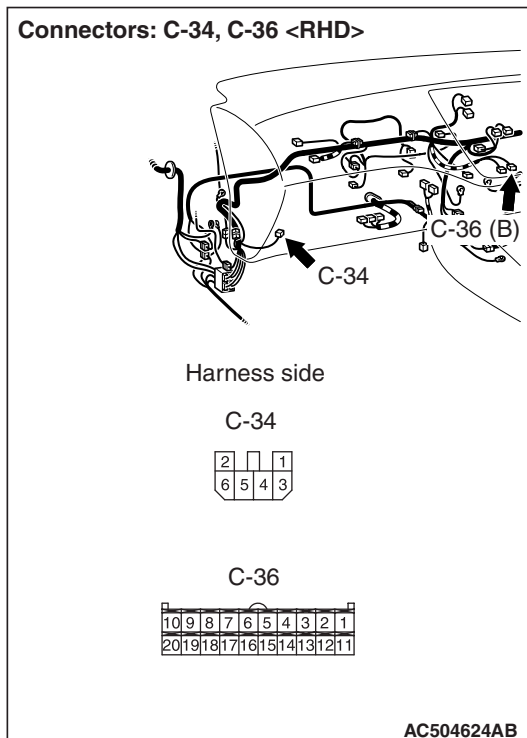
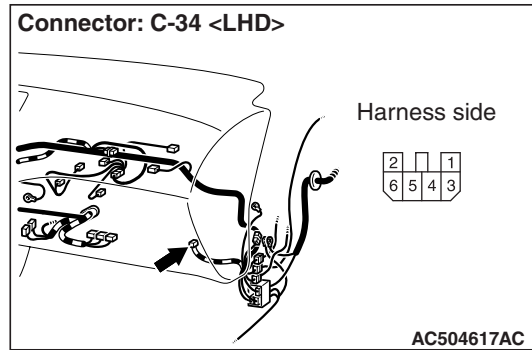
YES : Replace the automatic A/C control panel (A/C-ECU)

NO : Go to Step 2.

STEP 2. Connector check: C-36 A/C-ECU connector and C-34 blower linear controller connector



STEP 3. Check the wiring harness between C-36 A/C-ECU connector terminal No.2 and C-34 blower linear controller connector terminal No.5.



Q: Is the check result normal?

YES : Go to Step 3.

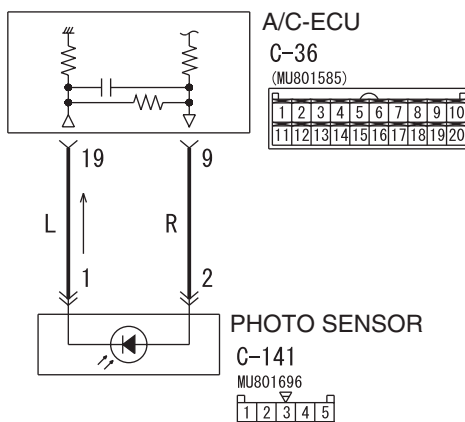
NO : Repair the connector.

- Check the communication line for open or short circuit.

Q: Is the check result normal?

YES : Replace the automatic A/C control panel (A/C-ECU) or the blower motor (blower linear controller).

NO : Repair the wiring harness.

Inspection Procedure 6: When sunlight intensity changes, blower air temperature does not Change.**Photo Sensor Circuit**

Wire colour code

B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

W6J55E004A

CIRCUIT OPERATION

When the blower air temperature can not be changed even if the preset temperature is changed, the sensors may be defective.

PROBABLE CAUSES

- Malfunction of the photo sensor
- Damaged the wiring harness or connectors
- Malfunction of the A/C-ECU

DIAGNOSIS PROCEDURE

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

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

YES : Go to Step 2.

NO : Refer to Inspection procedure 9

"Malfunction of the A/C-ECU power supply system [P.55-73](#)."

STEP 2. M.U.T.-II/III diagnosis code

On completion, check that the diagnosis code is not reset.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Carry the diagnosis code procedures. Refer to [P.55-5](#).

STEP 3. M.U.T.-II/III data list

- Item 25: Photo sensor

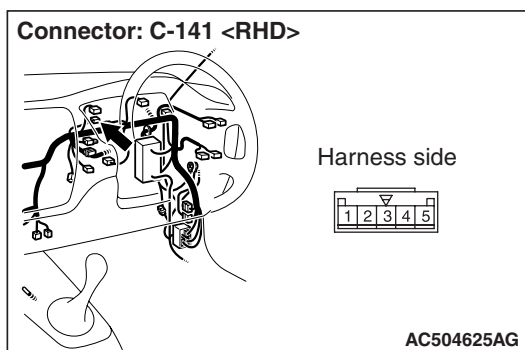
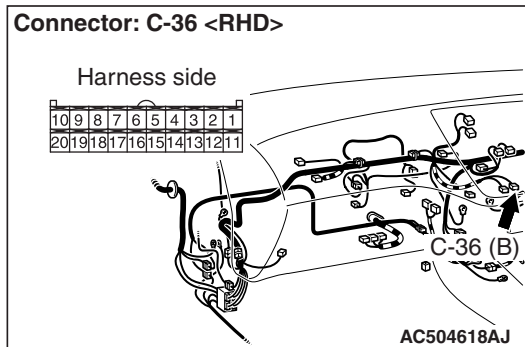
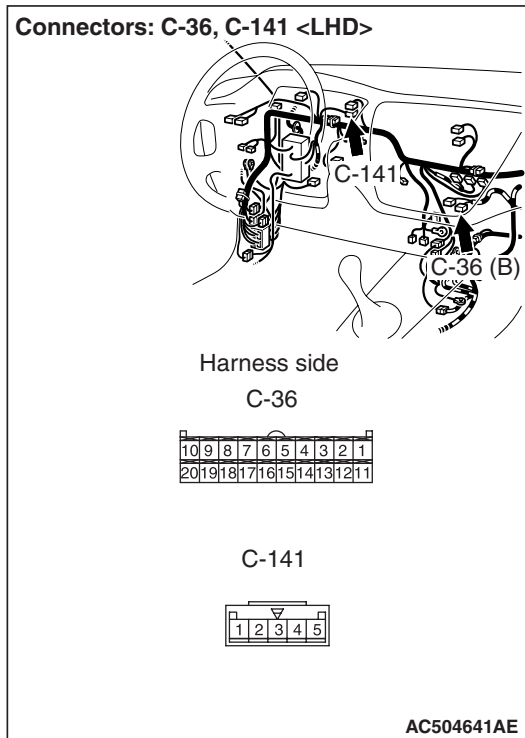
OK: Check that the volume of insulation takes inverse proportion with the M.U.T.-II/III displayed voltage.

Q: Is the check result normal?

YES : Replace the automatic A/C control panel (A/C-ECU).

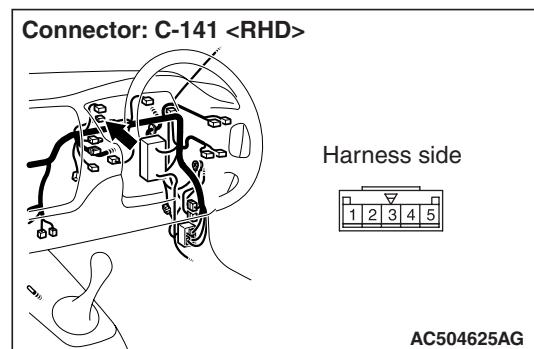
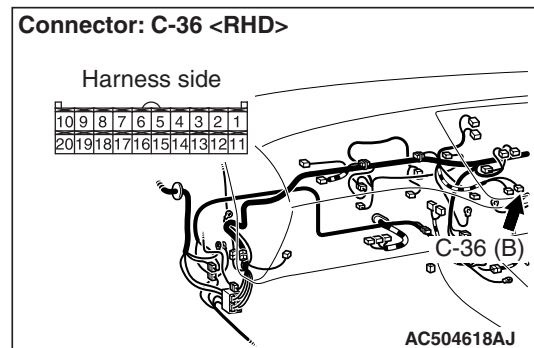
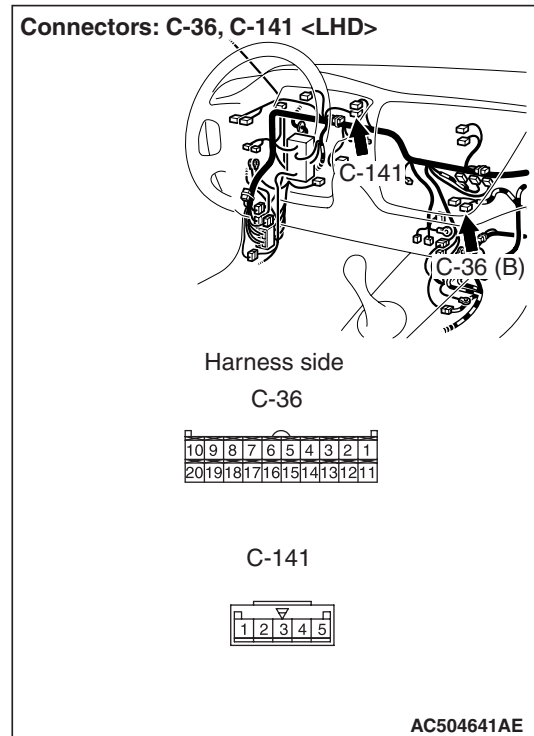
NO : Go to Step 4.

STEP 4. Connector check: C-36 A/C-ECU connector and C-141 photo sensor connector.



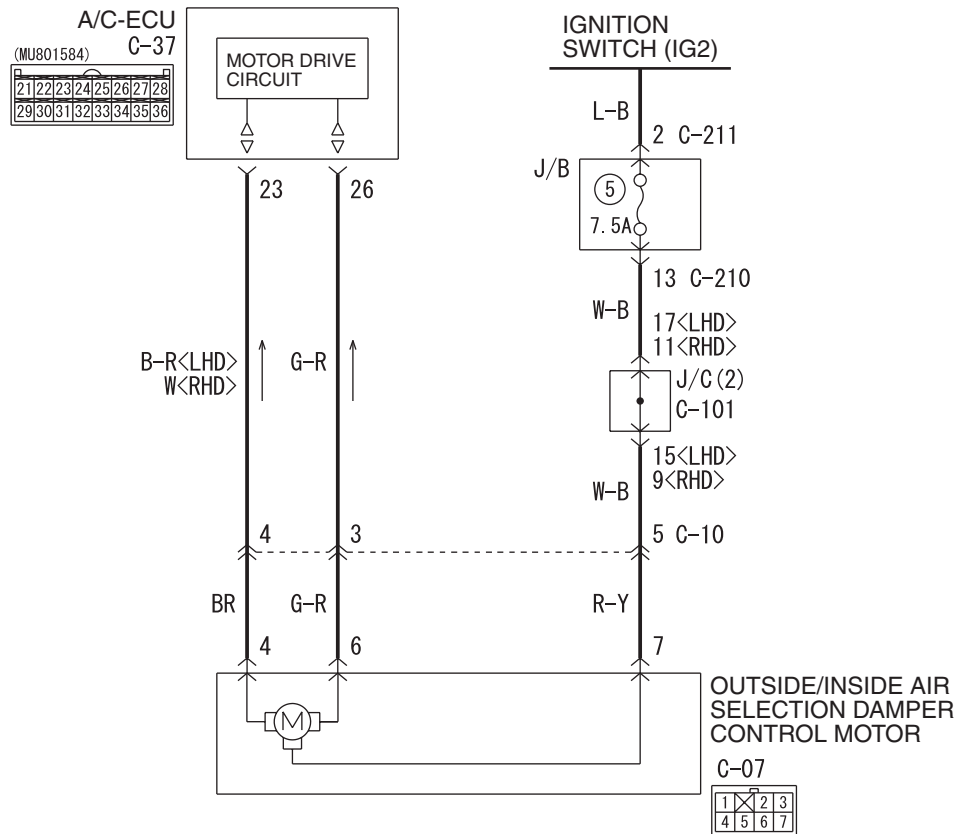
Q: Is the check result normal?
YES : Go to Step 5.
NO : Repair or replace the connector.

STEP 5. Check the wiring harness between C-141 photo sensor connector (terminal 1, 2) and C-36 A/C-ECU connector (terminal 19, 9).



- Check the photo sensor signal lines for open or short circuit.

Q: Is the check result normal?
YES : Replace the Photo sensor.
NO : Repair the wiring harness.

Inspection Procedure 7: The outside/inside air changeover is impossible.**Outside/Inside Air Selection Damper Control Motor Circuit**

Wire colour code

B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
 BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

W6J55E005A

COMMENTS ON TROUBLE SYMPTOM

When inside air cannot be changed to outside air vice versa even if its changeover switch is on, the outside/inside air selection damper control motor system may be defective.

PROBABLE CAUSES

- Malfunction of the outside/inside air selection damper control motor
- Damaged the wiring harness or connectors
- Malfunction of the automatic A/C control panel (A/C-ECU)

DIAGNOSIS PROCEDURE**STEP 1. M.U.T.-II/III actuator test**

Carry out the actuator test. (Refer to [P.55-101](#))

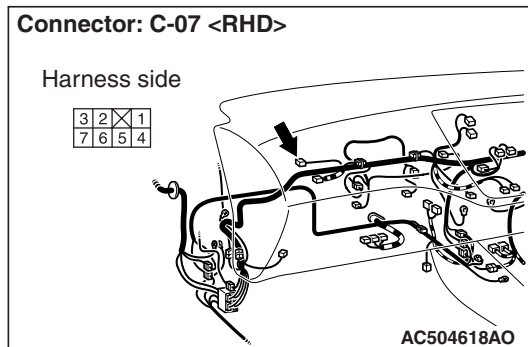
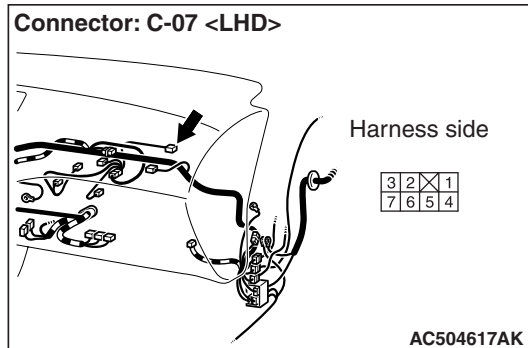
- Item 13, 14: outside/inside air selection damper control motor

Q: Does the blower motor work normally?

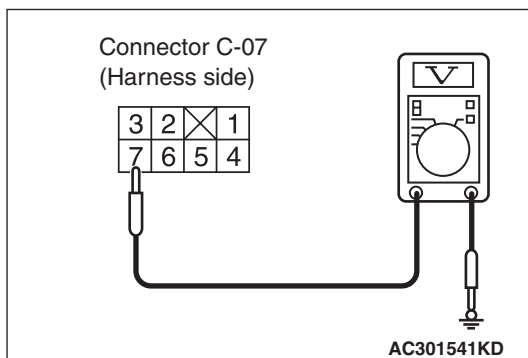
YES : Replace the automatic A/C control panel (A/C-ECU)

NO : Go to Step 2.

STEP 2. Measure the voltage at C-07 outside/inside air selection damper control motor connector.



- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the ignition switch to the ON position.



- (3) Measure the voltage between terminal 7 and body earth.

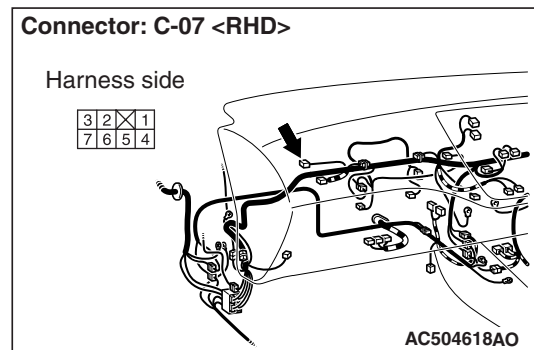
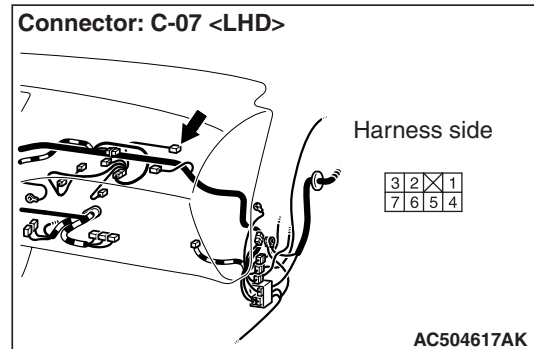
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 5.

NO : Go to Step 3.

STEP 3. Connector check: C-07 outside/inside air selection damper control motor connector



Q: Is the check result normal?

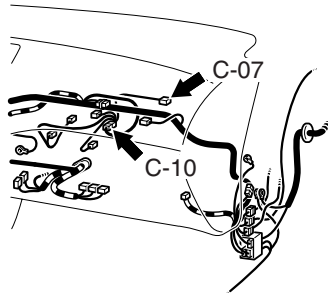
YES : Go to Step 4.

NO : Repair the connector.

STEP 4. Check the wiring harness between C-07 outside/inside air selection damper control motor connector terminal No.7 and the ignition switch (IG2).

NOTE:

Connectors: C-07, C-10 <LHD>



C-07
Harness side

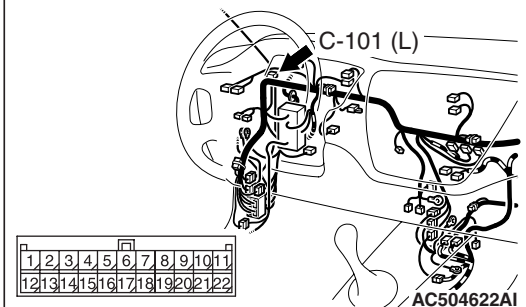
3	2	1
7	6	5

C-10

1	2	3	4	5
6	7	8	9	10
11	12	13		

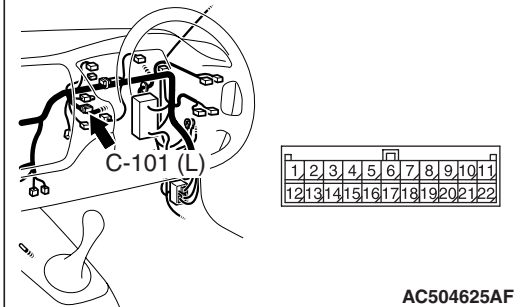
AC504701AB

Connector: C-101 <LHD>



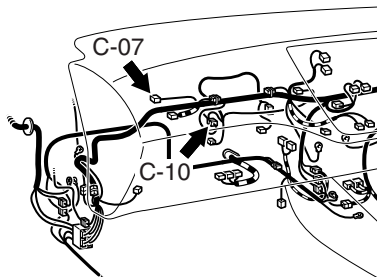
AC504622AI

Connector: C-101 <RHD>



AC504625AF

Connectors: C-07, C-10 <RHD>



C-07
Harness side

3	2	1
7	6	5

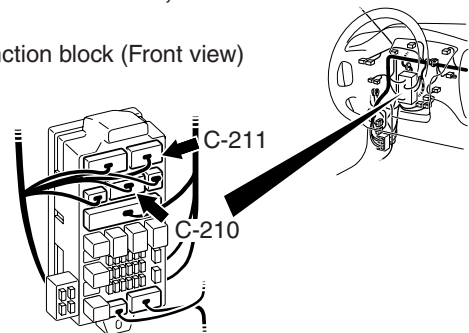
C-10

1	2	3	4	5
6	7	8	9	10
11	12	13		

AC504624AF

Connectors: C-210, C-211 <LHD>

Junction block (Front view)



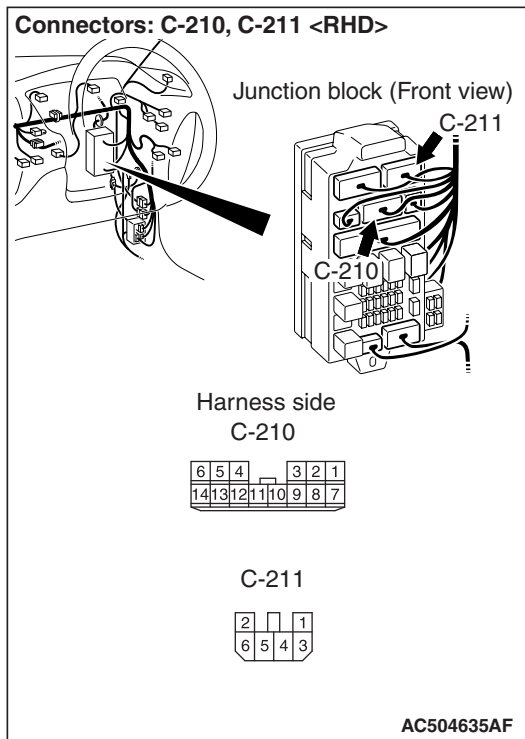
Harness side
C-210

6	5	4	3	2	1
14	13	12	11	10	9
8	7				

C-211

2	1
6	5
4	3

AC504633AF



Prior to the wiring harness inspection, check intermediate connector C-10, joint connector C-101 and junction block connectors C-210 and C-211, and repair if necessary.

- Check the motor power supply line for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).

NO : Repair the wiring harness.

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

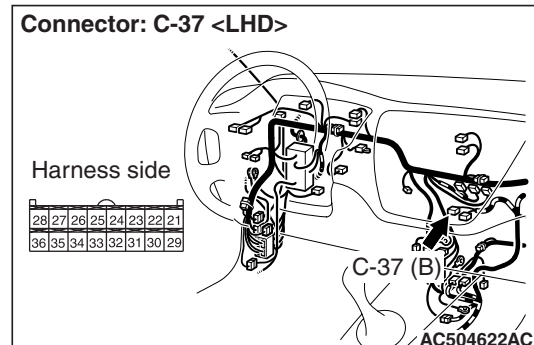
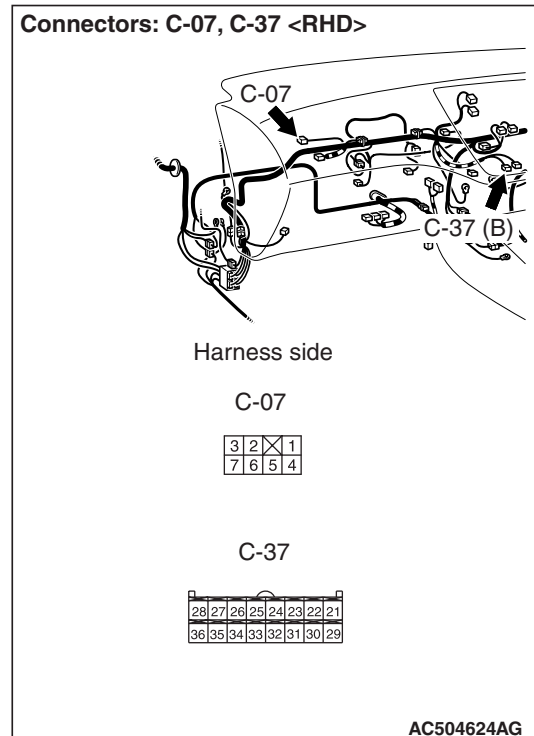
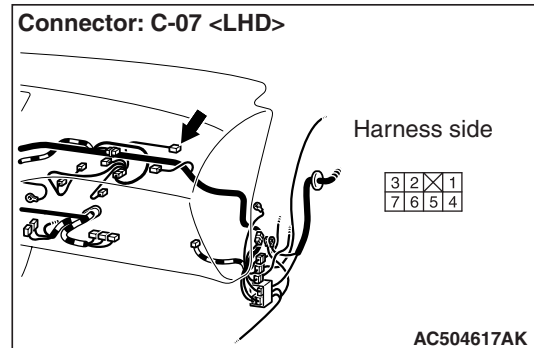
Refer to [P.55-114](#).

Q: Is the check result normal?

YES : Go to Step 6.

NO : Replace the outside/inside air selection damper control motor.

STEP 6. Connector check: C-37 A/C-ECU connector and C-07 outside/inside air selection damper control motor connector



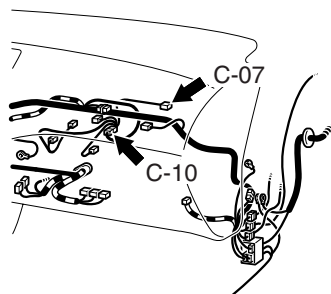
Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the connector.

STEP 7. Check the wiring harness between C-37 A/C-ECU connector (terminals 23 and 26) and C-07 outside/inside air selection damper control motor connector (terminals 6 and 4).

Connectors: C-07, C-10 <LHD>



C-07
Harness side

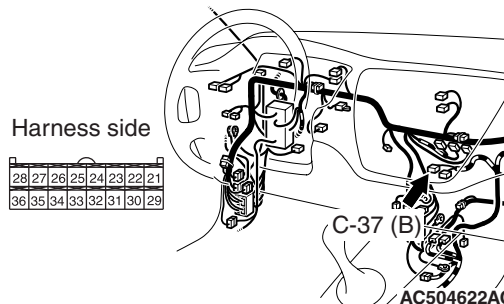
3	2	1
7	6	5

C-10

1	2	3	4	5
6	7	8	9	10
11	12	13		

AC504701AB

Connector: C-37 <LHD>



NOTE: Prior to the wiring harness inspection, check intermediate connector C-10, and repair if necessary.

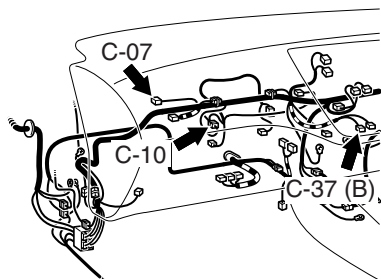
- Check the motor activating lines for open or short circuit.

Q: Is the check result normal?

YES : Replace the automatic A/C control panel (A/C-ECU).

NO : Repair the wiring harness.

Connectors: C-07, C-10, C-37 <RHD>



C-07
Harness side

3	2	1
7	6	5

C-10

1	2	3	4	5
6	7	8	9	10
11	12	13		

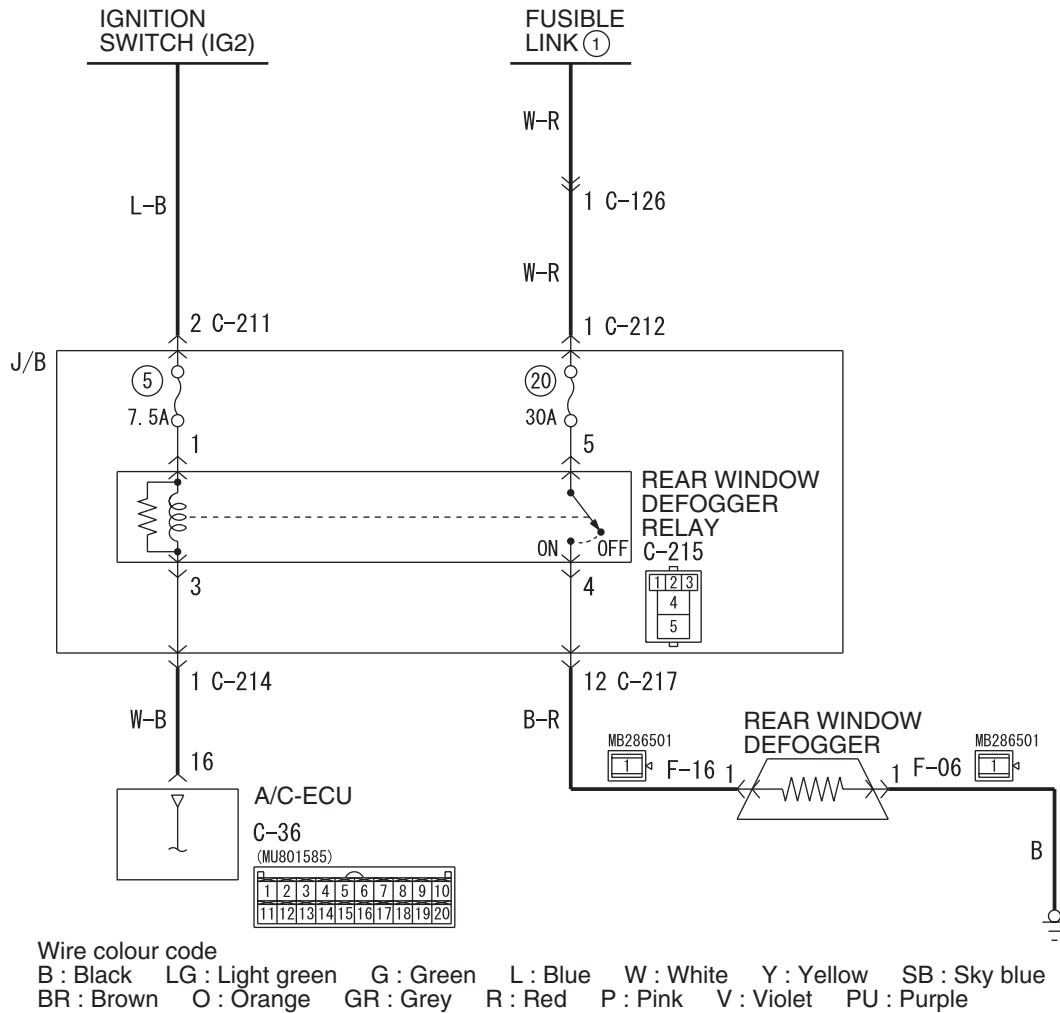
C-37
Harness side

28	27	26	25	24	23	22	21
36	35	34	33	32	31	30	29

AC504624AH

Inspection Procedure 8: Rear Window Defogger function does not operate.

Rear Window Defogger Circuit



W6J55E006A

CIRCUIT OPERATION

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.

PROBABLE CAUSES

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

DIAGNOSIS PROCEDURE

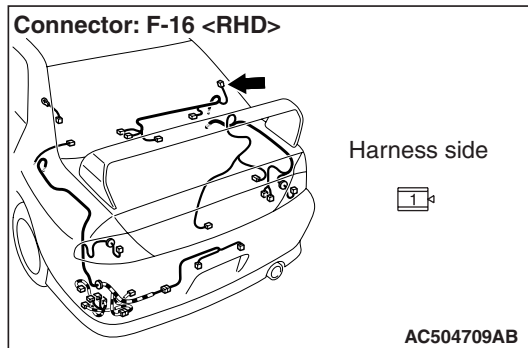
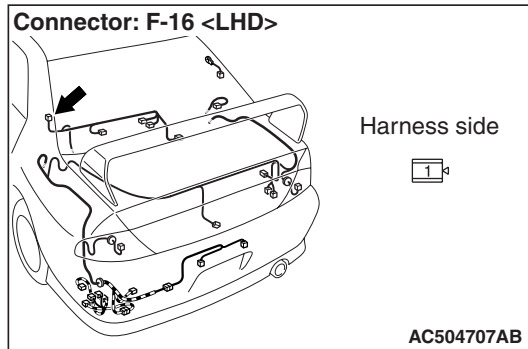
STEP 1. Check the A/C and outside/inside air selection damper control motor operation.

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

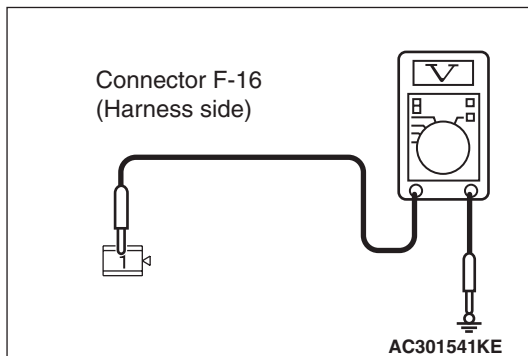
YES : Go to Step 2.

NO : Refer to Inspection procedure 9

"Malfunction of the A/C-ECU power supply system [P.55-73](#)."

STEP 2. Voltage measurement at F-16 rear window defogger connector.

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the rear window defogger switch to the "ON" position.



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

OK: System voltage

Q: Is the check result normal?

YES : Go to Step 14.

NO : Go to Step 3.

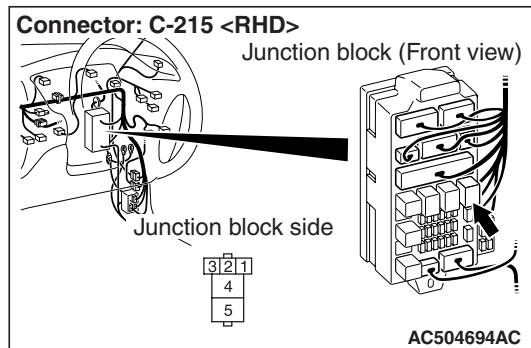
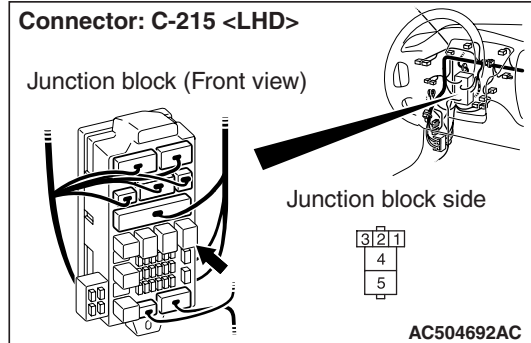
STEP 3. Check the rear window defogger relay continuity.

Refer to [P.55-107](#).

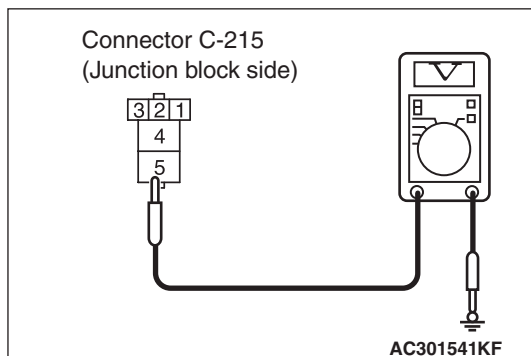
Q: Is the rear window defogger relay in good condition?

YES : Go to Step 4.

NO : Replace the rear window defogger relay.

STEP 4. Voltage measurement at C-215 rear window defogger relay connector.

- (1) Remove the relay, and measure at the junction block side.



- (2) Measure the voltage between terminal 5 and body earth.

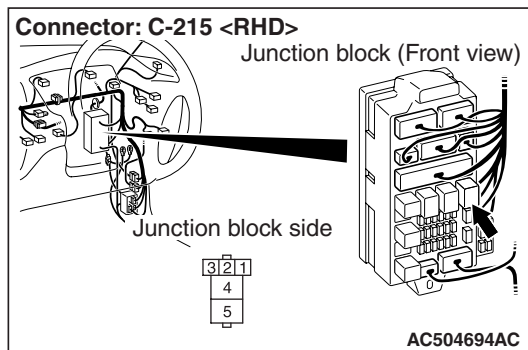
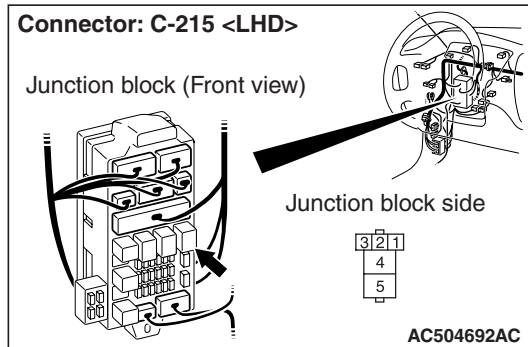
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 7.

NO : Go to Step 5.

STEP 5. Connector check: C-215 rear window defogger relay connector

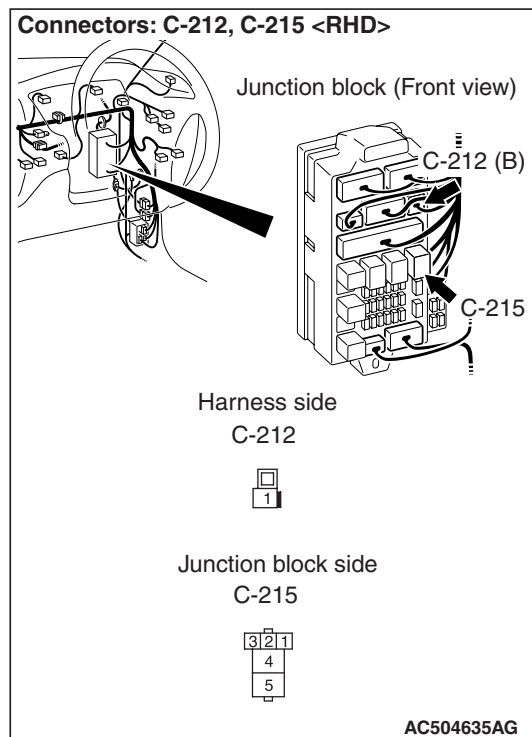
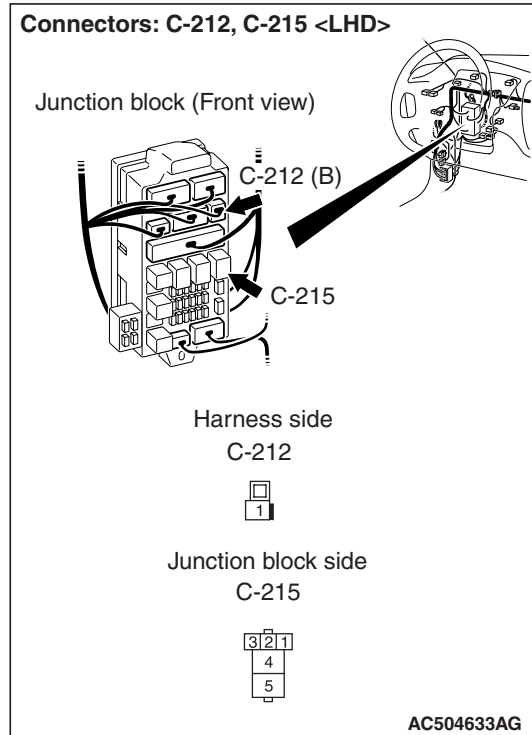


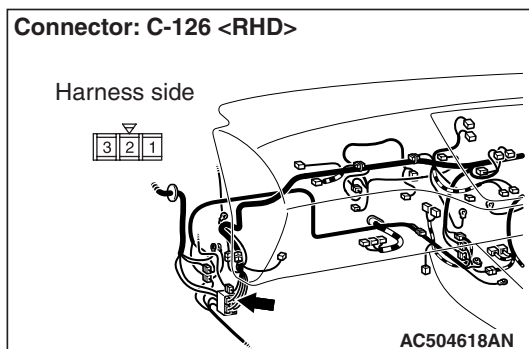
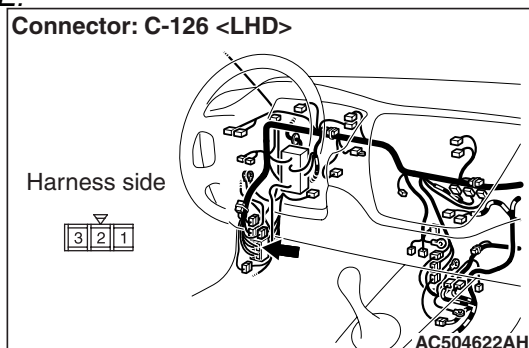
Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the connector.

STEP 6. Check the wiring harness between C-215 rear window defogger relay connector terminal No.5 and the fusible link (1).



NOTE:

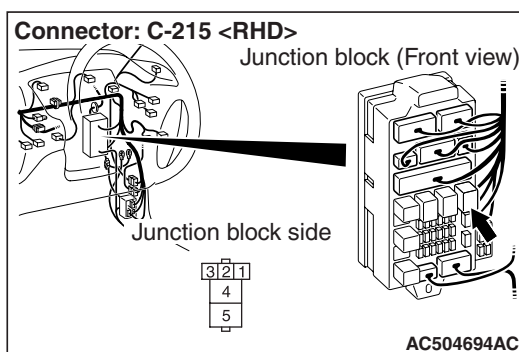
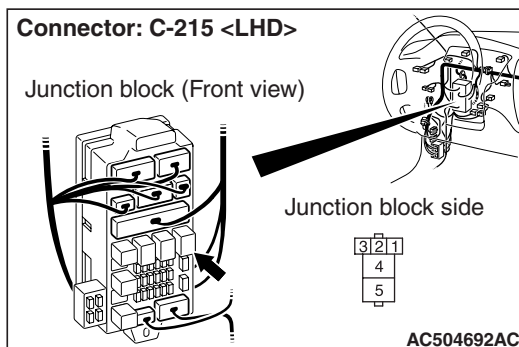
Prior to the wiring harness inspection, check intermediate connectors C-126 and junction block connector C-212, and repair if necessary.

- Check the rear window defogger relay power supply line for open or short circuit.

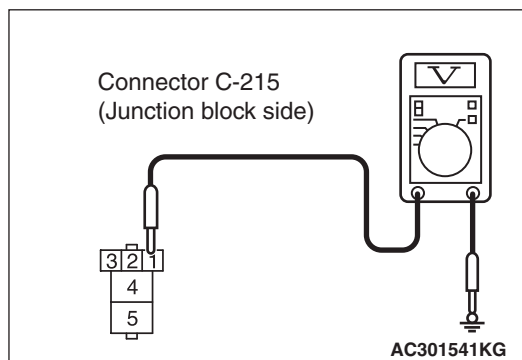
Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).

NO : Repair the wiring harness.

STEP 7. Voltage measurement at C-215 rear window defogger relay connector.

- (1) Remove the relay, and measure at the junction block side.
- (2) Turn the ignition switch to the "ON" position.



- (3) Voltage between terminal 1 and body earth.

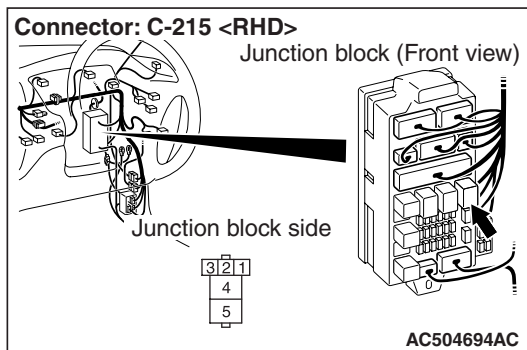
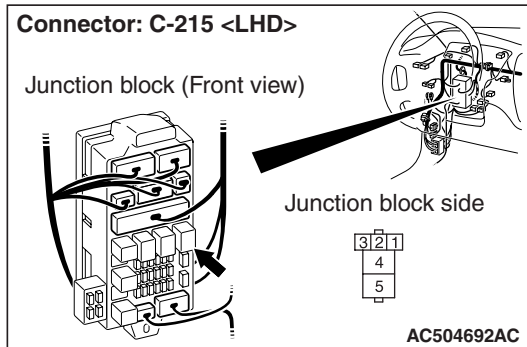
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 10.

NO : Go to Step 8.

STEP 8. Connector check: C-215 rear window defogger relay connector

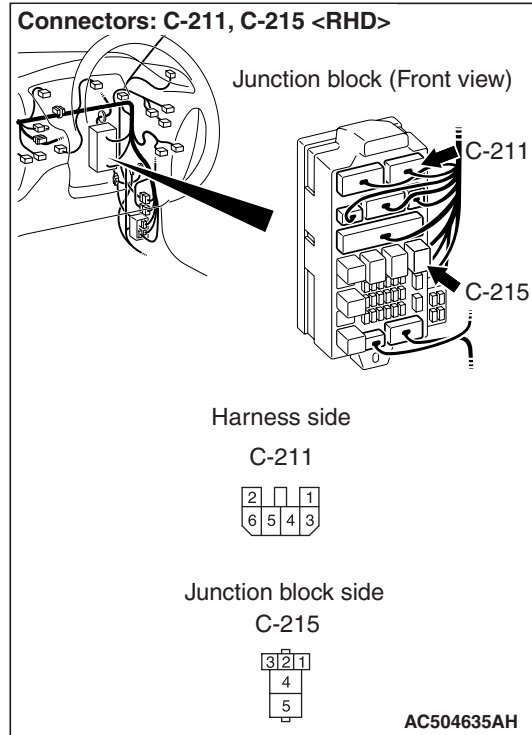
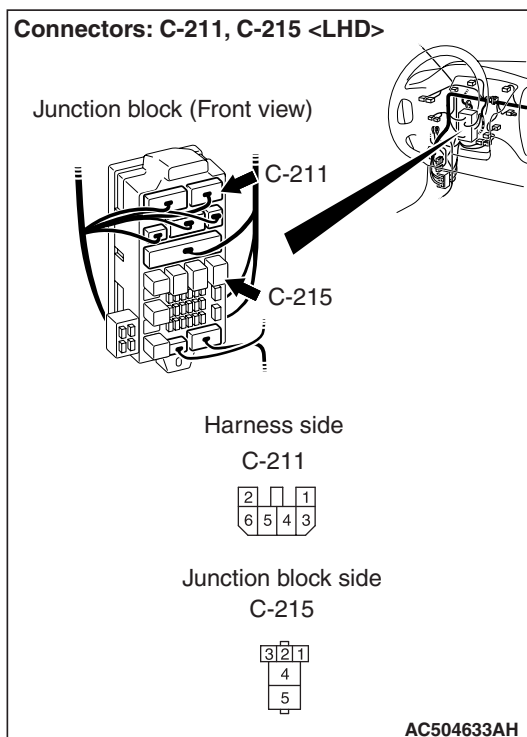


Q: Is the check result normal?

YES : Go to Step 9.

NO : Repair the connector.

STEP 9. Check the wiring harness between C-215 rear window defogger relay connector No.1 and ignition switch (IG2).



NOTE: Prior to the wiring harness inspection, check junction block connector C-211, and repair if necessary.

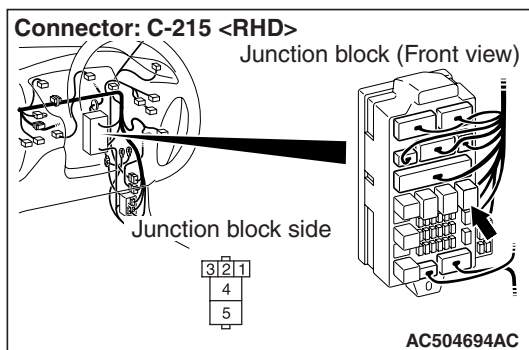
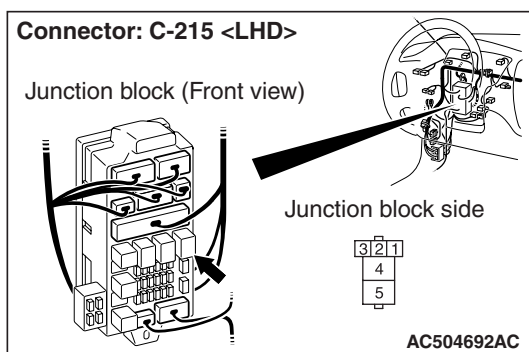
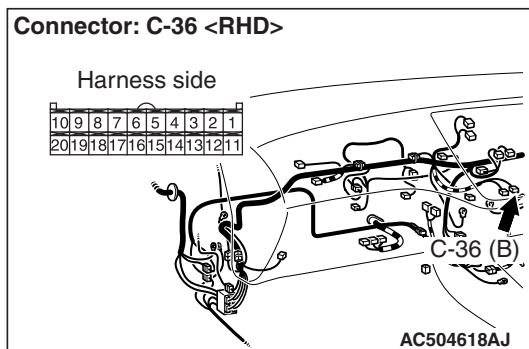
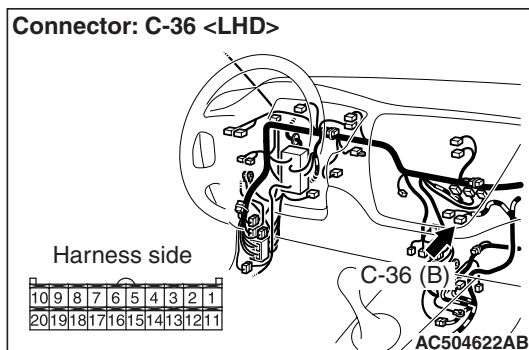
- Check the rear window defogger power supply line for open circuit.

Q: Is the check result normal?

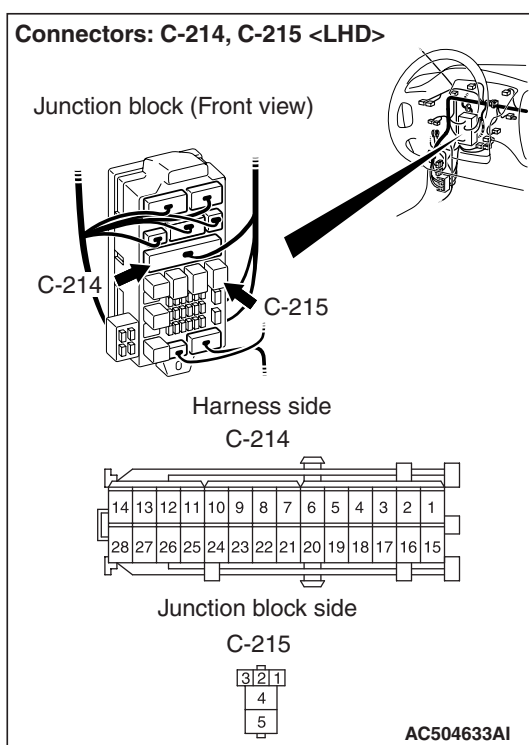
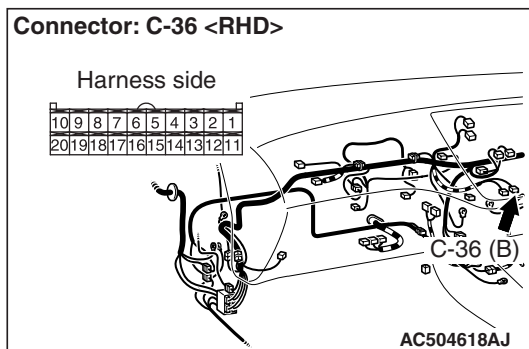
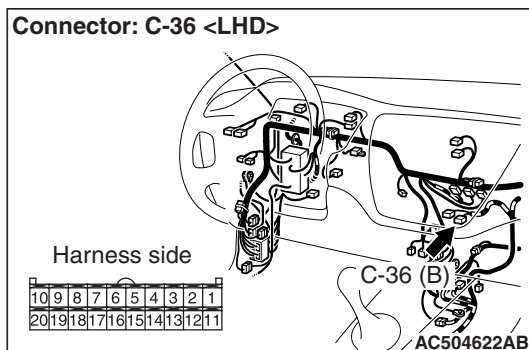
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).

NO : Repair the wiring harness.

STEP 10. Connector check: C-215 rear window defogger relay connector and C-36 A/C-ECU connector



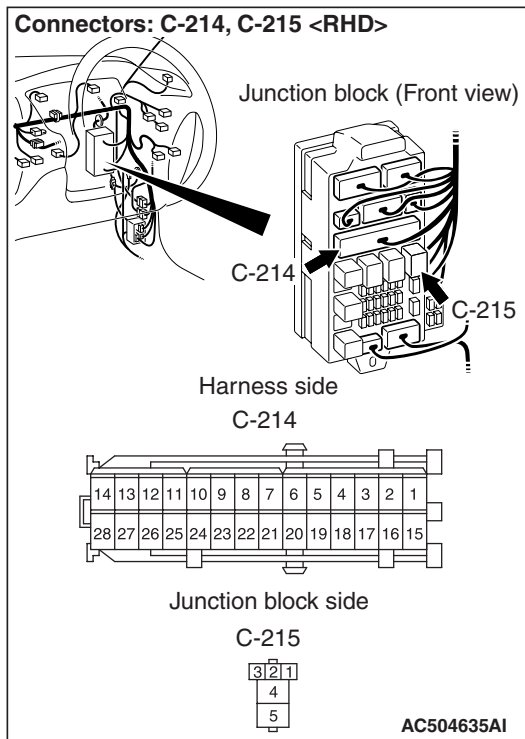
STEP 11. Check the wiring harness between rear window defogger relay connector C-215 No.3 and A/C-ECU connector C-36 No.16.



Q: Is the check result normal?

YES : Go to Step 11.

NO : Repair the connector.



NOTE: Prior to the wiring harness inspection, check junction block connector C-214, and repair if necessary.

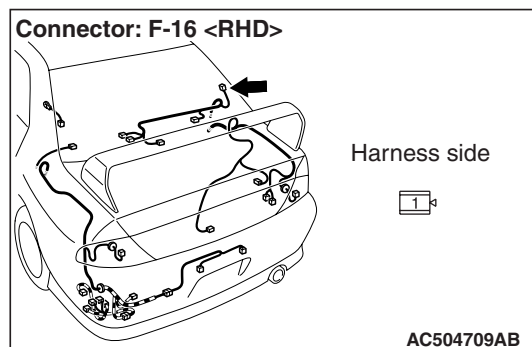
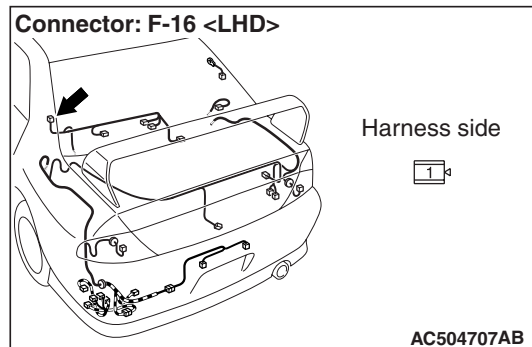
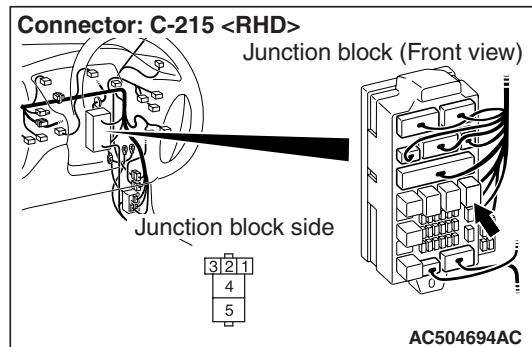
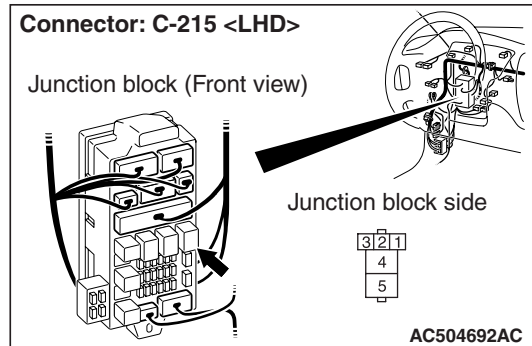
- Check the rear window defogger relay line for open or short circuit.

Q: Is the check result normal?

YES : Go to Step 12.

NO : Repair the wiring harness.

STEP 12. Connector check: C-215 rear window defogger relay connector and F-16 rear window defogger connector



Q: Is the check result normal?

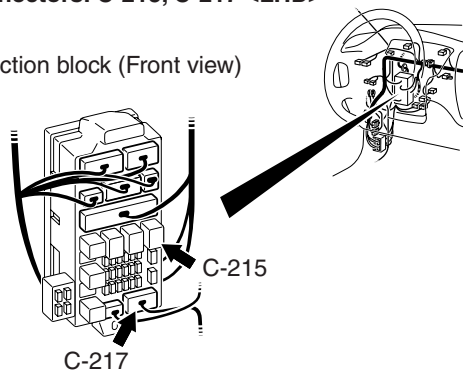
YES : Go to Step 13.

NO : Repair the connector.

STEP 13. Check the wiring harness between C-215 rear window defogger relay connector terminal No.4 and F-16 rear window defogger connector terminal No.1.

Connectors: C-215, C-217 <LHD>

Junction block (Front view)

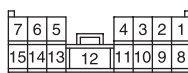


Junction block side

C-215

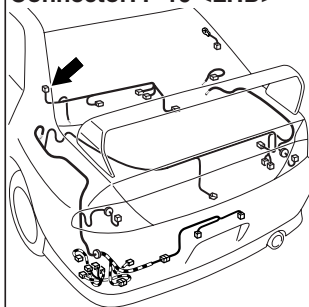


C-217



AC504633AK

Connector: F-16 <LHD>

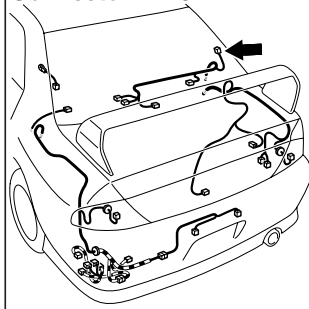


Harness side



AC504707AB

Connector: F-16 <RHD>



Harness side



AC504709AB

NOTE: Prior to the wiring harness inspection, check junction block connector C-217, and repair if necessary.

- Check the rear window defogger power supply line for open or short circuit.

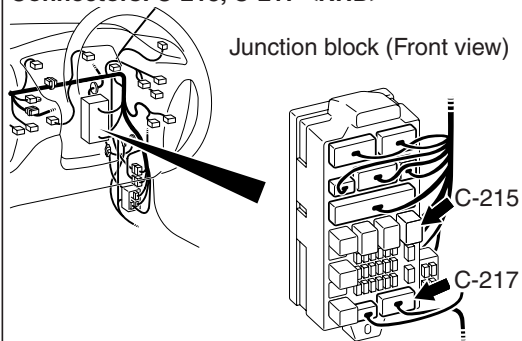
Q: Is the check result normal?

YES : Replace the automatic A/C control panel (A/C-ECU).

NO : Repair the wiring harness.

Connectors: C-215, C-217 <RHD>

Junction block (Front view)



Junction block side

C-215

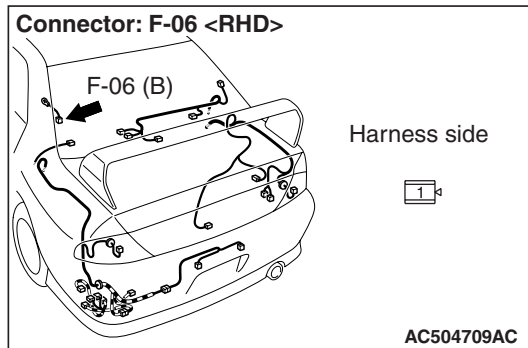
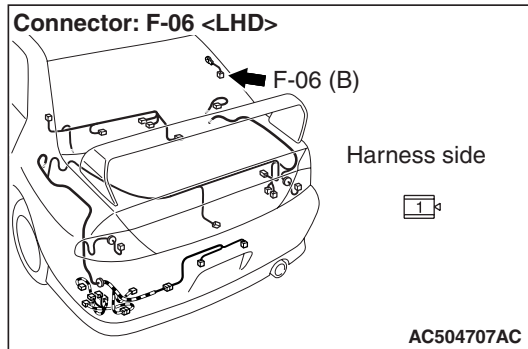


C-217

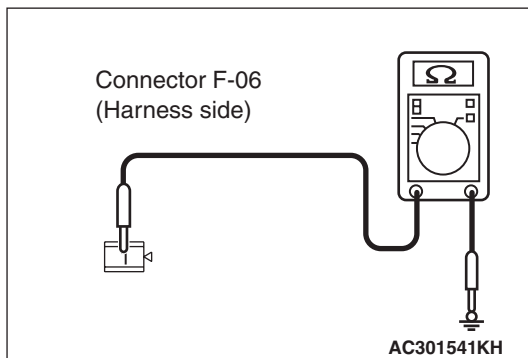


AC504635AK

STEP 14. Resistance measurement at F-06 rear window defogger connector.



(1) Disconnect the connector, and measure at the wiring harness side.



(2) Continuity between terminal 1 and body earth.

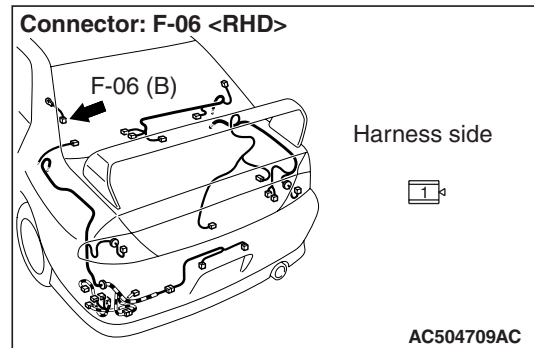
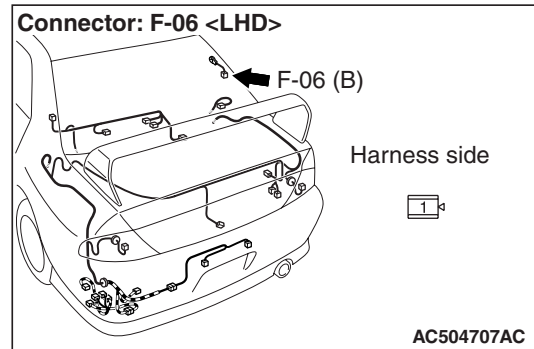
OK: 2 ohm or less

Q: Is the check result normal?

YES : Go to Step 17.

NO : Go to Step 15.

STEP 15. Connector check: F-06 rear window defogger connector

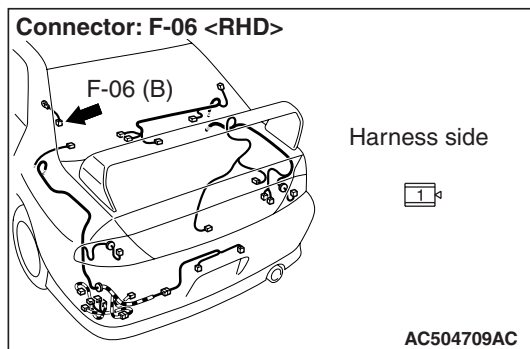
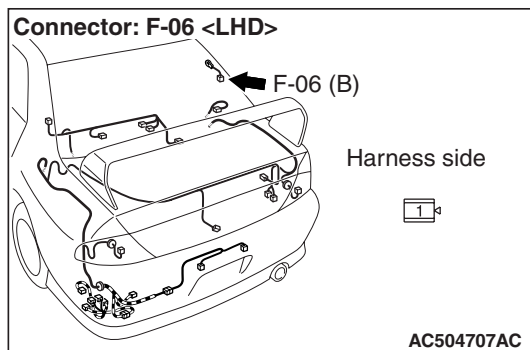


Q: Is the check result normal?

YES : Go to Step 16.

NO : Repair the connector.

STEP 16. Check the wiring harness between F-06 rear window defogger connector terminal No.1 and earth.



- Check the rear window defogger earth line for open or short circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).
NO : Repair or replace the wiring harness.

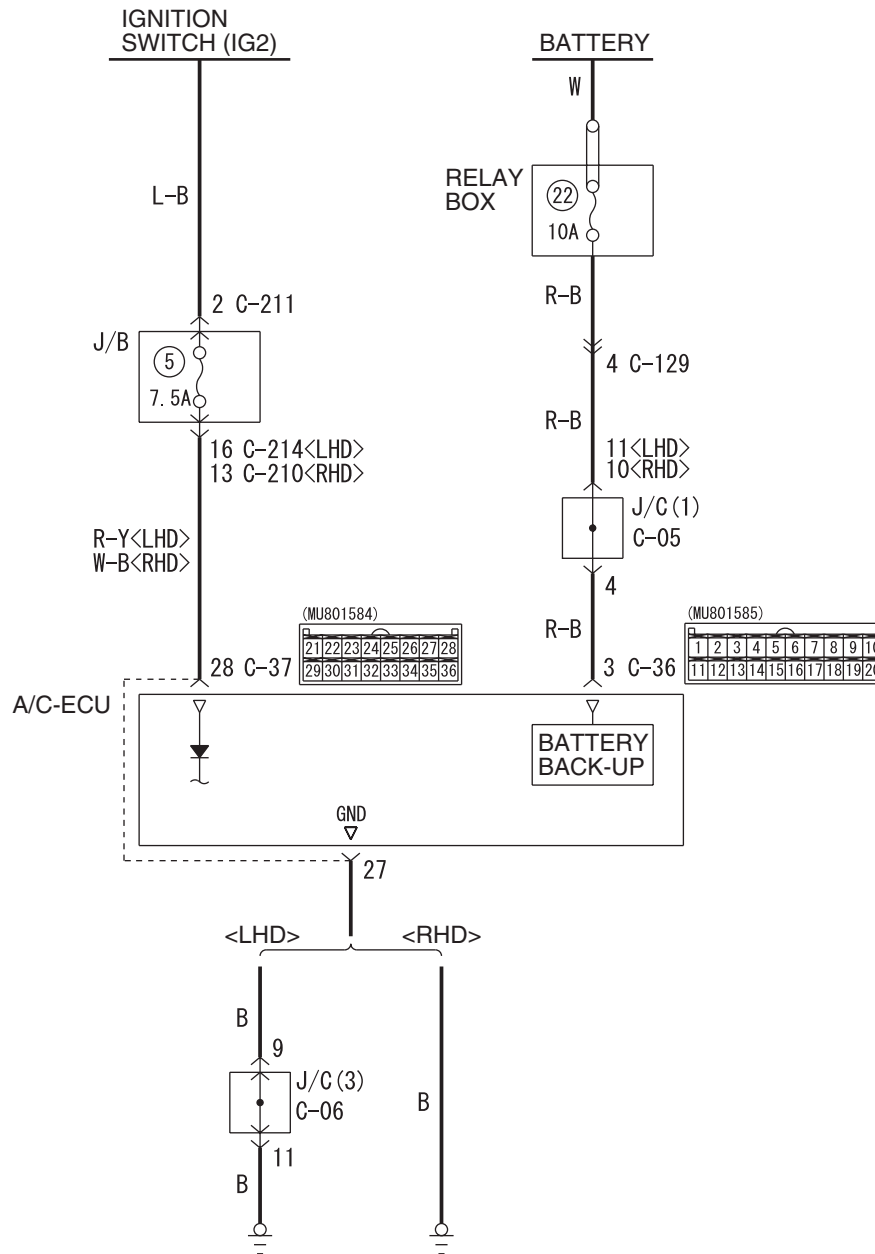
STEP 17. Check the rear window defogger.
Refer to [P.54A-80](#).

Q: Does the rear window defogger work normally?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).
NO : Repair the rear window defogger.

Inspection Procedure 9: Malfunction of the A/C-ECU power supply system.

A/C-ECU Power Supply Circuit



Wire colour code

B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

W6J55E007A

CIRCUIT OPERATION

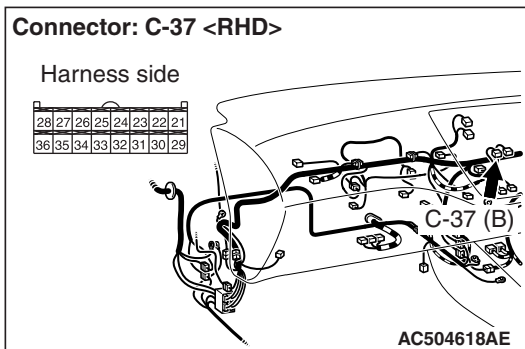
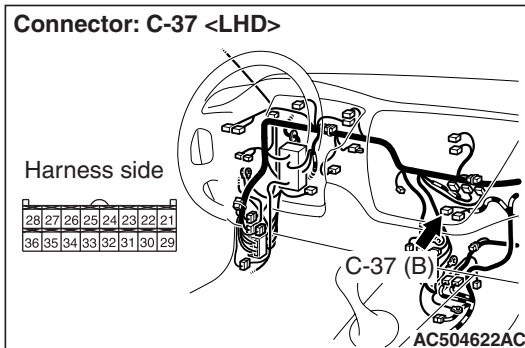
The A/C-ECU power system may be defective if the A/C, defogger, and outside/inside air selection damper motor all do not operate normally.

PROBABLE CAUSES

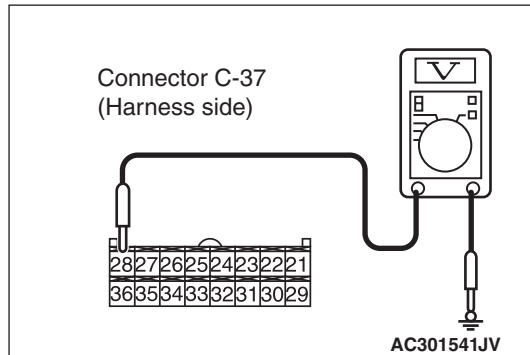
- Damaged the wiring harness or connectors
- Malfunction of the A/C-ECU

DIAGNOSIS PROCEDURE

STEP 1. Voltage measurement at A/C-ECU connector C-37.



- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.



- (3) Measure the voltage between terminal 28 and body earth.

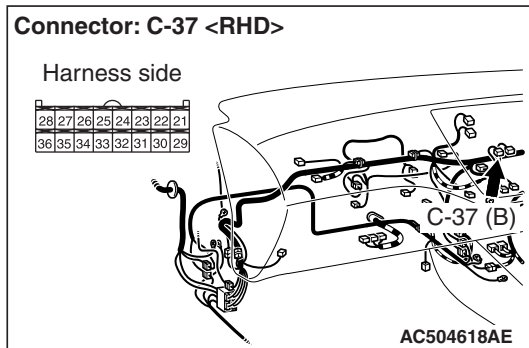
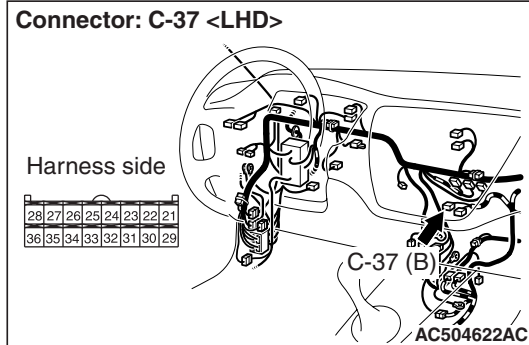
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 4.

NO : Go to Step 2.

STEP 2. Connector check: C-37 A/C-ECU connector

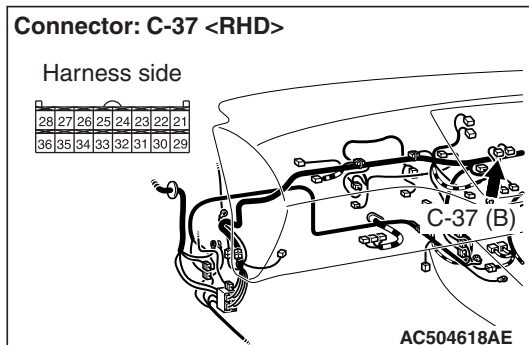
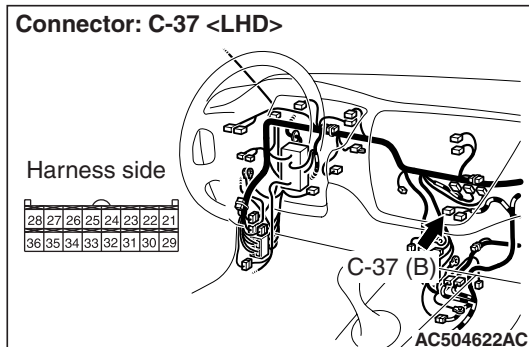


Q: Is the check result normal?

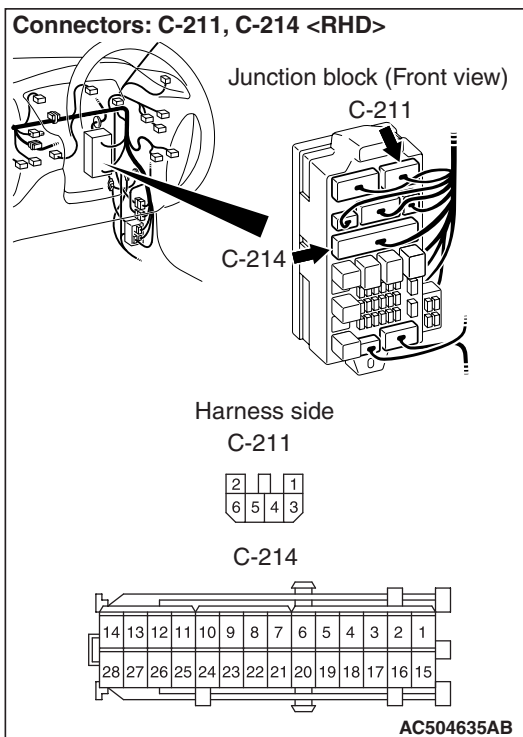
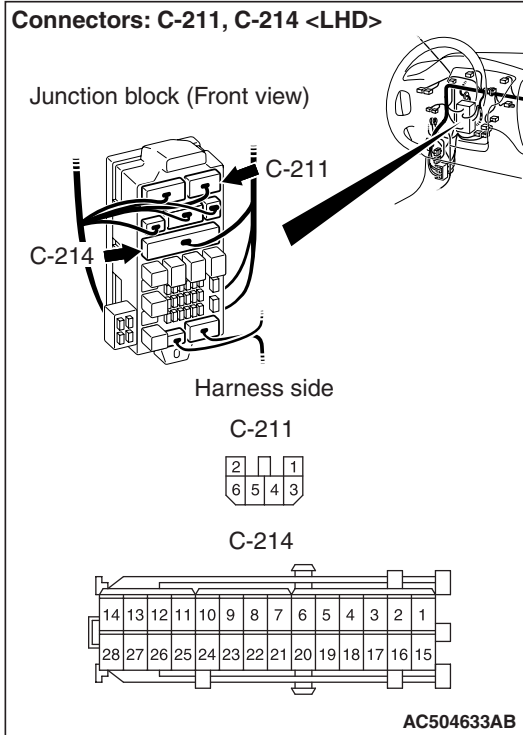
YES : Go to Step 3.

NO : Repair the connector.

STEP 3. Check the wiring harness between C-37 A/C-ECU connector terminal No.28 and the ignition switch (IG2).



NOTE:



Prior to the wiring harness inspection, check junction block connectors C-214 and C-211, and repair if necessary.

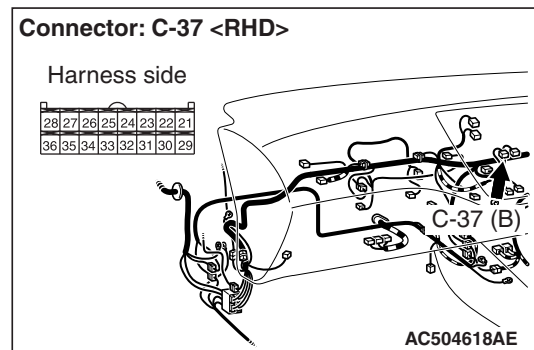
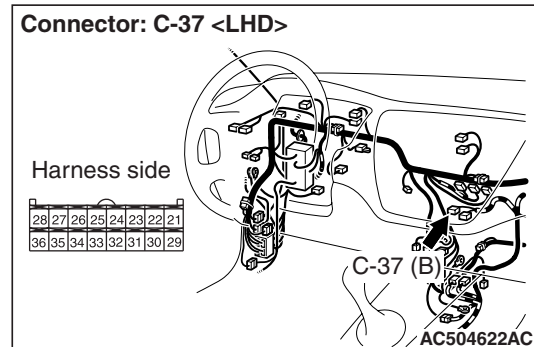
- Check the A/C-ECU power supply line for open or short circuit.

Q: Is the check result normal?

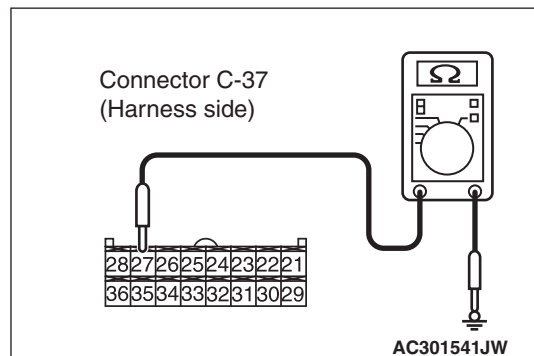
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).

NO : Repair the wiring harness.

STEP 4. Resistance measurement at C-37 A/C-ECU connector.



- (1) Remove the relay, and measure at the junction block side.



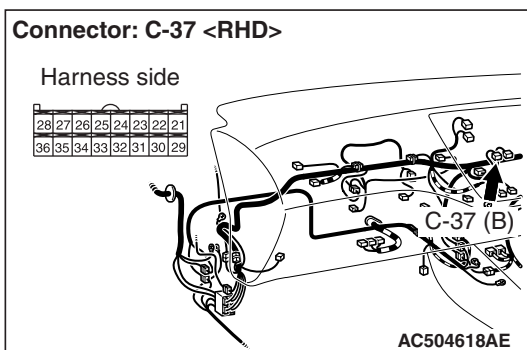
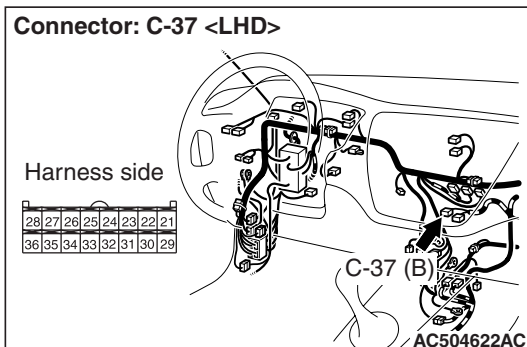
- (2) Continuity between terminal 27 and body earth.

OK: 2 ohm or less

Q: Is the check result normal?

YES : Go to Step 7.

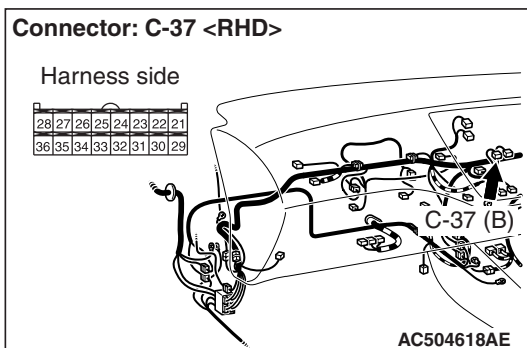
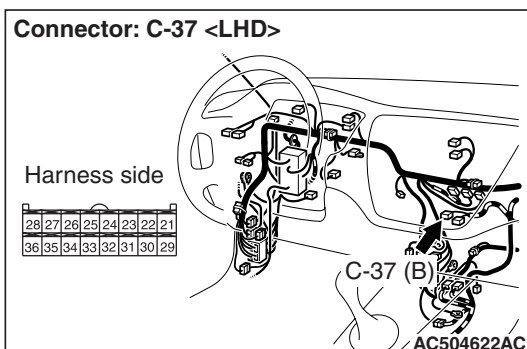
NO : Go to Step 5.

STEP 5. Connector check: C-37 A/C-ECU connector

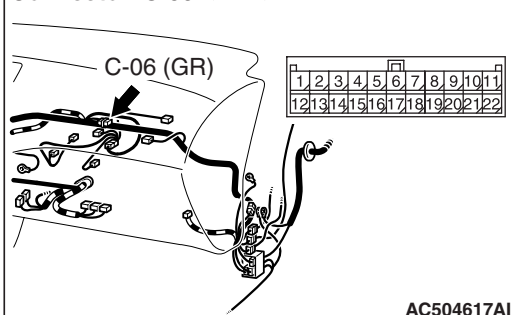
Q: Is the check result normal?

YES : Go to Step 6.

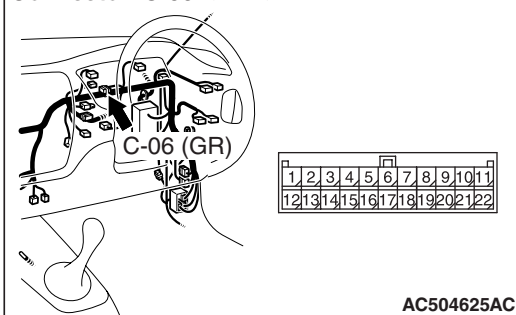
NO : Repair the connector.

STEP 6. Check the wiring harness between C-37 A/C-ECU connector terminal No.27 and the earth.**NOTE:**

Connector: C-06 <LHD>



Connector: C-06 <RHD>



Prior to the wiring harness inspection, check joint connector C-06 <LH drive vehicles>, and repair if necessary.

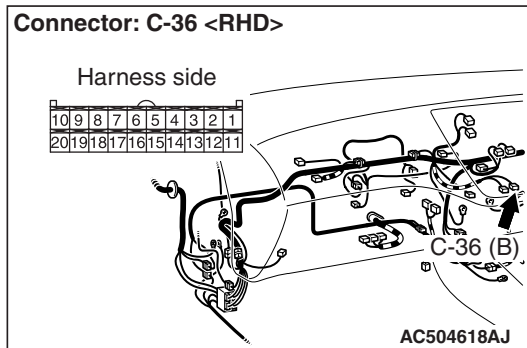
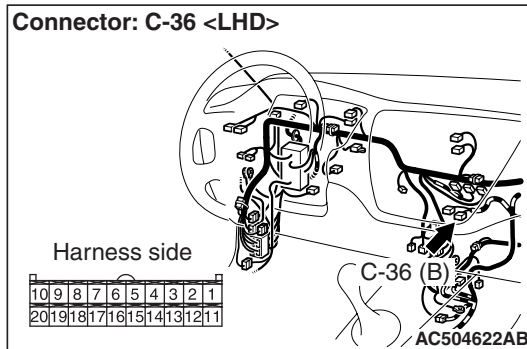
- Check the A/C-ECU earth line for open or short circuit.

Q: Is the check result normal?

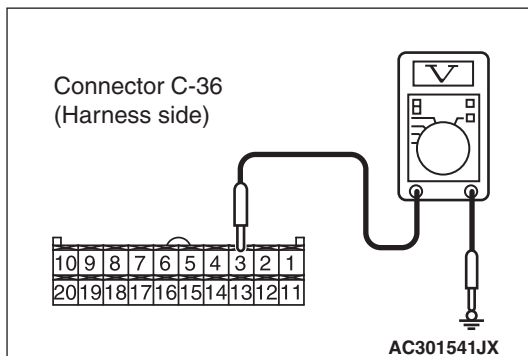
YES : Replace the automatic A/C control panel (A/C-ECU).

NO : Repair the wiring harness.

STEP 7. Voltage measurement at C-36 A/C-ECU connector.



- (1) Disconnect the connector, and measure at the wiring harness side.



- (2) Measure the voltage between terminal 3 and earth.

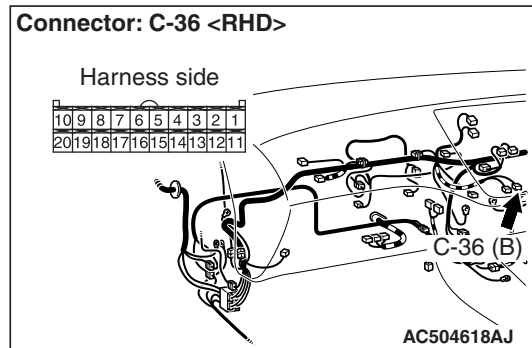
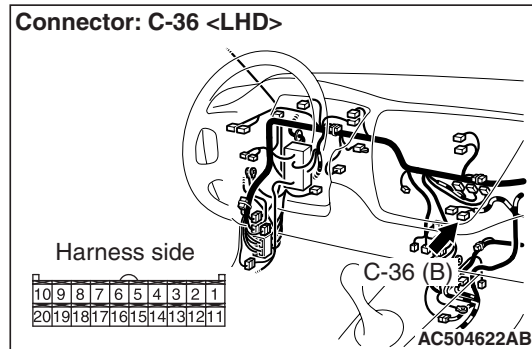
OK: System voltage

Q: Is the check result normal?

YES : Replace the automatic A/C control panel (A/C-ECU).

NO : Go to Step 8.

STEP 8. Connector check: C-36 A/C-ECU connector

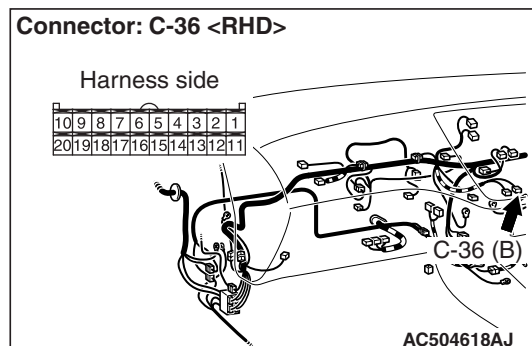
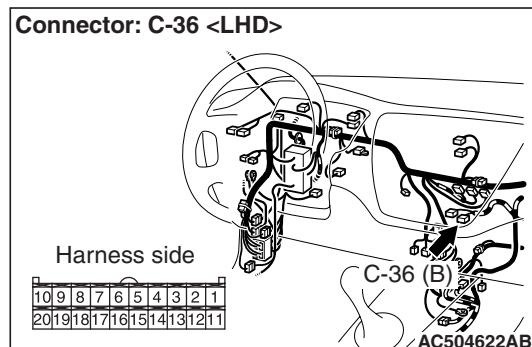


Q: Is the check result normal?

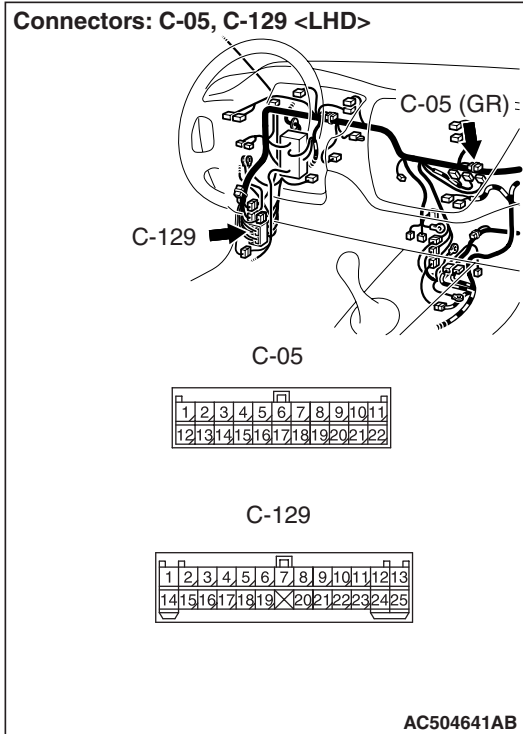
YES : Go to Step 9.

NO : Repair the connector.

STEP 9. Check the wiring harness between C-36 A/C-ECU connector terminal No.3 and battery.

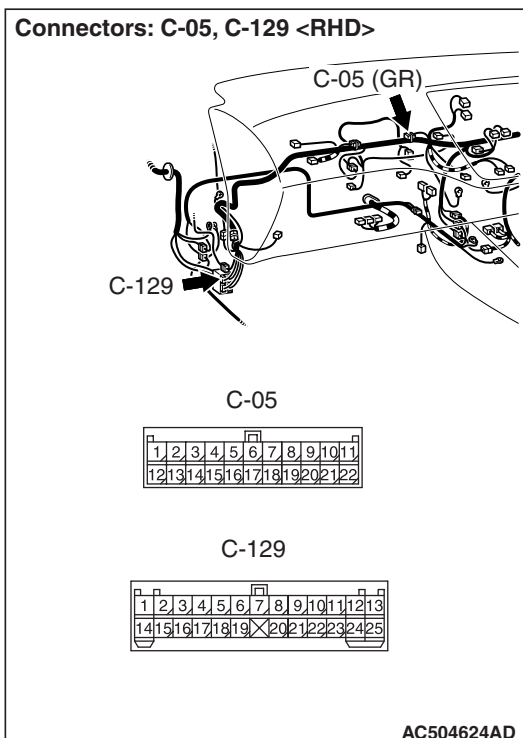


NOTE:



Q: Is the check result normal?

- YES** : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).
- NO** : Repair the wiring harness.

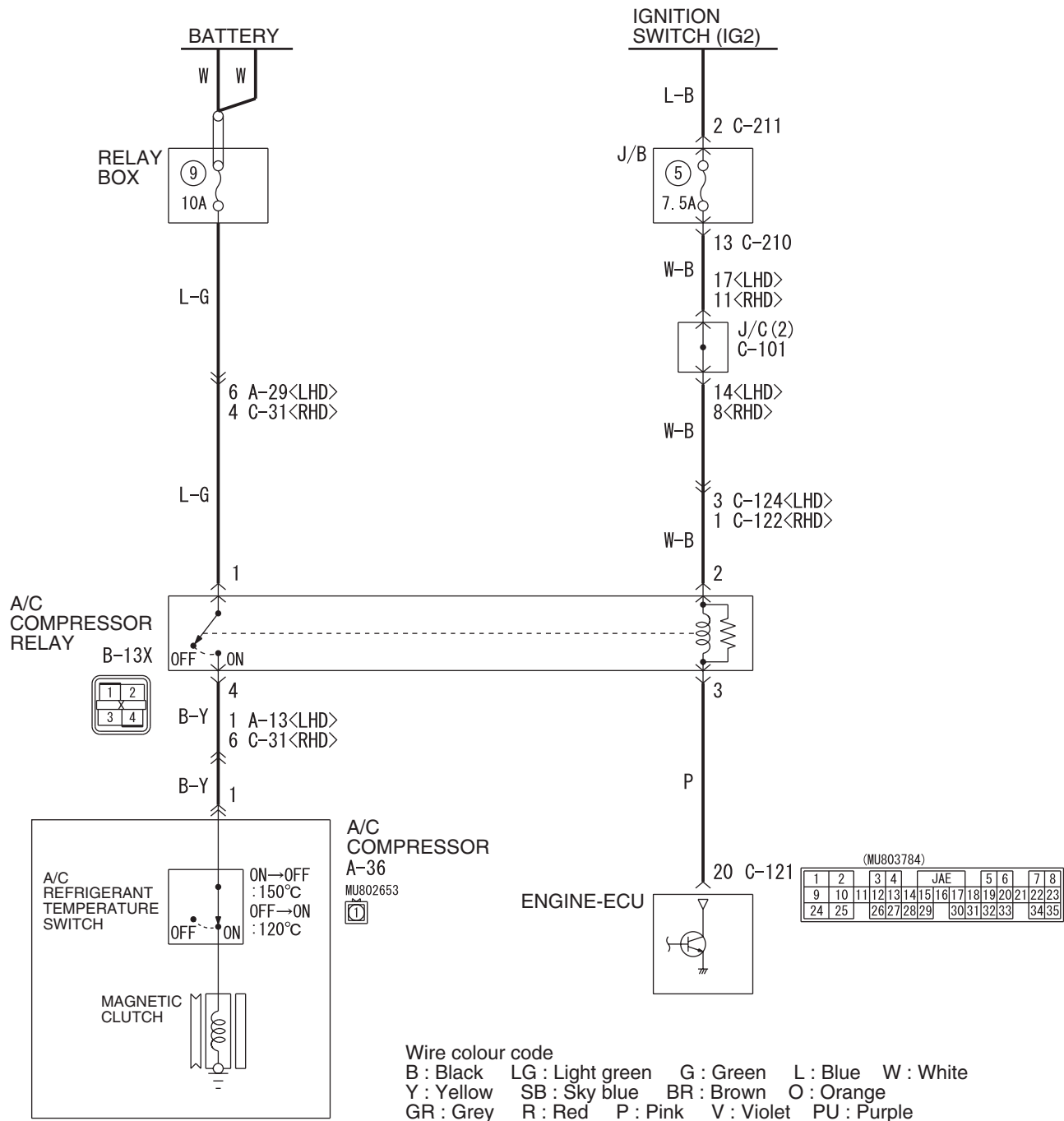


Prior to the wiring harness inspection, check intermediate connector C-129 and joint connector C-05, and repair if necessary.

- Check the A/C-ECU power supply (battery back-up) line for open or short circuit.

Inspection Procedure 10: A/C Compressor power supply system.

A/C Compressor Circuit



W6J55E008A

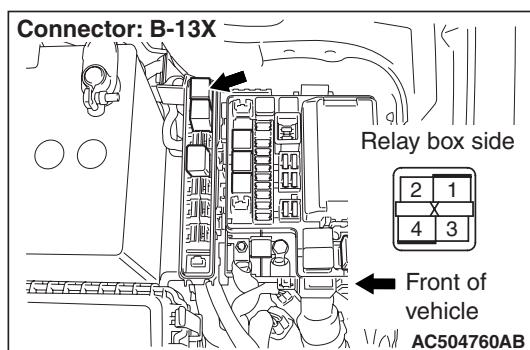
COMMENTS ON TROUBLE SYMPTOM

If the power is not supplied to the A/C compressor, the A/C compressor circuit system may be defective.

POSSIBLE CAUSES

- Malfunction of the A/C compressor relay
- Damaged the wiring harness or connectors

DIAGNOSIS PROCEDURE

STEP 1. Connector check: B-13X A/C compressor relay connector

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the connector.

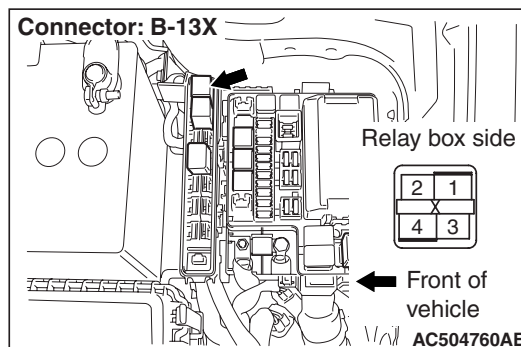
STEP 2. Check the A/C compressor relay continuity.

Refer to [P.55-107](#).

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

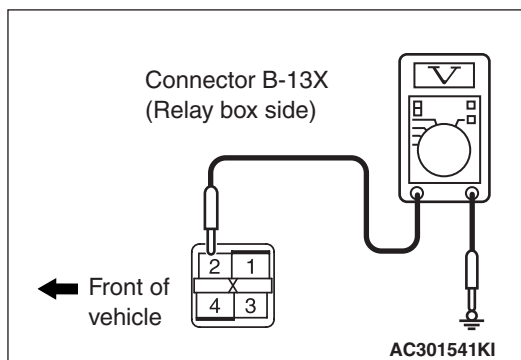
YES : Go to Step 3.

NO : Replace the A/C compressor relay.

STEP 3. Voltage measurement at B-13X A/C compressor relay connector.

(1) Remove the relay, and measure at the relay box side.

(2) Turn the ignition switch to the "ON" position.



(3) Measure the voltage between terminal 2 and body earth.

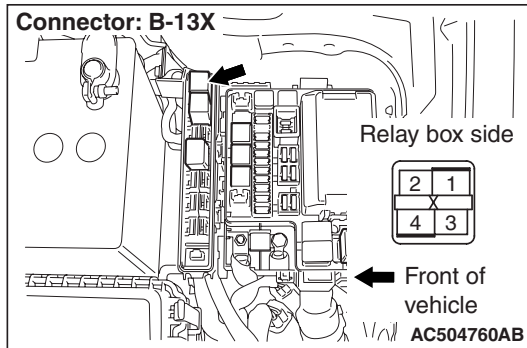
OK: System voltage

Q: Is the check result normal?

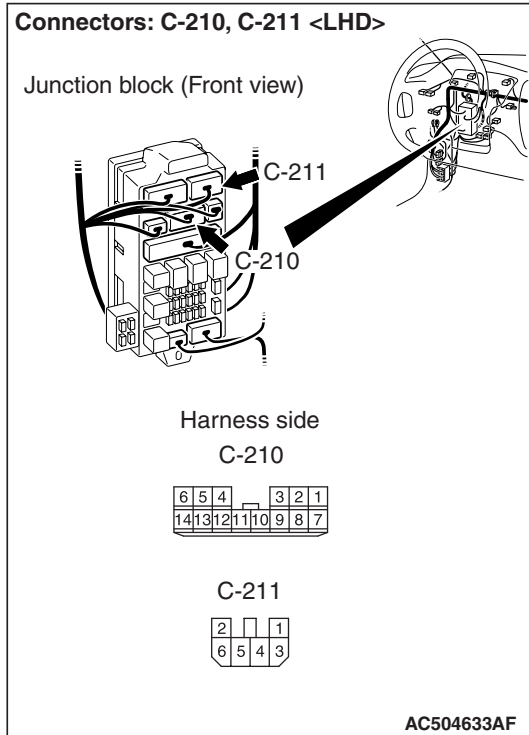
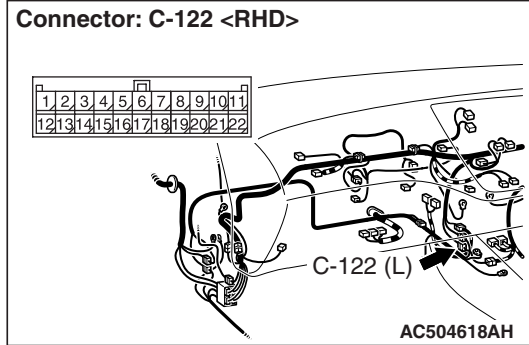
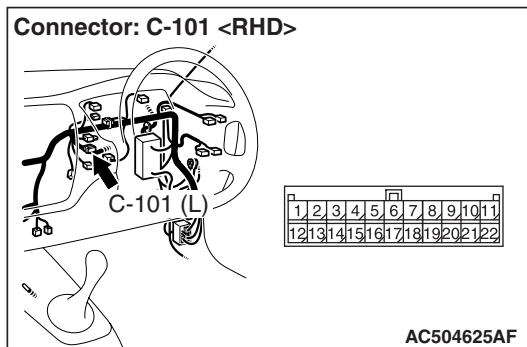
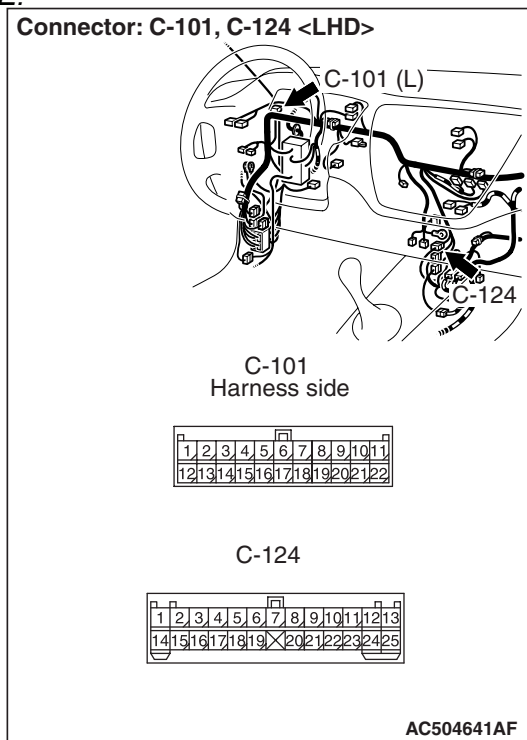
YES : Go to Step 5.

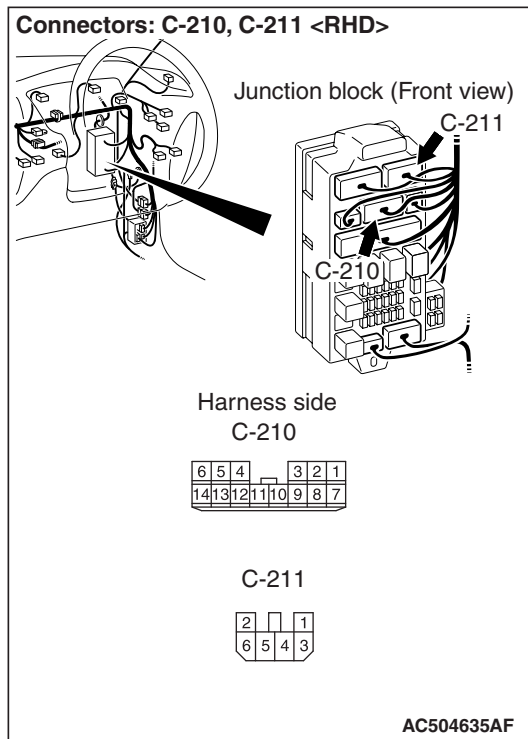
NO : Go to Step 4.

STEP 4. Check the wiring harness between B-13X A/C compressor relay connector terminal No.2 and the ignition switch (IG2).



NOTE:





Prior to the wiring harness inspection, check intermediate connector C-124 <LH drive vehicles>, C-122 <RH drive vehicles>, joint connector C-101, junction block connectors C-210 and C-211, and repair if necessary.

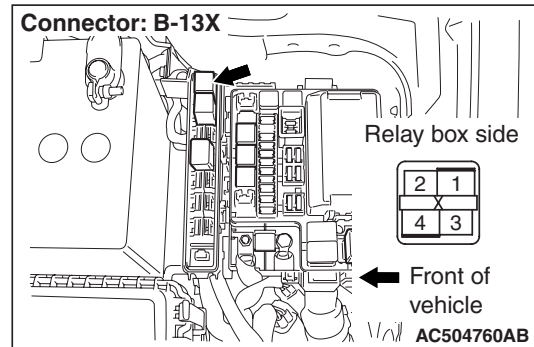
- Check the A/C compressor relay power supply line for open circuit.

Q: Is the check result normal?

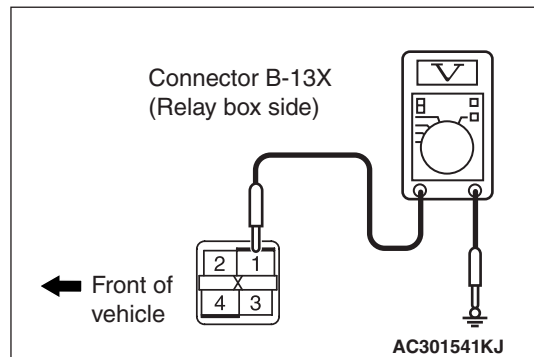
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).

NO : Repair the wiring harness.

STEP 5. Voltage measurement at B-13X A/C compressor relay connector.



- (1) Remove the relay, and measure at the junction block side.



- (2) Measure the voltage between terminal 1 and body earth.

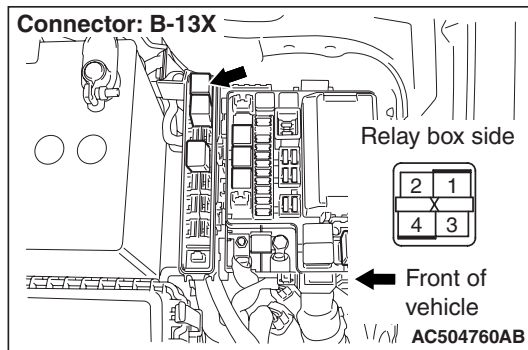
OK: System voltage

Q: Is the check result normal?

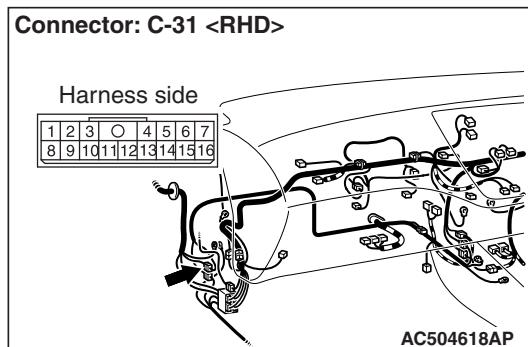
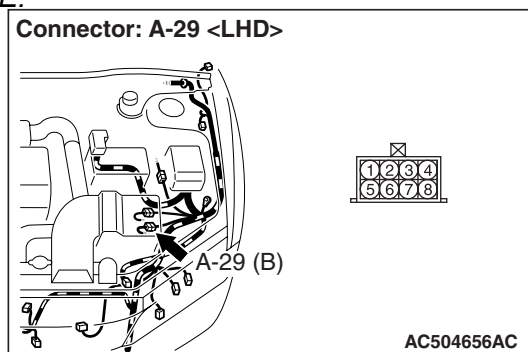
YES : Go to Step 7.

NO : Go to Step 6.

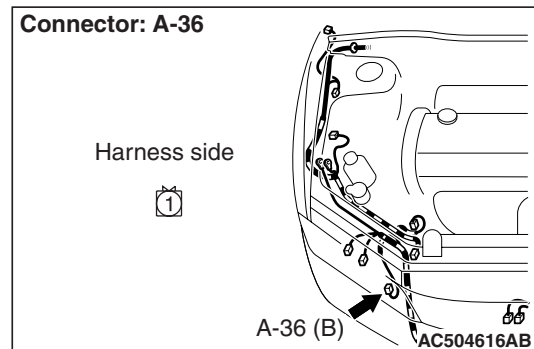
STEP 6. Check the wiring harness between B-13X A/C compressor relay connector terminal No.1 and the battery.



NOTE:



STEP 7. Connector check: A-36 A/C compressor connector



Q: Is the check result normal?

YES : Go to Step 8.

NO : Repair the connector.

Prior to the wiring harness inspection, check intermediate connector A-29 <LHD> or C-31 <RHD>, and repair if necessary.

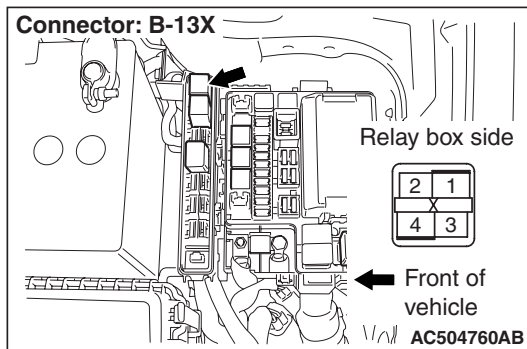
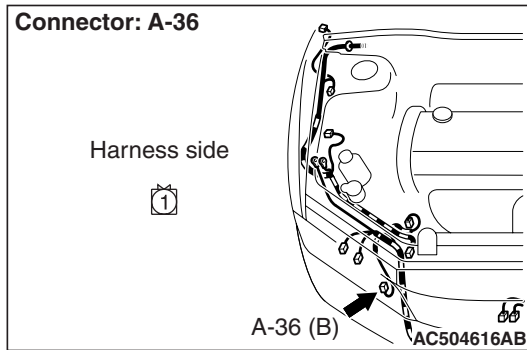
- Check the A/C compressor relay power supply line for open circuit.

Q: Is the check result normal?

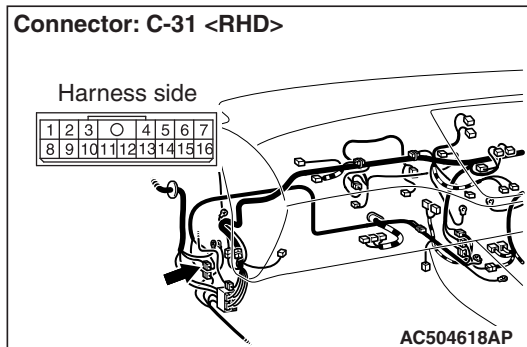
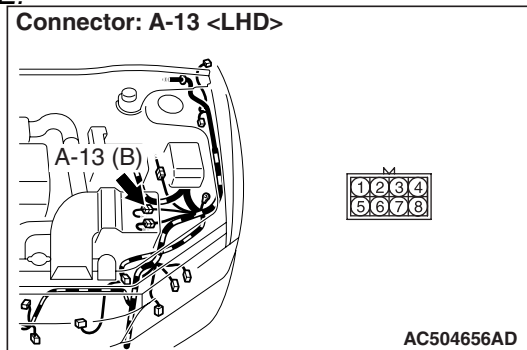
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).

NO : Repair the wiring harness.

STEP 8. Check the wiring harness between B-13X A/C compressor relay connector terminal No.4 and A-36 A/C compressor connector terminal No.1.



NOTE:



Prior to the wiring harness inspection, check intermediate connector A-13 <LHD> or C-31 <RHD>, and repair if necessary.

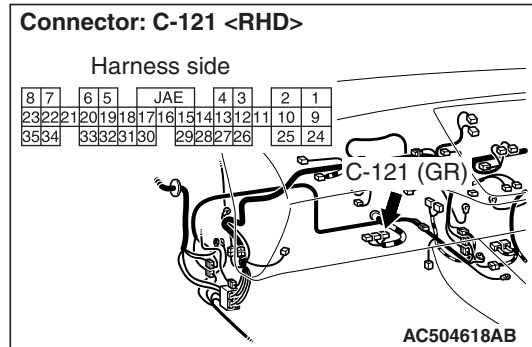
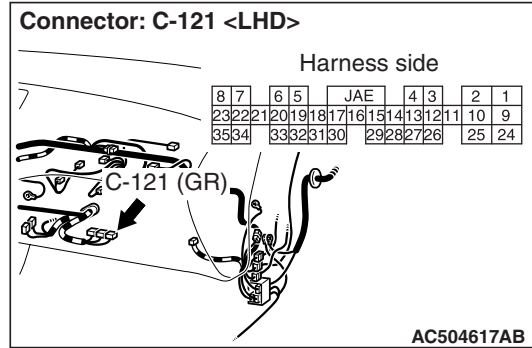
- Check the A/C compressor power supply line for open circuit.

Q: Is the check result normal?

YES : Go to Step 9.

NO : Repair the wiring harness.

STEP 9. Connector check: C-121 engine-ECU connector



Q: Is the check result normal?

YES : Go to Step 11.

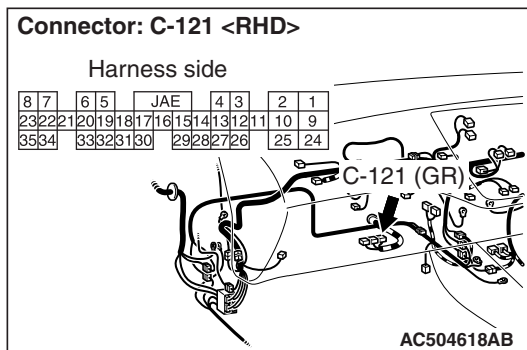
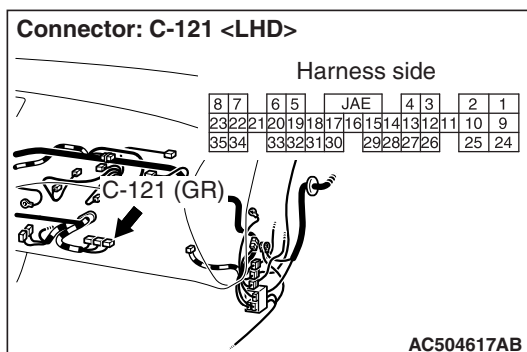
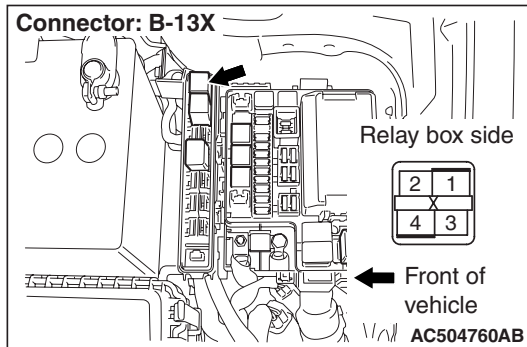
NO : Repair the connector.

STEP 11. Check the wiring harness between C-121 engine-ECU connector terminal No.20 and B-13X A/C compressor relay connector terminal No.3.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).

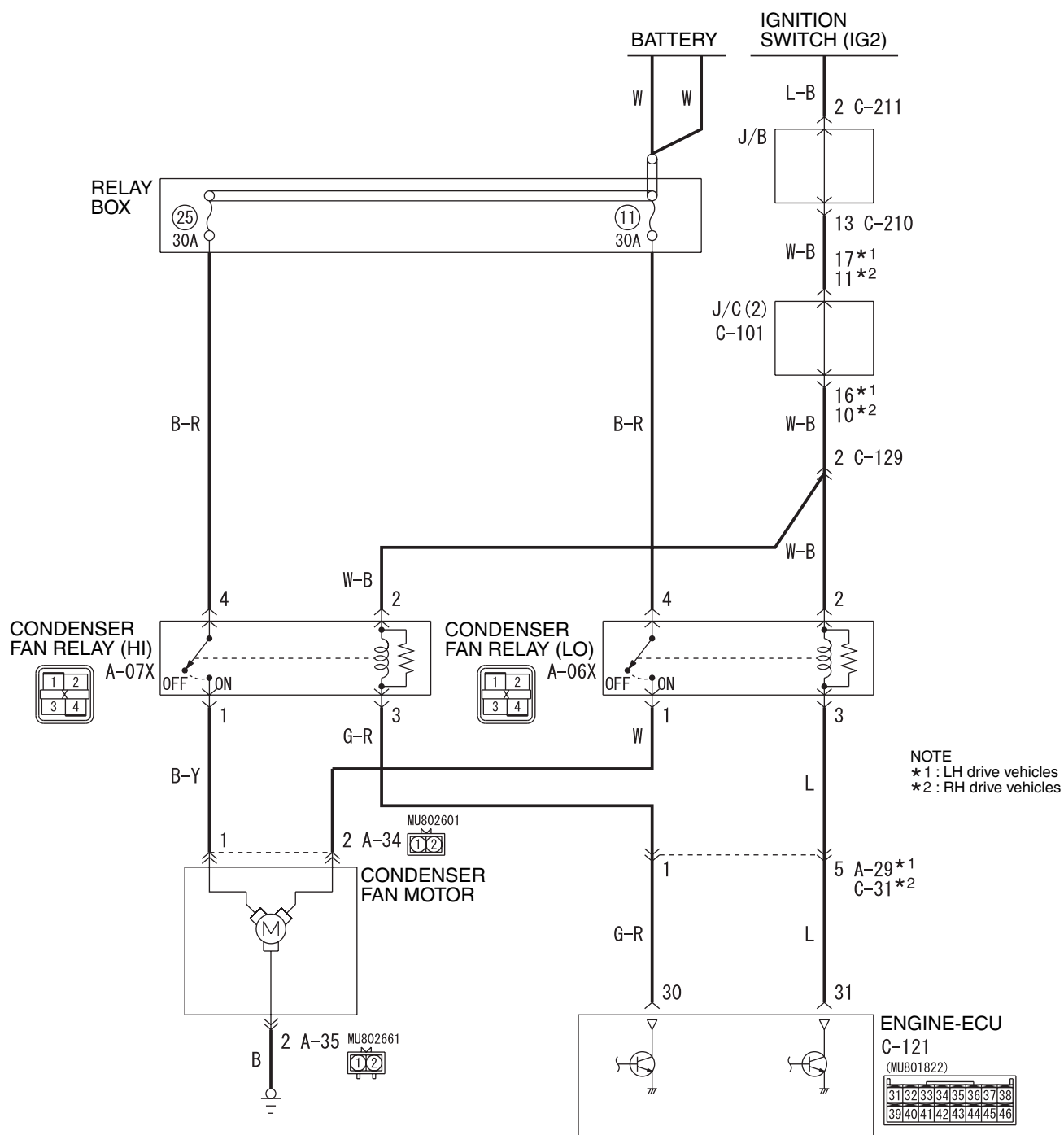
NO : Repair the wiring harness.



- Check the A/C compressor relay earth line for open or short circuit.

Inspection Procedure 11: Condenser Fan does not Operate.

Condenser Fan Motor Circuit



Wire colour code

B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
 BR : Brown O : Orange GR : Grey R : Red P : Pink V : Violet PU : Purple

CIRCUIT OPERATION

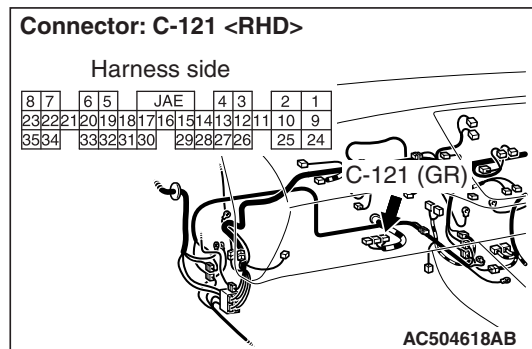
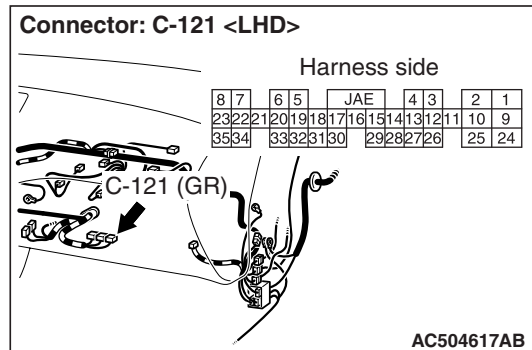
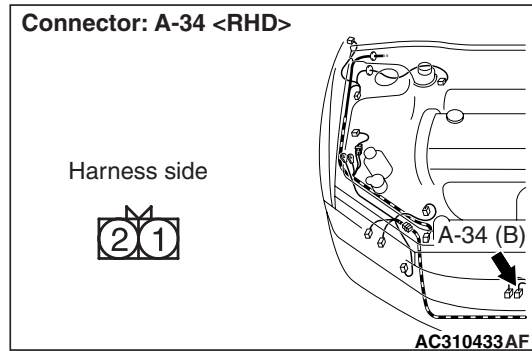
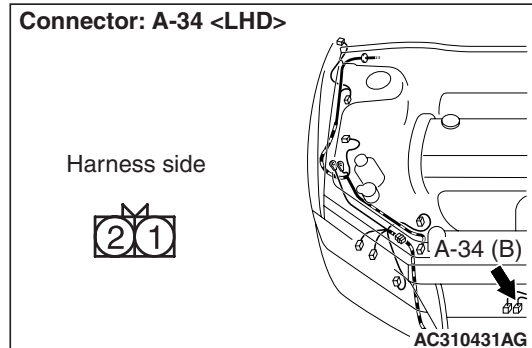
If the condenser fan motor does not operate, the condenser fan relay circuit system or the earth system of the condenser fan motor is suspected.

PROBABLE CAUSES

- Malfunction of the condenser fan relay (HI)
- Malfunction of the condenser fan relay (LO)
- Malfunction of the condenser fan motor
- Malfunction of the engine-ECU
- Damaged the wiring harness or connectors

DIAGNOSIS PROCEDURE

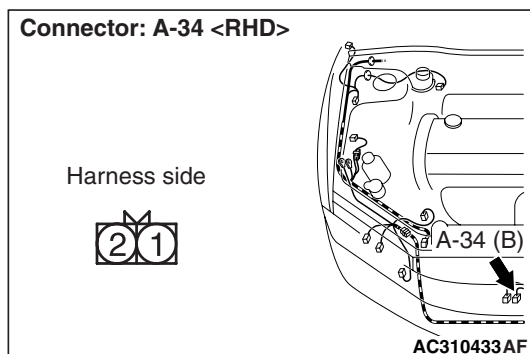
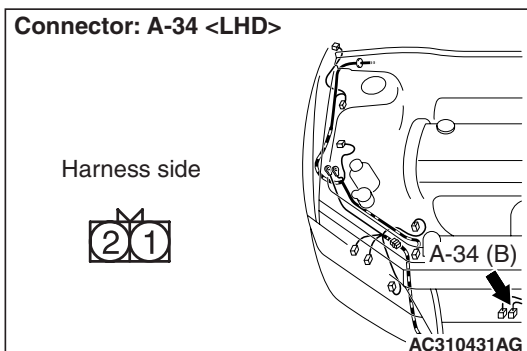
STEP 1. Connector check: A-34 condenser fan motor connector and C-121 engine-ECU connector



Q: Is the check result normal?

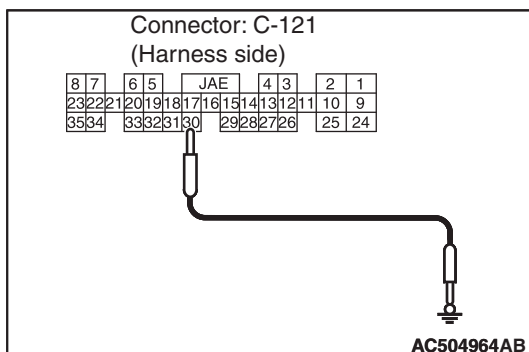
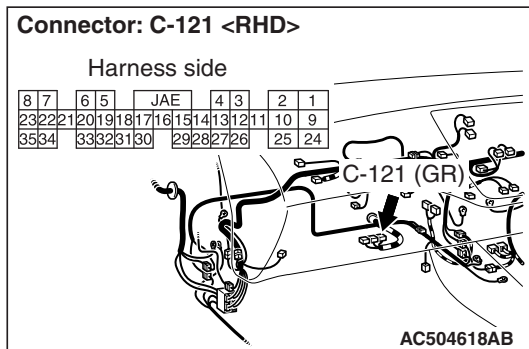
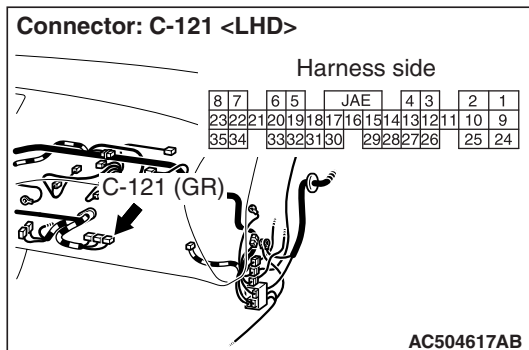
YES : Go to Step 2.

NO : Repair the connector.

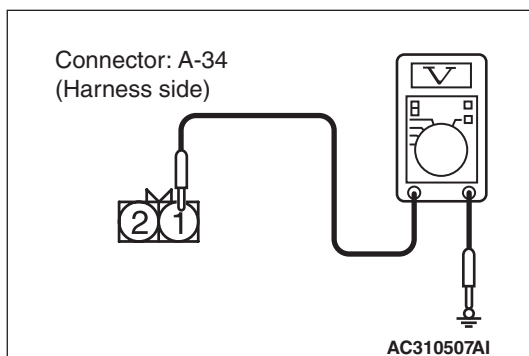
STEP 2. Voltage measurement at A-34 condenser fan motor connector.

- (1) Remove the relay, and measure at the relay box side.

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



- (3) Disconnect engine-ECU connector C-121, and earth terminal 30.



- (4) Measure the voltage between terminal 1 and body earth.

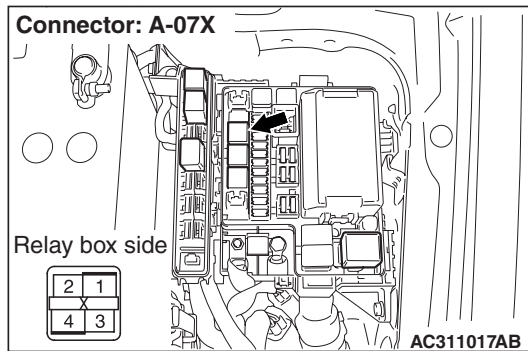
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 11.

NO : Go to Step 3.

STEP 3. Connector check: A-07X condenser fan relay (HI) connector



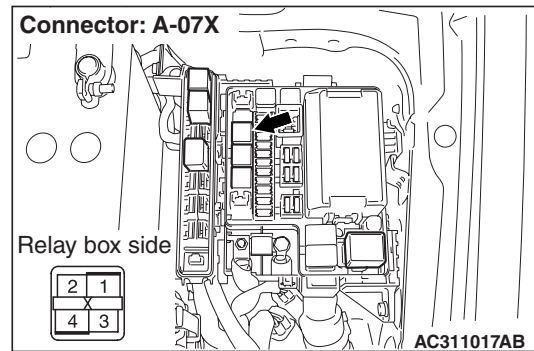
Q: Is the check result normal?
YES : Go to Step 4.
NO : Repair the connector.

STEP 4. Check the condenser fan relay (HI) continuity.

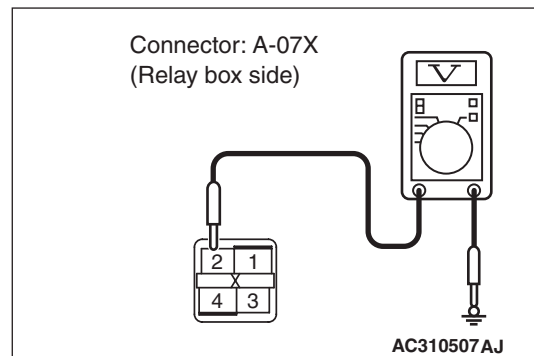
Refer to [P.55-107](#).

Q: Is the condenser fan relay (HI) in good condition?
YES : Go to Step 5.
NO : Replace the condenser fan relay (HI).

STEP 5. Voltage measurement at A-07X condenser fan relay (HI) connector.



- (1) Remove the relay, and measure at the relay box side.
- (2) Turn the ignition switch to the "ON" position.

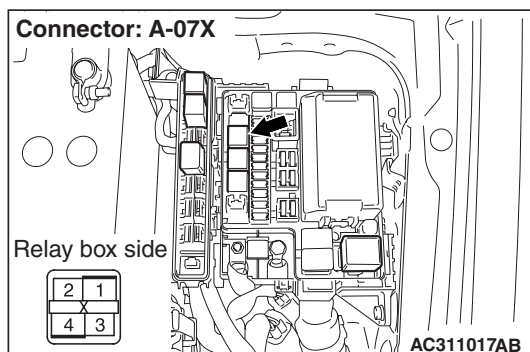


- (3) Measure the voltage between terminal 2 and body earth.

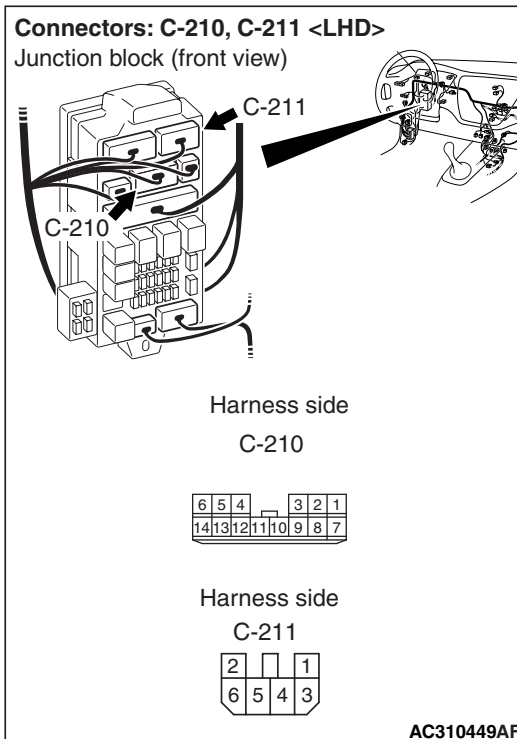
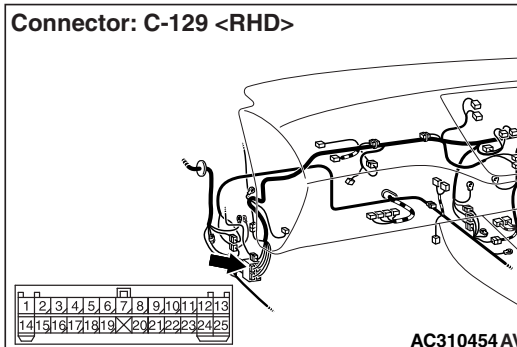
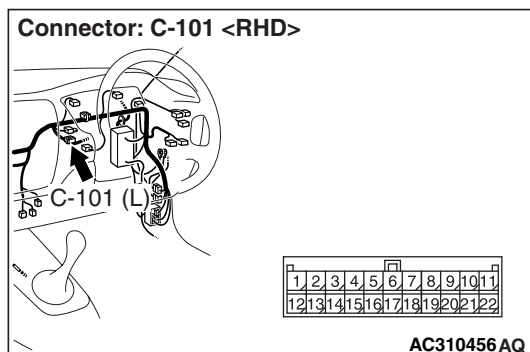
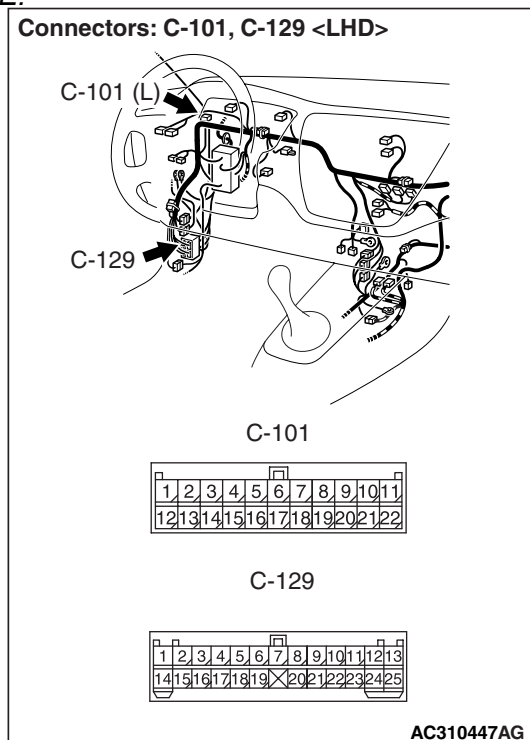
OK: System voltage

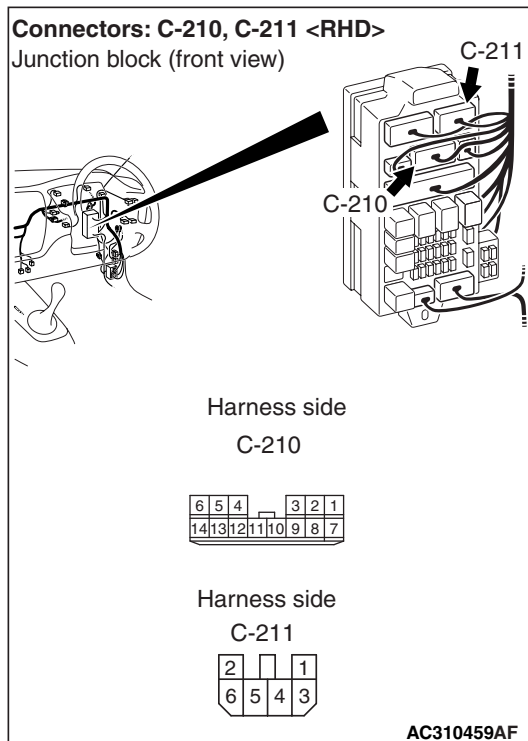
Q: Is the check result normal?
YES : Go to Step 7.
NO : Go to Step 6.

STEP 6. Check the wiring harness between A-07X condenser fan relay (HI) connector terminal No.2 and the ignition switch (IG2).



NOTE:





Prior to the wiring harness inspection, check intermediate connector C-129, joint connector C-101, junction block connectors C-210 and C-211, and repair if necessary.

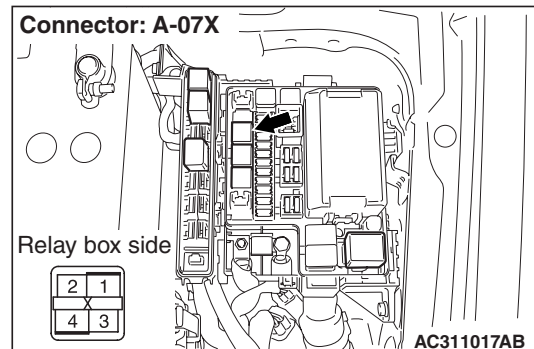
- Check the condenser fan relay (HI) power supply line for open circuit.

Q: Is the check result normal?

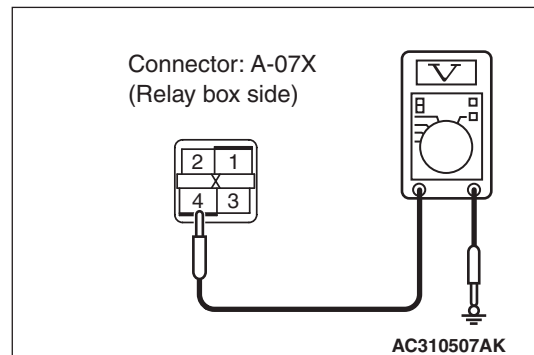
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).

NO : Repair the wiring harness.

STEP 7. Voltage measurement at A-07X condenser fan relay (HI) connector.



- (1) Remove the relay, and measure at the relay box side.



- (2) Measure the voltage between terminal 4 and body earth.

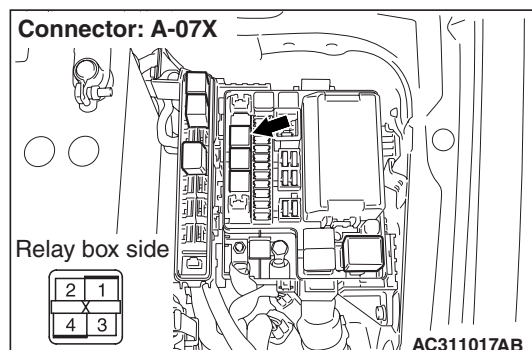
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 9.

NO : Go to Step 8.

STEP 8. Check the wiring harness between A-07X condenser fan relay (HI) connector terminal No.4 and the battery.



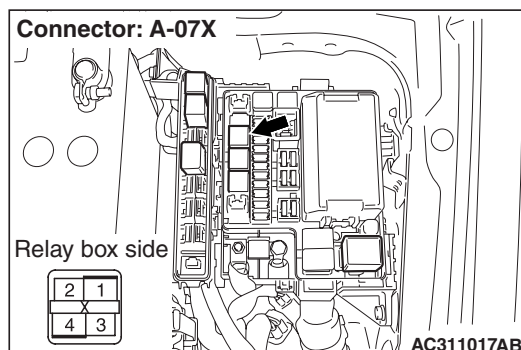
- Check the condenser fan relay (HI) power supply line for open circuit.

Q: Is the check result normal?

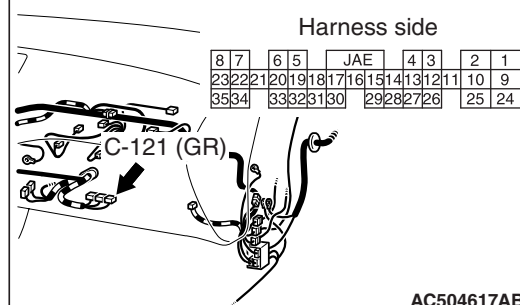
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).

NO : Repair the wiring harness.

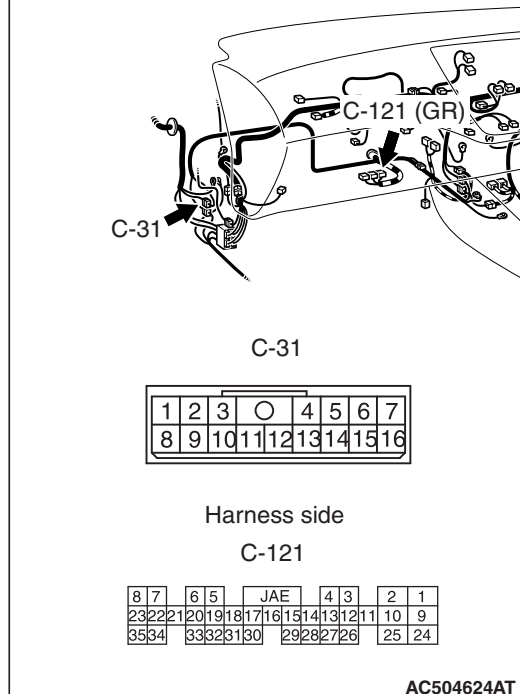
STEP 9. Check the wiring harness between A-07X condenser fan relay (HI) connector terminal No.3 and C-121 engine-ECU connector terminal No.30.



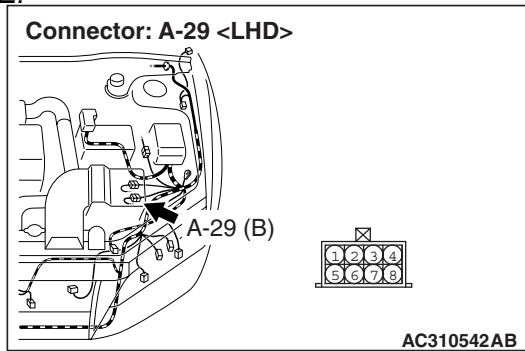
Connector: C-121 <LHD>



Connectors: C-31, C-121 <RHD>



NOTE:



Prior to the wiring harness inspection, check intermediate connector A-29 <LHD> or C-31 <RHD>, and repair if necessary.

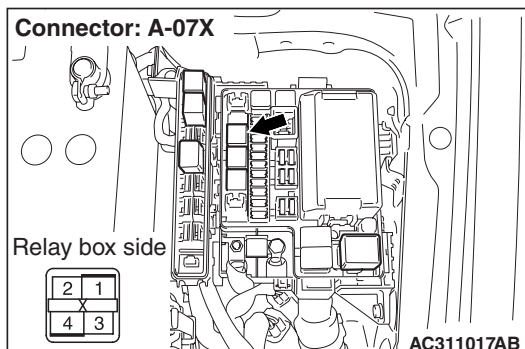
- Check the condenser fan relay (HI) earth line for open or short circuit.

Q: Is the check result normal?

YES : Go to Step 10.

NO : Repair the wiring harness.

STEP 10. Check the wiring harness between A-07X condenser fan relay (HI) connector terminal No.1 and A-34 condenser fan motor connector terminal No.1.



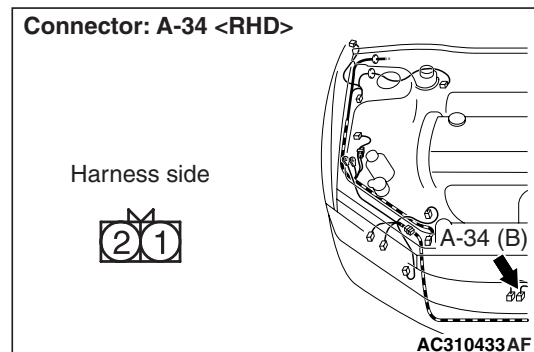
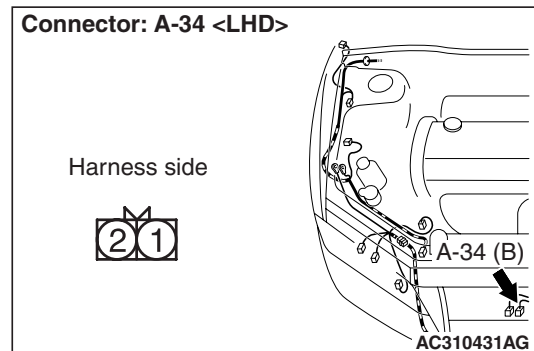
- Check the condenser fan motor power supply line for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).

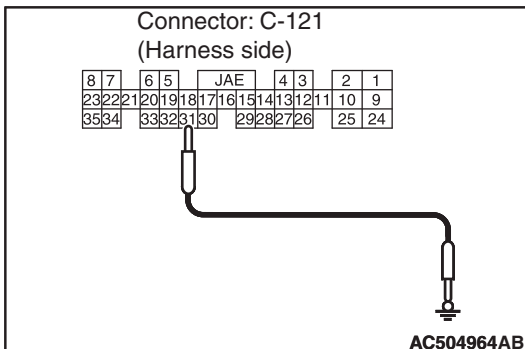
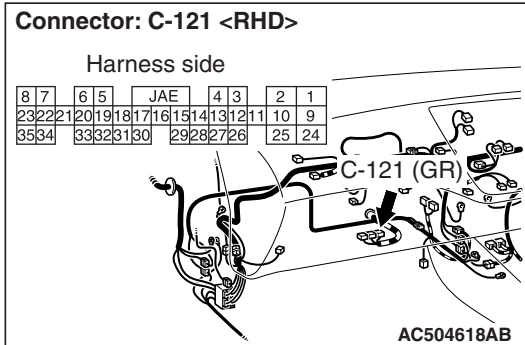
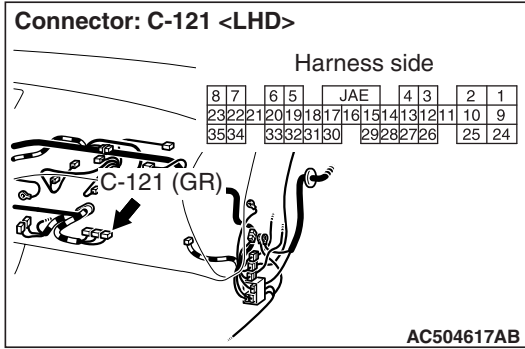
NO : Repair the wiring harness.

STEP 11. Voltage measurement at A-34 condenser fan motor connector.

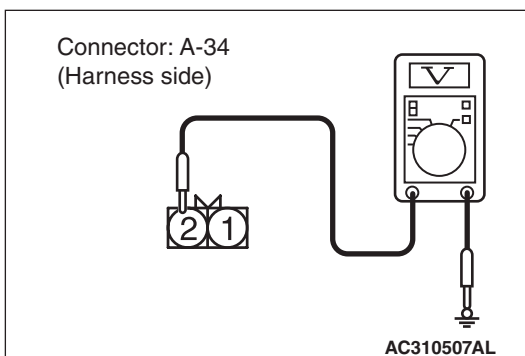


(1) Remove the relay, and measure at the relay box side.

(2) Turn the ignition switch to the "ON" position.



(3) Disconnect engine-ECU connector C-121, and earth terminal 31.



(4) Measure the voltage between terminal 2 and body earth.

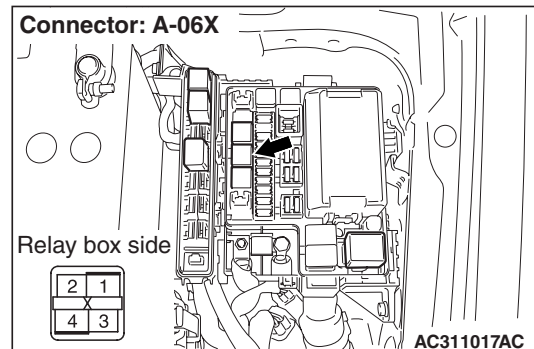
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 20.

NO : Go to Step 12.

STEP 12. Connector check: A-06X condenser fan relay (LO) connector



Q: Is the check result normal?

YES : Go to Step 13.

NO : Repair the connector.

STEP 13. Check the condenser fan relay (LO) continuity.

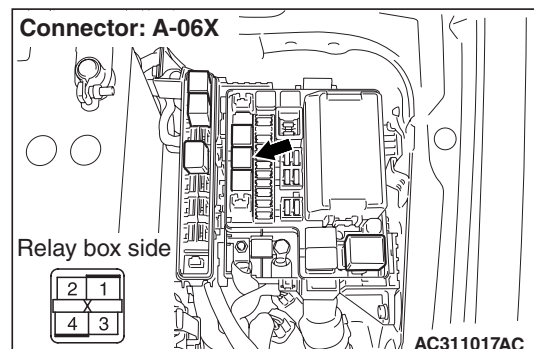
Refer to P.55-107.

Q: Is the condenser fan relay (LO) in good condition?

YES : Go to Step 14.

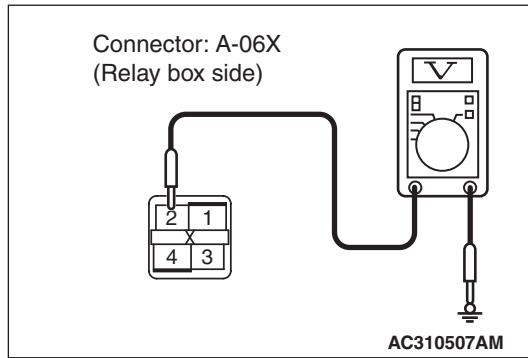
NO : Replace the condenser fan relay (LO).

STEP 14. Voltage measurement at A-06X condenser fan relay (LO) connector.



(1) Remove the relay, and measure at the relay box side.

(2) Turn the ignition switch to the "ON" position.



(3) Measure the voltage between terminal 2 and body earth.

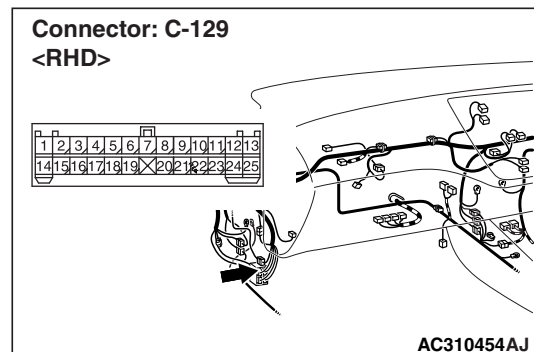
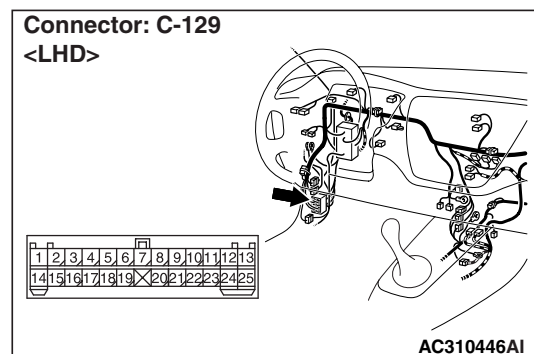
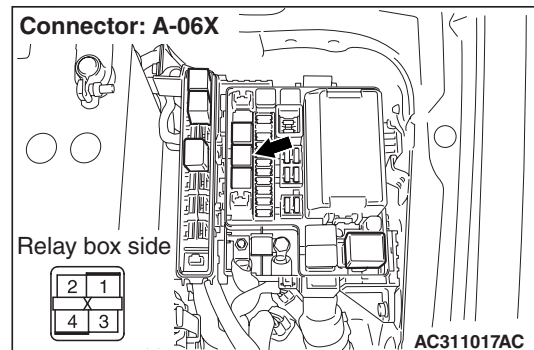
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 16.

NO : Go to Step 15.

STEP 15. Check the wiring harness between A-06X condenser fan relay (LO) connector terminal No.2 and C-129 intermediate connector terminal No.2.

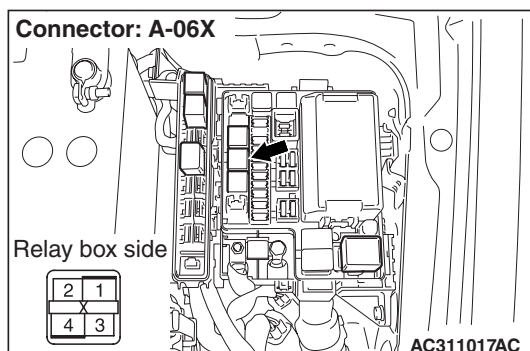


- Check the condenser fan relay (LO) power supply line for open circuit.

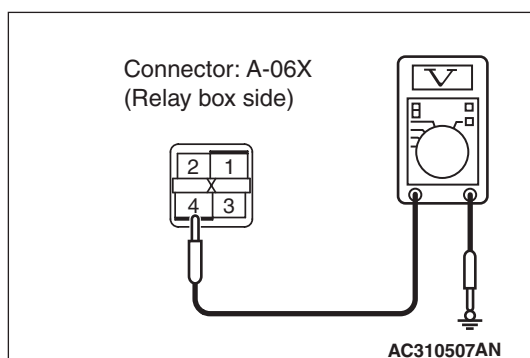
Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).

NO : Repair the wiring harness.

STEP 16. Voltage measurement at A-06X condenser fan relay (LO) connector.

(1) Remove the relay, and measure at the relay box side.



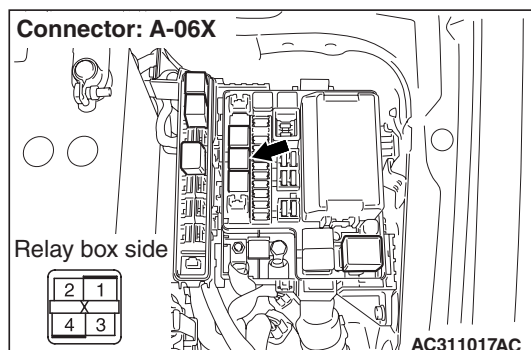
(2) Measure the voltage between terminal 4 and body earth.

OK: System voltage

Q: Is the check result normal?

YES : Go to Step 18.

NO : Go to Step 17.

STEP 17. Check the wiring harness between A-06X condenser fan relay (LO) connector terminal No.4 and the battery.

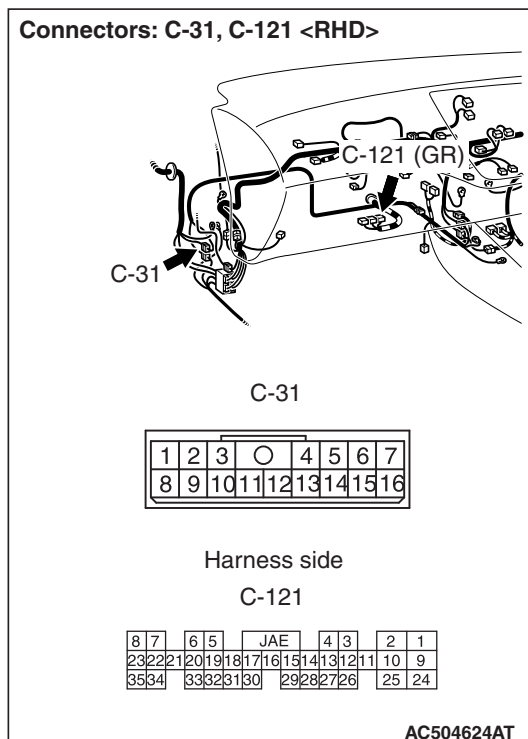
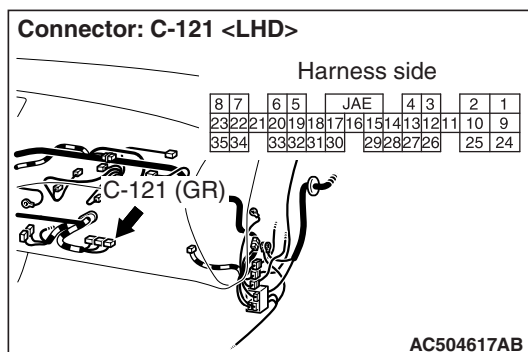
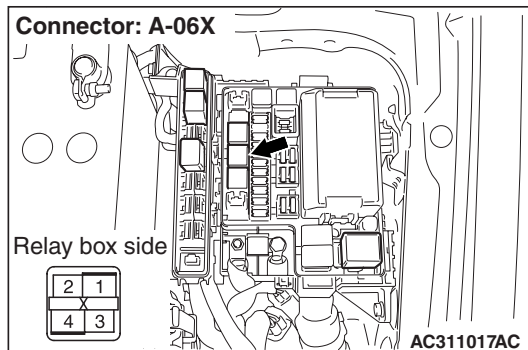
- Check the condenser fan relay (HI) power supply line for open circuit.

Q: Is the check result normal?

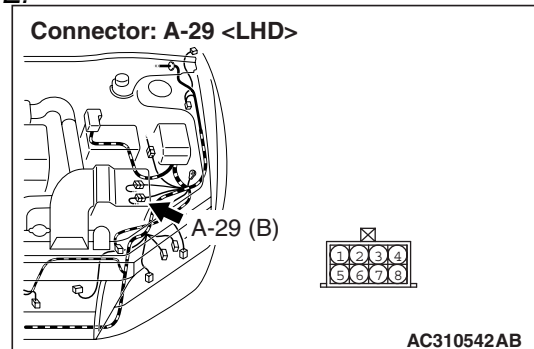
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).

NO : Repair the wiring harness.

STEP 18. Check the wiring harness between A-06X condenser fan relay (LO) connector terminal No.3 and C-121 engine-ECU connector terminal No.31.



NOTE:



Prior to the wiring harness inspection, check intermediate connector A-29 <LHD> or C-31 <RHD>, and repair if necessary.

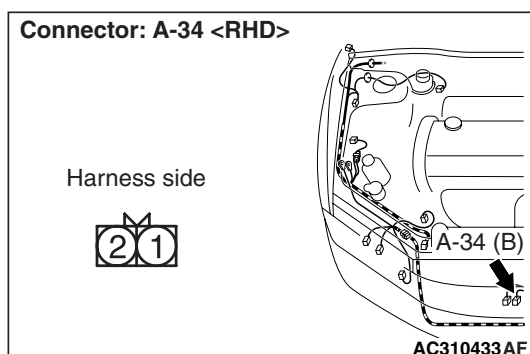
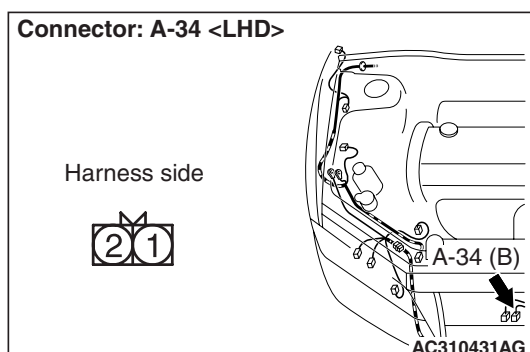
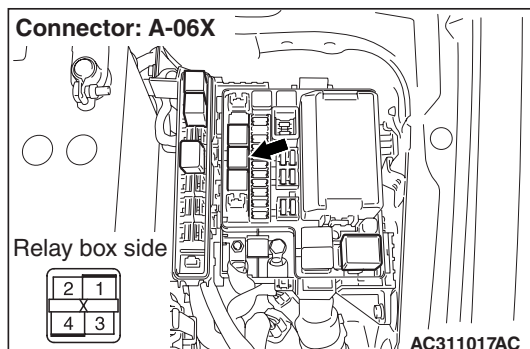
- Check the condenser fan relay (HI) earth line for open or short circuit.

Q: Is the check result normal?

YES : Go to Step 19.

NO : Repair the wiring harness.

STEP 19. Check the wiring harness between A-06X condenser fan relay (LO) connector terminal No.1 and A-34 condenser fan motor connector terminal No.2.



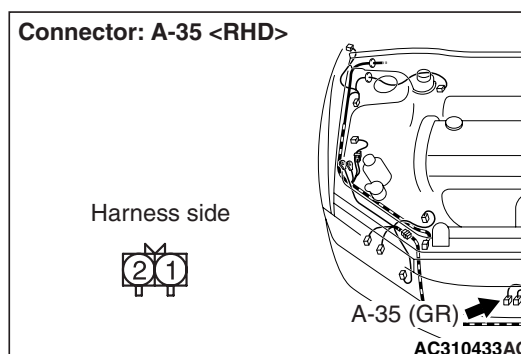
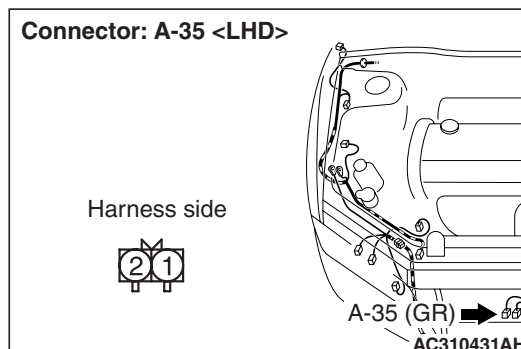
- Check the condenser fan motor power supply line for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).

NO : Repair the wiring harness.

STEP 20. Connector check: A-35 condenser fan motor connector

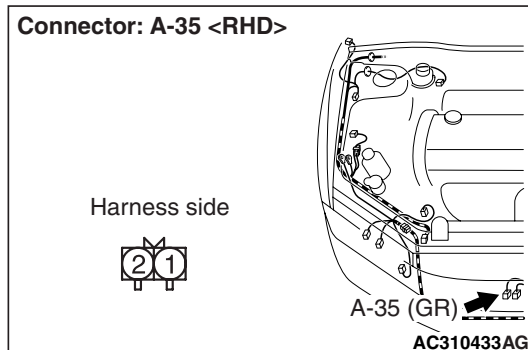
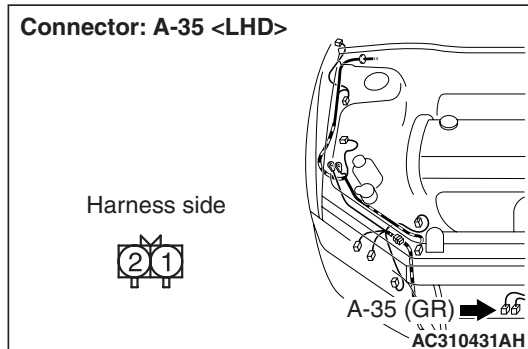


Q: Is the check result normal?

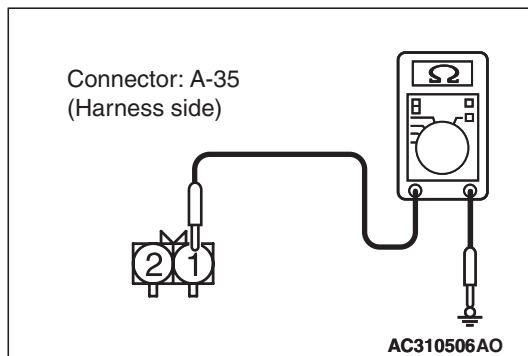
YES : Go to Step 21.

NO : Repair the connector.

STEP 21. Resistance measurement at A-35 condenser fan motor connector.



- (1) Disconnect the connector, and measure at the wiring harness side.



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

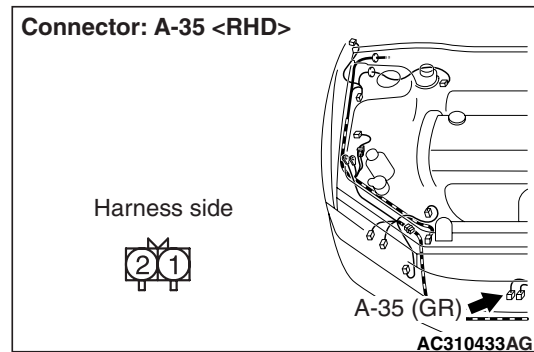
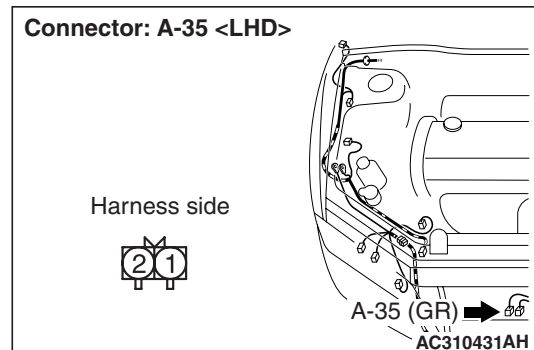
OK: 2 ohms or less

Q: Is the check result normal?

YES : Replace the engine-ECU.

NO : Go to Step 22.

STEP 22. Check the wiring harness between A-35 condenser fan motor connector terminal No.1 and earth.



- Check the condenser fan motor earth line for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-5](#)).

NO : Repair the wiring harness.

DATA LIST REFERENCE TABLE

M1554005100341

Item No.	Check items	Inspection conditions	Normal condition
11	Interior temperature sensor	Turn the ignition switch to the ON position.	Room temperature is the same as M.U.T.-II/III displayed temperature.
13	Outside thermo sensor	Turn the ignition switch to the ON position.	Outside temperature is the same as M.U.T.-II/III displayed temperature.
15	Heater water temperature sensor	Turn the ignition switch to the ON position.	Heater core wall surface temperature is the same as M.U.T.-II/III displayed temperature.
21	Air thermo sensor	Turn the ignition switch to the ON position.	Evaporator outlet temperate is the same as M.U.T.-II/III displayed temperature
25	Photo sensor	• Turn the ignition switch to the ON position. • Change the volume of insolation.	The volume of insolation takes inverse proportion with the M.U.T.-II/III displayed voltage.
31	Air mixing damper control motor and potentiometer	• Turn the ignition switch to the ON position. • Door position: MAX HOT	Opening angle: approximately 100%
		• Turn the ignition switch to the ON position. • Door position: MAX COOL	Opening angle: approximately 0%
32	Mode selection damper control motor and potentiometer	• Turn the ignition switch to the ON position. • Damper position: FACE	Opening angle: approximately 0%
		• Turn the ignition switch to the ON position. • Damper position: FOOT	Opening angle: approximately 60%
		• Turn the ignition switch to the ON position. • Damper position: FOOT/DEF	Opening angle: approximately 80%
		• Turn the ignition switch to the ON position. • Damper position: DEF	Opening angle: approximately 100%
42	A/C pressure sensor	Turn the ignition switch to the ON position.	A/C refrigerant pressure is the same as M.U.T.-II/III displayed pressure.

ACTUATOR TEST TABLE

M1554005200315

Item No.	Check items	Drive content
01	Blower motor	Stop
02		Low speed
03		Middle speed
04		High speed
05	Air mixing damper control motor	Open angle: Approximately 0% (MAX COOL)
06		Opening angle: approximately 50%
07		Open angle: Approximately 100% (MAX HOT)
08	Mode selection damper control motor	FACE
09		FOOT
10		DEF
11	Compressor output	OFF
12		ON
13	Outside/inside air selection damper control motor	Outside air
14		Inside air
38	Idle-up	OFF (A/C high pressure)
39		ON (A/C low pressure)

CHECK AT ENGINE-A/T ECU TERMINALS

M1554005400289

<C-121>

1	2	3	4	JAE	5	6	7	8
9	10	11	12	13	14	15	16	17
18	19	20	21	22	23	24	25	26
27	28	29	30	31	32	33	34	35

<C-119>

41	42	43	44	JAE	45	46	47
48	49	50	51	52	53	54	55
56	57	58	59	60	61	62	63
64	65	66	67	68			

<C-117>

71	72	73	74	JAE	75	76	77
78	79	80	81	82	83	84	85
86	87	88	89	90	91	92	93
94	95	96	97	98	99	100	

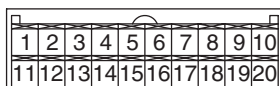
AC504605AB

Terminal No.	Check items	Check conditions	Normal conditions
20	Output to A/C compressor	A/C compressor relay: OFF	System voltage
		A/C compressor relay: ON	0 V
30	Condenser fan motor relay (HI)	Fan inactive state (Engine coolant temperature: 90°C or less)	System voltage
		Fan high-speed rotation state (Engine coolant temperature: 105°C or less)	1 V or less
31	Condenser fan motor relay (LOW)	Fan inactive state (Engine coolant temperature: 90°C or less)	System voltage
		Fan low-speed rotation state (Engine coolant temperature: 95 – 100°C or less)	1 V or less
83	Input from A/C-ECU (A/C1)	When the A/C is in operation (When the air thermo sensor detects 3°C or more).	System voltage
65	Input from A/C-ECU (A/C2)	When the A/C is under low load	System voltage

CHECK AT A/C-ECU TERMINALS

M1554005400290

<C-36>



<C-37>



AC300196AC

Terminal No.	Check items	Check conditions	Normal conditions
1	Interior temperature sensor	Sensor temperature: 25°C (4kΩ)	2.1 – 2.7V
2	Output to blower pulse controller	When the blower is operating.	0 – 2.5V (Effective alternating voltage)
3	Back-up power supply	Always	System voltage
4	Input from heater water temperature sensor	Sensor temperature: 25°C (4kΩ)	2.1 – 2.7V
5	Input from air mixing damper control motor potentiometer	When the damper flaps is moving to the MAX HOT position.	4.1 – 4.6 V
6	Input from mode selection damper control motor potentiometer	When the damper is moved to the DEF position.	4.1 – 4.6 V
7	Input from the outside thermo sensor	Sensor temperature: 25°C (4kΩ)	2.1 – 2.7 V
8	Input from the air thermo sensor	Sensor temperature: 25°C (4kΩ)	2.1 – 2.7 V
9	Photo sensor (-)	Brightness is 0 lux	4.9 – 5.1 V
		Brightness is 100,000 lux or more	Approximately 0 V
10	Potentiometer power supply	Always	5 V
11	Input from the A/C pressure sensor	2.6 MPa	3.9 V
12 – 15	-	-	-
16	Rear defogger	When the rear defogger is operating.	2.0 V or less
		When the rear defogger is stopped	System voltage
17	Diagnosis set	Ignition switch: ON	A voltmeter needle fluctuates between 0 and 12 V.
18	Input from diagnosis	Ignition switch: ON	Approximately 5 V
19	Photo sensor (+)	Always	0 V
20	Sensors and potentiometers earth	Always	0 V
21	Air outlet changeover damper motor (FACE)	When the damper is moved to the FACE position.	10 V
		When the damper is moved to the DEF position.	Faint voltage (0.5 V)
22	Air mix damper motor (MAX COOL)	When the damper flaps is moving to the MAX COOL position.	10 V
		When the damper flaps is moving to the MAX HOT position.	Faint voltage (0.5 V)

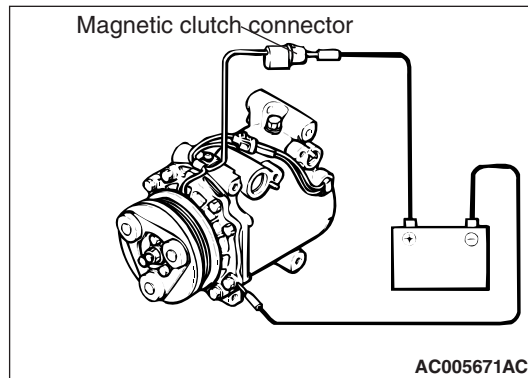
Terminal No.	Check items	Check conditions	Normal conditions
23	Outside/inside air selection damper control motor (outside)	When the damper is moved to the inside air recirculation position	10 V (When the motor is stopped)
		When the damper is moved to the outside air inside air intake position	2.0 V or less
24	Mode selection damper control motor and potentiometer (DEF)	When the damper is moved to the FACE position.	Faint voltage (0.5 V)
		When the damper is moved to the DEF position.	10 V
25	Air mixing damper control motor and potentiometer (MAX HOT)	When the damper flaps is moving to the MAX COOL position.	Faint voltage (0.5 V)
		When the damper flaps is moving to the MAX HOT position.	10 V
26	outside/inside air selection damper control motor (inside)	When the damper is moved to the inside air recirculation position	2.0 V or less
		When the damper is moved to the outside air inside air intake position	10 V (When the motor is stopped)
27	Earth	Always	Continuity exists.
28	IG2 power supply	Ignition switch: ON	System voltage
29	Illumination earth	Always	Continuity exists.
30	ILL power supply	Lighting switch: ON	System voltage
31	-	-	-
32	Input from the engine-A/T-ECU (A/C2)	When the A/C is under low load	System voltage
33	Input from the compressor relay	Compressor: ON	System voltage
34	Input from the engine-A/T-ECU (A/C1)	When the A/C is stopped	0 V
		When the A/C is operating (When the compressor is operating)	System voltage
35	-	-	-
36	ACC power supply	Ignition switch: ACC	System voltage

ON-VEHICLE SERVICE

MAGNETIC CLUTCH TEST

M1552008500483

1. Disconnect the magnetic clutch connector to the magnetic clutch.



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

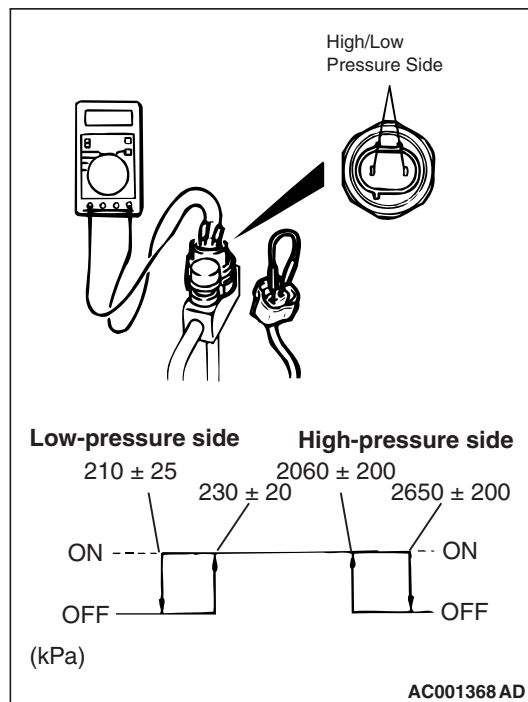
COMPRESSOR DRIVE BELT
ADJUSTMENT

M1552001000409

Refer to GROUP 11A, On-vehicle Service – Drive Belt Tension Check [P.11A-7](#).

DUAL PRESSURE SWITCH CHECK

M1552010400375



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.55-128](#), [P.55-129](#)).
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.

CHARGING AND DISCHARGING

M1552022200044

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

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

REFILLING OF OIL IN THE A/C SYSTEM

M1552020000066

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 120 mL of compressor 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 mL

Condenser: 15 mL

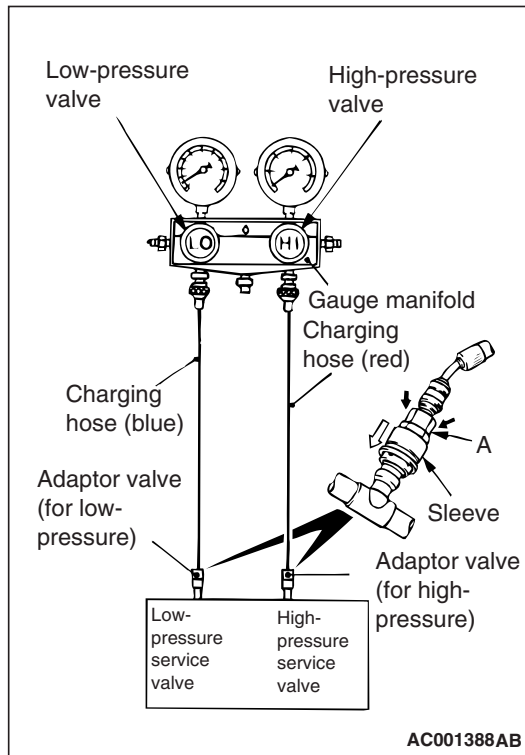
Flexible suction hose: 10 mL

Receiver: 10 mL

PERFORMANCE TEST

M1552001400429

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.

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.
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).

PERFORMANCE TEMPERATURE CHART

Garage ambient temperature °C	20	25	30	35
Discharge air temperature °C	8.0 – 11.0	12.0 – 16.0	17.0 – 21.0	22.5 – 27.5
Compressor high pressure kPa	740 – 840	950 – 1,050	1,160 – 1,300	1,360 – 1,550
Compressor low pressure kPa	150 – 190	190 – 240	240 – 300	300 – 375

**REFRIGERANT LEAK REPAIR
PROCEDURE**

M1552001500385

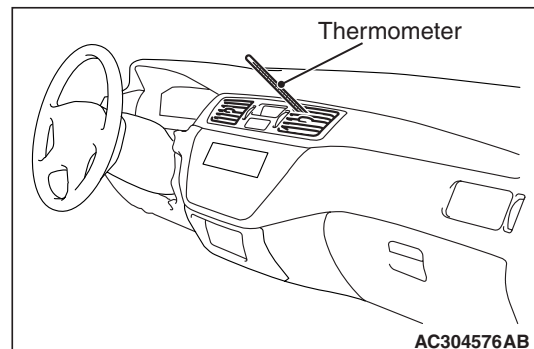
LOST CHARGE

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

1. Evacuate the system (Refer to [P.55-104](#)).

NOTE: The high-pressure service valve is on the A/C pipe 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" (Fast) position
8. Keep engine speed to idling speed with A/C clutch engaged.
9. Engine should be warmed up with doors and all windows opened.



10. Insert a thermometer in the centre 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.

2. Charge the system with approximately 480 – 520 g 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 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

M1552008700379

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 alternator).

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.

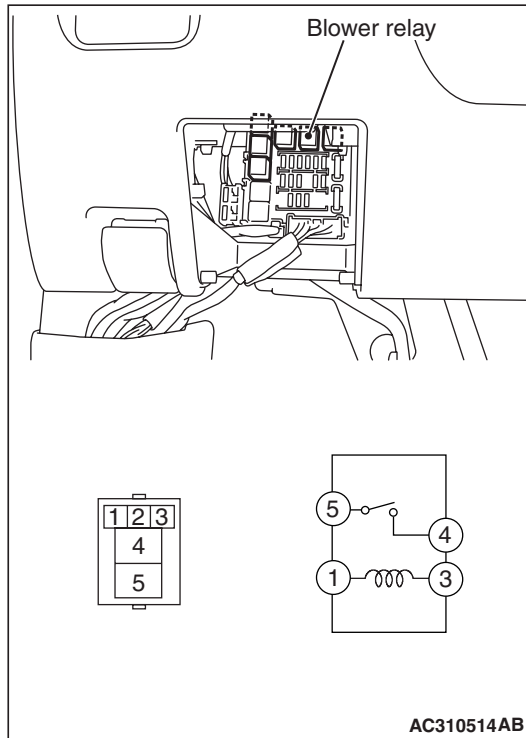
ADJUSTMENT

1. Select a quiet area for testing. Duplicate conditions as much as possible. Switch the compressor on and off several times to clearly identify compressor noise. To duplicate high ambient conditions (high head pressure), restrict air flow through the condenser. Install a manifold gauge set to make sure discharge pressure doesn't exceed 2,070 kPa.
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.55-104](#)).
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.

POWER RELAY CHECK

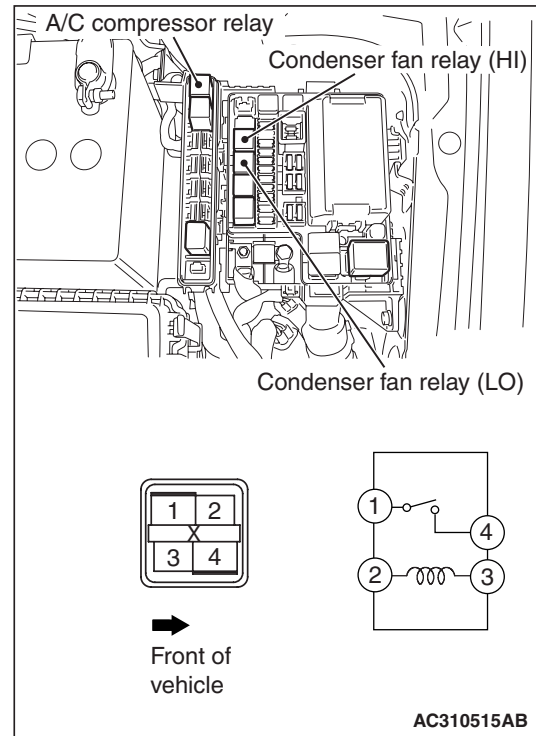
BLOWER RELAY CONTINUITY CHECK

M1552008800428



Battery voltage	Tester connection	Specified condition
Not applied	4 – 5	Open circuit
- Connect terminal 3 to the positive battery terminal - Connect terminal 1 to the negative battery terminal	4 – 5	Less than 2 ohms

A/C COMPRESSOR RELAY, CONDENSER FAN RELAY (LO) AND (HI) CONTINUITY CHECK



Battery voltage	Tester connection	Specified condition
Not applied	1 – 4	Open circuit
- Connect terminal 2 to the positive battery terminal - Connect terminal 3 to the negative battery terminal	1 – 4	Less than 2 ohms

IDLE-UP OPERATION CHECK

- Before inspection and adjustment, set vehicle in the following condition:
 - Engine coolant temperature: 80 – 90 °C
 - Lamps, electric cooling fan and accessories: Set to OFF
 - Transmission: Neutral
 - Steering wheel: Straightforward
- Check whether or not the idle speed is the standard value. Refer to GROUP 13A, On-vehicle Service – Basic Idle Speed Adjustment [P.13A-396](#).

Standard value: 850 ± 50 r/min

M1552001600683

- 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 up speed is at the standard value.

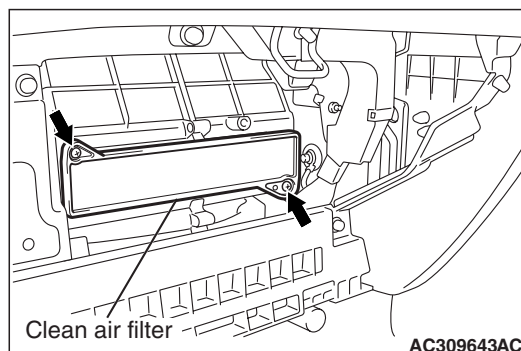
Standard value: 850 ± 50 r/min

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.

**CLEAN AIR FILTER REPLACEMENT
PROCEDURE**

M1552020100096

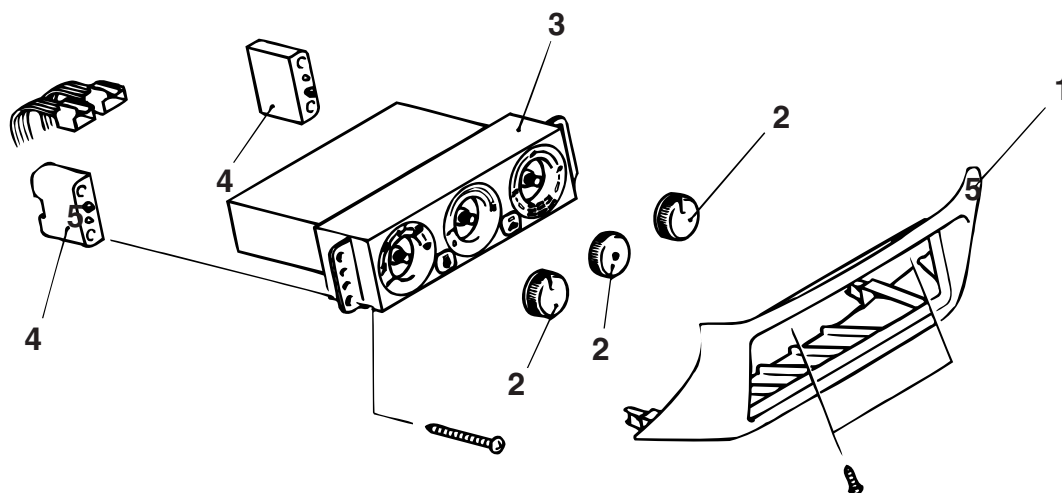
1. Remove the glove box (Refer to GROUP 52A, Instrument Panel [P.52A-2](#)).



2. Remove the two screws as shown, and replace the clean air filter.
3. Install the glove box.

**HEATER CONTROL ASSEMBLY AND A/C SWITCH
REMOVAL AND INSTALLATION**

M1552002400659

AY0555AU
AC504841AB**Removal steps**

1. Centre lower case (Refer to GROUP 52A, Instrument panel assembly [P.52A-2](#))
2. Knob

Removal steps (Continued)

3. Automatic A/C control panel (A/C-ECU)
4. Bracket

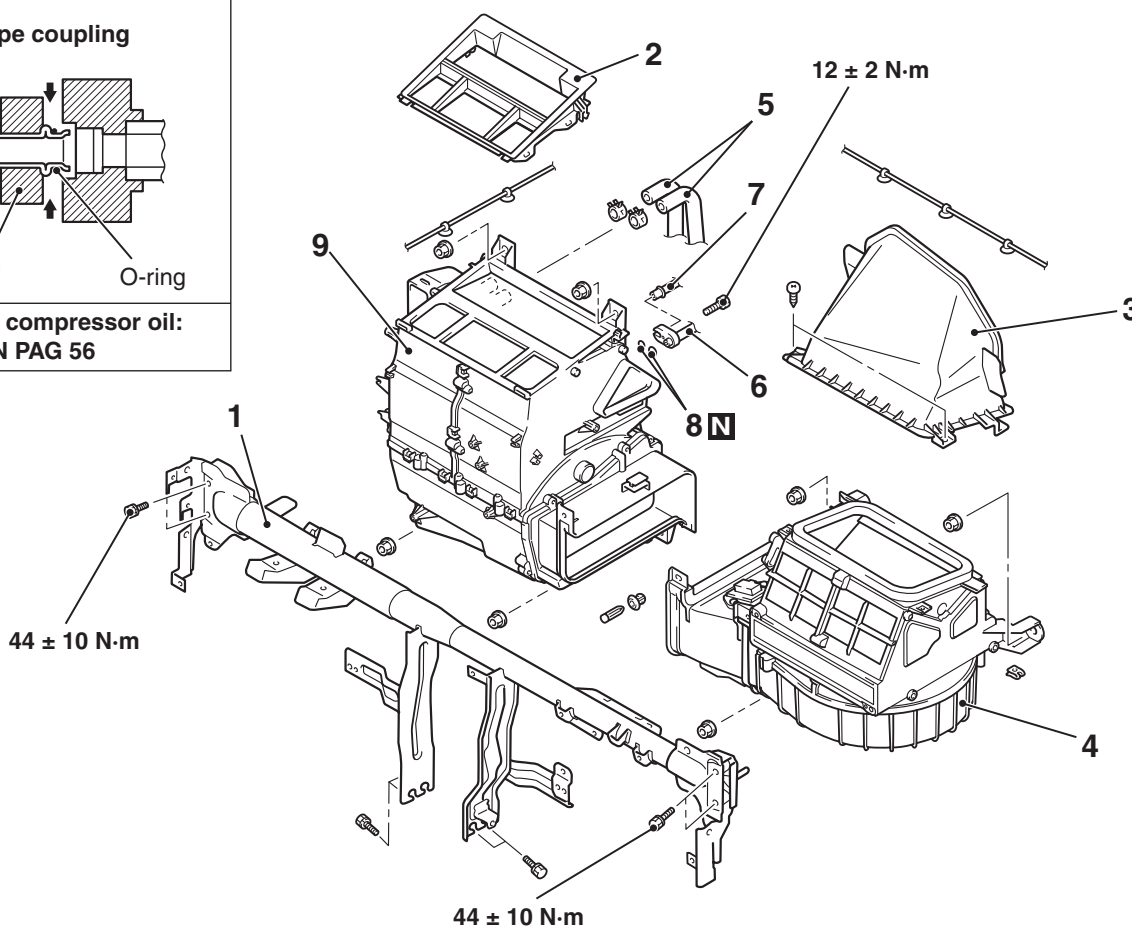
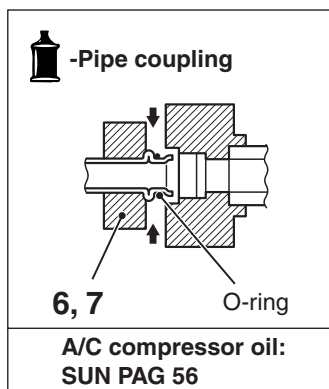
HEATER UNIT, HEATER CORE, BLOWER ASSEMBLY AND EVAPORATOR UNIT

REMOVAL AND INSTALLATION

M1552011600521

Pre-removal and Post-installation Operation

- Refrigerant draining and Refilling (Refer to Charging and Discharging P.55-104).
- Engine coolant Draining and Refilling (Refer to GROUP 14, On vehicles service P.14-15).
- Instrument Panel Removal and Installation (Refer to GROUP 52A, Instrument Panel P.52A-2).
- Air cleaner cover and air flow sensor assembly Removal and Installation (Refer to GROUP 15, Air cleaner P.15-5).
- Rear console assembly Removal and Installation (Refer to GROUP 52A, Rear console assembly P.52A-8).
- Front floor console assembly Removal and Installation (Refer to GROUP 52A, Front floor console assembly P.52A-7).
- Front seat assembly Removal and Installation (Refer to GROUP 52A, Front seat assembly P.52A-18).



AC304861AC

Removal steps

1. Front deck crossmember
 2. Centre duct
 3. Intake duct
 - Foot duct (RH), Rear heater duct A (RH) upper side (Refer to P.55-130).
- <<A>> <<A>>

Removal steps (Continued)

4. Blower assembly
5. Heater hose connection
6. Flexible suction hose connection
7. Liquid pipe B connection
8. O-ring
9. Heater unit

REMOVAL SERVICE POINT

<<A>> FLEXIBLE SUCTION HOSE/LIQUID
PIPE B DISCONNECTION**CAUTION**

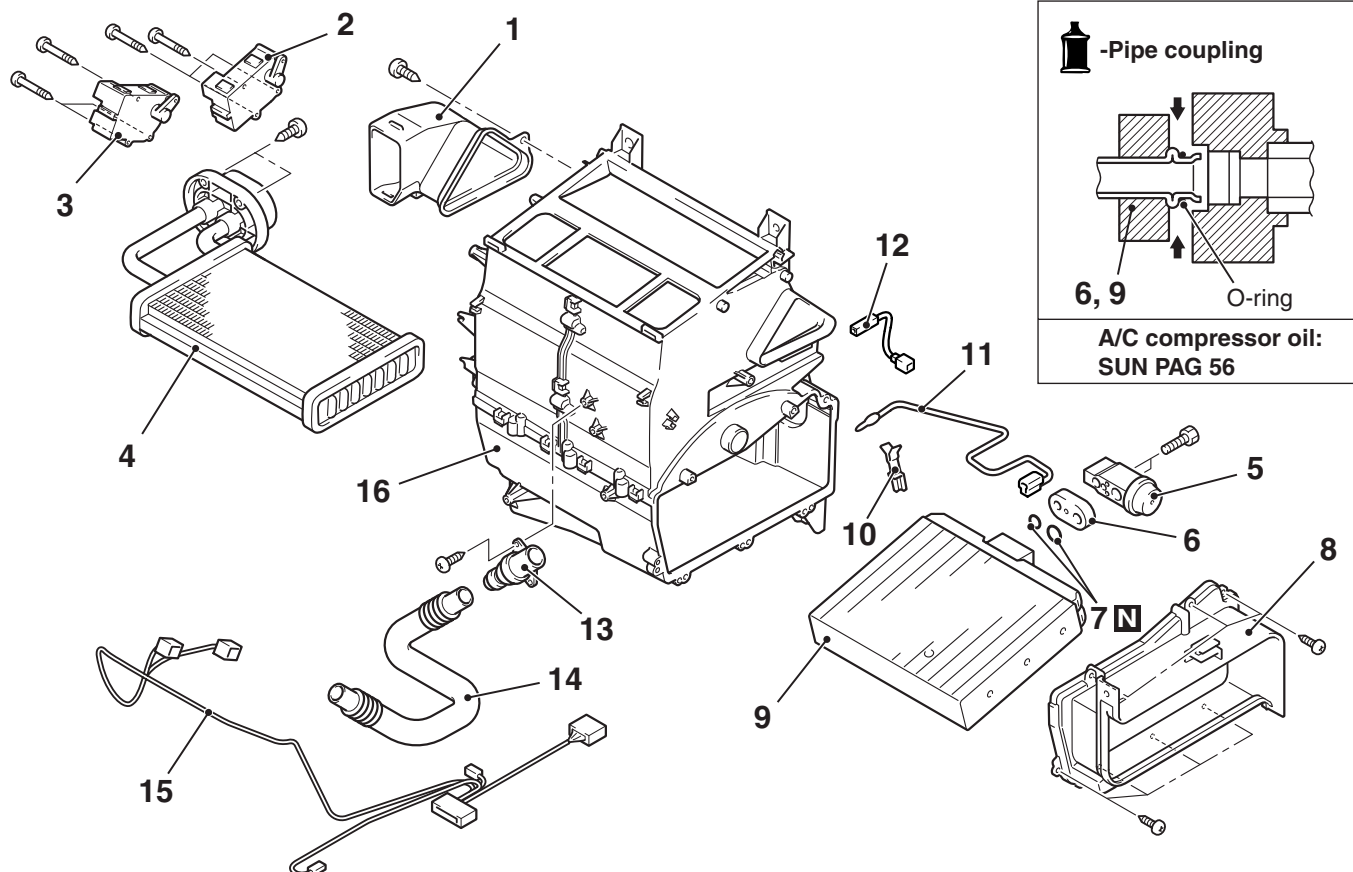
As the compressor oil and receiver are highly moisture absorbent, use a non-porous material to plug the hose and nipples.

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

HEATER UNIT

DISASSEMBLY AND REASSEMBLY
<LHD>

M1551005400503



AC504612AB

Disassembly steps

1. Foot duct (LH)
2. Air mixing damper control motor and potentiometer
3. Mode selection damper control motor and potentiometer
4. Heater core
5. Expansion valve
6. Joint
7. O-ring

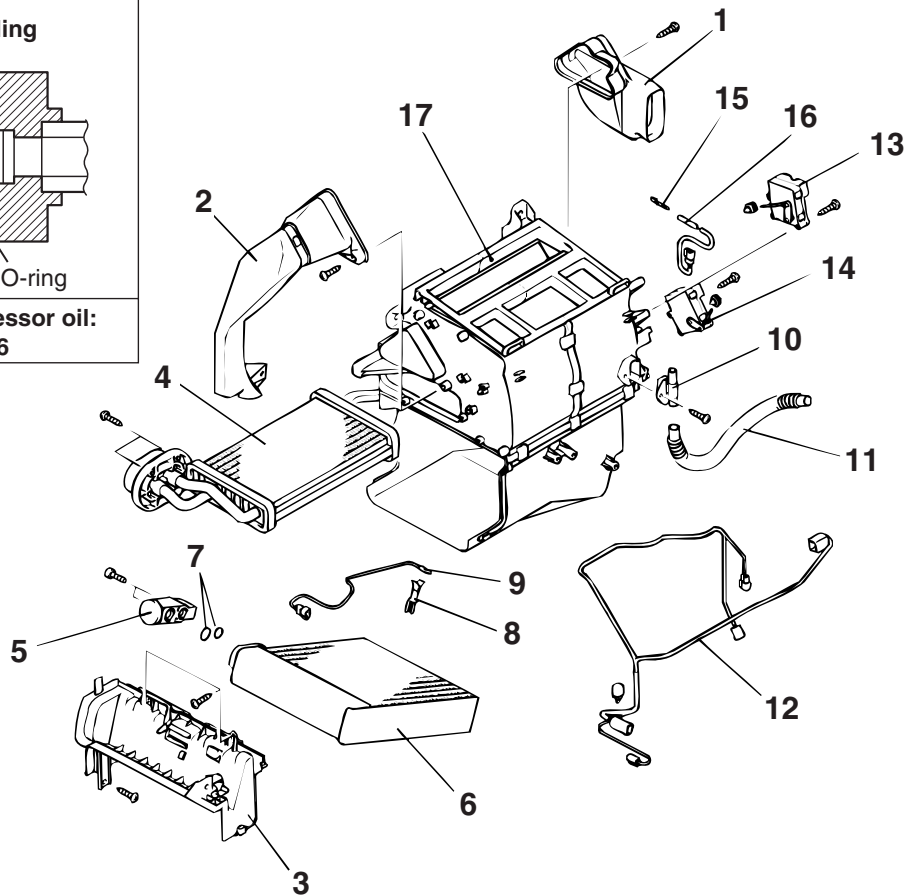
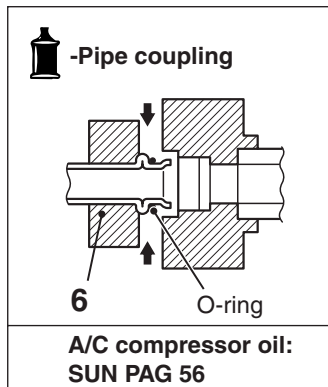
Disassembly steps (Continued)

8. Evaporator cover
9. Evaporator
10. Air thermo sensor clip
11. Air thermo sensor
12. Heater water temperature sensor
13. Aspirator
14. Aspirator hose
15. Harness
16. Heater case

DISASSEMBLY AND REASSEMBLY

<RHD>

M1551005400514



AC504713AB

Disassembly steps

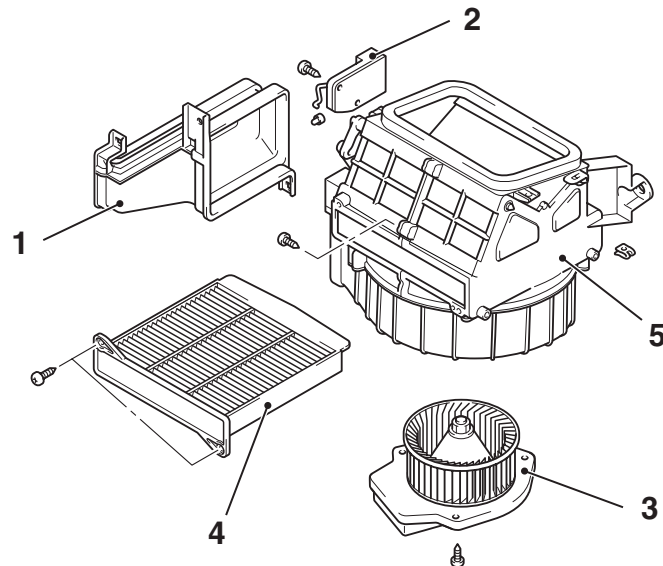
1. Foot duct (RH)
2. Foot duct (LH)
3. Evaporator cover
4. Heater core
5. Expansion valve
6. Evaporator
7. O-ring
8. Air thermo sensor clip
9. Air thermo sensor
10. Aspirator

Disassembly steps (Continued)

11. Aspirator hose
12. Harness
13. Air mixing damper control motor and potentiometer
14. Mode selection damper control motor and potentiometer
15. Heater water temperature sensor clip
16. Heater water temperature sensor
17. Heater case

BLOWER ASSEMBLY**DISASSEMBLY AND REASSEMBLY**

M1551005500287



AC504715AB

Disassembly steps

1. Joint duct
2. Outside/inside air selection damper control motor

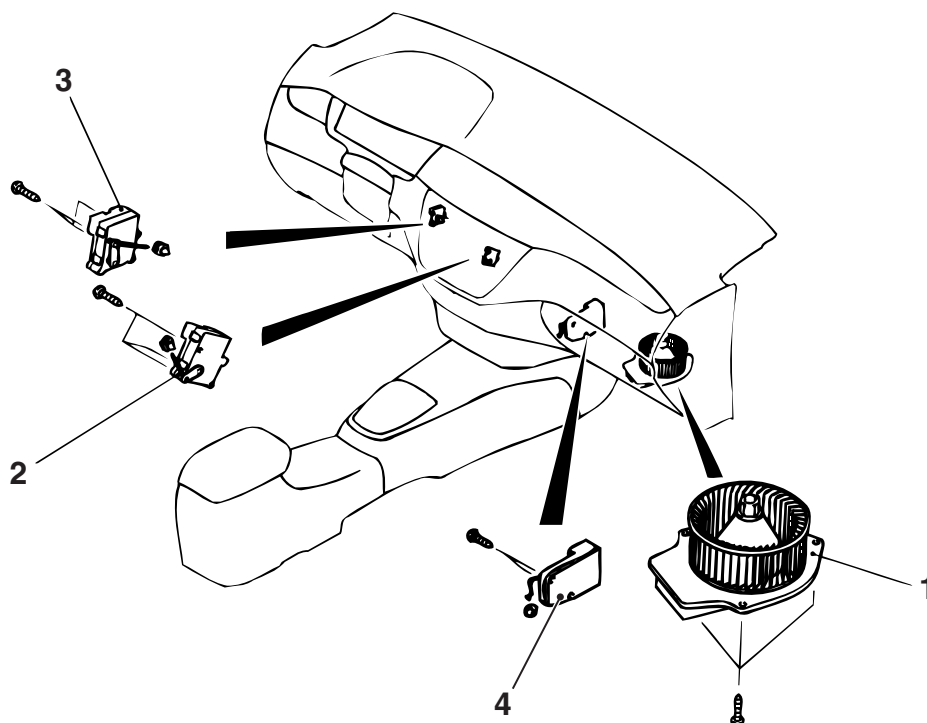
Disassembly steps (Continued)

3. Blower motor
4. Air filter
5. Blower case

MODE SELECTION DAMPER CONTROL MOTOR, AIR MIXING DAMPER CONTROL MOTOR, OUTSIDE/INSIDE AIR SELECTION DAMPER CONTROL MOTOR AND BLOWER MOTOR

REMOVAL AND INSTALLATION

M1554019900016



AC504716AB

Blower motor removal step

- Front passenger's side under cover

1. Blower motor

Air mixing damper control motor and potentiometer removal step

2. Air mixing damper control motor and potentiometer

Mode selection damper control motor and potentiometer removal step

3. Mode selection damper control motor and potentiometer

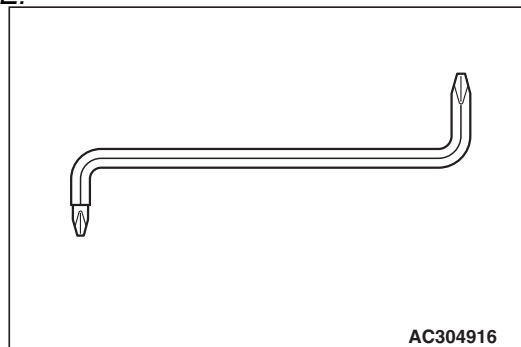
Outside/inside air selection damper control motor removal step

- Glove box (Refer to GROUP 52A, Instrument Panel [P.52A-2](#)).
 - Engine-ECU (Refer to GROUP 13A, Engine-ECU [P.13A-416](#)).
4. Outside/inside air selection damper control motor

REMOVAL SERVICE POINT

<<A>> BLOWER MOTOR AND MODE SELECTION DAMPER CONTROL MOTOR AND POTENTIOMETER REMOVAL

NOTE:



AC304916

Use of commercially available offset screw driver is recommended.

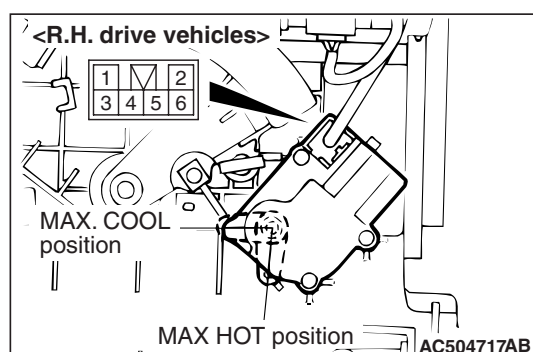
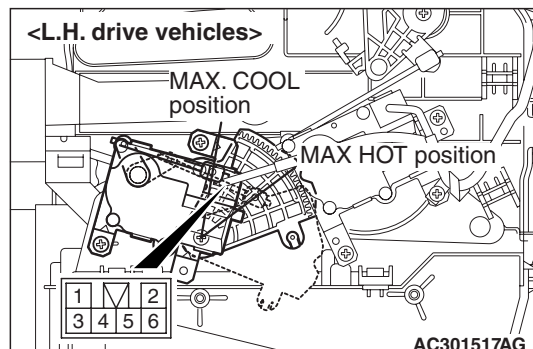
<<A>>

<<A>>

INSPECTION

M1551006300491

CHECK THE AIR MIXING DAMPER CONTROL MOTOR AND POTENTIOMETER



CHECK THE AIR MIXING DAMPER CONTROL MOTOR

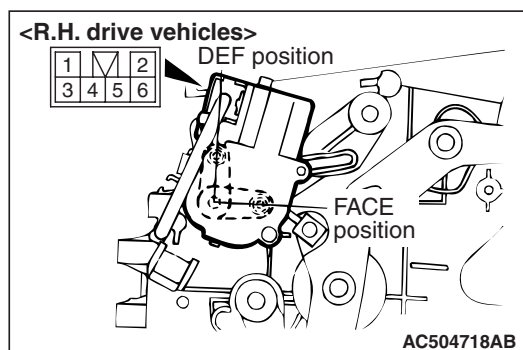
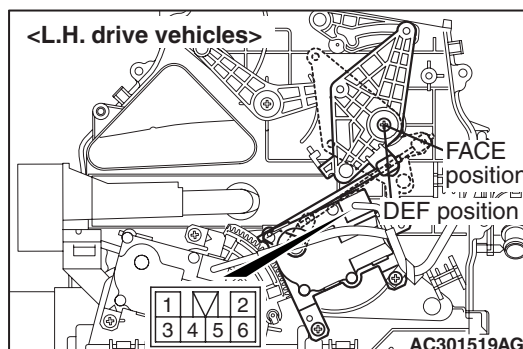
Battery connection (+) terminal	Battery connection (-) terminal	Lever operation
1	3	Rotate to the HOT position.
3	1	Rotate to the COOL position.

Potentiometer check

When the resistances between terminals 2 and 5 as well as terminals 5 and 6 are measured at the air mixing damper motor check, the resistance value should change gradually within the standard value.

Standard value: Approximately 0.65 – 5.35 kΩ

MODE SELECTION DAMPER CONTROL MOTOR AND POTENTIOMETER CHECK



MODE SELECTION DAMPER CONTROL MOTOR CHECK

Battery connection (+) terminal	Battery connection (-) terminal	Lever operation
1	3	Rotate to the DEF position.
3	1	Rotate to the FACE position.

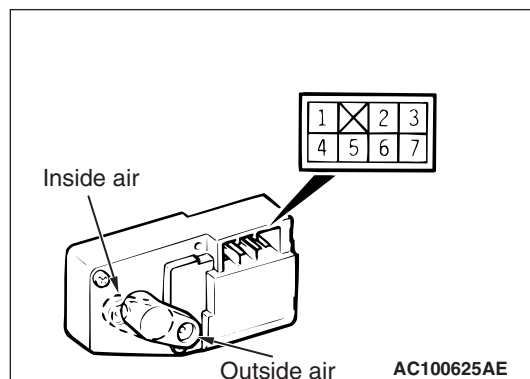
Potentiometer check

When the resistances between terminals 2 and 5 as well as terminals 5 and 6 are measured at the mode selection damper control motor check, the resistance value should change gradually within the standard value.

Standard value: Approximately 0.65 – 5.35 kΩ

OUTSIDE/INSIDE AIR SELECTION DAMPER CONTROL MOTOR CHECK

⚠ CAUTION



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

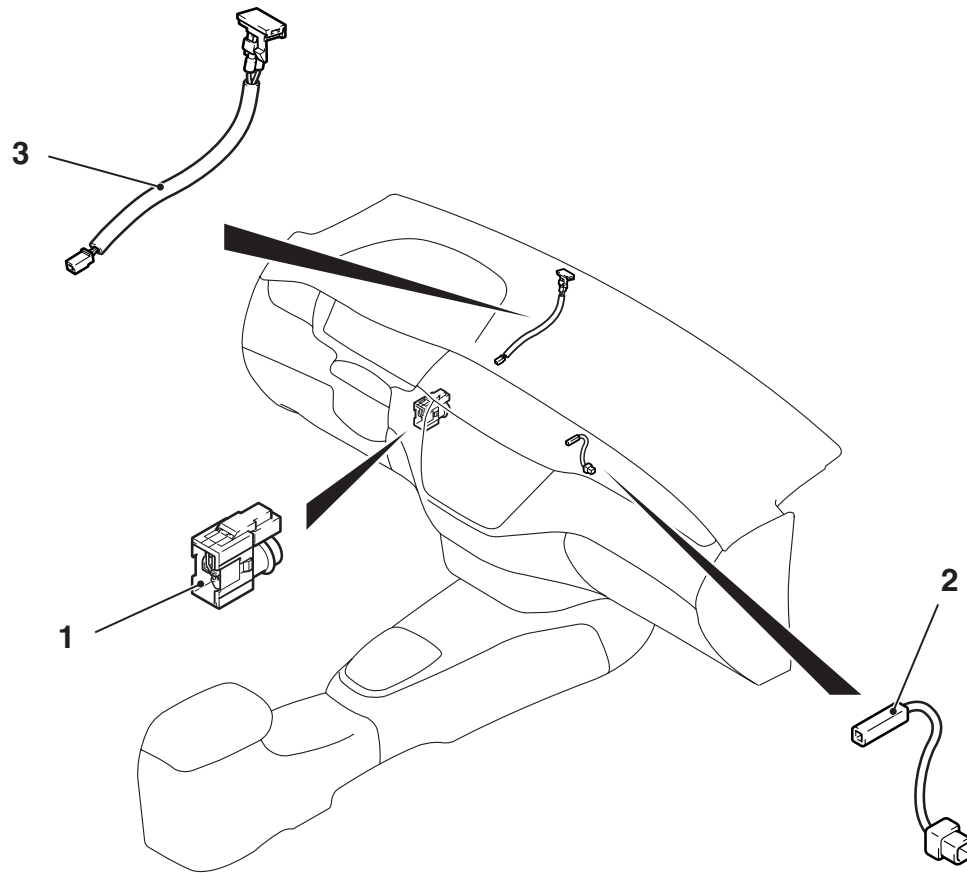
Lever position	Battery connection	Lever operation
At the inside position	- Connect terminal 7 to the positive battery terminal - Connect terminal 4 to the negative battery terminal	The lever moves from the inside position to the outside position
At the outside position	- Connect terminal 7 to the positive battery terminal - Connect terminal 6 to the negative battery terminal	The lever moves from the outside position to the inside position

BLOWER MOTOR CHECK

Execute actuator test item No.01 to 04 by using M.U.T.-II/III with the vehicle body, and check that the blower motor works normally. (Refer to [P.55-101](#)).

SENSORS**REMOVAL AND INSTALLATION**

M1554001900196



AC504729AB

**Interior temperature sensor
removal steps**

1. Interior temperature sensor

**Heater water temperature sensor
removal steps**

- Foot duct <front passenger's side> (Refer to GROUP 55, Ventilator [P.55-131](#)).

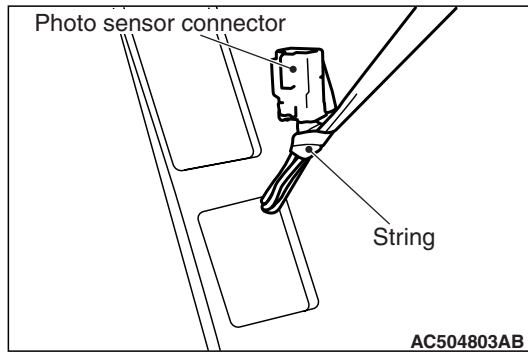
Photo sensor removal steps

3. Photo sensor

<<A>>

REMOVAL SERVICE POINT

<<A>> PHOTO SENSOR REMOVAL

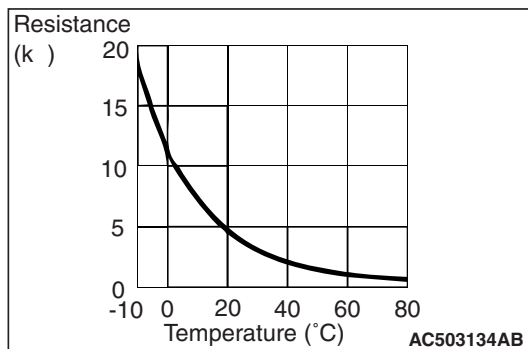


1. Remove the photo sensor together with the defroster nozzle.
2. Suspend the connector with a string to avoid the connector drops behind the instrument panel.

INSPECTION

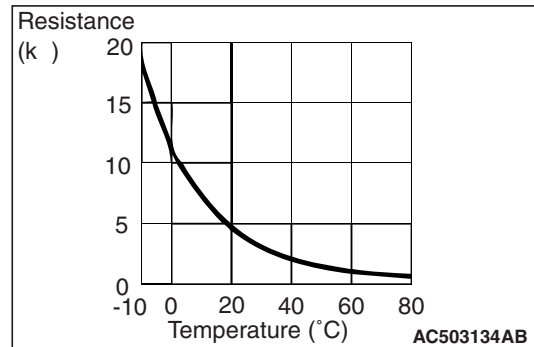
M1552014302150

INTERIOR TEMPERATURE SENSOR CHECK



Check to see that the resistance shown in the graph is almost satisfied when measuring the resistance between the terminals under two or more different temperature conditions.

HEATER WATER TEMPERATURE SENSOR CHECK



Check to see that the resistance shown in the graph is almost satisfied when measuring the resistance between the terminals under two or more different temperature conditions.

PHOTO SENSOR CHECK

Check that the blower rotation comes down if the photo sensor is covered with hands, when the automatic A/C is operating (in summer sunbeam). If not the rotation comes down, replace the photo sensor.

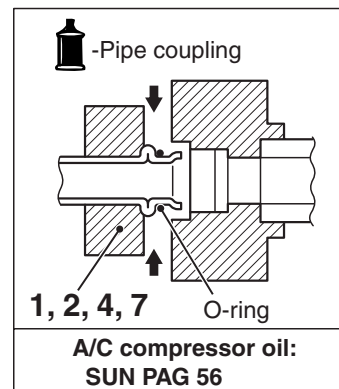
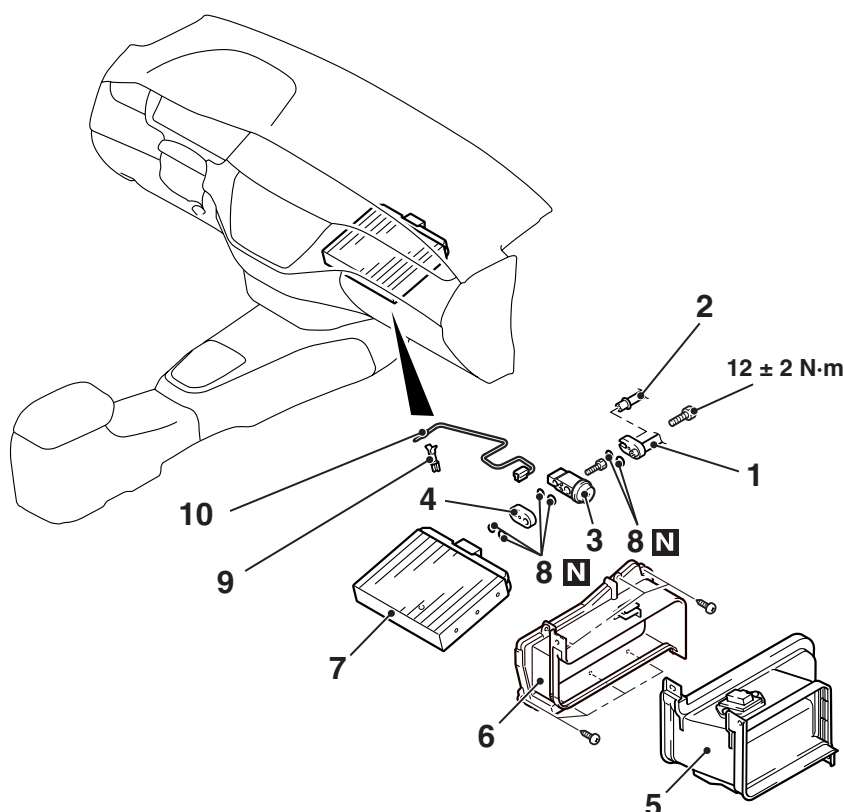
EVAPORATOR ASSEMBLY

REMOVAL AND INSTALLATION <LHD>

M1552003600496

Pre-removal and Post-installation Operation

- Refrigerant draining and Refilling (Refer to Charging and discharging P.55-104).
- Air cleaner and air cleaner air flow sensor assembly Removal and Installation (Refer to GROUP 15, Air cleaner P.15-5).



AC504937AB

<<A>>

<<A>>

Removal steps

1. Flexible suction hose connection
2. Liquid pipe B connection
3. Expansion valve
4. Joint
 - Glove box (Refer to GROUP 52A, Instrument Panel P.52A-2).
 - Engine-ECU (Refer to GROUP 13A, Engine-ECU P.13A-416).
5. Joint duct
 - Foot duct (RH), Rear heater duct A (RH) upper side (Refer to P.55-130).
6. Evaporator cover
7. Evaporator
8. O-ring

Removal steps (Continued)

9. Air thermo sensor clip
10. Air thermo sensor

REMOVAL SERVICE POINT**<<A>> FLEXIBLE SUCTION HOSE/LIQUID PIPE B DISCONNECTION****⚠ CAUTION**

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

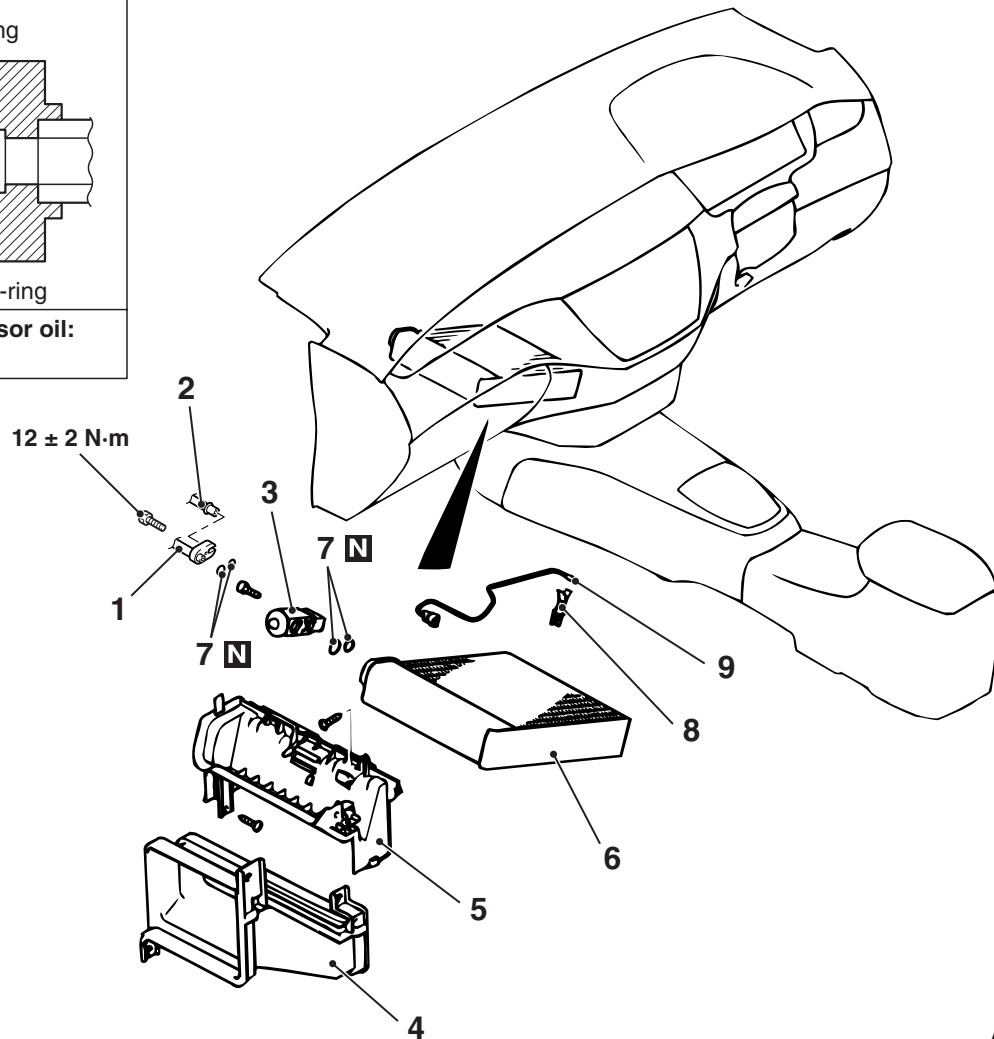
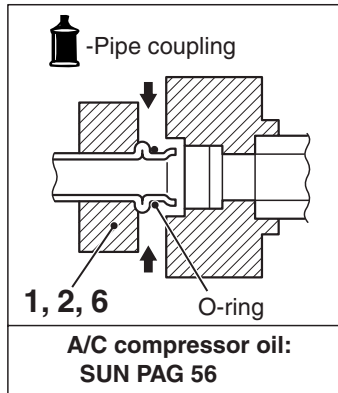
To prevent the entry of dust or other foreign bodies, plug the dismantled hose and the nipples of the expansion valves.

REMOVAL AND INSTALLATION <RHD>

M1552003600504

Pre-removal and Post-installation Operation

- Refrigerant draining and Refilling (Refer to Charging and discharging [P.55-104](#)).
- Air cleaner and air cleaner air flow sensor assembly Removal and Installation (Refer to GROUP 15, Air cleaner [P.15-5](#)).



AC304886AC

<<A>>

<<A>>

Removal steps

1. Flexible suction hose connection
2. Liquid pipe B connection
3. Expansion valve
 - Glove box (Refer to GROUP 52A, Instrument Panel [P.52A-2](#)).
 - Engine-ECU (Refer to GROUP 13A, Engine-ECU [P.13A-416](#)).
4. Joint duct

<>

Removal steps (Continued)

- Foot duct (RH), Rear heater duct A (RH) upper side (Refer to [P.55-130](#)).
- 5. Evaporator cover
- 6. Evaporator
- 7. O-ring
- 8. Air thermo sensor clip
- 9. Air thermo sensor

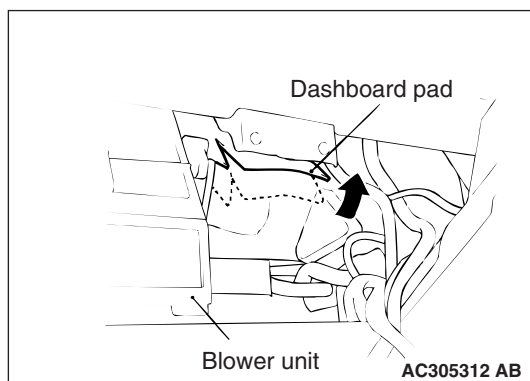
REMOVAL SERVICE POINT

<<A>> FLEXIBLE SUCTION HOSE/LIQUID
PIPE B 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 hose and the nipples of the expansion valves.

<> EVAPORATOR REMOVAL

**CAUTION**

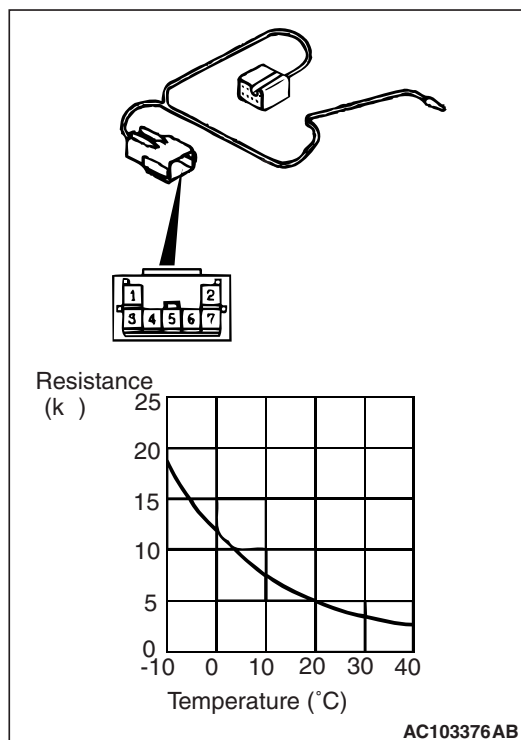
Do not cut the upper side of the pad.

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.

INSPECTION

M1552014302161

AIR THERMO SENSOR INSPECTION



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.

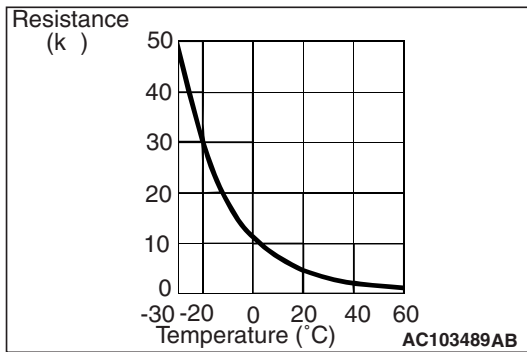
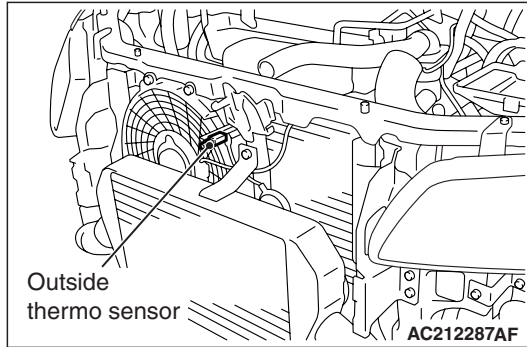
NOTE: The temperature at the check should not exceed the range in the graph.

OUTSIDE THERMO SENSOR

INSPECTION

M1552014302138

Check to see that the resistance shown in the graph is almost satisfied when measuring the resistance between the sensor terminals under two or more different temperature conditions.



COMPRESSOR ASSEMBLY AND TENSION PULLEY

REMOVAL AND INSTALLATION

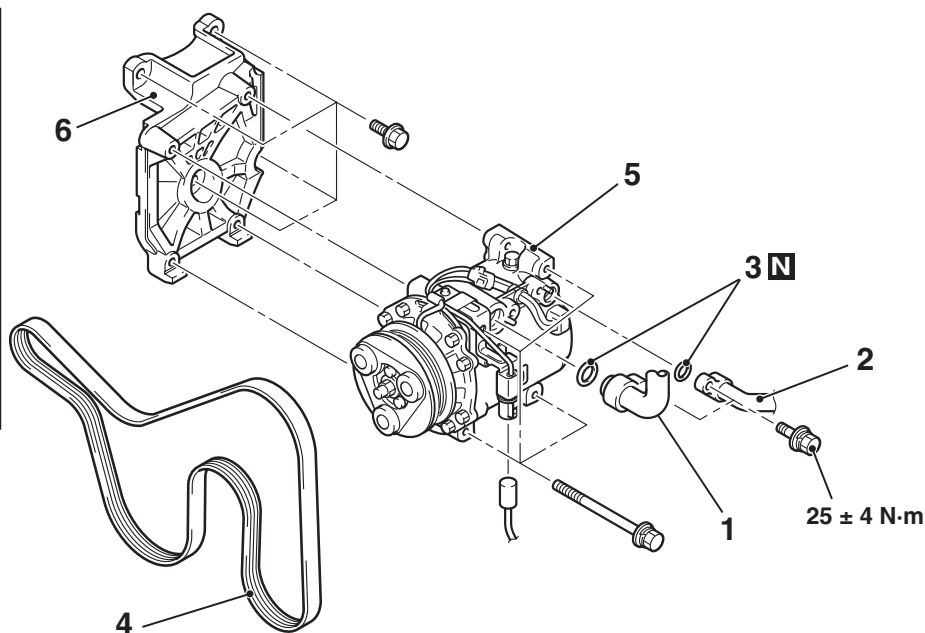
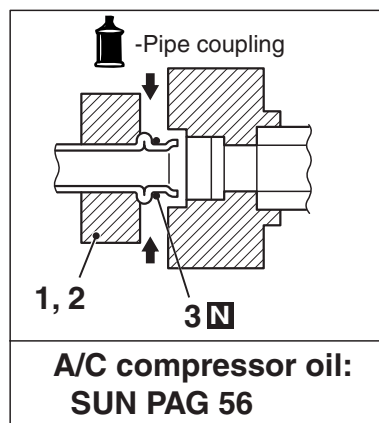
M1552004100535

Pre-removal Operation

- Refrigerant Discharging (Refer to P.55-104).

Post-installation Operation

- Drive Belt Tension Adjustment (Refer to GROUP 11A, On-vehicles Service – Drive Belt Tension Check P.11A-7).
- Refrigerant Charging (Refer to P.55-104).



AC310766AB

Removal steps

- <<A>> 1. Flexible suction hose connection
<<A>> 2. Flexible discharge hose connection
3. O-ring

Removal steps (Continued)

- <> 4. Drive belt
<<C>> >>A<< 5. A/C compressor
6. A/C compressor bracket

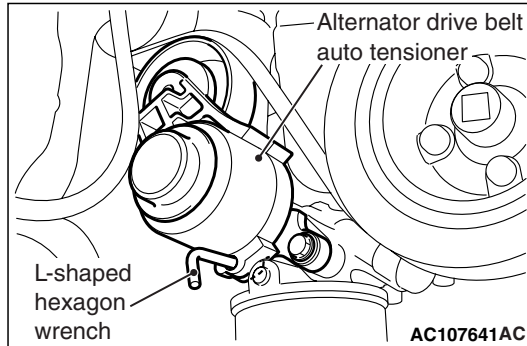
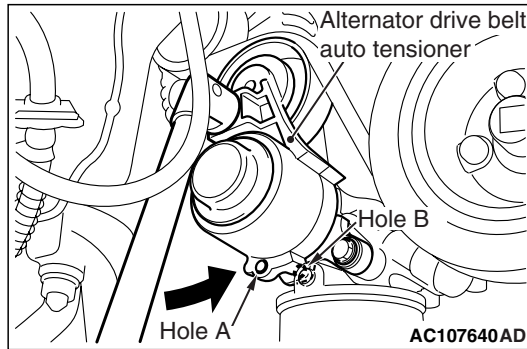
REMOVAL SERVICE POINTS**<<A>> FLEXIBLE SUCTION HOSE/FLEXIBLE DISCHARGE HOSE DISCONNECTION****CAUTION**

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

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



1. Securely insert the spindle handle or ratchet handle with a 12.7 mm insertion angle into the jig hole of the alternator drive belt auto tensioner, and turn the alternator drive belt auto tensioner anti-clockwise until it hits the stopper.

CAUTION

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

2. Align hole A with hole B, insert an L-shaped hexagon wrench, etc. to fix and then remove the alternator drive belt.

<<C>> A/C COMPRESSOR REMOVAL

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

INSTALLATION SERVICE POINT

>>A<< A/C 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 mL) of oil within the removed compressor.
2. Drain (from the new compressor) the amount of oil calculated according to the following formula, and then install the new compressor.

New compressor oil amount = 120 mL

$$120 \text{ mL} - X \text{ mL} = Y \text{ mL}$$

NOTE: Y mL 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 mL and discharge from the new compressor.

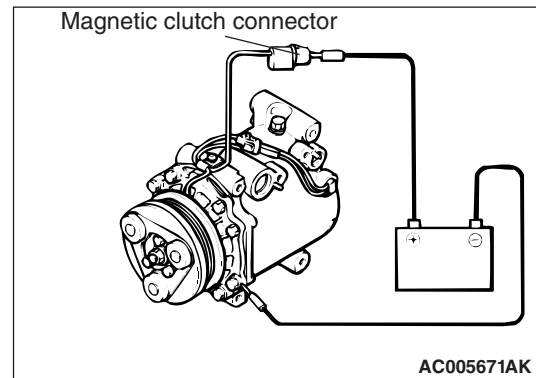
Quantity:

- Evaporator: 60 mL
- Condenser: 15 mL
- Suction hose: 10 mL
- Receiver: 10 mL

INSPECTION

M1552014301834

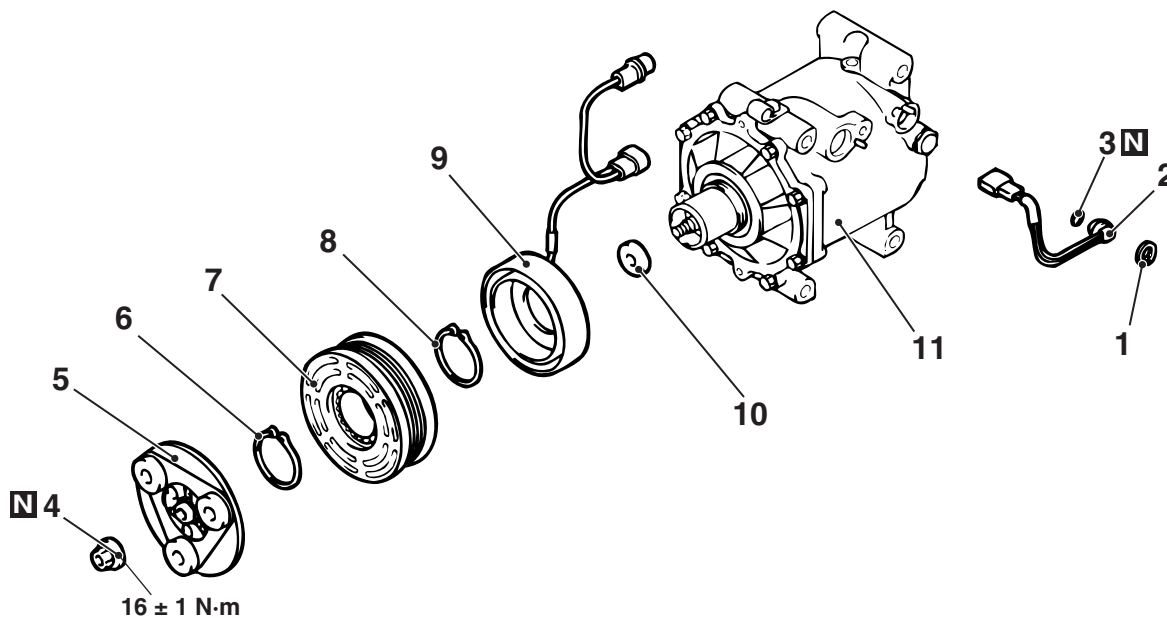
COMPRESSOR MAGNETIC CLUTCH OPERATION CHECK



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

DISASSEMBLY AND REASSEMBLY

M1552004600808



AC100630AB

**Cooling temperature switch
disassembly steps**

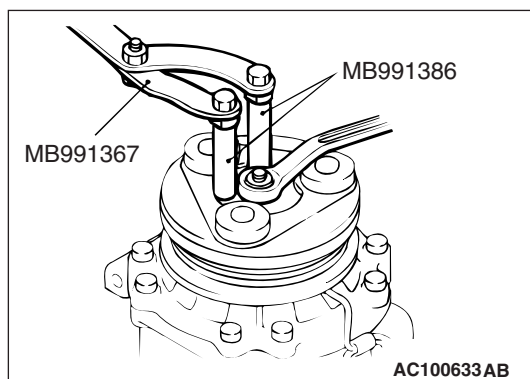
1. Snap ring
2. Refrigerant temperature switch
3. O-ring

Magnetic clutch disassembly

- >>D<< • Air gap adjustment

Magnetic clutch disassembly

- | | | | |
|-------|-------|-----|------------------|
| <<A>> | >>C<< | 4. | Self-locking nut |
| | | 5. | Armature |
| | >>B<< | 6. | Snap ring |
| | | 7. | Rotor |
| | | 8. | Snap ring |
| | >>A<< | 9. | Field core |
| | | 10. | Shim |
| | | 11. | A/C compressor |

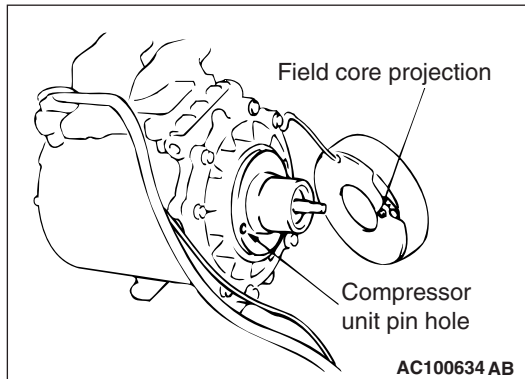
DISASSEMBLY SERVICE POINT**<<A>> SELF-LOCKING NUT REMOVAL**

Use the special tools to remove the self-locking nut.

- Special spanner (MB991367)
- Pin (MB991386)

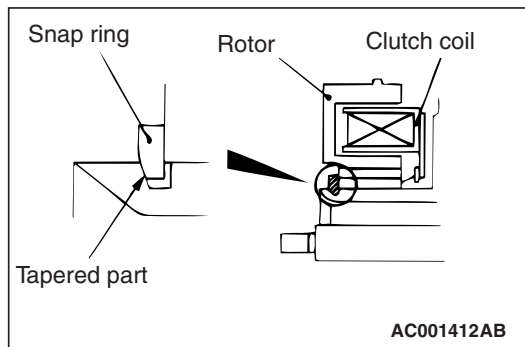
REASSEMBLY SERVICE POINTS

>>A<< FIELD CORE



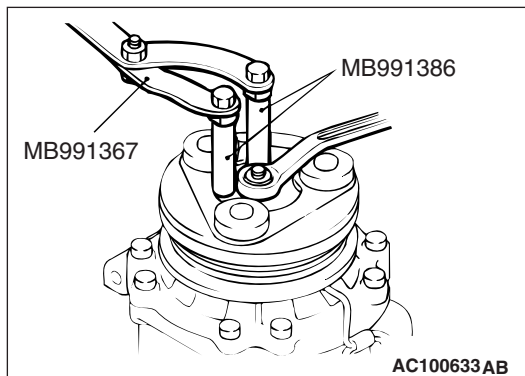
Line up the pin hole on the compressor unit with the field core projection and attach.

>>B<< SNAP RING INSTALLATION



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

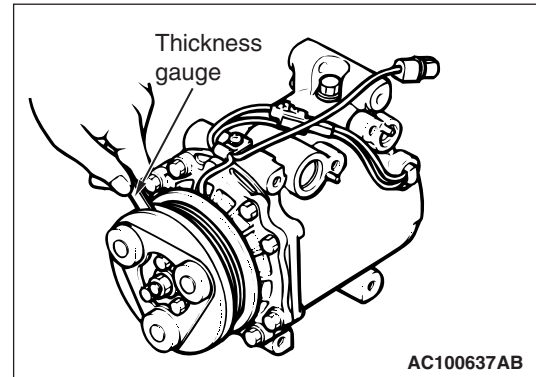
>>C<< SELF-LOCKING NUT INSTALLATION



Use the special tools to install the self-locking nut.

- Special spanner (MB991367)
- Pin (MB991386)

>>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

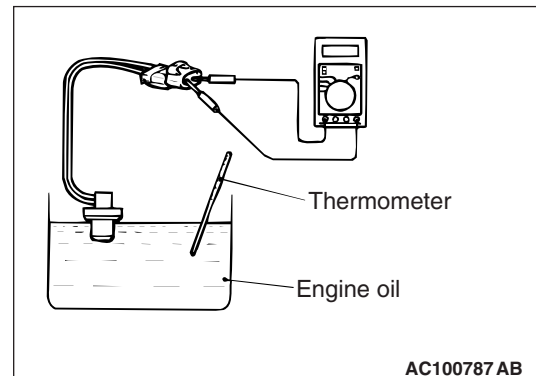
INSPECTION

M1552014301340

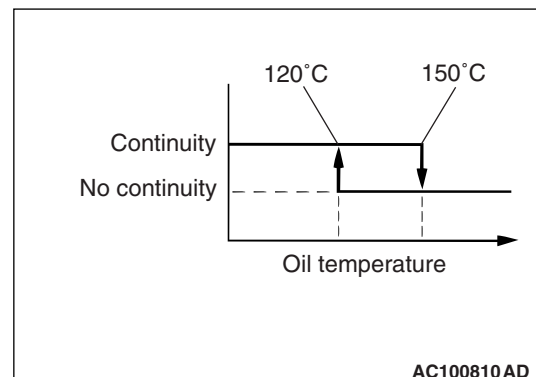
REFRIGERANT TEMPERATURE SWITCH

⚠ CAUTION

Do not heat more than necessary.



1. Dip the metal part of the cooling 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
No continuity	150°C or more

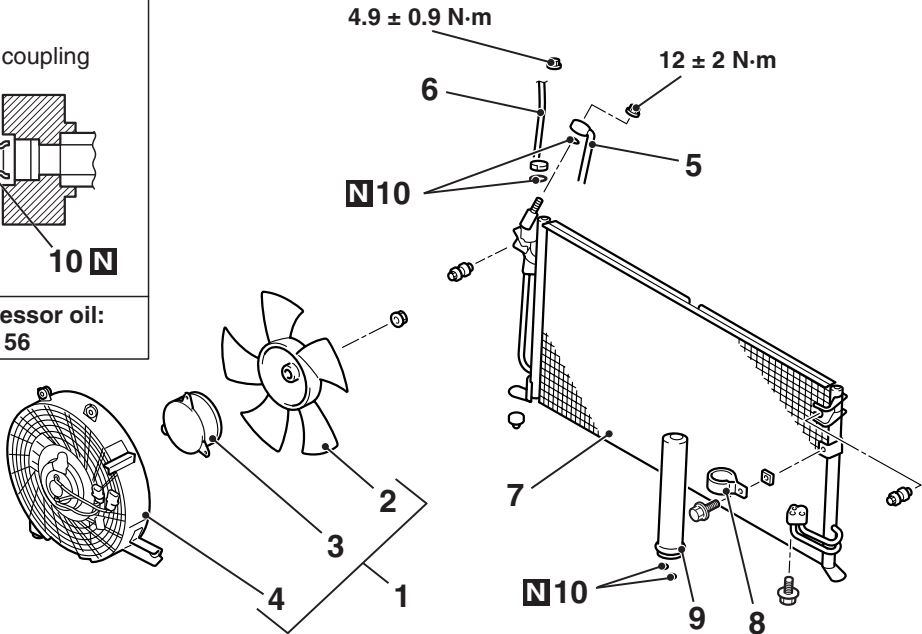
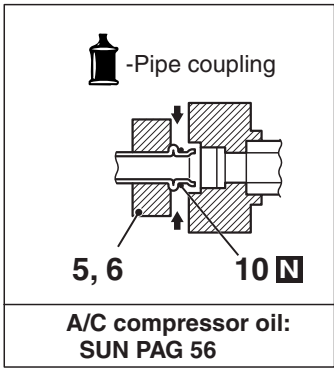
NOTE: When the oil temperature is 150°C or more and there is no continuity, the resistance will not be 2Ω or lower until the oil temperature reduces to 120°C or less.

CONDENSER AND CONDENSER FAN MOTOR
REMOVAL AND INSTALLATION

M1552006700674

Pre-removal and Post-installation Operation

- Refrigerant Draining and Refilling (Refer to P.55-104).
- Front Bumper Removal and Installation (Refer to GROUP 51 P.51-2).



AC211410AC

Fan shroud assembly removal steps

<<A>>

1. Fan shroud assembly
2. Fan
3. Fan motor
4. Fan shroud

Condenser removal steps

<>

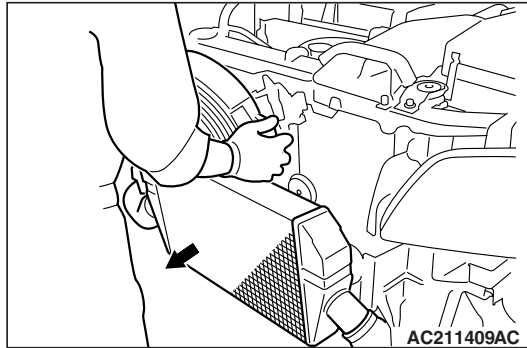
<>

>>A<<

5. Flexible discharge hose connection
6. Liquid pipe A connection
7. Condenser
8. Clamp
9. Receiver
10. O ring

REMOVAL SERVICE POINT

<<A>> FAN SHROUD ASSEMBLY REMOVAL



1. Remove the intercooler mounting bolts/nuts and pull the intercooler forward.
2. Move the fan motor/shroud assembly upward for removal.

<> FLEXIBLE DISCHARGE HOSE/LIQUID PIPE A 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 material, 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.

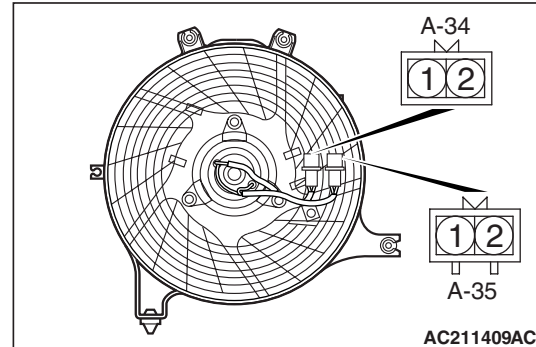
Compressor oil: **SUN PAG 56**

Quantity: **15 cm³ (0.5 floz)**

INSPECTION

M1552014301351

CONDENSER FAN MOTOR CHECK



BATTERY CONNECTION	CONDENSER FAN MOTOR OPERATION
• Connect connector A-34 terminal 2 to the positive battery terminal • Connect connector A-35 terminal 2 to the negative battery terminal	Condenser fan motor LO operation
• Connect connector A-34 terminal 1 to the positive battery terminal • Connect connector A-35 terminal 2 to the negative battery terminal	Condenser fan motor HI operation

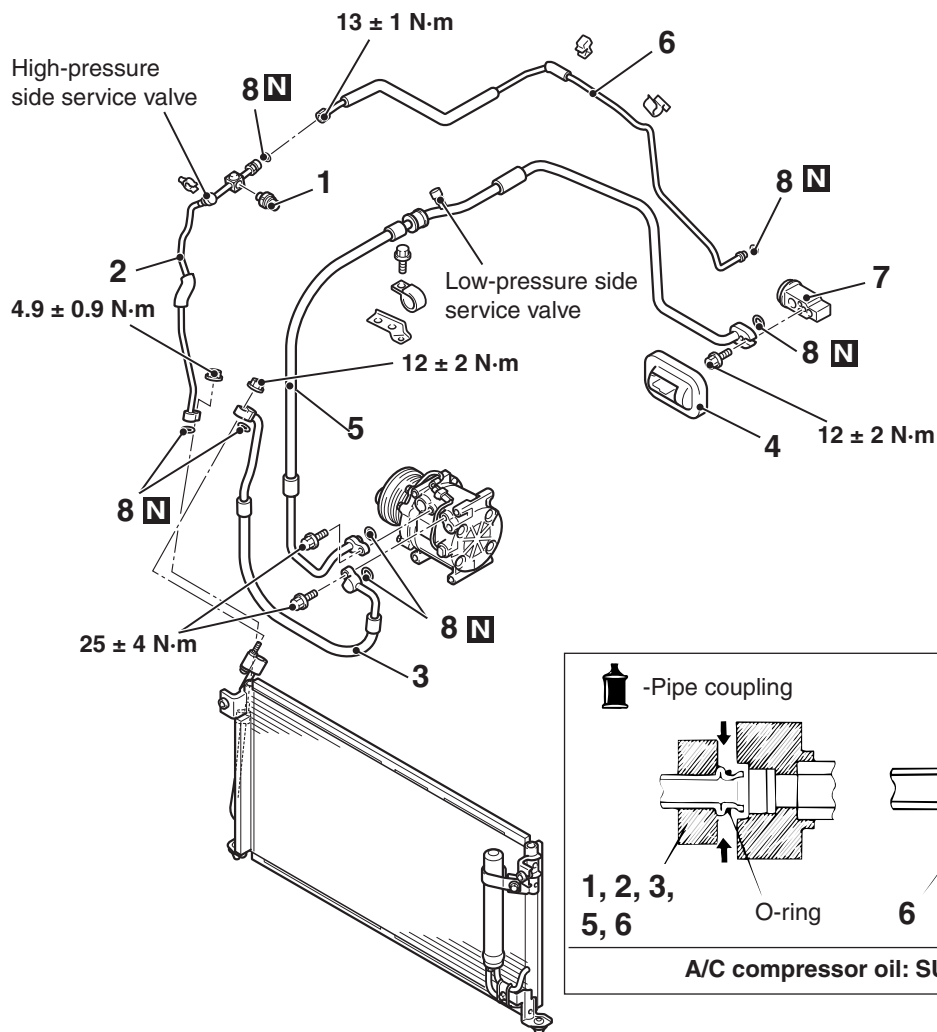
REFRIGERANT LINE

REMOVAL AND INSTALLATION <LHD>

M1552006401063

Pre-removal and Post-installation Operation

- Refrigerant Draining and Refilling (Refer to P.55-104).
- Air Cleaner Removal and Installation (Refer to GROUP 15, Air cleaner P.15-5).
- Radiator Grille Removal and Installation (Refer to GROUP 51, Front bumper P.51-2).



AC304553AE

Removal steps

- | | | |
|-------------|----|-------------------------|
| <<A>> | 1. | Dual pressure switch |
| <<A>> | 2. | Liquid pipe A |
| <<A>> | 3. | Flexible discharge hose |
| <<A>> | 4. | Expansion valve cover |
| <<A>> >>A<< | 5. | Flexible suction hose |
| <<A>> | 6. | Liquid pipe B |
| <<A>> | 7. | Expansion valve cover |
| | 8. | O-ring |

REMOVAL SERVICE POINT**<<A>> HOSE/PIPE 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 other foreign bodies, plug the condenser, compressor, and expansion valve nipples.

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

Compressor oil: SUN PAG 56
Quantity: Suction hose: 10 cm³

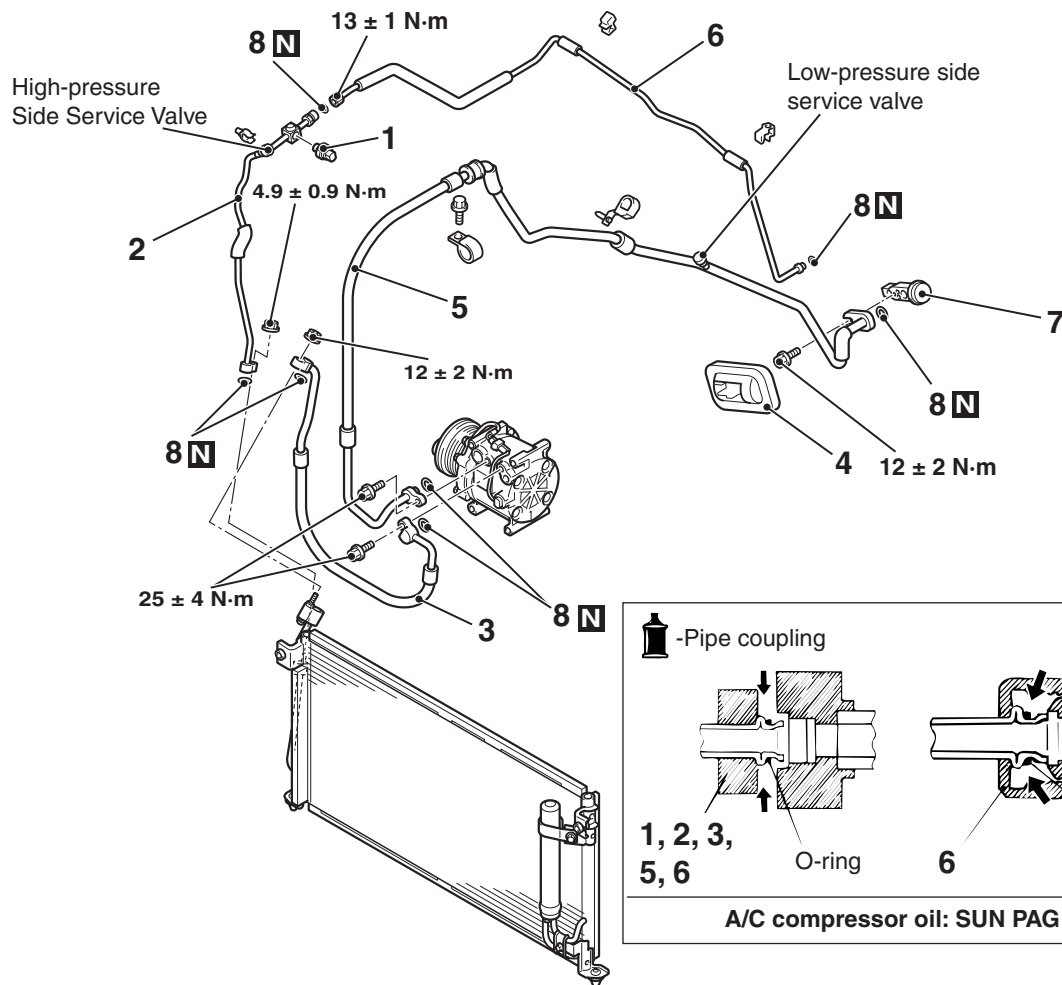
When replacing the suction hose, refill them with a specified amount of compressor oil, and then install them.

REMOVAL AND INSTALLATION <RHD>

M1552006401074

Pre-removal and Post-installation Operation

- Refrigerant Draining and Refilling (Refer to P.55-104).
- Air Cleaner Removal and Installation (Refer to GROUP 15, Air cleaner P.15-5).
- Radiator Grille Removal and Installation (Refer to GROUP 51, Front bumper P.51-2).



AC304554AB

<<A>>
<<A>>
<<A>>

Removal steps

1. Dual pressure switch
2. Liquid pipe A
3. Flexible discharge hose
4. Expansion valve cover

<<A>> >>A<<
<<A>>

Removal steps (Continued)

5. Flexible suction hose
6. Liquid pipe B
7. Expansion valve cover
8. O-ring

REMOVAL SERVICE POINT

<<A>> HOSE/PIPE 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 other foreign bodies, plug the condenser, compressor, and expansion valve nipples.

INSTALLATION SERVICE POINT

>>A<< FLEXIBLE SUCTION HOSE INSTALLATION

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

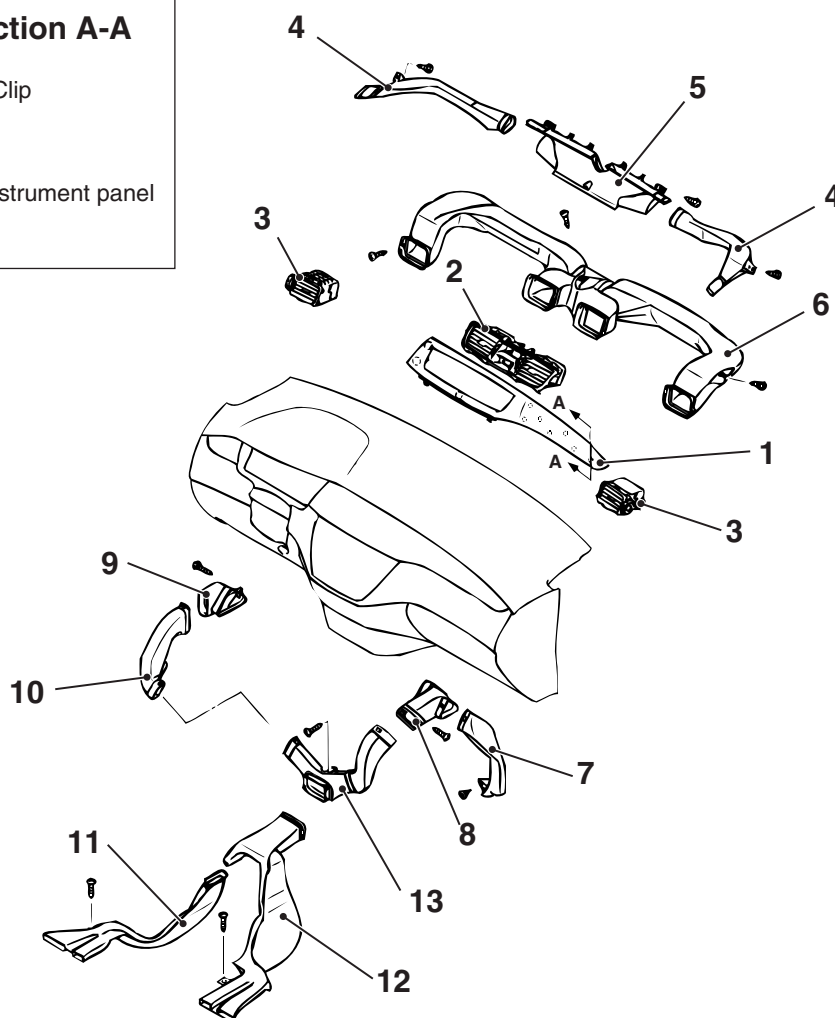
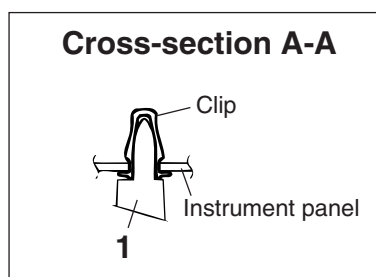
Compressor oil: **SUN PAG 56**

Quantity: Suction hose: 10 cm³

DUCTS

REMOVAL AND INSTALLATION

M1553001000134

**Air Outlet Removal steps**

1. Centre Air Outlet Panel
2. Centre Air Outlet
3. Side Air Outlet

AC304890AB

Defroster nozzle and Distribution duct Removal steps

- Instrument Panel (Refer to 52A, Instrument Panel [P.52A-2](#)).
- 4. Side defroster duct

Defroster nozzle and Distribution duct Removal steps (Continued)

5. Defroster nozzle
6. Distribution duct

Foot duct Removal steps

- Console cover and Glove box (Refer to GROUP 52A, Instrument panel P.52A-2).
- 7. Foot duct (RH)
- 8. Rear heater duct A (RH) upper side
- Under cover (Refer to GROUP 52A, Instrument panel P.52A-2).

Foot duct Removal steps

9. Foot duct (LH)

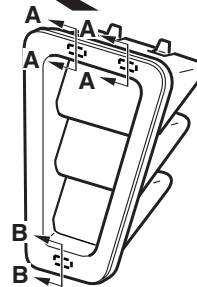
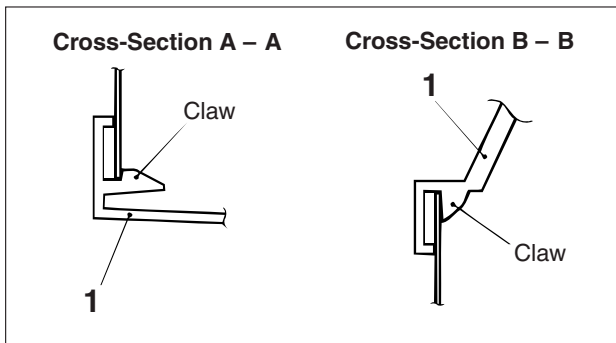
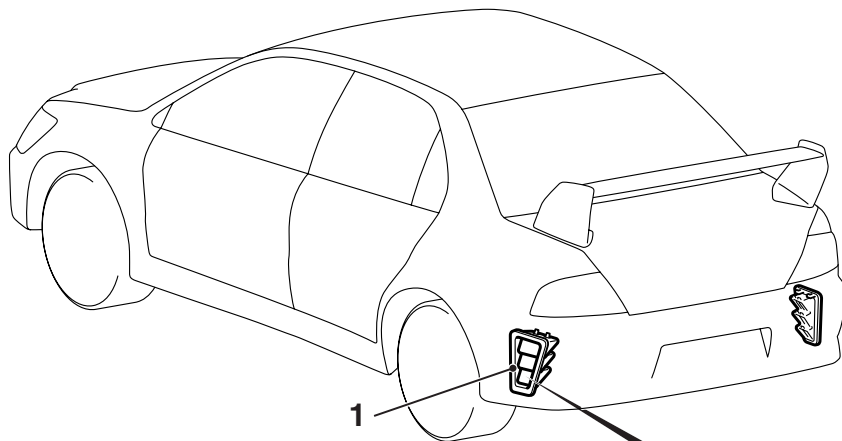
Rear heater duct Removal steps

- Front floor console (Refer to GROUP 52A, Front floor console assembly P.52A-7).
- Front seat (Refer to GROUP 52A - Front seat assembly P.52A-18).
- Floor carpet and Floor pads
- 10. Rear heater duct A (LH)
- 11. Left -hand rear heater duct B
- 12. Right-hand rear heater duct B
- 13. Rear heater duct A (RH) lower side

VENTILATORS

REMOVAL AND INSTALLATION

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Rear ventilation duct removal steps

- Rear bumper assembly (Refer to GROUP 51, Rear bumper P.51-5).
- 1. Rear ventilation duct

NOTES