

GROUP 55B

AUTOMATIC AIR CONDITIONER

CONTENTS

GENERAL INFORMATION	55B-2	HEATER UNIT	55B-100
SERVICE SPECIFICATIONS	55B-2	REMOVAL AND INSTALLATION	55B-100
SPECIAL TOOL	55B-2	DISASSEMBLY AND REASSEMBLY	55B-100
TROUBLESHOOTING	55B-4	AIR MIXING DOOR MOTOR, AIR OUTLET CHANGEOVER DAMPER MOTOR AND BLOWER MOTOR	55B-101
DIAGNOSIS TROUBLESHOOTING FLOW	55B-4	REMOVAL AND INSTALLATION	55B-101
DIAGNOSIS FUNCTION	55B-4	INSPECTION	55B-102
DIAGNOSIS CODE CHART	55B-4	SENSORS	55B-103
DIAGNOSTIC TROUBLE CODE PROCEDURES	55B-5	REMOVAL AND INSTALLATION	55B-103
TROUBLE SYMPTOM CHART	55B-28	INSPECTION	55B-104
SYMPTOM PROCEDURES	55B-28	EVAPORATOR ASSEMBLY	55B-105
DATA LIST REFERENCE TABLE	55B-95	REMOVAL AND INSTALLATION	55B-105
ACTUATOR TEST TABLE	55B-96	INSPECTION	55B-105
CHECK AT ENGINE-A/T ECU TERMINALS	55B-96	AMBIENT TEMPERATURE SENSOR	55B-105
CHECK AT A/C-ECU TERMINALS	55B-97	INSPECTION	55B-105
AUTOMATIC AIR CONDITIONER PANEL ASSEMBLY (A/C-ECU)	55B-99	OTHER PARTS	55B-106
REMOVAL AND INSTALLATION	55B-99	OTHER PARTS	55B-106

GENERAL INFORMATION

M1554000100056

The heater and air conditioner system incorporating the heater and cooling units has reduced ventilation resistance to increase air volume and reduce noise. The automatic air conditioner is installed for RHD-Comfort and Sports models.

SPECIFICATION

Item		Specification
Heater unit type		Two-layer full blow air mix method
Heater control type		Rotary type
Air conditioner switch type		Push button type
Compressor type	Standard type	MSC90CA
	Large capacity type	MSC105CA
Cooling output		5.5 kW
Heating output	L.H. drive vehicles	5.0 kW
	R.H. drive vehicles	5.5 kW

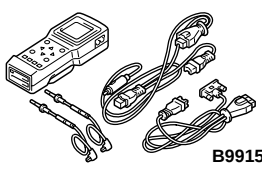
SERVICE SPECIFICATIONS

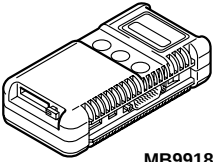
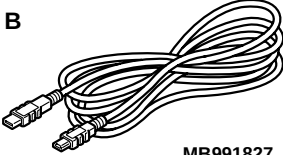
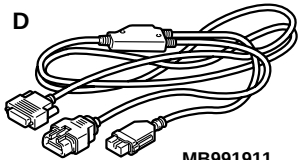
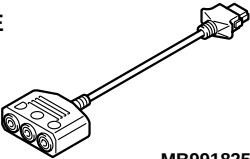
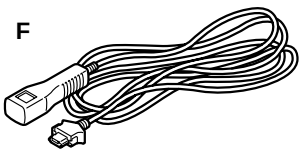
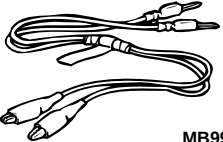
M1554000300083

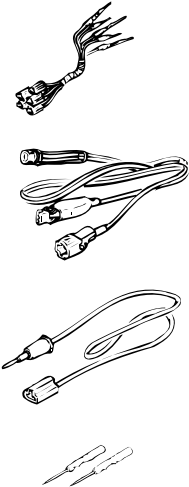
Item		Standard value
Resistance value for air mixing damper control motor and potentiometer k Ω	MAX HOT	Approximately 5.35
	MAX COOL	Approximately 0.65
Resistance value for mode selection damper control motor and potentiometer k Ω	DEF position	Approximately 0.65
	FACE position	Approximately 5.35

SPECIAL TOOL

M1555000600076

Tool	Number	Name	Use
 B991502	MB991502	MUT-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	MUT-III sub-assembly A: Vehicle Communication Interface (V. C. I.) B: MUT-III USB cable C: MUT-III main harness A (Vehicles with CAN communication system) D: MUT-III main harness B (Vehicles without CAN communication system) E: MUT-III measurement adapter F: MUT-III trigger harness	Automatic A/C check ⚠ CAUTION MUT-III main harness B (MB991911) should be used. MUT-III main harness A should not be used for this vehicle.
 MB991529	MB991529	Diagnosis code check harness	Automatic A/C check with a voltmeter

Tool	Number	Name	Use
 MB991223	MB991223 A: MB991219 B: MB991220 C: MB991221 D: MB991222	Harness set A: Test 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

TROUBLESHOOTING

DIAGNOSIS TROUBLESHOOTING FLOW

M1554004700102

Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#).

How to erase diagnosis code

Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#).

DIAGNOSIS FUNCTION

M1554004800176

DIAGNOSIS CODE CHART

M1554004900140

How to read diagnosis code

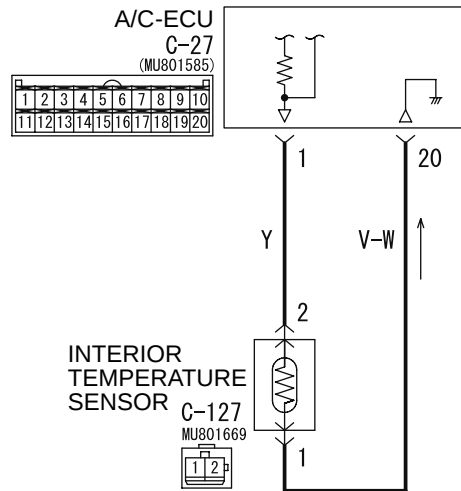
Connect the MUT-II/III to the 16-pin diagnosis connector to read diagnosis code (Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points [P.00-6](#)).

Code No.	Diagnostic item	Reference page
11	Interior temperature sensor system (open circuit)	P.55B-5
12	Interior temperature sensor system (short circuit)	
13	Outside thermo sensor system (open circuit)	P.55B-7
14	Outside thermo sensor system (short circuit)	
15	Heater water temperature sensor system (open circuit)	P.55B-10
16	Heater water temperature sensor system (short circuit)	
21	Air thermo sensor system (open circuit)	P.55B-13
22	Air thermo sensor system (short circuit)	
31	Air mixing damper control motor and potentiometer sensor system	P.55B-16
32	Mode selection damper control motor and potentiometer sensor system	P.55B-19
41	Air mixing damper control motor and potentiometer activating system	P.55B-22
42	Mode selection damper control motor and potentiometer activating system	P.55B-25

DIAGNOSTIC TROUBLE CODE PROCEDURES

Diagnosis 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 : Gray R : Red P : Pink V : Violet

W3Z05E01AA

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).

Possible causes

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

DIAGNOSIS

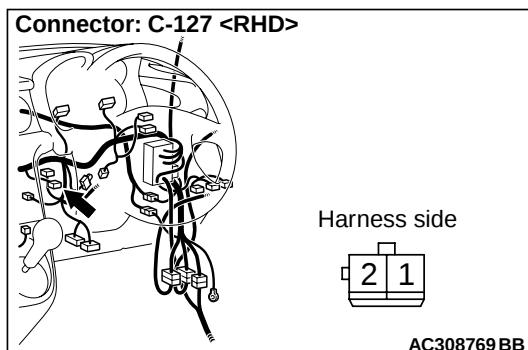
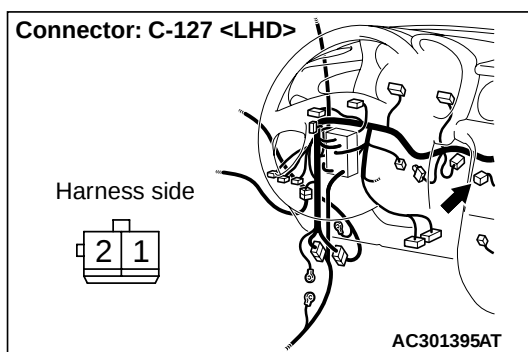
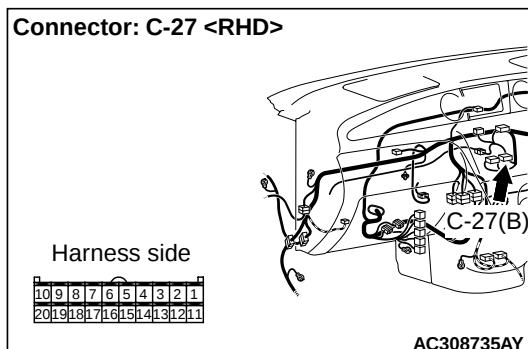
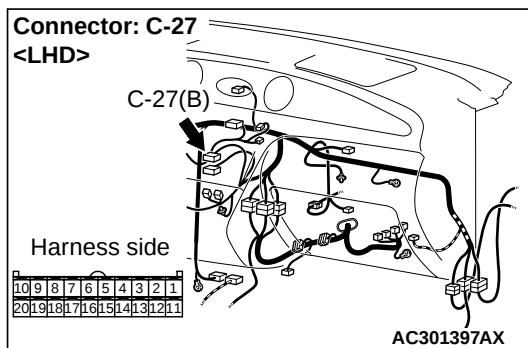
Step 1. Check the interior temperature sensor.
Refer to [P.55B-104](#).

Q: Is the check result normal?

YES : Go to Step 2.

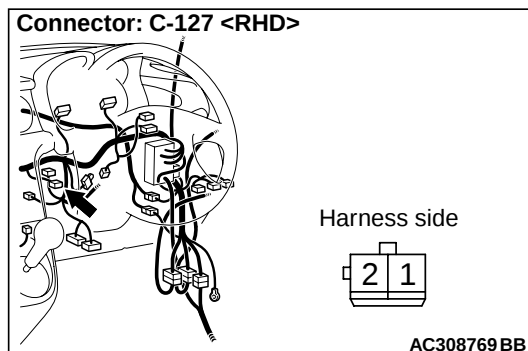
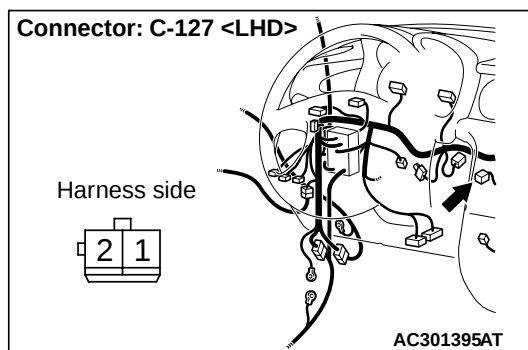
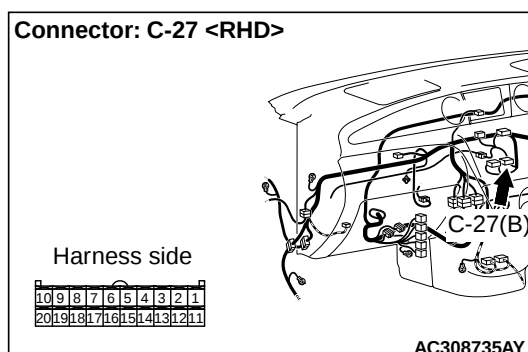
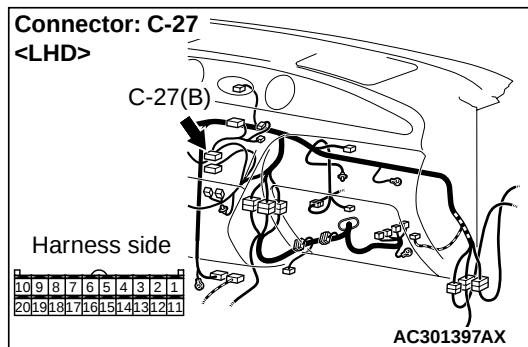
NO : Replace the interior temperature sensor.

Step 2. Connector check: C-27 A/C-ECU connector and C-127 interior temperature sensor connector



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

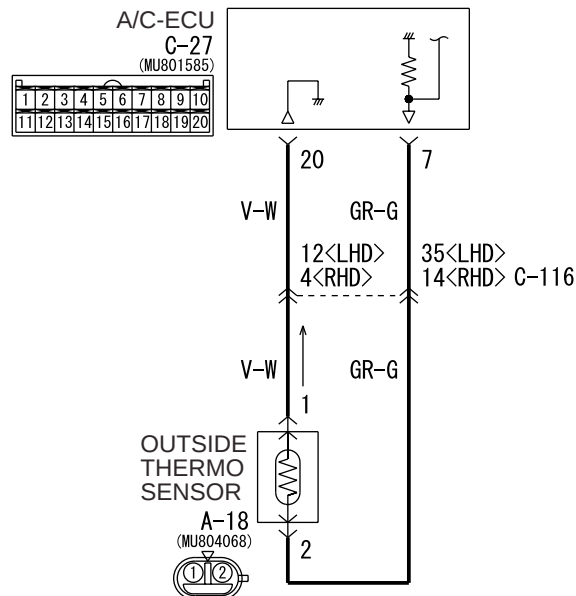
Step 3. Check the wiring harness between C-27 A/C-ECU connector (terminals 1 and 20) and C-127 interior temperature sensor connector (terminals 2 and 1).



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

Q: Is the check result normal?
YES : Replace the automatic air conditioner control panel (A/C-ECU)
NO : Repair the wiring harness.

Diagnosis code 13, 14: Outside thermo sensor system



Wire colour code

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

W4Z55E07AA

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).

Possible causes

- Malfunction of the outside thermo sensor
- Damaged the wiring harness and connectors

- Malfunction of the automatic air conditioner control panel (A/C-ECU)

DIAGNOSIS

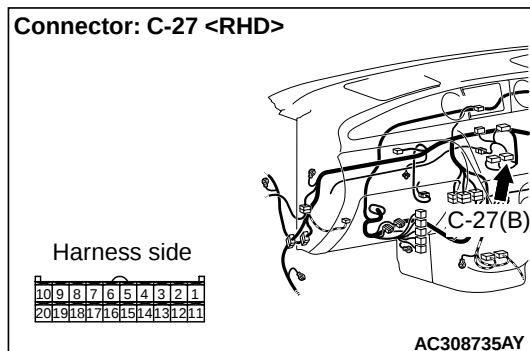
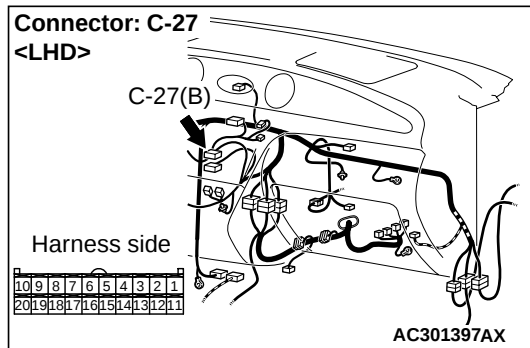
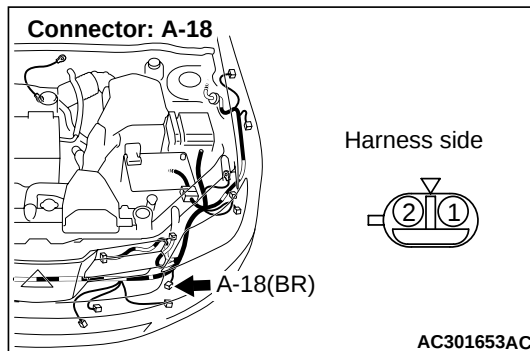
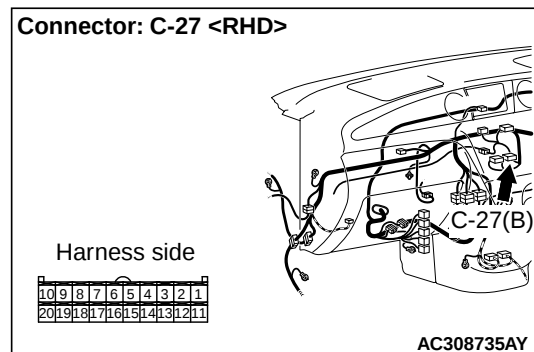
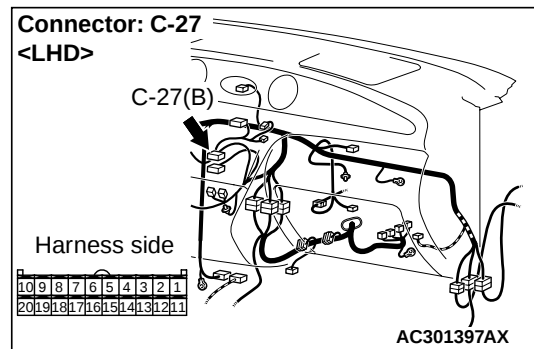
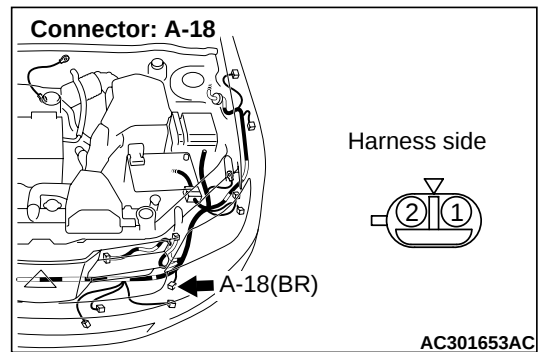
Step 1. Check the outside thermo sensor.

Refer to [P.55B-105](#).

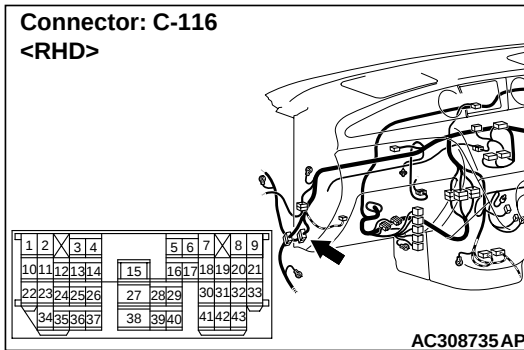
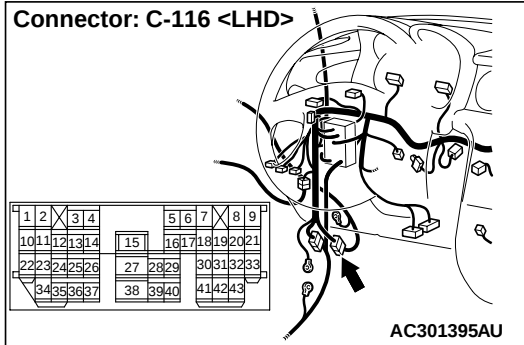
Q: Is the check result normal?

YES : Go to Step 2.

NO : Replace the outside thermo sensor.

Step 2. Connector check: A-18 outside thermo sensor connector and C-27 A/C-ECU connector**Step 3. Check the wiring harness between A-18 outside thermo sensor connector (terminals 1 and 2) and C-27 A/C-ECU connector (terminals 20 and 7).****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-116, and repair if necessary.

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

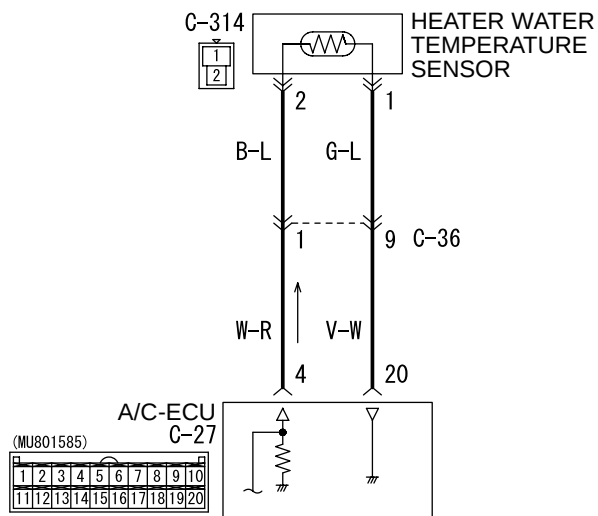
Q: Is the check result normal?

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

NO : Repair the wiring harness.

Diagnosis code 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 : Gray R : Red P : Pink V : Violet

W3Z05E06AA

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).

Possible causes

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

DIAGNOSIS

Step 1. Check the heater water temperature sensor.

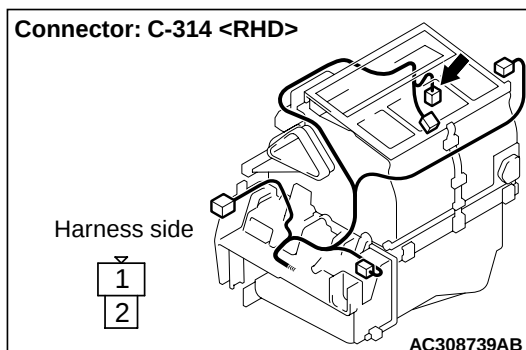
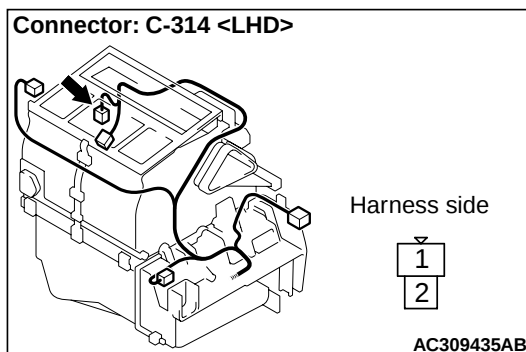
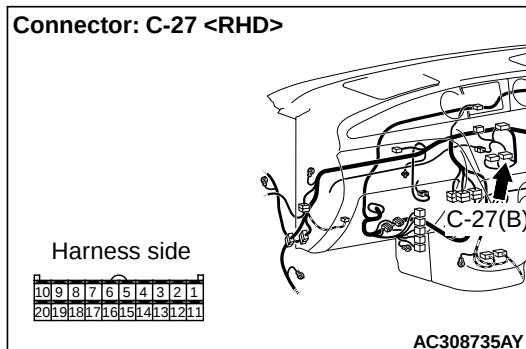
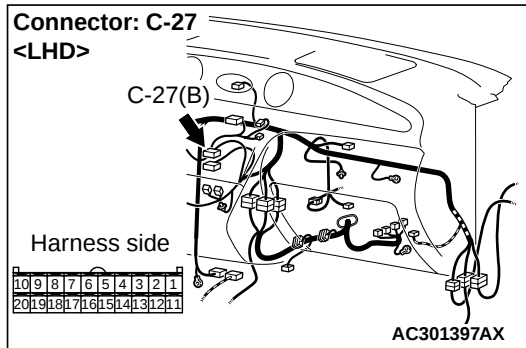
Refer to [P.55B-104](#).

Q: Is the check result normal?

YES : Go to Step 2.

NO : Replace the heater water temperature sensor.

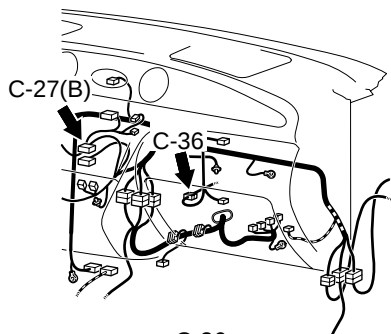
Step 2. Connector check: C-27 A/C-ECU connector and C-314 heater water temperature connector



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

Step 3. Check the wiring harness between C-27 A/C-ECU connector (terminals 4 and 20) and C-314 heater water temperature sensor connector (terminals 2 and 1).

Connectors: C-27, C-36 <LHD>



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

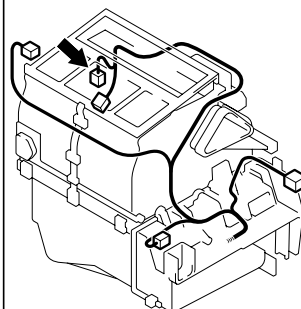
Harness side

C-27

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

AC301398BE

Connector: C-314 <LHD>

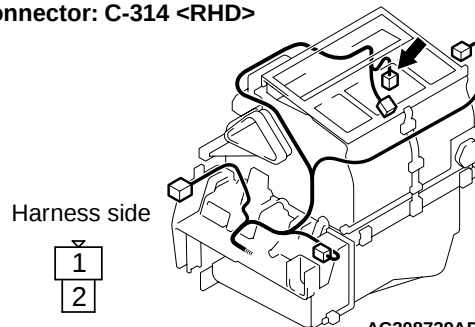


Harness side

1
2

AC309435AB

Connector: C-314 <RHD>



Harness side

1
2

AC308739AB

NOTE: Prior to the wiring harness inspection, check intermediate connector C-36, and repair if necessary.

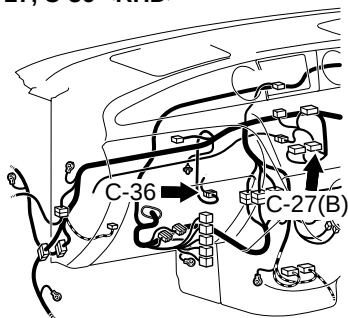
- Check the sensor signal line and earth line for open or short circuit.

Q: Is the check result normal?

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

NO : Repair the wiring harness.

Connectors: C-27, C-36 <RHD>



C-36

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

Harness side

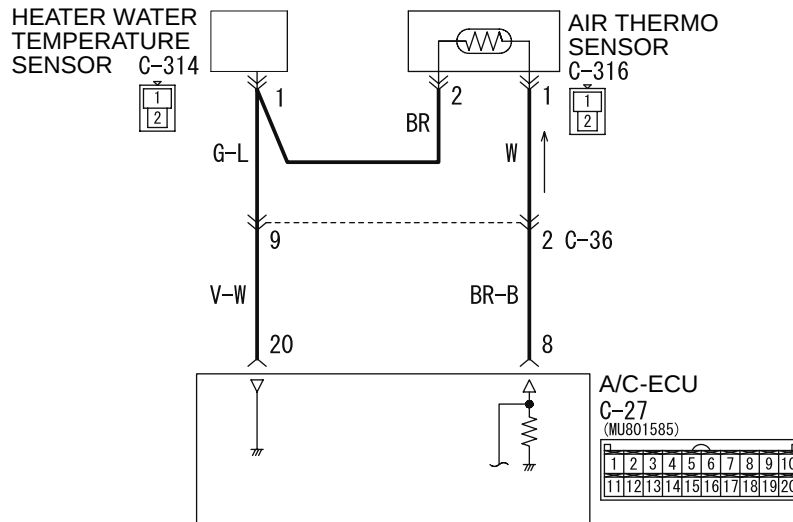
C-27

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

AC308736AK

Diagnosis code 21, 22: Air thermo sensor system

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 : Gray R : Red P : Pink V : Violet

W3Z05E04AA

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).

Possible causes

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

DIAGNOSIS

Step 1. Check the air thermo sensor.

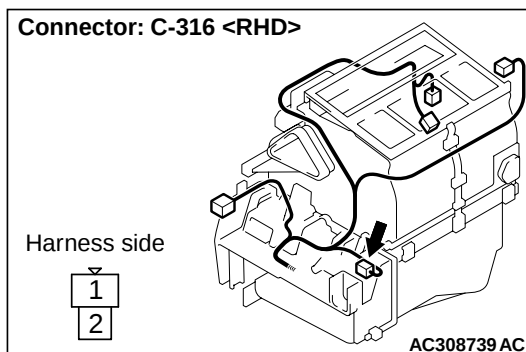
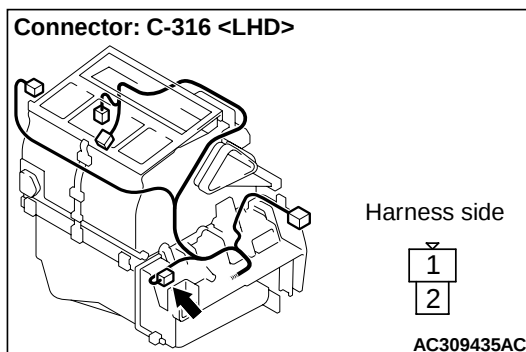
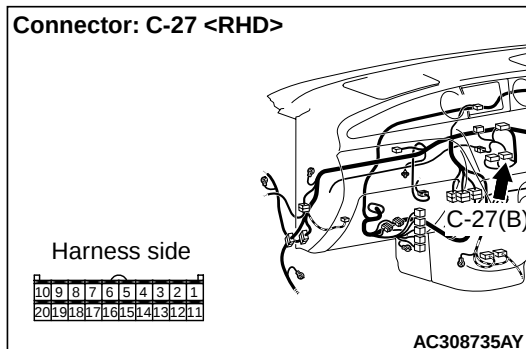
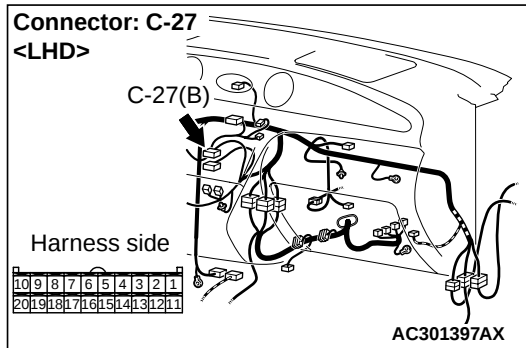
Refer to [P.55B-105](#).

Q: Is the check result normal?

YES : Go to Step 2.

NO : Replace the air thermo sensor.

Step 2. Connector check: C-27 A/C-ECU connector and C-316 air thermo sensor connector



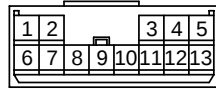
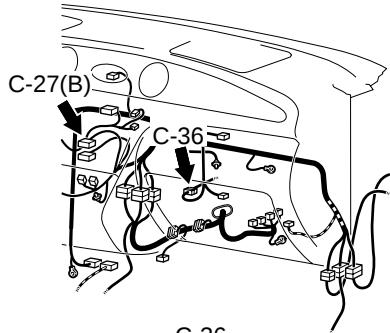
Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the connector.

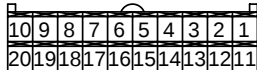
Step 3. Check the wiring harness between C-27 A/C-ECU connector (terminals 8 and 20) and C-316 air thermo sensor connector (terminals 1 and 2).

Connectors: C-27, C-36 <LHD>



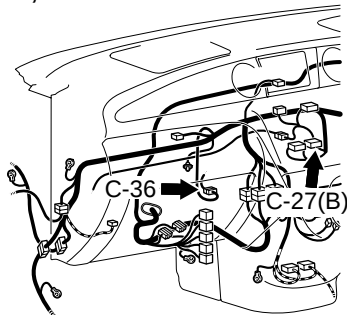
Harness side

C-27

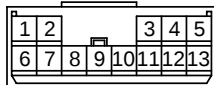


AC301398BE

Connectors: C-27, C-36 <RHD>

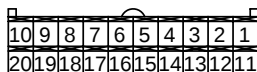


C-36



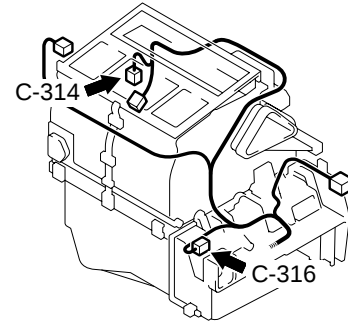
Harness side

C-27



AC308736AK

Connectors: C-314, C-316 <LHD>



Harness side

C-314



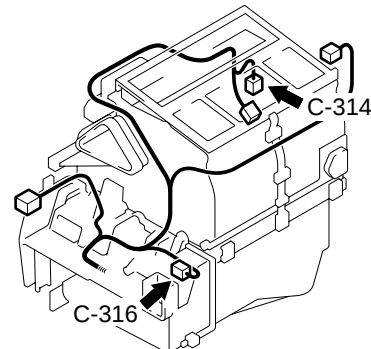
Harness side

C-316



AC309436AB

Connectors: C-314, C-316 <RHD>



Harness side

C-314



Harness side

C-316



AC308740AB

NOTE: Prior to the wiring harness inspection, check intermediate connector C-36 and heater water temperature sensor connector C-314, and repair if necessary.

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

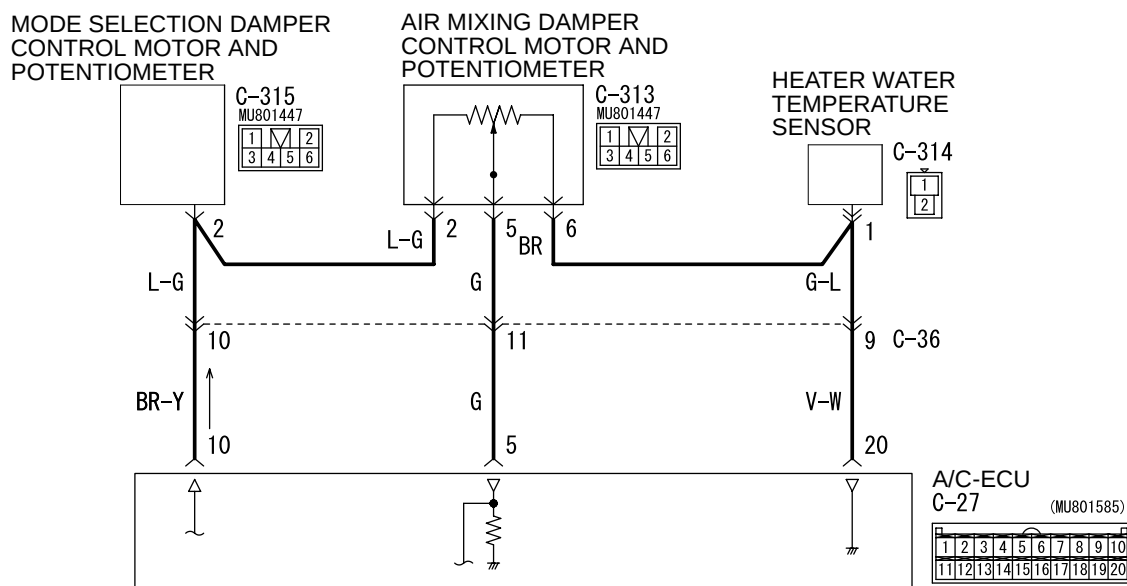
Q: Is the check result normal?

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

NO : Repair the wiring harness.

Diagnosis code 31: Air mixing damper control motor potentiometer system

Air Mixing Damper Control Motor Potentiometer Circuit



W3Z05E05AA

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.

Possible causes

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

DIAGNOSIS

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

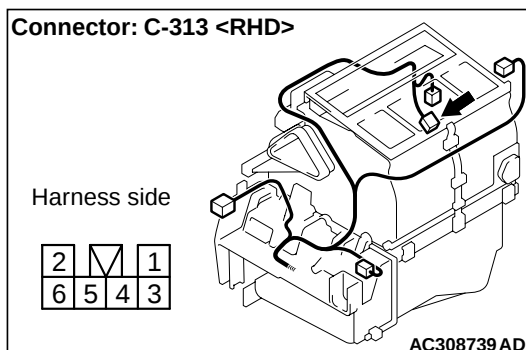
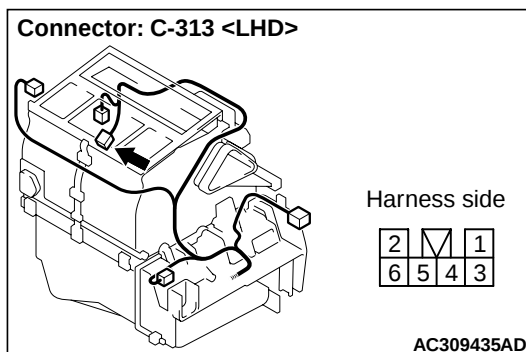
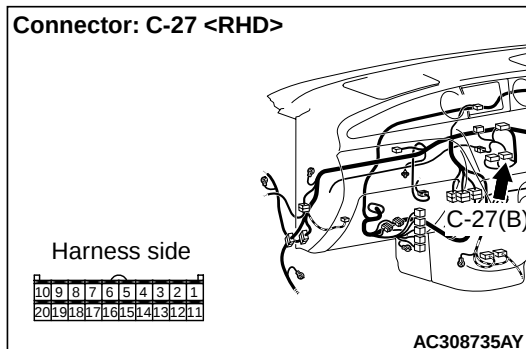
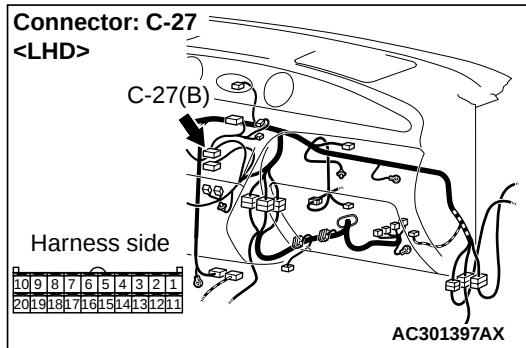
Refer to [P.55B-102](#).

Q: Is the check result normal?

YES : Go to Step 2.

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

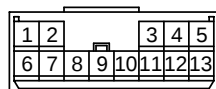
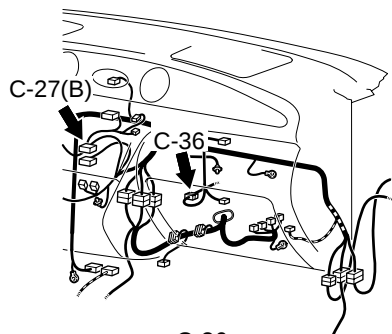
**Step 2. Connector check: C-27 A/C-ECU
connector and C-313 air mixing damper control
motor and potentiometer connector**



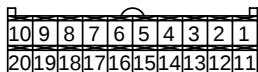
Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the connector.

Step 3. Check the wiring harness between C-27 A/C-ECU connector (terminals 10, 5 and 20) and C-313 air mixing damper control motor and potentiometer connector (terminals 2, 5 and 6).

Connectors: C-27, C-36 <LHD>

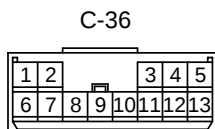
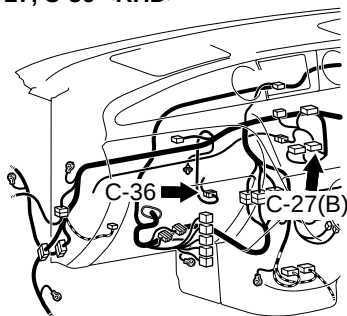


Harness side
C-27

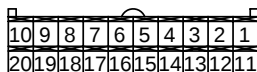


AC301398BE

Connectors: C-27, C-36 <RHD>

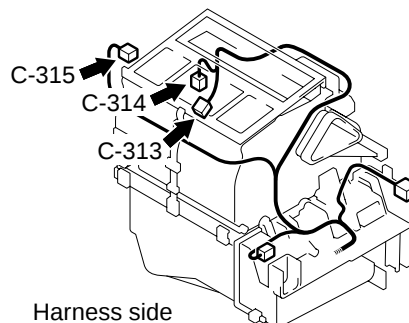


Harness side
C-27



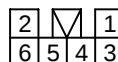
AC308736AK

Connectors: C-313, C-314, C-315 <LHD>



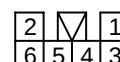
Harness side

C-313



Harness side

C-315



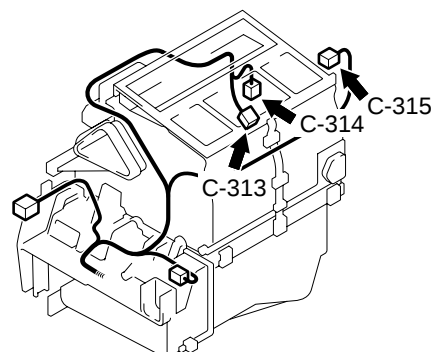
Harness side

C-314



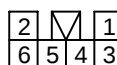
AC309436AC

Connectors: C-313, C-314, C-315 <RHD>



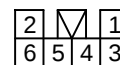
Harness side

C-313



Harness side

C-315



Harness side

C-314



AC308740AC

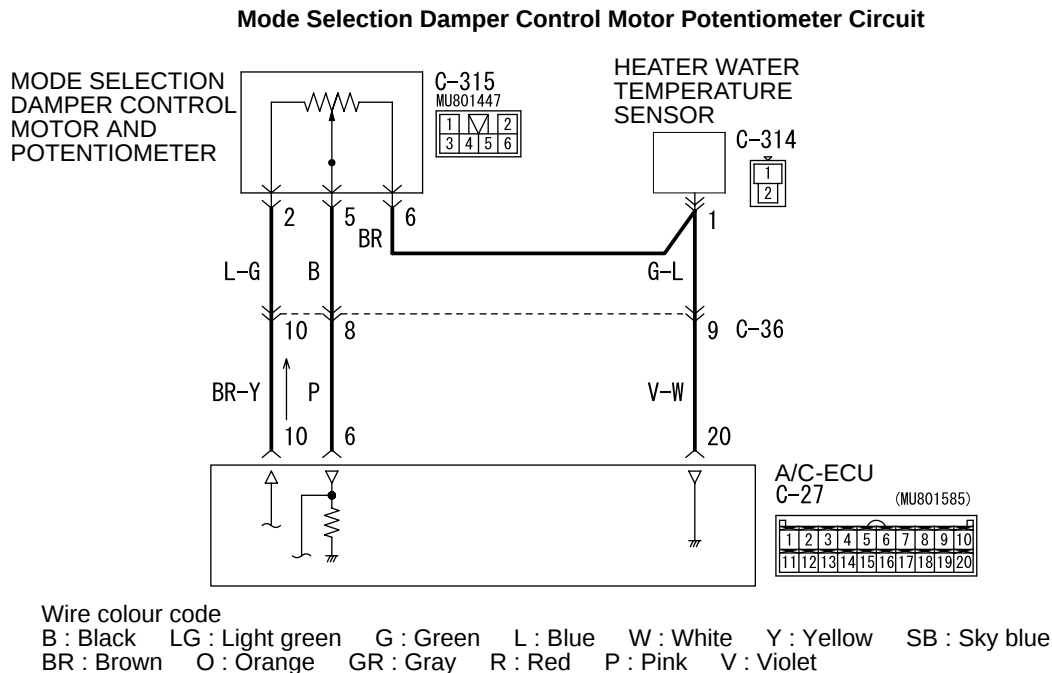
NOTE: Prior to the wiring harness inspection, check intermediate connector C-36, mode selection damper control motor and potentiometer connector C-315 and heater water temperature sensor connector C-314, and repair if necessary.

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

Q: Is the check result normal?

- YES** : Replace the automatic air conditioner control panel (A/C-ECU).
NO : Repair the wiring harness.

Diagnosis code 32: Mode selection damper control motor potentiometer system



W3Z05E08AA

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.

Possible causes

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

DIAGNOSIS

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

Refer to [P.55B-102](#).

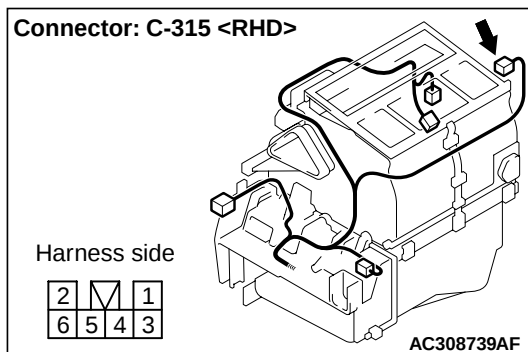
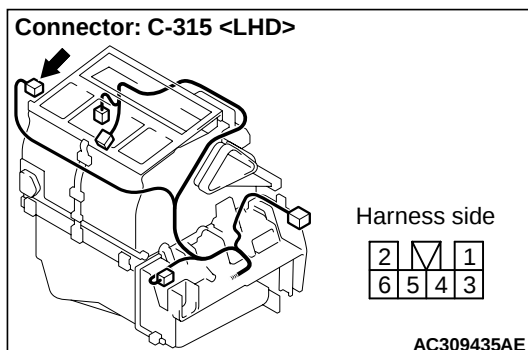
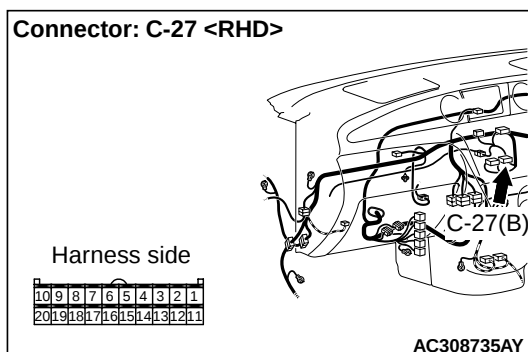
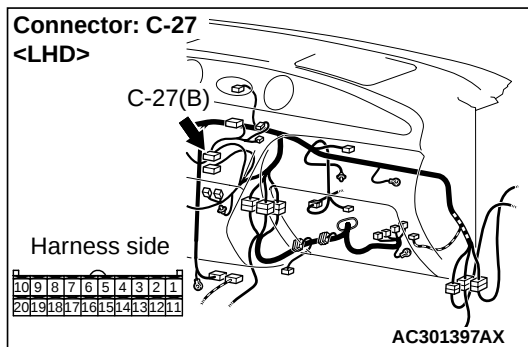
Q: Is the check result normal?

YES : Go to Step 2.

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

Step 2. Connector check: C-27 A/C-ECU connector and C-315 mode selection damper control motor and potentiometer connector

Q: Is the check result normal?

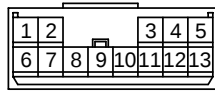
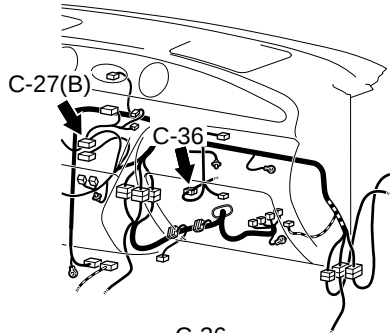


YES : Go to Step 3.

NO : Repair the connector.

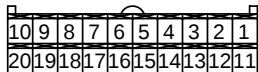
Step 3. Check the wiring harness between C-27 A/C-ECU connector (terminals 10, 6 and 20) and C-315 mode selection damper control motor and potentiometer connector (terminals 2, 5 and 6).

Connectors: C-27, C-36 <LHD>



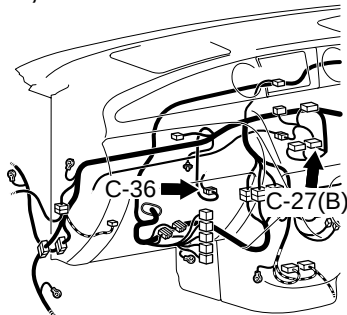
Harness side

C-27

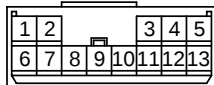


AC301398BE

Connectors: C-27, C-36 <RHD>

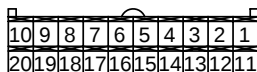


C-36



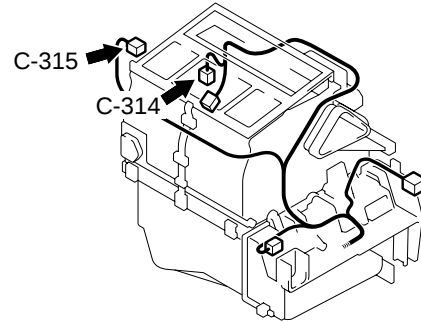
Harness side

C-27



AC308736AK

Connectors: C-314, C-315 <LHD>



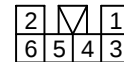
Harness side

C-314



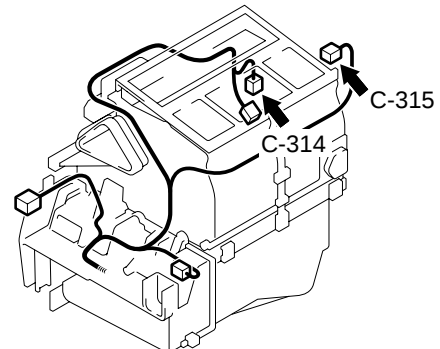
Harness side

C-315



AC309436AD

Connectors: C-314, C-315 <RHD>



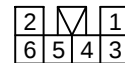
Harness side

C-314



Harness side

C-315



AC308740AD

NOTE: Prior to the wiring harness inspection, check intermediate connector C-36 and heater water temperature sensor connector C-314, and repair if necessary.

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

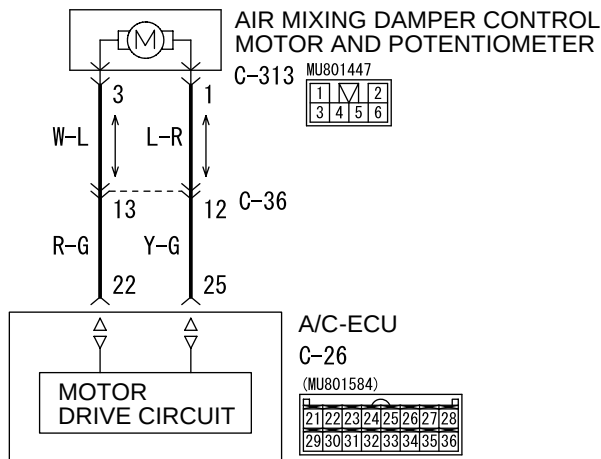
Q: Is the check result normal?

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

NO : Repair the wiring harness.

Diagnosis code 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 : Gray R : Red P : Pink V : Violet

W3Z05E03AA

COMMENTS ON TROUBLE SYMPTOM

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

Possible causes

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

DIAGNOSIS

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

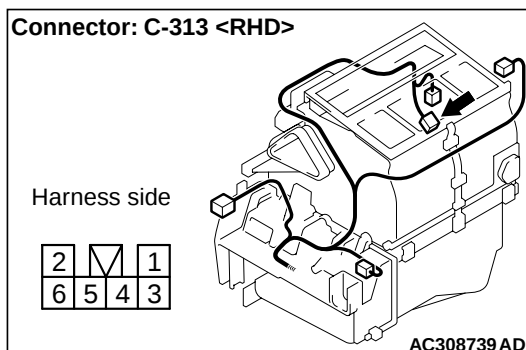
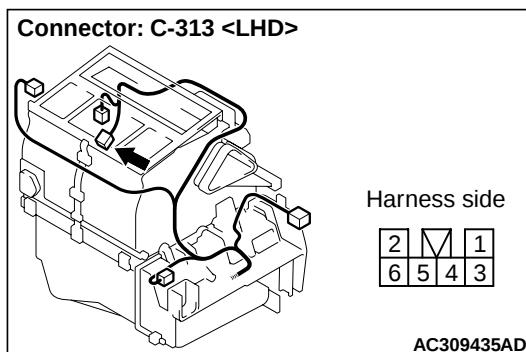
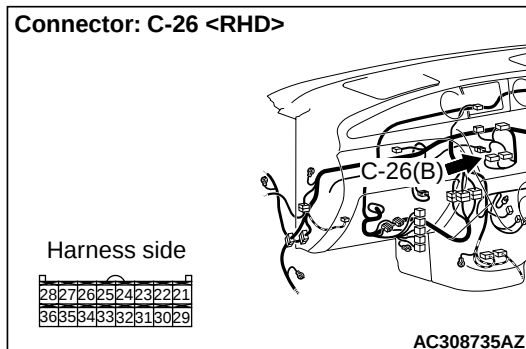
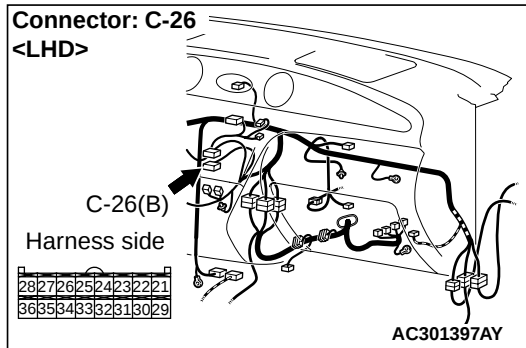
Refer to [P.55B-102](#).

Q: Is the check result normal?

YES : Go to Step 2.

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

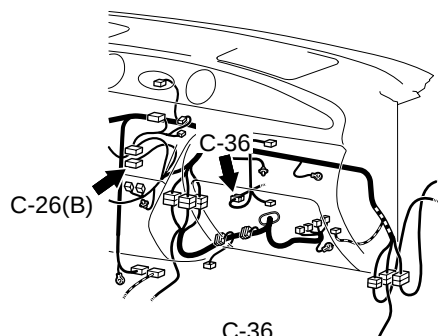
**Step 2. Connector check: C-26 A/C-ECU
connector and C-313 air mixing damper control
motor and potentiometer connector**



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

Step 3. Check the wiring harness between C-26 A/C-ECU connector (terminals 22 and 25) and C-313 air mixing damper control motor and potentiometer connector (terminals 3 and 1).

Connectors: C-26, C-36 <LHD>



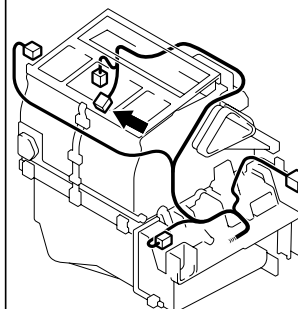
1	2			3	4	5
6	7	8	9	10	11	12
13						

Harness side
C-26

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

AC301398BI

Connector: C-313 <LHD>

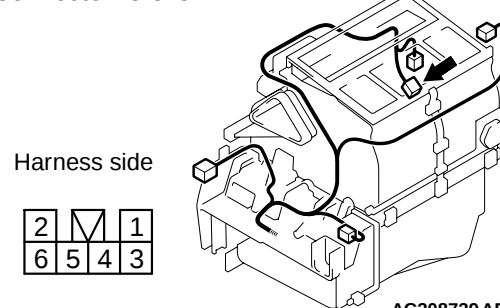


Harness side

2	1
6	5
4	3

AC309435AD

Connector: C-313 <RHD>



Harness side

2	1
6	5
4	3

AC308739AD

NOTE: Prior to the wiring harness inspection, check intermediate connector C-36, and repair if necessary.

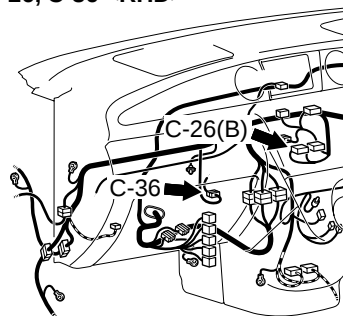
- Check the motor activating lines for open or short circuit.

Q: Is the check result normal?

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

NO : Repair the wiring harness.

Connectors: C-26, C-36 <RHD>



C-36

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

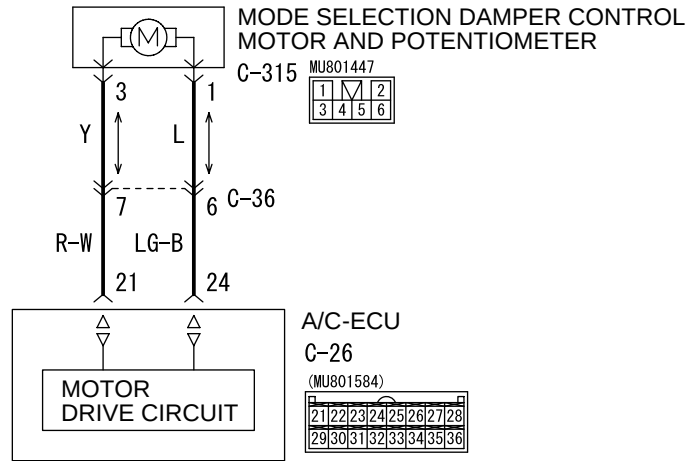
Harness side
C-26

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

AC308736AL

Diagnosis code 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 : Gray R : Red P : Pink V : Violet

W3Z05E07AA

COMMENTS ON TROUBLE SYMPTOM

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

Possible causes

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

DIAGNOSIS

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

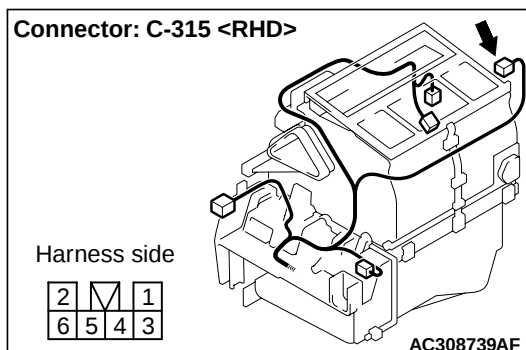
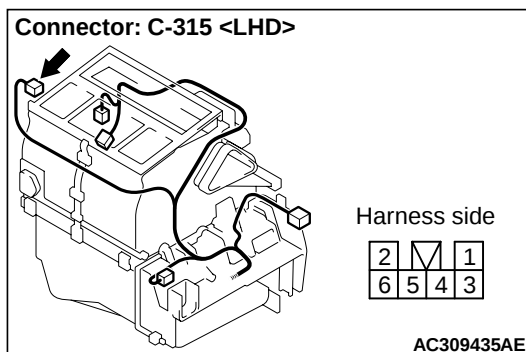
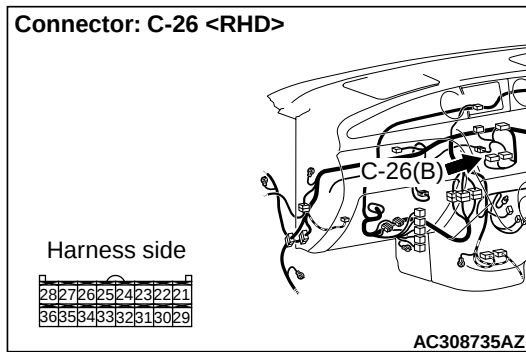
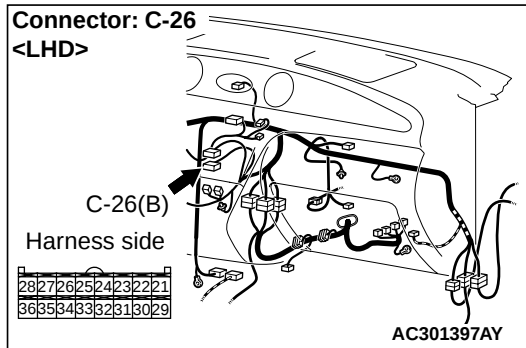
Refer to [P.55B-102](#).

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-26 A/C-ECU connector and C-315 mode selection damper control motor and potentiometer connector



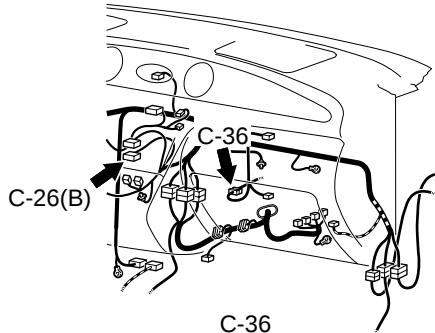
Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the connector.

Step 3. Check the wiring harness between C-26 A/C-ECU connector (terminals 21 and 24) and C-315 mode selection damper control motor and potentiometer connector (terminals 3 and 1).

Connectors: C-26, C-36 <LHD>



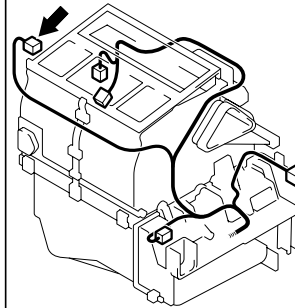
1	2			3	4	5
6	7	8	9	10	11	12
						13

Harness side
C-26

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

AC301398BI

Connector: C-315 <LHD>

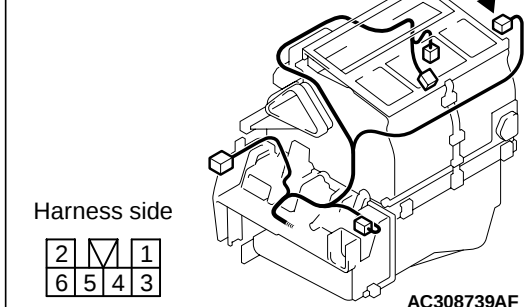


Harness side

2	✓	1
6	5	4
		3

AC309435AE

Connector: C-315 <RHD>



Harness side

2	✓	1
6	5	4
		3

AC308739AF

NOTE: Prior to the wiring harness inspection, check intermediate connector C-36, and repair if necessary.

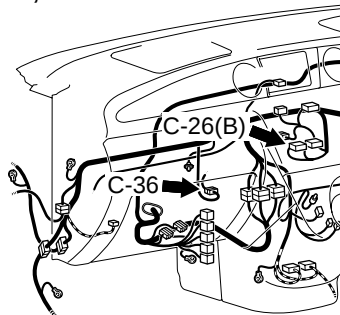
- Check the motor activating lines for open or short circuit.

Q: Is the check result normal?

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

NO : Repair the wiring harness.

Connectors: C-26, C-36 <RHD>



C-36

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

Harness side
C-26

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

AC308736AL

TROUBLE SYMPTOM CHART

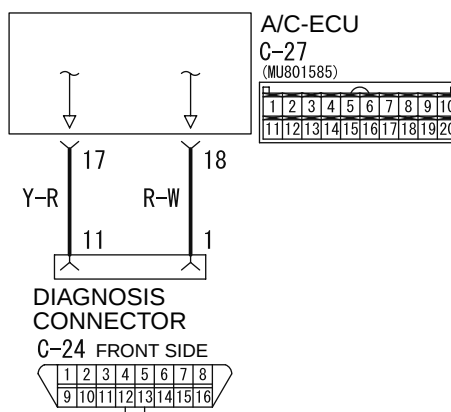
M1554005000214

Symptom	Inspection procedure number	Reference page
Communication with the MUT-II is not possible.	1	P.55B-28
The air conditioner does not work at all.	2	P.55B-31 <4G63>, P.55B-43 <4G69>
A/C outlet air temperature cannot be set.	3	P.55B-56
The blower does not work.	4	P.55B-57
The blower air volume cannot be changed.	5	P.55B-68
When sunlight intensity changes, air outlet temperature does not change.	6	P.55B-70
The A/C indicator flashes.	7	P.55B-72
The inside/outside air changeover is impossible.	8	P.55B-73
Defogger function does not operate.	9	P.55B-78
Malfunction of the A/C-ECU power supply system.	10	P.55B-88

SYMPTOM PROCEDURES

INSPECTION PROCEDURE 1: Communication with the MUT-II/III is not possible.

Data Link Connector 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 : Gray R : Red P : Pink V : Violet

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 MUT-II/III, the diagnosis line between the A/C-ECU and the diagnosis connector may be defective.

Possible causes

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

DIAGNOSIS

Step 1. Check the communication with other systems.

Q: Is the communication with the other systems possible using the MUT-II/III?

YES : Go to Step 2.

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

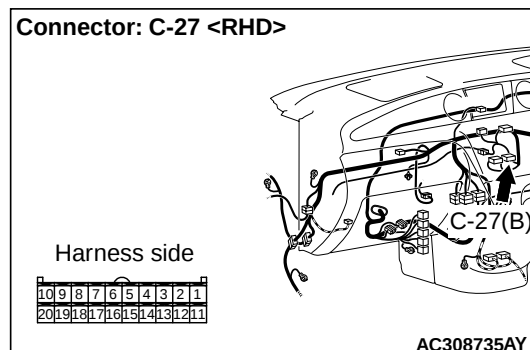
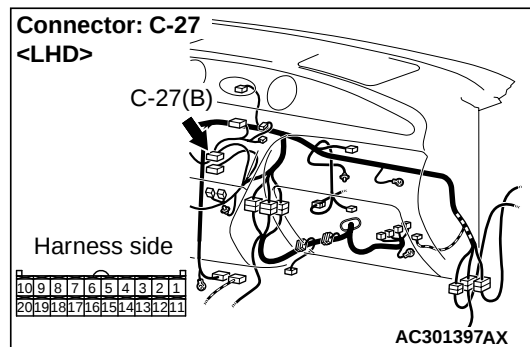
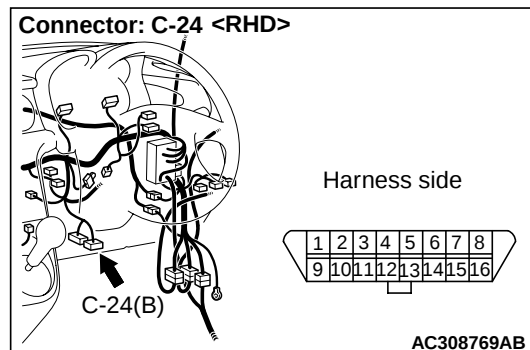
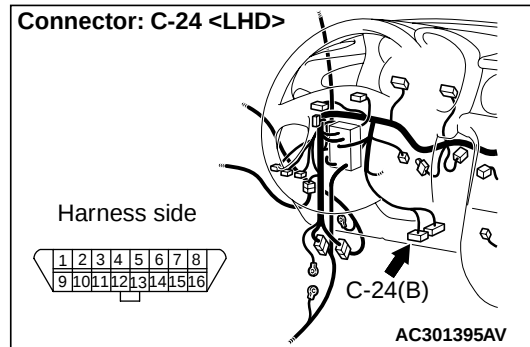
STEP 2. Check operations of the air conditioner, defogger and outside/inside air selection damper control motor.

Q: Does the air conditioner, defogger or outside/inside air selection damper control motor operate?

YES : Go to Step 3.

NO : Refer to Inspection procedure 10 "Malfunction of the A/C-ECU power supply system P.55B-88."

Step 3. Connector check: C-27 A/C-ECU connector and C-24 diagnosis connector

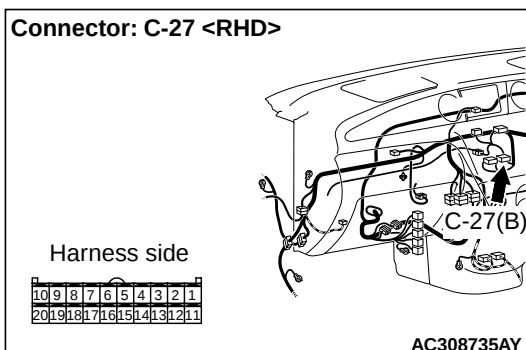
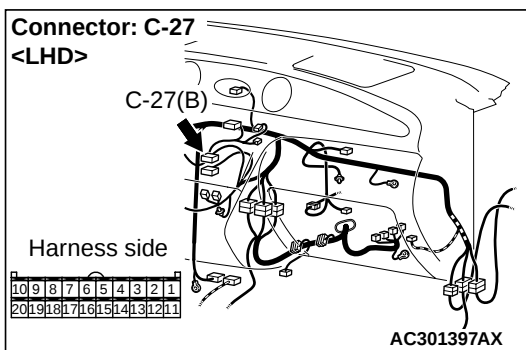
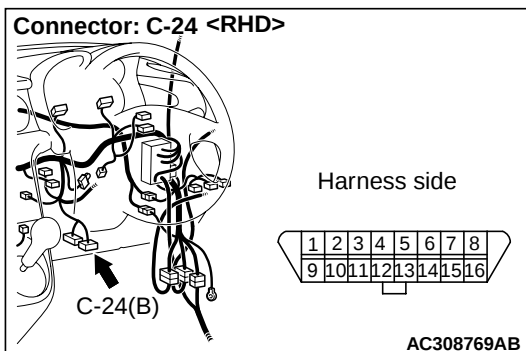
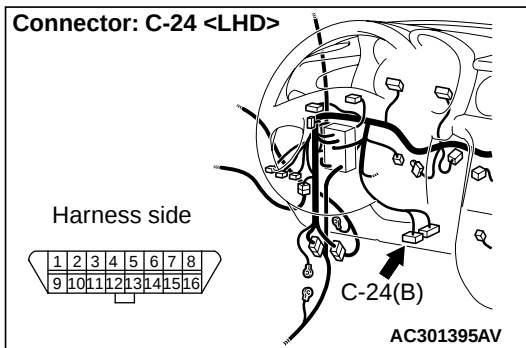


Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the connector.

Step 4. Check the wiring harness between C-27 A/C-ECU connector (terminal 17 and 18) and C-24 diagnosis connector (terminal 11 and 1).



- Check the communication lines for open or short circuit.

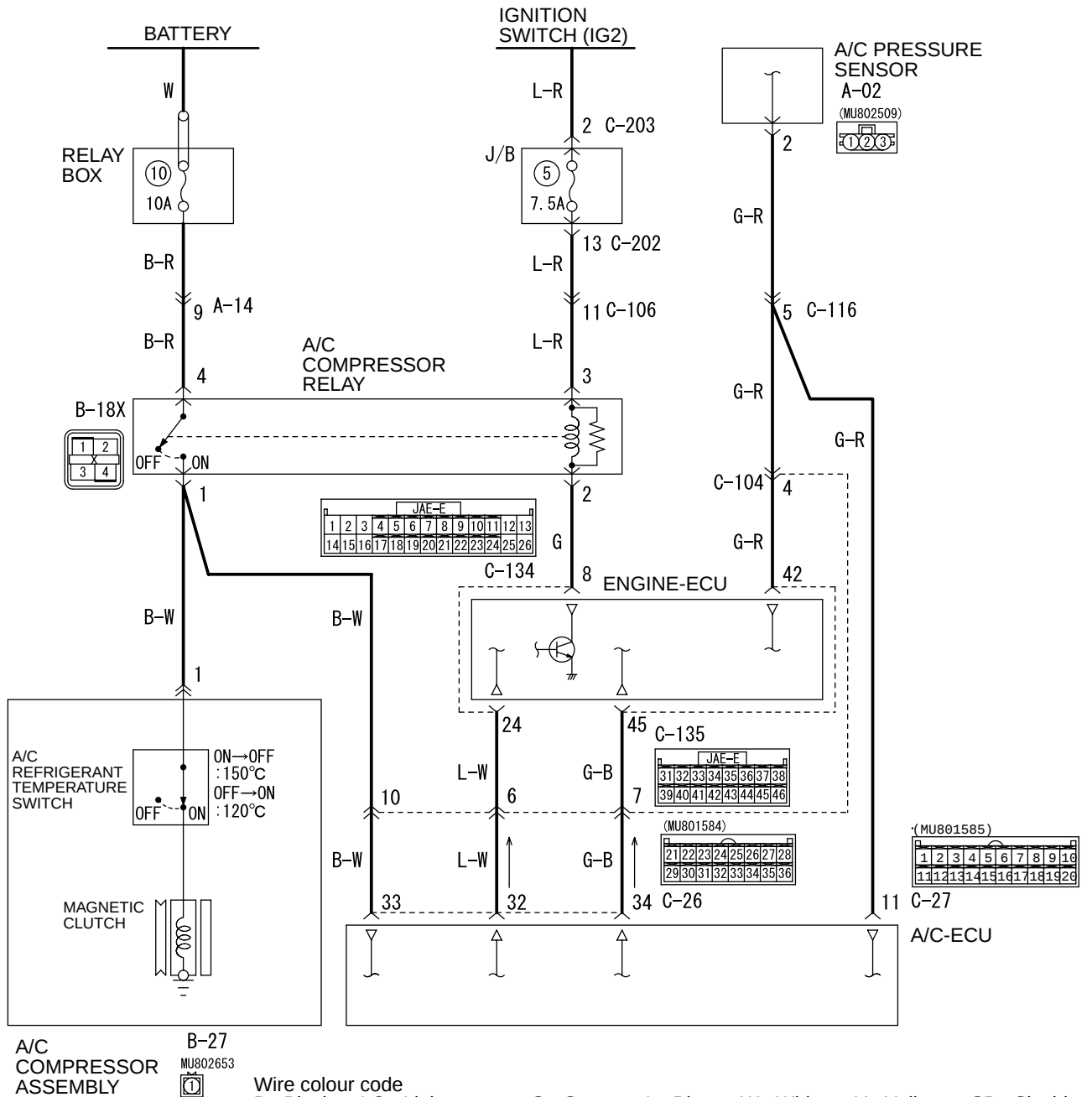
Q: Is the check result normal?

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

NO : Repair the wiring harness.

INSPECTION PROCEDURE 2: The air conditioner does not work at all. <4G63>

A/C Compressor Circuit



W3Z08E03AA

CIRCUIT OPERATION

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

Possible causes

- Improper amount of refrigerant
- Malfunction of the A/C pressure sensor

- Malfunction of the A/C compressor relay
- Malfunction of the magnetic clutch
- Malfunction of the A/C refrigerant temperature switch
- Damaged the wiring harness or connectors
- Malfunction of the automatic air conditioner control panel (A/C-ECU)

DIAGNOSIS

Step 1. Use the MUT-II/III to confirm a diagnosis code.

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

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to diagnosis code chart [P.55B-4](#).

Step 2. Check the blower operation.

- (1) Turn the ignition switch to the ON position.
- (2) Blower knob: Other than OFF
- (3) Check that the air comes out of the blower.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Refer to Inspection Procedure 4 "The blower does not work."

STEP 3. Check the defogger and outside/inside air selection damper control motor operation.

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

YES : Go to Step 4.

NO : Refer to Inspection procedure 10 "Malfunction of the A/C-ECU power supply system [P.55B-88](#)."

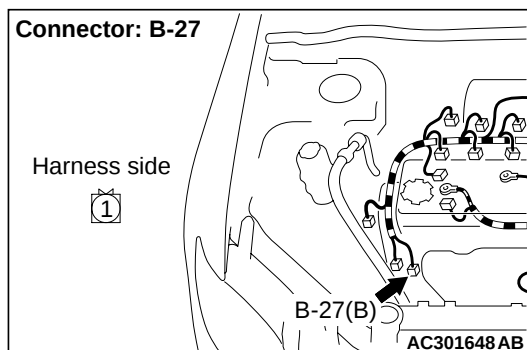
STEP 4. Check the A/C compressor.

Check the A/C compressor for compressor oil leaks.

Q: Is the check result satisfactory?

YES : Go to Step 5.

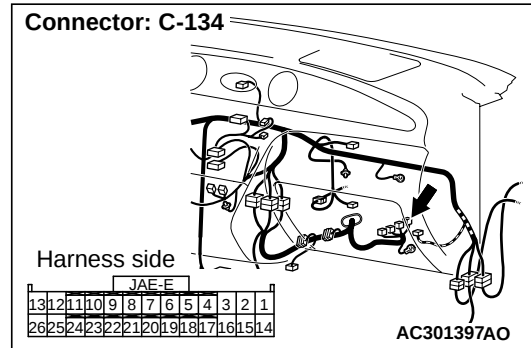
NO : Replace the A/C compressor or the expansion valve.

STEP 5. Measure the voltage at B-27 A/C compressor connector.

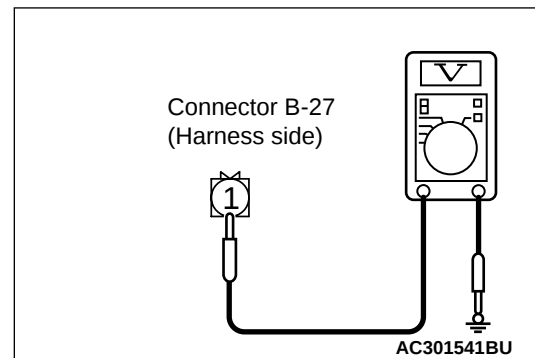
- (1) Disconnect the connector, and measure at the

wiring harness side.

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



- (3) Disconnect engine-ECU connector C-134 and earth terminal 8.



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

OK: System voltage

Q: Is the check result normal?

YES : Go to Step 17.

NO : Go to Step 6.

STEP 6. Check the A/C compressor relay continuity.

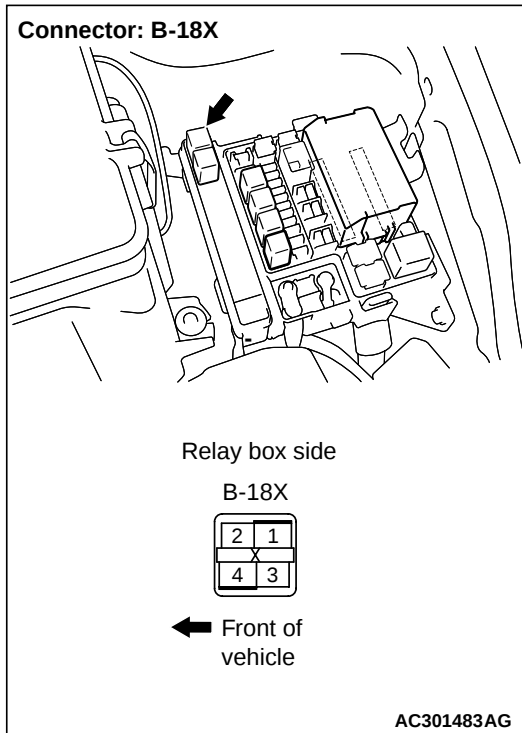
Refer to GROUP 55A - On vehicle service, power relay [P.55A-57](#).

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

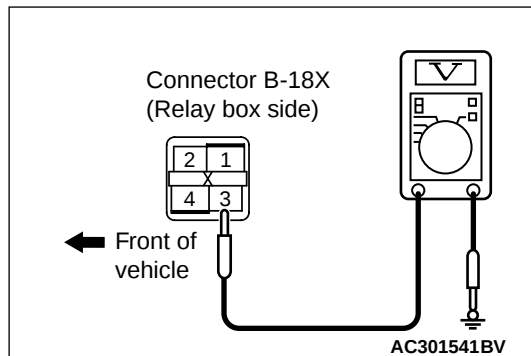
YES : Go to Step 7.

NO : Replace the A/C compressor relay.

STEP 7. Measure the voltage at B-18X A/C compressor relay connector.



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



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

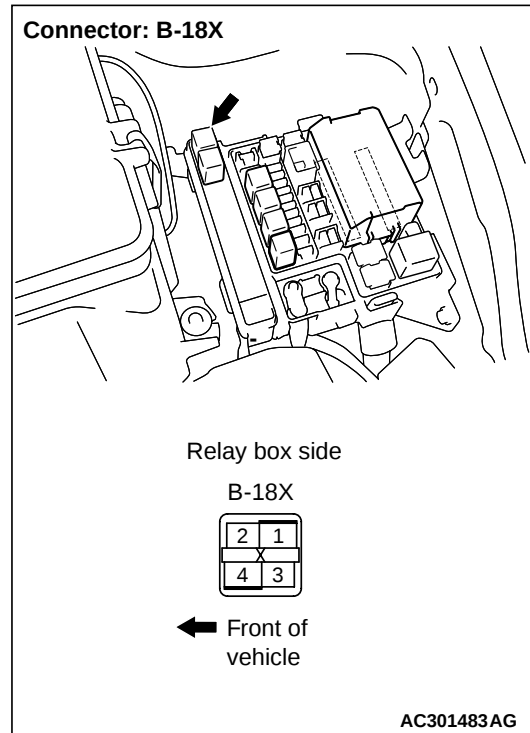
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 10.

NO : Go to Step 8.

STEP 8. Connector check: B-18X A/C compressor relay connector.

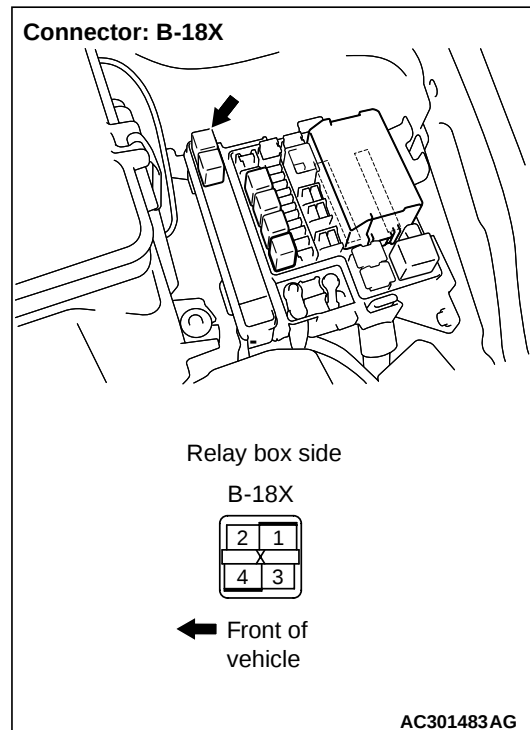


Q: Is the check result normal?

YES : Go to Step 9.

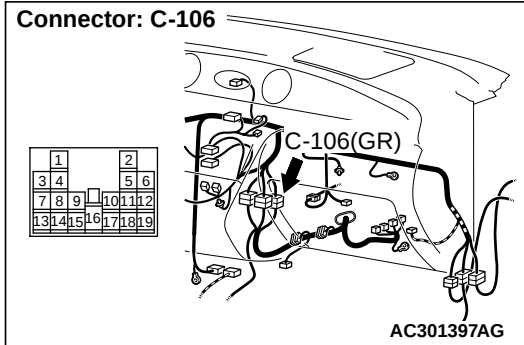
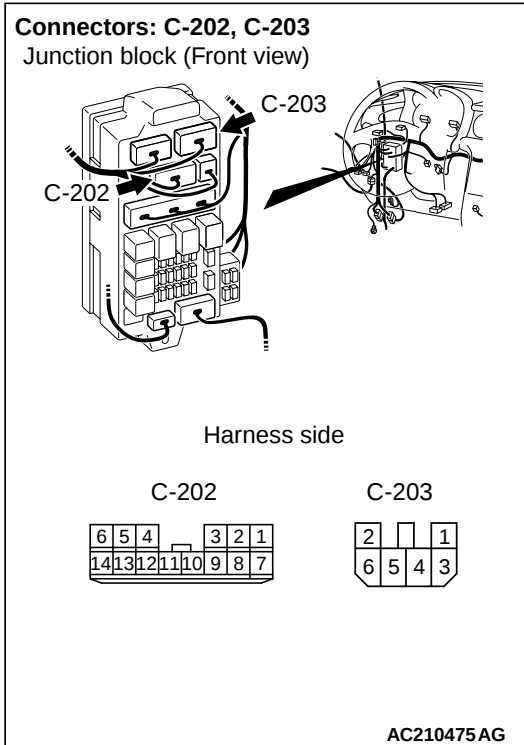
NO : Repair the connector.

STEP 9. Check the wiring harness between B-18X A/C compressor relay connector terminal No.3 and the ignition switch (IG2).



NOTE:

Connector: C-106

Connectors: C-202, C-203
Junction block (Front view)

Prior to the wiring harness inspection, check junction block connectors C-203, C-202 and intermediate connector C-106, and repair if necessary.

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

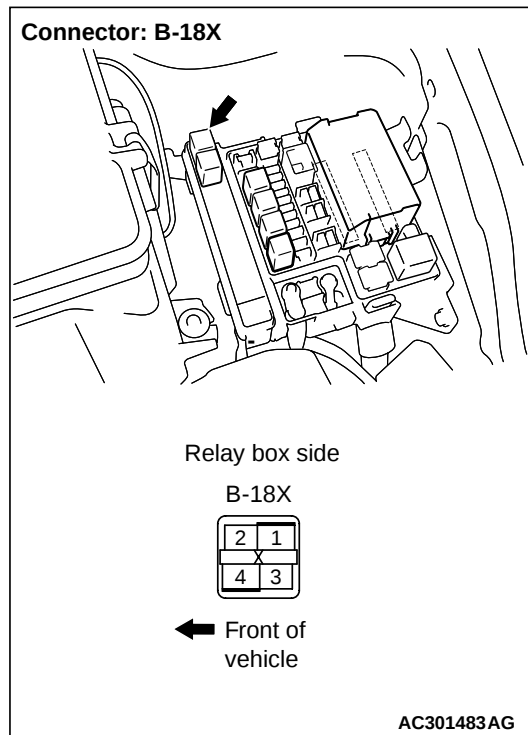
Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-6).

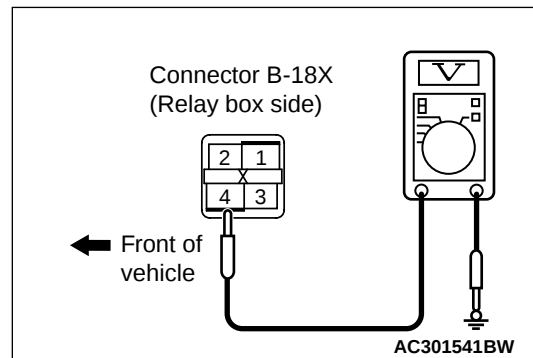
NO : Repair the wiring harness.

STEP 10. Measure the voltage at B-18X A/C compressor relay connector.

Connector: B-18X



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



- (2) Voltage between terminal 4 and body earth.

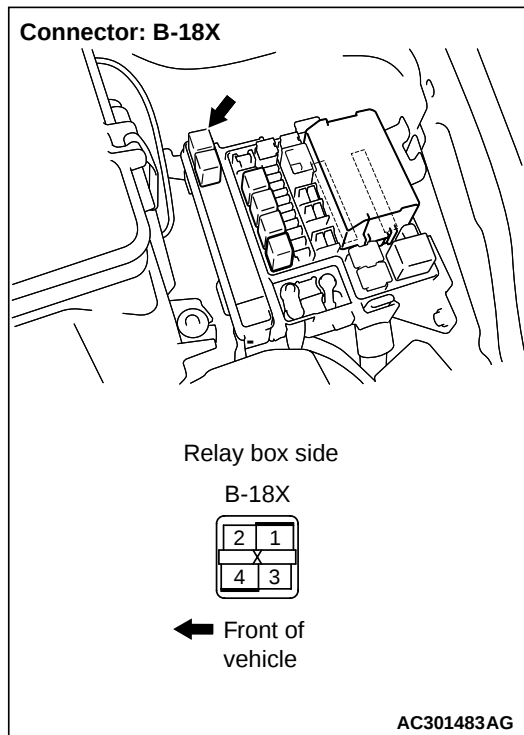
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 13.

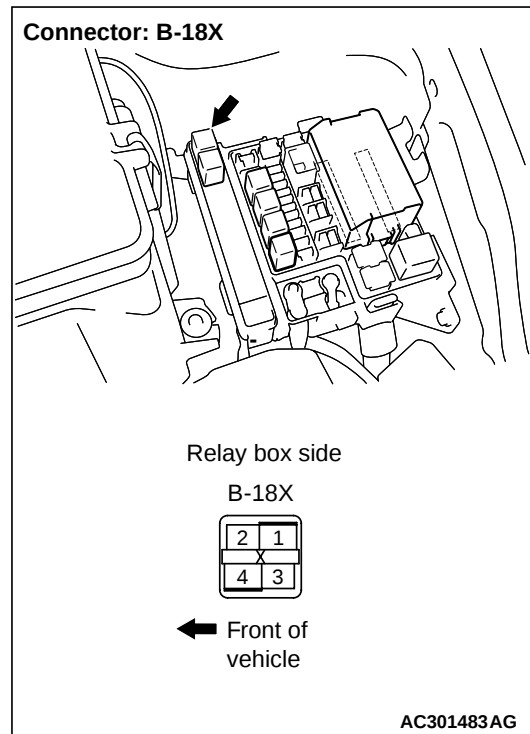
NO : Go to Step 11.

STEP 11. Connector check: B-18X A/C compressor relay connector

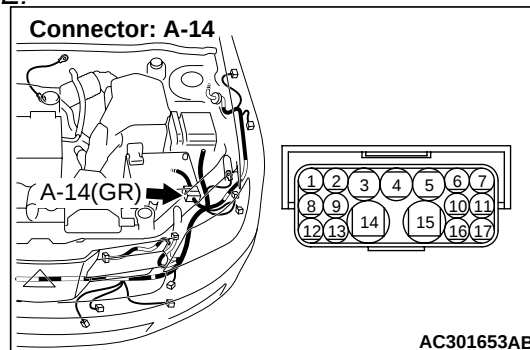


Q: Is the check result normal?
YES : Go to Step 12.
NO : Repair the connector.

STEP 12. Check the wiring harness between B-18X A/C compressor relay connector terminal No.4 and the battery.



NOTE:



Prior to the wiring harness inspection, check intermediate connector A-14, and repair if necessary.

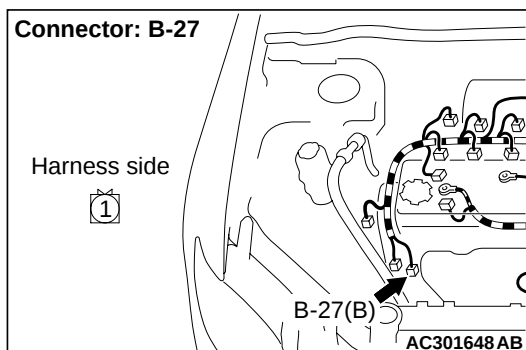
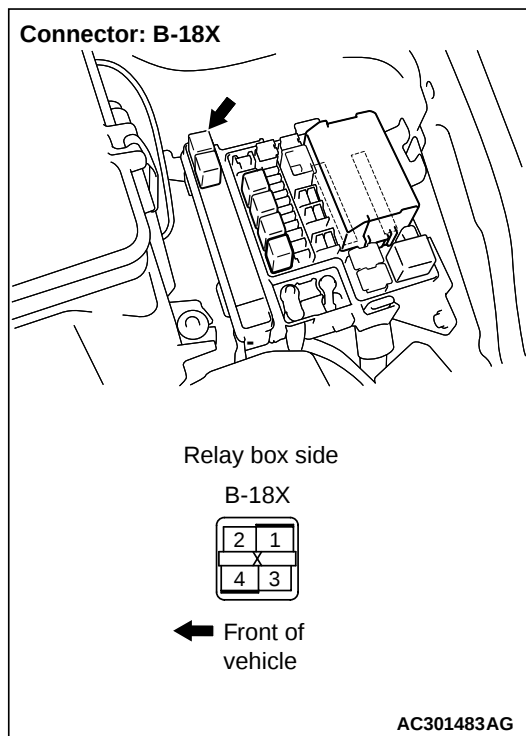
- Check the A/C compressor relay power supply line for open circuit.

Q: Is the check result normal?

YES : Check that the air conditioner works normally.

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

STEP 13. Connector check: B-18X A/C compressor relay connector and B-27 A/C compressor connector

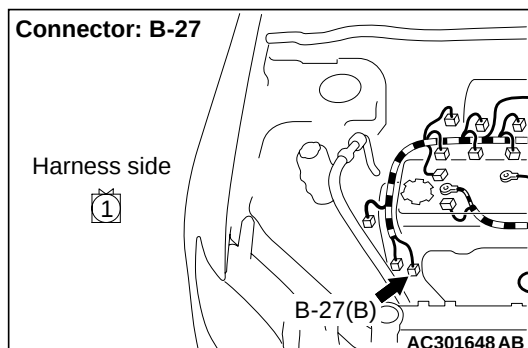
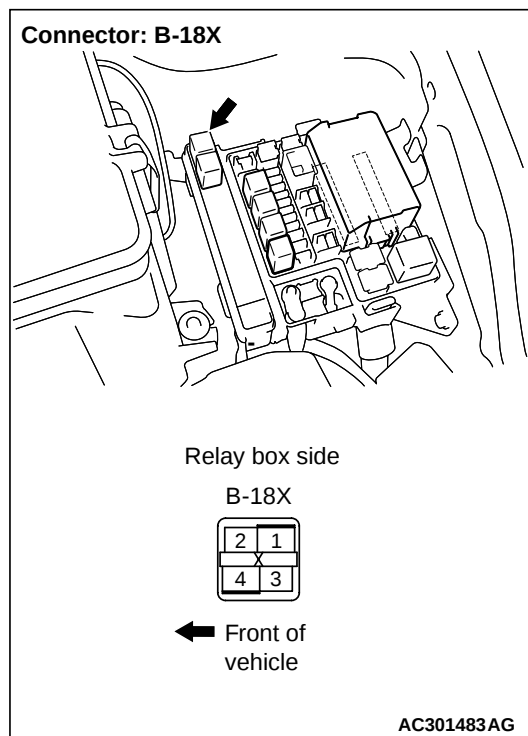


Q: Is the check result normal?

YES : Go to Step 14.

NO : Repair the connector.

STEP 14. Check the wiring harness between B-18X A/C compressor relay connector terminal No.1 and B-27 A/C compressor connector terminal No.1.



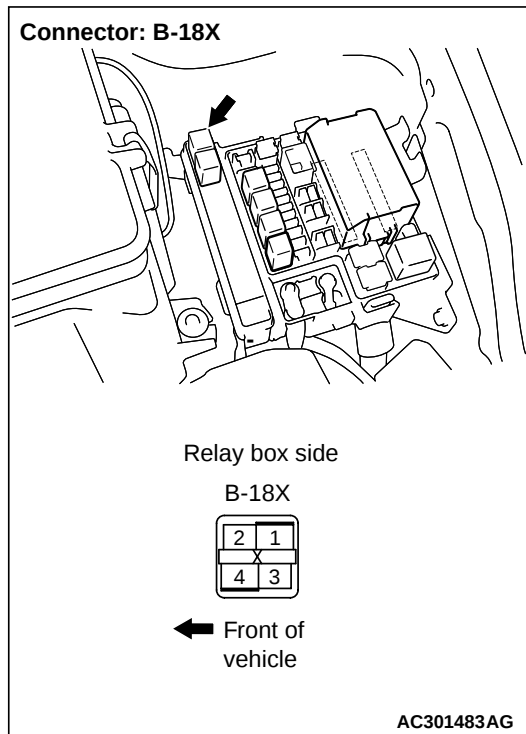
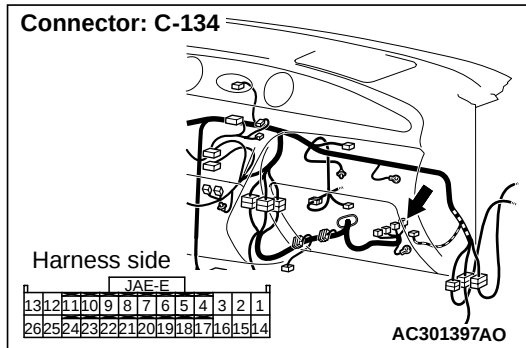
- Check the A/C compressor relay power supply line for open circuit.

Q: Is the check result normal?

YES : Go to Step 15.

NO : Repair the wiring harness.

STEP 15. Connector check: C-134 engine-ECU connector and B-18X A/C compressor relay connector



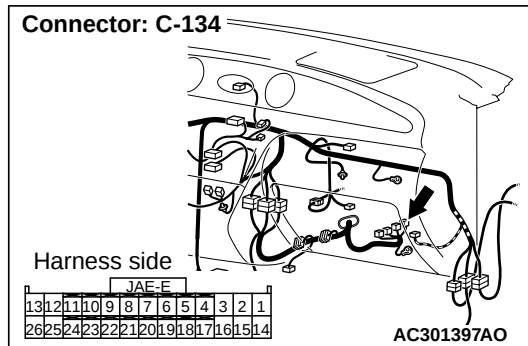
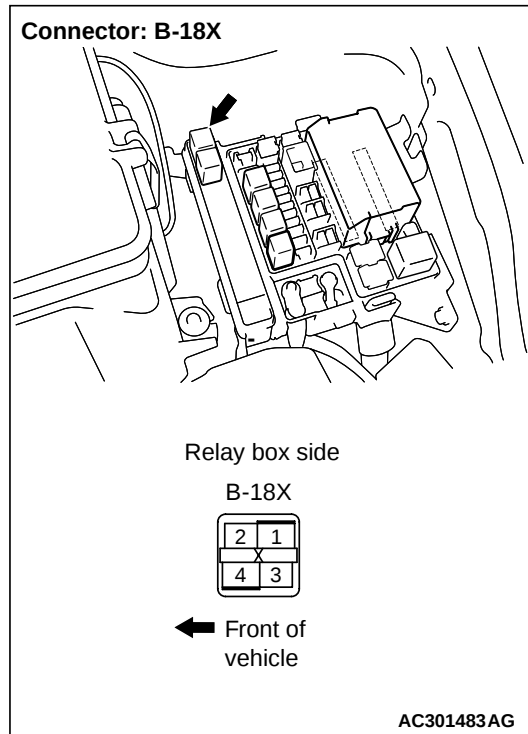
- Check the A/C compressor relay earth line for open circuit.

Q: Is the check result normal?

YES : Go to Step 16.

NO : Repair the connector.

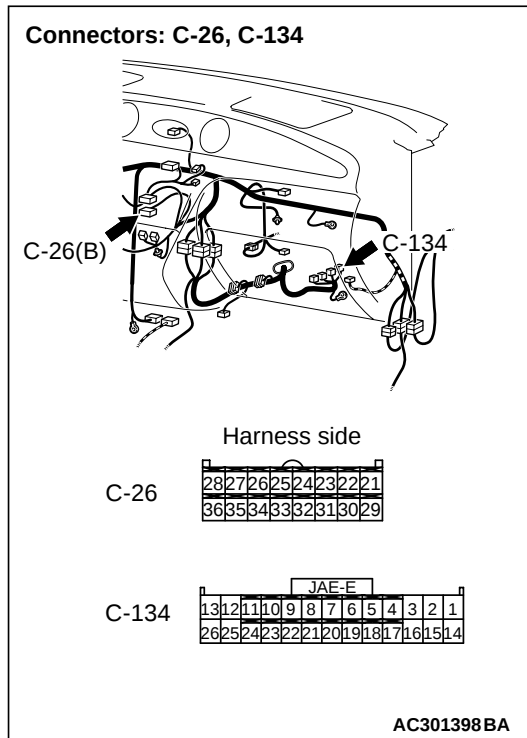
STEP 16. Check the wiring harness between C-134 engine-ECU connector terminal No.8 and B-18X A/C compressor relay connector terminal No.2.



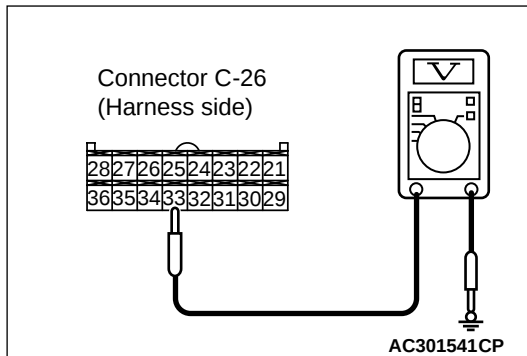
Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-6](#)).

NO : Repair the wiring harness.

STEP 17. Measure the voltage at C-26 A/C-ECU connector.

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Disconnect engine-ECU connector C-134 and earth terminal 8.



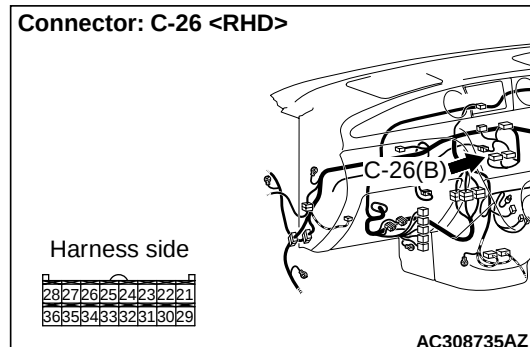
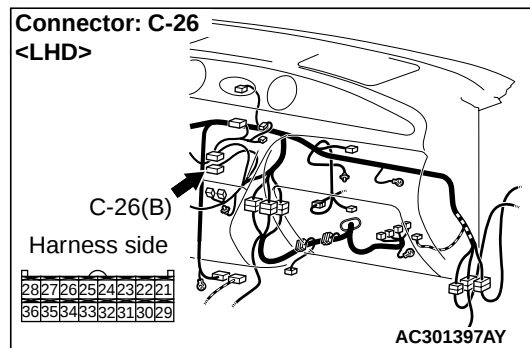
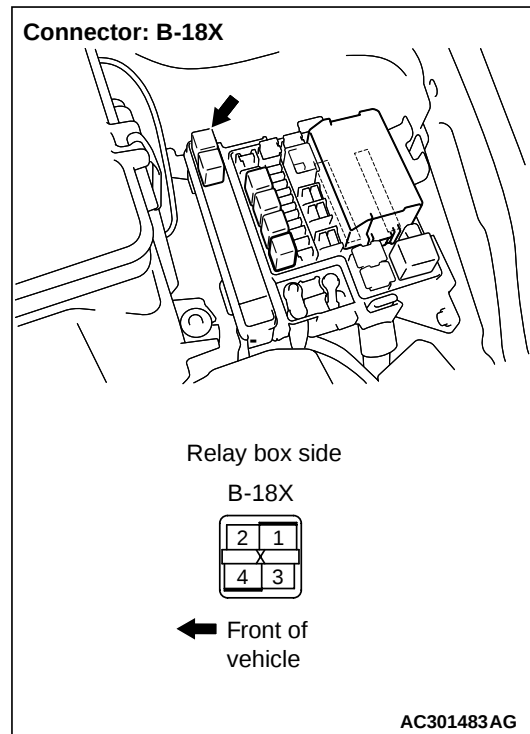
- (4) Continuity between terminal 33 and body earth.

OK: System voltage

Q: Is the check result normal?

YES : Go to Step 20.

NO : Go to Step 18.

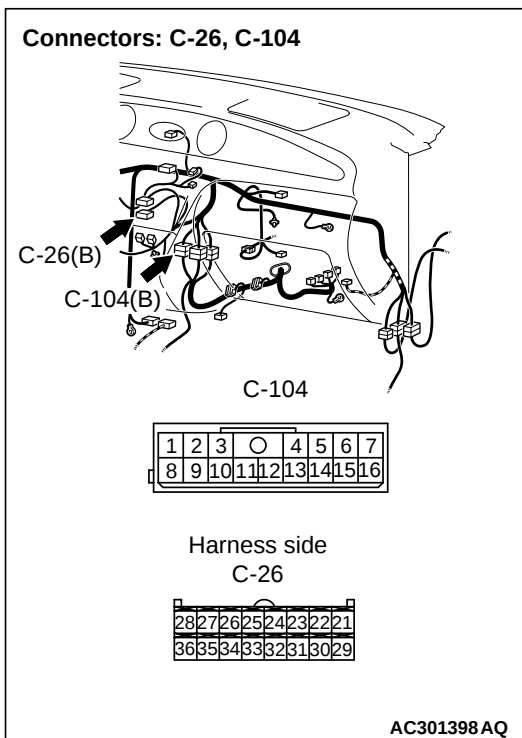
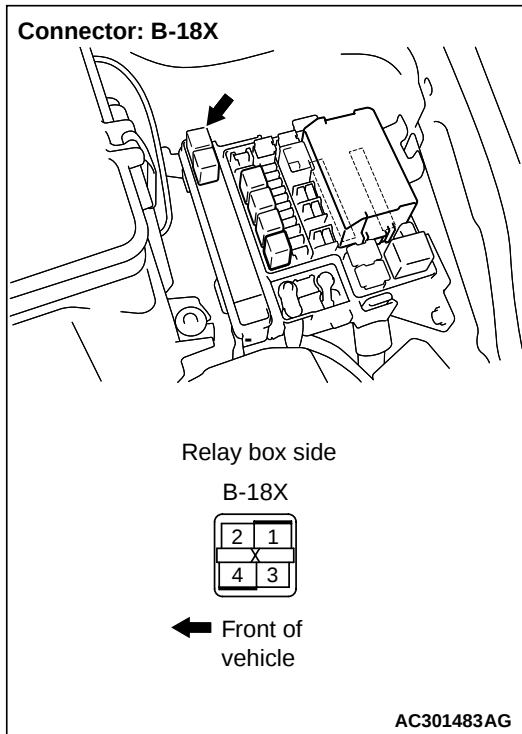
STEP 18. Connector check: B-18X A/C compressor relay connector and C-26 A/C-ECU connector

Q: Is the check result normal?

YES : Go to Step 19.

NO : Repair the connector.

STEP 19. Check the wiring harness between B-18X A/C compressor relay connector terminal No.1 and C-26 A/C-ECU connector terminal No.33.



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.00-6](#)).
NO : Repair the wiring harness.

STEP 20. Check the magnetic clutch operation.

Refer to [P.55A-51](#).

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

YES : Go to Step 21.
NO : Replace the compressor magnet clutch.

STEP 21. Check the refrigerant temperature switch.

Refer to [P.55A-73](#).

Q: Is the refrigerant temperature switch operating properly?

YES : Go to Step 22.
NO : Replace the refrigerant temperature switch.

STEP 22. Check the refrigerant level.

Refer to [P.55A-51](#).

Q: Is the refrigerant level correct?

YES : Go to Step 23.
NO : Correct the refrigerant level (Refer to On-vehicle Service [P.55A-52](#)).

STEP 23. Check the A/C pressure sensor operation.

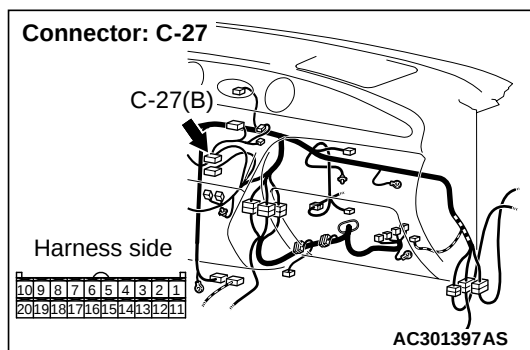
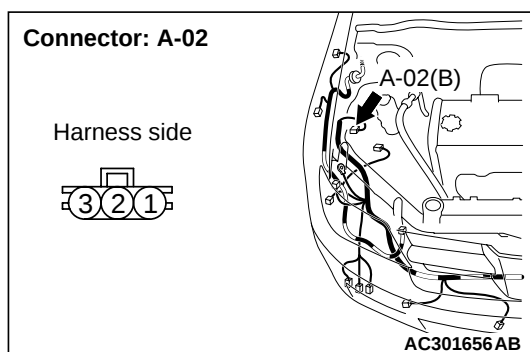
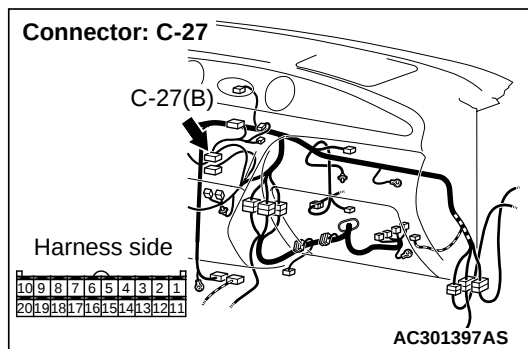
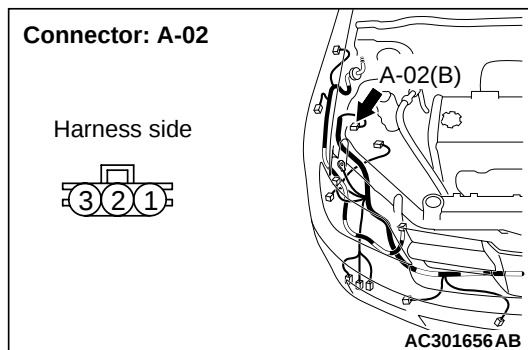
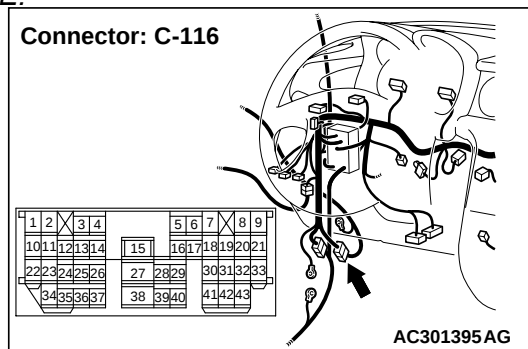
Refer to [P.55A-51](#).

Q: Is the A/C pressure sensor operating properly?

YES : Go to Step 24.
NO : Replace the A/C pressure sensor.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-104, and repair if necessary.

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

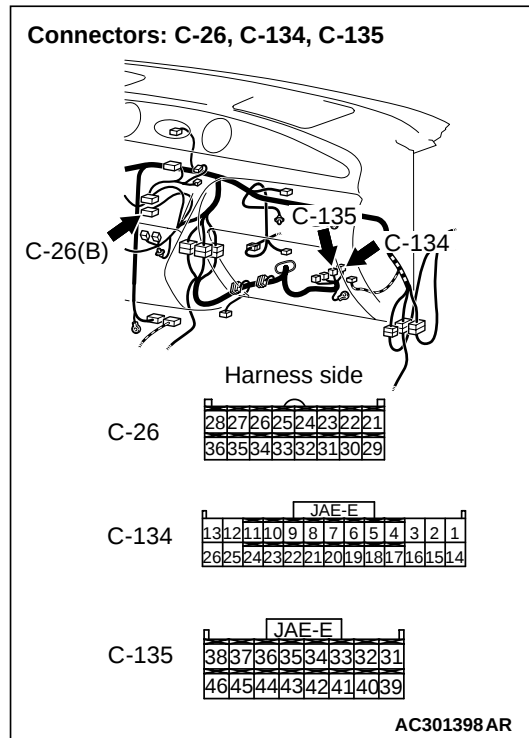
STEP 24. Connector check: A-02 A/C pressure sensor connector and C-27 A/C-ECU connector**Q: Is the check result normal?****YES :** Go to Step 25.**NO :** Repair the connector.**STEP 25. Check the wiring harness between A-02 A/C pressure sensor connector terminal No.2 and C-27 A/C-ECU connector terminal No.11.****NOTE:**

Prior to the wiring harness inspection, check intermediate connector C-116, and repair if necessary.

- Check the A/C pressure sensor signal line for open circuit.

Q: Is the check result normal?**YES :** Go to Step 26.**NO :** Repair the wiring harness.

STEP 26. Connector check: C-134 engine-ECU connector and C-26 A/C-ECU connector

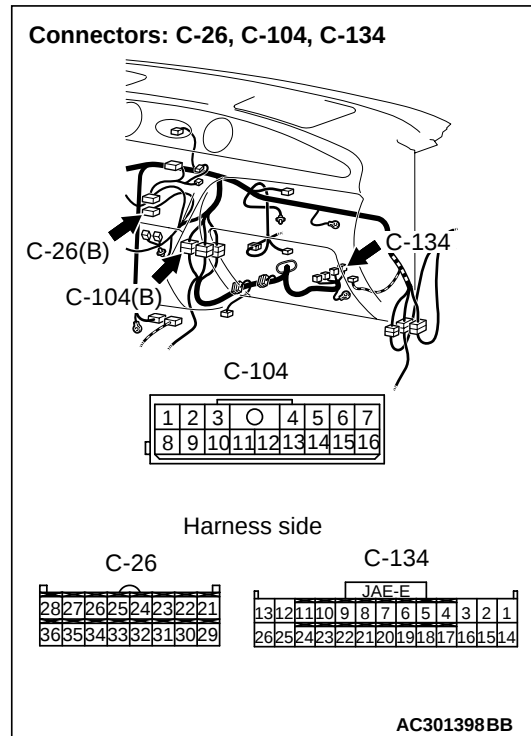


Q: Is the check result normal?

YES : Go to Step 27.

NO : Repair the connector.

STEP 27. Check the wiring harness between C-134 engine-ECU connector terminal No.24 and C-26 A/C-ECU connector terminal No.32.



NOTE: Prior to the wiring harness inspection, check intermediate connector C-104, and repair if necessary.

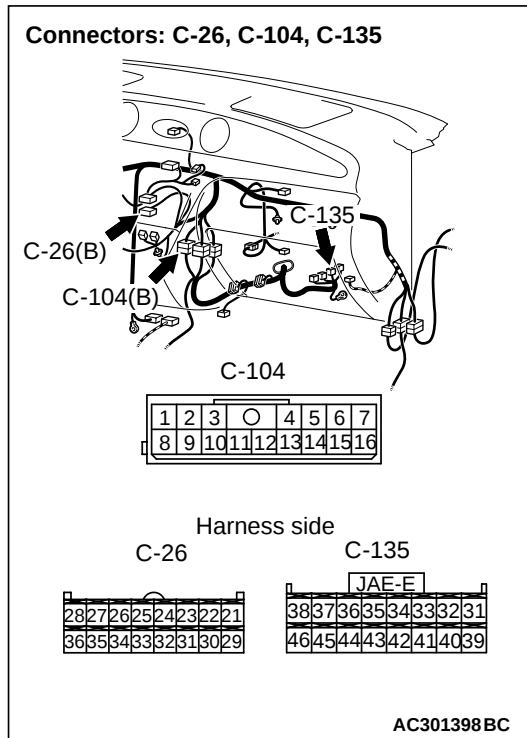
- Check the communication line for open circuit.

Q: Is the check result normal?

YES : Go to Step 28.

NO : Repair the wiring harness.

STEP 28. Check the wiring harness between C-135 engine-ECU connector terminal No.45 and C-26 A/C-ECU connector terminal No.34.



NOTE: Prior to the wiring harness inspection, check intermediate connector C-104, and repair if necessary.

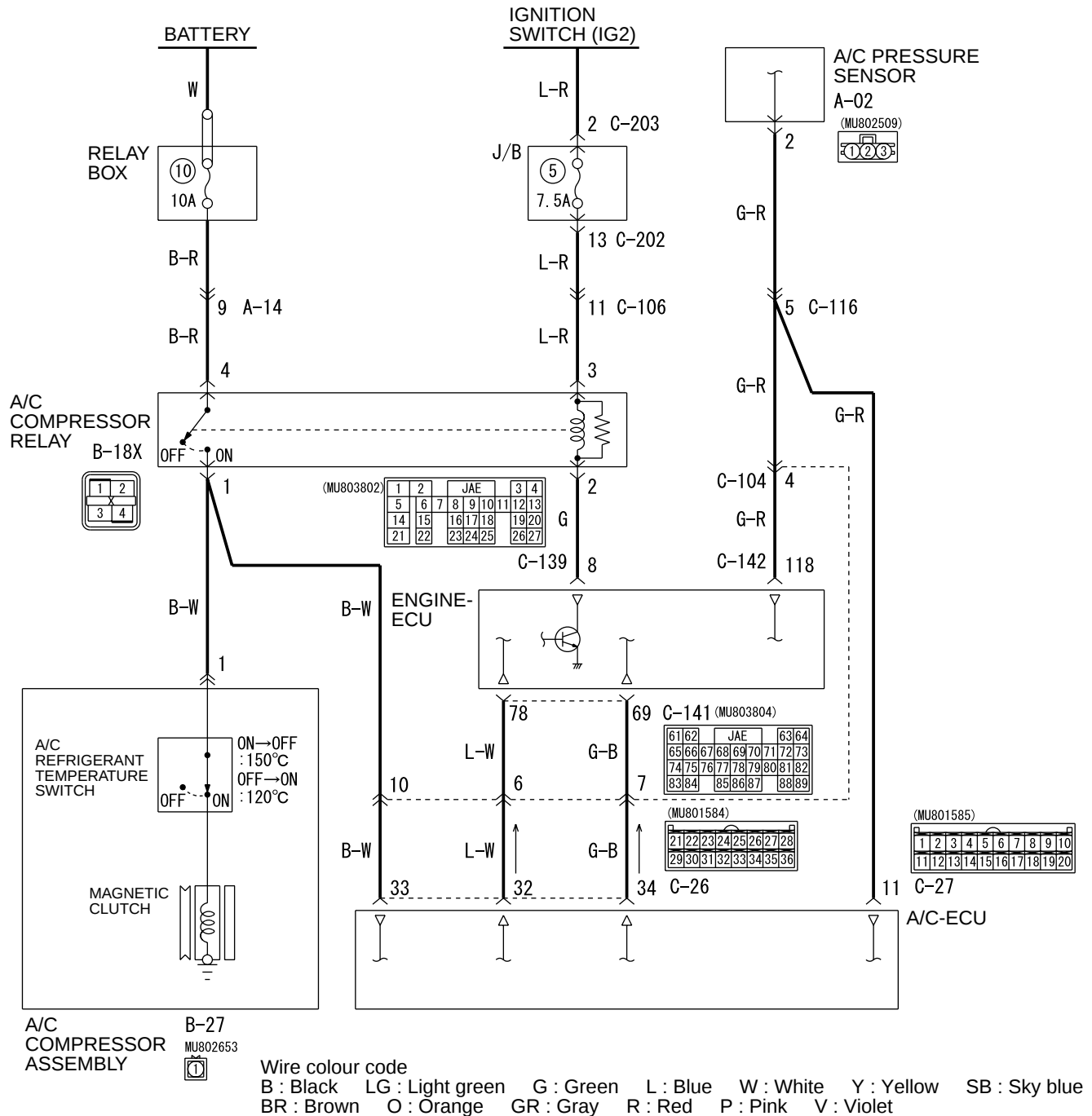
- Check the communication line for open circuit.

Q: Is the check result normal?

YES : Replace the A/C-ECU or engine-ECU.

NO : Repair the wiring harness.

INSPECTION PROCEDURE 2: The air conditioner does not work at all. <4G69>



W4Z55E02AA

CIRCUIT OPERATION

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

Possible causes

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

DIAGNOSIS

Step 1. Use the MUT-II/III to confirm a diagnosis code.

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

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to diagnosis code chart [P.55B-4](#).

Step 2. Check the blower operation.

(1) Turn the ignition switch to the ON position.

(2) Blower knob: Other than OFF

(3) Check that the air comes out of the blower.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Refer to Inspection Procedure 4 "The blower does not work."

STEP 3. Check the defogger and outside/inside air selection damper control motor operation.

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

YES : Go to Step 4.

NO : Refer to Inspection procedure 10 "Malfunction of the A/C-ECU power supply system [P.55B-88](#)."

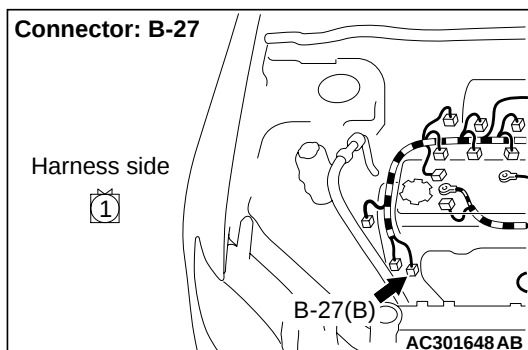
STEP 4. Check the A/C compressor.

Check the A/C compressor for compressor oil leaks.

Q: Is the check result satisfactory?

YES : Go to Step 5.

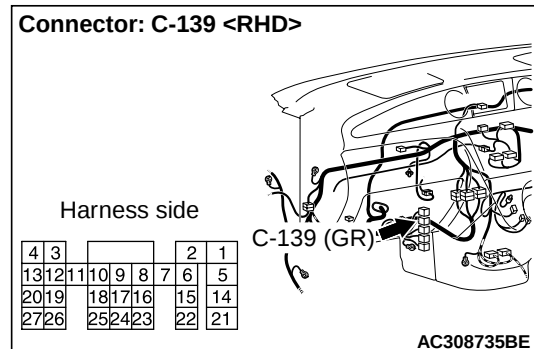
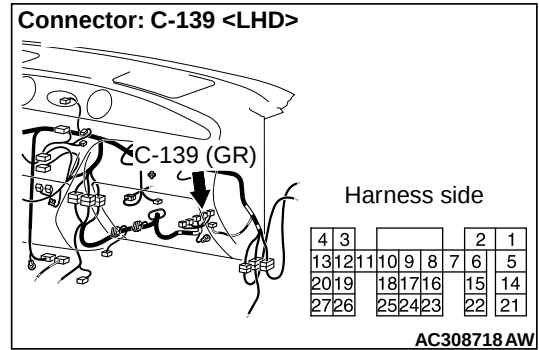
NO : Replace the A/C compressor or the expansion valve.

STEP 5. Measure the voltage at B-27 A/C compressor connector.

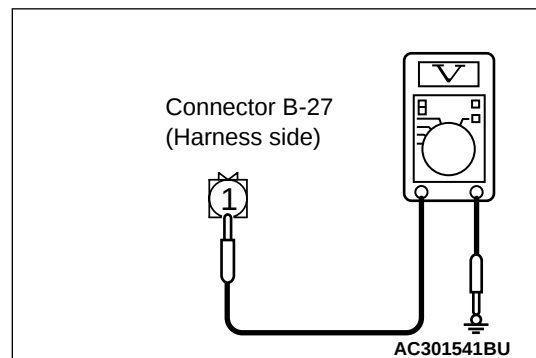
(1) Disconnect the connector, and measure at the

wiring harness side.

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



(3) Disconnect engine-ECU connector C-139 and earth terminal 8.



(4) Voltage between terminal 1 and body earth.

OK: System voltage

Q: Is the check result normal?

YES : Go to Step 17.

NO : Go to Step 6.

STEP 6. Check the A/C compressor relay continuity.

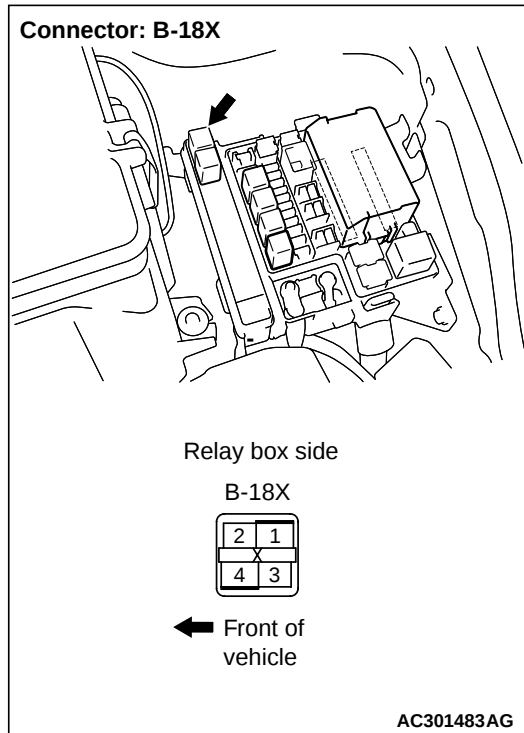
Refer to GROUP 55A - On vehicle service, power relay [P.55A-57](#).

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

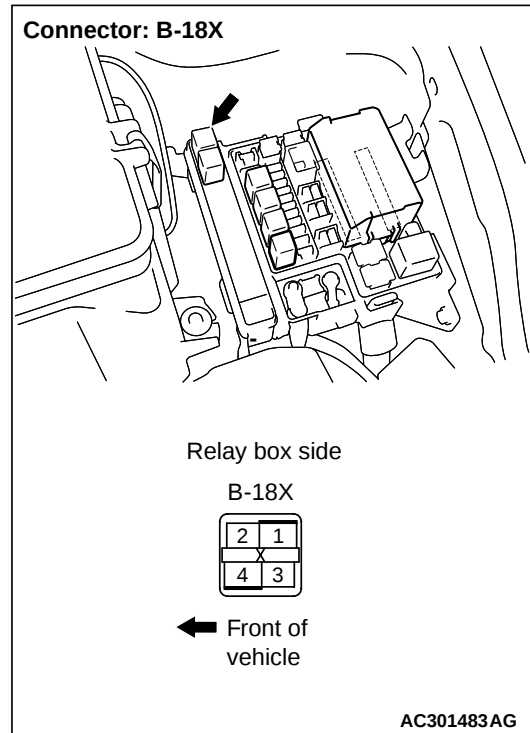
YES : Go to Step 7.

NO : Replace the A/C compressor relay.

STEP 7. Measure the voltage at B-18X A/C compressor relay connector.

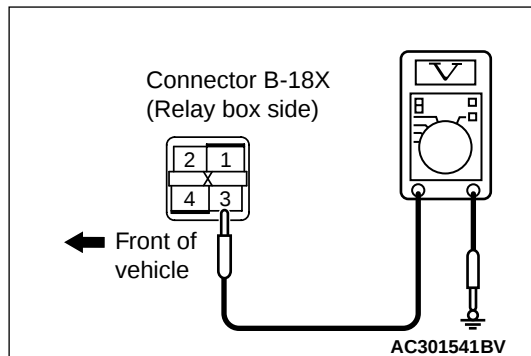


STEP 8. Connector check: B-18X A/C compressor relay connector.



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

Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the connector.

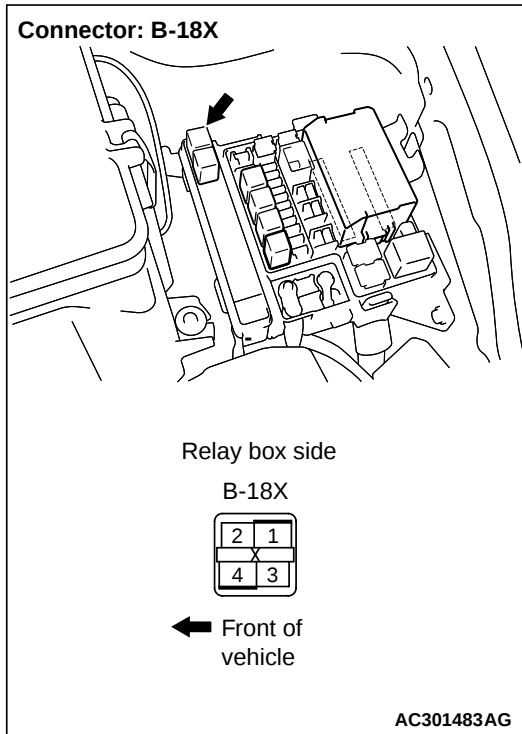


- (3) Voltage between terminal 3 and body earth.

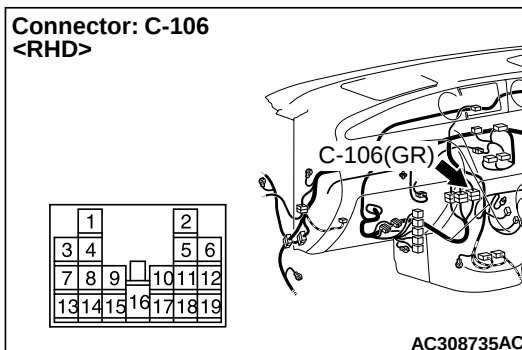
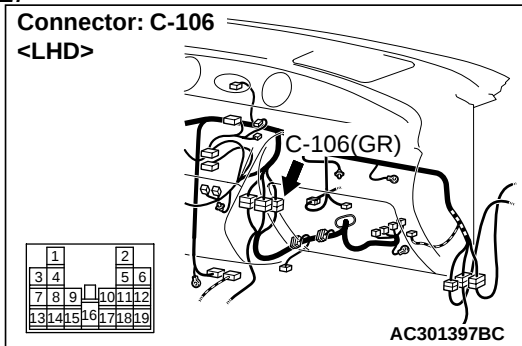
OK: System voltage

Q: Is the check result normal?
YES : Go to Step 10.
NO : Go to Step 8.

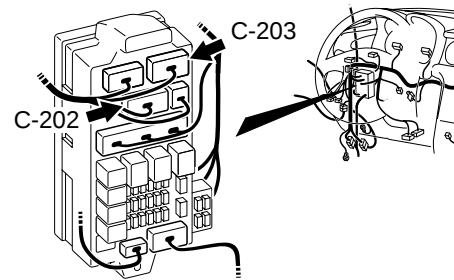
STEP 9. Check the wiring harness between B-18X A/C compressor relay connector terminal No.3 and the ignition switch (IG2).



NOTE:



Connectors: C-202, C-203 <LHD>
Junction block (Front view)



Harness side
C-202

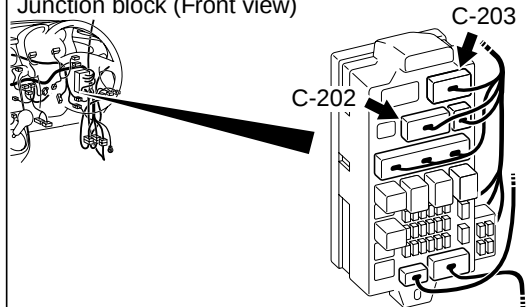
6	5	4		3	2	1
14	13	12	11	10	9	8
7						

Harness side
C-203

2		1
6	5	4
3		

AC210475BD

Connectors: C-202, C-203 <RHD>
Junction block (Front view)



Harness side
C-202

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

Harness side
C-203

2		1
6	5	4
3		

AC308773AC

Prior to the wiring harness inspection, check junction block connectors C-203, C-202 and intermediate connector C-106, and repair if necessary.

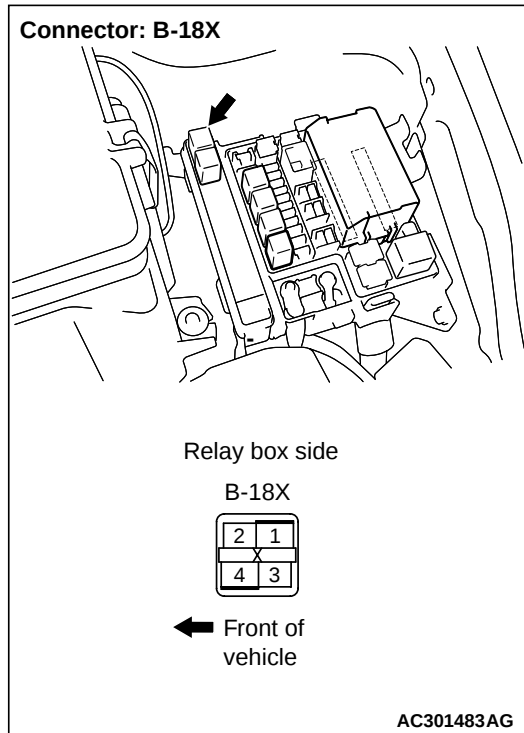
- Check the A/C compressor relay power supply line for open circuit.

Q: Is the check result normal?

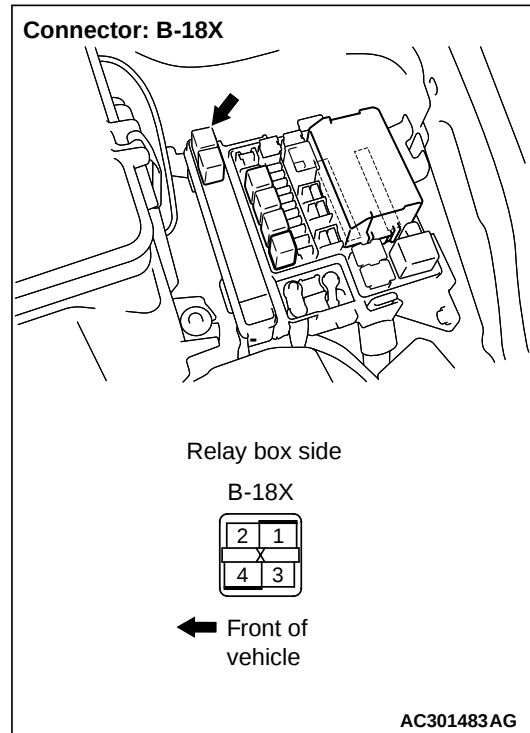
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-6).

NO : Repair the wiring harness.

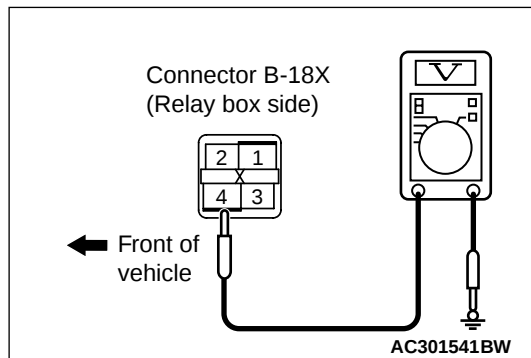
STEP 10. Measure the voltage at B-18X A/C compressor relay connector.



STEP 11. Connector check: B-18X A/C compressor relay connector



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



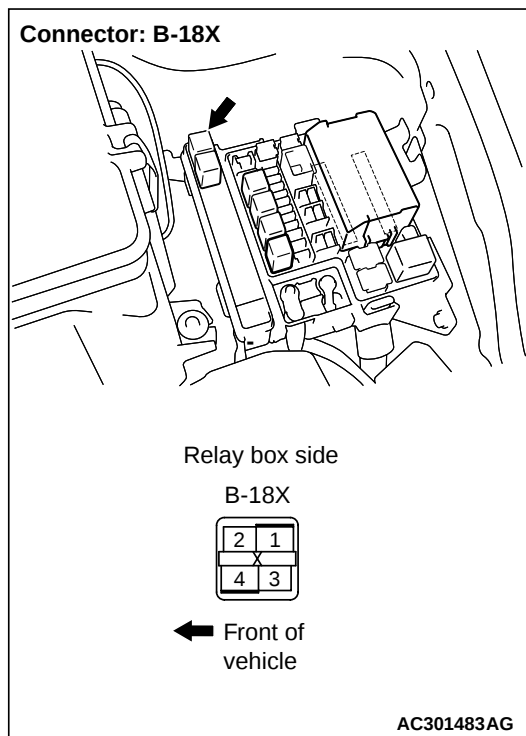
Q: Is the check result normal?
YES : Go to Step 12.
NO : Repair the connector.

(2) Voltage between terminal 4 and body earth.

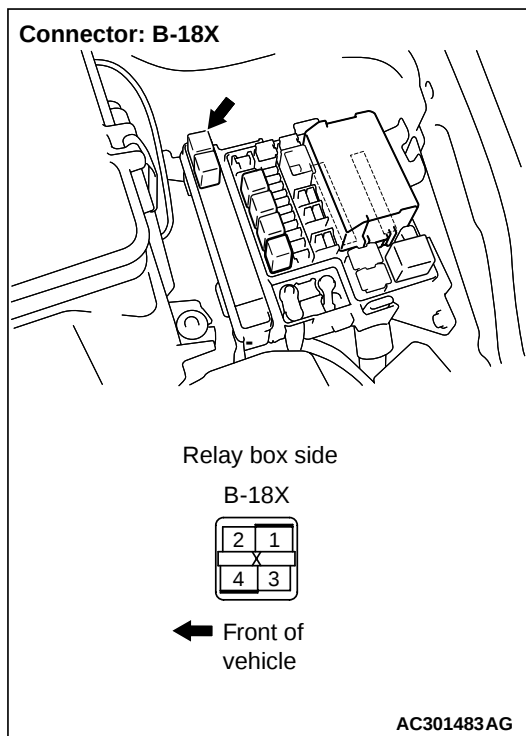
OK: System voltage

Q: Is the check result normal?
YES : Go to Step 13.
NO : Go to Step 11.

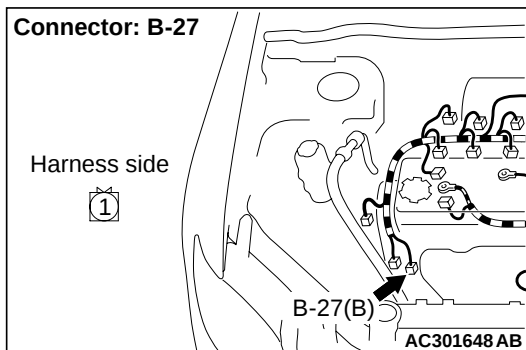
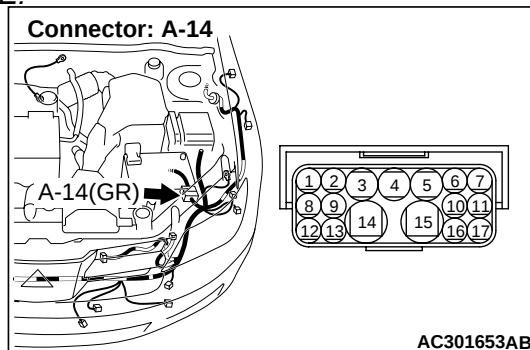
STEP 12. Check the wiring harness between B-18X A/C compressor relay connector terminal No.4 and the battery.



STEP 13. Connector check: B-18X A/C compressor relay connector and B-27 A/C compressor connector



NOTE:



Prior to the wiring harness inspection, check intermediate connector A-14, and repair if necessary.

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

Q: Is the check result normal?

YES : Check that the air conditioner works normally.

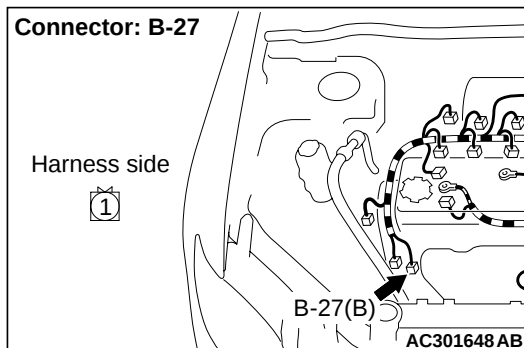
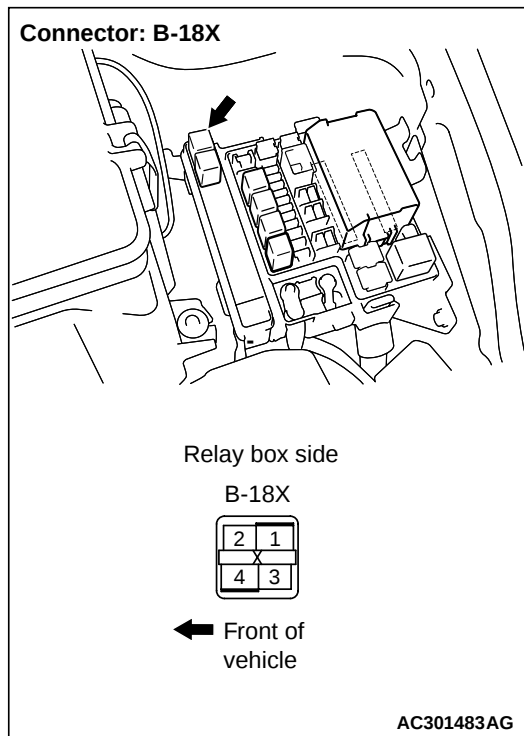
NO : Repair the wiring harness. Check that the air conditioner works normally.

Q: Is the check result normal?

YES : Go to Step 14.

NO : Repair the connector.

STEP 14. Check the wiring harness between B-18X A/C compressor relay connector terminal No.1 and B-27 A/C compressor connector terminal No.1.



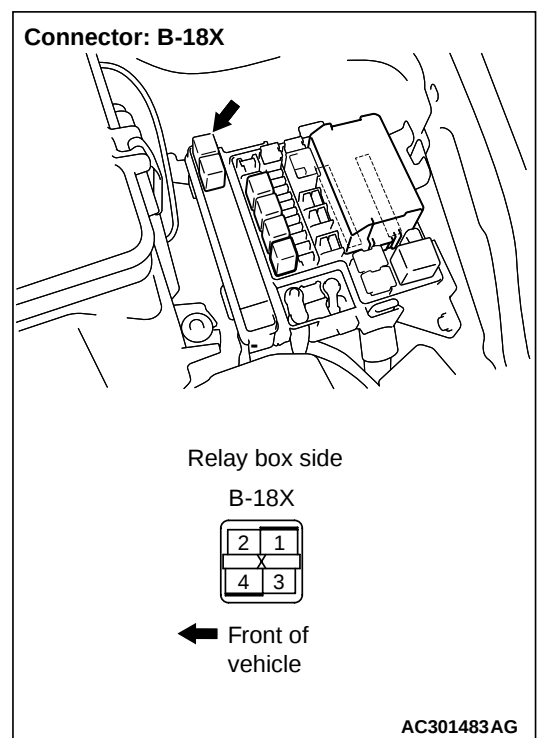
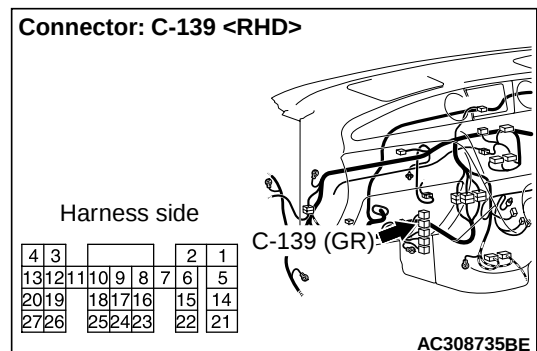
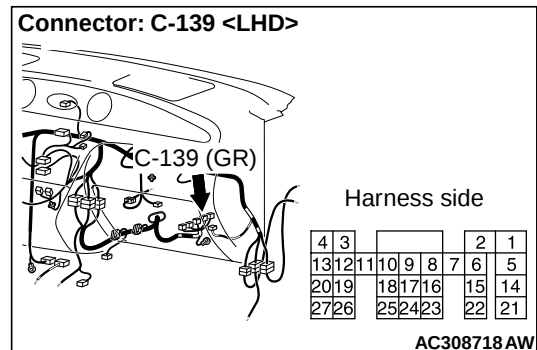
- Check the A/C compressor relay power supply line for open circuit.

Q: Is the check result normal?

YES : Go to Step 15.

NO : Repair the wiring harness.

STEP 15. Connector check: C-139 engine-ECU connector and B-18X A/C compressor relay connector



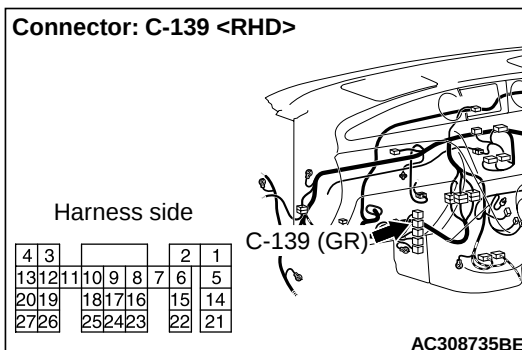
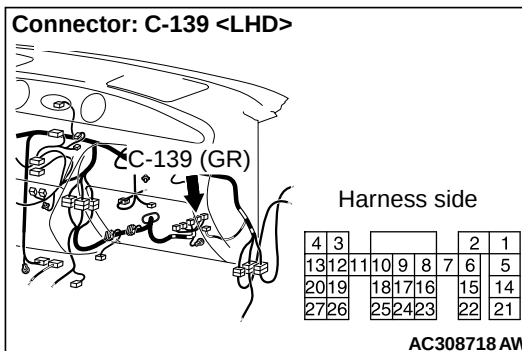
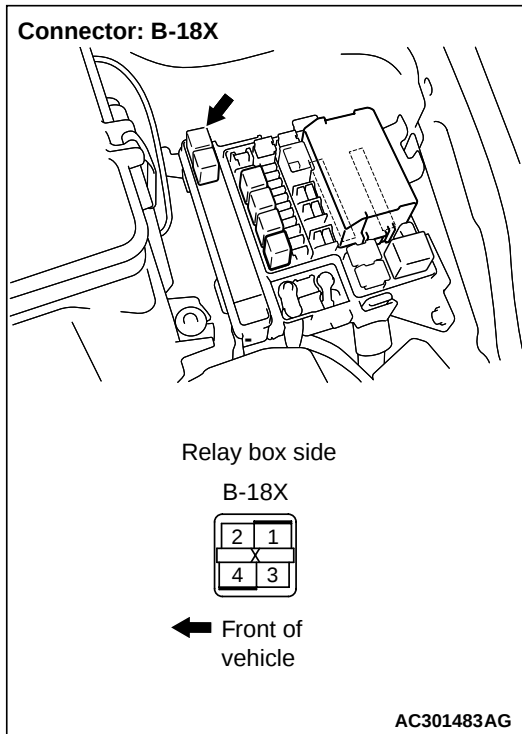
- Check the A/C compressor relay earth line for open circuit.

Q: Is the check result normal?

YES : Go to Step 16.

NO : Repair the connector.

STEP 16. Check the wiring harness between C-139 engine-ECU connector terminal No.8 and B-18X A/C compressor relay connector terminal No.2.

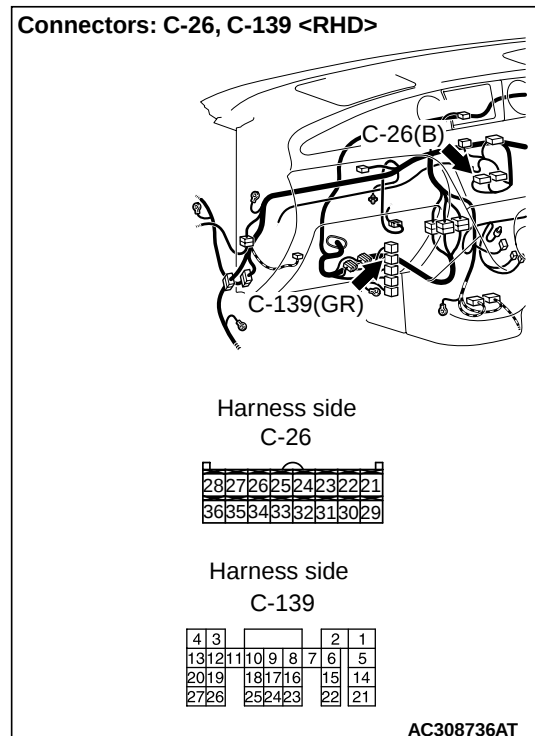
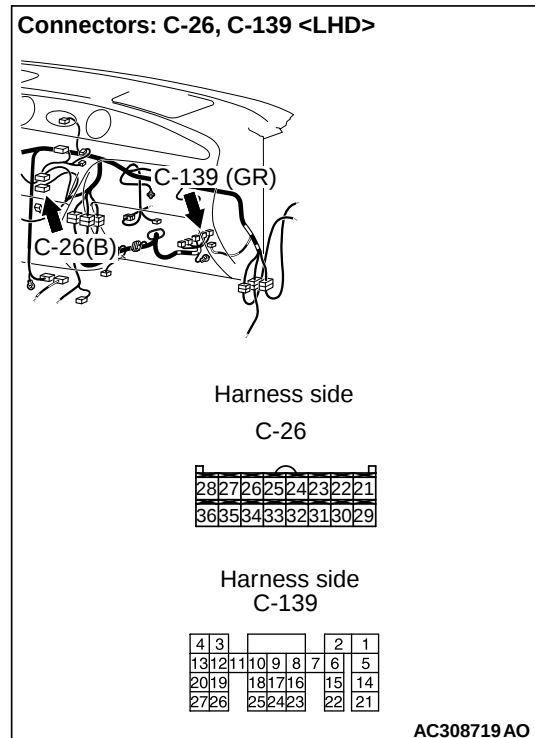


Q: Is the check result normal?

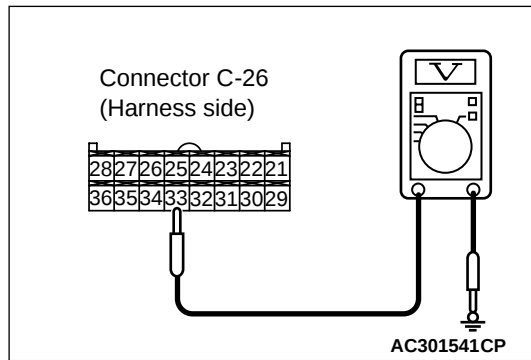
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-6](#)).

NO : Repair the wiring harness.

STEP 17. Measure the voltage at C-26 A/C-ECU connector.



- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Disconnect engine-ECU connector C-139 and earth terminal 8.



(4) Continuity between terminal 33 and body earth.

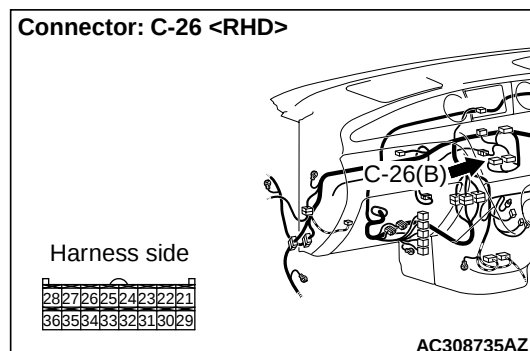
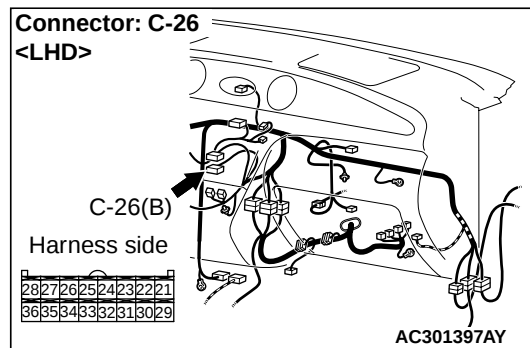
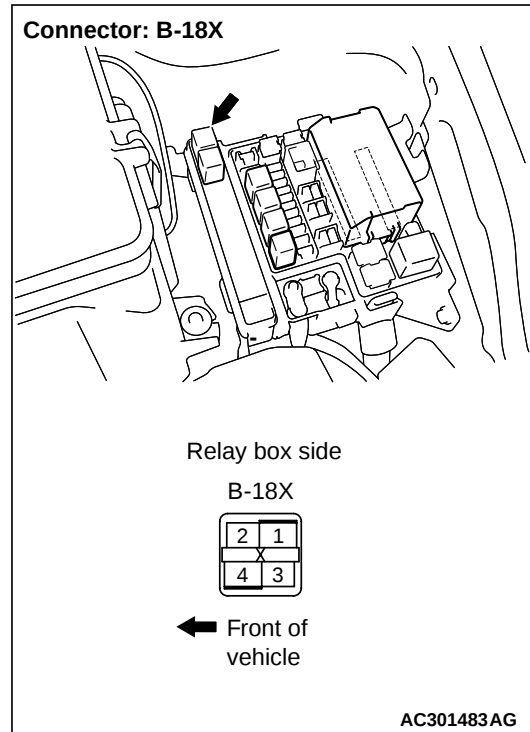
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 20.

NO : Go to Step 18.

STEP 18. Connector check: B-18X A/C compressor relay connector and C-26 A/C-ECU connector

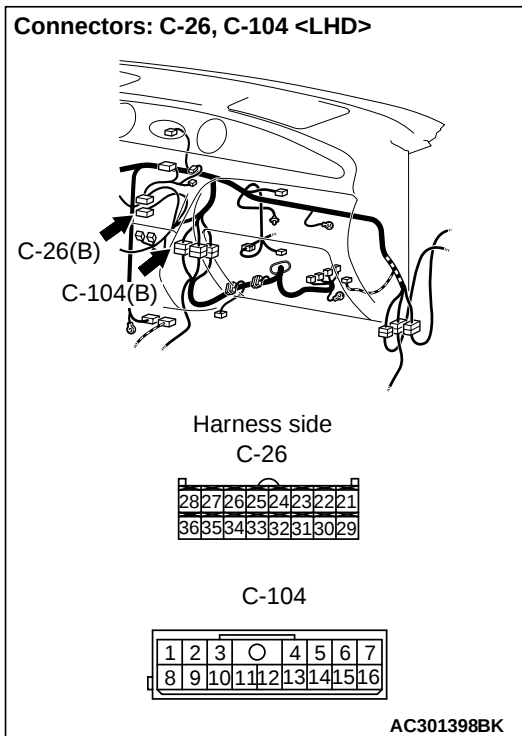
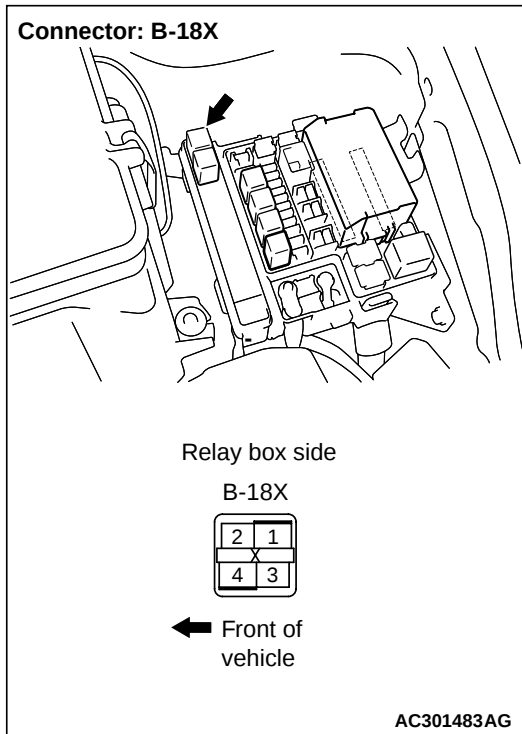


Q: Is the check result normal?

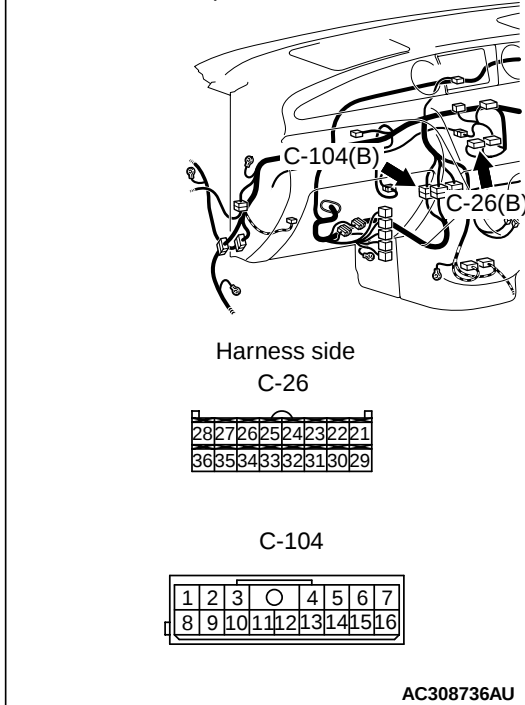
YES : Go to Step 19.

NO : Repair the connector.

STEP 19. Check the wiring harness between B-18X A/C compressor relay connector terminal No.1 and C-26 A/C-ECU connector terminal No.33.



Connectors: C-26, C-104 <RHD>



NOTE: Prior to the wiring harness inspection, check intermediate connector C-104, and repair if necessary.

- Check the A/C compressor relay output 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.00-6).

NO : Repair the wiring harness.

STEP 20. Check the magnetic clutch operation.

Refer to P.55A-51.

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

YES : Go to Step 21.

NO : Replace the compressor magnet clutch.

STEP 21. Check the refrigerant temperature switch.

Refer to P.55A-73.

Q: Is the refrigerant temperature switch operating properly?

YES : Go to Step 22.

NO : Replace the refrigerant temperature switch.

STEP 22. Check the refrigerant level.

Refer to [P.55A-51](#).

Q: Is the refrigerant level correct?

YES : Go to Step 23.

NO : Correct the refrigerant level (Refer to On-vehicle Service [P.55A-52](#)).

STEP 23. Check the A/C pressure sensor operation.

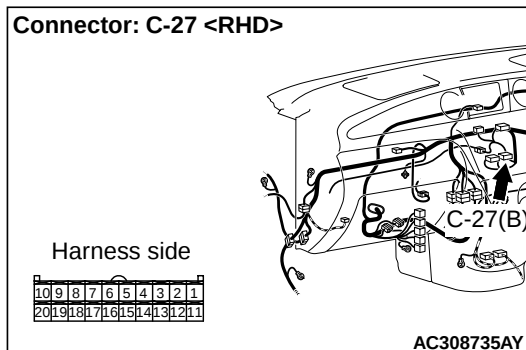
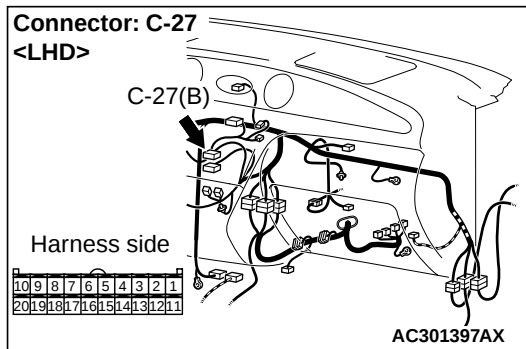
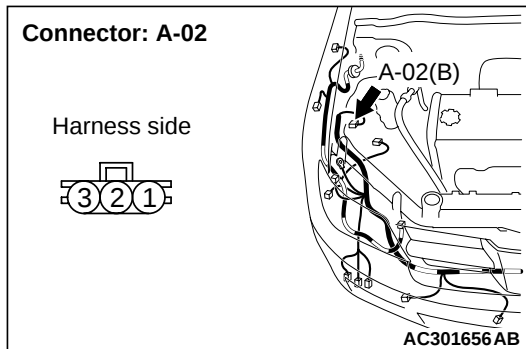
Refer to [P.55A-51](#).

Q: Is the A/C pressure sensor operating properly?

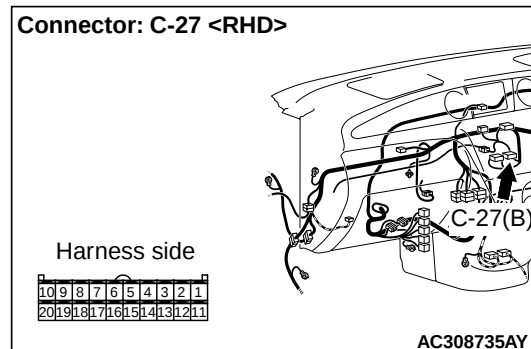
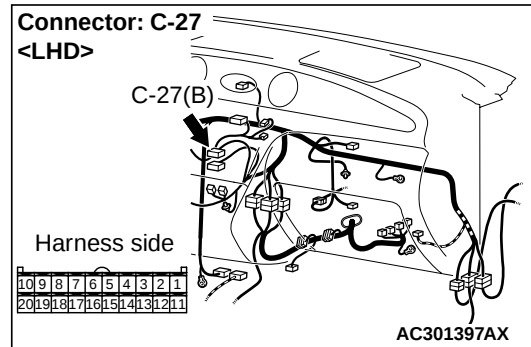
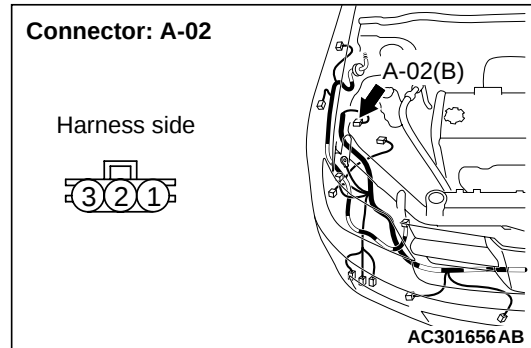
YES : Go to Step 24.

NO : Replace the A/C pressure sensor.

STEP 24. Connector check: A-02 A/C pressure sensor connector and C-27 A/C-ECU connector



STEP 25. Check the wiring harness between A-02 A/C pressure sensor connector terminal No.2 and C-27 A/C-ECU connector terminal No.11.



Q: Is the check result normal?

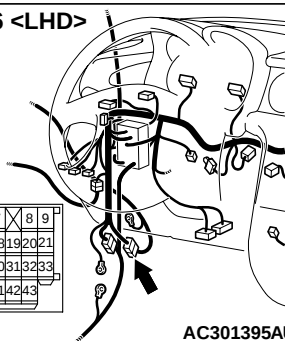
YES : Go to Step 25.

NO : Repair the connector.

NOTE:

Connector: C-116 <LHD>

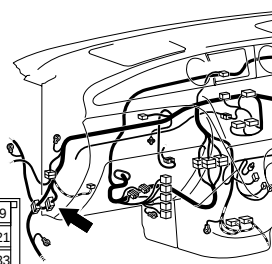
1	2	3	4
10	11	12	13
22	23	24	25
34	35	36	37



AC301395AU

Connector: C-116
<RHD>

1	2	3	4
10	11	12	13
22	23	24	25
34	35	36	37



AC308735AP

Prior to the wiring harness inspection, check intermediate connector C-116, and repair if necessary.

- Check the A/C pressure sensor signal line for open circuit.

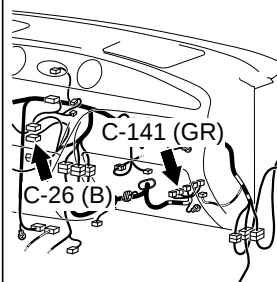
Q: Is the check result normal?

YES : Go to Step 26.

NO : Repair the wiring harness.

STEP 26. Connector check: C-141 engine-ECU connector and C-26 A/C-ECU connector

Connectors: C-26, C-141 <LHD>



Harness side

C-26

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

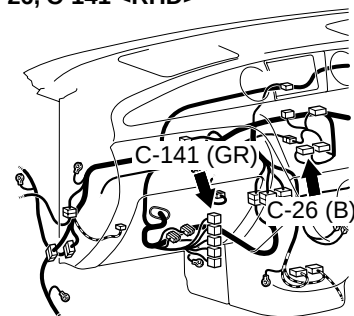
Harness side

C-141

64	63	JAE	62	61
73	72	71	70	69
82	81	80	79	78
89	88	87	86	85

AC308719AP

Connectors: C-26, C-141 <RHD>



Harness side

C-26

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

Harness side

C-141

64	63	JAE	62	61
73	72	71	70	69
82	81	80	79	78
89	88	87	86	85

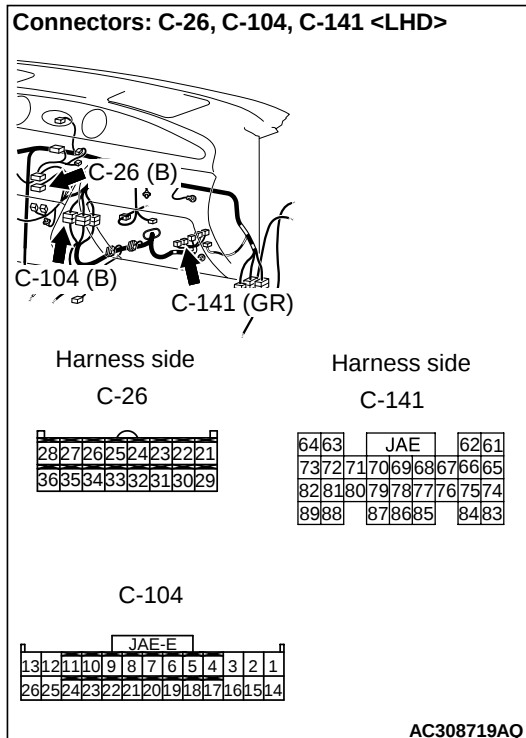
AC308736AV

Q: Is the check result normal?

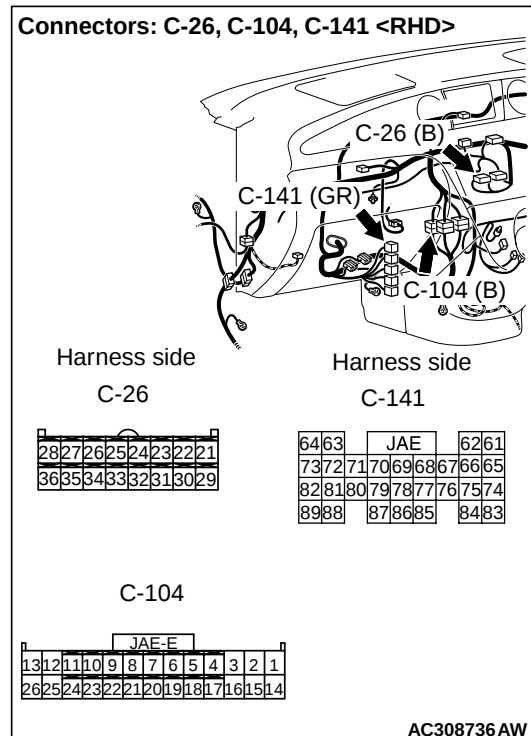
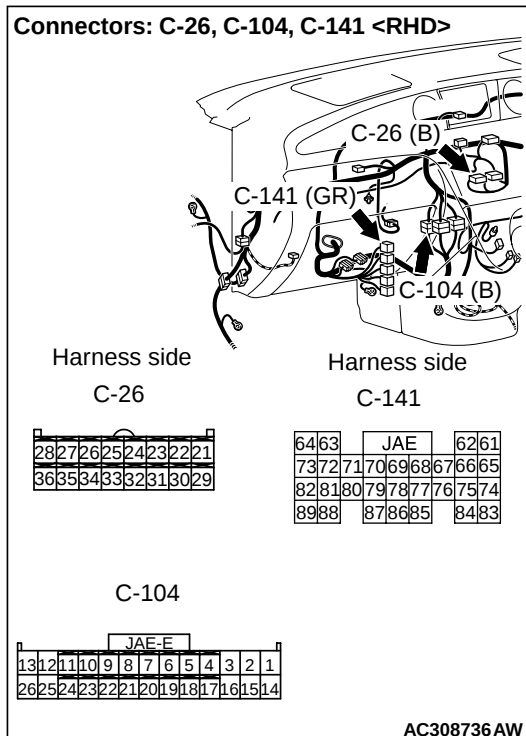
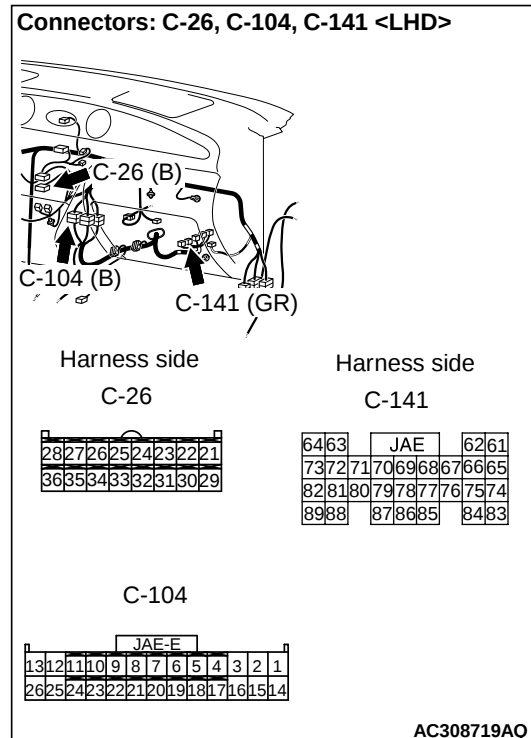
YES : Go to Step 27.

NO : Repair the connector.

STEP 27. Check the wiring harness between C-141 engine-ECU connector terminal No.78 and C-26 A/C-ECU connector terminal No.32.



STEP 28. Check the wiring harness between C-141 engine-ECU connector terminal No.69 and C-26 A/C-ECU connector terminal No.34.



NOTE: Prior to the wiring harness inspection, check intermediate connector C-104, and repair if necessary.

- Check the communication line for open circuit.

Q: Is the check result normal?

YES : Go to Step 28.

NO : Repair the wiring harness.

NOTE: Prior to the wiring harness inspection, check intermediate connector C-104, and repair if necessary.

- Check the communication line for open circuit.

Q: Is the check result normal?

YES : Replace the A/C-ECU or engine-ECU.

NO : Repair the wiring harness.

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.

Possible causes

- Malfunction of the A/C-ECU

DIAGNOSIS

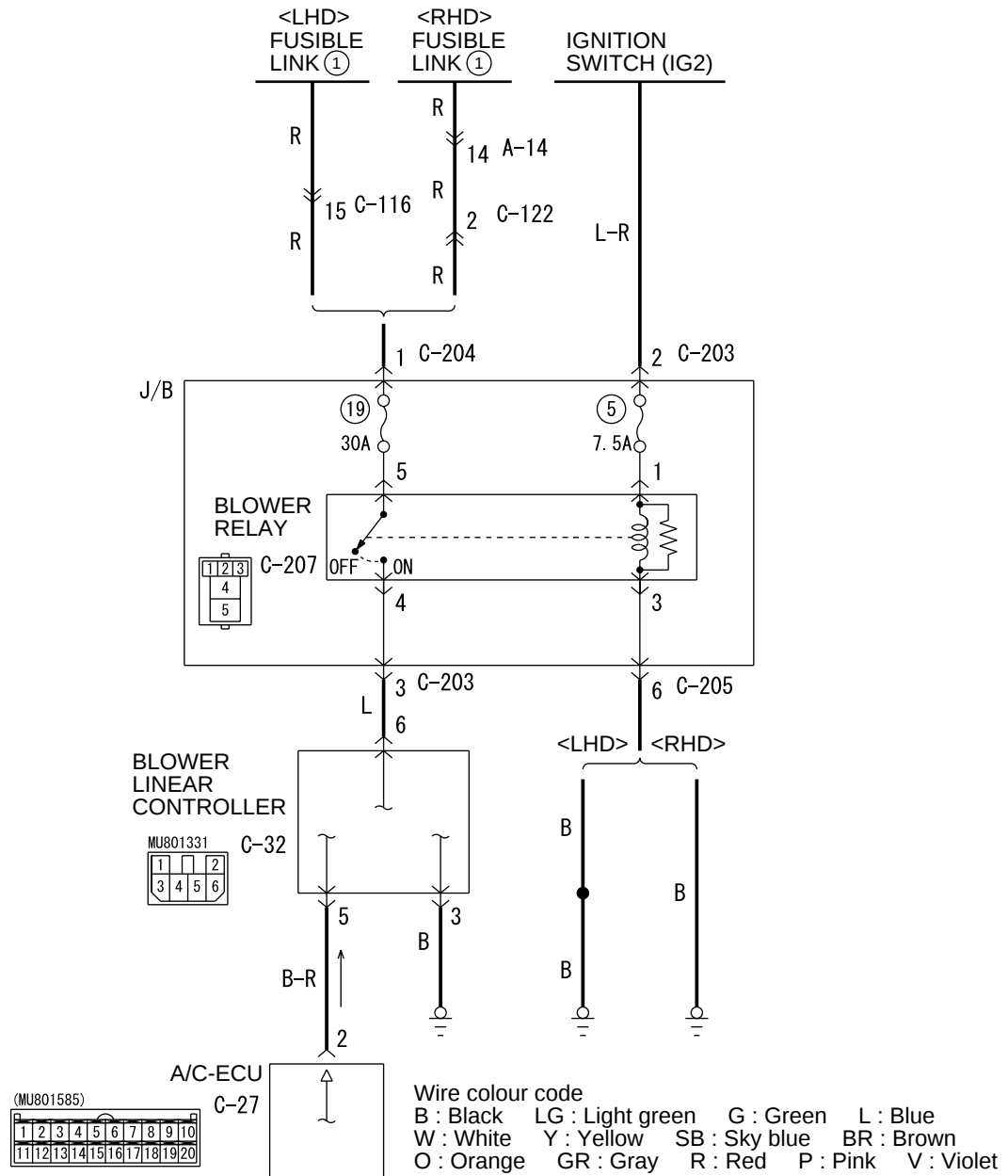
Read diagnosis code by using the MUT-II.

Q: Is the diagnosis code set?

YES : Refer to diagnosis code chart [P.55B-4](#).

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

INSPECTION PROCEDURE 4: The blower does not work.



W4Z55E03AA

COMMENTS ON TROUBLE SYMPTOM

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

Possible causes

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

DIAGNOSIS

Step 1. MUT-II/III actuator test

Carry out the actuator test.

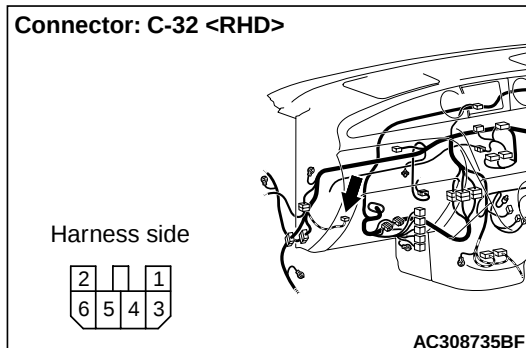
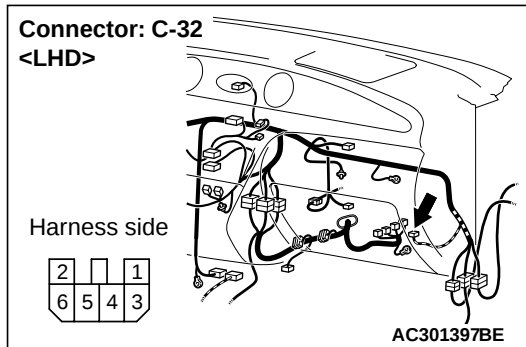
- Item 01, 02, 03, 04: Blower motor

Q: Does the blower motor work normally?

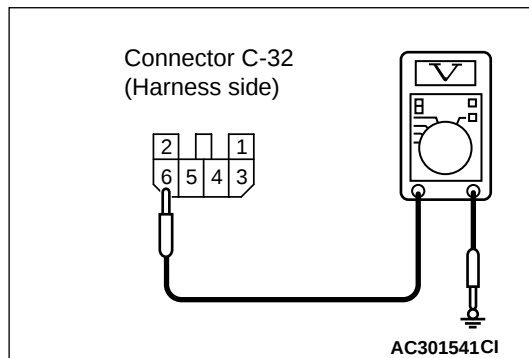
YES : Replace the automatic air conditioner control panel (A/C-ECU).

NO : Go to Step 2.

Step 2. Measure the voltage at the C-32 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.

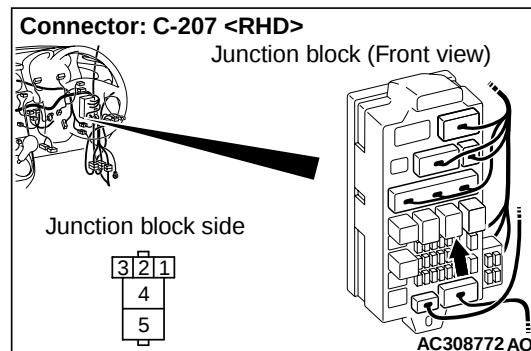
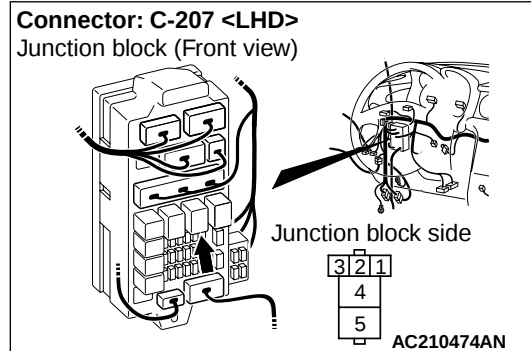
Refer to GROUP 55A, On-vehicle Service – Power relay check [P.55A-57](#).

Q: Is the blower relay in good condition?

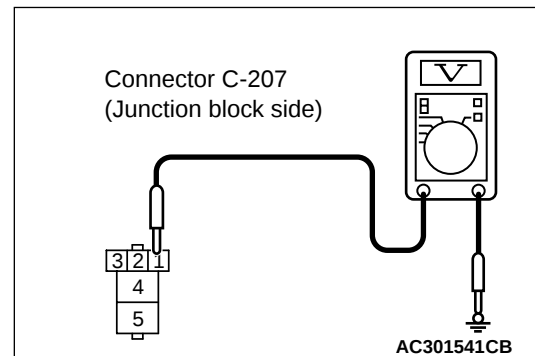
YES : Go to Step 4.

NO : Replace the blower relay.

Step 4. Measure the voltage at C-207 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.

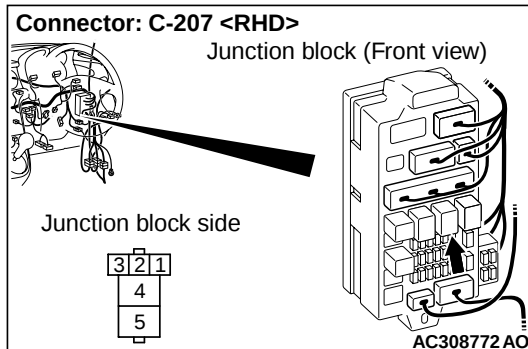
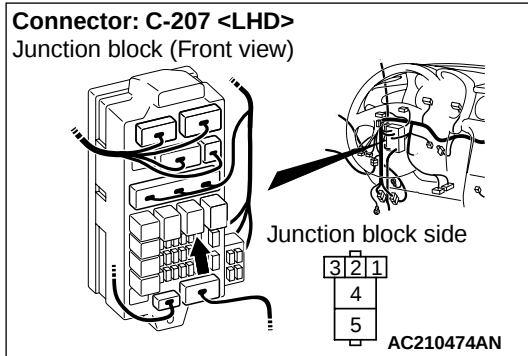
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 7.

NO : Go to Step 5.

Step 5. Connector check: C-207 blower relay connector

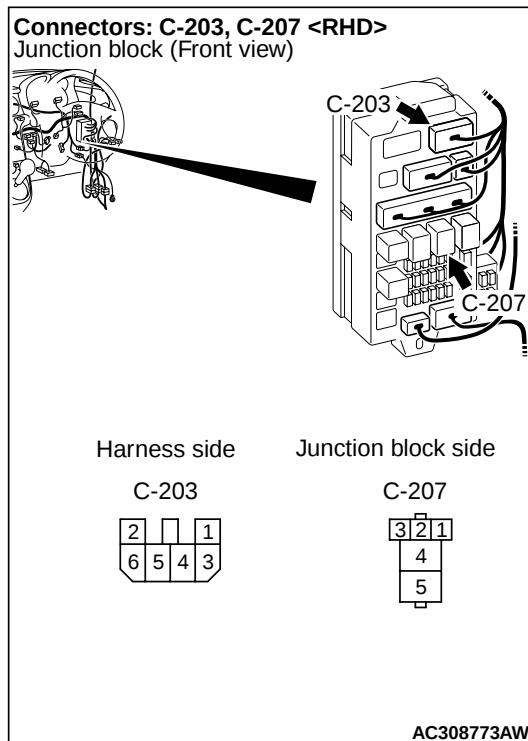
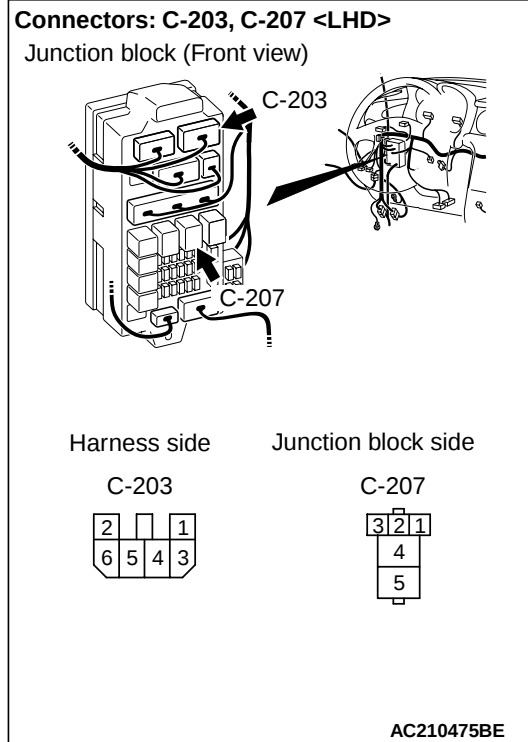


Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the connector.

Step 6. Check the wiring harness between C-207 blower relay connector terminal No.1 and the ignition switch (IG2).



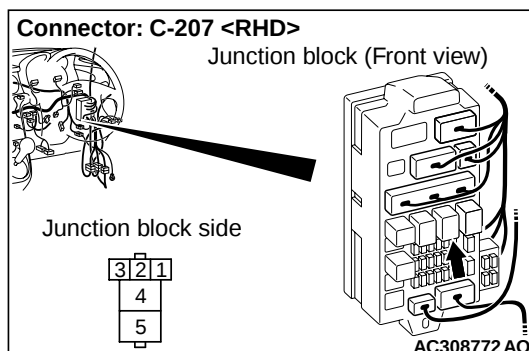
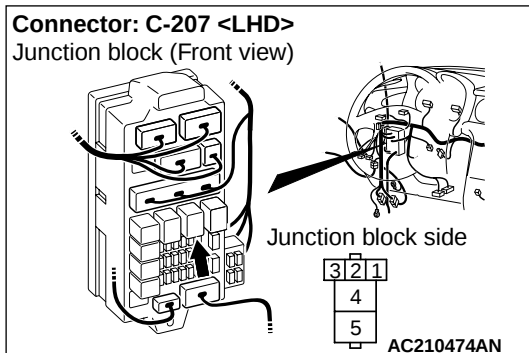
NOTE: Prior to the wiring harness inspection, check junction block connector C-203, and repair if necessary.

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

Q: Is the check result normal?

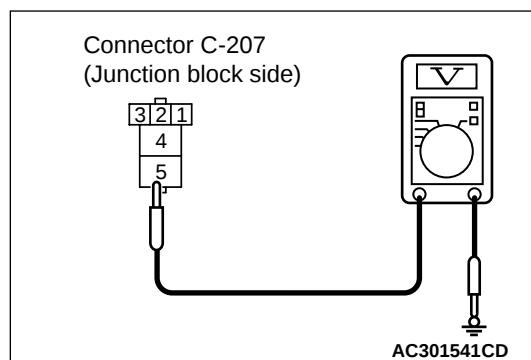
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-6).
NO : Repair the wiring harness.

Step 7. Measure the voltage at C-207 blower relay connector.



(1) Remove the relay, and measure at the junction

block side.



(2) Voltage between terminal 5 and body earth.

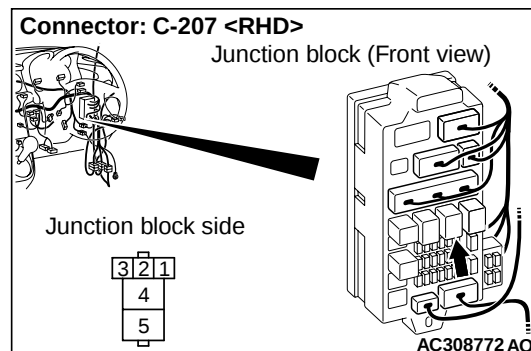
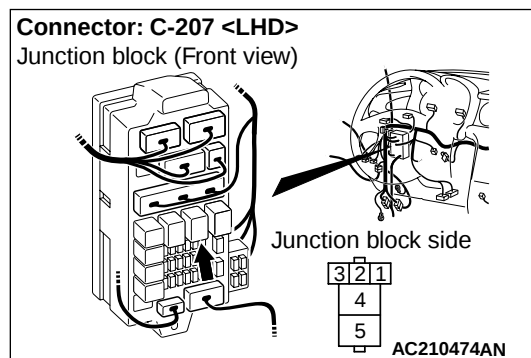
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 10.

NO : Go to Step 8.

Step 8. Connector check: C-207 blower relay connector



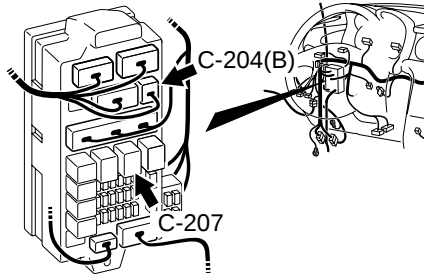
Q: Is the check result normal?

YES : Go to Step 9.

NO : Repair the connector.

Step 9. Check the wiring harness between C-207 blower relay connector terminal No.5 and fusible link (1).

Connectors: C-204, C-207 <LHD>
Junction block (Front view)



Harness side

C-204



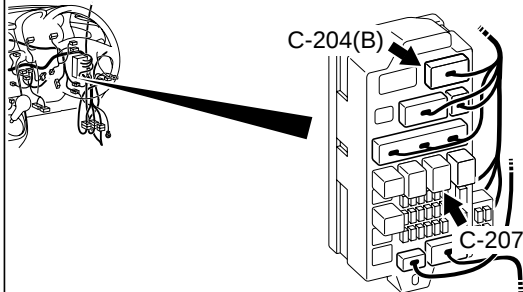
Junction block side

C-207



AC210475BF

Connectors: C-204, C-207 <RHD>
Junction block (Front view)



Harness side

C-204



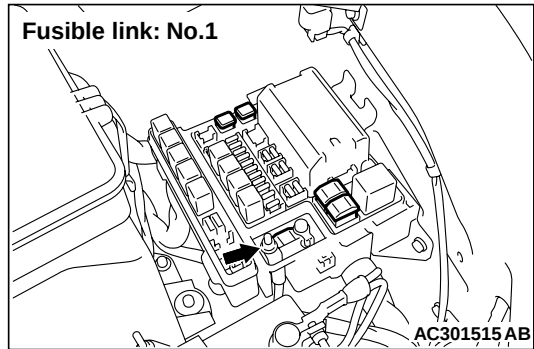
Junction block side

C-207



AC308773AX

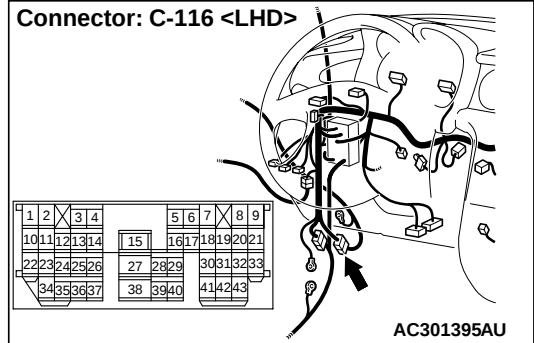
Fusible link: No.1



AC301515AB

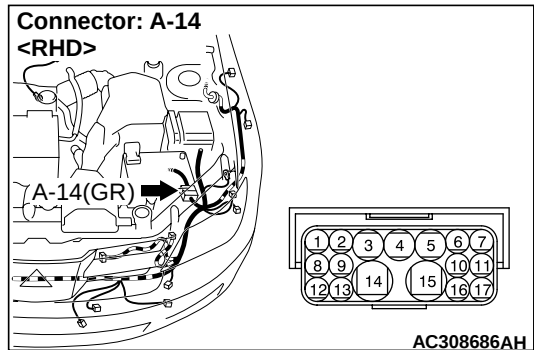
NOTE:

Connector: C-116 <LHD>



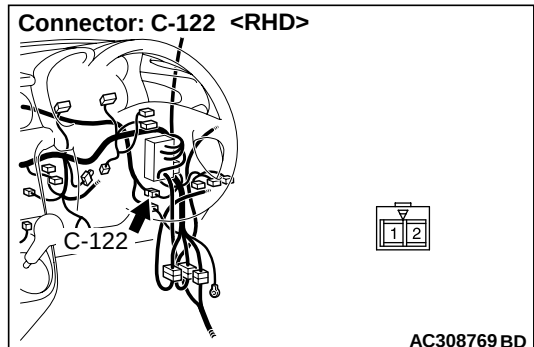
AC301395AU

**Connector: A-14
<RHD>**



AC308686AH

Connector: C-122 <RHD>



AC308769BD

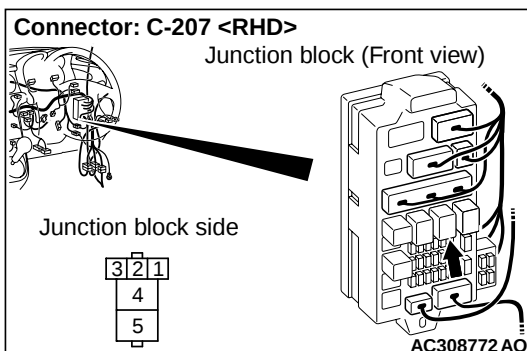
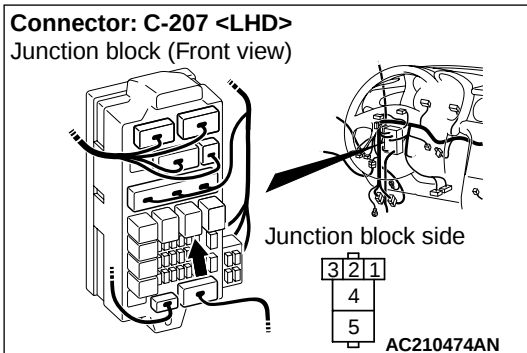
Prior to the wiring harness inspection, check intermediate connectors C-116 <LHD>, A-14 <RHD>, C-122 <LHD> and junction block connector C-204, and repair if necessary.

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

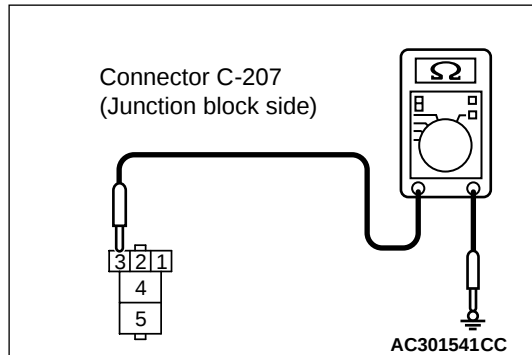
Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-6).

NO : Repair the wiring harness.

Step 10. Measure the resistance at C-207 blower relay connector.

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



(2) Measure the resistance between terminal 3 and

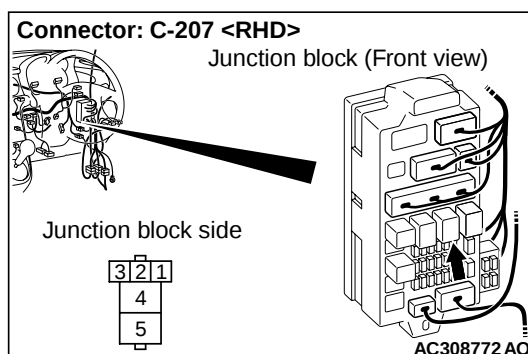
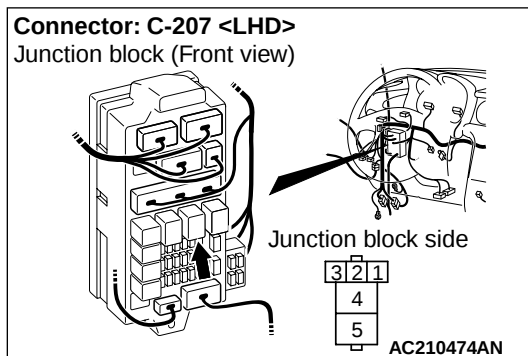
body earth

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-207 blower relay connector

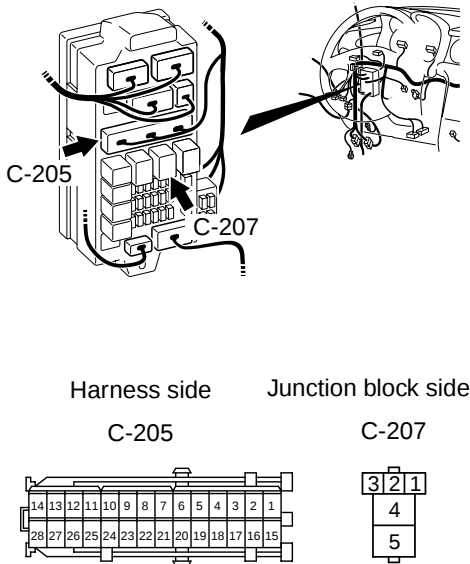
Q: Is the check result normal?

YES : Go to Step 12.

NO : Repair the connector.

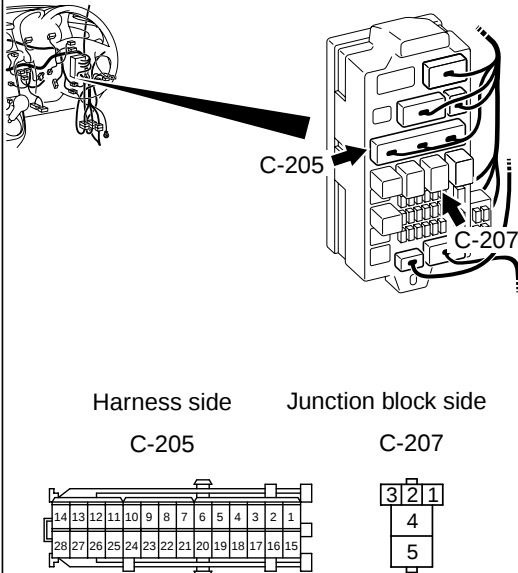
Step 12. Check the wiring harness between C-207 blower relay connector terminal No.3 and body earth.

Connectors: C-205, C-207 <LHD>
Junction block (Front view)



AC210475BG

Connectors: C-205, C-207 <RHD>
Junction block (Front view)



AC308773AY

NOTE: Prior to the wiring harness inspection, check junction block connector C-205, and repair if necessary.

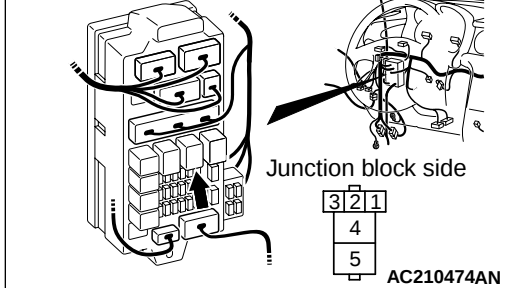
- Check the blower relay earth wires for open circuit.

Q: Is the check result normal?

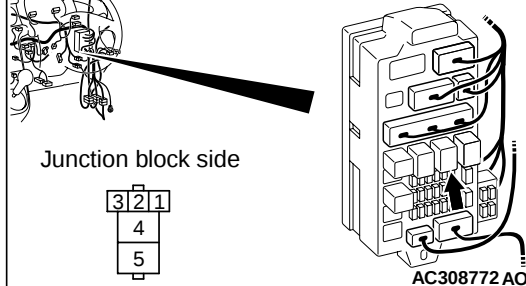
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-6).
NO : Repair the wiring harness.

Step 13. Connector check: C-207 blower relay connector and C-32 blower linear controller connector

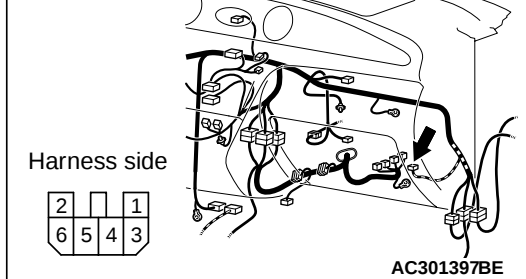
Connector: C-207 <LHD>
Junction block (Front view)



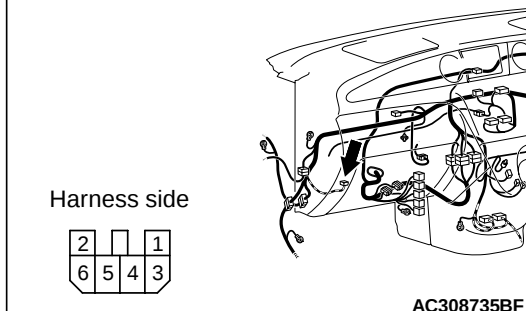
Connector: C-207 <RHD>
Junction block (Front view)



Connector: C-32 <LHD>



Connector: C-32 <RHD>

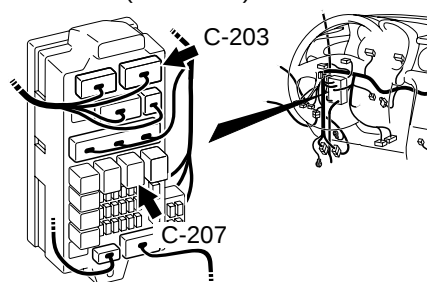


Q: Is the check result normal?
YES : Go to Step 14.
NO : Repair the connector.

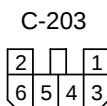
Step 14. Check the wiring harness between C-207 blower relay connector terminal No.4 and C-32 blower linear controller connector terminal No.6.

Connectors: C-203, C-207 <LHD>

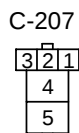
Junction block (Front view)



Harness side



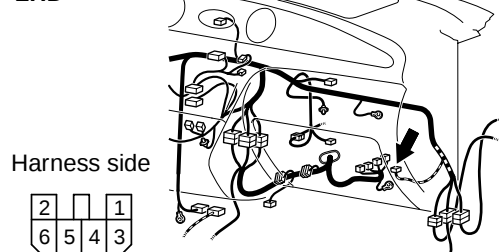
Junction block side



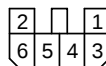
AC210475BE

Connector: C-32

<LHD>

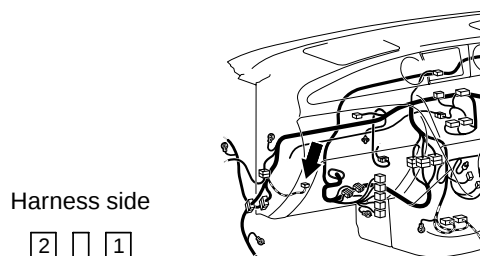


Harness side

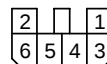


AC301397BE

Connector: C-32 <RHD>



Harness side



AC308735BF

NOTE: Prior to the wiring harness inspection, check junction block connector C-203, and repair if necessary.

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

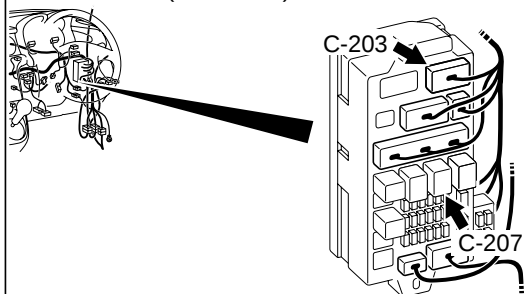
Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-6](#)).

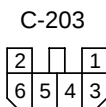
NO : Repair the wiring harness.

Connectors: C-203, C-207 <RHD>

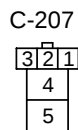
Junction block (Front view)



Harness side

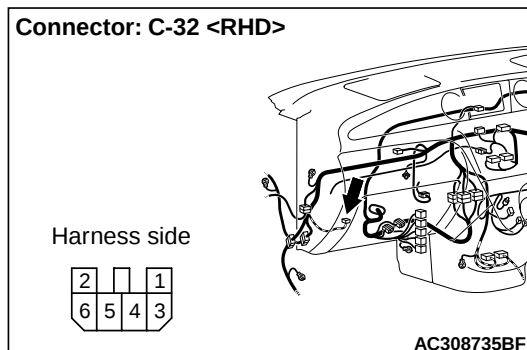
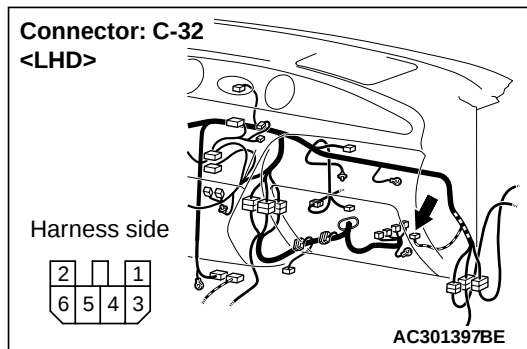


Junction block side

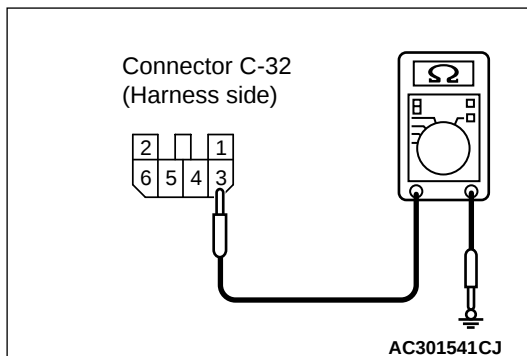


AC308773AW

Step 15. Measure the resistance at the C-32 blower liner controller connector.



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



(2) Continuity between terminal 3 and body earth

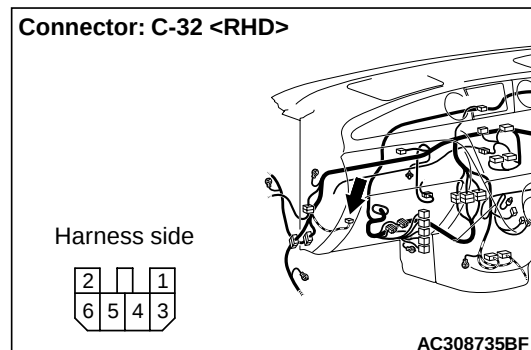
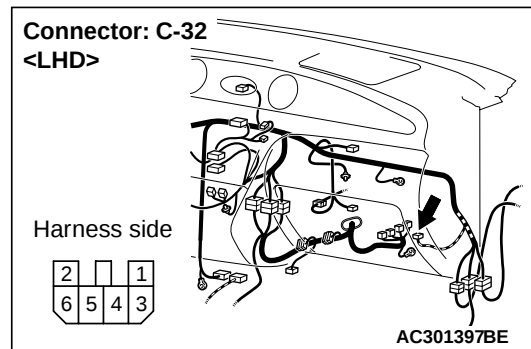
OK: 2Ω or less

Q: Is the check result normal?

YES : Go to Step 18.

NO : Go to Step 16.

Step 16. Connector check: C-32 blower liner controller

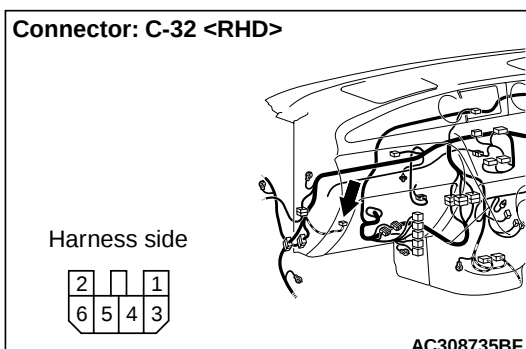
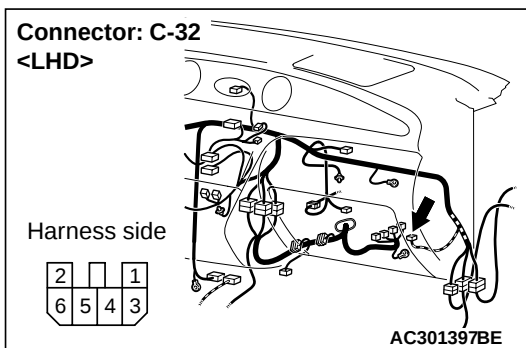


Q: Is the check result normal?

YES : Go to Step 17.

NO : Repair the connector.

Step 17. Check the wiring harness between C-32 blower linear controller connector terminal No.3 and body earth.



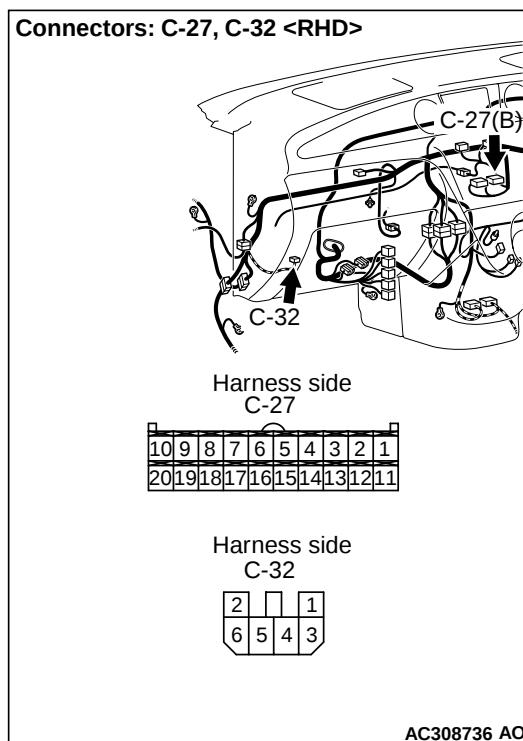
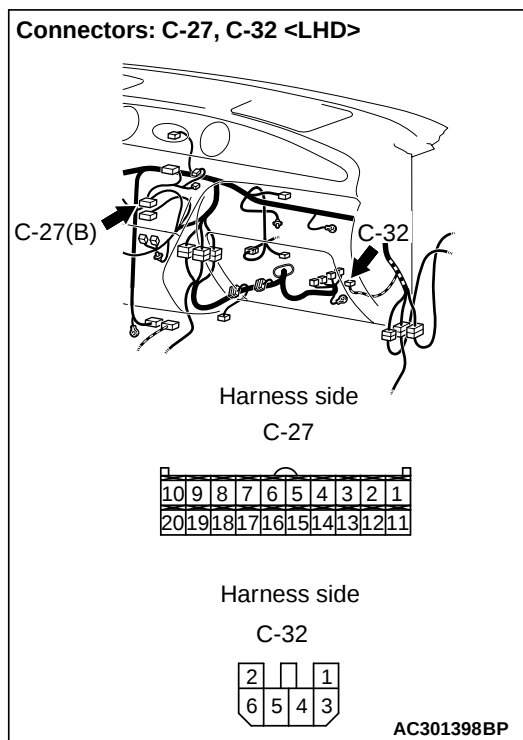
- Check the blower linear controller earth line for open circuit.

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.00-6](#)).

NO : Repair the wiring harness.

Step 18. Connector check: C-27 A/C-ECU connector and C-32 blower linear controller connector

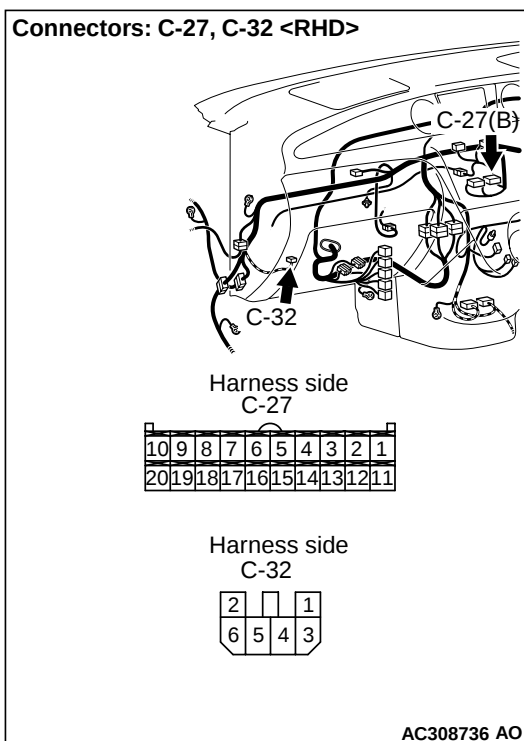
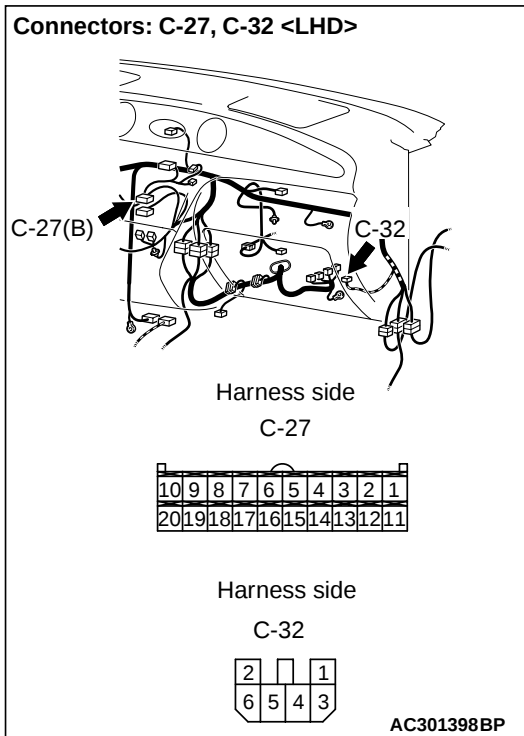


Q: Is the check result normal?

YES : Go to Step 19.

NO : Repair the connector.

**Step 19. Check the wiring harness between C-27
A/C-ECU connector terminal No.2 and C-32
blower linear controller connector terminal No.5.**

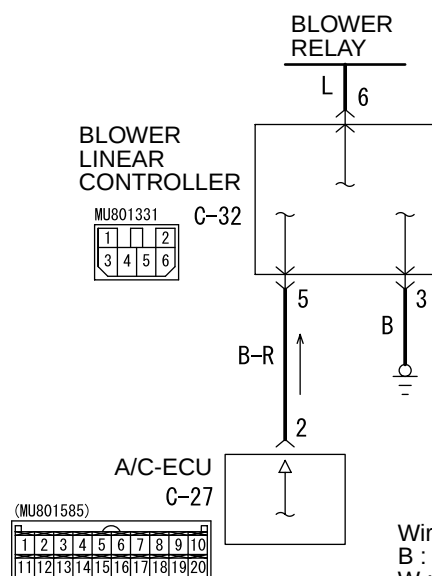


- Check the communication line for open or short circuit.

Q: Is the check result normal?

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

NO : Repair the wiring harness.

INSPECTION PROCEDURE 5: The blower air volume cannot be changed.**Blower 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 : Gray R : Red P : Pink V : Violet

W3Z08E05AA

COMMENTS ON TROUBLE SYMPTOM

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

Possible causes

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

Step 1. MUT-II/III actuator test

Carry out the actuator test.

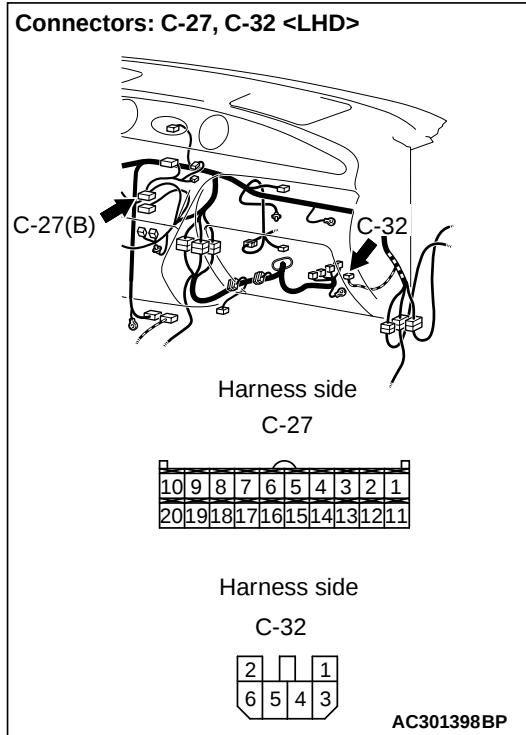
- Item 01, 02, 03, 04: Blower motor

Q: Does the blower motor work normally?

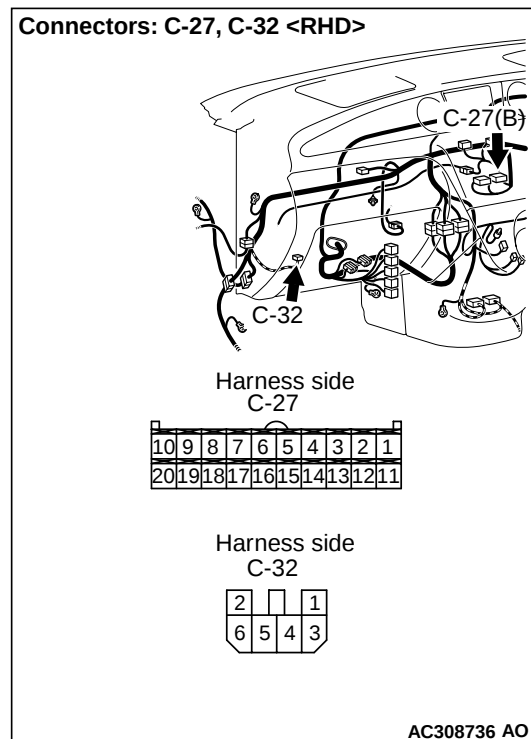
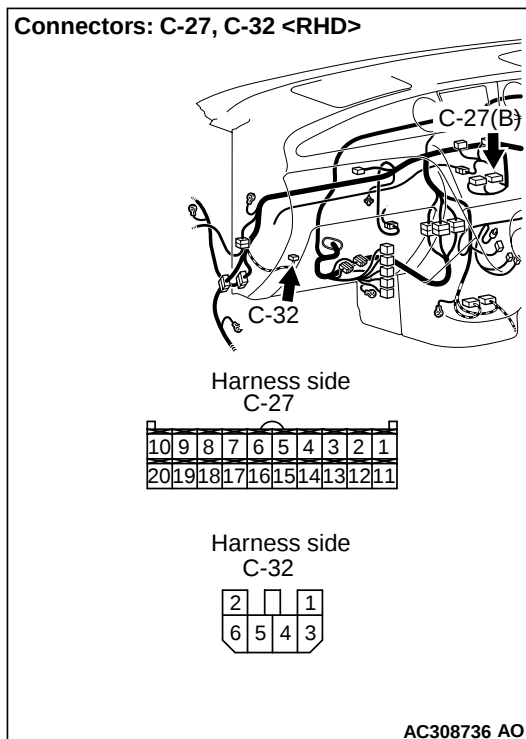
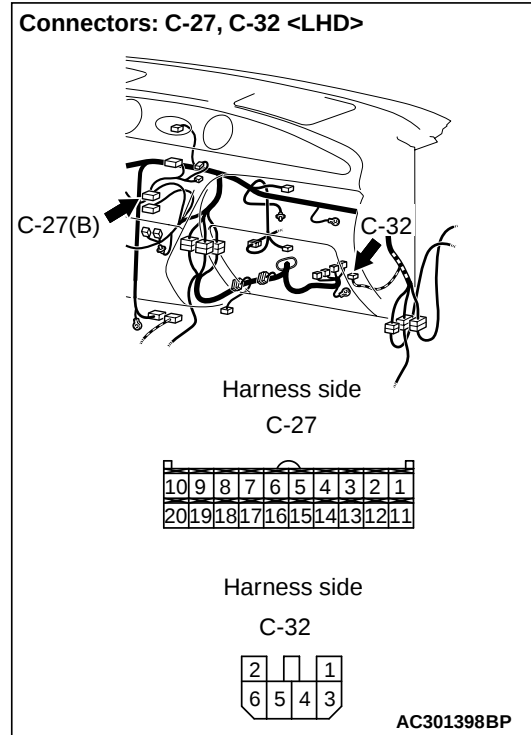
YES : Replace the automatic air conditioner control panel (A/C-ECU)

NO : Go to Step 2.

Step 2. Connector check: C-27 A/C-ECU connector and C-32 blower linear controller connector



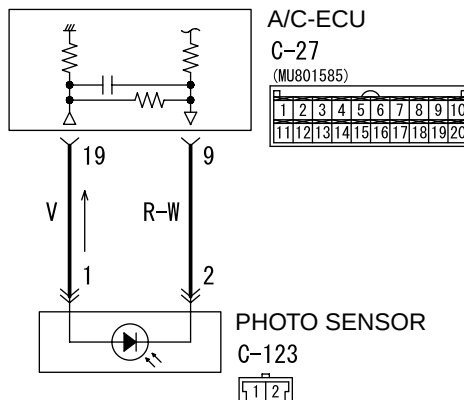
Step 3. Check the wiring harness between C-27 A/C-ECU connector terminal No.2 and C-32 blower linear controller connector terminal No.5.



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 air conditioner 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**

W3Z08E01AA

CIRCUIT OPERATION

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

TROUBLESHOOTING HINTS

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

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

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

YES : Go to Step 2.

NO : Refer to Inspection procedure 10

"Malfunction of the A/C-ECU power supply system [P.55B-88](#)."

Step 2. Use the MUT-II/III to confirm a 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.55B-4](#).

Step 3. Check the MUT-II/III data list.

- Item 25: Photo sensor

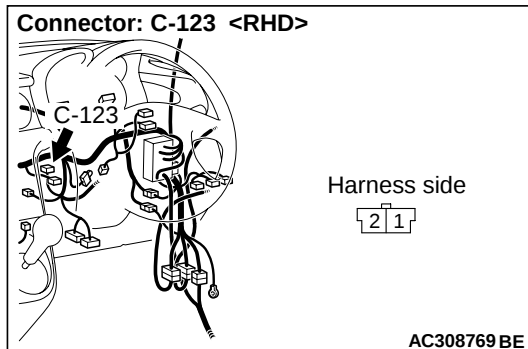
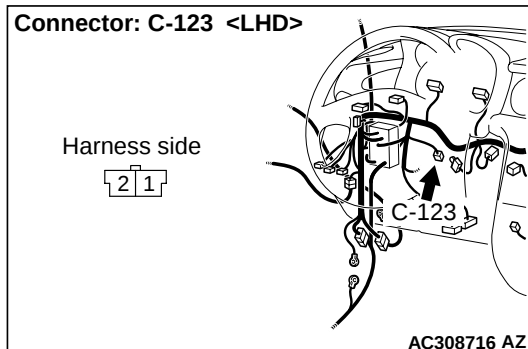
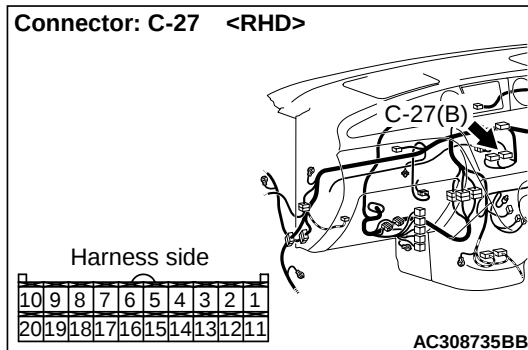
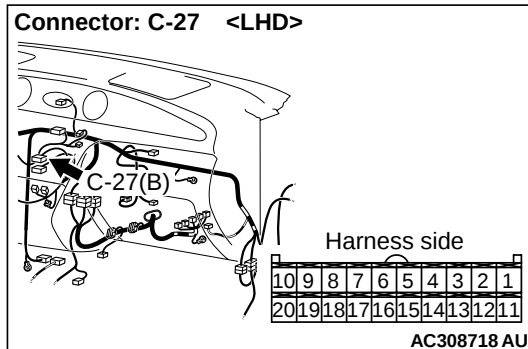
OK: Check that the volume of insulation takes inverse proportion with the MUT-II/III displayed voltage.

Q: Is the check result normal?

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

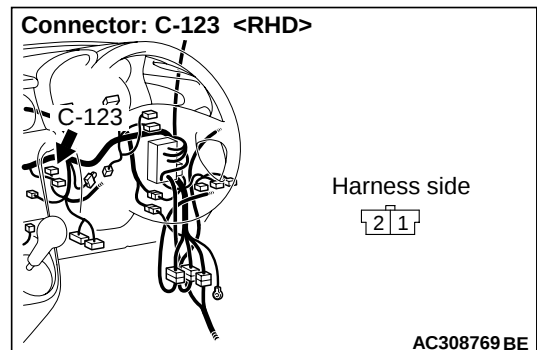
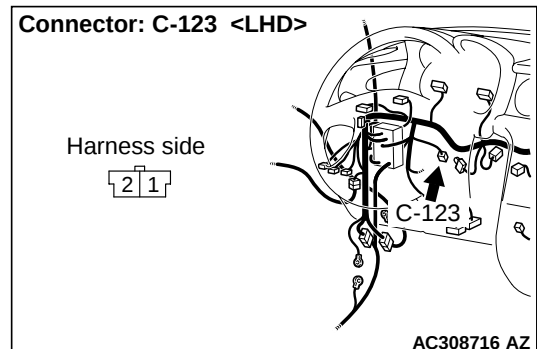
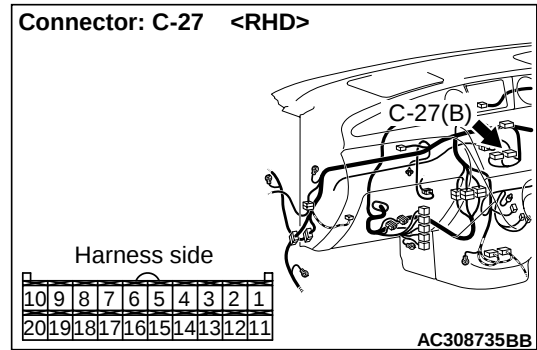
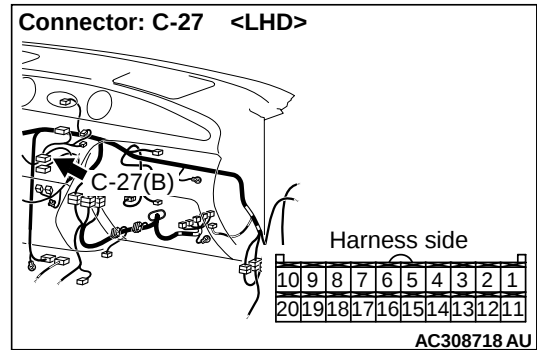
NO : Go to Step 4.

STEP 4. Connector check: C-27 A/C-ECU connector and C-123 photo sensor connector.



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

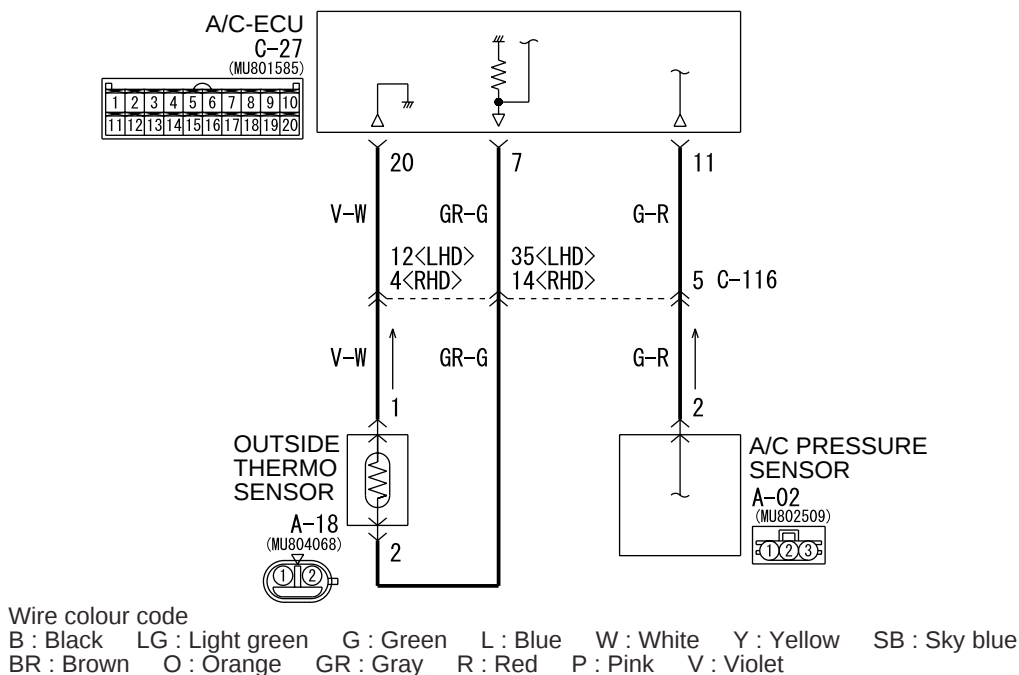
STEP 5. Check the wiring harness between C-123 photo sensor connector (terminal 1, 2) and C-27 A/C-ECU connector (terminal 19, 9).



- 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 A/C indicator flashes.



W4Z55E08AA

CIRCUIT OPERATION

If the A/C indicator flashes then the possible causes may be due to a defective A/C pressure system or insufficient refrigerant gas.

TROUBLESHOOTING HINTS

- Malfunction of the A/C pressure sensor
- Malfunction of the outside thermo sensor
- Malfunction of the A/C-ECU

DIAGNOSIS**STEP 1. Check the A/C pressure sensor operation.**

Refer to GROUP 55A, On vehicle service – A/C pressure sensor check [P.55A-51](#).

Q: Is the A/C pressure sensor operating properly?

YES : Go to Step 2.

NO : Replace the A/C pressure sensor.

STEP 2. Check the outside thermo sensor.

Refer to [P.55B-105](#).

Q: Is the outside thermo sensor in good condition?

YES : Go to Step 3.

NO : Replace the air thermo sensor.

STEP 3. Check the refrigerant level.

Refer to GROUP 55A, On vehicle service – sight glass refrigerant level test [P.55A-51](#).

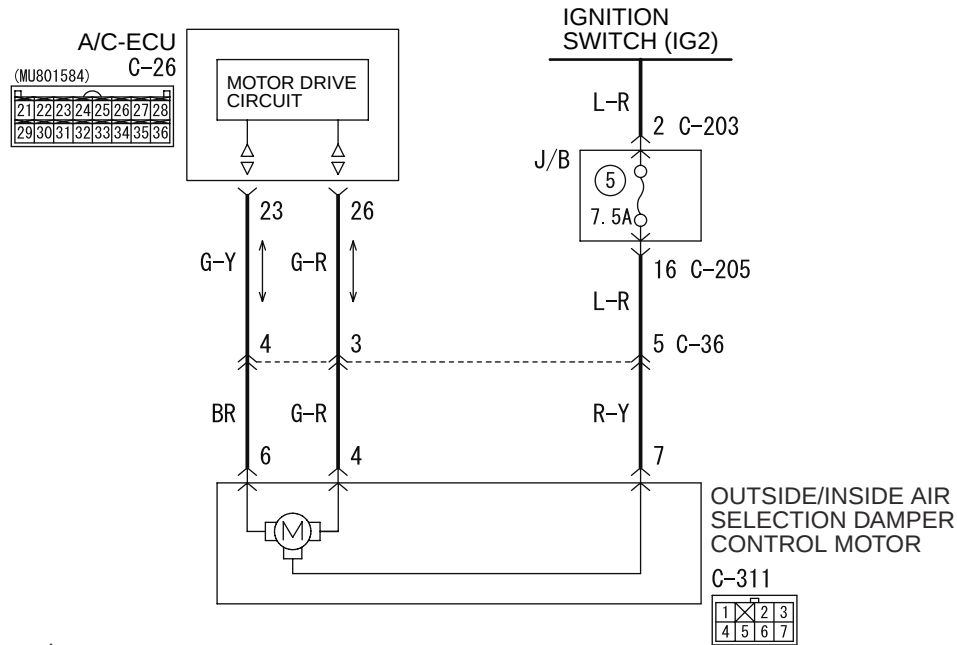
Q: Is the refrigerant level correct?

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

NO : Correct the refrigerant level. (Refer to GROUP 55A, On-vehicle Service [P.55A-56](#)).

INSPECTION PROCEDURE 8: The inside/outside air changeover is impossible.

Outside/Inside Air Selection Damper Control Motor Circuit



W3Z08E07AA

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.

Possible causes

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

DIAGNOSIS

Step 1. MUT-II/III actuator test

Carry out the actuator test.

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

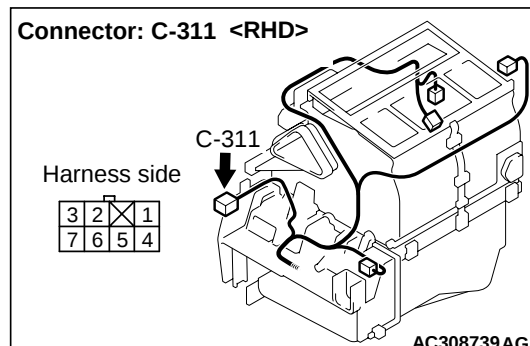
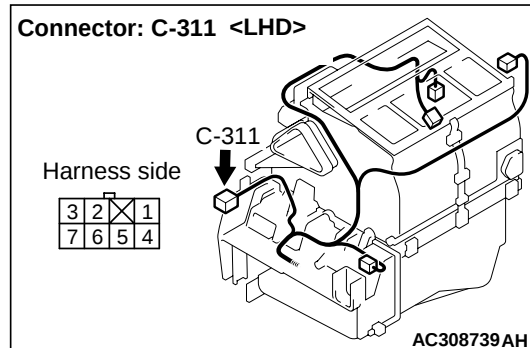
Q: Does the blower motor work normally?

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

NO : Go to Step 2.

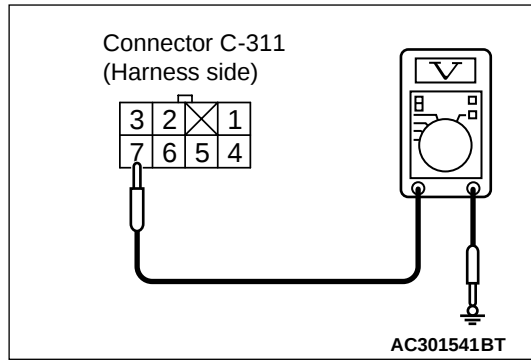
Step 2. Measure the voltage at C-311

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

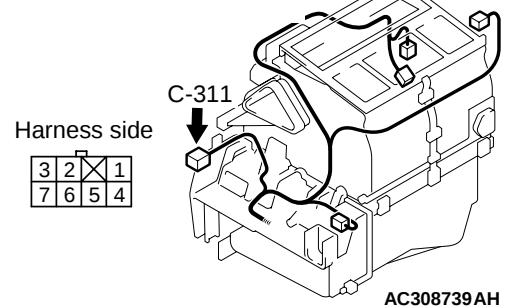
Q: Is the check result normal?

YES : Go to Step 5.

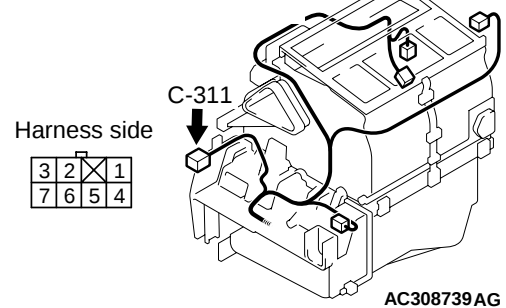
NO : Go to Step 3.

Step 3. Connector check: C-311 outside/inside air selection damper control motor connector

Connector: C-311 <LHD>



Connector: C-311 <RHD>

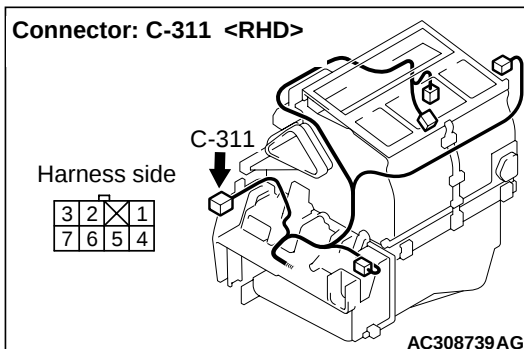
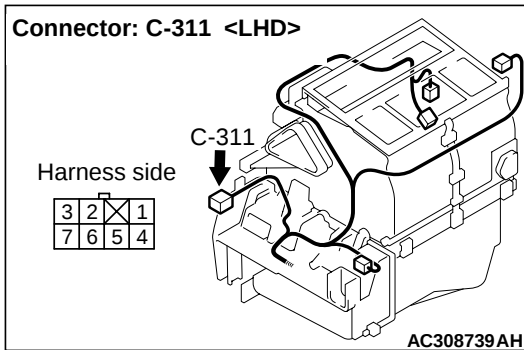


Q: Is the check result normal?

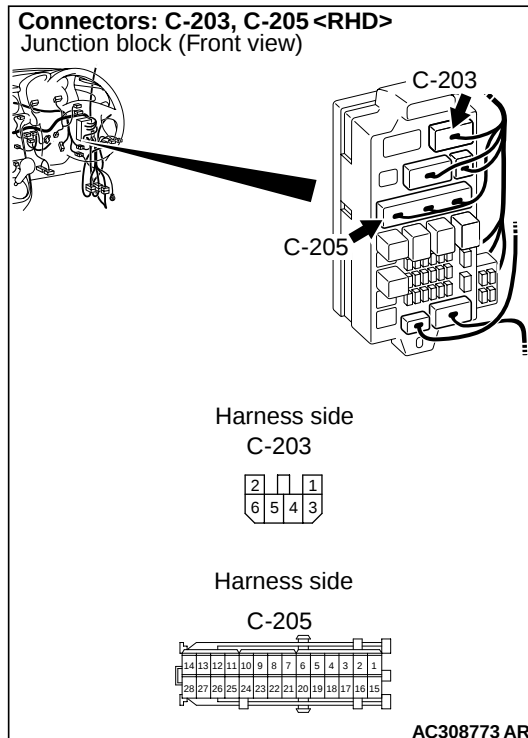
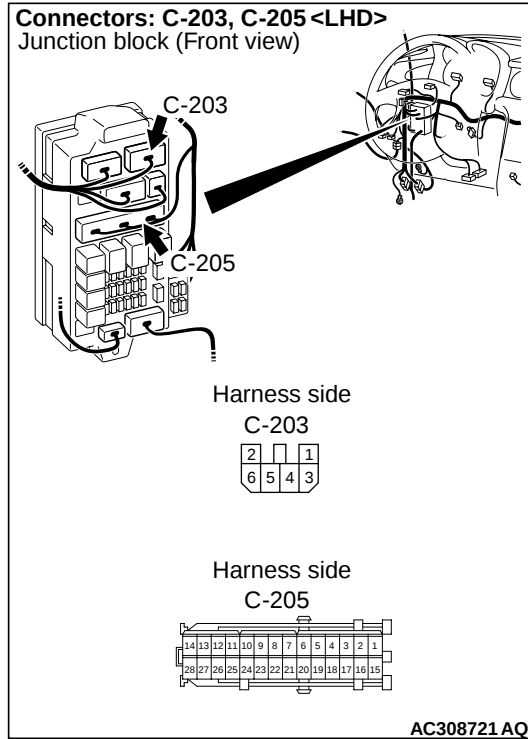
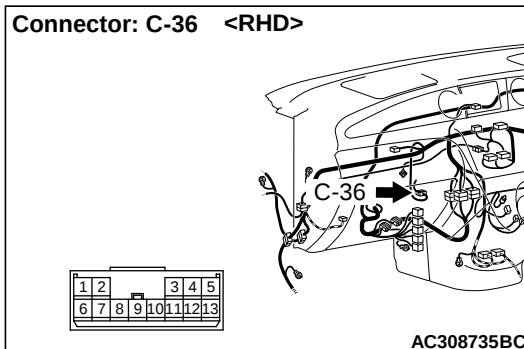
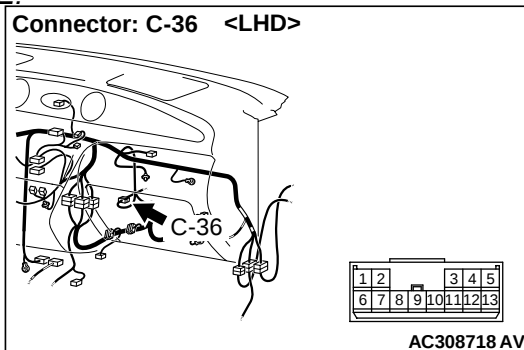
YES : Go to Step 4.

NO : Repair the connector.

Step 4. Check the wiring harness between C-311 outside/inside air selection damper control motor connector terminal No.7 and the ignition switch (IG2).



NOTE:



Prior to the wiring harness inspection, check intermediate connector C-36 and junction block connectors C-203 and C-205, 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.00-6).

NO : Repair the wiring harness.

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

Refer to GROUP 55A, Resistor, blower motor and inside/outside air selection damper control motor [P.55A-67](#).

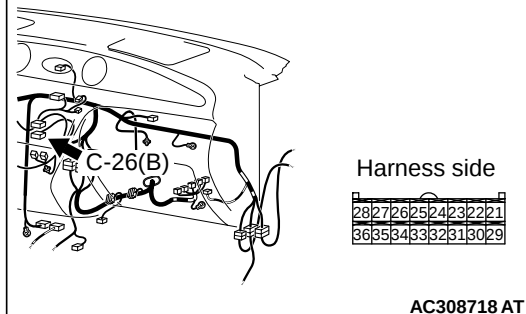
Q: Is the check result normal?

YES : Go to Step 6.

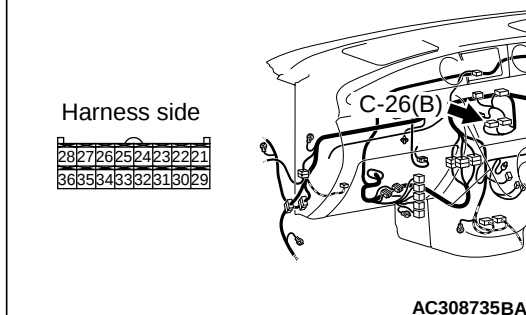
NO : Replace the outside/inside air selection damper control motor.

Step 6. Connector check: C-26 A/C-ECU connector and C-311 outside/inside air selection damper control motor connector

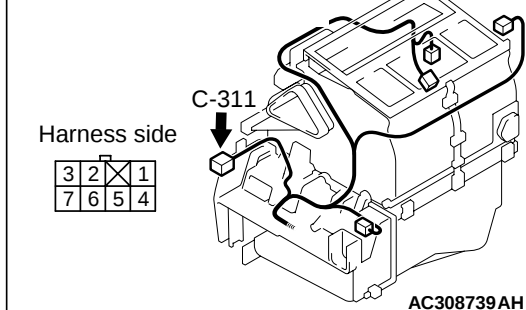
Connector: C-26 <LHD>



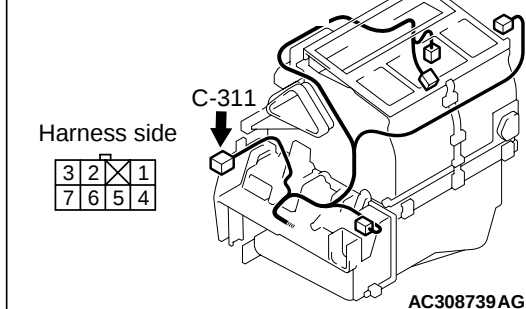
Connector: C-26 <RHD>



Connector: C-311 <LHD>



Connector: C-311 <RHD>

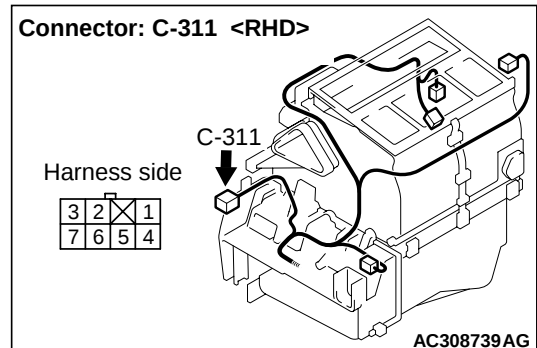
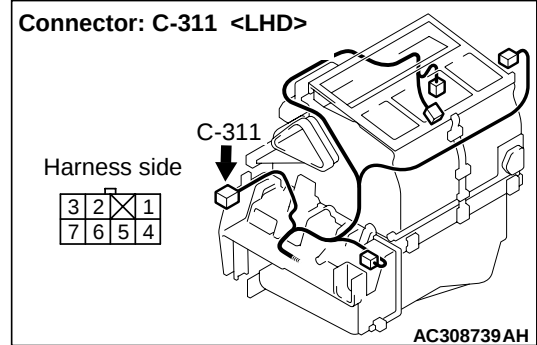
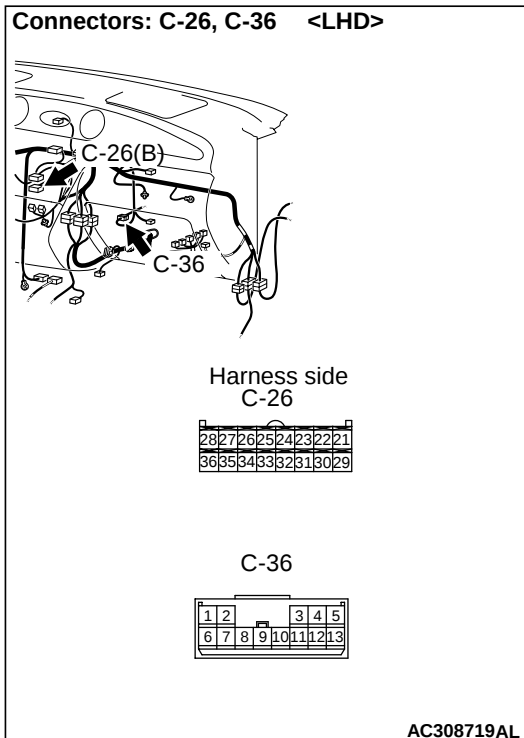


Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the connector.

Step 7. Check the wiring harness between C-26 A/C-ECU connector (terminals 23 and 26) and C-311 outside/inside air selection damper control motor connector (terminals 6 and 4).



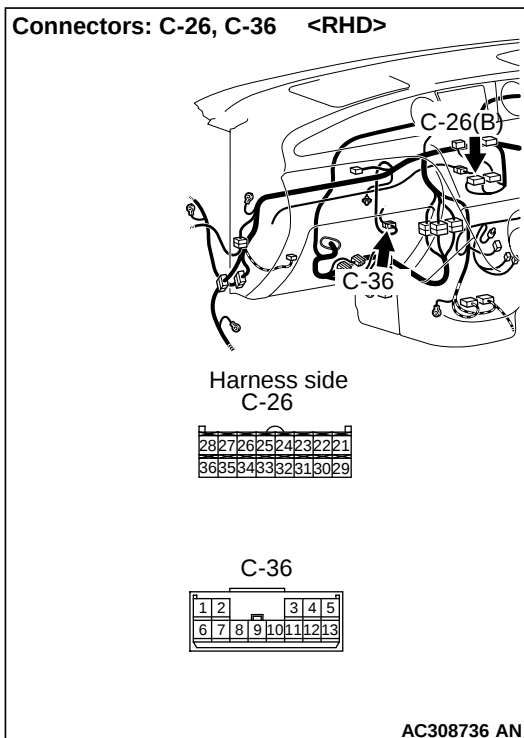
NOTE: Prior to the wiring harness inspection, check intermediate connector C-36, and repair if necessary.

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

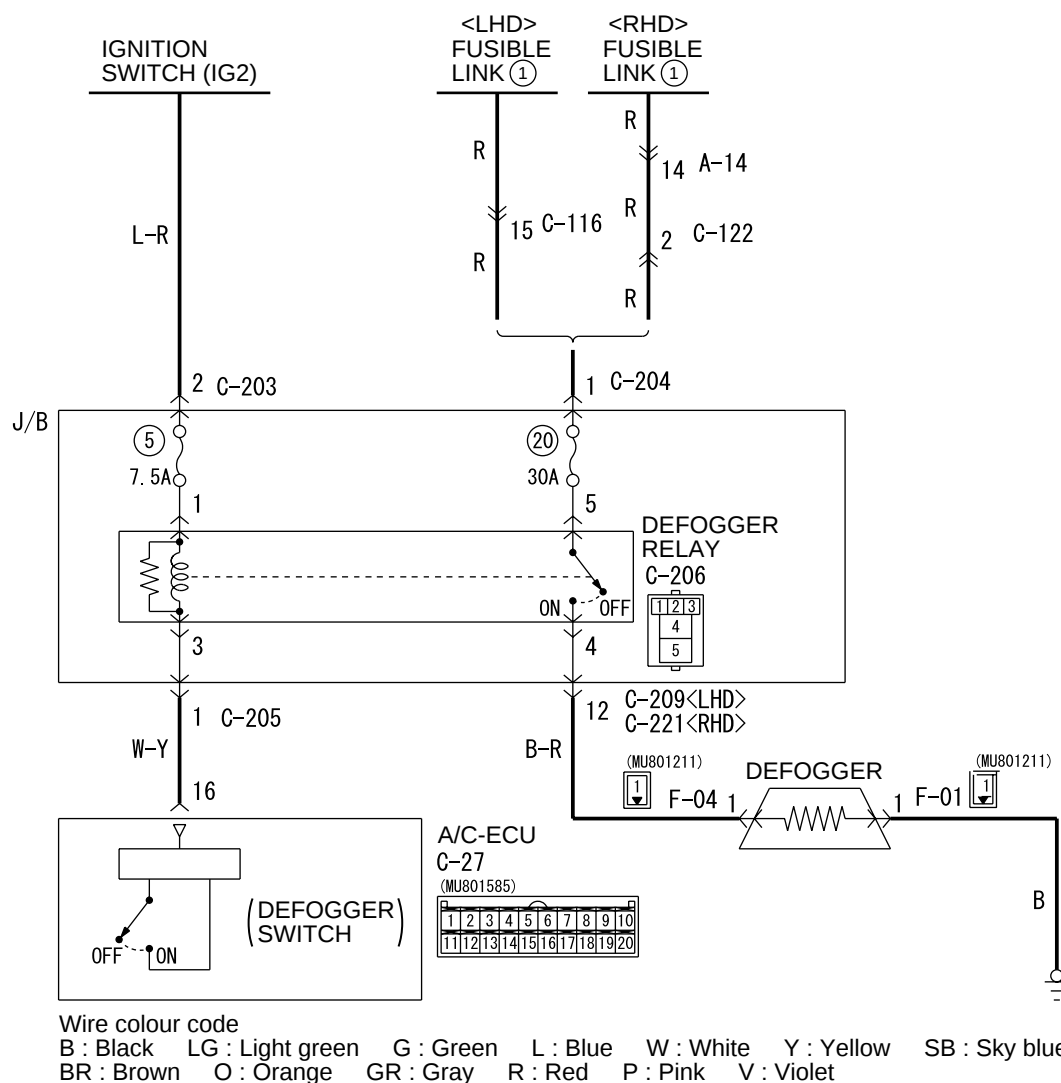
Q: Is the check result normal?

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

NO : Repair the wiring harness.



INSPECTION PROCEDURE 9: Defogger function does not operate.



W4755F05AA

CIRCUIT OPERATION

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

TROUBLESHOOTING HINTS

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

DIAGNOSIS

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

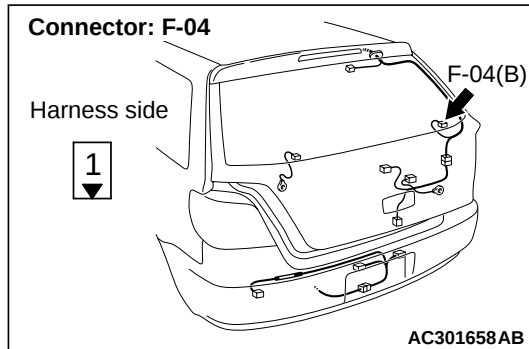
Q: Do the A/C and outside/inside air selection damper control motor work normally?

YES : Go to Step 2.

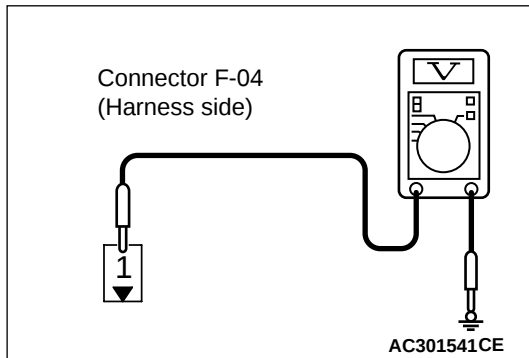
NO : Refer to Inspection procedure 10

"Malfunction of the A/C-ECU power supply system P.55B-88."

STEP 2. Measure the voltage at F-04 defogger connector.



- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the 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 defogger relay continuity.

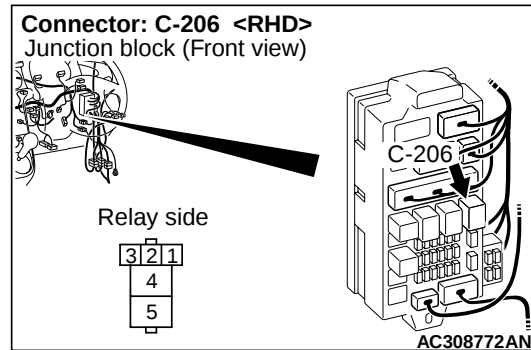
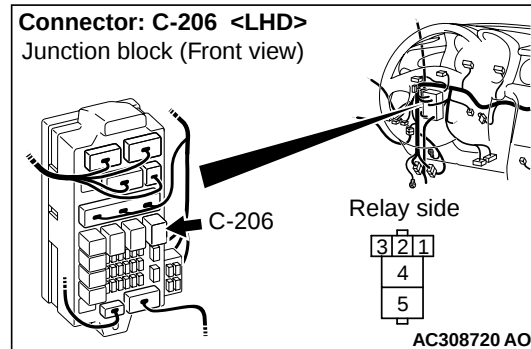
Refer to [P.55A-57](#).

Q: Is the defogger relay in good condition?

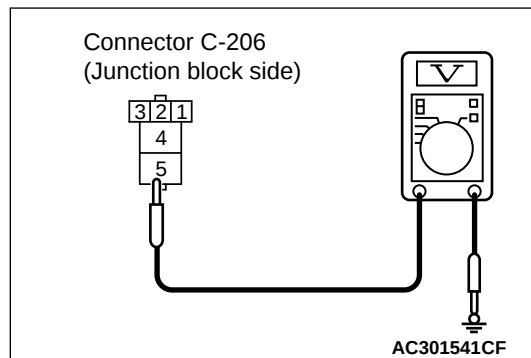
YES : Go to Step 4.

NO : Replace the defogger relay.

STEP 4. Measure the voltage at C-206 defogger relay connector.



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



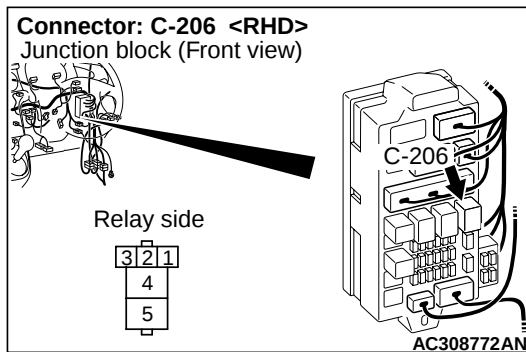
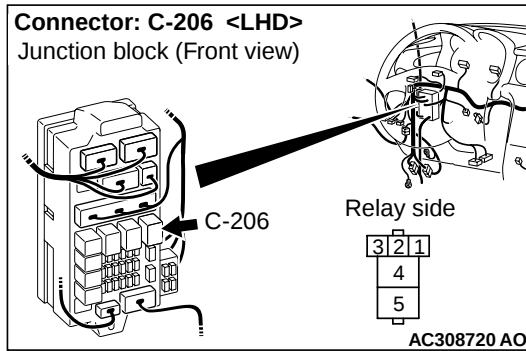
- (2) Measure the voltage between terminal 5 and body earth.

OK: System voltage

Q: Is the check result normal?

YES : Go to Step 7.

NO : Go to Step 5.

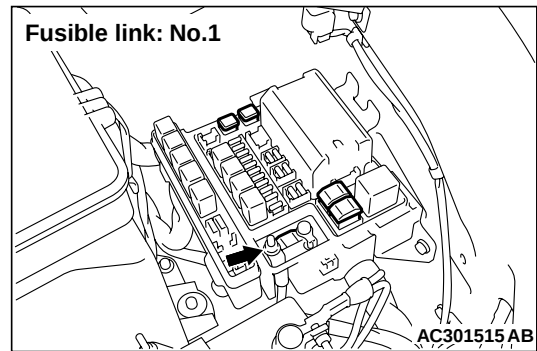
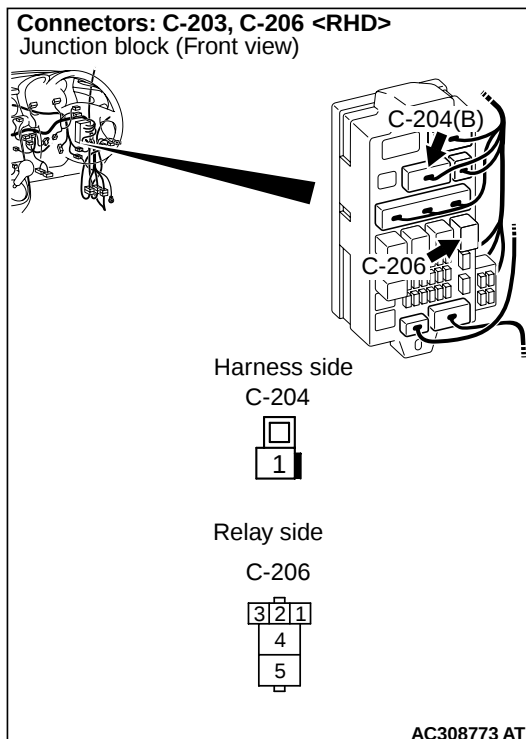
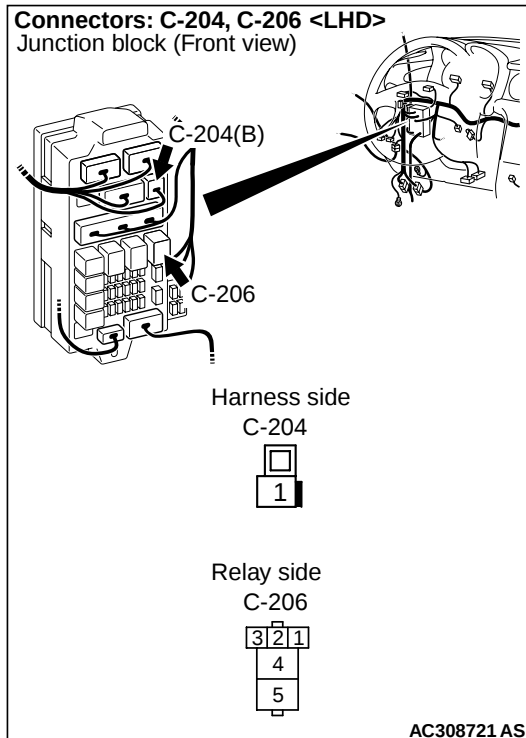
STEP 5. Connector check: C-206 defogger relay connector

Q: Is the check result normal?

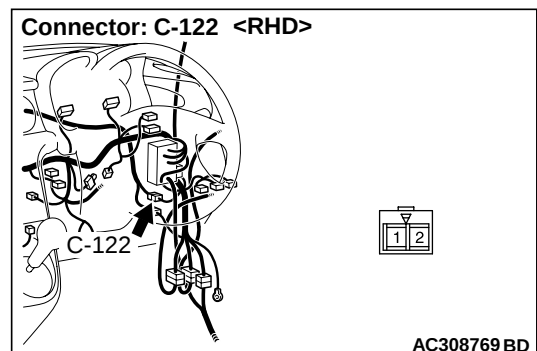
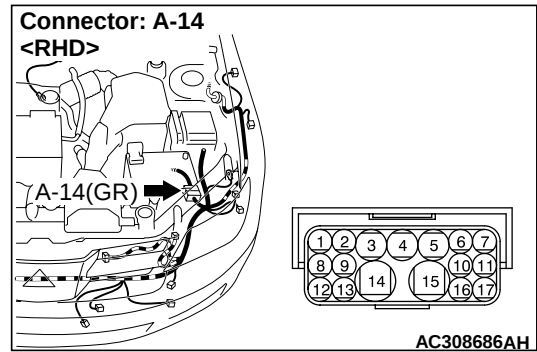
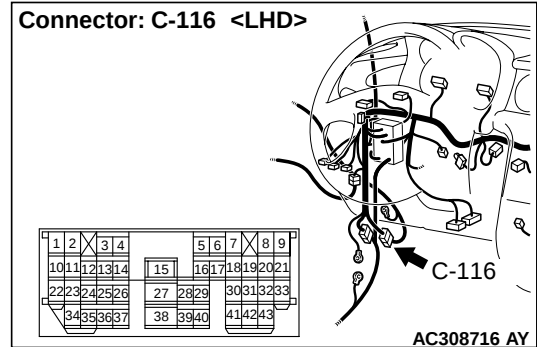
YES : Go to Step 6.

NO : Repair the connector.

STEP 6. Check the wiring harness between C-206 defogger relay connector terminal No.5 and the fusible link (1).



NOTE:



Prior to the wiring harness inspection, check intermediate connectors C-116 <LHD>, A-14 <RHD>, C-122 <RHD> and junction block connector C-204, and repair if necessary.

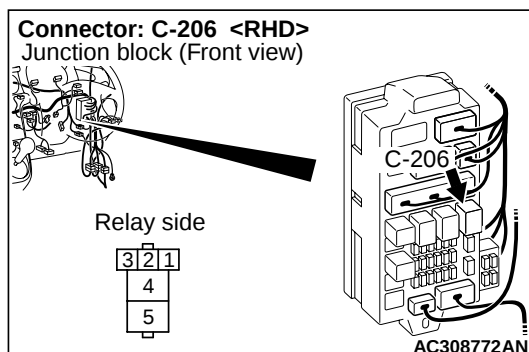
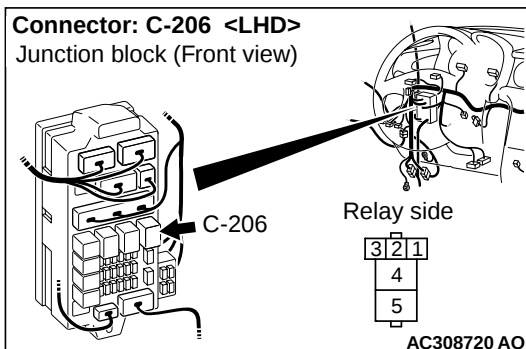
- Check the defogger relay power supply line for open or short circuit.

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.00-6).

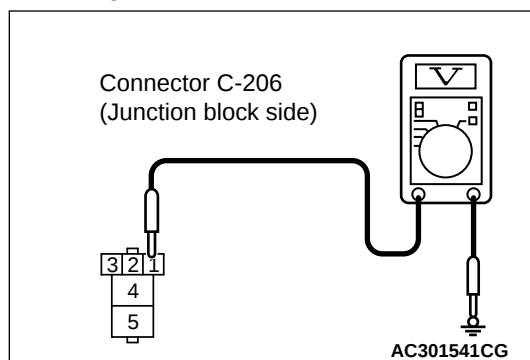
NO : Repair the wiring harness.

STEP 7. Measure the voltage at C-206 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.

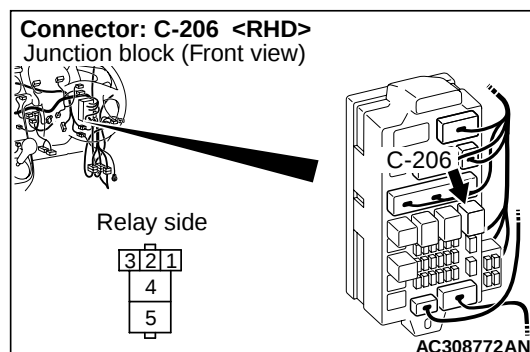
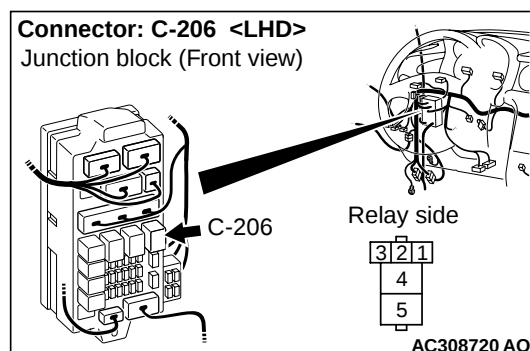
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 10.

NO : Go to Step 8.

STEP 8. Connector check: C-206 defogger relay connector

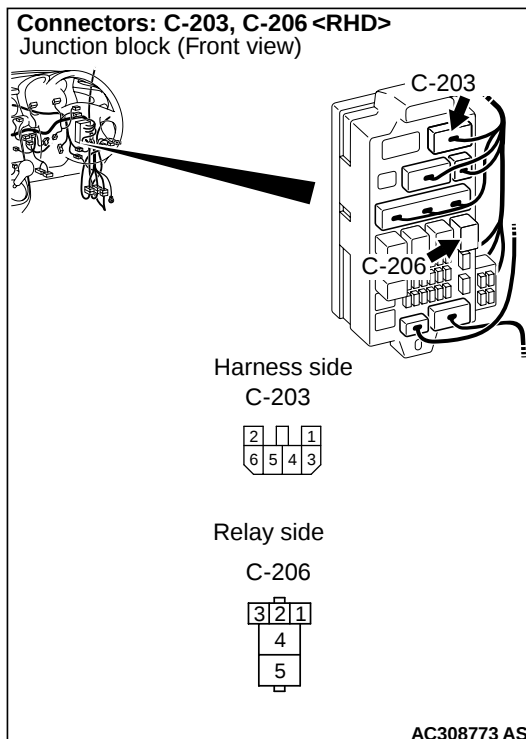
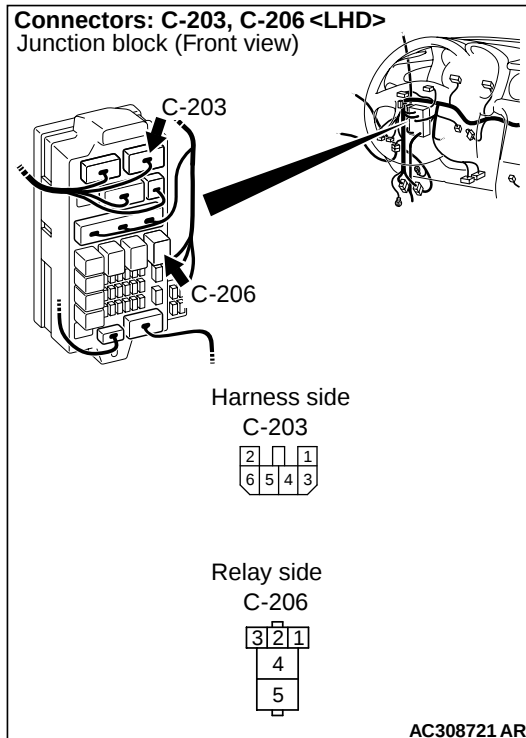


Q: Is the check result normal?

YES : Go to Step 9.

NO : Repair the connector.

STEP 9. Check the wiring harness between C-206 defogger relay connector No.1 and ignition switch (IG2).



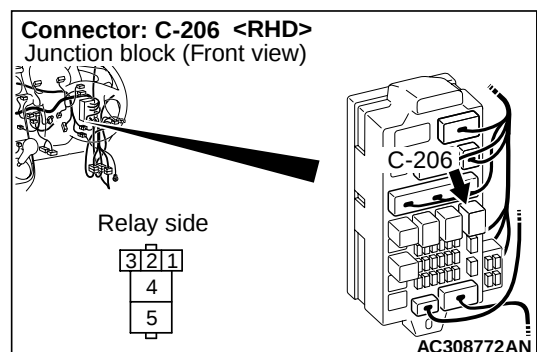
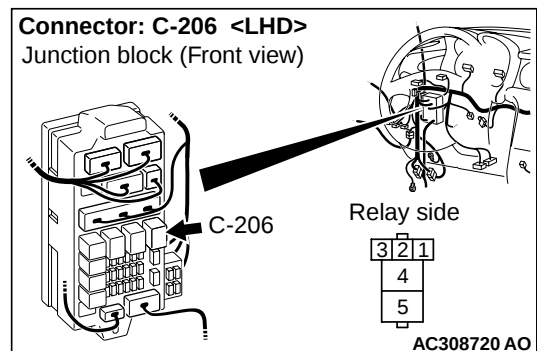
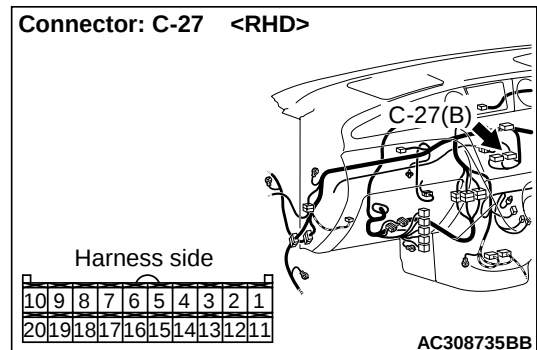
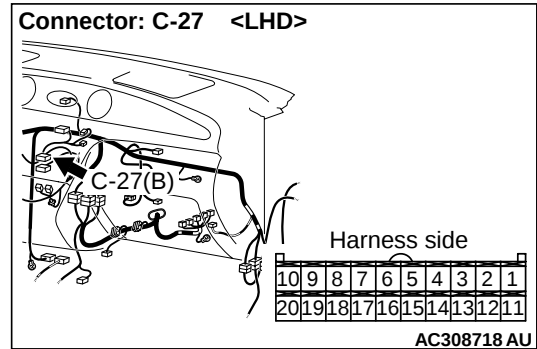
NOTE: Prior to the wiring harness inspection, check junction block connector C-203, and repair if necessary.

- Check the defogger power supply line for open circuit.

Q: Is the check result normal?

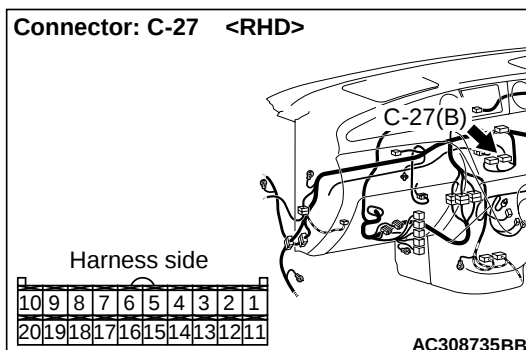
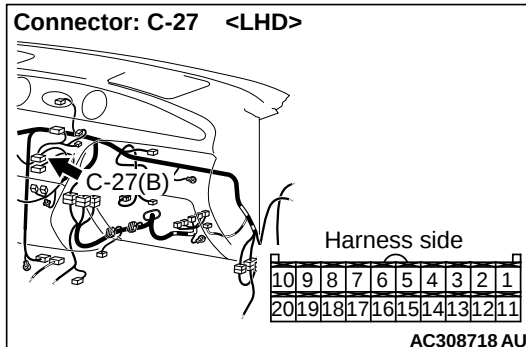
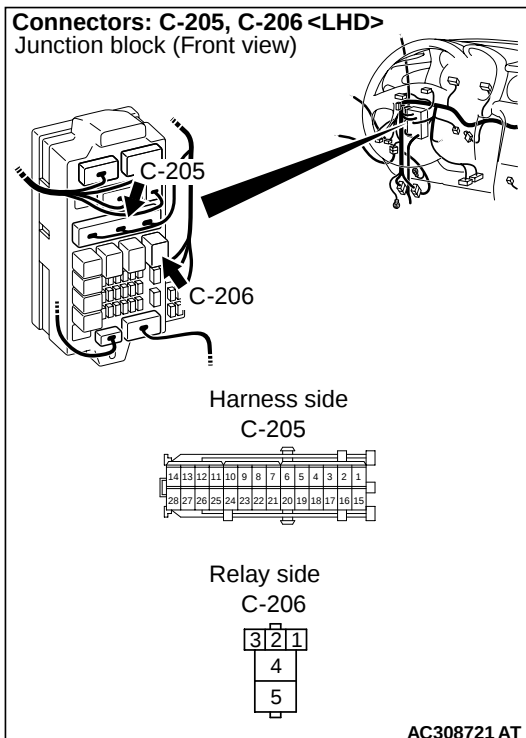
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-6).
NO : Repair the wiring harness.

STEP 10. Connector check: C-206 defogger relay connector and C-27 A/C-ECU connector



Q: Is the check result normal?
YES : Go to Step 11.
NO : Repair the connector.

STEP 11. Check the wiring harness between defogger relay connector C-206 No.3 and A/C-ECU connector C-27 No.16.



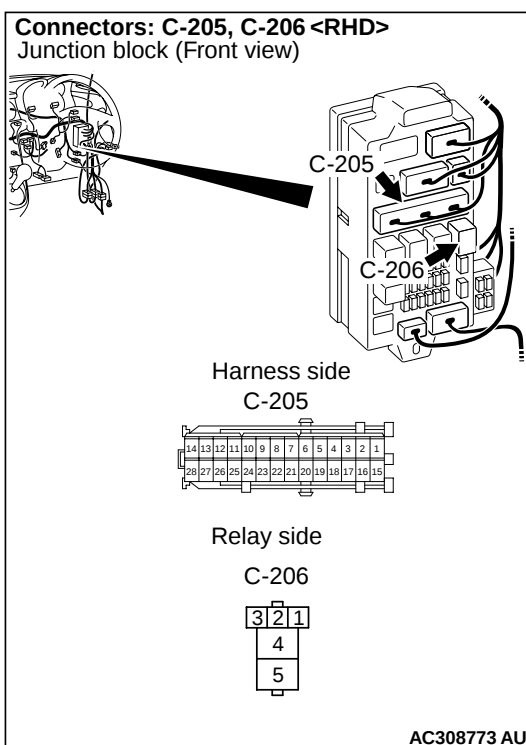
NOTE: Prior to the wiring harness inspection, check junction block connector C-205, and repair if necessary.

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

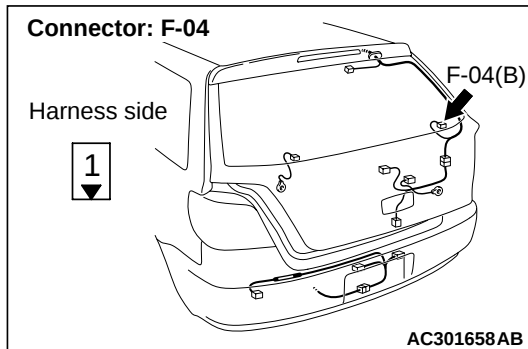
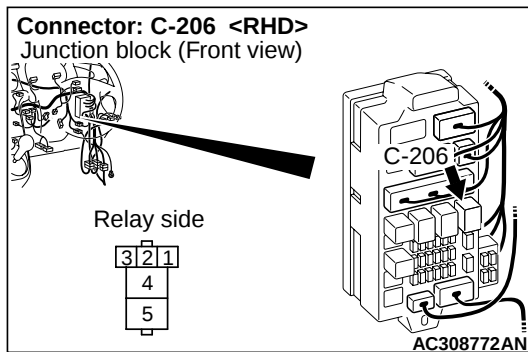
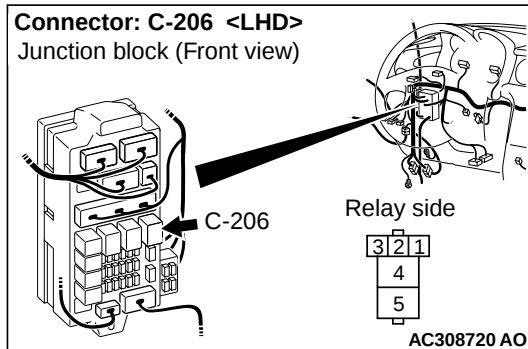
Q: Is the check result normal?

YES : Go to Step 12.

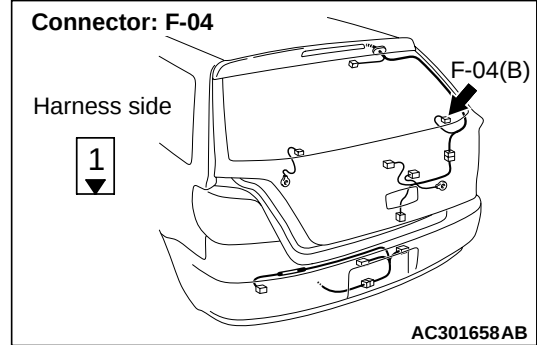
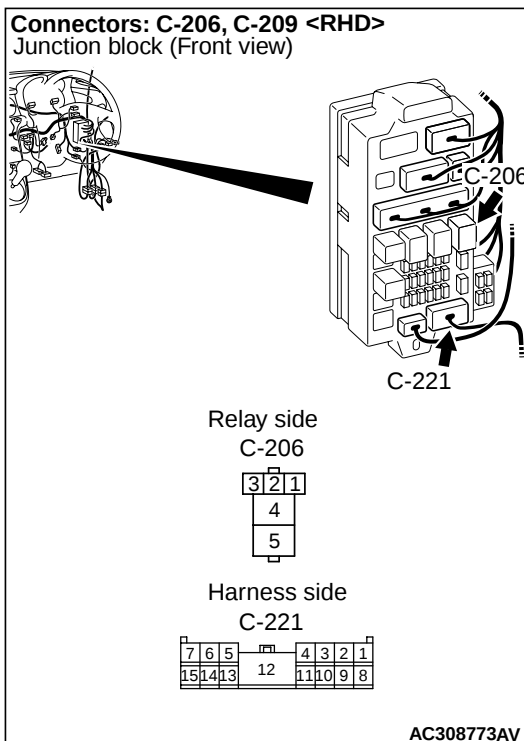
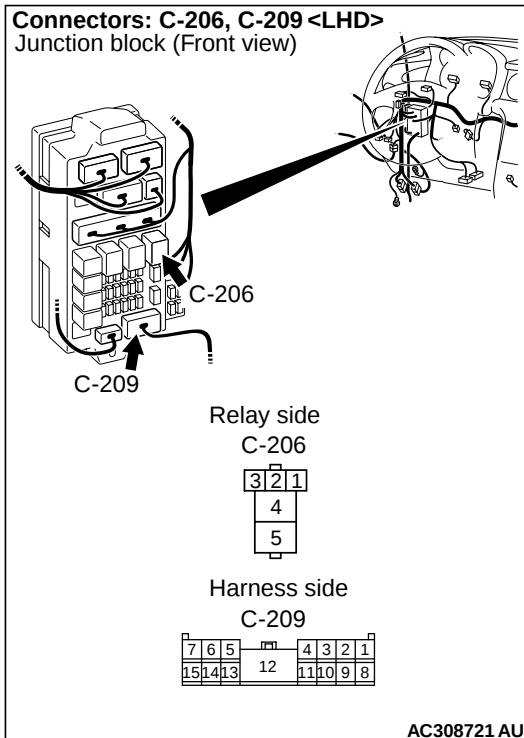
NO : Repair the wiring harness.



STEP 12. Connector check: C-206 defogger relay connector and F-04 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-206 defogger relay connector terminal No.4 and F-04 defogger connector terminal No.1.

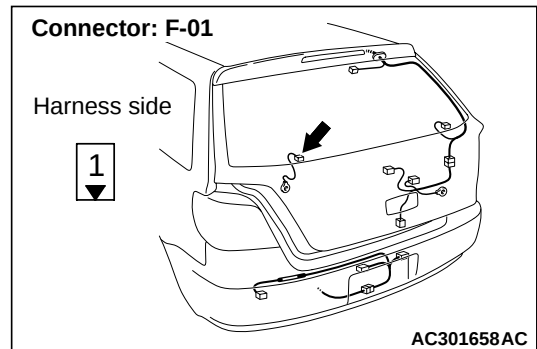
NOTE: Prior to the wiring harness inspection, check junction block connector C-209 <LHD>, C-221 <RHD>, and repair if necessary.

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

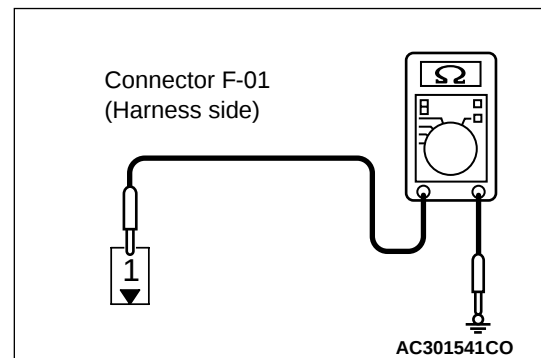
Q: Is the check result normal?

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

NO : Repair the wiring harness.

STEP 14. Measure the resistance at F-01 defogger connector.

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



- (2) Continuity between terminal 1 and body earth.

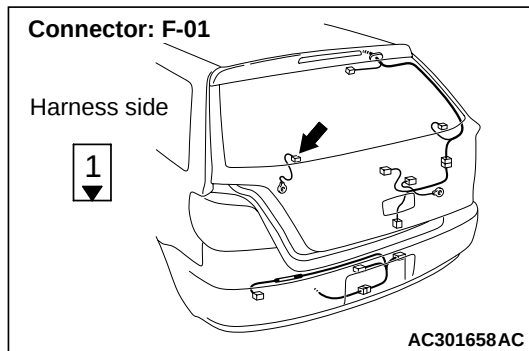
OK: 2 ohm or less

Q: Is the check result normal?

YES : Go to Step 17.

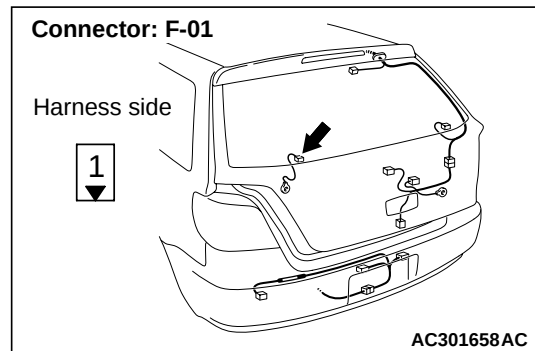
NO : Go to Step 15.

STEP 15. Connector check: F-01 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-01 defogger connector terminal No.1 and earth.



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

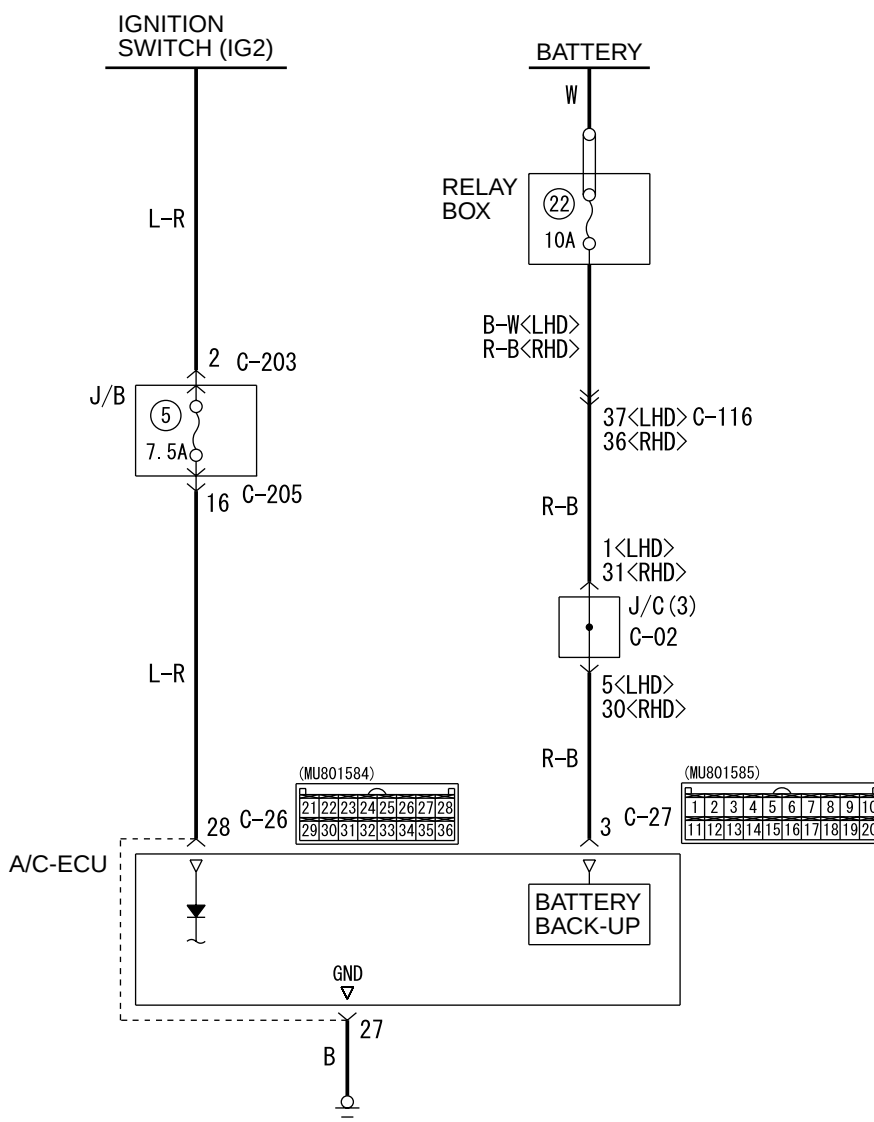
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-6](#)).
NO : Repair or replace the wiring harness.

STEP 17. Check the defogger.

Refer to GROUP 54A, Rear Window Defogger Switch Inspection [P.54A-105](#).

Q: Does the defogger work normally?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-6](#)).
NO : Repair the defogger.

INSPECTION PROCEDURE 10: Malfunction of the A/C-ECU power supply system.



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CIRCUIT OPERATION

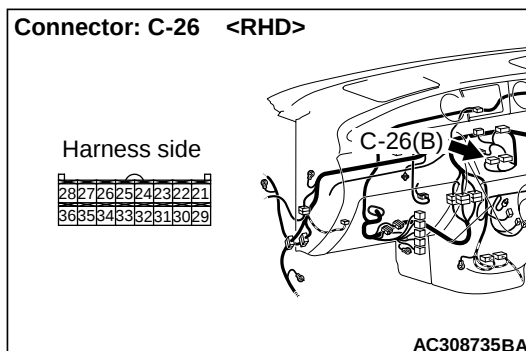
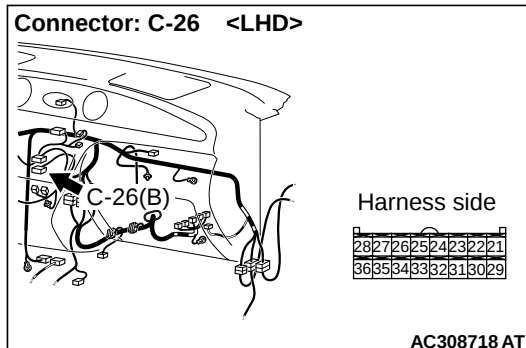
The A/C-ECU power system may be defective if the air conditioner, defogger, and outside/inside air selection damper motor all do not operate normally.

TROUBLESHOOTING HINTS

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

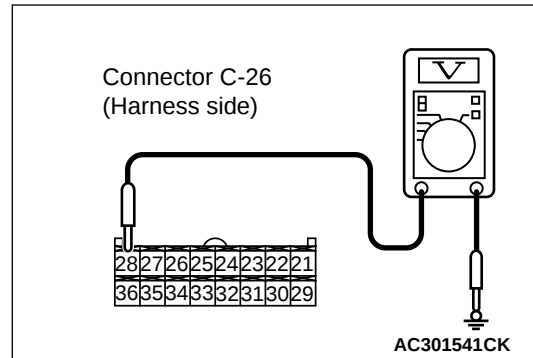
DIAGNOSIS

STEP 1. Measure the voltage at A/C-ECU connector C-26.



- (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.

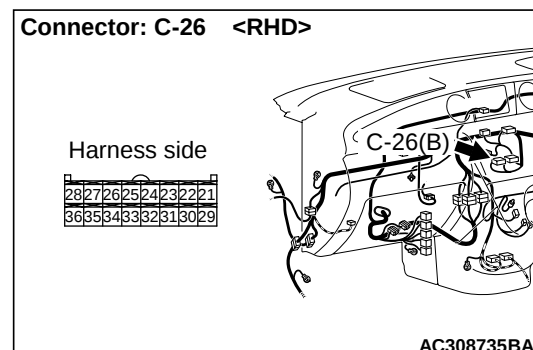
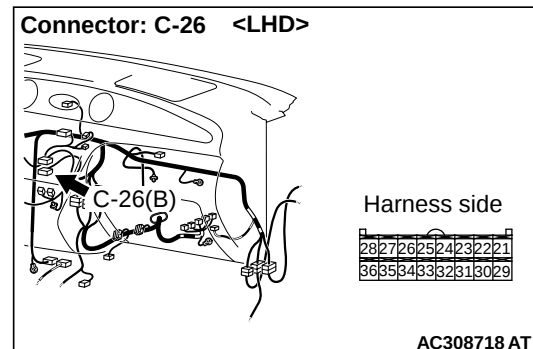
OK: System voltage

Q: Is the check result normal?

YES : Go to Step 4.

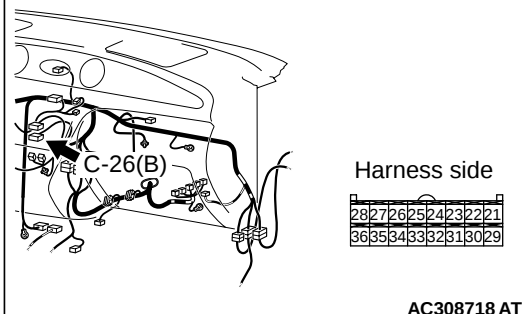
NO : Go to Step 2.

STEP 2. Connector check: C-26 A/C-ECU connector

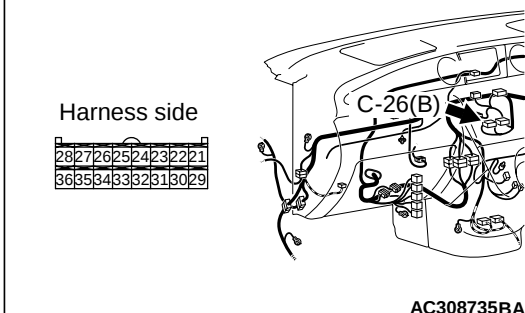


STEP 3. Check the wiring harness between C-26 A/C-ECU connector terminal No.28 and the ignition switch (IG2).

Connector: C-26 <LHD>

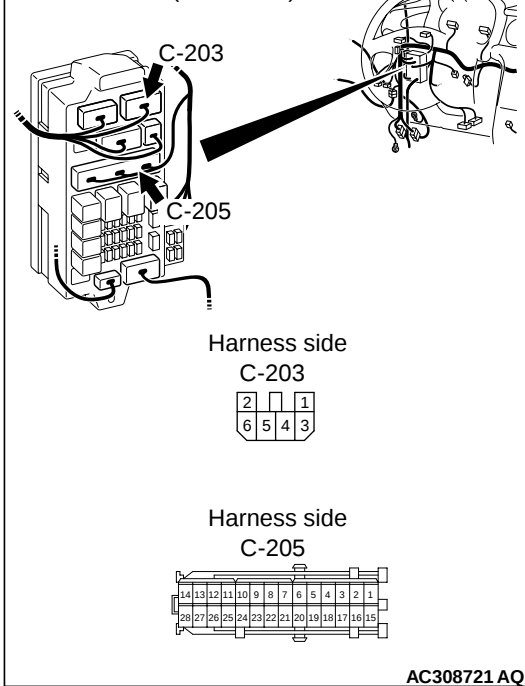


Connector: C-26 <RHD>

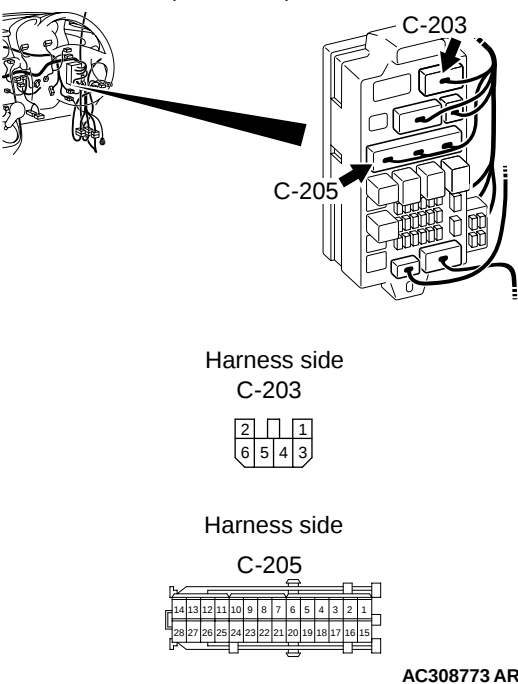


NOTE:

Connectors: C-203, C-205 <LHD>
Junction block (Front view)



Connectors: C-203, C-205 <RHD>
Junction block (Front view)



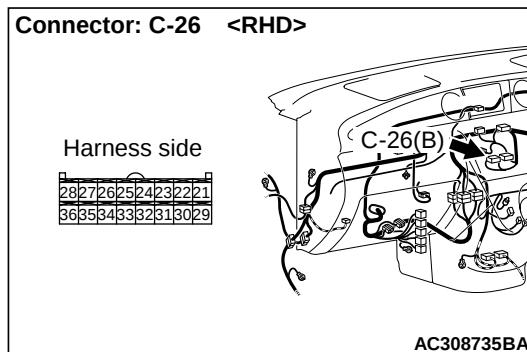
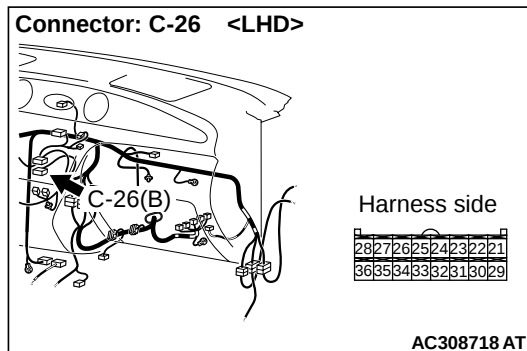
Prior to the wiring harness inspection, check junction block connectors C-205 and C-203, and repair if necessary.

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

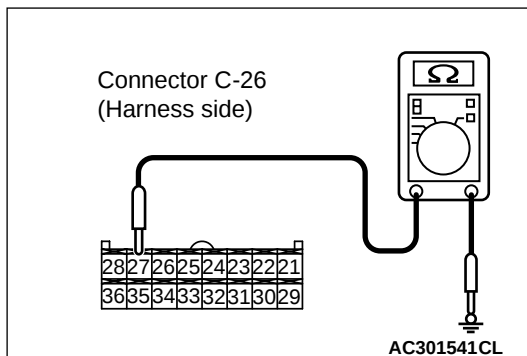
Q: Is the check result normal?

- YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-6).
- NO :** Repair the wiring harness.

STEP 4. Measure the resistance at C-26 A/C-ECU connector.



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



(2) Continuity between terminal 27 and body earth.

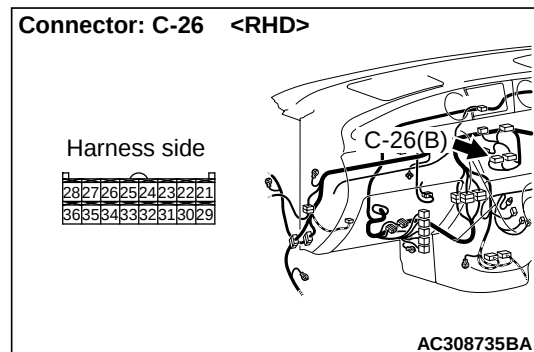
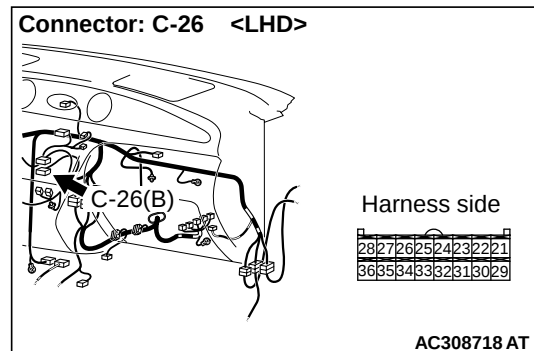
OK: 2 ohm or less

Q: Is the check result normal?

YES : Go to Step 7.

NO : Go to Step 5.

STEP 5. Connector check: C-26 A/C-ECU connector

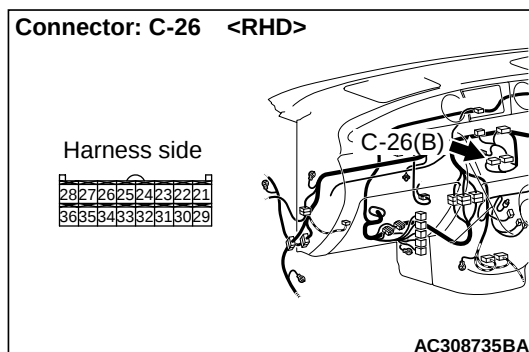
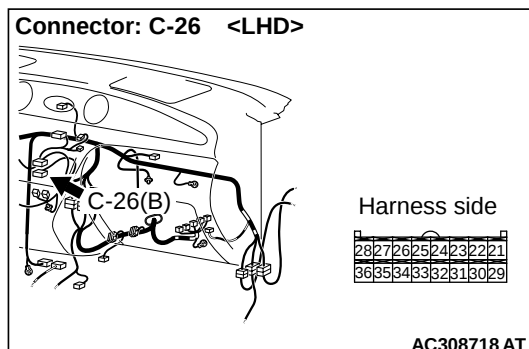


Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the connector.

STEP 6. Check the wiring harness between C-26 A/C-ECU connector terminal No.27 and the earth.



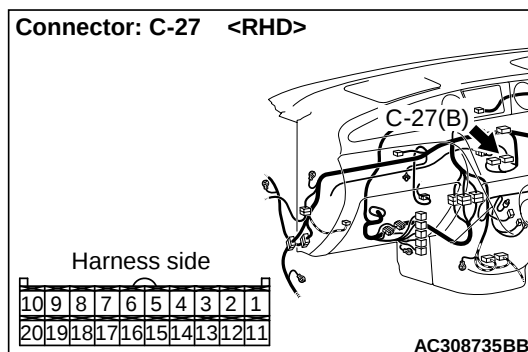
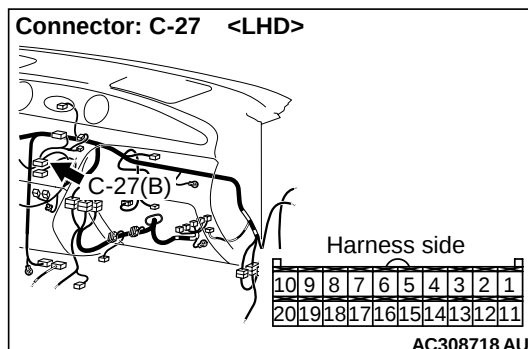
- Check the A/C-ECU earth line for open or short circuit.

Q: Is the check result normal?

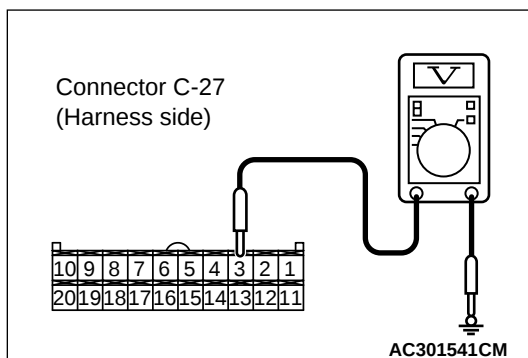
YES : Replace the automatic air conditioner control panel (A/C-ECU).

NO : Repair the wiring harness.

STEP 7. Measure the voltage at C-27 A/C-ECU connector.



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



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

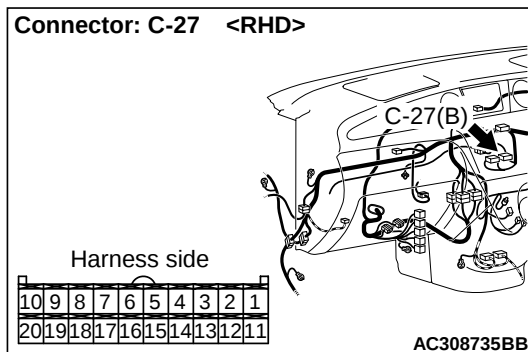
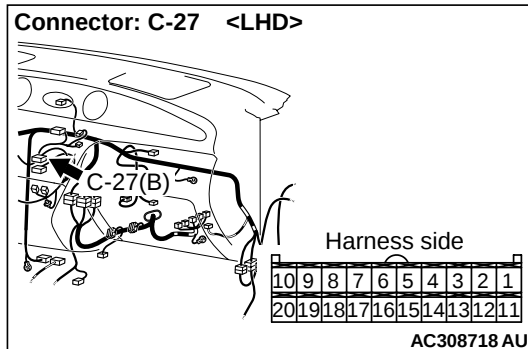
OK: System voltage

Q: Is the check result normal?

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

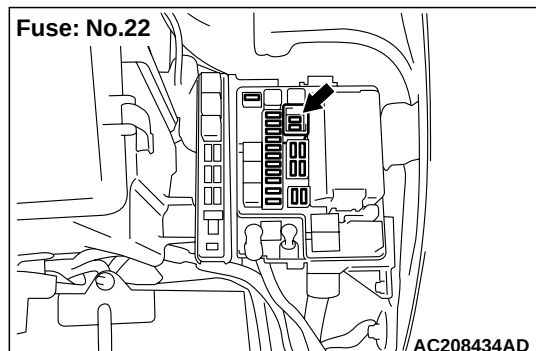
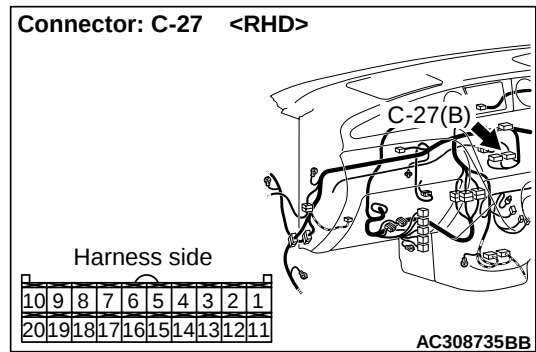
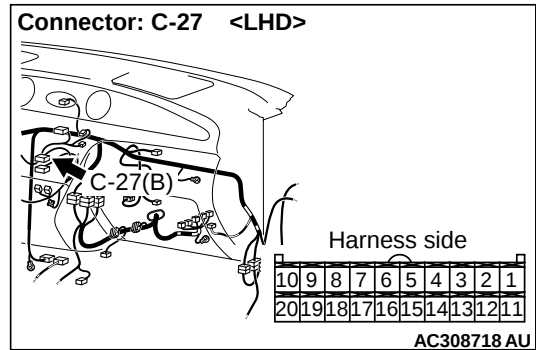
NO : Go to Step 8.

STEP 8. Connector check: C-27 A/C-ECU connector



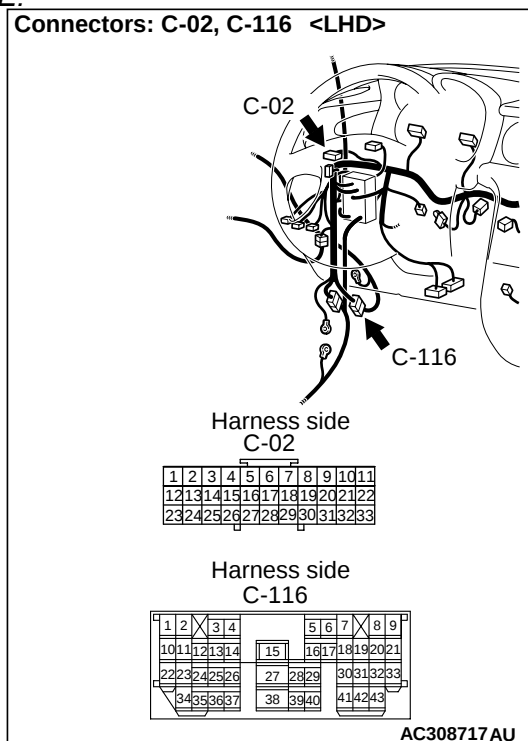
Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the connector.

STEP 9. Check the wiring harness between C-27 A/C-ECU connector terminal No.3 and relay box fuse No.22.



NOTE:

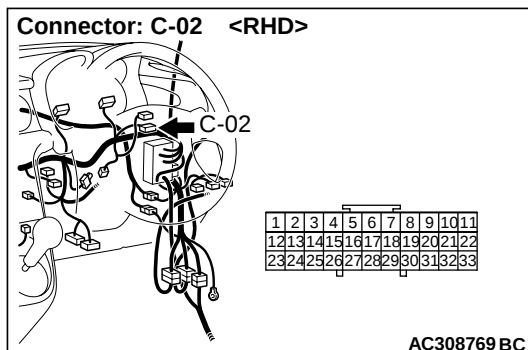
Connectors: C-02, C-116 <LHD>



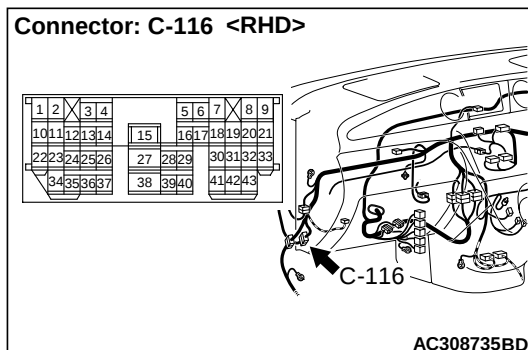
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-6).

NO : Repair the wiring harness.

Connector: C-02 <RHD>



Connector: C-116 <RHD>



Prior to the wiring harness inspection, check junction block connectors C-202, C-204, intermediate connectors C-116 <LHD>, A-14 <RHD>, C-122 <RHD> and joint connector C-02, and repair if necessary.

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

Q: Is the check result normal?

DATA LIST REFERENCE TABLE

M1554005100170

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 MUT-II/III displayed temperature.
13	Outside thermo sensor	Turn the ignition switch to the ON position.	Outside temperature is the same as MUT-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 MUT-II/III displayed temperature.
21	Air thermo sensor	Turn the ignition switch to the ON position.	Evaporator outlet temperate is the same as MUT-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 MUT-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 MUT-II/III displayed pressure.

ACTUATOR TEST TABLE

M1554005200166

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

M1554005400182

<4G63>

<C-134>

JAE-E															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26						

<C-135>

JAE-E															
31	32	33	34	35	36	37	38								
39	40	41	42	43	44	45	46								

<C-137>

JAE-E															
71	72	73	74	75	76	77	78	79	80	81					
82	83	84	85	86	87	88	89	90	91	92					

AC301466AB

Terminal No.	Check items	Check conditions	Normal conditions
8	Output to A/C compressor	A/C compressor relay: OFF	System voltage
		A/C compressor relay: ON	0 V
21	Output to fan controller	Air conditioner switch: OFF	4.9 – 5.1 V
		Air conditioner switch: ON	0 V
24	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
42	Input from A/C pressure sensor	2.6MPa	3.9 V
45	Input from A/C-ECU (A/C2)	When the A/C is under low load	System voltage
81	A/C pressure sensor power supply	Always	4.9 – 5.1 V
92	A/C pressure sensor earth	Always	0 V

<4G69>

<C-139>

1	2		JAE	3	4
5	6	7	8	9	10
11	12	13			
14	15	16	17	18	19
20	21	22	23	24	25
26	27				

<C-141>

61	62		JAE	63	64
65	66	67	68	69	70
71	72	73			
74	75	76	77	78	79
80	81	82			
83	84	85	86	87	88
89					

<C-142>

91	92		JAE	93	94
95	96	97	98	99	100
101	102	103	104		
105	106	107	108	109	110
111	112	113	114	115	116
117	118	119	120		

AC309402AB

Terminal No.	Check items	Check conditions	Normal conditions
8	Output to A/C compressor	A/C compressor relay: OFF	System voltage
		A/C compressor relay: ON	0 V
17	Output to fan controller	Air conditioner switch: OFF	4.9 – 5.1 V
		Air conditioner switch: ON	0 V
69	Input from A/C-ECU (A/C2)	When the A/C is under low load	System voltage
78	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
96	A/C pressure sensor earth	Always	0 V
97	A/C pressure sensor power supply	Always	4.9 – 5.1 V
118	Input from A/C pressure sensor	2.6MPa	3.9 V

CHECK AT A/C-ECU TERMINALS

M1554005400159

<C-27>

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

<C-26>

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

AC300196AB

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

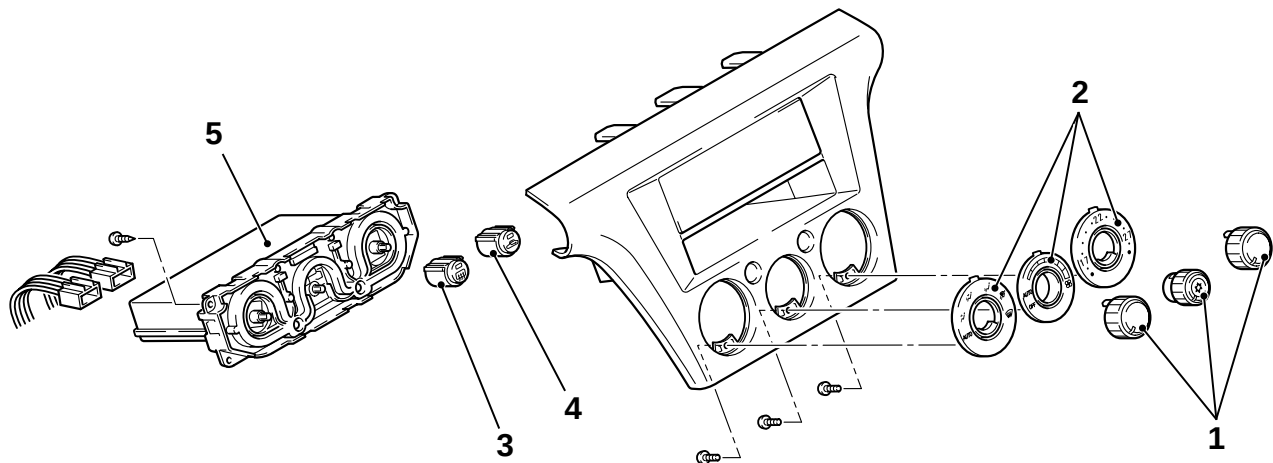
Terminal No.	Check items	Check conditions	Normal conditions
8	Input from the air thermo sensor	Sensor temperature: 25°C (4kΩ)	2.1 – 2.7 V
9	Photo sensor (-)	Brightness is 0 lux	4.9 – 5.1 V
		Brightness is 100000 lux or more	Approximately 0 V
10	Potentiometer power supply	Always	5 V
11	Input from the 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)
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 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	-	-	-

Terminal No.	Check items	Check conditions	Normal conditions
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

AUTOMATIC AIR CONDITIONER PANEL ASSEMBLY (A/C-ECU)

REMOVAL AND INSTALLATION

M1554010900064



AC301496AB

Removal steps

- Centre panel(Refer to GROUP 52A, Instrument Panel <LHD>[P.52A-2](#) or Instrument Panel <RHD>[P.52A-8](#)).
1. Knob

Removal steps (Continued)

2. Panel
3. Rear defogger knob
4. Outside/inside air selection knob
5. Automatic air conditioner control panel (A/C-ECU)

HEATER UNIT

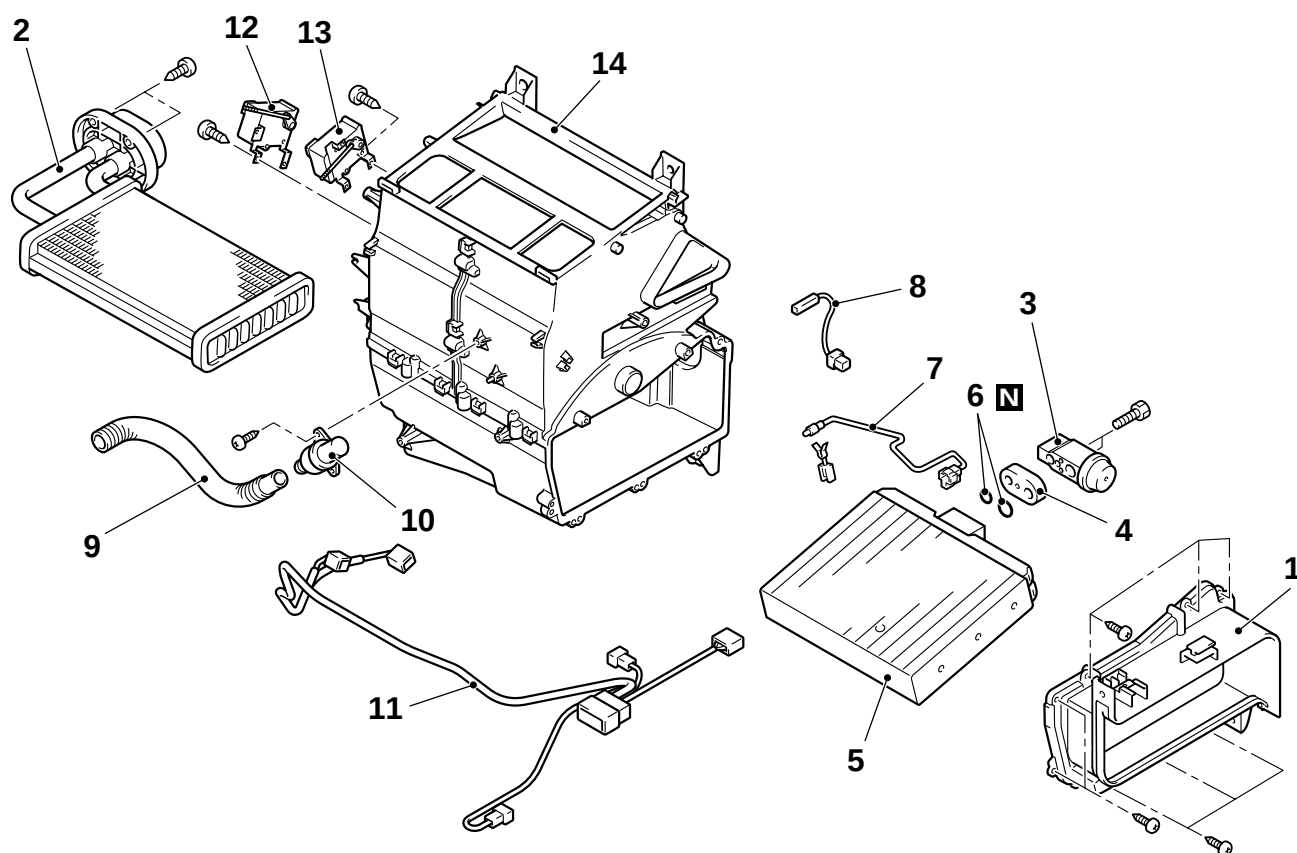
REMOVAL AND INSTALLATION

M1554009100097

Refer to GROUP 55A, Heater Unit Blower assembly [P.55A-63](#).

DISASSEMBLY AND REASSEMBLY

M1554009200072



AC301506AB

Disassembly steps

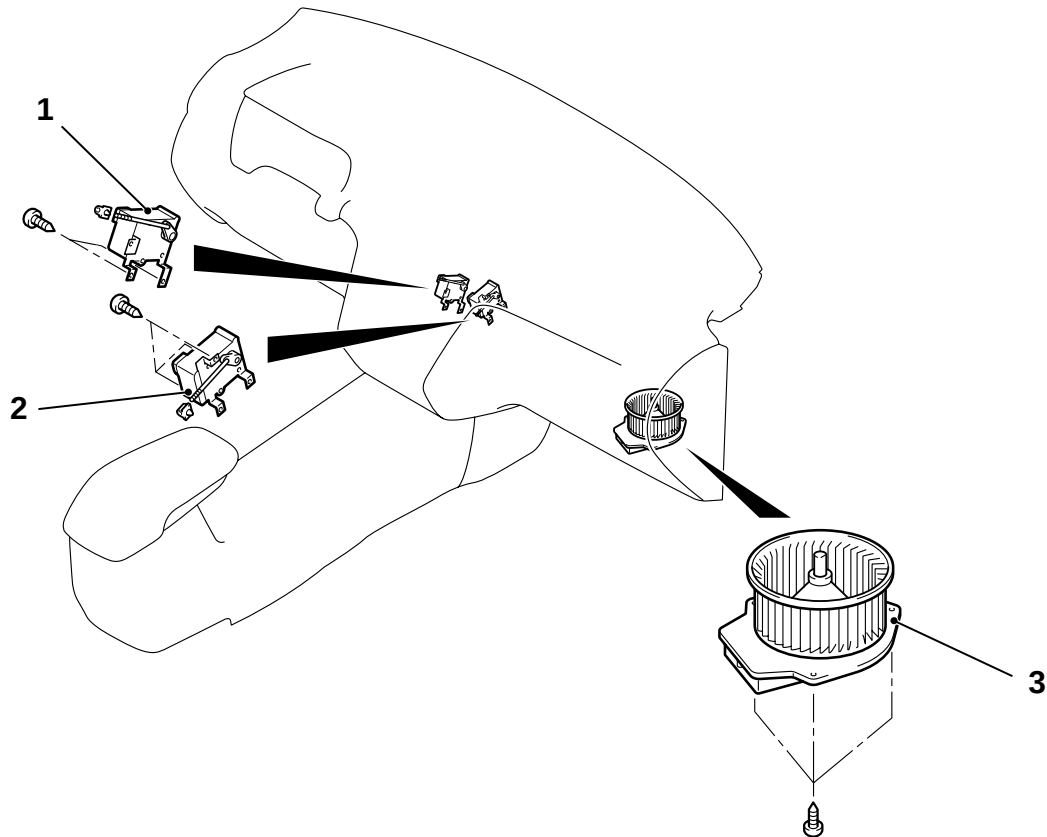
1. Evaporator cover
2. Heater core
3. Expansion valve
4. Joint
5. Evaporator
6. O ring
7. Air thermo sensor
8. Heater water temperature sensor

Disassembly steps (Continued)

9. Aspirator hose
10. Aspirator
11. Wiring harness
12. Mode selection damper control motor and potentiometer
13. Air mixing damper control motor and potentiometer
14. Heater case

AIR MIXING DOOR MOTOR, AIR OUTLET CHANGEOVER DAMPER MOTOR AND BLOWER MOTOR REMOVAL AND INSTALLATION

M1554011100050



AC301512AB

Air mixing damper control motor and potentiometer removal steps

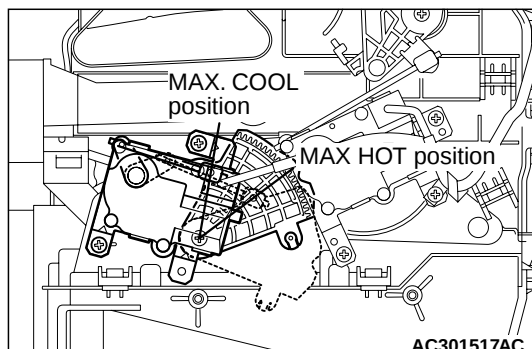
- Foot duct <driver's side>
- 1. Air mixing damper control motor and potentiometer

Mode selection damper control motor and potentiometer removal steps

2. Mode selection damper control motor and potentiometer
- ## Blower motor removal steps
3. Blower motor

INSPECTION

M1552014301287

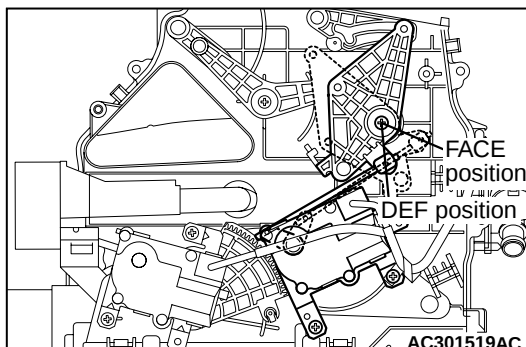
**CHECK THE AIR MIXING DAMPER
 CONTROL MOTOR AND
 POTENTIOMETER**
**Check the air mixing damper control motor**

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

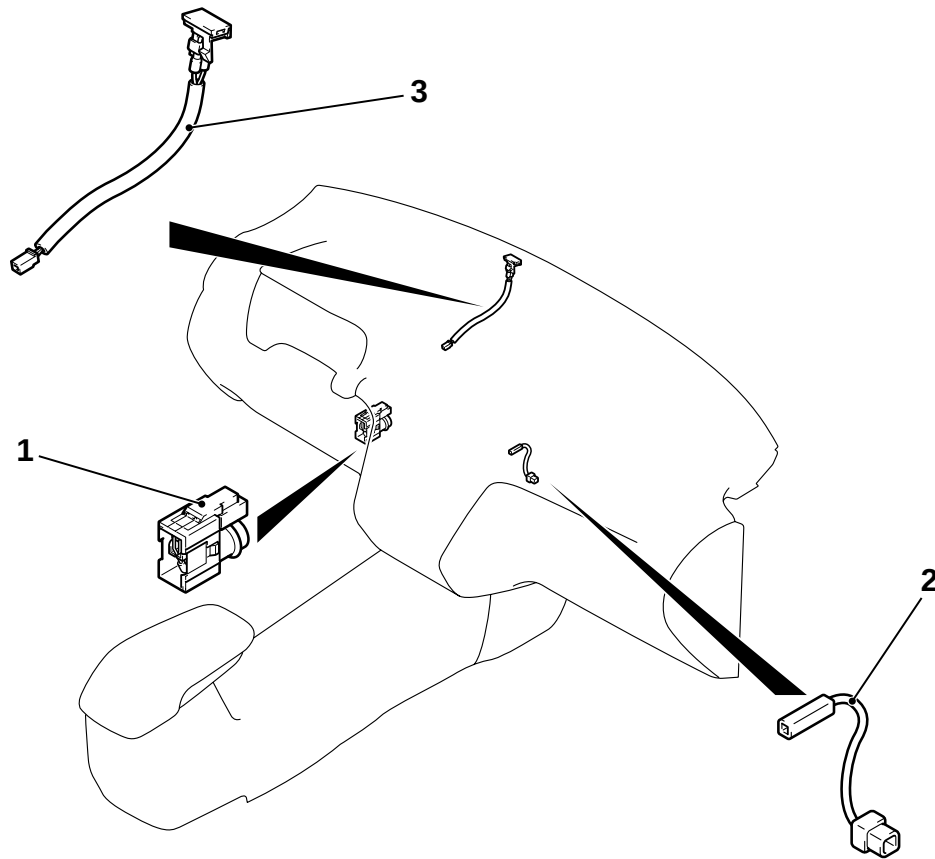
BLOWER MOTOR CHECK

Execute actuator test item No.01 to 04 by using MUT-II with the vehicle body, and check that the blower motor works normally. (Refer to [P.55B-96](#)).

SENSORS

REMOVAL AND INSTALLATION

M1554001900099



AC301526AB

Interior temperature sensor removal steps

- Instrument lower panel (Refer to GROUP 52A, Instrument Panel <LHD>[P.52A-2](#) or Instrument Panel <RHD>[P.52A-8](#)).
1. Interior temperature sensor

Heater water temperature sensor removal steps

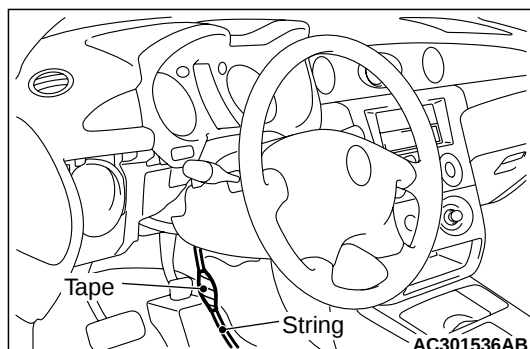
- Foot duct <front passenger's side> (Refer to GROUP 55A, Ventilator [P.55A-79](#)).

2. Heater water temperature sensor

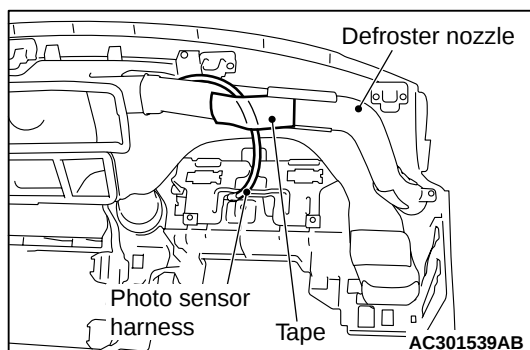
Photo sensor removal steps

- Instrument lower panel (Refer to GROUP 52A, Instrument Panel <LHD>[P.52A-2](#) or Instrument Panel <RHD>[P.52A-8](#)).
3. Photo sensor

<<A>> >>A<<

REMOVAL SERVICE POINTS**<<A>> PHOTO SENSOR REMOVAL**

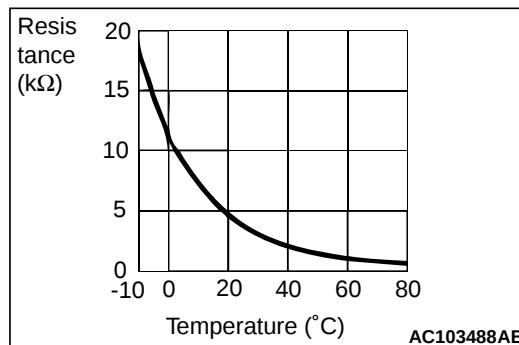
Binding the photo sensor connector with a cord and rapping a tape around the connector as its surface is flatly to pull out the photo sensor toward the instrument panel upper.

INSTALLATION SERVICE POINTS**>>A<< PHOTO SENSOR INSTALLATION**

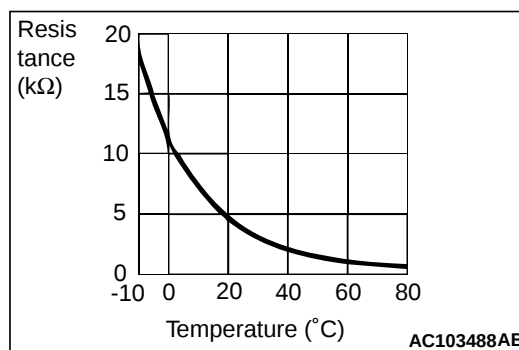
Tape the photo sensor under the defroster nozzle.

INSPECTION

M1552014300767

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

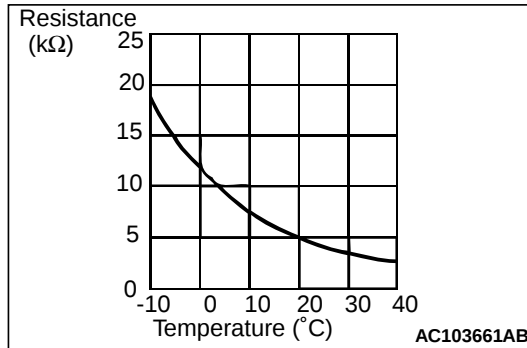
M1552003600195

Refer to GROUP 55A, Evaporator assembly [P.55A-68](#).

INSPECTION

M1552014300734

AIR THERMO SENSOR CHECK



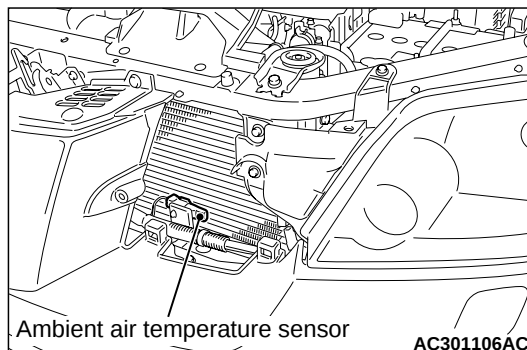
Check to see that the resistance shown in the graph is almost satisfied when measuring the resistance between the terminals under two or more different temperature conditions.

NOTE: The temperature should be within the shown range.

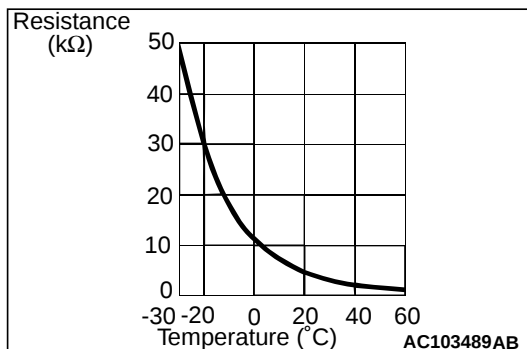
AMBIENT TEMPERATURE SENSOR

INSPECTION

M1552014300745



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.



OTHER PARTS

OTHER PARTS

M1554004000073

The following maintenance service points are the same as for the manual A/C.

Item		Reference page
On-vehicle service	Refrigerant level test	P.55A-51
	Magnetic clutch test	P.55A-51
	Compressor drive belt adjustment	P.55A-51
	A/C pressure sensor simple check	P.55A-51
	Charging	P.55A-52
	Correcting low refrigerant level in case the service can in used	P.55A-54
	Discharging system	P.55A-55
	Refilling of oil in the A/C system	P.55A-55
	Performance test	P.55A-55
	Refrigerant leak repair procedure	P.55A-56
	Compressor noise check	P.55A-57
	Power relay continuity check	P.55A-57
	Idle-up operation check	P.55A-58
	Clean air filter replacement procedure	P.55A-59

Item	Reference page
Heater unit and blower assembly	P.55A-63
Blower motor and outside/inside air selection damper control motor	P.55A-66
Evaporator and air thermo sensor	P.55A-68
A/C compressor	P.55A-70
Condenser and condenser fan motor	P.55A-74
Refrigerant line	P.55A-77
Ventilators	P.55A-79