

BODY SECTION

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.

This manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and diagnostics for guidance of experienced mechanics.

Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustration and specifications contained in this manual are based on the latest product information available at the time of publication approval.

**HVAC SYSTEM
(HEATER, VENTILATOR AND A/C)** AC

**HVAC SYSTEM (AUTO A/C)
(DIAGNOSTICS)** AC(diag)

AIRBAG SYSTEM AB

AIRBAG SYSTEM (DIAGNOSTICS) AB(diag)

SEAT BELT SYSTEM SB

LIGHTING SYSTEM LI

WIPER AND WASHER SYSTEMS WW

ENTERTAINMENT ET

COMMUNICATION SYSTEM COM

GLASS/WINDOWS/MIRRORS GW

BODY STRUCTURE BS

INSTRUMENTATION/DRIVER INFO IDI

SEATS SE

SECURITY AND LOCKS SL

**SUNROOF/T-TOP/CONVERTIBLE TOP
(SUNROOF)** SR

EXTERIOR/INTERIOR TRIM EI

EXTERIOR BODY PANELS EB

BODY SECTION

CRUISE CONTROL SYSTEM CC

CRUISE CONTROL SYSTEM (DIAGNOSTICS) CC(diag)

IMMOBILIZER (DIAGNOSTICS) IM(diag)

LAN SYSTEM (DIAGNOSTICS) LAN(diag)

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

AC(diag)

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Basic Diagnostic Procedure

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

1. Basic Diagnostic Procedure

A: PROCEDURE

Step	Check	Yes	No
1 START INSPECTIONS. 1) Perform the pre-inspection. <Ref. to AC(diag)-3, INSPECTION, General Description.> 2) Perform the self-diagnosis. <Ref. to AC(diag)-10, OPERATION, Diagnostic Chart for Self-Diagnosis.>	Does the self-diagnosis operate?	Go to step 2.	<Ref. to AC(diag)-15, A/C OR SELF-DIAGNOSIS SYSTEMS DO NOT OPERATE, Diagnostics for A/C System Malfunction.>
2 IDENTIFY MALFUNCTION PART. Identify the malfunction part with self-diagnosis.	Can the malfunction part be identified?	Repair the malfunction part in accordance with each diagnostic chart.	Go to step 3.
3 CHECK COMPARTMENT TEMPERATURE. 1) Turn ON the A/C switch. 2) Turn the temperature control dial at maximum cool position. 3) Check the compartment temperature change.	Does the compartment temperature change?	Go to step 4.	<Ref. to AC(diag)-20, COMPARTMENT TEMPERATURE DOES NOT CHANGE, OR A/C SYSTEM DOES NOT RESPOND PROMPTLY., Diagnostics for A/C System Malfunction.>
4 CHECK A/C SYSTEM RESPONSE. Change the temperature setting, and check the response of A/C system.	Does the A/C system respond quickly?	A/C system is normal.	<Ref. to AC(diag)-20, COMPARTMENT TEMPERATURE DOES NOT CHANGE, OR A/C SYSTEM DOES NOT RESPOND PROMPTLY., Diagnostics for A/C System Malfunction.>

General Description

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

2. General Description

A: CAUTION

- 1) Never connect the battery in reverse polarity.
 - Auto A/C control module may be destroyed instantly.
- 2) Do not disconnect the battery terminals while the engine is running.
 - A large counter electromotive force will be generated in the generator, and this voltage may damage electronic parts such as auto A/C control module, etc.
- 3) Before disconnecting the connectors of each sensor and the auto A/C control module, be sure to turn off the ignition switch.
 - Auto A/C control module may be damaged.
- 4) Every A/C-related part is a precision part. Do not drop them.
- 5) Airbag system wiring harness is routed near the A/C control panel and junction box.

CAUTION:

- For airbag system, yellow-colored wiring harness and connectors are all used. Do not use the electrical test equipment on these circuits.
- Be careful not to damage the airbag system wiring harness when servicing the A/C control panel and junction box.

B: INSPECTION

Before performing the diagnosis, check the following items which might affect A/C system problems.

1. BATTERY

- 1) Measure the battery voltage and specific gravity of electrolyte.

Standard voltage: 12 V

Specific gravity: More than 1.260

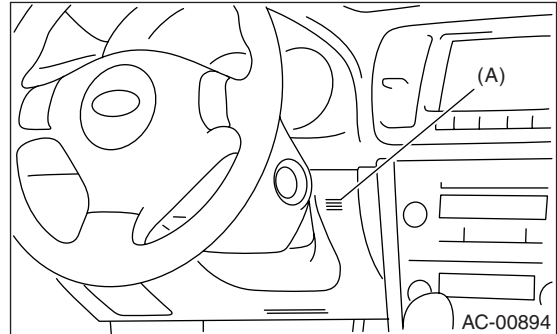
- 2) Check the condition of the fuses for A/C system power supply and other fuses.
- 3) Check the condition of harness and harness connector connections.

2. ASPIRATOR HOSE

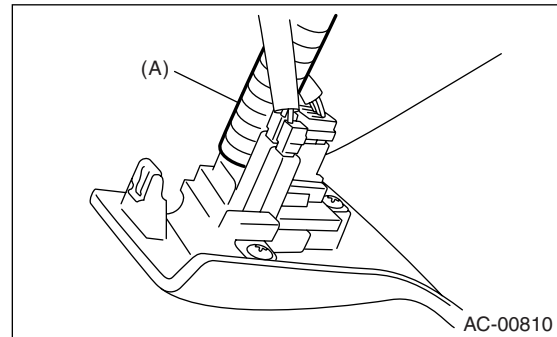
- 1) Turn the ignition switch to ON, and press the A/C switch.
- 2) Turn the temperature control dial at maximum hot position.
- 3) Turn the air flow control dial to "DEF" position.
- 4) Turn the fan speed control dial to 4th position.
- 5) Approach a strip of paper in front of the in-vehicle sensor suction port (A) located in the instrument lower cover, and check that air is being sucked into the port by seeing the paper moving towards the port.

NOTE:

Be careful not to let the paper get sucked into the port.

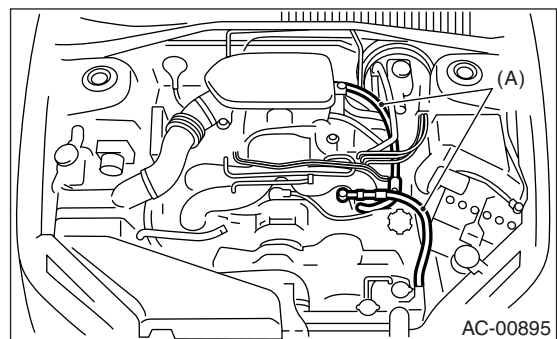


- 6) If the paper does not move at all, remove the instrument panel lower cover <Ref. to EI-50, REMOVAL, Instrument Panel Lower Cover.> and check for improper connection of the aspirator hose (A), in-vehicle sensor and heater unit, and repair them if necessary.



3. A/C LINE

Check the connection for A/C line (A) and lower side high-pressure pipe.



4. CONTROL LINKAGE

- 1) Check the state of mode door linkage.
- 2) Check the state of air mix door linkage.
- 3) Check the state of intake door linkage.

General Description

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

5. CONTROL SWITCHES

Start and warm-up the engine completely.

1) Inspection using switches

No.	Point to check	Switch operation	Judgment standard
1	OFF switch	Press the OFF switch.	Setting temperature display goes out. <ul style="list-style-type: none"> • Blower fan: OFF • Inlet opening: External air • Compressor: OFF
2	AUTO switch	1) Press the AUTO switch. 2) Turn the temperature control dial to the left fully, and set to 18°C (maximum cool position).	AUTO display illuminates. <ul style="list-style-type: none"> • Outlet air temperature: COOL • Blower fan: HI (AUTO) • Outlet opening: FACE • Inlet opening: AUTO • Compressor: AUTO
		3) Turn the temperature control dial to the right slowly, and change the setting from 18°C (maximum cool position) to 32°C.	<ul style="list-style-type: none"> • Outlet air temperature: COOL → HOT • Blower fan: AUTO • Outlet opening: FACE → B/L → FOOT • Inlet opening: AUTO • Compressor: AUTO
		4) Turn the temperature control dial to the right fully, and set to 32°C (maximum hot position).	<ul style="list-style-type: none"> • Outlet air temperature: HOT • Blower fan: HI (AUTO) • Outlet opening: FOOT • Inlet opening: Ambient (AUTO) • Compressor: AUTO
3	Defroster switch	Press the defroster switch.	Defroster switch indicator illuminates. <ul style="list-style-type: none"> • Outlet air temperature: AUTO • Blower fan: AUTO • Outlet opening: DEF • Inlet opening: External air • Compressor: ON
4	FRESH/RECIRC switch	Press the FRESH/RECIRC switch.	Inlet opening switches RECIRC → FRESH or FRESH → RECIRC each time pressing the switch.
5	MODE switch	Press the MODE switch.	Outlet opening switches FACE → B/L → FOOT → F/D each time pressing the switch
6	FAN switch	Press the FAN (+) switch.	Inlet opening switches LO → M1 → M2 → M3 → M4 → HI each time pressing the switch

2) Compressor operation inspection

No.	Point to check	Switch operation	Judgment standard
1	Compressor	1) Turn the A/C switch to ON. 2) Set the FAN switch between LO and HI.	Compressor: ON

3) Inspection of illumination control

No.	Point to check	Switch operation	Judgment standard
1	Illumination	Turn the lighting switch to ON.	Illumination comes on.

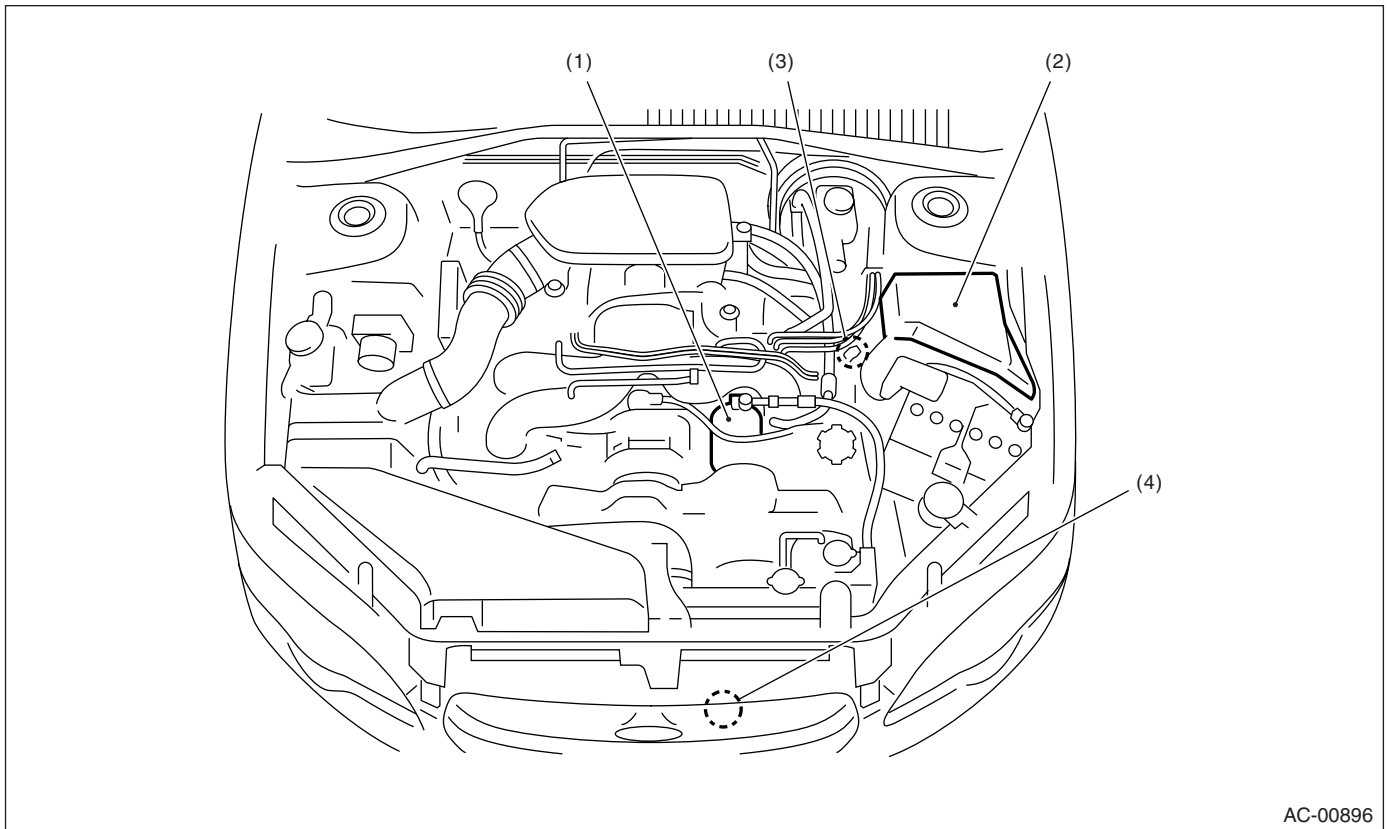
Electrical Component Location

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

3. Electrical Component Location

A: LOCATION

1. ENGINE COMPARTMENT



AC-00896

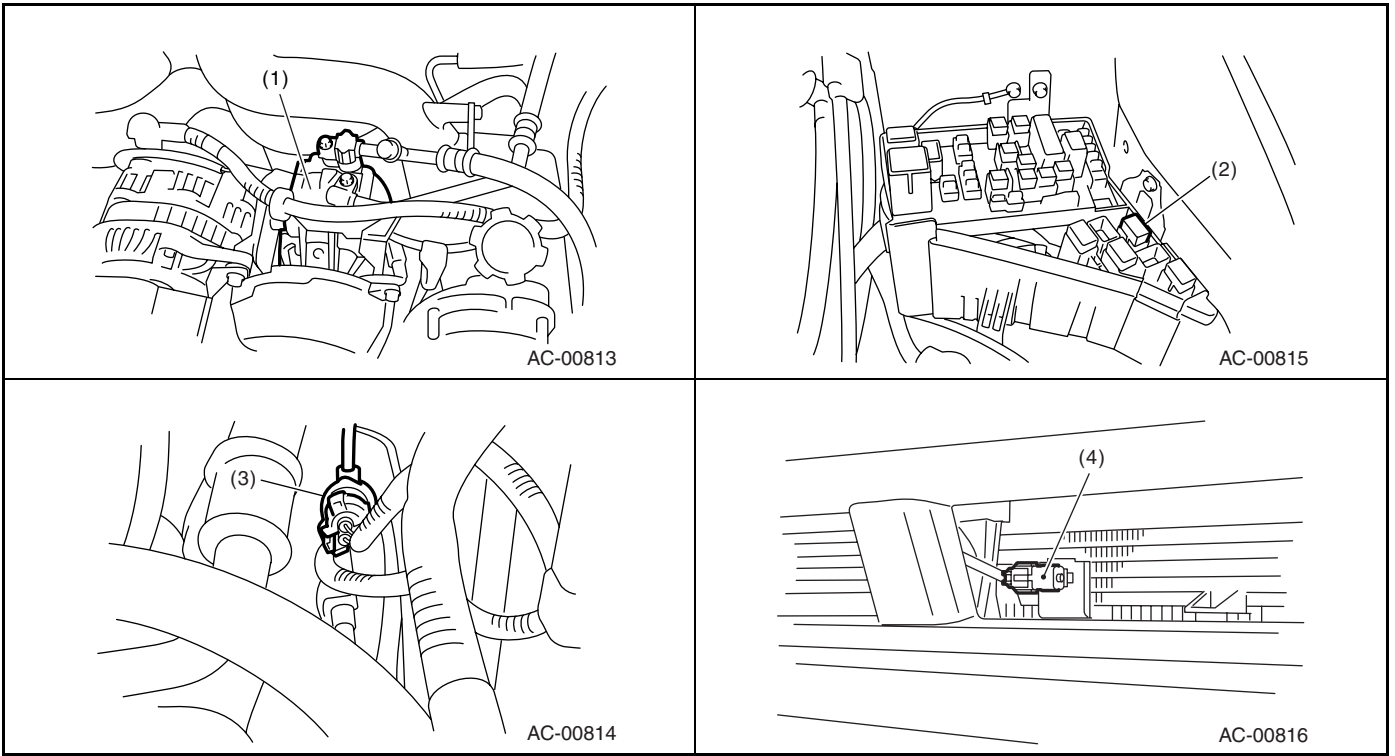
(1) A/C compressor
(2) A/C relay

(3) Pressure switch

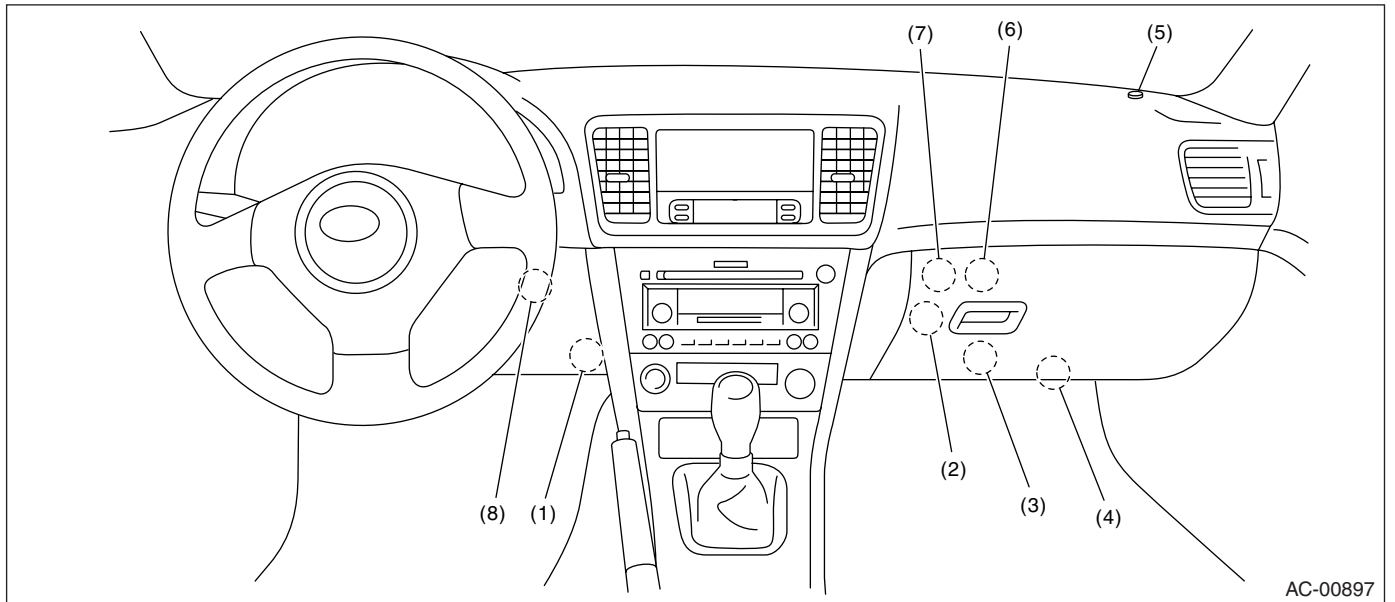
(4) Ambient sensor

Electrical Component Location

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)



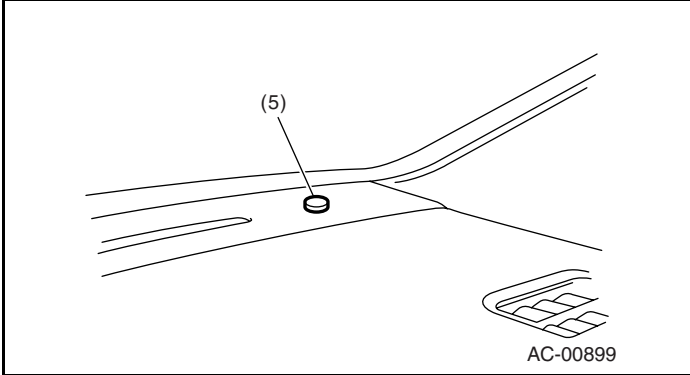
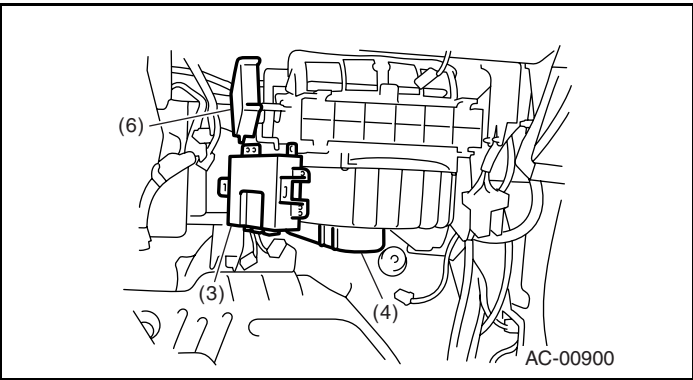
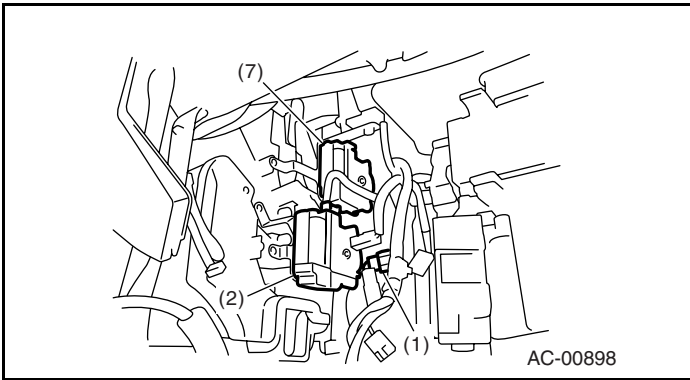
2. PASSENGER COMPARTMENT



- | | | |
|-----------------------------|--------------------------|------------------------|
| (1) Evaporator sensor | (4) Blower motor | (7) Mode door actuator |
| (2) Air mix door actuator | (5) Sunload sensor | (8) In-vehicle sensor |
| (3) Auto A/C control module | (6) Intake door actuator | |

Electrical Component Location

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

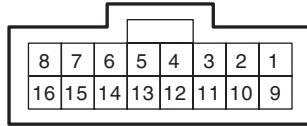


Auto A/C Control Module I/O Signal

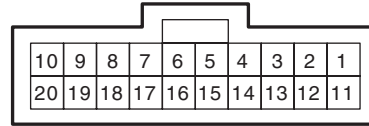
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

4. Auto A/C Control Module I/O Signal

A: ELECTRICAL SPECIFICATION



To A: (B282)



To B: (B283)

AC-00735

Auto A/C Control Module I/O Signal

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Terminal No.	Remarks	Measuring conditions	Standard value
A1	Battery power supply	Ignition switch: OFF	Battery voltage
A2	ACC power supply	Ignition switch: ACC	Battery voltage
A3	Mode door actuator position signal	Mode door: FACE position	4 V
		Mode door: DEF position	1 V
A4	Air mix door actuator position signal	Air mix door: Maximum cool position	4 V
		Air mix door: Maximum hot position	1 V
A5	In-vehicle sensor	Ignition switch: ON	Less than 5 V
A6	Sunload sensor	Ignition switch: ON, With sunload (No sunload: 0 V)	3 V
A8	Sensor power supply	Ignition switch: ON	5 V
A9	Ignition power supply	Ignition switch: ON	Battery voltage
A10	A/C cut signal	Ignition switch: ON	Battery voltage
		When operating pressure SW	0 V
A13	Evaporator center	Ignition switch: ON	Less than 5 V
A14, A16	Ground	Continuity to chassis ground	0 Ω
A15	Sensor ground	Continuity to chassis ground	0 Ω
B1, B11	Ambient sensor, engine coolant temperature sensor	—	*1
B2	Blower motor control	Ignition switch : ON, Blower switch : ON	0.45 V
B3	Blower motor control	Ignition switch : ON, Blower switch : ON	9.05 V
B4	RAM monitor	—	*1
B5	RAM monitor	—	*1
B6	A/C ON signal	A/C ON (A/C OFF: 0 V)	7 — 14 V
B7	Mode door actuator power supply	When switching mode door from DEF → FACE	Battery voltage
B17		When switching mode door from FACE → DEF	Battery voltage
B8	Air mix door actuator power supply	When switching air mix door from HOT → COOL	Battery voltage
B18		When switching air mix door from COOL → HOT	Battery voltage
B10	Intake door actuator	FRESH (RECIRC: Battery voltage)	0 V
B20		RECIRC (FRESH: Battery voltage)	0 V
B13	Blower fan ON signal	When blower fan is rotating (Not rotating: Battery voltage)	0 V
B14	RAM monitor	—	*1
B15, B16	Control panel	—	*1

*1: Unable to measure the voltage for digital signal.

B: WIRING DIAGRAM

1. AIR CONDITIONER AUTO A/C MODEL

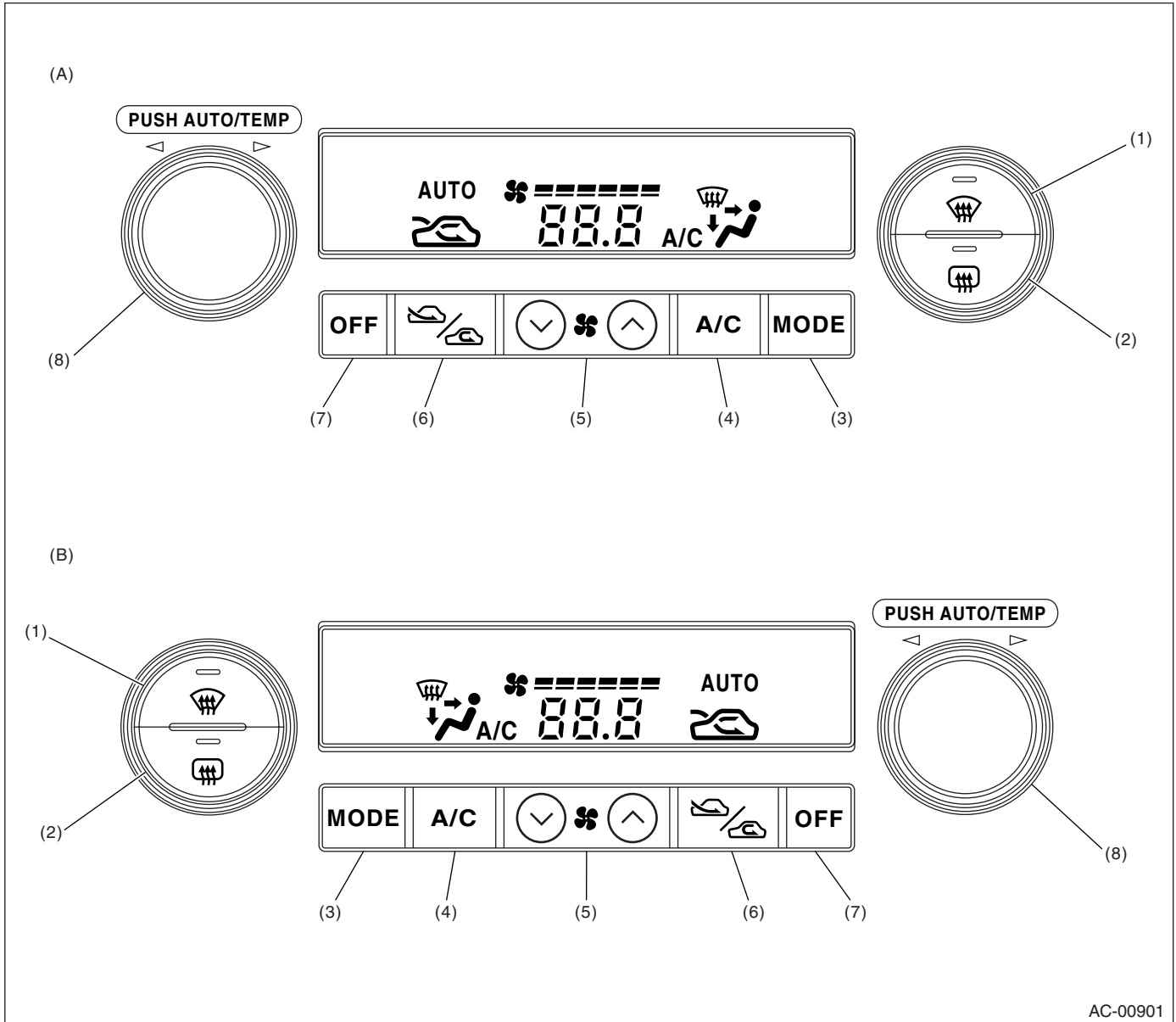
<Ref. to WI-59, WIRING DIAGRAM, Air Conditioning System.>

Diagnostic Chart for Self-Diagnosis

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

5. Diagnostic Chart for Self-Diagnosis

A: OPERATION



NOTE:

For A/C system self-diagnosis, there is one that checks the control panel, and the other that checks the whole control system (sensor, actuator, blower motor, etc.). Perform the self-diagnosis for control panel first, and then perform the self-diagnosis for control system.

Diagnostic Chart for Self-Diagnosis

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

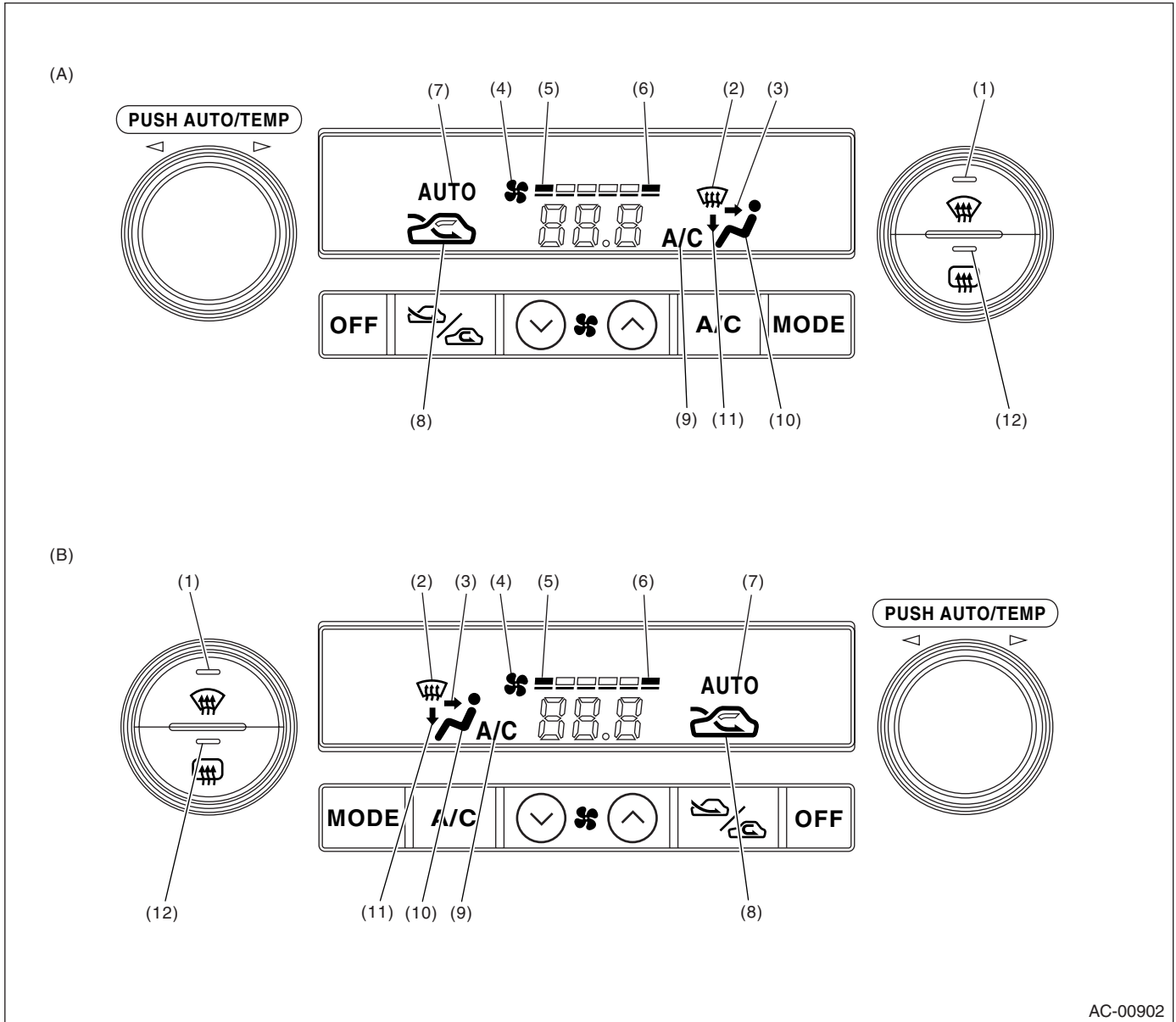
1. A/C CONTROL PANEL SELF-DIAGNOSIS

Step	Check	Yes	No
1 SET SELF-DIAGNOSIS MODE BY OPERATING A/C CONTROL PANEL. 1) Turn the ignition switch to OFF. 2) Turn the ignition switch to ON with the defroster switch and A/C switch pressed. 3) The screen display and indicator illuminate.	Does the self-diagnosis mode operate?	Go to step 2.	<Ref. to AC(diag)-15, A/C OR SELF-DIAGNOSIS SYSTEMS DO NOT OPERATE, Diagnostics for A/C System Malfunction.>
2 CHECK DISPLAY AND INDICATOR. Check the display and all indicators illuminate.	Do the display and all indicators illuminate?	Go to step 3.	Replace the A/C control panel.
3 CHECK SWITCH AND TEMPERATURE CONTROL DIAL INPUT. According to the switch check table, press each switch or turn the temperature control dial, and check the relative screen display and indicators illuminate. <Ref. to AC(diag)-12, SWITCH CHECK TABLE, OPERATION, Diagnostic Chart for Self-Diagnosis.>	Does the screen display related to each switch and dial input illuminate?	Go to step 4.	Replace the A/C control panel.
4 CHECK A/C CONTROL PANEL COMMUNICATION. 1) Turn the ignition switch to OFF. 2) Disconnect the auto A/C control module harness connector. 3) Using a suitable lead wire, short the terminal No. 15 and No. 16 of auto A/C control module harness connector (B283). 4) Turn the ignition switch to ON with the rear defogger switch and A/C switch pressed. 5) When no malfunction occurs in the control panel communication, "CL" is displayed in the screen; and when malfunction occurs, "OP" is displayed.	Is "CL" displayed in the screen?	A/C control panel is normal. Turn the ignition switch to OFF, and connect the auto A/C control module harness connector.	Replace the A/C control panel.

Diagnostic Chart for Self-Diagnosis

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

2. SWITCH CHECK TABLE



AC-00902

(A) LHD model

(B) RHD model

Switch	Display screen	Switch	Display screen
A/C switch	(9)	FAN switch (+)	(6)
AUTO switch	(7)	FAN switch (-)	(5)
Air flow control switch	(10)	Temperature control dial (Right turn)	(3)
FRESH/RECIRC	(8)	Temperature control dial (Left turn)	(11)
Defroster switch	(1) (2)	OFF switch	(4)
Rear defogger switch	(12)		

Diagnostic Chart for Self-Diagnosis

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

3. A/C CONTROL SYSTEM SELF-DIAGNOSIS

Step	Check	Yes	No
<p>1 SET SELF-DIAGNOSIS MODE BY OPERATING A/C CONTROL PANEL.</p> <p>1) Turn the ignition switch to OFF. 2) Start the engine with the auto switch and FRESH/RECIRC switch pressed.</p> <p>NOTE: Self-diagnosis can also be performed with ignition switch ON, but start the engine because telling the magnet clutch operation is difficult. 3) All the indicator blinks four times.</p>	Does the self-diagnosis mode operate?	Go to step 2.	<Ref. to AC(diag)-15, A/C OR SELF-DIAGNOSIS SYSTEMS DO NOT OPERATE, Diagnostics for A/C System Malfunction.>
<p>2 CHECK EACH SENSOR AND POTENTIOMETER</p> <p>1) After the indicators are completed to blink, automatically change to the inspection mode of sensor and potentiometer.</p> <p>NOTE: Display items can be changed each time the A/C switch is pressed. (Step Operation)</p> <p>2) When malfunction occurs in each sensor and potentiometer, codes are displayed on the screen. When no malfunction occurs in each sensor and potentiometer, code "20" is displayed on the screen.</p> <p>3) Identify the defective sensor according to the sensor check table. <Ref. to AC(diag)-14, SENSOR CHECK TABLE, OPERATION, Diagnostic Chart for Self-Diagnosis.></p>	Are other codes except "20" displayed?	Repair the defective sensor. <Ref. to AC(diag)-30, Diagnostic Procedure for Sensors.>	Go to step 3.
<p>3 CHECK EACH ACTUATOR, BLOWER FAN AND MAGNET CLUTCH.</p> <p>1) After completing each sensor and potentiometer inspection, change to the inspection mode of actuator, blower fan and magnet clutch by pressing the defroster switch.</p> <p>2) Each mode will change and operate automatically every four seconds.</p> <p>NOTE: Operation mode items can be changed each time the A/C switch is pressed. (Step Operation)</p> <p>3) Check the operation of actuator, blower fan and magnet clutch in each mode according to the operating mode table. <Ref. to AC(diag)-14, OPERATING MODE TABLE, OPERATION, Diagnostic Chart for Self-Diagnosis.></p>	Do the actuator, blower fan and magnet clutch operate along the operating mode table?	A/C control system is normal. Press the OFF switch and complete the self-diagnosis mode.	Repair the malfunction part in accordance with each diagnostic chart. <Ref. to AC(diag)-15, Diagnostics for A/C System Malfunction.> or <Ref. to AC(diag)-24, Diagnostic Procedure for Actuators.>

Diagnostic Chart for Self-Diagnosis

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

4. SENSOR CHECK TABLE

NOTE:

When the sunload sensor check is conducted indoors or in the shade, open circuit might be indicated. Always check the sunload sensor at the place where the sun shines directly on it.

Display screen (Malfunction at present) *1	SENSOR	Trouble contents
21/AUTO Blink	In-vehicle sensor	Broken
-21/AUTO Blink		Short
22/AUTO Blink	Ambient sensor	Sensor trouble or communication malfunction
23/AUTO Blink	Evaporator sensor	Broken
-23/AUTO Blink		Short
24/AUTO Blink	Engine coolant temperature sensor	Sensor trouble or communication malfunction
25 Blink	Sunload sensor	Open *2
-25/AUTO Blink		Short
26/AUTO Blink	Air mix door actuator potentiometer	COOL
27/AUTO Blink		HOT
28/AUTO Blink	Mode door actuator potentiometer	FACE
29/AUTO Blink		DEF
20 Blink	When all conditions are normal	

*1: "AUTO" display does not blink when past malfunction occurred. Past malfunction means that abnormal signal had input for a certain time continuously in the past.

*2: Present malfunction only is displayed for sunload sensor open circuit.

5. OPERATING MODE TABLE

Display screen	FRESH/RECIRC door	Mode door	Air mix door	Blower fan	A/C compressor (Magnet clutch)
31	FRESH	FACE	Maximum cool	LO	OFF
32	RECIRC	FACE	Maximum cool	LO	ON
33	RECIRC	FACE	Maximum cool	M1	ON
34	FRESH	B/L	50%	M1	ON
35	FRESH	FOOT	50%	M1	ON
36	FRESH	FOOT	Maximum hot	M3	ON
37	FRESH	F/D	Maximum hot	M3	ON
38	FRESH	DEF	Maximum hot	HI	ON

Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

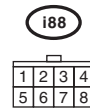
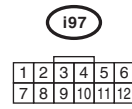
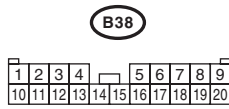
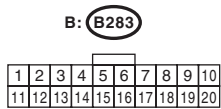
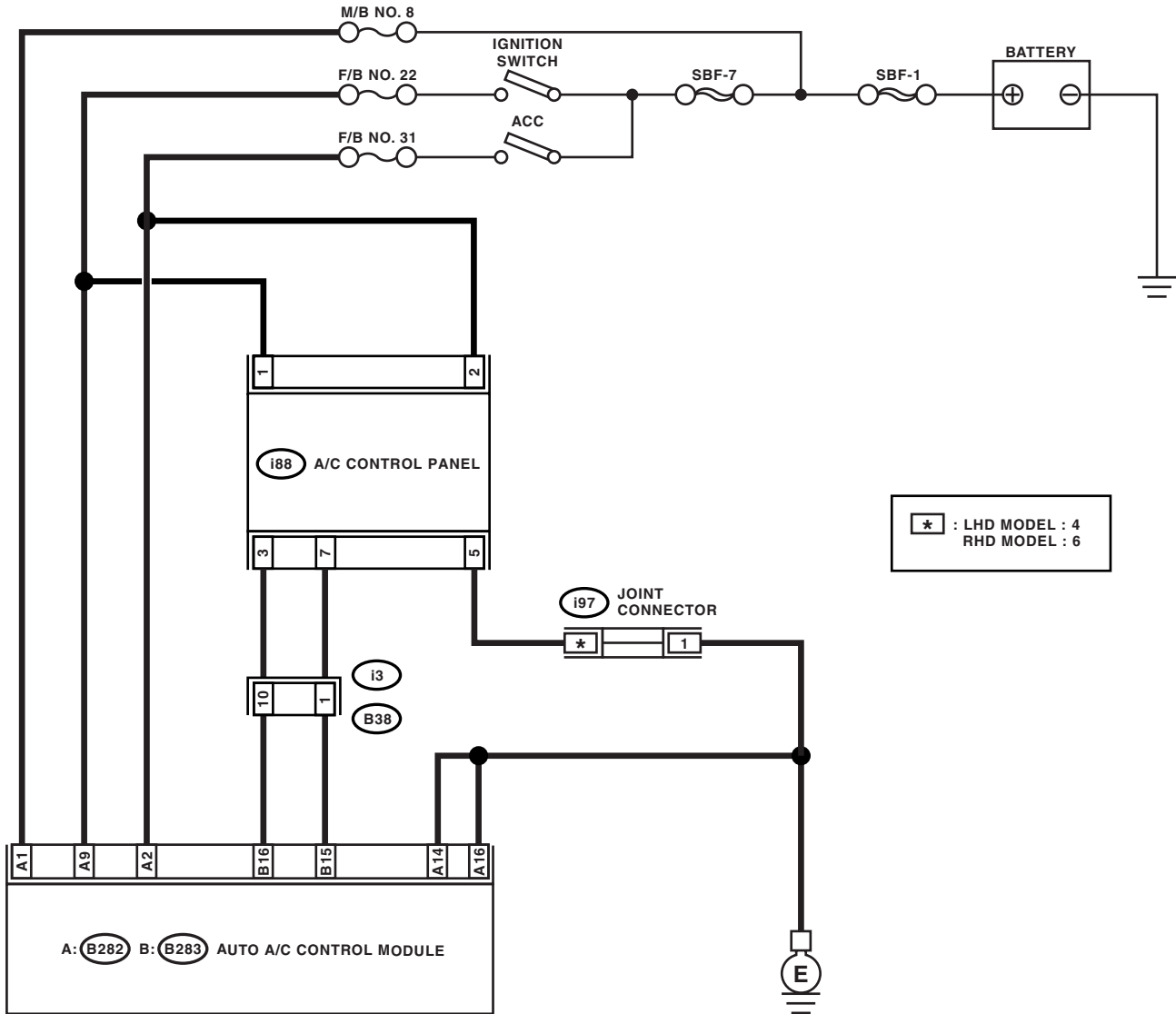
6. Diagnostics for A/C System Malfunction

A: A/C OR SELF-DIAGNOSIS SYSTEMS DO NOT OPERATE

TROUBLE SYMPTOM:

- "Set" temperature is not indicated on the display, switch LEDs are faulty and switches do not operate.
- Self-diagnosis system does not operate.

WIRING DIAGRAM:



Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK FUSE. 1) Turn the ignition switch to OFF. 2) Remove the fuse No. 8 from main fuse box. 3) Check the condition of fuse.	Is the fuse blown-out?	Replace the fuse.	Go to step 2.
2 CHECK FUSE. 1) Turn the ignition switch to OFF. 2) Remove the fuse No. 22 and 31 from fuse & relay box. 3) Check the condition of fuse.	Is the fuse blown-out?	Replace the fuse.	Go to step 3.
3 CHECK A/C CONTROL PANEL POWER CIRCUIT. 1) Replace the A/C control panel. 2) Disconnect the A/C control panel harness connector. 3) Measure the voltage between A/C control panel harness connector terminal and chassis ground after turning the ignition switch to ACC position. Connector & terminal (i88) No. 2 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 4.	Check the harness for open or short circuit between A/C control panel and fuse.
4 CHECK A/C CONTROL PANEL POWER CIRCUIT. Measure the voltage between A/C control panel harness connector terminal and chassis ground after turning the ignition switch to ON position. Connector & terminal (i88) No. 1 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 5.	Check the harness for open or short circuit between A/C control panel and fuse.
5 CHECK A/C CONTROL PANEL GROUND POWER CIRCUIT. Measure the resistance in harness between A/C control panel and chassis ground after turning the ignition switch to OFF position. Connector & terminal (i88) No. 5 — Chassis ground:	Is the resistance less than 10 Ω ?	Go to step 6.	Repair the harness for ground line.
6 CHECK AUTO A/C CONTROL MODULE POWER CIRCUIT. Measure the voltage between auto A/C control module connector terminal and chassis ground after turning the ignition switch to OFF position. Connector & terminal (B282) No. 1 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 7.	Check the harness for open or short circuit between auto A/C control module and fuse.
7 CHECK AUTO A/C CONTROL MODULE POWER CIRCUIT. Measure the voltage between auto A/C control module connector terminal and chassis ground after turning the ignition switch to ACC position. Connector & terminal (B282) No. 2 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 8.	Check the harness for open or short circuit between auto A/C control module and fuse.
8 CHECK AUTO A/C CONTROL MODULE POWER CIRCUIT. Measure the voltage between auto A/C control module connector terminal and chassis ground after turning the ignition switch to ON position. Connector & terminal (B282) No. 9 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 9.	Check the harness for open or short circuit between auto A/C control module and fuse.

Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
9 CHECK AUTO A/C CONTROL MODULE GROUND CIRCUIT. Measure the resistance in harness between auto A/C control module and chassis ground. Connector & terminal (B282) No. 14, No. 16 — Chassis ground:	Is the resistance less than 5 Ω ?	Go to step 10 .	Repair the harness for ground line.
10 CHECK COMMUNICATION CIRCUIT. Measure the resistance in harness between A/C control panel and auto A/C control module. Connector & terminal (i88) No. 3 — (B283) No. 16: (i88) No. 7 — (B283) No. 15:	Is the resistance less than 1 Ω ?	Go to step 11 .	Repair the harness.
11 CHECK POOR CONTACT. Check poor contact in auto A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the auto A/C control module.

Diagnostics for A/C System Malfunction

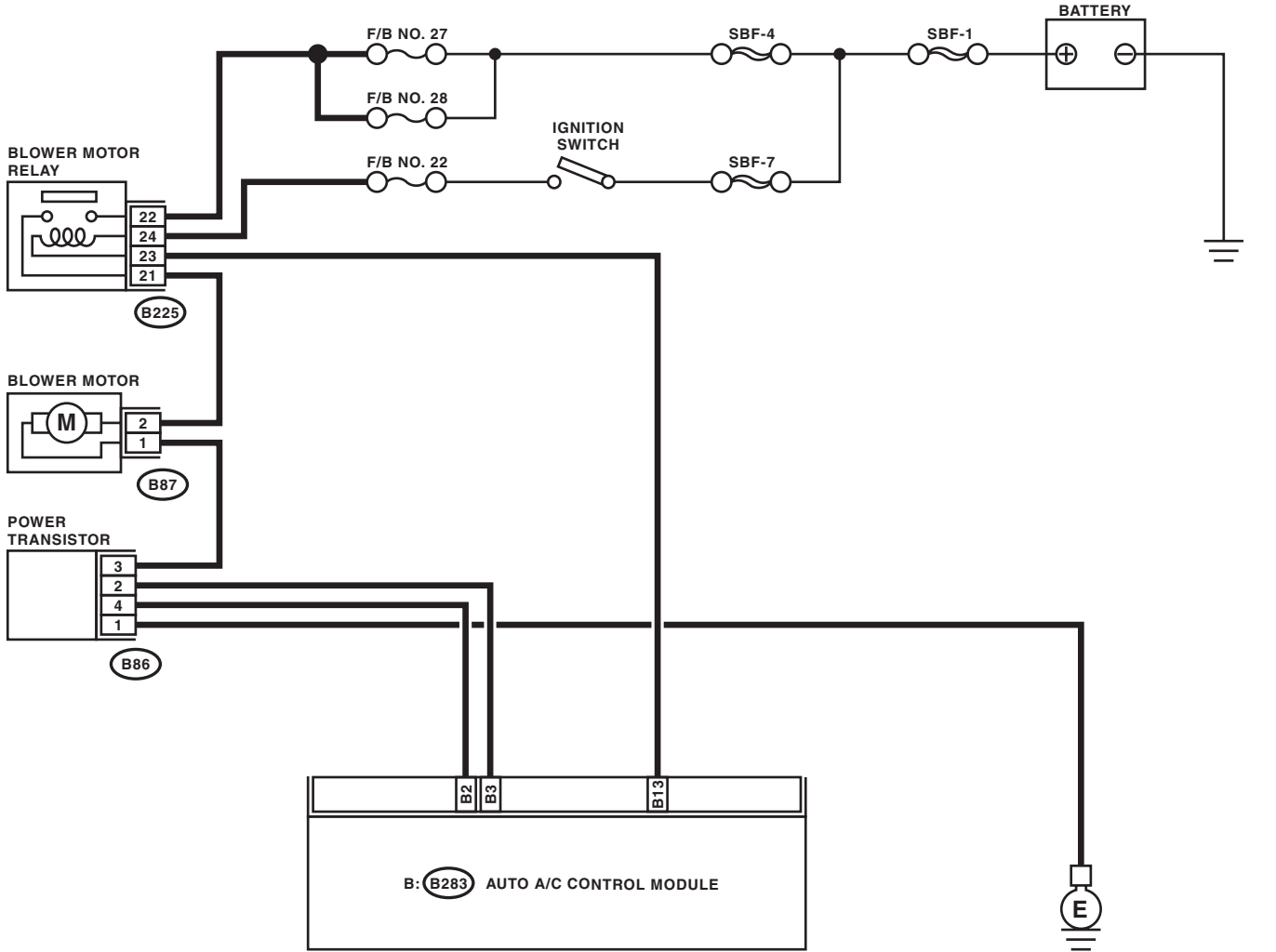
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

B: BLOWER FAN DOES NOT ROTATE.

TROUBLE SYMPTOM:

- Blower motor does not rotate.
- Blower motor does not rotate in "HI".

WIRING DIAGRAM:



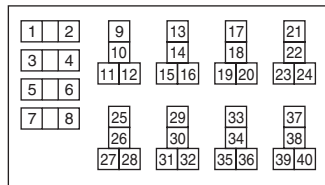
B87



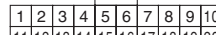
B86



B225



B: B283



AC-00824

Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

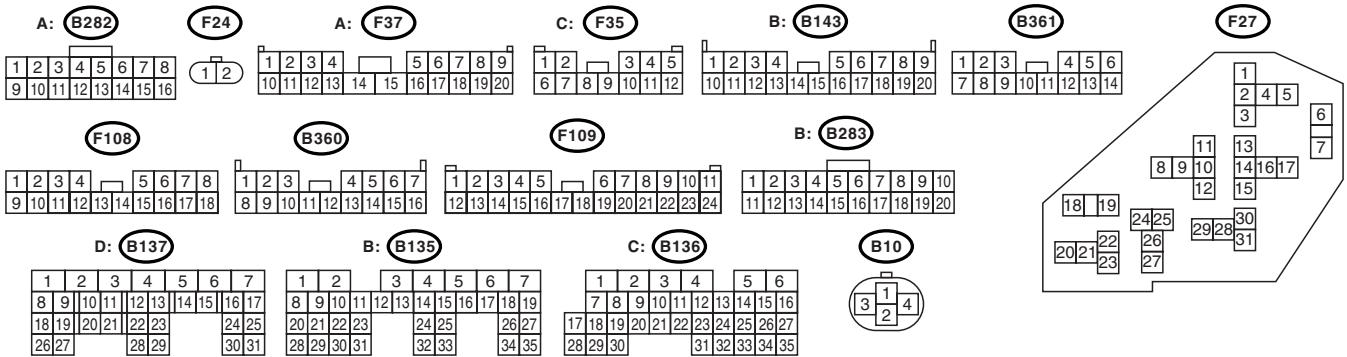
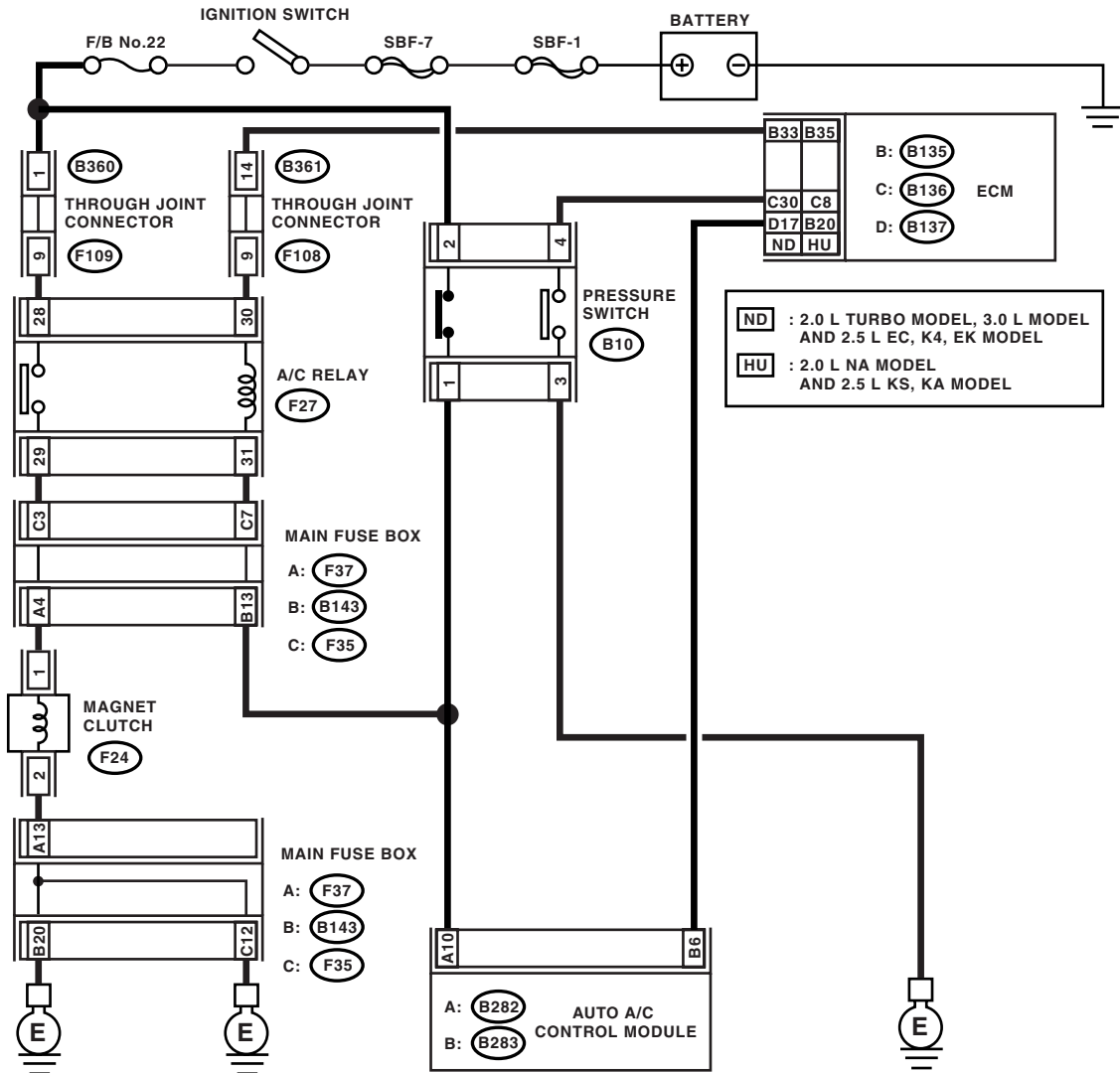
Step	Check	Yes	No
1 CHECK FUSE. 1) Remove the fuse No. 22, 27 and 28 from fuse & relay box. 2) Check the condition of fuse.	Is any fuse blown-out?	Replace the fuse.	Go to step 2.
2 CHECK POWER SUPPLY FOR BLOWER MOTOR. 1) Turn the ignition switch to ON. 2) Turn the blower switch to ON. 3) Measure the voltage between blower motor and chassis ground. Connector & terminal (B87) No. 2 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 3.	Repair the open circuit of blower motor power supply line harness.
3 CHECK BLOWER MOTOR RELAY. 1) Turn the ignition switch to OFF. 2) Remove the blower motor relay. 3) Connect the battery positive (+) terminal to terminal No. 24 of blower motor relay, and negative (-) terminal to terminal No. 23. 4) Measure the resistance between terminals No. 21 and 22. Terminals No. 21 — No. 22:	Is the resistance less than 1 Ω ?	Go to step 4.	Replace the blower motor relay.
4 CHECK BLOWER MOTOR. 1) Disconnect the connector from blower motor. 2) Connect the battery positive (+) terminal to terminal No. 2 of blower motor connector, and negative (-) terminal to terminal No. 1. 3) Make sure the blower motor runs.	Does the blower motor run?	Go to step 5.	Replace the blower motor.
5 CHECK POOR CONTACT. Check poor contact in auto A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the auto A/C control module.

Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

C: COMPARTMENT TEMPERATURE DOES NOT CHANGE, OR A/C SYSTEM DOES NOT RESPOND PROMPTLY.

WIRING DIAGRAM:



AC-00905

Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK FUSE. 1) Turn the ignition switch to OFF. 2) Remove the fuse No. 22 from fuse & relay box. 3) Check the condition of fuse.	Is the fuse blown-out?	Replace the fuse.	Go to step 2.
2 CHECK SIGNAL TO A/C RELAY AND A/C CONTROL MODULE. 1) Disconnect the A/C relay and auto A/C control module harness connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between A/C relay connector terminal and chassis ground. 4) Measure the voltage between auto A/C control module harness connector terminal and chassis ground. Connector & terminal (F27) No. 31 (+) — Chassis ground (-): (B282) No. 10 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 5.	Go to step 3.
3 CHECK POWER SUPPLY FOR PRESSURE SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the pressure switch harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between pressure switch harness connector terminal and chassis ground. Connector & terminal (B10) No. 2 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 4.	Check the harness for open or short circuit between fuse and pressure switch.
4 CHECK HARNESS BETWEEN PRESSURE SWITCH AND A/C RELAY, AUTO A/C CONTROL MODULE. 1) Turn the ignition switch to OFF. 2) Measure the resistance in harness between pressure switch connector and A/C relay connector. 3) Measure the resistance in harness between pressure switch connector and auto A/C control module connector. Connector & terminal (B10) No. 1 — (F27) No. 31: (B10) No. 1 — (B282) No. 10:	Is the resistance less than 1 Ω?	Check the pressure switch. <Ref. to AC-40, INSPECTION, Pressure Switch (Triple Pressure Switch).>	Repair the harness.
5 CHECK POWER SUPPLY FOR A/C RELAY. Measure the voltage between A/C relay connector terminal and chassis ground. Connector & terminal (F27) No. 28 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 6.	Check the harness for open or short circuit between fuse and A/C relay.
6 CHECK A/C RELAY. Check the A/C relay. <Ref. to AC-39, INSPECTION, Relay and Fuse.>	Is malfunction found in A/C relay?	Go to step 7.	Replace the A/C relay.

Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
7 CHECK A/C ON SIGNAL. 1) Turn the ignition switch to OFF. 2) Connect the A/C relay and all disconnected connectors. 3) Start the engine and turn the A/C switch to ON. 4) Turn the temperature control dial at maximum cool position. 5) Measure the voltage between auto A/C control module harness connector terminal and chassis ground. Connector & terminal (B283) No. 6 (+) — Chassis ground (-):	Is the voltage more than 5.5 V?	Go to step 9.	Go to step 8.
8 CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND ECM. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of auto A/C control module and ECM. 3) Measure the resistance in harness between auto A/C control module connector and ECM connector. Connector & terminal 2.0 L turbo model, 3.0 L model and 2.5 L EC, K4, EK model (B283) No. 6 — (B137) No. 17: 2.0 L non-turbo model and 2.5 L KS, KA model (B283) No. 6 — (B135) No. 20:	Is the resistance less than 1 Ω ?	Replace the auto A/C control module.	Repair the harness.
9 CHECK MAGNET CLUTCH ON SIGNAL. 1) Stop the engine and turn the A/C switch to OFF. 2) Turn the ignition switch to ON. 3) Measure the voltage between ECM connector terminal and chassis ground. Connector & terminal 2.0 L turbo model, 3.0 L model and 2.5 L EC, K4, EK model (B135) No. 33 (+) — Chassis ground (-): 2.0 L non-turbo model and 2.5 L KS, KA model (B135) No. 35 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 10.	Check the harness for open or short circuit between A/C relay and ECM.
10 CHECK MAGNET CLUTCH ON SIGNAL. 1) Start the engine and turn the A/C switch to ON. 2) Turn the temperature control dial at maximum cool position. 3) Measure the voltage between ECM connector terminal and chassis ground. Connector & terminal 2.0 L turbo model, 3.0 L model and 2.5 L EC, K4, EK model (B135) No. 33 (+) — Chassis ground (-): 2.0 L non-turbo model and 2.5 L KS, KA model (B135) No. 35 (+) — Chassis ground (-):	Is the voltage 0 V?	Go to step 11.	Replace the ECM.

Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
11 CHECK POWER SUPPLY FOR MAGNET CLUTCH. 1) Stop the engine and turn the A/C switch to OFF. 2) Disconnect the harness connector of magnet clutch. 3) Start the engine and turn the A/C switch to ON. 4) Turn the temperature control dial at maximum cool position. 5) Measure the voltage between magnet clutch harness connector terminal and chassis ground. Connector & terminal (F24) No. 1 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 12 .	Check the harness for open or short circuit between A/C relay and magnet clutch.
12 CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND ECM. 1) Stop the engine and turn the A/C switch to OFF. 2) Measure the resistance between magnet clutch harness connector terminal and chassis ground. Connector & terminal (F24) No. 2 — Chassis ground:	Is the resistance less than 1 Ω ?	Check the compressor. <Ref. to AC-33, INSPECTION, Compressor.>	Repair the harness.

Diagnostic Procedure for Actuators

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

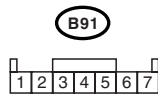
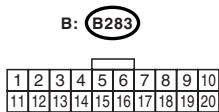
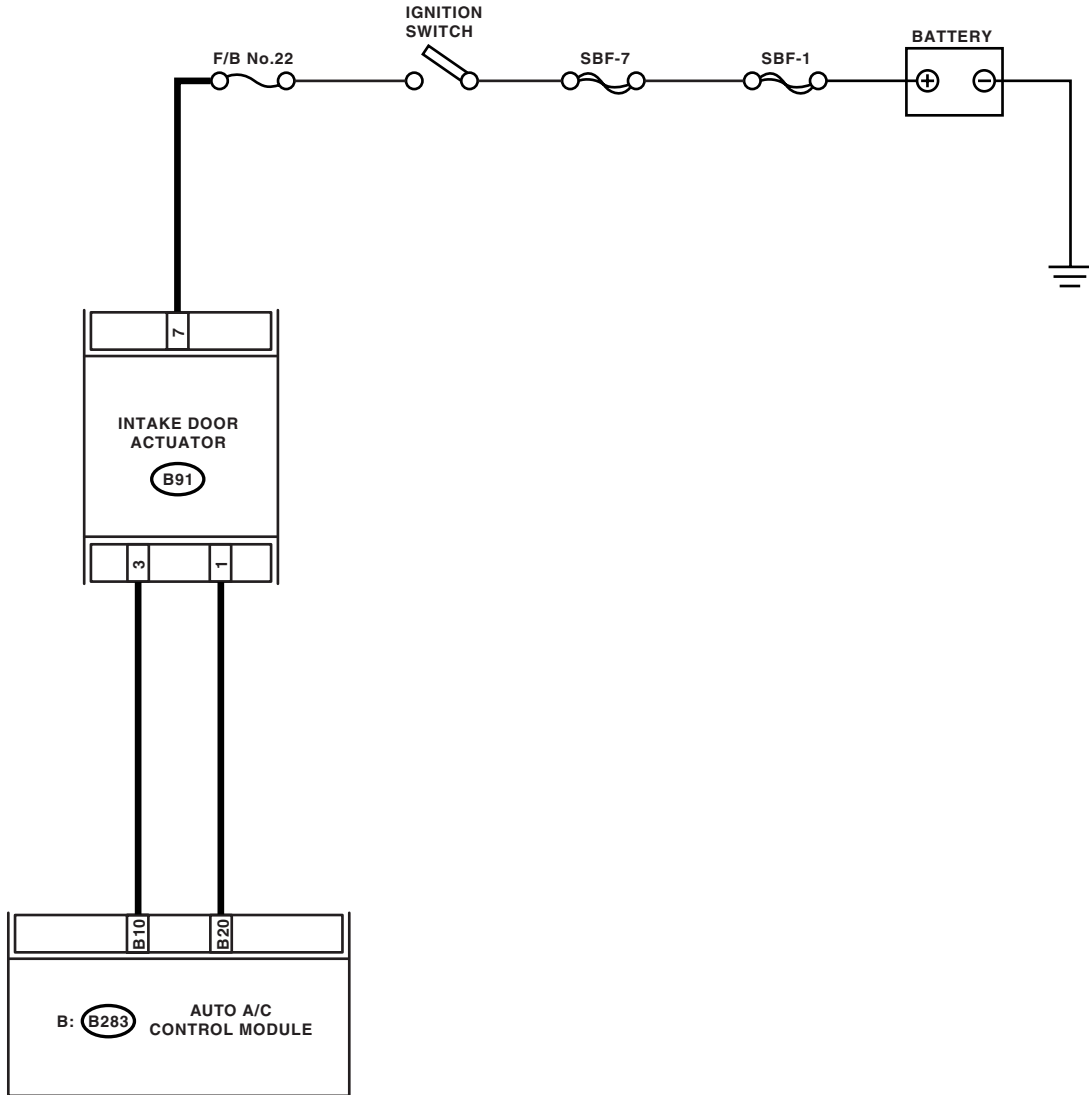
7. Diagnostic Procedure for Actuators

A: INTAKE DOOR ACTUATOR

TRUBLE SYMPTOM:

FRESH/RECIRC mode is not changed.

WIRING DIAGRAM:



AC-00826

Diagnostic Procedure for Actuators

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
<p>1</p> <p>CHECK POWER SUPPLY FOR INTAKE DOOR ACTUATOR.</p> <p>1) Turn the ignition switch to OFF. 2) Disconnect the intake door actuator connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between intake door actuator connector and chassis ground.</p> <p>Connector & terminal (B91) No. 7 (+) — Chassis ground (-):</p>	<p>Is the voltage 7 V (at normal temperature)?</p>	<p>Go to step 2.</p>	<p>Check the harness for open or short circuit between intake door actuator and fuse.</p>
<p>2</p> <p>CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND INTAKE DOOR ACTUATOR.</p> <p>1) Turn the ignition switch to OFF. 2) Disconnect the auto A/C control module connector. 3) Measure the resistance between intake door actuator connector and auto A/C control module connector.</p> <p>Connector & terminal (B283) No. 10 — (B91) No. 3: (B283) No. 20 — (B91) No. 1:</p>	<p>Is the resistance less than 1 Ω?</p>	<p>Go to step 3.</p>	<p>Repair the harness between auto A/C control module and intake door actuator.</p>
<p>3</p> <p>CHECK OPERATION OF INTAKE DOOR ACTUATOR.</p> <p>1) Connect the intake door actuator connector. 2) Ground the auto A/C control module connector with a suitable wire. 3) Turn the ignition switch to ON, and check the operation of intake door actuator.</p> <p>Connector & terminal (B283) No. 10 — Chassis ground:</p>	<p>Does the actuator move to the FRESH side?</p>	<p>Go to step 4.</p>	<p>Replace the intake door actuator.</p>
<p>4</p> <p>CHECK OPERATION OF INTAKE DOOR ACTUATOR.</p> <p>1) Turn the ignition switch to OFF. 2) Ground the auto A/C control module connector with a suitable wire. 3) Turn the ignition switch to ON, and check the operation of intake door actuator.</p> <p>Connector & terminal: (B283) No. 20 — Chassis ground:</p>	<p>Does the actuator move to the RECIRC side?</p>	<p>Replace the auto A/C control module.</p>	<p>Replace the intake door actuator.</p>

Diagnostic Procedure for Actuators

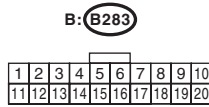
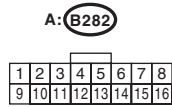
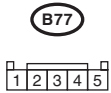
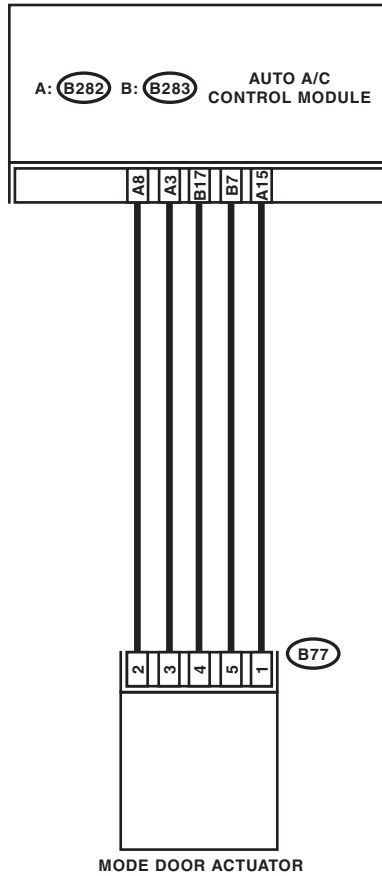
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

B: MODE DOOR ACTUATOR

TROUBLE SYMPTOM:

Air flow outlet is not changed.

WIRING DIAGRAM:



AC-00827

Diagnostic Procedure for Actuators

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
<p>1 CHECK POWER SUPPLY FOR MODE DOOR ACTUATOR POSITION SENSOR.</p> <p>1) Turn the ignition switch to OFF. 2) Disconnect the mode door actuator connector. 3) Turn the ignition switch and AUTO switch to ON. 4) Measure the voltage between auto A/C control module connector terminals.</p> <p>Connector & terminal (B282) No. 8 (+) — (B282) No. 15 (-):</p>	Is the voltage approx. 5 V?	Go to step 2.	Replace the auto A/C control module.
<p>2 CHECK POWER SUPPLY FOR MODE DOOR ACTUATOR.</p> <p>Measure the voltage between auto A/C control module connector and chassis ground after turning the air flow control switch to FACE position.</p> <p>Connector & terminal (B283) No. 7 (+) — Chassis ground (-):</p>	Is the voltage 7 V (at normal temperature)?	Go to step 3.	Replace the auto A/C control module.
<p>3 CHECK POWER SUPPLY FOR MODE DOOR ACTUATOR.</p> <p>Measure the voltage between auto A/C control module connector and chassis ground after turning the air flow control switch to DEF position.</p> <p>Connector & terminal (B283) No. 17 (+) — Chassis ground (-):</p>	Is the voltage 7 V (at normal temperature)?	Go to step 4.	Replace the auto A/C control module.
<p>4 CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND MODE DOOR ACTUATOR.</p> <p>1) Turn the A/C and ignition switch to OFF. 2) Disconnect the auto A/C control module connector. 3) Measure the resistance between auto A/C control module and mode door actuator connector.</p> <p>Connector & terminal (B77) No. 1 — (B282) No. 15: (B77) No. 2 — (B282) No. 8: (B77) No. 3 — (B282) No. 3: (B77) No. 4 — (B283) No. 17: (B77) No. 5 — (B283) No. 7:</p>	Is the resistance less than 1 Ω ?	Go to step 5.	Repair the harness between auto A/C control module and mode door actuator.
<p>5 CHECK MODE DOOR ACTUATOR POSITION SWITCH SIGNAL.</p> <p>1) Connect the connector of auto A/C control module and mode door actuator. 2) Turn the ignition switch and AUTO switch to ON. 3) Check the voltage between auto A/C control module connector terminals while changing the mode between DEF and FACE.</p> <p>Connector & terminal (B282) No. 3 (+) — (B282) No. 15 (-):</p>	Does the voltage change between 1 (DEF) — 4 (FACE) V?	Go to step 6.	Replace the mode door actuator.
<p>6 CHECK POOR CONTACT.</p> <p>Check poor contact in auto A/C control module and connector.</p>	Is there poor contact in connector?	Repair connector.	Replace the auto A/C control module.

Diagnostic Procedure for Actuators

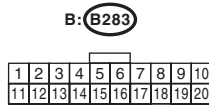
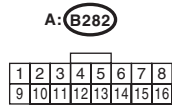
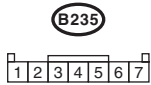
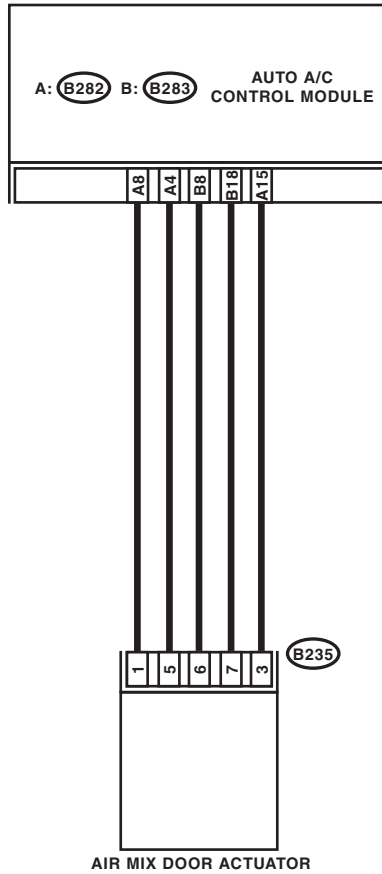
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

C: AIR MIX DOOR ACTUATOR

TROUBLE SYMPTOM:

Outlet air temperature does not change.

WIRING DIAGRAM:



AC-00828

Diagnostic Procedure for Actuators

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
<p>1 CHECK POWER SUPPLY FOR AIR MIX DOOR ACTUATOR POSITION SWITCH.</p> <p>1) Turn the ignition switch to OFF. 2) Disconnect the air mix door actuator connector. 3) Turn the ignition switch and AUTO switch to ON. 4) Measure the voltage between auto A/C control module connector terminals.</p> <p>Connector & terminal (B282) No. 8 (+) — (B282) No. 15 (-):</p>	Is the voltage approx. 5 V?	Go to step 2.	Replace the auto A/C control module.
<p>2 CHECK POWER SUPPLY FOR AIR MIX DOOR ACTUATOR.</p> <p>Measure the voltage between auto A/C control module connector and chassis ground after turning the temperature control dial to maximum COOL position.</p> <p>Connector & terminal (B283) No. 8 (+) — Chassis ground (-):</p>	Is the voltage 7 V (at normal temperature)?	Go to step 3.	Replace the auto A/C control module.
<p>3 CHECK POWER SUPPLY FOR AIR MIX DOOR ACTUATOR.</p> <p>Measure the voltage between auto A/C control module connector and chassis ground after turning the temperature control dial to maximum HOT position.</p> <p>Connector & terminal (B283) No. 18 (+) — Chassis ground (-):</p>	Is the voltage 7 V (at normal temperature)?	Go to step 4.	Replace the auto A/C control module.
<p>4 CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND AIR MIX DOOR ACTUATOR.</p> <p>1) Turn the A/C and ignition switch to OFF. 2) Disconnect the auto A/C control module connector. 3) Measure the resistance between auto A/C control module and air mix door actuator connector.</p> <p>Connector & terminal (B235) No. 1 — (B282) No. 8: (B235) No. 3 — (B282) No. 15: (B235) No. 5 — (B282) No. 4: (B235) No. 6 — (B283) No. 8: (B235) No. 7 — (B283) No. 18:</p>	Is the resistance less than 1 Ω ?	Go to step 5.	Repair the harness between auto A/C control module and air mix door actuator.
<p>5 CHECK AIR MIX DOOR ACTUATOR POSITION SWITCH SIGNAL.</p> <p>1) Connect the connector of auto A/C control module and air mix door actuator. 2) Turn the ignition switch and AUTO switch to ON. 3) Check the voltage between auto A/C control module connector terminals while changing the setting temperature between maximum COOL and maximum HOT.</p> <p>Connector & terminal (B282) No. 4 (+) — (B282) No. 15 (-):</p>	Does the voltage change between 1 (Max. HOT) — 4 (Max. COOL) V?	Go to step 6.	Replace the air mix door actuator.
<p>6 CHECK POOR CONTACT.</p> <p>Check poor contact in auto A/C control module and connector.</p>	Is there poor contact in connector?	Repair the connector.	Replace the auto A/C control module.

Diagnostic Procedure for Sensors

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

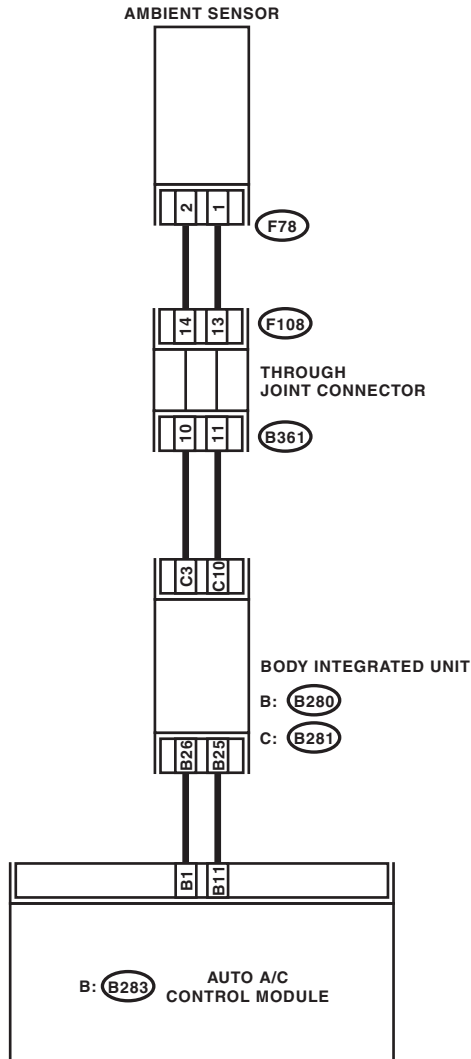
8. Diagnostic Procedure for Sensors

A: AMBIENT SENSOR

TROUBLE SYMPTOM:

Fan speed is not switched when the fan speed control dial is in AUTO position.

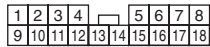
WIRING DIAGRAM:



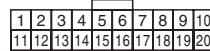
F78



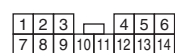
F108



B: B283



B361



B: B280



C: B281



AC-00829

Diagnostic Procedure for Sensors

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK AMBIENT SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ambient sensor. 3) Measure the resistance between connector terminals of ambient sensor. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance approx. 2.2 k Ω at 25°C (77°F)?	Go to step 2.	Replace the ambient sensor.
2 CHECK INPUT SIGNAL FOR AMBIENT SENSOR. 1) Turn the ignition to ON. 2) Measure the voltage between connector (F78) terminals. <i>Connector & terminal</i> <i>(F78) No. 1 (+) — No. 2 (-):</i>	Is the voltage approx. 5 V?	Go to step 6.	Go to step 3.
3 CHECK OUTPUT SIGNAL OF BODY INTEGRATED UNIT. 1) Turn the ignition switch to OFF. 2) Draw out the body integrated unit. 3) Disconnect the connector from ambient sensor. 4) Turn the ignition switch to ON. 5) Measure the voltage between connector terminals of body integrated unit. <i>Connector & terminal</i> <i>(B281) No. 3 (+) — No. 10 (-):</i>	Is the voltage approx. 5 V?	Go to step 4.	Go to step 6.
4 CHECK HARNESS CONNECTOR BETWEEN BODY INTEGRATED UNIT AND AMBIENT SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from body integrated unit. 3) Measure the resistance in harness between body integrated unit and ambient sensor. <i>Connector & terminal</i> <i>(F78) No. 1 — (B281) No. 10:</i>	Is the resistance less than 1 Ω ?	Go to step 5.	Repair the open circuit in harness between body integrated unit and ambient sensor.
5 CHECK HARNESS CONNECTOR BETWEEN BODY INTEGRATED UNIT AND AMBIENT SENSOR. Measure the resistance in harness between body integrated unit and ambient sensor. <i>Connector & terminal</i> <i>(F78) No. 2 — (B281) No. 3:</i>	Is the resistance less than 1 Ω ?	Go to step 6.	Repair the open circuit in harness between body integrated unit and ambient sensor.
6 CHECK COMMUNICATION ERROR DISPLAY. 1) Connect the connectors of body integrated unit and ambient sensor to original position. 2) Check "Er xx" is indicated on the Odo/Trip meter in combination meter after turning the ignition switch to ON.	Is the error display "Er xx" indicated?	Check the communication circuit. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	Go to step 7.
7 CHECK POOR CONTACT. Check poor contact in auto A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the A/C control module.

Diagnostic Procedure for Sensors

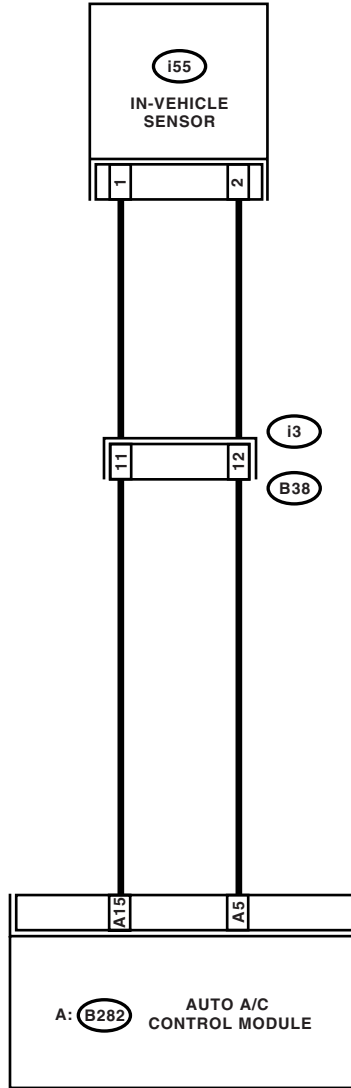
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

B: IN-VEHICLE SENSOR

TROUBLE SYMPTOM:

Blower fan speed, outlet port and inlet port do not change after turning the AUTO switch to ON.

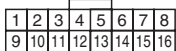
WIRING DIAGRAM:



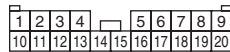
i55



A: B282



B38



AC-00830

Diagnostic Procedure for Sensors

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

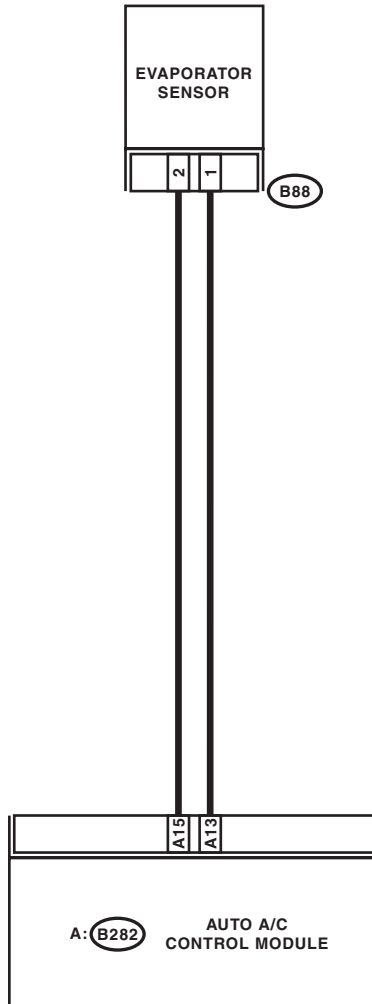
Step	Check	Yes	No
1 CHECK IN-VEHICLE SENSOR. 1) Turn the ignition switch to OFF. 2) Remove the driver's side lower cover. 3) Disconnect the connector from in-vehicle sensor. 4) Measure the resistance between connector terminals of in-vehicle sensor. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance approx. 2.7 k Ω at 20°C (68°F)?	Go to step 2.	Replace the in-vehicle sensor.
2 CHECK INPUT SIGNAL FOR IN-VEHICLE SENSOR. 1) Turn the ignition switch to ON. 2) Measure the voltage between in-vehicle sensor harness connector terminal and chassis ground. <i>Connector & terminal</i> <i>(i55) No. 2 (+) — No. 1 (-):</i>	Is the voltage approx. 5 V?	Go to step 6.	Go to step 3.
3 CHECK AUTO A/C CONTROL MODULE OUTPUT SIGNAL. 1) Turn the ignition switch to OFF. 2) Remove the auto A/C control module. 3) Turn the ignition switch to ON. 4) Measure the voltage between connector terminals of auto A/C control module. <i>Connector & terminal</i> <i>(B282) No. 5 (+) — (B282) No. 15 (-):</i>	Is the voltage approx. 5 V?	Go to step 4.	Go to step 6.
4 CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND IN-VEHICLE SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from auto A/C control module. 3) Measure the resistance in harness between auto A/C control module and in-vehicle sensor. <i>Connector & terminal</i> <i>(i55) No. 2 — (B282) No. 5:</i>	Is the resistance less than 1 Ω ?	Go to step 5.	Repair the harness between auto A/C control module and in-vehicle sensor.
5 CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND IN-VEHICLE SENSOR. Measure the resistance in harness between auto A/C control module and in-vehicle sensor. <i>Connector & terminal</i> <i>(i55) No. 1 — (B282) No. 15:</i>	Is the resistance less than 1 Ω ?	Go to step 6.	Repair the harness between auto A/C control module and in-vehicle sensor.
6 CHECK POOR CONTACT. Check poor contact in auto A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the auto A/C control module.

Diagnostic Procedure for Sensors

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

C: EVAPORATOR SENSOR

WIRING DIAGRAM:



(B88)



A: (B282)



AC-00831

Diagnostic Procedure for Sensors

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK EVAPORATOR SENSOR 1) Turn the ignition switch to OFF. 2) Remove the glove box. 3) Disconnect the connector from evaporator sensor. 4) Measure the resistance between connector terminals of evaporator sensor. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance approx. 3.3 k Ω at 20°C (68°F)?	Go to step 2.	Replace the evaporator sensor.
2 CHECK INPUT SIGNAL FOR EVAPORATOR SENSOR. 1) Turn the ignition switch to ON. 2) Measure the voltage between connector (B88) terminal and chassis ground. <i>Connector & terminal</i> <i>(B88) No. 1 (+) — No. 2 (-):</i>	Is the voltage approx. 5 V?	Go to step 6.	Go to step 3.
3 CHECK AUTO A/C CONTROL MODULE OUTPUT SIGNAL. 1) Turn the ignition switch to OFF. 2) Remove the auto A/C control module. 3) Turn the ignition switch to ON. 4) Measure the voltage between connector terminals of auto A/C control module. <i>Connector & terminal</i> <i>(B282) No. 13 (+) — No. 15 (-):</i>	Is the voltage approx. 5 V?	Go to step 4.	Go to step 6.
4 CHECK HARNESS CONNECTOR BETWEEN AUTO A/C CONTROL MODULE AND EVAPORATOR SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from auto A/C control module. 3) Measure the resistance in harness between auto A/C control module and evaporator sensor. <i>Connector & terminal</i> <i>(B88) No. 2 — (B282) No. 15:</i>	Is the resistance less than 1 Ω ?	Go to step 5.	Repair the open circuit in harness between auto A/C control module and evaporator sensor.
5 CHECK HARNESS CONNECTOR BETWEEN AUTO A/C CONTROL MODULE AND EVAPORATOR SENSOR. Measure the resistance in harness between auto A/C control module and evaporator sensor. <i>Connector & terminal</i> <i>(B88) No. 1 — (B282) No. 13:</i>	Is the resistance less than 1 Ω ?	Go to step 6.	Repair the open circuit in harness between auto A/C control module and evaporator sensor.
6 CHECK POOR CONTACT. Check poor contact in auto A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the auto A/C control module.

Diagnostic Procedure for Sensors

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

D: SUNLOAD SENSOR

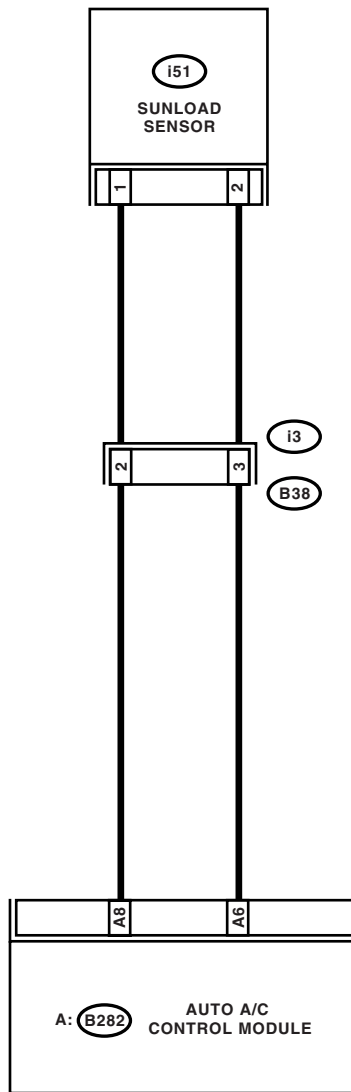
TROUBLE SYMPTOM:

- Sensor identifies that sunlight is at maximum. Then, A/C system is controlled to COOL side.
- Sensor identifies that sunlight is at minimum. Then, A/C system is controlled to HOT side.

NOTE:

When the sunload sensor check is conducted indoors or in the shade, open circuit might be indicated. Always check the sunload sensor at the place where the sun shines directly on it.

WIRING DIAGRAM:



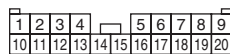
i51



A: B282



B38



Diagnostic Procedure for Sensors

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK POWER SUPPLY VOLTAGE FOR SUNLOAD SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from sunload sensor. 3) Turn the ignition switch to ON. 4) Measure the power supply voltage for sunload sensor. <i>Connector & terminal</i> <i>(i51) No. 1 (+) — No. 2 (-):</i>	Is the voltage approx. 5 V?	Go to step 4.	Go to step 2.
2 CHECK HARNESS CONNECTOR BETWEEN AUTO A/C CONTROL MODULE AND SUNLOAD SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from auto A/C control module. 3) Measure the resistance in harness between auto A/C control module and sunload sensor. <i>Connector & terminal</i> <i>(i51) No. 2 — (B282) No. 6:</i>	Is the resistance less than 1 Ω ?	Go to step 3.	Repair the harness between auto A/C control module and sunload sensor.
3 CHECK HARNESS CONNECTOR BETWEEN AUTO A/C CONTROL MODULE AND SUNLOAD SENSOR. Measure the resistance in harness between auto A/C control module and sunload sensor. <i>Connector & terminal</i> <i>(i51) No. 1 — (B282) No. 8:</i>	Is the resistance less than 1 Ω ?	Go to step 4.	Repair the harness between auto A/C control module and sunload sensor.
4 CHECK INPUT VOLTAGE FOR AUTO A/C CONTROL MODULE. 1) Connect the connectors of sunload sensor and auto A/C control module. 2) Turn the ignition switch to ON. 3) Measure the voltage between connector terminals of auto A/C control module. <i>Connector & terminal</i> <i>(B282) No. 8 (+) — (B282) No. 6 (-):</i>	Is the voltage approx. 2.5 V?	Go to step 5.	Replace the sunload sensor.
5 CHECK POOR CONTACT. Check poor contact in auto A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the auto A/C control module.

Diagnostics with Phenomenon

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

9. Diagnostics with Phenomenon

A: INSPECTION

Symptom	Problem parts
A/C system fails to operate.	<ul style="list-style-type: none"> • Fuse (M/B No. 8, F/B No. 22, 31) • Connector (Poor contact) • Ground • Auto A/C control module • Blower fan motor • Blower fan relay • A/C Relay • Compressor (Magnet clutch) • Evaporator sensor
Fuse is blown out.	<ul style="list-style-type: none"> • Fuse (M/B No. 8, F/B No. 22, 31) • Connector (Poor contact)
Illumination cannot dim.	<ul style="list-style-type: none"> • Fuse (M/B No. 8, F/B No. 22, 31) • Connector (Poor contact) • Auto A/C control module
Blower fan does not rotate or fan speed cannot be controlled.	<ul style="list-style-type: none"> • Fuse (M/B No. 8, F/B No. 22, 31) • Connector (Poor contact) • Ground • Auto A/C control module • Blower fan motor • Blower fan relay
Unable to switch suction vents.	<ul style="list-style-type: none"> • Connector (Poor contact) • Auto A/C control module • Intake door actuator
Unable to switch blow vents.	<ul style="list-style-type: none"> • Connector (Poor contact) • Auto A/C control module • Mode door actuator
Compartment temperature does not increase. (No hot air is discharged.)	<ul style="list-style-type: none"> • Connector (Poor contact) • Auto A/C control module • Air mix door actuator • In-vehicle sensor, ambient sensor, evaporator sensor and sunload sensor • In-vehicle sensor aspirator hose
Compartment temperature does not decrease. (No cool air is discharged.)	<ul style="list-style-type: none"> • Connector (Poor contact) • Auto A/C control module • Air mix door actuator • A/C Relay • Compressor (Magnet clutch) • Radiator fan motor • Radiator fan relay • In-vehicle sensor, ambient sensor, evaporator sensor and sunload sensor • In-vehicle sensor aspirator hose
Compartment temperature is higher or lower than setting temperature.	<ul style="list-style-type: none"> • Auto A/C control module • Air mix door actuator • In-vehicle sensor, ambient sensor, evaporator sensor and sunload sensor • In-vehicle sensor aspirator hose
Compartment temperature does not quickly respond to setting temperature.	<ul style="list-style-type: none"> • Air mix door actuator • In-vehicle sensor, ambient sensor, evaporator sensor and sunload sensor • In-vehicle sensor aspirator hose
Radiator fan does not rotate during A/C operation.	<ul style="list-style-type: none"> • Radiator fan motor • Radiator fan relay