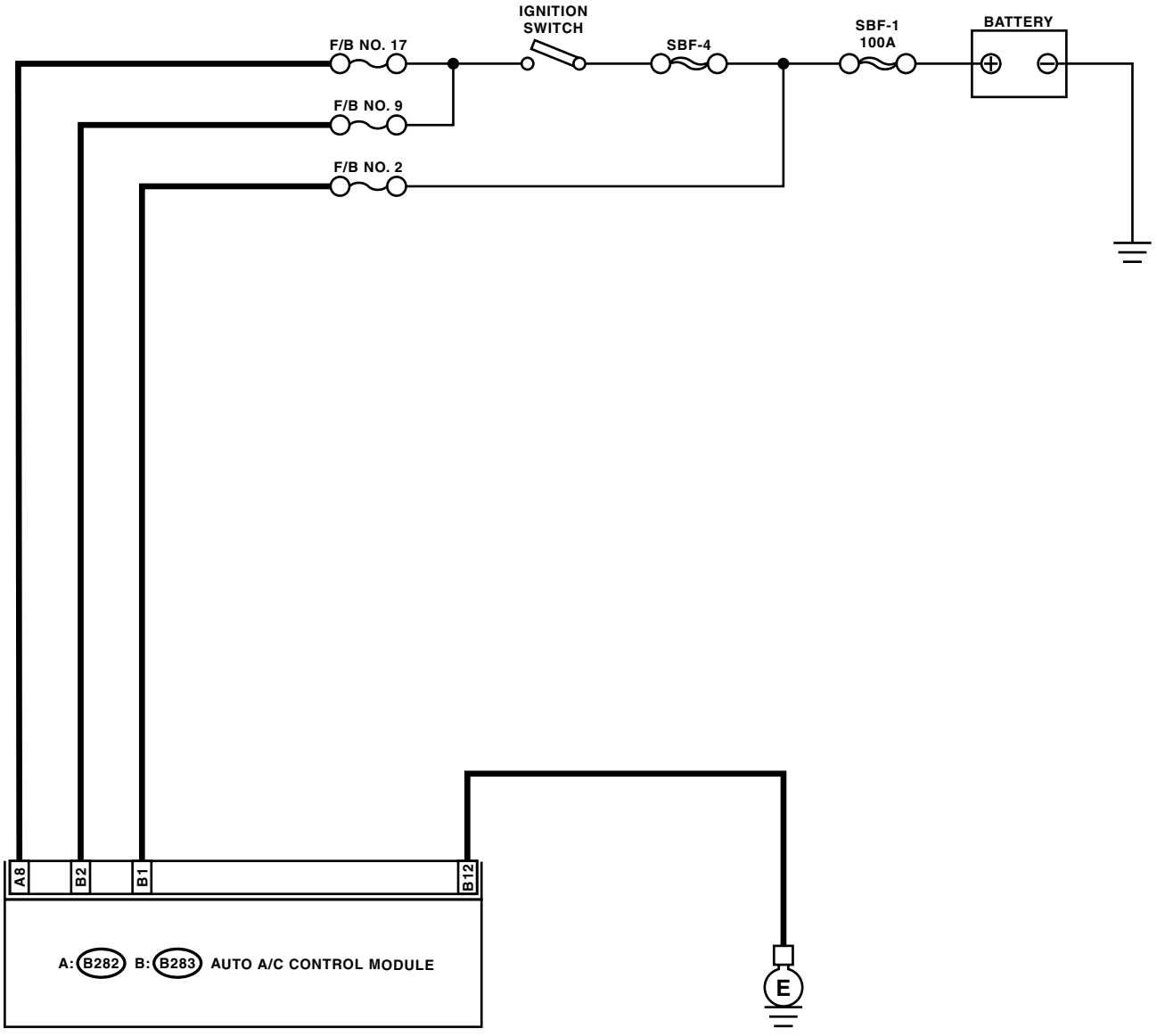
6. Diagnostics for A/C System Malfunction

A: A/C AND/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:



AC-00669

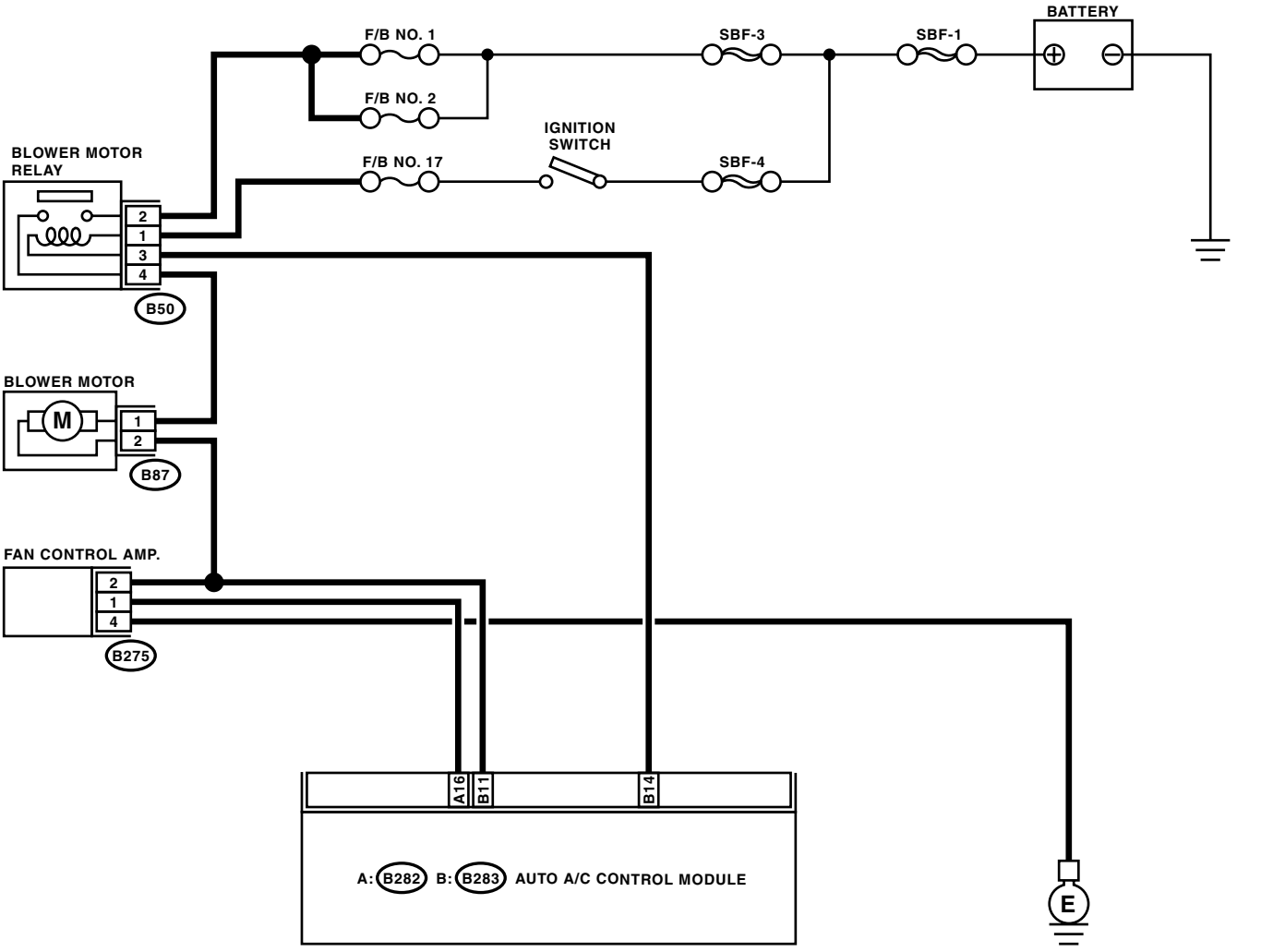
Step		Check	Yes	No
1	**CHECK FUSE.** 1)Turn the ignition switch to OFF. 2)Remove the fuse No. 2 from main fuse box. 3)Check the condition of fuse.	Is the fuse blown-out?	Replace the fuse.	Go to step **2.**
2	**CHECK FUSE.** 1)Turn the ignition switch to OFF. 2)Remove the fuses No. 9 and No. 17 from fuse & 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 MODULE POWER CIRCUIT.** 1)Pull out the A/C control module connector. 2)Measure the voltage between A/C control module connector terminal and chassis ground when turning ignition switch to OFF. ***Connector & terminal*** ***(B283) No. 1 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **4.**	Repair the short circuit in harness for power supply line.
4	**CHECK A/C CONTROL MODULE POWER CIRCUIT.** Measure the voltage between A/C control module connector terminal and chassis ground when turning the ignition switch to ACC. ***Connector & terminal*** ***(B283) No. 2 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **5.**	Repair the short circuit in harness for power supply line.
5	**CHECK A/C CONTROL MODULE POWER CIRCUIT.** Measure the voltage between A/C control module connector terminal and chassis ground when turning the ignition switch to ON. ***Connector & terminal*** ***(B282) No. 8 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **6.**	Repair the short circuit in harness for power supply line.
6	**CHECK A/C CONTROL MODULE GROUND CIRCUIT.** Measure the resistance of harness between A/C control module and chassis ground. ***Connector & terminal*** ***(B283) No. 12 — Chassis ground:***	Is the resistance less than 5 Ω?	Go to step **7.**	Repair the short circuit in harness for ground line.
7	**CHECK POOR CONTACT.** Check poor contact in A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the A/C control module.

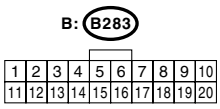
B: BLOWER MOTOR IS NOT ROTATED

TROUBLE SYMPTOM:

- Blower motor is not rotated.
- Blower motor is not rotated in “HI”.

WIRING DIAGRAM:



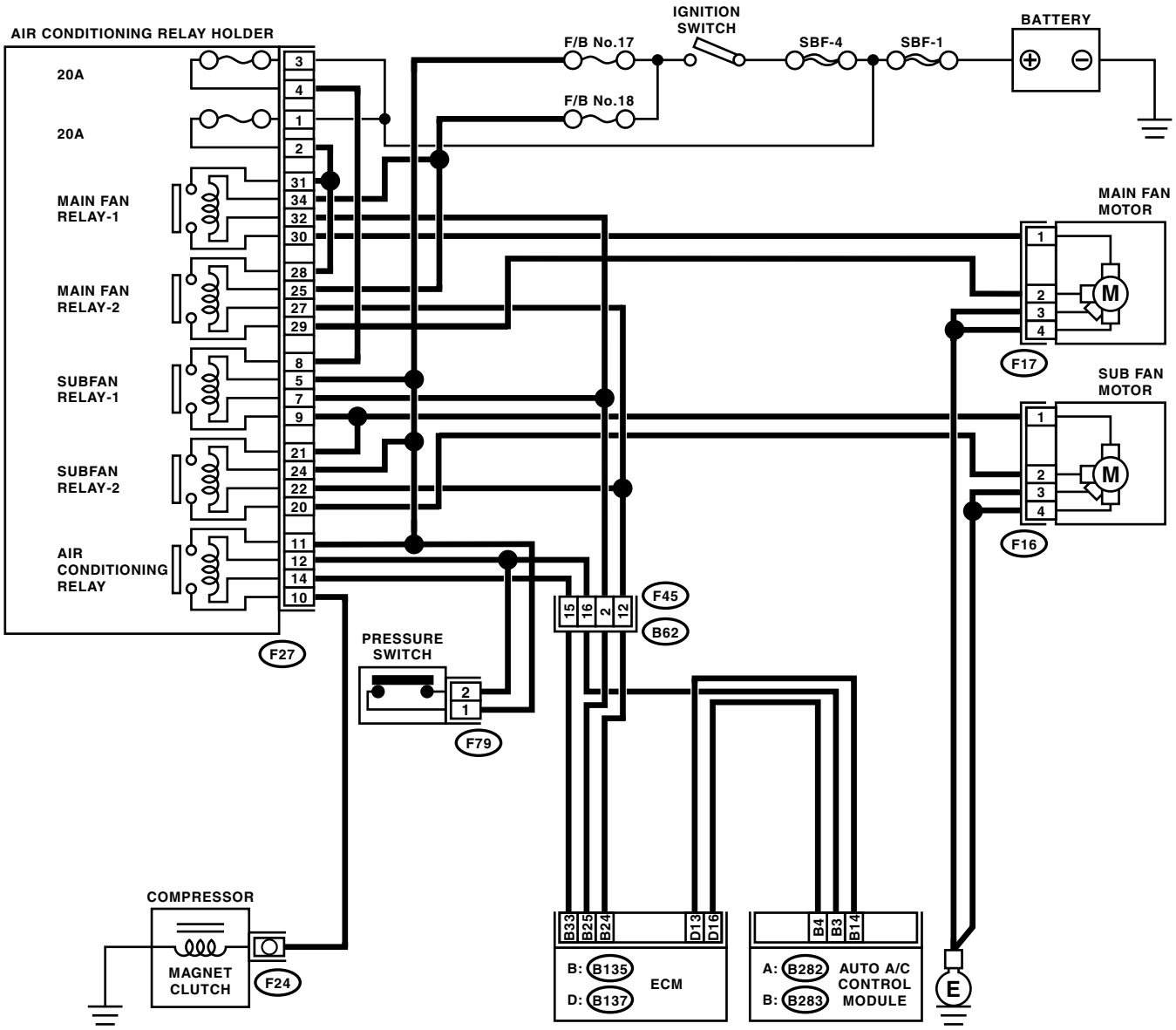


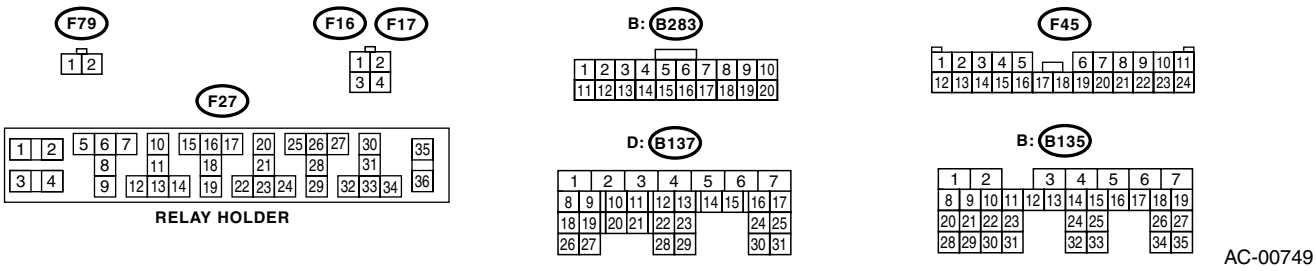
AC-00670

	Step	Check	Yes	No
1	**CHECK FUSE.** 1)Remove the No.1, No. 2 and No. 17 fuses in fuse & relay box. 2)Check the condition of fuses.	Are any of the fuses blown-out?	Replace the fuse.	Go to step **2.**
2	**CHECK POWER SUPPLY TO BLOWER FAN MOTOR.** 1)Turn the ignition switch to ON. 2)Turn the blower switch to ON. 3)Measure the voltage between blower fan motor and chassis ground. ***Connector & terminal*** ***(B87) No. 1 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **3.**	Repair the open circuit in harness for blower fan motor power supply line.
3	**CHECK BLOWER FAN MOTOR RELAY.** 1)Turn the ignition switch to OFF. 2)Remove the blower fan motor relay. 3)Connect the battery positive (+) terminal to No. 1 terminal and negative (–) terminal to No. 3 terminal of blower fan motor connector. 4)Measure the resistance between No. 2 and No. 4 terminals. ***Terminals*** ***No. 2 — No. 4:***	Is the resistance less than 1 Ω?	Go to step **4.**	Replace the blower fan motor relay.
4	**CHECK BLOWER FAN MOTOR.** 1)Disconnect the connector from blower fan motor. 2)Connect the battery positive (+) terminal to No.1 terminal and negative (–) terminal to No.2 terminal of blower fan motor connector. 3)Make sure that the blower fan motor is operated.	Does the blower fan motor operate?	Go to step **5.**	Replace the blower fan motor.
5	**CHECK POOR CONTACT.** Check poor contact in A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the A/C control module.

C: COMPARTMENT TEMPERATURE IS NOT CHANGED OR A/C SYSTEM DOES NOT RESPOND QUICKLY

WIRING DIAGRAM:





AC-00749

	Step	Check	Yes	No
1	**CHECK FUSE.** 1)Turn the ignition switch to OFF. 2)Remove the No. 2 fuse in main fuse box. 3)Check the condition of fuse.	Is the fuse blown-out?	Replace the fuse.	Go to step **2.**
2	**CHECK POWER SUPPLY TO MAGNET CLUTCH OF A/C COMPRESSOR.** 1)Start the engine, and turn A/C switch to ON. 2)Set the temperature control dial to maximum cold position. 3)Measure the voltage between magnet clutch connector and chassis ground. ***Connector & terminal*** ***(F24) No. 1 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **3.**	Repair the open circuit in harness for power supply line of the A/C compressor.
3	**CHECK SIGNAL VOLTAGE TO A/C RELAY.** 1)Turn the ignition switch to ON. 2)Turn the A/C switch to ON. 3)Measure the signal voltage between A/C relay and chassis ground. ***Connector & terminal*** ***(F27) No. 14 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **4.**	Repair the open circuit in harness for A/C relay signal circuit.
4	**CHECK A/C RELAY.** 1)Remove the A/C relay in main fuse box. 2)Check the A/C relay. <Ref. to AC-38, INSPECTION, Relay and Fuse.>	Is the operation of the relay OK?	Go to step **5.**	Replace the A/C relay.
5	**CHECK OPERATION OF MAIN FAN MOTOR.** 1)Start the engine. 2)Turn the A/C switch to ON. 3)Check the operation of main fan motor.	Does the radiator main fan operate?	Go to step **10.**	Go to step **6.**
6	**CHECK POWER SUPPLY TO MAIN FAN MOTOR.** **CAUTION:** **Be careful not to overheat the engine during repair.** 1)Turn the ignition switch to OFF. 2)Disconnect the connector from main fan motor. 3)Start the engine, and warm it up until engine coolant temperature increases over 95°C (203°F). 4)Stop the engine and turn ignition switch to ON. 5)Measure the voltage between main fan motor connector and chassis ground. ***Connector & terminal*** ***(F17) No. 1, 2 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **7.**	Repair the open circuit in harness for power supply circuit.
7	**CHECK GROUND CIRCUIT OF MAIN FAN MOTOR.** 1)Turn the ignition switch to OFF. 2)Measure the resistance between main fan motor connector and chassis ground. ***Connector & terminal*** ***(F17) No. 3, 4 — Chassis ground:***	Is the resistance less than 1 Ω?	Go to step **8.**	Repair the open circuit in harness between main fan motor connector and chassis ground.
8	**CHECK POOR CONTACT.** Check poor contact in main fan motor connector.	Is there poor contact in main fan motor connector?	Repair the poor contact in main fan motor connector.	Go to step **9.**
9	**CHECK MAIN FAN MOTOR.** Connect the battery positive (+) terminal to terminal No. 1 and 2, and negative (–) terminal to terminal No. 3 and 4.	Does the main fan rotate?	Repair the poor contact in main fan motor connector.	Replace the main fan motor with a new one.

	Step	Check	Yes	No
10	**CHECK OPERATION OF SUB FAN MOTOR.** Check the operation of sub fan motor.	Does the radiator sub fan operate?	Go to step **15.**	Go to step **11.**
11	**CHECK POWER SUPPLY TO SUB FAN MOTOR.** **CAUTION:** **Be careful not to overheat the engine during repair.** 1)Turn the ignition switch to OFF. 2)Disconnect the connector from sub fan motor. 3)Start the engine, and warm it up until engine coolant temperature increases over 100°C (212°F). 4)Stop the engine and turn the ignition switch to ON. 5)Measure the voltage between sub fan motor connector and chassis ground. ***Connector & terminal*** ***(F16) No. 1, 2 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **12.**	Repair the open circuit in harness for power supply circuit.
12	**CHECK GROUND CIRCUIT OF SUB FAN MOTOR.** 1)Turn the ignition switch to OFF. 2)Measure the resistance between sub fan motor connector and chassis ground. ***Connector & terminal*** ***(F16) No. 3, 4 — Chassis ground:***	Is the resistance less than 1 Ω?	Go to step **13.**	Repair the open circuit in harness between sub fan motor connector and chassis ground.
13	**CHECK POOR CONTACT.** Check poor contact in sub fan motor connector.	Is there poor contact in sub fan motor connector?	Repair the poor contact in sub fan motor connector.	Go to step **14.**
14	**CHECK SUB FAN MOTOR.** Connect the battery positive (+) terminal to terminal No. 1 and 2, and negative (–) terminal to terminal No. 3 and 4.	Does the sub fan rotate?	Repair the poor contact in sub fan motor connector.	Replace the sub fan motor with a new one.
15	**CHECK EACH SENSOR AND POTENTIOMETER.** Check the sensors and potentiometer for proper operation using the self-diagnostic function. <Ref. to AC-9, Diagnostics Chart for Self-diagnosis.>	Is the operation of each sensor and potentiometer normal?	Go to step **16.**	Check the sensor and circuit. <Ref. to AC-25, Diagnostic Procedure for Sensors.>
16	**CHECK CONNECTION OF ASPIRATOR DUCT.** Make sure the connection of aspirator duct is correct.	Is the connection of aspirator duct correct?	Repair the aspirator duct connection.	Go to step **17.**
17	**CHECK EACH ACTUATOR.** Check the actuators for proper operation using the self-diagnostic function. <Ref. to AC-9, Diagnostics Chart for Self-diagnosis.>	Is the operation of each actuator normal?	Go to step **18.**	Check the actuator and circuit. <Ref. to AC-19, Diagnostic Procedure for Actuators.>
18	**CHECK POOR CONTACT.** Check poor contact in A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the A/C control module.