

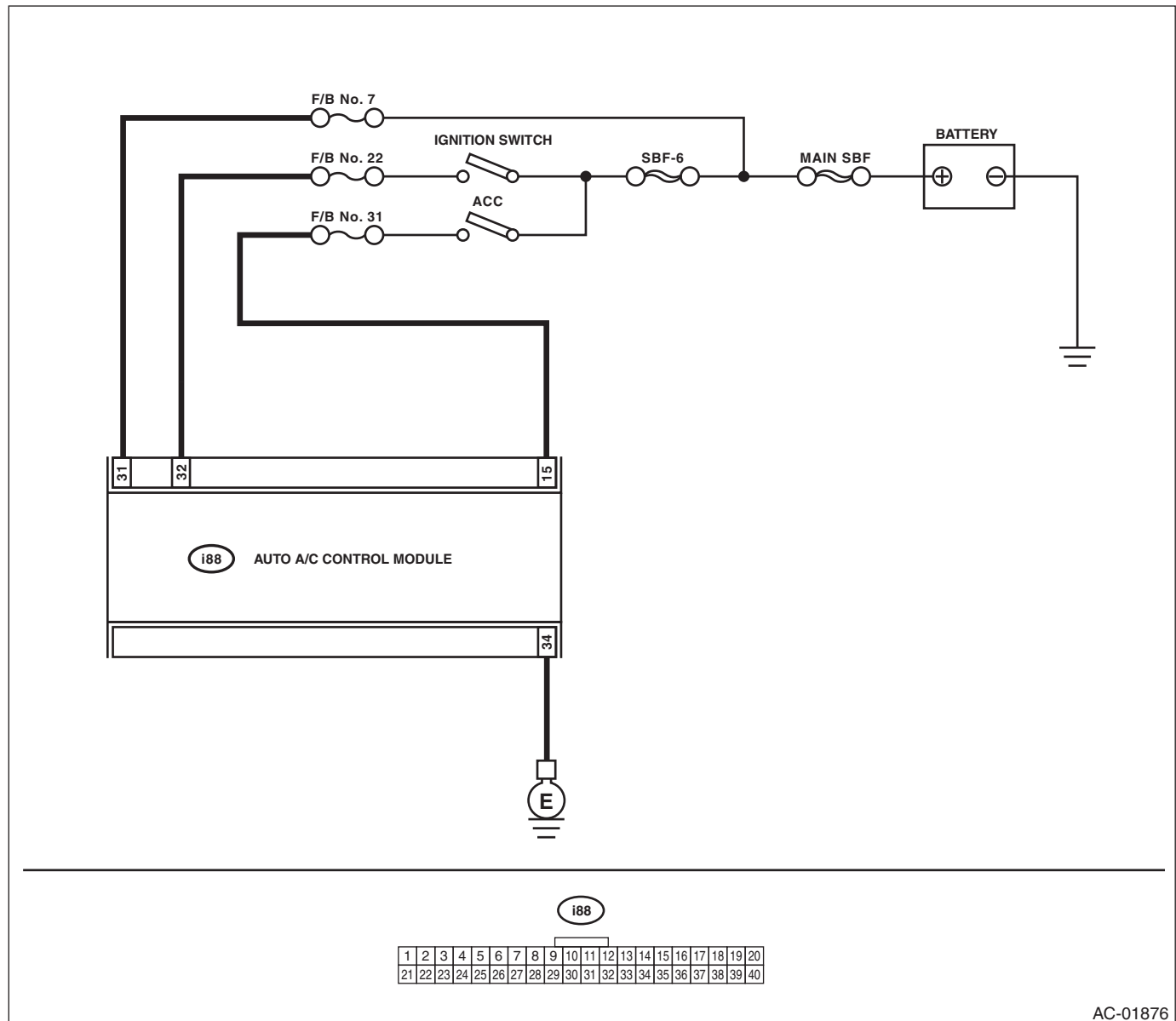
### 6. Diagnostics for A/C System Malfunction

#### 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:



AC-01876

# Diagnostics for A/C System Malfunction

## HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

| Step |                                                                                                                                                                                                                                                                                                                                                                            | Check                                    | Yes                   | No                                                                                 |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-----------------------|------------------------------------------------------------------------------------|
| 1    | <b>CHECK FUSE.</b><br>1) Turn the ignition switch to OFF.<br>2) Remove the fuse No. 7 from fuse & relay box.<br>3) Check the condition of fuse.                                                                                                                                                                                                                            | Is the fuse blown out?                   | Replace the fuse.     | Go to step 2.                                                                      |
| 2    | <b>CHECK FUSE.</b><br>1) Turn the ignition switch to OFF.<br>2) Remove the fuse No. 22 and No. 31 from fuse & relay box.<br>3) Check the condition of fuse.                                                                                                                                                                                                                | Is the fuse blown out?                   | Replace the fuse.     | Go to step 3.                                                                      |
| 3    | <b>CHECK A/C CONTROL UNIT POWER CIRCUIT.</b><br>1) Remove the A/C control panel.<br>2) Disconnect the A/C control panel harness connector.<br>3) Measure the voltage between A/C control panel harness connector terminal and chassis ground after turning the ignition switch to ACC.<br><b>Connector &amp; terminal</b><br><b>(i88) No. 15 (+) — Chassis ground (-):</b> | Is the voltage 10 V or more?             | Go to step 4.         | Check for open or short circuit in the harness between A/C control panel and fuse. |
| 4    | <b>CHECK A/C CONTROL UNIT POWER CIRCUIT.</b><br>Measure the voltage between A/C control panel harness connector terminal and chassis ground after turning the ignition switch to ON.<br><b>Connector &amp; terminal</b><br><b>(i88) No. 32 (+) — Chassis ground (-):</b>                                                                                                   | Is the voltage 10 V or more?             | Go to step 5.         | Check for open or short circuit in the harness between A/C control panel and fuse. |
| 5    | <b>CHECK A/C CONTROL PANEL GROUND POWER CIRCUIT.</b><br>Measure the resistance of harness between A/C control panel and chassis ground after turning the ignition switch to OFF.<br><b>Connector &amp; terminal</b><br><b>(i88) No. 34 — Chassis ground:</b>                                                                                                               | Is the resistance less than 1 $\Omega$ ? | Go to step 6.         | Repair the harness for ground line.                                                |
| 6    | <b>CHECK POOR CONTACT.</b><br>Check poor contact of 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

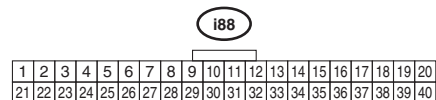
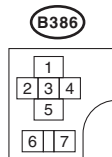
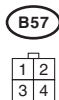
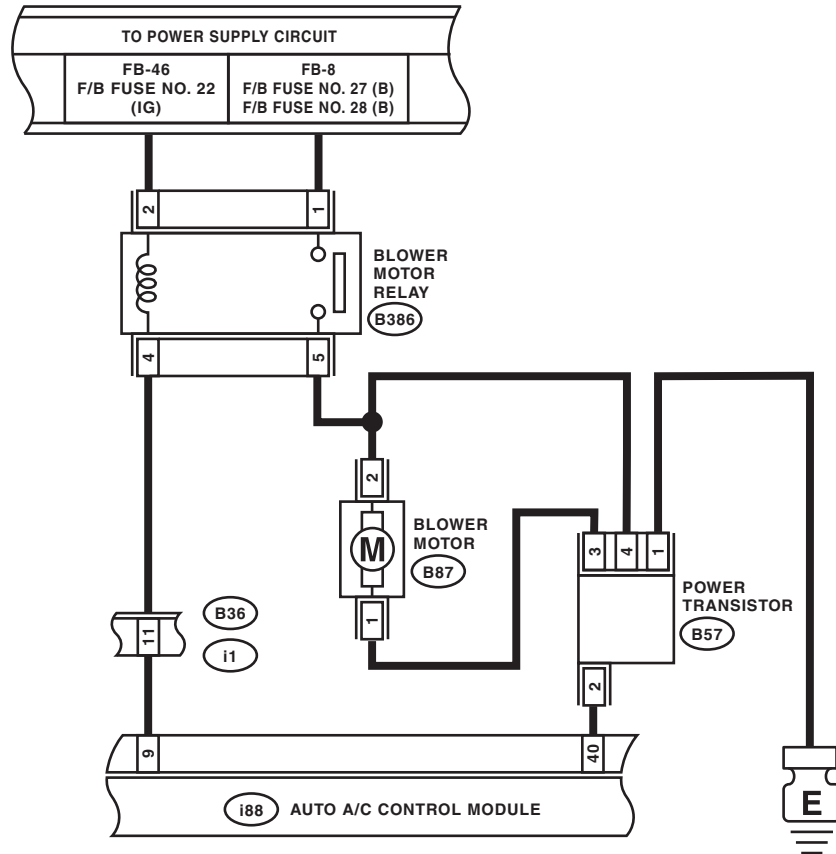
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

## B: BLOWER MOTOR DOES NOT ROTATE

### TROUBLE SYMPTOM:

- Blower motor does not rotate.
- Blower motor does not change speeds.

### WIRING DIAGRAM:



AC-01715

# Diagnostics for A/C System Malfunction

## HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

| Step                                                                                                                                                                                                                                                                                                                                                                                                                      | Check                                    | Yes               | No                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-------------------|------------------------------------------------------------------------------------|
| <b>1 CHECK FUSE.</b><br>1) Remove fuse No. 22, 27 and 28 from the fuse & relay box.<br>2) Check the condition of fuse.                                                                                                                                                                                                                                                                                                    | Is any fuse blown out?                   | Replace the fuse. | Go to step 2.                                                                      |
| <b>2 CHECK BLOWER MOTOR RELAY POWER SUPPLY.</b><br>1) Turn the ignition switch to OFF.<br>2) Remove the blower motor relay.<br>3) Turn the ignition switch to ON.<br>4) Use a tester to measure the voltage between the blower motor relay connector and chassis ground.<br><b>Connector &amp; terminal</b><br><b>(B386) No. 2 — Chassis ground:</b>                                                                      | Is the voltage 10 V or more?             | Go to step 3.     | Repair the open circuit of blower motor power supply line harness.                 |
| <b>3 CHECK BLOWER MOTOR RELAY POWER SUPPLY.</b><br>1) Turn the ignition switch to ON.<br>2) Turn the blower switch to ON.<br>3) Use a tester to measure the voltage between the blower motor relay connectors.<br><b>Connector &amp; terminal</b><br><b>(B386) No. 2 — No. 4:</b>                                                                                                                                         | Is the voltage 10 V or more?             | Go to step 5.     | Go to step 4.                                                                      |
| <b>4 CHECK HARNESS.</b><br>1) Turn the ignition switch to OFF.<br>2) Disconnect the auto A/C control module connector (i88).<br>3) Use a tester to measure the resistance between harness terminals.<br><b>Connector &amp; terminal</b><br><b>(B386) No. 4 — (i88) No. 9:</b>                                                                                                                                             | Is the resistance less than 1 $\Omega$ ? | Go to step 5.     | Repair or replace the open circuit of the harness.                                 |
| <b>5 CHECK BLOWER MOTOR RELAY.</b><br>1) Turn the ignition switch to OFF.<br>2) Remove the blower motor relay.<br>3) Connect the battery terminal to the blower motor relay.<br><b>No. 2 (+) — No. 4 (-)</b><br>4) Measure the resistance between terminals.<br><b>Terminals</b><br><b>No. 1 — No. 5:</b>                                                                                                                 | Is the resistance less than 1 $\Omega$ ? | Go to step 6.     | Replace the blower motor relay.                                                    |
| <b>6 CHECK BLOWER MOTOR POWER SUPPLY.</b><br>1) Turn the ignition switch to OFF.<br>2) Install the blower motor relay.<br>3) Disconnect the blower motor connector.<br>4) Turn the ignition switch to ON.<br>5) Turn the blower switch to ON.<br>6) Use a tester to measure the voltage between the blower motor connector and chassis ground.<br><b>Connector &amp; terminal</b><br><b>(B87) No. 2 — Chassis ground:</b> | Is the voltage 10 V or more?             | Go to step 7.     | Repair or replace the harness between the blower motor relay and the blower motor. |
| <b>7 CHECK BLOWER MOTOR.</b><br>1) Disconnect the connector from the blower motor.<br>2) Connect the battery positive terminal to terminal No. 2 of blower motor connector, and negative terminal to terminal No. 1.<br>3) Make sure the blower motor runs.                                                                                                                                                               | Does the blower motor run?               | Go to step 8.     | Replace the blower motor.                                                          |

# Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

| Step                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Check                                            | Yes                                                                                        | No                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------|
| <b>8</b><br><b>CHECK HARNESS.</b><br>1) Turn the ignition switch to OFF.<br>2) Disconnect the power transistor connector.<br>3) Disconnect the auto A/C control module connector.<br>4) Use a tester to measure the resistance between harness terminals.<br><b>Connector &amp; terminal</b><br><b>(B57) No. 1 — Chassis ground:</b><br><b>(B57) No. 2 — (i88) No. 40:</b><br><b>(B57) No. 3 — (B87) No. 1:</b><br><b>(B57) No. 4 — (B87) No. 2:</b><br><b>(B57) No. 4 — (B386) No. 5:</b> | Is the resistance less than 1 $\Omega$ ?         | Go to step 9.                                                                              | Repair or replace the harness.       |
| <b>9</b><br><b>CHECK FAN CONTROL SIGNAL.</b><br>1) Turn the ignition switch to OFF.<br>2) Connect the blower motor and auto A/C control module.<br>3) Turn the ignition switch to ON.<br>4) Set the fan dial to 1st — 7th.<br>5) Use a tester to measure the voltage between the power transistor connector and chassis ground.<br><b>Connector &amp; terminal</b><br><b>(B57) No. 2 (+) — Chassis ground (-):</b>                                                                         | Is approx. 10 V detected in 1st, and 1 V at 7th? | Replace the power transistor. <Ref. to AC-25, REMOVAL, Power Transistor (Auto A/C Model).> | Go to step 10.                       |
| <b>10</b><br><b>CHECK POOR CONTACT.</b><br>Check poor contact of 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

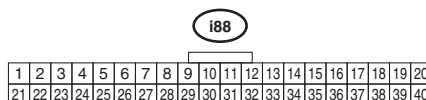
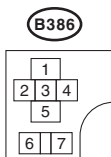
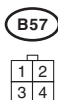
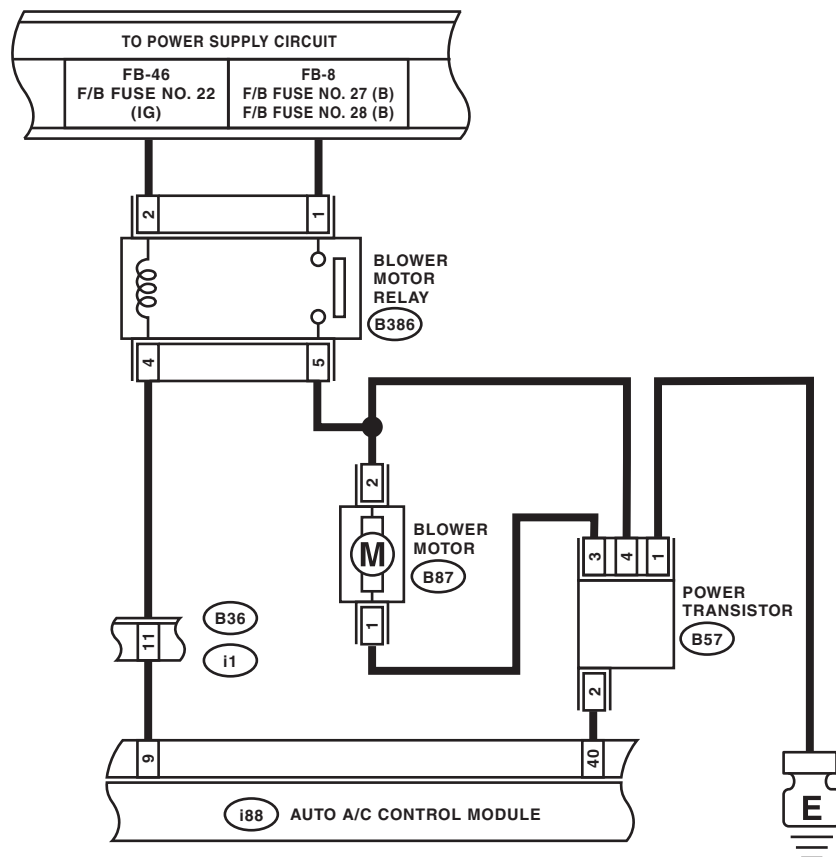
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

## C: BLOWER MOTOR TURNS AROUND EARLY

### TROUBLE SYMPTOM:

- The blower turns even though the blower switch is not turned ON.
- The blower motor continues to turn at high speed. (Cannot be adjusted)

### WIRING DIAGRAM:



AC-01715

# Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

| Step                                                                                                                                                                                                                                                                                                                      | Check                                                                                            | Yes                                                                                        | No                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <b>1</b><br><b>CHECK BLOWER MOTOR CIRCUIT.</b><br>1) Turn the ignition switch to OFF.<br>2) Disconnect the power transistor connector.<br>3) Use a tester to measure the resistance between the power transistor connector and chassis ground.<br><b>Connector &amp; terminal</b><br><b>(B57) No. 3 — Chassis ground:</b> | Is there continuity?                                                                             | Repair or replace the short circuit of the harness.                                        | Go to step 2.                                                                                 |
| <b>2</b><br><b>CHECK HARNESS.</b><br>1) Remove the auto A/C control module.<br>2) Use a tester to measure the resistance between the power transistor connector and chassis ground.<br><b>Connector &amp; terminal</b><br><b>(B57) No. 2 — Chassis ground:</b>                                                            | Is there continuity?                                                                             | Repair or replace the short circuit of the harness.                                        | Go to step 3.                                                                                 |
| <b>3</b><br><b>CHECK POWER TRANSISTOR.</b><br>1) Connect the disconnected connectors.<br>2) Turn the ignition switch to ON.<br>3) Use a tester to measure the voltage between the power transistor connector and chassis ground.<br><b>Connector &amp; terminal</b><br><b>(B57) No. 2 (+) — Chassis ground (-):</b>       | Is approx. 10 V detected when the fan dial is set to 1st, and approx. 1 V when it is set to 7th? | Replace the power transistor. <Ref. to AC-25, REMOVAL, Power Transistor (Auto A/C Model).> | Go to step 4.                                                                                 |
| <b>4</b><br><b>CHECK AUTO A/C CONTROL MODULE.</b><br>1) Turn the fan dial to OFF.<br>2) Disconnect the power transistor connector.<br>3) Use a tester to measure the resistance between the power transistor connector and chassis ground.<br><b>Connector &amp; terminal</b><br><b>(B57) No. 2 — Chassis ground:</b>     | Is the resistance changed between when the fan dial is OFF and otherwise?                        | Replace the power transistor. <Ref. to AC-25, REMOVAL, Power Transistor (Auto A/C Model).> | Replace the auto A/C control module. <Ref. to AC-29, REMOVAL, Control Unit (Auto A/C Model).> |

# Diagnostics for A/C System Malfunction

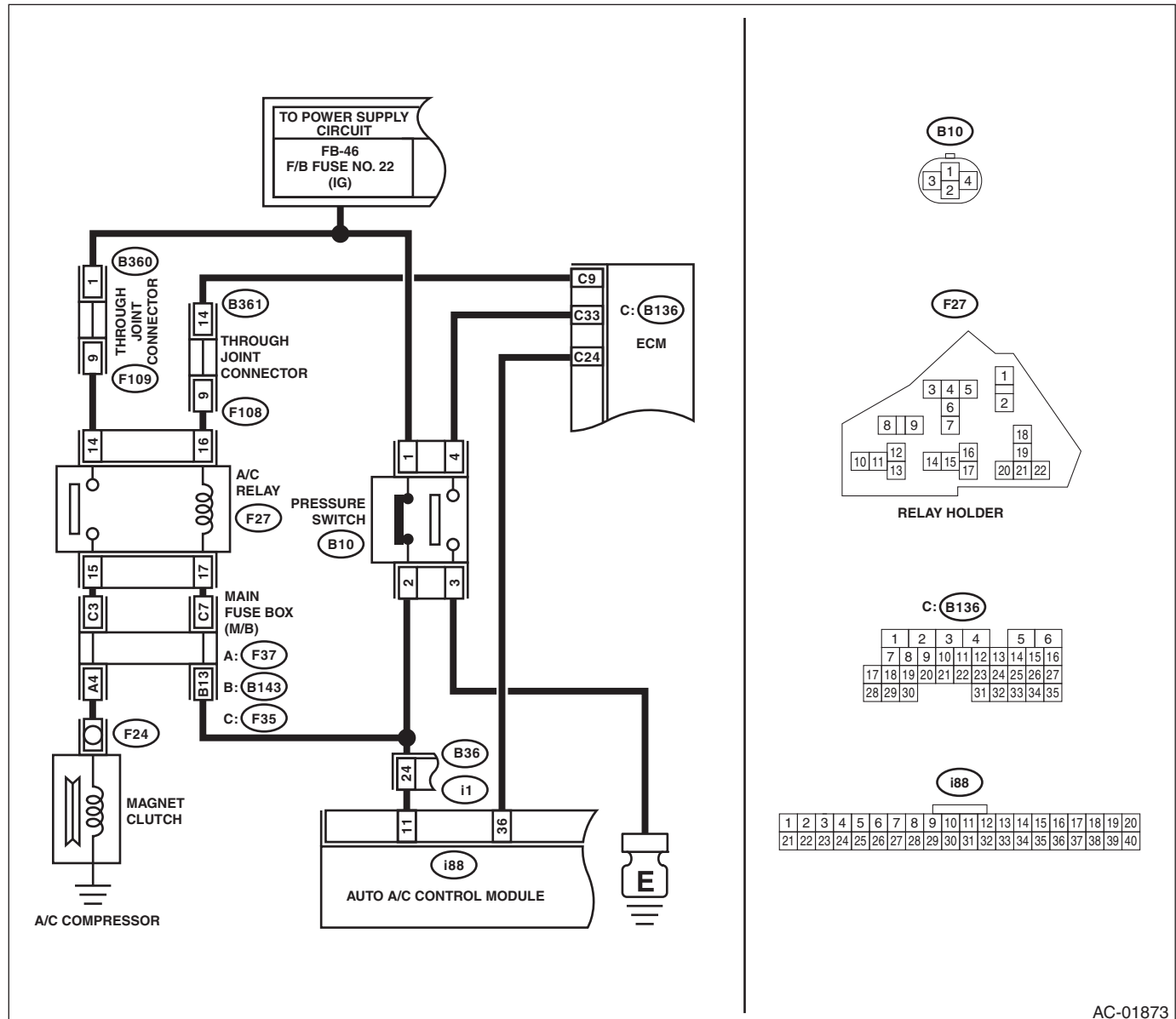
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

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

### TROUBLE SYMPTOM:

- Compartment temperature does not change. (Cold air does not come out)
- The A/C system does not respond. (Response is extremely slow)

### WIRING DIAGRAM:



# Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

| Step                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Check                                    | Yes                                                                                               | No                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| <b>1 CHECK FUSE.</b><br>1) Turn the ignition switch to OFF.<br>2) Remove the fuse No. 22 from fuse & relay box.<br>3) Check the condition of fuse.                                                                                                                                                                                                                                                                                                                                                                   | Is the fuse blown out?                   | Replace the fuse.                                                                                 | Go to step 2.                                                                    |
| <b>2 CHECK SIGNAL TO A/C RELAY AND AUTO A/C CONTROL MODULE.</b><br>1) Disconnect the A/C relay and auto A/C control module harness connector.<br>2) Turn the ignition switch to ON.<br>3) Measure the voltage between A/C relay connector terminal and chassis ground.<br>4) Measure the voltage between auto A/C control module harness connector terminal and chassis ground.<br><b>Connector &amp; terminal</b><br><b>(F27) No. 17 (+) — Chassis ground (-):</b><br><b>(i88) No. 11 (+) — Chassis ground (-):</b> | Is the voltage 10 V or more?             | Go to step 5.                                                                                     | Go to step 3.                                                                    |
| <b>3 CHECK POWER SUPPLY FOR PRESSURE SWITCH.</b><br>1) Turn the ignition switch to OFF.<br>2) Disconnect the pressure switch harness connector.<br>3) Turn the ignition switch to ON.<br>4) Measure the voltage between pressure switch harness connector terminal and chassis ground.<br><b>Connector &amp; terminal</b><br><b>(B10) No. 2 (+) — Chassis ground (-):</b>                                                                                                                                            | Is the voltage 10 V or more?             | Go to step 4.                                                                                     | Check for open or short circuit in the harness between fuse and pressure switch. |
| <b>4 CHECK HARNESS BETWEEN PRESSURE SWITCH AND A/C RELAY, AUTO A/C CONTROL MODULE.</b><br>1) Turn the ignition switch to OFF.<br>2) Measure the resistance of harness between pressure switch connector and A/C relay connector.<br>3) Measure the resistance of harness between pressure switch connector and auto A/C control module connector.<br><b>Connector &amp; terminal</b><br><b>(B10) No. 2 — (F27) No. 17:</b><br><b>(B10) No. 2 — (i88) No. 11:</b>                                                     | Is the resistance less than 1 $\Omega$ ? | Check the pressure switch. <Ref. to AC-37, INSPECTION, Pressure Switch (Triple Pressure Switch).> | Repair the harness.                                                              |
| <b>5 CHECK POWER SUPPLY FOR A/C RELAY.</b><br>Measure the voltage between A/C relay connector terminal and chassis ground.<br><b>Connector &amp; terminal</b><br><b>(F27) No. 14 (+) — Chassis ground (-):</b>                                                                                                                                                                                                                                                                                                       | Is the voltage 10 V or more?             | Go to step 6.                                                                                     | Check open or short circuit of harness between fuse and A/C relay.               |
| <b>6 CHECK A/C RELAY.</b><br>Check the A/C relay. <Ref. to AC-36, INSPECTION, Relay and Fuse.>                                                                                                                                                                                                                                                                                                                                                                                                                       | Is there a malfunction in the 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                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>7 CHECK A/C ON SIGNAL.</b><br>1) Turn the ignition switch to OFF.<br>2) Connect the A/C relay and all disconnected connectors.<br>3) Start the engine and turn the A/C switch to ON.<br>4) Turn the temperature control dial at maximum cool position.<br>5) Measure the voltage between auto A/C control module harness connector terminal and chassis ground.<br><b>Connector &amp; terminal</b><br><b>(i88) No. 36 (+) — Chassis ground (-):</b>                   | Is the voltage 5.5 V or more?            | Go to step 9.                                                    | Go to step 8.                                                                       |
| <b>8 CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND ECM.</b><br>1) Turn the ignition switch to OFF.<br>2) Disconnect the harness connector of auto A/C control module and ECM.<br>3) Measure the resistance of harness between auto A/C control module connector and ECM connector.<br><b>Connector &amp; terminal</b><br><b>(i88) No. 36 — (B136) No. 24:</b>                                                                                                        | Is the resistance less than 1 $\Omega$ ? | Replace the auto A/C control module.                             | Repair the harness.                                                                 |
| <b>9 CHECK MAGNET CLUTCH ON SIGNAL.</b><br>1) Stop the engine and turn the A/C switch to OFF.<br>2) Turn the ignition switch to ON.<br>3) Measure the voltage between ECM connector terminal and chassis ground.<br><b>Connector &amp; terminal</b><br><b>(B136) No. 9 (+) — Chassis ground (-):</b>                                                                                                                                                                     | Is the voltage 10 V or more?             | Go to step 10.                                                   | Check for open or short circuit in the harness between A/C relay and ECM.           |
| <b>10 CHECK MAGNET CLUTCH ON SIGNAL.</b><br>1) Start the engine and turn the A/C switch to ON.<br>2) Turn the temperature control dial at maximum cool position.<br>3) Measure the voltage between ECM connector terminal and chassis ground.<br><b>Connector &amp; terminal</b><br><b>(B136) No. 9 (+) — Chassis ground (-):</b>                                                                                                                                        | Is the voltage 0 V?                      | Go to step 11.                                                   | Replace the ECM.                                                                    |
| <b>11 CHECK POWER SUPPLY FOR MAGNET CLUTCH.</b><br>1) Stop the engine and turn the A/C switch to OFF.<br>2) Disconnect the harness connector of magnet clutch.<br>3) Start the engine and turn the A/C switch to ON.<br>4) Turn the temperature control dial at maximum cool position.<br>5) Measure the voltage between magnet clutch harness connector terminal and chassis ground.<br><b>Connector &amp; terminal</b><br><b>(F24) No. 1 (+) — Chassis ground (-):</b> | Is the voltage 10 V or more?             | Inspect the compressor. <Ref. to AC-30, INSPECTION, Compressor.> | Check for open or short circuit in the harness between A/C relay and magnet clutch. |