

# Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

## 6. Diagnostics for A/C System Malfunction

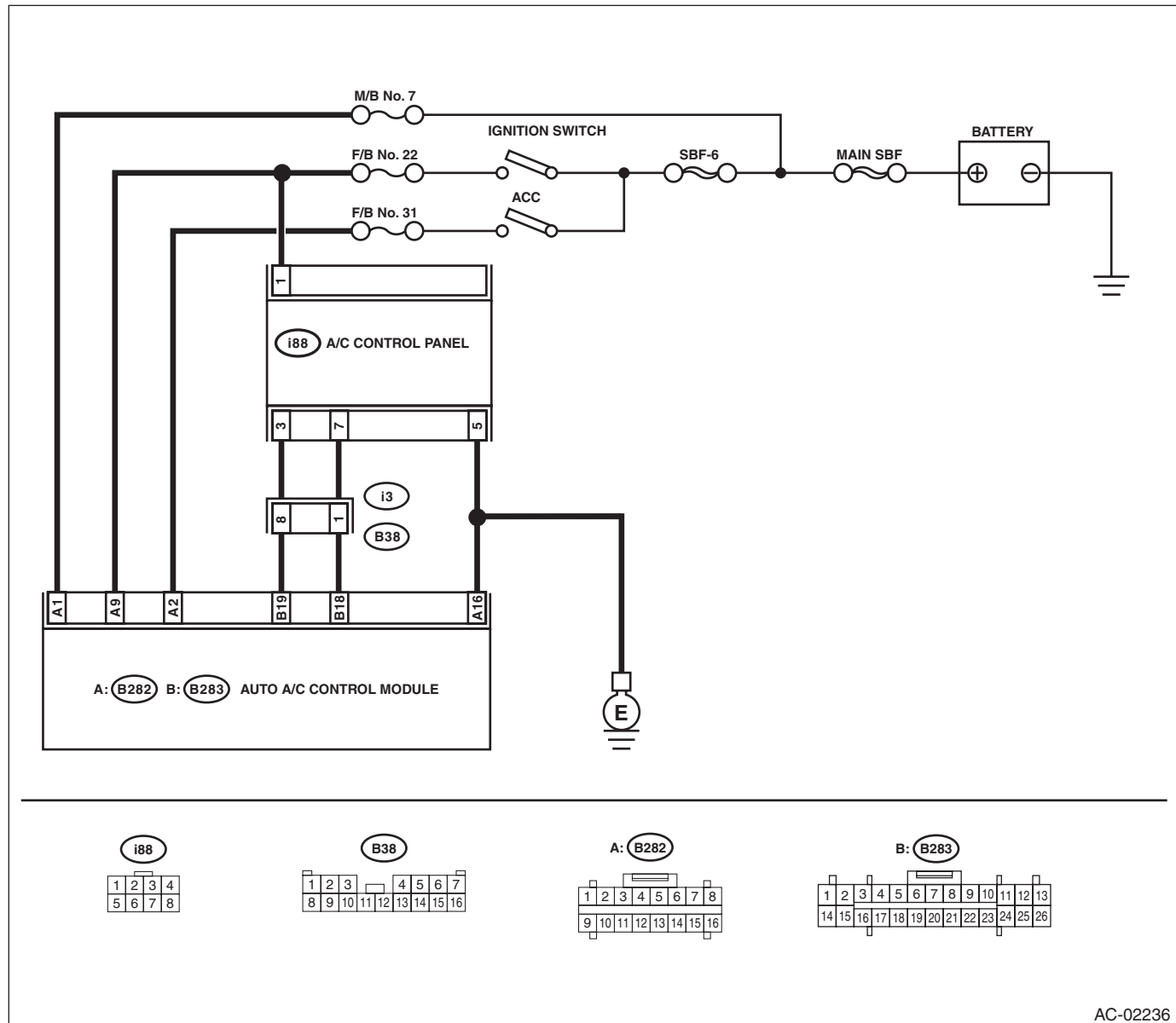
### A: A/C OR SELF-DIAGNOSIS SYSTEMS DO NOT OPERATE

#### 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:

Air conditioning system <Ref. to WI-63, WIRING DIAGRAM, Air Conditioning System.>



| Step                                                                                                                                                             | Check                  | Yes               | No            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------|---------------|
| 1<br><b>CHECK FUSE.</b><br>1) Turn the ignition switch to OFF.<br>2) Remove the fuse No. 7 from main fuse box.<br>3) Check the condition of fuse.                | Is the fuse blown out? | Replace the fuse. | Go to step 2. |
| 2<br><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. |

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| Step                                                                                                                                                                                                                                                                                         | Check                                     | Yes                   | No                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------|
| <b>3 CHECK A/C CONTROL PANEL 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. 1 (+) — 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.            |
| <b>4 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. 5 — Chassis ground:</b>                                | Is the resistance less than 10 $\Omega$ ? | Go to step 5.         | Repair the harness for ground line.                                                           |
| <b>5 CHECK AUTO A/C CONTROL MODULE POWER CIRCUIT.</b><br>Measure the voltage between auto A/C control module connector terminal and chassis ground after turning the ignition switch to OFF.<br><b>Connector &amp; terminal</b><br><b>(B282) No. 1 (+) — Chassis ground (-):</b>             | Is the voltage 10 V or more?              | Go to step 6.         | Check open or short circuit of harness between auto A/C control module and fuse.              |
| <b>6 CHECK AUTO A/C CONTROL MODULE POWER CIRCUIT.</b><br>Measure the voltage between auto A/C control module connector terminal and chassis ground after turning the ignition switch to ACC.<br><b>Connector &amp; terminal</b><br><b>(B282) No. 2 (+) — Chassis ground (-):</b>             | Is the voltage 10 V or more?              | Go to step 7.         | Check open or short circuit of harness between auto A/C control module and fuse.              |
| <b>7 CHECK AUTO A/C CONTROL MODULE POWER CIRCUIT.</b><br>Measure the voltage between auto A/C control module connector terminal and chassis ground after turning the ignition switch to the ON position.<br><b>Connector &amp; terminal</b><br><b>(B282) No. 9 (+) — Chassis ground (-):</b> | Is the voltage 10 V or more?              | Go to step 8.         | Check open or short circuit of harness between auto A/C control module and fuse.              |
| <b>8 CHECK AUTO A/C CONTROL MODULE GROUND CIRCUIT.</b><br>Measure the resistance of harness between auto A/C control module and chassis ground.<br><b>Connector &amp; terminal</b><br><b>(B282) No. 16 — Chassis ground:</b>                                                                 | Is the resistance less than 5 $\Omega$ ?  | Go to step 9.         | Repair the harness for ground line.                                                           |
| <b>9 CHECK COMMUNICATION CIRCUIT.</b><br>Measure the resistance of harness between A/C control panel and auto A/C control module.<br><b>Connector &amp; terminal</b><br><b>(i88) No. 3 — (B283) No. 19:</b><br><b>(i88) No. 7 — (B283) No. 18:</b>                                           | Is the resistance less than 1 $\Omega$ ?  | Go to step 10.        | Repair the harness.                                                                           |
| <b>10 CHECK FOR POOR CONTACT.</b><br>Check poor contact of auto A/C control module connector.                                                                                                                                                                                                | Is there poor contact of connector?       | Repair the connector. | Replace the auto A/C control module. <Ref. to AC-33, REMOVAL, Control Unit (Auto A/C Model).> |

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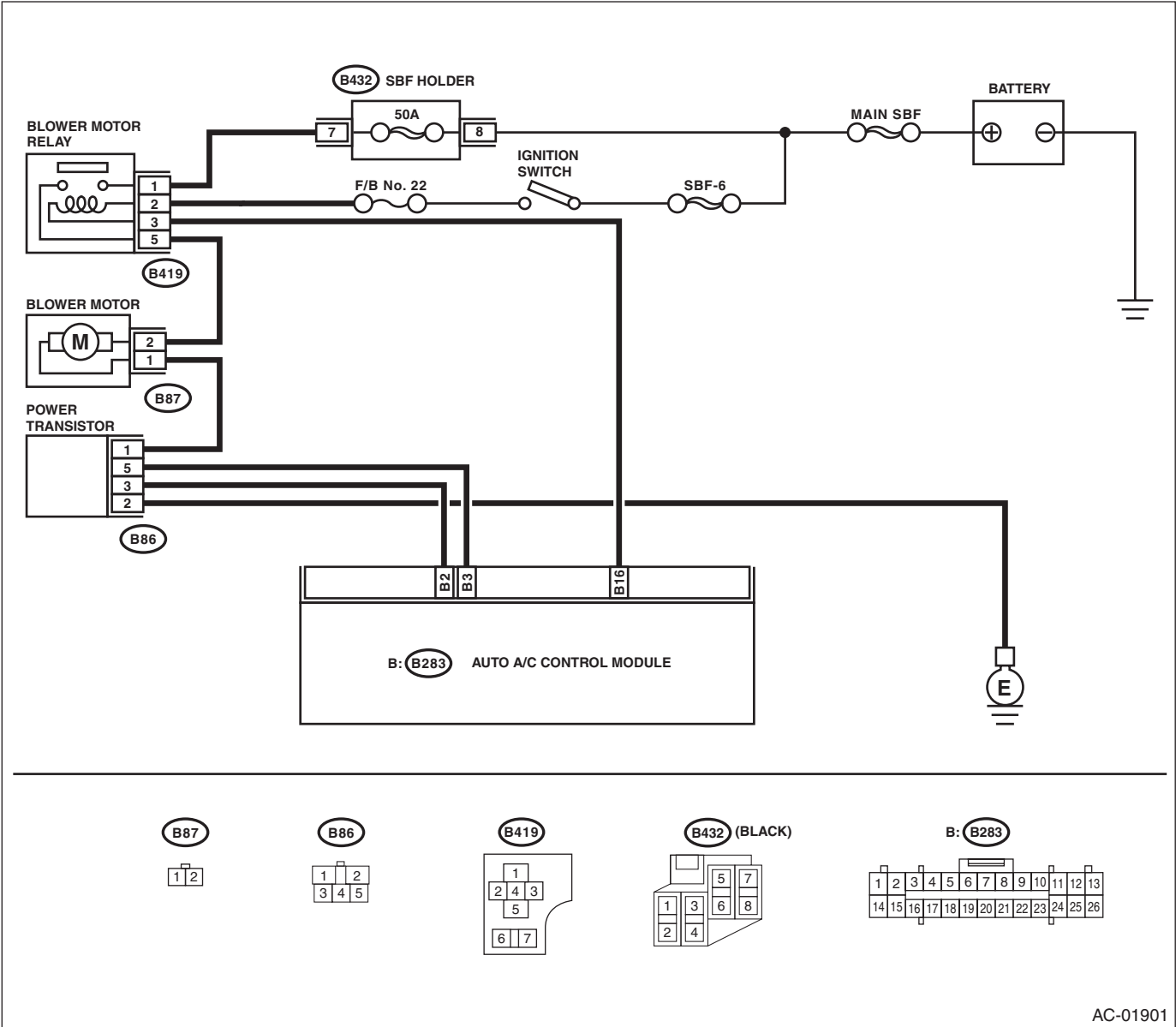
B: BLOWER MOTOR DOES NOT ROTATE

TROUBLE SYMPTOM:

- Blower motor does not rotate.
- Blower motor does not rotate in “HI”.

WIRING DIAGRAM:

Air conditioning system <Ref. to WI-63, WIRING DIAGRAM, Air Conditioning System.>



| Step                                                                                                           | Check                  | Yes               | No            |
|----------------------------------------------------------------------------------------------------------------|------------------------|-------------------|---------------|
| 1<br><b>CHECK FUSE.</b><br>1) Remove the fuse No. 22 from fuse & relay box.<br>2) Check the condition of fuse. | Is the fuse blown out? | Replace the fuse. | Go to step 2. |

## Diagnostics for A/C System Malfunction

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

| Step                                                                                                                                                                                                                                                                                                                                                                                      | Check                                    | Yes                   | No                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------|
| <b>2</b><br><b>CHECK POWER SUPPLY FOR BLOWER MOTOR.</b><br>1) Turn the ignition switch to ON.<br>2) Turn the blower switch to ON.<br>3) Measure the voltage between blower motor and chassis ground.<br><b>Connector &amp; terminal</b><br><b>(B87) No. 1 (+) — Chassis ground (–):</b><br><b>(B87) 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</b><br><b>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 positive (+) terminal to terminal No. 2 of blower motor relay, and negative (–) terminal to terminal No. 3.<br>4) Measure the resistance between terminals No. 1 and No. 5.<br><b>Terminals</b><br><b>(B419) No. 1 — (B419) No. 5:</b> | Is the resistance less than 1 $\Omega$ ? | Go to step 4.         | Replace the blower motor relay.                                                               |
| <b>4</b><br><b>CHECK BLOWER MOTOR.</b><br>1) Disconnect the connector from 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 5.         | Replace the blower motor. <Ref. to AC-28, REMOVAL, Blower Motor.>                             |
| <b>5</b><br><b>CHECK FOR POOR CONTACT.</b><br>Check poor contact of auto A/C control module connector.                                                                                                                                                                                                                                                                                    | Is there poor contact of connector?      | Repair the connector. | Replace the auto A/C control module. <Ref. to AC-33, REMOVAL, Control Unit (Auto A/C Model).> |

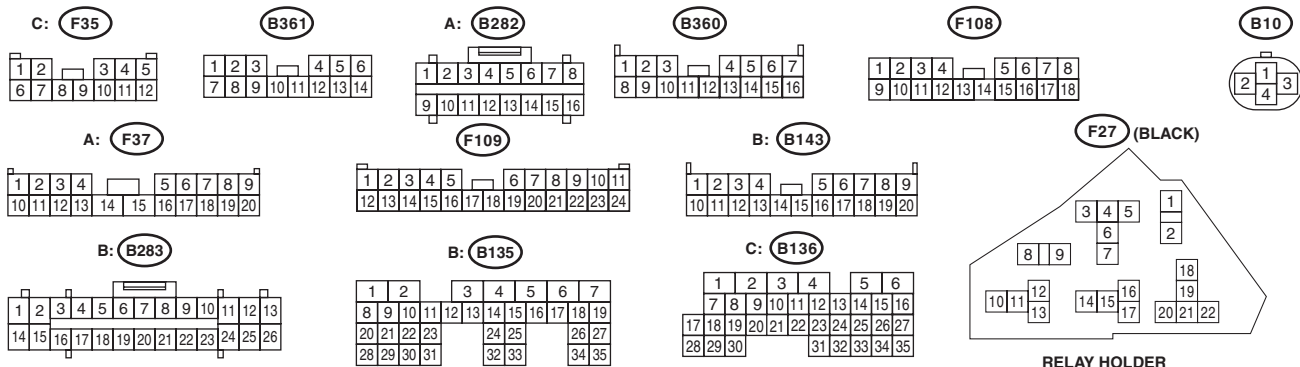
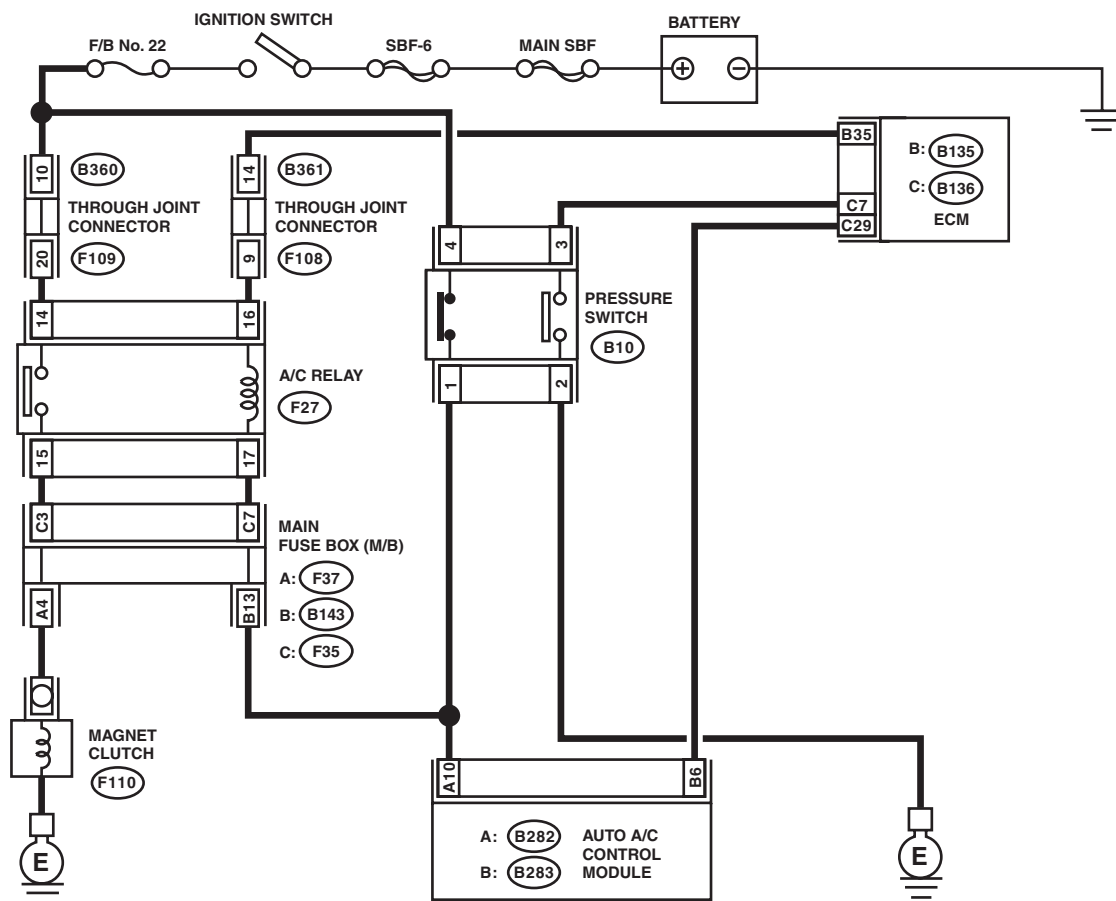
# Diagnostics for A/C System Malfunction

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

### WIRING DIAGRAM:

Air conditioning system <Ref. to WI-63, WIRING DIAGRAM, Air Conditioning System.>



RELAY HOLDER

AC-02237

# 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. 22 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 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>(B282) No. 10 (+) — Chassis ground (-):</b> | Is the voltage 10 V or more?             | Go to step 5.                                                                                     | Go to step 3.                                                                    |
| 3    | <b>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. 4 (+) — 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. |
| 4    | <b>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. 1 — (F27) No. 17:</b><br><b>(B10) No. 1 — (B282) No. 10:</b>                                                     | Is the resistance less than 1 $\Omega$ ? | Check the pressure switch. <Ref. to AC-46, INSPECTION, Pressure Switch (Triple Pressure Switch).> | Repair the harness.                                                              |
| 5    | <b>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.               |
| 6    | <b>CHECK A/C RELAY.</b><br>Check the A/C relay. <Ref. to AC-44, INSPECTION, Relay and Fuse.>                                                                                                                                                                                                                                                                                                                                                                                                                        | Is there a malfunction in the A/C relay? | Replace the A/C relay.                                                                            | Go to step 7.                                                                    |

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| 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 AUTO 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>(B283) No. 6 (+) — Chassis ground (-):</b>                      | Is the voltage 10 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>(B283) No. 6 — (B136) No. 29:</b>                                                                                                            | Is the resistance less than 1 $\Omega$ ? | Replace the auto A/C control module. <Ref. to AC-33, REMOVAL, Control Unit (Auto A/C Model).> | Repair the harness.                                                                 |
| <b>9 CHECK MAGNET CLUTCH ON SIGNAL.</b><br>1) Stop the engine, and turn the AUTO 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>(B135) No. 35 (+) — 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 AUTO 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>(B135) No. 35 (+) — Chassis ground (-):</b>                                                                                                                                          | Is the voltage 0 V?                      | Go to step 11.                                                                                | Replace the ECM. <Ref. to FU(H6DO)-55, REMOVAL, Engine Control Module (ECM).>       |
| <b>11 CHECK POWER SUPPLY FOR MAGNET CLUTCH.</b><br>1) Stop the engine, and turn the AUTO switch to OFF.<br>2) Disconnect the harness connector of magnet clutch.<br>3) Start the engine and turn the AUTO 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>(F110) No. 1 (+) — Chassis ground (-):</b> | Is the voltage 10 V or more?             | Go to step 12.                                                                                | Check for open or short circuit in the harness between A/C relay and magnet clutch. |

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

| Step                                                                                                                                                                                                                                                                                                | Check                           | Yes                                        | No                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|--------------------------------------------|---------------------------------------------------------------|
| <b>12</b><br><b>CHECK MAGNET CLUTCH.</b><br>1) Stop the engine, and turn the AUTO switch to OFF.<br>2) Disconnect the harness connector of magnet clutch.<br>3) Connect the battery positive (+) terminal to terminal No. 1 of the magnet clutch, and negative (–) terminal to the compressor body. | Does the magnet clutch operate? | The magnet clutch is functioning properly. | Replace the compressor. <Ref. to AC-34, REMOVAL, Compressor.> |