

# Diagnostic Procedure for Actuators

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

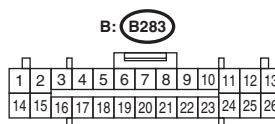
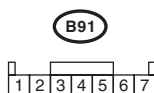
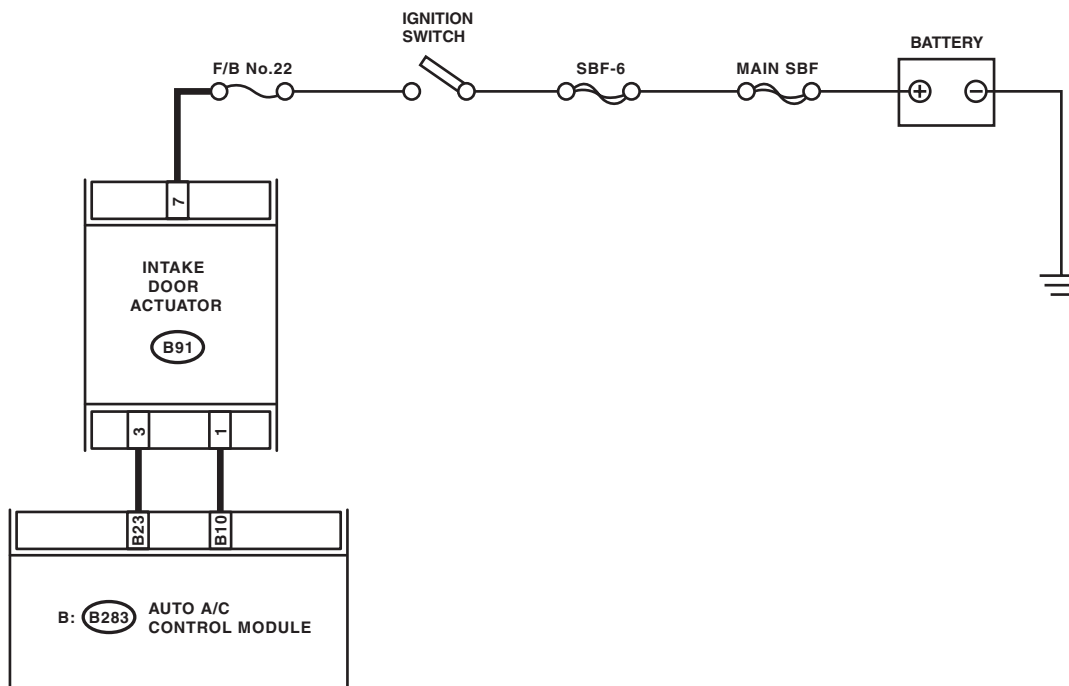
## 7. Diagnostic Procedure for Actuators

### A: INTAKE DOOR ACTUATOR

#### TROUBLE SYMPTOM:

FRESH/RECIRC mode is not changed.

#### WIRING DIAGRAM:



AC-01665

| Step                                                                                                                                                                                                                                                                                                                                                               | Check                                       | Yes           | No                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------------|---------------------------------------------------------------------------------------|
| 1<br><b>CHECK POWER SUPPLY FOR INTAKE DOOR ACTUATOR.</b><br>1) Turn the ignition switch to OFF.<br>2) Disconnect the intake door actuator connector.<br>3) Turn the ignition switch to ON.<br>4) Measure the voltage between intake door actuator connector and chassis ground.<br><b>Connector &amp; terminal</b><br><b>(B91) No. 7 (+) — Chassis ground (-):</b> | Is the voltage 8 V (at normal temperature)? | Go to step 2. | Check for open or short circuit in the harness between intake door actuator and fuse. |

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| Step                                                                                                                                                                                                                                                                                                                                                                                                                  | Check                                      | Yes                                                                                           | No                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| <b>2</b><br><b>CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND INTAKE DOOR ACTUATOR.</b><br>1) Turn the ignition switch to OFF.<br>2) Disconnect the auto A/C control module connector.<br>3) Measure the resistance between intake door actuator connector and auto A/C control module connector.<br><b>Connector &amp; terminal</b><br><b>(B283) No. 10 — (B91) No. 1:</b><br><b>(B283) No. 23 — (B91) No. 3:</b> | Is the resistance 1 $\Omega$ or less?      | Go to step 3.                                                                                 | Repair the harness between auto A/C control module and intake door actuator.                   |
| <b>3</b><br><b>CHECK OPERATION OF INTAKE DOOR ACTUATOR.</b><br>1) Connect the intake door actuator connector.<br>2) Ground the auto A/C control module connector with a suitable wire.<br>3) Turn the ignition switch to ON, and check the operation of intake door actuator.<br><b>Connector &amp; terminal</b><br><b>(B283) No. 10 — Chassis ground:</b>                                                            | Does the actuator move to the FRESH side?  | Go to step 4.                                                                                 | Replace the intake door actuator.<br><Ref. to AC-44, INTAKE DOOR ACTUATOR, REMOVAL, Actuator.> |
| <b>4</b><br><b>CHECK OPERATION OF INTAKE DOOR ACTUATOR.</b><br>1) Turn the ignition switch to OFF.<br>2) Ground the auto A/C control module connector with a suitable wire.<br>3) Turn the ignition switch to ON, and check the operation of intake door actuator.<br><b>Connector &amp; terminal</b><br><b>(B283) No. 23 — Chassis ground:</b>                                                                       | Does the actuator move to the RECIRC side? | Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).> | Replace the intake door actuator.<br><Ref. to AC-44, INTAKE DOOR ACTUATOR, REMOVAL, Actuator.> |

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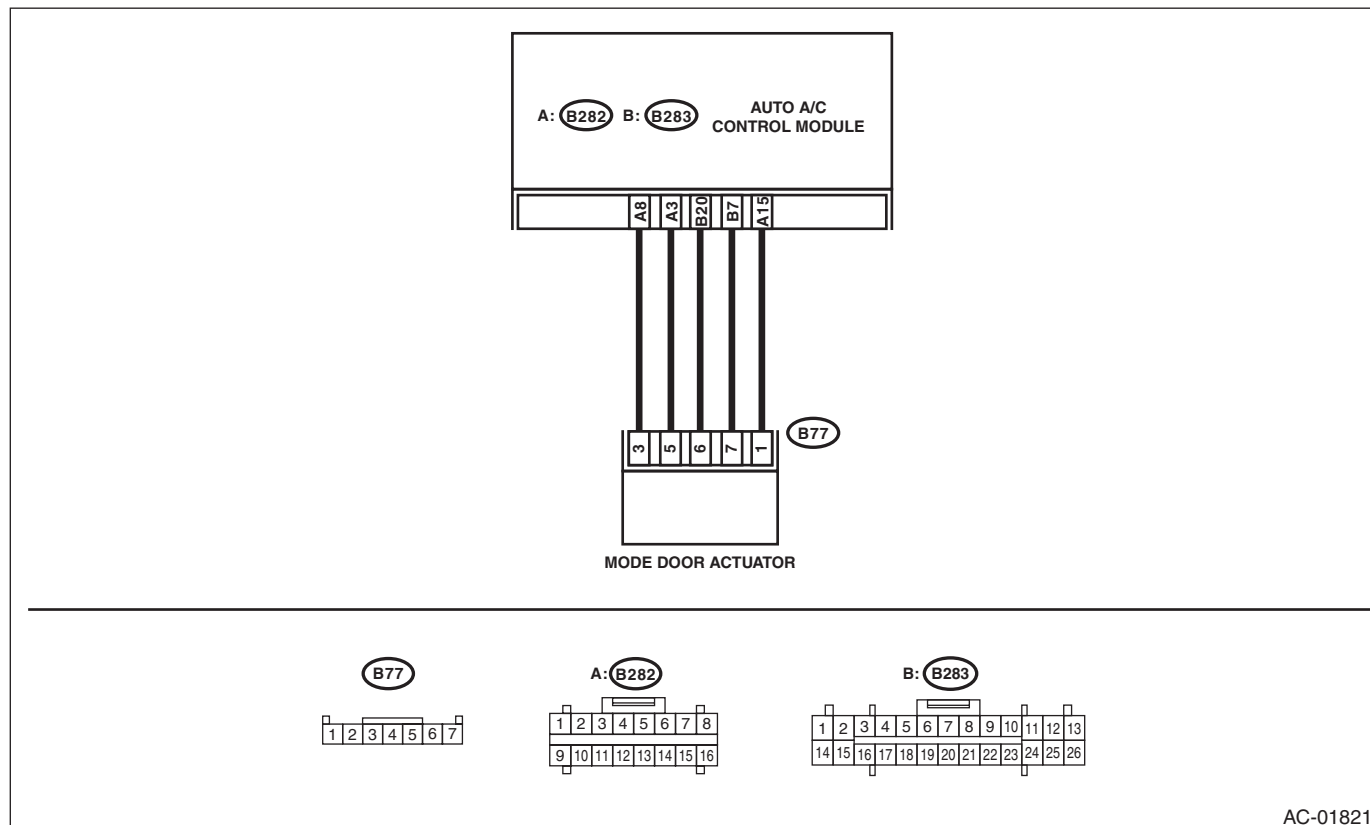
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

## B: MODE DOOR ACTUATOR

### TROUBLE SYMPTOM:

Air flow outlet is not changed.

### WIRING DIAGRAM:



AC-01821

| Step                                                                                                                                                                                                                                                                                                                                                                                            | Check                                       | Yes           | No                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------------|-----------------------------------------------------------------------------------------------|
| <b>1</b><br><b>CHECK POWER SUPPLY FOR MODE DOOR ACTUATOR POSITION SENSOR.</b><br>1) Turn the ignition switch to OFF.<br>2) Disconnect the mode door actuator connector.<br>3) Turn the ignition switch and AUTO switch to ON.<br>4) Measure the voltage between auto A/C control module connector terminals.<br><b>Connector &amp; terminal</b><br><b>(B282) No. 8 (+) — (B282) No. 15 (-):</b> | Is the voltage approx. 5 V?                 | Go to step 2. | Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).> |
| <b>2</b><br><b>CHECK POWER SUPPLY FOR MODE DOOR ACTUATOR.</b><br>Measure the voltage between auto A/C control module connector and chassis ground after turning the air flow control switch to FACE position.<br><b>Connector &amp; terminal</b><br><b>(B283) No. 7 (+) — Chassis ground (-):</b>                                                                                               | Is the voltage 8 V (at normal temperature)? | Go to step 3. | Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).> |

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HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

| Step                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Check                                                     | Yes                   | No                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------|
| <b>3</b><br><b>CHECK POWER SUPPLY FOR MODE DOOR ACTUATOR.</b><br>Measure the voltage between auto A/C control module connector and chassis ground after turning the air flow control switch to DEF position.<br><i>Connector &amp; terminal</i><br><i>(B283) No. 20 (+) — Chassis ground (-):</i>                                                                                                                                                                                                                                 | Is the voltage 8 V (at normal temperature)?               | Go to step 4.         | Replace the auto A/C control module.                                                          |
| <b>4</b><br><b>CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND MODE DOOR ACTUATOR.</b><br>1) Turn the A/C and ignition switch to OFF.<br>2) Disconnect the auto A/C control module connector.<br>3) Measure the resistance between auto A/C control module and mode door actuator connector.<br><i>Connector &amp; terminal</i><br><i>(B77) No. 1 — (B282) No. 15:</i><br><i>(B77) No. 3 — (B282) No. 8:</i><br><i>(B77) No. 5 — (B282) No. 3:</i><br><i>(B77) No. 6 — (B283) No. 20:</i><br><i>(B77) No. 7 — (B283) No. 7:</i> | Is the resistance less than 1 $\Omega$ ?                  | Go to step 5.         | Repair the harness between auto A/C control module and mode door actuator.                    |
| <b>5</b><br><b>CHECK MODE DOOR ACTUATOR POSITION SWITCH SIGNAL.</b><br>1) Connect the connector of auto A/C control module and mode door actuator.<br>2) Turn the ignition switch and AUTO switch to ON.<br>3) Check the voltage between auto A/C control module connector terminals while changing the mode between DEF and FACE.<br><i>Connector &amp; terminal</i><br><i>(B282) No. 3 (+) — (B282) No. 15 (-):</i>                                                                                                             | Does the voltage change between 1 V (DEF) and 4 V (FACE)? | Go to step 6.         | Replace the mode door actuator.<br><Ref. to AC-44, MODE DOOR ACTUATOR, REMOVAL, Actuator.>    |
| <b>6</b><br><b>CHECK FOR POOR CONTACT.</b><br>Check poor contact of auto A/C control module and connector.                                                                                                                                                                                                                                                                                                                                                                                                                        | Is there poor contact of connector?                       | Repair the connector. | Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).> |

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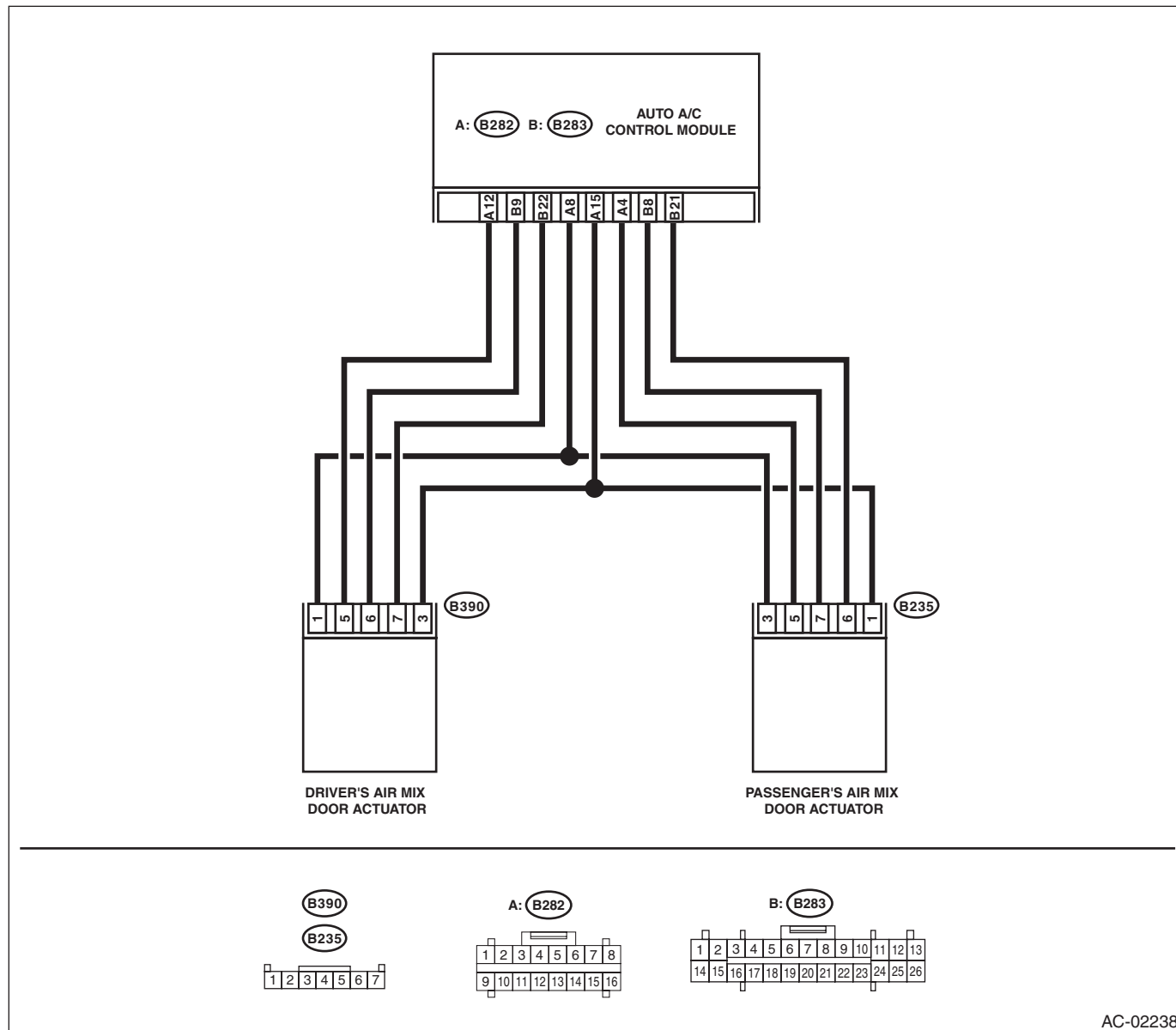
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

## C: AIR MIX DOOR ACTUATOR

### TROUBLE SYMPTOM:

Outlet air temperature does not change.

### WIRING DIAGRAM:



| Step                                                                                                                                                                                                                                                                                                                                                                                                  | Check                       | Yes           | No                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------|-----------------------------------------------------------------------------------------------|
| <b>1</b><br><b>CHECK POWER SUPPLY FOR AIR MIX DOOR ACTUATOR POSITION SWITCH.</b><br>1) Turn the ignition switch to OFF.<br>2) Disconnect the air mix door actuator connector.<br>3) Turn the ignition switch and AUTO switch to ON.<br>4) Measure the voltage between auto A/C control module connector terminals.<br><b>Connector &amp; terminal</b><br><b>(B282) No. 8 (+) — (B282) No. 15 (–):</b> | Is the voltage approx. 5 V? | Go to step 2. | Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).> |

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| Step                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Check                                                               | Yes           | No                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------|
| <b>2</b><br><b>CHECK POWER SUPPLY FOR AIR MIX DOOR ACTUATOR.</b><br>Measure the voltage between auto A/C control module connector and chassis ground after turning the temperature control dial to maximum COOL position.<br><i>Connector &amp; terminal</i><br><i>Driver's side</i><br>(B283) No. 22 (+) — Chassis ground (-):<br><i>Passenger's side</i><br>(B283) No. 21 (+) — Chassis ground (-):                                                                                                                                                                                                                                                                                                                           | Is the voltage 8 V (at normal temperature)?                         | Go to step 3. | Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).>                  |
| <b>3</b><br><b>CHECK POWER SUPPLY FOR AIR MIX DOOR ACTUATOR.</b><br>Measure the voltage between auto A/C control module connector and chassis ground after turning the temperature control dial to maximum HOT position.<br><i>Connector &amp; terminal</i><br><i>Driver's side</i><br>(B283) No. 9 (+) — Chassis ground (-):<br><i>Passenger's side</i><br>(B282) No. 4 (+) — Chassis ground (-):                                                                                                                                                                                                                                                                                                                              | Is the voltage 8 V (at normal temperature)?                         | Go to step 4. | Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).>                  |
| <b>4</b><br><b>CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND AIR MIX DOOR ACTUATOR.</b><br>1) Turn the A/C and ignition switch to OFF.<br>2) Disconnect the auto A/C control module connector.<br>3) Measure the resistance between auto A/C control module and air mix door actuator connector.<br><i>Connector &amp; terminal</i><br><i>Driver's side</i><br>(B390) No. 1 — (B282) No. 8:<br>(B390) No. 3 — (B282) No. 15:<br>(B390) No. 5 — (B282) No. 12:<br>(B390) No. 6 — (B283) No. 9:<br>(B390) No. 7 — (B283) No. 22:<br><i>Passenger's side</i><br>(B235) No. 1 — (B282) No. 15:<br>(B235) No. 3 — (B282) No. 8:<br>(B235) No. 5 — (B282) No. 4:<br>(B235) No. 7 — (B283) No. 8:<br>(B235) No. 6 — (B283) No. 21: | 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.                                  |
| <b>5</b><br><b>CHECK AIR MIX DOOR ACTUATOR POSITION SWITCH SIGNAL.</b><br>1) Connect the connector of auto A/C control module and air mix door actuator.<br>2) Turn the ignition switch and AUTO switch to ON.<br>3) Check the voltage between auto A/C control module connector terminals while changing the setting temperature between maximum COOL and maximum HOT.<br><i>Connector &amp; terminal</i><br><i>Driver's side</i><br>(B282) No. 12 (+) — (B282) No. 15 (-):<br><i>Passenger's side</i><br>(B282) No. 4 (+) — (B282) No. 15 (-):                                                                                                                                                                                | Does the voltage change between 1 V (Max. HOT) and 4 V (Max. COOL)? | Go to step 6. | Replace the air mix door actuator. <Ref. to AC-44, AIR MIX DOOR ACTUATOR (AUTO A/C MODEL), REMOVAL, Actuator.> |

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| Step |                                                                                                | Check                               | Yes                   | No                                                                                            |
|------|------------------------------------------------------------------------------------------------|-------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------|
| 6    | <b>CHECK FOR POOR CONTACT.</b><br>Check poor contact of auto A/C control module and connector. | Is there poor contact of connector? | Repair the connector. | Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).> |