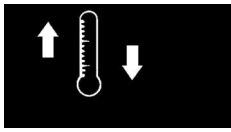
21

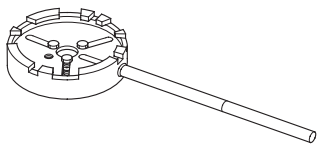
HVAC
(Heating, Ventilation, and Air Conditioning)



Heating

Special Tools

Ref. No.	Tool Number	Description	Qty
1	07NAB-HAC0100	A/C Clutch Holder	1



1

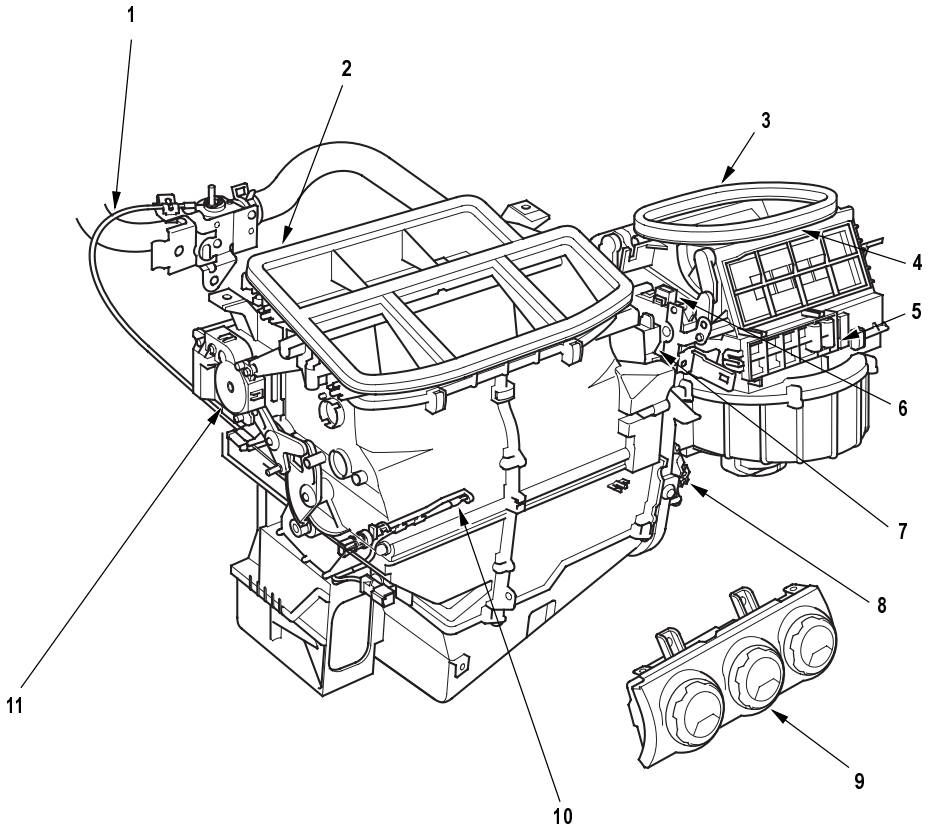
SUPPLEMENAL RESTRAINT SYSTEM (SRS) (If HVAC maintenance is required)

The CR-V SRS includes a driver's airbag in the steering wheel hub, a passenger's airbag in the dashboard above the glove box, seat belt tensioners in the front seat belt retractors, seat belt buckle tensioners in the front seat belt buckles, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents include or are located near SRS components. Servicing, disassembling, or replacing these items will require special precautions and tools, and should be done only by an authorized Honda dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal collision, all SRS service work must be performed by an authorized Honda dealer.
- Improper service procedures, including incorrect removal and installation of the SRS could lead to personal injury caused by unintentional deployment of the airbags and side airbags.
- Do not bump the SRS unit. Otherwise, the system may fail in a collision, or the airbags may deploy when the ignition switch is ON (II).
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, front console, dashboard, dashboard lower panel, in the dashboard above the glove box, in the front seats, and around the floor. Do not use electrical test equipment on these circuits.

Component Location Index

NOTE: LHD type is shown, RHD type is symmetrical.



1	HEATER VALVE CABLE	Adjustment, page 21-30
2	HEATER UNIT / CORE	Replacement, page 21-28
3	BLOWER UNIT	Removal and Installation, page 21-26
4	BLOWER UNIT COMPONENTS	Replacement, page 21-27
5	DUST AND POLLEN FILTER	Replacement, page 21-25
6	RECIRCULATION CONTROL MOTOR	Test, page 21-23; Replacement, page 21-23
7	MODE CONTROL MOTOR	Test, page 21-22; Replacement, page 21-22
8	POWER TRANSISTOR	Test, page 21-24
9	HEATER CONTROL PANEL	Removal and Installation, page 21-24
10	EVAPORATOR TEMPERATURE SENSOR (With A/C)	Replacement, page 21-44; Test, page 21-44
11	AIR MIX CONTROL MOTOR	Replacement, page 21-21; Test, page 21-21

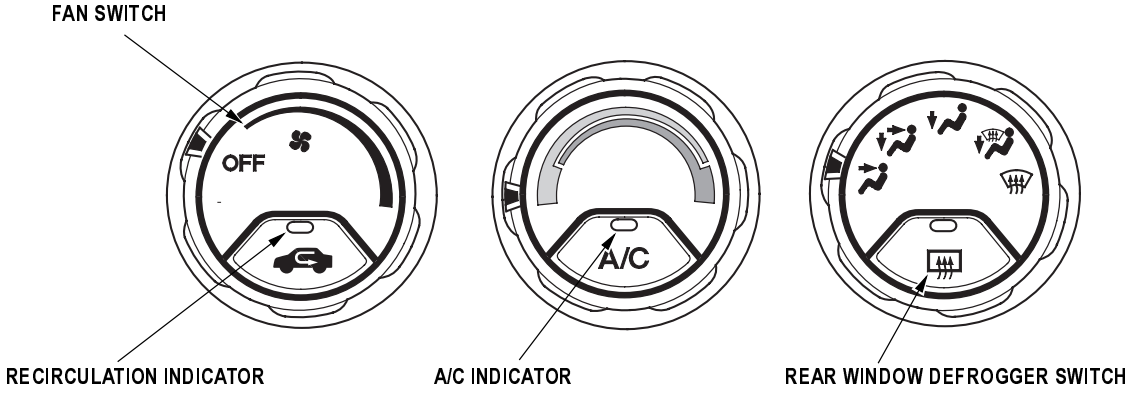
General Troubleshooting Information

How to Retrieve a DTC

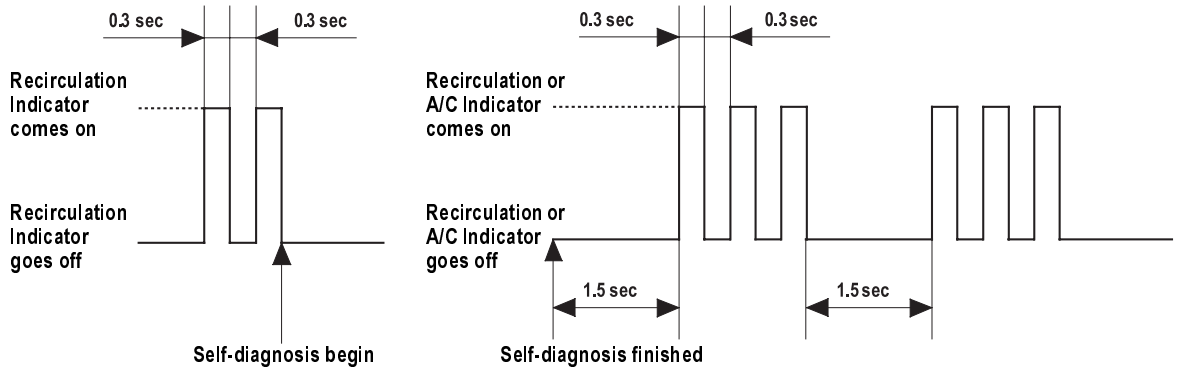
The Heater Control Panel has a self-diagnosis function.

Running the Self-diagnosis Function

1. Turn the ignition switch OFF.
2. Turn the fan switch OFF, the temperature control dial on Max Cool and the mode control dial on Vent.
3. Turn the ignition switch ON (II), then press and hold the recirculation control switch. Within 10 seconds while holding the switch down, press the rear window defogger switch five times. The recirculation indicator blinks two times, then the self-diagnosis will begin. If there is any problem in the system after self-diagnosis is finished, the recirculation indicator will blink the Diagnostic Trouble Code (DTC) 7 through 13 when problems in the evaporator temperature sensor circuit are detected (codes 14 and 15), the A/C indicator will blink the DTC. If no DTC's are found, the indicator will not blink.



Example of DTC indication Pattern (DTC 3)



Resetting the Self-diagnosis Function

Turn the ignition switch OFF to cancel the self-diagnosis function. After completing repair work, run the self-diagnosis function again to make sure that there are no other malfunctions.

DTC Troubleshooting Index

DTC (Recirculation Indicator Blinks)	Detection Item	Page
7	An open in the air mix control motor circuit	(see page 21-9)
8	A short in the air mix control motor circuit	(see page 21-9)
9	A problem in the air mix control linkage, door, or motor	(see page 21-10)
10	An open or short in the mode control motor circuit	(see page 21-11)
11	A problem in the mode control linkage, doors, or motor	(see page 21-12)
12	A problem in the blower motor circuit	(see page 21-13)
13	A problem in the EEPROM in the heater control panel; the control panel must be replaced	(see page 21-24)

DTC (A/C Indicator Blinks)	Detection Item	Page
14 (With A/C)	An open in the evaporator temperature sensor circuit	(see page 21-16)
15 (With A/C)	A short in the evaporator temperature sensor circuit	(see page 21-17)

In case of multiple problems, the recirculation indicator will indicate only the DTC with the least number of blinks.

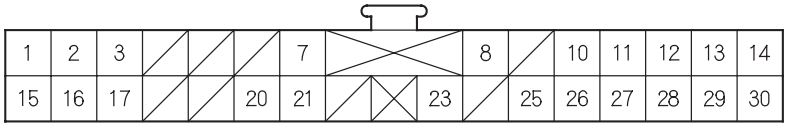
Symptom Troubleshooting Index

Symptom	Diagnostic procedure	Also check for
Recirculation control doors do not change between Fresh and Recirculate	Recirculation Control Motor Circuit Troubleshooting (see page 21-18)	• Blown fuse No. 14 (10A) in the under-dash fuse/relay box • Cleanliness and tightness of all connectors
Both heater and A/C do not work	Heater Control Power and Ground Circuits Troubleshooting (see page 21-20)	• Blown fuse No. 14 (10A) in the under-dash fuse/relay box • Poor ground at G501 • Cleanliness and tightness of all connectors

System Description

Heater Control Panel Inputs and Outputs

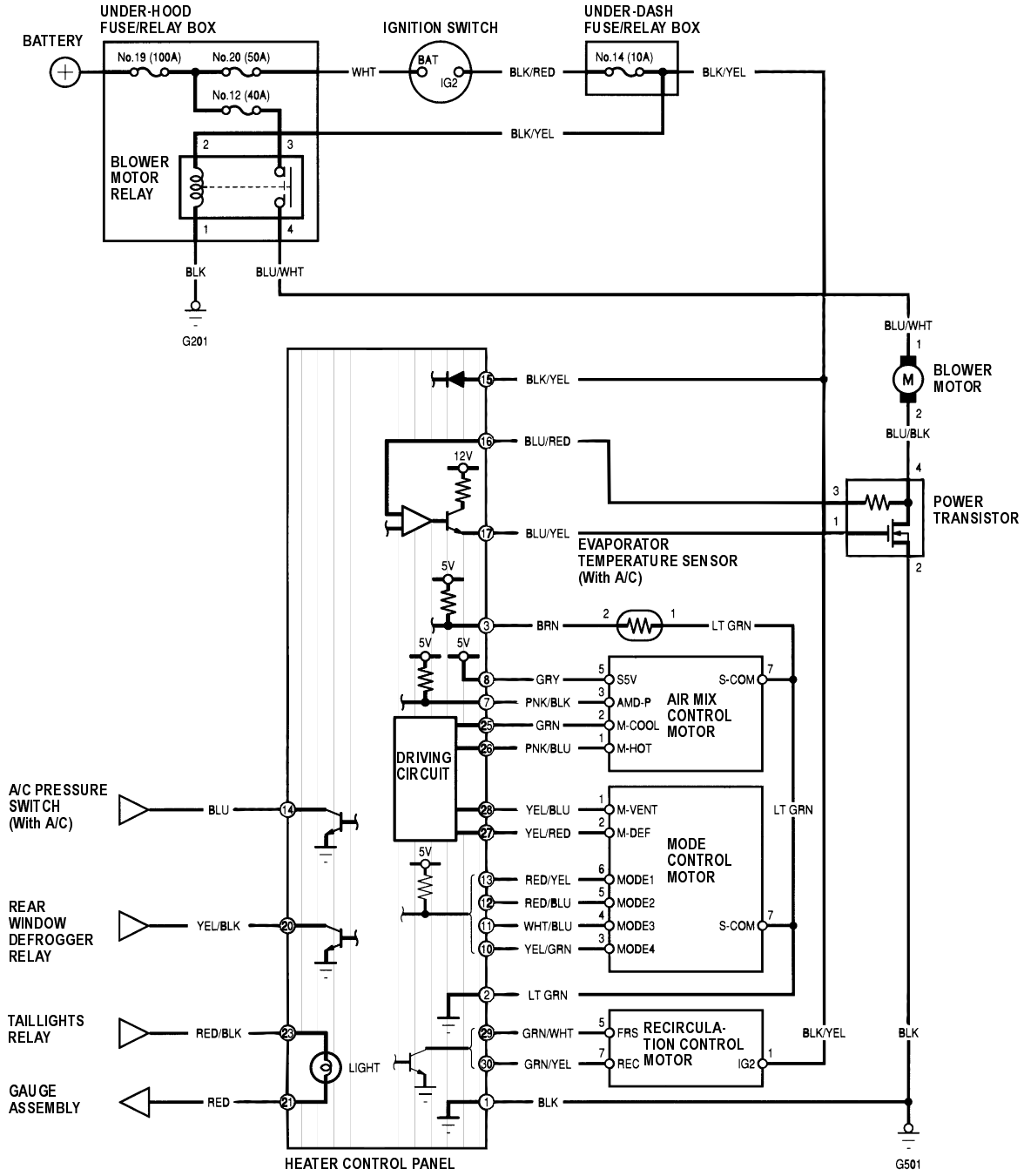
HEATER CONTROL PANEL 30P CONNECTOR



Wire side of female terminals

Cavity	Wire color	Signal	
1	BLK	Ground	Input
2	LT GRN	Sensor Common Ground	Input
3	BRN	Evaporator temperature sensor	Output
4	——	——	——
5	——	——	——
6	——	——	——
7	PNK/BLK	Air mix potential	Output
8	GRY	Air mix potential +5V	Output
9	——	——	——
10	YEL/GRN	Mode 4	Output
11	WHT/BLU	Mode 3	Output
12	RED/BLU	Mode 2	Output
13	RED/YEL	Mode 1	Output
14	BLU	A/C pressure switch	Input
15	BLK/YEL	IG2 Power	Input
16	BLU/RED	Blower feed back	Input
17	BLU/YEL	Power transistor base	Output
18	——	——	——
19	——	——	——
20	YEL/BLK	Rear window defogger relay	Output
21	RED	Ground (For lighting)	Output
22	——	——	——
23	RED/BLK	Taillights relay	Input
24	——	——	——
25	GRN	Air mix cool	Output
26	PNK/BLU	Air mix hot	Output
27	YEL/RED	Mode vent	Output
28	YEL/BLU	Mode def	Output
29	GRN/WHT	Fresh	Input
30	GRN/YEL	Recirculate	Input

Circuit Diagram



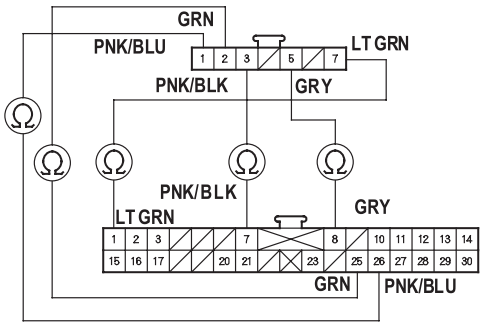
DTC Troubleshooting

DTC 7: An Open in the Air Mix Control Motor Circuit

1. Disconnect the air mix control motor 7P connector.
2. Disconnect the heater control panel 30P connector.
3. Check for continuity between the following terminals of the heater control panel 30P connector and the air mix control motor 7P connector.

30P:	7P:
No. 2	No. 7
No. 7	No. 3
No. 8	No. 5
No. 25	No. 2
No. 26	No. 1

AIR MIX CONTROL MOTOR 7P CONNECTOR
Wire side of female terminals



HEATER CONTROL PANEL 30P CONNECTOR
Wire side of female terminals

Is there continuity?

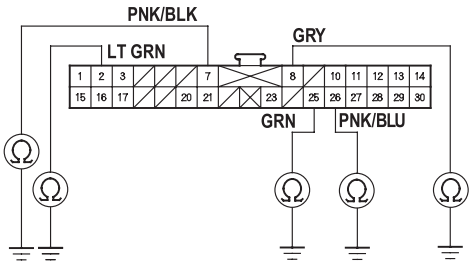
Yes Check for loose wires or poor connections at the heater control panel 30P connector and at the air mix control motor 7P connector. If the connections are good, substitute a known-good heater control panel, and recheck. If the symptom/indication goes away, replace the original heater control panel.■

No Repair any open in the wire(s) between the heater control panel and the air mix control motor.■

DTC 8: A Short in the Air Mix Control Motor Circuit

1. Disconnect the air mix control motor 7P connector.
2. Disconnect the heater control panel 30P connector.
3. Check for continuity between body ground and heater control panel 30P connector terminals No. 2, 7, 8, 25, and 26 individually.

HEATER CONTROL PANEL 30P CONNECTOR



Wire side of female terminals

Is there continuity?

Yes Repair any short to body ground in the wire(s) between the heater control panel and the air mix control motor.■

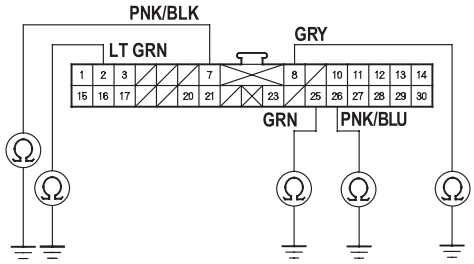
No Go to step 4.

(cont'd)

DTC Troubleshooting (cont'd)

4. Turn the ignition switch ON (II), and check the same terminals for voltage.

HEATER CONTROL PANEL 30P CONNECTOR



Wire side of female terminals

Is there any voltage?

Yes Repair any short to power in the wire(s) between the heater control panel and the air mix control motor. This short also may damage the heater control panel. Repair the short to power before replacing the heater control panel.■

No Substitute a known-good heater control panel, and recheck. If the symptom/indication goes away, replace the original heater control panel.■

DTC 9: A Problem in the Air Mix Control Linkage, Door, or Motor

1. Test the air mix control motor (see page 21-21).

Is the air mix control motor OK?

Yes Substitute a known-good heater control panel, and recheck. If the symptom/indication goes away, replace the original heater control panel.■

No Go to step 2.

2. Remove the air mix control motor (see page 21-21).

3. Check the air mix control linkage and door for smooth movement.

Do the air mix control linkage and door move smoothly?

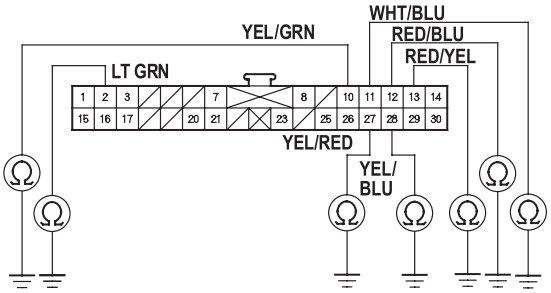
Yes Replace the air mix control motor.■

No Repair the air mix control linkage or door.■

DTC 10: An Open or Short in the Mode Control Motor Circuit

1. Disconnect the mode control motor 7P connector.
2. Disconnect the heater control panel 30P connector.
3. Check for continuity between body ground and the heater control panel 30P connector terminals No. 2, 10, 11, 12, 13, 27, and 28 individually.

HEATER CONTROL PANEL 30P CONNECTOR



Wire side of female terminals

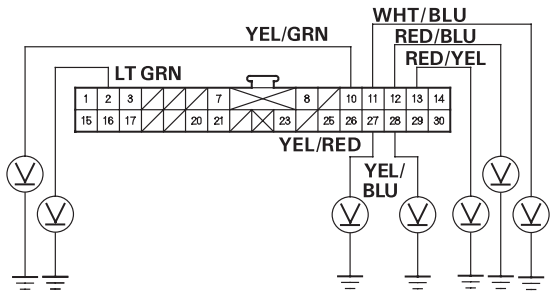
Is there continuity?

Yes Repair any short to body ground in the wire(s) between the heater control panel and the mode control motor.■

No Go to step 4.

4. Turn the ignition switch ON (II), and check the same terminals for voltage.

HEATER CONTROL PANEL 30P CONNECTOR



Wire side of female terminals

Is there any voltage?

Yes Repair any short to power in the wire(s) between the heater control panel and the mode control motor. This short also may damage the heater control panel. Repair the short to power before replacing the heater control panel.■

No Go to step 5.

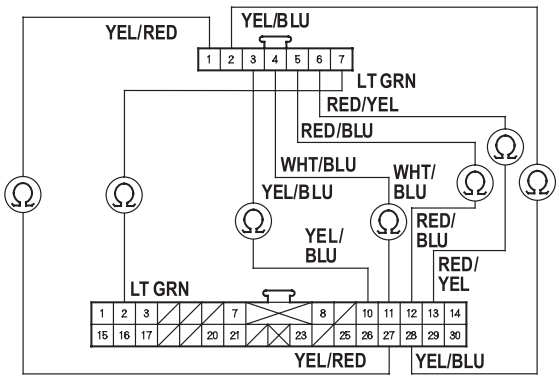
(cont'd)

DTC Troubleshooting (cont'd)

5. Turn the ignition switch OFF, and check for continuity between the following terminals of the heater control panel 30P connector and the mode control motor 7P connector.

30P:	7P:
No. 2	No. 7
No. 10	No. 3
No. 11	No. 4
No. 12	No. 5
No. 13	No. 6
No. 28	No. 2
No. 27	No. 1

MODE CONTROL MOTOR 7P CONNECTOR
Wire side of female terminals



HEATER CONTROL PANEL 30P CONNECTOR
Wire side of female terminals

Is there continuity?

Yes Check for loose wires or poor connections at the heater control panel 30P connector and at the mode control motor 7P connector. If the connections are good, substitute a known-good heater control panel, and recheck. If the symptom/indication goes away, replace the original heater control panel.■

No Repair any open in the wire(s) between the heater control panel and the mode control motor.■

DTC 11: A Problem in the Mode Control Linkage, Doors, or Motor

1. Test the mode control motor (see page 21-22).

Is the mode control motor OK?

Yes Substitute a known-good heater control panel, and recheck. If the symptom/indication goes away, replace the original heater control panel.■

No Go to step 2.

2. Remove the mode control motor (see page 21-22).

3. Check the mode control linkage and doors for smooth movement.

Do the mode control linkage and doors move smoothly?

Yes Replace the mode control motor.■

No Repair the mode control linkage or doors.■

DTC 12: A Problem in the Blower Motor Circuit

1. Check the No. 12 (40A) fuse in the under-hood fuse/relay box, and the No. 14 (10A) fuse in the under-dash fuse/relay box.

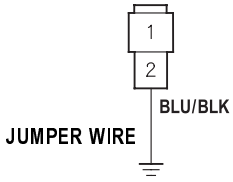
Are the fuses OK?

Yes Go to step 2.

No Replace the fuse(s), and recheck.■

2. Connect the No. 2 terminal of the blower motor 2P connector to body ground with a jumper wire.

BLOWER MOTOR 2P CONNECTOR



Wire side of female terminals

3. Turn the ignition switch ON (II).

Does the blower motor run?

Yes Go to step 4.

No Go to step 17.

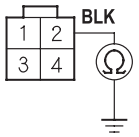
4. Turn the ignition switch OFF.

5. Disconnect the jumper wire.

6. Disconnect the power transistor 4P connector.

7. Check for continuity between the No. 2 terminal of the power transistor 4P connector and body ground.

POWER TRANSISTOR 4P CONNECTOR



Wire side of female terminals

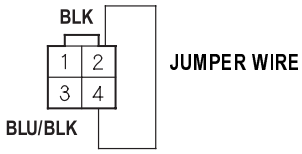
Is there continuity?

Yes Go to step 8.

No Check for an open in the wire between the power transistor and body ground. If the wire is OK, check for poor ground at G501.■

8. Connect the No. 2 and No. 4 terminals of the power transistor 4P connector with a jumper wire.

POWER TRANSISTOR 4P CONNECTOR



Wire side of female terminals

9. Turn the ignition switch ON (II).

Does the blower motor run at high speed?

Yes Go to step 10.

No Repair open in the wire between the power transistor and the blower motor.■

10. Turn the ignition switch OFF.

11. Disconnect the jumper wire.

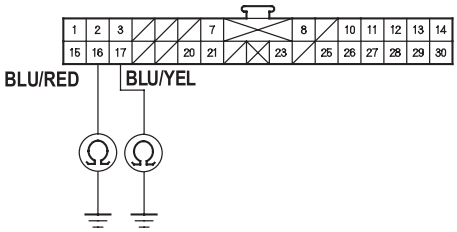
(cont'd)

DTC Troubleshooting (cont'd)

12. Disconnect the heater control panel 30P connector.

13. Check for continuity between the No. 16 and No. 17 terminals of the heater control panel 30P connector and body ground individually.

HEATER CONTROL PANEL 30P CONNECTOR



Wire side of female terminals

Is there continuity?

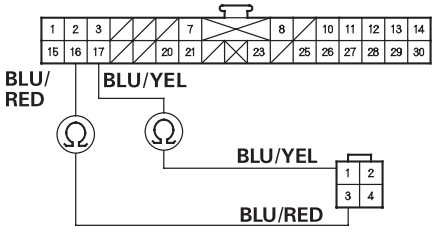
Yes Repair any short to body ground in the wire(s) between the heater control panel and the power transistor.■

No Go to step 14.

14. Check for continuity between the following terminals of the heater control panel 30P connector and the power transistor 4P connector.

30P:	4P:
No. 17	No. 1
No. 16	No. 3

HEATER CONTROL PANEL 30P CONNECTOR
Wire side of female terminals



Wire side of female terminals

Is there continuity?

Yes Go to step 15.

No Repair any open in the wire(s) between the heater control panel and the power transistor.■

15. Reconnect the heater control panel 30P connector.

16. Test the power transistor (see page 21-24)

Is the power transistor OK?

Yes Check for loose wires or poor connections at the heater control panel 30P connector and at the power transistor 4P connector. If the connections are good, substitute a known-good heater control panel, and recheck. If the symptom/indication goes away, replace the original heater control panel.■

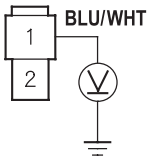
No Replace the power transistor.■

17. Disconnect the jumper wire.

18. Disconnect the blower motor 2P connector.

19. Measure the voltage between the No. 1 terminal of the blower motor 2P connector and body ground.

BLOWER MOTOR 2P CONNECTOR



Wire side of female terminals

Is there battery voltage?

Yes Replace the blower motor.■

No Go to step 20.

20. Turn the ignition switch OFF.

21. Remove the blower motor relay from the under-hood fuse/relay box, and test it (see page 21-26).

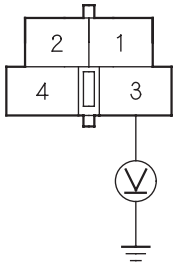
Is the relay OK?

Yes Go to step 22.

No Replace the blower motor relay.■

22. Measure the voltage between the No. 3 terminal of the blower motor relay 4P socket and body ground.

BLOWER MOTOR 4P SOCKET



Is there battery voltage?

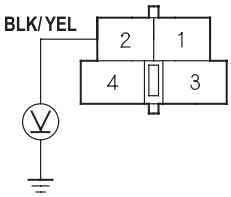
Yes Go to step 23.

No Replace the under-hood fuse/relay box.■

23. Turn the ignition switch ON (II).

24. Measure the voltage between the No. 2 terminal of the blower motor relay 4P socket and body ground.

BLOWER MOTOR 4P SOCKET



Is there battery voltage?

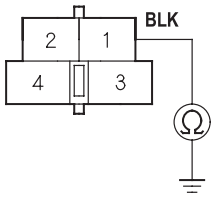
Yes Go to step 25.

No Repair open in the wire between the No. 14 fuse in the under-dash fuse/relay box and the blower motor relay.■

25. Turn the ignition switch OFF.

26. Check for continuity between the No. 1 terminal of the blower motor relay 4P socket and body ground.

BLOWER MOTOR RELAY 4P CONNECTOR



Wire side of female terminals

Is there continuity?

Yes Repair open in the wire between the blower motor relay and the blower motor.■

No Check for an open in the wire between the blower motor relay and body ground. If the wire is OK, check for poor ground at G501.■

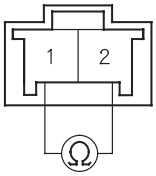
DTC Troubleshooting (cont'd)

DTC 14: An Open in the Evaporator Temperature Sensor Circuit

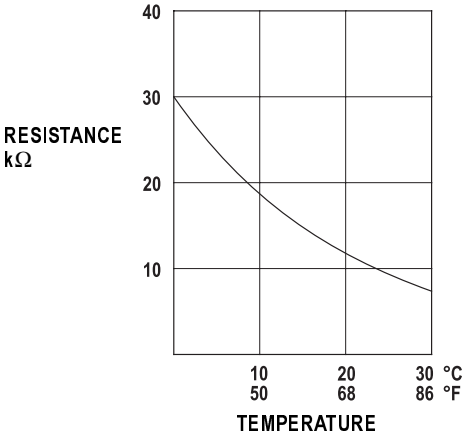
1. Remove the evaporator temperature sensor (see page 21-44).
2. Measure the resistance between the No. 1 and No. 2 terminals of the evaporator temperature sensor.

   *Dip the sensor in ice water, and measure resistance. Then pour hot water on the sensor, and check for change in resistance.

EVAPORATOR TEMPERATURE SENSOR



Terminal side of male terminals



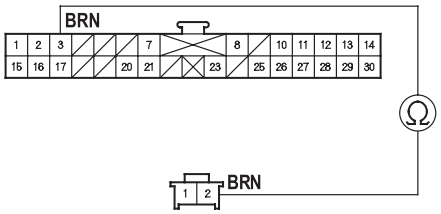
Is the resistance within the specifications shown on the graph?

Yes Go to step 3.

No Replace the evaporator temperature sensor.■

3. Disconnect the heater control panel 30P connector.
4. Check for continuity between the No. 3 terminal of the heater control panel 30P connector and the No. 2 terminal of the evaporator temperature sensor 2P connector.

HEATER CONTROL PANEL 30P CONNECTOR
Wire side of female terminals



EVAPORATOR TEMPERATURE SENSOR 2P CONNECTOR
Wire side of female terminals

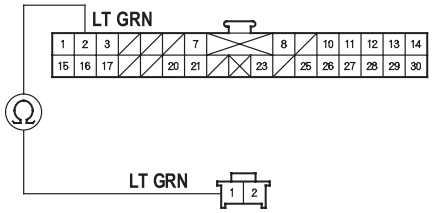
Is there continuity?

Yes Go to step 5.

No Repair open in the wire between the heater control panel and the evaporator temperature sensor.■

5. Check for continuity between the No. 2 terminal of the heater control panel 30P connector and the No. 1 terminal of the evaporator temperature sensor 2P connector.

HEATER CONTROL PANEL 30P CONNECTOR
Wire side of female terminals



EVAPORATOR TEMPERATURE SENSOR 2P CONNECTOR
Wire side of female terminals

Is there continuity?

Yes Check for loose wires or poor connections at the heater control panel 30P connector and at the evaporator temperature sensor 2P connector. If the connections are good, substitute a known-good heater control panel, and recheck. If the symptom/indication goes away, replace the original heater control panel.■

No Repair open in the wire between the heater control panel and the evaporator temperature sensor.■

DTC 15: A Short in the Evaporator Temperature Sensor Circuit

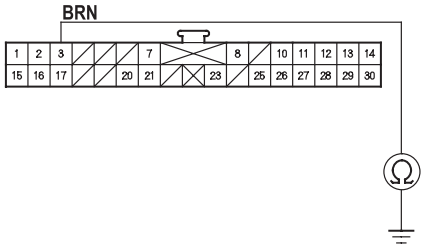
1. Remove the evaporator temperature sensor (see page 21-44).
2. Test the evaporator temperature sensor (see page 21-44).

   Is the resistance within the specifications shown on the graph?

   Yes Go to step 3.

   No Replace the evaporator temperature sensor.■
3. Disconnect the heater control panel 30P connector.
4. Check for continuity between the No. 3 terminal of the heater control panel 30P connector and body ground.

HEATER CONTROL PANEL 30P CONNECTOR



Wire side of female terminals

Is there continuity?

Yes Repair short to body ground in the wire between the heater control panel and the evaporator temperature sensor.■

No Substitute a known-good heater control panel, and recheck. If the symptom/indication goes away, replace the original heater control panel.■

Recirculation Control Motor Circuit Troubleshooting

1. Check the No. 14 (10A) fuse in the under-dash fuse/relay box.

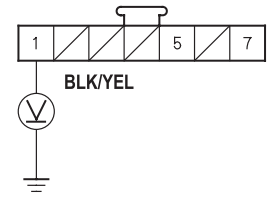
   Is the fuse OK?

   Yes Go to step 2.

   No Replace the fuse, and recheck.■

2. Disconnect the recirculation control motor 7P connector.
3. Turn the ignition switch ON (II).
4. Measure the voltage between the No. 1 terminal of the recirculation control motor 7P connector and body ground.

RECIRCULATION CONTROL MOTOR 7P CONNECTOR



Wire side of female terminals

   Is there battery voltage?

   Yes Go to step 5.

   No Repair open in the wire between the No. 14 fuse in the under-dash fuse/relay box and the recirculation control motor.■

5. Turn the ignition switch OFF.
6. Test the recirculation control motor (see page 21-23).

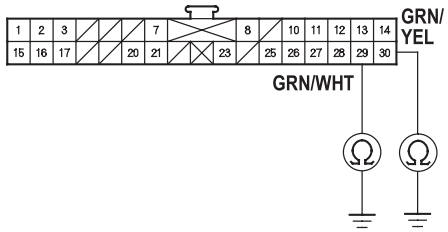
   Is the recirculation control motor OK?

   Yes Go to step 7.

   No Go to step 12.

7. Disconnect the heater control panel 30P connector.
8. Check for continuity between the No. 29 and No. 30 terminals of the heater control panel 30P connector and body ground individually.

HEATER CONTROL PANEL 30P CONNECTOR



Wire side of female terminals

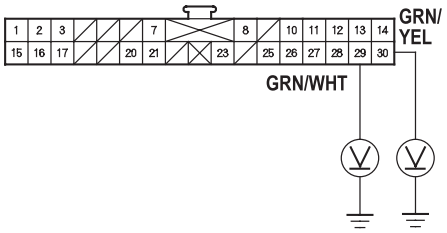
   Is there continuity?

   Yes Repair any short to body ground in the wire(s) between the heater control panel and the recirculation control motor.■

   No Go to step 9.

9. Turn the ignition switch ON (II), and check the same wires for voltage.

HEATER CONTROL PANEL 30P CONNECTOR



Wire side of female terminals

   Is there any voltage?

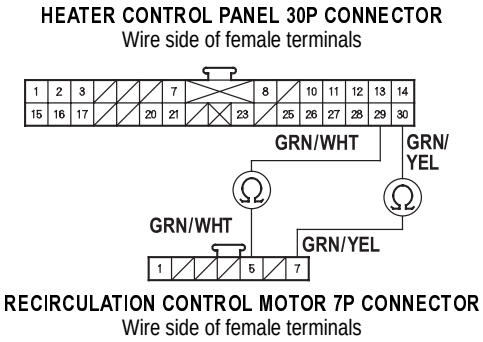
   Yes Repair any short to power in the wire(s) between the heater control panel and the recirculation control motor. This short also may damage the heater control panel. Repair the short to power before replacing the heater control panel.■

   No Go to step 10.

10. Turn the ignition switch OFF.

11. Check for continuity between the following terminals of the heater control panel 30P connector and the recirculation control motor 7P connector.

30P:	7P:
No. 29	No. 5
No. 30	No. 7



Is there continuity?

Yes Check for loose wires or poor connections at the heater control panel 30P connector and at the recirculation control motor 7P connector. If the connections are good, substitute a known-good heater control panel, and recheck. If the symptom/indication goes away, replace the original heater control panel.■

No Repair any open in the wire(s) between the heater control panel and the recirculation control motor.■

12. Remove the recirculation contol motor (see page 21-23).

13. Check the recirculation control linkage and doors for smooth movement.

Do the recirculation control linkage and doors move smoothly?

Yes Replace the recirculation control motor.■

No Repair the recirculation control linkage or doors.■

Heater Control Power and Ground Circuits Troubleshooting

1. Check the No.14 (10A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

Yes Go to step 2.

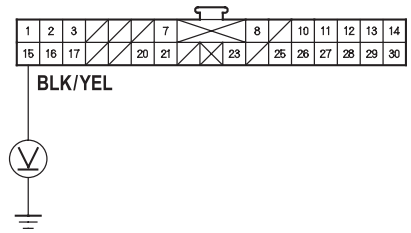
No Replace the fuse, and recheck.■

2. Disconnect the heater control panel 30P connector.

3. Turn the ignition switch ON (II).

4. Measure the voltage between the No. 15 terminal of the heater control panel 30P connector and body ground.

HEATER CONTROL PANEL 30P CONNECTOR



Wire side of female terminals

Is there battery voltage?

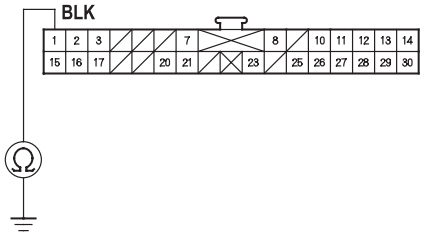
Yes Go to step 5.

No Repair open in the wire between the No. 14 fuse in the under-dash fuse/relay box and the heater control panel.■

5. Turn the ignition switch OFF.

6. Check for continuity between the No. 1 terminal of the heater control panel 30P connector and body ground.

HEATER CONTROL PANEL 30P CONNECTOR



Wire side of female terminals

Is there continuity?

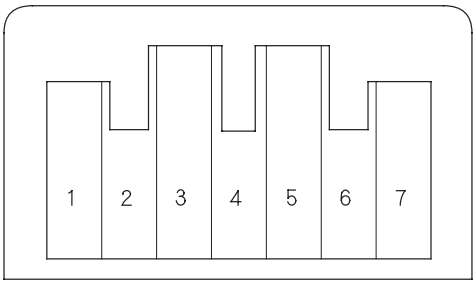
Yes Check for loose wires or poor connections at the heater control panel 30P connector. If the connections are good, substitute a known-good heater control panel, and recheck. If the symptom/indication goes away, replace the original heater control panel.■

No Check for an open in the wire between the heater control panel and body ground. If the wire is OK, check for poor ground at G501.■

Air Mix Control Motor Test

1. Disconnect the 7P connector from the air mix control motor.
2. Connect battery power to the No. 1 terminal of the air mix control motor, and ground the No. 2 terminal; the air mix control motor should run smoothly, and stop at Max Hot. If it doesn't, reverse the connections; the air mix control motor should run smoothly, and stop at Max Cool. If the air mix control motor does not run, remove it, then check the air mix control linkage and door for smooth movement.
   - If the linkage and door move smoothly, replace the air mix control motor.
   - If the linkage or door sticks or binds, repair them as needed.

AIR MIX CONTROL MOTOR



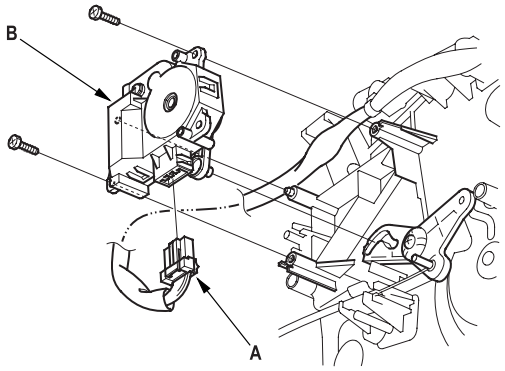
3. Measure the resistance between the No. 5 and No. 7 terminals. It should be between 4.2 k to 7.8 kΩ.
4. Reconnect the air mix control motor 7P connector, then turn the ignition switch ON (II).
5. Measure the voltage between the No. 3 and No. 7 terminals.

Max Cool - about 1V
Max Hot - about 4V

Air Mix Control Motor Replacement

NOTE: LHD type is shown, RHD type is symmetrical.

1. RHD type, remove the clutch pedal bracket (M/T) or the parking brake pedal bracket (A/T).
2. 2. Disconnect the 7P connector (A) from the air mix control motor (B). Remove the self-tapping screws and the air mix control motor from the heater unit.

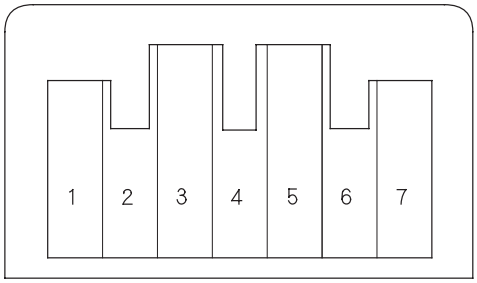


3. Install the motor in the reverse order of removal. After installation, make sure the motor runs smoothly.

Mode Control Motor Test

1. Disconnect the 7P connector from the mode control motor.
2. Connect battery power to the No. 1 terminal of the mode control motor, and ground the No. 2 terminal; the mode control motor should run smoothly, and stop at Vent. If it doesn't, reverse the connections; the mode control motor should run smoothly, and stop at Defrost. When the mode control motor stops running, disconnect battery power immediately.

MODE CONTROL MOTOR

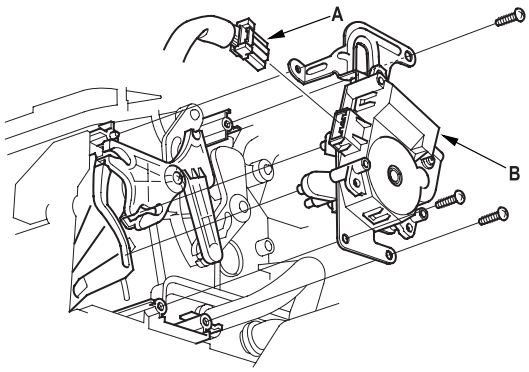


3. If the mode control motor does not run in step 2, remove it, then check the mode control linkage and doors for smooth movement.
   - If the linkage and doors move smoothly, replace the mode control motor.
   - If the linkage or doors stick or bind, repair them as needed.
4. Use a digital multimeter with an output of 1 mA or less at the 20 kΩ range. With the mode control motor running as in step 2, check for continuity between the No. 3, 4, 5, 6 terminals and the No. 7 terminal individually. There should be continuity for a moment at each terminal.
5. If there is no continuity for a moment at each terminal, replace the mode control motor.

Mode Control Motor Replacement

NOTE: LHD type is shown, RHD type is symmetrical.

1. Remove the ECM/PCM (see page 11-4).
2. Disconnect the 7P connector (A) from the mode control motor (B). Remove the self-tapping screws and the mode control motor from the heater unit.



3. Install the motor in the reverse order of removal. After installation, make sure the motor runs smoothly.

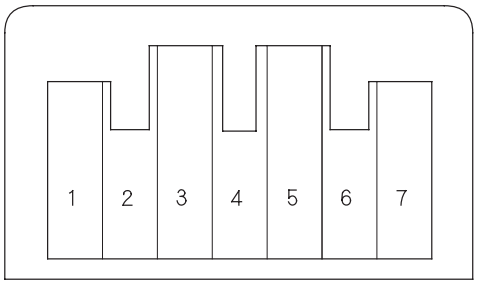
Recirculation Control Motor Test

1. Disconnect the 7P connector from the recirculation control motor.

   NOTICE
   Incorrectly applying power and ground to the recirculation control motor will damage it. Follow the instructions carefully.

2. Connect battery power to the No. 1 terminal of the recirculation control motor, and ground the No. 5 and No. 7 terminals; the recirculation control motor should run smoothly. To avoid damaging the recirculation control motor, do not reverse power and ground. Disconnect the No. 5 or No. 7 terminals from ground; the recirculation control motor should stop at Fresh or Recirculate. Don't cycle the recirculation control motor for a long time.

RECIRCULATION CONTROL MOTOR

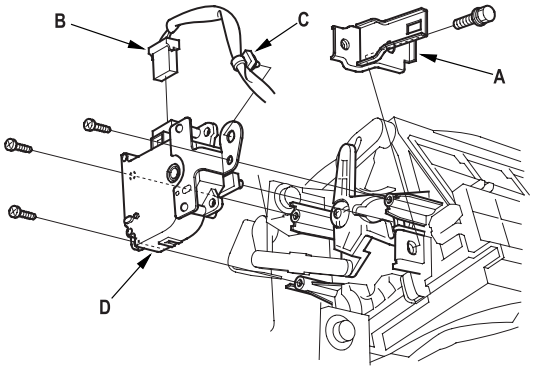


3. If the recirculation control motor does not run in step 2, remove it, then check the recirculation control linkage and doors for smooth movement.
   - If the linkage and doors move smoothly, replace the recirculation control motor.
   - If the linkage or doors stick or bind, repair them as needed.

Recirculation Control Motor Replacement

NOTE: LHD type is shown, RHD type is symmetrical.

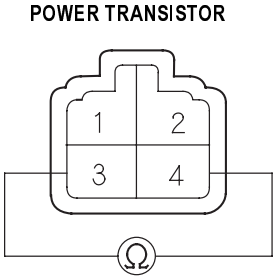
1. Remove the ECM/PCM (see page 11-4).
2. Remove the bolt and the bracket (A). Disconnect the 7P connector (B) and the harness clip (C) from the recirculation control motor (D). Remove the self-tapping screws and the recirculation control motor from the blower unit.



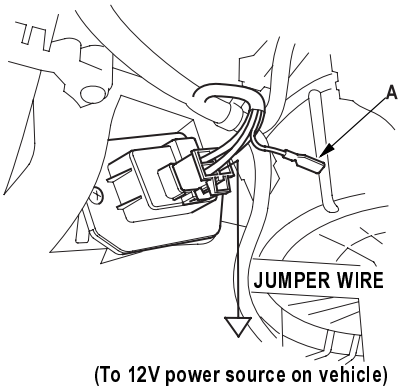
3. Install the motor in the reverse order of removal. After installation, make sure the motor runs smoothly.

Power Transistor Test

1. Disconnect the 4P connector from the power transistor.
2. Measure the resistance between the No. 3 and No. 4 terminals of the power transistor. It should be about 1.4 - 1.5 kΩ.
   - If the resistance is within the specifications, go to step 3.
   - If the resistance is not within the specifications, replace the power transistor.



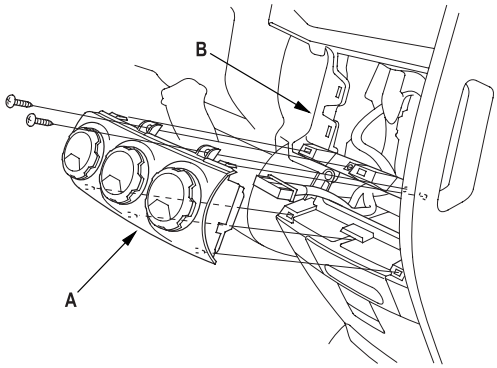
3. Carefully release the lock tab on the No. 1 terminal (BLU/YEL) (A) in the 4P connector, then remove the terminal and insulate it from body ground.



4. Reconnect the 4P connector to the power transistor.
5. Supply 12 volts to the No. 1 cavity with a jumper wire.
6. Turn the ignition switch ON (II), and check that the blower motor runs.
   - If the blower motor does not run, replace the power transistor.
   - If the blower motor runs, the power transistor is OK.

Heater Control Panel Removal and Installation

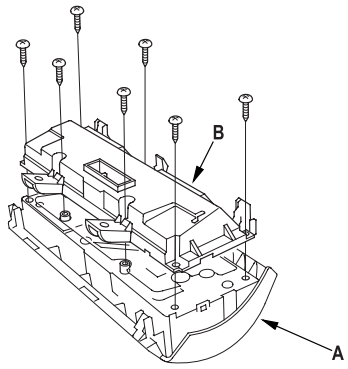
1. Remove the center panel (see page 20-87).
2. Remove the self-tapping screws and the heater control panel (A) from the dashboard (B).



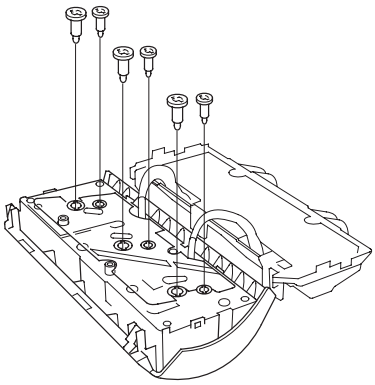
3. Install the control panel in the reverse order of removal. After installation, operate the control panel controls to see whether it works properly.
4. Run the self-diagnosis function to confirm that there are no problems in the system (see page 21-4).

Heater Control Panel Bulb Replacement

1. Discharge the static electricity (which accumulated on you when you removed the heater control panel) by touching the door striker or other body parts.
2. Remove the self-tapping screws, then carefully separate the heater control panel display (A) from the control panel (B). Do not kink or pull on the wires between the display and control panel. Do not touch the electronic components on the printed circuit board in the control panel.



3. Remove the bulb(s) with a flat-tip screw driver.



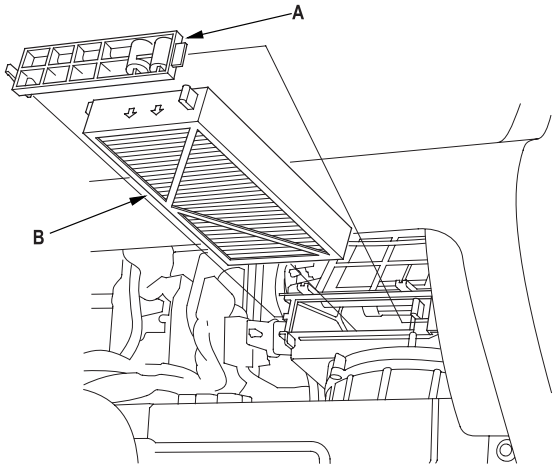
4. Install the bulb(s) in the reverse order of removal.

Dust and Pollen Filter Replacement (With Air Conditioning)

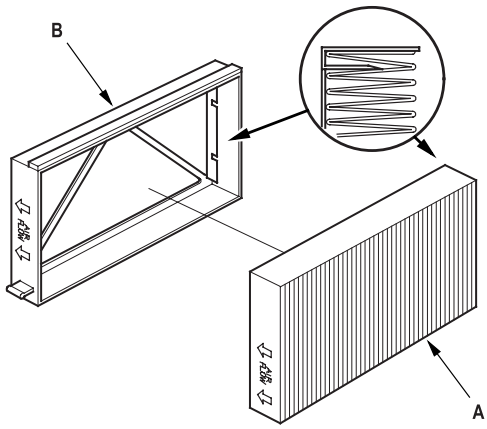
NOTE: LHD type is shown, RHD type is symmetrical.

The dust and pollen filters should be replaced every 30,000 km (6,000 miles) or 12 months whichever comes first. Replace the filters more often if the air flow is less than usual.

1. Open the glove box. Remove the glove box stop on each side, then hang the glove box down (see page 20-95).
2. Remove the filter lid (A) from the blower unit, then pull out the first dust and pollen filter (B). Slide the second filter to the left, and pull it out.



3. Remove the filter (A) from the housing (B), and replace the filter.

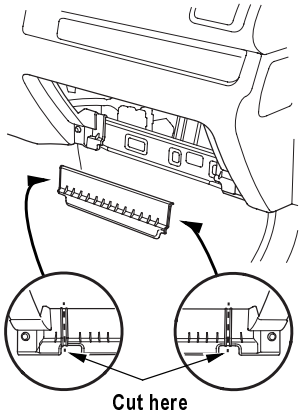


4. Install the filters in the reverse order of removal.

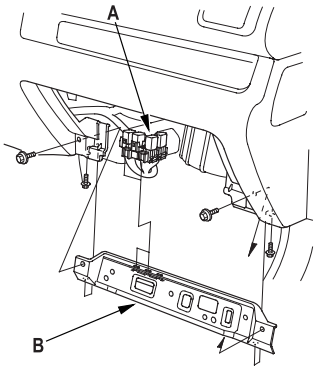
Blower Unit Removal and Installation

NOTE: LHD type is shown, RHD type is symmetrical.

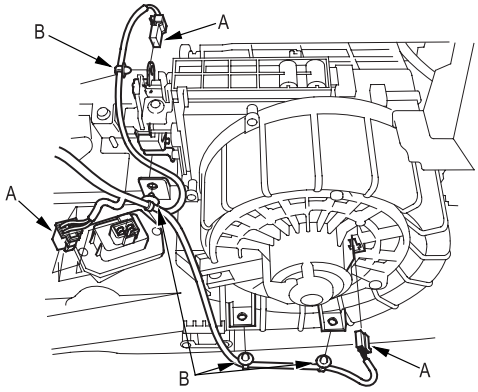
1. Remove the passenger's dashboard lower cover (see page 20-95), the right kick panel (see page 20-76), and the glove box (see page 20-95).
2. Cut the plastic cross brace in the glove box opening with diagonal cutters in the area shown. Remove and discard the plastic cross brace.



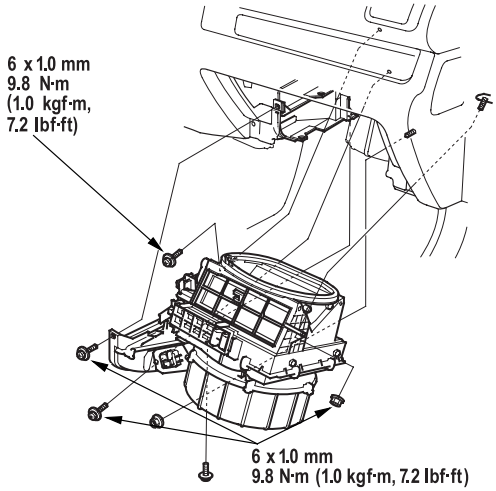
3. Remove the relays (A), then remove the bolts and the glove box frame (B).



4. Remove the ECM/PCM (see page 11-4).
5. Disconnect the connectors (A) from the blower motor, the power transistor, and the recirculation control motor, then remove the wire harness clips (B).



6. Fold the carpet and pad back toward you. Remove the mounting bolts, the mounting nut, and the blower unit.



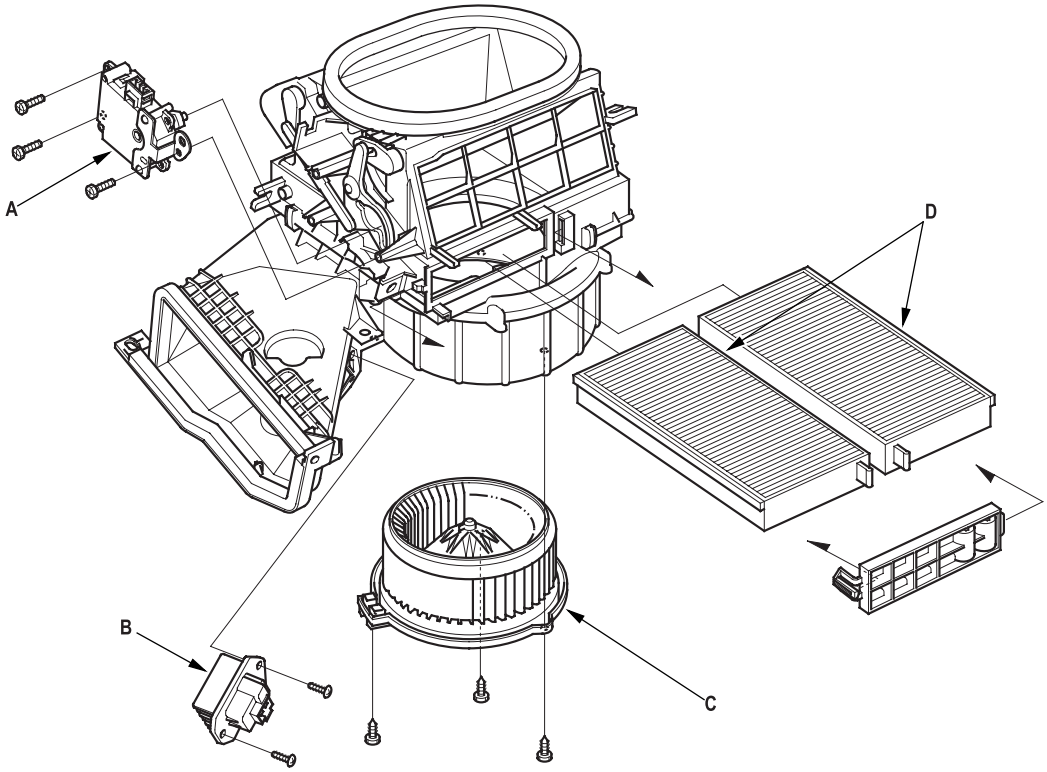
7. Install the unit in the reverse order of removal. Make sure that there is no air leakage.

Blower Unit Components Replacement

Note these items when overhauling the blower unit:

- The recirculation control motor (A), the power transistor (B), the blower motor (C), and the dust and pollen filters (with A/C)(D) can be replaced without removing the blower unit.
- Before reassembly, make sure that the recirculation control linkage and doors move smoothly.
- After reassembly, make sure the recirculation control motor runs smoothly (see page 21-23).

NOTE: LHD type is shown, RHD type is symmetrical.

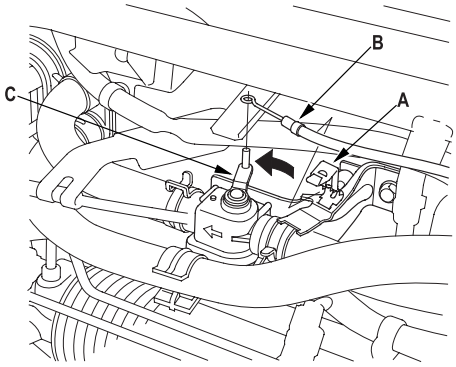


Heater Unit/Core Replacement

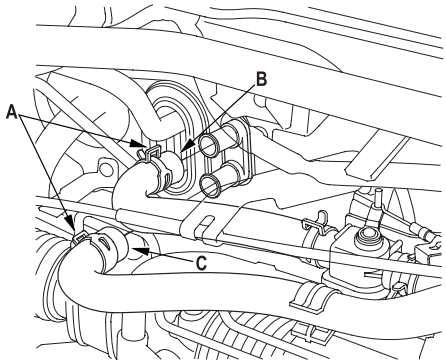
SRS components are located in this area. Review the SRS component locations (see page 23-14), and precautions and procedures (see page 23-16) in the SRS section before performing repairs or service.

NOTE: LHD type is shown, RHD type is symmetrical.

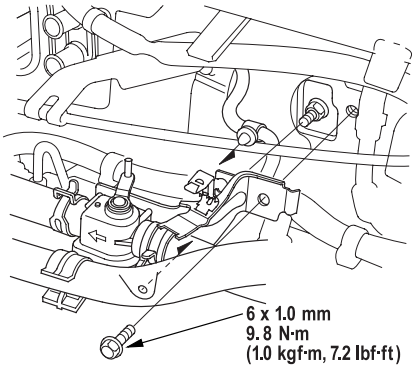
1. Make sure you have the anti-theft code for the radio, then write down the frequencies for the radio's preset buttons.
2. Disconnect the negative cable from the battery.
3. With air conditioning; disconnect the A/C line from the evaporator core (see page 21-45).
4. From under the hood, open the cable clamp (A), then disconnect the heater valve cable (B) from the heater valve arm (C). Turn the heater valve arm to the fully opened position as shown.



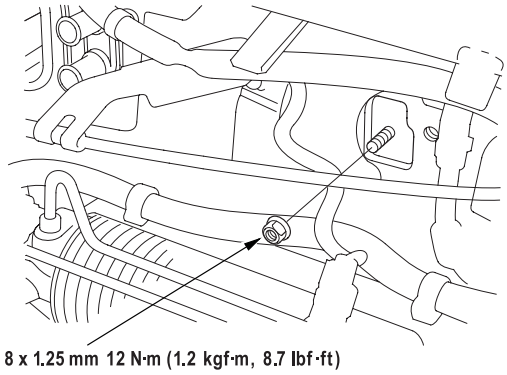
5. When the engine is cool, drain the engine coolant from the radiator (see page 10-6).
6. Slide the hose clamps (A) back, then disconnect the inlet heater hose (B) and the outlet heater hose (C) from the heater core. Engine coolant will run out when the hoses are disconnected; drain it into a clean drip pan. Be sure not to let coolant spill on the electrical parts or the painted surfaces. If any coolant spills, rinse it off immediately.



7. Remove the mounting bolt and the heater valve as shown.



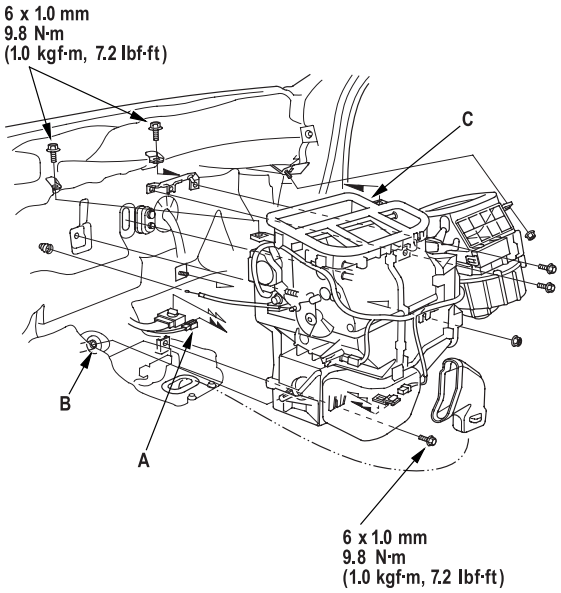
8. Remove the mounting nut from the heater unit. Take care not to damage or bend the fuel lines and the brake lines, etc.



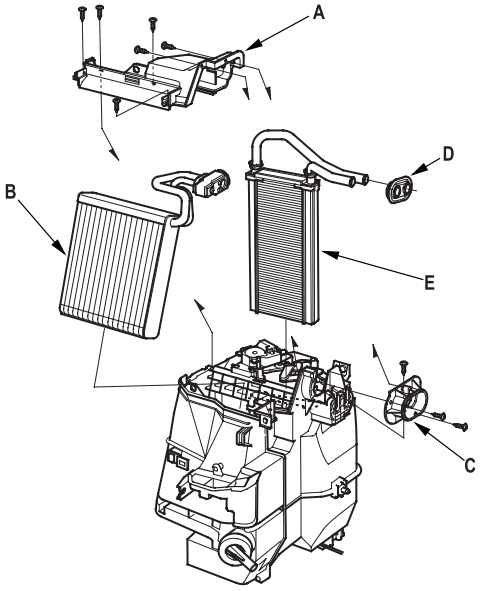
9. Remove the dashboard (see page 20-96).

10. Remove the ECM/PCM (see page 11-4)

11. Disconnect the connectors (A) from the heater unit, then disconnect the drain hose (B). Remove the mounting bolts and nuts, then remove the heater unit/Core (C).



12. Remove the self-tapping screws and the expansion valve cover (A). With air conditioning; carefully pull out the evaporator core (B) so you don't bend the inlet and outlet pipes. Remove the self-tapping screws and the flange cover (C), then remove the grommet (D), and carefully pull out the heater core (E) so you don't bend the inlet and outlet pipes.



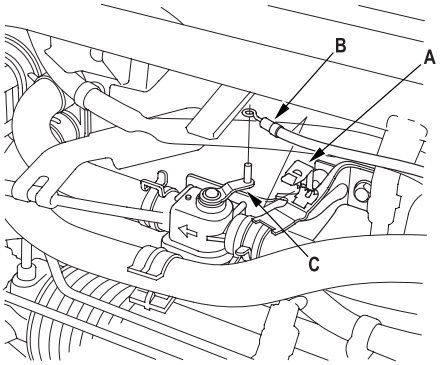
13. Install the heater core and the evaporator core (with A/C) in the reverse order of removal.

14. Install the heater unit in the reverse order of removal, and note these items:
    - Do not interchange the inlet and outlet heater hoses, and install the hose clamps securely.
    - Refill the cooling system with engine coolant (see page 10-6).
    - Be sure to connect the drain hose securely.
    - Adjust the heater valve cable (see page 21-30).
    - Make sure that there is no coolant leakage.
    - Make sure that there is no air leakage.
    - With air conditioning, refer to evaporator core replacement (see step 6 on page 21-45).

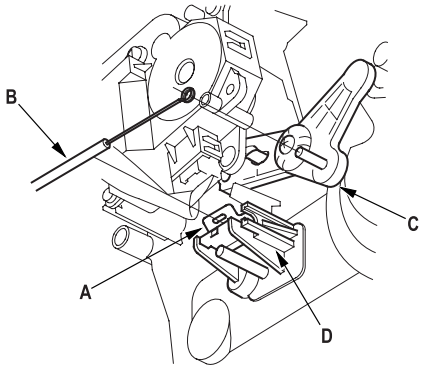
Heater Valve Cable Adjustment

NOTE: LHD type is shown, RHD type is symmetrical.

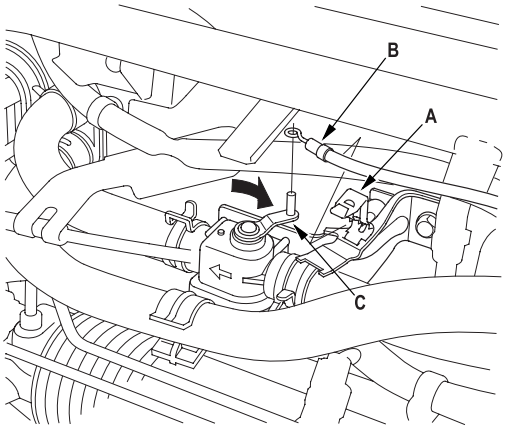
1. From under the hood, open the cable clamp (A), then disconnect the heater valve cable (B) from the heater valve arm (C).



2. From under the dash, disconnect the heater valve cable housing from the cable clamp (A), and disconnect the heater valve cable (B) from the air mix control linkage (C).



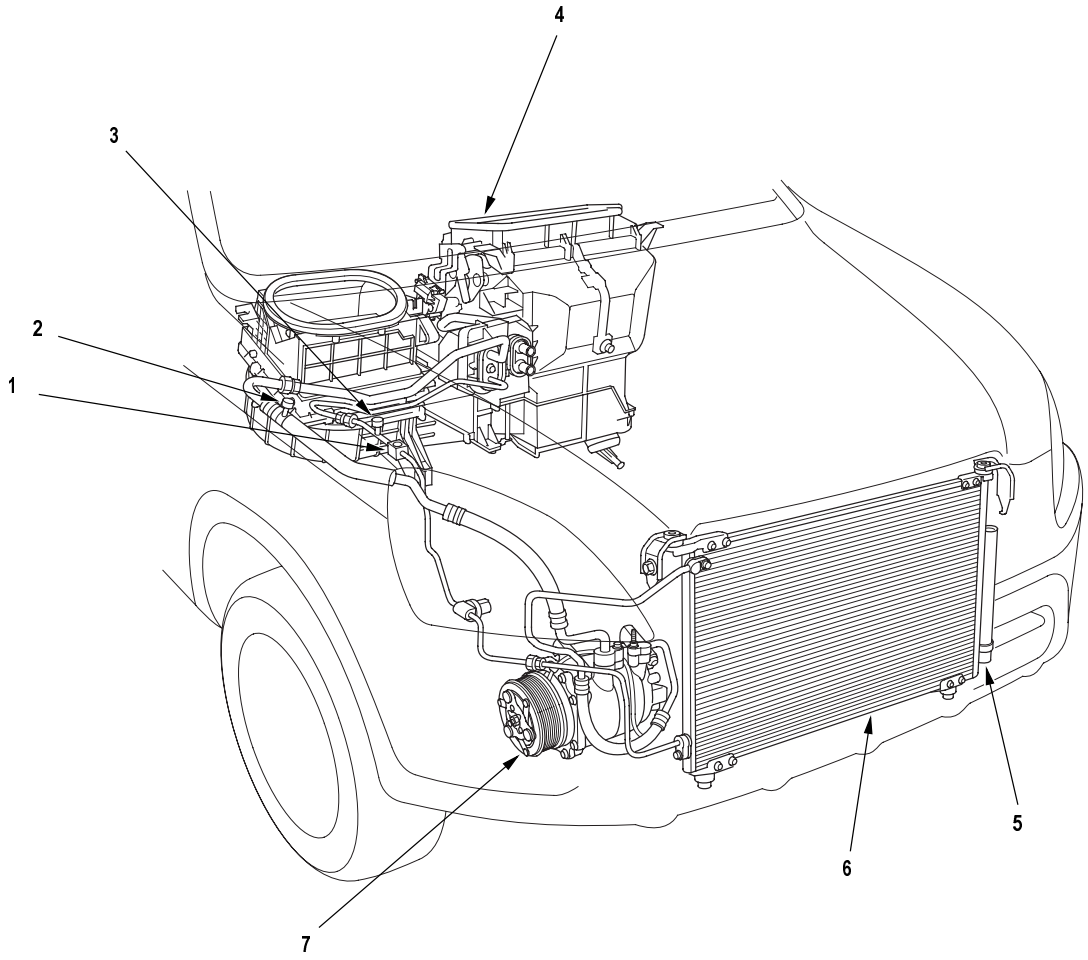
3. Set the temperature control dial on Max Cool with the ignition switch ON (II).
4. Attach the heater valve cable (B) to the air mix control linkage (C) as shown above. Hold the end of the heater valve cable housing against the stop (D), then snap the heater valve cable housing into the cable clamp (A).
5. From under the hood, turn the heater valve arm (C) to the fully closed position as shown, and hold it. Attach the heater valve cable (B) to the heater valve arm, and gently pull on the heater valve cable housing to take up any slack, then install the heater valve cable housing into the cable clamp (A).



Air Conditioning

Component Location Index

NOTE: LHD type is shown, RHD type is similar.

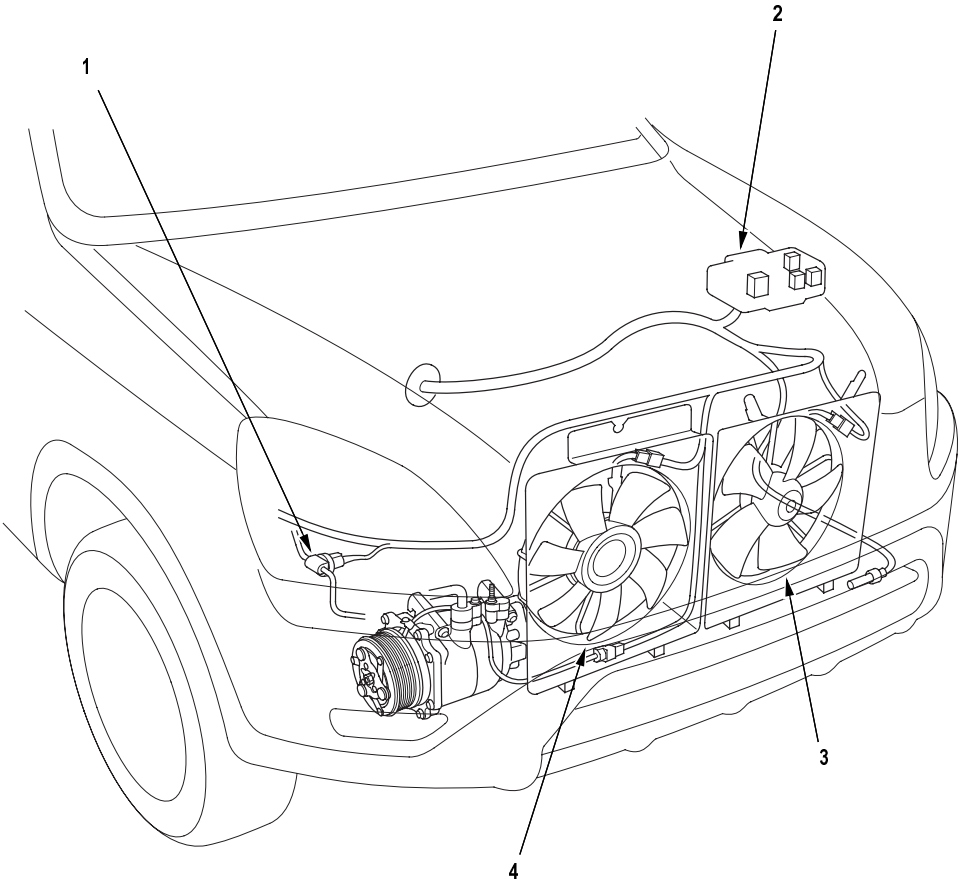


1	SIGHT GLASS	
2	SERVICE VALVE (LOW PRESSURE SIDE)	
3	SERVICE VALVE (HIGH PRESSURE SIDE)	
4	EVAPORATOR CORE (Built-in the heater unit)	Replacement, page 21-45
5	RECEIVER/DRYER	
6	CONDENSER	Replacement, page 21-51
7	COMPRESSOR	Replacement, page 21-46; Clutch Check, page 21-47; Clutch Overhaul, page 21-48; Thermal Protector Check, page 21-47; Thermal Protector Replacement, page 21-50; Relief Valve Replacement, page 21-50

(cont'd)

Component Location Index (cont'd)

NOTE: LHD type is shown, RHD type is similar.



1 A/C PRESSURE SWITCH

2 BLOWER MOTOR RELAY, RADIATOR FAN RELAY, CONDENSER FAN RELAY, COMPRESSOR CLUTCH RELAY (Located in the under-hood fuse/relay box) Test, page 22A-60

3 RADIATOR FAN

4 CONDENSER FAN

A/C Service Tips and Precautions

WARNING

- Compressed air mixed with R-134a forms a combustible vapor.
- The vapor can burn or explode causing serious injury.
- Never use compressed air to pressure test R-134a service equipment or vehicle air conditioning systems.

CAUTION

- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

The air conditioning system uses HFC-134a (R-134a) refrigerant and polyalkyleneglycol (PAG) refrigerant oil, which are not compatible with CFC-12 (R-12) refrigerant and mineral oil. Do not use R-12 refrigerant or mineral oil in this system, and do not attempt to use R-12 servicing equipment; damage to the air conditioning system or your servicing equipment will result.
Separate the manifold gauge sets (pressure gauges, hoses, joints) for refrigerants R-12 and R-134a. Do not confuse them.

If accidental system discharge occurs, ventilate work area before resuming service.

R-134a service equipment or vehicle air conditioning systems should not be pressure tested or leak tested with compressed air.

Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

- Always disconnect the negative cable from the battery whenever replacing air conditioning parts.
- Keep moisture and dirt out of the system. When disconnecting any lines, plug or cap the fittings immediately; don't remove the caps or plugs until just before you reconnect each line.
- Before connecting any hose or line, apply a few drops of refrigerant oil to the O-ring.
- When tightening or loosening a fitting, use a second wrench to support the matching fitting.
- When discharging the system, don't let refrigerant escape too fast; it will draw the compressor oil out of the system.

A/C Refrigerant Oil Replacement

Recommended PAG oil:

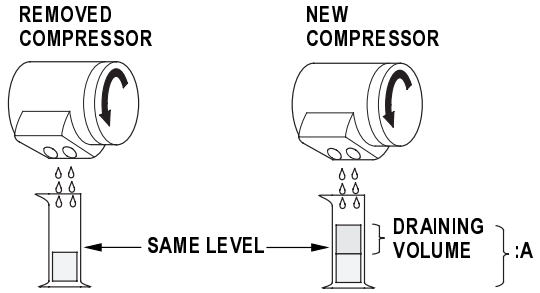
KEIHIN SP-10:
- P/N 38897-P13-003: 120 m*l* (4 fl·oz, 4.2 lmp·oz)
- P/N 38898-P13-003: 250 m*l* (8 1/3 fl·oz, 8.8 lmp·oz)
- P/N 38899-P13-A01: 40 m*l* (1 1/3 fl·oz, 1.4 lmp·oz)

Add the recommended refrigerant oil in the amount listed if you replace any of the following parts.

- To avoid contamination, do not return the oil to the container once dispensed, and never mix it with other refrigerant oils.
- Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
- Do not spill the refrigerant oil on the vehicle; it may damage the paint; if it gets on the paint, wash it off immediately.

Condenser ..... 35 m*l* (1 1/6 fl·oz, 1.2 lmp·oz)
Front evaporator ..... 40 m*l* (1 1/3 fl·oz, 1.4 lmp·oz)
Rear evaporator ..... 30 m*l* (1 fl·oz, 1.1 lmp·oz)
Line or hose ..... 10 m*l* (1/3 fl·oz, 0.4 lmp·oz)
Leakage repair ..... 25 m*l* (5/6 fl·oz, 0.9 lmp·oz)
Compressor ..... For compressor replacement, subtract the volume of oil drained from the removed compressor from A, and drain the calculated volume of oil from the new compressor: A - Volume of removed compressor = Volume to drain from new compressor.

NOTE: Even if no oil is drained from the removed compressor, don't drain more than 50 m*l* (1 2/3 fl·oz, 1.8 lmp·oz) from the new compressor.

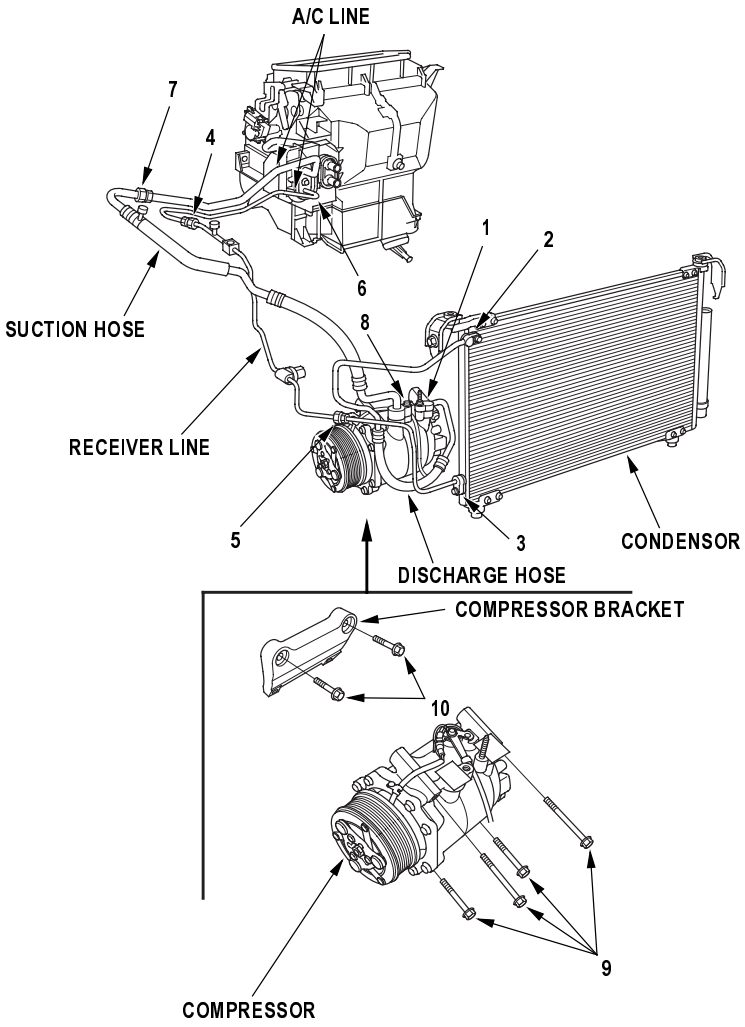


A: KEIHIN COMPRESSOR 130 m*l* (4 1/3 fl·oz, 4.6 lmp·oz)

(cont'd)

A/C Refrigerant Oil Replacement (cont'd)

NOTE: LHD type is shown, RHD type is similar.



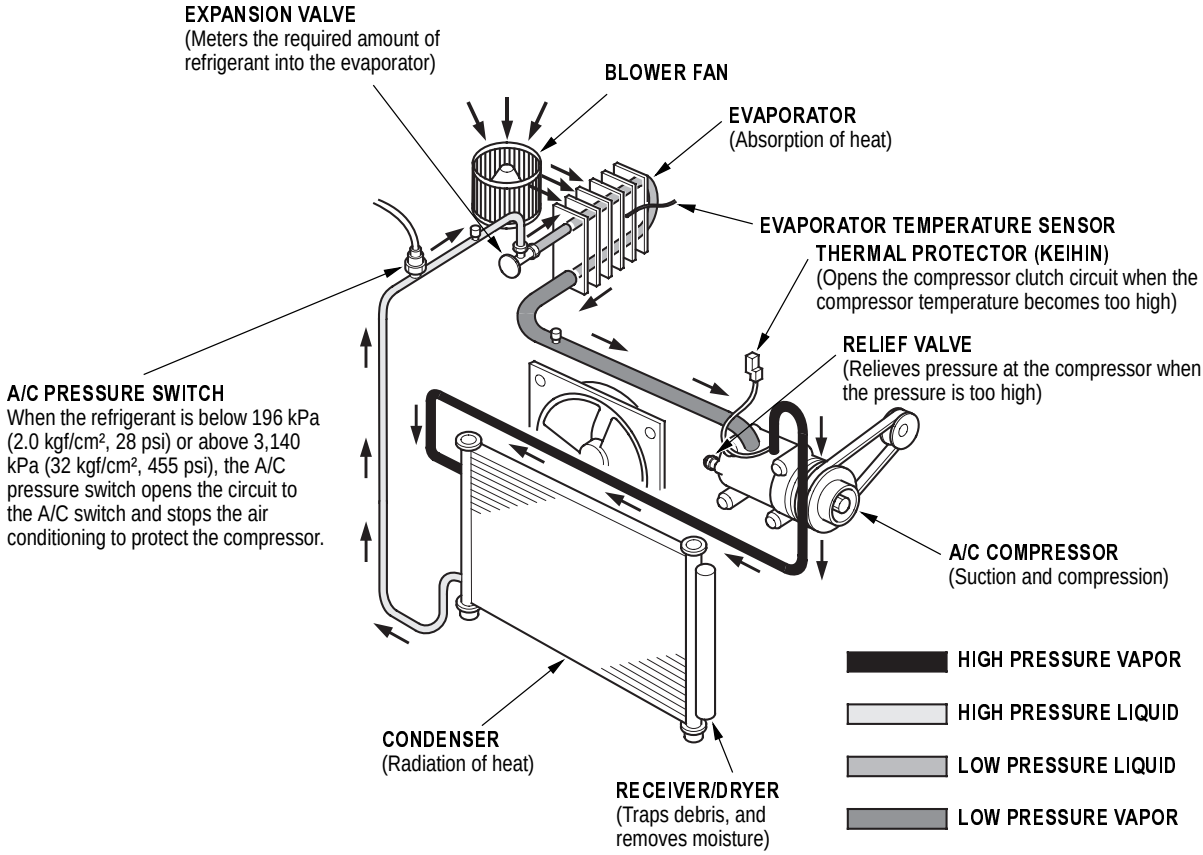
1 Discharge hose to the compressor (6 x 1.0 mm) : 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
2 Discharge hose to the condenser (6 x 1.0 mm) : 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
3 Receiver line to the condenser (6 x 1.0 mm) : 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
4 Receiver line to the A/C line : 13 N·m (1.3 kgf·m, 9.4 lbf·ft)
5 Receiver line A to the receiver line B (16 x 1.5 mm) : 13 N·m (3.2 kgf·m, 23 lbf·ft)
6 A/C line to the evaporator (6 x 1.0 mm) : 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
7 Suction hose to the A/C line : 31 N·m (3.2 kgf·m, 23 lbf·ft)
8 Suction hose to the compressor (6 x 1.0 mm) : 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
9 Compressor to the compressor bracket (8 x 1.25 mm) : 22 N·m (2.2 kgf·m, 16 lbf·ft)
10 Compressor bracket to the engine block (10 x 1.25 mm) : 44 N·m (4.5 kgf·m, 33 lbf·ft)

Symptom Troubleshooting Index

Symptom	Diagnostic procedure	Also check for
Condenser fan does not run at all (but radiator fan runs with the A/C on)	Condenser Fan Circuit Troubleshooting (see page 21-38)	• Blown fuse No. 1 (20A) in the under-hood fuse/relay box, and No. 14 (10A) in the under-dash fuse/relay box • Poor ground at G201 • Cleanliness and tightness of all connectors
Both fans do not run with the A/C on	Radiator and Condenser Fans Common Circuit Troubleshooting (see page 21-39)	• Blown fuse No. 1 (20A) and No. 4 (20A) in the under-hood fuse/relay box, and No. 14 (10A) in the under-dash fuse/relay box • Poor ground at G201 • Cleanliness and tightness of all connectors
Compressor clutch does not engage	Compressor Clutch Circuit Troubleshooting (see page 21-40)	• Blown fuse No. 1 (20A) in the under-hood fuse/relay box, and No. 14 (10A) in the under-dash fuse/relay box • Cleanliness and tightness of all connectors
A/C System does not come on (both fans and compressor)	A/C Pressure Switch Circuit Troubleshooting (see page 21-42)	Cleanliness and tightness of all connectors

System Description

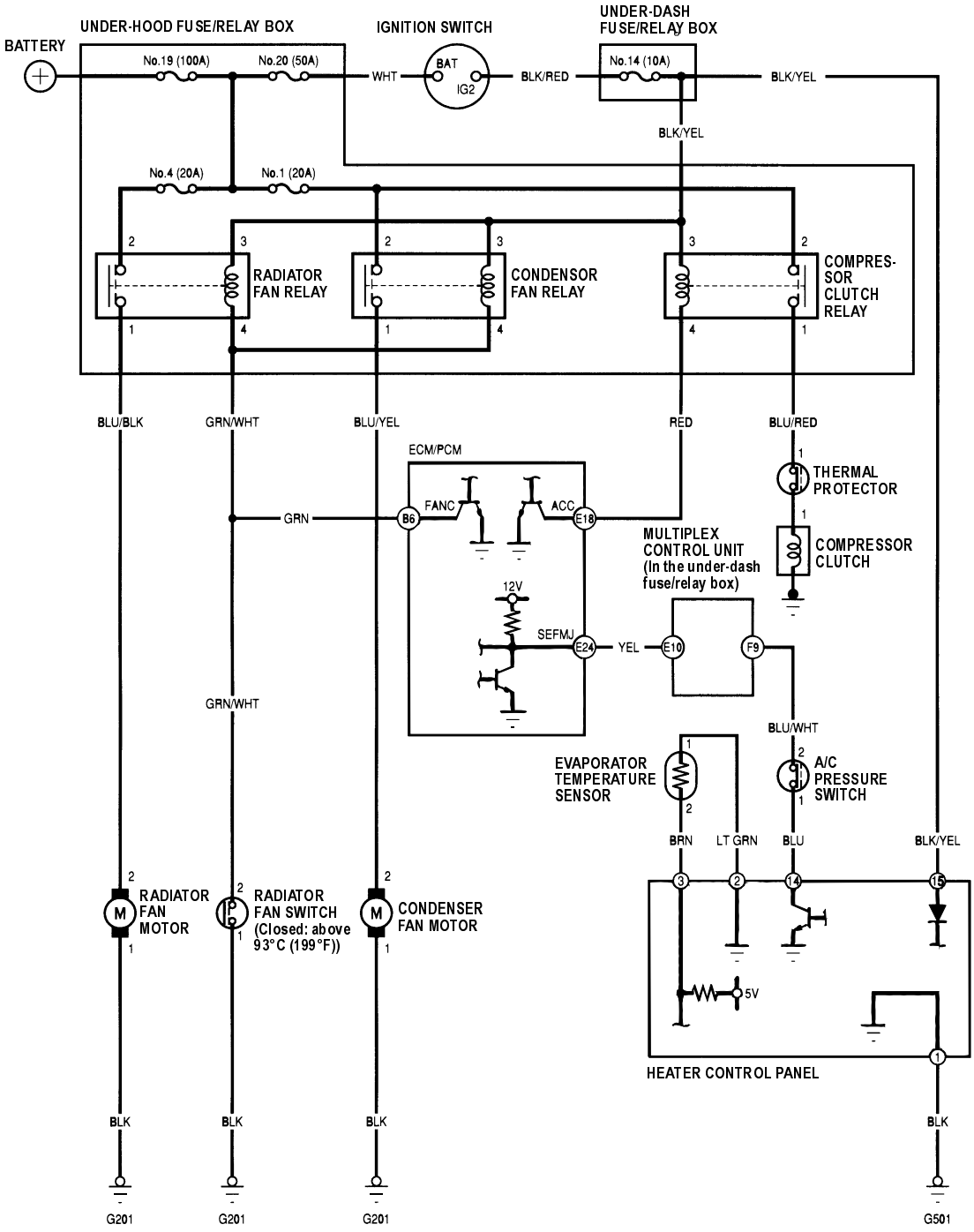
The air conditioning system removes heat from the passenger compartment by circulating refrigerant through the system as shown below.



This vehicle uses HFC-134a (R-134a) refrigerant which does not contain chlorofluorocarbons. Pay attention to the following service items:

- Do not mix refrigerants CFC-12 (R-12) and HFC-134a (R-134a). They are not compatible.
- Use only the recommended polyalkyleneglycol (PAG) refrigerant oil (KEIHIN SP-10) designed for the R-134a compressor. Intermixing the recommended (PAG) refrigerant oil with any other refrigerant oil will result in compressor failure.
- All A/C system parts (compressor, discharge line, suction line, evaporator, condenser, receiver/dryer, expansion valve, O-rings for joints) have to be proper for refrigerant R-134a. Do not confuse with R-12 parts.
- Use a halogen gas leak detector designed for refrigerant R-134a.
- Use a vacuum pump adapter which is equipped with a check valve to prevent the backflow of the vacuum pump oil.
- Separate the manifold gauge sets (pressure gauges, hoses, joints) for refrigerants R-12 and R-134a. Do not confuse them.

Circuit Diagram



Condenser Fan Circuit Troubleshooting

1. Check the No. 1 (20A) fuse in the under-hood fuse/relay box, and the No. 14 (10A) fuse in the under-dash fuse/relay box.

   Are the fuses OK?

   Yes Go to step 2.

   No Replace the fuse(s), and recheck.■

2. Remove the condenser fan relay from the under-hood fuse/relay box, and test it (see page 22A-60).

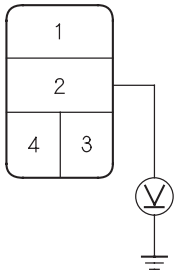
   Is the relay OK?

   Yes Go to step 3.

   No Replace the condenser fan relay.■

3. Measure the voltage between the No. 2 terminal of the condenser fan relay 4P socket and body ground.

   CONDENSER FAN RELAY 4P SOCKET



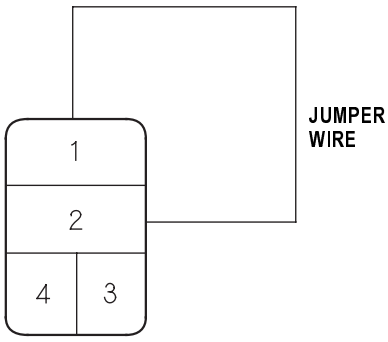
   Is there battery voltage?

   Yes Go to step 4.

   No Replace the under-hood fuse/relay box.■

4. Connect the No. 1 and No. 2 terminals of the condenser fan relay 4P socket with a jumper wire.

   CONDENSER FAN RELAY 4P SOCKET



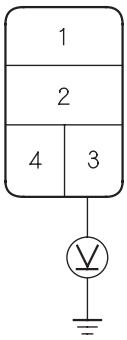
   Does the condenser fan run?

   Yes Go to step 5.

   No Go to step 8.

5. Disconnect the jumper wire.
6. Turn the ignition switch ON (II).
7. Measure the voltage between the No. 3 terminal of the condenser fan relay 4P socket and body ground.

   CONDENSER FAN RELAY 4P SOCKET



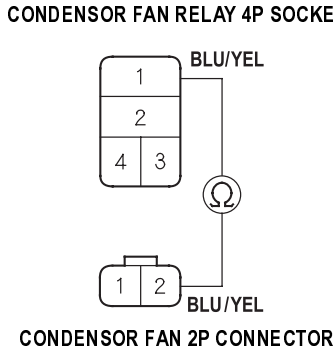
   Is there battery voltage?

   Yes Replace the under-hood fuse/relay box.■

   No Repair open in the wire between the No. 14 fuse in the under-dash fuse/relay box and the condenser fan relay socket in the under-hood fuse/relay box.■

8. Disconnect the jumper wire.

9. Disconnect the condenser fan 2P connector.
10. Check for continuity between the No. 1 terminal of the condenser fan relay 4P socket and the No. 2 terminal of the condenser fan 2P connector.

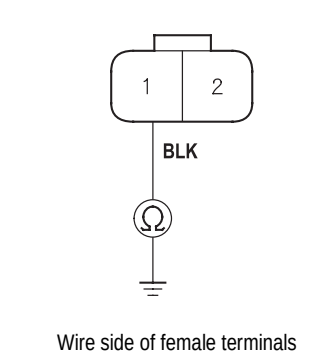


Is there continuity?

Yes Go to step 11.

No Repair open in the wire between the condenser fan relay socket in the under-hood fuse/relay box and the condenser fan.■

11. Check for continuity between the No. 1 terminal of the condenser fan 2P connector and body ground.



Is there continuity?

Yes Replace the condenser fan motor.■

No Check for an open in the wire between the condenser fan and body ground. If the wire is OK, check for poor ground at G201.■

Radiator and Condenser Fans Common Circuit Troubleshooting

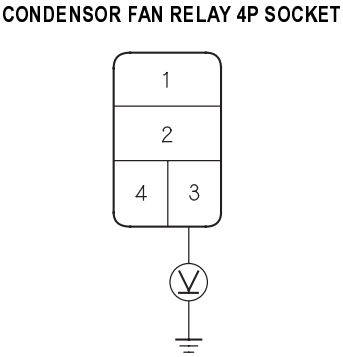
1. Check the No. 1 (20A) and No. 4 (20A) fuses in the under-hood fuse/relay box, and the No. 14 (10A) fuse in the under-dash fuse/relay box.

   Are the fuses OK?

   Yes Go to step 2.

   No Replace the fuse(s), and recheck.■

2. Remove the condenser fan relay from the under-hood fuse/relay box.
3. Turn the ignition switch ON (II).
4. Measure the voltage between the No. 3 terminal of the condenser fan relay 4P socket and body ground.



Is there battery voltage?

Yes Go to step 5.

No Repair open in the wire between the No. 14 fuse in the under-dash fuse/relay box and the radiator fan relay socket, and the condenser fan relay socket.■

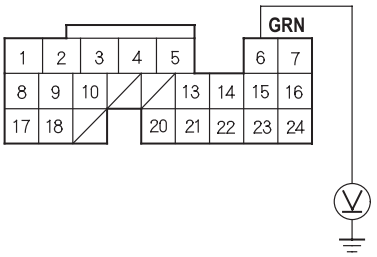
5. Turn the ignition switch OFF.
6. Reinstall the condenser fan relay.
7. Make sure the A/C switch is OFF.
8. Turn the ignition switch ON (II).

(cont'd)

Radiator and Condenser Fans Common Circuit Troubleshooting (cont'd)

9. Measure the voltage between the No. 6 terminal of ECM/PCM connector B (24P) and body ground with the ECM/PCM connectors connected.

ECM / PCM CONNECTOR B (24P)



Wire side of female terminals

Is there battery voltage?

Yes Check for loose wires or poor connections at ECM/PCM connector B (24P). If the connections are good, substitute a known-good ECM/PCM, and recheck. If the symptom/indication goes away, replace the original ECM/PCM.■

No Repair open in the wire between the radiator fan relay socket, the condenser fan relay socket and the ECM/PCM.■

Compressor Clutch Circuit Troubleshooting

1. Check the No. 1 (20A) fuse in the under-hood fuse/relay box, and the No. 14 (10A) fuse in the under-dash fuse/relay box.

Are the fuses OK?

Yes Go to step 2.

No Replace the fuse(s), and recheck.■

2. Check the engine coolant temperature (use the Honda PGM Tester PGM-FI data list if possible).

Is the coolant temperature above nomal?

Yes Troubleshoot and repair the cause of the high engine coolant temperature.■

No Go to step 3.

3. Remove the compressor clutch relay from the under-hood fuse/relay box, and test it (see page 22A-60).

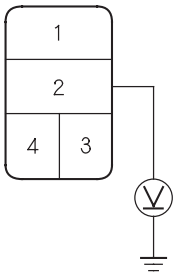
Is the relay OK?

Yes Go to step 4.

No Replace the compressor clutch relay.■

4. Measure the voltage between the No. 2 terminal of the compressor clutch relay 4P socket and body ground.

CONDENSOR FAN RELAY 4P SOCKET



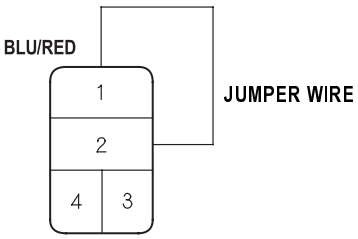
Is there battery voltage?

Yes Go to step 5.

No Replace the under-hood fuse/relay box.■

5. Connect the No. 1 and No. 2 terminals of the compressor clutch relay 4P socket with a jumper wire.

COMPRESSOR CLUTCH RELAY 4P SOCKET



Does the compressor clutch click ?

Yes Go to step 6.

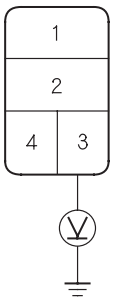
No Go to step 14.

6. Disconnect the jumper wire.

7. Turn the ignition switch ON (II).

8. Measure the voltage between the No. 3 terminal of the compressor clutch relay 4P socket and body ground.

COMPRESSOR CLUTCH RELAY 4P SOCKET



Is there battery voltage?

Yes Go to step 9.■

No Repair open in the wire between the No. 14 fuse in the under-dash fuse/relay box and the compressor clutch relay socket.■

9. Turn the ignition switch OFF.

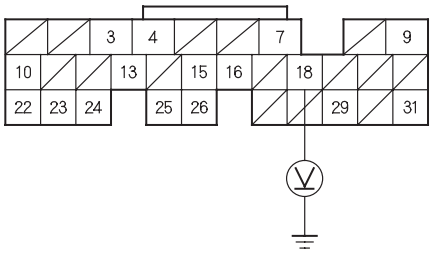
10. Reinstall the compressor clutch relay.

11. Make sure the A/C switch is OFF.

12. Turn the ignition switch ON (II).

13. Measure the voltage between the No. 18 terminal of ECM/PCM connector E (31P) and body ground with the ECM/PCM connectors connected.

ECM/PCM CONNECTOR E (31P)



Wire side of female terminals

Is there battery voltage?

Yes Check for loose wires or poor connections at ECM/PCM connector E (31P). If the connections are good, substitute a known-good ECM/PCM, and recheck. If the symptom/indication goes away, replace the original ECM/PCM.■

No Repair open in the wire between the compressor clutch relay and the ECM/PCM.■

14. Disconnect the jumper wire.

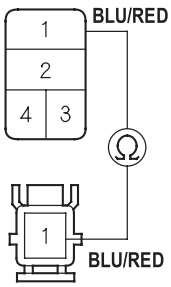
15. Disconnect the compressor clutch 1P connector.

(cont'd)

Compressor Clutch Circuit Troubleshooting (cont'd)

16. Check for continuity between the No. 1 terminal of the compressor clutch relay 4P socket and the No. 1 terminal of the compressor clutch 1P connector.

COMPRESSOR CLUTCH RELAY 4P SOCKET



COMPRESSOR CLUTCH 1P CONNECTOR
Terminal side of male terminals

Is there continuity?

Yes Check the KEIHIN compressor clutch clearance, the thermal protector, and the compressor clutch field coil (see page 21-47).■

No Repair open in the wire between the compressor clutch relay socket and the compressor clutch.■

A/C Pressure Switch Circuit Troubleshooting

1. Turn the ignition switch ON (II).

2. Turn the blower switch on, and check for blower motor operation.

Does the blower motor run on all speeds?

Yes Go to step 3.

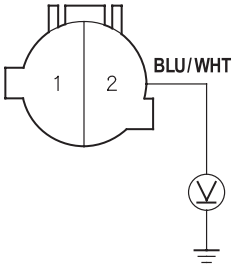
No Troubleshoot the blower motor circuit (see page 21-13).

3. Disconnect the A/C pressure switch 2P connector.

4. Turn the ignition switch ON (II).

5. Measure the voltage between the No. 2 terminal of the A/C pressure switch 2P connector and body ground.

A/C PRESSURE SWITCH 2P CONNECTOR



Wire side of female terminals

Is there 5V or more?

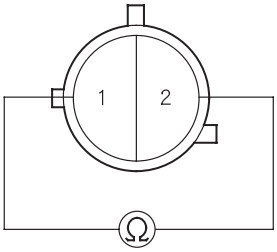
Yes Go to step 6.

No Go to step 12.

6. Turn the ignition switch OFF.

7. Check for continuity between the No. 1 and No. 2 terminals of the A/C pressure switch.

A/C PRESSURE SWITCH



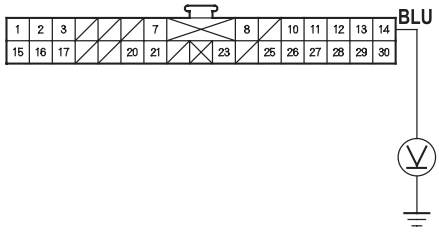
Is there continuity?

Yes Go to step 8.

No Go to step 14.

8. Reconnect the A/C pressure switch 2P connector.
9. Disconnect the heater control panel 30P connector.
10. Turn the ignition switch ON (II).
11. Measure the voltage between the No. 14 terminal of the heater control panel 30P connector and body ground.

HEATER CONTROL PANEL 30P CONNECTOR



Wire side of female terminals

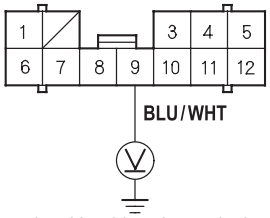
Is there battery voltage?

Yes Check for loose wires or poor connections at the heater control panel 30P connector and at the A/C pressure switch 2P connector. If the connections are good, substitute a known-good heater control panel, and recheck. If the symptom/indication goes away, replace the original heater control panel.■

No Repair open in the wire between the heater control panel and the A/C pressure switch.■

12. Make sure the A/C switch is OFF.
13. Measure the voltage between the No. 9 terminal of under-dash fuse/relay box connector F (12P) and body ground with the under-dash fuse/relay box connectors connected.

UNDER - DASH FUSE/RELAY BOX CONNECTOR F (12P)



Wire side of female terminals

Is there 5 V or more?

Yes Repair open in the wire between the under-dash fuse/relay box and the A/C pressure switch.■

No Refer to the multiplex control system (see page 22A-227).■

NOTE: Check for multiplex codes in mode 1. Follow the troubleshooting for any codes found. If no codes are found, substitute a known-good multiplex control unit and a PCM one at a time.

14. Check for proper A/C system pressure.

Is the pressure within specifications?

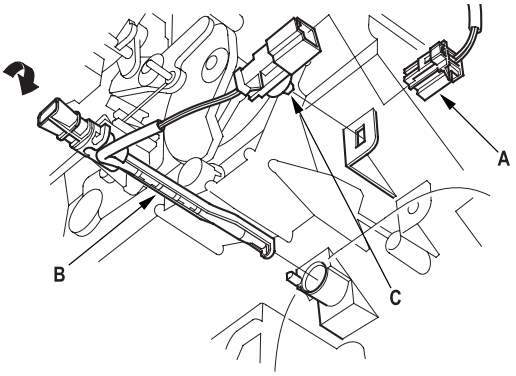
Yes Replace the A/C pressure switch.■

No Repair the A/C pressure problem.■

Evaporator Temperature Sensor Replacement

NOTE: LHD type is shown, RHD type is symmetrical.

1. Disconnect the 2P connector (A) from the evaporator temperature sensor (B), then remove the connector clip (C). Turn the evaporator temperature sensor counterclockwise to the stop, and carefully pull out it.

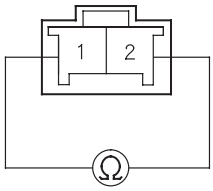


2. Install the sensor in the reverse order of removal.

Evaporator Temperature Sensor Test

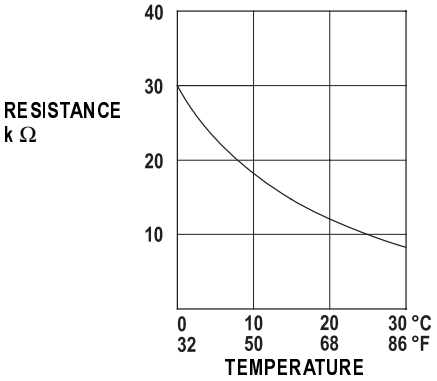
1. Dip the sensor in ice water, and measure the resistance between its terminals.

EVAPORATOR TEMPERATURE SENSOR



Terminal side of male terminals

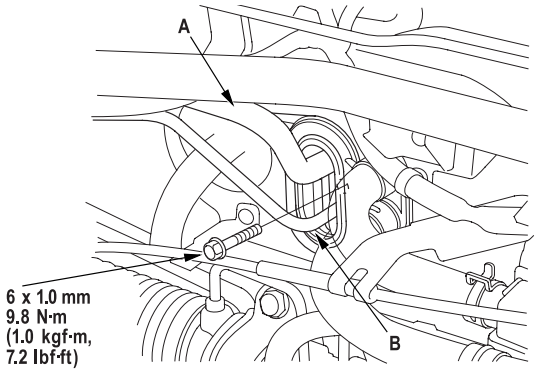
2. Then pour hot water on the sensor, and check for a change in resistance.
3. Compare the resistance readings with the specifications shown in the graph; the resistance should be within the specifications.



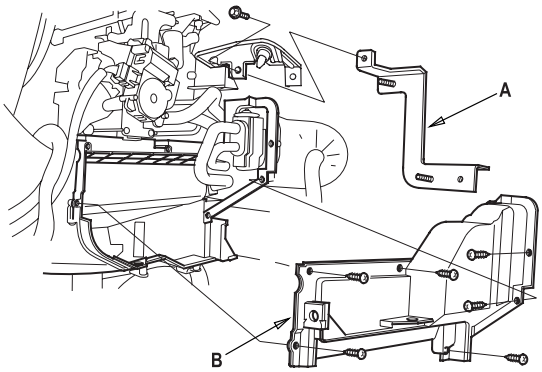
Evaporator Core Replacement

NOTE: LHD type is shown, RHD type is symmetrical.

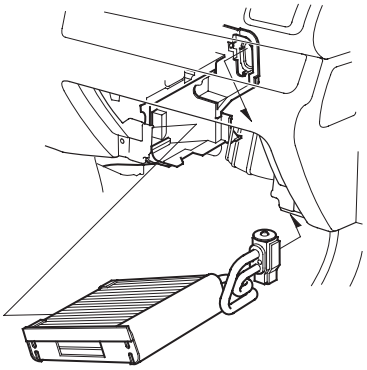
1. Recover the refrigerant with a recovery/recycling/charging station (see page 21-53).
2. Remove the bolt, then disconnect the A/C line from the evaporator core.



3. Remove the blower unit (see page 21-26).
4. Remove the bolt and the ECM/PCM bracket (A). Remove the self-tapping screws and the expansion valve cover (B).



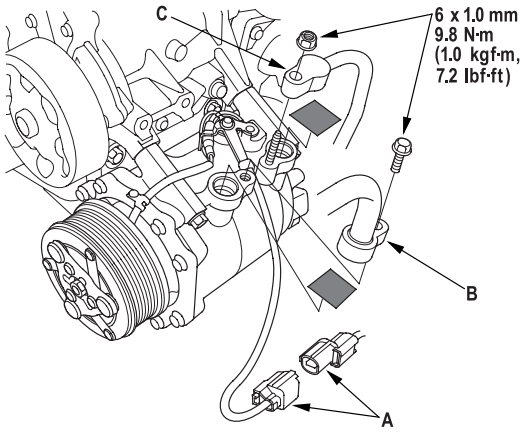
5. Carefully pull out the evaporator core without bending the pipes.



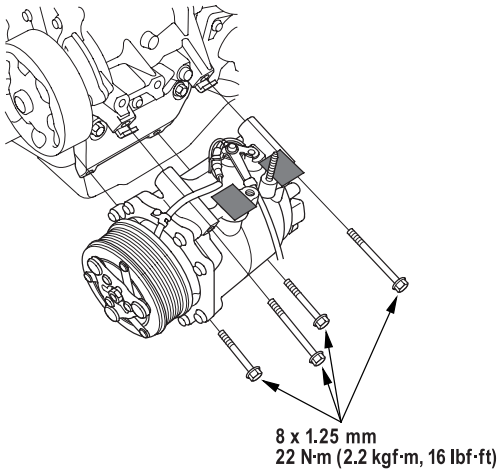
6. Install the core in the reverse order of removal, and note these items:
   - If you're installing a new evaporator core, add refrigerant oil (KEIHIN SP-10) (see page 21-33).
   - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the right O-rings for HFC-134a (R-134a) to avoid leakage.
   - Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
   - Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.
   - Charge the system (see page 21-55).

Compressor Replacement

1. If the compressor is marginally operable, run the engine at idle speed, and let the air conditioning work for a few minutes, then shut the engine off.
2. Disconnect the negative cable from the battery.
3. Recover the refrigerant with a recovery/recycling/charging station (see page 21-53).
4. Remove the radiator reservoir tank (see page 10-10).
5. Remove the alternator (see page 04-32).
6. Disconnect the compressor clutch connector (A), remove the bolt and nut, then disconnect the suction line (B) and the discharge line (C) from the compressor. Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.



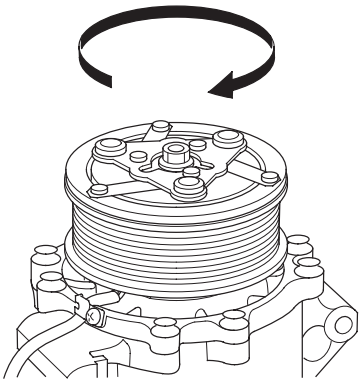
7. Remove the mounting bolts and the compressor. Be careful not to damage the radiator fins when removing the compressor.



8. Install the compressor in the reverse order of removal, and note these items:
   - If you're installing a new compressor, you must calculate the amount of refrigerant oil to be removed from it (see page 21-33).
   - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the right O-rings for HFC-134a (R-134a) to avoid leakage.
   - Use refrigerant oil (KEIHIN SP-10) for HFC-134a KEIHIN spiral type compressor only.
   - To avoid contamination, do not return the oil to the container once dispensed, and never mix it with other refrigerant oils.
   - Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
   - Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.
   - Be careful not to damage the radiator fins when installing the compressor and the condenser fan shroud.
   - Charge the system (see page 21-55)
   - Enter the anti-theft code for the radio, then enter the customer's radio station presets.

Compressor Clutch Check

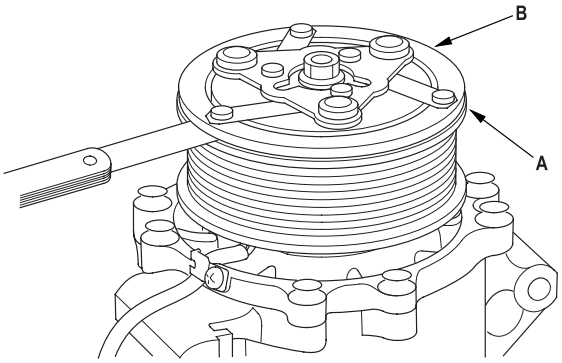
1. Check the armature plate for discoloration, peeling, or other damage. If there is damage, replace the clutch set (see page 21-48).
2. Check the rotor pulley bearing play and drag by rotating the rotor pulley by hand. Replace the clutch set with a new one if it is noisy or has excessive play/drag (see page 21-48).



3. Measure the clearance between the rotor pulley (A) and the armature plate (B) all the way around. If the clearance is not within specified limits, remove the armature plate (see page 21-48) and add or remove shims as needed to increase or decrease clearance.

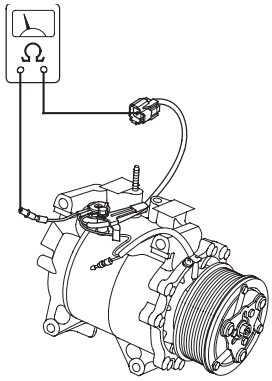
   Clearance: 0.5 ± 0.15 mm (0.020 ± 0.006 in.)

   NOTE: The shims are available in four thicknesses: 0.1 mm, 0.2 mm, 0.4 mm, and 0.5 mm.



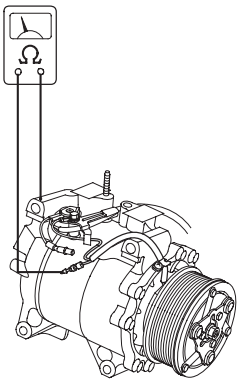
4. Release the field coil connector from the holder, then disconnect it. Check the thermal protector for continuity. If there is no continuity, replace the thermal protector (see page 21-50).

   NOTE: The thermal protector will have no continuity above 122 to 128°C (252 to 262°F). When the temperature drops below 116 to 104°C (241 to 219°F), the thermal protector will have continuity.



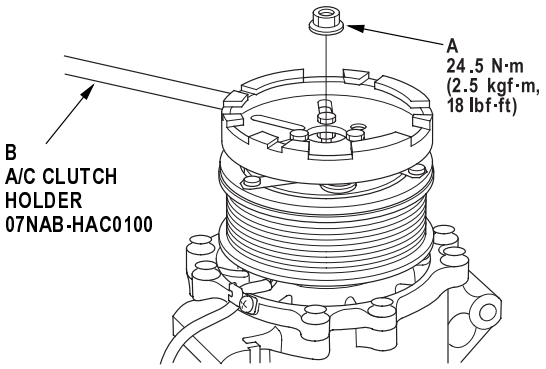
5. Check resistance of the field coil. If resistance is not within specifications, replace the field coil (see page 21-48).

   Field Coil Resistance: 3.05 - 3.35 ohms at 20°C (68°F)



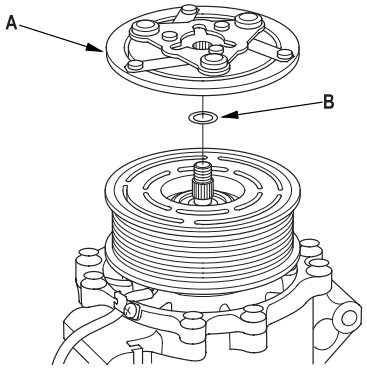
Compressor Clutch Overhaul

1. Remove the center nut (A) while holding the armature plate with the special tool (B).

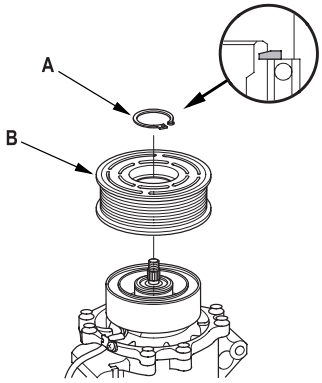


2. Remove the armature plate (A) and shim(s) (B), taking care not to lose the shim(s). If the clutch needs adjustment, increase or decrease the number and thickness of shims as necessary, then reinstall the armature plate, and recheck its clearance (see page 21-47).

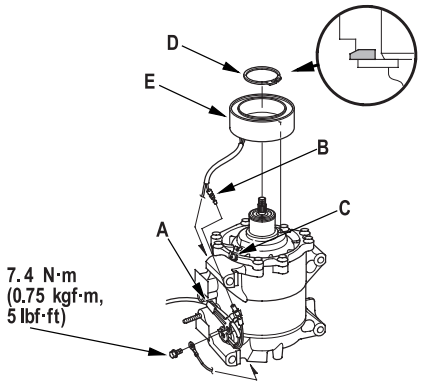
   NOTE: The shims are available in four thickness: 0.1 mm, 0.2 mm, 0.4 mm and 0.5 mm.



3. If you are replacing the field coil, remove the snap ring (A) with snap ring pliers, then remove the rotor pulley (B). Be careful not to damage the rotor pulley and compressor.



4. Remove the bolt and holder (A), then disconnect the field coil connector (B). Loosen the clamp screw (C) to free the field coil wire. Remove the snap ring (D) with snap ring pliers, then remove the field coil (E). Be careful not to damage the field coil and compressor.

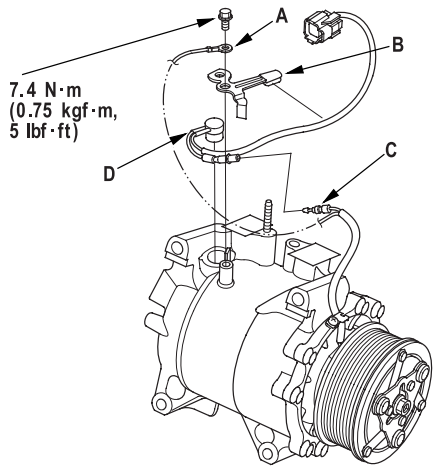


5. Reassemble the clutch in the reverse order of disassembly, and note these items:

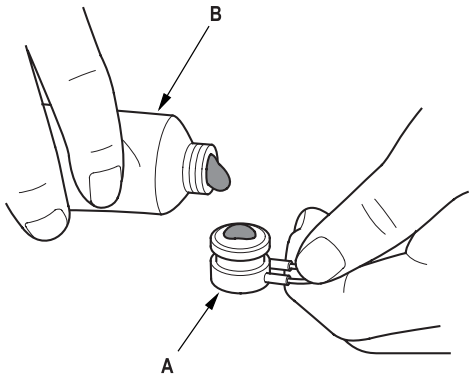
- Install the field coil with the wire side facing down, and align the boss on the field coil with the hole in the compressor.
- Clean the rotor pulley and compressor sliding surfaces with contact cleaner or other non-petroleum solvent.
- Install new snap rings, note the installation direction, and make sure they are fully seated in the groove.
- Make sure that the rotor pulley turns smoothly after it's reassembled.
- Route and clamp the wires properly or they can be damaged by the rotor pulley.

Compressor Thermal Protector Replacement

1. Remove the bolt, the ground terminal (A), and the holder (B). Disconnect the field coil connector (C), then remove the thermal protector (D).



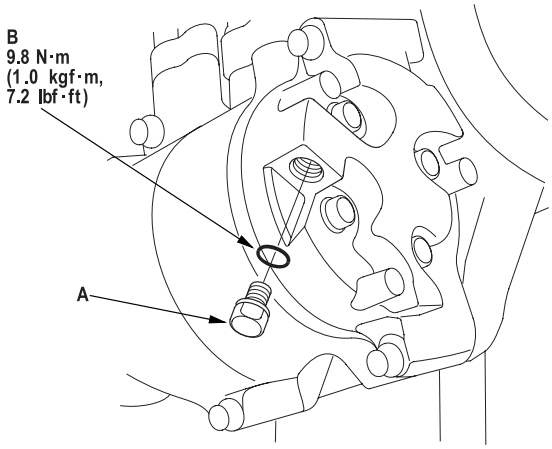
2. Replace the thermal protector (A) with a new one, and apply silicone sealant (B) to the bottom of the thermal protector.



3. Install in the reverse order of removal.

Compressor Relief Valve Replacement

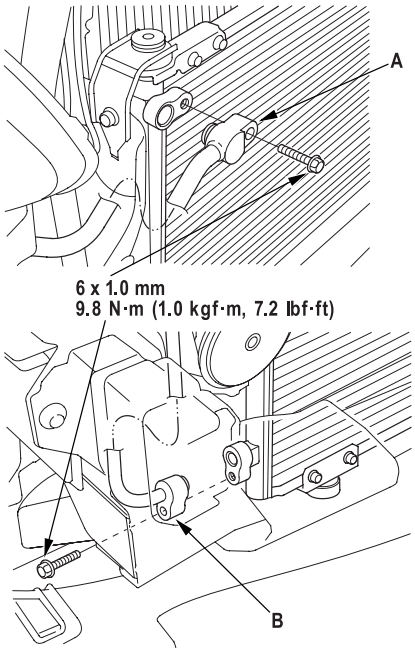
1. Recover the refrigerant with a recovery/recycling/charging station (see page 21-53).
2. Remove the relief valve (A), and the O-ring (B). Plug the opening to keep foreign matter from entering the system and the compressor oil from running out.



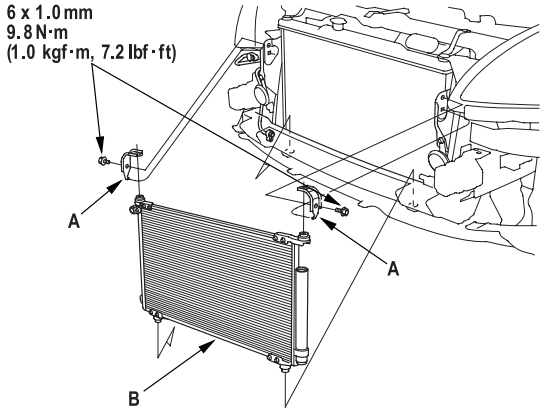
3. Clean the mating surfaces.
4. Install a new O-ring on the relief valve, and apply a thin coat of refrigerant oil to the O-ring.
5. Remove the plug, and install and tighten the relief valve.
6. Charge the system (see page 21-55).

Condenser Replacement

1. Recover the refrigerant with a recovery/recycling/charging station (see page 21-55).
2. Remove the front bumper (see page 20-130).
3. Remove the bolts, then disconnect the discharge line (A) and the receiver line (B) from the condenser. Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.



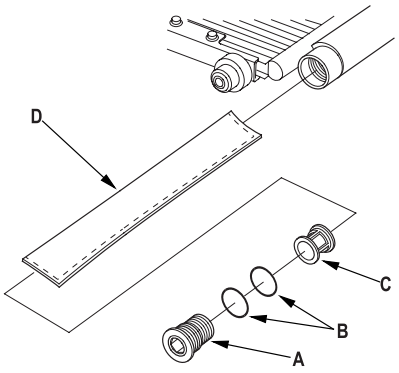
4. Remove the bolts and mounting brackets (A), then remove the condenser (B) by lifting it up. Be careful not to damage the radiator and condenser fins when removing the condenser.



5. Install the condenser in the reverse order of removal, and note these items:
   - If you're installing a new condenser, add refrigerant oil (KEIHIN SP-10) (see page 21-33).
   - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the right O-rings for HFC-134a (R-134a) to avoid leakage.
   - Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
   - Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.
   - Be careful not to damage the radiator and condenser fins when installing the condenser.
   - Charge the system (see page 21-55).

Receiver/Dryer Desiccant Replacement

1. Remove the condenser (see page 21-51).
2. Remove the cap (A) from the bottom of the condenser, then remove the O-rings (B), the filter (C) and the desiccant (D).



3. Install the desiccant in the reverse order of removal, and note these items:
   - Replace the O-rings with new ones, and apply a thin coat of refrigerant oil (KEIHIN SP-10) before installing them.
   - Be sure to use the right O-rings for HFC-134a (R-134a) to avoid leakage.

Refrigerant Recovery

CAUTION

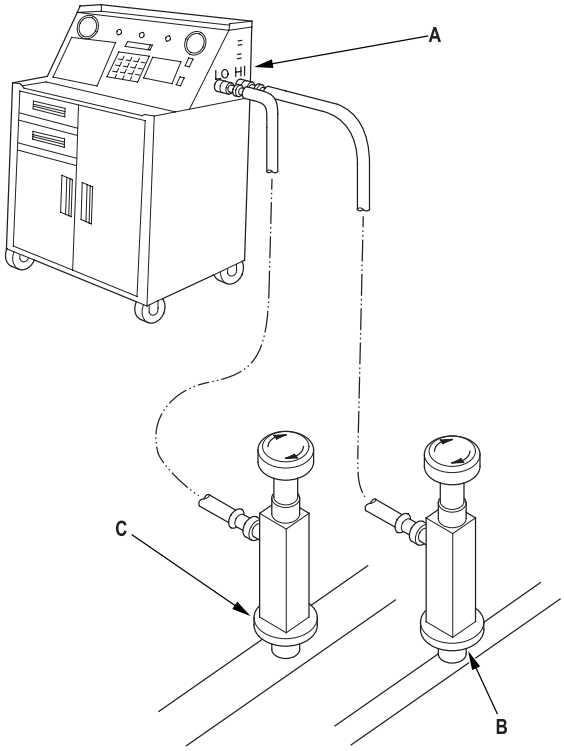
- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

Use only service equipment for refrigerant HFC-134a (R-134a).

If accidental system discharge occurs, ventilate work area before resuming service.

Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. Connect a R-134a refrigerant recovery/recycling/charging station (A) to the high-pressure service port (B) and the low-pressure service port (C), as shown, following the equipment manufacturer's instructions.



2. Measure the amount of refrigerant oil removed from the A/C system after the recovery process is completed. Be sure to put the same amount of new refrigerant oil back into the A/C system before charging.

System Evacuation

CAUTION

- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

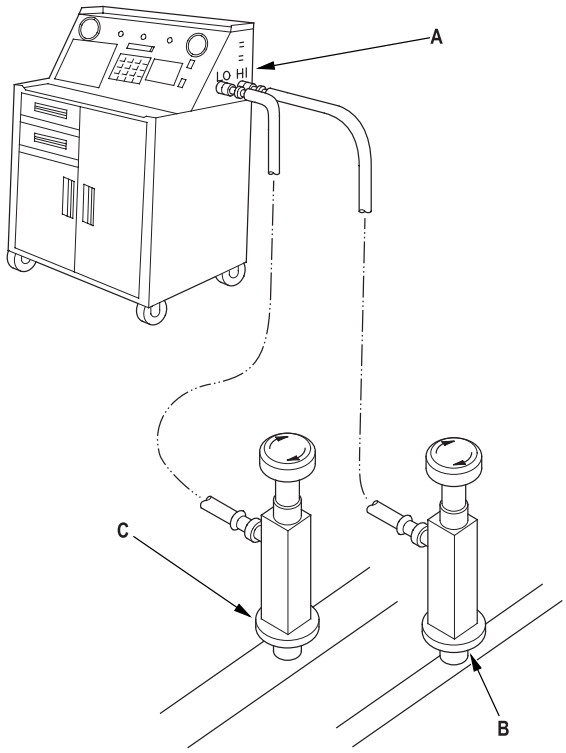
Use only service equipment for refrigerant HFC-134a (R-134a).

If accidental system discharge occurs, ventilate work area before resuming service.

Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. When an A/C system has been opened to the atmosphere, such as during installation or repair, it must be evacuated using a R-134a refrigerant recovery/recycling/charging station. (If the system has been open for several days, the receiver/dryer should be replaced, and the system should be evacuated for several hours.)

2. Connect a R-134a refrigerant recovery/recycling/charging station (A) to the high-pressure service port (B) and the low-pressure service port (C), as shown, following the equipment manufacturer's instructions. Evacuate the system.



3. If the low-pressure does not reach more than 93.3 kPa (700 mmHg, 27.6 in.Hg) in 15 minutes, there is probably a leak in the system. Partially charge the system, and check for leaks (see step 3 on page 21-56).

System Charging

CAUTION

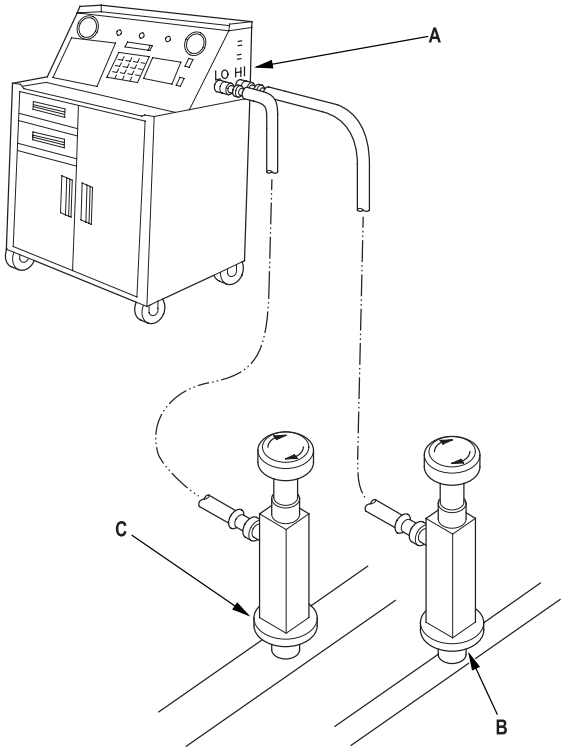
- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

Use only service equipment for refrigerant HFC-134a (R-134a).

If accidental system discharge occurs, ventilate work area before resuming service.

Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. Connect a R-134a refrigerant recovery/recycling/charging station (A) to the high-pressure service port (B) and the low-pressure service port (C), as shown, following the equipment manufacturer's instructions.



2. Evacuate the system (see page 21-54).
3. Add the same amount of new refrigerant oil to the system that was removed during recovery. Use only KEIHIN SP-10 refrigerant oil.
4. Charge the system with the specified amount of R-134a refrigerant. Do not overcharge the system; the compressor will be damaged.

   Select the appropriate units of measure for your refrigerant charging station.

   Refrigerant capacity:
   480 to 530 g
   0.48 to 0.53 kg
   1.06 to 1.17 lbs
   16.9 to 18.7 oz
5. Check for refrigerant leaks (see page 21-56).
6. Check for system performance (see page 21-58).

Refrigerant Leak Test

WARNING

- Compressed air mixed with R-134a froms a combustible vapor.
- The vapor can burn or explode causing serious injury.
- Never use compressed air to pressure test R-134a service equipment or vehicle air conditioning system.

CAUTION

- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

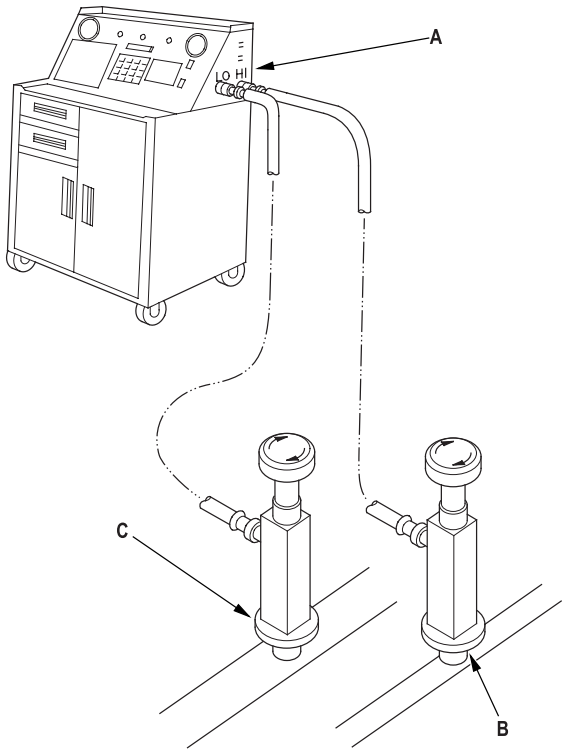
Use only service equipment for refrigerant HFC-134a (R-134a).

If accidental system discharge occurs, ventilate work area before resuming service.

R-134a service equipment or vehicle air conditioning systems should not be pressure tested or leak tested with compressed air.

Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. Connect a R-134a refrigerant recovery/recycling/charging station (A) to the high-pressure service port (B) and the low-pressure service port (C), as shown, following the equipment manufacturer's instructions.



2. Open high pressure valve to charge the system to the specified capacity, then close the supply valve, and remove the charging system couplers.

   Select the appropriate units of measure for your refrigerant charging station.

   Refrigerant capacity:
   480 to 530 g
   0.48 to 0.53 kg
   1.06 to 1.17 lbs
   16.9 to 18.7 oz

3. Check the system for leaks using a R-134a refrigerant leak detector with an accuracy of 14 g (0.5 oz) per year or better.
4. If you find leaks that require the system to be opened (to repair or replace hoses, fittings, etc.), recover the system.
5. After checking and repairing leaks, the system must be evacuated.

A/C System Tests

Pressure Test

Test results	Related symptoms	Probable cause	Remedy
Discharge (high) pressure abnormally high	After stopping compressor, pressure drops to about 196 kPa (2.0 kgf/cm^2, 28 psi) quickly, and then falls gradually.	Air in system	Discharge, evacuate (see page 21-54), and recharge with specified amount (see page 21-55).
	No bubbles in sight glass when condenser is cooled by water.	Excessive refrigerant in system	Discharge, evacuate, and recharge with specified amount.
	Reduced or no air flow through condenser.	• Clogged condenser or radiator fins • Condenser or radiator fan not working properly	• Clean. • Check voltage and fan rpm. • Check fan direction.
	Line to condenser is excessively hot.	Restricted flow of refrigerant in system	Restricted lines
Discharge pressure abnormally low	Excessive bubbles in sight glass; condenser is not hot.	Insufficient refrigerant in system	• Check for leak. • Charge system.
	High and low pressures are balanced soon after stopping compressor. Low side is higher than normal.	• Faulty compressor discharge valve • Faulty compressor seal	Replace the compressor.
	Outlet of expansion valve is not frosted, low-pressure gauge indicates vacuum.	• Faulty expansion valve • Moisture in system	• Replace. • Discharge, evacuate, and recharge with specified amount.
Suction (low) pressure abnormally low	Excessive bubbles in sight glass; condenser is not hot.	Insufficient refrigerant in system	• Repair the leaks. • Discharge, evacuate, and recharge with specified amount. • Charge as required.
	Expansion valve is not frosted, and low-pressure line is not cold. Low-pressure gauge indicates vacuum.	• Frozen expansion valve (Moisture in system) • Faulty expansion valve	• Discharge, evacuate, and recharge with specified amount. • Replace the expansion valve.
	Discharge temperature is low, and the air flow from vents is restricted.	Frozen evaporator	Run the fan with compressor off, then check evaporator temperature sensor.
	Expansion valve is frosted.	Clogged expansion valve	Clean or replace.
Suction pressure abnormally high	Low-pressure hose and check joint are cooler than the temperature around evaporator.	Expansion valve open too long	Repair or replace.
	Suction pressure is lowered when condenser is cooled by water.	Excessive refrigerant in system	Discharge, evacuate, and recharge with specified amount.
	High and low-pressure are equalized as soon as the compressor is stopped, and both gauges fluctuate while running.	• Faulty gasket • Faulty high-pressure valve • Foreign particle stuck in high-pressure valve	Replace the compressor.
Suction and discharge pressures abnormally high	Reduced air flow through condenser.	• Clogged condenser or radiator fins • Condenser or radiator fan not working properly	• Clean. • Check voltage and fan rpm. • Check fan direction.
	No bubbles in sight glass when condenser is cooled by water.	Excessive refrigerant in system	Discharge, evacuate, and recharge with specified amount.
Suction and discharge pressure abnormally low	Low-pressure hose and metal end areas are cooler than evaporator.	Clogged or kinked low-pressure hose parts	Repair or replace.
	Temperature around expansion valve is too low compared with that around receiver/dryer.	Clogged high-pressure line	Repair or replace.
Refrigerant leaks	Compressor clutch is dirty.	Compressor shaft seal leaking	Replace the compressor.
	Compressor bolt(s) are dirty.	Leaking around bolt(s)	Tighten bolt(s) or replace compressor.
	Compressor gasket is wet with oil.	Gasket leaking	Replace the compressor.

(cont'd)

A/C System Tests (cont'd)

Performance Test

WARNING

- Compressed air mixed R-134a forms a combustible vapor.
- The vapor can burn or explode causing serious injury.
- Never use compressed air to pressure test R-134a service equipment or vehicle air conditioning systems.

CAUTION

- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

The performance test will help determine if the air conditioner system is operating within specifications.

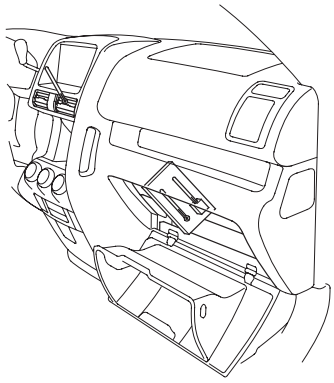
Use only service equipment for refrigerant HFC-134a (R-134a).

If accidental system discharge occurs, ventilate work area before resuming service.

R-134a service equipment or vehicle air conditioning systems should not be pressure tested or leak tested with compressed air.

Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. Connect a R-134a refrigerant recover/recycling/charging station to the high-pressure service port and the low-pressure service port, following the equipment manufacturer's instructions.
2. Insert a thermometer in the center vent.

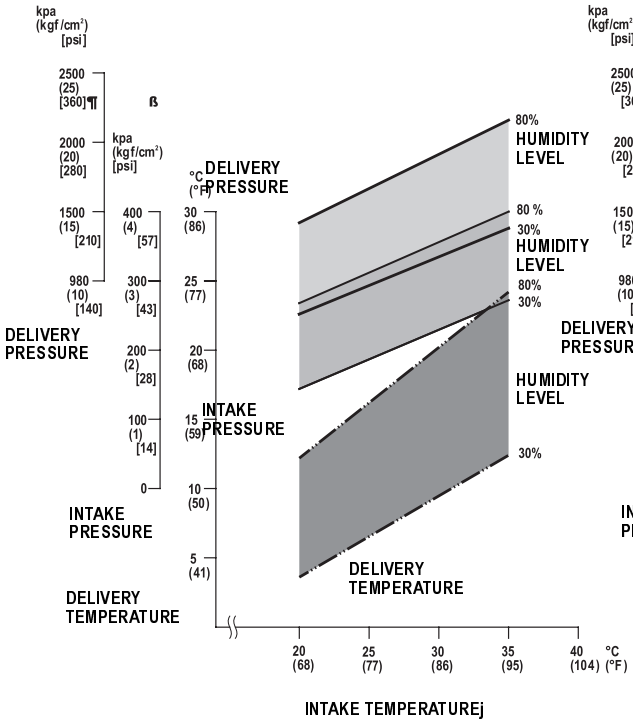


3. Test conditions:
   - Avoid direct sunlight.
   - Open the hood.
   - Open the front doors.
   - Set the temperature control dial to Max Cool, the mode control dial to Vent and the recirculation control lever to Recirculate.
   - Turn the A/C switch on and the fan switch on Max.
   - Run the engine at 1,500 rpm (min^{-1}).
   - No driver or passengers in vehicle.
4. After running the air conditioning for 10 minutes under the above test conditions, read the delivery temperature from the thermometer in the center vent, the intake temperature near the blower unit behind the glove box and the high and low system pressure from the A/C gauges.

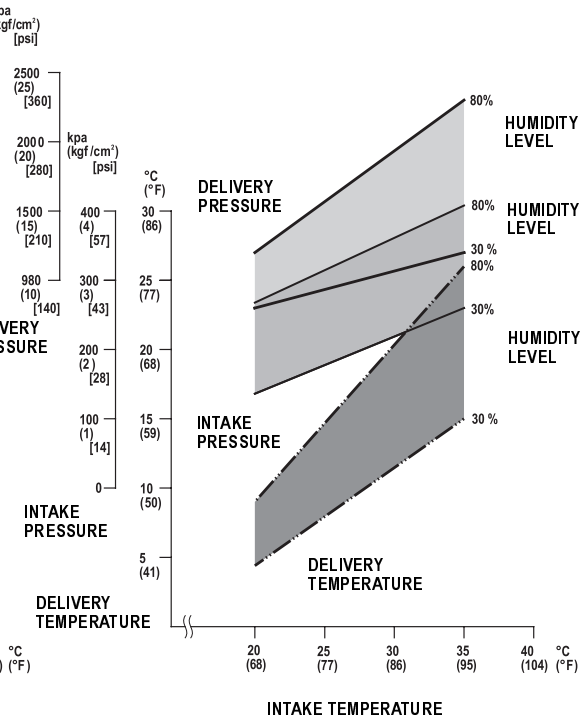
5. To complete the charts:

- Mark the delivery temperature along the vertical line.
- Mark the intake temperature (ambient air temperature) along the bottom line.
- Draw a line straight up from the air temperature to the humidity.
- Mark a point 10 % above and 10 % below the humidity level.
- From each point, draw a horizontal line across the delivery temperature.
- The delivery temperature should fall between the two lines.
- Complete the low-side pressure test and high-side pressure test in the same way.
- Any measurements outside the line may indicate the need for further inspection.

LHD model:



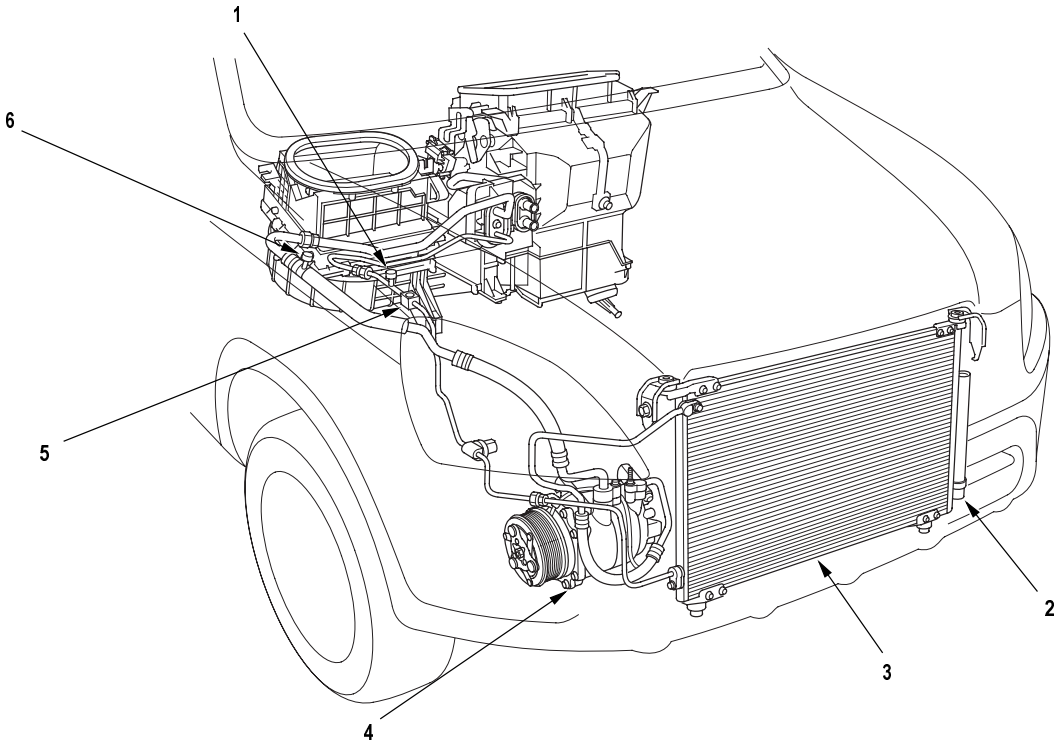
RHD model:



Climate Control

Component Location Index

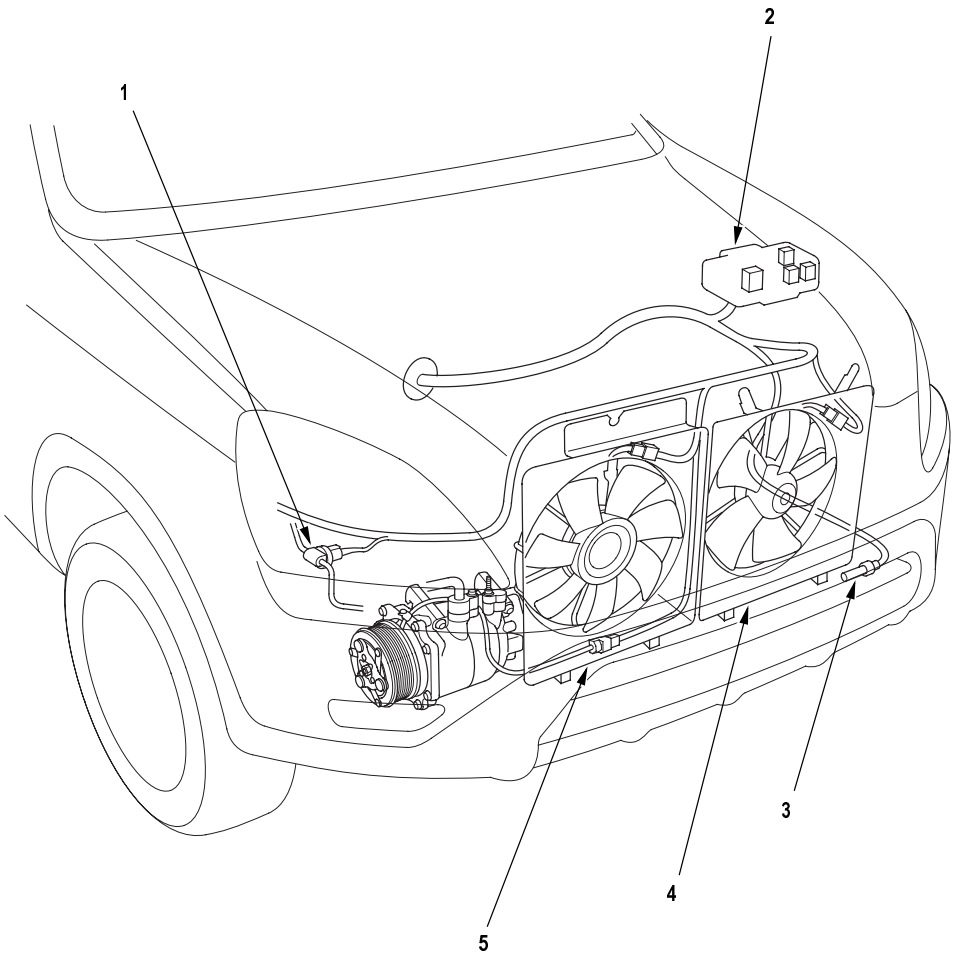
NOTE: LHD type is shown, RHD type is similar.



1	SERVICE VALVE (HIGH PRESSURE SIDE)	
2	RECEIVER/DRYER	
3	CONDENSER	Replacement, page 21-51
4	COMPRESSOR	Replacement, page 21-46; Clutch Check, page 21-47; Clutch Overhaul, page 21-48; Thermal Protector Check, page 21-47; Thermal Protector Replacement, page 21-50; Relief Valve Replacement, page 21-50
5	SIGHT GLASS	
6	SERVICE VALVE (LOW PRESSURE SIDE)	

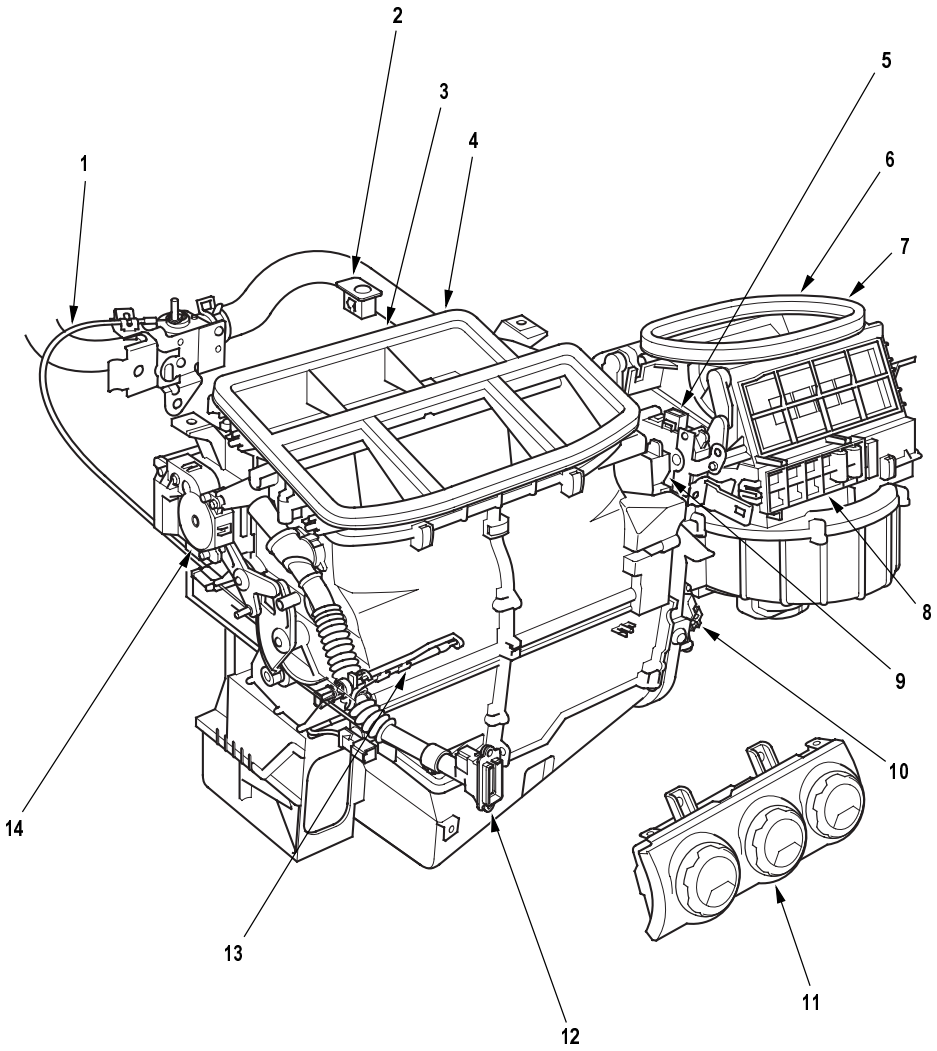
Component Location Index (cont'd)

NOTE: LHD type is shown, RHD type is similar.



1	A/C PRESSURE SWITCH	
2	BLOWER MOTOR RELAY, RADIATOR FAN RELAY, CONDENSER FAN RELAY, COMPRESSOR CLUTCH RELAY (Located in the under-hood fuse/relay box)	Test, page 22A-60
3	OUTSIDE AIR TEMPERATURE SENSOR	Replacement, page 21-90; Test, page 21-90
4	RADIATOR FAN	
5	CONDENSER FAN	

NOTE: LHD type is shown, RHD type is symmetrical.



1	HEATER VALVE CABLE	Adjustment, page 21-30
2	SUNLIGHT SENSOR	Replacement, page 21-91; Test, page 21-91
3	HEATER UNIT/CORE	Replacement, page 21-28
4	EVAPORATOR CORE (Built-in the heater unit)	Replacement, page 21-45
5	RECIRCULATION CONTROL MOTOR	Test, page 21-23; Replacement, page 21-23
6	BLOWER UNIT	Removal and Installation, page 21-26
7	BLOWER UNIT COMPONENTS	Replacement, page 21-27
8	DUST AND POLLEN FILTER	Replacement, page 21-25
9	MODE CONTROL MOTOR	Test, page 21-22; Replacement, page 21-22
10	POWER TRANSISTOR	Test, page 21-24
11	CLIMATE CONTROL UNIT	Removal and Installation, page 21-92
12	IN-CAR TEMPERATURE SENSOR	Replacement, page 21-89; Test, page 21-89
13	EVAPORATOR TEMPERATURE SENSOR	Replacement, page 21-44; Test, page 21-44
14	AIR MIX CONTROL MOTOR	Test, page 21-21; Replacement, page 21-21

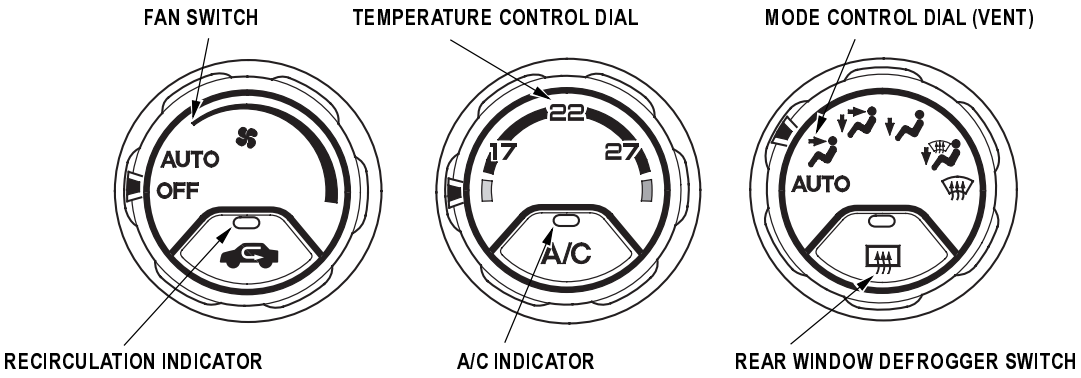
General Troubleshooting Information

How to Retrieve a DTC

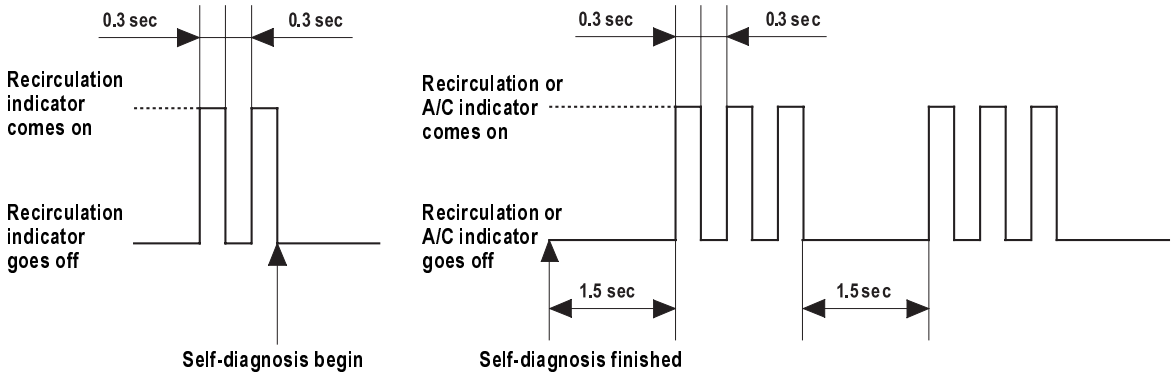
The Climate Control Unit has a self-diagnosis function.

Running the Self-diagnosis Function

1. Turn the ignition switch OFF.
2. Turn the fan switch OFF, the temperature control dial on Max Cool and the mode control dial on Vent.
3. Turn the ignition switch ON (II), then press and hold the recirculation control switch. Within 10 seconds while holding the switch down, press the rear window defogger switch five times. The recirculation indicator blinks two times, then the self-diagnosis will begin. If there is any problem in the system after self-diagnosis is finished, the recirculation indicator will blink the Diagnostic Trouble Code (DTC) 1 through 13, When problems in the evaporator temperature sensor circuit are detected (codes 14 and 15), the A/C indicator will blink the DTC. If no DTC's are found, the indicator will not blink.



Example of DTC indication Pattern (DTC 3)



Resetting the Self-diagnosis Function

Turn the ignition switch OFF to cancel the self-diagnosis function. After completing repair work, run the self-diagnosis function again to make sure that there are no other malfunctions.

DTC Troubleshooting Index

DTC (Recirculation Indication Blinks)	Detection Item	Page
1	An open in the in-car temperature sensor circuit	(see page 21-70)
2	A short in the in-car temperature sensor circuit	(see page 21-71)
3	An open in the outside air temperature sensor circuit	(see page 21-71)
4	A short in the outside air temperature sensor circuit	(see page 21-73)
5	An open in the sunlight sensor circuit	(see page 21-73)
6	A short in the sunlight sensor circuit	(see page 21-74)
7	An open in the air mix control motor circuit	(see page 21-75)
8	A short in the air mix control motor circuit	(see page 21-75)
9	A problem in the air mix control linkage, door, or motor	(see page 21-76)
10	An open or short in the mode control motor circuit	(see page 21-77)
11	A problem in the mode control linkage, doors, or motor	(see page 21-78)
12	A problem in the blower motor circuit	(see page 21-79)
13	A problem in the EEPROM in the climate control unit; the control unit must be replaced	(see page 21-92)

DTC (A/C Indication Blinks)	Detection Item	Page
14	An open in the evaporator temperature sensor circuit	(see page 21-82)
15	A short in the evaporator temperature sensor circuit	(see page 21-83)

In case of multiple problems, the recirculation or A/C indicator will indicate only the DTC with the least number of blinks.

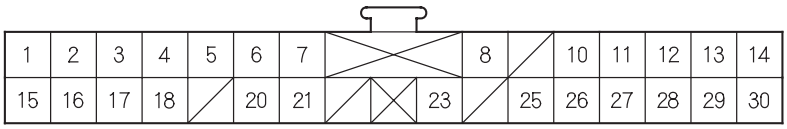
Symptom Troubleshooting Index

Symptom	Diagnostic procedure	Also check for
Recirculation control doors do not change between Fresh and Recirculate	Recirculation Control Motor Circuit Troubleshooting (see page 21-84)	• Blown fuse No. 14 (10A) in the under-dash fuse/relay box • Cleanliness and tightness of all connectors
The blower motor does not run immediately even through the engine is fully warmed up NOTE: The temperature control dial must be set between 18°C (64°F) and 32°C (90°F)	ECT Sensor Circuit Troubleshooting (see page 21-88)	Cleanliness and tightness of all connectors
Both heater and A/C do not work	Climate Control Power and Ground Circuits Troubleshooting (see page 21-86)	• Blown fuse No. 14 (10A) in the under-dash fuse/relay box • Poor ground at G501 • Cleanliness and tightness of all connectors
Condenser fan does not run at all (but radiator fan runs with the A/C on)	Condenser Fan Circuit Troubleshooting (see page 21-38)	• Blown fuse No. 1 (20A) in the under-hood fuse/relay box, and No. 14 (10A) in the under-dash fuse/relay box • Poor ground at G201 • Cleanliness and tightness of all connectors
Both fans do not run with the A/C on	Radiator and Condenser Fans Common Circuit Troubleshooting (see page 21-39)	• Blown fuse No. 1 (20A) and No. 4 (20A) in the under-hood fuse/relay box, and No. 14 (10A) in the under-dash fuse/relay box • Poor ground at G201 • Cleanliness and tightness of all connectors
Compressor clutch does not engage	Compressor Clutch Circuit Troubleshooting (see page 21-40)	• Blown fuse No. 1 (20A) in the under-hood fuse/relay box, and No. 14 (10A) in the under-dash fuse/relay box • Cleanliness and tightness of all connectors
A/C System does not come on (both fans and compressor)	A/C Pressure Switch Circuit Troubleshooting (see page 21-87)	Cleanliness and tightness of all connectors

System Description

Climate Control Unit Inputs and Outputs

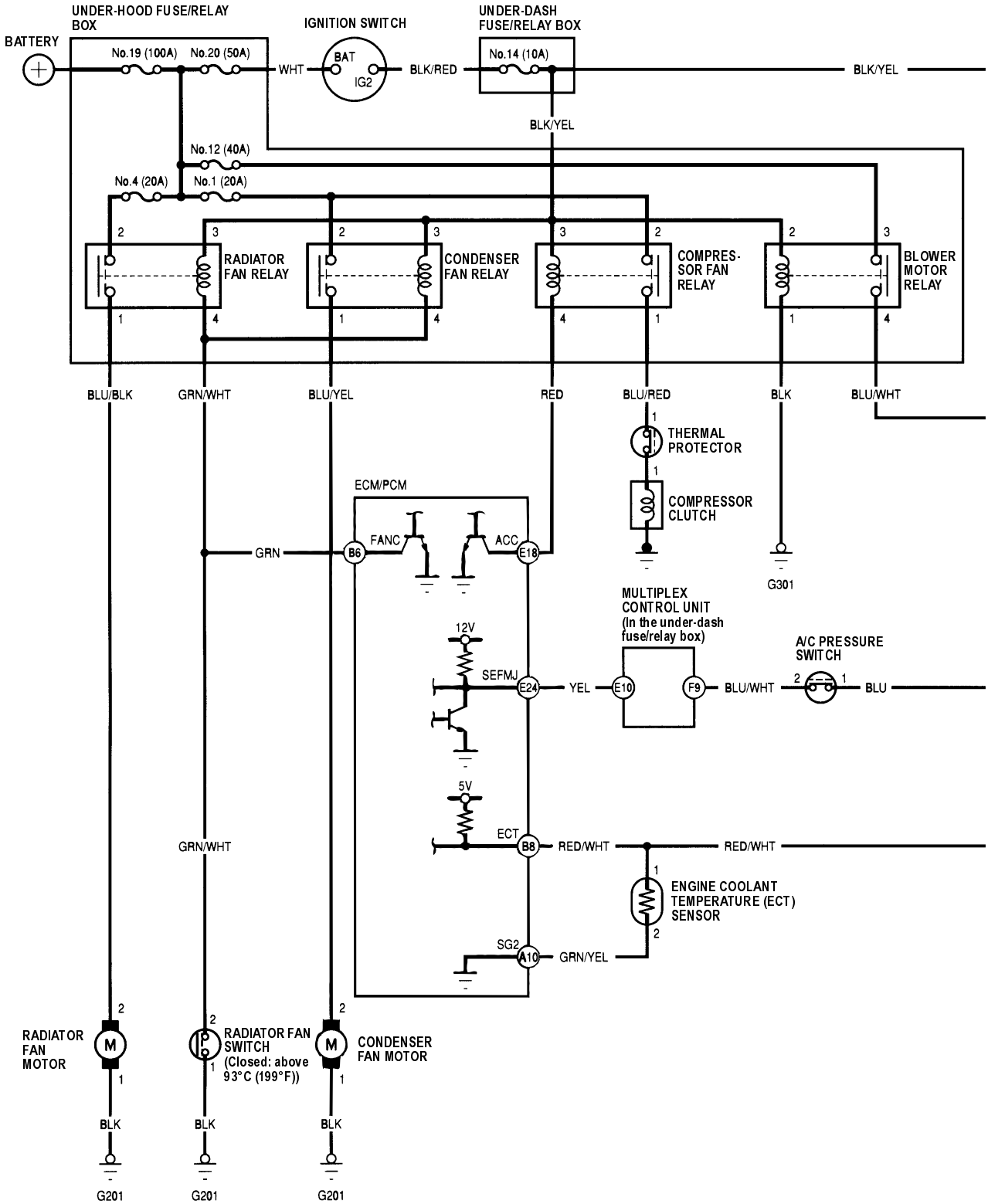
CLIMATE CONTROL UNIT 30P CONNECTOR

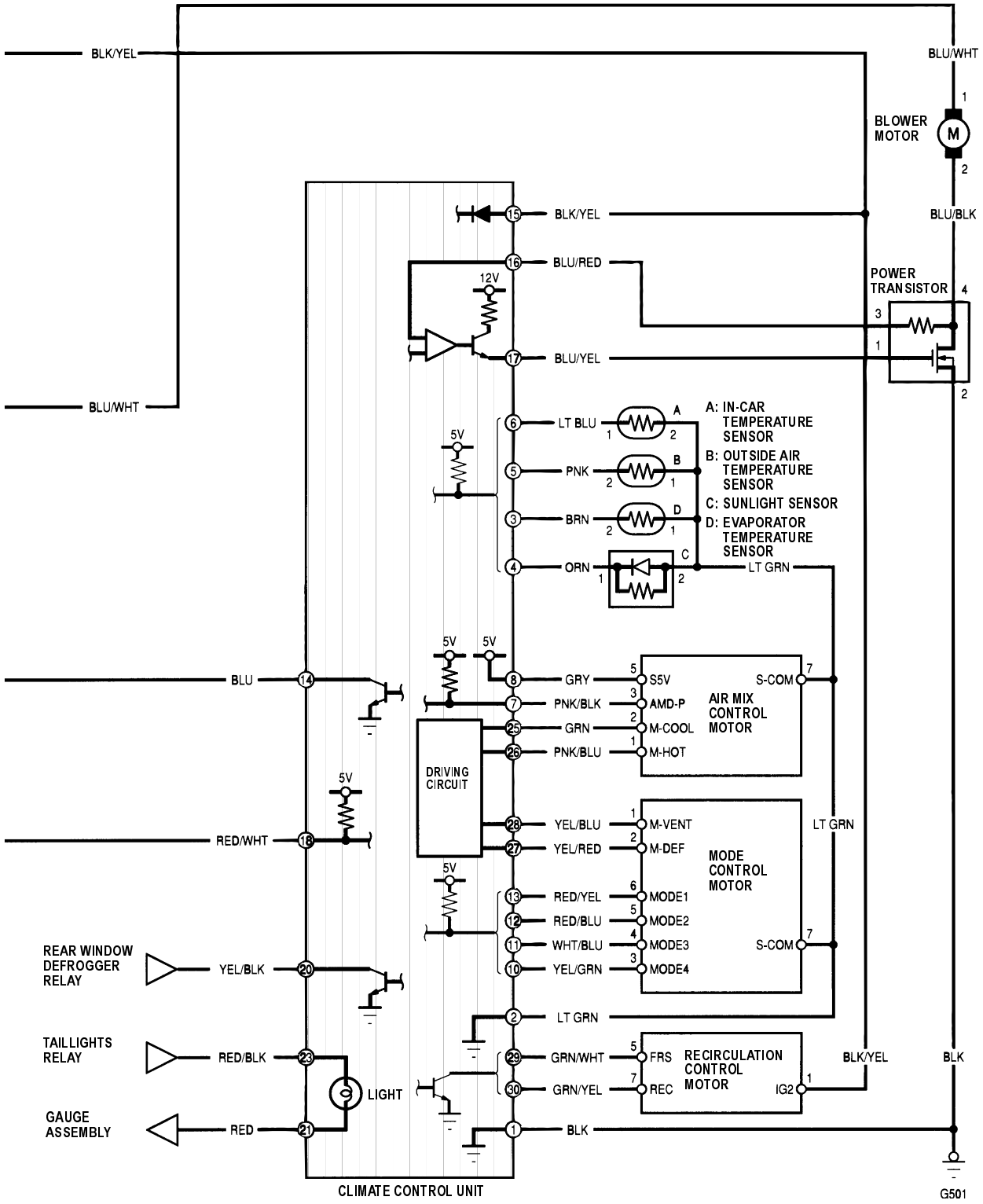


Wire side of female terminals

Cavity	Wire color	Signal	
1	BLK	Ground	Input
2	LT GRN	Sensor Common Ground	Input
3	BRN	Evaporator temperature sensor	Output
4	ORN	Sunlight sensor	Output
5	PNK	Outside air temperature sensor	Output
6	LT BLU	In-car temperature sensor	Output
7	PNK/BLK	Air mix potential	Output
8	GRY	Air mix potential +5V	Output
9	—-—	—-—	—-—
10	YEL/GRN	Mode 4	Output
11	WHT/BLU	Mode 3	Output
12	RED/BLU	Mode 2	Output
13	RED/YEL	Mode 1	Output
14	BLU	A/C pressure switch	Input
15	BLK/YEL	IG2 Power	Input
16	BLU/RED	Blower feed back	Input
17	BLU/YEL	Power transistor base	Output
18	RED/WHT	Engine coolant temperature (ECT) sensor	Output
19	—-—	—-—	—-—
20	YEL/BLK	Rear window defogger relay	Output
21	RED	Ground (For lighting)	Output
22	—-—	—-—	—-—
23	RED/BLK	Taillights relay	Input
24	—-—	—-—	—-—
25	GRN	Air mix cool	Output
26	PNK/BLU	Air mix hot	Output
27	YEL/RED	Mode vent	Output
28	YEL/BLU	Mode def	Output
29	GRN/WHT	Fresh	Input
30	GRN/YEL	Recirculate	Input

Circuit Diagram

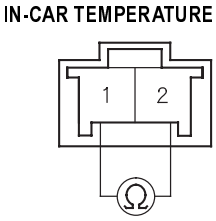


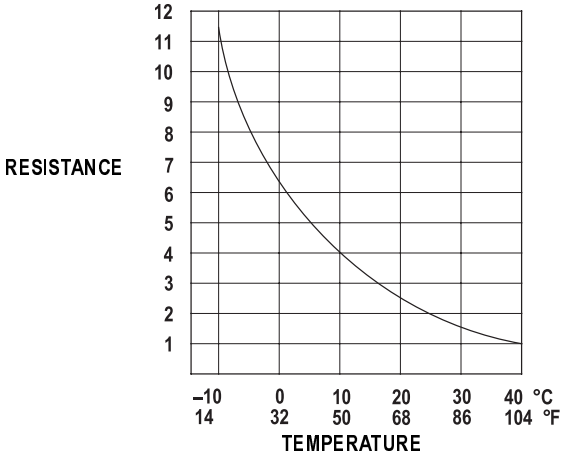

BLK/YEL
BLU/WHT
BLOWER MOTOR
BLU/BLK
POWER TRANSISTOR
BLU/RED
BLU/YEL
12V
A: IN-CAR TEMPERATURE SENSOR
B: OUTSIDE AIR TEMPERATURE SENSOR
C: SUNLIGHT SENSOR
D: EVAPORATOR TEMPERATURE SENSOR
LT BLU
PNK
BRN
ORN
LT GRN
5V
BLU
GRY
PNK/BLK
GRN
PNK/BLU
S5V
AMD-P
M-COOL
M-HOT
S-COM
AIR MIX CONTROL MOTOR
DRIVING CIRCUIT
RED/WHT
YEL/BLU
YEL/RED
M-VENT
M-DEF
MODE CONTROL MOTOR
RED/YEL
RED/BLU
WHT/BLU
YEL/GRN
MODE1
MODE2
MODE3
MODE4
REAR WINDOW DEFROGGER RELAY
YEL/BLK
TAILLIGHTS RELAY
RED/BLK
LIGHT
GAUGE ASSEMBLY
RED
GRN/WHT
GRN/YEL
FRS
REC
RECIRCULATION CONTROL MOTOR
IG2
BLK
CLIMATE CONTROL UNIT
G501

DTC Troubleshooting

DTC 1: An Open in the In-car Temperature Sensor Circuit

1. Remove the in-car temperature sensor (see page 21-89).
2. Measure the resistance between the No. 1 and No. 2 terminals of the in-car temperature sensor.
*Check for change in resistance by heating or cooling the sensor with a hair drier.



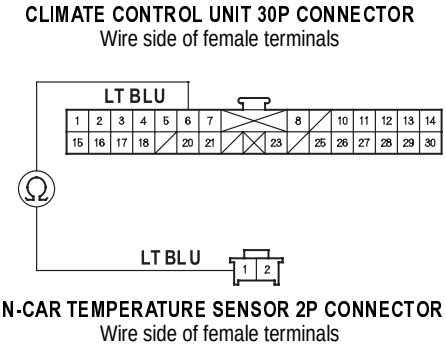


Is the resistance within the specifications shown on the graph?

Yes Go to step 3.

No Replace the in-car temperature sensor.■

3. Disconnect the climate control unit 30P connector.
4. Check for continuity between the No. 6 terminal of the climate control unit 30P connector and the No. 1 terminal of the in-car temperature sensor 2P connector.

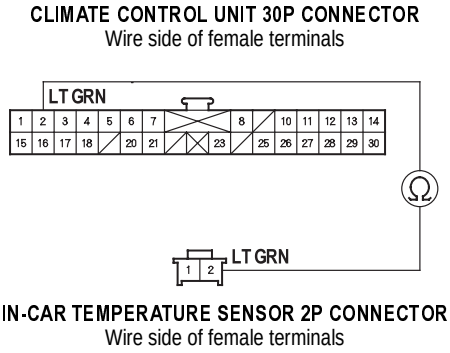


Is there continuity?

Yes Go to step 5.

No Repair open in the wire between the climate control unit and the in-car temperature sensor.■

5. Check for continuity between the No. 2 terminal of the climate control unit 30P connector and the No. 2 terminal of the in-car temperature sensor 2P connector.



Is there continuity?

Yes Check for loose wires or poor connections at the climate control unit 30P connector and at the in-car temperature sensor 2P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.■

No Repair open in the wire between the climate control unit and the in-car temperature sensor.■

DTC 2: A Short in the In-car Temperature Sensor Circuit

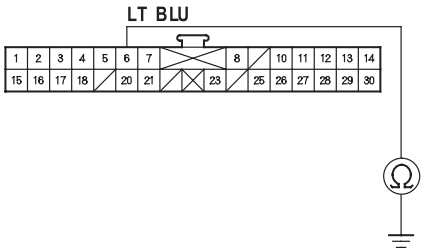
1. Remove the in-car temperature sensor (see page 21-89).
2. Test the in-car temperature sensor (see page 21-89).

   Is the resistance within the specifications shown on the graph?

   Yes Go to step 3.

   No Replace the in-car temperature sensor.■
3. Disconnect the climate control unit 30P connector.
4. Check for continuity between the No. 6 terminal of the climate control unit 30P connector and body ground.

CLIMATE CONTROL UNIT 30P CONNECTOR



Wire side of female terminals

Is there continuity?

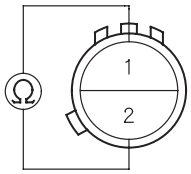
Yes Repair short to body ground in the wire between the climate control unit and the in-car temperature sensor.■

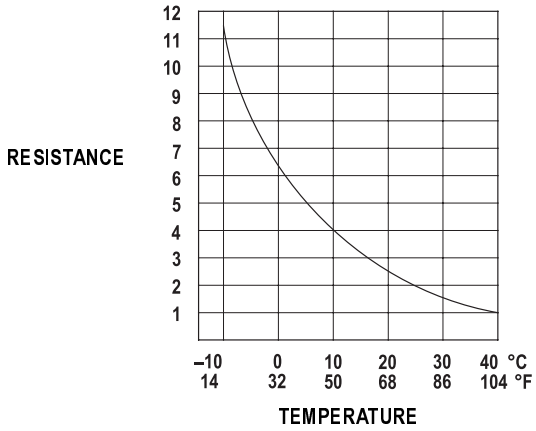
No Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.■

DTC 3: An Open in the Outside Air Temperature Sensor Circuit

1. Remove the outside air temperature sensor (see page 21-90).
2. Measure the resistance between the No. 1 and No. 2 terminals of the outside air temperature sensor. *Dip the sensor in ice water, and measure resistance. Then pour hot water on the sensor, and check for change in resistance.

OUTSIDE AIR TEMPERATURE SENSOR





Is the resistance within the specifications shown on the graph?

Yes Go to step 3.

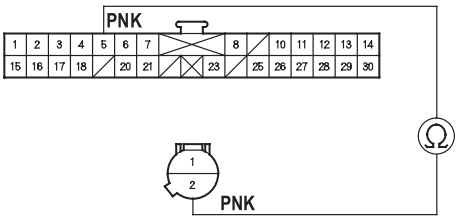
No Replace the outside air temperature sensor.■
3. Disconnect the climate control unit 30P connector.

(cont'd)

DTC Troubleshooting (cont'd)

4. Check for continuity between the No. 5 terminal of the climate control unit 30P connector and the No. 2 terminal of the outside air temperature sensor 2P connector.

CLIMATE CONTROL UNIT 30P CONNECTOR
Wire side of female terminals



OUTSIDE TEMPERATURE SENSOR 2P CONNECTOR
Wire side of female terminals

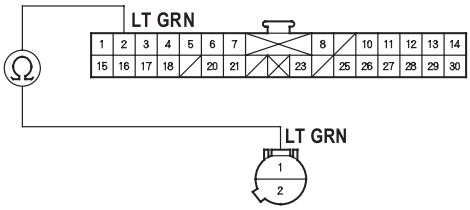
Is there continuity?

Yes Go to step 5.

No Repair open in the wire between the climate control unit and the outside air temperature sensor.■

5. Check for continuity between the No. 2 terminal of the climate control unit 30P connector and the No. 1 terminal of the outside air temperature sensor 2P connector.

CLIMATE CONTROL UNIT 30P CONNECTOR
Wire side of female terminals



OUTSIDE TEMPERATURE SENSOR 2P CONNECTOR
Wire side of female terminals

Is there continuity?

Yes Check for loose wires or poor connections at the climate control unit 30P connector and at the outside air temperature sensor 2P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.■

No Repair open in the wire between the climate control unit and the outside air temperature sensor.■

DTC 4: A Short in the Outside Air Temperature Sensor Circuit

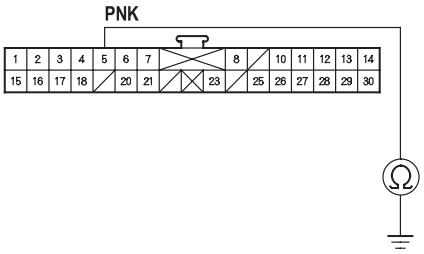
1. Remove the outside air temperature sensor (see page 21-90).
2. Test the outside air temperature sensor (see page 21-90).

   Is the resistance within the specifications shown on the graph?

   Yes Go to step 3.

   No Replace the outside air temperature sensor.■
3. Disconnect the climate control unit 30P connector.
4. Check for continuity between the No. 5 terminal of the climate control unit 30P connector and body ground.

CLIMATE CONTROL UNIT 30P CONNECTOR



Is there continuity?

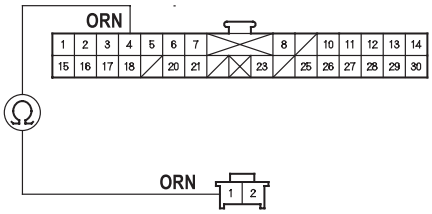
Yes Repair short to body ground in the wire between the climate control unit and the outside air temperature sensor.■

No Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.■

DTC 5: An Open in the Sunlight Sensor Circuit

1. Disconnect the sunlight sensor 2P connector.
2. Disconnect the climate control unit 30P connector.
3. Check for continuity between the No. 4 terminal of the climate control unit 30P connector and the No. 1 terminal of the sunlight sensor 2P connector.

CLIMATE CONTROL UNIT 30P CONNECTOR
Wire side of female terminals



SUN LIGHT SENSOR 2P CONNECTOR
Wire side of female terminals

Is there continuity?

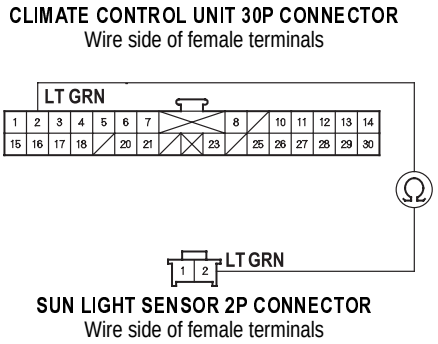
Yes Go to step 4.

No Repair open in the wire between the climate control unit and the sunlight sensor.■

(cont'd)

0 DTC Troubleshooting (cont'd)

4. Check for continuity between the No. 2 terminal of the climate control unit 30P connector and the No. 2 terminal of the sunlight sensor 2P connector.



Is there continuity?

Yes Go to step 5.

No Repair open in the wire between the climate control unit and the sunlight sensor.■

5. Reconnect the sunlight sensor 2P connector.
6. Reconnect the climate control unit 30P connector.
7. Test the sunlight sensor (see page 21-91).

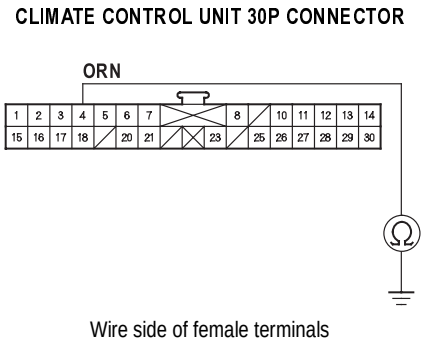
Is the sunlight sensor OK?

Yes Check for loose wires or poor connections at the climate control unit 30P connector and at the sunlight sensor 2P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.■

No Replace the sunlight sensor.■

DTC 6: A Short in the Sunlight Sensor Circuit

1. Disconnect the sunlight sensor 2P connector.
2. Disconnect the climate control unit 30P connector.
3. Check for continuity between the No. 4 terminal of the climate control unit 30P connector and body ground.



Is there continuity?

Yes Repair short to body ground in the wire between the climate control unit and the sunlight sensor.■

No Go to step 4.

4. Reconnect the sunlight sensor 2P connector.
5. Reconnect the climate control unit 30P connector.
6. Test the sunlight sensor (see page 21-91).

Is the sunlight sensor OK?

Yes Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.■

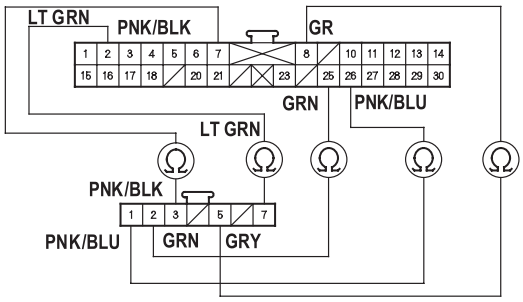
No Replace the sunlight sensor.■

DTC 7: An Open in the Air Mix Control Motor Circuit

1. Disconnect the air mix control motor 7P connector.
2. Disconnect the climate control unit 30P connector.
3. Check for continuity between following terminals of the climate control unit 30P connector and the air mix control motor 7P connector.

30P:	7P:
No. 2	No. 7
No. 7	No. 3
No. 8	No. 5
No. 25	No. 2
No. 26	No. 1

CLIMATE CONTROL UNIT 30P CONNECTOR
Wire side of female terminals



AIR MIX CONTROL MOTOR 7P CONNECTOR
Wire side of female terminals

Is there continuity?

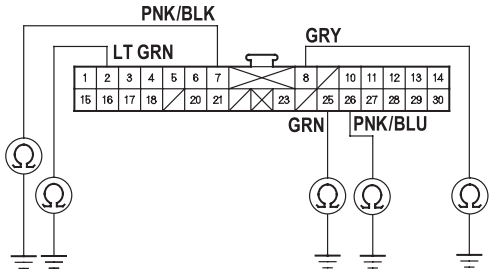
Yes Check for loose wires or poor connections at the climate control unit 30P connector and at the air mix control motor 7P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.■

No Repair any open in he wire(s) between the climate control unit and the air mix control motor.■

DTC 8: A Short in the Air Mix Control Motor Circuit

1. Disconnect the air mix control motor 7P connector.
2. Disconnect the climate control unit 30P connector.
3. Check for continuity between body ground and the climate control unit 30P connector terminals No. 2, 7, 8, 25 and 26 individually.

CLIMATE CONTROL UNIT 30P CONNECTOR



Wire side of female terminals

Is there continuity?

Yes Repair any short to body ground in the wire(s) between the climate control unit and the air mix control motor.■

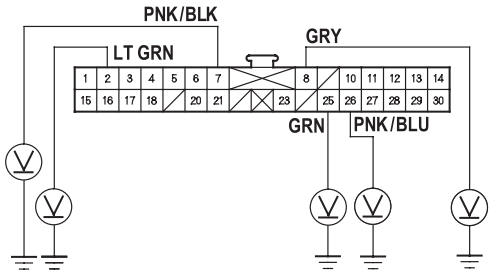
No Go to step 4.

(cont'd)

DTC Troubleshooting (cont'd)

4. Turn the ignition switch ON (II), and check the same terminals for voltage.

CLIMATE CONTROL UNIT 30P CONNECTOR



Wire side of female terminals

Is there any voltage?

Yes Repair any short to power in the wire(s) between the climate control unit and the air mix control motor. This short also may damage the climate control unit. Repair the short to power before replacing the climate control unit.■

No Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.■

DTC 9: A Problem in the Air Mix Control Linkage, Door, or Motor

1. Test the air mix control motor (see page 21-21).

Is the air mix control motor OK?

Yes Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.■

No Go to step 2.

2. Remove the air mix control motor (see page 21-21).

3. Check the air mix control linkage and door for smooth movement.

Do the air mix control linkage and door move smoothly?

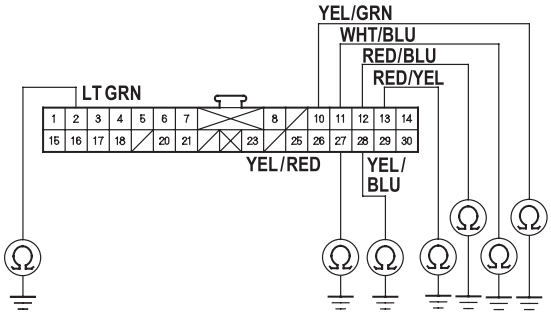
Yes Replace the air mix control motor.■

No Repair the air mix control linkage or door.■

DTC 10: An Open or Short in the Mode Control Motor Circuit

1. Disconnect the mode control motor 7P connector.
2. Disconnect the climate control unit 30P connector.
3. Check for continuity between body ground and the climate control unit 30P connector terminals No. 2, 10, 11, 12, 13, 27 and 28 individually.

CLIMATE CONTROL UNIT 30P CONNECTOR



Wire side of female terminals

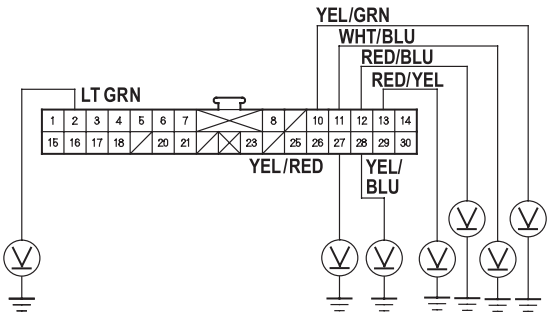
Is there continuity?

Yes Repair any short to body ground in the wire(s) between the climate control unit and the mode control motor.■

No Go to step 4.

4. Turn the ignition switch ON (II), and check the same terminals for voltage.

CLIMATE CONTROL UNIT 30P CONNECTOR



Wire side of female terminals

Is there any voltage?

Yes Repair any short to power in the wire(s) between the climate control unit and the mode control motor. This short also may damage the climate control unit. Repair the short to power before replacing the climate control unit.■

No Go to step 5.

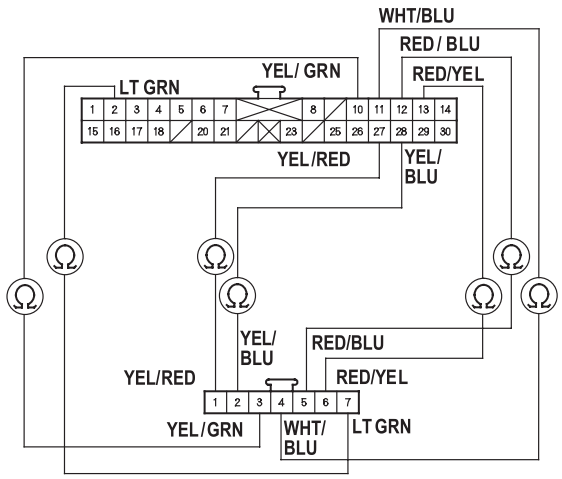
(cont'd)

DTC Troubleshooting (cont'd)

5. Turn the ignition switch OFF,and check for continuity between following terminals of the climate control unit 30P connector and the mode control motor 7P connector.

30P:	7P:
No. 2	No. 7
No. 10	No. 3
No. 11	No. 4
No. 12	No. 5
No. 13	No. 6
No. 28	No. 2
No. 27	No. 1

CLIMATE CONTROL UNIT 30P CONNECTOR
Wire side of female terminals



MODE CONTROL MOTOR
Wire side of female terminals

Is there continuity?

Yes Check for loose wires or poor connections at the climate control unit 30P connector and at the mode control motor 7P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.■

No Repair any open in the wire(s) between the climate control unit and the mode control motor.■

DTC 11: A Problem in the Mode Control Linkage, Doors, or Motor

1. Test the mode control motor (see page 21-22).

Is the mode control motor OK?

Yes Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.■

No Go to step 2.

2. Remove the mode control motor (see page 21-22).

3. Check the mode control linkage and doors for smooth movement.

Do the mode control linkage and doors move smoothly?

Yes Replace the mode control motor.■

No Repair the mode control linkage or doors.■

DTC 12: A Problem in the Blower Motor Circuit

1. Check the No. 12 (40A) fuse in the under-hood fuse/relay box, and the No. 14 (10A) fuse in the under-dash fuse/relay box.

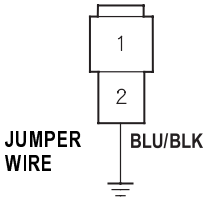
   Are the fuses OK?

   Yes Go to step 2.

   No Replace the fuse(s), and recheck.■

2. Connect the No. 2 terminal of the blower motor 2P connector to body ground with a jumper wire.

BLOWER MOTOR 2P CONNECTOR



Wire side of female terminals

3. Turn the ignition switch ON (II).

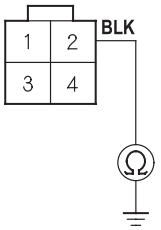
   Does the blower motor run?

   Yes Go to step 4.

   No Go to step 17.

4. Turn the ignition switch OFF.
5. Disconnect the jumper wire.
6. Disconnect the power transistor 4P connector.
7. Check for continuity between the No. 2 terminal of the power transistor 4P connector and body ground.

POWER TRANSISTOR 4P CONNECTOR



Wire side of female terminals

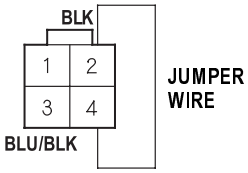
   Is there continuity?

   Yes Go to step 8.

   No Check for an open in the wire between the power transistor and body ground. If the wire is OK, check for poor ground at G501.■

8. Connect the No. 2 and No. 4 terminals of the power transistor 4P connector with a jumper wire.

POWER TRANSISTOR 4P CONNECTOR



Wire side of female terminals

9. Turn the ignition switch ON (II).

   Does the blower motor run at high speed?

   Yes Go to step 10.

   No Repair open in the wire between the power transistor and the blower motor.■

10. Turn the ignition switch OFF.
11. Disconnect the jumper wire.

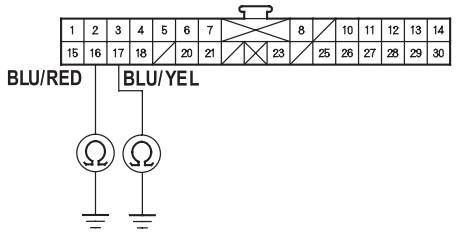
(cont'd)

DTC Troubleshooting (cont'd)

12. Disconnect the climate control unit 30P connector.

13. Check for continuity between the No. 16 and No. 17 terminals of the climate control unit 30P connector and body ground individually.

CLIMATE CONTROL UNIT 30P CONNECTOR



Wire side of female terminals

Is there continuity?

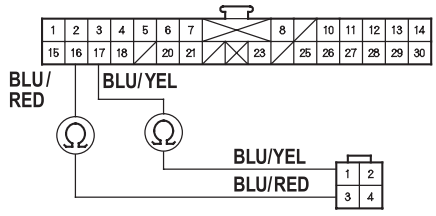
Yes Repair any short to body ground in the wire(s) between the climate control unit and the power transistor.■

No Go to step 14.

14. Check for continuity between the following terminals of the climate control unit 30P connector and power transistor 4P connector.

30P:	4P:
No. 17	No. 1
No. 16	No. 3

CLIMATE CONTROL UNIT 30P CONNECTOR
Wire side of female terminals



POWER TRANSISTOR 4P CONNECTOR
Wire side of female terminals

Is there continuity?

Yes Go to step 15.

No Repair any open in the wire(s) between the climate control unit and the power transistor.■

15. Reconnect the climate control unit 30P connector.

16. Test the power transistor (see page 21-24).

Is the power transistor OK?

Yes Check for loose wires or poor connections at the climate control unit 30P connector and at the power transistor 4P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.■

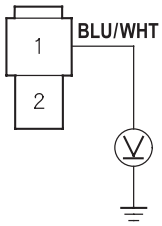
No Replace the power transistor.■

17. Disconnect the jumper wire.

18. Disconnect the blower motor 2P connector.

19. Measure the voltage between the No. 1 terminal of the blower motor 2P connector and body ground.

BLOWER MOTOR 2P CONNECTOR



Wire side of female terminals

Is there battery voltage?

Yes Replace the blower motor.■

No Go to step 20.

20. Turn the ignition switch OFF.

21. Remove the blower motor relay from the under-hood fuse/relay box, and test it (see page 22A-60).

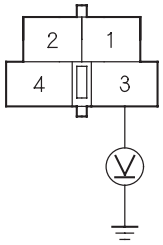
Is there relay OK?

Yes Go to step 22.

No Replace the blower motor relay.■

22. Measure the voltage between the No. 3 terminal of the blower motor relay 4P socket and body ground.

BLOWER MOTOR RELAY 4P SOCKET



Is there battery voltage?

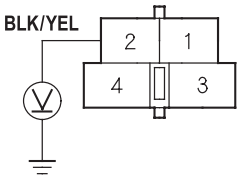
Yes Go to step 23.

No Replace the under-hood fuse/relay box.■

23. Turn the ignition switch ON (II).

24. Measure the voltage between the No. 2 terminal of the blower motor relay 4P socket and body ground.

BLOWER MOTOR RELAY 4P SOCKET



Is there battery voltage?

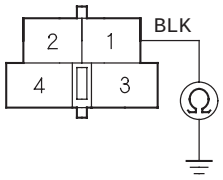
Yes Go to step 25.

No Repair open in the wire between the No. 14 fuse in the under-dash fuse/relay box and the blower motor relay.■

25. Turn the ignition switch OFF.

26. Check for continuity between the No. 1 terminal of the blower motor relay 4P socket and body ground.

BLOWER MOTOR RELAY 4P SOCKET



Is there contnuity?

Yes Repair open in the wire between the blower motor relay and the blower motor.■

No Check for an open in the wire between the blower motor relay and body ground. If the wire is OK, check for poor ground at G201.■

(cont'd)

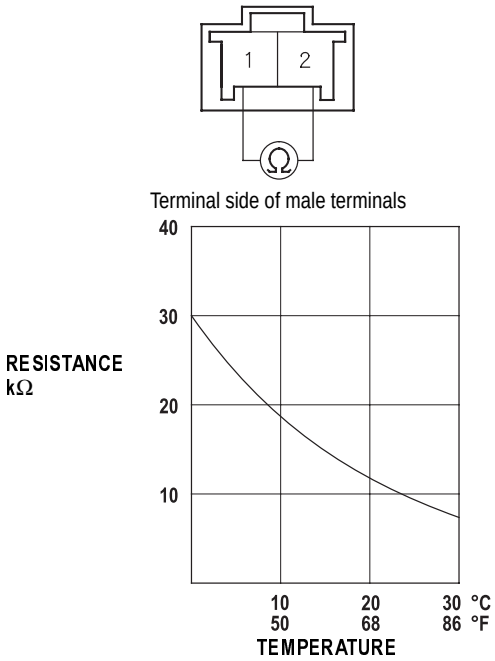
DTC Troubleshooting (cont'd)

DTC 14: An Open in the Evaporator Temperature Sensor Circuit

1. Remove the evaporator temperature sensor (see page 21-44).
2. Measure the resistance between the No. 1 and No. 2 terminals of the evaporator temperature sensor.

   *Dip the sensor in ice water, and measure resistance. Then pour hot water on the sensor, and check for change in resistance.

EVAPORATOR TEMPERATURE SENSOR



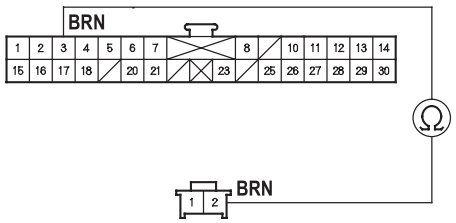
Is the resistance within the specifications shown on the graph?

Yes Go to step 3.

No Replace the evaporator temperature sensor.■

3. Disconnect the climate control unit 30P connector.
4. Check for continuity between the No. 3 terminal of the climate control unit 30P connector and the No. 2 terminal of the evaporator temperature sensor 2P connector.

CLIMATE UNIT 30P CONNECTOR
Wire side of female terminals



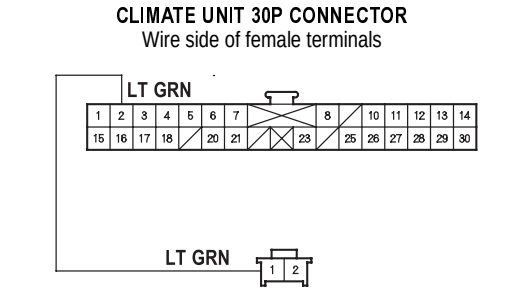
EVAPORATOR TEMPERATURE SENSOR 2P CONNECTOR
Wire side of female terminals

Is there continuity?

Yes Go to step 5.

No Repair open in the wire between the climate control unit and the evaporator temperature sensor.■

5. Check for continuity between the No. 2 terminal of the climate control unit 30P connector and the No. 1 terminal of the evaporator temperature sensor 2P connector.



Is there continuity?

Yes Check for loose wires or poor connections at the climate control unit 30P connector and at the evaporator temperature sensor 2P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.■

No Repair open in the wire between the climate control unit and the evaporator temperature sensor.■

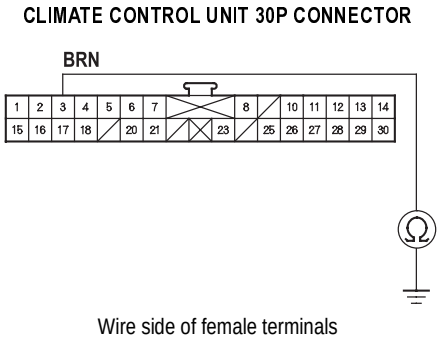
DTC 15: A Short in the Evaporator Temperature Sensor Circuit

1. Remove the evaporator temperature sensor (see page 21-44).
2. Test the evaporator temperature sensor (see page 21-44).

   Is the resistance within the specifications shown on the graph?

   Yes Go to step 3.

   No Replace the evaporator temperature sensor.■
3. Disconnect the climate control unit 30P connector.
4. Check for continuity between the No. 3 terminal of the climate control unit 30P connector and body ground.



Is there continuity?

Yes Repair short to body ground in the wire between the climate control unit and the evaporator temperature sensor.■

No Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.■

Recirculation Control Motor Circuit Troubleshooting

1. Check the No. 14 (10A) fuse in the under-dash fuse/relay box.

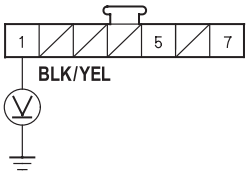
   Is the fuse OK?

   Yes Go to step 2.

   No Replace the fuse, and recheck.■

2. Disconnect the recirculation control motor 7P connector.
3. Turn the ignition switch ON (II).
4. Measure the voltage between the No. 1 terminal of the recirculation control motor 7P connector and body ground.

RECIRCULATION CONTROL MOTOR 7P CONNECTOR



Wire side of female terminals

Is there battery voltage?

Yes Go to step 5.

No Repair open in the wire between the No. 14 fuse in the under-dash fuse/relay box and the recirculation control motor .■

5. Turn the ignition switch OFF.
6. Test the recirculation control motor (see page 21-23).

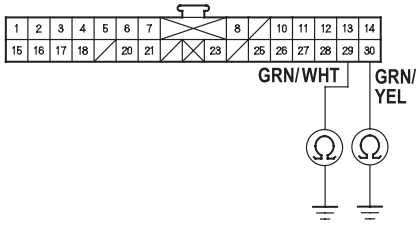
   Is the recirculation control motor OK?

   Yes Go to step 7.

   No Go to step 12.

7. Disconnect the climate control unit 30P connector.
8. Check for continuity between the No. 29 and No. 30 terminals of the climate control unit 30P connector and body ground individually.

CLIMATE CONTROLUNIT 30P CONNECTOR



Wire side of female terminals

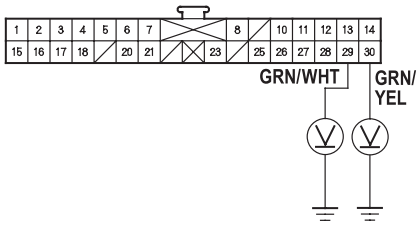
Is there continuity?

Yes Repair any short to body ground in the wire(s) between the climate control unit and the recirculation control motor.■

No Go to step 9.

9. Turn the ignition switch ON (II), and check the same wires for voltage.

CLIMATE CONTROL UNIT 30P CONNECTOR



Wire side of female terminals

Is there any voltage?

Yes Repair any short to power in the wire(s) between the climate control unit and the recirculation control motor. This short also may damage the climate control unit. Repair the short to power before replacing the climate control unit.■

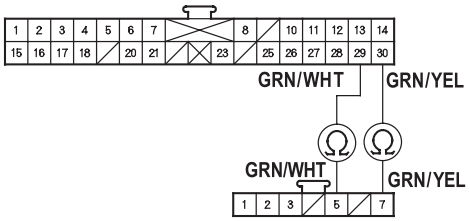
No Go to step 10.

10. Turn the ignition switch OFF.

11. Check for continuity between the following terminals of the climate control unit 30P connector and the recirculation control motor 7P connector.

30P:	7P:
No. 29	No. 5
No. 30	No. 7

CLIMATE CONTROL UNIT 30P CONNECTOR
Wire side of female terminals



RECIRCULATION CONTROL MOTOR 7P CONNECTOR
Wire side of female terminals

Is there continuity?

Yes Check for loose wires or poor connections at the climate control unit 30P connector and at recirculation control motor 7P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.■

No Repair any open in the wire(s) between the climate control unit and the recirculation control motor.■

12. Remove the recirculation contol motor (see page 21-23).

13. Check the recirculation control linkage and doors for smooth movement.

Do the recirculation control linkage and doors move smoothly?

Yes Replace the recirculation control motor.■

No Repair the recirculation control linkage or doors.■

Climate Control Power and Ground Circuits Troubleshooting

1. Check the No. 14 (10A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

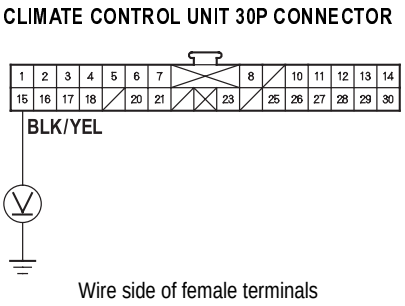
Yes Go to step 2.

No Replace the fuse, and recheck.■

2. Disconnect the climate control unit 30P connector.

3. Turn the ignition switch ON (II).

4. Measure the voltage between the No. 15 terminal of the climate control unit 30P connector and body ground.



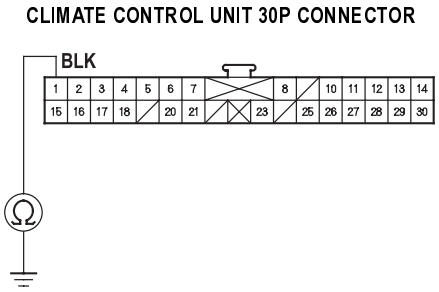
Is there battery voltage?

Yes Go to step 5.

No Repair open in the wire between the No. 14 fuse in the under-dash fuse/relay box and the climate control unit.■

5. Turn the ignition switch OFF.

6. Check for continuity between the No. 1 terminal of the climate control unit 30P connector and body ground.



Is there continuity?

Yes Check for loose wires or poor connections at the climate control unit 30P connector. If the connections are good,substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.■

No Check for an open in the wire between the climate control unit and body ground. If the wire is OK, check for poor ground at G501.■

A/C Pressure Switch Circuit Troubleshooting

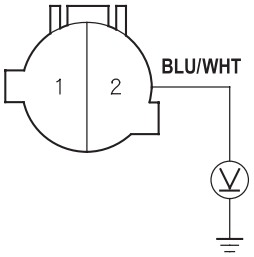
1. Turn the ignition switch ON (II).
2. Turn the blower switch on, and check for blower motor operation.

   Does the blower motor run on all speeds?

   Yes Go to step 3.

   No Troubleshoot the blower motor circuit (see page 21-79).
3. Disconnect the A/C pressure switch 2P connector.
4. Turn the ignition switch ON (II).
5. Measure the voltage between the No. 2 terminal of the A/C pressure switch 2P connector and body ground.

A/C PRESSURE SWITCH 2P CONNECTOR



Wire side of female terminals

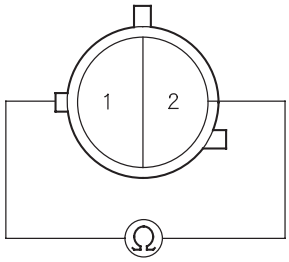
Is there battery voltage?

Yes Go to step 6.

No Go to step 12.

6. Turn the ignition switch OFF.
7. Check for continuity between the No. 1 and No. 2 terminals of the A/C pressure switch.

A/C PRESSURE SWITCH



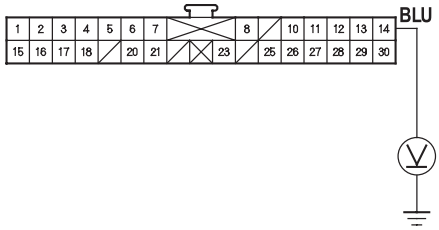
Is there continuity?

Yes Go to step 8.

No Go to step 14.

8. Reconnect the A/C pressure switch 2P connector.
9. Disconnect the climate control unit 30P connector.
10. Turn the ignition switch ON (II).
11. Measure the voltage between the No. 14 terminal of the climate control unit 30P connector and body ground.

CLIMATE CONTROL UNIT 30P CONNECTOR



Wire side of female terminals

Is battery voltage?

Yes Check for loose wires or poor connections at the climate control unit 30P connector and at the A/C pressure switch 2P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.■

No Repair open in the wire between the climate control unit and the A/C pressure switch.■

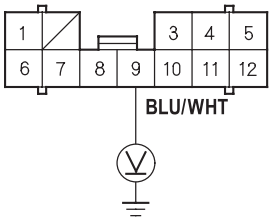
(cont'd)

A/C Pressure Switch Circuit Troubleshooting (cont'd)

12. Make sure the A/C switch is OFF.

13. Measure the voltage between the No. 9 terminal of under-dash fuse/relay box connector F (12P) and body ground with the under-dash fuse/relay box connectors connected.

UNDER-DASH FUSE/RELAY BOX CONNECTOR F (12P)



Wire side of female terminals

Is there 5V or more?

Yes Repair open in the wire between the under-dash fuse/relay box and the A/C pressure switch.■

No Refer to the multiplex control system (see page 22A-227).■

NOTE: Check for multiplex codes in mode 1. Follow the troubleshooting for any codes found. If no codes are found, subsititute a known-good multiplex control unit and a PCM one at a time.

14. Check for proper A/C system pressure.

Is the pressure within specifications?

Yes Replace the A/C pressure switch.■

No Repair the A/C pressure problem.■

ECT Sensor Circuit Troubleshooting

1. Check the malfunction indicator lamp (MIL).

Does the malfunction indicator lamp come on?

Yes Refer to the fuel and emissions section (see page 11-3).■

No Go to step 2.

2. Turn the ignition switch OFF.

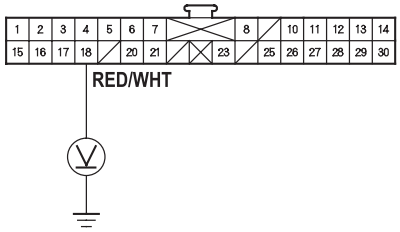
3. Disconnect the ECT sensor 2P connector.

4. Disconnect the climate control unit 30P connector.

5. Turn the ignition switch ON (II).

6. Measure the voltage between the No. 18 terminal of the climate control unit 30P connector and body ground.

CLIMATE CONTROL UNIT 30P CONNECTOR



Wire side of female terminals

Is there about 5 V?

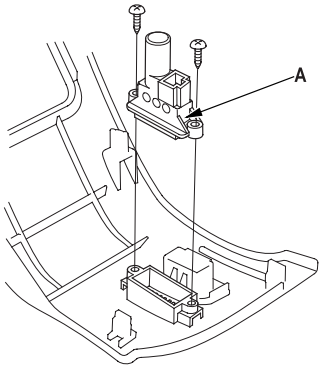
Yes Check for loose wires or poor connections at the climate control unit 30P connector and at the ECT sensor 2P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit.■

No Repair open in the wire between the climate control unit and the ECT sensor.■

In-car Temperature Sensor Replacement

NOTE: LHD type is shown, RHD type is symmetrical.

1. Remove the driver's dashboard lower cover (see page 20-88).
2. Disconnect the 2P connector and the air hose, then remove the self-tapping screws and the in-car temperature sensor (A) from the dashboard.

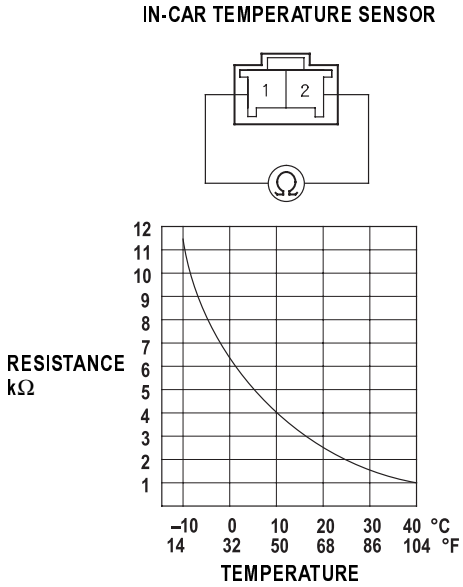


3. Install the sensor in the reverse order of removal. Be sure to connect the air hose securely.

In-car Temperature Sensor Test

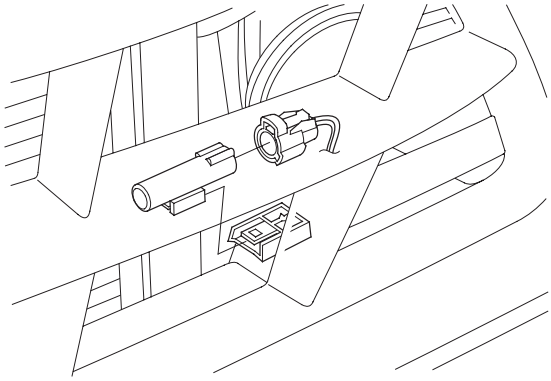
Check for a change in resistance by heating or cooling the sensor with a hair drier.

Compare the resistance reading between the No. 1 and No. 2 terminals of the in-car temperature sensor with the specifications shown in the graph; the resistance should be within the specifications.



Outside Air Temperature Sensor Replacement

1. Release the lock, and remove the outside air temperature sensor, then disconnect the 2P connector.

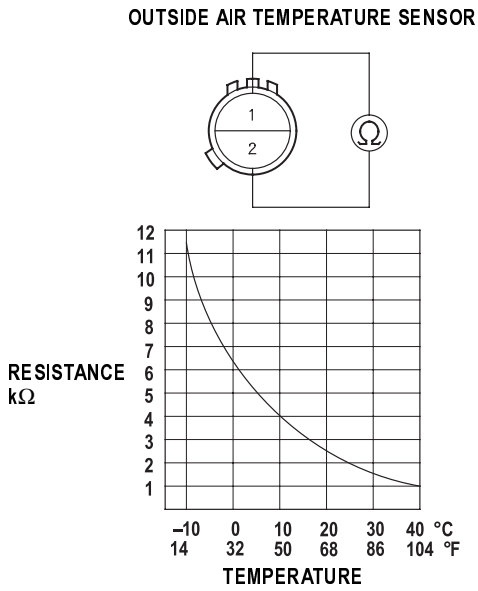


2. Install the sensor in the reverse order of removal.

Outside Air Temperature Sensor Test

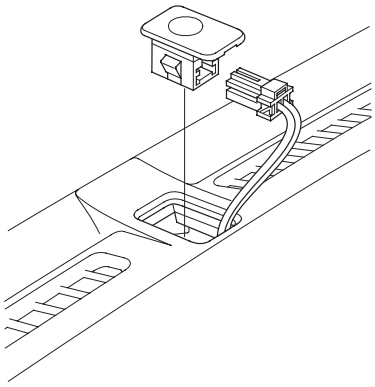
Dip the sensor in ice water, and measure the resistance. Then pour hot water on the sensor, and check for a change in resistance.

Compare the resistance reading between the No. 1 and No. 2 terminals of the outside air temperature sensor with the specifications shown in the graph; the resistance should be within the specifications.



Sunlight Sensor Replacement

1. Remove the sunlight sensor from the dashboard, then disconnect the 2P connector. Be careful not to damage the sensor and the dashboard.

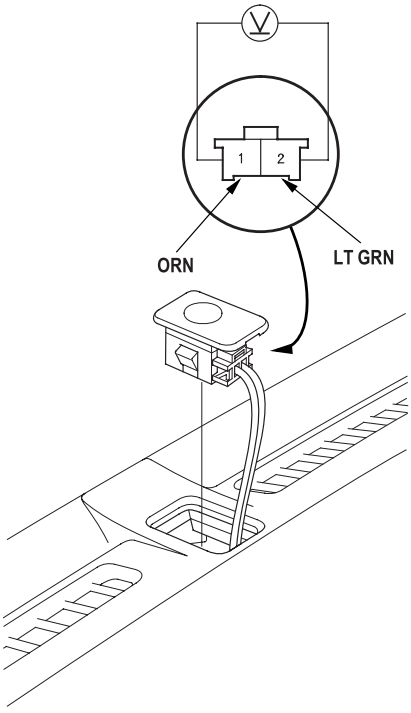


2. Install the sensor in the reverse order of removal.

Sunlight Sensor Test

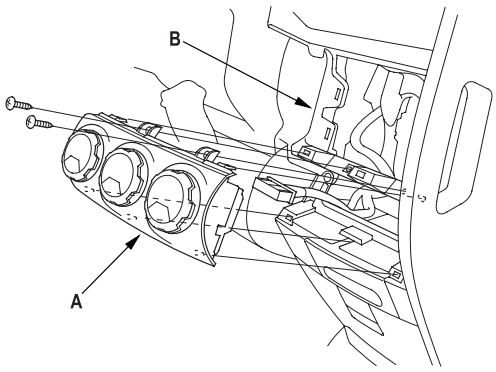
Turn the ignition switch ON (II). Measure the voltage between the terminals with the (+) probe on the No. 1 terminal and the (-) probe on the No. 2 terminal with the 2P connector connected. The voltage will not change under the light at a flashlight or fluorescent lamp. Voltage should be:

- 3.6 - 3.7 V or more with the sensor out of direct.
- 3.6 - 3.5 V or less with the sensor is direct sunlight.



Climate Control Unit Removal and Installation

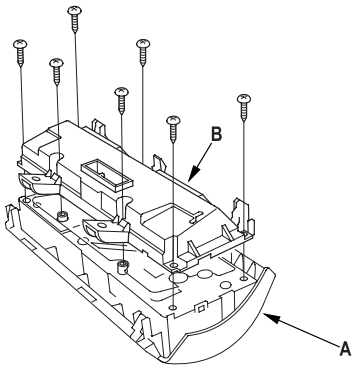
1. Remove the cool box (see page 20-90).
2. Remove the self-tapping screws and the heater control panel (A) from the dashboard (B).



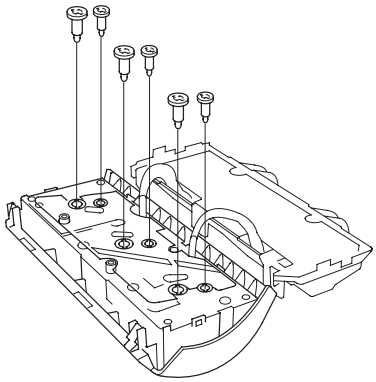
3. Install the control panel in the reverse order of removal. After installation, operate the control panel controls to see whether it works properly.
4. Run the self-diagnosis function to confirm that there are no problems in the system (see page 21-64).

Climate Control Unit Bulb Replacement

1. Discharge the static electricity (which accumulated on you when you removed the climate control unit) by touching the door striker or other body parts.
2. Remove the self-tapping screws, then carefully separate the climate control unit display (A) from the control unit (B). Do not kink or pull on the wires between the display and control unit. Do not touch the electronic components on the printed circuit board in the control unit.



3. Remove the bulb(s) with a flat-tip screw driver.



4. Install the bulb(s) in the reverse order of removal.