

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

The Acura TL 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, side curtain airbags in the sides of the roof, 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 page include or are located near SRS components. Servicing, disassembling, or replacing these items requires special precautions and tools, and should be done by an authorized Acura dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Acura dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the airbags, side airbags, and/or side curtain airbags.
- Do not bump or impact the SRS unit, front impact sensors, side impact sensors, or rear safing sensor, especially when the ignition switch is in ON (II)/the ON mode, for at least 3 minutes after the ignition switch is turned to LOCK (0), or after the engine start/stop button is pressed to select the OFF mode; otherwise, the system may fail in a collision, or the airbags may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, dashboard undercover, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

Heating, Ventilation, and Air Conditioning

Climate Control

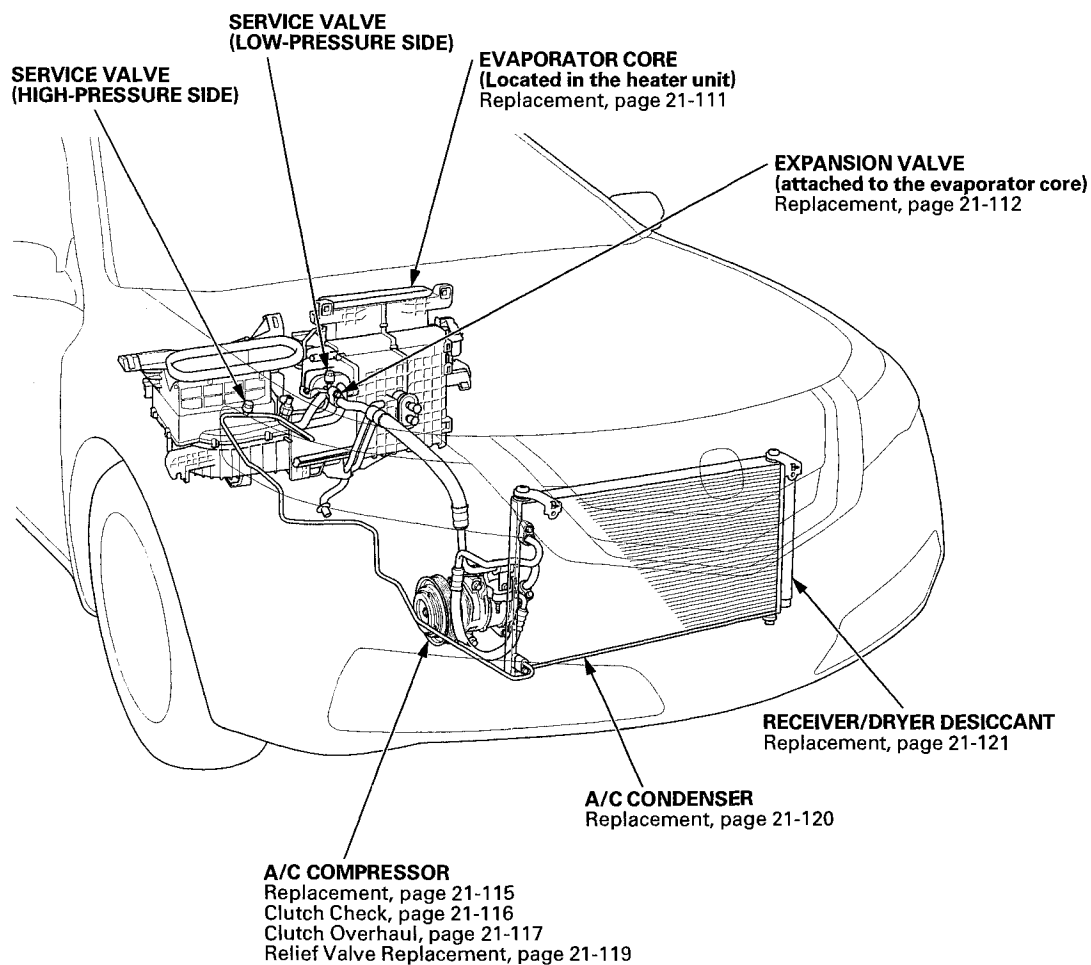
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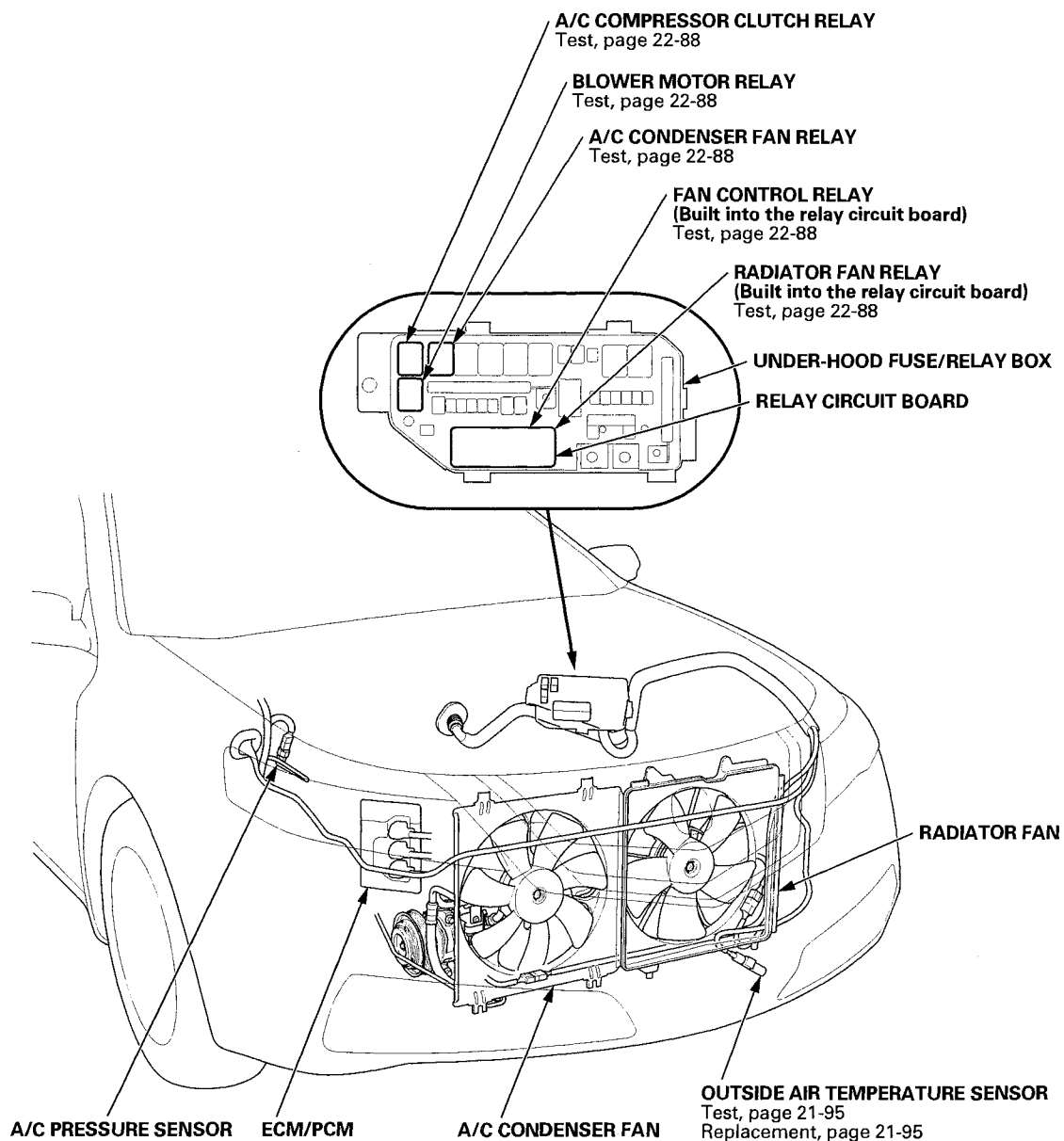
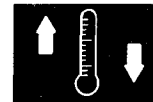
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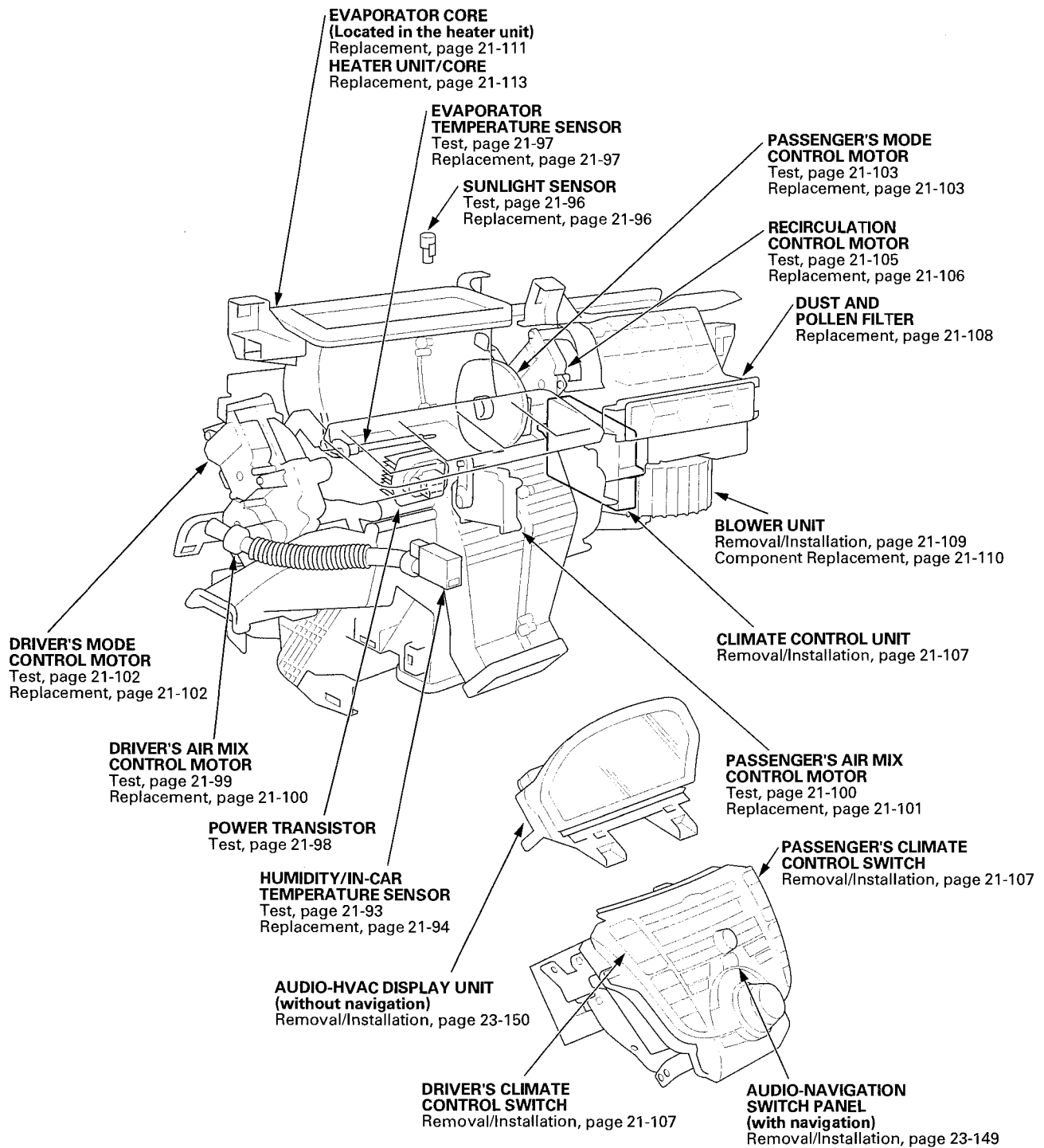


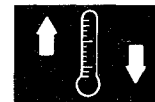


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Climate Control

Component Location Index (cont'd)





A/C Service Tips and Precautions

⚠ WARNING

- Compressed air mixed with the 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 or 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.

Use only service equipment that is U.L.-listed and is certified to meet the requirements of SAE J2210 to remove R-134a from the air conditioning system.

If accidental system discharge occurs, ventilate the 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, use an R-134a refrigerant recovery/recycling/charging station; don't release refrigerant into the atmosphere.

A/C Refrigerant Oil Replacement

Recommended PAG oil: DENSO ND-OIL 8

P/N 38897-PR7-A01AH: 120 mL (4 fl-oz)

It is important to have the correct amount of refrigerant oil in the A/C system to ensure proper lubrication of the A/C compressor. Too little oil damages the A/C compressor; too much oil reduces the cooling capacity of the system, and can produce high vent temperatures.

- 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.

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

A/C condenser

(including Dryer

Desiccant)..... 35 mL (1 1/5 fl-oz)

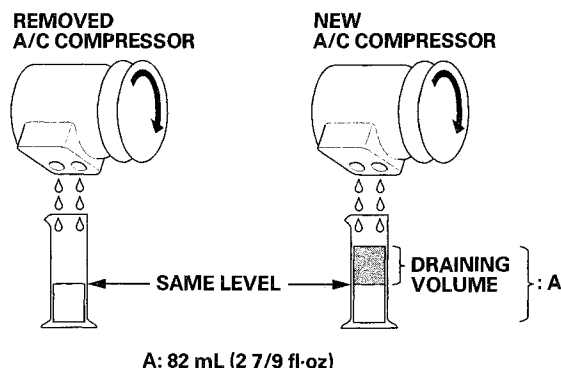
Evaporator 35 mL (1 1/5 fl-oz)

Line or hose 10 mL (1/3 fl-oz)

Leakage repair 25 mL (5/6 fl-oz)

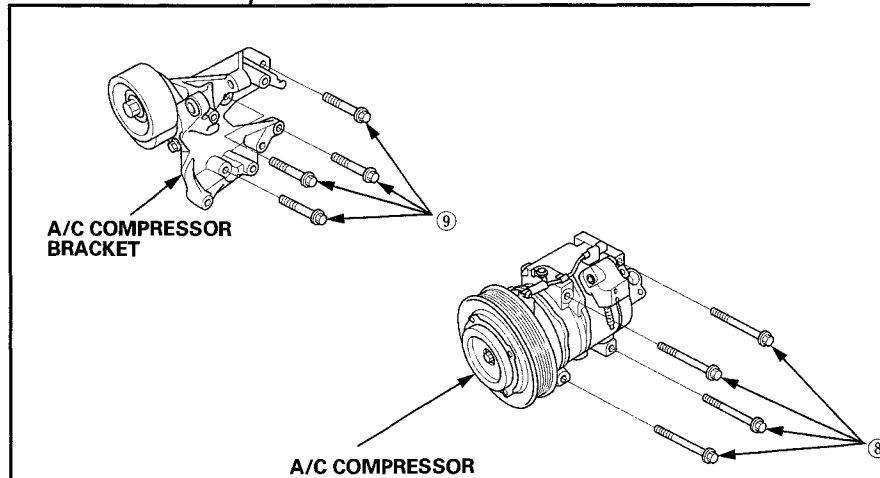
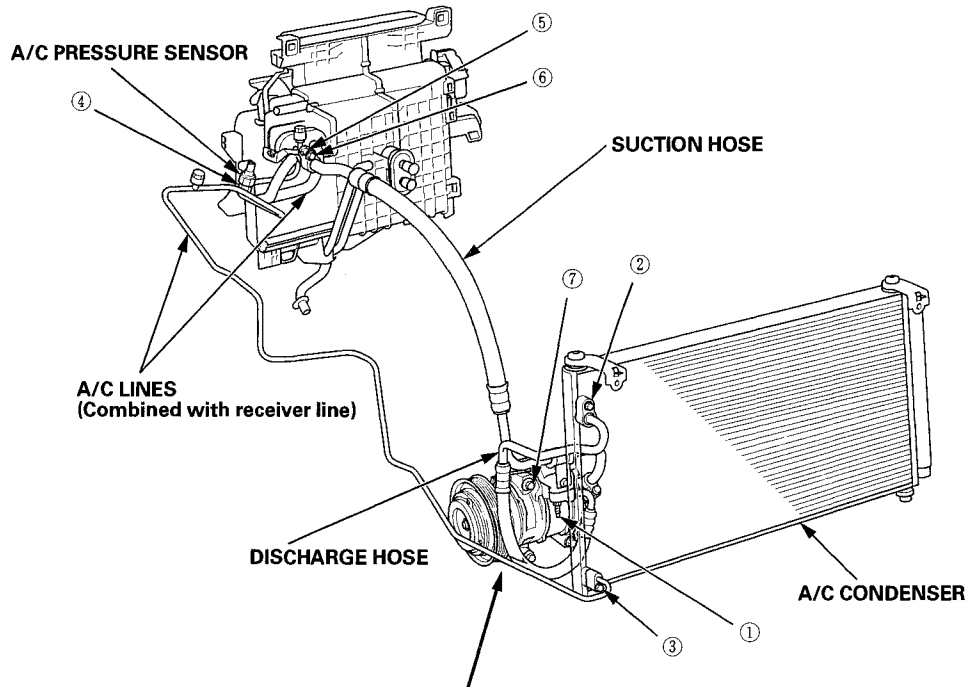
A/C compressor..... For A/C compressor replacement, subtract the volume of oil drained from the removed A/C compressor from 82 mL (2 7/9 fl-oz), and drain the calculated volume of oil from the new A/C compressor: 82 mL (2 7/9 fl-oz) — Volume of removed A/C compressor = Volume to drain from new A/C compressor.

NOTE: Even if no oil is drained from the removed A/C compressor, don't drain more than 50 mL (1 2/3 fl-oz) from the new A/C compressor.

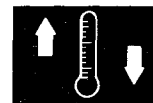


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A/C Line Replacement



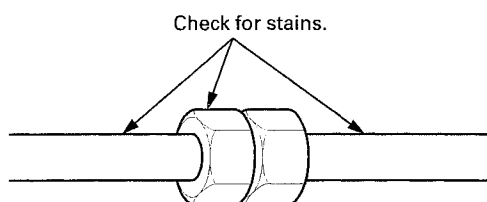
- ① Discharge hose to the A/C compressor (6 x 1.0 mm): 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
- ② Discharge hose to the A/C condenser (6 x 1.0 mm): 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
- ③ Receiver line to the A/C condenser (6 x 1.0 mm): 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
- ④ A/C pressure sensor to the receiver line (11 x 1.0 mm): 10.8 N·m (1.1 kgf·m, 8.0 lbf·ft)
- ⑤ A/C lines to the evaporator (6 x 1.0 mm): 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
- ⑥ A/C line to the suction hose (6 x 1.0 mm): 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
- ⑦ Suction hose to the A/C compressor (6 x 1.0 mm): 9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
- ⑧ A/C compressor to the A/C compressor bracket (8 x 1.25 mm): 22 N·m (2.2 kgf·m, 16.2 lbf·ft)
- ⑨ A/C compressor bracket to the engine block (10 x 1.25 mm): 44 N·m (4.5 kgf·m, 32.5 lbf·ft)



A/C System Inspection

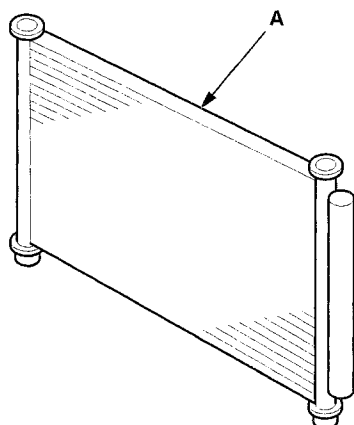
Before troubleshooting any problem with the air conditioning system, do the following:

1. Check for collision damage or body shop work.
2. Make sure the ignition switch is in LOCK (0), or the vehicle is in the OFF mode. Inspect the A/C components, the pressure lines, and the hoses for stains that may indicate a refrigerant or a compressor oil leak.

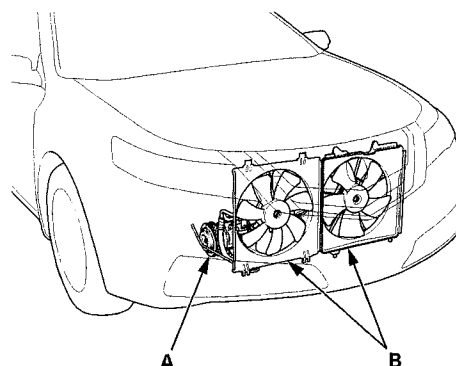


3. Check the A/C condenser for material clogging the fins or for damage to the fins:

- Carefully clean any material from the A/C condenser fins with water and detergent. If deeper cleaning is required, clean the fins with Honda Brite cleaner (P/N 08732-0020B).
- Be sure to dry the A/C condenser (A) completely.
- Refer to the refrigerant leak check (see page 21-124) to confirm leaks if there is visible damage to the A/C condenser.



4. Inspect the drive belt (see page 4-43).
5. Make sure no material is blocking the airflow to the A/C condenser.
6. Check the dust and pollen filter, and replace it if it is clogged (see page 21-108).
7. Check for kinks or sharp bends in the A/C lines and hoses, which can greatly reduce system performance. Replace A/C lines and hoses if they are kinked or damaged (see page 21-6).
8. Start the engine, turn the air conditioning system on, and allow it to run for a few minutes and reach stable operation.
9. Check that the A/C operates at each position of the blower fan switch (except OFF). If the A/C does not operate, refer to the symptom troubleshooting.
10. Check that the A/C compressor clutch (A) is engaged. The pressure plate should be rotating at the same speed as the pulley. If the pressure plate does not engage, or fails to disengage, refer to the symptom troubleshooting.



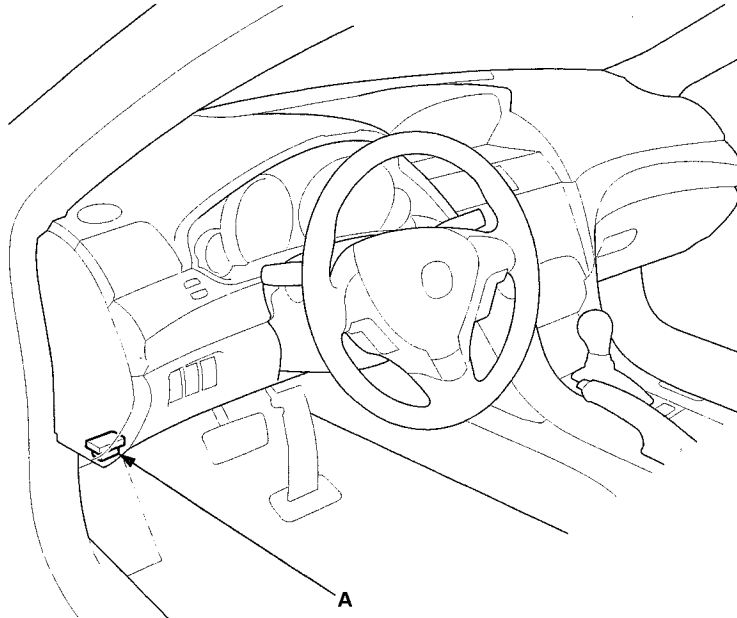
11. Check that the cooling fans (B) operate when the A/C compressor clutch is engaged. If either fan fails to operate when the A/C compressor clutch is engaged, refer to the symptom troubleshooting.
12. Check that the engine idle speed is correctly maintained when the A/C is switched on and off, and when the A/C compressor clutch is engaged and disengaged.

Climate Control

General Troubleshooting Information

How to Check for DTCs with the HDS

1. Make sure the ignition switch is in LOCK (0), or the vehicle ignition is in the OFF mode.
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Make sure the HDS communicates with the vehicle and the climate control unit. If it does not, troubleshoot the DLC circuit (see page 11-258).
5. Select HVAC/CLIMATE CONTROL in the BODY ELECTRICAL menu.
6. Select DTCs in the HVAC/CLIMATE CONTROL menu.
7. Check for DTCs. If any DTCs are indicated, write down the DTCs, then go to the indicated DTC troubleshooting. If no DTCs are indicated, do all system scan, then refer to symptom troubleshooting.

NOTE:

- After troubleshooting, clear the DTCs with the HDS.
- For specific operations, refer to the user's manual that came with the HDS.



How to Use the Self-diagnostic Function with the HDS

1. Make sure the ignition switch is in LOCK (0), or the vehicle ignition is in the OFF mode.
2. Connect the HDS to the data link connector (DLC).
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Make sure the HDS communicates with the vehicle and the climate control unit. If it does not, troubleshoot the DLC circuit (see page 11-258).
5. Select HVAC/CLIMATE CONTROL in the BODY ELECTRICAL menu.
6. Select INSPECTION in the HVAC/CLIMATE CONTROL menu.
7. Select CLIMATE CONTROL SELF TEST in the INSPECTION menu.
8. Check for DTCs. If any DTCs are indicated, write down the DTCs, then go to the indicated DTC troubleshooting.

NOTE:

- After troubleshooting, clear the DTCs with the HDS.
- For specific operations, refer to the user's manual that came with the HDS.

Climate Control

General Troubleshooting Information (cont'd)

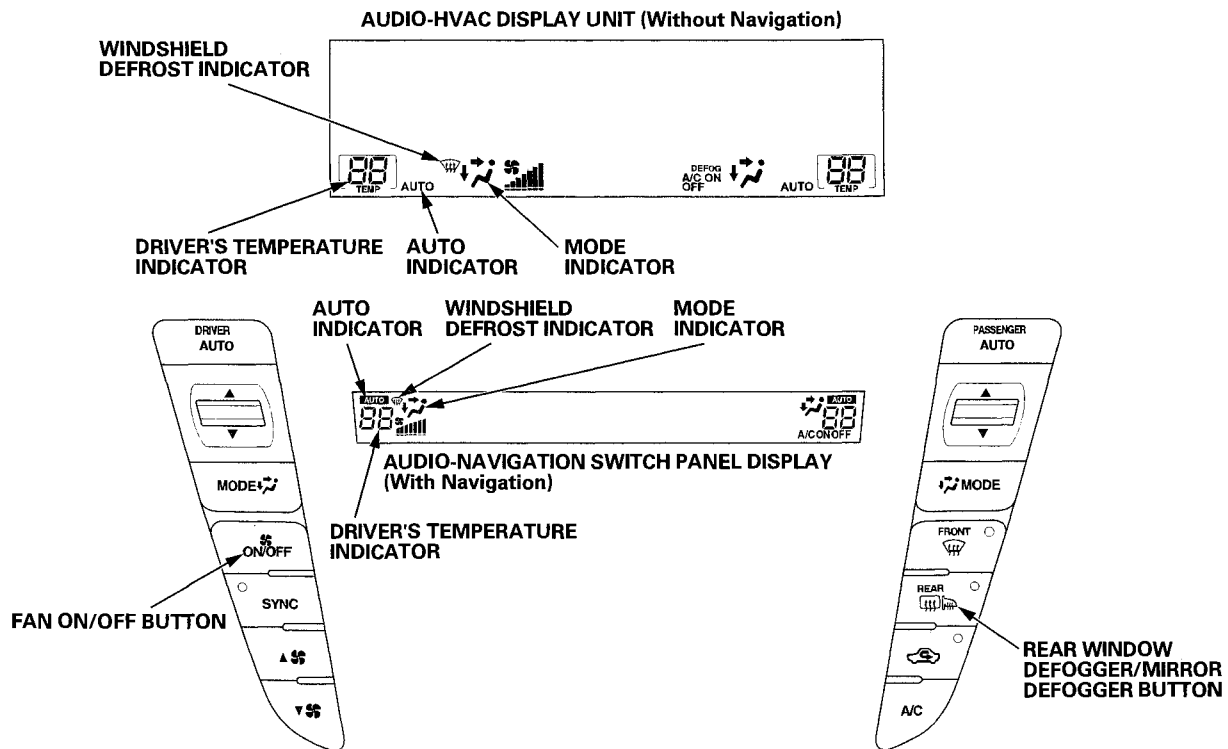
How to Use the Self-diagnostic Function without the HDS

The climate control unit has a self-diagnostic function. To run the self-diagnostic function, do the following:

1. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
2. Press and hold the FAN ON/OFF button, then within 10 seconds press and release the REAR WINDOW DEFOGGER/MIRROR DEFOGGER button five times. Release the FAN ON/OFF button, then the self-diagnostic begins.

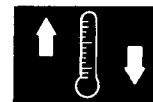
NOTE:

- The blower motor runs at various speeds regardless of what the panel is displaying.
- If there is a problem with the system, it will flash AUTO, 88 and AUTO, 88 and WINDSHIELD DEFROST, or 88 and MODE, and one or more of the 14 indicator segments (A through N). Refer to checking for DTCs.
- If there is more than one DTC, they are displayed one at a time in sequence followed by a pause (all the display indicator segments illuminate) between the DTCs.
- If there are no problems detected, the segments do not illuminate, and the system appears to be turned off.



Canceling the Self-diagnostic Function

3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode to cancel the self-diagnostic function. After completing repair work, run the self-diagnostic function again to make sure that there are no other DTCs.



Checking for DTCs

The temperature display indicates single or multiple DTCs. If no DTCs are present, the indicator remains blank.

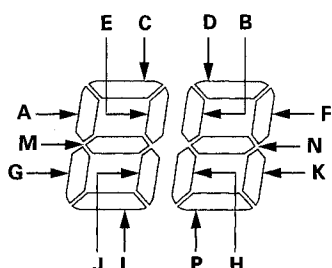
NOTE: If the driver's indicator segments A, C, E, G, M, with the AUTO indicator, MODE indicator, and the WINDSHIELD DEFROST indicator are on at the same time, there may be an open in the sensor common ground wire.

DRIVER'S TEMPERATURE INDICATOR

AUTO INDICATOR

MODE INDICATOR

WINDSHIELD DEFROST INDICATOR



AUTO



DTC (Driver's Temperature Indicator Segment, AUTO, MODE, and WINDSHIELD DEFROST Indicator)	Detection Item
AUTO	Engine coolant temperature (ECT) sensor signal error. Check for DTCs (P2183, P2184, or P2185) in the PGM-FI system and go to the indicated DTC's troubleshooting. If no DTCs are found, replace the climate control unit (see page 21-107)
A and AUTO	An open in the in-car temperature sensor circuit (see page 21-40)
B and AUTO	A short in the in-car temperature sensor circuit (see page 21-41)
C and AUTO	An open in the outside air temperature sensor circuit (see page 21-42)
D and AUTO	A short in the outside air temperature sensor circuit (see page 21-44)
E and AUTO	An open in the sunlight sensor circuit (see page 21-45)
F and AUTO	A short in the sunlight sensor circuit (see page 21-46)
G and AUTO	An open in the evaporator temperature sensor circuit (see page 21-47)
H and AUTO	A short in the evaporator temperature sensor circuit (see page 21-48)
J and AUTO	An open in the driver's air mix control motor circuit (see page 21-49)
K and AUTO	A short in the driver's air mix control motor circuit (see page 21-50)
L and AUTO	A problem in the driver's air mix control linkage, door, or motor circuit (see page 21-53)
M and AUTO	An open in the passenger's air mix control motor circuit (see page 21-54)
N and AUTO	A short in the passenger's air mix control motor circuit (see page 21-55)
P and AUTO	A problem in the passenger's air mix control linkage, door, or motor circuit (see page 21-58)

(cont'd)

Climate Control

General Troubleshooting Information (cont'd)

DTC (Driver's Temperature Indicator Segment, AUTO, MODE, and WINDSHIELD DEFROST Indicator)	Detection Item
A and WINDSHIELD DEFROST	An open in the humidity sensor circuit (see page 21-70)
B and WINDSHIELD DEFROST	A short in the humidity sensor circuit (see page 21-71)
E and WINDSHIELD DEFROST	An open in the A/C pressure sensor circuit (see page 21-75)
F and WINDSHIELD DEFROST	A short in the A/C pressure sensor circuit (see page 21-76)
A and MODE	An open or short in the driver's mode control motor circuit (see page 21-60)
B and MODE	A problem in the driver's mode control linkage, doors, or motor circuit (see page 21-62)
C and MODE	A problem in the blower motor circuit (see page 21-63)
E and MODE	An open or short in the passenger's mode control motor circuit (see page 21-67)
F and MODE	A problem in the passenger's mode control linkage, doors, or motor circuit (see page 21-69)
J and MODE	An open or short in the recirculation control motor circuit (see page 21-38)
K and MODE	A problem in the recirculation control linkage, door, or motor circuit (see page 21-80)

Displaying Sensor Inputs at the Climate Control Unit

The climate control unit has a mode that displays the sensor inputs it receives. This mode shows you what the climate control unit is receiving from each of the sensors, one at a time, and it can help you determine if a sensor is faulty.

Check these items before using the sensor input display mode

1. Turn the ignition switch to ON (II), and check the recirculation door function; press the recirculation button to switch from FRESH to RECIRC. The air volume and sound should change slightly.
2. Set the desired test temperature using the driver's control switch:
Press the SYNC button off, the LED turns off.
When selecting the test temperature, note these items:
 - "Lo" temperature setting will default to MAX COOL, VENT, and RECIRC.
 - "Hi" temperature setting will default to MAX HOT, HEAT, and FRESH.
 - 58 through 86 °F settings will use the automatic climate control logic.
3. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.



To run the sensor input display mode, follow these steps

1. Make sure the ignition switch is in LOCK (0), or the vehicle ignition is in the OFF mode.
2. Press and hold both the passenger's AUTO and RECIRCULATION CONTROL buttons, then start the engine.
3. After the engine starts, release both buttons. The display panel control unit flashes the sensor number, then the value for that sensor. Record the value displayed.
4. To advance to the next sensor, press the REAR WINDOW DEFOGGER button.

NOTE:

- The sensor values are displayed in degrees Celsius (°C) or an alphanumeric code. Use the charts to convert degrees Fahrenheit (°F), or convert the alphanumeric code to a numerical value.
- If the sensor value displays "Er" this indicates there is an open or short in the circuit or sensor. Check for DTCs using the HDS, or use the climate control unit self-diagnostic function.
- If necessary, compare the sensor input display to a known-good vehicle under the same test conditions.
- If the sensor is out of the normal range, refer to the sensor test or substitute a known-good sensor, and recheck.

Sensor	Item	Displayed Value
1	In-car Temperature	°C
2	Outside Air Temperature	°C
3	Solar Radiation Sensor Value: Dark = 00, Flashlight = 04, Cloudy = 10, Sunny = 65	kcal/m ² ·h
4	Radiator Coolant Temperature	°C
5	Evaporator Outlet Air Temperature	°C
6	Driver's Air Mix Opening (Low value indicates cooler air distribution, higher value indicates warmer air distribution)	% of opening
	Passenger's Air Mix Opening (Low value indicates cooler air distribution, higher value indicates warmer air distribution) (Passenger's side of display)	% of opening
7	Vent Temperature Air Out (TAO)	°C
8	Vehicle Speed (Vehicle must be driven to display speed)	km/h
9	A/C Pressure	10 kPa
A	Humidity Sensor Value	% rh
b	Fog Margin	°C
C	Solar Radiation azimuth (With navigation)	10 °
d	Solar Radiation angle of elevation (With navigation)	10 °

(cont'd)

Climate Control

General Troubleshooting Information (cont'd)

Celsius to Fahrenheit Conversion Table

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
0	32	10	50	20	68	30	86	40	104
1	34	11	52	21	70	31	88	41	106
2	36	12	54	22	72	32	90	42	108
3	37	13	55	23	73	33	91	43	109
4	39	14	57	24	75	34	93	44	111
5	41	15	59	25	77	35	95	45	113
6	43	16	61	26	79	36	97	46	115
7	45	17	63	27	81	37	99	47	117
8	46	18	64	28	82	38	100	48	118
9	48	19	66	29	84	39	102	49	120
°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
50	122	60	140	70	158	80	176	90	194
51	124	61	142	71	160	81	178	91	196
52	126	62	144	72	162	82	180	92	198
53	127	63	145	73	163	83	181	93	199
54	128	64	147	74	165	84	183	94	201
55	131	65	149	75	167	85	185	95	203
56	133	66	151	76	169	86	187	96	205
57	135	67	152	77	170	87	188	97	207
58	136	68	154	78	172	88	190	98	208
59	139	69	158	79	174	89	192	99	210

Alphanumeric Conversion Table

Display Reading (Alphanumeric)	°C	°F	%
A1 thru A9	—1 thru —9	30 thru 16	—1 thru —9
B0 thru B9	—10 thru —19	14 thru —2	—10 thru —19
C0 thru C9	—20 thru —29	—4 thru —20	—20 thru —29
D0 thru D9	—30 thru —39	—22 thru —38	—30 thru —39
E0 thru E9	—40 thru —49	—40 thru —58	—40 thru —49
F0 thru F9	—	—	+100 thru +109

5. To cancel the sensor input display mode, press the driver's AUTO button or turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.



DTC Troubleshooting Index

Checking the DTCs with the HDS

DTC	Detection Item or Symptom	ECU	DTC type	Page
U1280	Communication bus line error (bus-off)	Climate control unit	Loss of communication	DTC Troubleshooting (see page 22-151)
U0155	Climate control unit lost communication with gauge control module	Climate control unit	Loss of communication	DTC Troubleshooting (see page 21-37)
B1215	An open or short in the recirculation control motor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-38)
B1225	An open in the in-car temperature sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-40)
B1226	A short in the in-car temperature sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-41)
B1227	An open in the outside air temperature sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-42)
B1228	A short in the outside air temperature sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-44)
B1229	An open in the sunlight sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-45)
B1230	A short in the sunlight sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-46)
B1231	An open in the evaporator temperature sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-47)
B1232	A short in the evaporator temperature sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-48)
B1233	An open in the driver's air mix control motor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-49)
B1234	A short in the driver's air mix control motor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-50)
B1235	A problem in the driver's air mix control linkage, door, or motor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-53)
B1236	An open in the passenger's air mix control motor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-54)
B1237	A short in the passenger's air mix control motor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-55)
B1238	A problem in the passenger's air mix control linkage, door, or motor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-58)

(cont'd)

Climate Control

DTC Troubleshooting Index (cont'd)

Checking the DTCs with the HDS

DTC	Detection Item or Symptom	ECU	DTC type	Page
B1239	An open or short in the driver's mode control motor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-60)
B1240	A problem in the driver's mode control linkage, doors, or motor	Climate control unit	Signal error	DTC Troubleshooting (see page 21-62)
B1241	A problem in the blower motor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-63)
B1242	An open or short in the passenger's mode control motor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-67)
B1243	A problem in the passenger's mode control linkage, doors, or motor	Climate control unit	Signal error	DTC Troubleshooting (see page 21-69)
B2967	An open in the humidity sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-70)
B2968	A short in the humidity sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-71)
B2969	Climate control unit lost communication with driver's MICU (WIPSW message)	Climate control unit	Loss of communication	DTC Troubleshooting (see page 21-74)
B2979	An open in the A/C pressure sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-75)
B2980	A short in the A/C pressure sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-76)
B2983	A problem in the recirculation control linkage, door, or motor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-80)



Symptom Troubleshooting Index

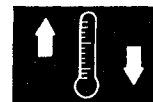
Symptom	Diagnostic procedure	Also check for
The blower and heater controls and the A/C system do not work	Probable cause: The climate control unit has malfunctioned, or has lost power or ground Do the climate control power and ground circuit troubleshooting (see page 21-81)	- Climate control DTCs (see page 21-8) - Blown fuse No. 16 (7.5 A) in the driver's under-dash fuse/relay box - Poor ground at G403 (see page 22-42) - Poor or loose connections at the terminals
The A/C compressor clutch and the A/C condenser/radiator fans are inoperative, but the blower and heater controls work	Probable cause: A/C pressure sensor circuit malfunction NOTE: When the A/C pressure sensor malfunctions, it may or may not set a DTC	- Climate control DTCs (see page 21-8) - Powertrain DTCs (see page 11-3) - Poor or loose connections at the terminals - A/C signal circuit problem in the ECM/PCM (see page 11-333) - Check sensor input display mode (see page 21-13): Sensor #5 Evaporator, Sensor #9 A/C Pressure
The A/C compressor clutch does not engage, but the A/C condenser/radiator fans operate, and the blower and heater controls work	Probable cause: - No power to the A/C compressor clutch Do the A/C compressor clutch circuit troubleshooting (see page 21-91) - Low speed idle - High engine coolant temperature (ECT)	- Climate control DTCs (see page 21-8) - Powertrain DTCs (see page 11-3) - Blown fuse No. 20 (7.5 A) in the under-hood fuse/relay box - A/C system pressure is normal (see page 21-20) - Poor or loose connections at the terminals
The A/C condenser fan and/or the radiator fan do not run with the A/C on	Probable cause: Condenser/radiator fan low speed circuit malfunction Do the radiator and A/C condenser fan low speed circuit troubleshooting (see page 21-86)	- Climate control DTCs (see page 21-8) - Powertrain DTCs (see page 11-3) - Blown fuse on the fan circuit: - Without SH-AWD and M/T, No. 3-3 (SUB FAN) (30 A) - A/T with SH-AWD, No. 3-2 (SUB FAN) (40 A) - Poor ground at G301 (see page 22-30) - Poor or loose connections at the terminals
The A/C condenser/radiator fans do not run at high speed, but do run at low speed	Probable cause: Malfunction in the fan high speed circuit(s) Do the following troubleshooting as needed: - A/C condenser fan high speed circuit troubleshooting (see page 21-89) - Radiator fan high speed circuit troubleshooting (see page 10-20)	- Climate control DTCs (see page 21-8) - Powertrain DTCs (see page 11-3) - Blown fuse on the fan circuit: - Without SH-AWD and M/T, No. 3-3 (SUB FAN) (30 A) - A/T with SH-AWD, No. 3-2 (SUB FAN) (40 A) - No. 3-5 (MAIN FAN) (30 A, Without SH-AWD and M/T), (40 A, A/T with SH-AWD) - Poor ground at G301 (see page 22-30) - Poor or loose connections at the terminals
Voice commands do not work	Probable cause: Communication problem between the climate control unit and the navigation system Do the navigation communication line circuit troubleshooting (see page 21-82)	- Climate control DTCs (see page 21-8) - Navigation unit DTCs (see page 23-166) - Poor or loose connections at the terminals
The climate control display is inoperative	Probable cause: Communication problem between the climate control unit and the Audio-HVAC display unit (without navigation) or the Audio-Navigation switch panel (with navigation) Do the audio communication line circuit troubleshooting (see page 21-84)	- Climate control DTCs (see page 21-8) - Audio-HVAC display failure - Poor or loose connections at the terminals
Blower fan runs slower than expected in cold weather (when in AUTO mode) NOTE: It is normal for the blower fan to run slowly until the coolant temperature rises when in AUTO mode	Probable cause: Engine coolant temperature (ECT) circuit malfunction Troubleshoot ECT Sensor 2 Circuit Range/Performance Problem (see page 11-213)	- Climate control DTCs (see page 21-8) - Powertrain DTCs (see page 11-3) - Manual blower motor operation

(cont'd)

Climate Control

Symptom Troubleshooting Index (cont'd)

Symptom	Diagnostic procedure	Also check for
The A/C compressor clutch cycles rapidly on and off	Probable cause: A/C system is very low on refrigerant, indicating a possible leak Do the refrigerant leak check (see page 21-124) and repair any leaks. Replace the receiver/dryer (see page 21-121), then recharge the system to specifications (see page 21-123)	- Climate control DTCs (see page 21-8) - If there is no leak and the refrigerant level is normal, do the A/C compressor clutch circuit troubleshooting (see page 21-91), and look for an intermittent problem.
The A/C compressor clutch does not disengage when the A/C switch is off	Probable cause: The A/C compressor clutch circuit is on (energized) continuously, shorted to ground, stuck A/C compressor clutch relay, or the A/C compressor clutch is mechanically jammed - Do the A/C compressor clutch circuit troubleshooting (see page 21-91), and repair any circuit problems - If the A/C compressor clutch circuit is OK, then do the A/C compressor clutch check (see page 21-116), and repair any problems with the A/C compressor clutch	The A/C compressor relief valve. If it has vented refrigerant to the atmosphere, correct the problem with the A/C compressor clutch or clutch circuit, then replace the relief valve (see page 21-119).
The A/C compressor relief valve has vented refrigerant NOTE: This indicates the A/C system pressure was very high	Probable cause: A high-side restriction, the A/C condenser/radiator fans are inoperative, or the A/C compressor clutch is not disengaging - If the fans and A/C compressor clutch operate normally, recover refrigerant (see page 21-122), and check for restrictions - If the A/C compressor clutch will not disengage, troubleshoot the clutch circuit (see page 21-91), and check for mechanical problems (see page 21-116) - If the fans are inoperative, troubleshoot the fan circuits (see page 21-86)	Powertrain DTCs (see page 11-3)
Warm air comes out of the vents. The suction line is cool to warm, and the discharge line is warm to hot	Probable cause: The A/C system is low on refrigerant, indicating a possible leak Do the refrigerant leak check (see page 21-124) and repair any leaks. Recharge the system to specifications (see page 21-123)	- Climate control DTCs (see page 21-8) - Add refrigerant oil depending on the part you replaced (see page 21-5)
Warm air comes out of the vents, and the high pressure liquid line is very hot	Probable cause: The A/C system is overcharged (too much refrigerant), or the A/C condenser is malfunctioning Recover A/C refrigerant (see page 21-122), then check the A/C condenser for restrictions or poor airflow. Repair as needed. Recharge the system to specifications (see page 21-123)	- Incorrect tension or abnormal wear on the drive belt. Replace the belt and/or the belt tensioner as needed. - Proper operation of the A/C condenser/radiator fans. Repair as needed. - Signs of an overheated engine. Repair as needed.
Warm air comes out of the vents. The suction line is cool to warm, the discharge line is warm to hot, and there is no frost on the expansion valve	Probable cause: Excessive air and/or moisture in the system, indicating a possible leak Do the refrigerant leak check (see page 21-124) and repair any leaks. Replace the receiver/dryer (see page 21-121), then recharge the system to specifications (see page 21-123)	- Climate control DTCs (see page 21-8) - Check the amount of refrigerant oil in the system. Adjust the oil level as needed.
Warm air comes out of the vents. The liquid line or the A/C condenser outlet is abnormally cool, or there is frost or condensation on the receiver/dryer	Probable cause: A restriction in the high-pressure side of the system Recover A/C refrigerant (see page 21-122), then check the liquid line, the receiver/dryer, and the A/C condenser for restrictions. Repair as needed. Recharge the system to specifications (see page 21-123)	Climate control DTCs (see page 21-8)
There is heavy frost or condensation on the expansion valve, and frost on the suction line	Probable cause: A restriction in the low-pressure side of the system Recover A/C refrigerant (see page 21-122), then check the suction line and the expansion valve for restrictions. Repair as needed. Recharge the system to specifications (see page 21-123)	Climate control DTCs (see page 21-8)

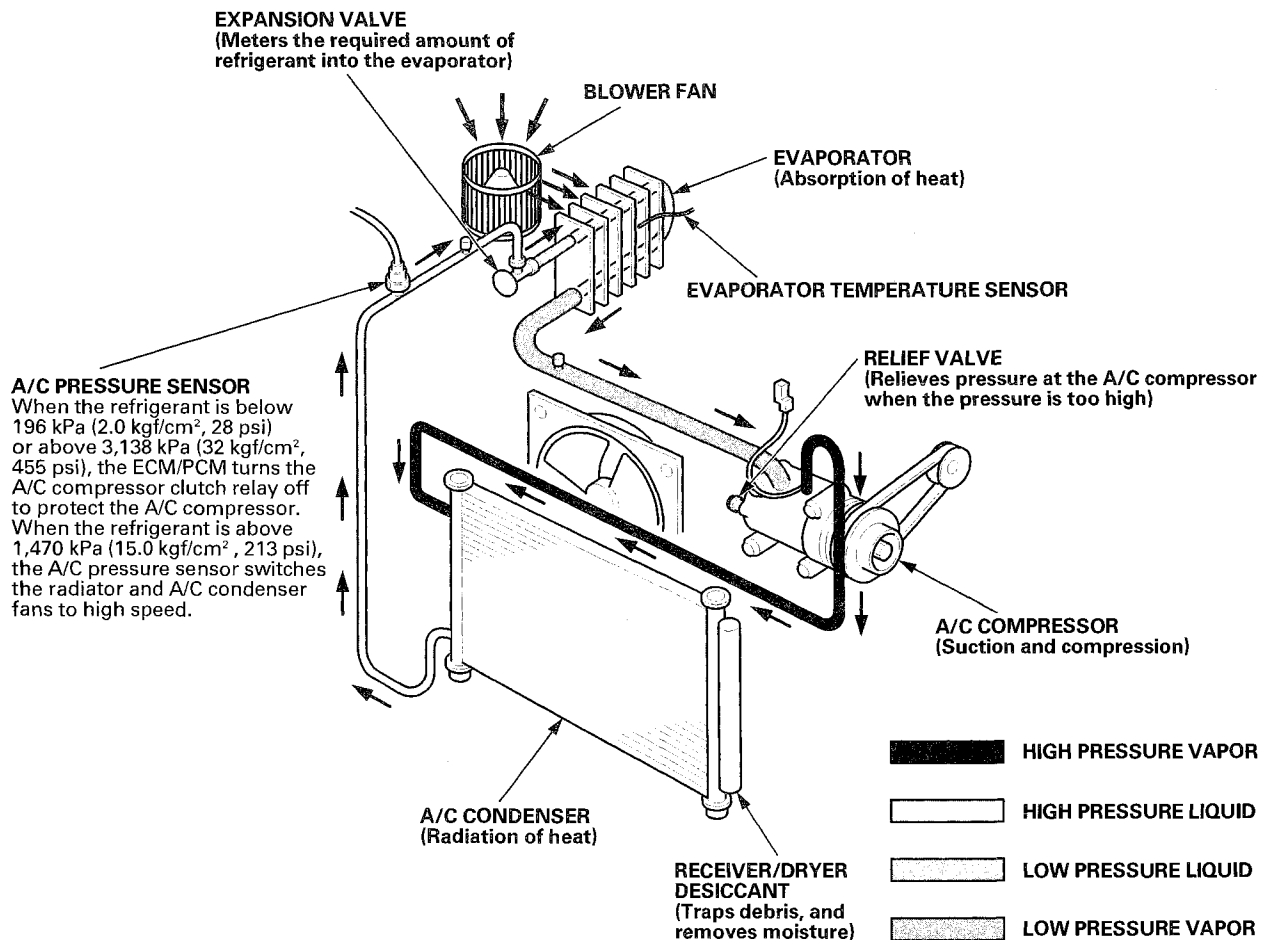


Symptom	Diagnostic procedure	Also check for
Warm air comes out of the vents, and there is frost on the expansion valve	Probable cause: The expansion valve is stuck closed Replace the expansion valve (see page 21-112)	- Climate control DTCs (see page 21-8) - Check the old expansion valve for contamination. If contaminants are found, replace the A/C system component that caused the contamination.
The temperature of the liquid line is the same on both sides of the expansion valve, and the evaporator coil or suction line has heavy condensation	Probable cause: The expansion valve is stuck open Replace the expansion valve (see page 21-112)	- Climate control DTCs (see page 21-8) - Check the old expansion valve for contamination. If contaminants are found, replace the A/C system component that caused the contamination.
Warm air comes out of the vents, but A/C command is normal (A/C switch and clutch are on)	Probable cause: A/C compressor failure Do the A/C system test (see page 21-131), and correct any problems. If necessary, replace the A/C compressor (see page 21-115)	- Climate control DTCs (see page 21-8) - Add refrigerant oil depending on the part you replaced (see page 21-5)
HDS does not communicate with the climate control unit or the vehicle	Troubleshoot the DLC circuit (see page 11-258)	
Insufficient heating	- Check the coolant level (see page 10-6) - Check the radiator cap (see page 10-3) - Check the coolant temperature during normal operation - Check the heater core inlet hose temperature: - If it is COLD, check for restrictions in the hose, a damaged or leaking thermostat, or a damaged or leaking water pump - If it is HOT, check for restrictions in the heater core. Back flush or replace the heater core - Check the operation of the air mix doors: - Driver's (see page 21-99) - Passenger's (see page 21-101) - Check the blower motor unit for obstructions - Check for air leaks around the ducts and vents	- Climate control DTCs (see page 21-8) - Damaged cylinder head gasket

Climate Control

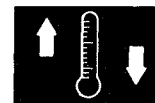
System Description

The air conditioning (A/C) system removes heat from the passenger compartment by transferring heat from the ambient air to the evaporator. The A/C refrigerant expands in the evaporator, and the evaporator becomes very cold and absorbs the heat from the ambient air. The blower fan pushes air across the evaporator where the heat is absorbed, and then it blows the cool air into the passenger compartment.



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 (DENSO ND-OIL 8) designed for the R-134a A/C compressor. Intermixing the recommended (PAG) refrigerant oil with any other refrigerant oil will result in A/C compressor failure.
- All A/C system parts (A/C compressor, discharge line, suction line, evaporator, A/C condenser, receiver/dryer, expansion valve, O-rings for joints) are designed for refrigerant R-134a. Do not exchange with R-12 parts.
- Use a halogen gas leak detector designed for refrigerant R-134a.
- R-12 and R-134a refrigerant servicing equipment are not interchangeable. Use only a recovery/recycling/charging station that is U.L.-listed and is certified to meet the requirements of SAE J2210 to service the R-134a air conditioning systems.
- Always recover refrigerant R-134a with an approved recovery/recycling/charging station before disconnecting any A/C fitting.



A/C Pressure Sensor

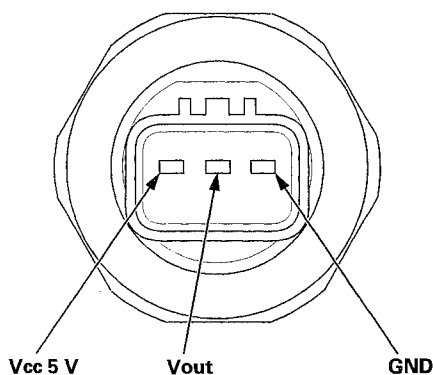
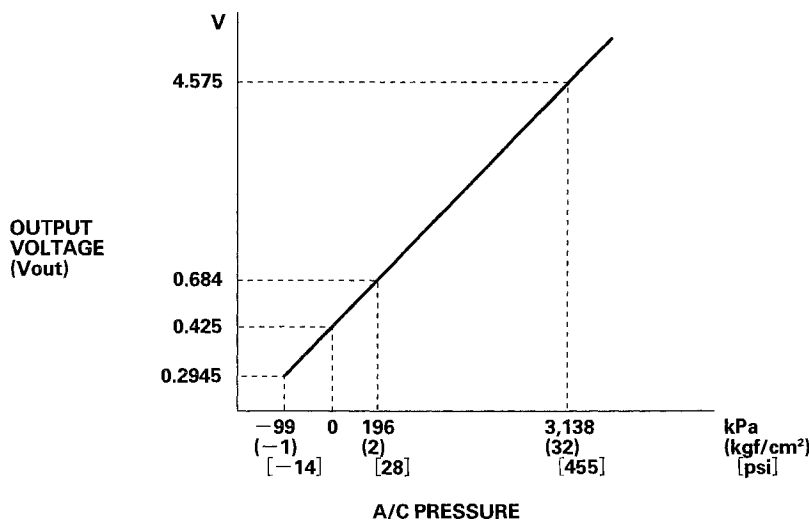
The A/C pressure sensor converts A/C pressure into electrical signals to the ECM/PCM.

A/C System Pressure*	Sensor Output Voltage (V out)	System Operation
Abnormally low pressure: Below 196 kPa (2.0 kgf/cm ² , 28 psi)	Below 0.685 V	The ECM/PCM disengages the A/C compressor clutch. The radiator and A/C condenser fans operate based on engine coolant temperature.
Normal operating pressure: • Above 196 kPa (2.0 kgf/cm², 28 psi) • Below 1,470 kPa (15.0 kgf/cm², 213 psi)	0.686 V to 1.944 V	The ECM/PCM cycles the A/C compressor clutch based on cooling demand. The radiator and A/C condenser fans operate at low speed unless the engine coolant temperature exceeds 206 °F (97 °C)
High operating pressure: • Above 1,470 kPa (15.0 kgf/cm², 213 psi) • Below 3,138 kPa (32 kgf/cm², 455 psi)	1.945 V to 4.575 V	The ECM/PCM cycles the A/C compressor clutch based on cooling demand. The radiator and A/C condenser fans operate at high speed.
Abnormally high pressure: More than 3,138 kPa (32 kgf/cm ² , 455 psi)	Above 4.575 V	The ECM/PCM disengages the A/C compressor clutch. The radiator and A/C condenser fans operate based on engine coolant temperature.

*: The A/C system pressure can be monitored through the climate control sensor input display function (see page 21-13).

The response of the A/C pressure sensor is shown in the graph.

NOTE: When the refrigerant is below 196 kPa (2.0 kgf/cm², 28 psi) or above 3,138 kPa (32 kgf/cm², 455 psi), the ECM/PCM turns the A/C compressor relay off to protect the A/C compressor. When the refrigerant pressure is above 1,470 kPa (15.0 kgf/cm², 213 psi), the ECM/PCM switches the radiator and A/C condenser fans to high speed.

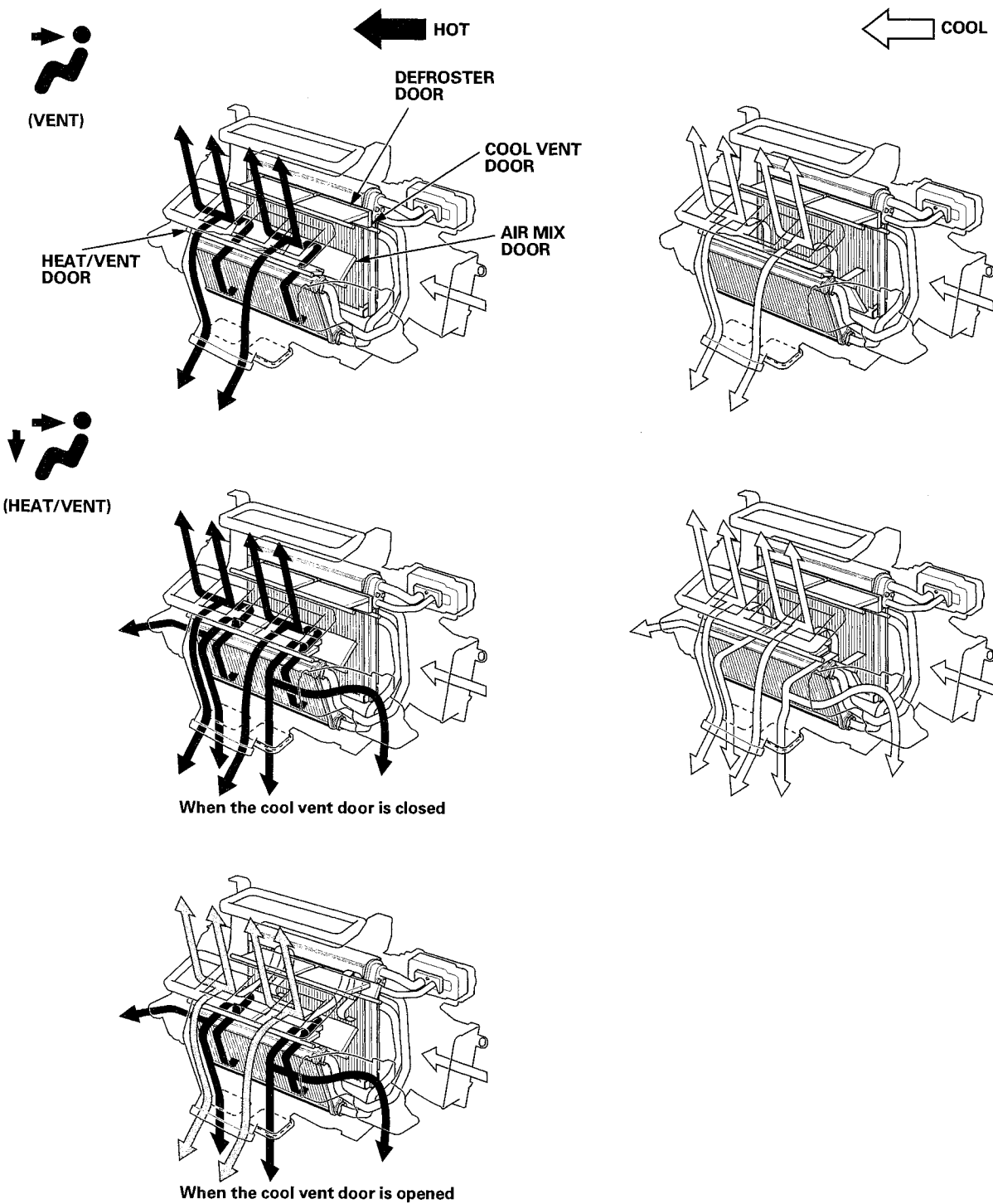


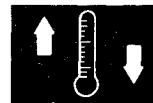
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Climate Control

System Description (cont'd)

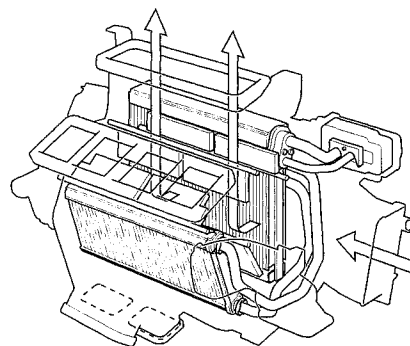
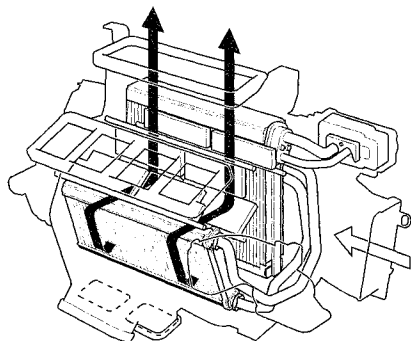
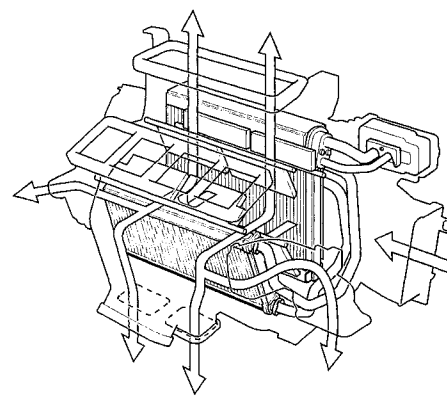
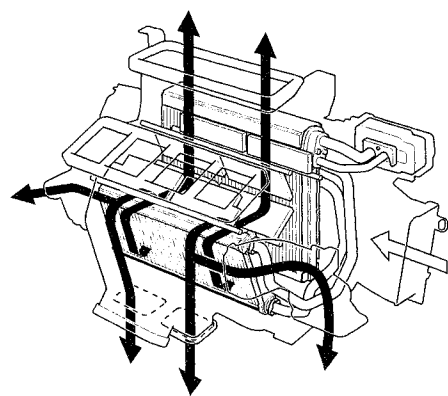
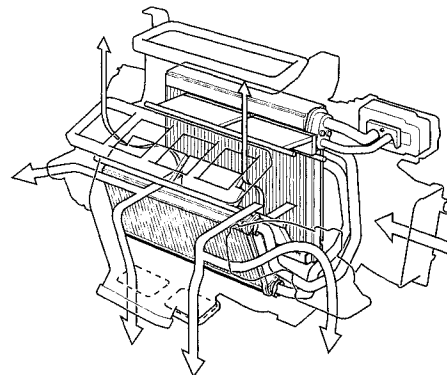
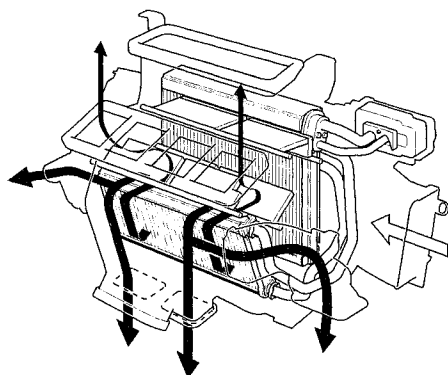
Climate Control Door Positions





HOT

COOL

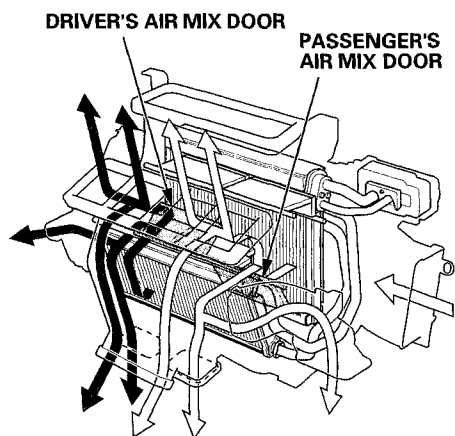


Climate Control

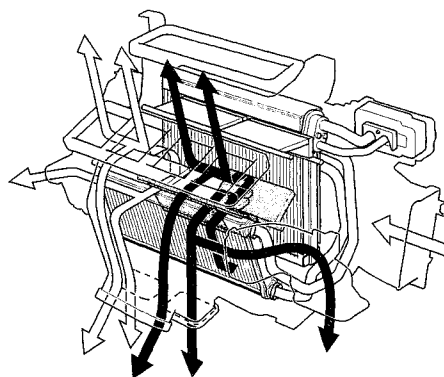
System Description (cont'd)

Dual Air Mix Control System

Driver's side: HOT
Passenger's side: COOL



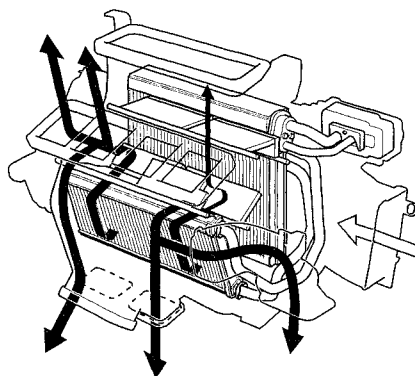
Driver's side: COOL
Passenger's side: HOT



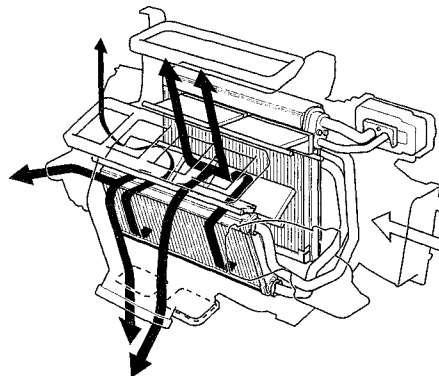
Dual Mode Control System

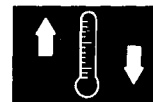
All modes (except defroster) can be controlled independently.

Driver's side: VENT
Passenger's side: HEAT



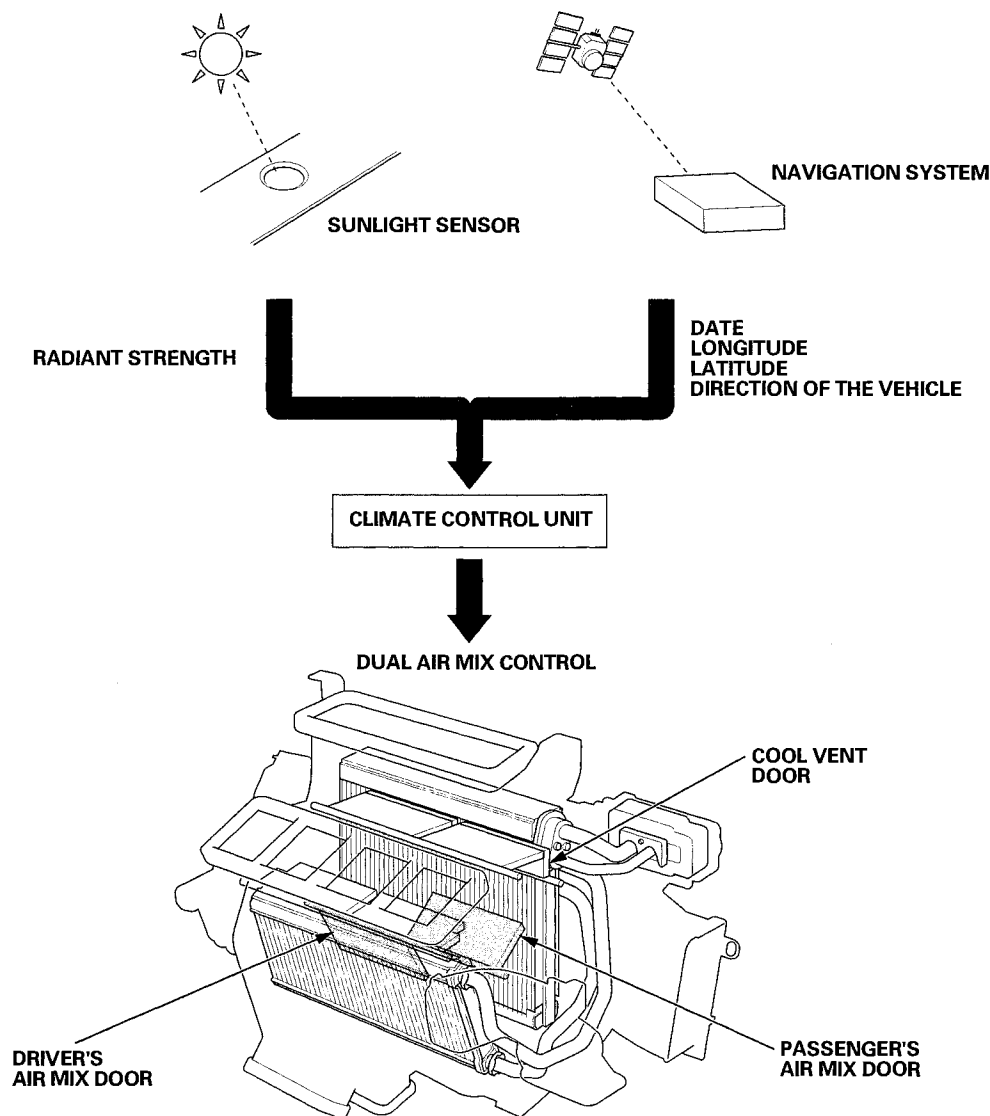
Driver's side: HEAT
Passenger's side: VENT





i-Dual Climate Control System

This system automatically controls the temperature and the air direction to the driver and passenger's side depending on the angle of the sun and the direction of the vehicle. It calculates information such as date, time, longitude, and latitude from the navigation system, as well as the radiant strength of the sun from the sunlight sensor, to determine the appropriate mode position and temperature to be directed to each side.



In the event that the navigation system malfunctions, or when driving in areas where the navigation cannot determine the vehicle position (non-coverage areas, tunnels, etc.), the climate control system will operate the same as a vehicle without navigation.

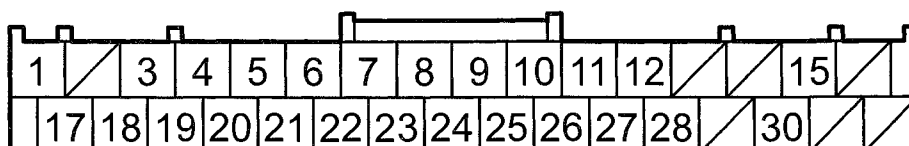
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Climate Control

System Description (cont'd)

Climate Control Unit Inputs and Outputs

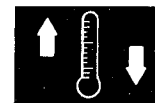
CLIMATE CONTROL UNIT CONNECTOR A (32P)



Wire side of female terminals

CONNECTOR A

Cavity	Wire color	Terminal name	Description	Signal
1	BLK	GND	Climate control unit ground (G403)	Less than 0.5 V at all times
3	RED	DISP CLK	Inputs clock signal from Audio-HVAC display	With ignition switch ON (II), or vehicle in ON mode: pulses (about 2.5 V)
4	PUR	DISP SO	Outputs display data to Audio-HVAC display	With ignition switch ON (II), or vehicle in ON mode: pulses (about 2.5 V)
5	BLU	M-DEF (Ps)	Drives passenger's mode control motor to DEF	With ignition switch ON (II), or vehicle in ON mode, and motor moving to DEF: battery voltage
6	GRY	M-VENT (Ps)	Drives passenger's mode control motor to VENT	With ignition switch ON (II), or vehicle in ON mode, and motor moving to VENT: battery voltage
7	GRY	M-DEF (Dr)	Drives driver's mode control motor to DEF	With ignition switch ON (II), or vehicle in ON mode, and motor moving to DEF: battery voltage
8	WHT	M-VENT (Dr)	Drives driver's mode control motor to VENT	With ignition switch ON (II), or vehicle in ON mode, and motor moving to VENT: battery voltage
9	LT BLU	M-COOL (Ps)	Drives passenger's air mix control motor to COOL	With ignition switch ON (II), or vehicle in ON mode, and motor moving to COOL: battery voltage
10	LT GRN	M-HOT (Ps)	Drives passenger's air mix control motor to HOT	With ignition switch ON (II), or vehicle in ON mode, and motor moving to HOT: battery voltage
11	LT BLU	M-COOL (Dr)	Drives driver's air mix control motor to COOL	With ignition switch ON (II), or vehicle in ON mode, and motor moving to COOL: battery voltage
12	PNK	M-HOT (Dr)	Drives driver's air mix control motor to HOT	With ignition switch ON (II), or vehicle in ON mode, and motor moving to HOT: battery voltage
15	LT GRN	IG2	IG2 power supply	With ignition switch ON (II), or vehicle in ON mode: battery voltage



CONNECTOR A

Cavity	Wire color	Terminal name	Description	Signal
17	GRN	MODE 1 (Ps)	Passenger's mode control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
18	BRN	MODE 2 (Ps)	Passenger's mode control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
19	BLU	MODE 3 (Ps)	Passenger's mode control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
20	LT GRN	MODE 4 (Ps)	Passenger's mode control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
21	LT GRN	MODE 1 (Dr)	Driver's mode control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
22	BRN	MODE 2 (Dr)	Driver's mode control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
23	YEL	MODE 3 (Dr)	Driver's mode control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
24	BLU	MODE 4 (Dr)	Driver's mode control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
25	GRY	AMD-P (Dr)	Driver's air mix control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: between 0.5 V and 4.5 V (depending on motor position)
26	YEL	AMD-P (Ps)	Passenger's air mix control motor position feedback	With ignition switch ON (II), or vehicle in ON mode: between 0.5 V and 4.5 V (depending on motor position)
27	BLU	BLW-V	Feedback of power transistor drain voltage	With ignition switch ON (II), or vehicle in ON mode, and fan switch OFF: about 8 V. Voltage decreases as fan speed increases
28	YEL	BLW-G	Outputs power transistor gate voltage	With ignition switch ON (II), or vehicle in ON mode, and fan switch at MIN: about 2 V. Voltage increases to about 10 V with fan switch at MAX
30	GRY	ILL +	Power source for illumination	With combination light switch ON: battery voltage

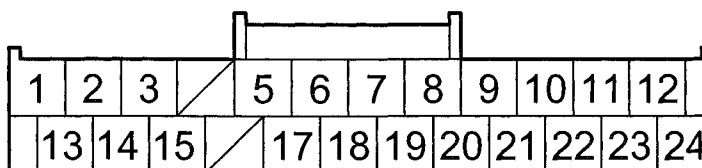
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Climate Control

System Description (cont'd)

Climate Control Unit Inputs and Outputs (cont'd)

CLIMATE CONTROL UNIT CONNECTOR B (24P)



Wire side of female terminals

CONNECTOR B

Cavity	Wire color	Terminal name	Description	Signal
1	RED	Rr DEF LED	Switches rear window defogger/mirror defogger button LED ON/OFF	—
2	PNK	DEF LED	Switches defroster button LED ON/OFF	—
3	LT BLU	PS IND PWM	Inputs indicator LED PWM (Pulse Width Modulation) control signal	—
5	PUR	PS IN 1	Inputs AUTO button signal	—
6	WHT	PS IN 2	Inputs passenger's temperature up button signal	—
7	YEL	PS IN 3	Inputs passenger's temperature down button signal	—
8	BRN	PS IN 4	Inputs passenger's MODE button signal	—
9	GRN	PS IN 5	Inputs rear window defogger/mirror defogger button signal	—
10	GRY	PS IN 6	Inputs A/C button signal	—
11	BLU	PS IN 7	Inputs recirculation button signal	—
12	LT GRN	PS IN 8	Inputs defroster button signal	—



CONNECTOR B

Cavity	Wire color	Terminal name	Description	Signal
13	PUR	SYNC LED	Switches SYNC button LED ON/OFF	_____
14	ORN	FR LED	Switches recirculation button LED ON/OFF	_____
15	WHT	DR IND PWM	Inputs indicator LED PWM (Pulse Width Modulation) control signal	_____
17	BRN	DR IN 1	Inputs AUTO button signal	_____
18	GRN	DR IN 2	Inputs driver's temperature up button signal	_____
19	GRY	DR IN 3	Inputs driver's temperature down button signal	_____
20	BLU	DR IN 4	Inputs driver's MODE button signal	_____
21	LT GRN	DR IN 5	Inputs SYNC button signal	_____
22	ORN	DR IN 6	Inputs FAN up button signal	_____
23	PNK	DR IN 7	Inputs FAN down button signal	_____
24	RED	DR IN 8	Inputs FAN ON/OFF button signal	_____

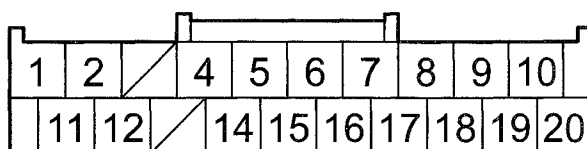
(cont'd)

Climate Control

System Description (cont'd)

Climate Control Unit Inputs and Outputs (cont'd)

CLIMATE CONTROL UNIT CONNECTOR C (20P)

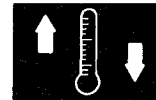


Wire side of female terminals

CONNECTOR C

Cavity	Wire color	Terminal name	Description	Signal
1	RED	S-COM	Ground for sensors	Less than 0.5 V at all times
2	BRN	S5V	Power source for sensors	With ignition switch ON (II), or vehicle in ON mode: about 5 V
4*	ORN	AC SI	Outputs NAVI communication data	With ignition switch ON (II), or vehicle in ON mode: pulses (about 2.5 V)
5*	PUR	AC SO	Inputs NAVI communication data	With ignition switch ON (II), or vehicle in ON mode: pulses (about 2.5 V)
6*	BRN	AC CLK	Inputs clock signal from NAVI	With ignition switch ON (II), or vehicle in ON mode: pulses (about 2.5 V)
7	BLU	B-CAN L	B-CAN communication line	With ignition switch ON (II), or vehicle in ON mode: pulses (about 2.5 V)
8	PNK	B-CAN H	B-CAN communication line	With ignition switch ON (II), or vehicle in ON mode: pulses (about 2.5 V)
9	PUR	FRS	Drives recirculation control motor to FRESH	With ignition switch ON (II), or vehicle in ON mode, and motor moving to FRESH: battery voltage
10	ORN	REC	Drives recirculation control motor to RECIRCULATE	With ignition switch ON (II), or vehicle in ON mode, and motor moving to RECIRCULATE: battery voltage

*: With navigation

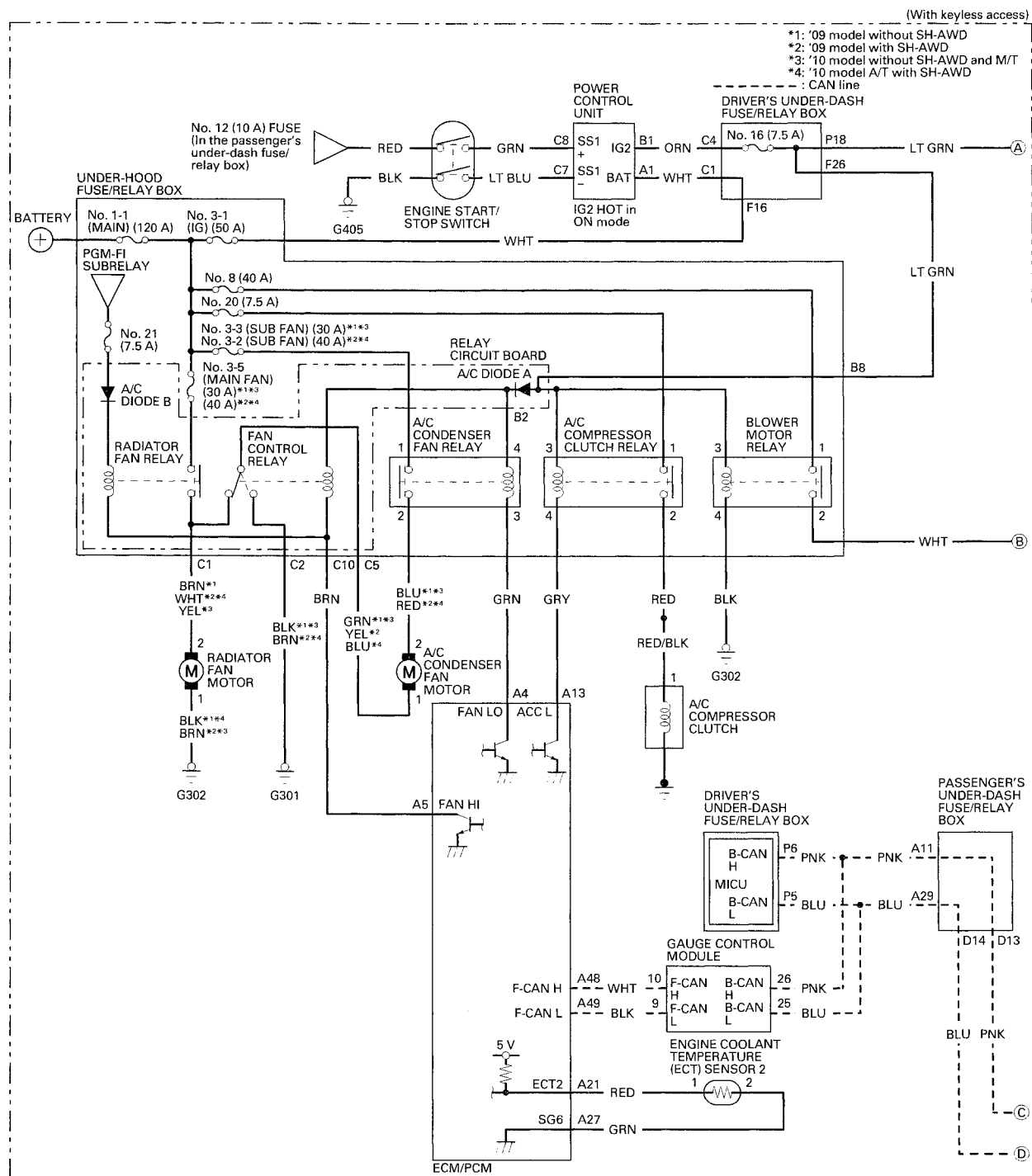


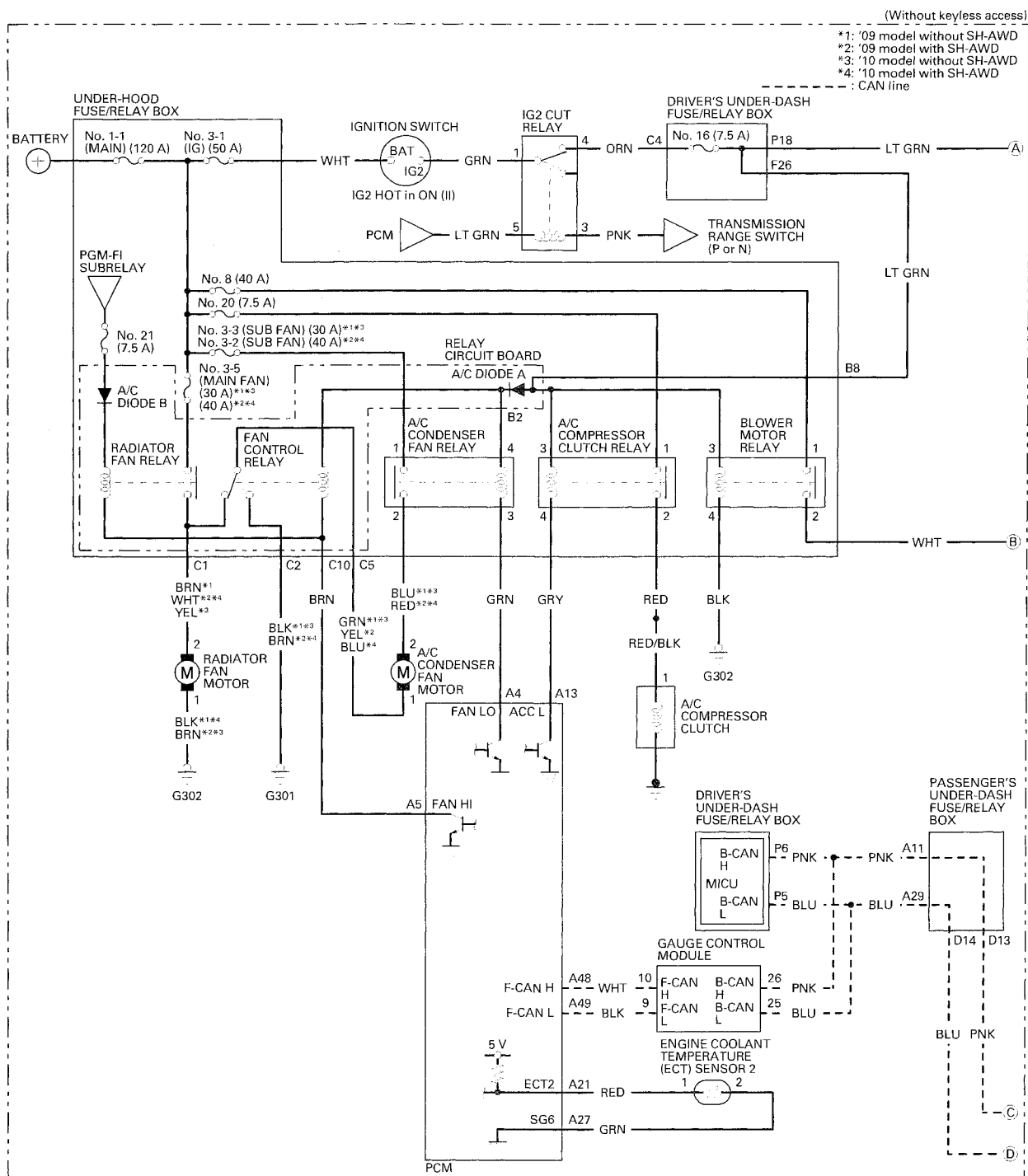
CONNECTOR C

Cavity	Wire color	Terminal name	Description	Signal
11	YEL	Pd	A/C pressure sensor signal	With engine running and A/C compressor clutch engaged: about 1.4–4.8 V (depending on A/C pressure)
12	YEL	Hum	Inputs humidity sensor signal	With ignition switch ON (II), or vehicle in ON mode: between 1.0 V and 4.0 V (depending on humidity)
14	PUR	Tsum	Inputs sunlight sensor signal	With ignition switch ON (II), or vehicle in ON mode, and vehicle in direct sunlight: Less than 3.5 V. Voltage rises above 3.6 V when vehicle is out of direct sunlight
15	LT BLU	Tr	Inputs in-car sensor signal	With ignition switch ON (II), or vehicle in ON mode: between 1.0 V and 4.0 V (depending on in-car temperature)
16	BRN	Teva	Inputs evaporator temperature sensor signal	With ignition switch ON (II), or vehicle in ON mode: between 1.0 V and 4.0 V (depending on evaporator temperature). About 2.5 V at 72 °F (22 °C)
17	WHT	Tam	Inputs outside air temperature sensor signal	With ignition switch ON (II), or vehicle in ON mode: between 1.0 V and 4.0 V (depending on ambient temperature)
18	GRN	MODE 1	Recirculation control motor position feedback 1 signal	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
19	BLU	MODE 2	Recirculation control motor position feedback 2 signal	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)
20	ORN	MODE 3	Recirculation control motor position feedback 3 signal	With ignition switch ON (II), or vehicle in ON mode: about 0 V or about 5 V (depending on motor position)

Climate Control

Circuit Diagram

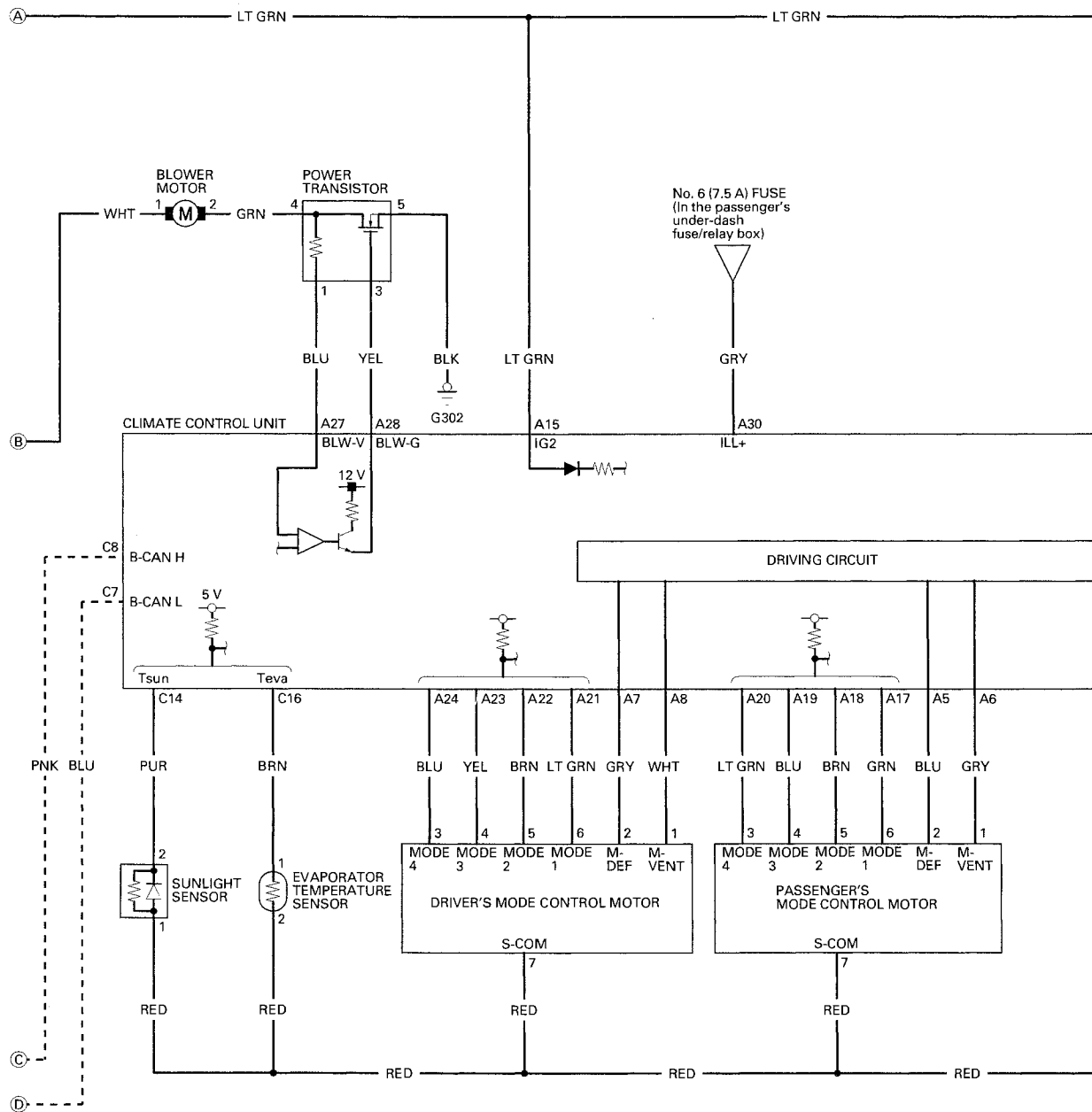


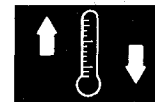


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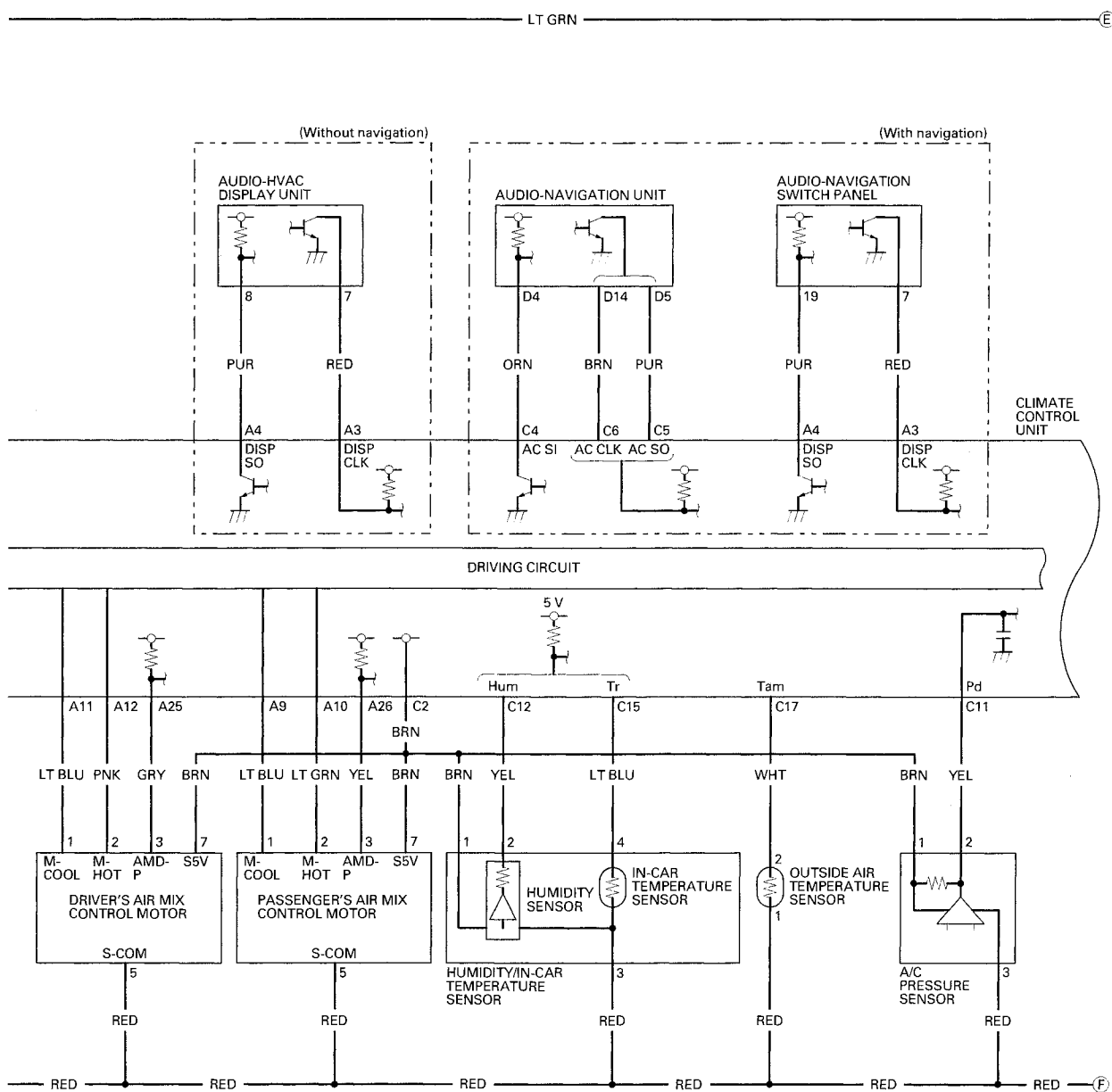
Climate Control

Circuit Diagram (cont'd)





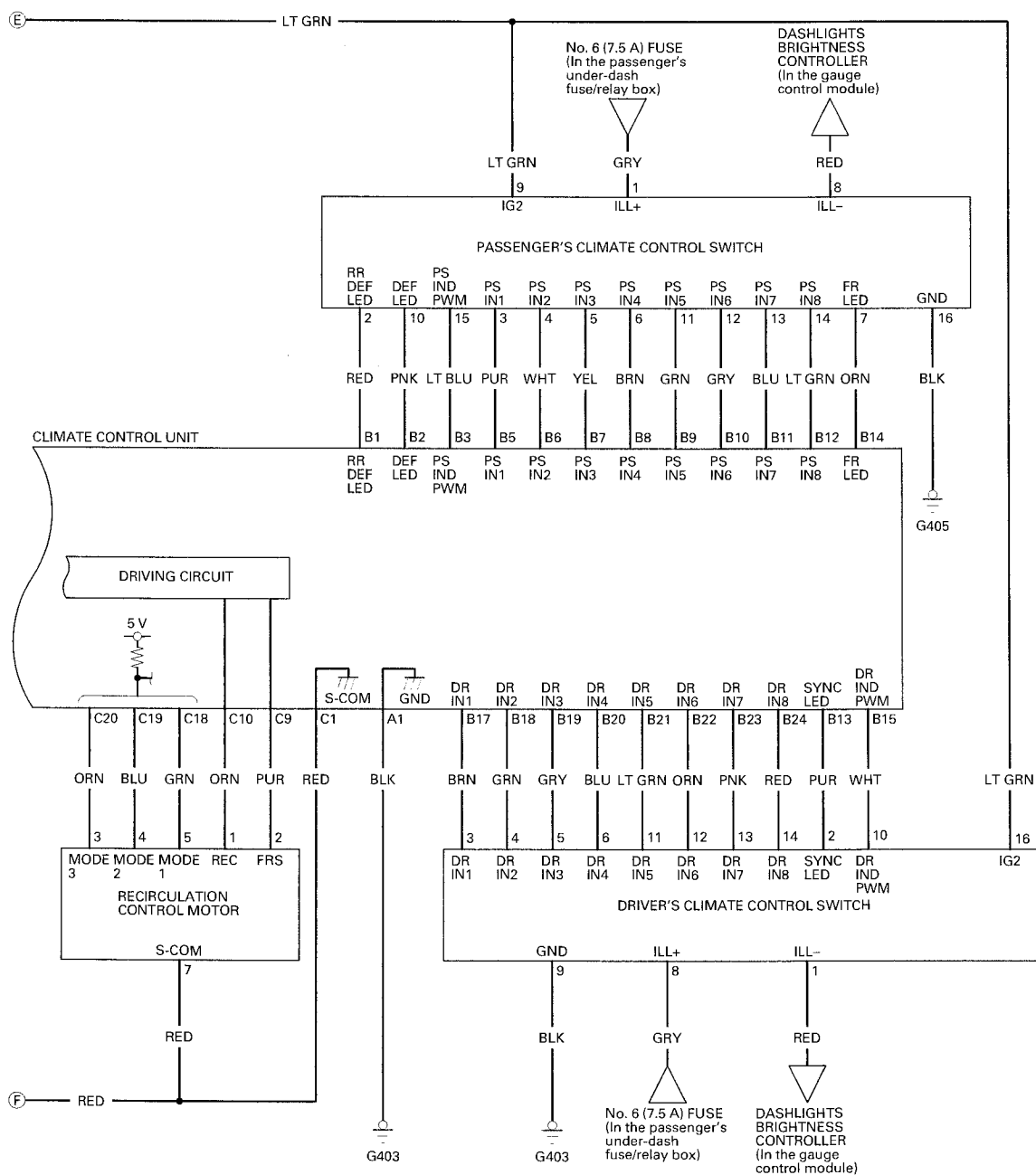
----- : CAN line



(cont'd)

Climate Control

Circuit Diagram (cont'd)





DTC Troubleshooting

DTC U0155: Climate Control Unit Lost Communication with Gauge Control Module

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-135).

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9).
4. Check for DTCs.

Is DTC U0155 indicated?

YES—Go to step 5.

NO—The system is OK at this time. Check for loose wires or poor connections on the B-CAN lines between the gauge control module and the climate control unit. ■

5. Select UNIT INFORMATION in the BODY ELECTRICAL menu.
6. Select CONNECTED UNIT in the UNIT INFORMATION menu.

Is the gauge control module detected?

YES—Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107). ■

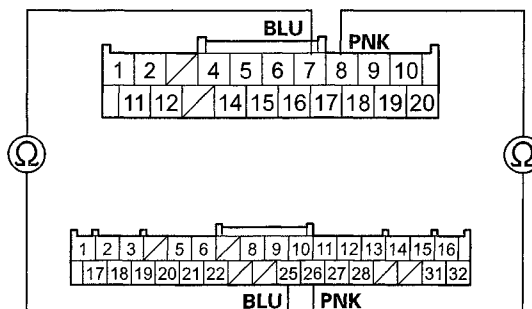
NO—Go to step 7.

7. Disconnect the gauge control module 32P connector.
8. Disconnect climate control unit connector C (20P).

9. Check for continuity between the following terminals of the gauge control module 32P connector and climate control unit connector C (20P).

20P:	32P:
No. 7	No. 25
No. 8	No. 26

CLIMATE CONTROL UNIT CONNECTOR C (20P)
Wire side of female terminals



GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals

Is there continuity?

YES—Go to the gauge control module input test (see page 22-363). ■

NO—Repair an open in the wire(s) between the climate control unit and the gauge control module. ■

Climate Control

DTC Troubleshooting (cont'd)

DTC B1215 or DTC indicator J and MODE:

An Open or Short in the Recirculation Control Motor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then ON (II) or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

Is DTC B1215 or J and MODE indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the recirculation control motor circuit. ■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the recirculation control motor (see page 21-105).

Is the recirculation control motor OK?

YES—Go to step 7.

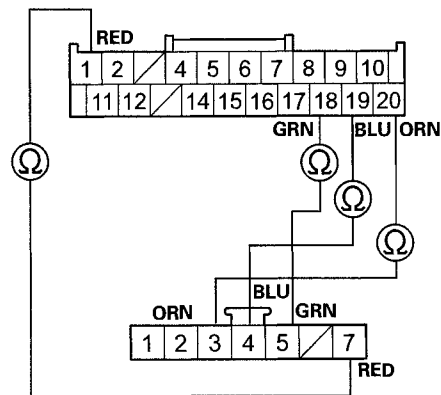
NO—Replace the recirculation control motor (see page 21-106). ■

7. Disconnect the recirculation control motor 7P connector.
8. Disconnect climate control unit connector C (20P).

9. Check for continuity between the following terminals of climate control unit connector C (20P) and the recirculation control motor 7P connector.

20P:	7P:
No. 1	No. 7
No. 18	No. 5
No. 19	No. 4
No. 20	No. 3

CLIMATE CONTROL UNIT CONNECTOR C (20P)
Wire side of female terminals



RECIRCULATION CONTROL MOTOR 7P CONNECTOR
Wire side of female terminals

Is there continuity?

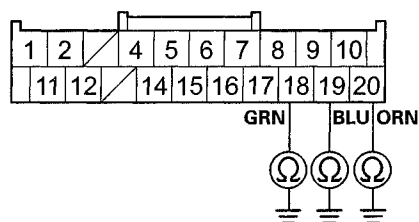
YES—Go to step 10.

NO—Repair an open in the wire(s) between the climate control unit and the recirculation control motor. ■



10. Check for continuity between body ground and climate control unit connector C (20P) terminals No. 18, 19, and 20 individually.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there continuity?

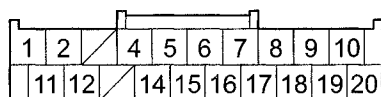
YES—Repair a short to body ground in the wire(s) between the climate control unit and the recirculation control motor. ■

NO—Go to step 11.

11. Check for continuity between climate control unit connector C (20P) terminals as follows.

From terminal	To terminals
18	19, 20
19	20

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there continuity between any of the terminals?

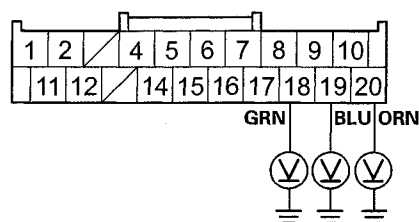
YES—Repair a short in the wire(s). ■

NO—Go to step 12.

12. Reconnect climate control unit connector C (20 P).

13. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check the same terminals for voltage to body ground.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there any voltage?

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

NO—Check for loose wires or poor connections at climate control unit connector C (20P) and at the 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 (see page 21-107). ■

Climate Control

DTC Troubleshooting (cont'd)

DTC B1225 or DTC indicator A and AUTO: An Open in the In-car Temperature Sensor Circuit

1. Clear the DTC with the HDS.
2. Make sure the ignition switch is in LOCK (0), or the vehicle ignition is in the OFF mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

Is DTC B1225 or A and AUTO indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the in-car temperature sensor circuit. ■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Remove the in-car temperature sensor (see page 21-94), and test it (see page 21-93).

Is the in-car temperature sensor OK?

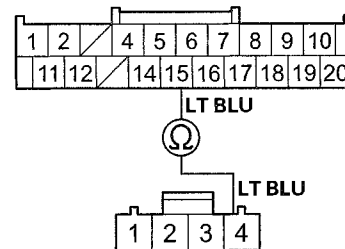
YES—Go to step 7.

NO—Replace the in-car temperature sensor. ■

7. Disconnect climate control unit connectors C (20P).

8. Check for continuity between climate control unit connector C (20P) terminal No. 15 and in-car temperature sensor 4P connector terminal No. 4.

CLIMATE CONTROL UNIT CONNECTOR C (20P)
Wire side of female terminals



**HUMIDITY/IN-CAR TEMPERATURE SENSOR
4P CONNECTOR**
Wire side of female terminals

Is there continuity?

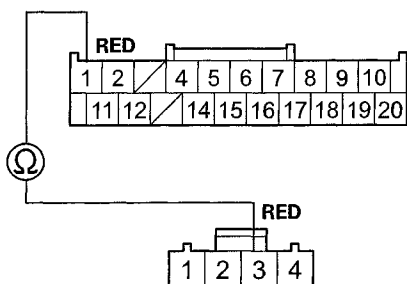
YES—Go to step 9.

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



9. Check for continuity between climate control unit connector C (20P) terminal No. 1 and in-car temperature sensor 4P connector terminal No. 3.

CLIMATE CONTROL UNIT CONNECTOR C (20P)
Wire side of female terminals



HUMIDITY/IN-CAR TEMPERATURE SENSOR 4P CONNECTOR
Wire side of female terminals

Is there continuity?

YES—Check for loose wires or poor connections at climate control unit connectors C (20P) and at the in-car temperature sensor 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 (see page 21-107). ■

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

DTC B1226 or DTC indicator B and AUTO: A Short in the In-car Temperature Sensor Circuit

1. Clear the DTC with the HDS.
2. Make sure the ignition switch is in LOCK (0), or the vehicle ignition is in the OFF mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).

4. Check for DTCs.

Is DTC B1226 or B and AUTO indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the in-car temperature sensor circuit. ■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Remove the humidity/in-car temperature sensor (see page 21-94), and test it (see page 21-93).

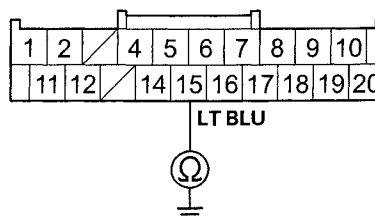
Is the in-car temperature sensor OK?

YES—Go to step 7.

NO—Replace the humidity/in-car temperature sensor. ■

7. Disconnect climate control unit connector C (20P).
8. Check for continuity between climate control unit connector C (20P) terminal No. 15 and body ground.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there continuity?

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

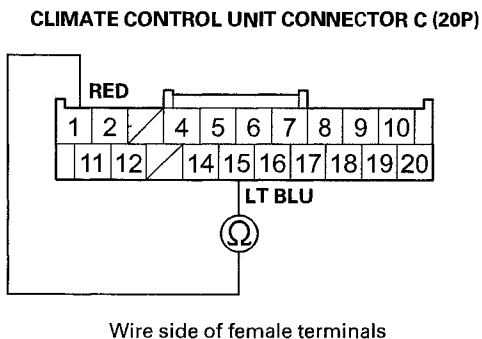
NO—Go to step 9.

(cont'd)

Climate Control

DTC Troubleshooting (cont'd)

9. Check for continuity between climate control unit connector C (20P) terminals No. 1 and No. 15.



Is there continuity?

YES—Repair a short in the wires 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 (see page 21-107). ■

DTC B1227 or DTC indicator C and AUTO: An Open in the Outside Air Temperature Sensor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

Is DTC B1227 or C and AUTO indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the outside air temperature sensor circuit. ■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Remove the outside air temperature sensor (see page 21-95), and test it (see page 21-95).

Is the outside air temperature sensor OK?

YES—Go to step 7.

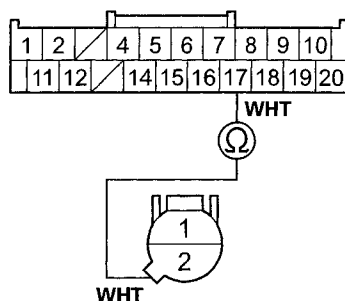
NO—Replace the outside air temperature sensor. ■

7. Disconnect climate control unit connector C (20P).



8. Check for continuity between climate control unit connector C (20P) terminal No. 17 and outside air temperature sensor 2P connector terminal No. 2.

CLIMATE CONTROL UNIT CONNECTOR C (20P)
Wire side of female terminals



OUTSIDE AIR TEMPERATURE SENSOR 2P CONNECTOR
Wire side of female terminals

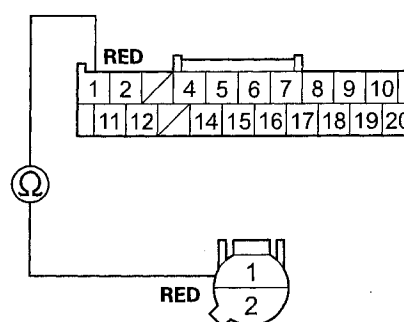
Is there continuity?

YES—Go to step 9.

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

9. Check for continuity between climate control unit connector C (20P) terminal No. 1 and outside air temperature sensor 2P connector terminal No. 1.

CLIMATE CONTROL UNIT CONNECTOR C (20P)
Wire side of female terminals



OUTSIDE AIR TEMPERATURE SENSOR 2P CONNECTOR
Wire side of female terminals

Is there continuity?

YES—Check for loose wires or poor connections at climate control unit connectors C (20P) 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 (see page 21-107). ■

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

Climate Control

DTC Troubleshooting (cont'd)

DTC B1228 or DTC indicator D and AUTO: A Short in the Outside Air Temperature Sensor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

Is DTC B1228 or D and AUTO indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the outside air temperature sensor circuit. ■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Remove the outside air temperature sensor (see page 21-95), and test it (see page 21-95).

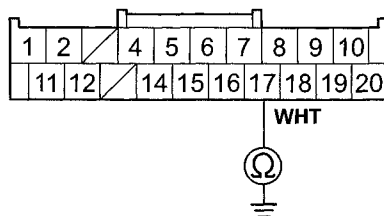
Is the outside air temperature sensor OK?

YES—Go to step 7.

NO—Replace the outside air temperature sensor. ■

7. Disconnect climate control unit connector C (20P).
8. Check for continuity between climate control unit connector C (20P) terminal No. 17 and body ground.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

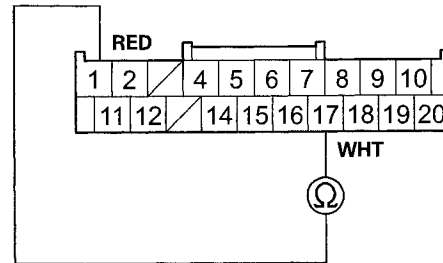
Is there continuity?

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

NO—Go to step 9.

9. Check for continuity between climate control unit connector C (20P) terminals No. 1 and No. 17.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there continuity?

YES—Repair a short in the wire(s) 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 (see page 21-107). ■



DTC B1229 or DTC indicator E and AUTO: An Open in the Sunlight Sensor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

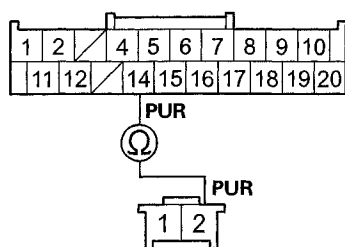
Is DTC B1229 or E and AUTO indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the sunlight sensor circuit. ■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the sunlight sensor 2P connector.
7. Disconnect climate control unit connector C (20P).
8. Check for continuity between climate control unit connector C (20P) terminal No. 14 and sunlight sensor 2P connector terminal No. 2.

CLIMATE CONTROL UNIT CONNECTOR C (20P)
Wire side of female terminals



SUNLIGHT SENSOR 2P CONNECTOR
Wire side of female terminals

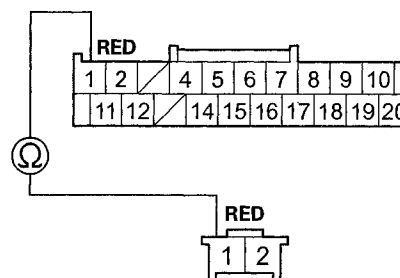
Is there continuity?

YES—Go to step 9.

NO—Repair an open in the wire between the climate control unit and the sunlight sensor. ■

9. Check for continuity between climate control unit connector C (20P) terminal No. 1 and sunlight sensor 2P connector terminal No. 1.

CLIMATE CONTROL UNIT CONNECTOR C (20P)
Wire side of female terminals



SUNLIGHT SENSOR 2P CONNECTOR
Wire side of female terminals

Is there continuity?

YES—Go to step 10.

NO—Repair an open in the wire between the climate control unit and the sunlight sensor. ■

10. Reconnect the sunlight sensor 2P connector.
11. Reconnect climate control unit connectors C (20P).
12. Test the sunlight sensor (see page 21-96).

Is the sunlight sensor OK?

YES—Check for loose wires or poor connections at climate control unit connector C (20P) 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 (see page 21-107). ■

NO—Replace the sunlight sensor (see page 21-96). ■

Climate Control

DTC Troubleshooting (cont'd)

DTC B1230 or DTC indicator F and AUTO: A Short in the Sunlight Sensor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

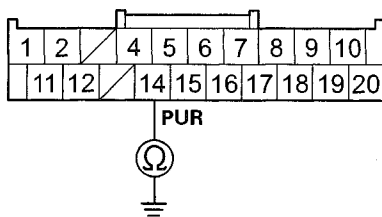
Is DTC B1230 or F and AUTO indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the sunlight sensor circuit. ■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the sunlight sensor 2P connector.
7. Disconnect climate control unit connectors C (20P).
8. Check for continuity between climate control unit connector C (20P) terminal No. 14 and body ground.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

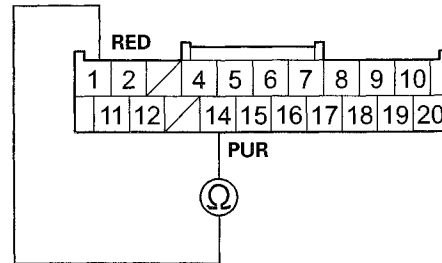
Is there continuity?

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

NO—Go to step 9.

9. Check for continuity between climate control unit connector C (20P) terminals No. 1 and No. 14.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there continuity?

YES—Repair a short in the wires between the climate control unit and the sunlight sensor. ■

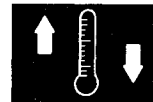
NO—Go to step 10.

10. Reconnect the sunlight sensor 2P connector.
11. Reconnect climate control unit connectors C (20P).
12. Test the sunlight sensor (see page 21-96).

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 (see page 21-107). ■

NO—Replace the sunlight sensor (see page 21-96). ■



DTC B1231 or DTC indicator G and AUTO: An Open in the Evaporator Temperature Sensor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

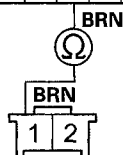
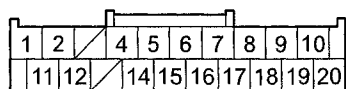
Is DTC B1231 or G and AUTO indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the evaporator temperature sensor circuit. ■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect climate control unit connectors C (20P).
7. Disconnect the evaporator temperature sensor 2P connector.
8. Check for continuity between climate control unit connector C (20P) terminal No. 16 and evaporator temperature sensor 2P connector terminal No. 1.

CLIMATE CONTROL UNIT CONNECTOR C (20P)
Wire side of female terminals



**EVAPORATOR TEMPERATURE SENSOR
2P CONNECTOR**
Wire side of female terminals

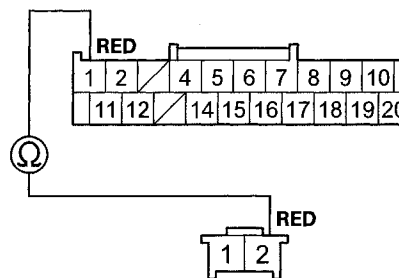
Is there continuity?

YES—Go to step 9.

NO—Repair an open in the wire between the climate control unit and the evaporator temperature sensor. ■

9. Check for continuity between climate control unit connector C (20P) terminal No. 1 and evaporator temperature sensor 2P connector terminal No. 2.

CLIMATE CONTROL UNIT CONNECTOR C (20P)
Wire side of female terminals



**EVAPORATOR TEMPERATURE SENSOR
2P CONNECTOR**
Wire side of female terminals

Is there continuity?

YES—Go to step 10.

NO—Repair an open in the wire between the climate control unit and the evaporator temperature sensor. ■

10. Remove the evaporator temperature sensor (see page 21-97), and test it (see page 21-97).

Is the evaporator temperature sensor OK?

YES—Check for loose wires or poor connections at climate control unit connector C (20P) 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 (see page 21-107). ■

NO—Replace the evaporator temperature sensor (see page 21-97). ■

Climate Control

DTC Troubleshooting (cont'd)

DTC B1232 or DTC indicator H and AUTO: A Short in the Evaporator Temperature Sensor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

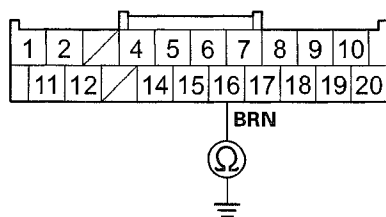
Is DTC B1232 or H and AUTO indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the evaporator temperature sensor circuit. ■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect climate control unit connector C (20P).
7. Disconnect the evaporator temperature sensor 2P connector.
8. Check for continuity between climate control unit connector C (20P) terminal No. 16 and body ground.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

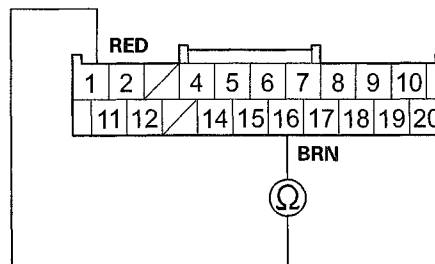
Is there continuity?

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

NO—Go to step 9.

9. Check for continuity between climate control unit connector C (20P) terminals No. 1 and No. 16.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there continuity?

YES—Repair a short in the wires between the climate control unit and the evaporator temperature sensor. ■

NO—Go to step 10.

10. Remove the evaporator temperature sensor (see page 21-97), and test it (see page 21-97).

Is the evaporator temperature sensor OK?

YES—Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107). ■

NO—Replace the evaporator temperature sensor (see page 21-97). ■



DTC B1233 or DTC indicator J and AUTO: An Open in the Driver's Air Mix Control Motor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

Is DTC B1233 or J and AUTO indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the driver's air mix control motor circuit. ■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the driver's air mix control motor (see page 21-99).

Is the driver's air mix control motor OK?

YES—Go to step 7.

NO—Replace the driver's air mix control motor (see page 21-100). ■

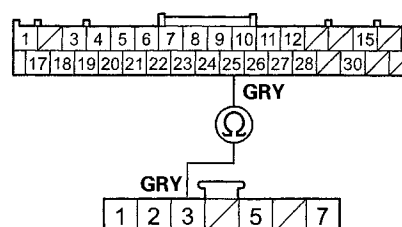
7. Disconnect the driver's air mix control motor 7P connector.
8. Disconnect climate control unit connectors A (32P) and C (20P).

9. Check for continuity between the following terminals of climate control unit connectors A (32P), C (20P), and the driver's air mix control motor 7P connector.

32P: 7P:
No. 25 No. 3

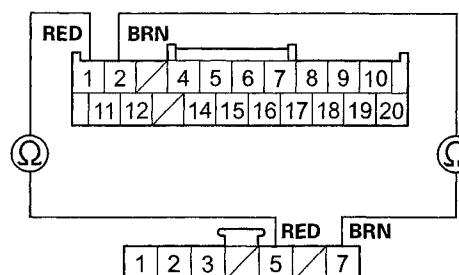
20P: 7P:
No. 1 No. 5
No. 2 No. 7

CLIMATE CONTROL UNIT CONNECTOR A (32P)
Wire side of female terminals



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

CLIMATE CONTROL UNIT CONNECTOR C (20P)
Wire side of female terminals



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

Is there continuity between any of the terminals?

YES—Check for loose wires or poor connections at climate control unit connectors A (32P), C (20P), and at the driver's 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 (see page 21-107). ■

NO—Repair an open in the wire(s) between the climate control unit and the driver's air mix control motor. ■

Climate Control

DTC Troubleshooting (cont'd)

DTC B1234 or DTC indicator K and AUTO: A Short in the Driver's Air Mix Control Motor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

Is DTC B1234 or K and AUTO indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose or poor connection on the driver's air mix control motor circuit. ■

5. Check for DTCs.

Are these DTCs also present; B1237 or N and AUTO, and/or B2968 or B and WINDSHIELD DEFROST, and/or B2980 or F and WINDSHIELD DEFROST?

YES—Go to step 13.

NO—Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Test the driver's air mix control motor (see page 21-99).

Is the driver's air mix control motor OK?

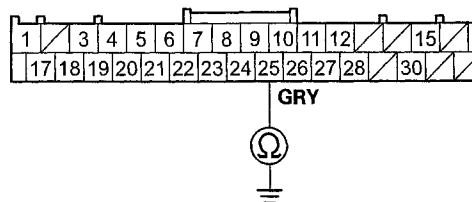
YES—Go to step 8.

NO—Replace the driver's air mix control motor (see page 21-100). ■

8. Disconnect the driver's air mix control motor 7P connector.
9. Disconnect climate control unit connectors A (32P) and C (20P).

10. Check for continuity between body ground and climate control unit connector A (32P) terminal No. 25.

CLIMATE CONTROL UNIT CONNECTOR A (32P)



Wire side of female terminals

Is there continuity?

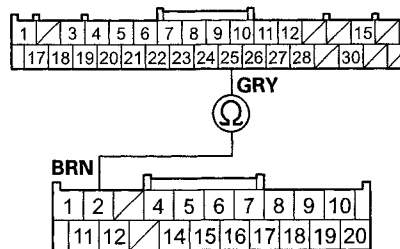
YES—Repair a short to body ground in the wire between the climate control unit and the driver's air mix control motor. ■

NO—Go to step 11.

11. Check for continuity between climate control unit connector A (32P) terminal No. 25 and climate control unit connector C (20P) terminal No. 2.

CLIMATE CONTROL UNIT CONNECTOR A (32P)

Wire side of female terminals



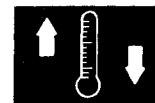
CLIMATE CONTROL UNIT CONNECTOR C (20P)

Wire side of female terminals

Is there continuity?

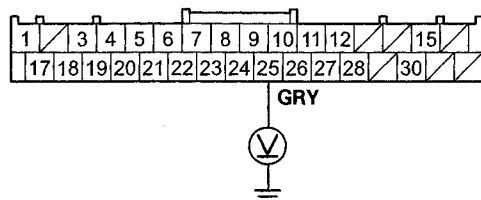
YES—Repair a short in the wires. ■

NO—Go to step 12.



12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between climate control unit connector A (32P) terminal No. 25 and body ground.

CLIMATE CONTROL UNIT CONNECTOR A (32P)



Wire side of female terminals

Is there any voltage?

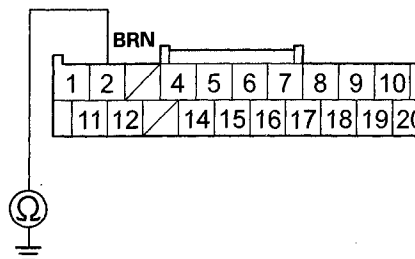
YES—Repair a short to power in the wire between the climate control unit and the driver's air mix control motor. This short may also damage the climate control unit. Repair a short to power before replacing the climate control unit. ■

NO—Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107). ■

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and disconnect the climate control unit connector C (20P).
14. Disconnect these items:
- Driver's air mix control motor
 - Passenger's air mix control motor
 - Humidity/in-car temperature sensor
 - A/C pressure sensor

15. Check for continuity between climate control unit connector C (20P) terminal No. 2 and body ground.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

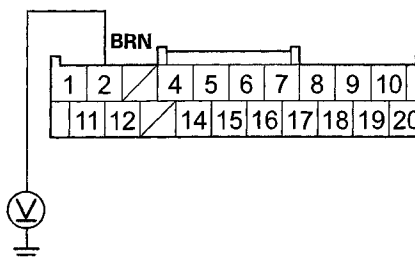
Is there continuity?

YES—Repair a short to body ground in the wire. ■

NO—Go to step 16.

16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between the same terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there any voltage?

YES—Repair a short to power in the wire. This short may have also damaged the climate control unit. Repair a short to power before replacing the climate control unit. ■

NO—Go to step 17.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Reconnect climate control unit connector C (20P).

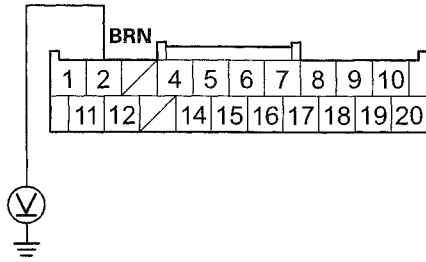
(cont'd)

Climate Control

DTC Troubleshooting (cont'd)

19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between climate control unit connector C (20P) terminal No. 2 and body ground.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there about 5 V?

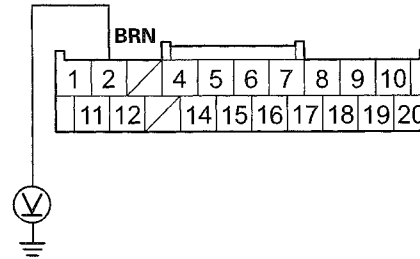
YES—Go to step 20.

NO—Check for a loose wire or poor connection at climate control unit connector C (20P). If the connection is good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107). ■

20. While measuring the voltage as described in step 19, reconnect these items individually and note the voltage reading each time:

- Driver's air mix control motor
- Passenger's air mix control motor
- Humidity/in-car temperature sensor
- A/C pressure sensor

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Does the voltage remain at about 5 V?

YES—Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107). ■

NO—Replace the component that caused the voltage drop. ■



DTC B1235 or DTC indicator L and AUTO: A Problem in the Driver's Air Mix Control Linkage, Door, or Motor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

Is DTC B1235 or L and AUTO indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the driver's air mix control motor circuit. ■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the driver's air mix control motor (see page 21-99).

Is the driver's air mix control motor OK?

YES—Go to step 7.

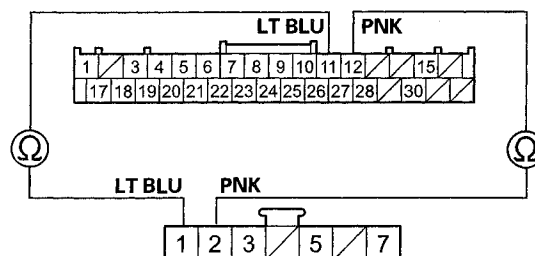
NO—Replace the driver's air mix control motor (see page 21-100), or repair the driver's air mix control linkage or door. ■

7. Disconnect the driver's air mix control motor 7P connector.
8. Disconnect climate control unit connector A (32P).

9. Check for continuity between the following terminals of climate control unit connector A (32P) and the driver's air mix control motor 7P connector.

32P: 7P:
No. 11 No. 1
No. 12 No. 2

CLIMATE CONTROL UNIT CONNECTOR A (32P)
Wire side of female terminals



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

Is there continuity?

YES—Go to step 10.

NO—Repair an open in the wire(s) between the climate control unit and the driver's air mix control motor. ■

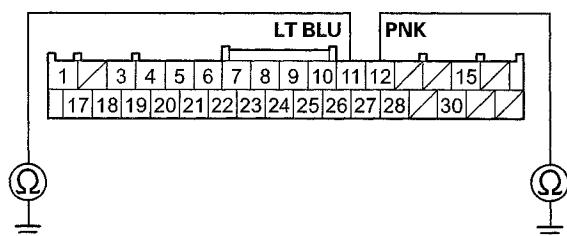
(cont'd)

Climate Control

DTC Troubleshooting (cont'd)

10. Check for continuity between body ground and climate control unit connector A (32P) terminals No. 11 and No. 12 individually.

CLIMATE CONTROL UNIT CONNECTOR A (32P)



Wire side of female terminals

Is there continuity?

YES—Repair a short to body ground in the wire(s) between the climate control unit and the driver's air mix control motor. ■

NO—Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107). ■

DTC B1236 or DTC indicator M and AUTO: An Open in the Passenger's Air Mix Control Motor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

Is DTC B1236 or M and AUTO indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the passenger's air mix control motor circuit. ■

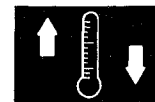
5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the passenger's air mix control motor (see page 21-100).

Is the passenger's air mix control motor OK?

YES—Go to step 7.

NO—Replace the passenger's air mix control motor (see page 21-101). ■

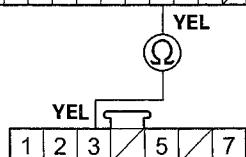
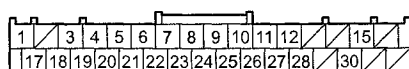
7. Disconnect the passenger's air mix control motor 7P connector.
8. Disconnect climate control unit connectors A (32P) and C (20P).



9. Check for continuity between the following terminals of climate control unit connectors A (32P), C (20P), and the passenger's air mix control motor 7P connector.

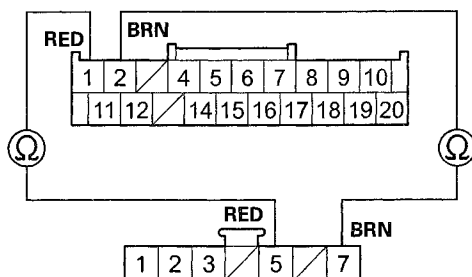
32P: 7P:
No. 26 No. 3
20P: 7P:
No. 1 No. 5
No. 2 No. 7

CLIMATE CONTROL UNIT CONNECTOR A (32P)
Wire side of female terminals



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

CLIMATE CONTROL UNIT CONNECTOR C (20P)
Wire side of female terminals



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

Is there continuity?

YES—Check for loose wires or poor connections at climate control unit connectors A (32P), C (20P), and at the passenger's 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 (see page 21-107). ■

NO—Repair an open in the wire(s) between the climate control unit and the passenger's air mix control motor. ■

DTC B1237 or DTC indicator N and AUTO: A Short in the Passenger's Air Mix Control Motor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

Is DTC B1237 or N and AUTO indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose or poor connection on the passenger's air mix control motor circuit. ■

5. Check for DTCs.

Are these DTCs also present; B1234 or K and AUTO, and/or B2968 or B and WINDSHIELD DEFROST, and/or B2980 or F and WINDSHIELD DEFROST?

YES—Go to step 13.

NO—Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Test the passenger's air mix control motor (see page 21-100).

Is the passenger's air mix control motor OK?

YES—Go to step 8.

NO—Replace the passenger's air mix control motor (see page 21-101). ■

8. Disconnect the passenger's air mix control motor 7P connector.
9. Disconnect climate control unit connectors A (32P) and C (20P).

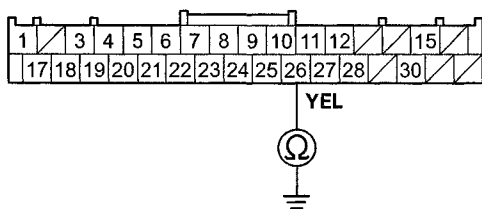
(cont'd)

Climate Control

DTC Troubleshooting (cont'd)

10. Check for continuity between body ground and climate control unit connector A (32P) terminal No. 26.

CLIMATE CONTROL UNIT CONNECTOR A (32P)



Wire side of female terminals

Is there continuity?

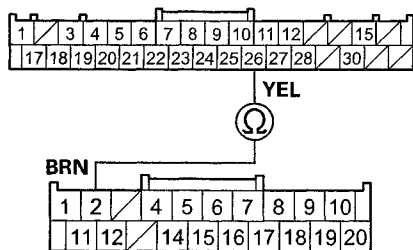
YES—Repair a short to body ground in the wire between the climate control unit and the passenger's air mix control motor. ■

NO—Go to step 11.

11. Check for continuity between climate control unit connector A (32P) terminal No. 26 and climate control unit connector C (20P) terminal No. 2.

CLIMATE CONTROL UNIT CONNECTOR A (32P)

Wire side of female terminals



CLIMATE CONTROL UNIT CONNECTOR C (20P)

Wire side of female terminals

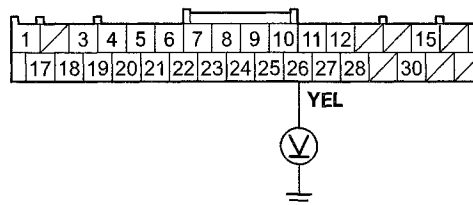
Is there continuity?

YES—Repair a short in the wire. ■

NO—Go to step 12.

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between climate control unit connector A (32P) terminal No. 26 and body ground.

CLIMATE CONTROL UNIT CONNECTOR A (32P)



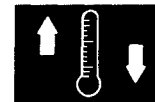
Wire side of female terminals

Is there any voltage?

YES—Repair a short to power in the wire(s) between the climate control unit and the passenger's air mix control motor. This short may also damage the climate control unit. Repair a short to power before replacing the climate control unit. ■

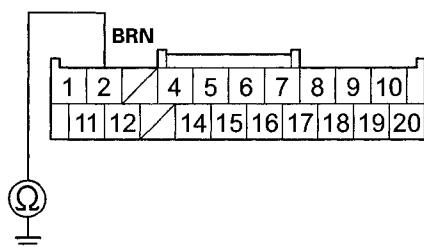
NO—Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107). ■

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and disconnect the climate control unit connector C (20P).
14. Disconnect these items:
- Driver's air mix control motor
 - Passenger's air mix control motor
 - Humidity/in-car temperature sensor
 - A/C pressure sensor



15. Check for continuity between climate control unit connector C (20P) terminal No. 2 and body ground.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

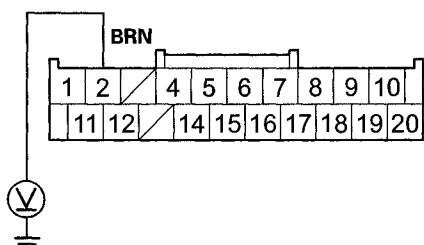
Is there continuity?

YES—Repair a short to body ground in the wire. ■

NO—Go to step 16.

16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between the same terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there any voltage?

YES—Repair a short to power in the wire. This short may have also damaged the climate control unit. Repair a short to power before replacing the climate control unit. ■

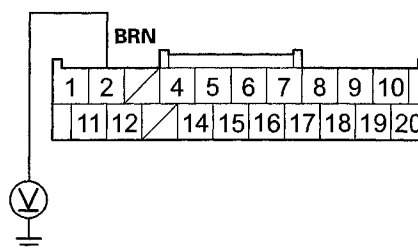
NO—Go to step 17.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

18. Reconnect climate control unit connector C (20P).

19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between climate control unit connector C (20P) terminal No. 2 and body ground.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there about 5 V?

YES—Go to step 20.

NO—Check for a loose wire or poor connection at climate control unit connector C (20P). If the connection is good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107). ■

(cont'd)

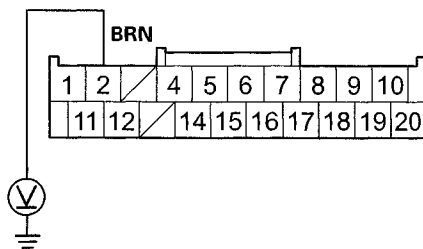
Climate Control

DTC Troubleshooting (cont'd)

20. While measuring the voltage as described in step 19, reconnect these items individually and note the voltage reading each time:

- Driver's air mix control motor
- Passenger's air mix control motor
- Humidity/in-car temperature sensor
- A/C pressure sensor

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Does the voltage remain at about 5 V?

YES—Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107). ■

NO—Replace the component that caused the voltage drop. ■

DTC B1238 or DTC indicator P and AUTO: A Problem in the Passenger's Air Mix Control Linkage, Door, or Motor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II) or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

Is DTC B1238 or P and AUTO indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the passenger's air mix control motor circuit. ■

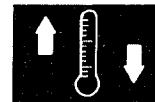
5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the passenger's air mix control motor (see page 21-100).

Is the passenger's air mix control motor OK?

YES—Go to step 7.

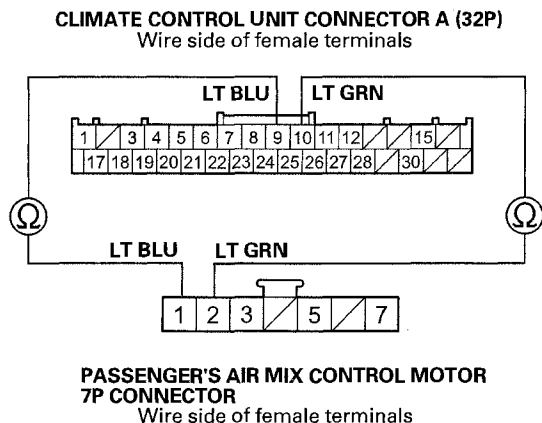
NO—Replace the passenger's air mix control motor (see page 21-101), or repair the passenger's air mix control linkage or door. ■

7. Disconnect the passenger's air mix control motor 7P connector.
8. Disconnect climate control unit connector A (32P).



9. Check for continuity between the following terminals of climate control unit connector A (32P) and the passenger's air mix control motor 7P connector.

32P: 7P:
No. 9 No. 1
No. 10 No. 2



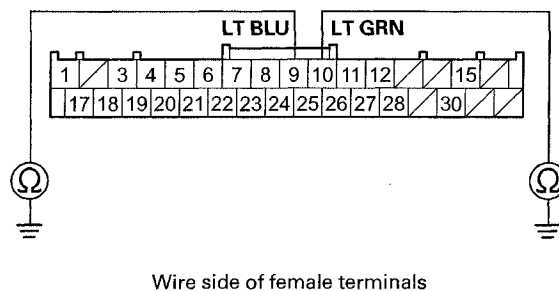
Is there continuity?

YES—Go to step 10.

NO—Repair an open in the wire(s) between the climate control unit and the passenger's air mix control motor. ■

10. Check for continuity between body ground and climate control unit connector A (32P) terminals No. 9 and No. 10 individually.

CLIMATE CONTROL UNIT CONNECTOR A (32P)



Is there continuity?

YES—Repair a short to body ground in the wire(s) between the climate control unit and the passenger's air mix control motor. ■

NO—Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107). ■

Climate Control

DTC Troubleshooting (cont'd)

DTC B1239 or DTC indicator A and MODE: An Open or Short in the Driver's Mode Control Motor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II) or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

Is DTC B1239 or A and MODE indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the driver's mode control motor circuit. ■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the driver's mode control motor (see page 21-102).

Is the driver's mode control motor OK?

YES—Go to step 7.

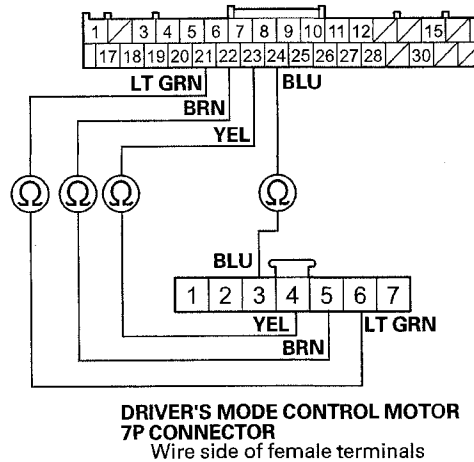
NO—Replace the driver's mode control motor (see page 21-102). ■

7. Disconnect the driver's mode control motor 7P connector.
8. Disconnect climate control unit connectors A (32P) and C (20P)

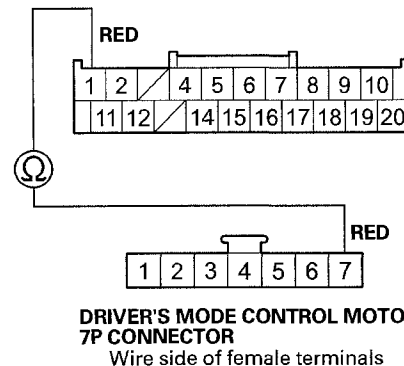
9. Check for continuity between the following terminals of climate control unit connector A (32P), C (20P) and the driver's mode control motor 7P connector.

32P:	7P:
No. 21	No. 6
No. 22	No. 5
No. 23	No. 4
No. 24	No. 3
20P:	7P:
No. 1	No. 7

CLIMATE CONTROL UNIT CONNECTOR A (32P)
Wire side of female terminals



CLIMATE CONTROL UNIT CONNECTOR C (20P)
Wire side of female terminals



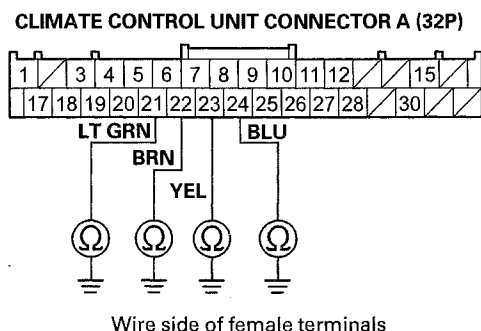
Is there continuity?

YES—Go to step 10.

NO—Repair an open in the wire(s) between the climate control unit and the driver's mode control motor. ■



10. Check for continuity between body ground and climate control unit connector A (32P) terminals No. 21, 22, 23, and 24 individually.



Is there continuity?

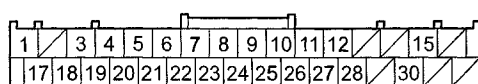
YES—Repair a short to body ground in the wire(s) between the climate control unit and the driver's mode control motor. ■

NO—Go to step 11.

11. Check for continuity between climate control unit connector A (32P) terminals as follows.

From terminal	To terminals
21	22, 23, 24
22	23, 24
23	24

CLIMATE CONTROL UNIT CONNECTOR A (32P)



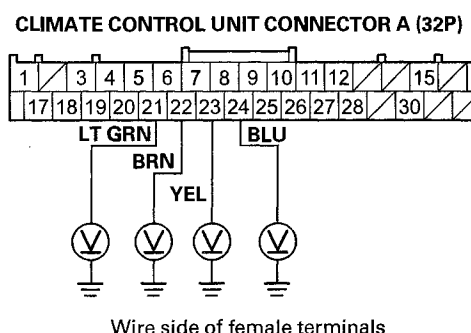
Wire side of female terminals

Is there continuity between any of the terminals?

YES—Repair a short in the wires. ■

NO—Go to step 12.

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between the same terminal and body ground.



Is there any voltage?

YES—Repair a short to power in the wire(s) between the climate control unit and the driver's mode control motor. This short may also damage the climate control unit. Repair a short to power before replacing the climate control unit. ■

NO—Check for loose wires or poor connections at climate control unit connector A (32P) and at the driver's 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 (see page 21-107). ■

Climate Control

DTC Troubleshooting (cont'd)

DTC B1240 or DTC indicator B and MODE: A Problem in the Driver's Mode Control Linkage, Doors, or Motor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

Is DTC B1240 or B and MODE indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the driver's mode control motor circuit. ■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the driver's mode control motor (see page 21-102).

Is the driver's mode control motor OK?

YES—Go to step 7.

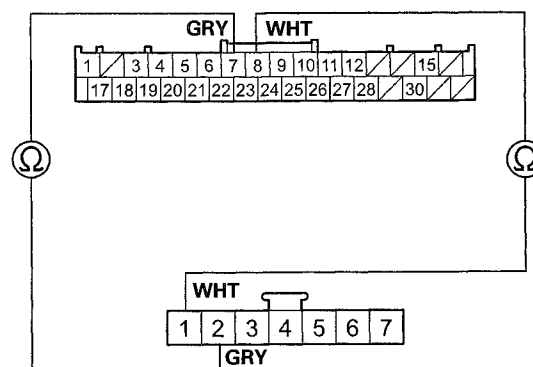
NO—Replace the driver's mode control motor (see page 21-102), or repair the driver's mode control linkage or doors. ■

7. Disconnect the driver's mode control motor 7P connector.
8. Disconnect climate control unit connector A (32P).

9. Check for continuity between the following terminals of climate control unit connector A (32P) and the driver's mode control motor 7P connector.

32P: 7P:
No. 7 No. 2
No. 8 No. 1

CLIMATE CONTROL UNIT CONNECTOR A (32P)
Wire side of female terminals

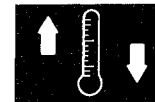


DRIVER'S MODE CONTROL MOTOR 7P CONNECTOR
Wire side of female terminals

Is there continuity?

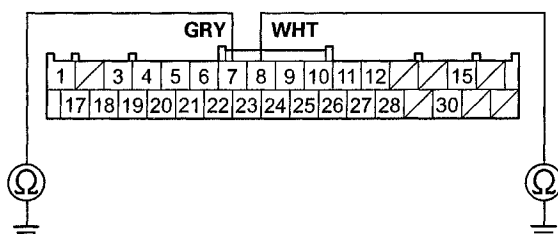
YES—Go to step 10.

NO—Repair an open in the wire(s) between the climate control unit and the driver's mode control motor. ■



10. Check for continuity between body ground and climate control unit connector A (32P) terminals No. 7 and No. 8 individually.

CLIMATE CONTROL UNIT CONNECTOR A (32P)



Wire side of female terminals

Is there continuity?

YES—Repair a short to body ground in the wire(s) between the climate control unit and the driver's mode control motor.■

NO—Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107).■

DTC B1241 or DTC indicator C and MODE: A Problem in the Blower Motor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

Is DTC B1241 or C and MODE indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the blower motor circuit.■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Check the No. 8 (40 A) fuse in the under-hood fuse/relay box, and the No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box.

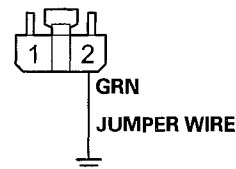
Are the fuses OK?

YES—Go to step 7.

NO—Replace the fuse(s), and recheck. If the fuse(s) blow again, check for a short in the No. 8 (40 A) fuse and the No. 16 (7.5 A) fuse circuits.■

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

BLOWER MOTOR 2P CONNECTOR



Wire side of female terminals

8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

Does the blower motor run?

YES—Go to step 9.

NO—Go to step 25.

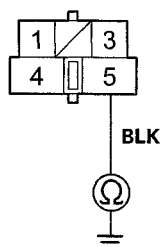
(cont'd)

Climate Control

DTC Troubleshooting (cont'd)

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect the jumper wire.
11. Disconnect the power transistor 5P connector.
12. Check for continuity between power transistor 5P connector terminal No. 5 and body ground.

POWER TRANSISTOR 5P CONNECTOR



Wire side of female terminals

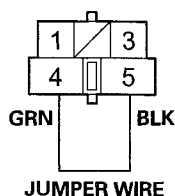
Is there continuity?

YES—Go to step 13.

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 G302 (see page 22-32). ■

13. Connect power transistor 5P connector terminals No. 4 and No. 5 with a jumper wire.

POWER TRANSISTOR 5P CONNECTOR



Wire side of female terminals

14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the OFF mode.

Does the blower motor run at high speed?

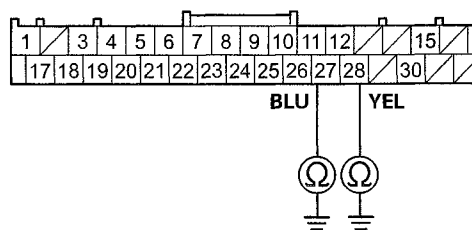
YES—Go to step 15.

NO—Repair an open in the GRN wire between the power transistor and the blower motor. ■

15. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF.

16. Disconnect the jumper wire.
17. Disconnect climate control unit connector A (32P).
18. Check for continuity between body ground and climate control unit connector A (32P) terminals No. 27 and No. 28 individually.

CLIMATE CONTROL UNIT CONNECTOR A (32P)



Wire side of female terminals

Is there continuity?

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

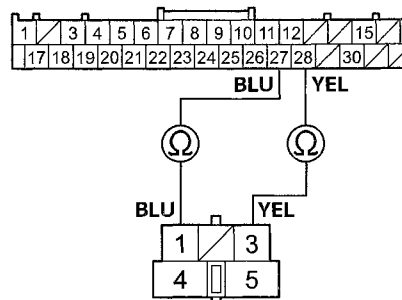
NO—Go to step 19.

19. Check for continuity between the following terminals of the climate control unit connector A (32P) and the power transistor 5P connector.

32P:	5P:
No. 27	No. 1
No. 28	No. 3

CLIMATE CONTROL UNIT CONNECTOR A (32P)

Wire side of female terminals



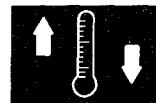
POWER TRANSISTOR 5P CONNECTOR

Wire side of female terminals

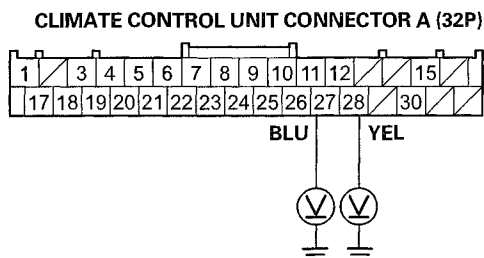
Is there continuity?

YES—Go to step 20.

NO—Repair an open in the wire(s) between the climate control unit and the power transistor. ■



20. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
21. Measure the voltage between body ground and climate control unit connector A (32P) terminals No. 27 and No. 28 individually.



Wire side of female terminals

Is there voltage?

YES—Repair a short to power in the wire(s). ■

NO—Go to step 22.

22. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
23. Reconnect climate control unit connector A (32P).
24. Test the power transistor (see page 21-98).

Is the power transistor OK?

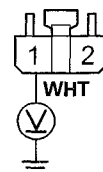
YES—Check for loose wires or poor connections at the climate control unit connector A (32P) and at the power transistor 5P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107). ■

NO—Replace the power transistor. ■

25. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
26. Disconnect the jumper wire.
27. Disconnect the blower motor 2P connector.

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

BLOWER MOTOR 2P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES—Replace the blower motor (see page 21-110). ■

NO—Go to step 29.

29. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
30. Remove the blower motor relay from the under-hood fuse/relay box, and test it (see page 22-88).

Is the relay OK?

YES—Go to step 31.

NO—Replace the blower motor relay. ■

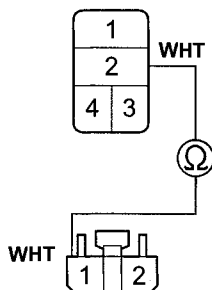
(cont'd)

Climate Control

DTC Troubleshooting (cont'd)

31. Check for continuity between blower motor relay 4P socket terminal No. 2 and blower motor 2P connector terminal No. 1.

BLOWER MOTOR RELAY 4P SOCKET
Terminal side of female terminals



BLOWER MOTOR 2P CONNECTOR
Wire side of female terminals

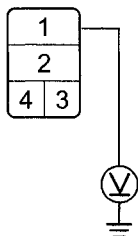
Is there continuity?

YES—Go to step 32.

NO—Repair an open in the wire between the blower motor relay and blower motor. ■

32. Measure the voltage between blower motor relay 4P socket terminal No. 1 and body ground.

BLOWER MOTOR RELAY 4P SOCKET



Terminal side of female terminals

Is there battery voltage?

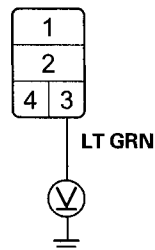
YES—Go to step 33.

NO—Replace the under-hood fuse/relay box (see page 22-80). ■

33. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

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

BLOWER MOTOR RELAY 4P SOCKET



Terminal side of female terminals

Is there battery voltage?

YES—Check for an open in the wire between blower motor relay 4P socket terminal No. 3 and body ground. If the wire is OK, check for poor body ground at G302 (see page 22-32). ■

NO—Repair an open in the wire between the No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box and the blower motor relay 4P socket. ■



DTC B1242 or DTC indicator E and MODE: An Open or Short in the Passenger's Mode Control Motor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode, and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).

4. Check for DTCs.

Is DTC B1242 or E and MODE indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the passenger's mode control motor circuit. ■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the passenger's mode control motor (see page 21-103).

Is the passenger's mode control motor OK?

YES—Go to step 7.

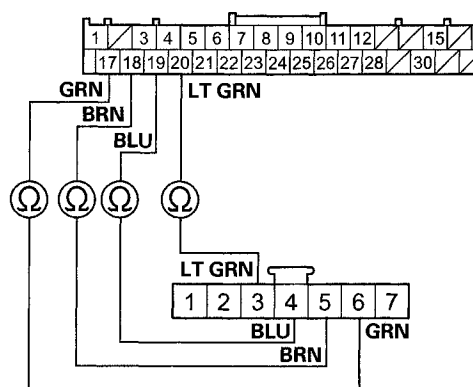
NO—Replace the passenger's mode control motor (see page 21-103). ■

7. Disconnect the passenger's mode control motor 7P connector.
8. Disconnect climate control unit connectors A (32P) and C (20P).

9. Check for continuity between the following terminals of climate control unit connector A (32P), C (20P) and the passenger's mode control motor 7P connector.

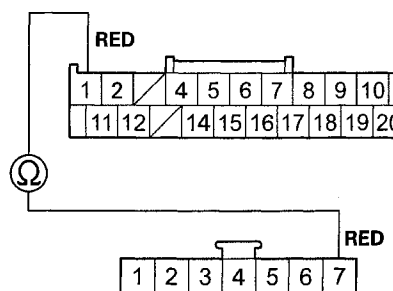
32P:	7P:
No. 17	No. 6
No. 18	No. 5
No. 19	No. 4
No. 20	No. 3
20P:	7P:
No. 1	No. 7

CLIMATE CONTROL UNIT CONNECTOR A (32P)
Wire side of female terminals



PASSENGER'S MODE CONTROL MOTOR 7P CONNECTOR
Wire side of female terminals

CLIMATE CONTROL UNIT CONNECTOR C (20P)
Wire side of female terminals



PASSENGER'S MODE CONTROL MOTOR 7P CONNECTOR
Wire side of female terminals

Is there continuity?

YES—Go to step 10.

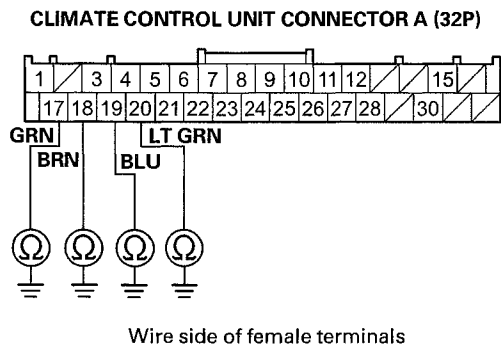
NO—Repair an open in the wire(s) between the climate control unit and the passenger's mode control motor. ■

(cont'd)

Climate Control

DTC Troubleshooting (cont'd)

10. Check for continuity between body ground and climate control unit connector A (32P) terminals No. 17, 18, 19, and 20 individually.



Is there continuity?

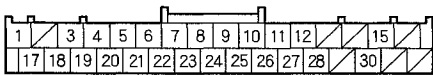
YES—Repair a short to body ground in the wire(s) between the climate control unit and the passenger's mode control motor. ■

NO—Go to step 11.

11. Check for continuity between climate control unit connector A (32P) terminals as follows.

From terminal	To terminals
17	18, 19, 20
18	19, 20
19	20

CLIMATE CONTROL UNIT CONNECTOR A (32P)



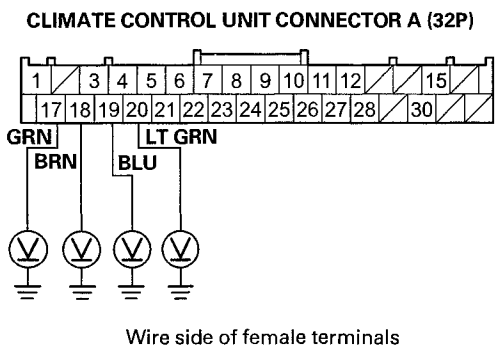
Wire side of female terminals

Is there continuity between any of the terminals?

YES—Repair a short in the wires. ■

NO—Go to step 12.

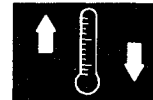
12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between the same terminals and body ground.



Is there any voltage?

YES—Repair a short to power in the wire(s) between the climate control unit and the passenger's mode control motor. This short may also damage the climate control unit. Repair a short to power before replacing the climate control unit. ■

NO—Check for loose wires or poor connections at climate control unit connector A (32P) and at the passenger's 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 (see page 21-107). ■



DTC B1243 or DTC indicator F and MODE: A
Problem in the Passenger's Mode Control
Linkage, Doors, or Motor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).

4. Check for DTCs.

Is DTC B1243 or F and MODE indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the passenger's mode control motor circuit. ■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the passenger's mode control motor (see page 21-103).

Is the passenger's mode control motor OK?

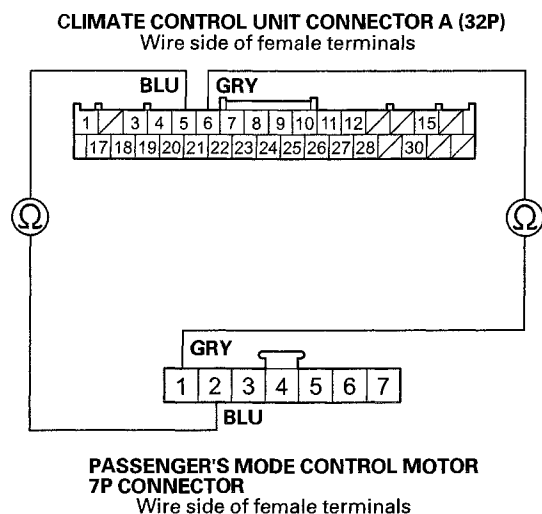
YES—Go to step 7.

NO—Replace the passenger's mode control motor (see page 21-103), or repair the Passenger's mode control linkage or doors. ■

7. Disconnect the passenger's mode control motor 7P connector.
8. Disconnect climate control unit connector A (32P).

9. Check for continuity between the following terminals of climate control unit connector A (32P) and the passenger's mode control motor 7P connector.

32P: 7P:
No. 5 No. 2
No. 6 No. 1



Is there continuity?

YES—Go to step 10.

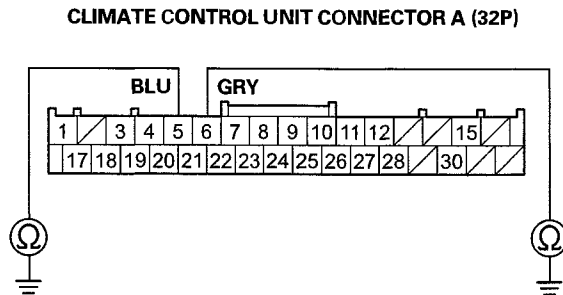
NO—Repair an open in the wire(s) between the climate control unit and the passenger's mode control motor. ■

(cont'd)

Climate Control

DTC Troubleshooting (cont'd)

10. Check for continuity between body ground and climate control unit connector A (32P) terminals No. 5 and No. 6 individually.



Wire side of female terminals

Is there continuity?

YES—Repair a short to body ground in the wire(s) between the climate control unit and the passenger's mode control motor. ■

NO—Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107). ■

DTC B2967 or DTC indicator A and Windshield Defrost: An Open in the Humidity Sensor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

Is DTC B2967 or A and WINDSHIELD DEFROST indicated?

YES—Go to step 5.

NO—Intermittent failure, check for loose wires or poor connections on the humidity sensor circuit. ■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Remove the humidity/in-car temperature sensor (see page 21-94), and test it (see page 21-93).

Is the humidity sensor OK?

YES—Go to step 7.

NO—Replace the humidity/in-car temperature sensor. ■

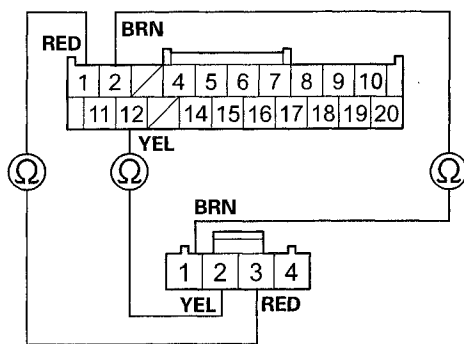
7. Disconnect the humidity/in-car temperature sensor 4P connector.
8. Disconnect climate control unit connector C (20P).



9. Check for continuity between the following terminals of climate control unit connector C (20P) and the humidity/in-car temperature sensor 4P connector.

20P:	4P:
No. 1	No. 3
No. 2	No. 1
No. 12	No. 2

CLIMATE CONTROL UNIT CONNECTOR C (20P)
Wire side of female terminals



HUMIDITY/IN-CAR TEMPERATURE SENSOR 4P CONNECTOR
Wire side of female terminals

Is there continuity?

YES—Check for loose wires or poor connections at climate control unit connector C (20P) and at the humidity/in-car temperature sensor 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 (see page 21-107). ■

NO—Repair an open in the wire(s) between the climate control unit and the humidity sensor. ■

DTC B2968 or DTC indicator B and Windshield Defrost: A Short in the Humidity Sensor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

Is DTC B2968 or B and WINDSHIELD DEFROST indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the humidity sensor circuit. ■

5. Check for DTCs.

Are these DTCs also present; B1234 or K and AUTO, and/or B1237 or N and AUTO, and/or B2980 or F and WINDSHIELD DEFROST?

YES—Go to step 13.

NO—Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Remove the humidity/in-car temperature sensor (see page 21-94), and test it (see page 21-93).

Is the humidity sensor OK?

YES—Go to step 8.

NO—Replace the humidity/in-car temperature sensor. ■

8. Disconnect the humidity/in-car temperature sensor 4P connector.
9. Disconnect climate control unit connector C (20P).

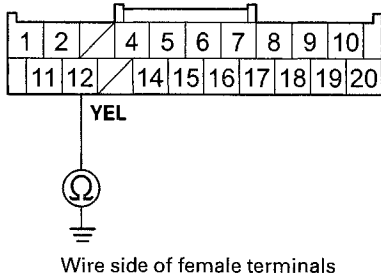
(cont'd)

Climate Control

DTC Troubleshooting (cont'd)

10. Check for continuity between body ground and climate control unit connector C (20P) terminal No. 12.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



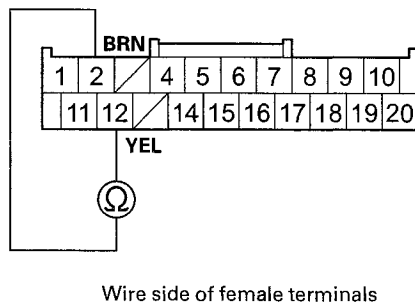
Is there continuity?

YES—Repair a short to body ground in the wire between the climate control unit and the humidity sensor. ■

NO—Go to step 11.

11. Check for continuity between climate control unit connector C (20P) terminals No. 2 and No. 12.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



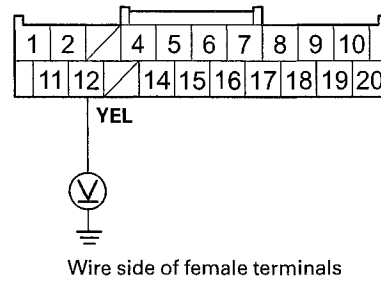
Is there continuity?

YES—Repair a short in the wires. ■

NO—Go to step 12.

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between climate control unit connector C (20P) terminal No. 12 and body ground.

CLIMATE CONTROL UNIT CONNECTOR C (20P)

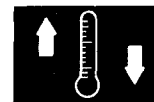


Is there any voltage?

YES—Repair a short to power in the wire between the climate control unit and the humidity sensor. This short may also damage the climate control unit. Repair a short to power before replacing the climate control unit. ■

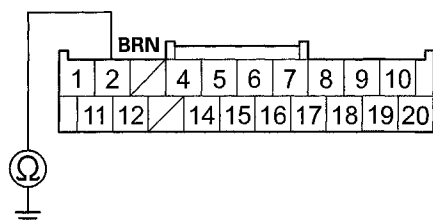
NO—Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107). ■

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and disconnect climate control unit connector C (20P).
14. Disconnect these items:
- Driver's air mix control motor
 - Passenger's air mix control motor
 - Humidity/in-car temperature sensor
 - A/C pressure sensor



15. Check for continuity between climate control unit connector C (20P) terminal No. 2 and body ground.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

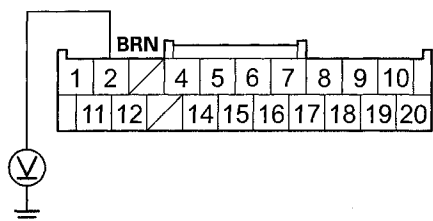
Is there continuity?

YES—Repair a short to body ground in the wire. ■

NO—Go to step 16.

16. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between the same terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there any voltage?

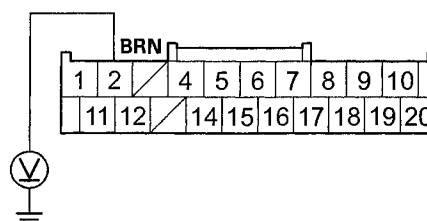
YES—Repair a short to power in the wire. This short may have also damaged the climate control unit. Repair the short to power before replacing the climate control unit. ■

NO—Go to step 17.

17. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
18. Reconnect the climate control unit connector C (20P).

19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode and measure the voltage between climate control unit connector C (20P) terminal No. 2 and body ground.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there about 5 V?

YES—Go to step 20.

NO—Check for a loose wire or poor connection at climate control unit connector C (20P). If the connection is good, substitute a known-good climate control unit and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107). ■

(cont'd)

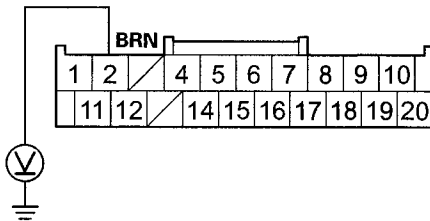
Climate Control

DTC Troubleshooting (cont'd)

20. While measuring the voltage as described in step 19, reconnect these items individually and note the voltage reading each time:

- Driver's air mix control motor
- Passenger's air mix control motor
- Humidity/in-car temperature sensor
- A/C pressure sensor

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Does the voltage remain at about 5 V?

YES—Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107). ■

NO—Replace the component that caused the voltage drop. ■

DTC B2969: Climate Control Unit Lost Communication with Driver's MICU (WIPSW message)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in the B-CAN system diagnosis test mode A (see page 22-135).

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Wait for at least 6 seconds.
4. Do the Self-diagnostic Function with the HDS (see page 21-9).
5. Check the DTCs.

Is DTC B2969 indicated?

YES—Go to step 6.

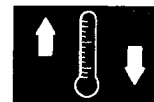
NO—Intermittent failure. Check for loose wires or poor connections on the climate control unit connector C (20P). ■

6. Check for DTCs with the HDS (Do all system scan).

Are any of the following DTCs indicated; B1958, B1063, or B1156 indicated?

YES—Do the driver's MICU Input Test (see page 22-156). ■

NO—Do the Climate Control Power and Ground Troubleshooting (see page 21-81). ■



DTC B2979 or DTC indicator E and Windshield Defrost: An Open in the A/C Pressure Sensor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

Is DTC B2979 or E and WINDSHIELD DEFROST indicated?

YES—Go to step 5.

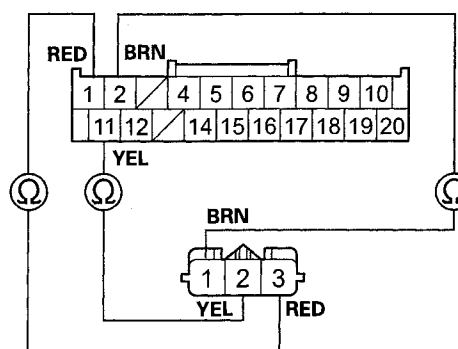
NO—Intermittent failure. Check for loose wires or poor connections on the A/C pressure sensor circuit. ■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Disconnect the A/C pressure sensor 3P connector.
7. Disconnect climate control unit connector C (20P).

8. Check for continuity between the following terminals of climate control unit connector C (20P) and the A/C pressure sensor 3P connector.

20P:	3P:
No. 1	No. 3
No. 2	No. 1
No. 11	No. 2

CLIMATE CONTROL UNIT CONNECTOR C (20P)
Wire side of female terminals



A/C PRESSURE SENSOR 3P CONNECTOR
Wire side of female terminals

Is there continuity?

YES—Go to step 9.

NO—Repair an open in the wire(s) between the climate control unit and the A/C pressure sensor. ■

9. Reconnect climate control unit connector C (20P).
10. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

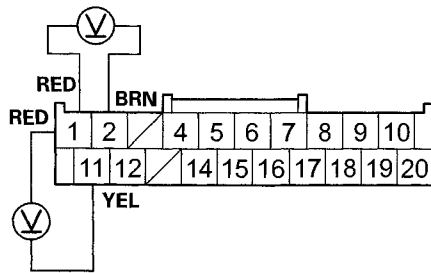
(cont'd)

Climate Control

DTC Troubleshooting (cont'd)

11. Measure the voltage between climate control unit connector C (20P) terminals No. 1 and No. 2, and between climate control unit connector C (20P) terminals No. 1 and No. 11.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there about 5 V?

YES—Replace the A/C pressure sensor.■

NO—Check for loose wires or poor connections at climate control unit connector C (20P) and at the A/C pressure sensor 3P 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 (see page 21-107).■

DTC B2980 or DTC indicator F and Windshield Defrost: A short in the A/C Pressure Sensor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check for DTCs.

Is DTC B2980 or F and WINDSHIELD DEFROST indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the A/C pressure sensor circuit.■

5. Check for DTCs.

Are these DTCs also present; B1234 or K and AUTO, and/or B1237 or N and AUTO, and/or B2968 or B and WINDSHIELD DEFROST?

YES—Go to step 16.

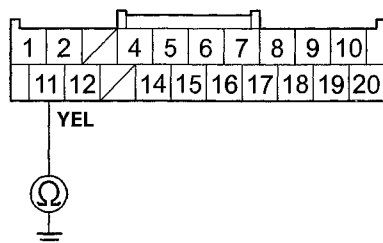
NO—Go to step 6.

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Disconnect the A/C pressure sensor 3P connector.
8. Disconnect climate control unit connector C (20P).



9. Check for continuity between body ground and climate control unit connector C (20P) terminal No. 11.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

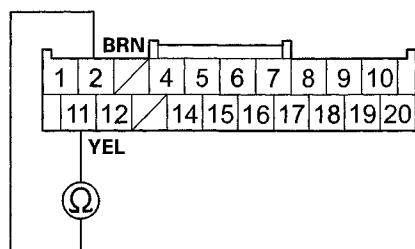
Is there continuity?

YES—Repair a short to body ground in the wire between the climate control unit and the A/C pressure sensor. ■

NO—Go to step 10.

10. Check for continuity between climate control unit connector C (20P) terminals No. 2 and No. 11.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

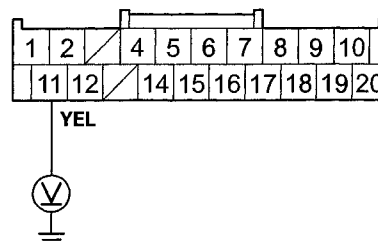
Is there continuity?

YES—Repair a short in the wires. ■

NO—Go to step 11.

11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between body ground and climate control unit connector C (20P) terminal No. 11.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there any voltage?

YES—Repair a short to power in the wire between the climate control unit and the A/C pressure sensor. This short may also damage the climate control unit. Repair a short to power before replacing the climate control unit. ■

NO—Go to step 12.

12. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
13. Reconnect climate control unit connector C (20P).
14. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

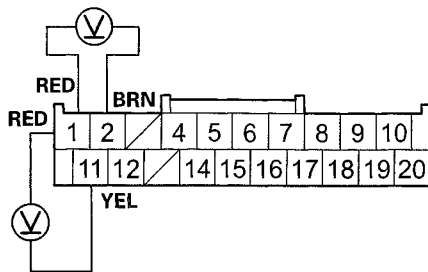
(cont'd)

Climate Control

DTC Troubleshooting (cont'd)

15. Measure the voltage between climate control unit connector C (20P) terminals No. 1 and No. 2, and between climate control unit connector C (20P) terminals No. 1 and No. 11.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there about 5 V?

YES—Replace the A/C pressure sensor. ■

NO—Check for loose wires or poor connections at climate control unit connector C (20P) and at the A/C pressure sensor 3P 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 (see page 21-107). ■

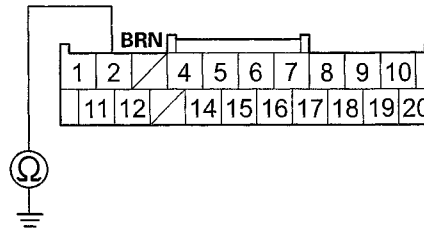
16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode, and disconnect climate control unit connector C (20P).

17. Disconnect these items:

- Driver's air mix control motor
- Passenger's air mix control motor
- Humidity/in-car temperature sensor
- A/C pressure sensor

18. Check for continuity between climate control unit connector C (20P) terminal No. 2 and body ground.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

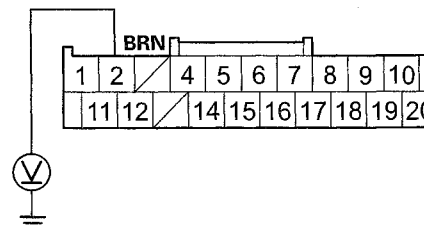
Is there continuity?

YES—Repair a short to body ground in the wire. ■

NO—Go to step 19.

19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between the same terminal and body ground.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

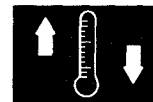
Is there any voltage?

YES—Repair a short to power in the wire. This short may have also damaged the climate control unit. Repair the short to power before replacing the climate control unit. ■

NO—Go to step 20.

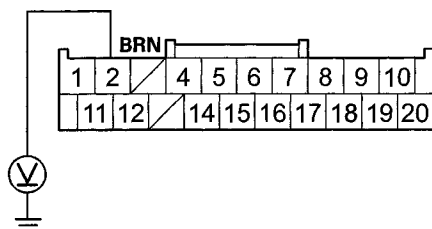
20. Turn the Ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

21. Reconnect climate control unit connector C (20P).



22. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and measure the voltage between climate control unit connector C (20P) terminal No. 2 and body ground.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there about 5 V?

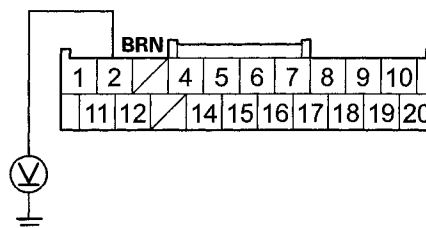
YES—Go to step 23.

NO—Check for a loose wire or poor connection at climate control unit connector C (20P). If the connection is good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107).■

23. While measuring the voltage as described in step 22, reconnect these items individually and note the voltage reading each time:

- Driver's air mix control motor
- Passenger's air mix control motor
- Humidity/in-car temperature sensor
- A/C pressure sensor

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Does the voltage remain at about 5 V?

YES—Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107).■

NO—Replace the component that caused the voltage drop.■

Climate Control

DTC Troubleshooting (cont'd)

DTC B2983 or DTC indicator K and MODE:

A Problem in the Recirculation Control Linkage, Door, or Motor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II), or press the engine start/stop button to select the OFF mode and then the ON mode.
3. Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10).
4. Check the DTCs.

Is DTC B2983 or K and MODE indicated?

YES—Go to step 5.

NO—Intermittent failure. Check for loose wires or poor connections on the recirculation control motor circuit. ■

5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
6. Test the recirculation control motor (see page 21-105).

Is the recirculation control motor OK?

YES—Go to step 7.

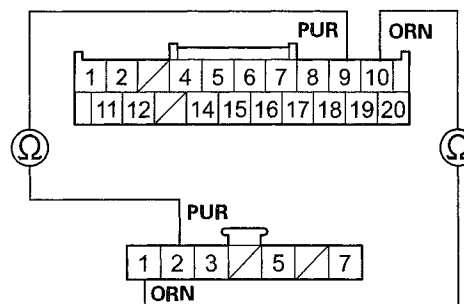
NO—Replace the recirculation control motor (see page 21-106), or repair the recirculation control linkage or door. ■

7. Disconnect the recirculation control motor 7P connector.
8. Disconnect climate control unit connector C (20P).

9. Check for continuity between the following terminals of climate control unit connector C (20P) and the recirculation control motor 7P connector.

20P:	7P:
No. 9	No. 2
No. 10	No. 1

CLIMATE CONTROL UNIT CONNECTOR C (20P)
Wire side of female terminals

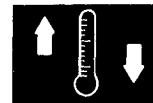


RECIRCULATION CONTROL MOTOR 7P CONNECTOR
Wire side of female terminals

Is there continuity?

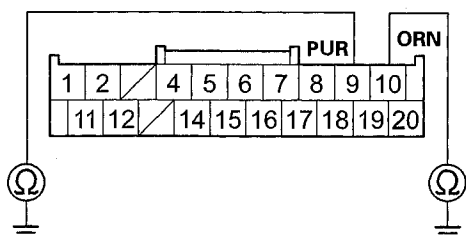
YES—Go to step 10.

NO—Repair an open in the wire(s) between the climate control unit and the recirculation control motor. ■



10. Check for continuity between body ground and climate control unit connector C (20P) terminals No. 9 and No. 10 individually.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there continuity?

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

NO—Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-107). ■

Climate Control Power and Ground Circuit Troubleshooting

1. Check the No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box.

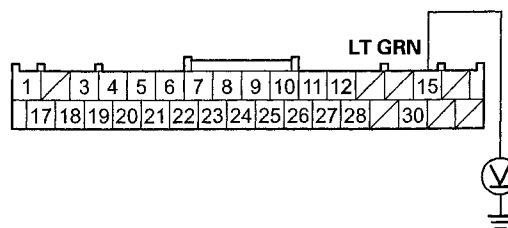
Is the fuse OK?

YES—Go to step 2.

NO—Replace the fuse, and recheck. If the fuse blows again, check for a short in the No. 16 (7.5 A) fuse circuit. ■

2. Disconnect climate control unit connector A (32P).
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
4. Measure the voltage between climate control unit connector A (32P) terminal No. 15 and body ground.

CLIMATE CONTROL UNIT CONNECTOR A (32P)



Wire side of female terminals

Is there battery voltage?

YES—Go to step 5.

NO—Repair an open in the wire between the No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box and the climate control unit. ■

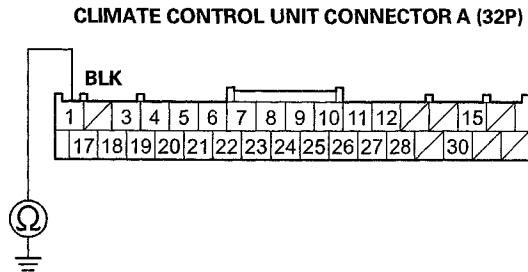
5. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

(cont'd)

Climate Control

Climate Control Power and Ground Circuit Troubleshooting (cont'd)

6. Check for continuity between climate control unit connector A (32P) terminal No. 1 and body ground.



Is there continuity?

YES—Check for loose wires or poor connections at climate control unit connector A (32P). If the connections are good, substitute a known-good climate control unit (see page 21-107), and recheck. ■

NO—Check for an open in the wire between the climate control unit and body ground. If the wire is OK, check for poor body ground at G403 (see page 22-42). ■

Navigation Communication Line Circuit Troubleshooting

1. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

2. Operate the climate control system in several modes.

Is the climate control system OK?

YES—Go to step 3.

NO—Do the Self-diagnostic Function with the HDS (see page 21-9) or with the climate control unit (see page 21-10). ■

3. Do the System Links (see page 23-213).

Is the A/C or Mic icon red?

YES—

- If A/C icon is red, go to step 4.
- If Mic icon is red, go to "Voice control does not work/respond" in the navigation system Symptom Troubleshooting (see page 23-271). ■

NO—Go to step 10.

4. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

5. Disconnect audio-navigation unit connector D (20P).

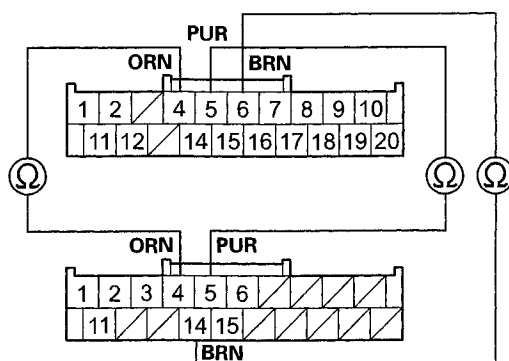
6. Disconnect climate control unit connector C (20P).



7. Check for continuity between the following terminals of climate control unit connector C (20P) and audio-navigation unit connector D (20P).

20P: 20P:
No. 4 No. 4
No. 5 No. 5
No. 6 No. 14

CLIMATE CONTROL UNIT CONNECTOR C (20P)
Wire side of female terminals



AUDIO-NAVIGATION UNIT CONNECTOR D (20P)
Wire side of female terminals

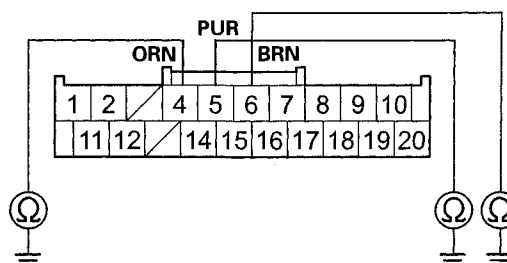
Is there continuity?

YES—Go to step 8.

NO—Repair an open in the wire(s) between the climate control unit and the audio-navigation unit. ■

8. Check for continuity between body ground and climate control unit connector terminals No. 4, 5, and 6 individually.

CLIMATE CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

Is there continuity?

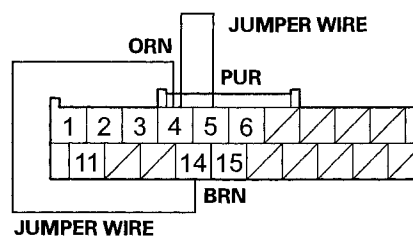
YES—Repair a short to body ground in the wire(s) between the climate control unit and the audio-navigation unit. ■

NO—Go to step 9.

9. Reconnect climate control unit connector C (20P).

10. Connect audio-navigation unit connector D (20P) terminals No. 4, 5, and 14 with jumper wires.

AUDIO-NAVIGATION UNIT CONNECTOR D (20P)



Wire side of female terminals

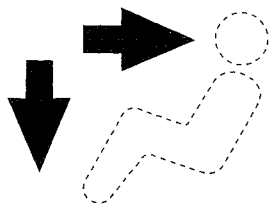
11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

(cont'd)

Climate Control

Navigation Communication Line Circuit Troubleshooting (cont'd)

12. Press and hold the AUTO button, then press and hold the OFF button.



Is the HEAT/VENT indicator solid with the remaining icons blinking?

YES—Do the Unit Check with the navigation system (see page 23-220). ■

NO—Substitute a known-good climate control unit, and recheck. If the symptom goes away, replace the original climate control unit (see page 21-107). ■

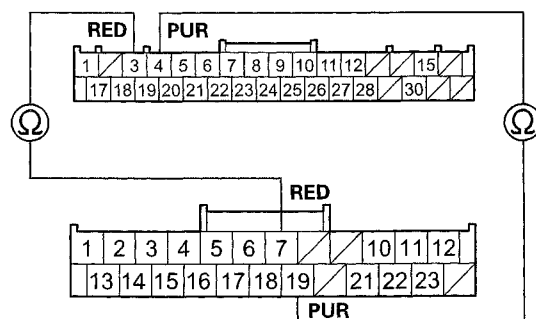
Audio Communication Line Circuit Troubleshooting

With Navigation

1. Disconnect climate control unit connector A (32P) and the audio-navigation switch panel 24P connector.
2. Check for continuity between the following terminals of climate control unit connector A (32P) and the audio-navigation switch panel 24P connector.

32P:	24P:
No. 3	No. 7
No. 4	No. 19

CLIMATE CONTROL UNIT CONNECTOR A (32P)
Wire side of female terminals



AUDIO-NAVIGATION SWITCH PANEL 24P CONNECTOR
Wire side of female terminals

Is there continuity?

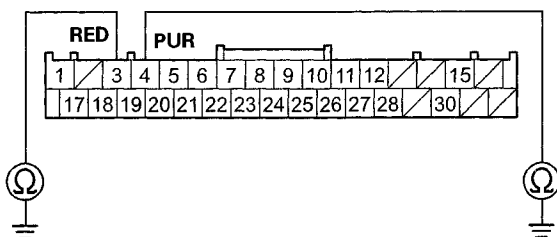
YES—Go to step 3.

NO—Repair an open in the wire between climate control unit connector A (32P) and the audio-navigation switch panel 24P connector. ■



3. Check for continuity between body ground and climate control unit connector A (32P) terminals No. 3 and No. 4 individually.

CLIMATE CONTROL UNIT CONNECTOR A (32P)



Wire side of female terminals

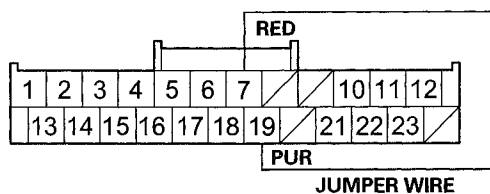
Is there continuity?

YES—Repair a short to body ground in the wire between climate control unit connector A (32P) and the audio-navigation switch panel 24P connector. ■

NO—Go to step 4.

4. Reconnect climate control unit connector A (32P).
5. Connect audio-navigation switch panel 24P connector terminals No. 7 and No. 19 with a jumper wire.

AUDIO-NAVIGATION SWITCH PANEL 24P CONNECTOR



Wire side of female terminals

6. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
7. Press and hold the front DEF button and OFF button.

Is the front DEF button LED blinking?

YES—The audio-navigation switch panel is faulty, replace the audio-navigation switch panel (see page 23-149). ■

NO—The climate control unit is faulty, replace the climate control unit (see page 21-107). ■

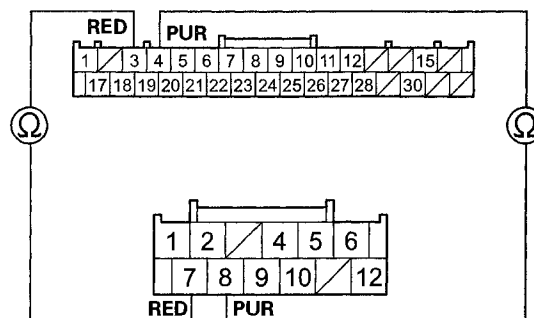
Without Navigation

1. Disconnect climate control unit connector A (32P) and the audio-HVAC display unit 12P connector.
2. Check for continuity between the following terminals of climate control unit connector A (32P) and the audio-HVAC display unit 12P connector.

Without navigation

32P: 12P:
No. 3 No. 7
No. 4 No. 8

CLIMATE CONTROL UNIT CONNECTOR A (32P) Wire side of female terminals



AUDIO-HVAC DISPLAY UNIT 12P CONNECTOR Wire side of female terminals

Is there continuity?

YES—Go to step 3.

NO—Repair an open in the wire between climate control unit connector A (32P) and the audio-HVAC display unit 12P connector. ■

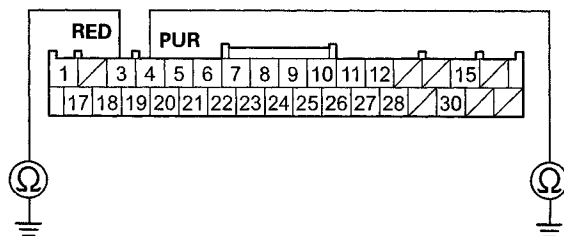
(cont'd)

Climate Control

Audio Communication Line Circuit Troubleshooting (cont'd)

3. Check for continuity between body ground and climate control unit connector A (32P) terminals No. 3 and No. 4 individually.

CLIMATE CONTROL UNIT CONNECTOR A (32P)



Wire side of female terminals

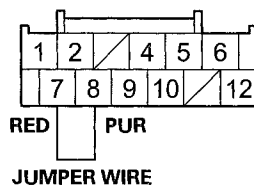
Is there continuity?

YES—Repair a short to body ground in the wire between climate control unit connector A (32P) and the audio-HVAC display unit 12P connector. ■

NO—Go to step 4.

4. Reconnect climate control unit connector A (32P).
5. Connect audio-HVAC display unit 12P connector terminals No. 7 and No. 8 with a jumper wire.

AUDIO-HVAC DISPLAY UNIT 12P CONNECTOR



Wire side of female terminals

6. Turn the ignition switch to ON (II).
7. Press and hold the front DEF button and OFF button.

Is the front DEF button LED blinking?

YES—The audio-HVAC display unit is faulty, replace the audio-HVAC display unit (see page 23-150). ■

NO—The climate control unit is faulty, replace the climate control unit (see page 21-107). ■

Radiator and A/C Condenser Fan Low Speed Circuit Troubleshooting

NOTE:

- Do not use this troubleshooting procedure if the A/C compressor is inoperative. Refer to the symptom troubleshooting index.
- Before performing symptom troubleshooting, check for powertrain DTCs (see page 11-3).

1. Check the No. 3-3 (SUB FAN) (30 A: without SH-AWD and M/T) or No. 3-2 (SUB FAN) (40 A: A/T with SH-AWD) fuse in the under-hood fuse/relay, and the No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box.

Are you fuses OK?

YES—Go to step 2.

NO—Replace the fuse(s), and recheck. If the fuse(s) blow again, check for a short in the No. 3-3 (SUB FAN) (30 A: without SH-AWD and M/T) or No. 3-2 (SUB FAN) (40 A: A/T with SH-AWD) fuse or the No. 16 (7.5 A) fuse circuits. ■

2. Remove the A/C condenser fan relay from the relay block, and test it (see page 22-88).

Is the relay OK?

YES—Go to step 3.

NO—Replace the A/C condenser fan relay. ■

3. Reinstall the A/C condenser fan relay.
4. Connect the HDS to the DLC.
5. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
6. Turn on the A/C.
7. Check the FAN LOW CTRL in the PGM-FI Data List with the HDS.

Is the FAN LOW CTRL on?

YES—Go to step 8.

NO—Substitute a known-good ECM/PCM (see page 11-282), and retest. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-282). ■

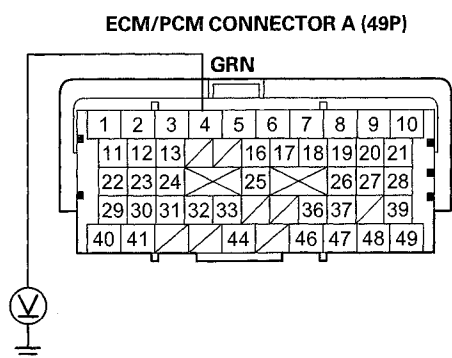
8. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
9. Jump the SCS line with the HDS.

NOTE: This step must be done to protect the engine control module/powertrain control module (ECM/PCM) from damage.

10. Disconnect ECM/PCM connector A (49P).



11. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
12. Measure the voltage between ECM/PCM connector A terminal No. 4 and body ground.



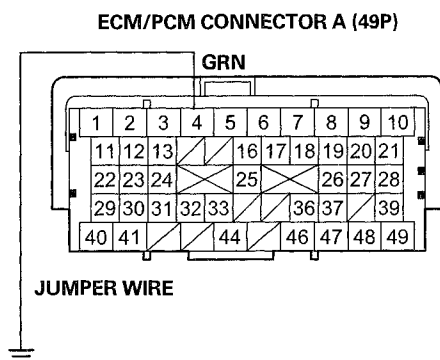
Terminal side of female terminals

Is there battery voltage?

YES—Go to step 13.

NO—Repair an open in the wires between the under-hood fuse/relay box and the ECM/PCM, or between the No. 16 (7.5 A) fuse in driver's under-dash fuse/relay box and the under-hood fuse/relay box. If wires are OK, replace the under-hood fuse/relay box (see page 22-80). ■

13. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
14. Connect the ECM/PCM connector A (49P) terminal No. 4 to body ground with a jumper wire.



JUMPER WIRE

Terminal side of female terminals

15. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

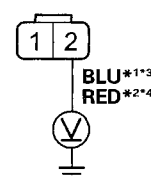
Do the A/C condenser and radiator fans run on low?

YES—Check for loose wires or poor connections at ECM/PCM connector A (49P) terminal No. 4. If the connections are good, substitute a known-good ECM/PCM, and recheck. If the symptom/indication goes away, replace the original ECM/PCM (see page 11-282). ■

NO—Go to step 16.

16. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
17. Disconnect the jumper wire.
18. Reconnect ECM/PCM connector A (49P).
19. Disconnect the A/C condenser fan motor 2P connector.
20. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then set the A/C button and fan control button ON.
21. Measure the voltage between A/C condenser fan motor 2P connector terminal No. 2 and body ground.

A/C CONDENSER FAN MOTOR 2P CONNECTOR



Wire side of female terminals

- *1: '09 model without SH-AWD
- *2: '09 model with SH-AWD
- *3: '10 model without SH-AWD and M/T
- *4: '10 model A/T with SH-AWD

Is there battery voltage?

YES—Go to step 22.

NO—Repair an open in the wire between the under-hood fuse/relay box and the A/C condenser fan motor. If the wire is OK, replace the under-hood fuse/relay box (see page 22-80). ■

22. Set the A/C button and fan control button OFF, then turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
23. Reconnect the A/C condenser fan motor 2P connector.

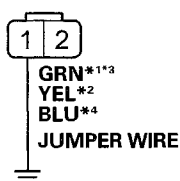
(cont'd)

Climate Control

Radiator and A/C Condenser Fan Low Speed Circuit Troubleshooting (cont'd)

24. Connect A/C condenser fan motor 2P connector terminal No. 1 to body ground with a jumper wire.

A/C CONDENSER FAN MOTOR 2P CONNECTOR



Wire side of female terminals

- *1: '09 model without SH-AWD
- *2: '09 model with SH-AWD
- *3: '10 model without SH-AWD and M/T
- *4: '10 model A/T with SH-AWD

25. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, then set the A/C button and fan control button ON.

Does the A/C condenser fan run?

YES—Go to step 26.

NO—Replace the A/C condenser fan motor (see page 10-10). ■

26. Set the A/C button and fan control button OFF, then turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

27. Disconnect the jumper wire.

28. Remove the relay circuit board (see page 22-80) from the under-hood fuse/relay box, and test the fan control relay (see page 22-88).

Is the relay OK?

YES—Go to step 29.

NO—Replace the relay circuit board. ■

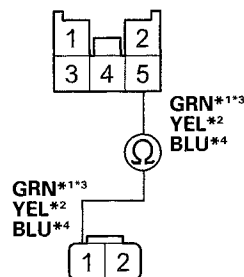
29. Disconnect the under-hood fuse/relay box connector C (5P).

30. Disconnect the A/C condenser fan motor 2P connector.

31. Check for continuity between under-hood fuse/relay box connector C (5P) terminal No. 5 and A/C condenser fan motor 2P connector terminal No. 1.

UNDER-HOOD FUSE/RELAY BOX CONNECTOR C (5P)

Wire side of female terminals



A/C CONDENSER FAN MOTOR 2P CONNECTOR

Wire side of female terminals

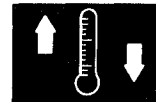
- *1: '09 model without SH-AWD
- *2: '09 model with SH-AWD
- *3: '10 model without SH-AWD and M/T
- *4: '10 model A/T with SH-AWD

Is there continuity?

YES—Go to step 32.

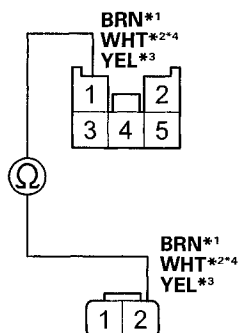
NO—Repair an open in the wire between the under-hood fuse/relay box and the A/C condenser fan motor. ■

32. Disconnect the radiator fan motor 2P connector.



33. Check for continuity between under-hood fuse/relay box connector C (5P) terminal No. 1 and radiator fan motor 2P connector terminal No. 2.

UNDER-HOOD FUSE/RELAY BOX CONNECTOR C (5P)
Wire side of female terminals



RADIATOR FAN MOTOR 2P CONNECTOR
Wire side of female terminals

- *1: '09 model without SH-AWD
*2: '09 model with SH-AWD
*3: '10 model without SH-AWD and M/T
*4: '10 model A/T with SH-AWD

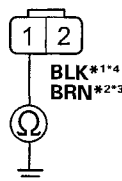
Is there continuity?

YES—Go to step 34.

NO—Repair an open in wire between the under-hood fuse/relay box and the radiator fan motor. ■

34. Check for continuity between radiator fan motor 2P connector terminal No. 1 and body ground.

RADIATOR FAN MOTOR 2P CONNECTOR



Wire side of female terminals

- *1: '09 model without SH-AWD
*2: '09 model with SH-AWD
*3: '10 model without SH-AWD and M/T
*4: '10 model A/T with SH-AWD

Is there continuity?

YES—Replace the radiator fan motor (see page 10-10). ■

NO—Check for an open in the wire between the radiator fan motor and body ground. If the wire is OK, check for poor body ground at G302 (see page 22-32). ■

A/C Condenser Fan High Speed Circuit Troubleshooting

NOTE:

- Do not use this troubleshooting procedure if the A/C compressor is inoperative. Refer to the symptom troubleshooting index.
- Before doing any symptom troubleshooting, check for powertrain DTCs (see page 11-3).

- Check the No. 3-3 (SUB FAN) (30 A: without SH-AWD and M/T) or No. 3-2 (SUB FAN) (40 A: A/T with SH-AWD) fuse in the under-hood fuse/relay, and the No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box.

Are the fuses OK?

YES—Go to step 2.

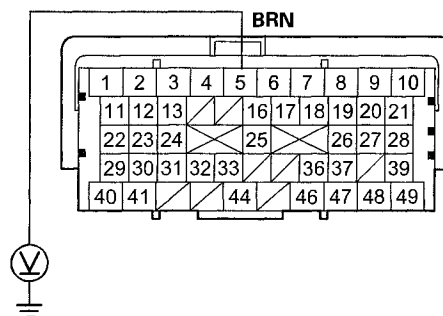
NO—Replace the fuse(s), and recheck. If fuse(s) blow again, check for a short in the No. 3-3 (SUB FAN) (30 A: without SH-AWD and M/T) or No. 3-2 (SUB FAN) (40 A: A/T with SH-AWD) fuse, or No. 16 (7.5 A) fuse circuits. ■

- Jump the SCS line with the HDS.

NOTE: This step must be done to protect the engine control module/powertrain control module (ECM/PCM) from damage.

- Disconnect ECM/PCM connector A (49P).
- Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
- Measure the voltage between ECM/PCM connector A terminal No. 5 and body ground.

ECM/PCM CONNECTOR A (49P)



Terminal side of female terminals

Is there battery voltage?

YES—Go to step 6.

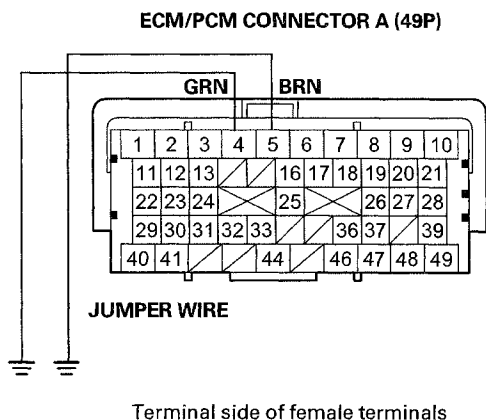
NO—Repair an open in the wire between the under-hood fuse/relay box and the ECM/PCM. If the wire is OK, replace the under-hood fuse/relay box (see page 22-80). ■

(cont'd)

Climate Control

A/C Condenser Fan High Speed Circuit Troubleshooting (cont'd)

6. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
7. Connect the ECM/PCM connector A (49P) terminals No.4 and No. 5 to body ground with a jumper wire.



8. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

Does the A/C condenser fan run on high?

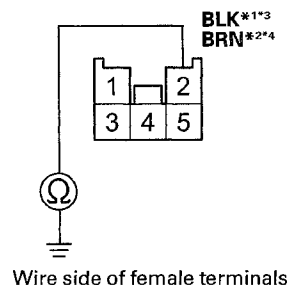
YES—Check for loose wires or poor connections at ECM/PCM connector A (49P) terminals No. 4 and No. 5. If the connections are good, substitute a known-good ECM/PCM, and recheck. If the symptom/indication goes away, replace the original ECM/PCM (see page 11-282). ■

NO—Go to step 9.

9. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
10. Disconnect under-hood fuse/relay box connector C (5P).

11. Check for continuity between under-hood fuse/relay box connector C (5P) terminal No. 2 and body ground.

UNDER-HOOD FUSE/RELAY BOX CONNECTOR C (5P)

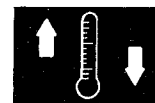


- *1: '09 model without SH-AWD
- *2: '09 model with SH-AWD
- *3: '10 model without SH-AWD and M/T
- *4: '10 model A/T with SH-AWD

Is there continuity?

YES—Replace the under-hood fuse/relay box (see page 22-80). ■

NO—Check for an open in the wire between the under-hood fuse/relay box and body ground. If the wire is OK, check for poor ground at G302 (see page 22-32). ■



A/C Compressor Clutch Circuit Troubleshooting

NOTE:

- It is normal for the A/C compressor to turn off under certain conditions, such as low idle, high engine coolant temperature, hard acceleration, or high/low refrigerant pressure.
- Do not use this troubleshooting procedure if the fans are also inoperative with the A/C on. Refer to the symptom troubleshooting index.
- Before doing any symptom troubleshooting, check for powertrain DTCs (see page 11-3).

- Check the No. 20 (7.5 A) fuse in the under-hood fuse/relay box, and the No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box.

Are the fuses OK?

YES—Go to step 2.

NO—Replace the fuse(s), and recheck. If the fuse(s) blow again, check for a short in the No. 20 (7.5 A) fuse and the No. 16 (7.5 A) fuse circuits. ■

- Connect the HDS to the DLC.
- Start the engine.
- Turn on the A/C.
- Check the A/C switch in the PGM-FI data list with the HDS.

Is the A/C switch ON?

YES—Go to step 6.

NO—Go to A/C Signal Circuit Troubleshooting (see page 11-333). ■

- Using the HDS, confirm the following values in the PGM-FI Data List at idle.

TP SENSOR	About 0.5 V
RPM	700–800
ECT SENSOR 2	176–212 °F (80–100 °C)
A/C SWITCH	ON
A/C CLUTCH	ON

Are all the values within specifications?

YES—Go to step 8.

NO—Troubleshoot the value that is not within the specifications. ■

- Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.

- Remove the A/C compressor clutch relay from the under-hood fuse/relay box, and test it (see page 22-88).

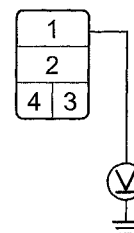
Is the relay OK?

YES—Go to step 9.

NO—Replace the A/C compressor clutch relay. ■

- Measure the voltage between A/C compressor clutch relay 4P socket terminal No. 1 and body ground.

A/C COMPRESSOR CLUTCH RELAY 4P SOCKET



Terminal side of female terminals

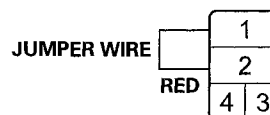
Is there battery voltage?

YES—Go to step 10.

NO—Replace the under-hood fuse/relay box (see page 22-80). ■

- Connect A/C compressor clutch relay 4P socket terminals No. 1 and No. 2 with a jumper wire.

A/C COMPRESSOR CLUTCH RELAY 4P SOCKET



Terminal side of female terminals

Does the A/C compressor clutch click?

YES—Go to step 11.

NO—Go to step 20.

- Disconnect the jumper wire.

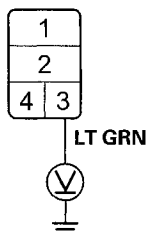
(cont'd)

Climate Control

A/C Compressor Clutch Circuit Troubleshooting (cont'd)

12. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.
13. Measure the voltage between A/C compressor clutch relay 4P socket terminal No. 3 and body ground.

A/C COMPRESSOR CLUTCH RELAY 4P SOCKET



Terminal side of female terminals

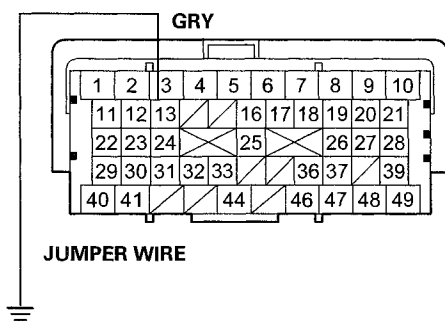
Is there battery voltage?

YES—Go to step 14.

NO—Repair an open in the wire between the No. 16 (7.5 A) fuse in the driver's under-dash fuse/relay box and the A/C compressor clutch relay. ■

14. Turn the ignition switch to LOCK (0), or press the engine start/stop button to select the OFF mode.
 15. Reinstall the A/C compressor clutch relay.
 16. Jump the SCS line with the HDS.
- NOTE:** This step must be done to protect the engine control module/powertrain control module (ECM/PCM) from damage.
17. Disconnect ECM/PCM connector A (49P).
 18. Connect ECM/PCM connector A (49P) terminal No. 13 to body ground with a jumper wire.

ECM/PCM CONNECTOR A (49P)



Terminal side of female terminals

19. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

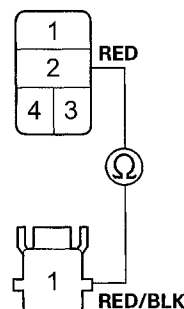
Does the A/C compressor click?

YES—Check for loose wires or poor connections at ECM/PCM connector A (49P). If the connections are good, check the ECM/PCM grounds. If the grounds are good, substitute a known-good ECM/PCM, and recheck. If the symptom/indication goes away, replace the original ECM/PCM (see page 11-282). ■

NO—Repair an open in the wire between the A/C compressor clutch relay and the ECM/PCM. ■

20. Disconnect the jumper wire.
21. Disconnect the A/C compressor clutch 1P connector.
22. Check for continuity between A/C compressor clutch relay 4P socket terminal No. 2 and A/C compressor clutch 1P connector terminal No. 1.

A/C COMPRESSOR CLUTCH RELAY 4P SOCKET
Terminal side of female terminals



A/C COMPRESSOR CLUTCH 1P CONNECTOR
Wire side of female terminal

Is there continuity?

YES—Check the A/C compressor clutch clearance, and the A/C compressor clutch field coil (see page 21-116). Repair as needed. ■

NO—Repair an open in the wire between the A/C compressor clutch relay and the A/C compressor clutch. ■

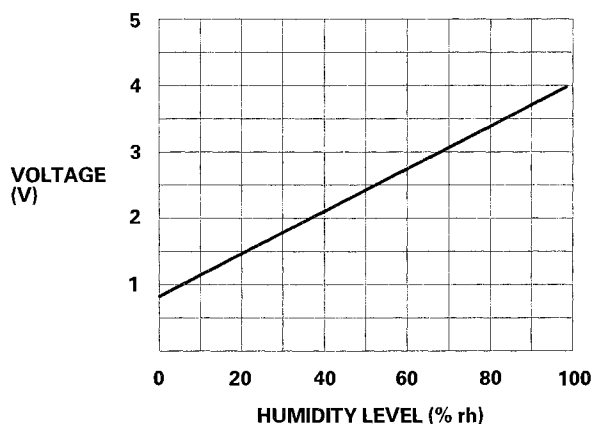
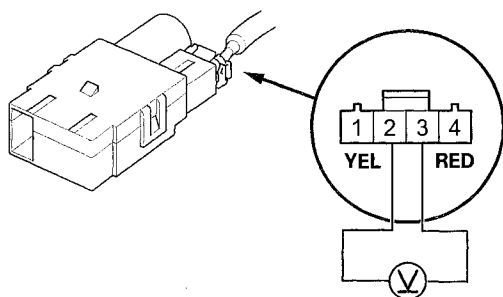


Humidity/In-car Temperature Sensor Test

Humidity Sensor Test

NOTE: Before testing the sensor, check for HVAC DTCs (see page 21-8).

1. Remove the humidity/in-car temperature sensor (see page 21-94).
2. Connect the humidity/in-car temperature sensor 4P connector.
3. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode. Measure the voltage between the terminals with the (+) probe on terminal No. 2 and the (–) probe on terminal No. 3 with the connector connected.



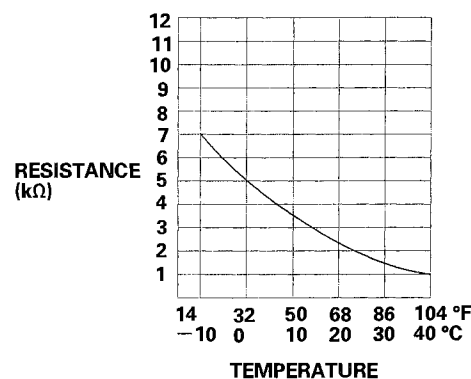
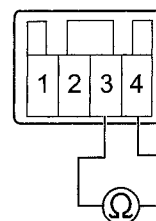
4. If the voltage is not as specified, replace the humidity/in-car temperature sensor (see page 21-94).

In-car Temperature Sensor Test

NOTE: Before testing the sensor, check for HVAC DTCs (see page 21-8).

1. Remove the humidity/in-car temperature sensor (see page 21-94).
2. Test the humidity/in-car temperature sensor while holding it in front of the dashboard center vent.
 - Measure the resistance with the system set to Max Cool.
 - Measure the resistance with the system set to Max Hot.
3. Compare the resistance reading between terminals No. 4 and No. 3 of the humidity/in-car temperature sensor with the specifications shown in the graph; the resistance should be within the specifications.

HUMIDITY/IN-CAR TEMPERATURE SENSOR



4. If the resistance is not as specified, replace the humidity/in-car temperature sensor (see page 21-94).
5. Clear any DTCs set when you disconnected the humidity/in-car temperature sensor.

Climate Control

Humidity/In-car Temperature Sensor Replacement

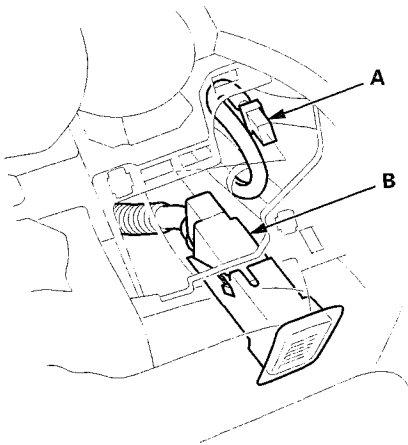
1. Remove these items:

- Driver's dashboard undercover (see page 20-118)
- Remote slot (with keyless access) (see page 22-619)

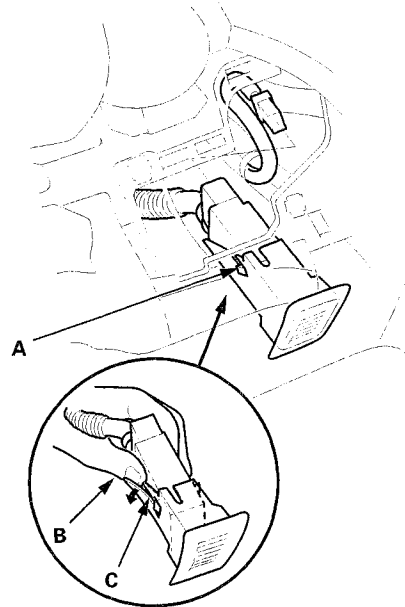
2. Disconnect the air hose from the heater unit (see step 2 on page 21-100). Keep grip on air hose while doing following procedures to assist in removal of sensor.

3. Disconnect the connector (A) from the humidity/in-car temperature sensor (B).

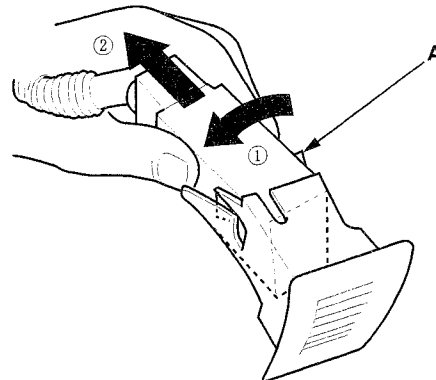
View from top



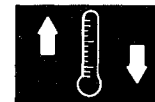
4. Unhook the left lock tab (A) of the humidity/in-car temperature sensor by pushing your thumb (B) between the sensor and tab (C).



5. Pull sensor toward steering column to unlock right lock tab (A). Maintain the pressure with thumb to keep left tab unlocked while unhooking right lock tab then pull out the sensor.



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

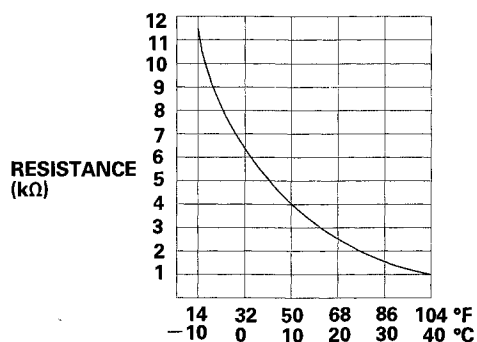
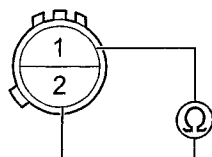


Outside Air Temperature Sensor Test

NOTE: before testing the sensor, check for HVAC DTCs (see page 21-8).

1. Remove the outside air temperature sensor (see page 21-95).
2. Dip the sensor in ice water, and measure the resistance. Then pour warm water on the sensor, and check for a change in resistance.
3. Compare the resistance reading between terminals No. 1 and No. 2 of the outside air temperature sensor with the specifications shown in the graph; the resistance should be within the specifications.

OUTSIDE AIR TEMPERATURE SENSOR

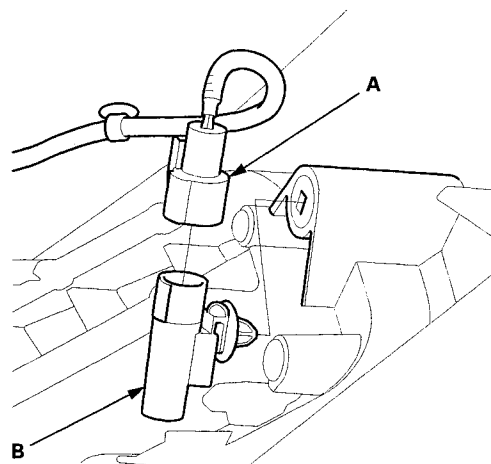


TEMPERATURE

4. If the resistance is not as specified, replace the outside air temperature sensor (see page 21-95).

Outside Air Temperature Sensor Replacement

1. From behind the bumper, disconnect the 2P connector (A). Detach the clip and remove the outside air temperature sensor (B).



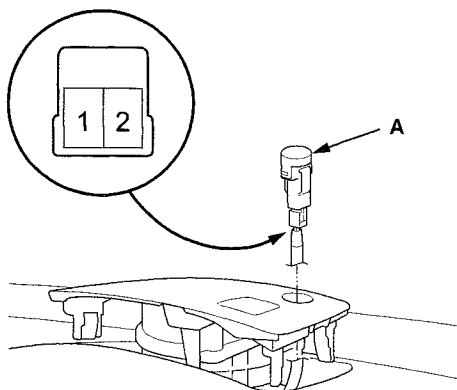
2. Install the sensor in the reverse order of removal.

Climate Control

Sunlight Sensor Test

NOTE: Before testing the sensor, check for HVAC DTCs (see page 21-8).

1. Remove the sunlight sensor (A) (see page 21-96).



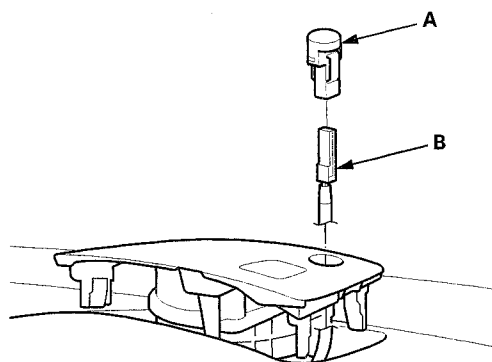
2. Turn the ignition switch to ON (II). Measure the voltage between terminals with the (+) probe on terminal No. 2 and the (–) probe on terminal No. 1 with the connector connected.

NOTE: The voltage readings do not change under the light of a flashlight or a fluorescent lamp. Voltage should be:

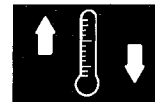
- 3.6–3.7 V or more with the sensor out of direct sunlight.
 - 3.3–3.5 V or less with the sensor in direct sunlight.
3. If the voltage is not as specified, replace the sunlight sensor (see page 21-96).

Sunlight Sensor Replacement

1. Remove the center speaker lid (see page 23-153).
2. Push out the sunlight sensor (A) from the speaker lid, then disconnect the connector (B). Be careful not to damage the sensor or the dashboard.



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

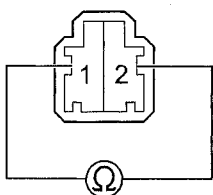


Evaporator Temperature Sensor Test

NOTE: Before testing the sensor, check for HVAC DTCs (see page 21-8).

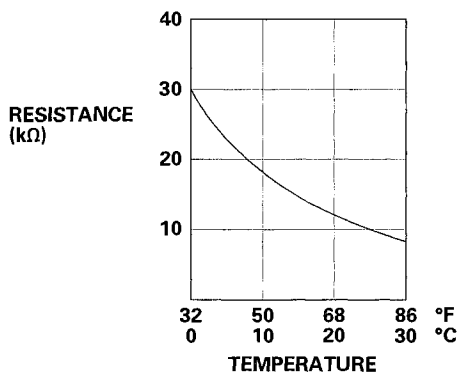
1. Remove the evaporator temperature sensor (see page 21-97).
2. Dip the sensor in ice water, and measure the resistance between its terminals.

EVAPORATOR TEMPERATURE SENSOR



Terminal side of male terminals

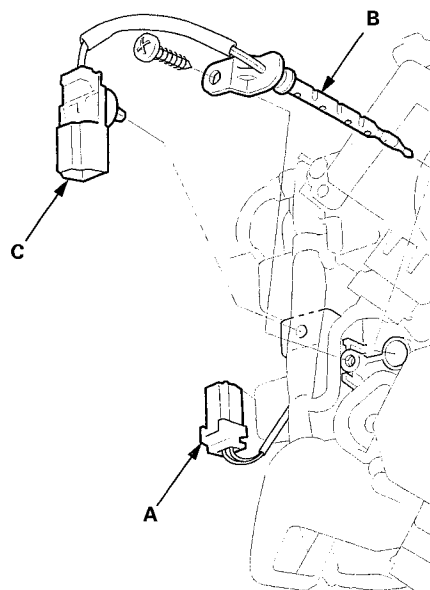
3. Pour warm water on the sensor, and measure the resistance.
4. Compare the resistance readings with the specifications shown in the graph; the resistance should be within the specifications.



5. If the resistance is not as specified, replace the evaporator temperature sensor (see page 21-97).

Evaporator Temperature Sensor Replacement

1. Remove the driver's dashboard undercover (see page 20-125).
2. Disconnect the 2P connector (A) from the evaporator temperature sensor (B) by pressing the lock tab toward the evaporator housing, then slide the male coupler down, and remove the connector clip (C). Remove the self-tapping screw and the evaporator temperature sensor.



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

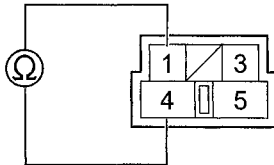
Climate Control

Power Transistor Test

1. Remove the passenger's dashboard undercover (see page 20-125).
2. Disconnect the 5P connector from the power transistor.
3. Measure the resistance between terminals No. 1 and No. 4 of the power transistor. It should be about 1.5 k Ω .
 - If the resistance is within the specifications, go to step 4.
 - If the resistance is not within the specifications, replace the power transistor.

NOTE: Also check the blower motor. Power transistor failure can be caused by a defective blower motor.

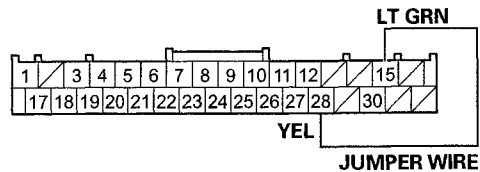
POWER TRANSISTOR



4. Reconnect the 5P connector to the power transistor.
5. Disconnect climate control unit connector A (32P)

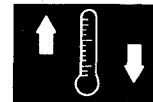
6. Connect climate control unit connector A (32P) terminals No. 15 and No. 28 with a jumper wire.

CLIMATE CONTROL UNIT CONNECTOR A (32P)



Wire side of female terminals

7. Turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode, and check that the blower motor runs.
 - If the blower motor does not run, replace the power transistor.
- NOTE: A faulty blower motor can cause the power transistor to fail. If the power transistor is replaced, also check the blower motor for binding, and replace it if necessary.
- If the blower motor runs, the power transistor is OK.



Driver's Air Mix Control Motor Test

Special Tools Required

Backprobe Set 07SAZ-001000A (2)

NOTE: Before testing the motor, check for HVAC DTCs (see page 21-8).

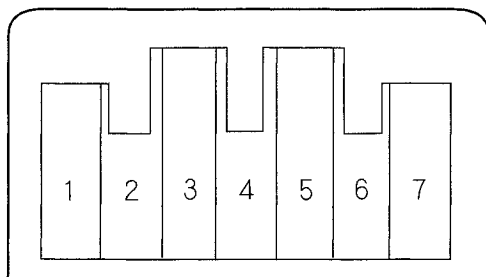
1. Disconnect the 7P connector from the driver's air mix control motor.

NOTICE

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

2. Connect battery power to terminal No. 1 of the driver's air mix control motor, and ground terminal No. 2 ; the driver's air mix control motor should run, and stop at Max Cool. If it doesn't, reverse the connections; the driver's air mix control motor should run, and stop at Max Hot. When the driver's air mix control motor stops running, disconnect battery power immediately.

DRIVER'S AIR MIX CONTROL MOTOR



3. If the driver's air mix control motor did not run in step 2, remove it, then check the driver's air mix control linkage and door for smooth movement.

- If the linkage and door move smoothly, replace the driver's air mix control motor (see page 21-100).
- If the linkage or door sticks or binds, repair them as needed.
- If the air mix control motor runs smoothly, go to step 4.

4. Measure the resistance between terminals No. 5 and No. 7 of the driver's air mix control motor. It should be between 4.2 and 7.8 k Ω .

5. Reconnect the air mix control motor 7P connector, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

6. Using the backprobe set (07SAZ-001000A), measure the voltage between terminals No. 3 and No. 7.

Max Cool: About 0.5 V

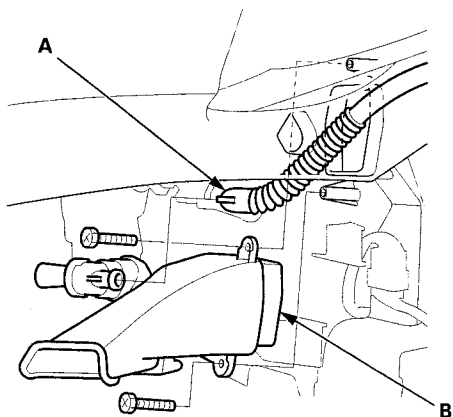
Max Hot: About 4.5 V

7. If either the resistance or the voltage readings are not as specified, replace the driver's air mix control motor (see page 21-100).

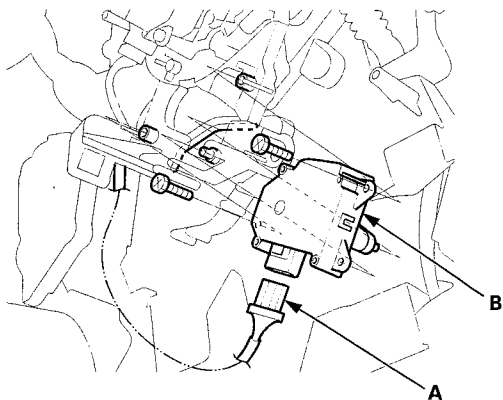
Climate Control

Driver's Air Mix Control Motor Replacement

1. Remove the driver's dashboard undercover (see page 20-118).
2. Remove the self-tapping screws, the air hose (A), and the driver's heater duct (B).



3. Disconnect the 7P connector (A) from the driver's air mix control motor (B). Remove the self-tapping screws and the driver's air mix control motor from the heater unit.



4. Install the motor in the reverse order of removal. Make sure the pin on the motor is properly engaged with the linkage. After installation, make sure the motor runs smoothly.

Passenger's Air Mix Control Motor Test

Special Tools Required

Backprobe Set 07SAZ-001000A (2)

NOTE: Before testing the motor, check for HVAC DTCs (see page 21-8).

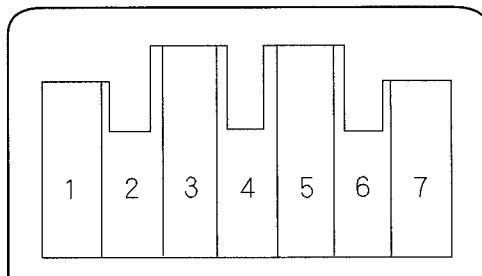
1. Disconnect the 7P connector from the driver's air mix control motor.

NOTICE

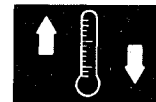
Incorrectly applying power and ground to the passenger's air mix control motor will damage it. Follow the instructions carefully.

2. Connect battery power to terminal No. 1 of the passenger's air mix control motor, and ground terminal No. 2; the passenger's air mix control motor should run, and stop at Max Cool. If it doesn't, reverse the connections; the passenger's air mix control motor should run, and stop at Max Hot. When the passenger's air mix control motor stops running, disconnect battery power immediately.

PASSENGER'S AIR MIX CONTROL MOTOR



3. If the passenger's air mix control motor did not run in step 2, remove it, then check the passenger's air mix control linkage and door for smooth movement.
 - If the linkage and door move smoothly, replace the passenger's air mix control motor (see page 21-101).
 - If the linkage or door sticks or binds, repair them as needed.
 - If the passenger's air mix control motor runs smoothly, go to step 4.



4. Measure the resistance between terminals No. 5 and No. 7 of the passenger's air mix control motor. It should be between 4.2 and 7.8 k Ω .

5. Reconnect the air mix control motor 7P connector, then turn the ignition switch to ON (II), or press the engine start/stop button to select the ON mode.

6. Using the backprobe set (07SAZ-001000A), measure the voltage between terminals No. 3 and No. 5.

Max Cool: About 1.5 V

Max Hot: About 4.5 V

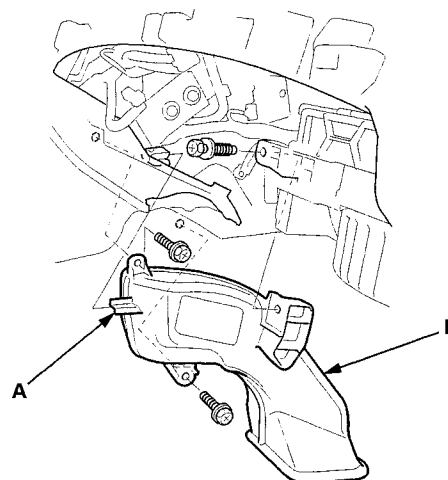
7. If either the resistance or the voltage readings are not as specified, replace the passenger's air mix control motor (see page 21-101).

Passenger's Air Mix Control Motor Replacement

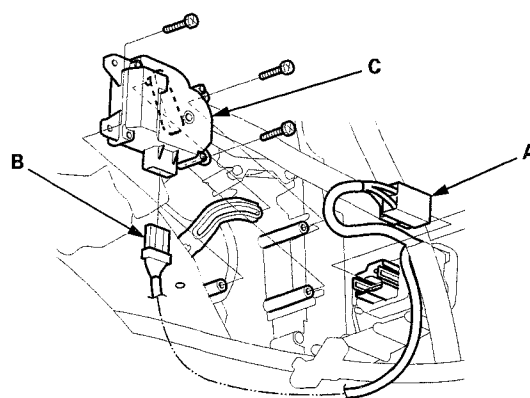
1. Remove the passenger's dashboard undercover (see page 20-125).

2. Remove the glove box (see page 20-123).

3. Release the wire from its harness clip (A), then remove the self-tapping screws and the passenger's heater duct (B).



4. Disconnect the 5P connector (A) from the power transistor, and the 7P connector (B) from the passenger's air mix control motor (C). Remove the self-tapping screws and the passenger's air mix control motor from the heater unit.



5. Install the motor in the reverse order of removal. Make sure the pin on the motor is properly engaged with the linkage. After installation, make sure the motor runs smoothly.

Climate Control

Driver's Mode Control Motor Test

NOTE: Before testing the motor, check for HVAC DTCs (see page 21-8).

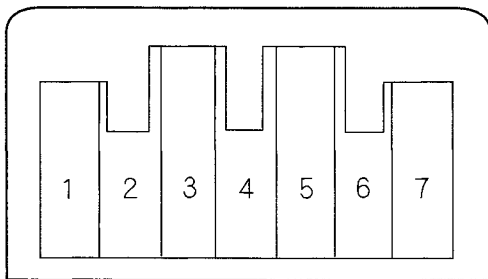
1. Disconnect the 7P connector from the driver's mode control motor.

NOTICE

Incorrectly applying power and ground to the driver's mode control motor will damage it. Follow the instructions carefully.

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

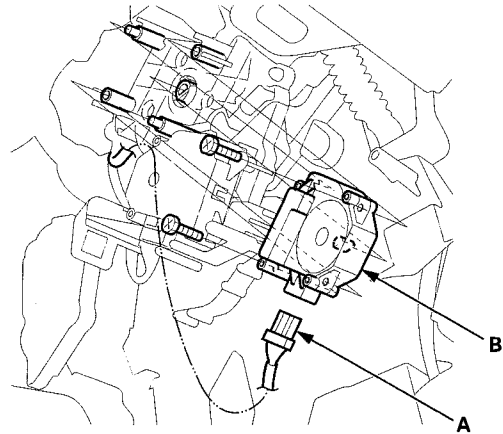
DRIVER'S MODE CONTROL MOTOR



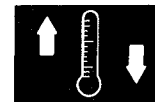
3. If the driver's mode control motor did not run in step 2, remove it, then check the mode control linkage and door for smooth movement.
 - If the linkage and door move smoothly, replace the driver's mode control motor (see page 21-102).
 - If the linkage or door sticks or binds, repair them as needed.
 - If the driver's mode control motor runs smoothly, go to step 4.
4. Use a digital multimeter with an output of 1 mA or less at the 20 k Ω range. Operate the driver's mode control motor as in step 2, and check for continuity between terminals No. 3, 4, 5, and 6 and terminal No. 7 individually. There should be continuity for a moment at each terminal as the motor moves through its travel.
5. If there is no continuity for a moment at each terminal, replace the driver's mode control motor (see page 21-102).

Driver's Mode Control Motor Replacement

1. Remove the driver's dashboard undercover (see page 20-118).
2. Disconnect the 7P connector (A) from the driver's mode control motor (B). Remove the self-tapping screws and the driver's mode control motor from the heater unit.



3. Install the motor in the reverse order of removal. Make sure the pin on the motor is properly engaged with the linkage. After installation, make sure the motor runs smoothly.



Passenger's Mode Control Motor Test

NOTE: Before testing the motor, check for HVAC DTCs (see page 21-8).

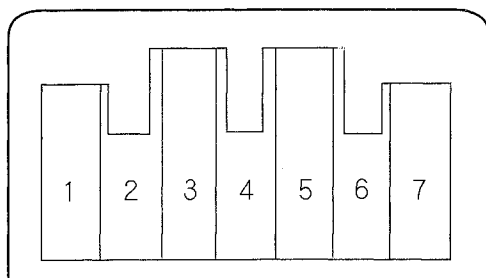
1. Disconnect the 7P connector from the passenger's mode control motor.

NOTICE

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

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

PASSENGER'S MODE CONTROL MOTOR

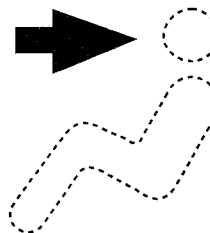


3. If the passenger's mode control motor did not run in step 2, remove it, then check the mode control linkage and door for smooth movement.
 - If the linkage and door move smoothly, replace the passenger's mode control motor (see page 21-103).
 - If the linkage or door sticks or binds, repair them as needed.
 - If the passenger's mode control motor runs smoothly, go to step 4.
4. Use a digital multimeter with an output of 1 mA or less at the 20 k Ω range. Operate the passenger's mode control motor as in step 2, and check for continuity between terminals No. 3, 4, 5, and 6 and terminal No. 7 individually. There should be continuity for a moment at each terminal as the motor moves through its travel.
5. If there is no continuity for a moment at each terminal, replace the passenger's mode control motor (see page 21-103).

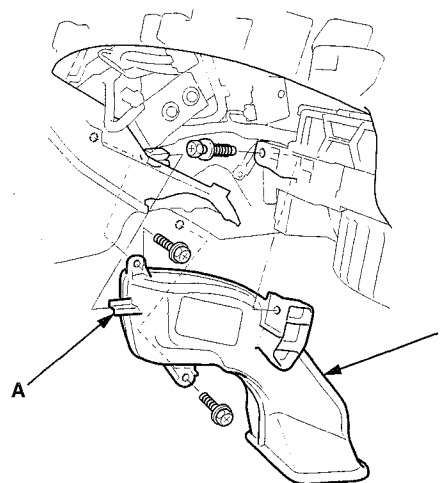
Passenger's Mode Control Motor Replacement

Removal

NOTE: Set the passenger's side climate control to the VENT position before removing the motor.



1. Remove the passenger's dashboard undercover (see page 20-125).
2. Remove the glove box (see page 20-123).
3. Remove the glove box frame (see step 4 on page 21-109).
4. Release the wire from its harness clip (A), then remove the self-tapping screws and the passenger's heater duct (B).

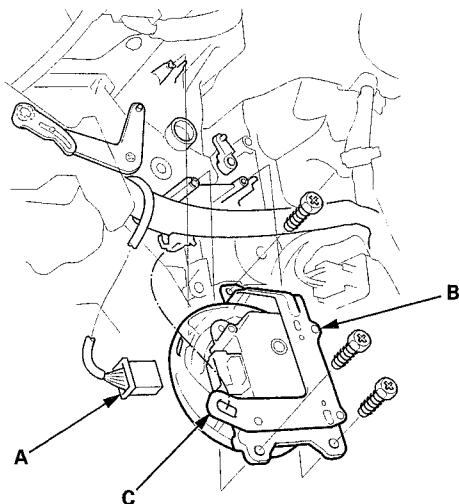


(cont'd)

Climate Control

Passenger's Mode Control Motor Replacement (cont'd)

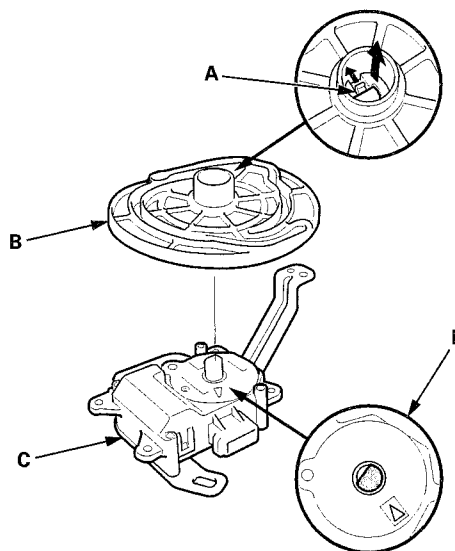
5. Disconnect the 7P connector (A) from the passenger's mode control motor (B). Release the wire from its harness clip (C), then remove the self-tapping screws and the passenger's mode control motor from the heater unit.



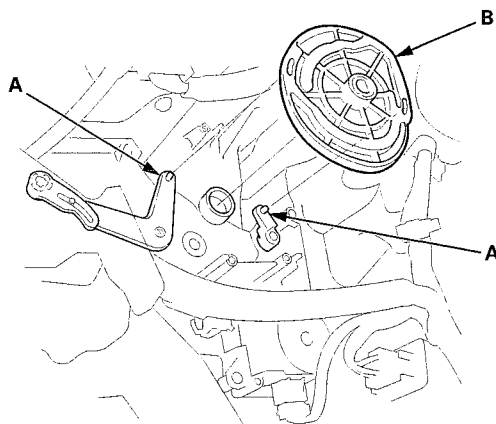
Installation

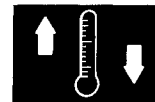
1. Release the lock (A), then remove the motor lever (B) from the mode control motor (C).

NOTE: Before installing the mode control motor, plug in the 7P connector, and set the passenger's side climate control mode to VENT. Check that the motor output shaft is lined up as indicated (D).



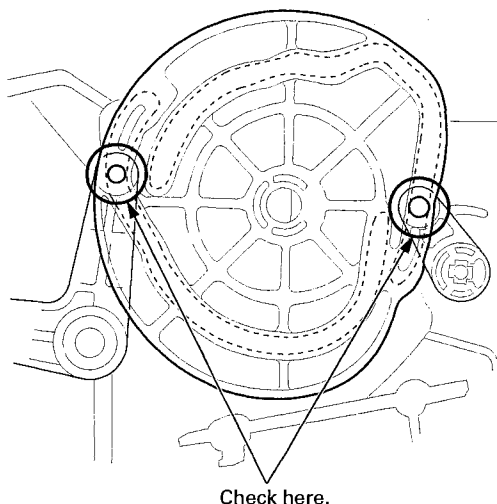
2. Align the position of the damper lever pins (A), then install the motor lever (B).



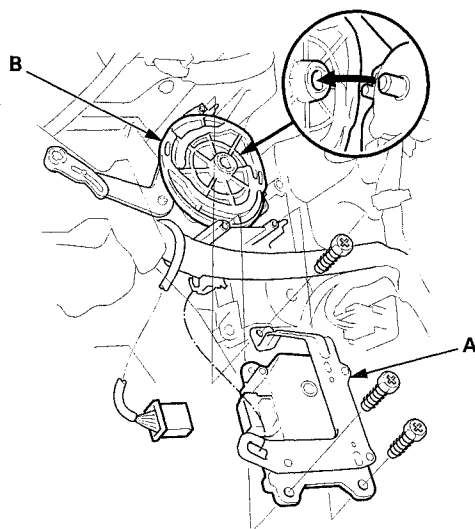


Recirculation Control Motor Test

3. Make sure the damper lever pins in the motor lever are visible through the holes.



4. Install the mode control motor (A) while holding the motor lever (B).



5. After installation, make sure the motor runs smoothly.

NOTE: Before testing the motor, check for HVAC DTCs (see page 21-8).

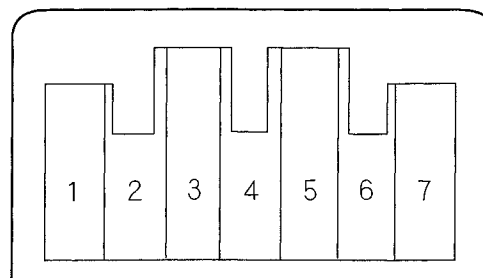
1. Disconnect the 7P connector from the recirculation control motor.

NOTICE

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

2. Connect battery power to terminal No. 1 of the recirculation control motor, and ground terminal No. 2; the recirculation control motor should run smoothly, and stop at Recirculate. If it doesn't, reverse the connections; the recirculation control motor should run smoothly, and stop at Fresh. When the recirculation control motor stops running, disconnect battery power immediately.

RECIRCULATION CONTROL MOTOR



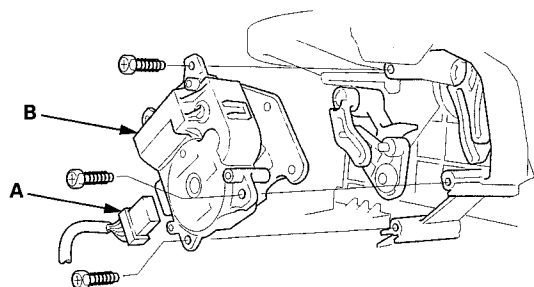
3. If the recirculation control motor did not run in step 2, remove it, then check the recirculation control linkage and door for smooth movement.
- If the linkage and door move smoothly, replace the recirculation control motor (see page 21-106).
 - If the linkage or door stick or bind, repair them as needed.
 - If the recirculation control motor runs smoothly, go to step 4.
4. Use a digital multimeter with an output of 1 mA or less at the 20 k Ω range. Operate the recirculation control motor running as in step 2, and check for continuity between terminals No. 3, 4, and 5 and terminal No. 7 individually. There should be continuity for a moment at each terminal as the motor through its travel.
5. If there is no continuity for a moment at each terminal, replace the recirculation control motor (see page 21-106).

Climate Control

Recirculation Control Motor Replacement

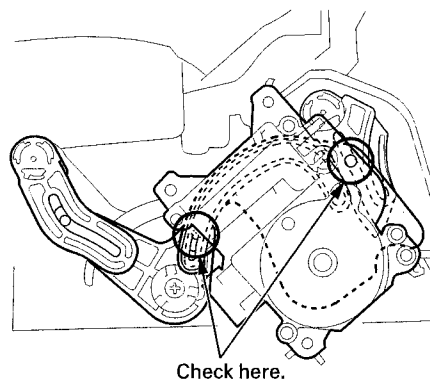
Removal

1. Remove the passenger's dashboard undercover (see page 20-125).
2. Remove the glove box (see page 20-123).
3. Remove the climate control unit (see page 21-107).
4. Disconnect the 7P connector (A) from the recirculation control motor (B). Remove the self-tapping screws and the recirculation control motor from the blower unit.

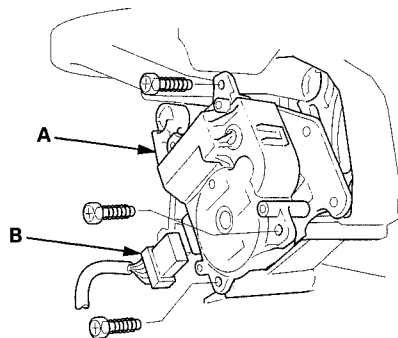


Installation

1. Make sure the damper lever pins in the motor lever are visible through the holes.



2. While holding the recirculation control motor (A), install the self-tapping screws and connect the 7P connector (B).

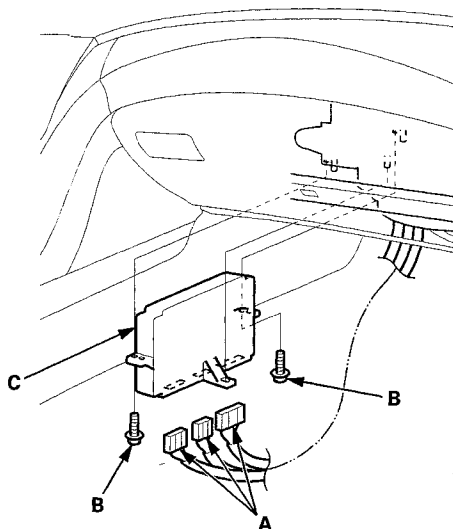


3. Reinstall the climate control unit.
4. After installation, make sure the motor runs smoothly.



Climate Control Unit Removal/Installation

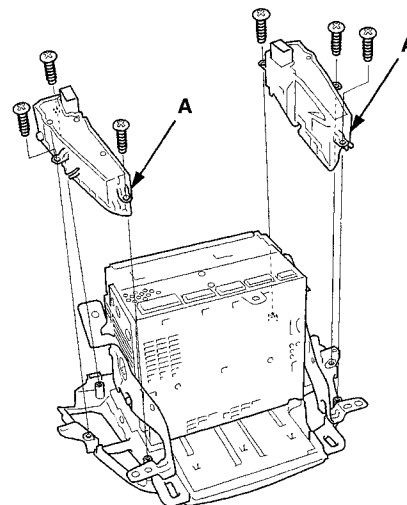
1. Remove the passenger's dashboard undercover (see page 20-125).
2. Disconnect the connectors (A). Remove the bolts (B) and the climate control unit (C).



3. Install the climate control unit in the reverse order of removal. After installation, operate the various functions to make sure they work properly.
4. Run the self-diagnostic function to confirm that there are no problems in the system (see page 21-9).

Climate Control Switch Removal/Installation

1. Remove the audio-navigation unit (with navigation) (see page 23-287), or the audio unit (without navigation) (see page 23-148).
2. Remove the self-tapping screws and the climate control switches (A).

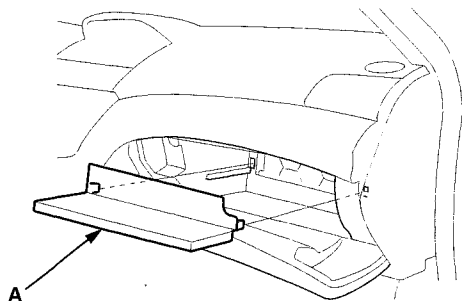


3. Install the control switches in the reverse order of removal. After installation, operate the various functions to make sure they work properly.

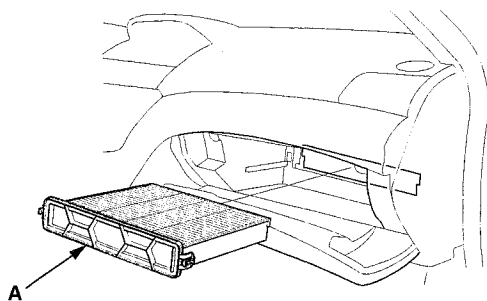
Climate Control

Dust and Pollen Filter Replacement

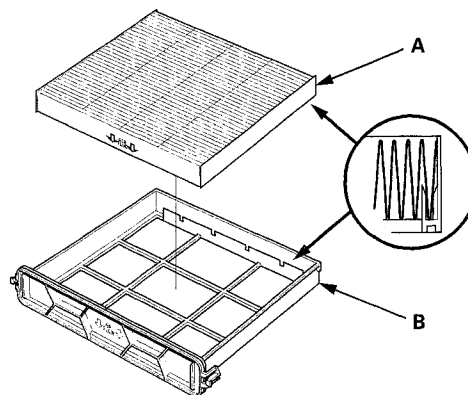
1. Open the glove box. Remove the glove box separator (A) by carefully pulling it straight back.



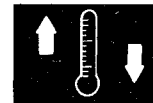
2. Remove the dust and pollen filter assembly (A) from the blower unit.



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

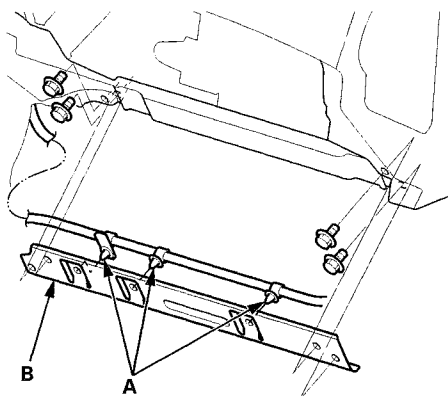


4. Install the filter in the reverse order of removal. Make sure that there is no air leaking out of the blower unit.

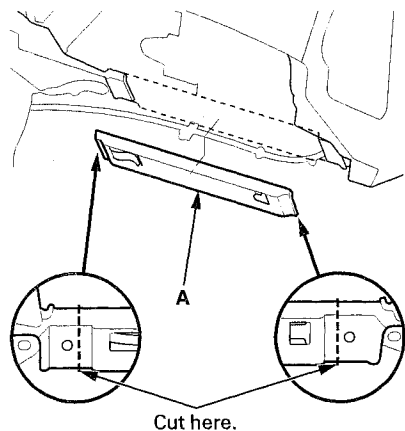


Blower Unit Removal/Installation

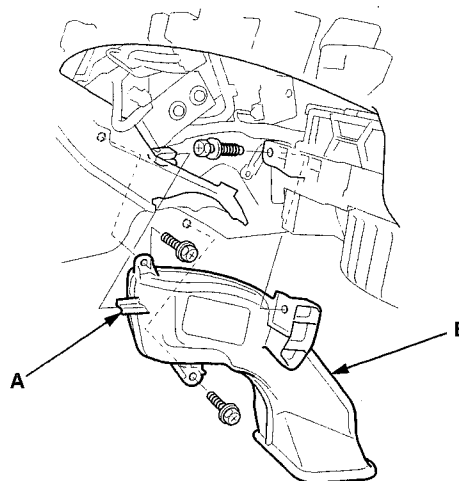
1. Remove the passenger's dashboard undercover (see page 20-125).
2. Remove the passenger's dashboard trim (see page 20-122).
3. Remove the glove box (see page 20-123).
4. Remove the harness clips (A), the bolts, and the glove box frame (B).



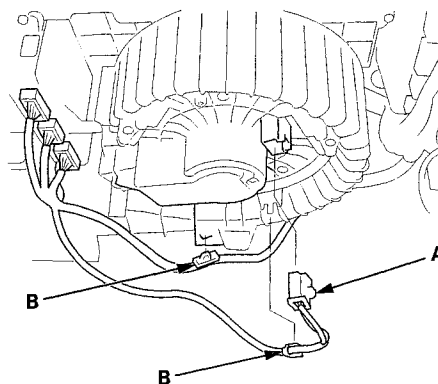
5. Cut the plastic cross brace (A) in the glove box opening with diagonal cutters in the area shown, and discard it.



6. Release the wire from its harness clip (A), then remove the self-tapping screws, and the passenger's heater duct (B).



7. Disconnect the connector (A) from the blower motor, and detach the wire harness clips (B).

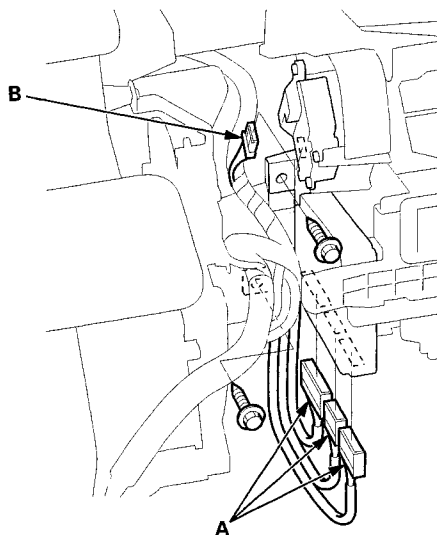


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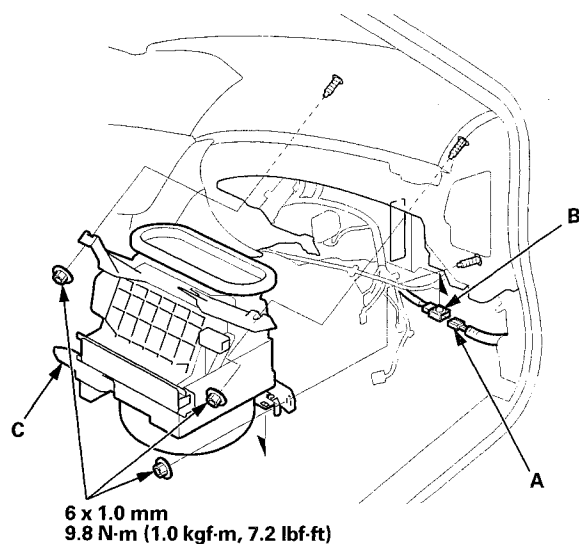
Climate Control

Blower Unit Removal/Installation (cont'd)

8. Remove the self-tapping screws and disconnect the climate control unit connector (A), and recirculation control motor connector (B).



9. Disconnect the right engine compartment harness connector (C205) (A) and harness clips (B). Remove the mounting nuts, and the blower unit (C).

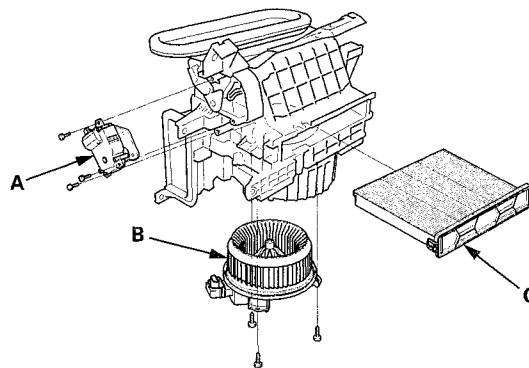


10. Install the unit in the reverse order of removal. Make sure that there are no air leaks.

Blower Unit Component Replacement

Note these items when overhauling the blower unit:

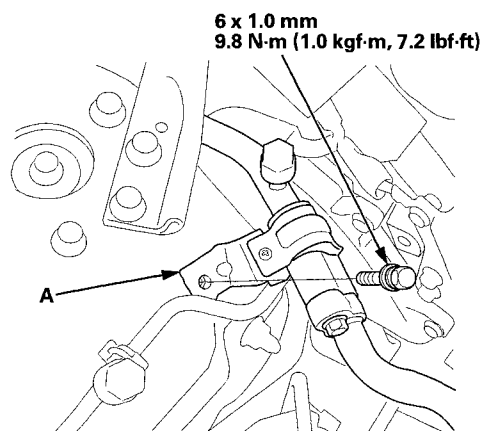
- The recirculation control motor (A), the blower motor (B), and the dust and pollen filter (C) can be replaced without removing the blower unit.
- Before reassembly, make sure that the recirculation control linkage and door move smoothly without binding.
- After reassembly, make sure the recirculation control motor runs smoothly (see page 21-105).



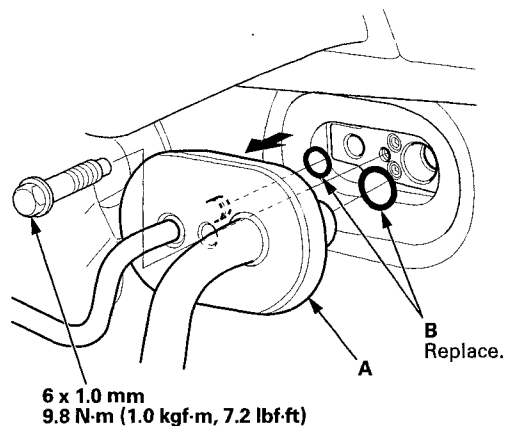


Evaporator Core Replacement

1. Recover the refrigerant with a recovery/recycling/charging station (see page 21-122).
2. Remove the bolt from the A/C line clamp (A).

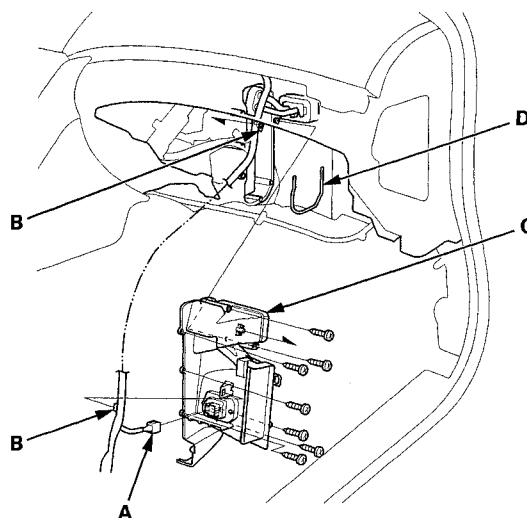


3. Remove the bolt, then disconnect the A/C line (A) from the evaporator core. Replace the O-rings (B).



4. Remove the blower unit (see page 21-109).

5. Disconnect the power transistor connector (A). Detach the harness clip (B). Remove the self-tapping screws, the joint duct (C), and the seal (D).



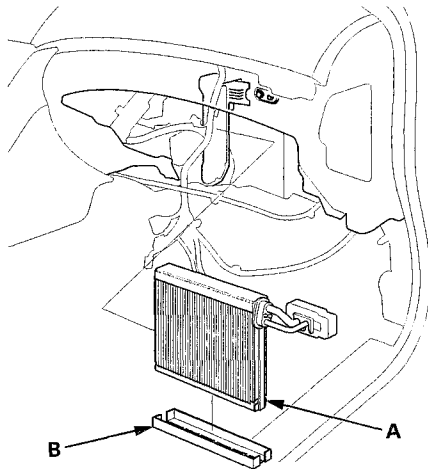
(cont'd)

Climate Control

Evaporator Core Replacement (cont'd)

6. Carefully pull out the evaporator core (A) without bending the lines, then remove the plate (B).

NOTE: Be careful not to damage the wire harness.

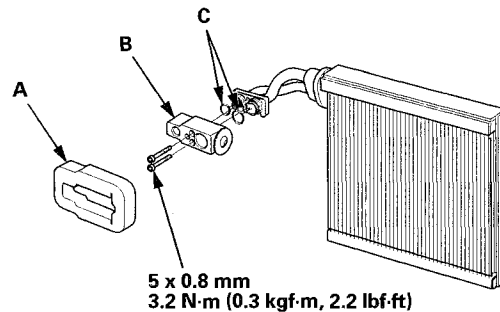


7. Install the core in the reverse order of removal, and note these items:

- If you're installing a new evaporator core, add refrigerant oil (DENSO ND-OIL 8) (see page 21-5).
- 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 correct 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.
- Make sure that there is no air leakage.
- Charge the system (see page 21-123).

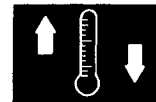
Expansion Valve Replacement

1. Remove the evaporator core (see page 21-111).
2. Remove the insulator (A) and bolts, then remove the expansion valve (B) and O-rings (C).



3. Install the expansion valve in the reverse order of removal, and note these items:

- 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 correct 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.
- Make sure that there are no air leaks.
- Charge the system (see page 21-123).

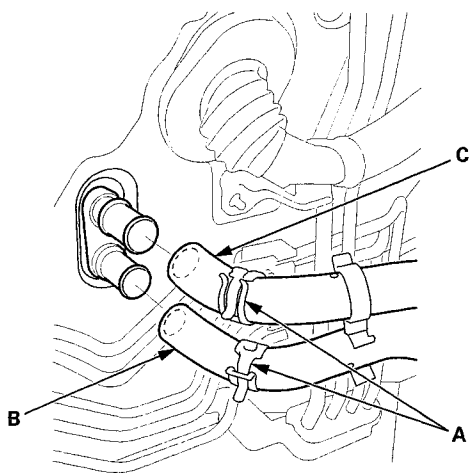


Heater Unit/Core Replacement

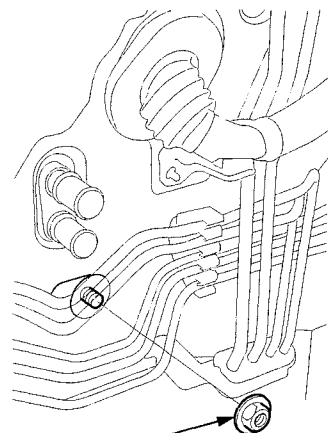
SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or service.

1. Do the battery terminal disconnection procedure (see page 22-86).
2. Recover the refrigerant with a recovery/recycling/charging station (see page 21-122).
3. Disconnect the A/C line from the evaporator core (see page 21-111).
4. When the engine is cool, drain the engine coolant from the radiator (see page 10-6).
5. From under the hood, slide the hose clamps (A) back. Disconnect the inlet heater hose (B) and the outlet heater hose (C) from the heater unit. Note the layout of the hoses.

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.

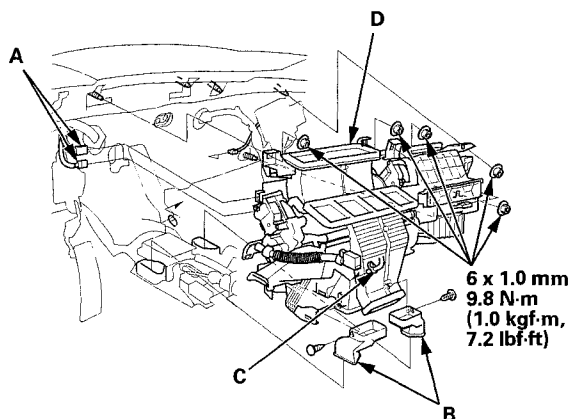


6. Remove the mounting nut from the heater unit. Take care not to damage or bend the fuel lines or the brake lines.



8 x 1.25 mm
12.3 N·m (1.3 kgf·m, 9.0 lbf·ft)

7. Remove the dashboard (see page 20-128).
8. Disconnect the left engine compartment wire harness connectors (C301 and 302) (A). Remove the ducts (B), and the drain hose (C). Then remove the mounting nuts, and the blower-heater unit (D).



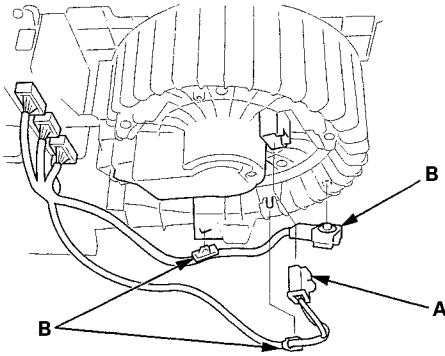
6 x 1.0 mm
9.8 N·m
(1.0 kgf·m,
7.2 lbf·ft)

(cont'd)

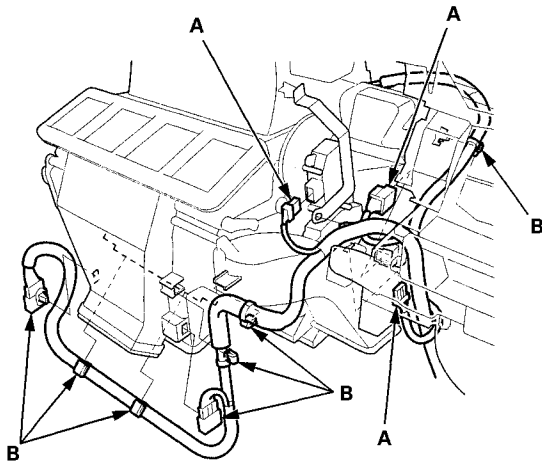
Climate Control

Heater Unit/Core Replacement (cont'd)

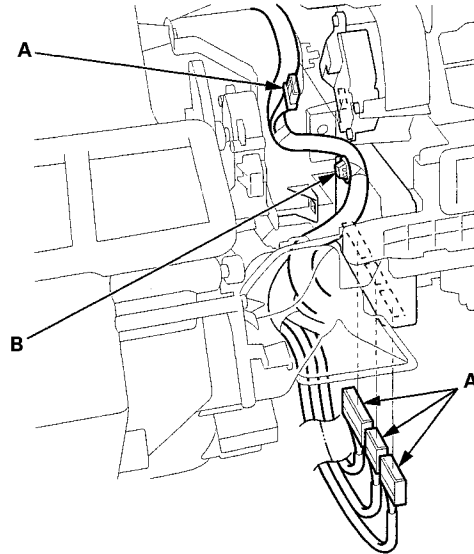
9. Disconnect the connector (A) from the blower motor. Remove the wire harness clips (B).



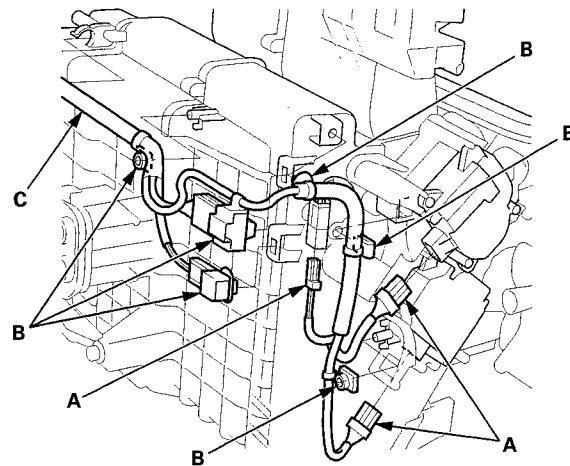
10. Disconnect these connectors (A): The passenger's mode control motor, the power transistor, and the passenger's air mix control motor. Detach the harness clips (B).



11. Disconnect these connectors (A): The recirculation control motor, and the climate control unit. Detach the harness clip (B).



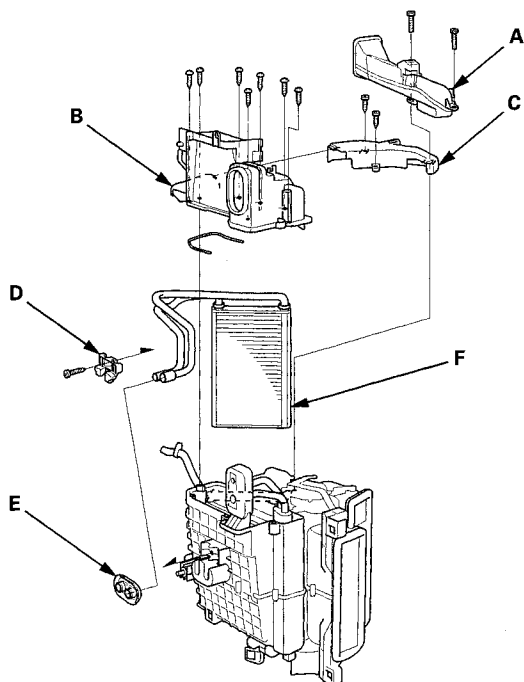
12. Disconnect these connectors (A): the driver's air mix control motor, the driver's mode control motor, and evaporator temperature sensor. Detach the harness clips (B) and the wire harness (C).





A/C Compressor Replacement

13. Remove the self-tapping screws and the passenger's heater duct (A). Remove the self-tapping screws and the joint duct (B). Remove the self-tapping screw and the heater core cover (C). Remove the self-tapping screw, the heater pipe bracket (D), and the grommet (E), and carefully pull out the heater core (F).



14. Install the heater core in the reverse order of removal.

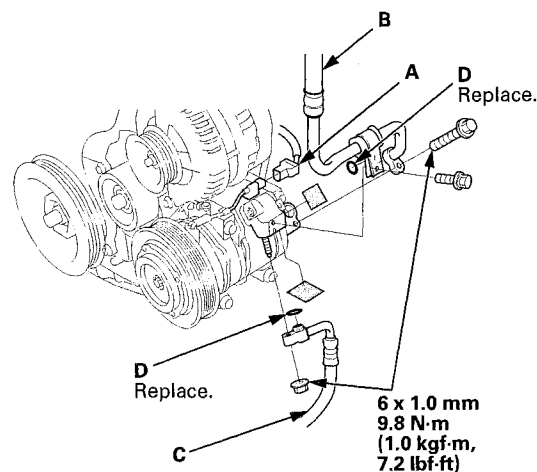
15. Install the heater unit in the reverse order of removal, and note these items:

- 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).
- Make sure that there is no coolant leakage.
- Make sure that there is no air leakage.
- Charge the system (see page 21-123).

16. Do the battery terminal reconnection procedure (see page 22-86).

NOTE: Do not install the A/C compressor into a system unless you are completely sure that the system is free of contamination. Installing the A/C compressor into a contaminated system can result in premature A/C compressor failure.

1. If the A/C 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. Recover the refrigerant with a recovery/recycling/charging station (see page 21-122).
3. Remove the drive belt (see page 4-44).
4. Remove the A/C condenser fan (see page 10-10).
5. Disconnect the A/C compressor clutch connector (A). Remove the bolts and the nut, then disconnect the suction hose (B) and the discharge hose (C) from the A/C compressor. Remove the O-rings (D). Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.



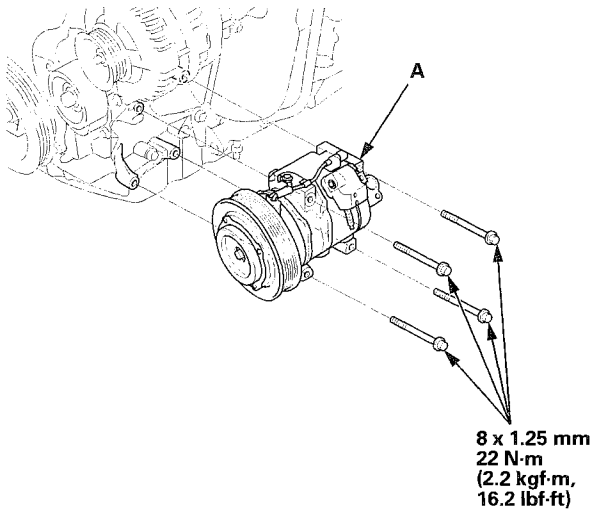
6. Raise the vehicle on a lift, then remove the front splash shield (see page 20-205).

(cont'd)

Climate Control

A/C Compressor Replacement (cont'd)

7. Remove the mounting bolts and the A/C compressor (A). Be careful not to damage the radiator fins when removing the A/C compressor.

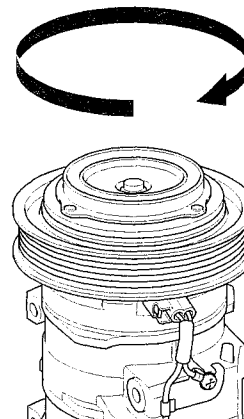


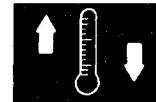
8. Install the A/C compressor in the reverse order of removal, and note these items:
- Inspect the A/C lines for any signs of contamination.
 - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
 - Use only refrigerant oil (DENSO ND-OIL 8) for HFC-134a DENSO A/C compressors 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 A/C compressor and the A/C condenser fan shroud.
 - Charge the system (see page 21-123).

A/C Compressor Clutch Check

1. Check the pressure plate for discoloration, peeling, or other damage. If there is damage, replace the clutch set (see page 21-117).
2. Check the pulley bearing play and drag by rotating the pulley by hand. Also check for grease leakage from the bearing. Replace the clutch set with a new one if it is noisy, has excessive play/drag, or has bearing grease contamination on the clutch faces (see page 21-117).

NOTE: The pulley and the pressure plate were mated at the factory by a burnishing operation. Always replace the pulley and the pressure plate as a set. Replacing only one part of the clutch set will cause clutch slippage.



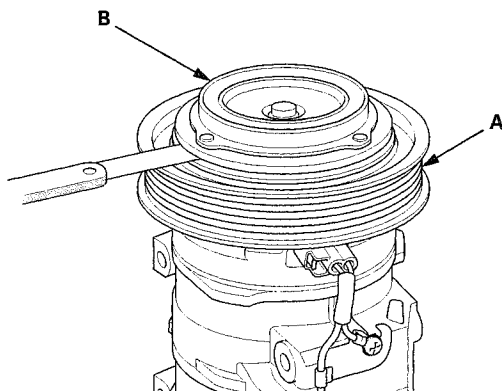


A/C Compressor Clutch Overhaul

3. Measure the clearance between the rotor pulley (A) and the pressure plate (B) all the way around. If the clearance is not within specified limits, remove the pressure plate (see page 21-117) and add or remove shims as needed to increase or decrease clearance.

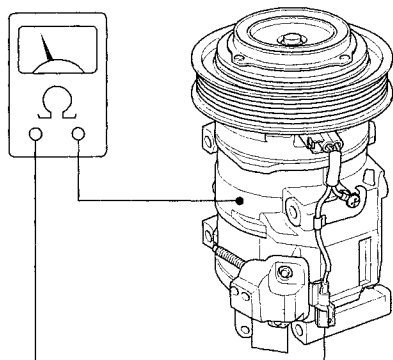
Clearance: 0.35—0.60 mm (0.014—0.024 in)

NOTE: The shims are available in three thicknesses: 0.1 mm, 0.3 mm, and 0.5 mm.



4. Remove the pressure plate (see page 21-117), and inspect the pressure plate and pulley friction surface for wear. If there is excessive wear, roughness, or scoring, replace the clutch set.
5. Inspect the friction surfaces and the A/C compressor shaft hub for excess oil. If excess oil is present, and it is not from the engine or power steering system, then the A/C compressor shaft seal is leaking. In that case, replace the A/C compressor (see page 21-115).
6. Check the resistance of the field coil. If resistance is not within specifications, replace the field coil (see page 21-117).

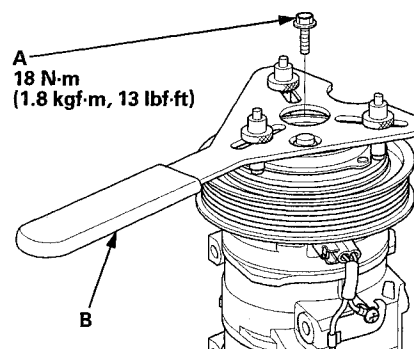
Field Coil Resistance: 3.9—4.3 Ω at 68 °F (20 °C)



Special Tools Required

- A/C Clutch Holder Robinair 10290 or Kent-Moore J37872, commercially available
- A/C Clutch Holder Honda Tool and Equipment ACT499A, commercially available

1. Remove the center bolt (A) while holding the pressure plate with a commercially available A/C clutch holder (B).



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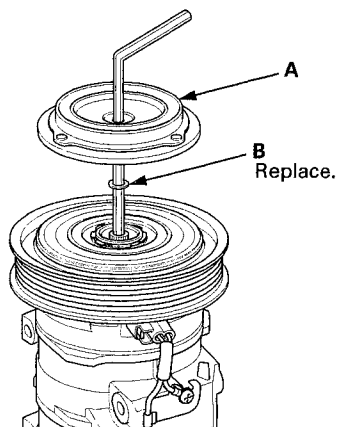
Climate Control

A/C Compressor Clutch Overhaul (cont'd)

2. Remove the pressure plate (A) and the 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 pressure plate, and recheck its clearance (see page 21-116).

NOTE:

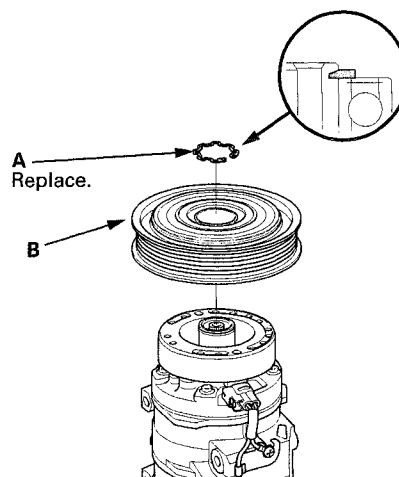
- The shims are available in three thicknesses: 0.1 mm, 0.3 mm, and 0.5 mm.
- Do not pry on the pressure plate with screwdrivers or similar tools. Prying damages the pressure plate and the pulley.
- When replacing the clutch set, place a trial stack of shims, 1 mm total thickness, on the A/C compressor shaft. Install the pressure plate, and check its clearance (see page 21-116). If the clearance is not with specification, add or subtract shims as needed.

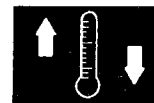


3. If you are replacing the field coil, remove the snap ring (A) with snap ring pliers, then remove the pulley (B). Be careful not to damage the pulley or the A/C compressor.

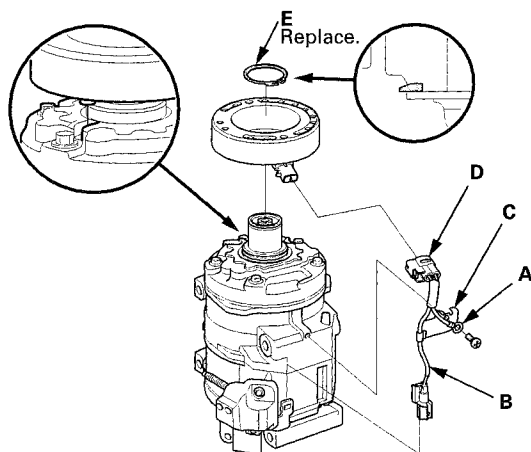
NOTE:

- Do not use a hammer to remove the snap rings. Using a hammer damages the A/C compressor.
- Do not hammer or pry on the pulley to remove it. If the pulley is difficult to remove, use a commercially available pulley removing tool. Make sure the jaws of the pulling tool engage the back face of the pulley, not the pulley grooves.





4. Remove the screw from the field coil ground terminal (A), then remove the wire harness (B) and the bracket (C). Disconnect the field coil connector (D). Remove the snap ring (E) with snap ring pliers, then remove the field coil (F). Be careful not to damage the field coil or the A/C compressor.



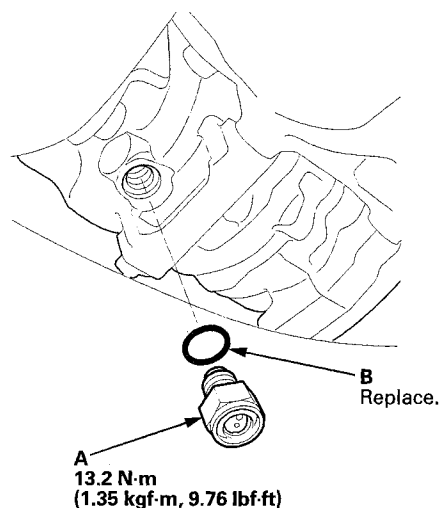
5. Reassemble the clutch in the reverse order of disassembly, and note these items:

- When replacing the field coil, check that the new coil has the correct resistance (see step 6 on page 21-117).
 - Install the field coil with the wire side facing down, and align the boss on the field coil with the hole in the A/C compressor.
 - Clean the pulley and A/C 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 grooves.
 - Make sure that the pulley turns smoothly after it's reassembled.
 - Route and clamp the wires properly to prevent damage by the pulley.
6. Cycle the A/C clutch approximately 20 times by running the engine at 1,500–2,000 rpm and setting the climate control temperature to Lo with the A/C button ON. This procedure seats the clutch friction surfaces, and increases clutch torque capacity.

A/C Compressor Relief Valve Replacement

NOTE: If the A/C compressor relief valve released refrigerant to the atmosphere, determine and correct the cause of the excessive system pressure, then replace the relief valve.

1. Recover the refrigerant with a recovery/recycling/charging station (see page 21-122).
2. Remove the relief valve (A) and the O-ring (B). Plug the opening to keep foreign matter from entering the system, and the A/C compressor oil from running out.

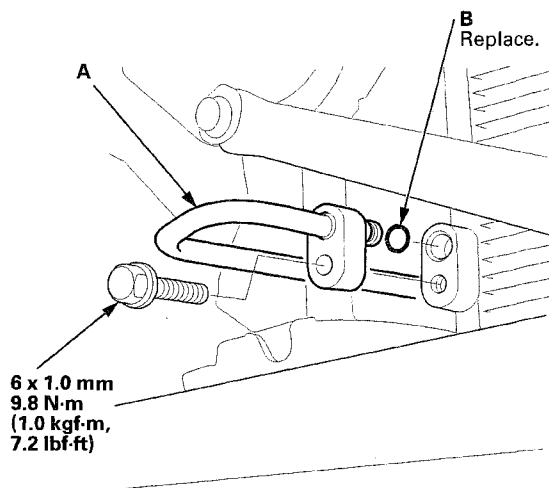


3. Clean the mating surfaces.
4. Replace the O-ring with a new one, and apply a thin coat of refrigerant oil before installing it.
5. Remove the plug you installed in step 2, then install and tighten the relief valve.
6. Charge the system (see page 21-123).

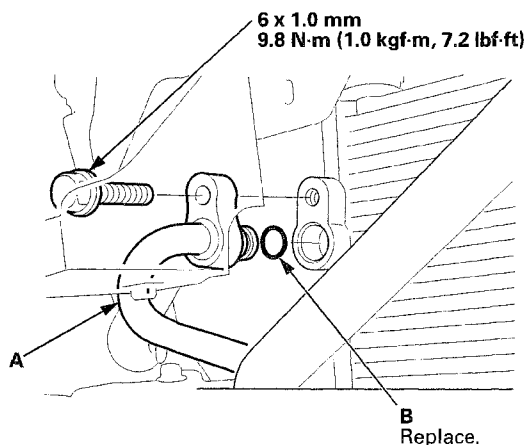
Climate Control

A/C Condenser Replacement

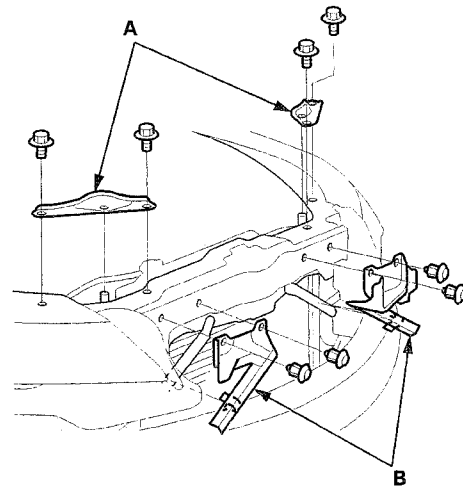
1. Recover the refrigerant with a recovery/recycling/charging station (see page 21-122).
2. Remove the front bumper (see page 20-164).
3. Remove the intake duct (see page 11-425).
4. Do the battery terminal disconnection procedure (see page 22-86).
5. Remove the bolt, then disconnect the receiver line (A) from the A/C condenser. Remove the O-ring (B).



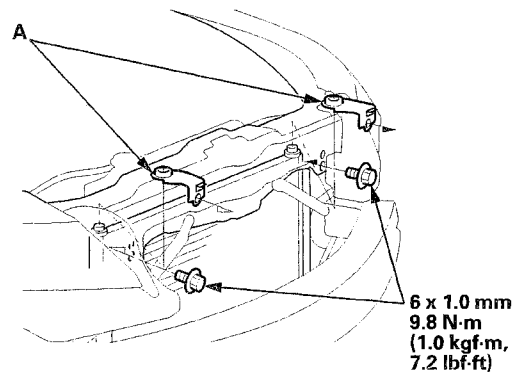
6. Remove the bolt, then disconnect the discharge hose (A) from the A/C condenser. Remove the O-ring (B).

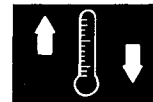


7. Remove the bolts and the radiator upper mount brackets (A). Remove the clips and the front bulkhead brace cover (B).

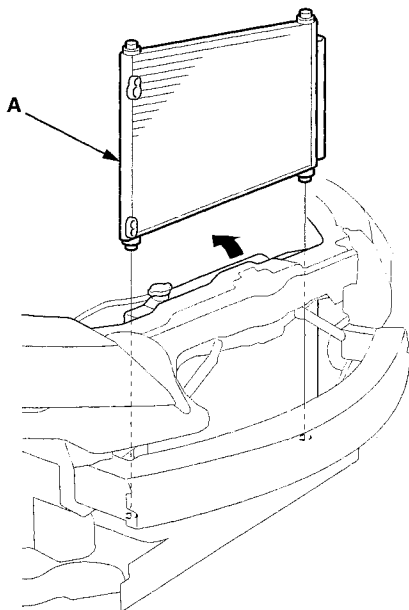


8. Remove the bolts and the A/C condenser upper mount brackets (A).





9. Remove the A/C condenser (A) by lifting it up. Be careful not to damage the radiator or the A/C condenser fins when removing the A/C condenser.

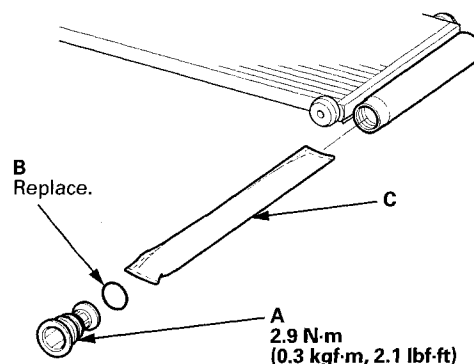


10. Install the A/C condenser in the reverse order of removal, and note these items:
- If you're installing a new A/C condenser, add refrigerant oil (DENSO ND-OIL 8) (see page 21-5).
 - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the correct 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 or the A/C condenser fins when installing the A/C condenser.
 - Charge the system (see page 21-123).
11. Do the battery terminal reconnection procedure (see page 22-86).

Receiver/Dryer Desiccant Replacement

NOTE: Install the receiver/dryer as quickly as possible to prevent the system from absorbing moisture from the air.

1. Remove the A/C condenser (see page 21-120).
2. Remove the cap (A) from the bottom of the A/C condenser. Remove the O-ring (B) and the desiccant (C).



3. Install the receiver/dryer 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 (DENSO ND-OIL 8) before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
 - Install the cap to the specified torque. It is made of plastic and can be easily stripped.

Climate Control

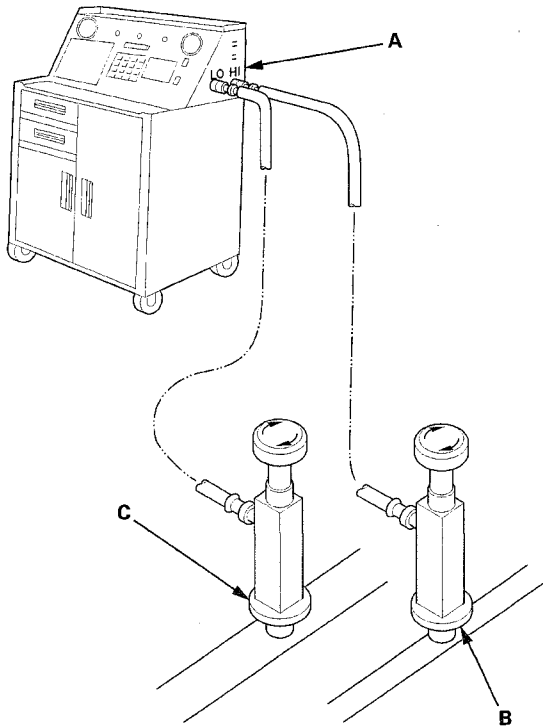
Refrigerant Recovery

⚠ 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.

NOTE:

- If accidental system discharge occurs, ventilate the work area before resuming service.
 - Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.
1. Connect an 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.

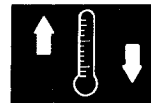
System Evacuation

⚠ 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.

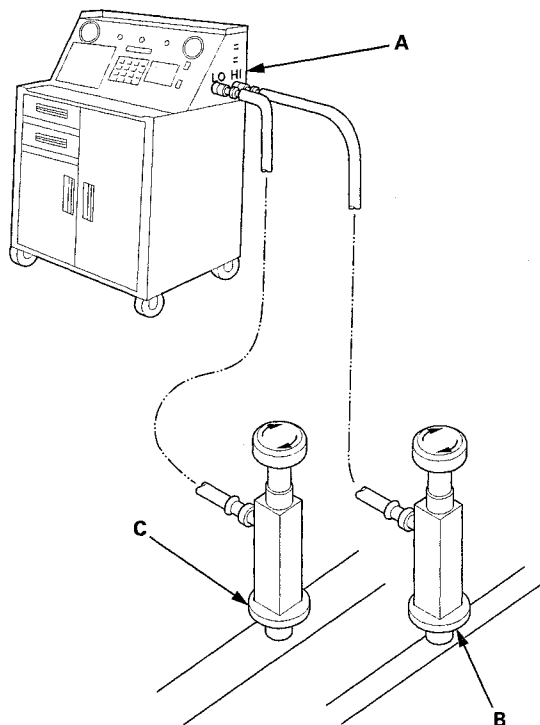
NOTE:

- If accidental system discharge occurs, ventilate the work area before resuming service.
 - Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.
 - Do not allow moisture to contaminate the A/C system oil. Moisture in the oil is difficult to remove, and it can damage the A/C compressor.
1. When an A/C System has been opened to the atmosphere, such as during installation or repair, it must be evacuated using an R-134a refrigerant recovery/recycling/charging station. If the system has been open for several days, replace the receiver/dryer, drain the refrigerant oil, and add fresh oil (see page 21-5). then evacuate the system for several hours before charging it.



System Charging

2. Connect an 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. Recover the refrigerant, if any, from the A/C system (see page 21-122).



3. Evacuate the system. The vacuum pump should run for a minimum of 45 minutes to eliminate all moisture from the system. When the suction gauge reads -93.3 kPa (-700 mmHg , -27.6 inHg) for at least 45 minutes, close all valves, and turn off the vacuum pump.
4. If the suction gauge does not reach approximately -93.3 kPa (-700 mmHg , -27.6 inHg) in 15 minutes, there is probably a leak in the system. Partially charge the system, and check for leaks (see page 21-124).

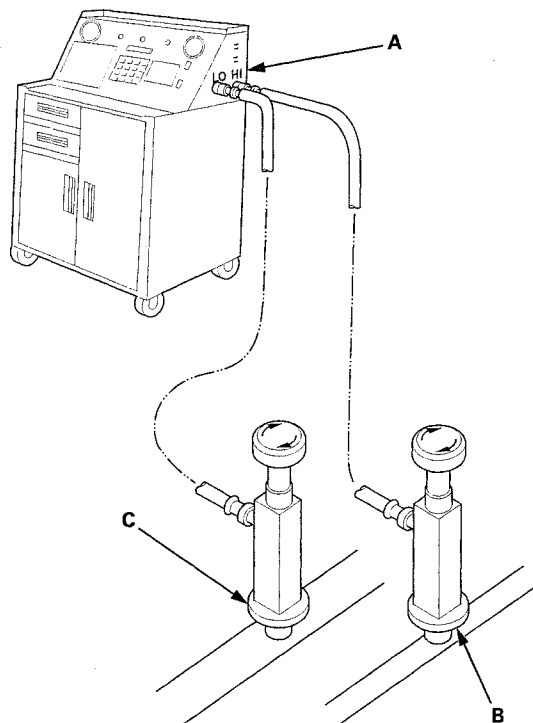
CAUTION

- 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.

NOTE:

- If accidental system discharge occurs, ventilate the work area before resuming service.
- Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. Connect an 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.



(cont'd)

Climate Control

System Charging (cont'd)

2. Recover the refrigerant in the A/C system (see page 21-122).
3. Evacuate the system (see page 21-122). If the system cannot reach a vacuum of -93.3 kPa (-700 mmHg, -27.6 inHg) in 15 minutes, or cannot hold a vacuum for at least 15 minutes, there is probably a leak. Do the refrigerant leak check (see page 21-124), and repair any leaks before charging the system.
4. Add the same amount of new refrigerant oil to the system that was removed during recovery. Use only DENSO ND-OIL 8 refrigerant oil.
5. Charge the system with the specified amount of R-134a refrigerant. Do not overcharge the system; the A/C compressor will be damaged.

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

Refrigerant Capacity:
500–550 g (17.6–19.4 oz)
0.50 to 0.55 kg
1.1 to 1.2 lbs

6. Check for refrigerant leaks (see page 21-124).
7. Check the system performance (see page 21-131).

Refrigerant Leak Check

Special Tools Required

- Leak Detector YGK-H-10PM*
- Leak Detector HLD-100*
- Leak Detector TIFZX-1*
- OPTIMAX Jr. A/C Leak Detection Kit TRP124893*

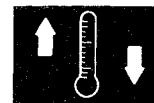
*: These tools are available through the Honda Tool and Equipment Program; call 888-424-6857

⚠ 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.

NOTE:

- If accidental system discharge occurs, ventilate the work area before resuming service.
- Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.
- Check the system for leaks using an R-134a refrigerant leak detector with an accuracy of 14 g (0.5 oz) per year or better.



Leak Detector Usage Tips (Refer to the Operator's Manual for complete operating instructions)

- Position the vehicle in a wind-free work area. This will aid in detecting small leaks.
- When using the leak detector for the first time, allow it to warm up for 2 minutes with the probe in a clean atmosphere. This lets the temperature sensor in the detector stabilize.
- The calibration check should be done in the "Search 2" mode. Once that is done, the other check modes do not need calibrating.
- When leak checking through the HVAC module drain hose, avoid drawing water into the probe. Water can damage the internal pump and sensor.
- Avoid creasing the flexible probe extension. Creases can restrict air flow and give false readings.
- Because the detector recalibrates itself for ambient gases, it may be necessary to move the detector away from the leak to clear the sensor. Once the sensor has cleared, recheck the suspected leak.
- When removing the clear probe tip, be careful not to lose the flow ball.
- R-134a is heavier than air; always check below and to the sides of all potential leak sources.
- Halogen leak detectors are sensitive to chemicals: windshield washing solutions, solvents/cleaners, and some vehicle adhesives. Keep these chemicals out of the area when doing leak detection.

Fluorescent Dye Usage Tips

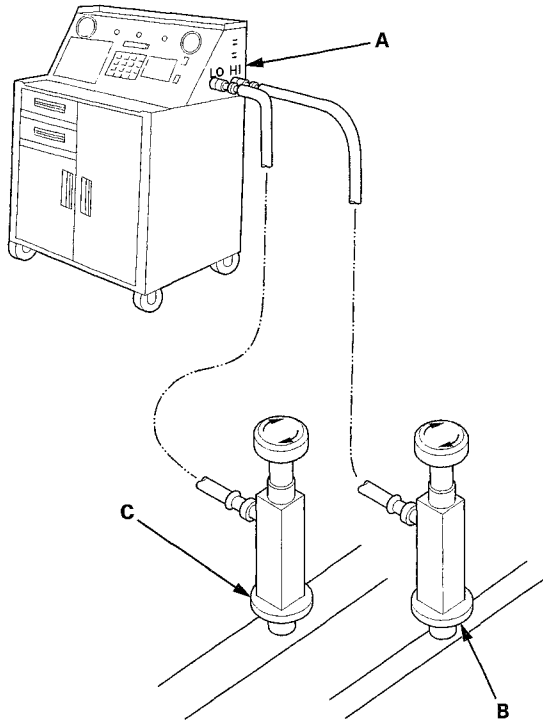
- Use only Tracer-Stick single dose fluorescent dye capsules from Tracerline®. Other dyes contain solvents that may contaminate the refrigerant oil, leading to component failure.
- Adding excessive amounts of dye can damage the A/C compressor.
- PAG oil is water soluble, so condensation on the evaporator core or the refrigerant lines may wash the PAG oil and fluorescent dye away from the actual leak. Condensation may also carry dye through the evaporator module drain.
- After checking and repairing leaks, thoroughly clean any residual dye from the areas where leaks were found. Use GLO-AWAY dye cleaner, from Tracerline®, and hot water to remove the dye (follow the instructions on the bottle). Residual dye stains can cause misdiagnosis of any future A/C system leaks.
- If any refrigerant dye contacts an exterior paint surface, remove it by doing this:
 - Carefully wash the affected surfaces to remove any dirt, and to prevent paint scratching.
 - Mix water and isopropyl alcohol in a 50/50 mixture.
 - Soak a soft cotton towel with the water/alcohol mixture, and place the cloth on the affected areas to remove the dye.
 - After removing the dye with the water/alcohol-soaked cloth, carefully wash the affected areas, and check that there is no remaining dye.

(cont'd)

Climate Control

Refrigerant Leak Check (cont'd)

1. Connect an 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. Recover refrigerant from the A/C system (see page 21-122), and evacuate the system (see page 21-122). If the system achieves a vacuum of approximately 93.3 kPa (700 mmHg, 27.6 inHg) in 15 minutes, and holds the vacuum for 15 minutes, then the system does not have a leak at this time. If the system cannot achieve or hold a vacuum, continue the refrigerant leak check.
3. Open the high pressure valve to charge the system to the specified capacity.

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

Refrigerant Capacity:
500—550 g (17.6—19.4 oz)
0.50 to 0.55 kg
1.1 to 1.2 lbs



4. With the engine OFF, use a halogen leak detector first to detect the leak source. Follow a continuous path in order to ensure that you will not miss any possible leaks. Test the following areas of the system for leaks:

Possible Leak Area	Diagnostic Procedure with the Leak Detector	Notes
Service Ports	• Check the service ports with the detector. • If the detector “sniffs” a leak, use fluorescent dye to confirm it.	When capping the service ports, ensure that the seals on the port caps are in place, and that the caps are tight. The caps are used as the final seals in the system.
A/C Condenser	If the detector “sniffs” a leak, use fluorescent dye to confirm it.	• Check for joints or connections coated with oily dust. • Check for damaged and corroded areas. • Check all fittings, couplings, brazed/welded areas and areas around attachment points. • Move the probe slowly (1 inch/second or less), and keep it within 1/4 inch of the component being checked. This maximizes the chance of detecting a leak. • If you detect a leak, blow compressed air over the area, then recheck for leaks. For large leaks, cleaning the area with compressed air may help you pinpoint the leak source.
A/C Lines	• Wiggle the rubber hoses when checking crimped metal ends. • If the detector “sniffs” a leak, use fluorescent dye to confirm it.	• Check all fittings, couplings, pressure switches, brazed/welded areas, and areas around attachment points on A/C lines and components. • Check for damaged and corroded areas. • Move the probe slowly (1 inch/second or less), and keep it within 1/4 inch of the component being checked. This maximizes the chance of detecting a leak.

5. Close the quick coupler valves, then disconnect the quick couplers from the vehicle service ports.
6. Attach the universal connect set, from the Optimax Jr. Leak Detection Kit, to the service valve fitting. Close the control valve (the black knob on the connect set).
7. Attach the charging station low pressure hose quick coupler to the service valve fitting, and open the quick coupler valve. Evacuate the connect set using the charging station vacuum pump, then close the quick coupler valve.
8. Detach the universal connect set, and install a Tracer-Stick® dye capsule between the connect set and the service valve fitting (see the manufacturer's instructions for more detail).
9. Attach the quick coupler on the universal connect set to the low pressure service port on the vehicle. Open the charging station low pressure hose quick coupler valve, but do not open the control valve.
10. Start the engine, and set the A/C system to maximum cooling. Open the control valve to let refrigerant and the dye enter the A/C system through the low pressure service port. Close the control valve when the Tracer-Stick® dye capsule is empty.
11. Run the engine and A/C system for 15 minutes to thoroughly circulate the dye. Then shut the engine off, and inspect the following areas of the system for leaks.

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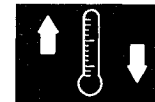
Climate Control

Refrigerant Leak Check (cont'd)

NOTE:

- Check for leaks in a dark work area, and use the UV light and the special glasses from the leak check kit. Other UV lights may not work well with the Tracer-Stick® dye.
- Small leaks may take up to 1 week of vehicle operation (with normal A/C use) to become visible.

Possible Leak Area	Diagnostic Procedure with Fluorescent Dye
Service Ports	If a leak is found, replace the Schrader valve on the service port.
A/C Lines	• Use a permanent marker pen to circle the leak area. • If a leak is found, remove and replace the A/C line (see page 21-6).
A/C Condenser	• If a leak is found, remove the A/C condenser (see page 21-120). • Determine whether leak is in the A/C condenser or the receiver/dryer. • Use a permanent marker pen to circle the leak area. • Replace either the receiver/dryer (see page 21-121), or the A/C condenser (see page 21-120), depending upon which is leaking.
A/C Compressor	• Check for leaks at all of the A/C compressor joints, the clutch center, the A/C compressor front housing bolts, and the scroll bolts on the back of the A/C compressor. • If the A/C compressor relief valve appears to be leaking, determine whether the leak is coming from the relief valve, or the joint between the A/C compressor casing and the valve. – If the leak is from the relief valve, diagnose and repair the cause of excessive A/C system pressure, then replace the A/C compressor relief valve (see page 21-119). – If the leak is from the casing/valve joint, replace the A/C compressor relief valve (see page 21-119). • If the leak is coming from the suction hose and/or discharge hose fittings on the A/C compressor, clean the A/C fittings and replace the suction/discharge fitting O-rings. • For all other A/C compressor leaks, remove and replace the A/C compressor (see page 21-115).
Evaporator	• Start checking for evaporator leaks by illuminating the evaporator drain tube area. Let the vehicle sit for 30 minutes with the engine off, and the doors and windows closed. Then place the detector probe in the center vent, and turn the fan on to low speed. • If a leak is found, remove the evaporator core (see page 21-111). • Determine whether leak is from the evaporator or the expansion valve. • Use a permanent marker pen to circle the leak area. • Replace the expansion valve (see page 21-112), or the evaporator core (see page 21-111), depending upon which is leaking.



A/C System Noise Check

⚠ 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 A/C system noise check will help you determine the source of abnormal A/C system noise.

NOTE:

- If accidental system discharge occurs, ventilate the work area before resuming service.
 - Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.
 - Identify the conditions when the noise occurs. The weather, the vehicle speed, the vehicle being in gear or in neutral, the engine temperature, or other conditions may be factors in determining the noise source.
 - Do an A/C system inspection (see page 21-7), and correct any problems found prior to diagnosing abnormal noises.
 - Abnormal A/C noises can be misleading. For example, a sound similar to a failed bearing may be caused by loose fasteners, loose mounting brackets, or a faulty compressor clutch assembly.
1. Inspect the air inlet grille in the cowl cover for debris. If debris is present, remove it.
 2. Sit inside the vehicle, close the doors and windows, and turn the ignition switch to ON (II), but do not start the engine. Cycle the HVAC system through all blower speeds and all air distribution modes to determine where and when the noise occurs.

3. Operate the blower at each speed with the engine and A/C off, and check for unusual noises and excessive vibration. If noise and/or vibration are present, do the following checks:

- 1. If the noise or vibration occurs only in a specific mode or setting, then check these items:
 - Operation of the mode control motor, door, and linkage
 - Operation of the air mix control motor(s), door(s), and linkage
 - Operation of the recirculation motors, doors, and linkage
- 2. If there is a squeaking or chirping noise, but no unusual vibration, replace the blower motor (see page 21-110).
- 3. Remove the blower unit (see page 21-109), and check for foreign material (leaves or twigs, for example) on the blower motor and fan. If foreign material is present, remove it, and recheck for noise. If you don't find any foreign material, remove the blower motor (see page 21-110), and check these items:
 - Check if the fan blades are cracked or broken
 - Make sure the fan retainer is tight
 - Inspect the fan alignment on the blower motor shaft

Replace the blower motor if any problems are present.

4. Set up the vehicle for the running A/C checks:
 - Select a quiet area for testing
 - Apply the parking brake
 - Shift the vehicle in P or N (A/T) or in Neutral (M/T)
 - Start the engine
 - Set the temperature control button to Max Cool
 - Set the mode control button to Vent
 - Set the fan ON/OFF button to minimum (but not OFF)
 - Turn the A/C button ON

Switch the A/C compressor on and off several times to clearly identify the sound during A/C compressor operation. Listen to the noise while the A/C compressor clutch is engaged and disengaged. Probe the A/C system with a stethoscope to pinpoint the noise.

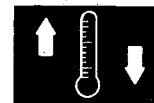
NOTE: If the noise does not change when the A/C compressor clutch engages or disengages, the noise may be caused by an engine-related component. Probe the engine area with a stethoscope to pinpoint the noise.

(cont'd)

Climate Control

A/C System Noise Check (cont'd)

5. Turn the ignition switch to LOCK (0), and check the drive belt for excessive wear, oil contamination, improper routing, or a faulty belt tensioner (see page 4-43). Correct any problems found. Start the engine, run the A/C system, and check if the noise is coming from the drive belt, the belt tensioner or any of the pulleys. Repair or replace any faulty components.
6. Listen for noises coming from the A/C lines, the A/C hoses, the A/C condenser, the evaporator, the receiver-drier, or the expansion valve, and check these items:
 - Noises caused by A/C components touching other components or the body. Reroute or insulate the A/C component(s) as needed, and recheck for noise.
 - Loose, damaged or excessively worn A/C components or mounting hardware. Repair or replace the faulty component(s) or hardware, and recheck for noise.
 - A moaning noise from the A/C suction line. If there is a moaning noise, check the system refrigerant charge (see page 21-123). If the refrigerant charge is OK, replace the receiver/dryer.
 - A whistling or hissing noise from the expansion valve. Evacuate the system for 3 hours (see page 21-122), then recheck. If the noise is still present, replace the expansion valve (see page 21-112).
7. Check the operation of the A/C compressor clutch:
 - Make sure A/C compressor clutch engages without slipping. If the clutch does not engage, troubleshoot the A/C compressor clutch circuit (see page 21-91). If the A/C compressor clutch slips, replace the complete clutch assembly (see page 21-117).
 - Make sure the A/C compressor clutch disengages. If the clutch does not disengage, do the A/C compressor clutch circuit troubleshooting (see page 21-91). If the clutch circuit is OK, do the A/C compressor clutch check (see page 21-116), and see if the clutch is mechanically jammed. If there are no electrical or mechanical problems with the A/C compressor clutch, replace the A/C compressor (see page 21-115).
 - Make sure the A/C compressor clutch cycles normally. If the A/C compressor clutch is cycling rapidly, the A/C system is probably low on refrigerant due to a leak. Do the refrigerant leak check (see page 21-124). If the refrigerant charge is OK, and there are no leaks, troubleshoot the A/C compressor clutch circuit.
8. Listen with a stethoscope for noises coming from the A/C compressor, and check these items:
 - The noise changes when the A/C compressor clutch disengages. If the noise does not change when the A/C compressor disengages, the noise may be caused by an engine-related component. Probe the engine area with a stethoscope to pinpoint the noise.
 - The A/C system operating pressures are normal. If the system pressures are abnormal, troubleshoot the problem using the pressure test table in the A/C system test (see page 21-131). Correct the pressure-related problem(s), and recheck for noise.
 - The A/C compressor hose connections, mounting brackets, and fasteners are in good condition. If any of these components are loose, damaged, or excessively worn, repair or replace the faulty component(s), and recheck for noise. If these components are in good condition, and the noise is still present, replace the A/C compressor (see page 21-115).



A/C System Test

Performance Test

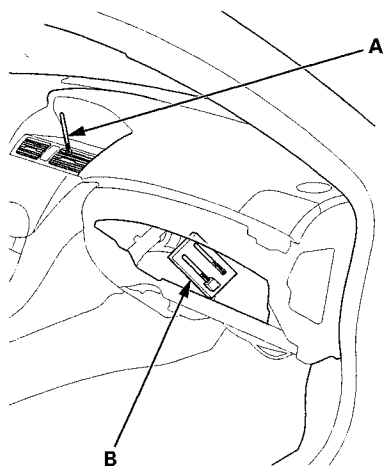
CAUTION

- 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 A/C system is operating within specifications.

NOTE:

- If accidental system discharge occurs, ventilate the work area before resuming service.
 - Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.
1. Do the A/C system inspection (see page 21-7), and correct any problems found.
 2. Connect an R-134a refrigerant recovery/recycling/charging station to the high-pressure service port and the low-pressure service port, following the equipment manufacturer's instructions.
 3. Determine the relative humidity and air temperature.
 4. Remove the glove box (see page 20-123).
 5. Insert a thermometer (A) in the center vent.



6. Place a thermometer (B) near the blower unit's recirculation inlet duct.

7. Test conditions:

- Move the vehicle out of direct sunlight and let it cool down to the surrounding (ambient) temperature. If necessary, wash the vehicle to cool it down more quickly.
- The ambient temperature must be at least 60 °F (16 °C).
- Open the hood.
- Open the front doors.
- Set the temperature control button to Max Cool, the mode control button to Vent, and the recirculation control button to Recirculate.
- Turn the A/C button ON and the fan ON/OFF button to Max.
- Hold the engine speed at 1,500 rpm.
- No driver or passengers in the vehicle.

8. Inspect the A/C components for the following conditions:

- A/C compressor clutch not engaged.
- Abnormal frost areas.
- Unusual noises.

If you observe any of these conditions, refer to the Symptom Troubleshooting Index.

9. 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, and the discharge (high) and suction (low) pressures on the A/C gauges.

(cont'd)

Climate Control

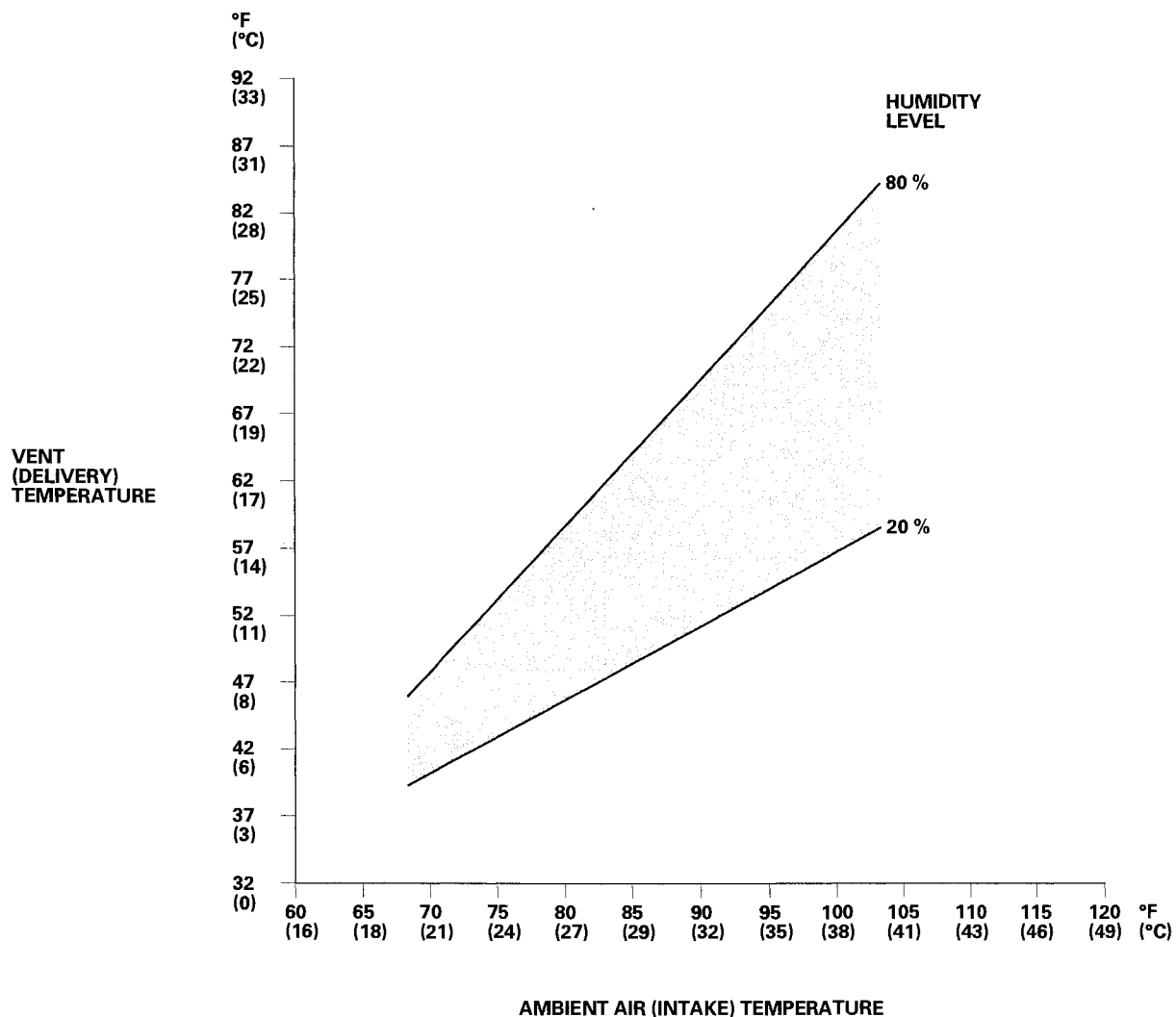
A/C System Test (cont'd)

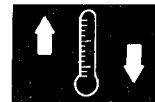
10. To complete the vent (delivery)/ambient air (intake) temperature chart:

- Mark the vent (delivery) temperature on the vertical line.
- Mark the ambient air (intake) temperature on the bottom line.
- Draw a vertical line from the ambient air (intake) temperature mark.
- Draw a horizontal line from the vent (delivery) temperature mark until it intersects the vertical line.

NOTE: The vent temperature and the ambient air temperature should intersect in the shaded area. Any measurements outside the area may indicate the need for further inspection.

Ambient Air (Intake) Temperature vs. Vent (Delivery) Temperature

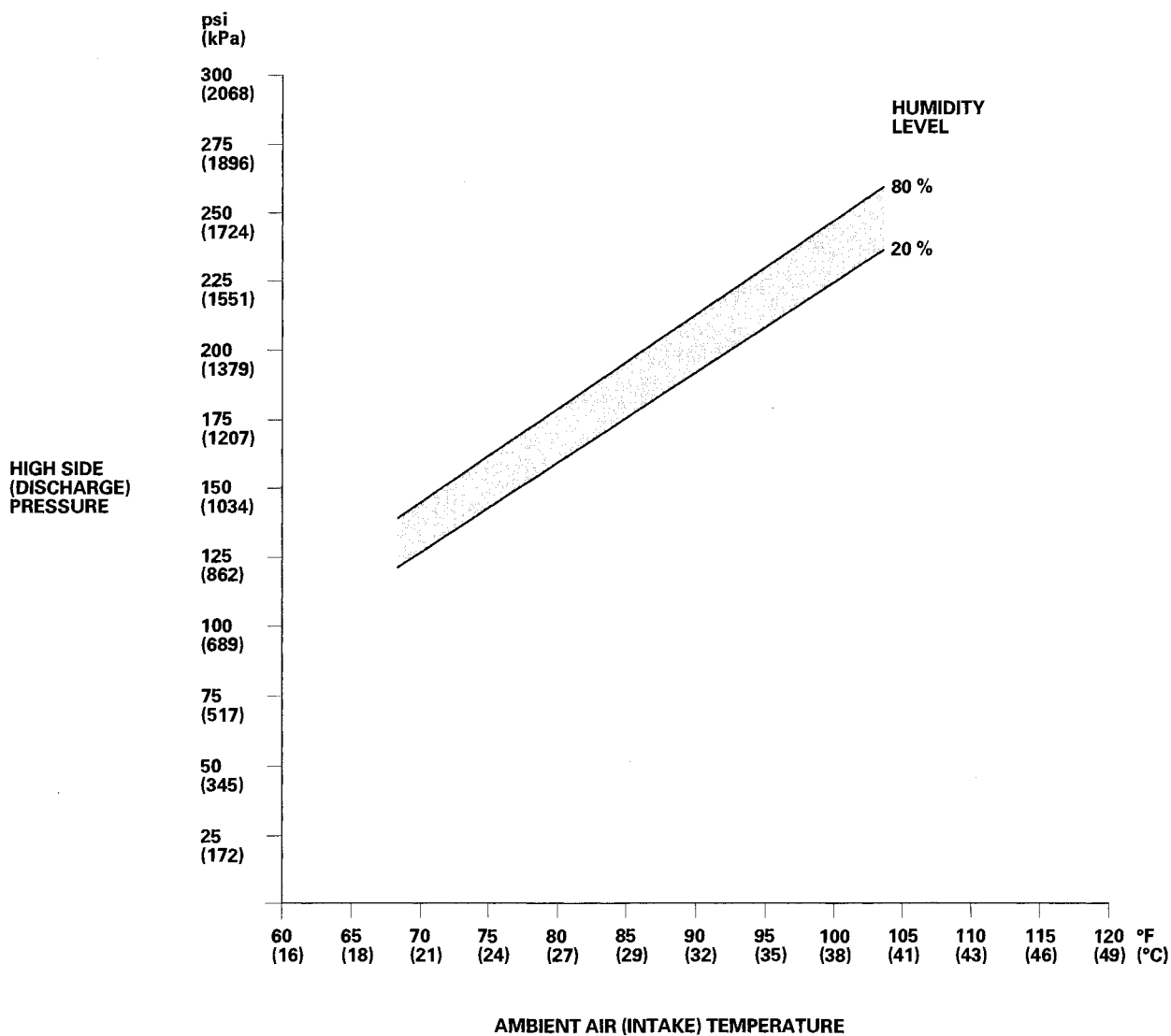




11. To complete the high side (discharge) pressure/ambient air (intake) temperature chart:

- Mark the high side (discharge) pressure on the vertical line.
 - Mark the ambient air (intake) temperature on the bottom line.
 - Draw a vertical line from the ambient air (intake) temperature mark.
 - Draw a horizontal line from the high side (discharge) pressure mark until it intersects the vertical line.
- NOTE: The high side pressure and the ambient air temperature should intersect in the shaded area. Any measurements outside the area may indicate the need for further inspection.

Ambient Air (Intake) Temperature vs. High Side (Discharge) Pressure



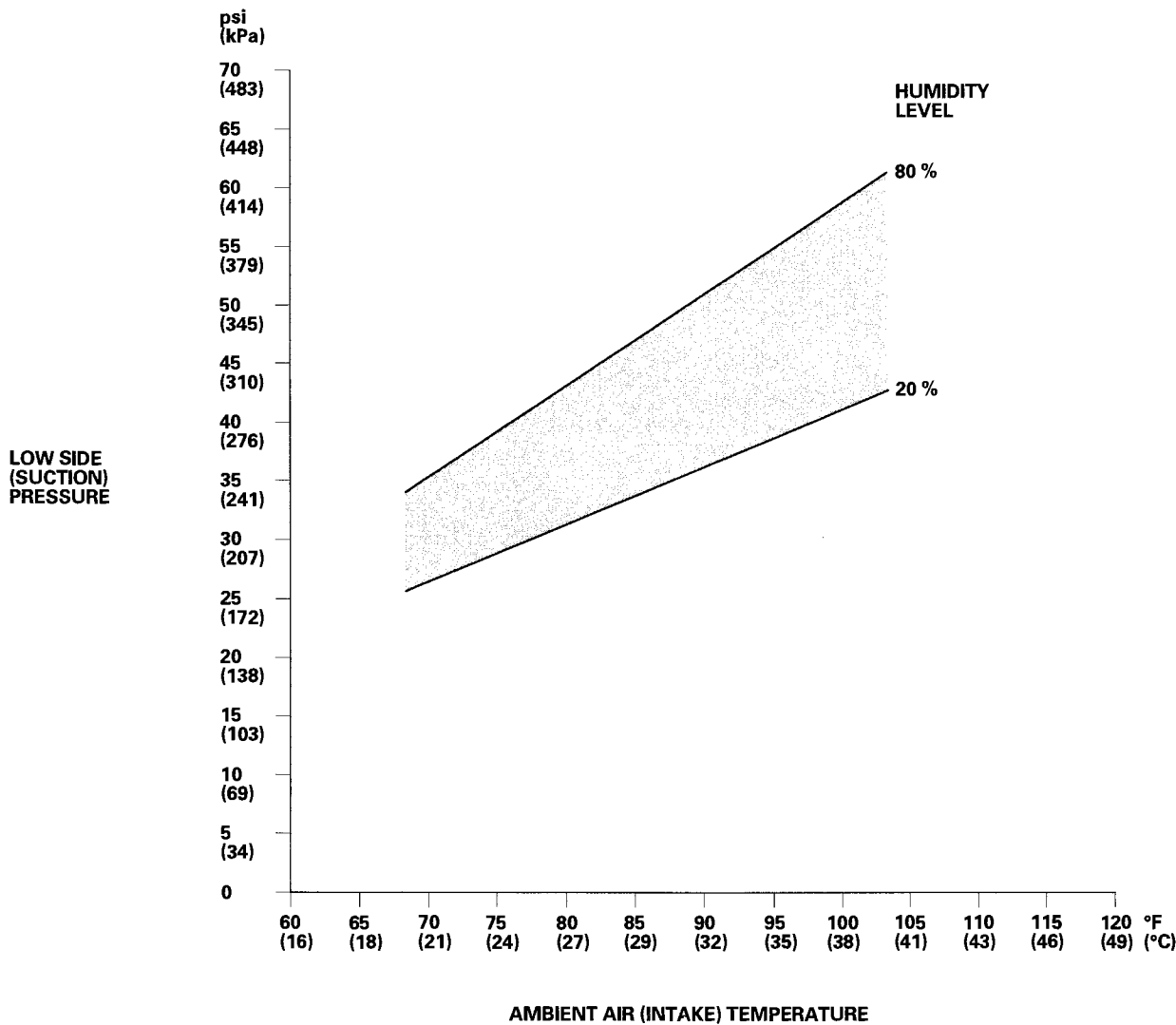
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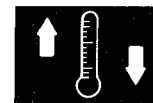
Climate Control

A/C System Test (cont'd)

12. To complete the low side (suction) pressure/ambient air (intake) temperature chart:
- Mark the low side (suction) pressure along the vertical line.
 - Mark the ambient air (intake) temperature along the bottom line.
 - Draw a vertical line from the ambient air (intake) temperature mark.
 - Draw a horizontal line from the low side (suction) pressure mark until it intersects the vertical line.
- NOTE: The low side pressure and the ambient air temperature should intersect in the shaded area. Any measurements outside the area may indicate the need for further inspection.

Ambient Air (Intake) Temperature vs. Low Side (Suction) Pressure





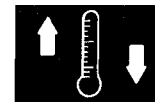
Test results	Related symptoms	Probable cause	Remedy
Suction and discharge pressures are normal	Warm air from the vents.	- The A/C system contains too much refrigerant oil. - The air mix door is not operating properly.	- Evacuate the system (see page 21-122). Adjust the oil level (see page 21-5), then recharge the system (see page 21-123). - Check air mix door operation; driver's (see page 21-99), passenger's (see page 21-100), and repair as needed.
Suction and discharge pressures are roughly equal and steady	The suction and discharge pressures equalize when the engine is revved.	The A/C compressor clutch or the drive belt is slipping, or the A/C compressor shaft seal is leaking.	- If the drive belt is slipping, replace the drive belt (see page 4-44). Also inspect the drive belt auto-tensioner (see page 4-44). - If the A/C compressor clutch is slipping, replace it (see page 21-117). - Check the A/C compressor shaft seal. If it's leaking, replace the A/C compressor (see page 21-115).
Suction and discharge pressures are roughly equal but fluctuate	Suction and discharge pressures fluctuate during operation, and equalize when the A/C compressor clutch disengages.	The A/C compressor discharge valve or the A/C compressor gasket is faulty.	Replace the A/C compressor (see page 21-115).
Suction and discharge pressures are roughly equal and abnormally low	The suction and discharge pressures do not change during continued operation.	The A/C system is undercharged.	Do the refrigerant leak check (see page 21-124). Repair any leaks, then recharge the system (see page 21-123).
Suction and discharge pressures are abnormally high, but normalize when the A/C condenser is cooled	The suction pressure decreases when cool water is sprayed on the A/C condenser.	The A/C system is overcharged.	Evacuate the A/C system (see page 21-122), and recharge it to specifications (see page 21-123).
Suction and discharge pressures are abnormally high, and refrigerant line temperatures are abnormal	- The vapor line to the A/C condenser is too hot. - The liquid line from the expansion valve is not cold. - There is an abrupt temperature change in the system.	The A/C system refrigerant flow is restricted.	Replace the restricted line or component.
The suction pressure is low, the discharge pressure is high, and the refrigerant temperature changes abnormally somewhere in the system	- The high pressure liquid line going into the expansion valve is cold. - There is an abrupt temperature drop in an A/C line or hose.	The A/C system refrigerant flow is restricted.	Replace the restricted line or component.
Discharge pressure is so high that the A/C compressor relief valve has opened. Suction pressure is normal or below normal	The temperature drop between the A/C condenser inlet and outlet is less than 30 °F (– 1 °C) or more than 60 °F (15 °C).	The A/C condenser or receiver/dryer is restricted.	Replace the restricted component; the A/C condenser (see page 21-120) or the receiver/dryer (see page 21-121).

(cont'd)

Climate Control

A/C System Test (cont'd)

Test results	Related symptoms	Probable cause	Remedy
Discharge pressure is so high that the A/C compressor relief valve has opened. Suction pressure is also above normal	- No evidence of restricted refrigerant flow. - The A/C compressor clutch stays engaged with the A/C switch off.	The A/C compressor clutch circuit is always on (energized), or the A/C compressor clutch is mechanically jammed.	- Do the A/C compressor clutch circuit troubleshooting (see page 21-91), and repair the problem with the circuit. - If the A/C compressor clutch circuit is OK, do the A/C compressor clutch check (see page 21-116), and repair as needed.
Suction and discharge pressures are abnormally high, but drop rapidly when the A/C compressor disengages	- Discharge pressure quickly drops about 196 kPa (28 psi) when the clutch disengages. - Expansion valve inlet and outlet temperatures are different.	There is excess air in the A/C system.	Evacuate the A/C system (see page 21-122), and recharge it (see page 21-123).
Suction and discharge pressures are abnormally high, and there is little or no airflow through the A/C condenser	Suction and discharge pressures normalize when water is sprayed on the A/C condenser.	- The A/C condenser and/or radiator fins are clogged. - The A/C condenser fins are damaged. - The A/C condenser and/or radiator fans are not working properly.	- Clean debris from the A/C condenser and/or radiator fins. - Comb the A/C condenser fins to repair any damage. - Troubleshoot the A/C condenser fan and/or the radiator fan circuit(s) (see page 21-86).
The suction pressure is high and the discharge pressure is low. Both pressures are steady	- The liquid line temperature is similar on both sides of expansion valve. - System pressures do not vary at a steady engine speed.	The expansion valve is stuck open.	Replace the expansion valve (see page 21-112).
The suction pressure is high, the discharge pressure is low, and there are particle contaminants in the refrigerant lines	Metal flakes or Desiccant particles are in the discharge hose or expansion valve.	The A/C compressor is malfunctioning.	Replace the A/C compressor (see page 21-115). If the system is contaminated with desiccant, replace the receiver/dryer (see page 21-121).
The suction pressure is high, the discharge pressure is low, and the pressures quickly change when the A/C disengages	The discharge and suction pressures equalize soon after the A/C compressor stops.	The A/C compressor seal is faulty.	Replace the A/C compressor (see page 21-115).
Suction and discharge pressures are both low and none of the refrigerant lines are cold	There is no frost on the expansion valve, and the low-pressure liquid line is not cold.	The A/C system has a leak (very low refrigerant charge).	Do the refrigerant leak check (see page 21-124), repair any leaks, and recharge the A/C system (see page 21-123).
Suction and discharge pressures are both low, and the expansion valve or the suction line is abnormally cold	- Expansion valve inlet temperature is much lower than receiver/dryer outlet temperature. - The low pressure (suction) hose/line is cooler than the evaporator.	- The discharge hose/line is clogged or kinked, which is restricting refrigerant flow. - The suction hose/line is clogged or kinked, which is restricting refrigerant flow.	Repair or replace the faulty A/C line or hose (see page 21-6).



Test results	Related symptoms	Probable cause	Remedy
Initially, the suction and discharge pressure are normal, but both become abnormally low during operation	During extended operation, the air flow from the vents decreases.	The evaporator is freezing up.	Run the fan with A/C compressor off to warm the evaporator, then test the evaporator temperature sensor (see page 21-97). If necessary, replace the evaporator temperature sensor (see page 21-97).
Suction and discharge pressures are both low and there are abnormal temperature changes at the expansion valve	- During operation, the suction pressure decreases, and heavy frost occurs on the low pressure liquid line. - The low pressure liquid line is cold at the expansion valve, but warm after the valve. - There is frost on the expansion valve.	The expansion valve is stuck closed.	- Replace the expansion valve (see page 21-112), and the receiver/dryer (see page 21-121). - Check the old expansion valve for contamination. If contaminants are found, replace the component that caused the contamination.
The discharge pressure is low, the suction pressure is extremely low, and the expansion valve outlet is abnormally warm	There is no frost on the expansion valve outlet, and the liquid line temperature changes significantly across the expansion valve.	There is excessive moisture in the A/C system.	Evacuate the A/C system (see page 21-122), and replace the receiver/dryer (see page 21-121). Recharge the A/C system (see page 21-123).
The discharge pressure is low, the suction pressure is extremely low, and the suction line is abnormally cold	There is frost on the line from the evaporator to the A/C compressor.	The evaporator is internally contaminated or plugged.	Replace the evaporator core (see page 21-111).
The discharge pressure is low, the suction pressure is extremely low, and the refrigerant temperature doesn't change going through the expansion valve	- The low pressure liquid line is not cold. - The liquid line temperatures are similar on both sides of expansion valve.	The expansion valve is faulty.	Replace the expansion valve (see page 21-112).
The discharge pressure is low, the suction pressure is extremely low, and the expansion valve is abnormally cold	There is frost on the expansion valve.	Excessive moisture in the system is freezing the expansion valve.	Replace the receiver/dryer (see page 21-121). Evacuate the A/C system (see page 21-122), and recharge the A/C system (see page 21-123).
The discharge pressure is low, the suction pressure is extremely low, and the high pressure liquid line is abnormally cold	There is frost on the line from the receiver/dryer to the expansion valve.	The receiver/dryer is clogged.	Replace the receiver/dryer (see page 21-121). Evacuate the A/C system (see page 21-122), and recharge the A/C system (see page 21-123).