

# 2007 Honda Element EX

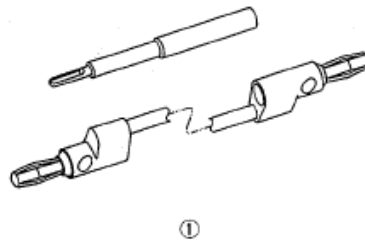
2007-2008 HVAC HVAC - Element

## 2007-2008 HVAC

### HVAC - Element

## SPECIAL TOOLS

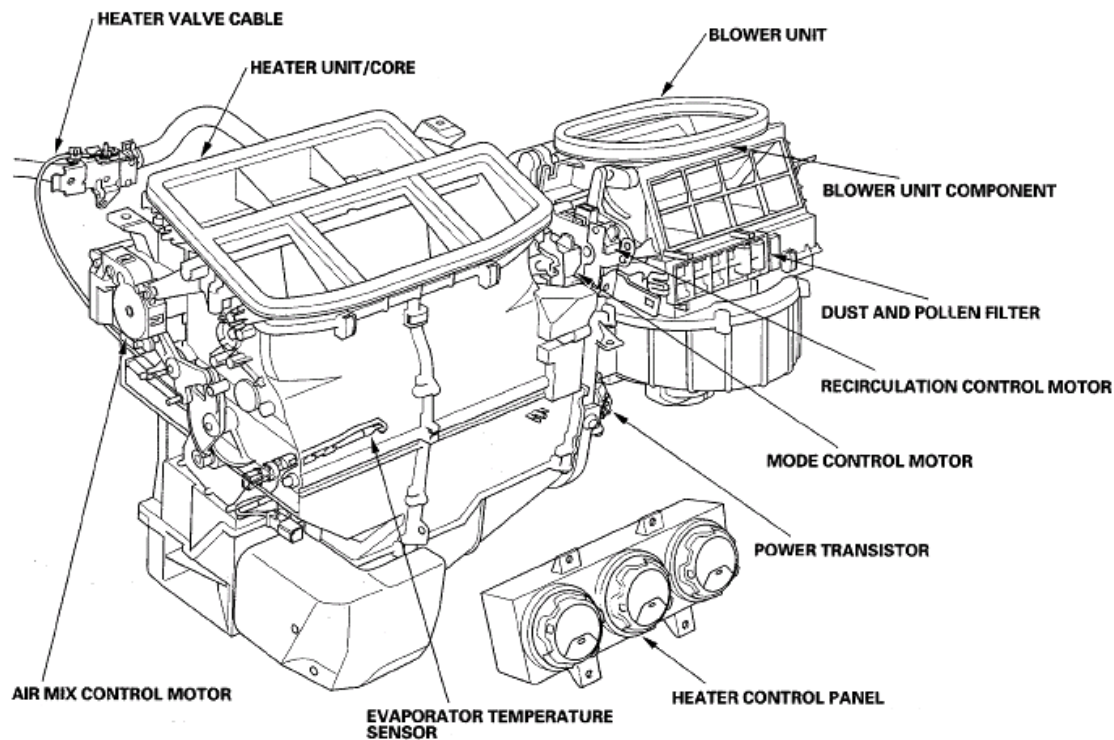
Ref. No.	Tool Number	Description	Qty
①	07SAZ-001000A	Backprobe Set	2



**Fig. 1: Identifying Special Tools**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

## COMPONENT LOCATION INDEX

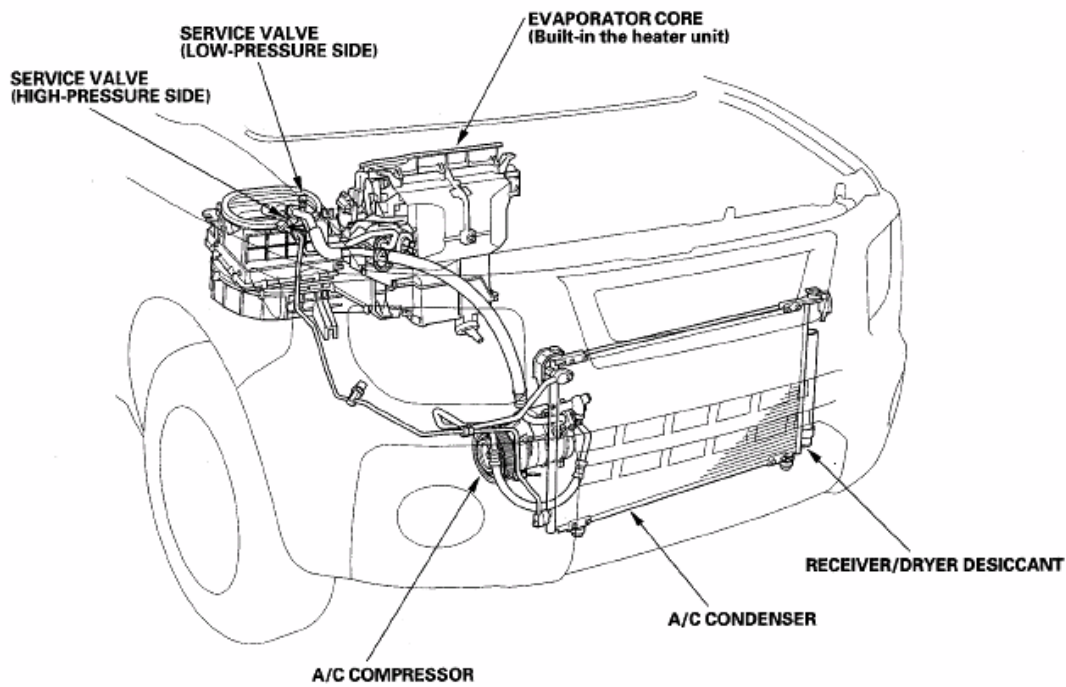


**Fig. 2: Identifying HVAC Component Location (1 Of 3)**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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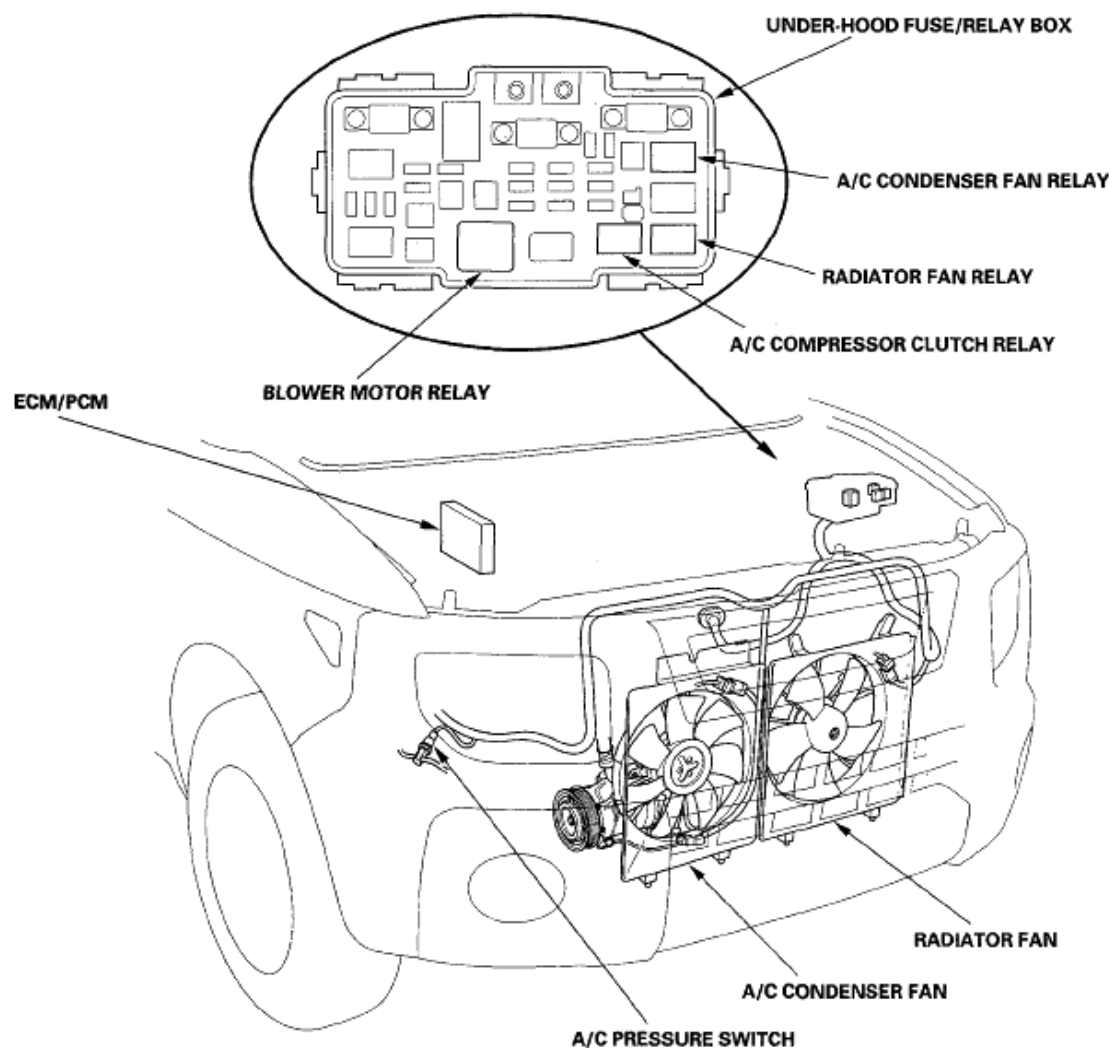
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**Fig. 3: Identifying HVAC Component Location (2 Of 3)**  
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**Fig. 4: Identifying HVAC Component Location (3 Of 3)**

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### A/C SERVICE TIPS AND PRECAUTIONS

**WARNING:**

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

**CAUTION:**

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

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The air conditioning system uses HFC-134a (R-134a) refrigerant and polyalkyleneglycol (PAG) refrigerant oil, which are not compatible with CFC-12 (R-12) refrigerant and mineral oil. Do not use R-12 refrigerant or mineral oil in this system, and do not attempt to use R-12 servicing equipment; damage to the air conditioning system or your servicing equipment will result. 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)
- P/N 38899-PR7-A01: 40 mL (1 1/3 fl.oz)

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

- To avoid contamination, do not return the oil to the container once dispensed, and never mix it with other refrigerant oils.
- Immediately after using the oil, replace 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.

A/C condenser .....25 mL (5/6 fl.oz)

Evaporator .....45 mL(1 1/2 fl.oz)

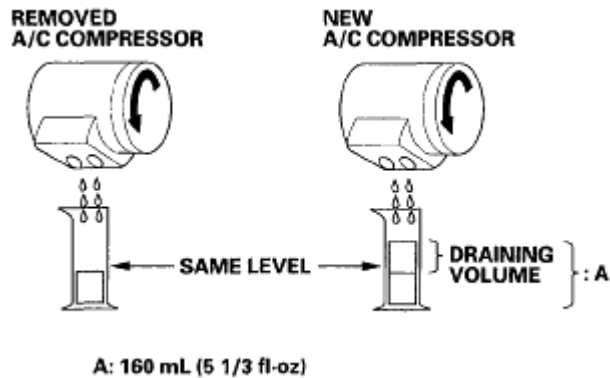
Line or hose .....10 mL (1/3 fl.oz)

Receiver/Dryer .....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 160 mL (5 1/3 fl.oz), and drain the calculated volume of oil from the new A/C compressor:  
 $160 \text{ mL (5 1/3 fl.oz)} - \text{Volume of removed A/C compressor} = \text{Volume to drain from new A/C compressor.}$

**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.



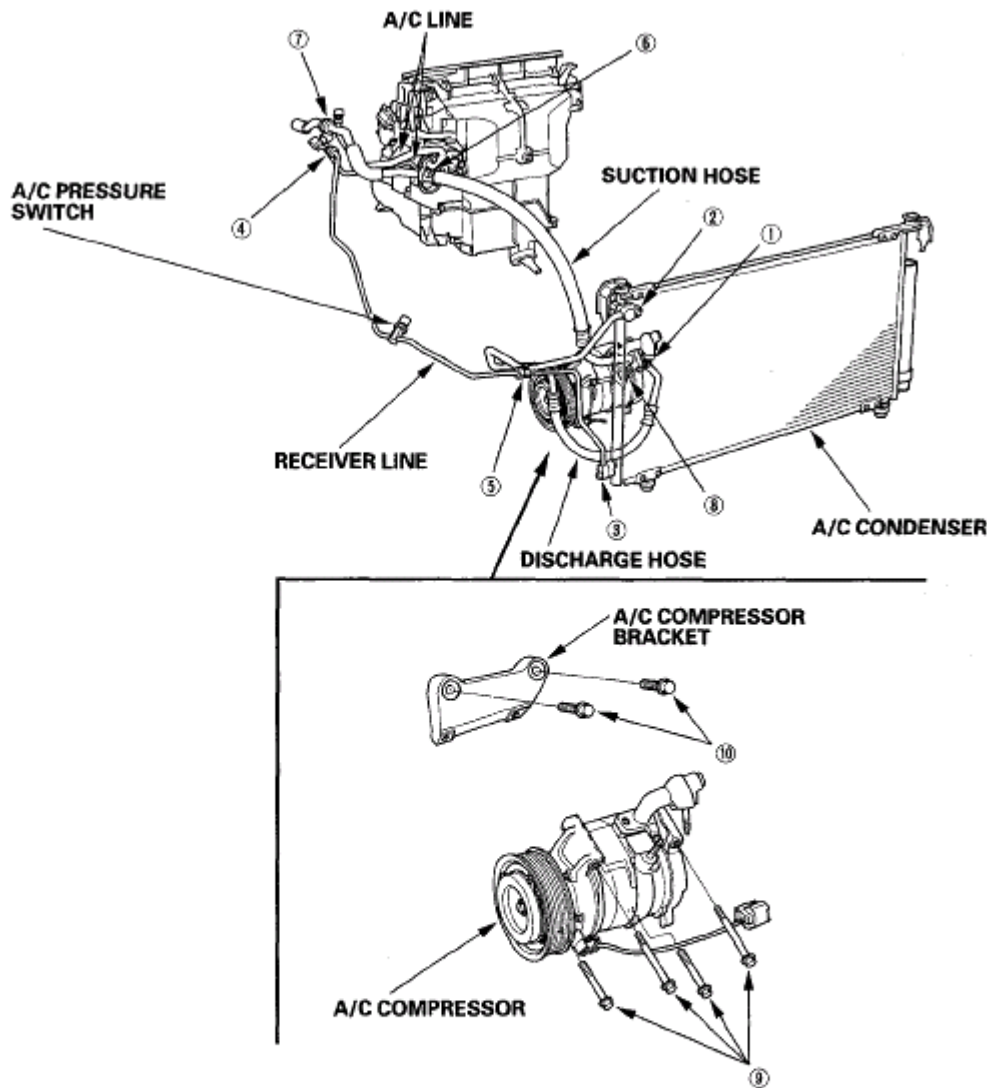
**Fig. 5: Draining A/C Compressor Oil**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

## A/C LINE REPLACEMENT

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

**Fig. 6: Identifying A/C Line Components With Torque Specifications**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

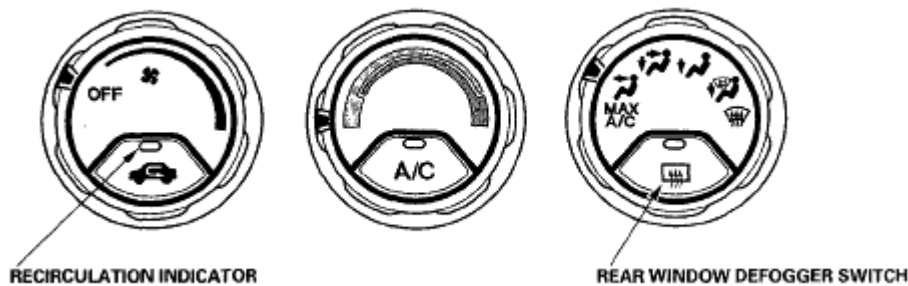
## GENERAL TROUBLESHOOTING INFORMATION

### HOW TO RETRIEVE A DTC

The heater control panel has a self-diagnostic function for heating, ventilation, and air conditioning system. To

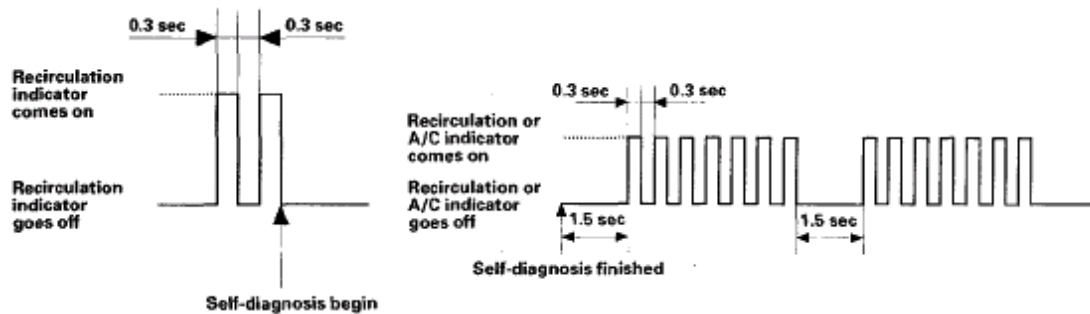
run the self-diagnostic function, do the following:

1. Turn the ignition switch OFF.
2. Press the recirculation control switch and the rear window defogger switch.
3. While holding the both switches down, turn the ignition switch ON (II).
4. The self-diagnosis will begin, and run for about 15 seconds.
  - If there is any problem in the system after self-diagnosis is finished, the recirculation indicator will blink the Diagnostic Trouble Code (DTC) 7 through 15.
  - If no DTCs are found, the indicator will not blink.



**Fig. 7: Identifying HVAC Control Panel Indicator**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

**Example of DTC indication Pattern (DTC 7)**



**Fig. 8: DTC Indication Pattern**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

**Resetting the self-diagnostic Function**

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

**Max Cool Position Function**

When the mode control dial is in the MAX A/C position, the heater control panel will automatically select the Recirculation mode and turn the A/C on. The recirculation switch and A/C switch are disabled and cannot be

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turned off in this mode. If the control panel fails to function as described, replace it.

### DTC TROUBLESHOOTING INDEX

#### DTC TROUBLESHOOTING INDEX

DTC (Recirculation Indicator Blinks)	Detection Item
<u>7</u>	An open in the air mix control motor circuit
<u>8</u>	A short in the air mix control motor circuit
<u>9</u>	A problem in the air mix control linkage, door, or motor
<u>10</u>	A short or open in the mode control motor circuit
<u>11</u>	A problem in the mode control linkage, doors, or motor
<u>12</u>	A problem in the blower motor circuit
<u>13</u>	A problem in the EEPROM in the heater control panel; the control panel must be replaced
<u>14</u>	An open in the evaporator temperature sensor circuit
<u>15</u>	A short in the evaporator temperature sensor circuit

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

### SYMPTOM TROUBLESHOOTING INDEX

#### SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic procedure	Also check for
Recirculation control doors do not change between Fresh and Recirculate	Recirculation control motor circuit troubleshooting (see <b><u>RECIRCULATION CONTROL MOTOR CIRCUIT TROUBLESHOOTING</u></b> )	<ul style="list-style-type: none"><li>• Blown fuse No. 14 (10 A) in the under-dash fuse/relay box</li><li>• Cleanliness and tightness of all connectors</li></ul>
Blower, heater controls, and A/C do not work	Heater control power and ground circuit troubleshooting (see <b><u>HEATER CONTROL POWER AND GROUND CIRCUIT TROUBLESHOOTING</u></b> )	<ul style="list-style-type: none"><li>• Blown fuse No. 14(10 A) in the under-dash fuse/relay box</li><li>• Poor ground at G501</li><li>• Cleanliness and tightness of all connectors</li></ul>
The A/C condenser fan does not run at all (but	A/C condenser fan circuit troubleshooting (see <b><u>A/C CONDENSER FAN CIRCUIT</u></b> )	<ul style="list-style-type: none"><li>• Blown fuse No. 1 (30 A) in the under-hood fuse/relay box, and No. 14(10 A) in the under-dash fuse/relay box</li></ul>



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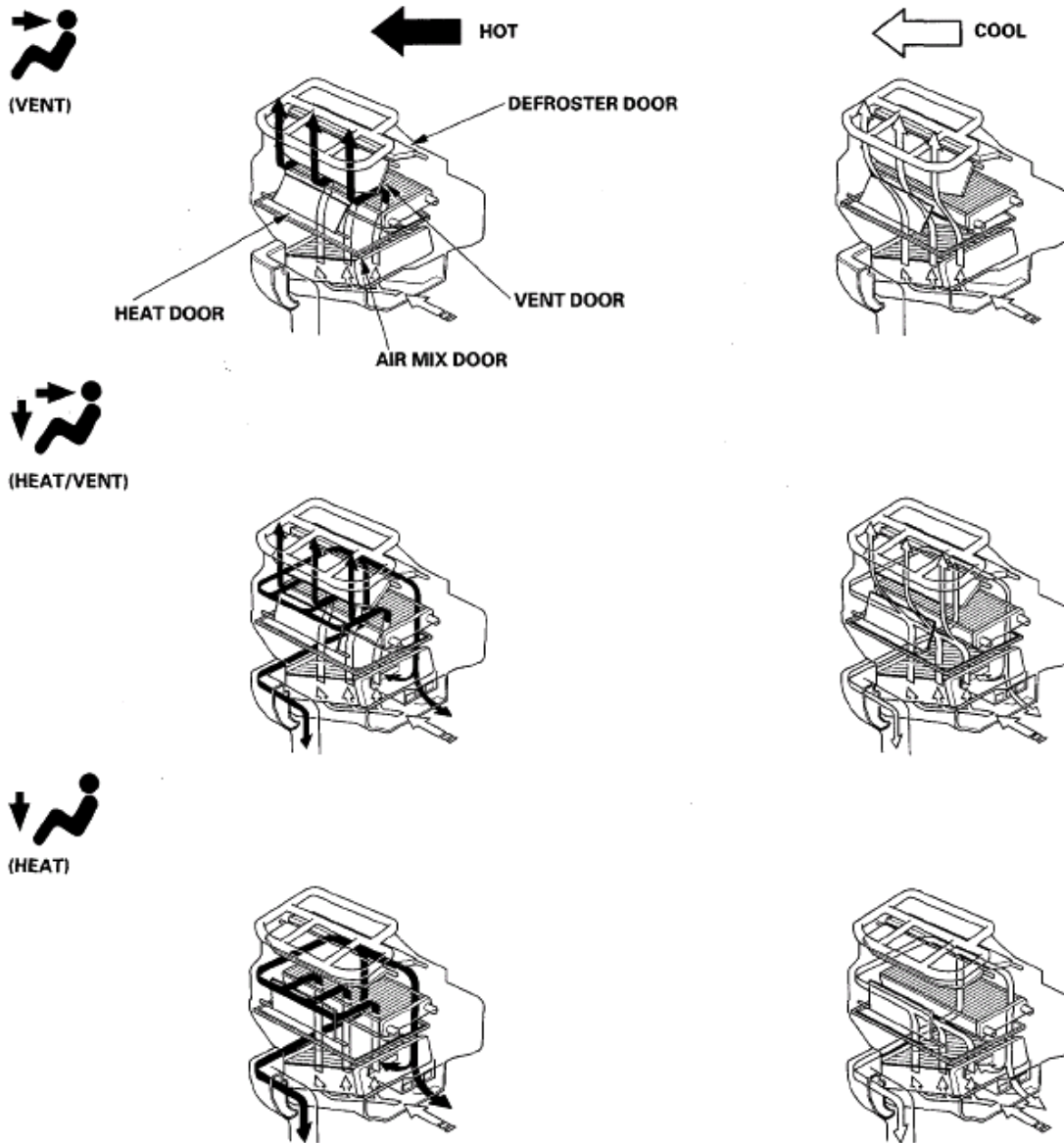
radiator fan runs with the A/C on)	<b><u>TROUBLESHOOTING )</u></b>	<ul style="list-style-type: none"> <li>• Poor ground at G201</li> <li>• Cleanliness and tightness of all connectors</li> </ul>
Both fans do not run with the A/C on (but the A/C compressor runs with the A/Con)	Radiator and A/C condenser fans common circuit troubleshooting (see <b><u>RADIATOR AND A/C CONDENSER FAN COMMON CIRCUIT TROUBLESHOOTING )</u></b> )	<ul style="list-style-type: none"> <li>• Blown fuse No. 1 (30 A) and No. 4 (20 A) in the under-hood fuse/relay box, and No. 14(10 A) in the under-dash fuse/relay box</li> <li>• Poor ground at G201</li> <li>• Cleanliness and tightness of all connectors</li> </ul>
The A/C compressor clutch does not engage (but both fans run with the A/C on)	A/C compressor clutch circuit troubleshooting (see <b><u>A/C COMPRESSOR CLUTCH CIRCUIT TROUBLESHOOTING )</u></b> )	<ul style="list-style-type: none"> <li>• Blown fuse No. 1 (30 A) in the under-hood fuse/relay box, and No. 14 (10 A) in the under-dash fuse/relay box</li> <li>• Cleanliness and tightness of all connectors</li> <li>• Blower motor operation</li> </ul>
A/C system does not come on (both fans and the A/C compressor do not work); heater is OK	A/C pressure switch circuit troubleshooting (see <b><u>A/C PRESSURE SWITCH CIRCUIT TROUBLESHOOTING )</u></b> )	<ul style="list-style-type: none"> <li>• Cleanliness and tightness of all connectors</li> <li>• Faulty evaporator temperature sensor</li> </ul>

### SYSTEM DESCRIPTION

### HEATING/AIR CONDITIONING DOOR POSITIONS

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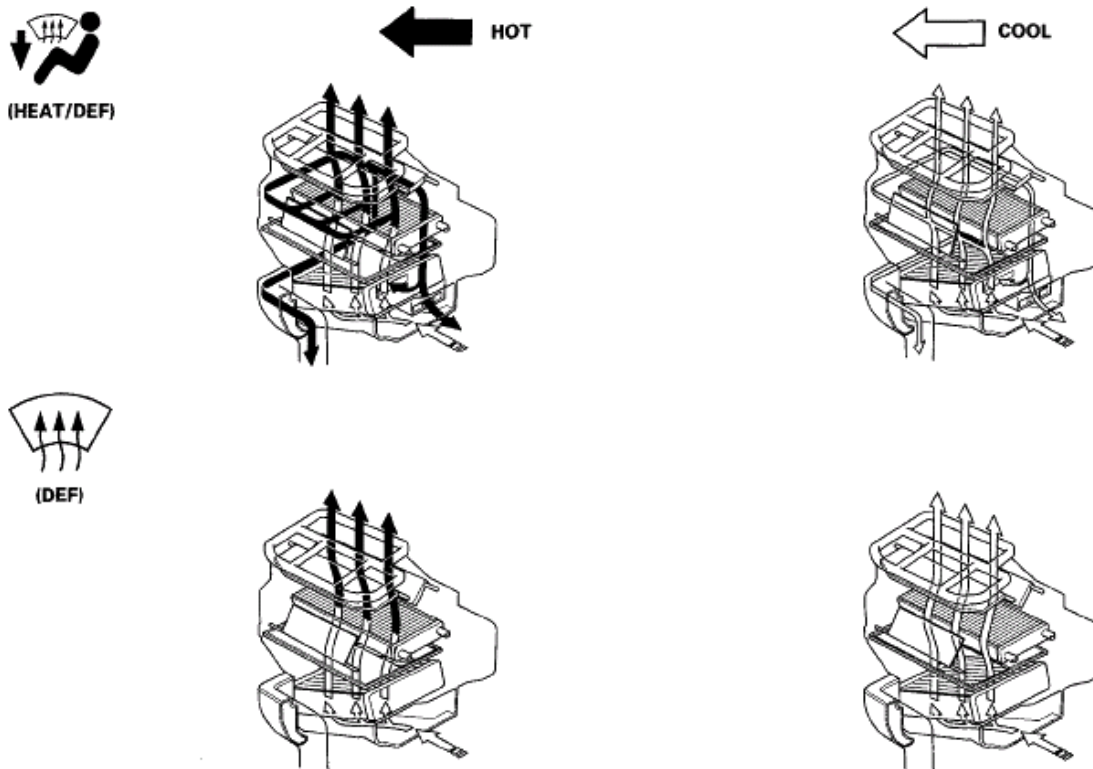
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**Fig. 9: Identifying Heating/Air Conditioning Door Positions (1 Of 2)**  
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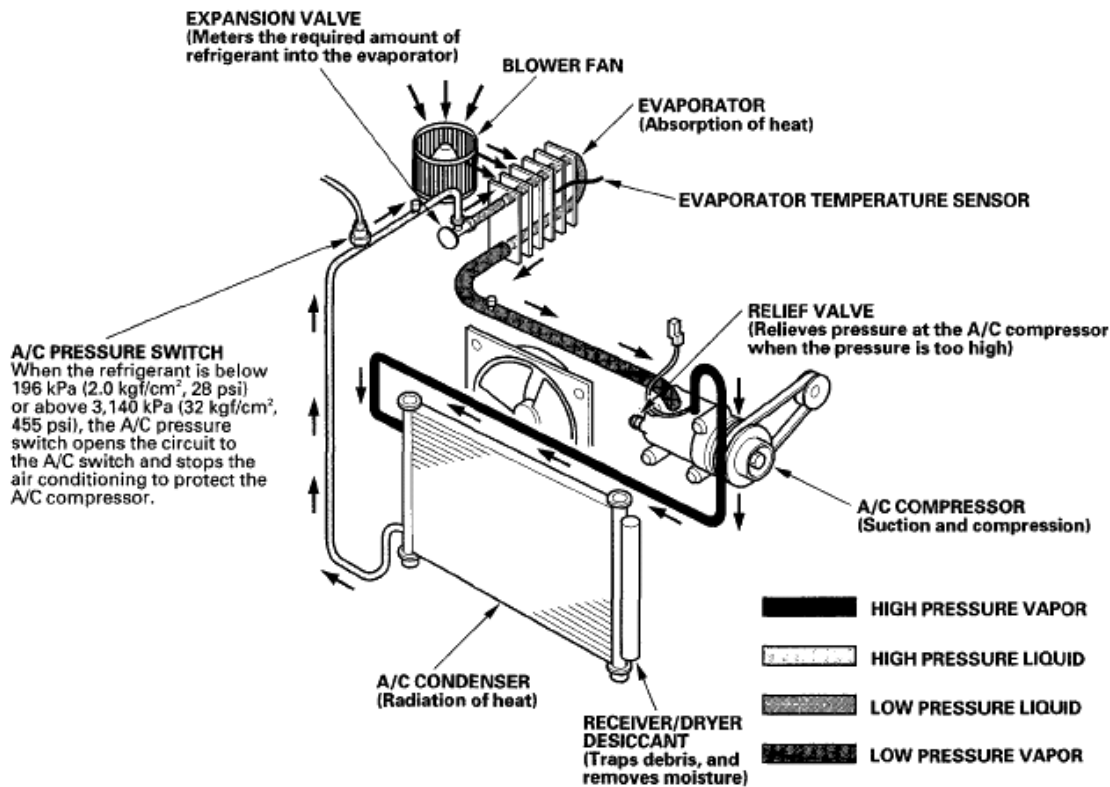
**Fig. 10: Identifying Heating/Air Conditioning Door Positions (2 Of 2)**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

The air conditioning system removes heat from the passenger compartment by transferring heat from the ambient air to the evaporator. The evaporator cools the air with the refrigerant that is circulating through the evaporator. The 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.

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**Fig. 11: HVAC System Diagram**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

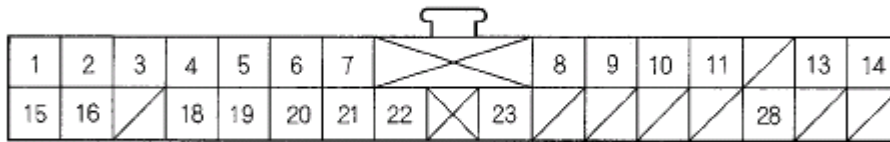
- Do not mix refrigerants CFC-12 (R-12) and HFC-134a (R-134a). They are not compatible.
- Use only the recommended polyalkyleneglycol (PAG) refrigerant oil (DENSO ND-OIL 8) designed for the R-134a A/C compressor. Intermixing the recommended (PAG) refrigerant oil with any other refrigerant oil will result 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.
- Use a vacuum pump adapter which is equipped with a check valve to prevent the backflow of the vacuum pump oil.
- Separate the manifold gauge sets (pressure gauges, hoses, joints) for refrigerants R-12 and R-134a. Do not confuse them.

## HEATER CONTROL PANEL INPUTS AND OUTPUTS

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### HEATER CONTROL PANEL 30P CONNECTOR



Wire side of female terminals

**Fig. 12: Heater Control Panel 30P Connector Terminals**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

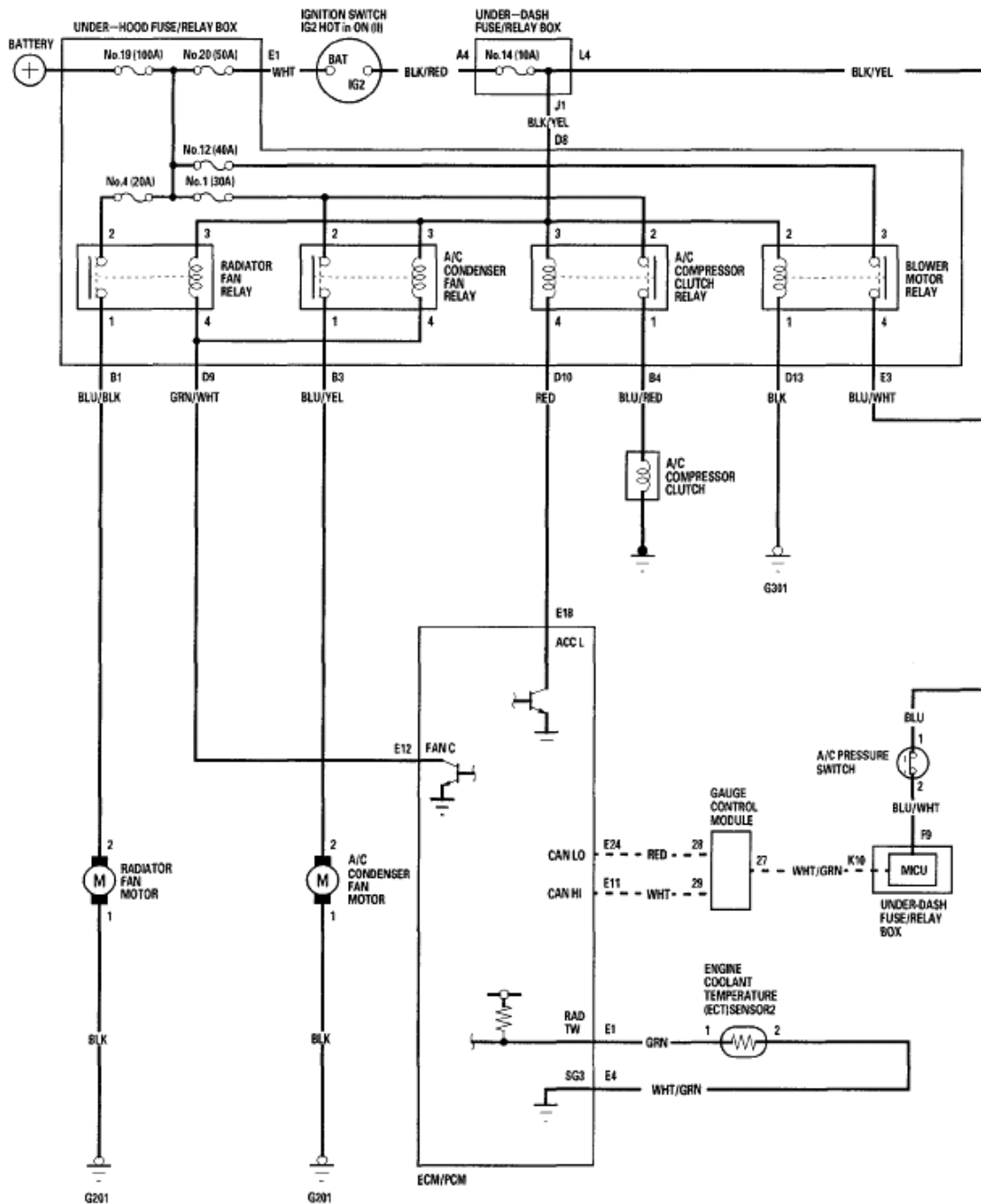
### TERMINALS REFERENCE

Cavity	Wire color	Signal	
1	PNK/BLU	AIR MIX HOT	OUTPUT
2	GRN	AIR MIX COOL	OUTPUT
3	BLK/YEL	IG2 (Power)	INPUT
4	BLK	GROUND	INPUT
5	GRN/WHT	FRESH	OUTPUT
6	GRN/YEL	RECIRCULATE	OUTPUT
7	BLU	A/C PRESSURE SWITCH	OUTPUT
8	WHT/BLU	MODE 3	INPUT
9	RED/YEL	MODE 1	INPUT
10	RED/BLU	MODE 2	INPUT
11	PNK/BLK	AIR MIX POTENTIAL	INPUT
13	LT GRN	SENSOR COMMON GROUND	OUTPUT
14	GRY	AIR MIX POTENTIAL 5 V	OUTPUT
15	YEL/RED	MODE DEF	OUTPUT
16	YEL/BLU	MODE VENT	OUTPUT
18	BLU/YEL	POWER TRANSISTOR	OUTPUT
19	BLU/RED	BLOWER FEED BACK	INPUT
20	RED	GAUGE ASSEMBLY	INPUT
21	RED/BLK	TAILLIGHTS RELAY	INPUT
22	YEL/BLK	REAR WINDOW DEFOGGER RELAY	OUTPUT
23	YEL/GRN	MODE 4	INPUT
28	BRN	EVAPORATOR TEMPERATURE SENSOR	INPUT

### CIRCUIT DIAGRAM

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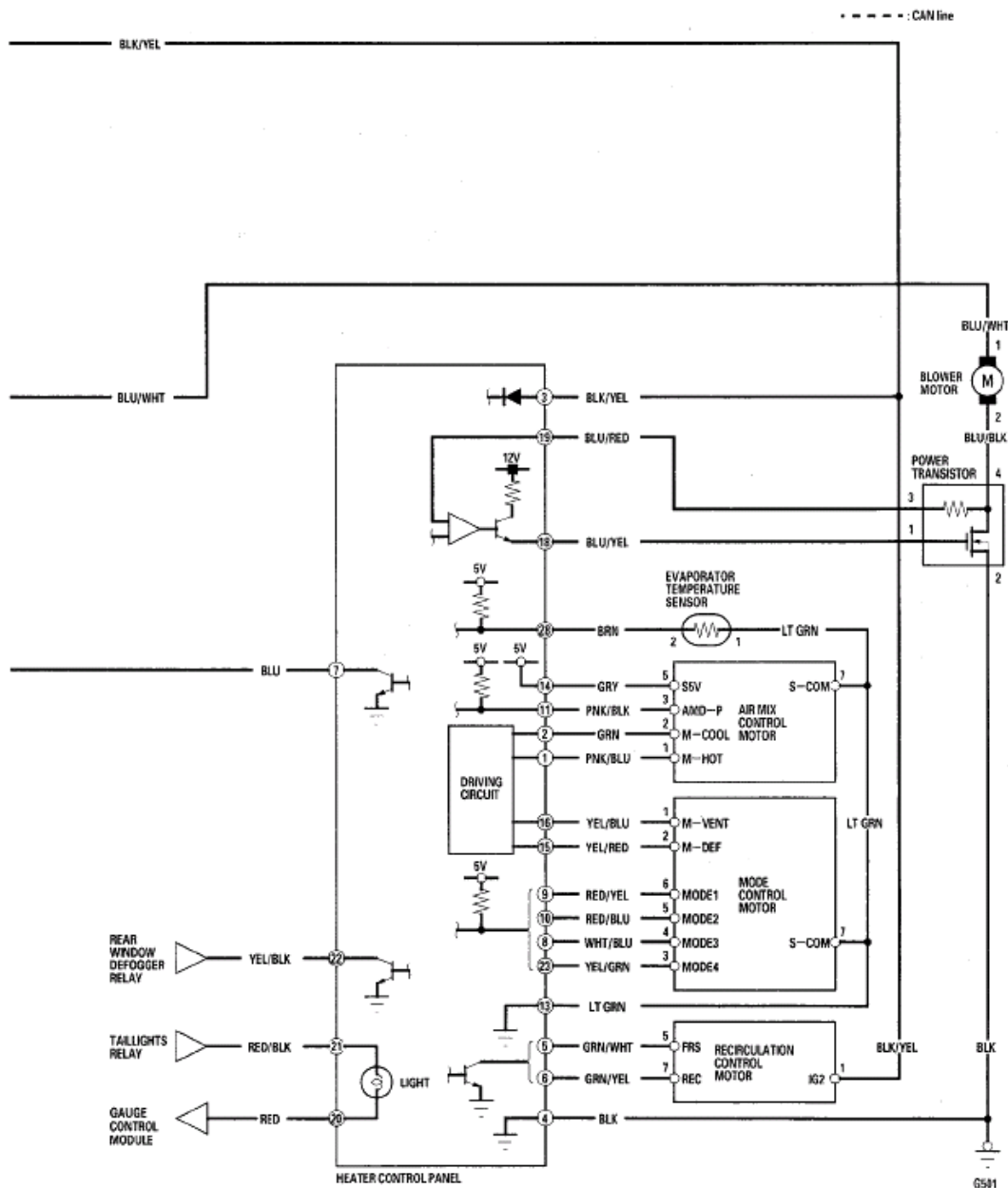


**Fig. 13: HVAC - Circuit Diagram (1 Of 2)**

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**Fig. 14: HVAC - Circuit Diagram (2 Of 2)**

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## DTC TROUBLESHOOTING

### DTC 7: AN OPEN IN THE AIR MIX CONTROL MOTOR CIRCUIT

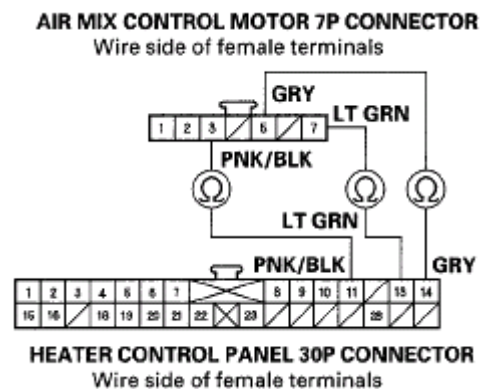
1. Disconnect the air mix control motor 7P connector.
2. Disconnect the heater control panel 30P connector.
3. Check for continuity between the following terminals of the heater control panel 30P connector and the air mix control motor 7P connector.

30P: 7P:

No. 11 No. 3

No. 13 No. 7

No. 14 No. 5



**Fig. 15: Checking Continuity Between Terminals Of Heater Control Panel 30P Connector And Air Mix Control Motor 7P Connector**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** -Go to step 4.

**NO** -Repair open in the wire(s) between the heater control panel and the air mix control motor.

4. Check for loose wires or poor connections at the heater control panel 30P connector and at the air mix control motor 7P connector. If the connections are good, substitute a known-good air mix control motor and retest.

*Did the symptom/indication go away?*

**YES** -The original air mix control motor is faulty, replace it.

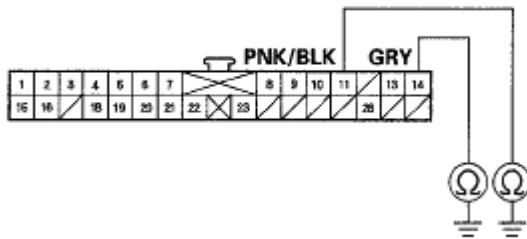
**NO** -Substitute a known-good heater control panel, and recheck. If the symptom/indication goes away, replace the original heater control panel.

#### **DTC 8: A SHORT IN THE AIR MIX CONTROL MOTOR CIRCUIT**

1. Disconnect the air mix control motor 7P connector.
2. Disconnect the heater control panel 30P connector.
3. Check for continuity between body ground and heater control panel 30P connector terminals No. 11 and 14 individually.



HEATER CONTROL PANEL 30P CONNECTOR



Wire side of female terminals

**Fig. 16: Checking Continuity Between Body Ground And Heater Control Panel 30P Connector Terminals No. 11 And 14**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

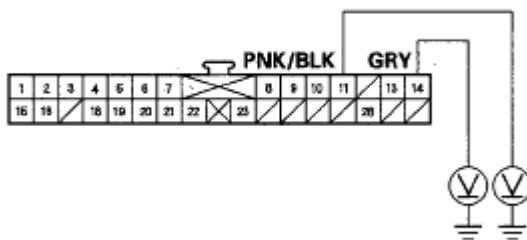
*Is there continuity?*

**YES** -Repair short to body ground in the wire(s) between the heater control panel and the air mix control motor.

**NO** -Go to step 4.

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

HEATER CONTROL PANEL 30P CONNECTOR



Wire side of female terminals

**Fig. 17: Checking For Voltage Between Body Ground And Heater Control Panel 30P Connector Terminals No. 11 And 14**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there any voltage?*

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

**NO** -Go to step 5.

5. Substitute a known-good air mix control motor and recheck.

*Did the symptom/indication go away?*

**YES** -The original air mix control motor is faulty, replace it.

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

### **DTC 9: A PROBLEM IN THE AIR MIX CONTROL LINKAGE, DOOR, OR MOTOR**

1. Test the air mix control motor (see **AIR MIX CONTROL MOTOR TEST** ).

*Is the air mix control motor OK?*

**YES** -Go to step 2.

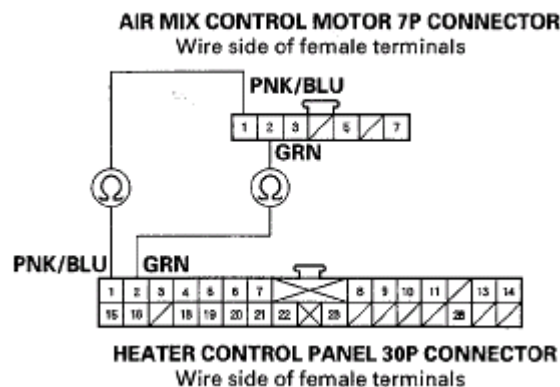
**NO** -Replace the air mix control motor (see **AIR MIX CONTROL MOTOR REPLACEMENT** ), or repair the air mix control linkage or door.

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

30P: 7P:

No. 1 No. 1

No. 2 No. 2



**Fig. 18: Checking Continuity Between Terminals Of Heater Control Panel 30P Connector And Air Mix Control Motor 7P Connector**

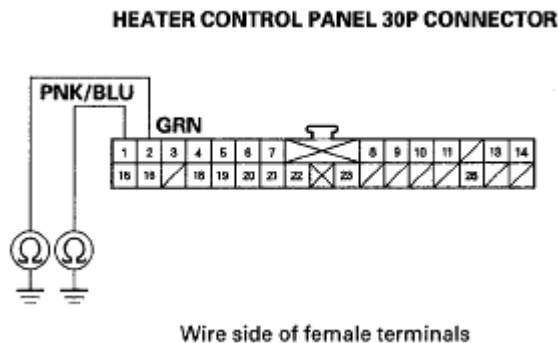
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** -Go to step 5.

**NO** -Repair open in the wire(s) between the heater control panel and the air mix control motor.

5. Check for continuity between body ground and heater control panel 30P connector terminals No. 1 and 2 individually.



**Fig. 19: Checking Continuity Between Body Ground And Heater Control Panel 30P Connector Terminals No. 1 And 2**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

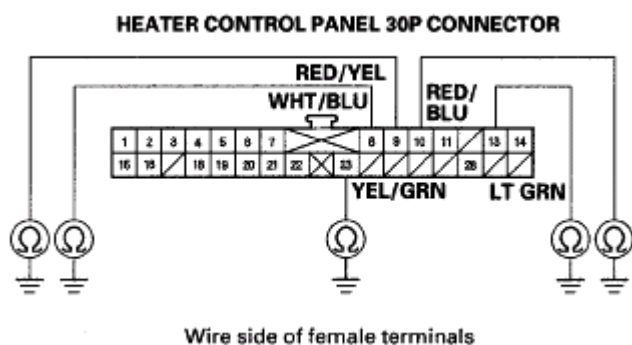
*Is there continuity?*

**YES** -Repair short to body ground in the wire(s) between the heater control panel and the air mix control motor.

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

**DTC 10: A SHORT OR OPEN IN THE MODE CONTROL MOTOR CIRCUIT**

1. Disconnect the mode control motor 7P connector.
2. Disconnect the heater control panel 30P connector.
3. Check for continuity between body ground and the heater control panel 30P connector terminals No. 8, 9,10,13, and 23 individually.



**Fig. 20: Checking Continuity Between Body Ground And Heater Control Panel 30P Connector Terminals**

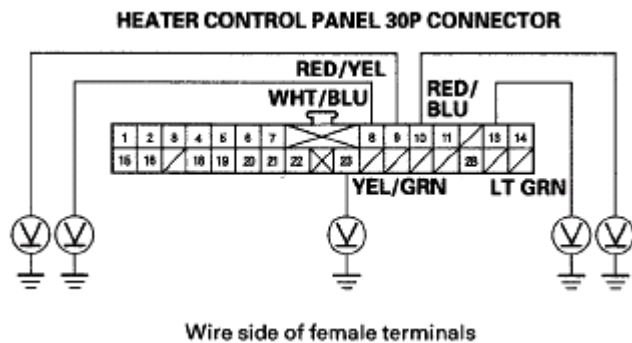
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** -Repair short to body ground in the wire(s) between the heater control panel and the mode control motor.

**NO** -Go to step 4.

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



**Fig. 21: Checking For Voltage Between Body Ground And Heater Control Panel 30P Connector Terminals**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there any voltage?*

**YES** -Repair short to power in the wire(s) between the heater control panel and the mode control motor. This short also may damage the heater control panel. Repair the short to power, then recheck before replacing the heater control panel.

**NO** -Go to step 5.

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

30P: 7P:

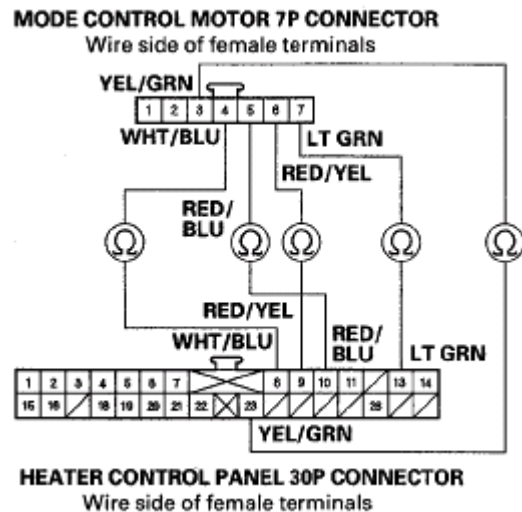
No. 8 No. 4

No. 9 No. 6

No. 10 No. 5

No. 13 No. 7

No. 23 No. 3



**Fig. 22: Checking Continuity Between Terminals Of Heater Control Panel 30P Connector And Mode Control Motor 7P Connector**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** -Go to step 6.

**NO** -Repair open in the wire(s) between the heater control panel and the mode control motor.

6. Check for loose wires or poor connections at the heater control panel 30P connector and at the mode control motor 7P connector. If the connections are good, substitute a known-good mode control motor and recheck.

*Did the symptom/indication go away?*

**YES** -The original mode control motor is faulty, replace it.

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

### **DTC 11: A PROBLEM IN THE MODE CONTROL LINKAGE, DOORS, OR MOTOR**

1. Test the mode control motor (see [AIR MIX CONTROL MOTOR REPLACEMENT](#) ).

*Is the mode control motor OK?*

**YES** -Go to step 2.

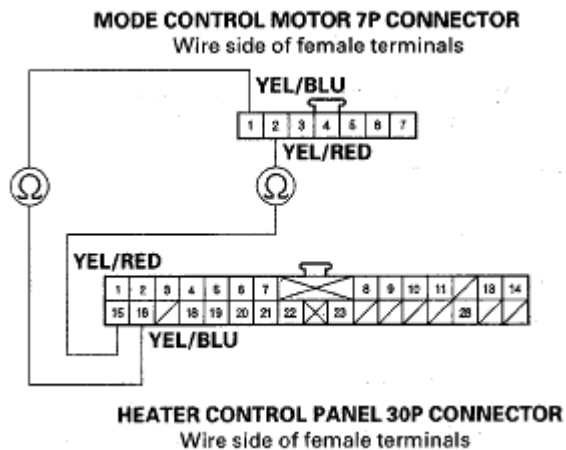
**NO** -Replace the mode control motor (see **MODE CONTROL MOTOR REPLACEMENT** ), or repair the mode control linkage or doors.

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

30P: 7P:

No. 15 No. 2

No. 16 No. 1



**Fig. 23: Checking Continuity Between Terminals Of Heater Control Panel 30P Connector And Mode Control Motor 7P Connector**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

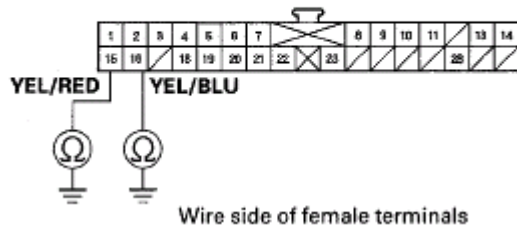
*Is there continuity?*

**YES** -Go to step 5.

**NO** -Repair open in the wire(s) between the heater control panel and the mode control motor.

5. Check for continuity between body ground and heater control panel 30P connector terminals No. 15 and 16 individually.

HEATER CONTROL PANEL 30P CONNECTOR



**Fig. 24: Checking Continuity Between Body Ground And Heater Control Panel 30P Connector Terminals No. 15 And 16**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** -Repair short to body ground in the wire(s) between the heater control panel and the mode control motor.

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

**DTC 12: A PROBLEM IN THE BLOWER MOTOR CIRCUIT**

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

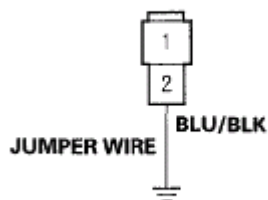
*Are the fuses OK?*

**YES** -Go to step 2.

**NO** -Replace the fuse(s), and recheck.

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

BLOWER MOTOR 2P CONNECTOR



Wire side of female terminals

**Fig. 25: Connecting No. 2 Terminal Of Blower Motor 2P Connector To Body Ground With Jumper**

**Wire****Courtesy of AMERICAN HONDA MOTOR CO., INC.**

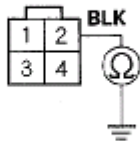
3. Turn the ignition switch ON (II).

*Does the blower motor run?*

**YES** -Go to step 4.

**NO** -Go to step 17.

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

**POWER TRANSISTOR 4P CONNECTOR**

Wire side of female terminals

**Fig. 26: Checking Continuity Between No. 2 Terminal Of Power Transistor 4P Connector And Body Ground****Courtesy of AMERICAN HONDA MOTOR CO., INC.**

*Is there continuity?*

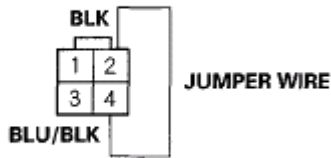
**YES** -Go to step 8.

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

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



**POWER TRANSISTOR 4P CONNECTOR**



Wire side of female terminals

**Fig. 27: Connecting No. 2 And 4 Terminals Of Power Transistor 4P Connector With Jumper Wire**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Turn the ignition switch ON (II).

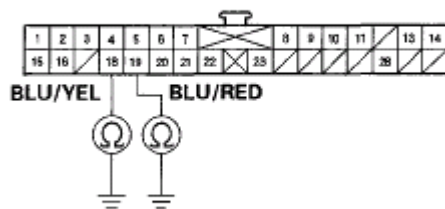
*Does the blower motor run at high speed?*

**YES** -Go to step 10.

**NO** -Repair open in the BLU/BLK wire between the power transistor and the blower motor.

10. Turn the ignition switch OFF.
11. Disconnect the jumper wire.
12. Disconnect the heater control panel 30P connector.
13. Check for continuity between the No. 18 and No. 19 terminals of the heater control panel 30P connector and body ground individually.

**HEATER CONTROL PANEL 30P CONNECTOR**



Wire side of female terminals

**Fig. 28: Checking Continuity Between No. 18 And 19 Terminals Of Heater Control Panel 30P Connector And Body Ground**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** -Repair short to body ground in the wire(s) between the heater control panel and the power transistor.

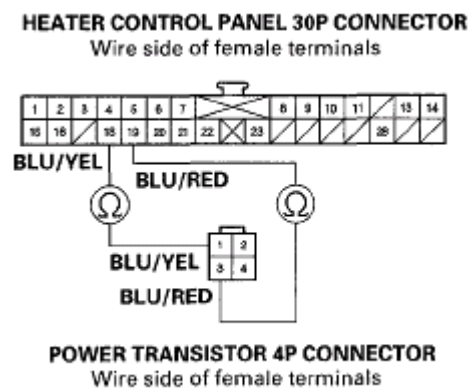
**NO** -Go to step 14.

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

30P: 4P:

No. 18 No. 1

No. 19 No. 3



**Fig. 29: Checking Continuity Between Terminals Of Heater Control Panel 30P Connector And Power Transistor 4P Connector**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** -Go to step 15.

**NO** -Repair open in the wire(s) between the heater control panel and the power transistor.

15. Reconnect the heater control panel 30P connector.
16. Test the power transistor (see **POWER TRANSISTOR TEST** ).

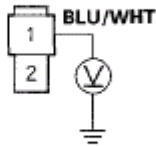
*Is the power transistor OK?*

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

**NO** -Replace the power transistor.

17. Disconnect the jumper wire.
18. Disconnect the blower motor 2P connector.

19. Turn the ignition switch ON (II).
20. Measure the voltage between the No. 1 terminal of the blower motor 2P connector and body ground.

**BLOWER MOTOR 2P CONNECTOR**

Wire side of female terminals

**Fig. 30: Measuring Voltage Between No. 1 Terminal Of Blower Motor 2P Connector And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there battery voltage?*

**YES** -Replace the blower motor.

**NO** -Go to step 21.

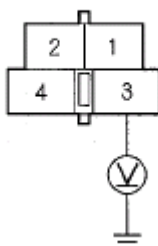
21. Turn the ignition switch OFF.
22. Remove the blower motor relay from the under-hood fuse/relay box, and test it (see **POWER RELAY TEST** ).

*Is the relay OK?*

**YES** -Go to step 23.

**NO** -Replace the blower motor relay.

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

**BLOWER MOTOR RELAY 4P SOCKET**

**Fig. 31: Measuring Voltage Between No. 3 Terminal Of Blower Motor Relay 4P Socket And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

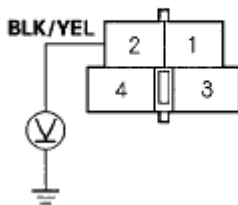
*Is there battery voltage?*

**YES** -Go to step 24.

**NO** -Replace the under-hood fuse/relay box.

24. Turn the ignition switch ON (II).
25. Measure the voltage between the No. 2 terminal of the blower motor relay 4P socket and body ground.

**BLOWER MOTOR RELAY 4P SOCKET**



**Fig. 32: Measuring Voltage Between No. 2 Terminal Of Blower Motor Relay 4P Socket And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

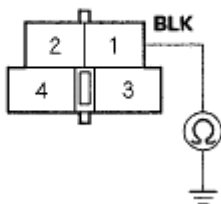
*Is there battery voltage?*

**YES** -Go to step 26.

**NO** -Repair open in the wire between the No. 14 (10 A) fuse in the under-dash fuse/relay box and the blower motor relay.

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

**BLOWER MOTOR RELAY 4P SOCKET**



**Fig. 33: Checking Continuity Between No. 1 Terminal Of Blower Motor Relay 4P Socket And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** -Repair open in the BLU/WHT wire between the blower motor relay and the blower motor.

**NO** -Check for an open in the wire between the blower motor relay and body ground. If the wire is OK, check for poor ground at G301.

#### **DTC 14: AN OPEN IN THE EVAPORATOR TEMPERATURE SENSOR CIRCUIT**

1. Remove the evaporator temperature sensor (see **EVAPORATOR TEMPERATURE SENSOR REPLACEMENT** ).
2. Test the evaporator temperature sensor (see **EVAPORATOR TEMPERATURE SENSOR REPLACEMENT** ).

*Is the evaporator temperature sensor OK?*

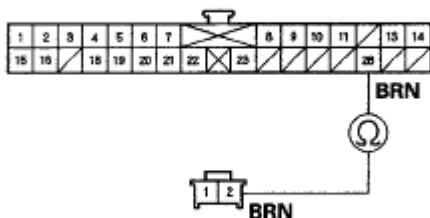
**YES** -Go to step 3.

**NO** -Replace the evaporator temperature sensor.

3. Disconnect the heater control panel 30P connector.
4. Check for continuity between the No. 28 terminal of the heater control panel 30P connector and the No. 2 terminal of the evaporator temperature sensor 2P connector.

#### **HEATER CONTROL PANEL 30P CONNECTOR**

Wire side of female terminals



#### **EVAPORATOR TEMPERATURE SENSOR 2P CONNECTOR**

Wire side of female terminals

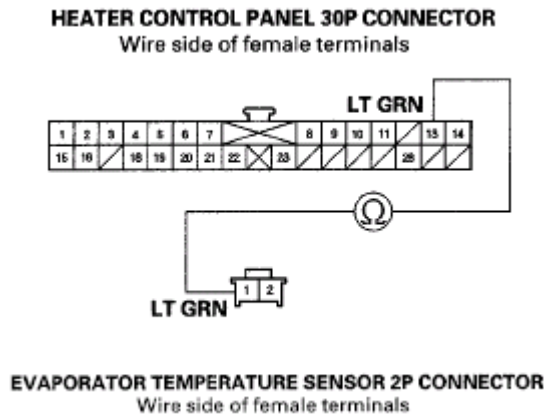
**Fig. 34: Checking Continuity Between No. 28 Terminal Of Heater Control Panel 30P Connector And No. 2 Terminal Of Evaporator Temperature Sensor 2P Connector**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** -Go to step 5.

**NO** -Repair open in the wire between the heater control panel and the evaporator temperature sensor.

5. Check for continuity between the No. 13 terminal of the heater control panel 30P connector and the No. 1 terminal of the evaporator temperature sensor 2P connector.



**Fig. 35: Checking Continuity Between No. 13 Terminal Of Heater Control Panel 30P Connector And No. 1 Terminal Of Evaporator Temperature Sensor 2P Connector**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

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

**NO** -Repair open in the wire between the heater control panel and the evaporator temperature sensor.

#### **DTC 15: A SHORT IN THE EVAPORATOR TEMPERATURE SENSOR CIRCUIT**

1. Remove the evaporator temperature sensor (see **EVAPORATOR TEMPERATURE SENSOR REPLACEMENT** ).
2. Test the evaporator temperature sensor (see **EVAPORATOR TEMPERATURE SENSOR REPLACEMENT** ).

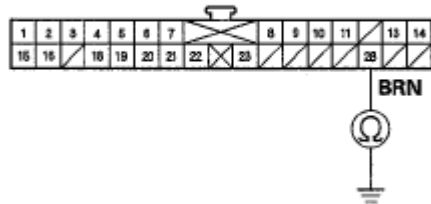
*Is the evaporator temperature sensor OK?*

**YES** -Go to step 3.

**NO** -Replace the evaporator temperature sensor.

3. Disconnect the heater control panel 30P connector.
4. Check for continuity between the No. 28 terminal of the heater control panel 30P connector and body ground.

## HEATER CONTROL PANEL 30P CONNECTOR



Wire side of female terminals

**Fig. 36: Checking Continuity Between No. 28 Terminal Of Heater Control Panel 30P Connector And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** -Repair short to body ground in the wire between the heater control panel and the evaporator temperature sensor.

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

## RECIRCULATION CONTROL MOTOR CIRCUIT TROUBLESHOOTING

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

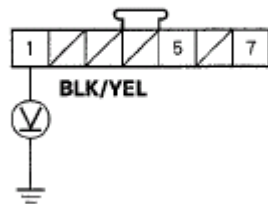
*Is the fuse OK?*

**YES** -Go to step 2.

**NO** -Replace the fuse, and recheck.

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

## RECIRCULATION CONTROL MOTOR 7P CONNECTOR



Wire side of female terminals

**Fig. 37: Measuring Voltage Between No. 1 Terminal Of Recirculation Control Motor 7P Connector And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there battery voltage?*

**YES** -Go to step 5.

**NO** -Repair open in the wire between the No. 14 (10 A) fuse in the under-dash fuse/relay box and the recirculation control motor.

5. Turn the ignition switch OFF.
6. Test the recirculation control motor (see **MODE CONTROL MOTOR REPLACEMENT** ).

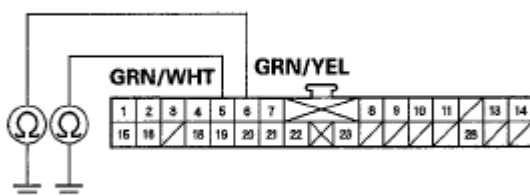
*Is the recirculation control motor OK?*

**YES** -Go to step 7.

**NO** -Go to step 13.

7. Disconnect the heater control panel 30P connector.
8. Check for continuity between the No. 5 and No. 6 terminals of the heater control panel 30P connector and body ground individually.

## HEATER CONTROL PANEL 30P CONNECTOR



Wire side of female terminals

**Fig. 38: Checking Continuity Between No. 5 And 6 Terminals Of Heater Control Panel 30P**

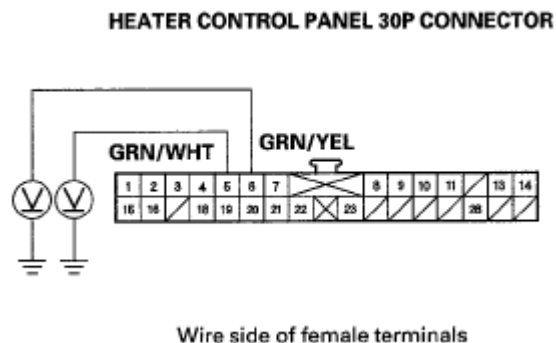


**Connector And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?***YES** -Repair short to body ground in the wire(s) between the heater control panel and the recirculation control motor.**NO** -Go to step 9.

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

**Fig. 39: Checking For Voltage Between No. 5 And 6 Terminals Of Heater Control Panel 30P Connector And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

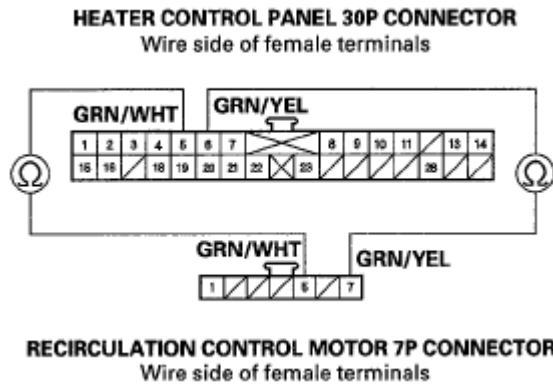
*Is there any voltage?***YES** -Repair short to power in the wire(s) between the heater control panel and the recirculation control motor. This short also may damage the heater control panel. Repair the short to power and retest before replacing the heater control panel.**NO** -Go to step 10.

- Turn the ignition switch OFF.
- Check for continuity between the following terminals of the heater control panel 30P connector and the recirculation control motor 7P connector.

30P: 7P:

No. 5 No. 5

No. 6 No. 7



**Fig. 40: Checking Continuity Between Terminals Of Heater Control Panel 30P Connector And Recirculation Control Motor 7P Connector**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** -Go to step 12.

**NO** -Repair open in the wire(s) between the heater control panel and the recirculation control motor.

12. Check for loose wires or poor connections at the heater control panel 30P connector and at the recirculation control motor 7P connector. If the connections are good, substitute a known-good recirculation control motor and retest.

*Did the symptom/indication go away?*

**YES** -The original recirculation control motor is faulty, replace it.

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

13. Remove the recirculation control motor (see **RECIRCULATION CONTROL MOTOR REPLACEMENT**).
14. Check the recirculation control linkage and doors for smooth movement.

*Do the recirculation control linkage and doors move smoothly?*

**YES** -Replace the recirculation control motor.

**NO** -Repair the recirculation control linkage or doors.

## HEATER CONTROL POWER AND GROUND CIRCUIT TROUBLESHOOTING

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

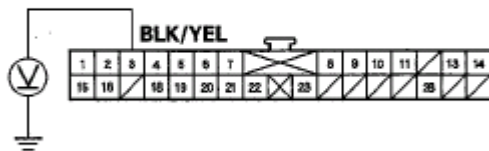
*Is the fuse OK?*

**YES** -Go to step 2.

**NO** -Replace the fuse, and recheck.

2. Disconnect the heater control panel 30P connector.
3. Turn the ignition switch ON (II).
4. Measure the voltage between the No. 3 terminal of the heater control panel 30P connector and body ground.

**HEATER CONTROL PANEL 30P CONNECTOR**



Wire side of female terminals

**Fig. 41: Measuring Voltage Between No. 3 Terminal Of Heater Control Panel 30P Connector And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

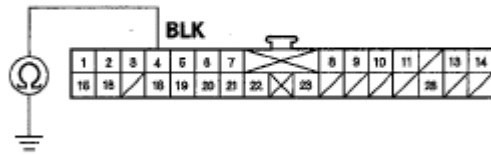
*Is there battery voltage?*

**YES** -Go to step 5.

**NO** -Repair open in the wire between the No. 14 (10 A) fuse in the under-dash fuse/relay box and the heater control panel.

5. Turn the ignition switch OFF.
6. Check for continuity between the No. 4 terminal of the heater control panel 30P connector and body ground.

## HEATER CONTROL PANEL 30P CONNECTOR



Wire side of female terminals

**Fig. 42: Checking Continuity Between No. 4 Terminal Of Heater Control Panel 30P Connector And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

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

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

**A/C CONDENSER FAN CIRCUIT TROUBLESHOOTING**

**NOTE:** Do not use this troubleshooting procedure if the radiator fan and/or the A/C compressor is inoperative. Refer to the **SYMPTOM TROUBLESHOOTING INDEX**.

1. Check the No. 1 (30 A) fuse in the under-hood fuse/relay box, and the No. 14 (10 A) fuse in the under-dash fuse/relay box.

*Are the fuses OK?*

**YES** -Go to step 2.

**NO** -Replace the fuse(s), and recheck.

2. Remove the A/C condenser fan relay from the under-hood fuse/relay box, and test it (see **POWER RELAY TEST**).

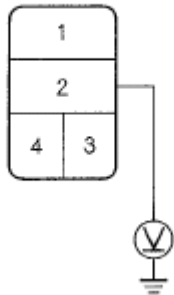
*Is the relay OK?*

**YES** -Go to step 3.

**NO** -Replace the A/C condenser fan relay.

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

**A/C CONDENSER FAN RELAY 4P SOCKET**



**Fig. 43: Measuring Voltage Between No. 2 Terminal Of A/C Condenser Fan Relay 4P Socket And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

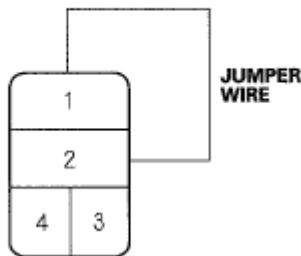
*Is there battery voltage?*

**YES** -Go to step 4.

**NO** -Replace the under-hood fuse/relay box.

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

**A/C CONDENSER FAN RELAY 4P SOCKET**



**Fig. 44: Connecting No. 1 And No. 2 Terminals Of A/C Condenser Fan Relay 4P Socket With Jumper Wire**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Does the A/C condenser fan run?*

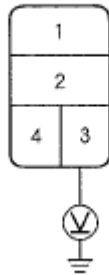
**YES** -Go to step 5.

**NO** -Go to step 8.

5. Disconnect the jumper wire.

6. Turn the ignition switch ON (II).
7. Measure the voltage between the No. 3 terminal of the A/C condenser fan relay 4P socket and body ground.

A/C CONDENSER FAN RELAY 4P SOCKET



**Fig. 45: Measuring Voltage Between No. 3 Terminal Of A/C Condenser Fan Relay 4P Socket And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

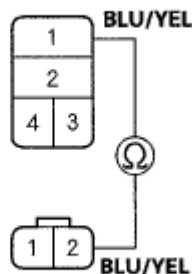
*Is there battery voltage?*

**YES** -Replace the under-hood fuse/relay box.

**NO** -Repair open in the BLK/YEL wire between the No. 14 (10 A) fuse in the under-dash fuse/relay box and the A/C condenser fan relay socket in the under-hood fuse/relay box.

8. Disconnect the jumper wire.
9. Disconnect the A/C condenser fan 2P connector.
10. Check for continuity between the No. 1 terminal of the A/C condenser fan relay 4P socket and the No. 2 terminal of the A/C condenser fan 2P connector.

A/C CONDENSER FAN RELAY 4P SOCKET



A/C CONDENSER FAN 2P CONNECTOR  
Wire side of female terminals

**Fig. 46: Checking Continuity Between No. 1 Terminal Of A/C Condenser Fan Relay 4P Socket And No. 2 Terminal Of A/C Condenser Fan 2P Connector**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

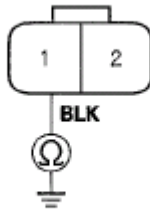
*Is there continuity?*

**YES** -Go to step 11.

**NO** -Repair open in the wire between the A/C condenser fan relay socket in the under-hood fuse/relay box and the A/C condenser fan.

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

**A/C CONDENSER FAN 2P CONNECTOR**



Wire side of female terminals

**Fig. 47: Checking Continuity Between No. 1 Terminal Of A/C Condenser Fan 2P Connector And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** -Replace the A/C condenser fan motor.

**NO** -Check for an open in the wire between the A/C condenser fan and body ground. If the wire is OK, check for poor ground at G201.

## **RADIATOR AND A/C CONDENSER FAN COMMON CIRCUIT TROUBLESHOOTING**

**NOTE:** Do not use this troubleshooting procedure if only one fan is inoperative, or the A/C compressor is inoperative. Refer to the **SYMPTOM TROUBLESHOOTING INDEX**.

1. Check the No. 1 (30 A) and No. 4 (20 A) fuses in the under-hood fuse/relay box, and the No. 14 (10 A) fuse in the under-dash fuse/relay box.

*Are the fuses OK?*

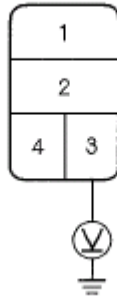
**YES** -Go to step 2.

**NO** -Replace the fuse(s), and recheck.

2. Remove the A/C condenser fan relay from the under-hood fuse/relay box.

3. Turn the ignition switch ON (II).
4. Measure the voltage between the No. 3 terminal of the A/C condenser fan relay 4P socket and body ground.

**A/C CONDENSER FAN RELAY 4P SOCKET**



**Fig. 48: Measuring Voltage Between No. 3 Terminal Of A/C Condenser Fan Relay 4P Socket And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

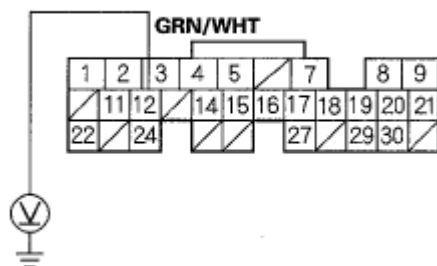
*Is there battery voltage?*

**YES** -Go to step 5.

**NO** -Repair open in the BLK/YEL wire between the No. 14 (10 A) fuse in the under-dash fuse/relay box and the radiator fan relay socket, and the A/C condenser fan relay socket.

5. Turn the ignition switch OFF.
6. Reinstall the A/C condenser fan relay.
7. Make sure the A/C switch is OFF.
8. Turn the ignition switch ON (II).
9. Using the backprobe set, measure the voltage between the No. 12 terminal of ECM/PCM connector E (31P) and body ground with the ECM/PCM connectors connected.

**ECM/PCM CONNECTOR E (31P)**



Wire side of female terminals

**Fig. 49: Measuring Voltage Between No. 12 Terminal Of ECM/PCM Connector E (31P) And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.



*Is there battery voltage?*

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

**NO** -Repair open in the wire between the radiator fan relay socket, the A/C condenser fan relay socket and the ECM/PCM.

## A/C COMPRESSOR CLUTCH CIRCUIT TROUBLESHOOTING

1. Check the No. 1 (30 A) fuse in the under-hood fuse/relay box, and the No. 14 (10 A) fuse in the under-dash fuse/relay box.

*Are the fuses OK?*

**YES** -Go to step 2.

**NO** -Replace the fuse(s), and recheck.

2. Connect the HDS to the DLC.
3. Start the engine.
4. Turn on the A/C on the heater control panel.
5. Using the HDS, confirm the following values in the PGM-FI Data List at idle.

### DATA LIST

TP SENSOR	About 0.5 V
RPM	720 ± 50
ECT SENSOR 2	39-230°F
A/C SWITCH	ON
A/C CLUTCH	ON

*Are all the values within specifications?*

**YES** -Go to step 6.

**NO** -Troubleshoot the value that is not within the specifications.

6. Remove the A/C compressor clutch relay from the under-hood fuse/relay box, and test it (see **POWER RELAY TEST** ).

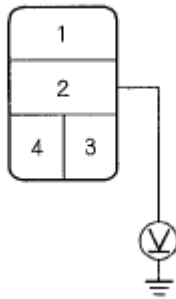
*Is the relay OK?*

**YES** -Go to step 7.

**NO** -Replace the A/C compressor clutch relay.

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

**A/C COMPRESSOR CLUTCH RELAY 4P SOCKET**



**Fig. 50: Measuring Voltage Between No. 2 Terminal Of A/C Compressor Clutch Relay 4P Socket And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

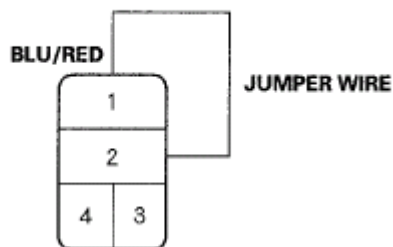
*Is there battery voltage?*

**YES** -Go to step 8.

**NO** -Replace the under-hood fuse/relay box.

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

**A/C COMPRESSOR CLUTCH RELAY 4P SOCKET**



**Fig. 51: Connecting No. 1 And 2 Terminals Of A/C Compressor Clutch Relay 4P Socket With Jumper Wire**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Does the A/C compressor clutch click?*

**YES** -Go to step 9.

**NO** -Go to step 17.

9. Disconnect the jumper wire.
10. Turn the ignition switch ON (II).
11. Measure the voltage between the No. 3 terminal of the A/C compressor clutch relay 4P socket and body ground.

**A/C COMPRESSOR CLUTCH RELAY 4P SOCKET**



**Fig. 52: Measuring Voltage Between No. 3 Terminal Of A/C Compressor Clutch Relay 4P Socket And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

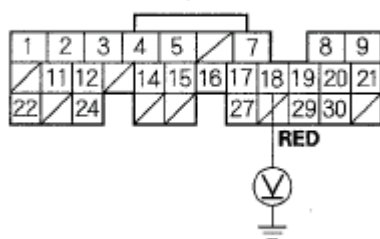
*Is there battery voltage?*

**YES** -Go to step 12.

**NO** -Repair open in the BLK/YEL wire between the No. 14 (10 A) fuse in the under-dash fuse/relay box and the A/C compressor clutch relay socket.

12. Turn the ignition switch OFF.
13. Reinstall the A/C compressor clutch relay.
14. Make sure the A/C switch is OFF.
15. Turn the ignition switch ON (II).
16. Using the backprobe set, measure the voltage between the No. 18 terminal of ECM/PCM connector E (31P) and body ground with the ECM/PCM connectors connected.

**ECM/PCM CONNECTOR E (31P)**



Wire side of female terminals

**Fig. 53: Measuring Voltage Between No. 18 Terminal Of ECM/PCM Connector E (31P) And Body**

**Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

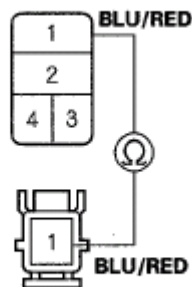
*Is there battery voltage?*

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

**NO** -Repair open in the wire between the A/C compressor clutch relay and the ECM/PCM.

17. Disconnect the jumper wire.
18. Disconnect the A/C compressor clutch 1P connector.
19. Check for continuity between the No. 1 terminal of the A/C compressor clutch relay 4P socket and the No. 1 terminal of the A/C compressor clutch 1P connector.

**A/C COMPRESSOR CLUTCH RELAY 4P SOCKET**



**A/C COMPRESSOR CLUTCH 1P CONNECTOR**

Terminal side of male terminals

**Fig. 54: Checking Continuity Between No. 1 Terminal Of A/C Compressor Clutch Relay 4P Socket And No. 1 Terminal Of A/C Compressor Clutch 1P Connector**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** -Check the A/C compressor clutch clearance, and the A/C compressor clutch field coil (see **A/C COMPRESSOR CLUTCH CHECK** ).

**NO** -Repair open in the wire between the A/C compressor clutch relay socket and the A/C compressor clutch.

## A/C PRESSURE SWITCH CIRCUIT TROUBLESHOOTING

### NOTE:

- Do not use this troubleshooting procedure if any of these items are working properly with the A/C switch ON; A/C condenser fan, radiator fan and A/C compressor, or the heater does not work. Refer to the **SYMPTOM TROUBLESHOOTING INDEX**.

- Before doing symptom troubleshooting, do the self-diagnostic function (see RESETTING THE SELF-DIAGNOSTIC FUNCTION ).

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

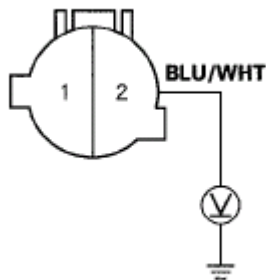
*Does the blower motor run correctly on all speeds?*

**YES** -Go to step 3.

**NO** -Troubleshoot the blower motor circuit (see DTC 12: A PROBLEM IN THE BLOWER MOTOR CIRCUIT ).

3. Disconnect the A/C pressure switch 2P connector.
4. Turn the ignition switch ON (II).
5. Measure the voltage between the No. 2 terminal of the A/C pressure switch 2P connector and body ground.

**A/C PRESSURE SWITCH 2P CONNECTOR**



Wire side of female terminals

**Fig. 55: Measuring Voltage Between No. 2 Terminal Of A/C Pressure Switch 2P Connector And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

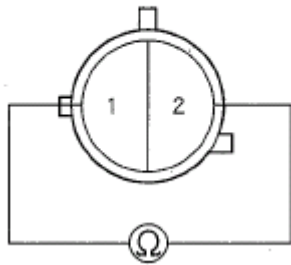
*Is there 5 V or more?*

**YES** -Go to step 6.

**NO** -Go to step 14.

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

**A/C PRESSURE SWITCH**



**Fig. 56: Checking Continuity Between No. 1 And No. 2 Terminals Of A/C Pressure Switch**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

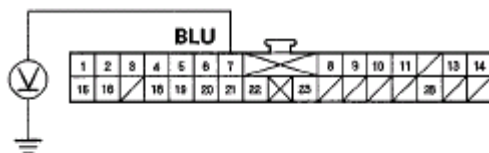
*Is there continuity?*

**YES** -Go to step 8.

**NO** -Go to step 16.

8. Reconnect the A/C pressure switch 2P connector.
9. Disconnect the heater control panel 30P connector.
10. Turn the ignition switch ON (II).
11. Measure the voltage between the No. 7 terminal of the heater control panel 30P connector and body ground.

**HEATER CONTROL PANEL 30P CONNECTOR**



Wire side of female terminals

**Fig. 57: Measuring Voltage Between No. 7 Terminal Of Heater Control Panel 30P Connector And Body Ground**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

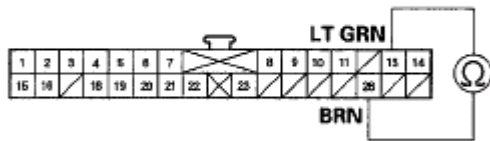
*Is there battery voltage?*

**YES** -Go to step 12.

**NO** -Repair open in the wire between the heater control panel and the A/C pressure switch.

12. Turn the ignition switch OFF.
13. Measure the resistance between the No. 13 and the No. 28 terminals of the heater control panel 30P connector.

**HEATER CONTROL PANEL 30P CONNECTOR**



Wire side of female terminals

**Fig. 58: Measuring Resistance Between No. 13 And 28 Terminals Of Heater Control Panel 30P Connector**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

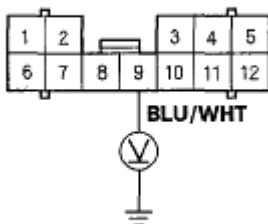
*Is the resistance less than 24 kohms?*

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

**NO** -Test the evaporator temperature sensor (see **EVAPORATOR TEMPERATURE SENSOR REPLACEMENT** ).

14. Make sure the A/C switch is OFF.
15. Using the backprobe set, measure the voltage between the No. 9 terminal of under-dash fuse/relay box connector F (12P) and body ground with the under-dash fuse/relay box connectors connected.

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



Wire side of female terminals

**Fig. 59: Measuring Voltage Between No. 9 Terminal Of Under-Dash Fuse/Relay Box Connector F (12P) And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there 5 V or more?*

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

**NO** -Refer to the multiplex control system (see **TROUBLESHOOTING** ).

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

16. Check for proper A/C system pressure.

*Is the pressure within specifications?*

**YES** -Replace the A/C pressure switch.

**NO** -Repair the A/C pressure problem.

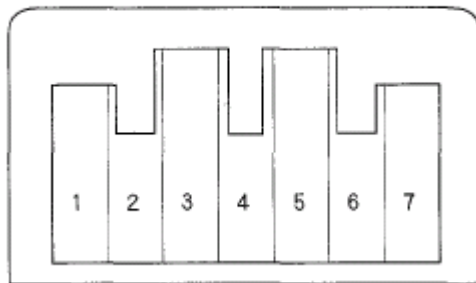
## AIR MIX CONTROL MOTOR TEST

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

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

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

**AIR MIX CONTROL MOTOR**



**Fig. 60: Identifying Air Mix Control Motor Connector Terminals**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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



- If the linkage and door move smoothly, replace the air mix control motor.
  - If the linkage or door sticks or binds, repair them as needed.
  - If the air mix control motor runs smoothly, go to step 4.
4. Measure the resistance between the No. 5 and No. 7 terminals. It should be between 4.2 to 7.8 kohms.
  5. Reconnect the air mix control motor 7P connector, then turn the ignition switch ON (II).
  6. Using the backprobe set, measure the voltage between the No. 3 and No. 7 terminals.

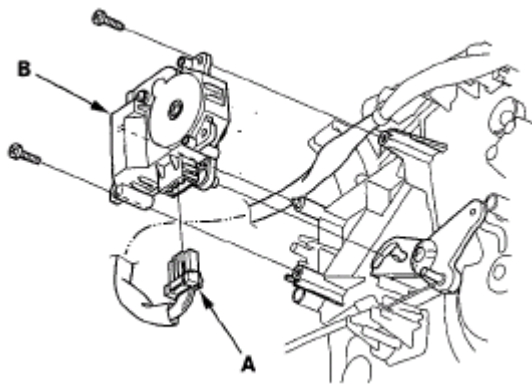
**Max Cool-about 1 V**

**Max Hot-about 4 V**

7. If either the resistance or voltage readings are not as specified, replace the air mix control motor.

## AIR MIX CONTROL MOTOR REPLACEMENT

1. Remove the under-dash fuse/relay box (see **REMOVAL AND INSTALLATION** ).
2. Disconnect the 7P connector (A) from the air mix control motor (B). Remove the self-tapping screws and the air mix control motor from the heater unit.



**Fig. 61: Identifying Air Mix Control Motor**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

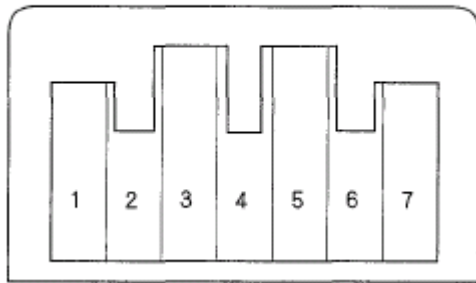
## MODE CONTROL MOTOR TEST

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

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

2. Connect battery power to the No. 1 terminal of the mode control motor, and ground the No. 2 terminal;

the mode control motor should run smoothly, and stop at Vent. If it doesn't, reverse the connections; the mode control motor should run smoothly, and stop at Defrost. When the mode control motor stops running, disconnect battery power immediately.

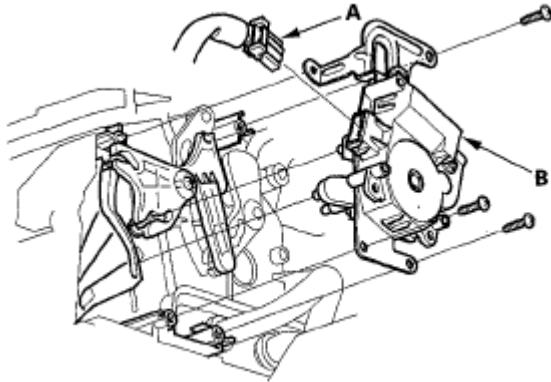
**MODE CONTROL MOTOR**

**Fig. 62: Identifying Mode Control Motor Connector Terminals**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the mode control motor did not run in step 2, remove it, then check the mode control linkage and doors for smooth movement.
  - If the linkage and doors move smoothly, replace the mode control motor.
  - If the linkage or doors stick or bind, repair them as needed.
  - If the 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 kohms range. With the mode control motor running as in step 2, check for continuity between the No. 3, 4, 5, 6 terminals and the No. 7 terminal individually. There should be continuity for a moment at each terminal as the motor moves past the switch's terminal.
5. If there is no continuity for a moment at each terminal, replace the mode control motor.

**MODE CONTROL MOTOR REPLACEMENT**

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



**Fig. 63: Identifying Mode Control Motor**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

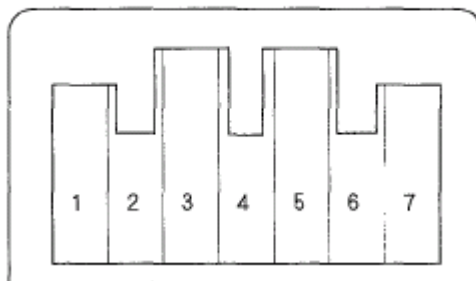
## RECIRCULATION CONTROL MOTOR TEST

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

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

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

### RECIRCULATION CONTROL MOTOR



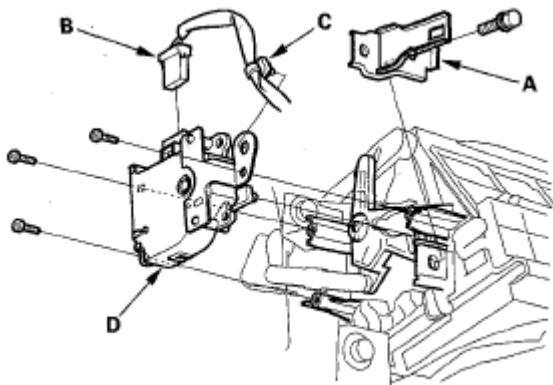
**Fig. 64: Identifying Recirculation Control Motor Connector Terminals**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the recirculation control motor did not run in step 2, remove it, then check the recirculation control linkage and doors for smooth movement.

- If the linkage and doors move smoothly, replace the recirculation control motor.
- If the linkage or doors stick or bind, repair them as needed.

## RECIRCULATION CONTROL MOTOR REPLACEMENT

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



**Fig. 65: Identifying Recirculation Control Motor**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

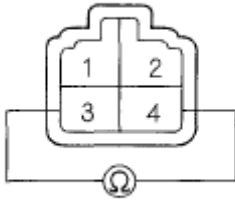
3. Install the motor in the reverse order of removal. After installation, make sure the motor runs smoothly.

## POWER TRANSISTOR TEST

1. Disconnect the 4P connector from the power transistor.
2. Measure the resistance between the No. 3 and No. 4 terminals of the power transistor. It should be about 1.4-1.5 kohms.
  - If the resistance is within the specifications, go to step 3.
  - 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.

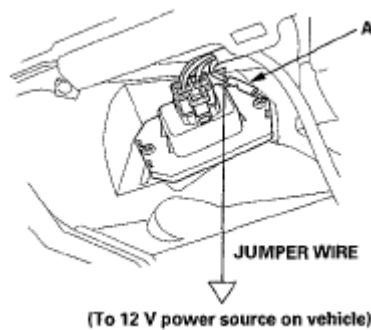
POWER TRANSISTOR



Terminal side of male terminals

**Fig. 66: Identifying Power Transistor Connector Terminals**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

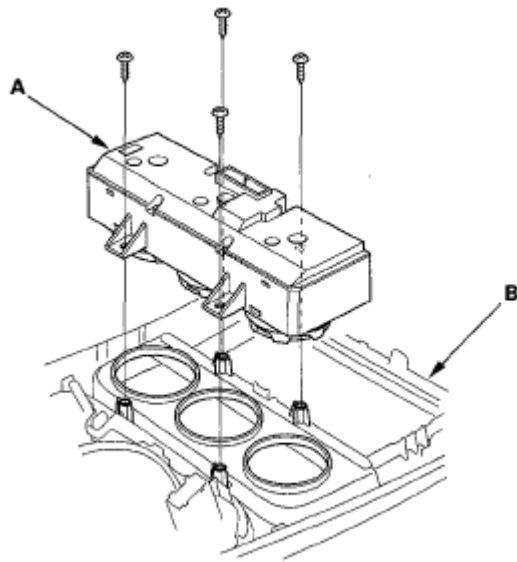


**Fig. 67: Identifying 4P Connector Terminal**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

## HEATER CONTROL PANEL REMOVAL/INSTALLATION

- Remove the center panel (see CENTER PANEL REMOVAL/INSTALLATION ).
- Remove the self-tapping screws and the heater control panel (A) from the center panel (B).

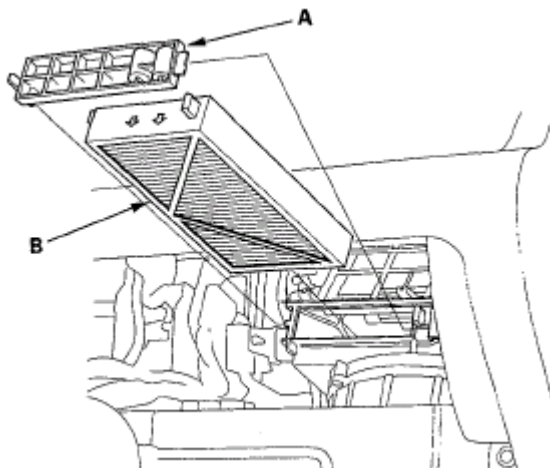


**Fig. 68: Identifying Heater Control Panel**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the control panel in the reverse order of removal. After installation, operate the various functions to see whether they works properly.
4. Run the self-diagnostic function to confirm that there are no problems in the system (see **RESETTING THE SELF-DIAGNOSTIC FUNCTION** ).

## DUST AND POLLEN FILTER REPLACEMENT

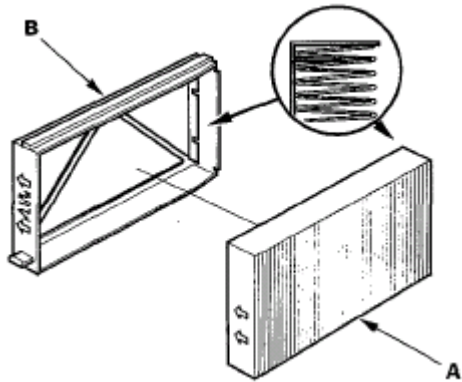
1. Open the glove box. Remove the glove box stop on each side, then hang the glove box down (see **GLOVE BOX REMOVAL/INSTALLATION** ).
2. Remove the filter lid (A) from the blower unit, then pull out the first dust and pollen filter (B). Slide the second filter to the left, and pull it out.



**Fig. 69: Identifying Filter Lid And Pollen Filter**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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



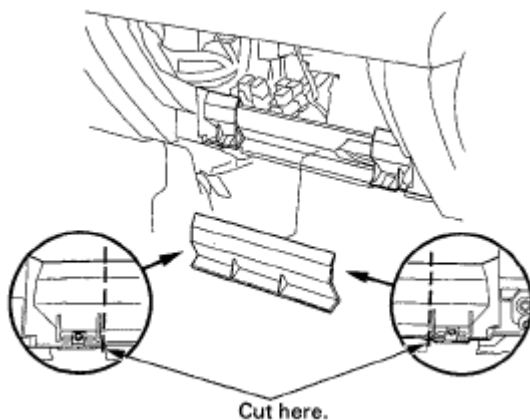
**Fig. 70: Identifying Filter And Housing**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

## BLOWER UNIT REMOVAL/INSTALLATION

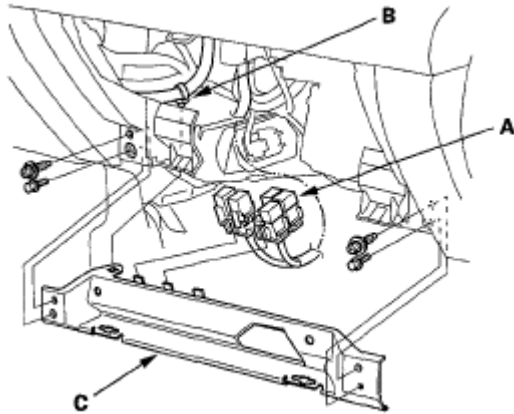
1. Remove the passenger's dashboard undercover (see GLOVE BOX REMOVAL/INSTALLATION), the passenger's kick panel (see TRIM REMOVAL/INSTALLATION - DOOR AREAS), and the glove box (see GLOVE BOX REMOVAL/INSTALLATION).
2. Cut the plastic cross brace in the glove box opening with diagonal cutters in the area shown. Remove and discard the plastic cross brace.



**Fig. 71: Identifying Plastic Cross Brace Cut Area**

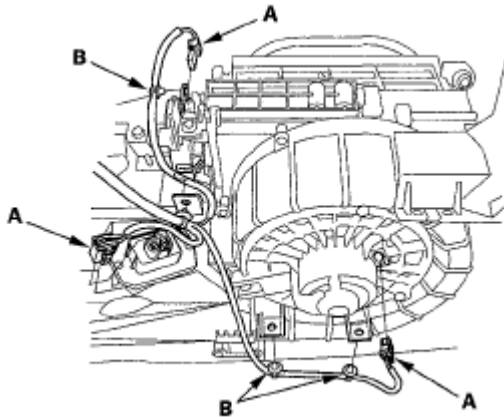
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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



**Fig. 72: Identifying Relays, Wire Harness Clip And Glove Box Frame**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

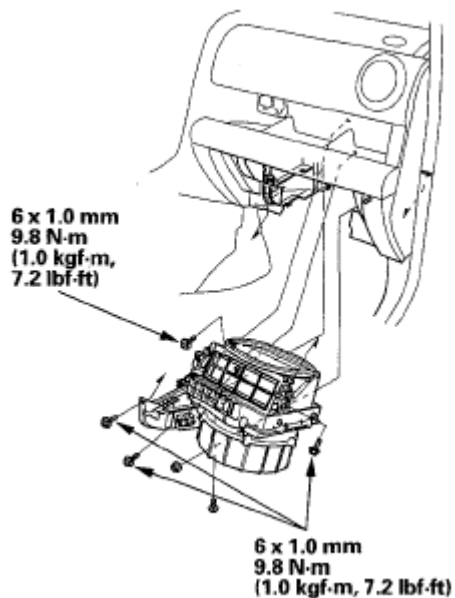
4. Remove the ECM/PCM (see **ECM/PCM REPLACEMENT** ).
5. Disconnect the connectors (A) from the blower motor, the power transistor, and the recirculation control motor, then remove the wire harness clips (B).



**Fig. 73: Identifying Blower Motor, Power Transistor And Recirculation Control Motor Connectors**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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





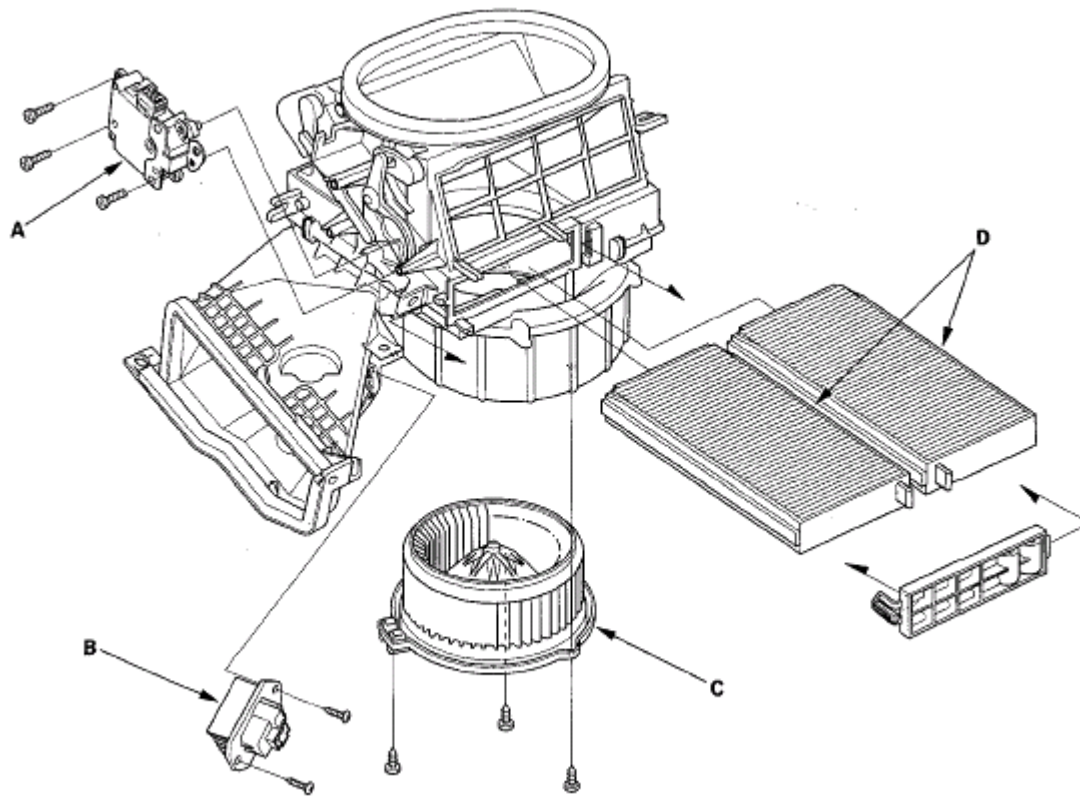
**Fig. 74: Identifying Blower Unit With Torque Specifications**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

## BLOWER UNIT COMPONENT REPLACEMENT

Note these items when overhauling the blower unit;

- The recirculation control motor (A), the power transistor (B), the blower motor (C), and the dust and pollen filters (D) can be replaced without removing the blower unit.
- Before reassembly, make sure that the recirculation control linkage and doors move smoothly.
- After reassembly, make sure the recirculation control motor runs smoothly (see **MODE CONTROL MOTOR REPLACEMENT** ).

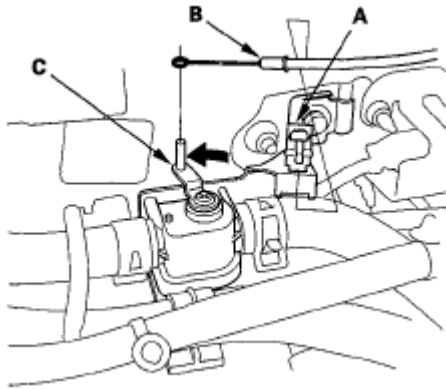


**Fig. 75: Identifying Blower Unit Components**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

## HEATER UNIT/CORE REPLACEMENT

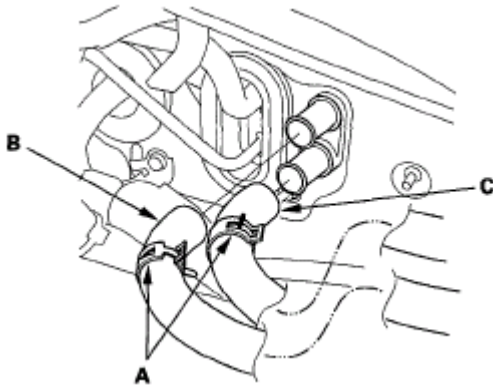
SRS components are located in this area. Review the SRS component locations (see **COMPONENT LOCATION INDEX** ) and precautions and procedures (see **PRECAUTIONS AND PROCEDURES** ) before doing repairs or service.

1. Make sure you have the anti-theft code for the audio system, then write down the audio presets.
2. Disconnect the negative cable from the battery.
3. With air conditioning; disconnect the A/C lines from the evaporator core (see **EVAPORATOR CORE REPLACEMENT** ).
4. From under the hood, open the cable clamp (A), then disconnect the heater valve cable (B) from the heater valve arm (C). Turn the heater valve arm to the fully opened position as shown.



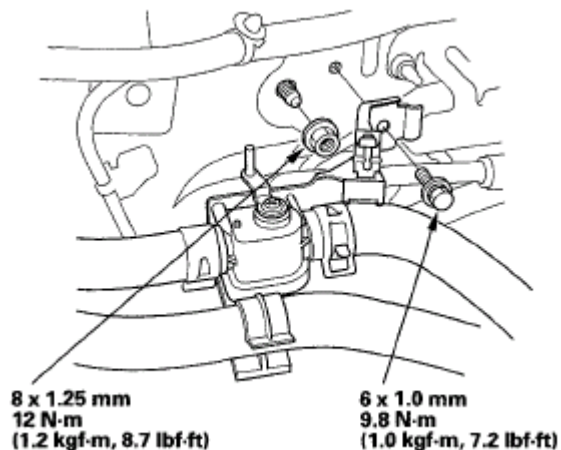
**Fig. 76: Turning Heater Valve Arm**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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



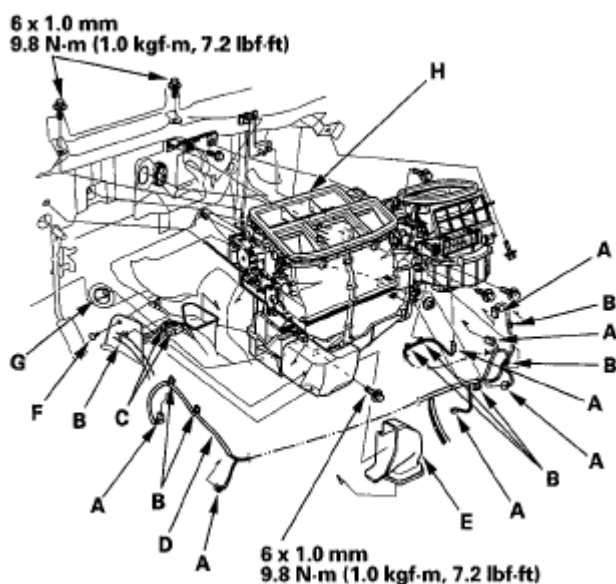
**Fig. 77: Identifying Inlet Heater Hose And Outlet Heater Hose**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the mounting bolt and the heater valve as shown. Remove the mounting nut from the heater unit. Take care not to damage or bend the fuel lines and the brake lines, etc..



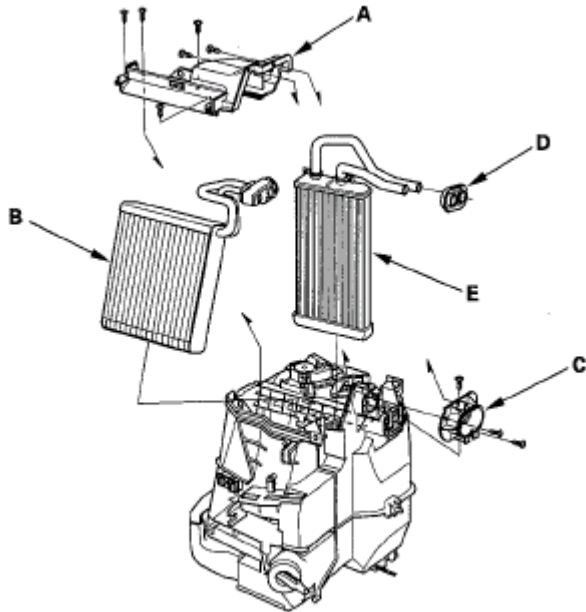
**Fig. 78: Identifying Heater Valve Bolts With Torque Specifications**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Remove the dashboard (see **PASSENGER'S DASHBOARD LOWER PANEL REMOVAL/INSTALLATION** ).
9. Remove the ECM/PCM (see **ECM/PCM REPLACEMENT** ).
10. Disconnect the connectors (A) from the dashboard wire harness, the air mix control motor, the evaporator temperature sensor, the power transistor, the mode control motor, the blower motor, and the recirculation control motor, then remove the wire harness clips (B), the connector clips (C), the wire harness (D), the heater duct (E), and the clip (F). Disconnect the drain hose (G), then remove the mounting nuts and the blower-heater unit(H).



**Fig. 79: Identifying Air Mix Control Motor, Evaporator Temperature Sensor And Wire Harness With Torque Specifications**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

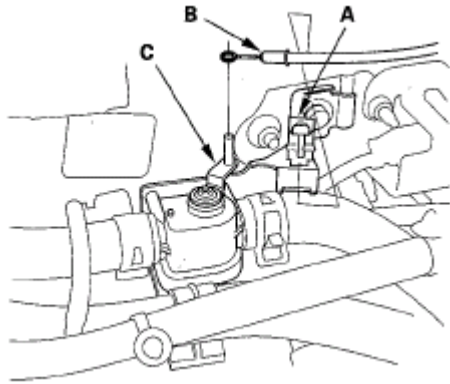


**Fig. 80: Identifying Expansion Valve Cover, Evaporator Core And Flange Cover**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the heater core and the evaporator core in the reverse order of removal.
13. 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 **COOLANT CHECK** ).
  - Be sure to connect the drain hose securely.
  - Adjust the heater valve cable (see **HEATER VALVE CABLE ADJUSTMENT** ).
  - Make sure that there is no engine coolant leakage.
  - Make sure that there is no air leakage.
  - With air conditioning, refer to evaporator core replacement (see **EVAPORATOR CORE REPLACEMENT** ).
  - Enter the anti-theft codes for the audio system, then enter the audio presets.

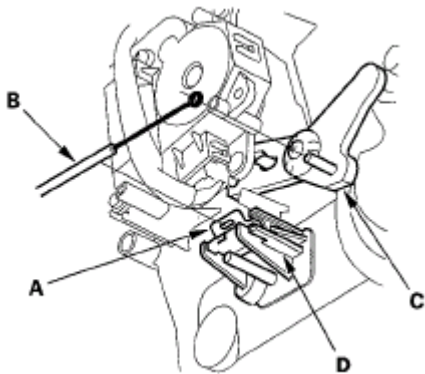
## HEATER VALVE CABLE ADJUSTMENT

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



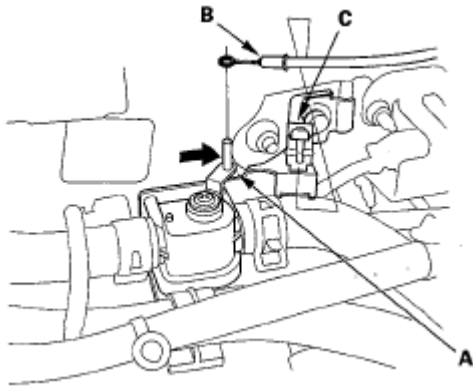
**Fig. 81: Identifying Cable Clamp, Heater Valve Cable And Heater Valve Arm**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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



**Fig. 82: Identifying Cable Clamp, Heater Valve Cable And Air Mix Control Linkage**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

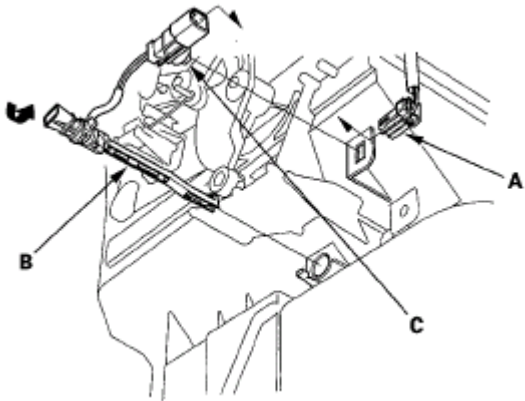
3. Set the temperature control dial on Max Cool with the ignition switch ON (II).
4. Attach the heater valve cable to the air mix control linkage as shown in step 2. Hold the end of the heater valve cable housing against the stop (D), then snap the heater valve cable housing into the cable clamp.
5. From under the hood, turn the heater valve arm (A) to the fully closed position as shown, and hold it. Attach the heater valve cable (B) to the heater valve arm, and gently pull on the heater valve cable housing to take up any slack, then install the heater valve cable housing into the cable clamp (C).



**Fig. 83: Identifying Heater Valve Arm, Heater Valve Cable And Cable Clamp**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

## EVAPORATOR TEMPERATURE SENSOR REPLACEMENT

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

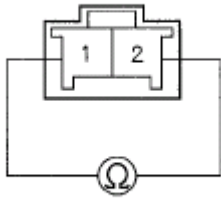


**Fig. 84: Turning Evaporator Temperature Sensor Clockwise**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

## EVAPORATOR TEMPERATURE SENSOR TEST

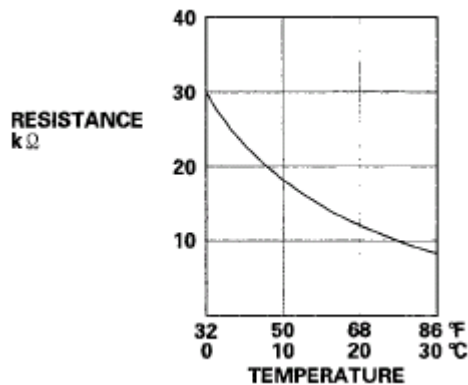
1. Dip the sensor in ice water, and measure the resistance between its terminals.

**EVAPORATOR TEMPERATURE SENSOR**

Terminal side of male terminals

**Fig. 85: Identifying Evaporator Temperature Sensor Connector Terminals**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

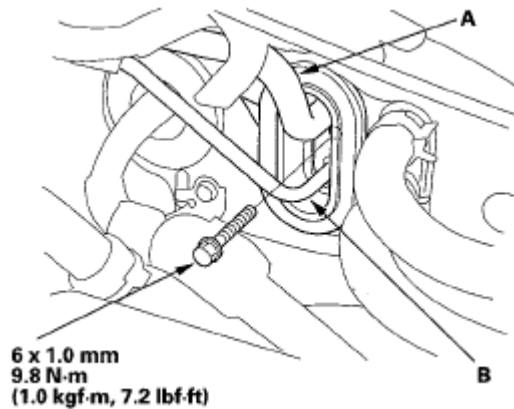


**Fig. 86: Resistance Vs Temperature Graph**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

**EVAPORATOR CORE REPLACEMENT**

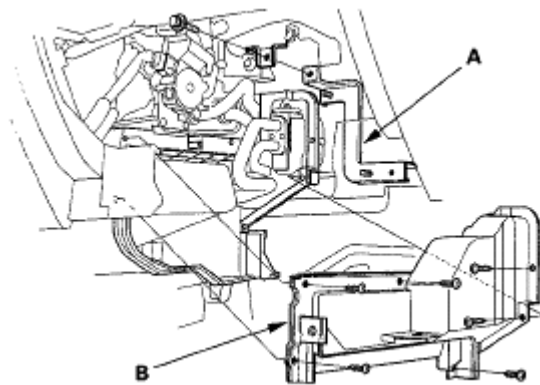
1. Recover the refrigerant with a recovery/recycling/charging station (see **REFRIGERANT RECOVERY** ).
2. Remove the bolt, then disconnect the suction line (A) and the receiver line (B) from the evaporator core.





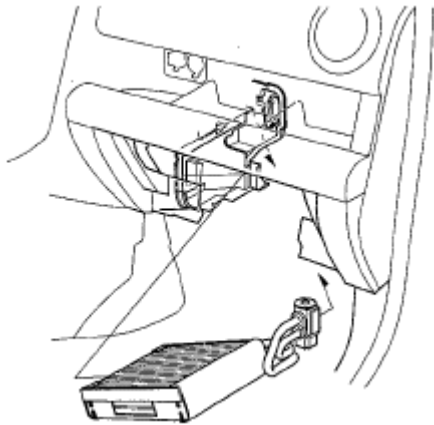
**Fig. 87: Identifying Suction Line And Receiver Line With Torque Specification**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the blower unit (see **BLOWER UNIT REMOVAL/INSTALLATION** ).
4. Remove the bolt and the ECM/PCM bracket (A). Remove the self-tapping screws and the expansion valve cover (B).



**Fig. 88: Identifying ECM/PCM Bracket And Expansion Valve Cover**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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



**Fig. 89: Pulling Out Evaporator Core**

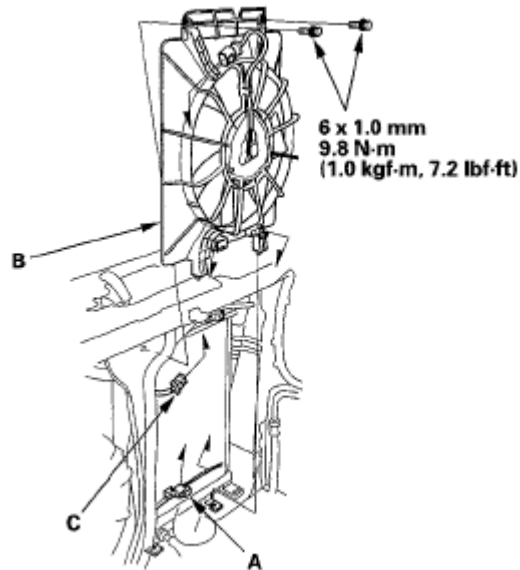
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the core in the reverse order of removal, and note these items:
  - If you're installing a new evaporator core, add refrigerant oil (DENSO ND-OIL 8) (see **A/C REFRIGERANT OIL REPLACEMENT** ).
  - 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 **SYSTEM CHARGING** ).

## A/C COMPRESSOR REPLACEMENT

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. Make sure you have the anti-theft code for the audio system, then write down the audio presets.
3. Disconnect the negative cable from the battery.
4. Recover the refrigerant with a recovery/recycling/charging station (see **REFRIGERANT RECOVERY** ).
5. Remove the radiator reservoir tank.
6. Remove the power steering pump (see **PUMP REPLACEMENT** ).
7. Remove the alternator (see **ALTERNATOR REMOVAL AND INSTALLATION** ).
8. Remove the front grille cover and bulkhead (see **RADIATOR AND FAN REPLACEMENT** ).
9. Remove the A/C compressor clutch connector (A) from the A/C condenser fan shroud (B), then open the wire harness clip. Disconnect the A/C condenser fan connector (C). Remove the upper mounting bolts and the A/C condenser fan shroud. Be careful not to damage the radiator fins when removing the A/C

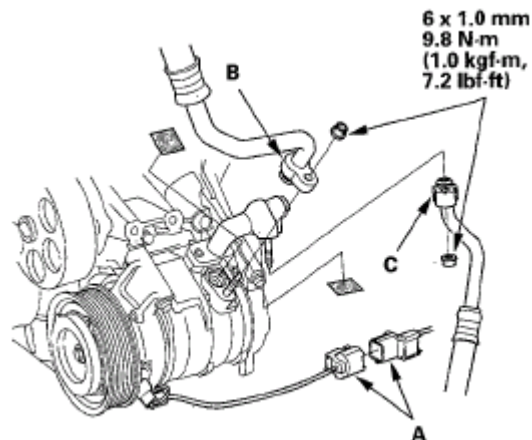
condenser fan shroud.



**Fig. 90: Removing A/C Compressor Clutch Connector From A/C Condenser Fan Shroud With Torque Specification**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

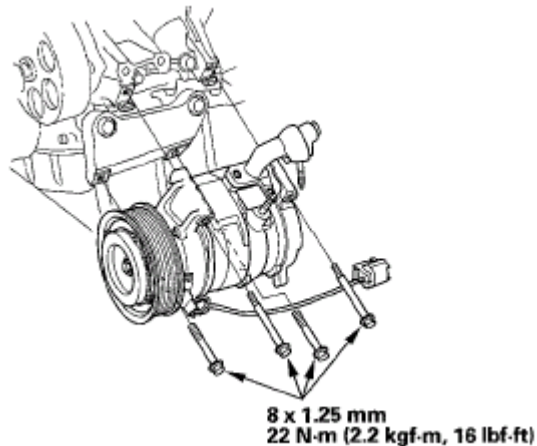
10. Disconnect the A/C compressor clutch connector (A), remove the nuts, then disconnect the suction line (B) and the discharge line (C) from the A/C compressor. Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.



**Fig. 91: Disconnecting A/C Compressor Clutch Connector With Torque Specification**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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



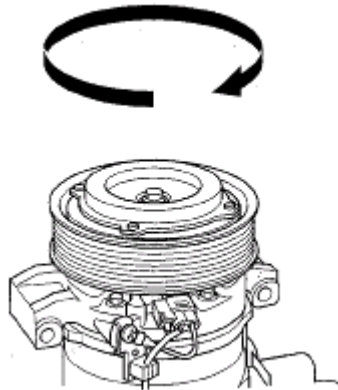
**Fig. 92: Identifying A/C Compressor Mounting Bolts With Torque Specification**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the A/C compressor in the reverse order of removal, and note these items:
  - If you're installing a new A/C compressor, you must calculate the amount of refrigerant oil to be removed from it (see **A/C REFRIGERANT OIL REPLACEMENT** ).
  - 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 refrigerant oil (DENSO ND-OIL 8) for HFC-134a DENSO piston type A/C compressor only.
  - To avoid contamination, do not return the oil to the container once dispensed, and never mix it with other refrigerant oils.
  - Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
  - Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.
  - Be careful not to damage the radiator fins when installing the A/C compressor and the A/C condenser fan shroud.
  - Charge the system (see **SYSTEM CHARGING** ).
  - Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE** ).
  - Perform the power window control unit reset procedure (see **RESETTING THE POWER WINDOW CONTROL UNIT** ).
  - Enter the anti-theft code for the audio system, then enter the audio presets.
  - Set the clock.

## 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 **A/C COMPRESSOR CLUTCH OVERHAUL** ).
2. Check the rotor pulley bearing play and drag by rotating the rotor pulley by hand. Replace the clutch set with a new one if it is noisy or has excessive play/drag (see **A/C COMPRESSOR CLUTCH** ).

**OVERHAUL** ).

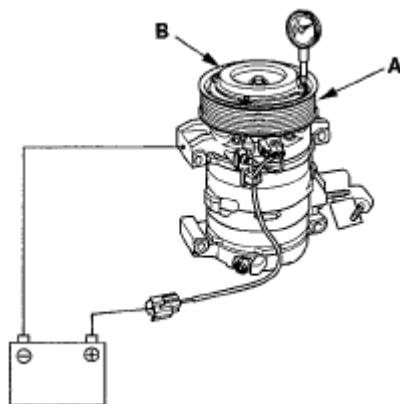


**Fig. 93: Checking Rotor Pulley Bearing Play**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the clearance between the pulley (A) and the pressure plate (B) with a dial indicator. Zero out the indicator, then apply battery voltage to the A/C compressor clutch. Measure the movement of the pressure plate when the voltage is applied. If the clearance is not within the specified limits, the pressure plate must be reshimmed (see **A/C COMPRESSOR CLUTCH OVERHAUL** ).

**Clearance: 0.35-0.6 mm (0.014-0.024 in.)**

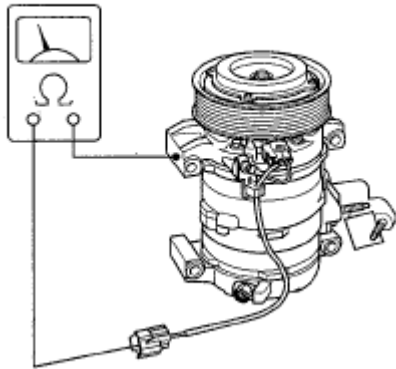
**NOTE:** The shims are available in three thicknesses: 0.1 mm, 0.3 mm, and 0.5 mm.



**Fig. 94: Measuring Clearance Between Pulley And Pressure Plate**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Check resistance of the field coil. If resistance is not within specifications, replace the field coil (see **A/C COMPRESSOR CLUTCH OVERHAUL** ).

**Field Coil Resistance: 3.9—4.3  $\Omega$  at 68 °F (20 °C)**



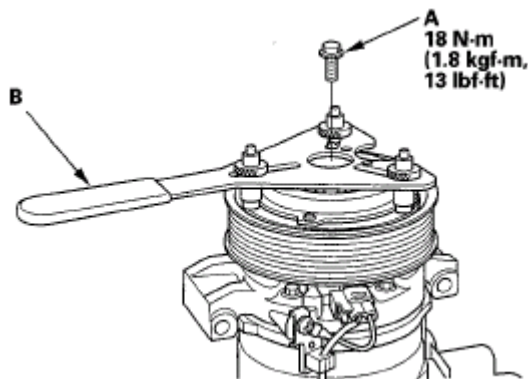
**Fig. 95: Checking Resistance Of Field Coil**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

## A/C COMPRESSOR CLUTCH OVERHAUL

### Special Tools Required

A/C clutch holder, Robin air 10204, Kent-Moore J37872, or Honda Tool and Equipment KMT-J33939, commercially available

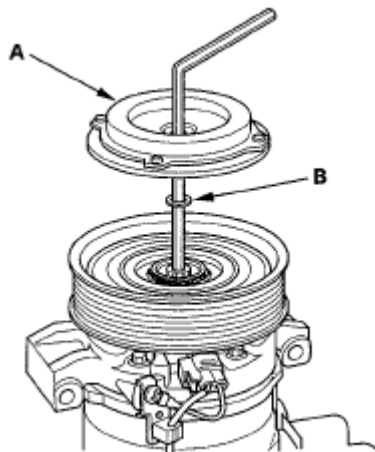
1. Remove the center bolt (A) while holding the pressure plate with a commercially available A/C clutch holder (B).



**Fig. 96: Removing Center Bolt With Torque Specification**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

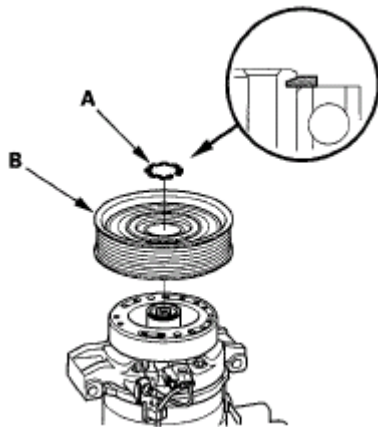
2. Remove the pressure plate (A) and shim(s) (B), taking care not to lose the shim(s). If the clutch needs adjustment, increase or decrease the number and thickness of shims as necessary, then reinstall the pressure plate, and recheck its clearance (see A/C COMPRESSOR CLUTCH CHECK ).

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



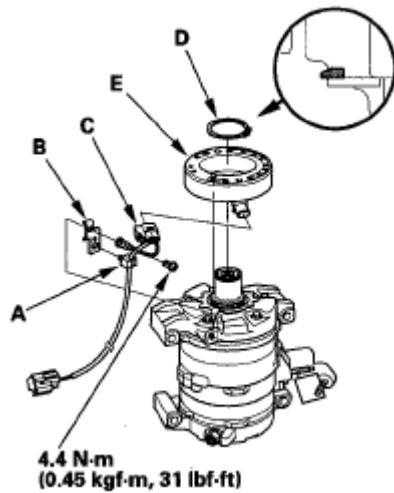
**Fig. 97: Removing Pressure Plate**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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



**Fig. 98: Removing Rotor Pulley**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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



**Fig. 99: Identifying Wire Harness Clip, Holder, Field Coil Connector And Field Coil With Torque Specification**

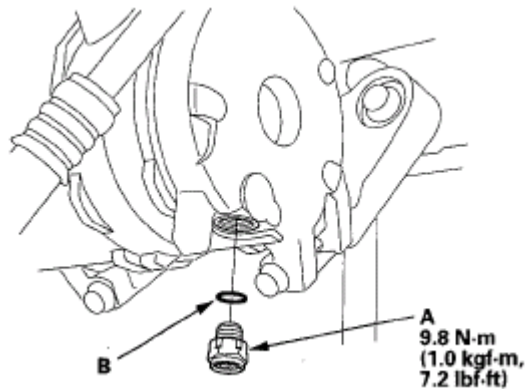
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Reassemble the clutch in the reverse order of disassembly, and note these items:
  - Install the field coil with the wire side facing down, and align the boss on the field coil with the hole in the A/C compressor.
  - Clean the rotor 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 groove.
  - Make sure that the rotor pulley turns smoothly after it's reassembled.
  - Route and clamp the wires properly or they can be damaged by the rotor pulley.

## **A/C COMPRESSOR RELIEF VALVE REPLACEMENT**

1. Recover the refrigerant with a recovery/recycling/charging station (see **REFRIGERANT RECOVERY** ).
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.



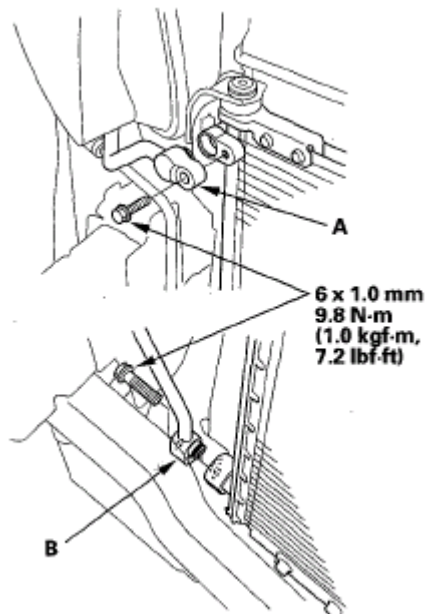


**Fig. 100: Identifying Relief Valve With Torque Specification**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Clean the mating surfaces.
4. Replace the O-ring with a new one at the relief valve, and apply a thin coat of refrigerant oil before installing it.
5. Remove the plug, and install and tighten the relief valve.
6. Charge the system (see **SYSTEM CHARGING** ).

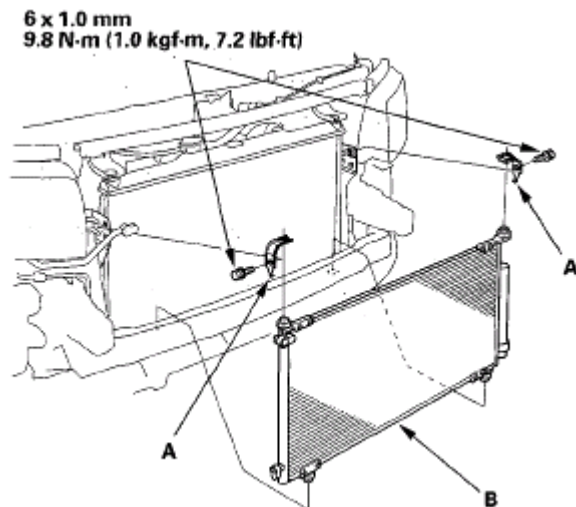
## **A/C CONDENSER REPLACEMENT**

1. Recover the refrigerant with a recovery/recycling/charging station (see **REFRIGERANT RECOVERY** ).
2. Remove the front bumper (see **FRONT BUMPER REMOVAL/INSTALLATION** ).
3. Remove the bolts, then disconnect the discharge line (A) and the A/C condenser line (B) from the A/C condenser. Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.



**Fig. 101: Identifying Discharge Line And A/C Condenser Line With Torque Specification**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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



**Fig. 102: Identifying Mounting Brackets And A/C Condenser With Torque Specification**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

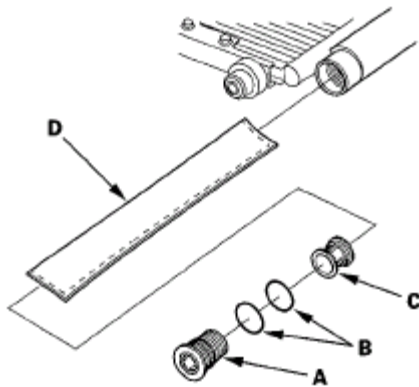
5. Install the A/C condenser in the reverse order of removal, and note these items:
  - If you're installing a new A/C condenser, add refrigerant oil (DENSO ND-OIL 8) (see **A/C REFRIGERANT OIL REPLACEMENT**).
  - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant 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 **SYSTEM CHARGING** ).

## RECEIVER/DRYER DESICCANT REPLACEMENT

1. Remove the A/C condenser (see **A/C CONDENSER REPLACEMENT** ).
2. Remove the cap (A) from the bottom of the A/C condenser, then remove the O-rings (B), the filter (C) and the desiccant (D).



**Fig. 103: Removing O-Rings, Filter And Desiccant**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the desiccant in the reverse order of removal, and note these items:
  - Replace the O-rings with new ones, and apply a thin coat of refrigerant oil (DENSO ND-OIL 8) before installing them.
  - Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.

## REFRIGERANT RECOVERY

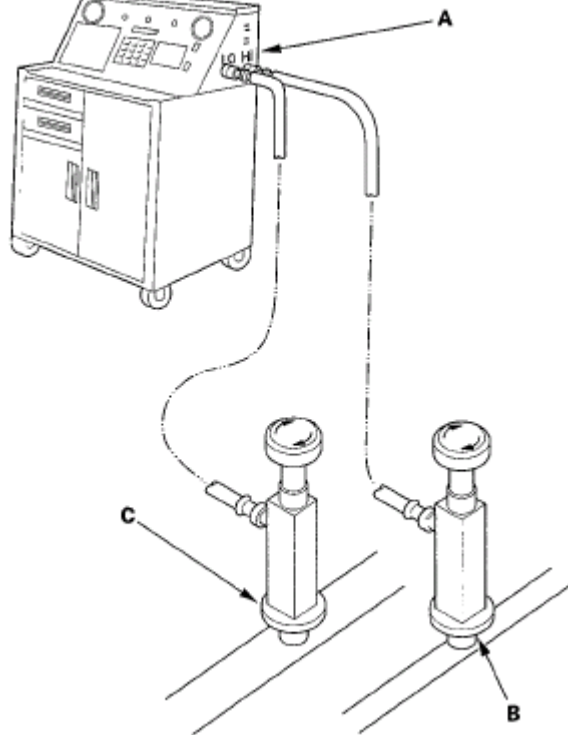
- CAUTION:**
- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
  - Be careful when connecting service equipment.
  - Do not breathe refrigerant or vapor.

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

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.



**Fig. 104: Connecting R-134A Refrigerant Recovery/Recycling/Charging Station To High-Pressure Service Port And Low-Pressure Service Port**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

## SYSTEM EVACUATION

### CAUTION:

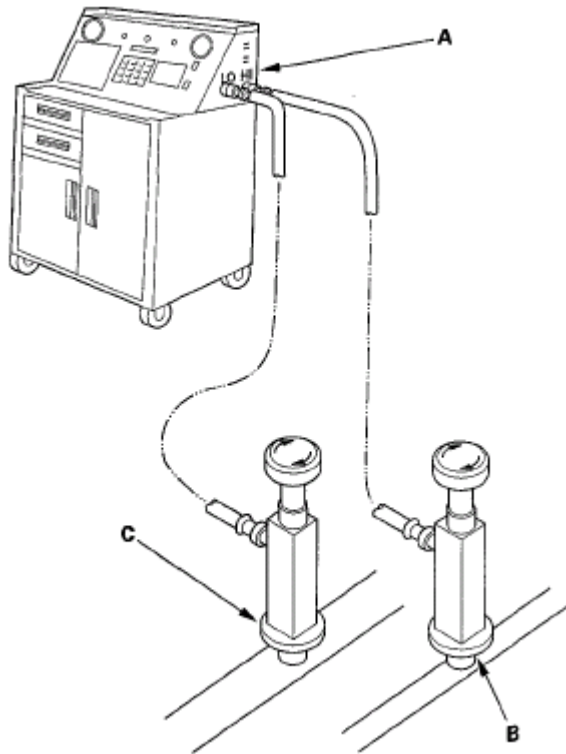
- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

Use only service equipment that is U.L.-listed and is certified to meet the requirements of SAEJ2210 to remove HFC-134a (R-134a) from the air conditioning system.

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. 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, the receiver/dryer should be replaced, and the system should be evacuated for several hours.)
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. Evacuate the system.



**Fig. 105: Connecting R-134A Refrigerant Recovery/Recycling/Charging Station To High-Pressure Service Port And Low-Pressure Service Port**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

## SYSTEM CHARGING

### CAUTION:

- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.

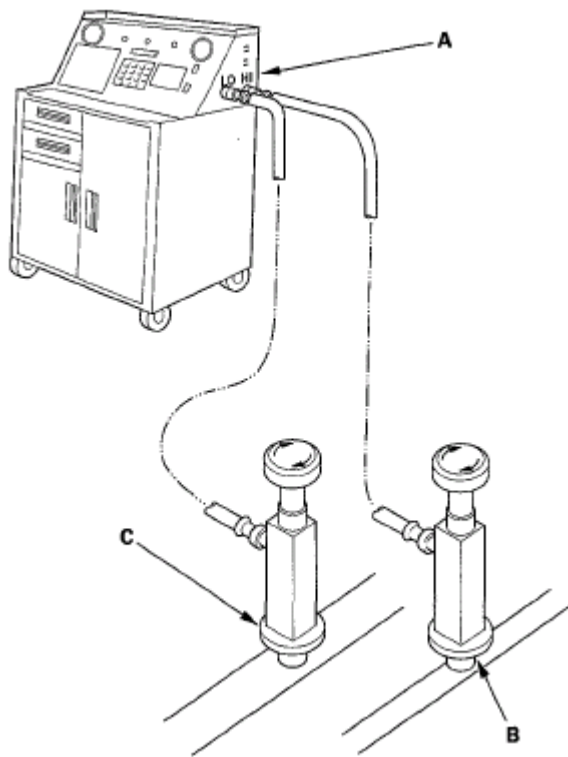
- **Do not breathe refrigerant or vapor.**

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

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.



**Fig. 106: Connecting R-134A Refrigerant Recovery/Recycling/Charging Station To High-Pressure Service Port And Low-Pressure Service Port**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Evacuate the system (see **SYSTEM EVACUATION** ).
3. Add the same amount of new refrigerant oil to the system that was removed during recovery. Use only DENSO ND-OIL 8 refrigerant oil.
4. 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.

## 2007 Honda Element EX

2007-2008 HVAC HVAC - Element

### Refrigerant Capacity:

**500 to 550 g**

**0.50 to 0.55 kg**

**1.10 to 1.21 lbs**

**17.6 to 19.4 oz**

5. Check for refrigerant leaks (see **REFRIGERANT LEAK TEST** ).
6. Check for system performance (see **PERFORMANCE TEST** ).

## REFRIGERANT LEAK TEST

### Special Tool Required

Leak detector, Honda Tool and Equipment YGK-H-10PM, commercially available

#### **WARNING:**

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

#### **CAUTION:**

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

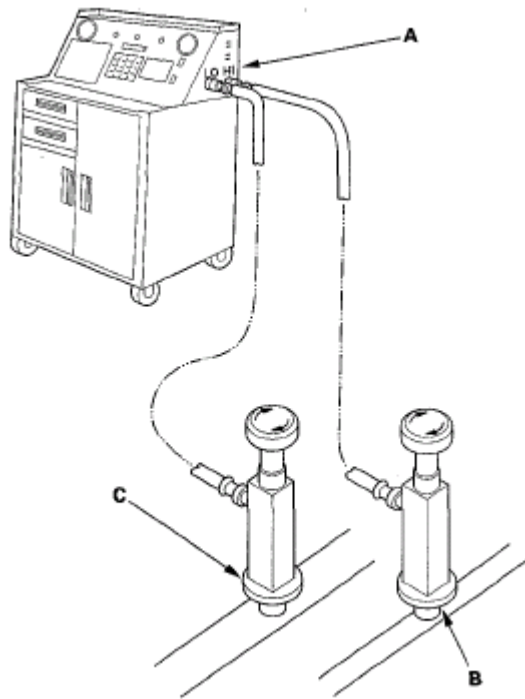
Use only service equipment that is U.L.-listed and is certified to meet the requirements of SAEJ2210 to remove HFC-134a (R-134a) from the air conditioning system.

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.

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.



**Fig. 107: Connecting R-134A Refrigerant Recovery/Recycling/Charging Station To High-Pressure Service Port And Low-Pressure Service Port**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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

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

**Refrigerant Capacity:**

**500 to 550 g**

**0.50 to 0.55 kg**

**1.10 to 1.21 lbs**

**17.6 to 19.4 oz**

3. 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.
4. If you find leaks that require the system to be opened (to repair or replace hoses, fittings, etc.), do the refrigerant recovery procedure (see **REFRIGERANT RECOVERY** ).
5. After checking and repairing leaks, the system must be evacuated.

**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.

**WARNING:**

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

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

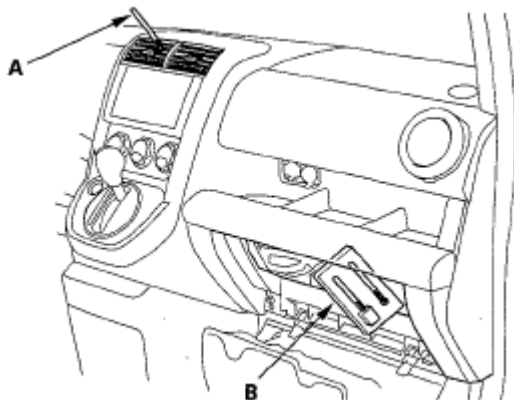
Use only service equipment that is U.L.-listed and is certified to meet the requirements of SAE J2210 to remove HFC-134a (R-134a) from the air conditioning system.

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.

1. Connect an R-134a refrigerant recover/recycling/charging station to the high-pressure service port and the low-pressure service port, following the equipment manufacturer's instructions.
2. Determine the relative humidity and air temperature.
3. Open the glove box, then let the glove box hang down (see **GLOVE BOX REMOVAL/INSTALLATION** ).
4. Insert a thermometer (A) in the center air vent.



**Fig. 108: Inserting Thermometer In Center Air Vent**

**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

5. Place a thermometer (B) near the blower unit.
6. Test conditions:
  - Avoid direct sunlight.
  - Open the hood.
  - Open the front doors.
  - Set the temperature control dial on Max Cool, the mode control dial on Vent and the recirculation control switch on Recirculate.
  - Turn the A/C switch on and the fan switch on Max.
  - Run the engine speed at 1,500 rpm.
  - No driver or passengers in vehicle.
7. 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 high and low system pressure from the A/C gauges.
8. Refer to the inspection data.

**Inspection data**

**Example Intake temperature (dry): 86°F (30°C) Humidity level 70 %**

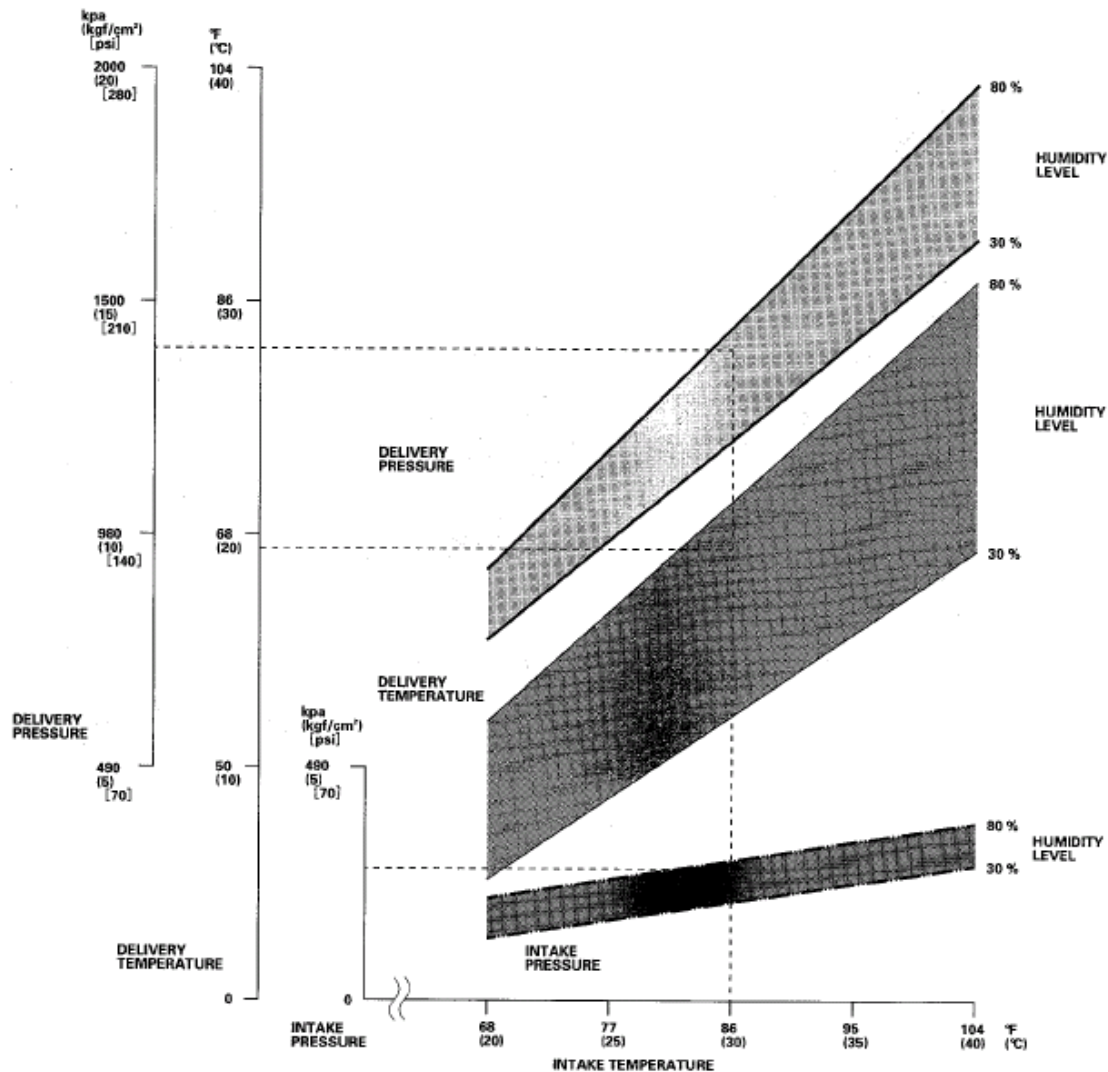
**Intake temperature (wet): 77.9°F (25.5°C)**

**Intake pressure: 275 kPa (2.8 kgf/cm<sup>2</sup>) [39.8 psi]**

**Delivery temperature: 67.6°F (19.8°C)**

**Delivery pressure: 1,363 kPa (13.9 kgf/cm<sup>2</sup>) [197.8 psi]**

**Results: Within normal range**



**Fig. 109: Inspection Data Chart**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

**PRESSURE TEST**

**PRESSURE TEST REFERENCE**

Test results	Related symptoms	Probable cause	Remedy
Discharge (high) pressure abnormally high	After stopping A/C compressor, pressure drops about 196 kPa (2.0 kgf/cm <sup>2</sup> , 28 psi) quickly, and then falls gradually.	Air in system	Recover, evacuate (see <b>SYSTEM EVACUATION</b> ), and recharge with specified amount (see <b>SYSTEM CHARGING</b> ).
	Reduced or no airflow	<ul style="list-style-type: none"> <li>Clogged A/C condenser or radiator fins</li> </ul>	<ul style="list-style-type: none"> <li>Clean.</li> </ul>

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	through A/C condenser.	<ul style="list-style-type: none"> <li>• A/C condenser or radiator fan not working properly</li> </ul>	<ul style="list-style-type: none"> <li>• Check voltage and fan rpm.</li> <li>• Check fan direction.</li> </ul>
	Line to A/C condenser is excessively hot.	Restricted flow of refrigerant in system	Restricted lines.
Discharge pressure abnormally low	High and low-pressures are balanced soon after stopping A/C compressor. Low side is higher than normal.	<ul style="list-style-type: none"> <li>• Faulty A/C compressor discharge valve</li> <li>• Faulty A/C compressor seal</li> </ul>	Replace the A/C compressor.
	Outlet of expansion valve is not frosted, low-pressure gauge indicates vacuum.	<ul style="list-style-type: none"> <li>• Faulty expansion valve</li> <li>• Moisture in system</li> </ul>	<ul style="list-style-type: none"> <li>• Replace.</li> <li>• Recover, evacuate, and recharge with specified amount.</li> </ul>
Suction (low) pressure abnormally low	Expansion valve is not frosted, and low-pressure line is not cold. Low-pressure gauge indicates vacuum.	<ul style="list-style-type: none"> <li>• Frozen expansion valve (Moisture in system)</li> <li>• Faulty expansion valve</li> </ul>	<ul style="list-style-type: none"> <li>• Recover, evacuate, and recharge with specified amount.</li> <li>• Replace the expansion valve.</li> </ul>
	Discharge temperature is low, and the airflow from vents is restricted.	Frozen evaporator	Run the fan with A/C compressor off, then check evaporator temperature sensor.
	Expansion valve is frosted.	Clogged expansion valve	Clean or replace.
Suction pressure abnormally high	Low-pressure hose and check joint are cooler than the temperature around evaporator.	Expansion valve open too long	Repair or replace.
	Suction pressure is lowered when A/C condenser is cooled by water.	Excessive refrigerant in system	Recover, evacuate, and recharge with specified amount.
	High and low-pressures are equalized as soon as the A/C compressor is stopped, and both gauges fluctuate while running.	<ul style="list-style-type: none"> <li>• Faulty gasket</li> <li>• Faulty high-pressure valve</li> <li>• Foreign particle stuck in high-pressure valve</li> </ul>	Replace the A/C compressor.
Suction and discharge	Reduced airflow through A/C	<ul style="list-style-type: none"> <li>• Clogged A/C condenser or radiator fins</li> </ul>	<ul style="list-style-type: none"> <li>• Clean.</li> </ul>

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pressures abnormally high	condenser.	<ul style="list-style-type: none"> <li>A/C condenser or radiator fan not working properly</li> </ul>	<ul style="list-style-type: none"> <li>Check voltage and fan rpm.</li> <li>Check fan direction.</li> </ul>
Suction and discharge pressures abnormally low	Low-pressure hose and metal end areas are cooler than evaporator.	Clogged or kinked low-pressure hose parts	Repair or replace.
	Temperature around expansion valve is too low compared with that around receiver/dryer.	Clogged high-pressure line	Repair or replace.
Refrigerant leaks	A/C compressor clutch is dirty.	A/C compressor shaft seal leaking	Replace the A/C compressor.
	A/C compressor bolt(s) are dirty.	Leaking around bolt(s)	Tighten bolt(s) or replace the A/C compressor.
	A/C compressor gasket is wet with oil.	Gasket leaking	Replace the A/C compressor.
	A/C fitting is dirty.	Leaking O-ring	Clean A/C fitting and replace O-ring.