

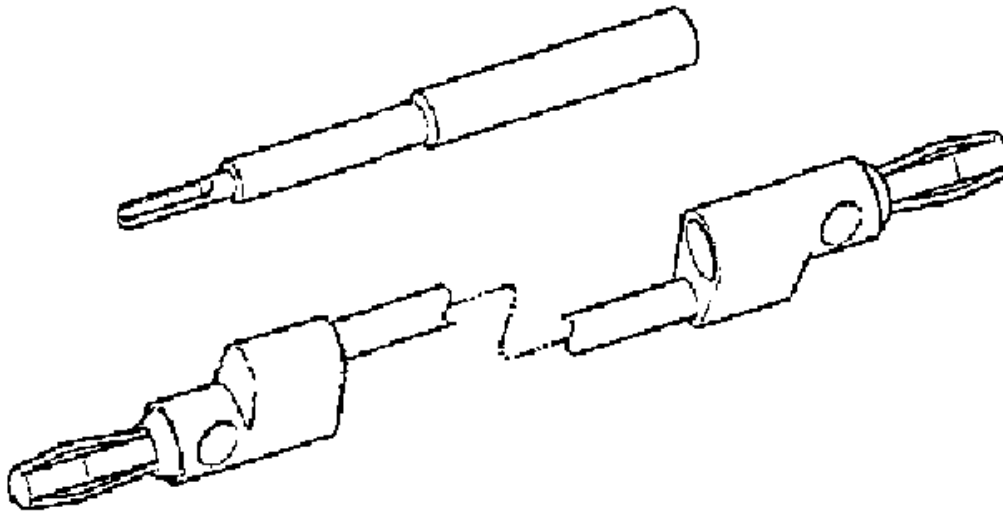
2004 AUTOMATIC A/C SYSTEMS

Climate Control System - TSX

SPECIAL TOOLS

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

G01822429

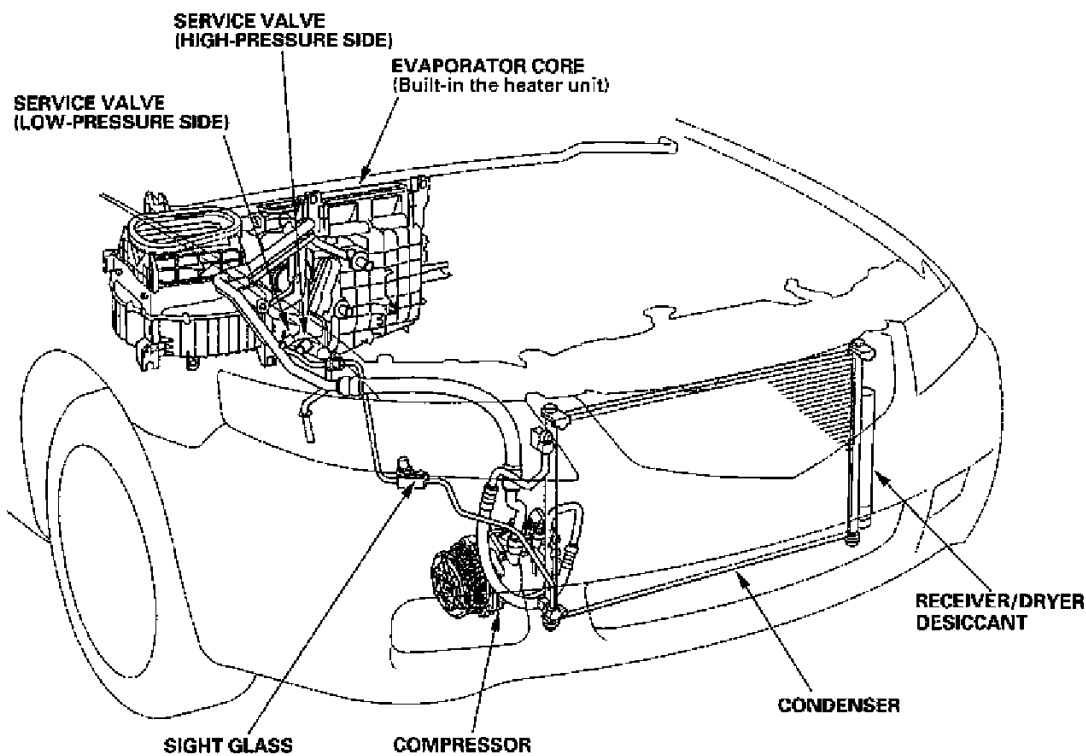
Fig. 1: Special Tools (1 Of 2)

①

G01822430

Fig. 2: Special Tools (2 Of 2)

COMPONENT LOCATION INDEX



G01822431

Fig. 3: Locating Climate Control Components (1 Of 3)

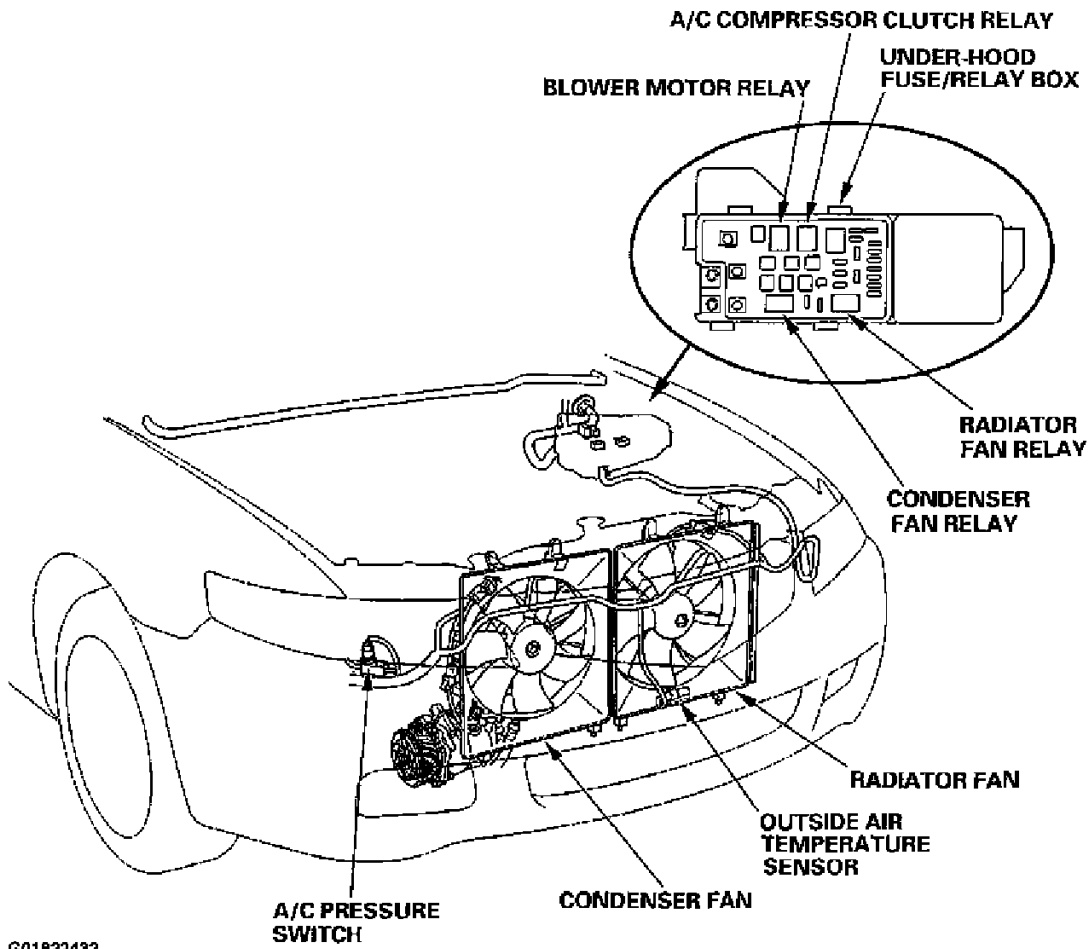
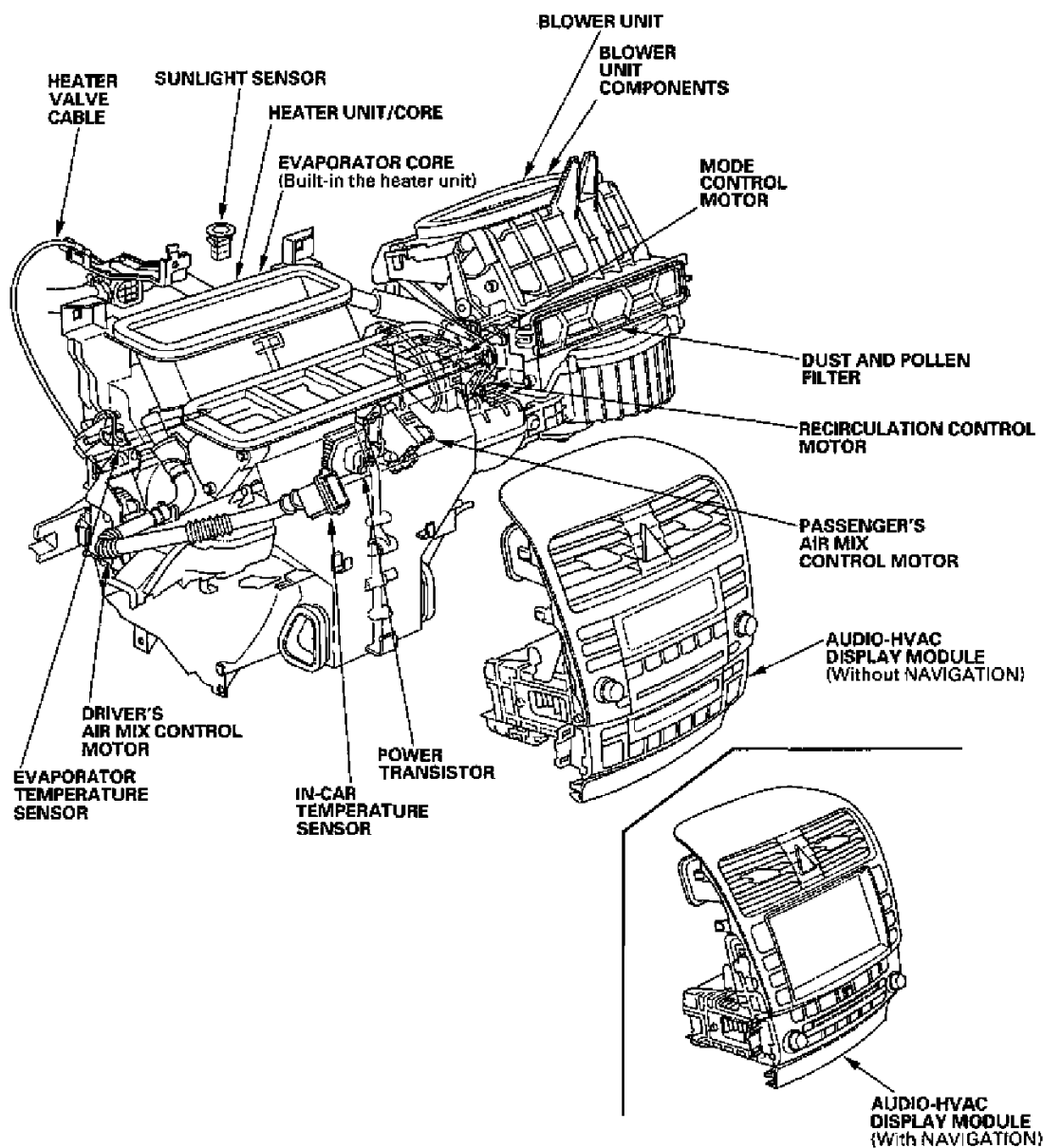


Fig. 4: Locating Climate Control Components (2 Of 3)



GC1822433

Fig. 5: Locating Climate Control Components (3 Of 3)

A/C SERVICE TIPS & PRECAUTIONS

WARNING:

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

CAUTION:

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

The air conditioning system uses HFC-134a (R-134a) refrigerant and polyalkyleneglycol (PAG) refrigerant oil, which are not compatible with CFC-12 (R-12) refrigerant and mineral oil. Do not use R-12 refrigerant or mineral oil in this system, and do not attempt to use R-12 servicing equipment; damage to the air conditioning system or your servicing equipment will result. 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 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 a R-134a refrigerant recovery/recycling/charging station; don't release refrigerant into the atmosphere.

A/C REFRIGERANT OIL REPLACEMENT

Recommended PAG Oil: KEIHIN SP-10

- P/N 38897-P13-003: 120 ml (4 fl. oz.)
- P/N 38899-P13-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:

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.)

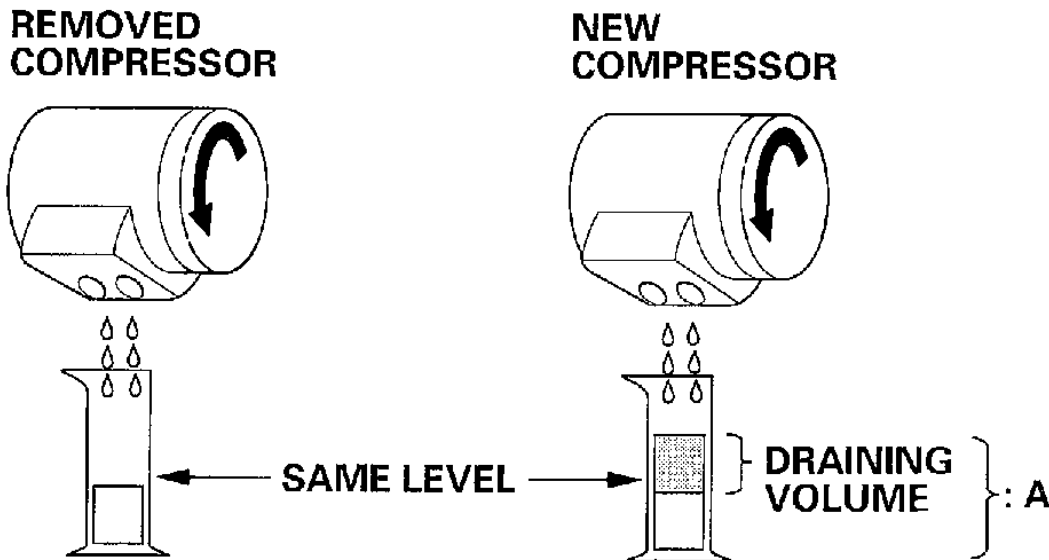
Leakage Repair: 25 ml (5/6 fl. oz.)

Compressor For Compressor Replacement: Subtract the volume of oil drained from the removed compressor from 130 ml (5 1/3 fl. oz.), and drain the calculated volume of oil from the new compressor:

Example: 130 ml (5 1/3 fl. oz.) - Volume of removed compressor = Volume to drain from new compressor

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

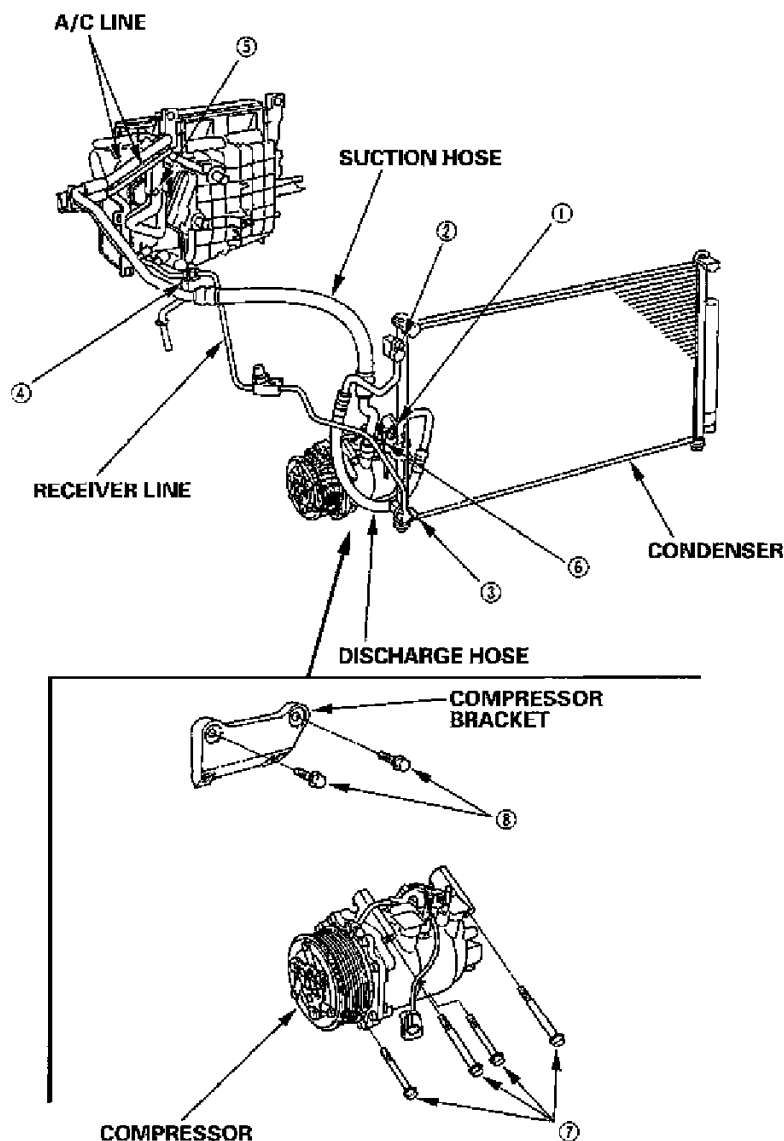
- To avoid contamination, do not return the oil to the container once dispensed, and never mix it with other refrigerant oils.
- Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
- Do not spill the refrigerant oil on the vehicle; it may damage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



A: 130 mL (5 1/3 fl.oz)

G01822434

Fig. 6: For Compressor Replacement, Subtract The Volume Of Oil Drained From The Removed Compressor



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

G01822435

Fig. 7: Replacing A/C Refrigerant Oil

GENERAL TROUBLESHOOTING INFORMATION

HOW TO CHECK FOR DTCS WITH THE HDS

1. Make sure the ignition switch is OFF.
2. Connect the HDS to the Data Link Connector (DLC) located under the driver's side of the dashboard.

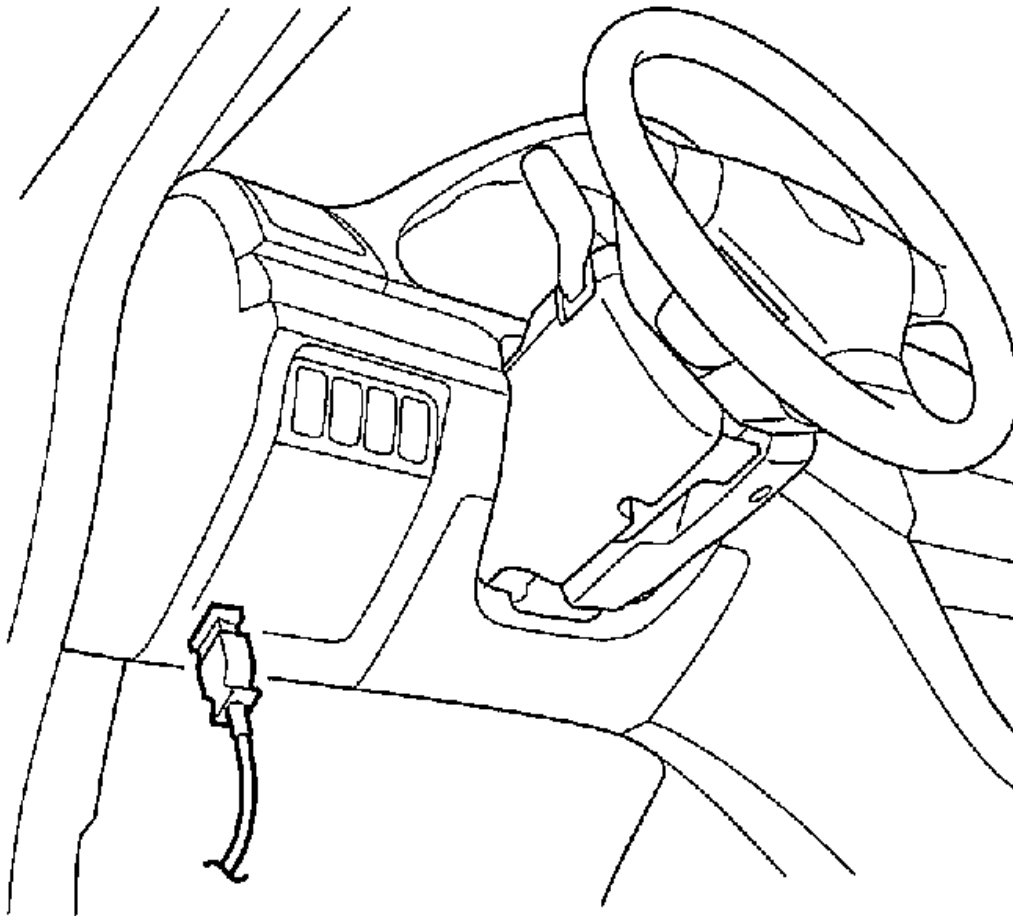
**G01822436**

Fig. 8: Connecting The HDS To The Data Link Connector (DLC) Located Under The Driver's Side Of The Dashboard

3. Turn the ignition switch ON (II).
4. Select DTCs in the body electrical/climate control mode MENU of the HDS.
5. Check for DTCs. If a DTCs indicated, go to the next step. If no DTC(s) indicated, refer to symptom troubleshooting.
6. Turn the ignition switch OFF.
7. Disconnect the HDS from the DLC.

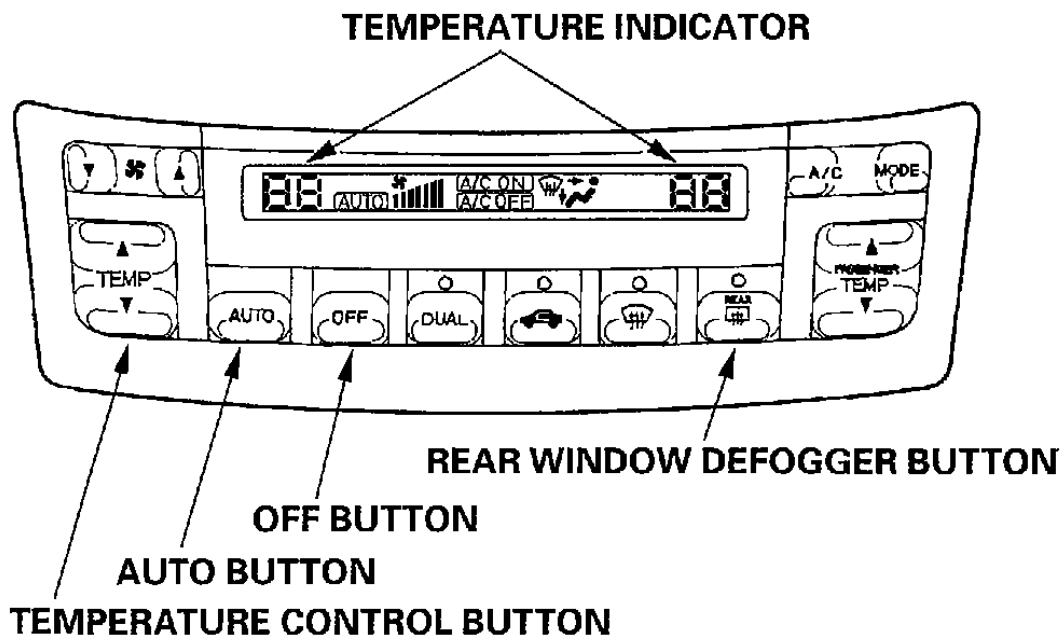
8. Do the troubleshooting procedure for the DTC indicated.

HOW TO RETRIEVE A DTC (WITHOUT HDS)

The audio-HVAC display module has a self-diagnosis function for climate control. To run the self-diagnosis function, do the following:

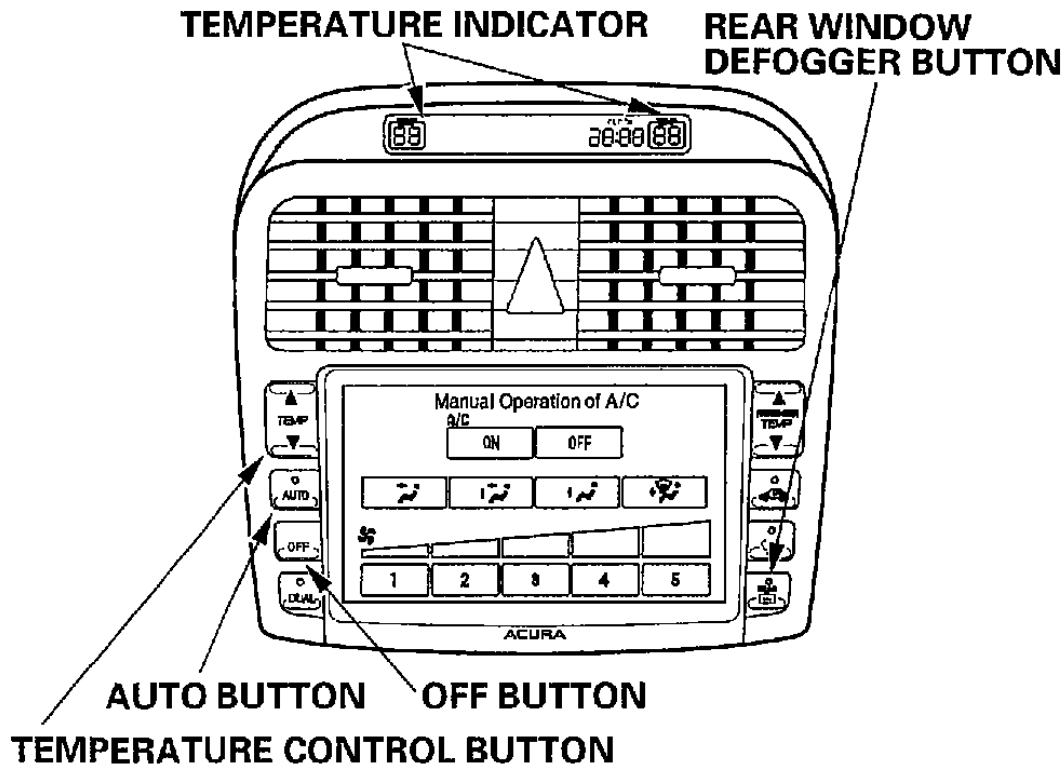
NOTE: Before troubleshooting the climate control system, refer to the multiplex integrated control system test mode A (see TROUBLESHOOTING).

1. Turn the ignition switch ON (II).
2. Press the AUTO button, and set the temperature to Lo.
3. Press and hold the OFF button. While holding the OFF button, press the rear window defogger button five times within 10 seconds. The self-diagnosis will begin.



G01822437

Fig. 9: Retrieving a DTC Without Navigation System

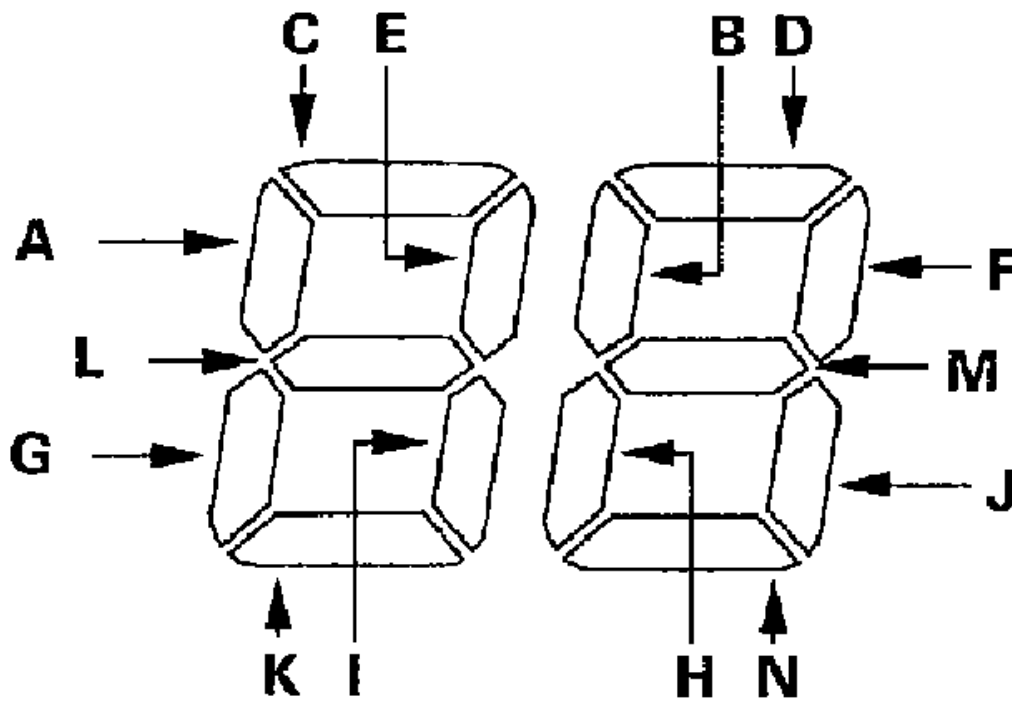


G01822438

Fig. 10: Retrieving a DTC With Navigation System

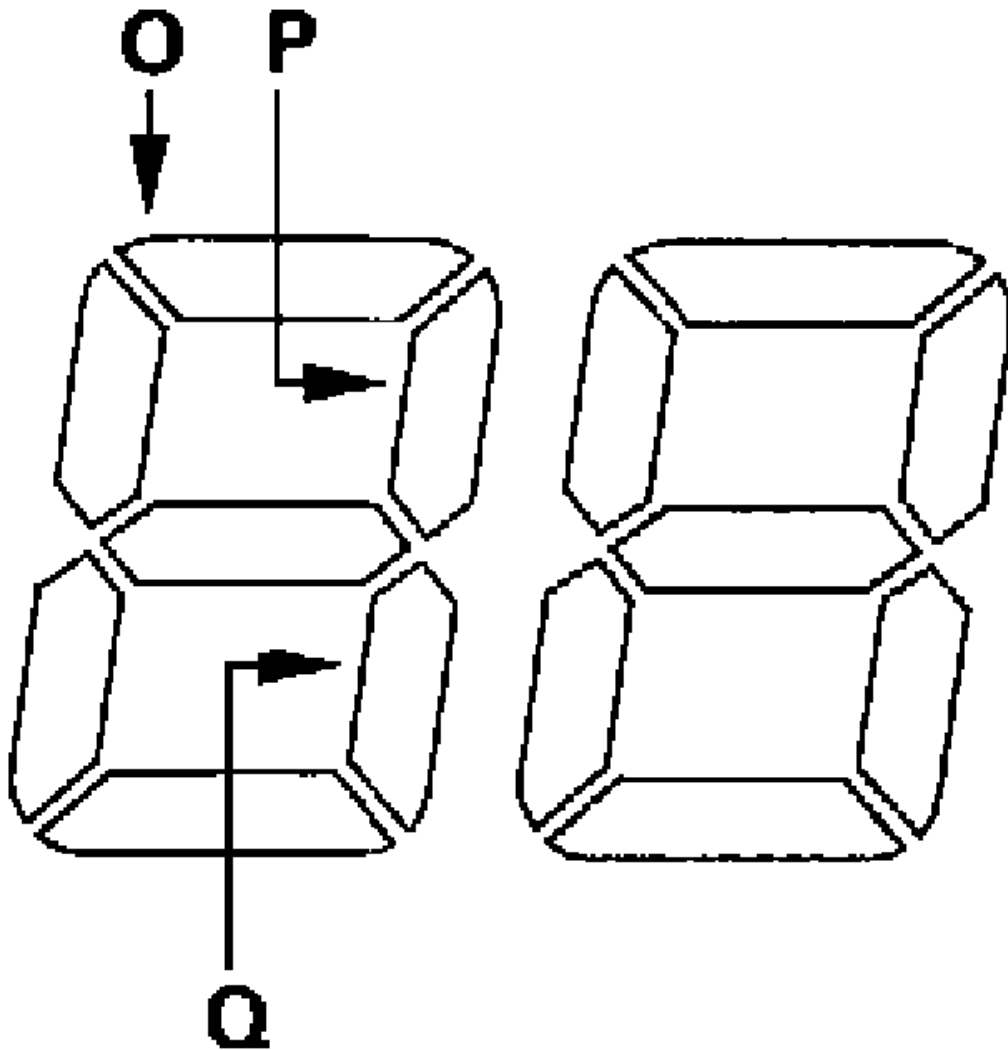
If there is any problem in the system, the temperature indicator will light up the segment (A through Q) corresponding to the error. The temperature indicator will then alternate every second between displaying "88" (all segments lit) and the error code segment (A through Q). To determine the meaning of the DTC, refer to the DTC Troubleshooting Index.

If there are no problems detected, the screen will go blank in about 10 seconds.



G01822439

Fig. 11: Driver's Side Temperature Indicator Segments



G01822440

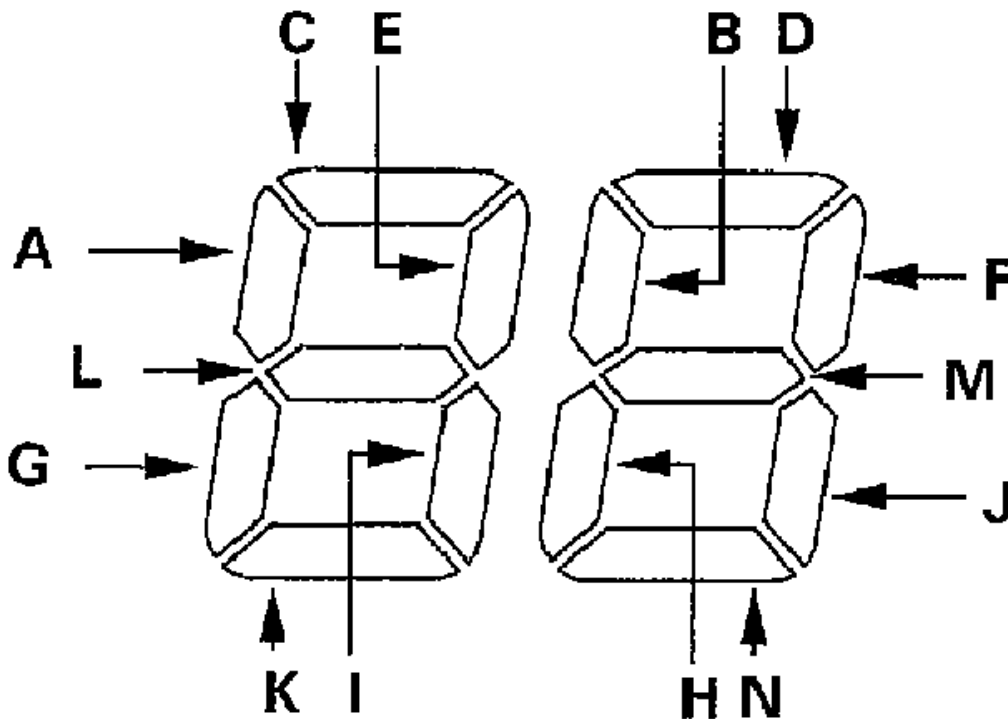
Fig. 12: Passenger's Side Temperature Indicator Segments**Cancelling the Self-diagnosis Function**

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

CHECKING DTCS BY DTC INDICATOR

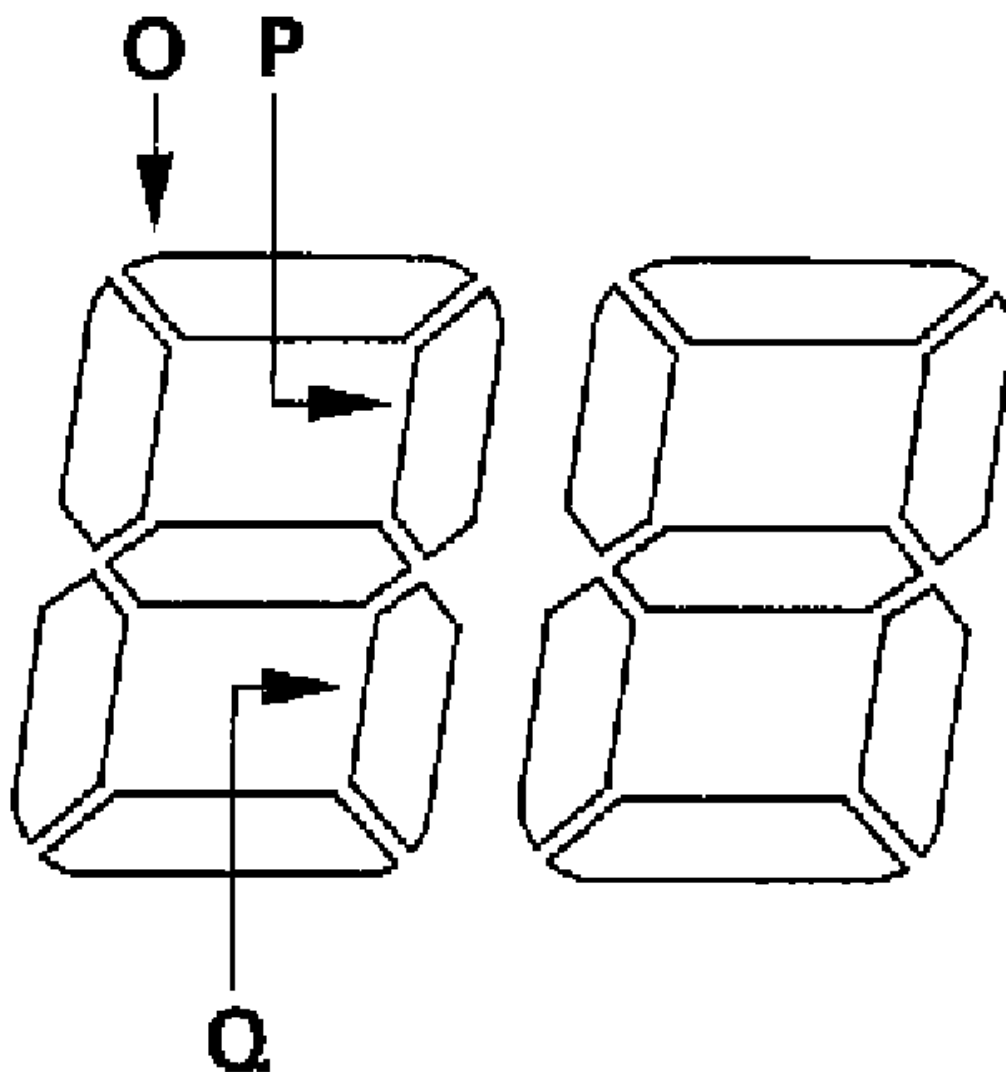
NOTE: Before troubleshooting the climate control system, refer to the multiplex integrated control system test mode A (see [TROUBLESHOOTING](#)).

To retrieve the DTC, you must run the self-diagnosis function. In the case of multiple problems, the respective indicator segments will come on. If indicator segments A, C, E, G, I, L, and O come on at the same time, there may be an open in the common ground wire of the sensors.



G01822441

Fig. 13: Driver's Temperature Indicator Segments



G01822442

Fig. 14: Passenger's Temperature Indicator Segments

DTC (Temperature Indicator segment)	Detection Item
A	An open in the in-car temperature sensor circuit
B	A short in the in-car temperature sensor circuit
C	An open in the outside air temperature sensor circuit
D	A short in the outside air temperature sensor circuit
E	An open in the sunlight sensor circuit
F	A short in the sunlight sensor circuit
G	An open in the evaporator temperature sensor circuit
H	A short in the evaporator temperature sensor circuit
I	An open in the driver's air mix control motor circuit
J	A short in the driver's air mix control motor circuit
K	A problem in the driver's air mix control linkage, door, or motor
L	A short or open in the mode control motor circuit
M	A problem in the mode control linkage, doors, or motor
N	A problem in the blower motor circuit
O	An open in the passenger's air mix control motor circuit
P	An short in the passenger's air mix control motor circuit
Q	An problem in the passenger's air mix control linkage, door, or motor

G01922443

Fig. 15: Segment Table**DISPLAYING SENSOR INPUTS AT THE CLIMATE CONTROL UNIT**

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

CHECK THESE ITEMS BEFORE USING THE SENSOR INPUT DISPLAY MODE

1. Turn the ignition switch ON (II), and check the recirculation door function; press the recirculation button to switch from FRESH to RECIRC. The air volume and sound should change slightly.
2. Set the temperature control knob to the desired test temperature. When selecting the test temperatures, note these items:
 - "Lo" temperature setting will default to MAX COOL, VENT, and RECIRC.
 - "Hi" temperature setting will default to MAX HOT, FLOOR, and FRESH.
 - 61°F through 89°F settings will use the automatic climate control logic.
 - Turn the ignition switch OFF.

TO RUN THE SENSOR INPUT DISPLAY MODE, FOLLOW THESE STEPS

1. Turn the ignition switch OFF.
2. Press and hold both the AUTO and DUAL buttons, then start the engine.
3. After the engine starts, release the buttons. The audio-HVAC display module display will flash the sensor number and then the value for that sensor. Record the value displayed.
4. To advance to the next sensor, press the rear window defogger button.

Sensor	Item	Displayed Value
1	In-car Temperature Sensor	°C
2	Ambient Temperature	°C
3	Solar Radiation Sensor Value: Dark = 00, Flashlight = 04, Cloudy = 10, Sunny = 65	Kcal/m2·h
4	Engine coolant Temperature	°C
5	Evaporator Outlet Air Temperature	°C
6	Driver's Air Mix Opening (Low value indicates cooler air distribution, higher value indicates warmer air distribution.)	% of opening
7	Passenger's Air Mix Opening (Low value indicates cooler air distribution, higher value indicates warmer air distribution.)	% of opening
8	Vehicle Speed (Vehicle must be driven to display speed)	Km/h
9	Vent Temperature Air Out (TAO)	°C

G01822444

Fig. 16: Sensor Input Display Mode Chart

NOTE:

- The sensor values will be displayed in degrees Celsius (°C) or an alphanumeric code. Use the chart to convert the value to degrees Fahrenheit (°F).
- If the sensor value displays "Er" this indicates there is an open or short in the circuit or sensor. Check for DTCs using the HDS, or refer to checking DTCs by DTC indication to check for DTCs.
- If necessary, compare the sensor input display to an alike, known-good vehicle under the same test conditions.
- If the sensor is out of the normal range, refer to the sensor test, or substitute the sensor with a known-good, and recheck.

5. To cancel the sensor input display mode, press the AUTO button, or turn the ignition off.

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
0	32	10	50	20	68	30	86	40	104
1	34	11	52	21	70	31	88	41	106
2	36	12	54	22	72	32	90	42	108
3	37	13	55	23	73	33	91	43	109
4	39	14	57	24	75	34	93	44	111
5	41	15	59	25	77	35	95	45	113
6	43	16	61	26	79	36	97	46	115
7	45	17	63	27	81	37	99	47	117
8	46	18	64	28	82	38	100	48	118
9	48	19	66	29	84	39	102	49	120

G01822445

Fig. 17: Celsius To Fahrenheit Conversion Table (1 Of 2)

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
50	122	60	140	70	158	80	176	90	194
51	124	61	142	71	160	81	178	91	196
52	126	62	144	72	162	82	180	92	198
53	127	63	145	73	163	83	181	93	199
54	128	64	147	74	165	84	183	94	201
55	131	65	149	75	167	85	185	95	203
56	133	66	151	76	169	86	187	96	205
57	135	67	152	77	170	87	188	97	207
58	136	68	154	78	172	88	190	98	208
59	139	69	158	79	174	89	192	99	210

G01822446

Fig. 18: Celsius To Fahrenheit Conversion Table (2 Of 2)

Display Reading (Alphanumeric)	°C	°F
A1 thru A9	− 1 thru − 9	30 thru 16
B0 thru B9	− 10 thru − 19	14 thru − 2
C0 thru C9	− 20 thru − 29	− 4 thru − 20
D0 thru D9	− 30 thru − 39	− 22 thru − 38
E0 thru E9	− 40 thru − 49	− 40 thru − 58
F0 thru F9	+ 100 thru + 109	212 thru 226

G01822447

Fig. 19: Alphanumeric Conversion Table

DTC TROUBLESHOOTING INDEX

DTC	Detection Item or Symptom	ECU	DTC type
B1200	Communication circuit error (BUS Off)	Climate control unit	Loss of communication
B1202	Climate control unit internal error	Climate control unit	Internal error
B1205	Climate control unit lost communication with gauge control module (VSP/NE message)	Climate control unit	Loss of communication
B1206	Climate control unit lost communication with gauge control module (ECT message)	Climate control unit	Loss of communication
B1207	Climate control unit lost communication with gauge control module (ILLUMI message)	Climate control unit	Loss of communication
B1225	Open in the in-car temperature sensor circuit	Climate control unit	Signal error
B1226	Short in the in-car temperature sensor circuit	Climate control unit	Signal error
B1227	Open in the outside air temperature sensor circuit	Climate control unit	Signal error
B1228	Short in the outside air temperature sensor circuit	Climate control unit	Signal error
B1229	Open in the sunlight sensor circuit	Climate control unit	Signal error
B1230	Short in the sunlight sensor circuit	Climate control unit	Signal error
B1231	Open in the evaporator temperature sensor circuit	Climate control unit	Signal error
B1232	Short in the evaporator temperature sensor circuit	Climate control unit	Signal error
B1233	Open in the driver's air mix control motor circuit	Climate control unit	Signal error
B1234	Short in the driver's air mix control motor circuit	Climate control unit	Signal error
B1235	Problem in the driver's air mix control linkage, door, or circuit	Climate control unit	Signal error
B1236	Open in the passenger's air mix control motor circuit	Climate control unit	Signal error
B1237	Short in the passenger's air mix control motor circuit	Climate control unit	Signal error
B1238	Problem in the passenger's air mix control linkage, door, or motor	Climate control unit	Signal error
B1239	Short or open in the mode control motor circuit	Climate control unit	Signal error
B1240	Problem in the mode control linkage, doors, or motor	Climate control unit	Signal error
B1241	Problem in the blower motor circuit	Climate control unit	Signal error

G01822448

Fig. 20: Checking the DTCs by HDS

SYMPTOM TROUBLESHOOTING INDEX

NOTE: Before performing symptom troubleshooting, check for body DTCs (see TROUBLESHOOTING), and power train DTCs (see GENERAL TROUBLESHOOTING INFORMATION).

Symptom	Diagnostic procedure	Also check for
Recirculation control doors do not change between Fresh and Recirculate	Recirculation control motor circuit troubleshooting	- DTCs - Blown fuse No. 30 (7.5A) in the under-dash fuse/relay box - Cleanliness and tightness of all connectors
Blower, heater controls, and A/C do not work	Climate control power and ground circuits troubleshooting	- DTCs - Blown fuse No. 30 (7.5A) in the under-dash fuse/relay box - Poor ground at G503 - Cleanliness and tightness of all connectors
Condenser fan does not run at all (but radiator fan runs with the A/C on)	Condenser fan circuit troubleshooting	- DTCs - Blown fuse No. 9 (20A) in the under-hood fuse/relay box, and No. 30 (7.5A) in the under-dash fuse/relay box - Poor ground at G201 - Cleanliness and tightness of all connectors
Both fans do not run with the A/C on (but the compressor runs with the A/C on)	Radiator and condenser fans common circuit troubleshooting	- DTCs - Blown fuse No. 9 (20A) and No. 11 (20A) in the under-hood fuse/relay box, and No. 30 (7.5A) in the under-dash fuse/relay box - Cleanliness and tightness of all connectors
Compressor clutch does not engage (but both fans run with the A/C on)	Compressor clutch circuit troubleshooting	- DTCs - Blown fuse No. 9 (20A) in the under-hood fuse/relay box, and No. 30 (7.5A) in the under-dash fuse/relay box - Cleanliness and tightness of all connectors - Blower motor operation
A/C system does not come on (both fans and compressor do not work); heater is OK	A/C Pressure switch and thermal protector circuit troubleshooting	- DTCs - Cleanliness and tightness of all connectors
Blower fan runs slower than expected in cold weather	ECT Troubleshooting NOTE: It is normal for the blower to run slowly until the engine coolant temperature begins to rise. If the blower continues to run slowly for an abnormal length of time, continue to troubleshoot the problem.	DTCs

G01822448

Fig. 21: Symptom Troubleshooting Table (1 Of 3)

Symptom	Diagnostic procedure	Also check for
AUTO button does not work	1. Turn the ignition switch ON (II). 2. Press the AUTO button and check the display. • If AUTO is displayed, but the climate control is not working properly, do the self-diagnosis. • If AUTO is not displayed, check for poor connections at the climate control connector. If the connections are OK, replace the audio-HVAC display panel.	
OFF button does not work	1. Turn the ignition switch ON (II). 2. Press the AUTO button, then press the OFF button and check the display. • If the climate control display turns off, go to self-diagnosis. • If the climate control display does not turn off, replace the audio-HVAC display panel.	Faulty relays.
Dual button does not work	1. Turn the ignition switch ON (II). 2. Press the AUTO button, then press the DUAL button and check the DUAL button LED. • If the LED turns on, go to self-diagnosis. • If the LED does not turn on, replace the audio-HVAC display panel.	
Recirculation button does not work	1. Turn the ignition switch ON (II). 2. Press the recirculation button and check the operation of the button's LED. • If the LED turns on, go to Recirculation control motor test. • If the LED does not turn on, replace the audio-HVAC display panel.	
Defroster button does not work	1. Turn the ignition switch ON (II). 2. Press the AUTO button, then the defroster button and check the defroster button's LED. • If the LED turns on, go to self-diagnosis. • If the LED does not turn on, replace the audio-HVAC display panel.	
Rear window defogger button does not work	1. Turn the ignition switch ON (II). 2. Press the rear window defogger button and check the button's LED. • If the LED turns on, go to rear window defogger troubleshooting. • If the LED does not turn on, replace the audio-HVAC display panel.	

G01822450

Fig. 22: Symptom Troubleshooting Table (2 Of 3)

Symptom	Diagnostic procedure	Also check for
MODE button does not work	1. Turn the ignition switch ON (II). 2. Press the MODE button and check the display. • If the display scrolls through the modes as the MODE button is pressed, go to self-diagnosis. • If the display does not scroll through the modes as the MODE button is pressed, replace the audio-HVAC display panel.	
Fan control button does not work	1. Turn the ignition switch ON (II). 2. Press the AUTO button, then adjust the fan control button up/down and check the display. • If the display indicates the fan speed selection up/down, go to self-diagnosis. • If the display does not indicate the fan speed selection up/down, replace the audio-HVAC display panel.	
TEMP control button does not work	1. Turn the ignition switch ON (II). 2. Press the AUTO button, then adjust the TEMP control button up/down and check the display. • If the display indicates the change in temperature up/down, go to self-diagnosis. • If the display does not indicate the change in temperature up/down, replace the audio-HVAC display panel.	
Passenger TEMP button does not work	1. Turn the ignition switch ON (II). 2. Press the AUTO button, then the Dual button then the Passenger TEMP button up/down. Check the display. • If the display indicates the change in passenger's temperature up/down, go to self-diagnosis. • If the display does not indicate the change in temperature up/down, replace the audio-HVAC display panel.	
Climate control does not work with voice control (with navigation)	Voice control troubleshooting.	
Climate control will not run self-diagnosis	1. Turn the ignition switch ON (II). 2. Press the AUTO button, then the TEMP control button up/down and check the display. • If the display does not work, check for loose or poor connections at the audio-HVAC display module, and recheck. • If the connections are OK, and the display still does not work, go to climate control power and ground circuit troubleshooting.	
More than one button is not working	Climate control power and ground circuit troubleshooting.	
Audio-HVAC display/button illumination problems	Audio-HVAC display module illumination troubleshooting.	

G01E22451

Fig. 23: Symptom Troubleshooting Table (3 Of 3)

SYSTEM DESCRIPTION

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

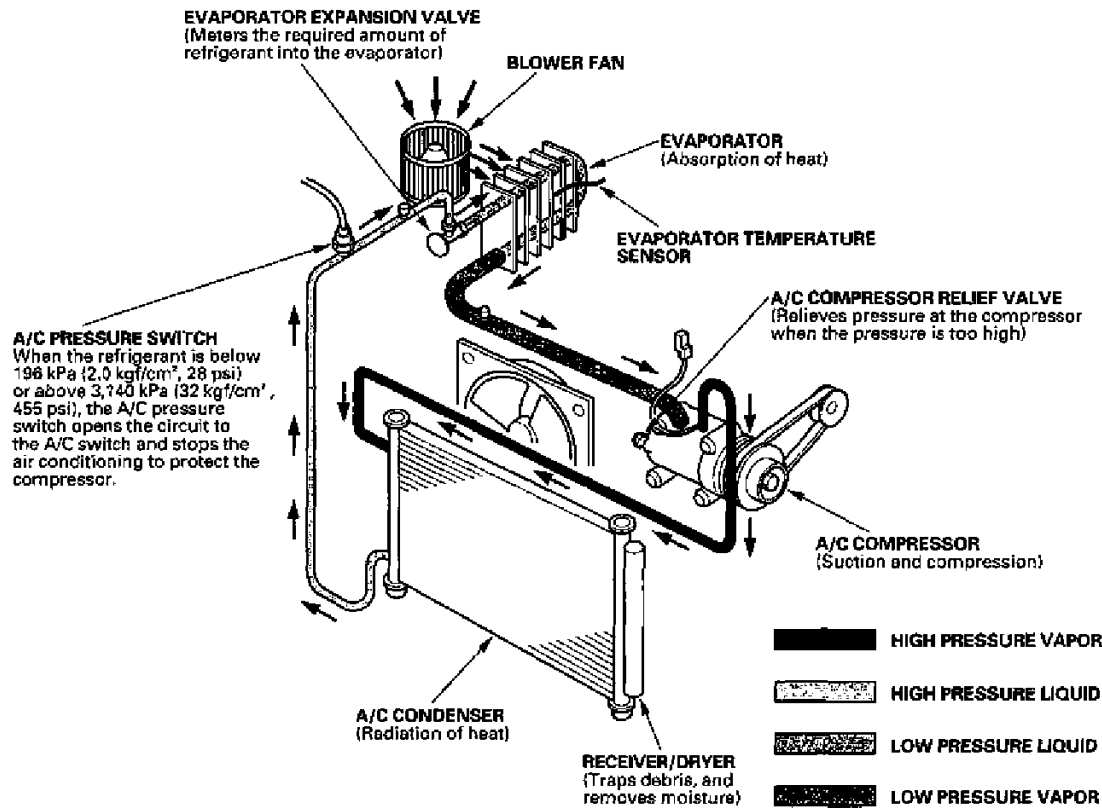
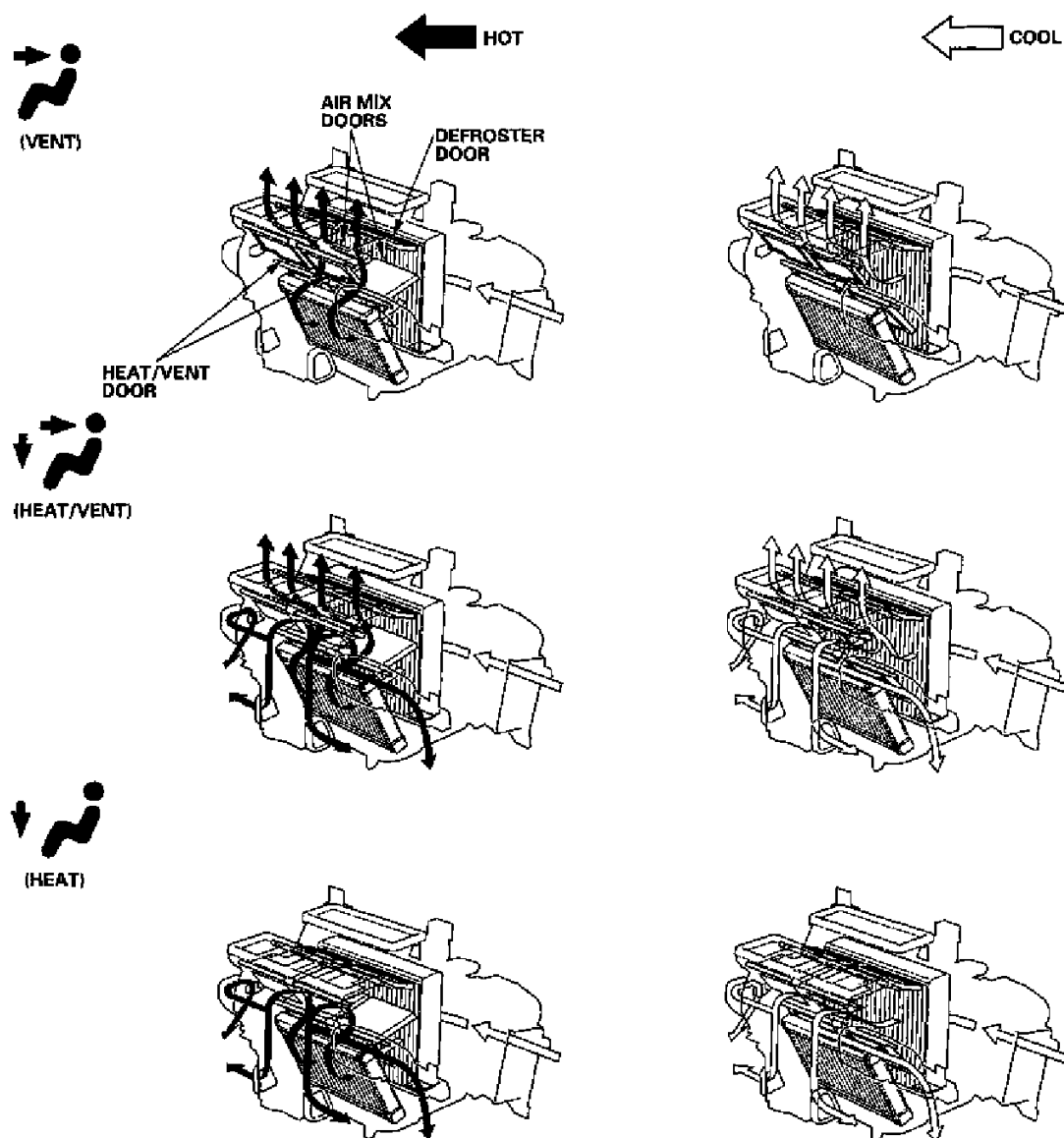


Fig. 24: Climate Control System Operation

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

- Do not mix refrigerants CFC-12 (R-12) and HFC-134a (R-134a). They are not compatible.
- Use only the recommended polyalkyleneglycol (PAG) refrigerant oil (KEIHIN SP-10) designed for the R-134a compressor. Intermixing the recommended (PAG) refrigerant oil with any other refrigerant oil will result in compressor failure.
- All A/C system parts (compressor, discharge line, suction line, evaporator, condenser, receiver/dryer, expansion valve, O-rings for joints) are designed for refrigerant R-134a. Do not exchange with R-12 parts.
- Use a halogen gas leak detector designed for refrigerant R-134a.
- R-12 and R-134a refrigerant servicing equipment are not interchangeable. Use only a recovery/recycling/charging station that is U.L.-listed and is certified to meet the requirements of SAE J2210 to service R-134a air conditioning system.
- Always recover the refrigerant R-134a with an approved recovery/recycling/charging station before disconnecting any A/C fitting.



G01B22453

Fig. 25: Identifying Climate Control System Operating Modes (1 Of 2)

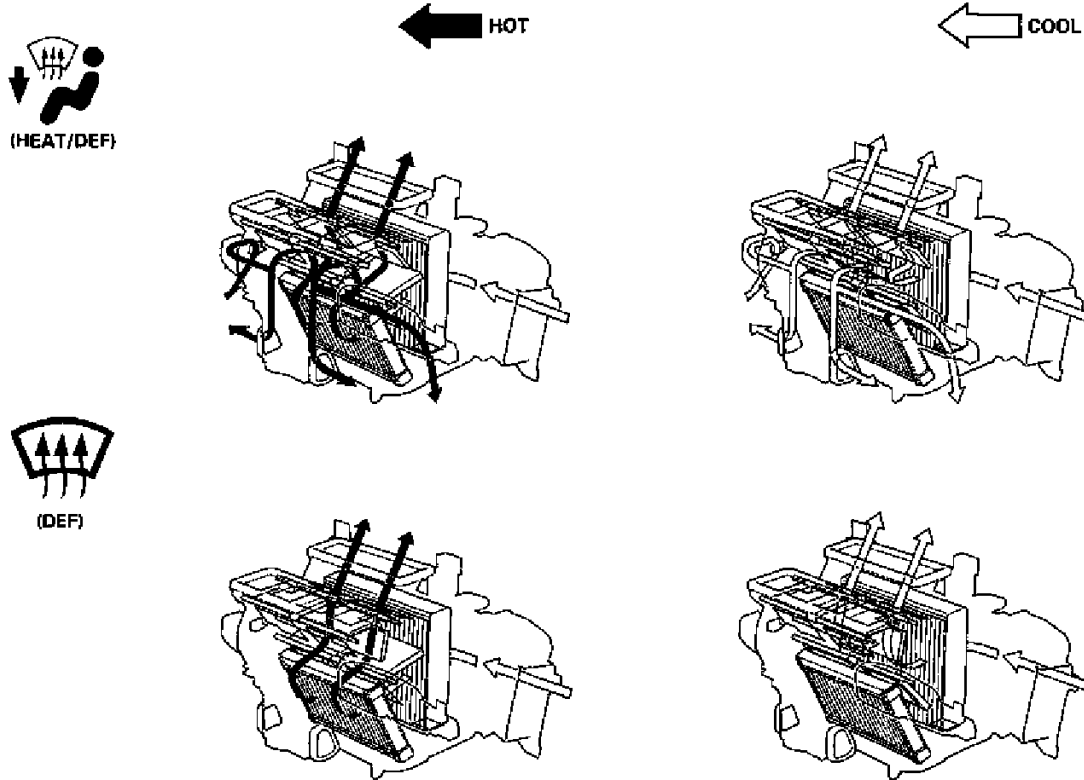
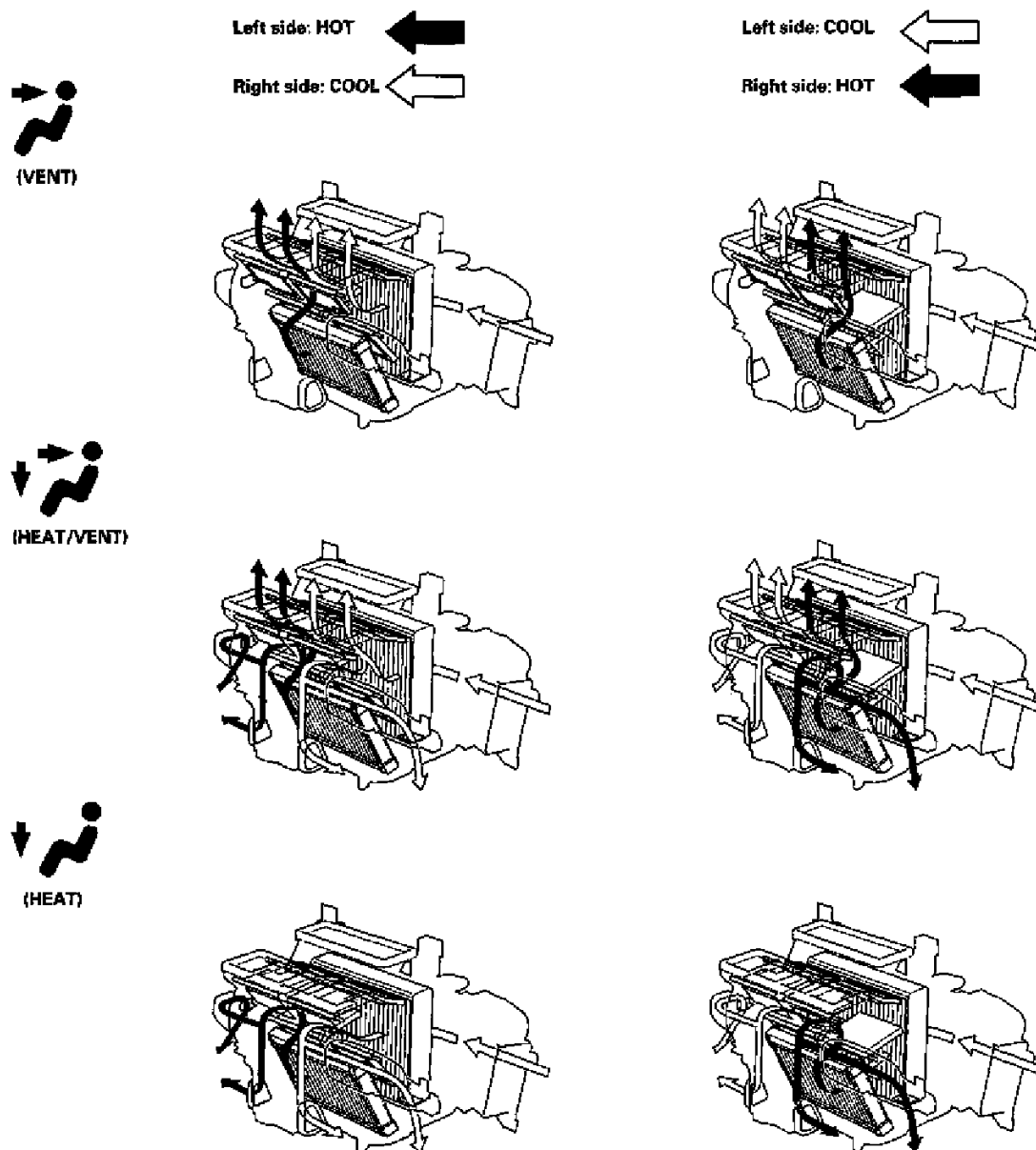


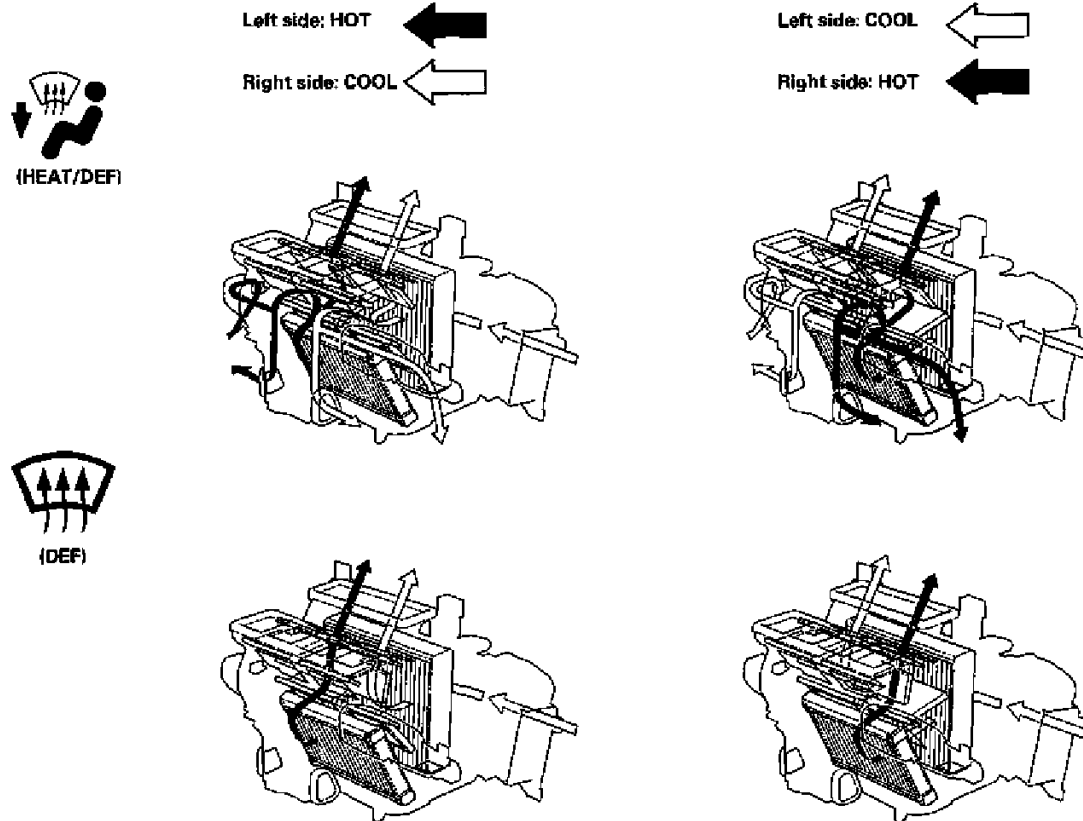
Fig. 26: Identifying Climate Control System Operating Modes (2 Of 2)

DUAL AIR MIX CONTROL SYSTEM



G01B22455

Fig. 27: Identifying Dual Air Mix Climate Control System Operating Modes (1 Of 2)



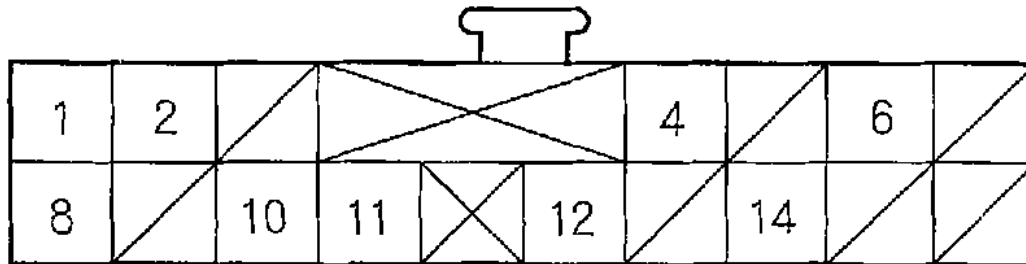
G01822456

Fig. 28: Identifying Dual Air Mix Climate Control System Operating Modes (2 Of 2)**AUDIO-HVAC DISPLAY PANEL INPUTS AND OUTPUTS****CONNECTOR A(22P)**

1	2			5			6	7	8	9	10
11	12	13	14	15	16		17	18	19	20	22

G01822457

Fig. 29: Identifying Audio-HVAC Display Panel Connector A Terminals

CONNECTOR B(16P)

G01822458

Fig. 30: Identifying Audio-HVAC Display Panel Connector B Terminals

NOTE: For audio-HVAC display panel connector location, go to Audio Unit Connector Replacement; with navigation (see [AUDIO UNIT CONNECTOR REPLACEMENT](#)), without navigation (see [AUDIO UNIT CONNECTOR REPLACEMENT](#)).

Cavity	Wire color	Signal	
1	PNK/BLK	DRIVER'S AIR MIX POTENTIAL	INPUT
2	YEL	PASSENGER'S AIR MIX POTENTIAL	INPUT
3			
4			
5	BLU	A/C PRESSURE SWITCH	OUTPUT
6	YEL/BLU	MODE DEF	OUTPUT
7	YEL/RED	MODE VENT	OUTPUT
8	GRN	DRIVER'S AIR MIX COOL	OUTPUT
9	PNK/BLU	DRIVER'S AIR MIX HOT	OUTPUT
10	YEL/BLK	PASSENGER'S AIR MIX COOL	OUTPUT
11	LT BLU	IN-CAR TEMPERATURE SENSOR	INPUT
12	PNK	OUTSIDE AIR TEMPERATURE SENSOR	INPUT
13	ORN	SUNLIGHT SENSOR	INPUT
14	BRN	EVAPORATOR TEMPERATURE SENSOR	INPUT
15	RED/BLK	SENSOR COMMON GROUND	OUTPUT
16	YEL/GRN	MODE 4	INPUT
17	WHT/BLU	MODE 3	INPUT
18	RED/BLU	MODE 2	INPUT
19	RED/YEL	MODE 1	INPUT
20	GRY	AIR MIX POTENTIAL +5 V	OUTPUT
21			
22	LT GRN	PASSENGER'S AIR MIX HOT	OUTPUT

G01822459

Fig. 31: Audio-HVAC Display Panel Connector A Pin Voltage Chart

2004 Acura TSX

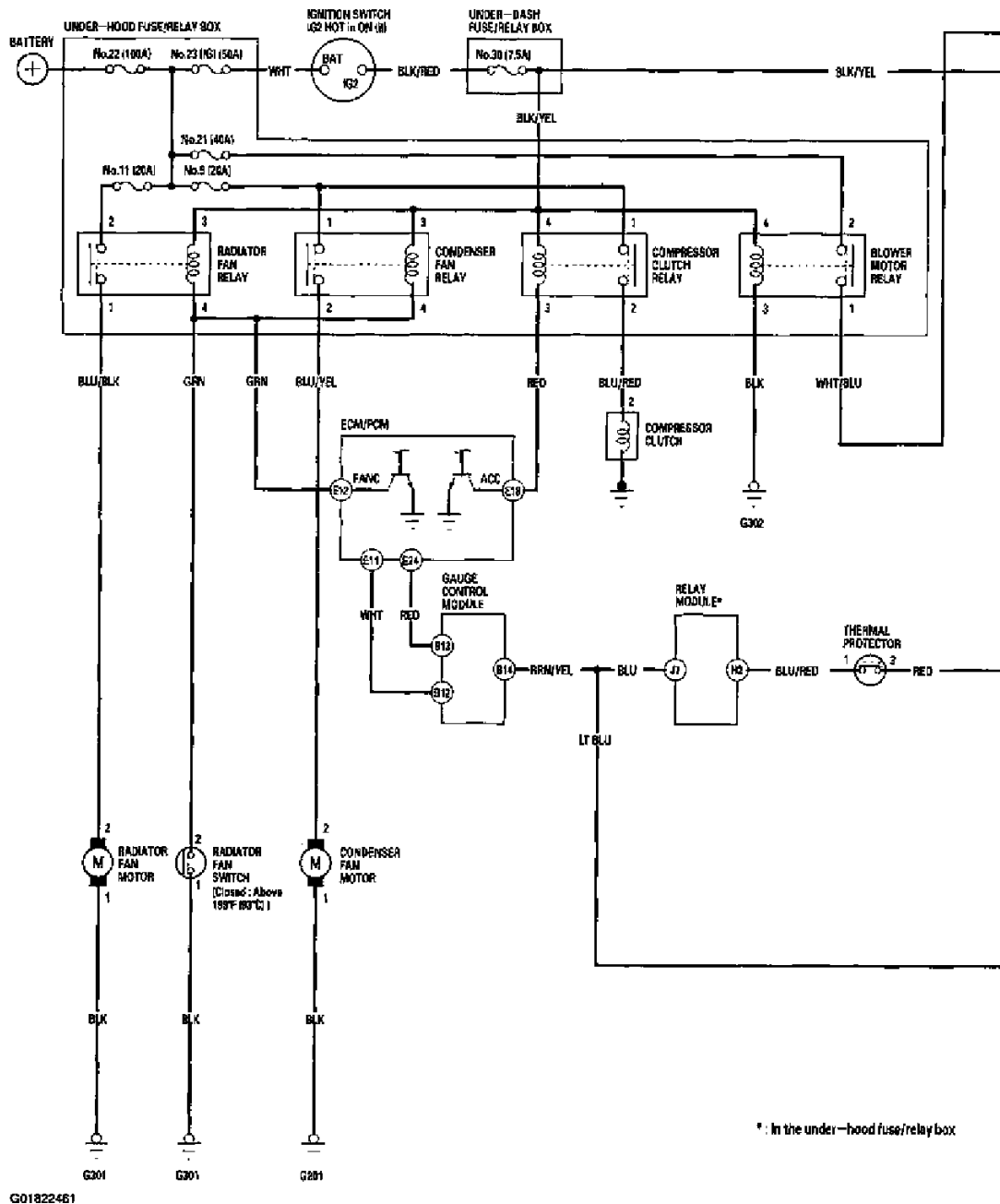
2004 AUTOMATIC A/C SYSTEMS Climate Control System - TSX

Cavity	Wire color	Signal	
1	BLU/YEL	POWER TRANSISTOR CONTROL	OUTPUT
2	BLU/RED	BLOWER FEEDBACK	INPUT
3			
4	BLK/YEL	IG2 (Power)	INPUT
5			
6	BLK	GROUND (G503)	INPUT
7			
8	RED/BLK	TAILLIGHT RELAY	INPUT
9			
10	GRN/WHT	FRESH	OUTPUT
11	LT GRN/RED	RECIRCULATE	OUTPUT
12	RED	GAUGE ASSEMBLY	OUTPUT
13			
14	LT BLU	MULTIPLEX INTEGRATED CONTROL UNIT	INPUT
15			
16			

G01822460

Fig. 32: Audio-HVAC Display Panel Connector B Pin Voltage Chart

CIRCUIT DIAGRAM



* : In the under-hood fuse/relay box

Fig. 33: Climate Control Circuit Diagram (1 Of 2)

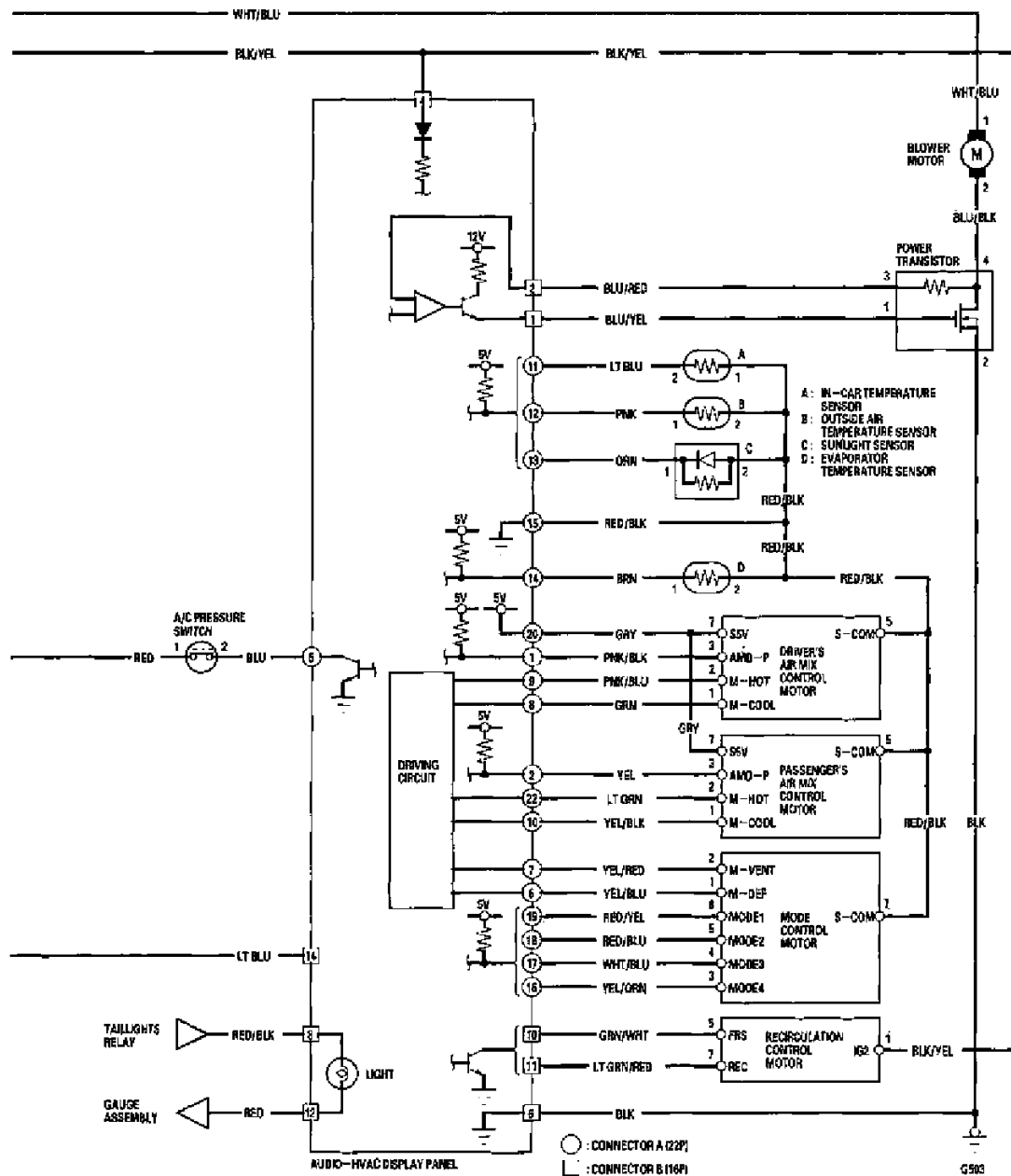


Fig. 34: Climate Control Circuit Diagram (2 Of 2)

DTC TROUBLESHOOTING

DTC INDICATOR A OR DTC B1225: AN OPEN IN THE IN-CAR TEMPERATURE SENSOR CIRCUIT

1. Clear the DTC.
2. Turn the ignition switch OFF, and then ON.

3. Operate the climate control system in several modes.
4. Check the DTCs.

Is DTC A or B1225 indicated?

YES: Go to step 5.

NO: Intermittent failure, check for loose wires or poor connections on the in-car temperature sensor circuit.

5. Remove the in-car temperature sensor and test it (see **IN-CAR TEMPERATURE SENSOR TEST**).

Does the in-car temperature sensor test OK?

YES: Go to step 6.

NO: Replace the in-car temperature sensor.

6. Disconnect audio-HVAC display panel connector A (22P).
7. Check for continuity between the No. 11 terminal of audio-HVAC display panel connector A (22P) and the No. 2 terminal of the in-car temperature sensor 2P connector.

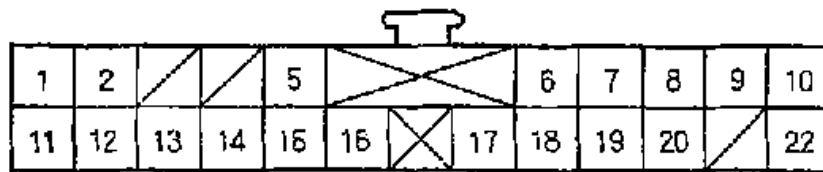
Is there continuity?

YES: Go to step 8.

NO: Repair open in the wire between the audio-HVAC display panel and the in-car temperature sensor.

AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)

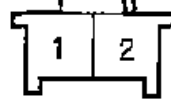
Wire side of female terminals



LT BLU



LT BLU

**IN-CAR TEMPERATURE SENSOR 2P CONNECTOR**

Wire side of female terminals

G01822463

Fig. 35: Checking For Continuity Between The No. 11 Terminal Of Audio-HVAC Display Panel Connector A (22P) & The No. 2 Terminal Of The In-Car Temperature Sensor 2P Connector

8. Check for continuity between the No. 15 terminal of audio-HVAC display panel connector A (22P) and the No. 1 terminal of the in-car temperature sensor 2P connector.

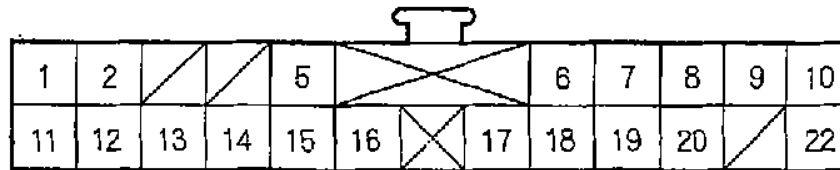
Is there continuity?

YES: Check for loose wires or poor connections at audio-HVAC display panel connector A (22P) and at the in-car temperature sensor 2P connector. If the connections are good, substitute a known-good audio-HVAC display panel, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.

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

AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)

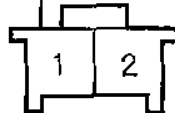
Wire side of female terminals



RED/BLK



RED/BLK

**IN-CAR TEMPERATURE SENSOR 2P CONNECTOR**

Wire side of female terminals

G01822464

Fig. 36: Checking For Continuity Between The No. 15 Terminal Of Audio-HVAC Display Panel Connector A (22P) & The No. 1 Terminal Of The In-Car Temperature Sensor 2P Connector

DTC INDICATOR B OR DTC B1226: A SHORT IN THE IN-CAR TEMPERATURE SENSOR CIRCUIT

1. Clear the DTC.
2. Turn the ignition switch OFF, and then ON.
3. Operate the climate control system in several modes.
4. Check the DTCs.

Is DTC B or B1226 indicated?

YES: Go to step 5.

NO: Intermittent failure.

5. Remove the in-car temperature sensor (see **IN-CAR TEMPERATURE SENSOR REPLACEMENT**).
6. Test the in-car temperature sensor (see **IN-CAR TEMPERATURE SENSOR TEST**).

Is the resistance within the specifications shown on the graph?

YES: Go to step 7.

NO: Replace the in-car temperature sensor.

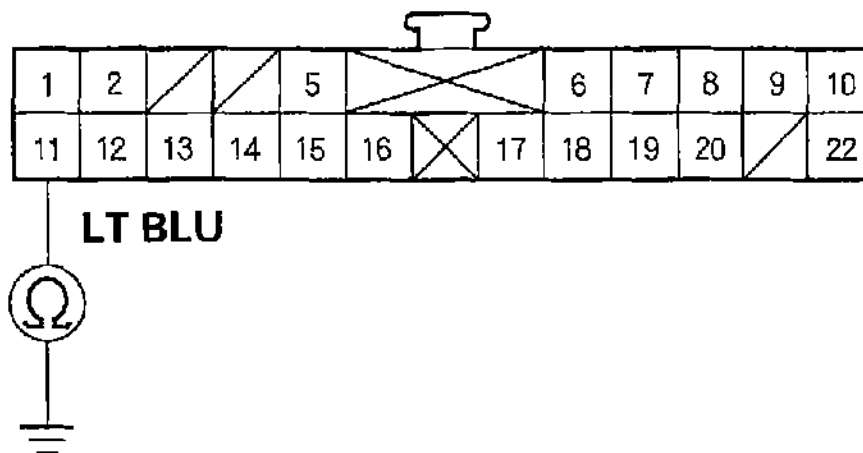
7. Disconnect audio-HVAC display panel connector A (22P).
8. Check for continuity between the No. 11 terminal of audio-HVAC display panel connector A (22P) and body ground.

Is there continuity?

YES: Repair short to body ground in the wire between the audio-HVAC display panel and the in-car temperature sensor.

NO: Substitute a known-good audio-HVAC display panel, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.

AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)



Wire side of female terminals

G01822465

Fig. 37: Checking For Continuity Between The No. 11 Terminal Of Audio-HVAC Display Panel Connector A (22P) & Body Ground

DTC INDICATOR C OR DTC B1227: AN OPEN IN THE OUTSIDE AIR TEMPERATURE SENSOR CIRCUIT

1. Clear the DTC.
2. Turn the ignition switch OFF, and then ON.
3. Operate the climate control system in several modes.

4. Check the DTCs.

Is DTC C or B1227 indicated?

YES: Go to step 5.

NO: Intermittent failure, check for loose wires or poor connections on the outside air temperature sensor circuit.

5. Remove the outside air temperature sensor (see **OUTSIDE AIR TEMPERATURE SENSOR TEST**) and test it (see **OUTSIDE AIR TEMPERATURE SENSOR REPLACEMENT**).

Does the outside air temperature sensor test OK?

YES: Go to step 6.

NO: Replace the outside air temperature sensor.

6. Disconnect climate control unit connector A (22P).

7. Check for continuity between the No. 12 terminal of audio-HVAC display panel connector A (22P) and the No. 1 terminal of the outside air temperature sensor 2P connector.

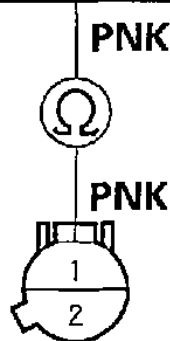
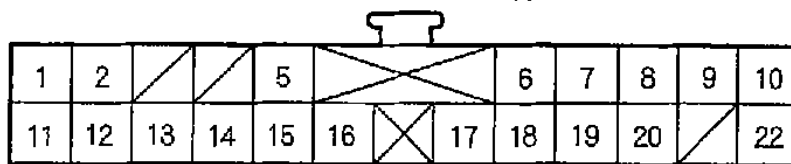
Is there continuity?

YES: Go to step 8.

NO: Repair open in the wire between the audio-HVAC display panel and the outside air temperature sensor.

AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)

Wire side of female terminals



OUTSIDE AIR TEMPERATURE SENSOR 2P CONNECTOR

Wire side of female terminals

G01822466

Fig. 38: Checking For Continuity Between The No. 12 Terminal Of Audio-HVAC Display

Panel Connector A (22P) & The No. 1 Terminal Of The Outside Air Temperature Sensor 2P Connector

8. Check for continuity between the No. 15 terminal of audio-HVAC display panel connector A (22P) and the No. 2 terminal of the outside air temperature sensor 2P connector.

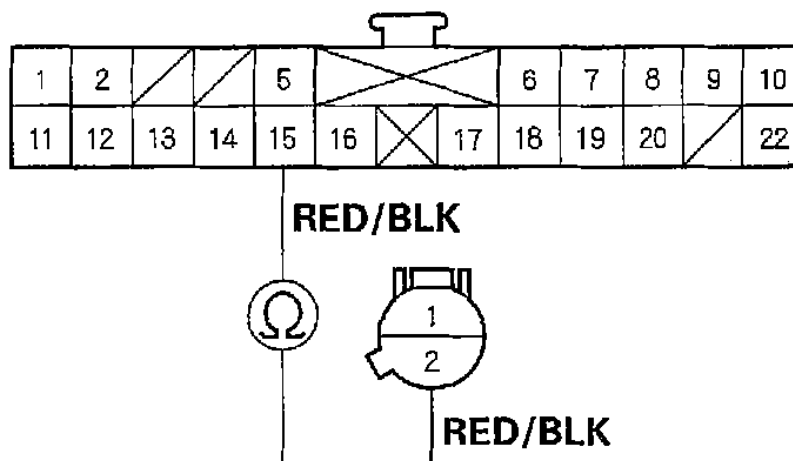
Is there continuity?

YES: Check for loose wires or poor connections at audio-HVAC display panel connector A (22P) and at the outside air temperature sensor 2P connector. If the connections are good, substitute a known-good audio-HVAC display panel, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.

NO: Repair open in the wire between the audio-HVAC display panel and the outside air temperature sensor.

AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)

Wire side of female terminals

**OUTSIDE AIR TEMPERATURE SENSOR 2P CONNECTOR**

Wire side of female terminals

G01822467

Fig. 39: Checking For Continuity Between The No. 15 Terminal Of Audio-HVAC Display Panel Connector A (22P) & The No. 2 Terminal Of The Outside Air Temperature Sensor 2P Connector

DTC INDICATOR D OR DTC 1228: A SHORT IN THE OUTSIDE AIR TEMPERATURE SENSOR CIRCUIT

1. Clear the DTC.

2. Turn the ignition switch OFF, and then ON.
3. Operate the climate control system is several modes.
4. Check the DTCs.

Is DTC D or B1228 indicated?

YES: Go to step 5.

NO: Intermittent failure.

5. Remove the outside air temperature sensor (see **OUTSIDE AIR TEMPERATURE SENSOR REPLACEMENT**).
6. Test the outside air temperature sensor (see **OUTSIDE AIR TEMPERATURE SENSOR TEST**).

Is the resistance within the specifications shown on the graph?

YES: Go to step 7.

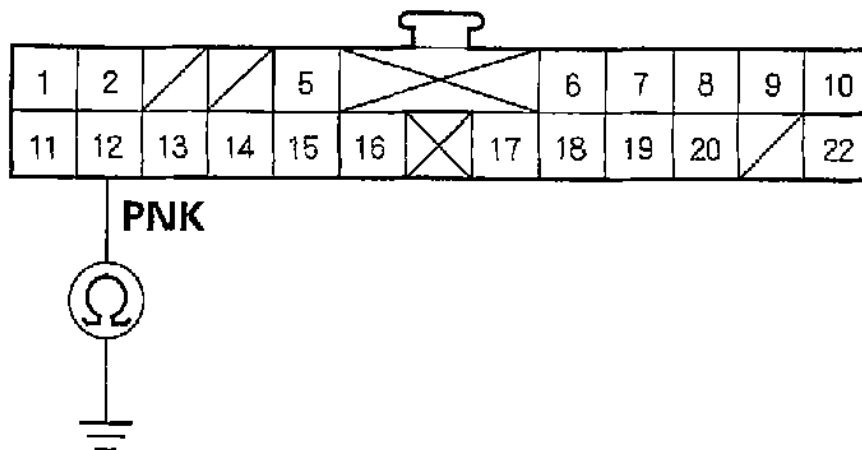
NO: Replace the outside air temperature sensor.

7. Disconnect audio-HVAC display panel connector A (22P).
8. Check for continuity between the No. 12 terminal of audio-HVAC display panel connector A (22P) and body ground.

Is there continuity?

YES: Repair short to body ground in the wire between the audio-HVAC display panel and the outside air temperature sensor.

NO: Substitute a known-good audio-HVAC display module, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.

AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)

Wire side of female terminals

G01822468

Fig. 40: Checking For Continuity Between The No. 12 Terminal Of Audio-HVAC Display Panel Connector A (22P) & Body Ground

DTC INDICATOR E OR DTC B1229: AN OPEN IN THE SUNLIGHT SENSOR CIRCUIT

1. Clear the DTC.
2. Turn the ignition switch OFF, and then ON.
3. Operate the climate control system in several modes.
4. Check the DTCs.

Is DTC E or B1229 indicated?**YES:** Go to step 5.**NO:** Intermittent failure, check for loose wires or poor connections on the sunlight sensor circuit.

5. Test the sunlight sensor (see **SUNLIGHT SENSOR TEST**).

Is the sunlight sensor OK?**YES:** Go to step 6.**NO:** Replace the sunlight sensor.

6. Disconnect the sunlight sensor 2P connector.
7. Disconnect audio-HVAC display panel connector A (22P).

8. Check for continuity between the No. 13 terminal of audio-HVAC display panel connector A (22P) and the No. 1 terminal of the sunlight sensor 2P connector.

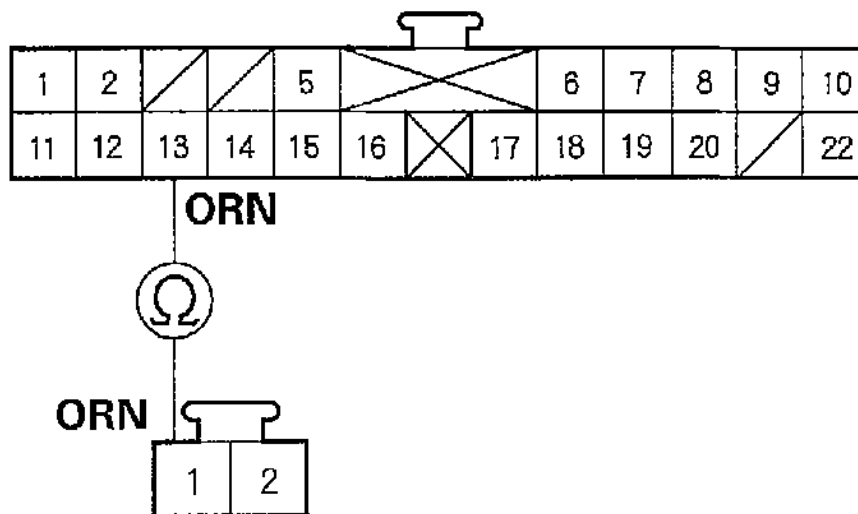
Is there continuity?

YES: Go to step 9.

NO: Repair open in the wire between the audio-HVAC display panel and the sunlight sensor.

AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)

Wire side of female terminals



SUNLIGHT SENSOR 2P CONNECTOR

Wire side of female terminals

G01822469

Fig. 41: Checking For Continuity Between The No. 13 Terminal Of Audio-HVAC Display Panel Connector A (22P) & The No. 1 Terminal Of The Sunlight Sensor 2P Connector

9. Check for continuity between the No. 15 terminal of audio-HVAC display panel connector A (22P) and the No. 2 terminal of the sunlight sensor 2P connector.

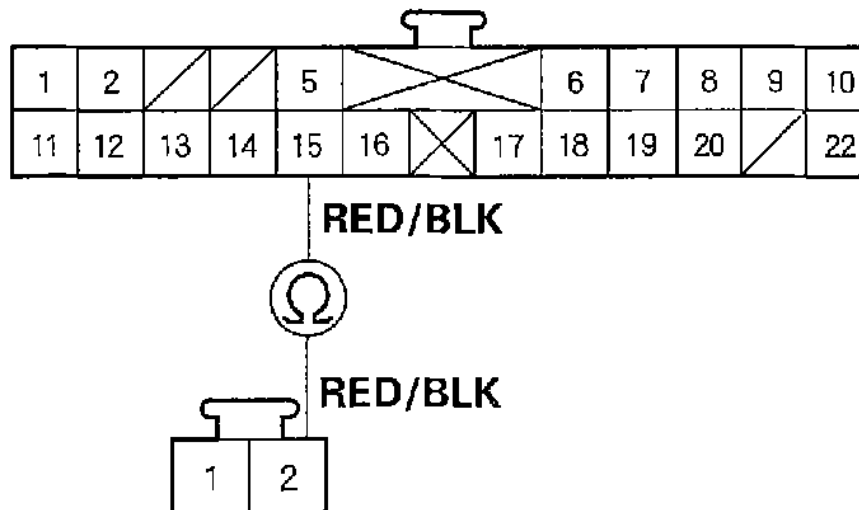
Is there continuity?

YES: Check for loose wires or poor connections at audio-HVAC display panel connector A (22P) and at the sunlight sensor 2P connector. If the connections are good, substitute a known-good audio-HVAC display panel, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.

NO: Repair open in the wire between the audio-HVAC display panel and the sunlight sensor.

AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)

Wire side of female terminals

**SUNLIGHT SENSOR 2P CONNECTOR**

Wire side of female terminals

G01822470

Fig. 42: Checking For Continuity Between The No. 15 Terminal Of Audio-HVAC Display Panel Connector A (22P) & The No. 2 Terminal Of The Sunlight Sensor 2P Connector

DTC INDICATOR F OR DTC B1230: A SHORT IN THE SUNLIGHT SENSOR CIRCUIT

1. Clear the DTC.
2. Turn the ignition switch OFF, and then ON.
3. Operate the climate control system in several modes.
4. Check the DTCs.

Is DTC F or B1230 indicated?**YES:** Go to step 5.**NO:** Intermittent failure.

5. Test the sunlight sensor (see **SUNLIGHT SENSOR TEST**).

Is the sunlight sensor OK?**YES:** Go to step 6.**NO:** Replace the sunlight sensor.

6. Disconnect the sunlight sensor 2P connector.

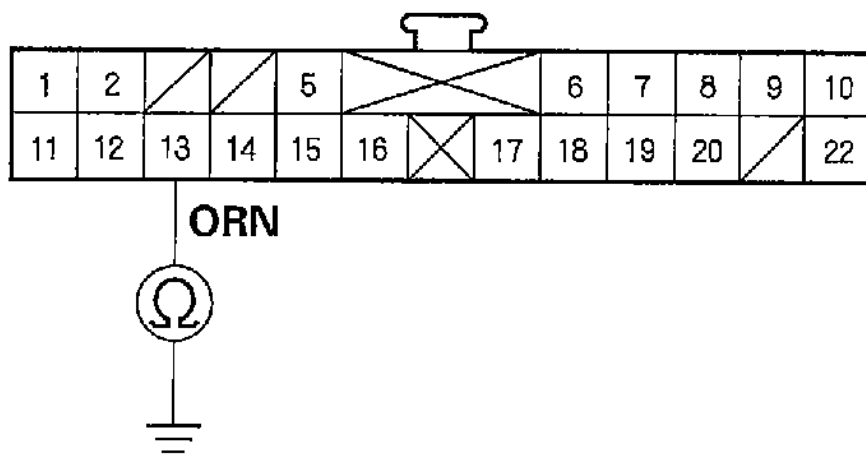
7. Disconnect audio-HVAC display panel connector A (22P).
8. Check for continuity between the No. 13 terminal of audio-HVAC display panel connector A (22P) and body ground.

Is there continuity?

YES: Repair short to body ground in the wire between the audio-HVAC display panel and the sunlight sensor.

NO: Substitute a known-good audio-HVAC display panel, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.

AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)



Wire side of female terminals

G01822471

Fig. 43: Checking For Continuity Between The No. 13 Terminal Of Audio-HVAC Display Panel Connector A (22P) & Body Ground

DTC INDICATOR G OR DTC B1231: AN OPEN IN THE EVAPORATOR TEMPERATURE SENSOR CIRCUIT

1. Clear the DTC.
2. Turn the ignition switch OFF, and then ON.
3. Operate the climate control system in several modes.
4. Check the DTCs.

Is DTC G or B1231 indicated?**YES:** Go to step 5.**NO:** Intermittent failure, check for loose wires or poor connections on the evaporator temperature sensor circuit.

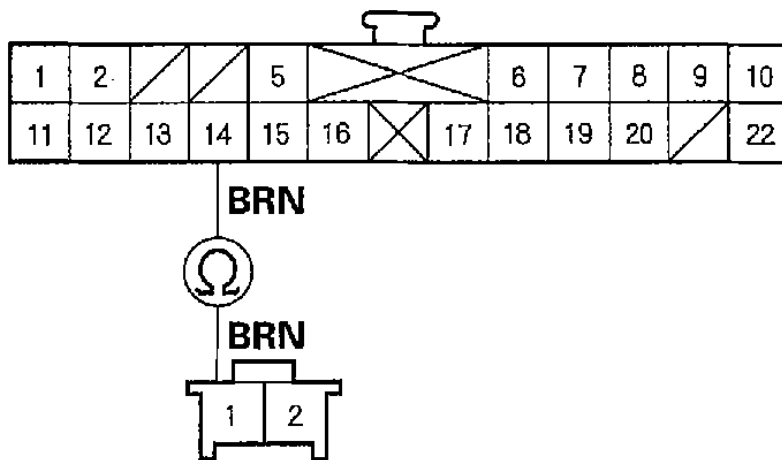
5. Remove the evaporator temperature sensor (see **EVAPORATOR TEMPERATURE SENSOR TEST**) and test it (see **EVAPORATOR TEMPERATURE SENSOR REPLACEMENT**).

Does the evaporator temperature sensor test OK?**YES:** Go to step 6.**NO:** Replace the evaporator temperature sensor.

6. Disconnect audio-HVAC display panel connector A (22P).
 7. Check for continuity between the No. 14 terminal of audio-HVAC display panel connector A (22P) and the No. 1 terminal of the evaporator temperature sensor 2P connector.

Is there continuity?**YES:** Go to step 8.**NO:** Repair open in the wire between the audio-HVAC display panel and the evaporator temperature sensor.**AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)**

Wire side of female terminals

**EVAPORATOR TEMPERATURE SENSOR 2P CONNECTOR**

Wire side of female terminals

G01822472

Fig. 44: Checking For Continuity Between The No. 14 Terminal Of Audio-HVAC Display Panel Connector A (22P) & The No. 1 Terminal Of The Evaporator Temperature Sensor 2P

Connector

8. Check for continuity between the No. 15 terminal of audio-HVAC display panel connector A (22P) and the No. 2 terminal of the evaporator temperature sensor 2P connector.

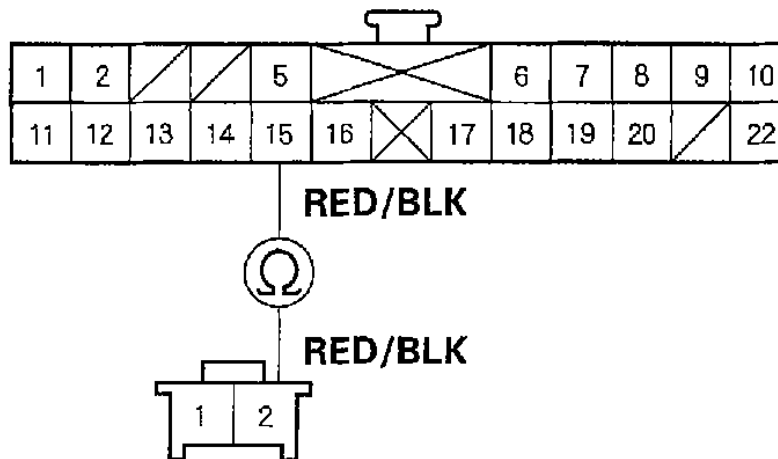
Is there continuity?

YES: Check for loose wire or poor connections at audio-HVAC display panel connector A (22P) and at the evaporator temperature sensor 2P connector. If the connections are good, substitute a known-good audio-HVAC display panel, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.

NO: Repair open in the wire between the audio-HVAC display panel and the evaporator temperature sensor.

AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)

Wire side of female terminals

**EVAPORATOR TEMPERATURE SENSOR 2P CONNECTOR**

Wire side of female terminals

G01822473

Fig. 45: Checking For Continuity Between The No. 15 Terminal Of Audio-HVAC Display Panel Connector A (22P) & The No. 2 Terminal Of The Evaporator Temperature Sensor 2P Connector

DTC INDICATOR H OR DTC B1232: A SHORT IN THE EVAPORATOR TEMPERATURE SENSOR CIRCUIT

1. Clear the DTC.
2. Turn the ignition switch OFF, and then ON.

3. Operate the climate control system in several modes.
4. Check the DTCs.

Is DTC H or B1232 indicated?

YES: Go to step 5.

NO: Intermittent failure.

5. Disconnect the evaporator temperature sensor 2P connector.
6. Test the evaporator temperature sensor (see **EVAPORATOR TEMPERATURE SENSOR TEST**).

Is the resistance within the specifications shown on the graph?

YES: Go to step 7.

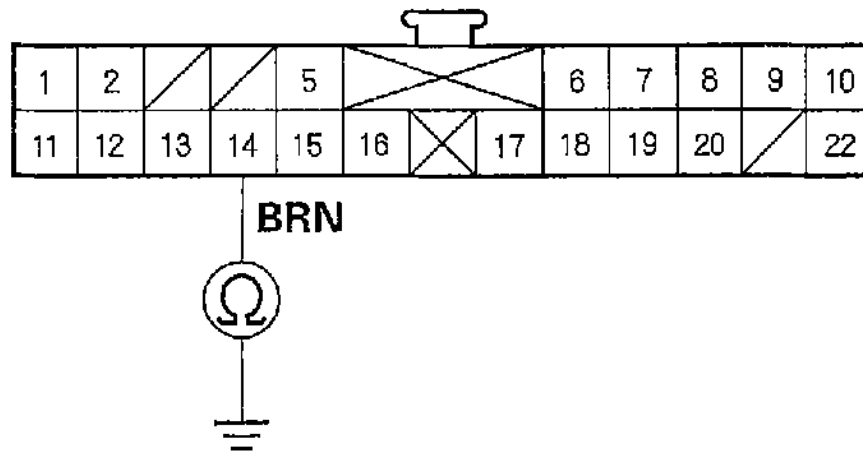
NO: Replace the evaporator temperature sensor.

7. Disconnect audio-HVAC display panel connector A (22P).
8. Check for continuity between the No. 14 terminal of audio-HVAC display panel connector A (22P) and body ground.

Is there continuity?

YES: Repair short to body ground in the wire between the audio-HVAC display panel and the evaporator temperature sensor.

NO: Substitute a known-good audio-HVAC display panel, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.

AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)

Wire side of female terminals

G01822474

Fig. 46: Checking For Continuity Between The No. 14 Terminal Of Audio-HVAC Display Panel Connector A (22P) & Body Ground

DTC INDICATOR I OR DTC B1233: AN OPEN IN THE DRIVER'S AIR MIX CONTROL MOTOR CIRCUIT

1. Clear the DTC.
2. Turn the ignition switch OFF, and then ON.
3. Operate the climate control system in several modes.
4. Check the DTCs.

Is DTC I or B1233 indicated?

YES: Go to step 5.

NO: Intermittent failure, check for loose wires or poor connections on the driver's air mix control motor circuit.

5. Test the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR TEST**).

Is driver's air mix control motor OK?

YES: Go to step 6.

NO: Replace the driver's air mix control motor.

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

7. Disconnect audio-HVAC display panel connector A (22P).
8. Check for continuity between following terminals of audio-HVAC display panel connector A (22P) and the driver's air mix control motor 7P connector.

Is there continuity?

YES: Check for loose wire or poor connections at audio-HVAC display panel connector A (22P) and at the driver's air mix control motor 7P connector. If the connections are good, substitute a known-good audio-HVAC display panel and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.

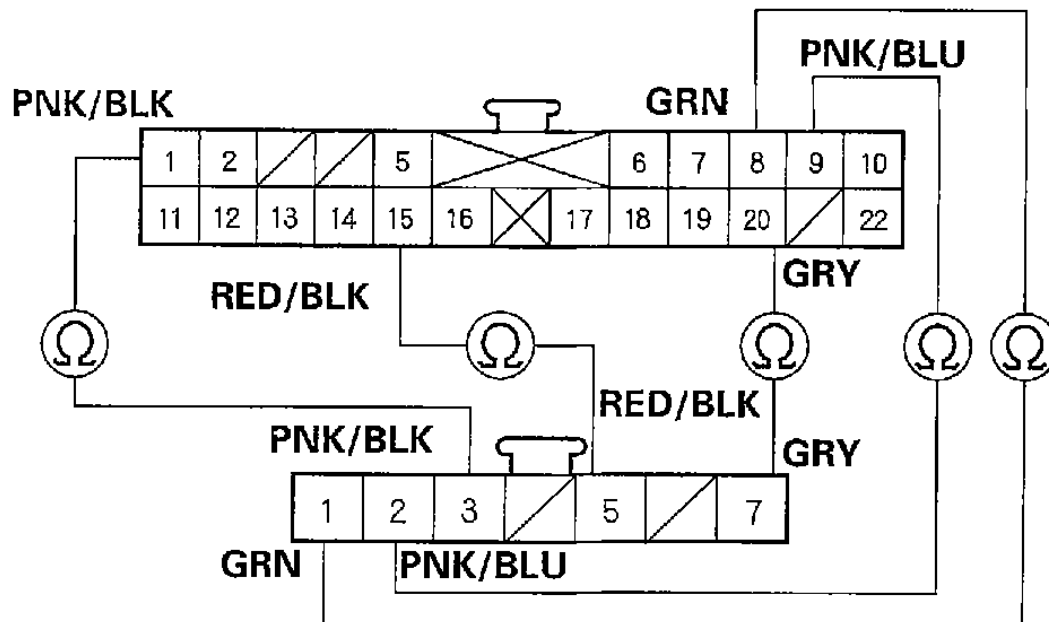
NO: Repair any open in the wire(s) between the audio-HVAC display panel and the driver's air mix control motor.

CONNECTOR CONTINUITY TESTING

Audio-HVAC Display Panel Connector A (22P) Terminal No.	Driver's Air Mix Control Motor 7P Con Termin
1	
8	
9	
15	
20	

AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)

Wire side of female terminals

**DRIVER'S AIR MIX CONTROL MOTOR 7P CONNECTOR**

Wire side of female terminals

G01822476

Fig. 47: Checking For Continuity Between Terminals Of Audio-HVAC Display Panel Connector A (22P) & The Driver's Air Mix Control Motor 7P Connector

DTC INDICATOR J OR DTC B1234: A SHORT IN THE DRIVER'S AIR MIX CONTROL MOTOR CIRCUIT

1. Clear the DTC.
2. Turn the ignition switch OFF, and then ON.
3. Operate the climate control system in several modes.
4. Check the DTCs.

Is DTC J or B1234 indicated?

YES: Go to step 5.

NO: Intermittent failure.

5. Test the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR TEST**).

Is the driver's air mix control motor OK?

YES: Go to step 6.

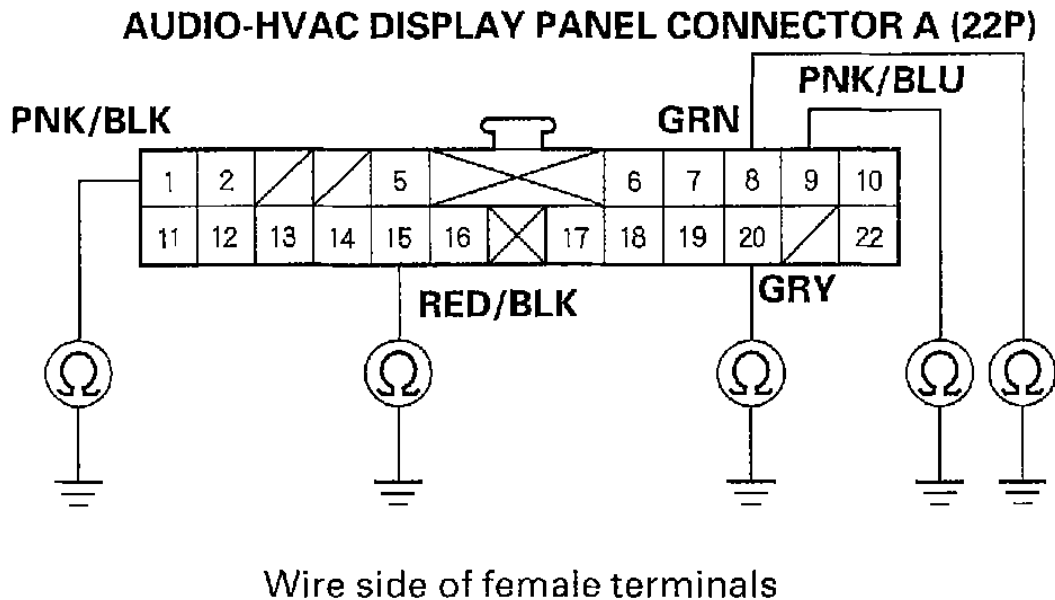
NO: Replace the driver's air mix control motor.

6. Disconnect the driver's air mix control motor 7P connector.
7. Disconnect audio-HVAC display panel connector A (22P).
8. Check for continuity between body ground and audio-HVAC display panel connector A (22P) terminals No. 1, 8, 9, 15 and 20 individually.

Is there continuity?

YES: Repair any short to body ground in the wire(s) between the audio-HVAC display panel and the driver's air mix control motor.

NO: Go to step 9.



G01822477

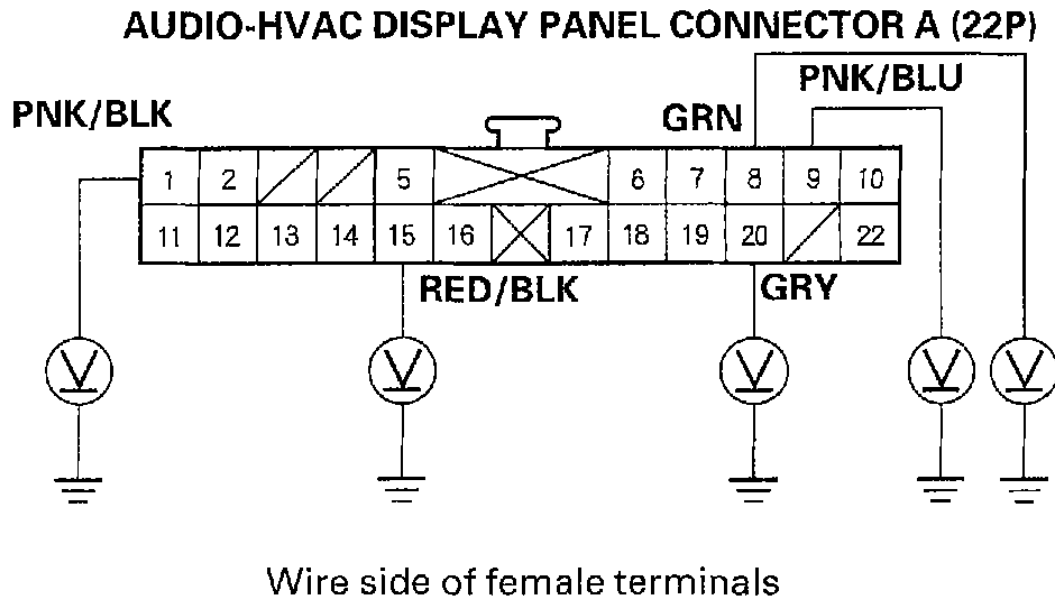
Fig. 48: Checking For Continuity Between Body Ground & Audio-HVAC Display Panel Connector A (22P) Terminals No. 1, 8, 9, 15 & 20

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

Is there any voltage?

YES: Repair any short to power in the wire(s) between the audio-HVAC display panel and the driver's air mix control motor. This short also damages the audio-HVAC display panel. Repair the short to power before replacing the audio-HVAC display panel.

NO: Substitute a known-good audio-HVAC display panel, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.



G01822478

Fig. 49: Checking For Voltage Between Body Ground & Audio-HVAC Display Panel Connector A (22P) Terminals No. 1, 8, 9, 15 & 20

DTC INDICATOR K OR DTC B1235: A PROBLEM IN THE DRIVER'S AIR MIX CONTROL LINKAGE, DOOR, OR MOTOR

1. Clear the DTC.
2. Turn the ignition switch OFF, and then ON.
3. Operate the climate control system in several modes.
4. Check the DTCs.

Is DTC K or B1235 indicated?

YES: Go to step 5.

NO: Intermittent failure.

5. Test the driver's air mix control motor (see **DRIVER'S AIR MIX CONTROL MOTOR TEST**).

Is the driver's air mix control motor OK?

YES: Substitute a known-good audio-HVAC display panel, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.

NO: Replace the driver's air mix control motor, or repair the driver's air mix control linkage or door.

DTC INDICATOR L OR DTC B1239: A SHORT OR OPEN IN THE MODE CONTROL MOTOR CIRCUIT

1. Clear the DTC.
2. Turn the ignition switch OFF, and then ON.
3. Operate the climate control system in several modes.
4. Check the DTCs.

Is DTC L or B1239 indicated?

YES: Go to step 5.

NO: Intermittent failure, check for loose wires or poor connections on the mode control motor circuit.

5. Test the mode control motor (see **MODE CONTROL MOTOR TEST**).

Is the mode control motor OK?

YES: Go to step 6.

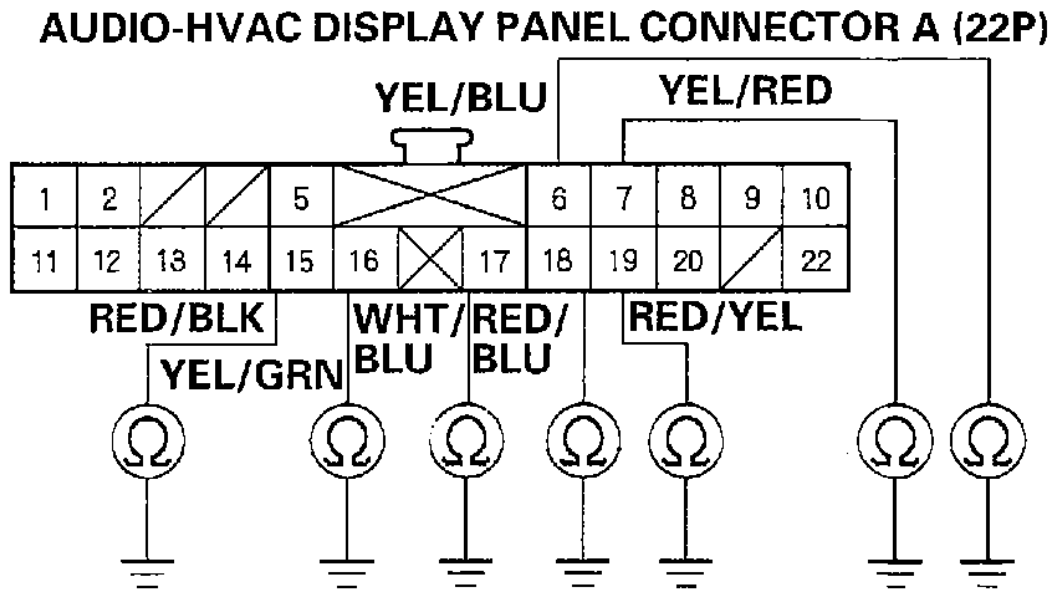
NO: Replace the mode control motor.

6. Disconnect the mode control motor 7P connector.
7. Disconnect audio-HVAC display panel connector A (22P).
8. Check for continuity between body ground and audio-HVAC display panel connector A (22P) terminals No. 6, 7, 15, 16, 17, 18 and 19 individually.

Is there continuity?

YES: Repair any short to body ground in the wire(s) between the audio-HVAC display panel and the mode control motor.

NO: Go to step 9.



G01822479

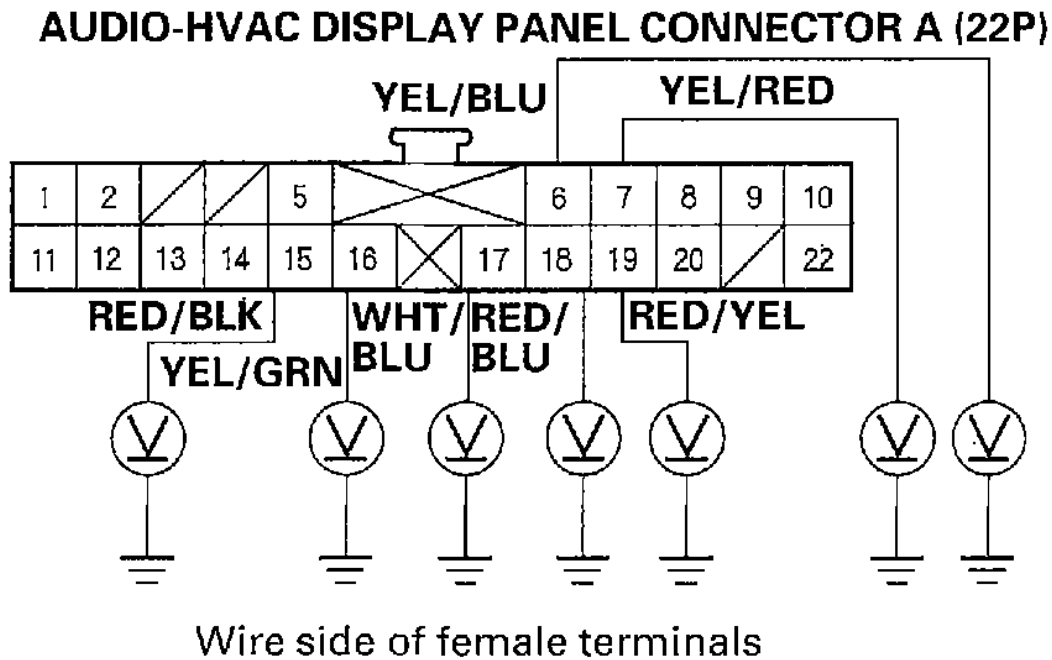
Fig. 50: Checking For Continuity Between Body Ground & Audio-HVAC Display Panel Connector A (22P) Terminals No. 6, 7, 15, 16, 17, 18 & 19

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

Is there any voltage?

YES: Repair any short to power in the wire(s) between the audio-HVAC display panel and the mode control motor. This short may also damage the audio-HVAC display panel. Repair the short to power before replacing the audio-HVAC display panel.

NO: Go to step 10.



G01822480

Fig. 51: Checking For Voltage Between Body Ground & Audio-HVAC Display Panel Connector A (22P) Terminals No. 6, 7, 15, 16, 17, 18 & 19

10. Turn the ignition switch OFF, and check for continuity between following terminals of audio-HVAC display panel connector A (22P) and the mode control motor 7P connector.

Is there continuity?

YES: Check for loose wire or poor connections at audio-HVAC display panel connector A (22P) and at the mode control motor 7P connector. If the connections are good, substitute a known-good audio-HVAC display panel, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.

NO: Repair any open in the wire(s) between the audio-HVAC display panel and the mode control motor.

CONNECTOR CONTINUITY TESTING

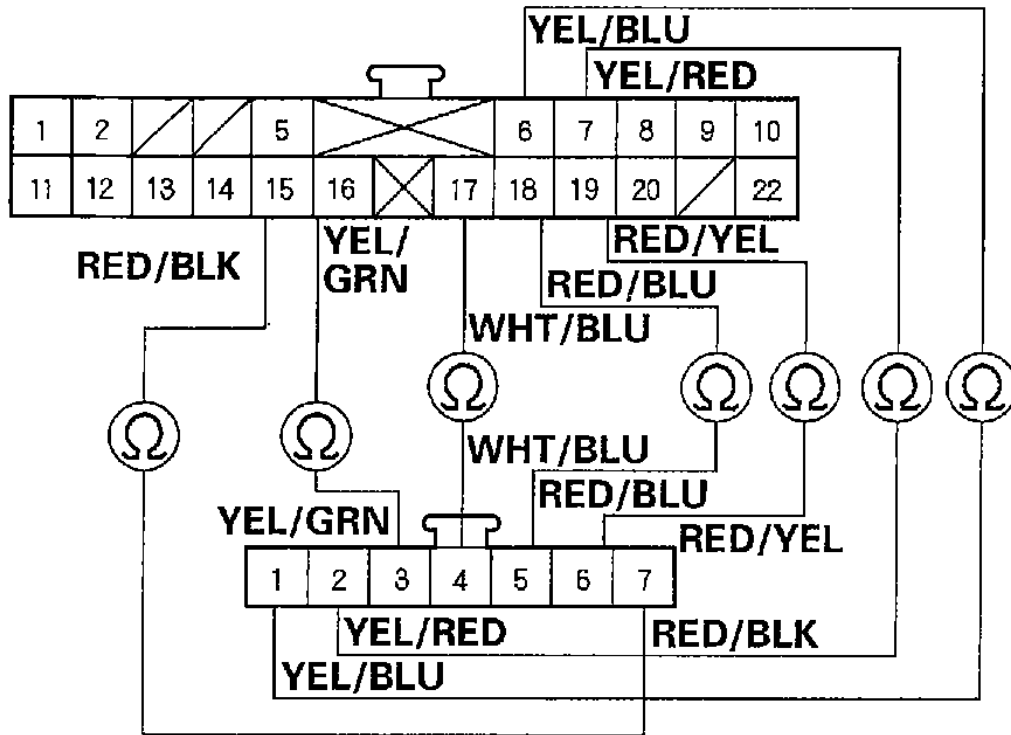
Audio-HVAC Display Panel Connector A (22P) Terminal No.	Driver's Air Mix Control Motor 7P Con Termin
6	
7	
15	
16	
17	

18

19

AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)

Wire side of female terminals

**MODE CONTROL MOTOR 7P CONNECTOR**

Wire side of female terminals

G01822482

Fig. 52: Checking For Continuity Between Terminals Of Audio-HVAC Display Panel Connector A (22P) & The Mode Control Motor 7P Connector

DTC INDICATOR M OR DTC B1240: A PROBLEM IN THE MODE CONTROL LINKAGE, DOORS, OR MOTOR

1. Clear the DTC.
2. Turn the ignition switch OFF, and then ON.
3. Operate the climate control system in several modes.
4. Check the DTCs.

Is DTC M or B1240 indicated?

YES: Go to step 5.

NO: Intermittent failure.

5. Test the mode control motor (see **MODE CONTROL MOTOR TEST**).

Is the mode control motor and linkage OK?

YES: Substitute a known-good audio-HVAC display panel, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.

NO: Replace the mode control motor, or repair the mode control linkage or doors.

DTC INDICATOR N OR DTC B1241: A PROBLEM IN THE BLOWER MOTOR CIRCUIT

1. Clear the DTC.
2. Turn the ignition switch OFF, and then ON.
3. Operate the climate control system is several modes.
4. Check the DTCs.

Is DTC N or B1241 indicated?

YES: Go to step 5.

NO: Intermittent failure, check for loose wires or poor connections on the blower motor circuit.

5. Check the No. 21 (40A) fuse in the under-hood fuse/relay box, and the No. 30 (7.5A) fuse in the under-dash fuse/relay box.

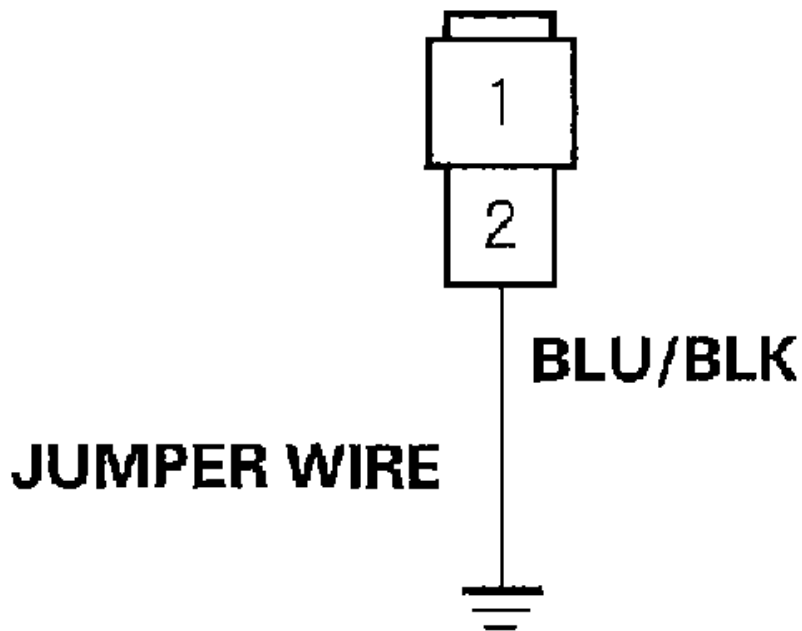
Are the fuses OK?

YES: Go to step 6.

NO: Replace the fuse(s), and recheck.

6. 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

G01822483

Fig. 53: Connecting The No. 2 Terminal Of The Blower Motor 2P Connector To Body Ground With A Jumper Wire

7. Turn the ignition switch ON (II).
Does the blower motor run?
YES: Go to step 8.
NO: Go to step 22 .
8. Turn the ignition switch OFF.
9. Disconnect the jumper wire.
10. Disconnect the power transistor 4P connector.

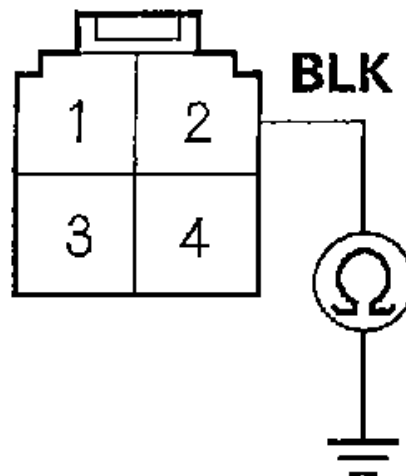
11. Check for continuity between the No. 2 terminal of the power transistor 4P connector and body ground.

Is there continuity?

YES: Go to step 12.

NO: Check for an open in the BLK wire between the power transistor and body ground. If the wire is OK, check for poor ground at G503.

POWER TRANSISTOR 4P CONNECTOR



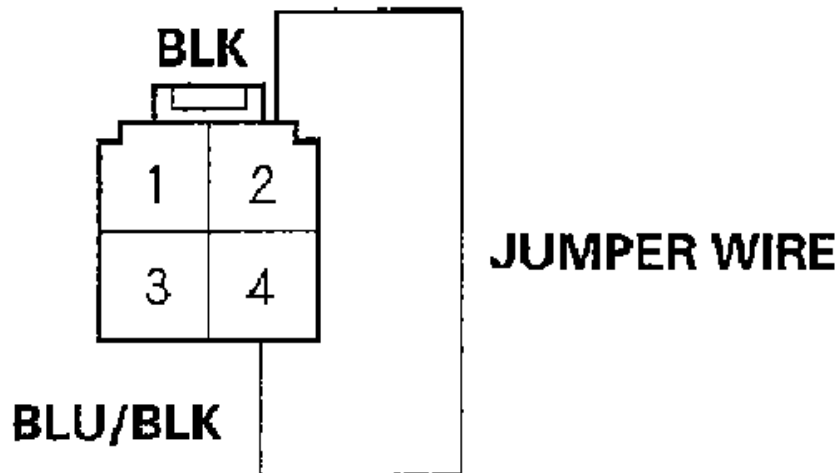
Wire side of female terminals

G01822484

Fig. 54: Checking For Continuity Between The No. 2 Terminal Of The Power Transistor 4P Connector & Body Ground

12. 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

G01822485

Fig. 55: Connecting The No. 2 & No. 4 Terminals Of The Power Transistor 4P Connector With A Jumper Wire

13. Turn the ignition switch ON (II).

Does the blower motor run at high speed?

YES: Go to step 14.

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

14. Turn the ignition switch OFF.

15. Disconnect the jumper wire.

16. Disconnect climate control unit connector B (16P).

17. Check for continuity between the No. 1 and No. 2 terminals of audio-HVAC display panel connector B (16P) and body ground individually.

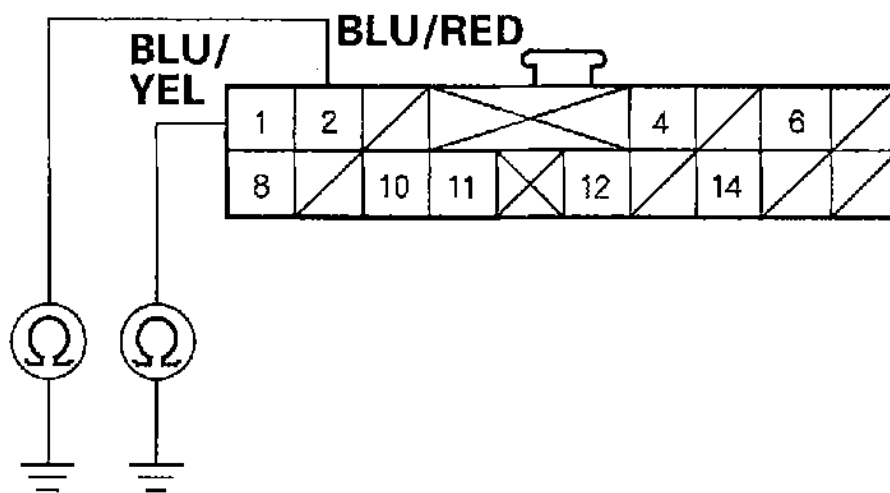
Is there continuity?

YES: Repair any short to body ground in the wire(s) between the audio-HVAC display panel

and the power transistor.

NO: Go to step 18.

AUDIO-HVAC DISPLAY PANEL CONNECTOR B (16P)



Wire side of female terminals

G01822486

Fig. 56: Checking For Continuity Between The No. 1 And No. 2 Terminals Of Audio-HVAC Display Panel Connector B (16P) & Body Ground

18. Check for continuity between the following terminals of audio-HVAC display panel connector B (16P) and power transistor 4P connector.

Is there continuity?

YES: Go to step 19.

NO: Repair any open in the wire(s) between the audio-HVAC display panel and the power transistor.

CONNECTOR CONTINUITY TESTING

Audio-HVAC Display Panel Connector B (16P) Terminal No.	Power Transistor 4P Connector Ter
1	
2	

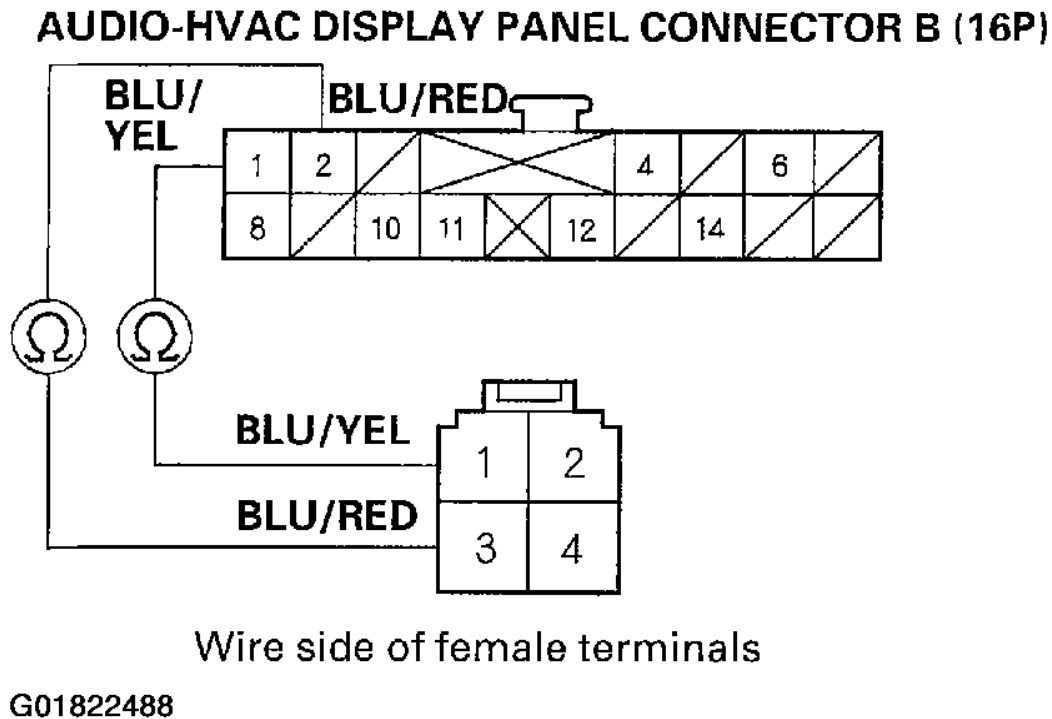


Fig. 57: Checking For Continuity Between The Terminals Of Audio-HVAC Display Panel Connector B (16P) & Power Transistor 4P Connector

19. Reconnect audio-HVAC display panel connector B (16P).
20. Test the power transistor (see **POWER TRANSISTOR TEST**).

Is the power transistor OK?

YES: Check for loose wire or poor connections at audio-HVAC display panel connector B (16P) and at the power transistor 4P connector. If the connections are good, substitute a known-good audio-HVAC display panel, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.

NO: Replace the power transistor.

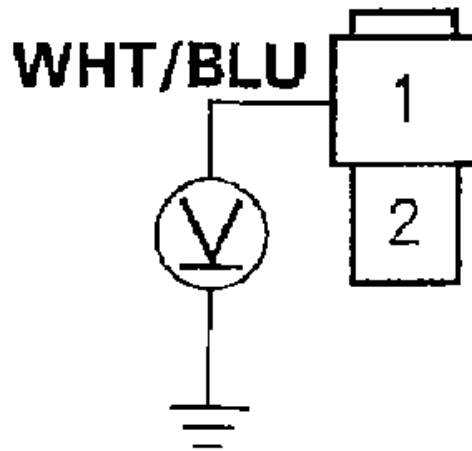
21. Disconnect the jumper wire.
22. Disconnect the blower motor 2P connector.
23. Measure the voltage between the No. 1 terminal of the blower motor 2P connector and body ground.

Is there battery voltage?

YES: Replace the blower motor.

NO: Go to step 25 .

BLOWER MOTOR 2P CONNECTOR



Wire side of female terminals

G01822489

Fig. 58: Measuring The Voltage Between The No. 1 Terminal Of The Blower Motor 2P Connector & Body Ground

24. Turn the ignition switch OFF.
25. Remove the blower motor relay from the underhood fuse/relay box, and test it (see **POWER RELAY TEST**).

Is the relay OK?

YES: Go to step 27 .

NO: Replace the blower motor relay.

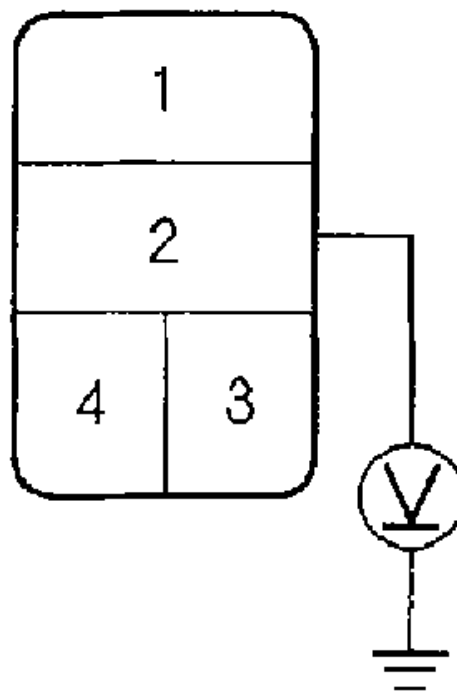
26. Measure the voltage between the No. 2 terminal of the blower motor relay 4P socket and body ground.

Is there battery voltage?

YES: Go to step 28 .

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

BLOWER MOTOR RELAY 4P SOCKET



G01822490

Fig. 59: Measuring The Voltage Between The No. 2 Terminal Of The Blower Motor Relay 4P Socket & Body Ground

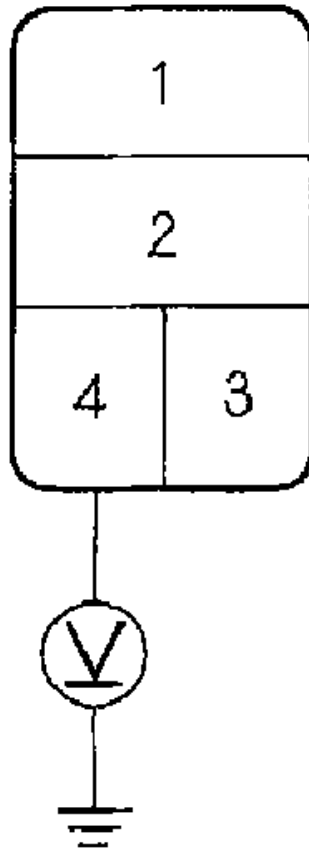
27. Turn the ignition switch ON (II).
28. Measure the voltage between the No. 4 terminal of the blower motor relay 4P socket and body ground.

Is there battery voltage?

YES: Go to step 30 .

NO: Repair open in the wire between the No. 30 fuse in the driver's under-dash fuse/relay box and the blower motor relay.

BLOWER MOTOR RELAY 4P SOCKET



G01822491

Fig. 60: Measuring The Voltage Between The No. 4 Terminal Of The Blower Motor Relay 4P Socket & Body Ground

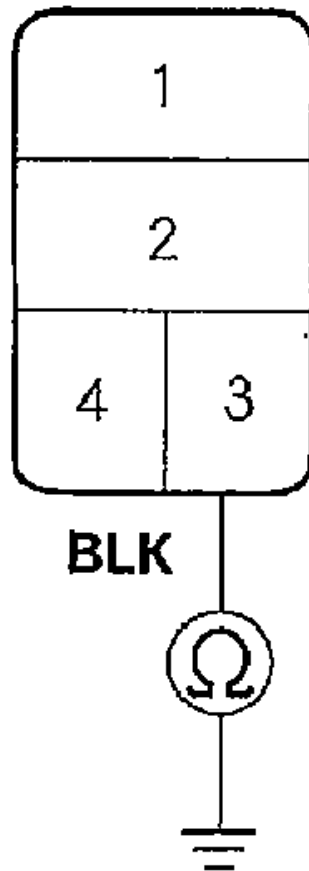
29. Turn the ignition switch OFF.
30. Check for continuity between the No. 3 terminal of the blower motor relay 4P socket and body ground.

Is there continuity?

YES: Repair open in the WHT/BLU 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 G302.

BLOWER MOTOR RELAY 4P SOCKET



G01822492

Fig. 61: Checking For Continuity Between The No. 3 Terminal Of The Blower Motor Relay 4P Socket & Body Ground

DTC INDICATOR O OR DTC B1236: AN OPEN IN THE PASSENGER'S AIR MIX CONTROL MOTOR CIRCUIT

1. Clear the DTC.
2. Turn the ignition switch OFF, and then ON.
3. Operate the climate control system in several modes.
4. Check the DTCs.

Is DTC O or B1236 indicated?**YES:** Go to step 5.**NO:** Intermittent failure, check for loose wires or poor connections on the passenger's air mix control motor circuit.

5. Test the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR TEST**).

Is the passenger's air mix control motor OK?**YES:** Go to step 6.**NO:** Replace the passenger's air mix control motor.

6. Disconnect the passenger's air mix control motor 7P connector.
7. Disconnect audio-HVAC display panel connector A (22P).
8. Check for continuity between following terminals of audio-HVAC display panel connector A (22P) and the passenger's air mix control motor 7P connector.

Is there continuity?

YES: Check for loose wire or poor connections at audio-HVAC display panel connector A (22P) and at the passenger's air mix control motor 7P connector. If the connections are good, substitute a known-good audio-HVAC display panel, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.

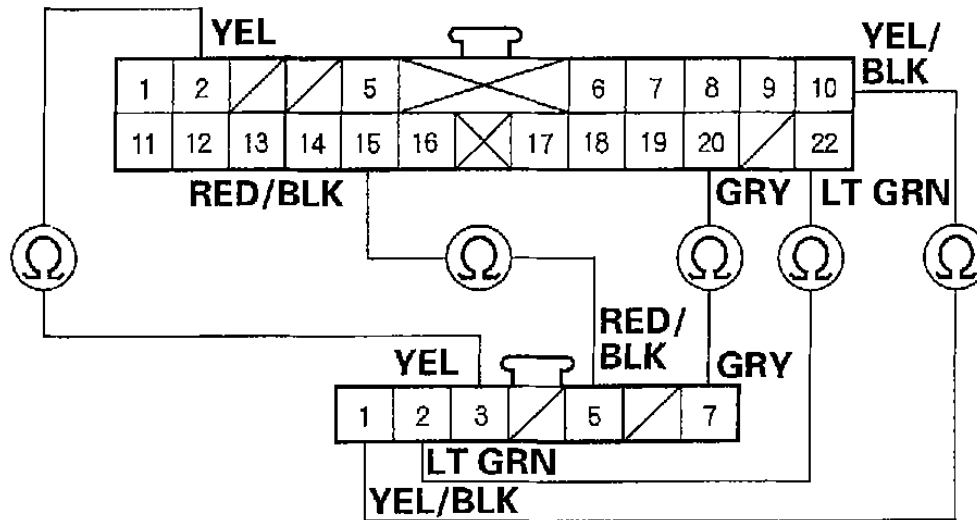
NO: Repair any open in the wire(s) between the audio-HVAC display panel and the passenger's air mix control motor.

CONNECTOR CONTINUITY TESTING

Audio-HVAC Display Panel Connector A (22P) Terminal No.	Driver's Air Mix Control Motor 7P Con Termin
2	
10	
15	
20	
22	

AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)

Wire side of female terminals

**PASSENGER'S AIR MIX CONTROL MOTOR 7P CONNECTOR**

Wire side of female terminals

G01822494

Fig. 62: Checking For Continuity Between Terminals Of Audio-HVAC Display Panel Connector A (22P) & The Passenger's Air Mix Control Motor 7P Connector

DTC INDICATOR P OR DTC B1237: A SHORT IN THE PASSENGER'S AIR MIX CONTROL MOTOR CIRCUIT

1. Clear the DTC.
2. Turn the ignition switch OFF, and then ON.
3. Operate the climate control system in several modes.
4. Check the DTCs.

Is DTC P or B1237 indicated?

YES: Go to step 5.

NO: Intermittent failure.

5. Test the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR TEST**).

Is the passenger's air mix control motor OK?

YES: Go to step 6.

NO: Replace the passenger's air mix control motor.

6. Disconnect the passenger's air mix control motor 7P connector.

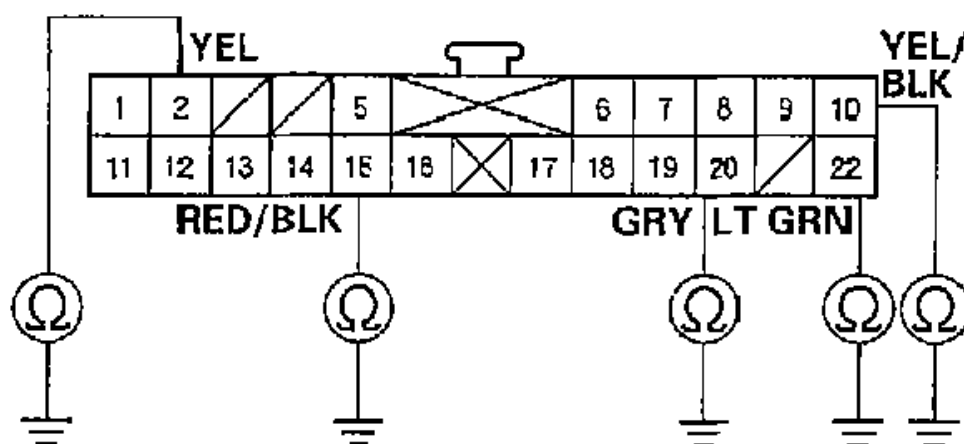
7. Disconnect audio-HVAC display panel connector A (22P).
8. Check for continuity between body ground and audio-HVAC display panel connector A (22P) terminals No. 2, 10, 15, 20 and 22 individually.

Is there continuity?

YES: Repair any short to body ground in the wire(s) between the audio-HVAC display panel and the passenger's air mix control motor.

NO: Go to step 9.

AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)



Wire side of female terminals

G01822495

Fig. 63: Checking For Continuity Between Body Ground & Audio-HVAC Display Panel Connector A (22P) Terminals No. 2, 10, 15, 20 & 22

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

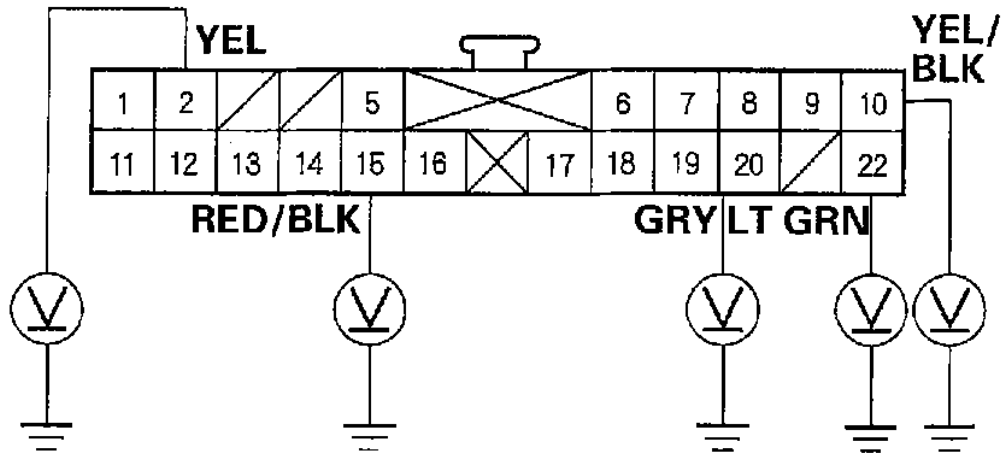
Is there any voltage?

YES: Repair any short to power in the wire(s) between the audio-HVAC display panel and the passenger's air mix control motor. This short also may damage the audio-HVAC display panel. Repair the short to power before replacing the audio-HVAC display panel.

NO: Check for loose wire or poor connection at audio-HVAC display panel connector A (22P) and at the evaporator temperature sensor 2P connector. If the connections are good, substitute a known-good audio-HVAC display panel, and recheck. If the symptom/indication

goes away, replace the original audio-HVAC display panel.

AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)



Wire side of female terminals

G01822496

Fig. 64: Checking For Voltage Between Body Ground & Audio-HVAC Display Panel Connector A (22P) Terminals No. 2, 10, 15, 20 & 22

DTC INDICATOR Q OR DTC B1238: A PROBLEM IN THE PASSENGER'S AIR MIX CONTROL LINKAGE, DOOR, OR MOTOR

1. Clear the DTC.
2. Turn the ignition switch OFF, and then ON.
3. Operate the climate control system in several modes.
4. Check the DTCs.

Is DTC Q or B1238 indicated?

YES: Go to step 5.

NO: Intermittent failure.

5. Test the passenger's air mix control motor (see **PASSENGER'S AIR MIX CONTROL MOTOR TEST**).

Is the passenger's air mix control motor OK?

YES: Substitute a known-good audio-HVAC display panel, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.

NO: Replace the passenger's air mix control motor, or repair the passenger's air mix control

linkage or door.

DTC B1202: CLIMATE CONTROL UNIT INTERNAL ERROR

1. Clear the DTCs using the HDS.
2. Turn the ignition switch OFF then ON.
3. Turn the climate control system on and operate several functions. (A/C on/off, air mix and blend door operations, temperature settings etc.)
4. Check the DTCs by selecting the DTC MENU (DTCs) from the HDS.

IS DTC B1202 indicated?

YES: The audio-HVAC display panel is faulty, replace the audio-HVAC display panel.

NO: Intermittent failure, the audio-HVAC display panel is OK at this time. Check for loose or poor connections at audio-HVAC display panel connector A (22P). If the connections are good, check the battery condition and the charging system (see **GENERATORS & REGULATORS**).

DTC B1205: CLIMATE CONTROL UNIT LOST COMMUNICATION WITH THE GAUGE CONTROL MODULE (VSP/NE MESSAGES); DTC B1206: CLIMATE CONTROL UNIT LOST COMMUNICATION WITH THE GAUGE CONTROL MODULE (ECT MESSAGES); DTC B1207: CLIMATE CONTROL UNIT LOST COMMUNICATION WITH THE GAUGE CONTROL MODULE (ILLUMI MESSAGES)

1. Push the AUTO button.

Does the climate control turn on?

YES: Go to step 2.

NO: Go to climate control power and ground circuits troubleshooting (see **BODY ELECTRICAL CONNECTORS & HARNESES**).

2. Clear the DTCs using the HDS.
3. Turn the ignition switch OFF then ON.
4. Turn the climate control system on and operate several functions. (A/C on/off, air mix and blend door operations, temperature settings etc.)
5. Check the DTCs by selecting the DTCs MENU (DTCs) from the HDS.

Is DTC B1205, B1206 and/or B1207 indicated?

YES: Go to step 6.

NO: Intermittent failure, the gauge control module and audio-HVAC display panel are ok at this time.

6. Check the DTCs by selecting the DTCs MENU (DTCs) from the HDS.

Is DTC B1008, B1060 and/or B1061 indicated?

YES: Perform the gauge control module self test procedure (see **SELF-DIAGNOSTIC PROCEDURE**).

NO: The climate control unit is faulty, replace the audio-HVAC display panel.

RECIRCULATION CONTROL MOTOR CIRCUIT TROUBLESHOOTING

1. Check the No. 30 (7.5A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

YES: Go to step 2.

NO: Replace the fuse, and recheck.

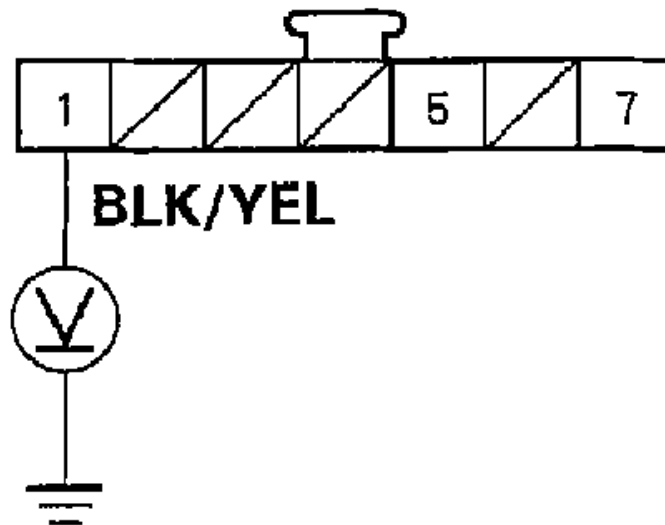
2. Disconnect the recirculation control motor 7P connector.
3. Turn the ignition switch ON (II).
4. Measure the voltage between the No. 1 terminal of the recirculation control motor 7P connector and body ground.

Is there battery voltage?

YES: Go to step 5.

NO: Repair open in the wire between the No. 30 fuse in the under-dash fuse/relay box and the recirculation control motor.

RECIRCULATION CONTROL MOTOR 7P CONNECTOR



Wire side of female terminals

G01822497

Fig. 65: Measuring The Voltage Between The No. 1 Terminal Of The Recirculation Control Motor 7P Connector & Body Ground

5. Turn the ignition switch OFF.
6. Test the recirculation control motor (see **RECIRCULATION CONTROL MOTOR TEST**).
Is the recirculation control motor OK?
YES: Go to step 7.
NO: Replace the recirculation control motor, or repair the recirculation control linkage or doors.
7. Disconnect audio-HVAC display panel connector B (16P).
8. Check for continuity between the No. 10 and No. 11 terminals of audio-HVAC display panel connector B

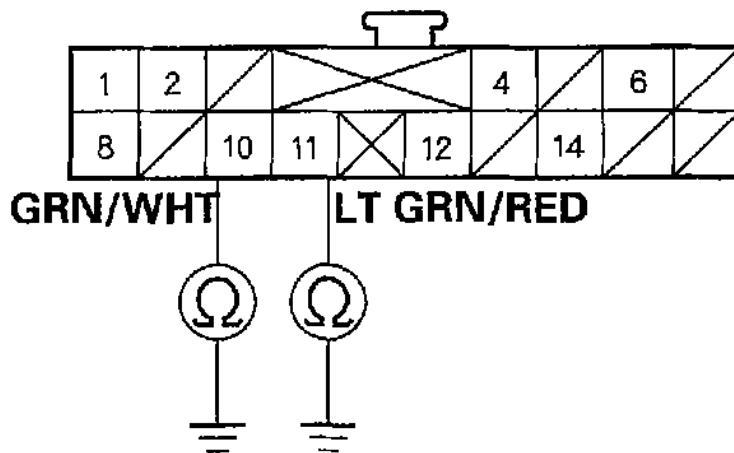
(16P) and body ground individually.

Is there continuity?

YES: Repair any short to body ground in the wire(s) between the audio-HVAC display panel and the recirculation control motor.

NO: Go to step 9.

AUDIO-HVAC DISPLAY PANEL CONNECTOR B (16P)



Wire side of female terminals

G01822498

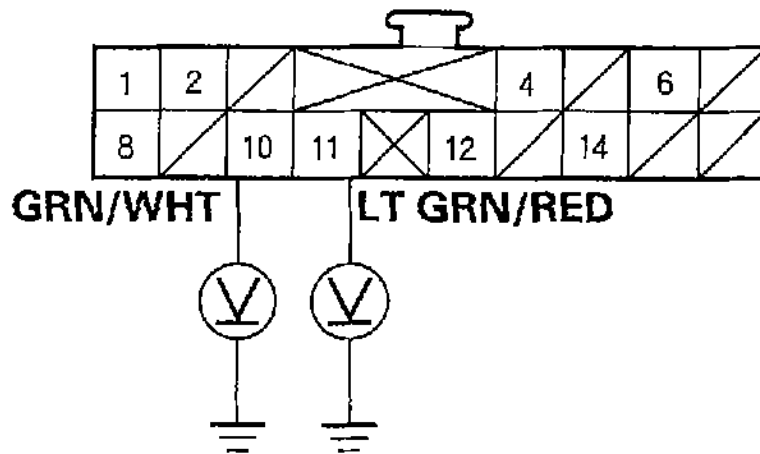
Fig. 66: Checking For Continuity Between The No. 10 & No. 11 Terminals Of Audio-HVAC Display Panel Connector B (16P) & Body Ground

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

Is there any voltage?

YES: Repair any short to power in the wire(s) between the audio-HVAC display panel and the recirculation control motor. This short may also damage the audio-HVAC display panel. Repair the short to power before replacing the audio-HVAC display panel.

NO: Go to step 10.

AUDIO-HVAC DISPLAY PANEL CONNECTOR B (16P)

Wire side of female terminals

G01822499

Fig. 67: Checking For Voltage Between The No. 10 & No. 11 Terminals Of Audio-HVAC Display Panel Connector B (16P) & Body Ground

10. Turn the ignition switch OFF.
11. Check for continuity between the following terminals of audio-HVAC display panel connector B (16P) and the recirculation control motor 7P connector.

Is there continuity?

YES: Check for loose wire or poor connections at audio-HVAC display panel connector B (16P) and at the recirculation control motor. If the connections are good, substitute a known-good audio-HVAC display panel, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.

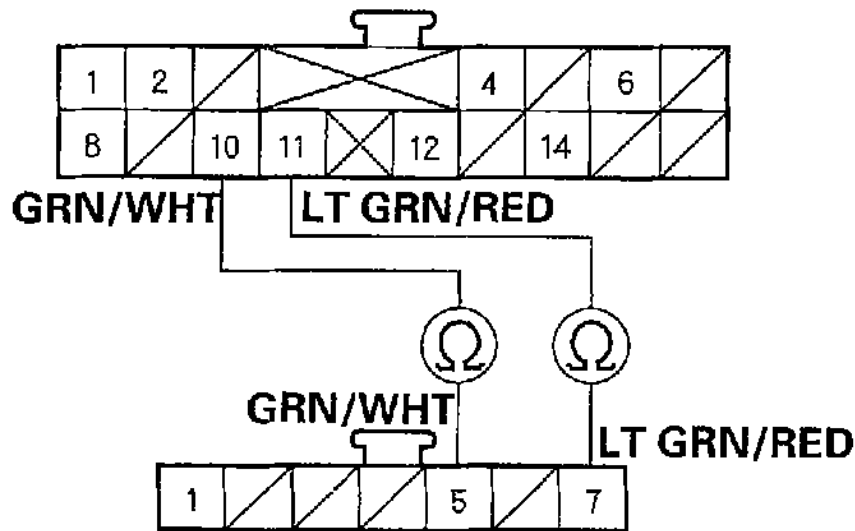
NO: Repair any open in the wire(s) between the audio-HVAC display panel and the recirculation control motor.

CONNECTOR CONTINUITY TESTING

Audio-HVAC Display Panel Connector B (16P) Terminal No.	Recirculation Control Motor 7P Con Termin
10	
11	

AUDIO-HVAC DISPLAY PANEL CONNECTOR B (16P)

Wire side of female terminals

**RECIRCULATION CONTROL MOTOR
7P CONNECTOR**

Wire side of female terminals

G01822501

Fig. 68: Checking For Continuity Between The Terminals Of Audio-HVAC Display Panel Connector B (16P) & The Recirculation Control Motor 7P Connector

CLIMATE CONTROL POWER & GROUND CIRCUIT TROUBLESHOOTING

1. Check the No. 30 (7.5A) fuse in the under-dash fuse/relay box.

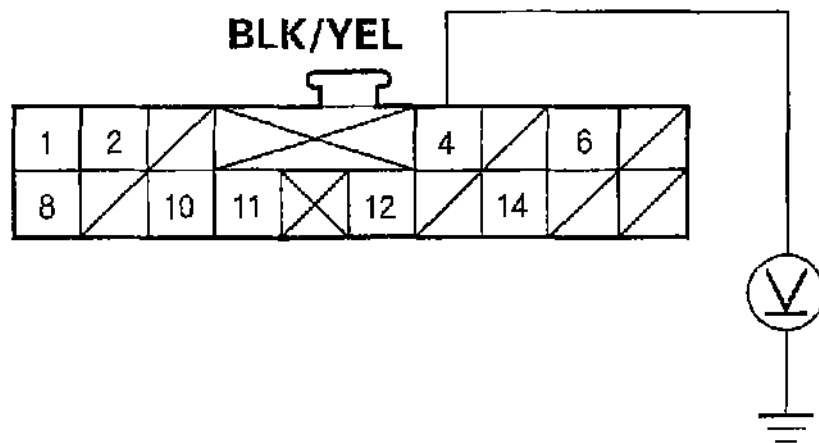
Is the fuse OK?**YES:** Go to step 2.**NO:** Replace the fuse, and recheck.

2. Disconnect audio-HVAC display panel connector B (16P).
3. Turn the ignition switch ON (II).
4. Measure the voltage between the No. 4 terminal of audio-HVAC display panel connector B (16P) and body ground.

Is there battery voltage?**YES:** Go to step 5.**NO:** Repair open in the wire between the No. 30 fuse in the driver's under-dash fuse/relay

box and the audio-HVAC display panel.

AUDIO-HVAC DISPLAY PANEL CONNECTOR B (16P)



Wire side of female terminals

G01822502

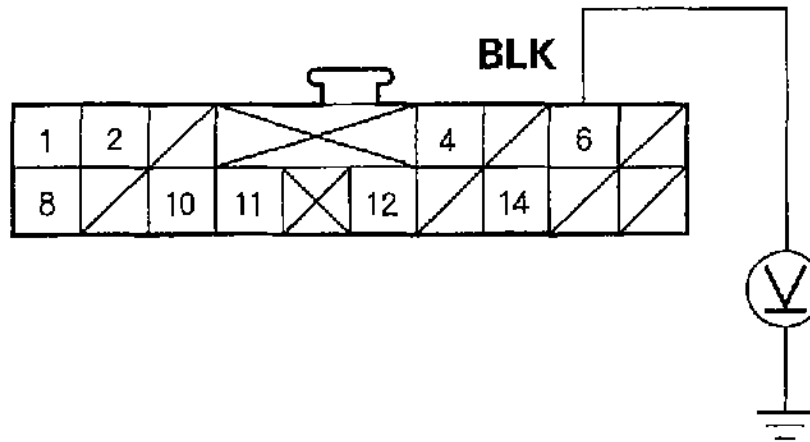
Fig. 69: Measuring The Voltage Between The No. 4 Terminal Of Audio-HVAC Display Panel Connector B (16P) & Body Ground

5. Turn the ignition switch OFF.
6. Check for continuity between the No. 6 terminal of audio-HVAC display panel connector B (16P) and body ground.

Is there continuity?

YES: Check for loose wire or poor connections at audio-HVAC display panel connector B (16P). If the connections are good, substitute a known-good audio-HVAC display panel, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.

NO: Check for an open in the wire between the audio-HVAC display panel and body ground. If the wire is OK, check for poor ground at G503.

AUDIO-HVAC DISPLAY PANEL CONNECTOR B (16P)

Wire side of female terminals

G01822503

Fig. 70: Checking For Continuity Between The No. 6 Terminal Of Audio-HVAC Display Panel Connector B (16P) & Body Ground

CONDENSER FAN CIRCUIT TROUBLESHOOTING

NOTE: Do not use this troubleshooting procedure if the radiator fan and/or the compressor is inoperative, refer to the symptom troubleshooting index.

1. Check the No. 9 (20A) fuse in the under-hood fuse/relay box, and the No. 30 (7.5A) fuse in the under-dash fuse/relay box.

Are the fuses OK?

YES: Go to step 2.

NO: Replace the fuse(s), and recheck.

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

Is the relay OK?

YES: Go to step 3.

NO: Replace the condenser fan relay.

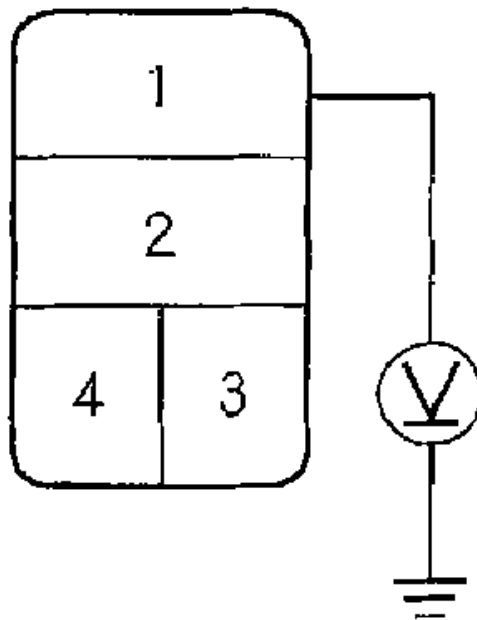
3. Measure the voltage between the No. 1 terminal of the condenser fan relay 4P socket and body ground.

Is there battery voltage?

YES: Go to step 4.

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

CONDENSER FAN RELAY 4P SOCKET



G01822504

Fig. 71: Measuring The Voltage Between The No. 1 Terminal Of The Condenser Fan Relay 4P Socket & Body Ground

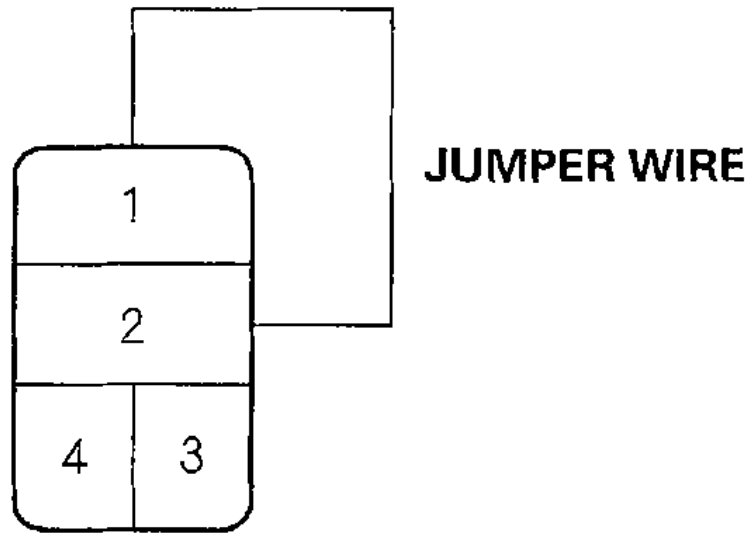
4. Connect the No. 1 and No. 2 terminals of the condenser fan relay 4P socket with a jumper wire.

Does the condenser fan run?

YES: Go to step 5.

NO: Go to step 8 .

CONDENSER FAN RELAY 4P SOCKET



G01822505

Fig. 72: Connecting The No. 1 & No. 2 Terminals Of The Condenser Fan Relay 4P Socket With A Jumper Wire

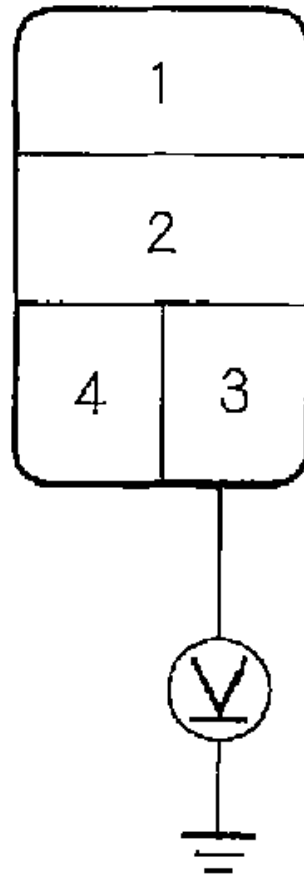
5. Disconnect the jumper wire.
6. Turn the ignition switch ON (II).
7. Measure the voltage between the No. 3 terminal of the condenser fan relay 4P socket and body ground.

Is there battery voltage?

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

NO: Repair open in the BLK/YEL wire between the No. 30 fuse in the under-dash fuse/relay box and the condenser fan relay.

CONDENSER FAN RELAY 4P SOCKET



G01822506

Fig. 73: Measuring The Voltage Between The No. 3 Terminal Of The Condenser Fan Relay 4P Socket & Body Ground

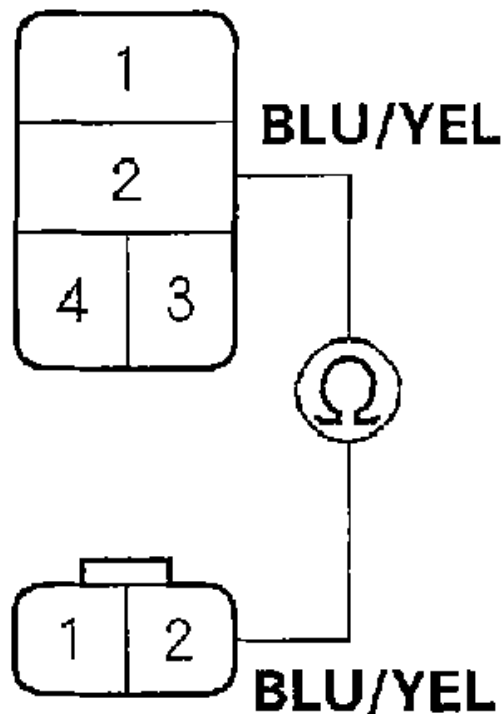
8. Disconnect the jumper wire.
9. Disconnect the condenser fan 2P connector.
10. Check for continuity between the No. 2 terminal of the condenser fan relay 4P socket and the No. 2 terminal of the condenser fan 2P connector.

Is there continuity?

YES: Go to step 11.

NO: Repair open in the wire between the condenser fan relay and the condenser fan.

CONDENSER FAN RELAY 4P SOCKET



CONDENSER FAN 2P CONNECTOR

Wire side of female terminals

G01822507

Fig. 74: Checking For Continuity Between The No. 2 Terminal Of The Condenser Fan Relay 4P Socket & The No. 2 Terminal Of The Condenser Fan 2P Connector

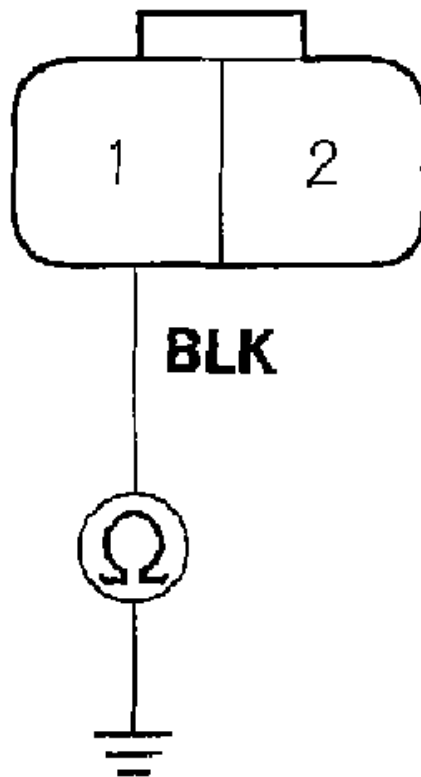
11. Check for continuity between the No. 1 terminal of the condenser fan 2P connector and body ground.

Is there continuity?

YES: Replace the condenser fan motor.

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

CONDENSER FAN 2P CONNECTOR



Wire side of female terminals

G01822508

Fig. 75: Checking For Continuity Between The No. 1 Terminal Of The Condenser Fan 2P Connector & Body Ground

RADIATOR & CONDENSER FAN COMMON CIRCUIT TROUBLESHOOTING

NOTE: Do not use this troubleshooting procedure if only one fan is inoperative, or if the compressor is inoperative, refer to the symptom troubleshooting index.

1. Check the No. 9 (20A) and No. 11 (20A) fuses in the under-hood fuse/relay box, and the No. 30 (7.5A) fuse in the under-dash fuse/relay box.

Are the fuses OK?

YES: Go to step 2.

NO: Replace the fuse(s), and recheck.

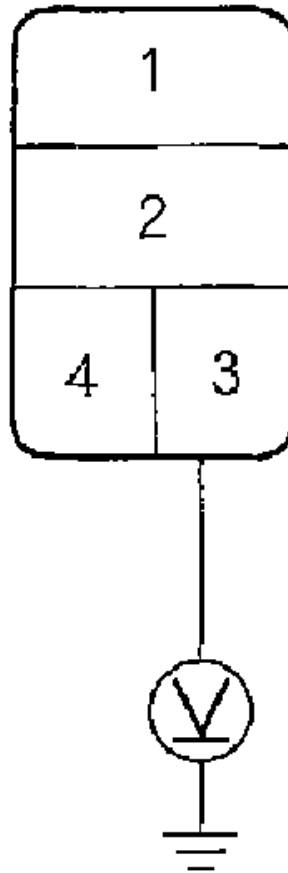
2. Remove the condenser fan relay from the under-hood fuse/relay box.
3. Turn the ignition switch ON (II).
4. Measure the voltage between the No. 3 terminal of the condenser fan relay 4P socket and body ground.

Is there battery voltage?

YES: Go to step 5.

NO: Repair open in the BLK/YEL wire between the No. 30 fuse in the under-dash fuse/relay box and the condenser fan relay.

CONDENSER FAN RELAY 4P SOCKET



G01822509

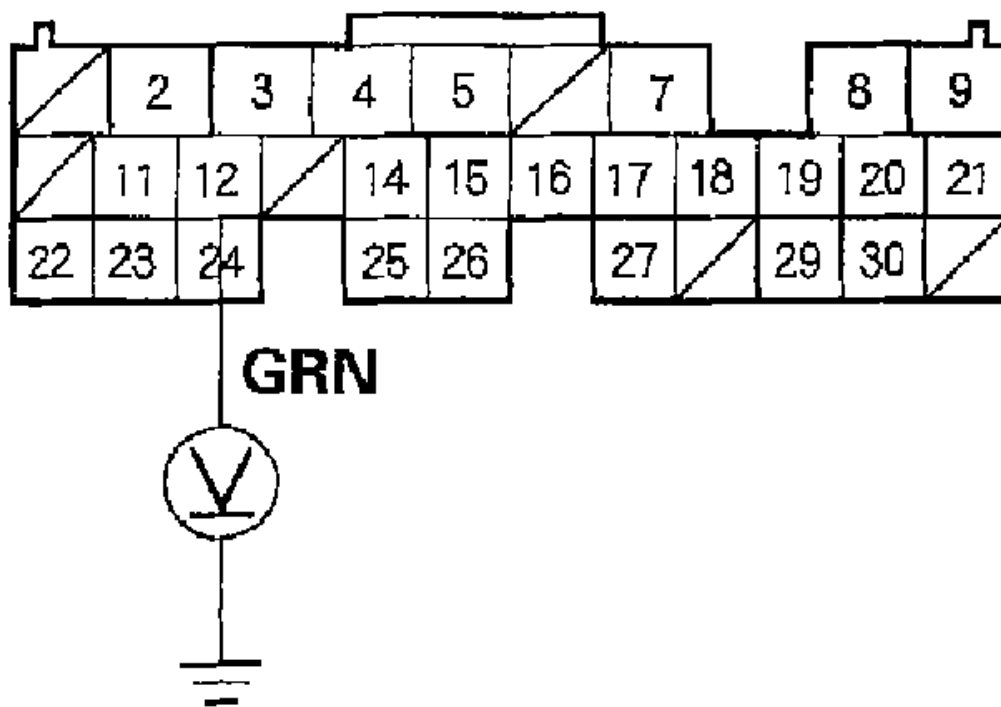
Fig. 76: Measuring The Voltage Between The No. 3 Terminal Of The Condenser Fan Relay 4P Socket & Body Ground

5. Turn the ignition switch OFF.
6. Reinstall the condenser fan relay.
7. Make sure the A/C switch is OFF, and the engine coolant temperature is below 199°F (93°C).
8. Turn the ignition switch ON (II).
9. Using a 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.

Is there battery voltage?

YES: Check for loose wires or poor connections at terminal E12 of the 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 **HOW TO REMOVE THE ECM/PCM FOR TESTING**).

NO: Repair open in the wire between the radiator fan relay, the condenser fan relay, and the ECM/PCM.

ECM/PCM CONNECTOR E (31P)

Wire side of female terminals

G01822510

Fig. 77: Measuring The Voltage Between The No. 12 Terminal Of ECM/PCM Connector E (31P) & Body Ground (ECM/PCM Connectors Connected)

NOTE: After replacing the ECM/PCM, do the following items:

- ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
- Enter the anti-theft codes for the radio and navigation system, then enter the customer's radio station presets.
- Replace ECM/PCM procedure with HDS.

COMPRESSOR CLUTCH CIRCUIT TROUBLESHOOTING

NOTE: Do not use this troubleshooting procedure if the fans are also inoperative, refer to the symptom troubleshooting index.

1. Check the No. 9 (20A) fuse in the under-hood fuse/relay box, and the No. 30 (7.5A) fuse in the under-dash fuse/relay box.

Are the fuses OK?

YES: Go to step 2.

NO: Replace the fuse(s), and recheck.

2. Check the engine coolant temperature, throttle position, and idle speed (use the HDS PGM-FI data list if possible).

Is the coolant temperature, throttle position, and idle speed OK?

YES: Go to step 3.

NO: Troubleshoot and repair the cause of the high engine coolant temperature, low idle, or excessively high throttle position sensor reading.

Sensor	Normal range at idle
TPS	About 0.5 V
RPM	More than 650

G01822511

Fig. 78: Coolant Temperature, Throttle Position & Idle Speed Test Specifications Table

3. Remove the 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 4.

NO: Replace the compressor clutch relay.

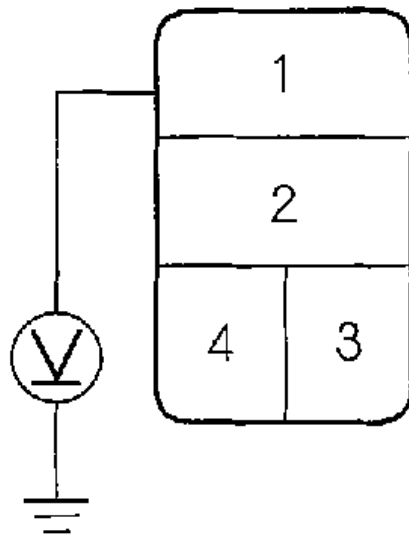
4. Measure the voltage between the No. 1 terminal of the compressor clutch relay 4P socket and body ground.

Is there battery voltage?

YES: Go to step 5.

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

COMPRESSOR CLUTCH RELAY 4P SOCKET



G01822512

Fig. 79: Measuring The Voltage Between The No. 1 Terminal Of The Compressor Clutch Relay 4P Socket & Body Ground

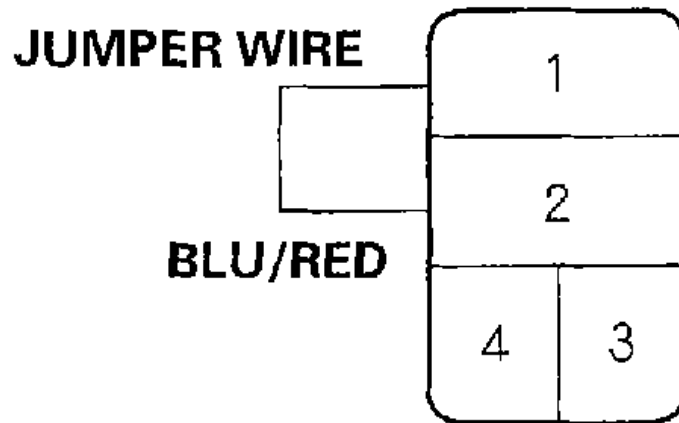
5. Connect the No. 1 and No. 2 terminals of the compressor clutch relay 4P socket with a jumper wire.

Does the compressor clutch click?

YES: Go to step 6.

NO: Go to step 14 .

COMPRESSOR CLUTCH RELAY 4P SOCKET



G01822513

Fig. 80: Connecting The No. 1 & No. 2 Terminals Of The Compressor Clutch Relay 4P Socket With A Jumper Wire

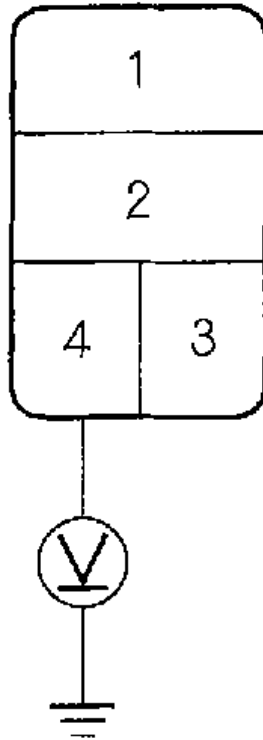
6. Disconnect the jumper wire.
7. Turn the ignition switch ON (II).
8. Measure the voltage between the No. 4 terminal of the compressor clutch relay 4P socket and body ground.

Is there battery voltage?

YES: Go to step 9.

NO: Repair open in the BLK/YEL wire between the No. 30 fuse in the under-dash fuse/relay box and the compressor clutch relay.

COMPRESSOR CLUTCH RELAY 4P SOCKET



G01822514

Fig. 81: Measuring The Voltage Between The No. 4 Terminal Of The Compressor Clutch Relay 4P Socket & Body Ground

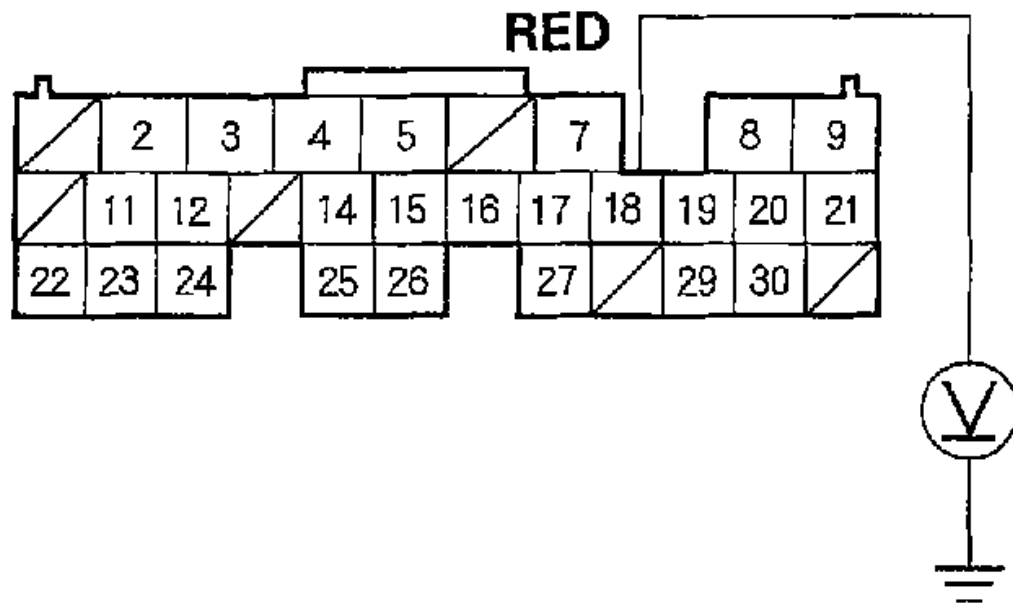
9. Turn the ignition switch OFF.
10. Reinstall the compressor clutch relay.
11. Make sure the A/C switch is OFF.
12. Turn the ignition switch ON (II).
13. Using a backprobe set, measure the voltage between the No. 18 terminal of ECM/PCM connector E (31P) and body ground with the ECM/PCM connectors connected.

Is there battery voltage?

YES: Check for loose wires or poor connections at terminal E18 of the ECM/PCM connector E (31P). If the connections are good, substitute a known-good ECM/PCM, and recheck. If the symptom/indication goes away, replace the original ECM/PCM.

NO: Repair open in the wire between the compressor clutch relay and the ECM/PCM.

ECM/PCM CONNECTOR E (31P)



Wire side of female terminals

G01822515

Fig. 82: Measuring The Voltage Between The No. 18 Terminal Of ECM/PCM Connector E (31P) & Body Ground (ECM/PCM Connectors Connected)

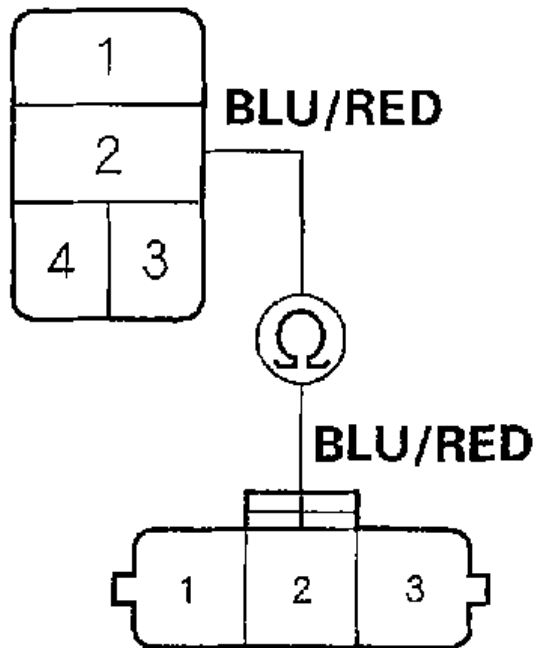
14. Disconnect the jumper wire.
15. Disconnect the compressor clutch 3P connector.
16. Check for continuity between the No. 2 terminal of the compressor clutch relay 4P socket and the No. 2 terminal of the compressor clutch 3P connector.

Is there continuity?

YES: Check the compressor clutch clearance, and the compressor clutch field coil (see **COMPRESSOR CLUTCH CHECK**). Repair as needed.

NO: Repair open in the wire between the compressor clutch relay and the compressor clutch.

COMPRESSOR CLUTCH RELAY 4P SOCKET



COMPRESSOR CLUTCH 3P CONNECTOR

Wire side of female terminals

G01822516

Fig. 83: Checking For Continuity Between The No. 2 Terminal Of The Compressor Clutch Relay 4P Socket & The No. 2 Terminal Of The Compressor Clutch 3P Connector

A/C PRESSURE SWITCH & THERMAL PROTECTOR CIRCUIT TROUBLESHOOTING

1. Turn the ignition switch ON (II).
2. Press the AUTO button, then press the A/C button and check the display.

Does the display indicate A/C on?

YES: Go to step 3.

NO: Check for loose or poor connection at the climate control connector. If the connections are OK, replace the audio-HVAC display panel.

3. Disconnect the thermal protector 3P connector.

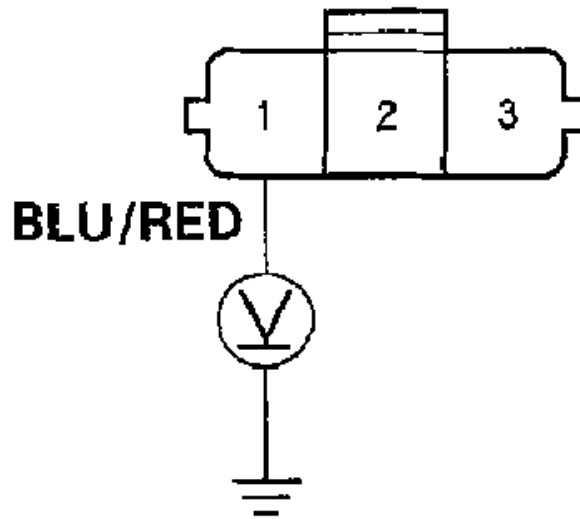
4. Turn the ignition switch ON (II).
5. Measure the voltage between the No. 1 terminal of the thermal protector 3P connector and body ground.

Is there about 5 V or more?

YES: Go to step 6.

NO: Go to step 20 .

THERMAL PROTECTOR 3P CONNECTOR



Wire side of female terminals

G01822517

Fig. 84: Measuring The Voltage Between The No. 1 Terminal Of The Thermal Protector 3P Connector & Body Ground

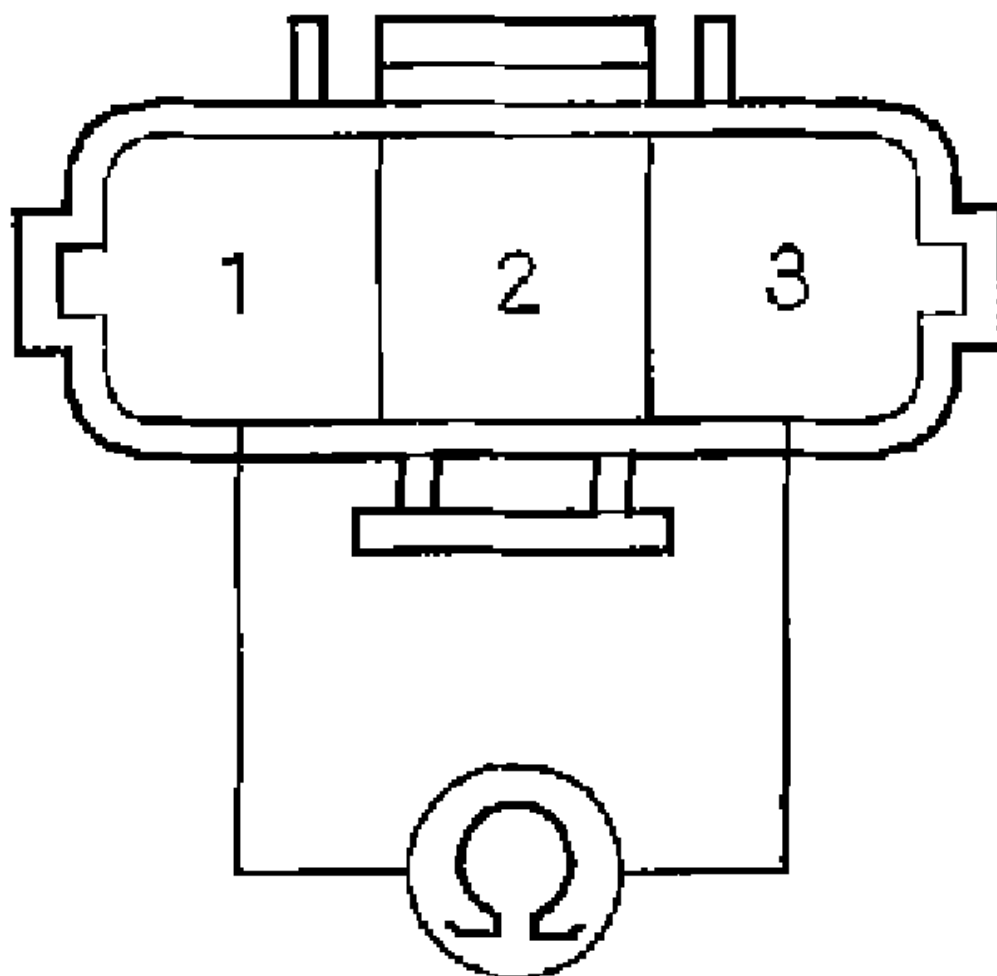
6. Turn the ignition switch OFF.
7. Check for continuity between the No. 1 and No. 3 terminals of the thermal protector.

Is there continuity?

YES: Go to step 8.

NO: Replace the thermal protector.

THERMAL PROTECTOR



G01822518

cardiagn.com

Fig. 85: Checking For Continuity Between The No. 1 & No. 3 Terminals Of The Thermal Protector

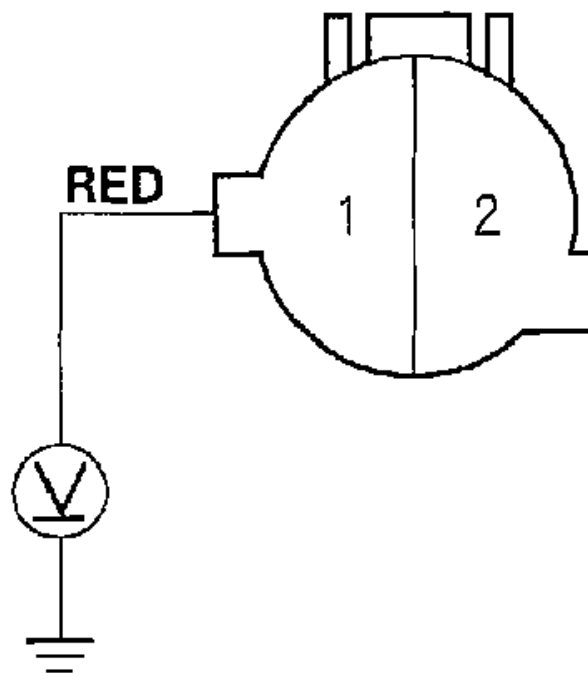
8. Reconnect the thermal protector 3P connector.
9. Disconnect the A/C pressure switch 2P connector.
10. Turn the ignition switch ON (II).
11. Measure the voltage between the No. 1 terminal of the A/C pressure switch 2P connector and body ground.

Is there about 5 V or more?

YES: Go to step 12.

NO: Repair open in the wire between the A/C pressure switch and the thermal protector.

A/C PRESSURE SWITCH 2P CONNECTOR



Wire side of female terminals

G01822519

Fig. 86: Measuring The Voltage Between The No. 1 Terminal Of The A/C Pressure Switch 2P

Connector & Body Ground

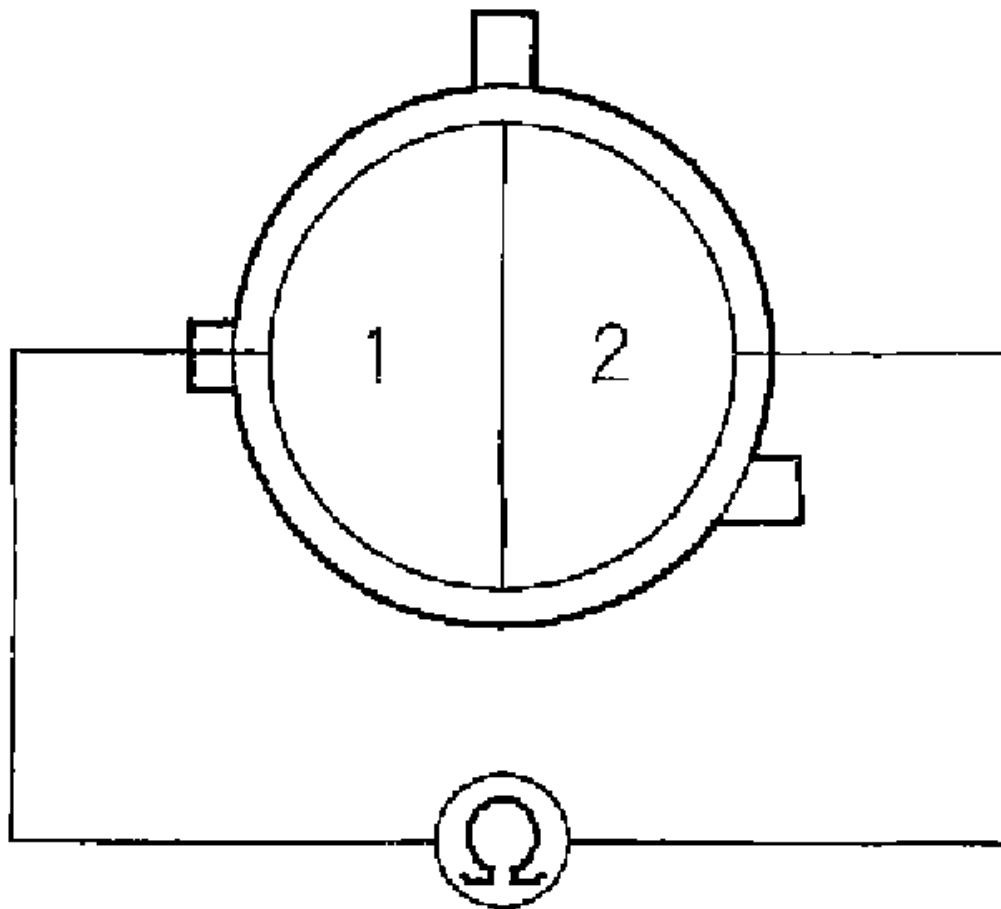
12. Turn the ignition switch OFF.
13. Check for continuity between the No. 1 and No. 2 terminals of the A/C pressure switch.

Is there continuity?

YES: Go to step 14.

NO: Go to step 21 .

A/C PRESSURE SWITCH



G01822520

Fig. 87: Checking For Continuity Between The No. 1 & No. 2 Terminals Of The A/C Pressure Switch

14. Reconnect the A/C pressure switch 2P connector.

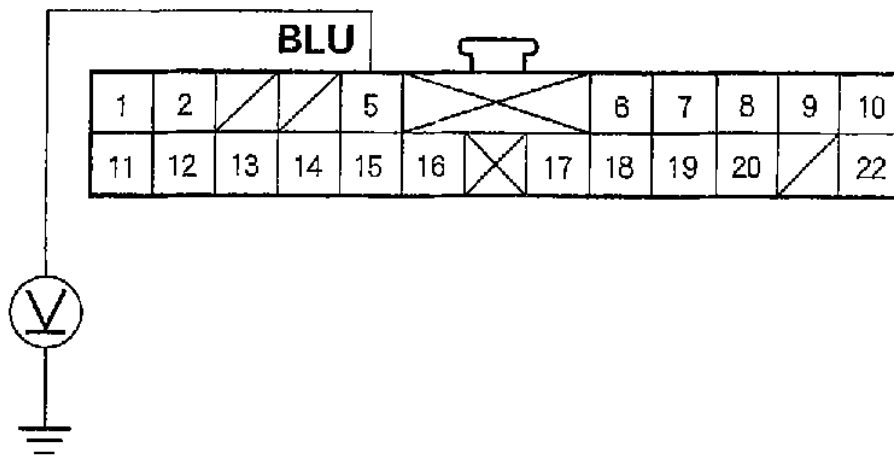
15. Disconnect climate control unit connector A (22P).
16. Turn the ignition switch ON (II).
17. Measure the voltage between the No. 5 terminal of audio-HVAC display panel connector A (22P) and body ground.

Is there about 5 V or more?

YES: Go to step 18.

NO: Repair open in the wire between the audio-HVAC display panel and the A/C pressure switch.

AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)



Wire side of female terminals

G01822521

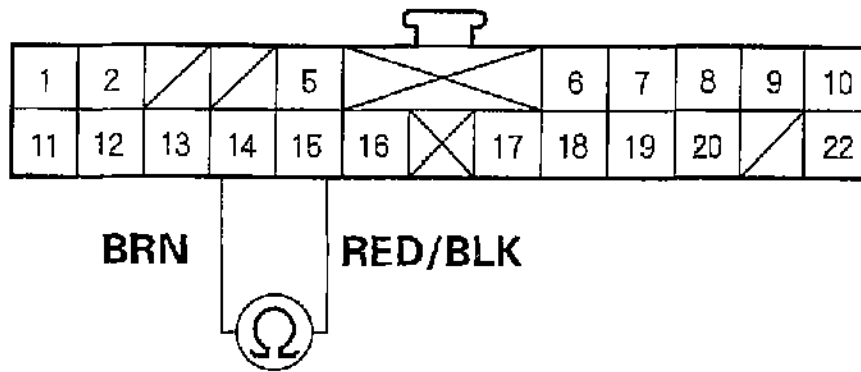
Fig. 88: Measuring The Voltage Between The No. 5 Terminal Of Audio-HVAC Display Panel Connector A (22P) & Body Ground

18. Turn the ignition switch off.
19. Measure the resistance between the No. 14 and No. 15 terminals of the audio-HVAC display panel connector A (22P).

Is the resistance less than 24k ohms?

YES: Check for loose wire or poor connections at audio-HVAC display panel connector A (22P) and at the A/C pressure switch 2P connector. If the connections are good, substitute a known-good audio-HVAC display panel, and recheck. If the symptom/indication goes away, replace the original audio-HVAC display panel.

NO: Repair cause of high resistance in the evaporator temperature circuit.

AUDIO-HVAC DISPLAY PANEL CONNECTOR A (22P)

Wire side of female terminals

G01822522

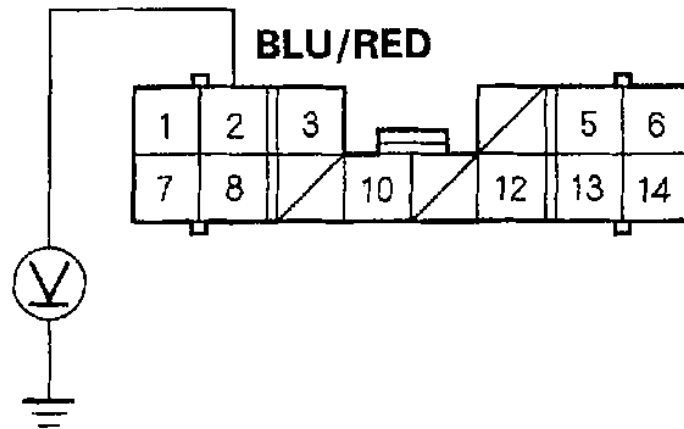
Fig. 89: Measuring The Resistance Between The No. 14 & No. 15 Terminals Of The Audio-HVAC Display Panel Connector A (22P)

20. Using a backprobe set, measure the voltage between the No. 2 terminal of under-hood fuse/relay box connector H (14P) and body ground with the under-hood fuse/relay box connectors connected.

Is there 5 V or more?

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

NO: Check for loose or poor connections at the No. 2 terminal of the under-hood fuse/relay box, if the connections are OK, replace the under-hood fuse/relay box.

UNDER-HOOD FUSE/RELAY BOX CONNECTOR H (14P)

Wire side of female terminals

G01822523

Fig. 90: Measuring The Voltage Between The No. 2 Terminal Of Under-Hood Fuse/Relay Box Connector H (14P) & Body Ground (Under-Hood Fuse/Relay Box Connectors Connected)

21. Check for proper A/C system pressure.

Is the pressure within specifications?

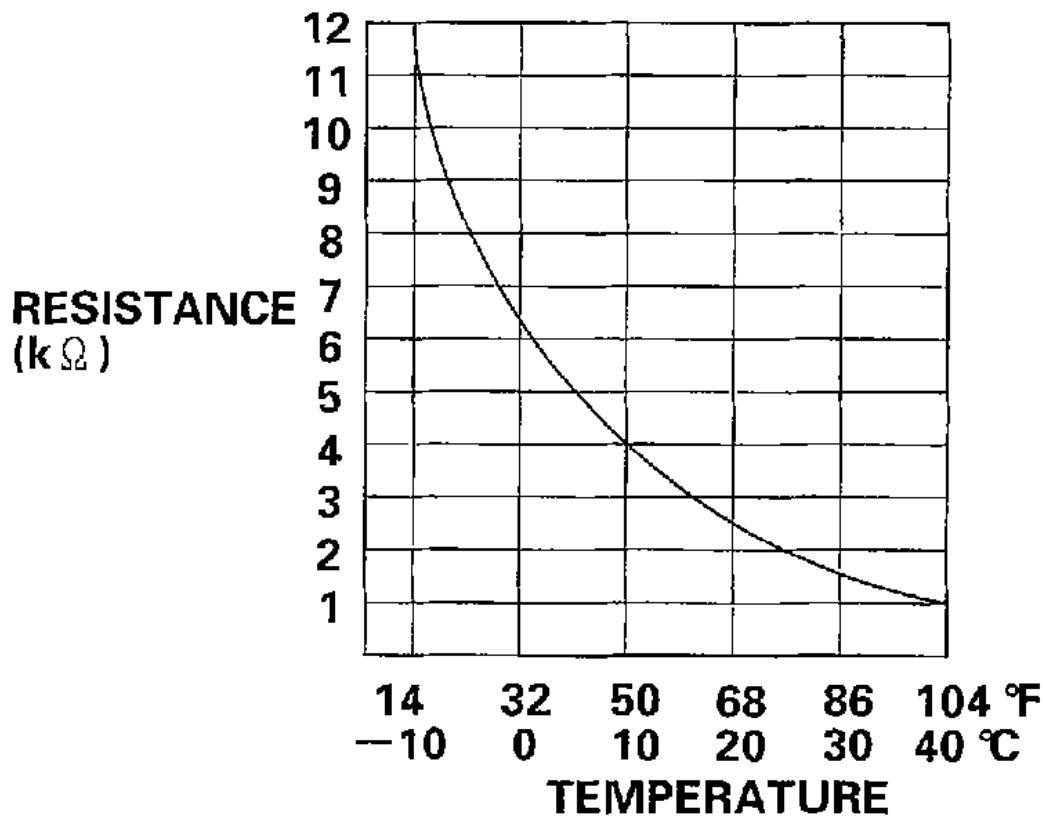
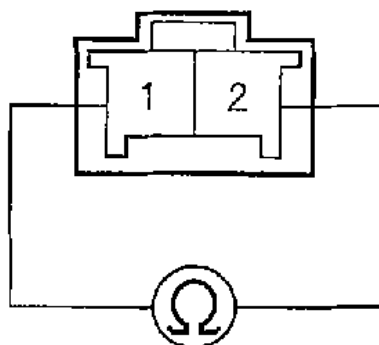
YES: Replace the A/C pressure switch.

NO: Repair the A/C pressure problem.

IN-CAR TEMPERATURE SENSOR TEST

Check for a change in resistance by heating or cooling the sensor with a hair drier. Compare the resistance reading between the No. 1 and No. 2 terminals of the in-car temperature sensor with the specifications shown in the graph; the resistance should be within the specifications.

IN-CAR TEMPERATURE SENSOR

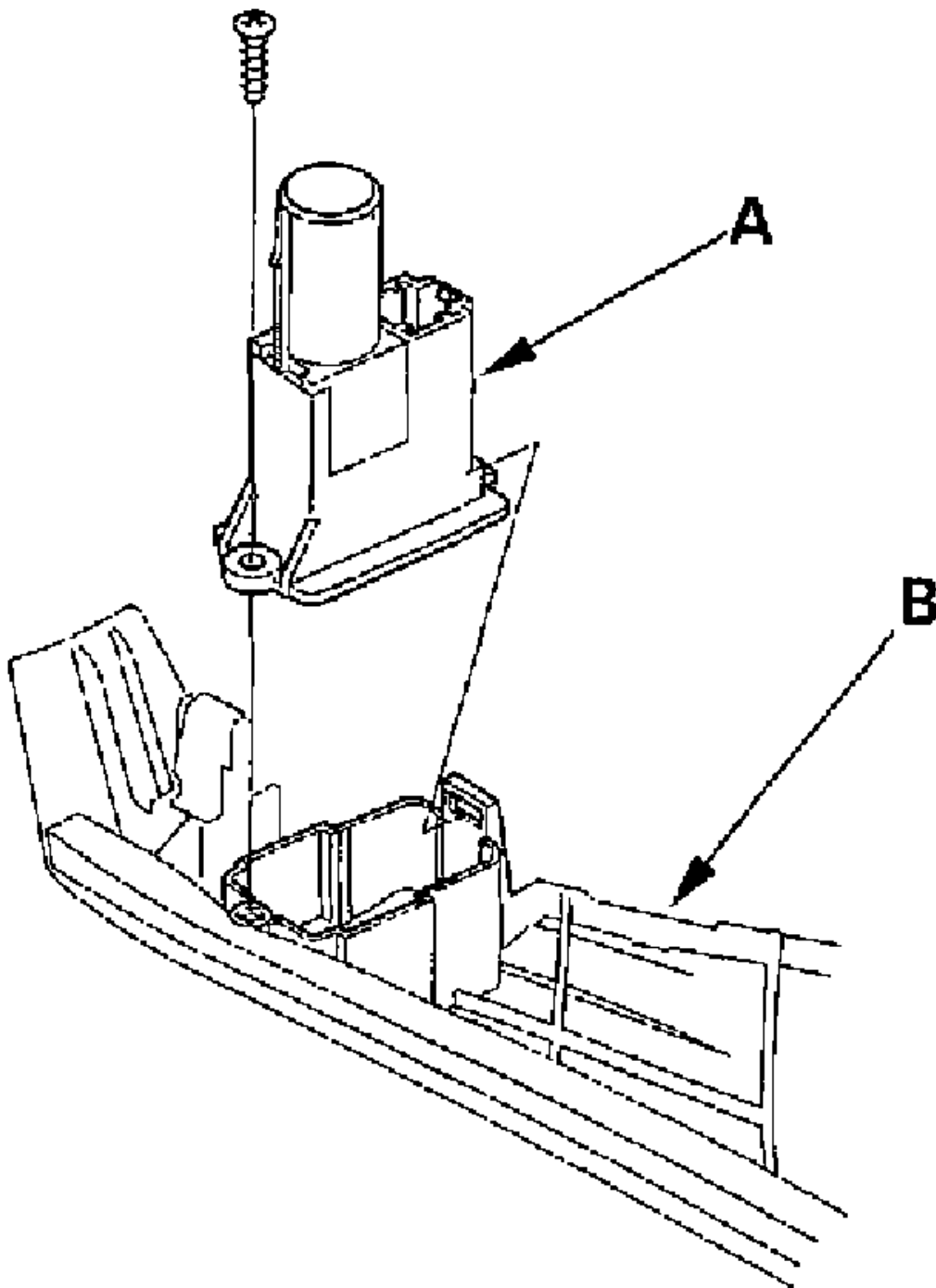


G01822524

Fig. 91: Testing In-Car Temperature Sensor

IN-CAR TEMPERATURE SENSOR REPLACEMENT

1. Remove the driver's inner dashboard trim (see **DRIVER'S DASHBOARD LOWER COVER REMOVAL/INSTALLATION**).
2. Remove the self-tapping screw and the in-car temperature sensor (A) from the driver's inner dashboard trim (B).



G01822525

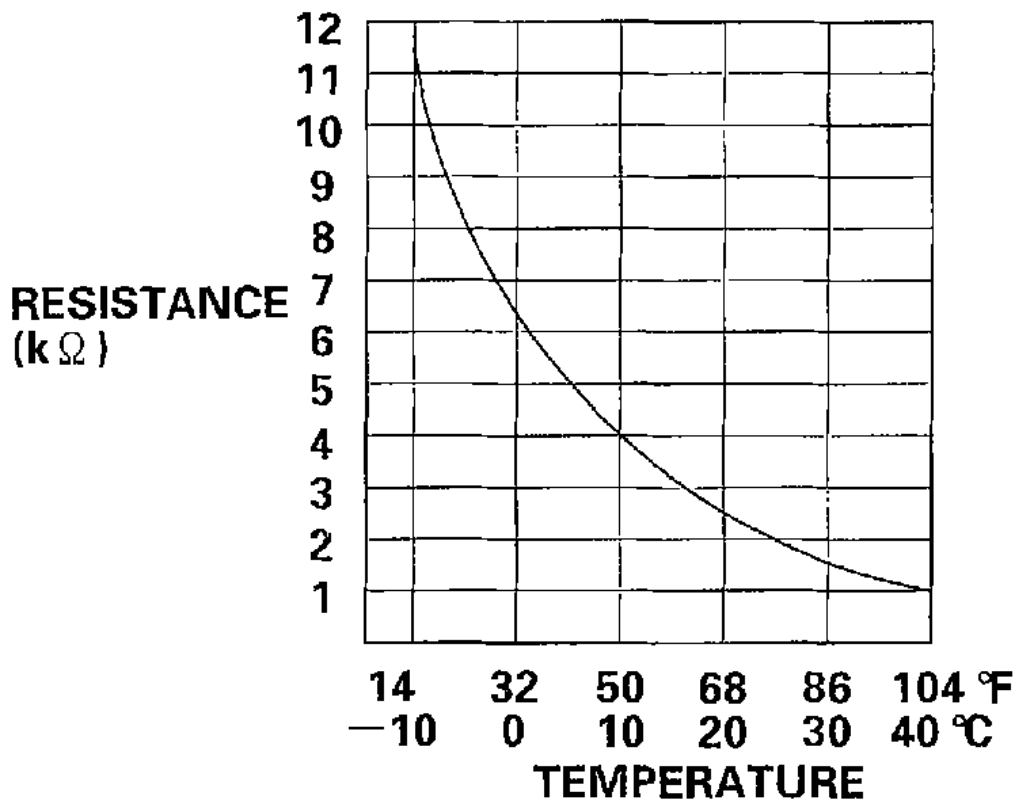
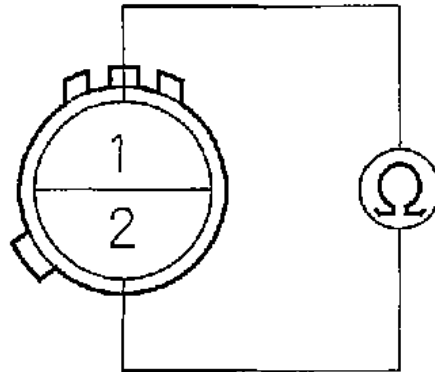
Fig. 92: Removing The In-Car Temperature Sensor

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

OUTSIDE AIR TEMPERATURE SENSOR TEST

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

OUTSIDE AIR TEMPERATURE SENSOR

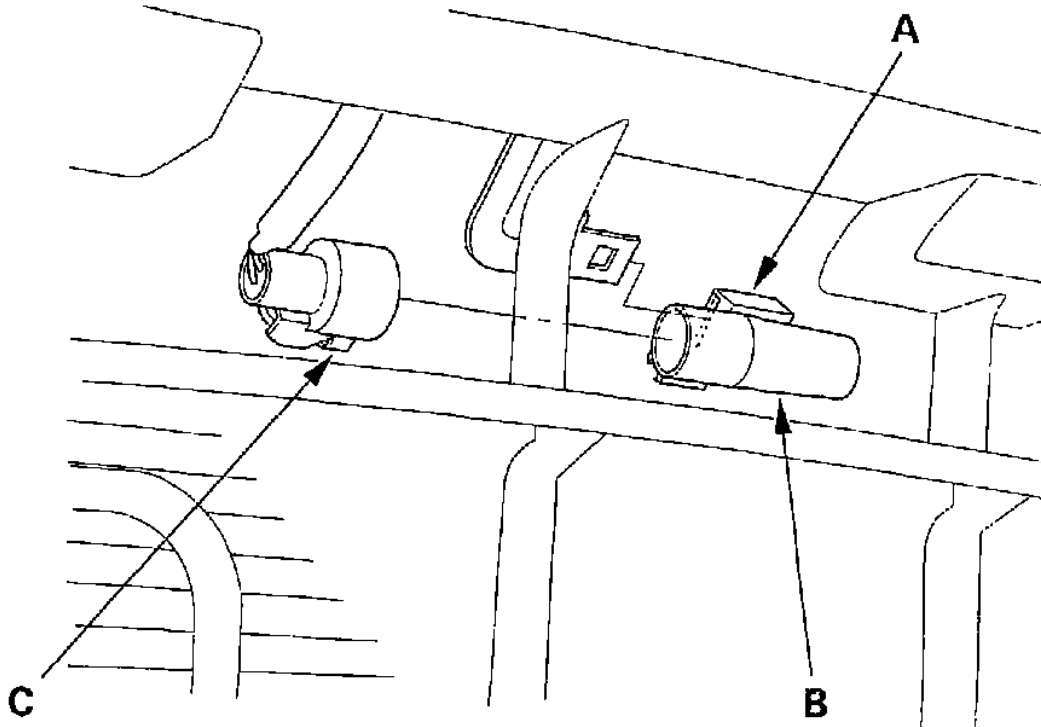


G01822526

Fig. 93: Testing Outside Air Temperature Sensor

OUTSIDE AIR TEMPERATURE SENSOR REPLACEMENT

Lift the tab (A) to release the lock, and remove the outside air temperature sensor (B) from the back of the front bumper beam. Disconnect the 2P connector (C) from the outside air temperature sensor. Install the sensor in the reverse order of removal.

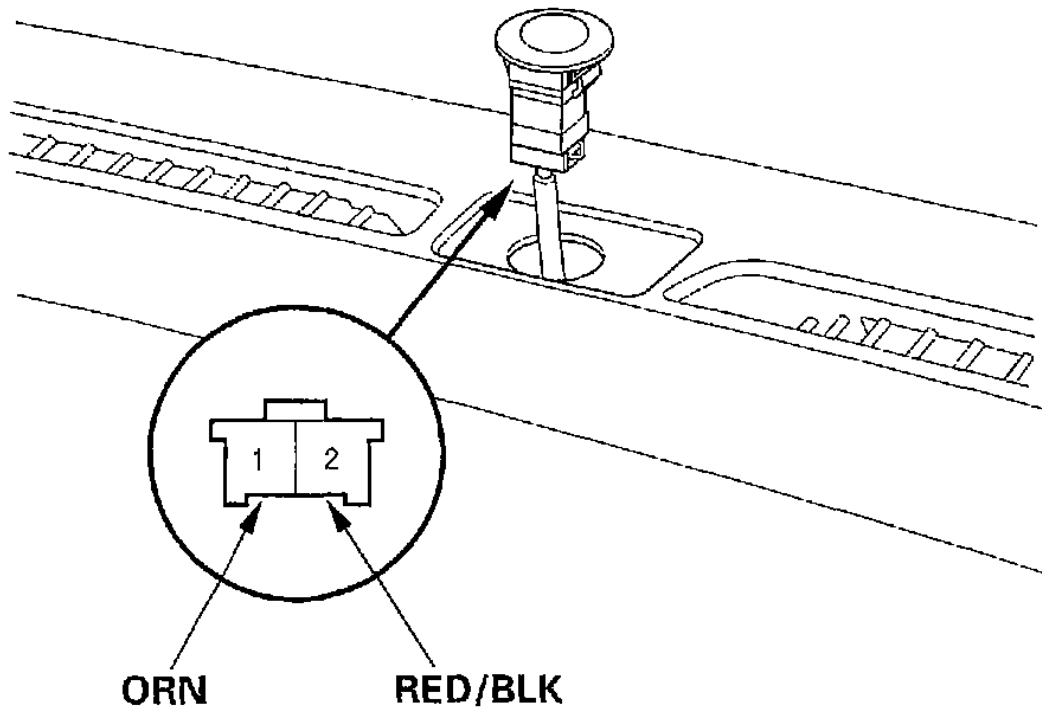


G01822527

Fig. 94: Removing Outside Air Temperature Sensor

SUNLIGHT SENSOR TEST

1. Turn the ignition switch ON (II). Measure the voltage between the terminals with the (+) probe on the No. 1 terminal and the (-) probe on the No. 2 terminal with the 2P connector connected. The voltage readings will not change under the light of a flashlight or a fluorescent lamp. Voltage should be:
 - **3.6-3.7 V Or More:** Sensor Out Of Direct Sunlight.
 - **3.3-3.5 V Or Less:** Sensor In Direct Sunlight.

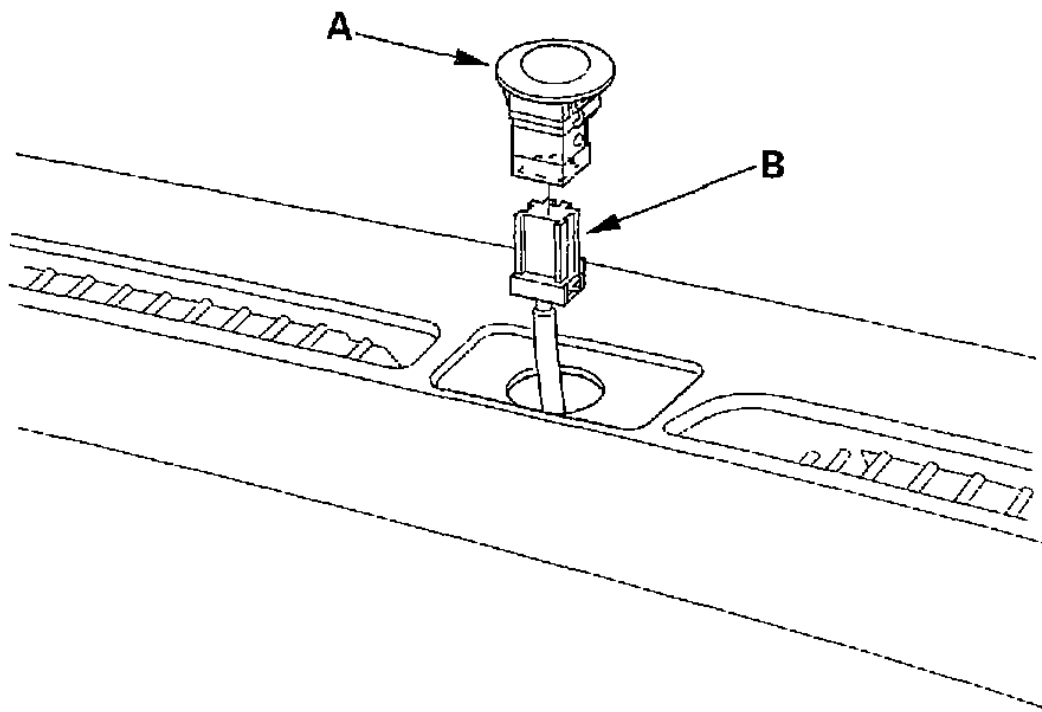


G01822528

Fig. 95: Testing Sunlight Sensor

SUNLIGHT SENSOR REPLACEMENT

Remove the sunlight sensor (A) from the dashboard then disconnect the 2P connector (B). Be careful not to damage the sensor and the dashboard. Install the sensor in the reverse order of removal.

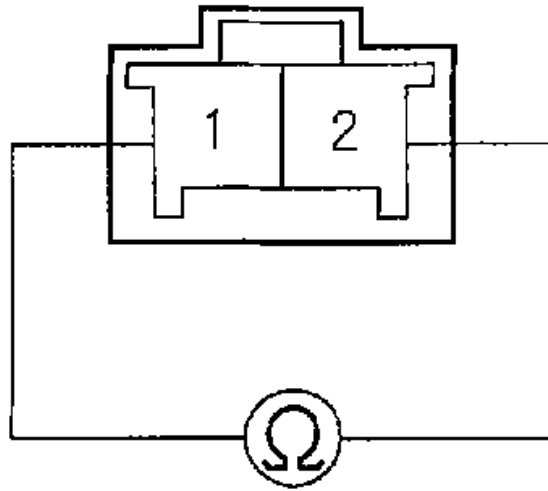


G01822529

Fig. 96: Removing Sunlight Sensor**EVAPORATOR TEMPERATURE SENSOR TEST**

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

EVAPORATOR TEMPERATURE SENSOR

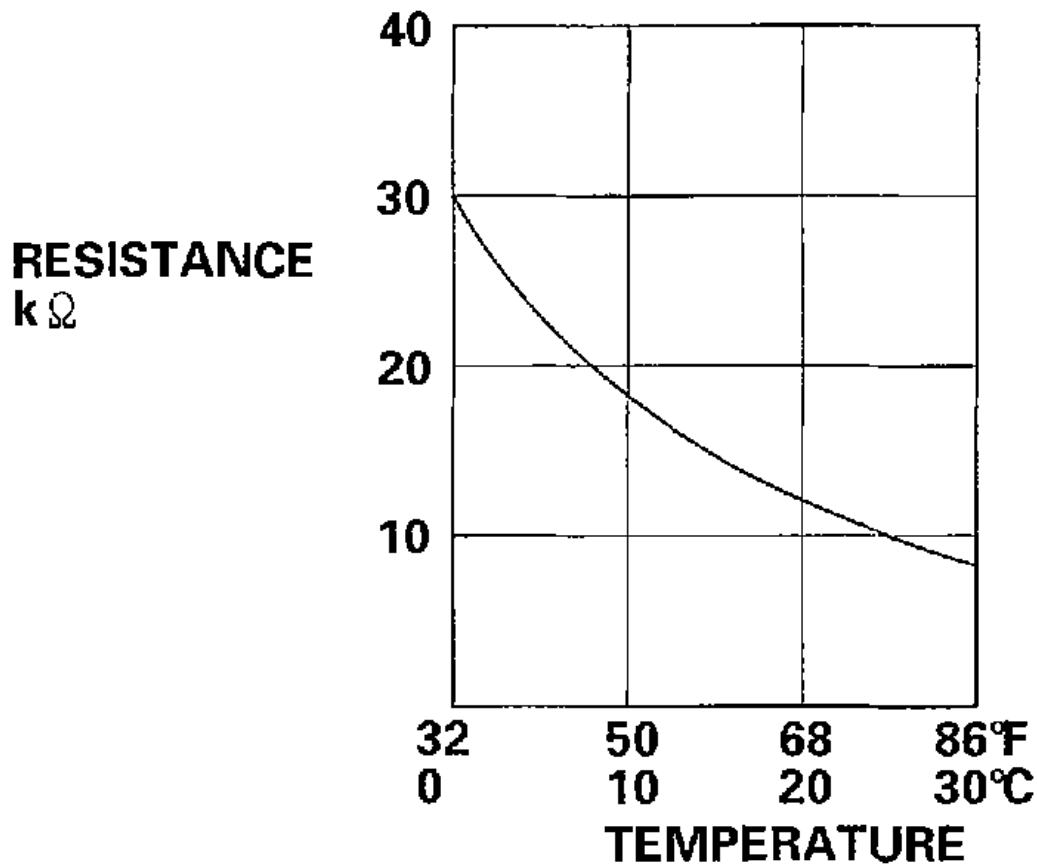


Terminal side of male terminals

G01822530

Fig. 97: Evaporator Temperature Sensor Test

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.

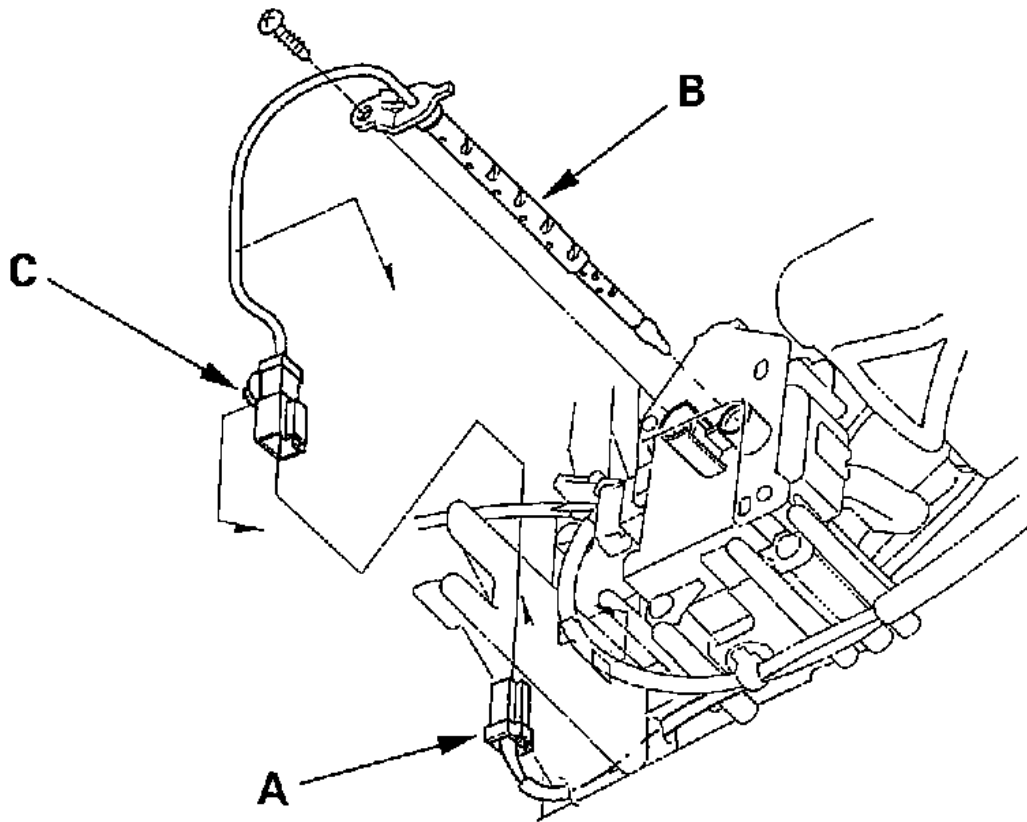


G01822531

Fig. 98: Evaporator Temperature Sensor Resistance Graph

EVAPORATOR TEMPERATURE SENSOR REPLACEMENT

Disconnect the 2P connector (A) from the evaporator temperature sensor (B), then remove the connector clip (C). Remove the self-tapping screw, and carefully pull out the evaporator temperature. Install the sensor in the reverse order of removal.

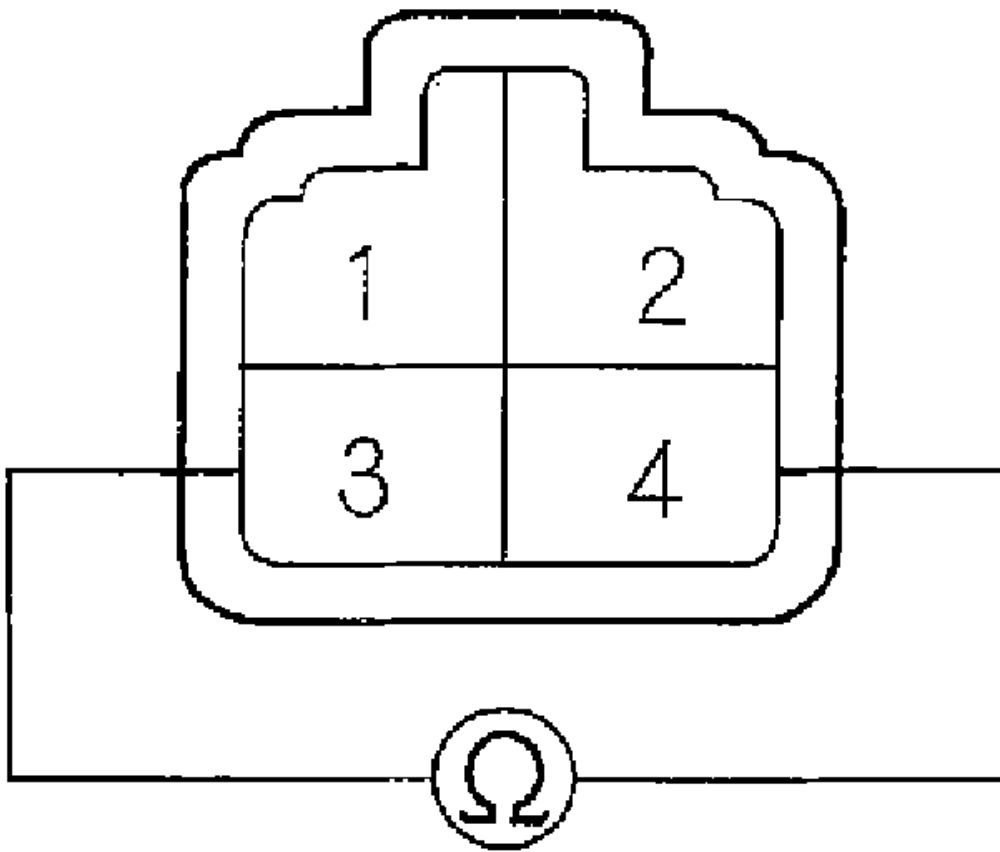


G01822532

Fig. 99: Removing Evaporator Temperature Sensor**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 kohm.
 - If the resistance is within the specifications, go to step 3.
 - If the resistance is not within the specifications, replace the power transistor.

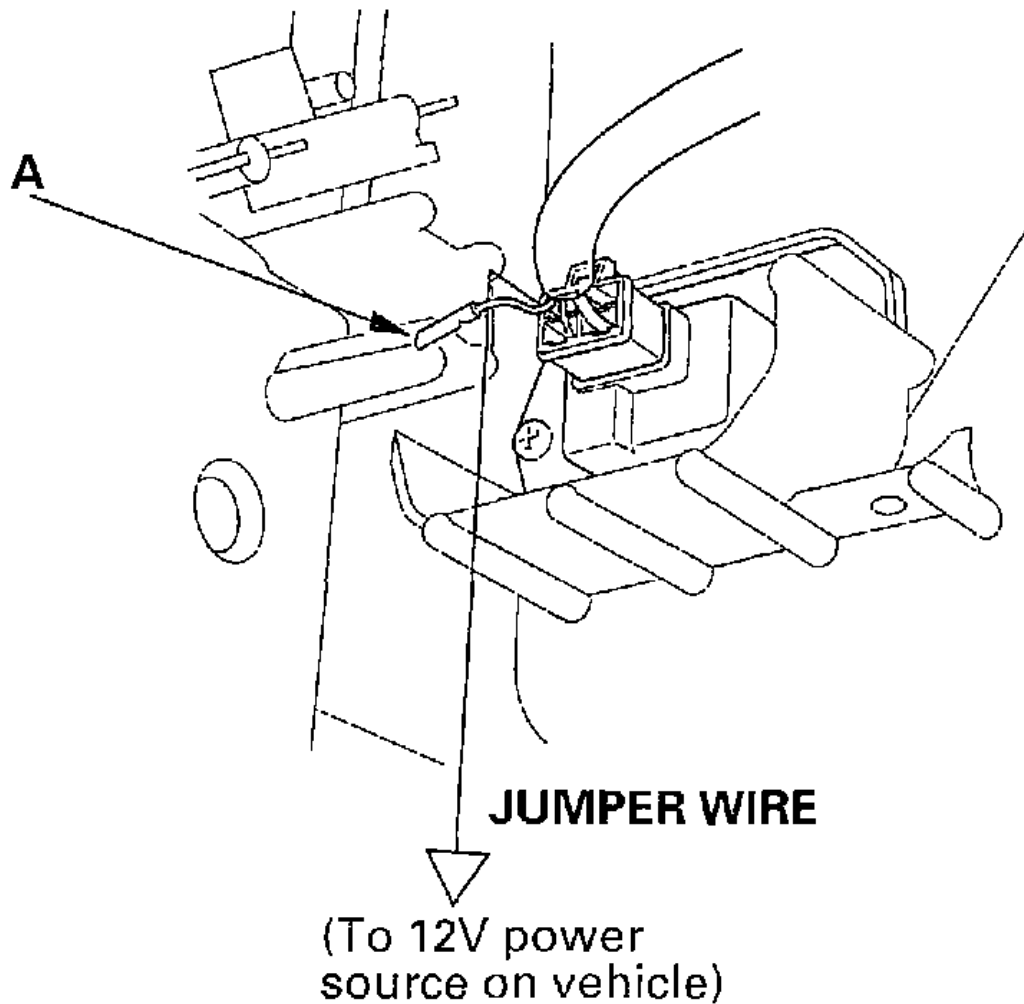
POWER TRANSISTOR



G01822533

Fig. 100: Measuring The Resistance Between The No. 3 & No. 4 Terminals Of The Power Transistor

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



G01822534

Fig. 101: Supplying 12 Volts To The No. 1 Cavity With A Jumper Wire

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

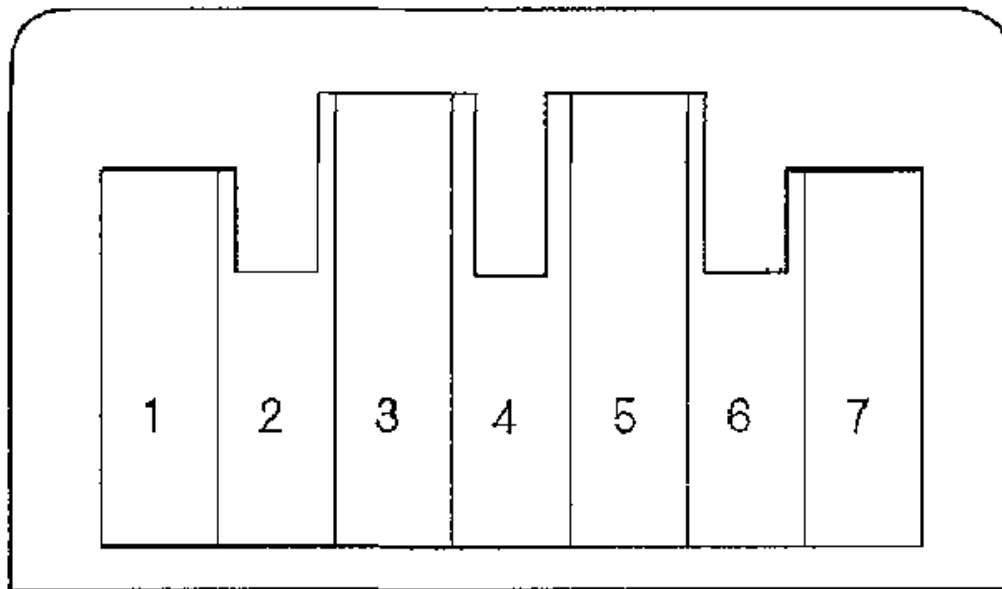
DRIVER'S AIR MIX CONTROL MOTOR TEST

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

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

2. Connect battery power to the No. 1 terminal of the driver's air mix control motor, and ground the No. 2 terminal; the driver's air mix control motor should run, Cool side. If it doesn't, reverse the connections; the driver's air mix control motor should run, Hot side.
3. If the driver's air mix control motor did not run in step 2, remove it, then check the driver's air mix control linkage and door for smooth movement.
 - If the linkage and door move smoothly, replace the driver's air mix control motor.
 - If the linkage or door sticks or binds, repair them as needed.
 - If the driver's air mix control motor runs smoothly, go to step 4.

DRIVER'S AIR MIX CONTROL MOTOR



G01822535

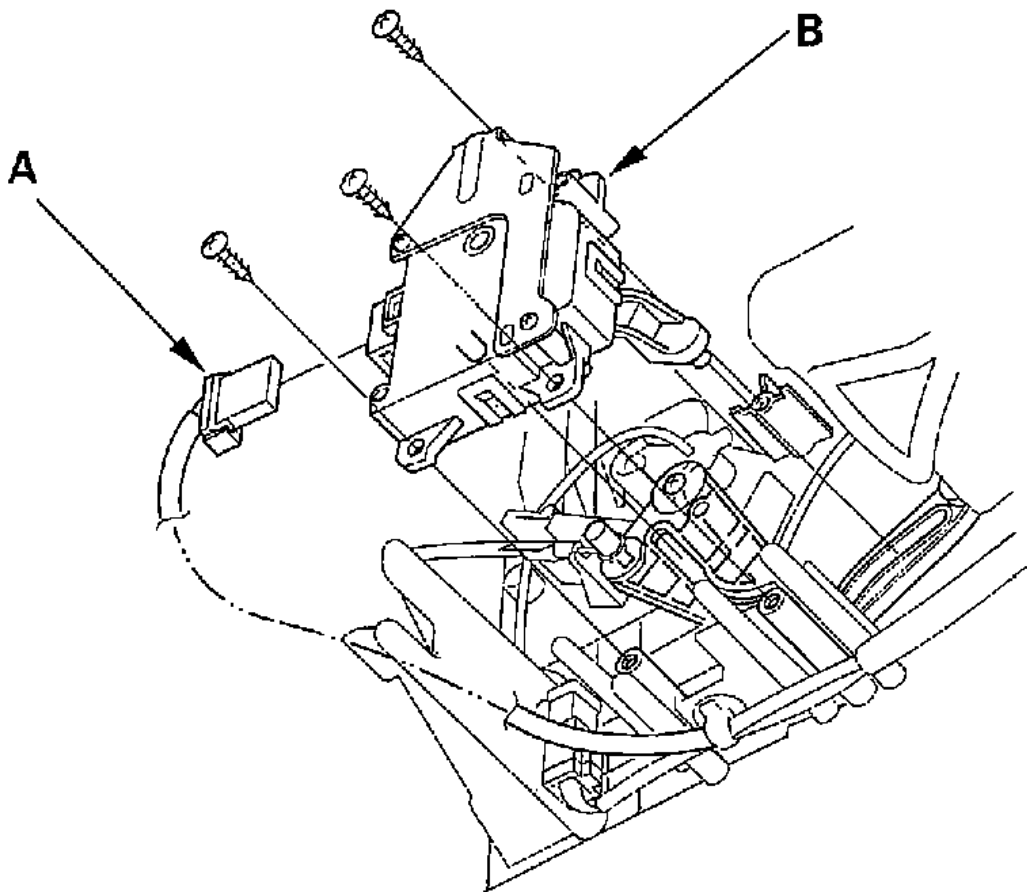
Fig. 102: Identifying Driver's Air Mix Control Motor Connector Terminals

4. Measure the resistance between the No. 5 and No. 7 terminals. It should be between 4.2 k to 7.8 k ohm.

5. Reconnect the driver's air mix control motor 7P connector, then turn the ignition switch ON (II).
6. Measure the voltage between the No. 3 and No. 5 terminals.
Max Cool: About 0.5 V
Max Hot: About 4.5 V
7. If either the resistance or voltage readings are not as specified, replace the driver's air mix control motor.

DRIVER'S AIR MIX CONTROL MOTOR REPLACEMENT

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



G01822536

Fig. 103: Removing Driver's Air Mix Control Motor

2. Install the motor in the reverse order of removal. Make sure the pin on the motor is properly engaged with

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

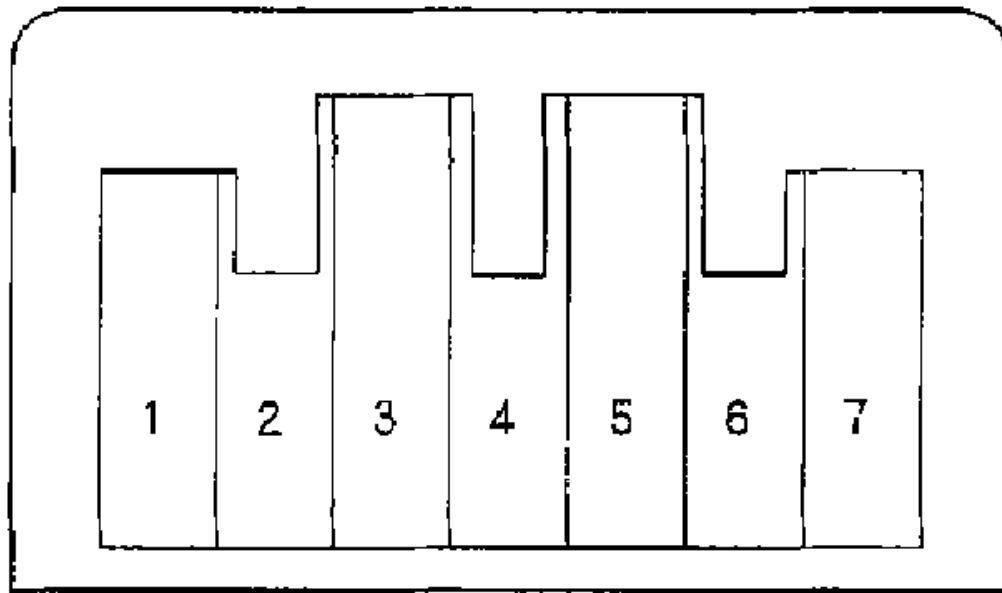
PASSENGER'S AIR MIX CONTROL MOTOR TEST

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

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

2. Connect battery power to the No. 1 terminal of the passenger's air mix control motor, and ground the No. 2 terminal; the passenger's air mix control motor should run, Cool side. If it doesn't, reverse the connections; the passenger's air mix control motor should run Hot side.
3. If the passenger's air mix control motor did not run in step 2, remove it, then check the passenger's air mix control linkage and door for smooth movement.
 - If the linkage and door move smoothly, replace the passenger's air mix control motor.
 - If the linkage or door sticks or binds, repair them as needed.
 - If the passenger's air mix control motor runs smoothly, go to step 4.

PASSENGER'S AIR MIX CONTROL MOTOR



G01822537

Fig. 104: Identifying Passenger's Air Mix Control Motor Connector Terminals

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

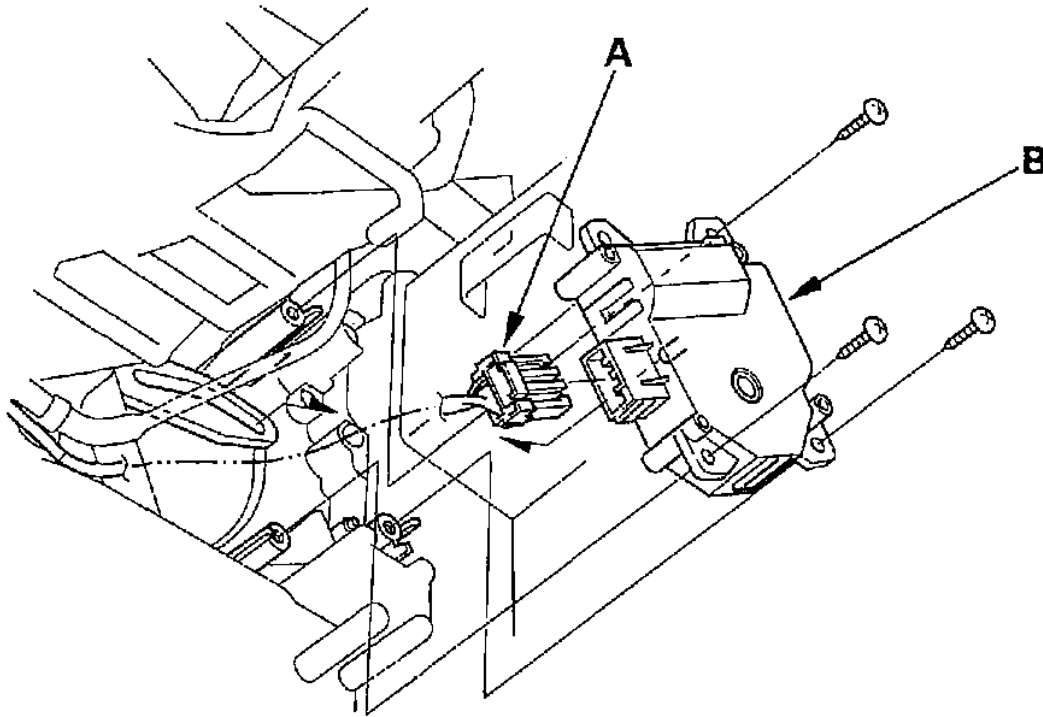
Max Cool: About 1.5 V

Max Hot: About 4.5 V

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

PASSENGER'S AIR MIX CONTROL MOTOR REPLACEMENT

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



G01822538

Fig. 105: Removing Passenger's Air Mix Control Motor

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

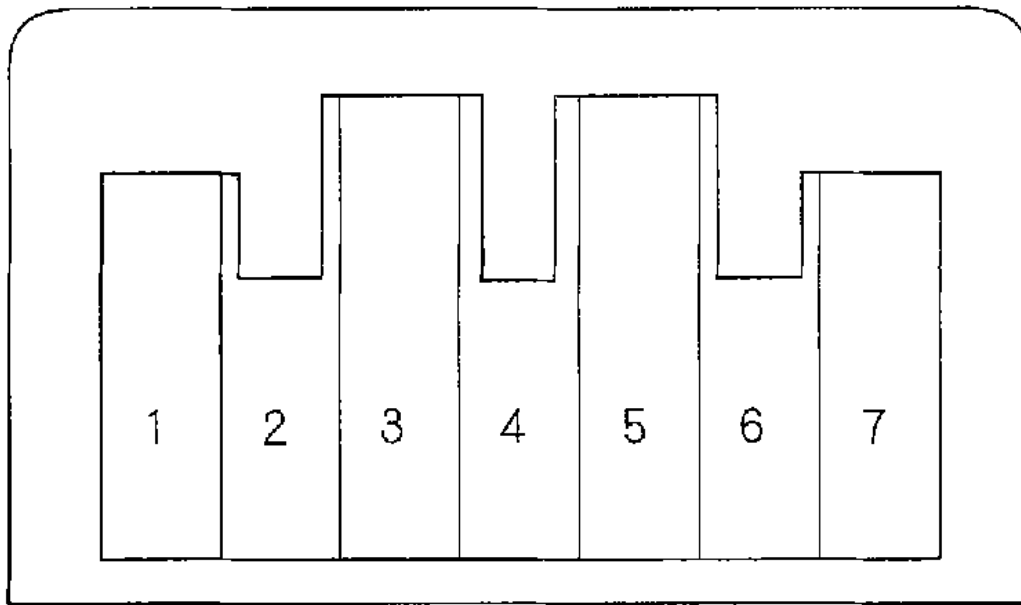
MODE CONTROL MOTOR TEST

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

MODE CONTROL MOTOR



G01822539

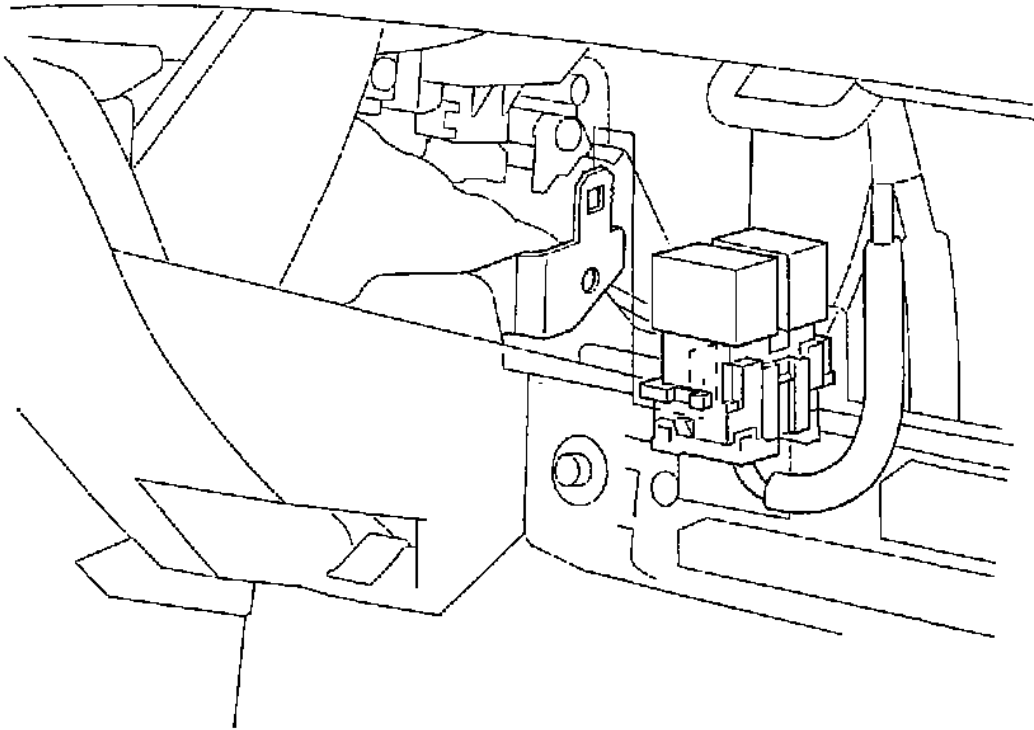
Fig. 106: Identifying Mode Control Motor Connector Terminals

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 runs smoothly, go to step 4.
4. Use a digital multimeter with an output of 1 mA or less at the 20 kohm range. With the mode control motor running as in step 2, check for continuity between the No. 3, 4, 5 and 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. Open the glove box. Remove the damper from the glove box, then let the glove box hang down (see **GLOVE BOX REMOVAL/INSTALLATION**)

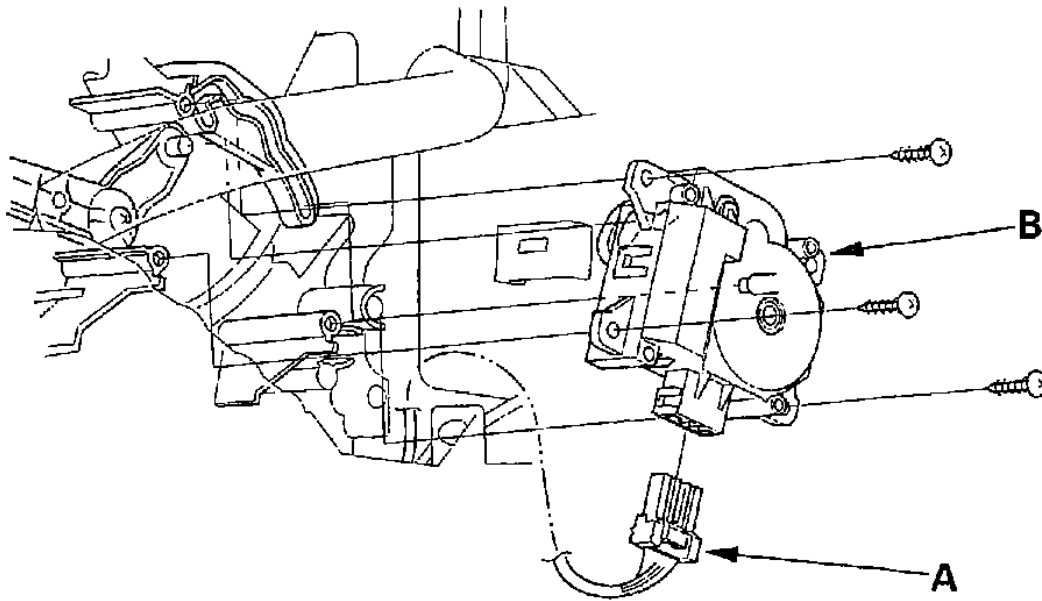
2. Remove the relays from the bracket.



G01822540

Fig. 107: Removing The Relays From The Bracket

3. Disconnect the 7P connector (A) from the mode control motor (B). Remove the self-tapping screws and the mode control from the heater unit.



G01822541

Fig. 108: Removing Mode Control Motor

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

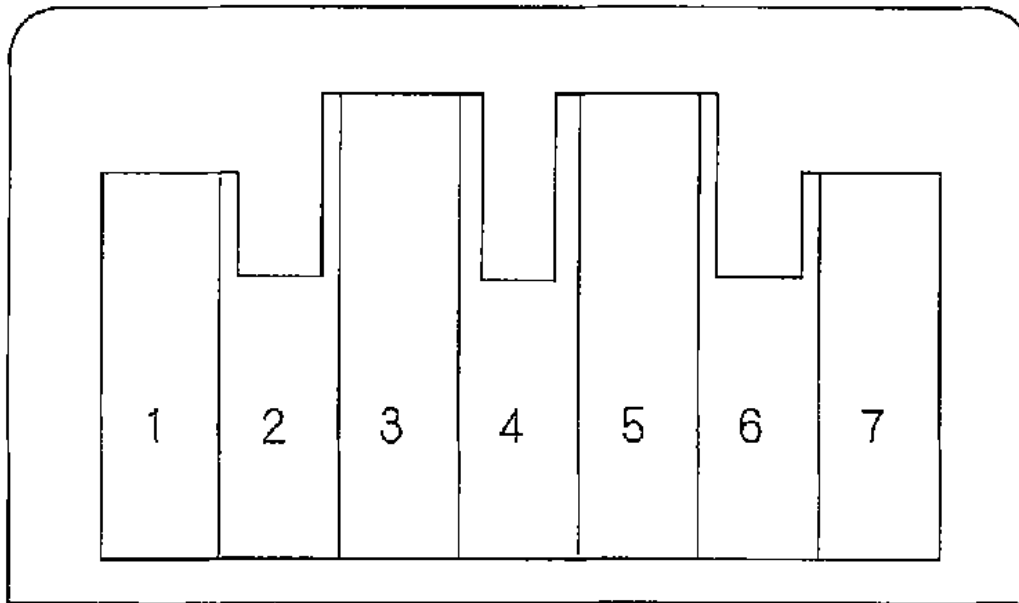
RECIRCULATION CONTROL MOTOR TEST

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 or 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 (when the No. 7 terminal is disconnected) or Recirculate (when the No. 5 terminal is disconnected). Don't cycle the recirculation control motor for a long time.

RECIRCULATION CONTROL MOTOR



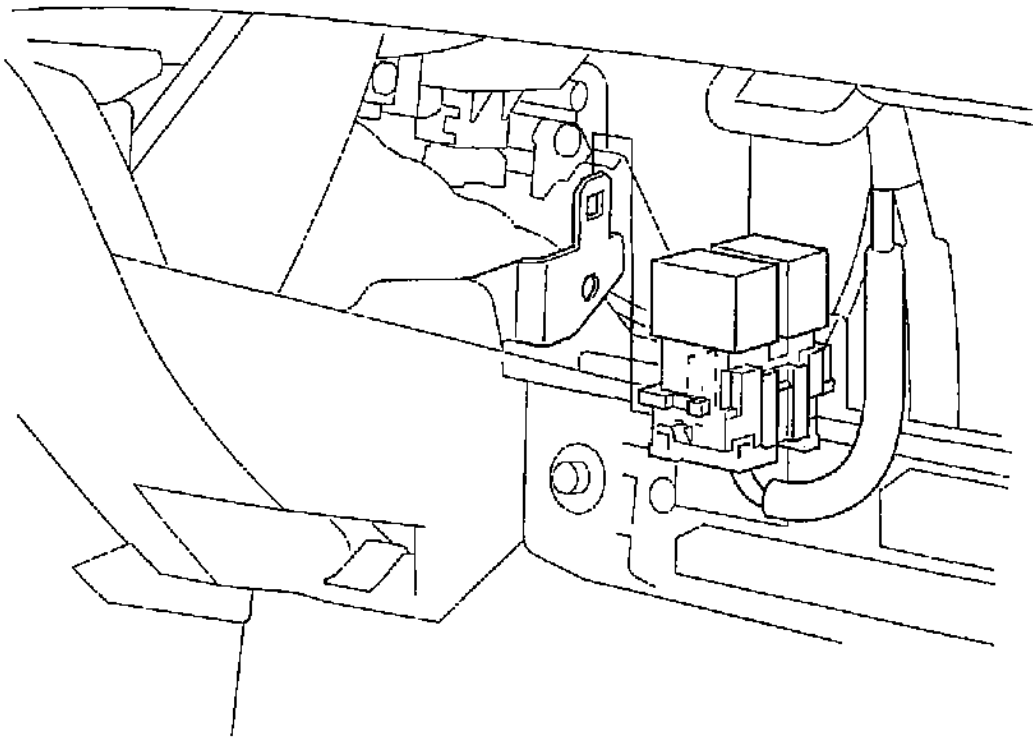
G01822542

Fig. 109: Identifying Recirculation Control Motor Connector Terminals

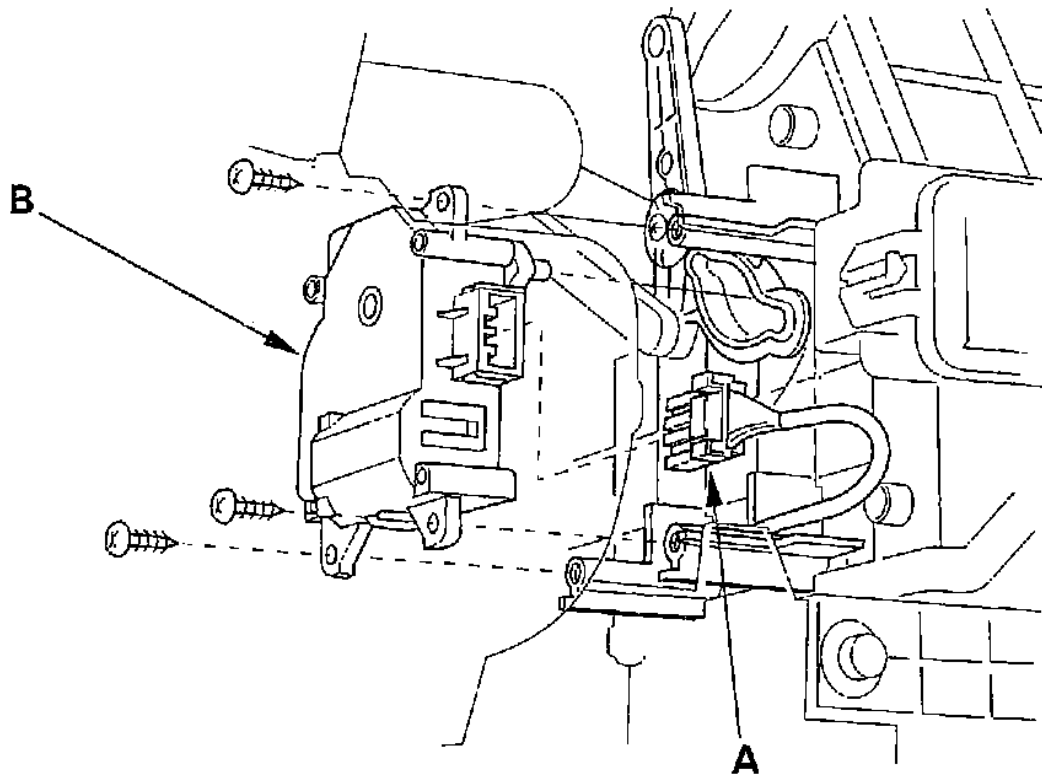
3. If the recirculation control motor did not run in step 2, remove it, then check the recirculation control linkage and doors for smooth movement.
 - If the linkage and doors move smoothly, replace the recirculation control motor.
 - If the linkage or doors stick or bind, repair them as needed.

RECIRCULATION CONTROL MOTOR REPLACEMENT

1. Open the glove box. Remove the damper from the glove box, then let the glove box hang down (see **GLOVE BOX REMOVAL/INSTALLATION**).
2. Remove the relays from the bracket.

**G01822543****Fig. 110: Removing The Relays From The Bracket**

3. Disconnect the 7P connector (A) from the recirculation control motor (B). Remove the self-tapping screws and the recirculation control motor from the blower unit.



G01822544

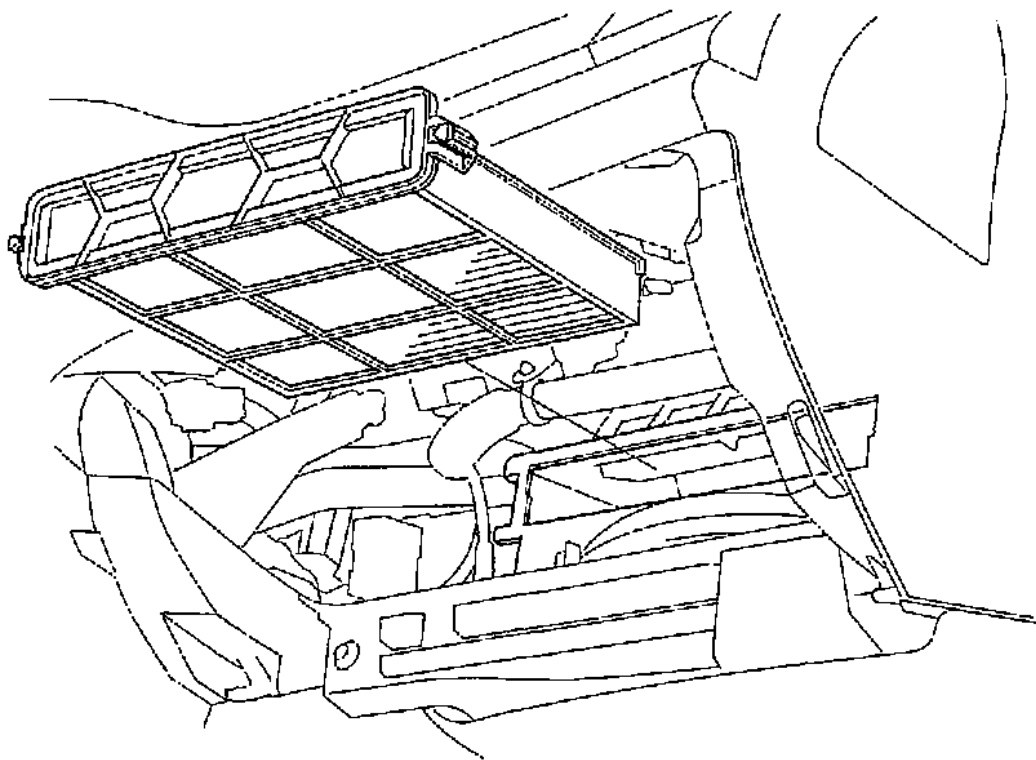
Fig. 111: Removing Recirculation Control Motor

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

DUST & POLLEN FILTER REPLACEMENT

The dust and pollen filter should be replaced every 30,000 miles (48,000 km) or 24 months whichever comes first. Replace the filter more often if the air flow is less than usual, or if the vehicle is driven in areas that have high concentrations of soot from industry or diesel powered vehicles.

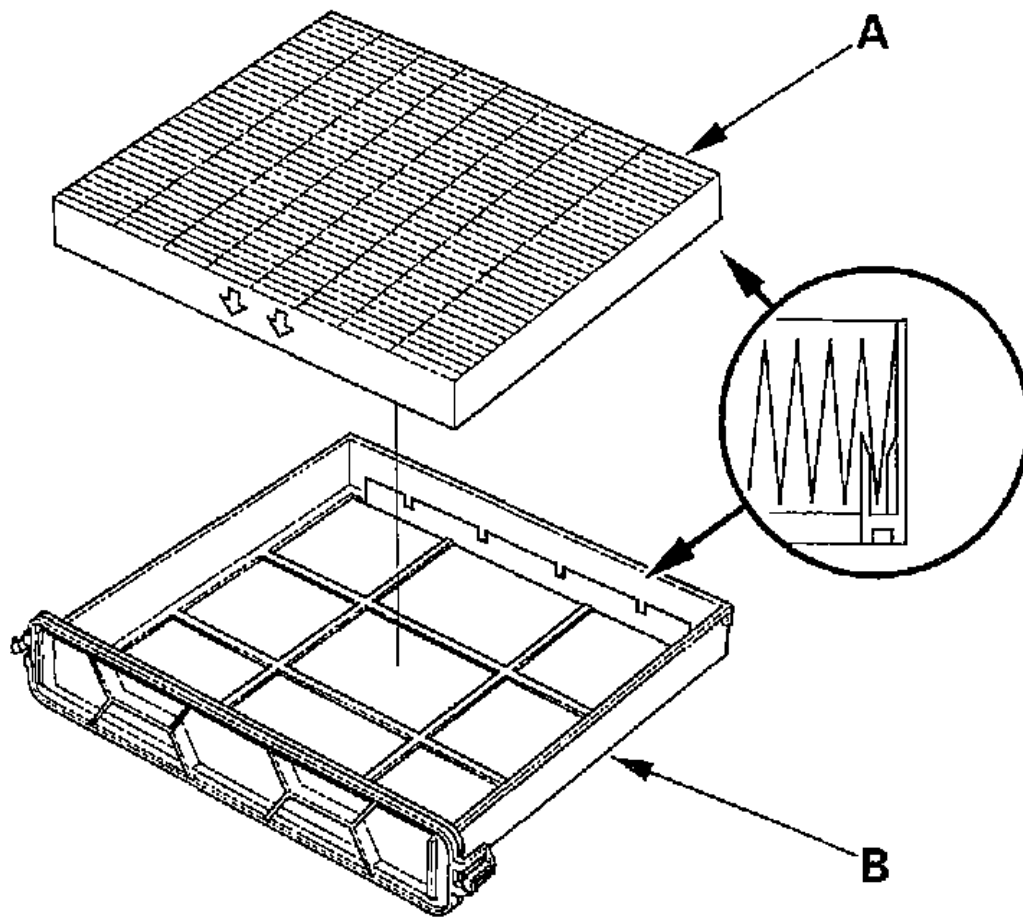
1. Open the glove box. Remove the damper from the glove box, then let the glove box hang down (see **GLOVE BOX REMOVAL/INSTALLATION**).
2. Remove the dust and pollen filter assembly from the evaporator.



G01822545

Fig. 112: Removing The Dust & Pollen Filter Assembly From The Evaporator

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



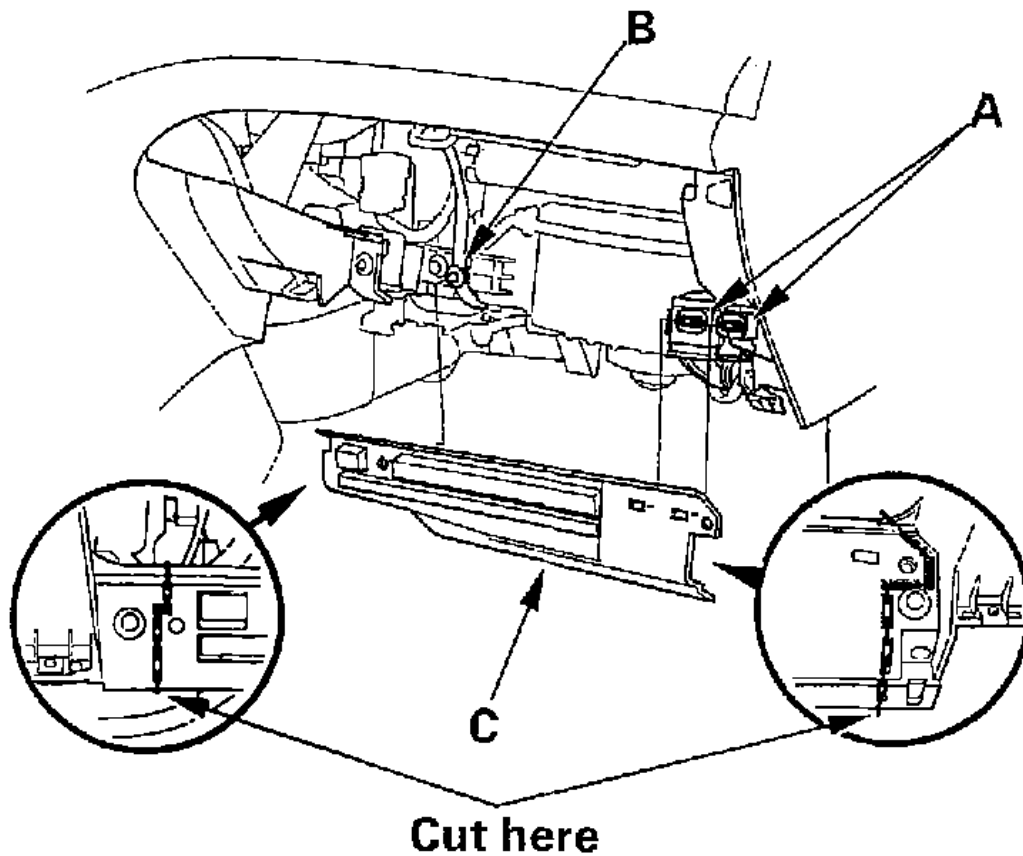
G01822546

Fig. 113: Removing The Filter From The Housing & Replacing The Filter

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

BLOWER UNIT REMOVAL & INSTALLATION

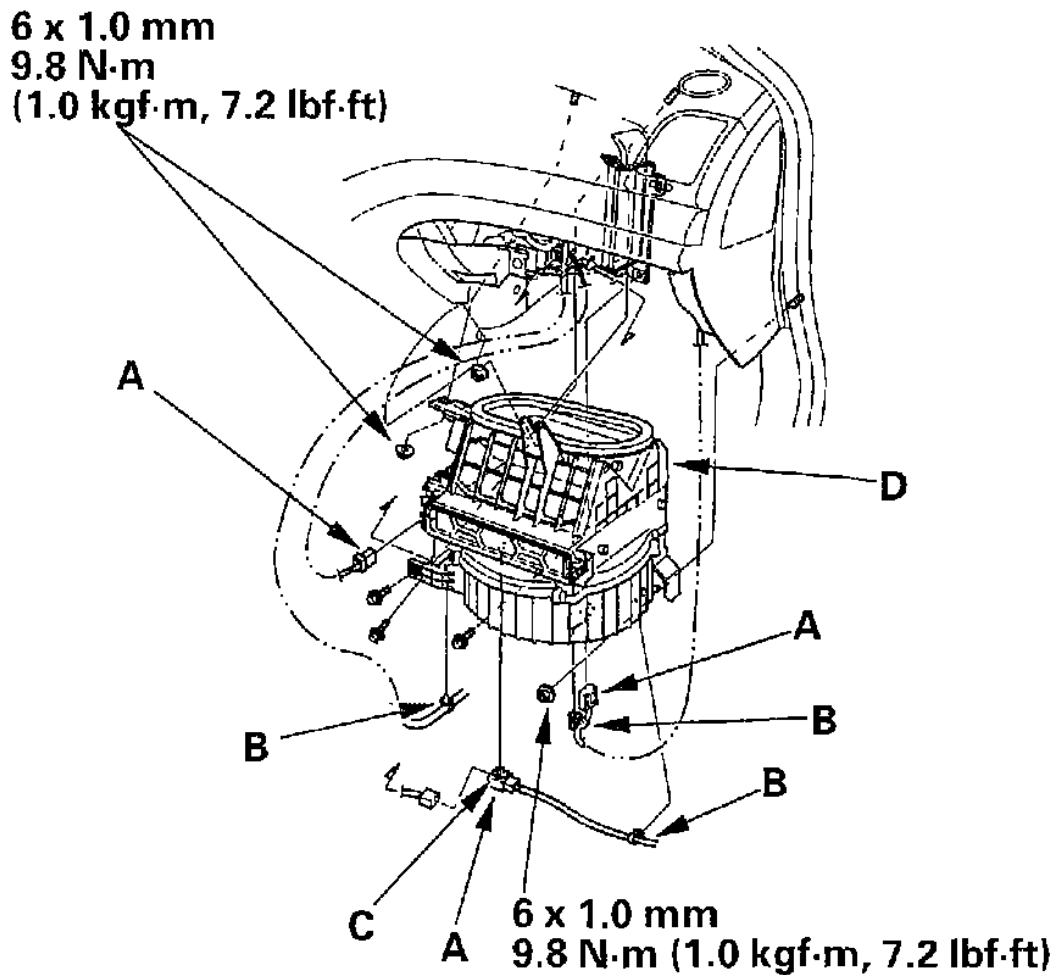
1. Remove the glove box and the passenger's kick panel (see **GLOVE BOX REMOVAL/INSTALLATION**).
2. Remove the wire harness connector clips (A), the wire harness clip (B), and bolt. Cut the plastic cross brace (C) in the glove box opening with diagonal cutters in the area shown.



G01822547

Fig. 114: Cutting The Plastic Cross Brace In The Glove Box Opening

3. Disconnect the connectors (A) from the blower motor, the floor wire harness, and the recirculation control motor, then remove the wire harness clips (B) and the connector clips (C). Remove the mounting nuts, the mounting bolts and the blower unit (D).



G01822548

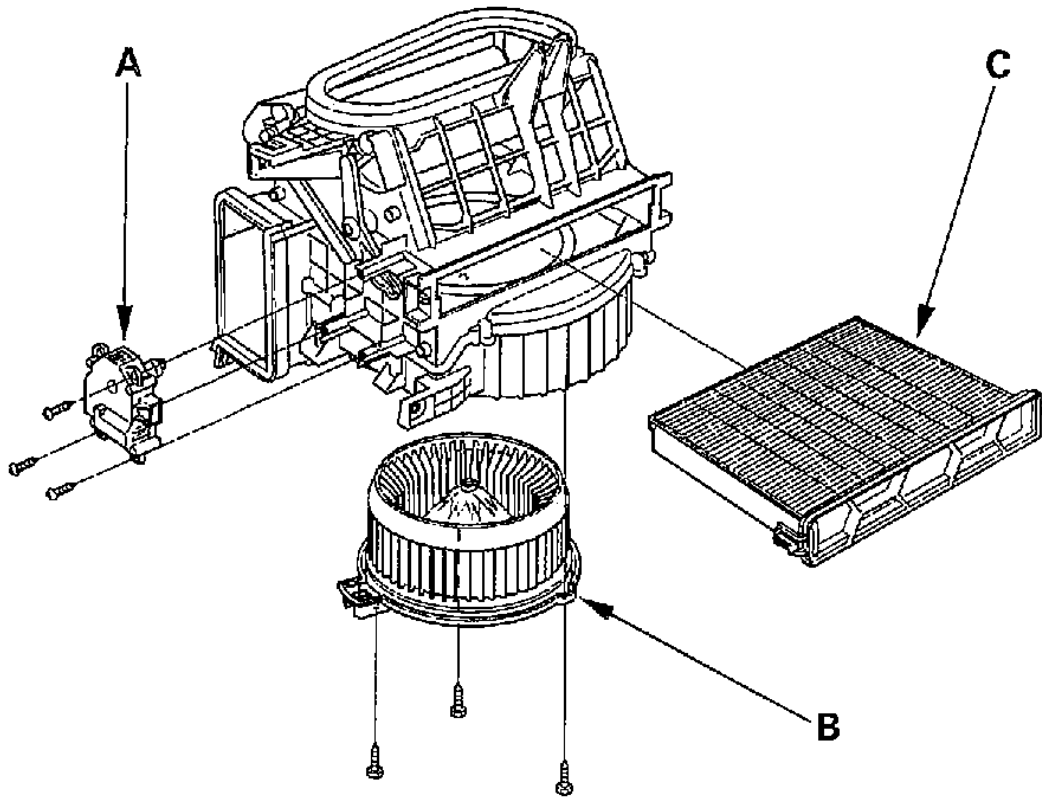
Fig. 115: Removing Blower Unit

4. 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:

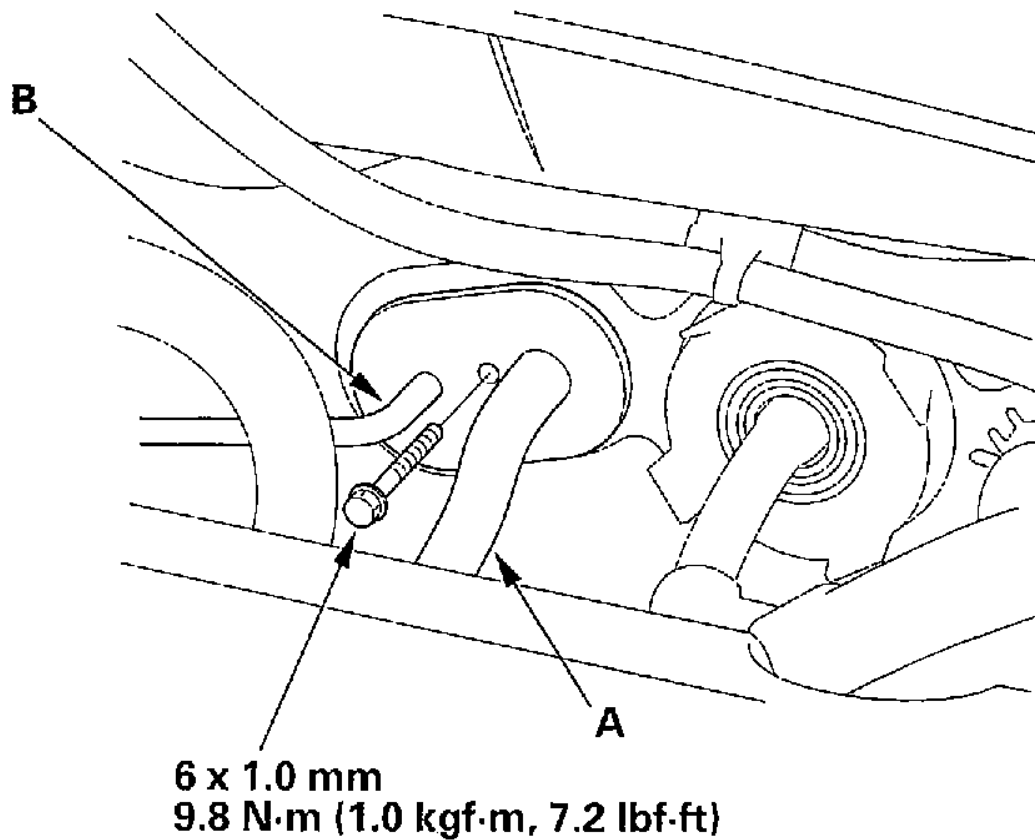
- The recirculation control motor (A), the blower motor (B), and the dust and pollen filter (C) can be replaced without removing the blower unit.
- Before reassembly, make sure that the recirculation control linkage and doors move smoothly without binding.
- After reassembly, make sure the recirculation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

CONTROL MOTOR TEST).

G01822549

Fig. 116: Exploded View Of Blower Unit Components**EVAPORATOR CORE REPLACEMENT**

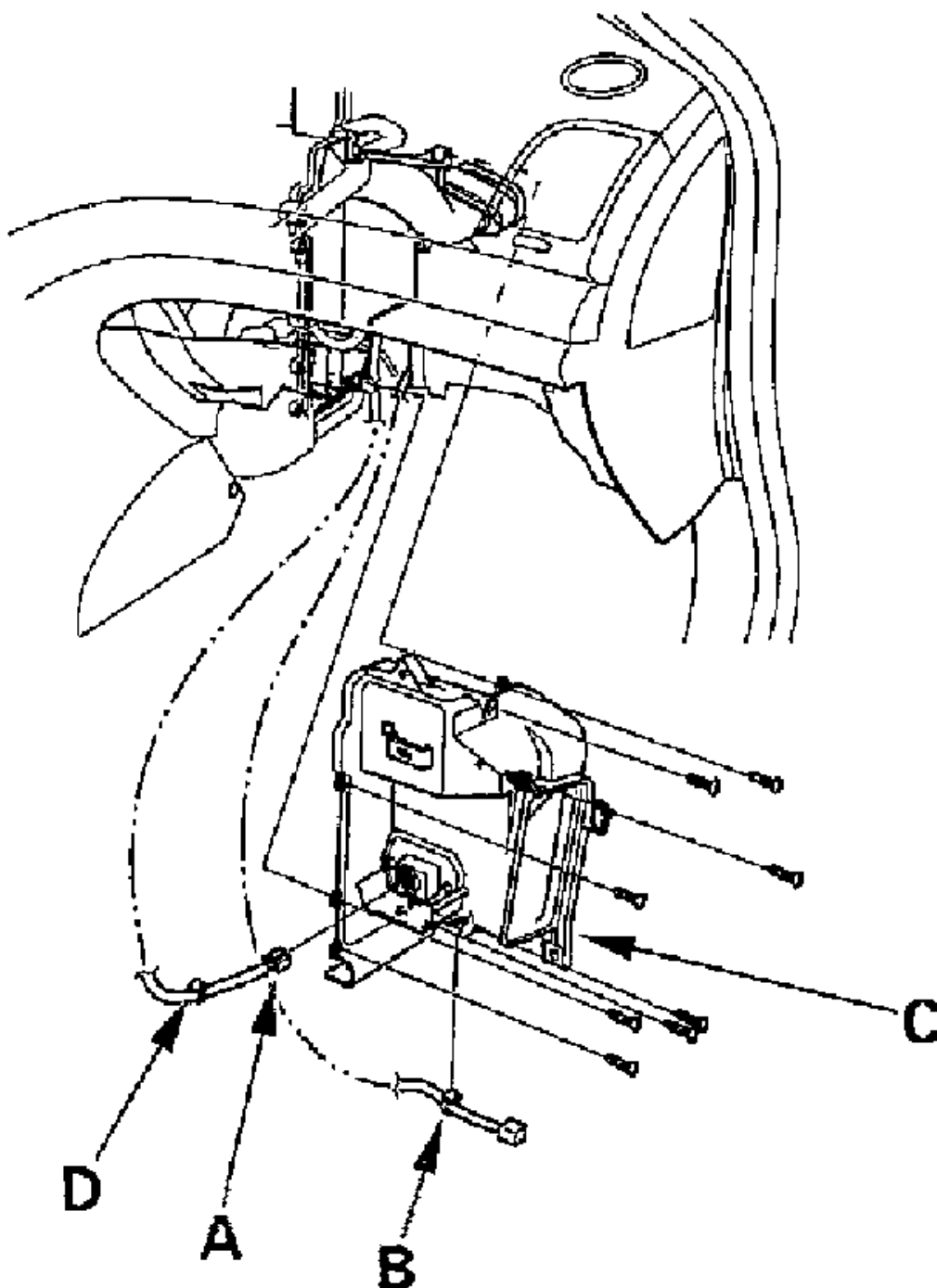
1. Recover the refrigerant with a recovery/recycling/charging station (see **REFRIGERANT RECOVERY**).
2. Remove the bolt, then disconnect the suction line (A) and the receiver line (B) from the evaporator core.



G01822550

Fig. 117: Disconnecting The Suction Line & The Receiver Line From The Evaporator Core

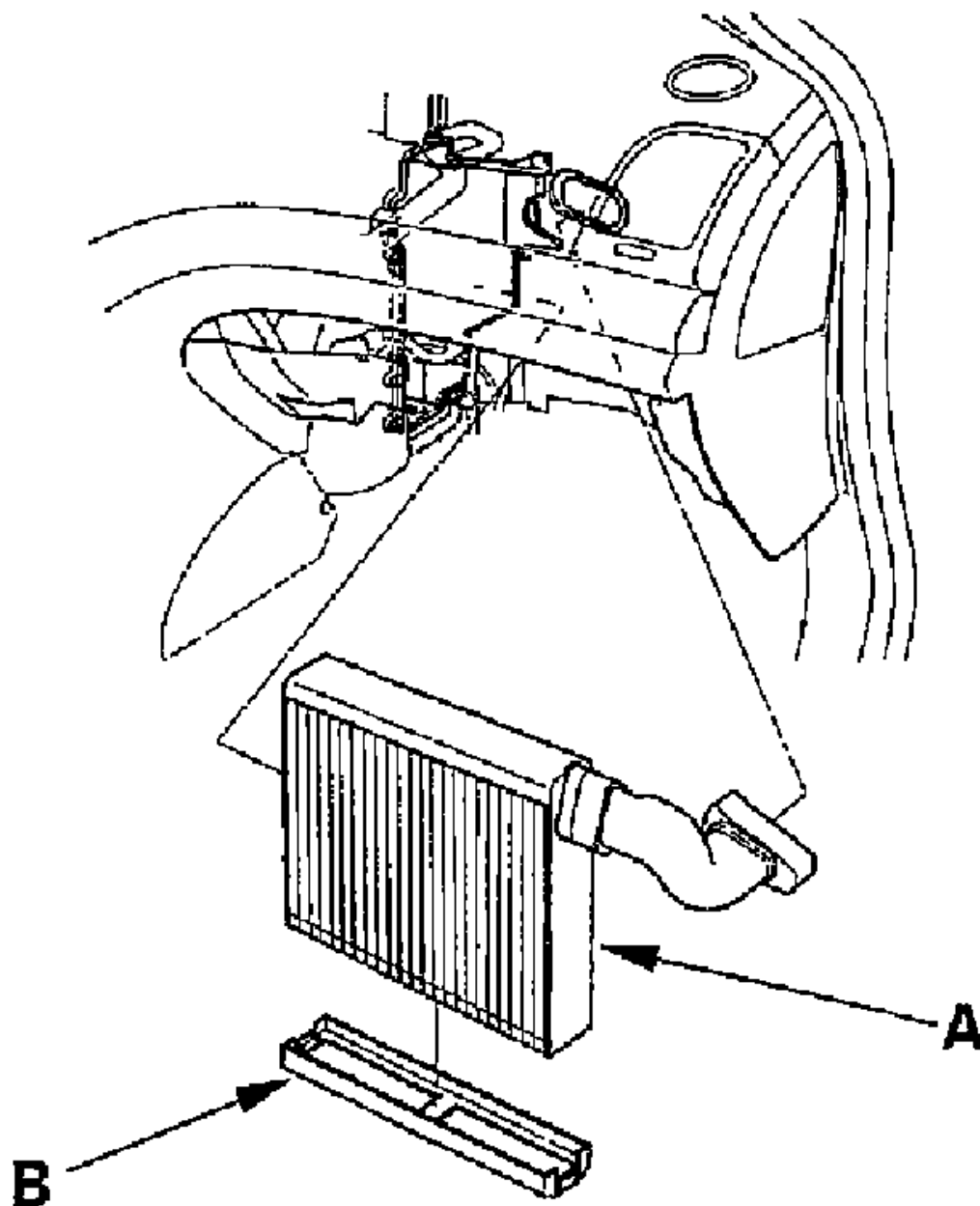
3. Remove the blower unit (see **BLOWER UNIT REMOVAL & INSTALLATION**).
4. Disconnect the connector (A) from the power transistor, then remove the wire harness clip (B) the self-tapping screws, and the expansion valve cover (C).



G01822551

Fig. 118: Disconnecting The Connector

5. Carefully pull out the evaporator core (A) and the plate (B) without bending the pipes.



G01822552

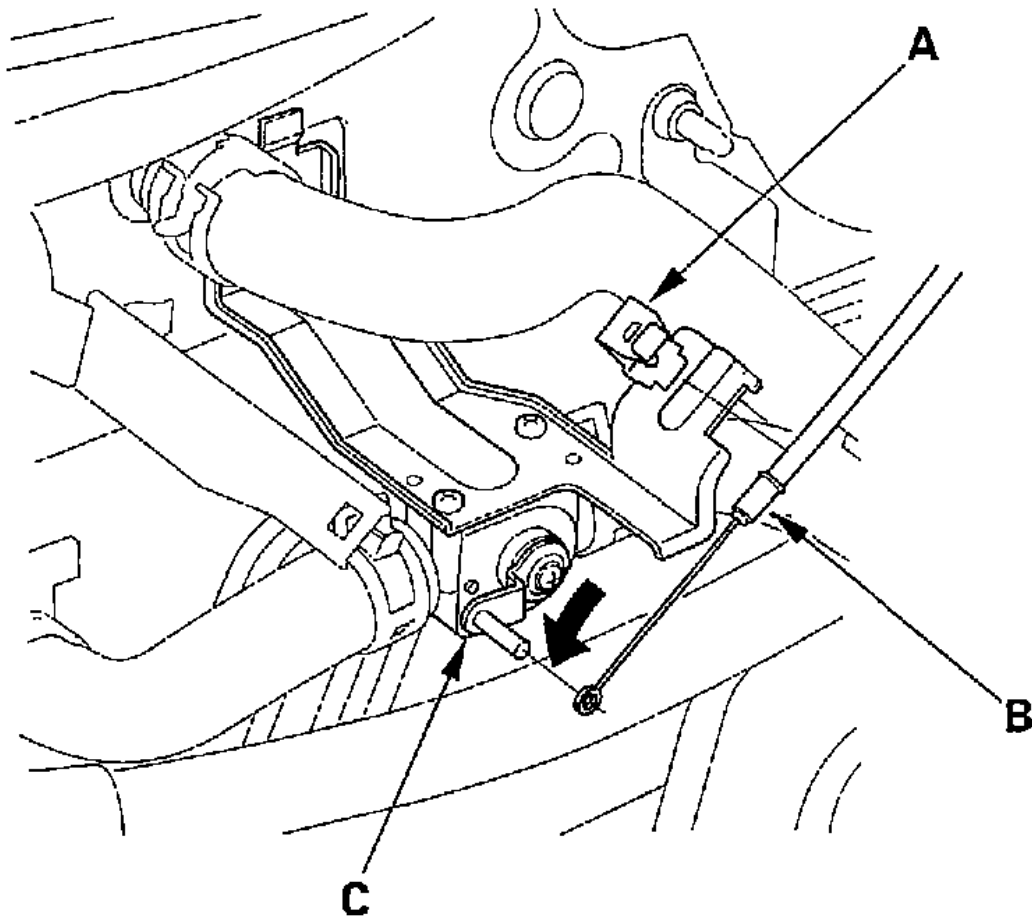
Fig. 119: Pulling Out The Evaporator Core And The Plate

6. Install the core in the reverse order of removal, and note these items.
 - If you're installing a new evaporator core, add refrigerant oil (KEIHIN SP-10) (see **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**).

HEATER UNIT/CORE REPLACEMENT

SRS components are located in this area. Review the SRS component locations, and the precautions and procedures in the SRS section before performing repairs or service. See **AIR BAG RESTRAINT SYSTEMS** .

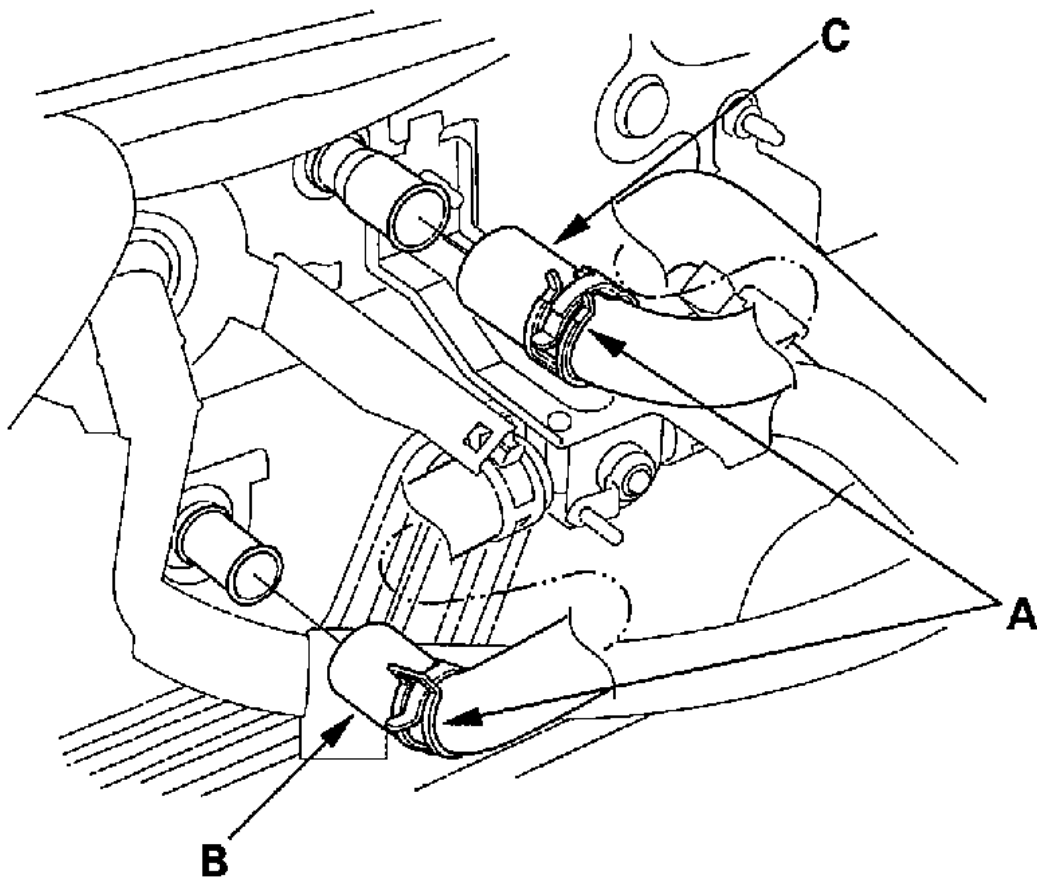
1. Make sure you have the anti-theft codes for the radio and the navigation system, then write down the frequencies for the radio's preset buttons.
2. Disconnect the negative cable from the battery.
3. Disconnect the suction and receiver lines from the evaporator core (see **EVAPORATOR CORE REPLACEMENT**)
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.



G01822553

Fig. 120: Disconnecting The Heater Valve Cable

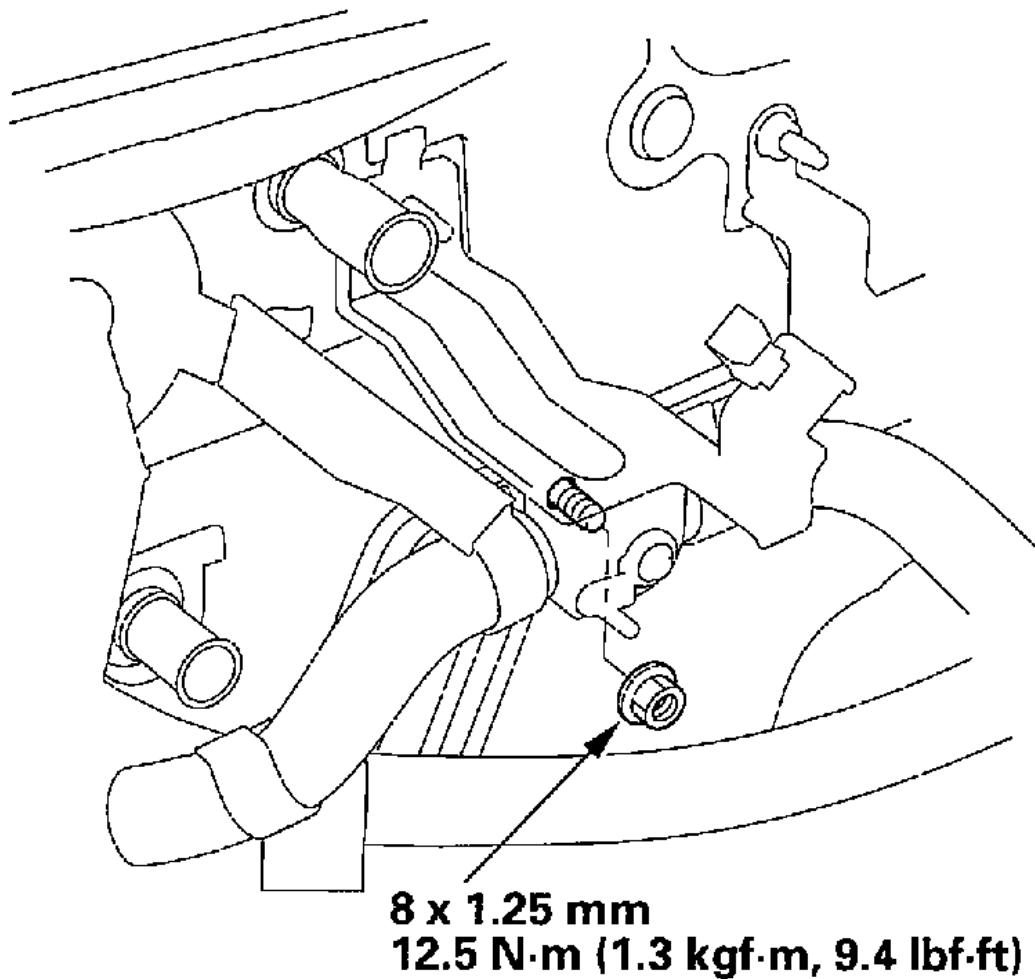
5. When the engine is cool, drain the engine coolant from the radiator (see **COOLANT REPLACEMENT**).
6. Slide the hose clamps (A) back. Remove the bolt and water valve bracket, then disconnect the inlet heater hose (B) and the outlet heater hose (C) from the heater unit. Engine coolant will run out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



G01822554

Fig. 121: Disconnecting The Inlet Heater Hose & The Outlet Heater Hose From The Heater Unit

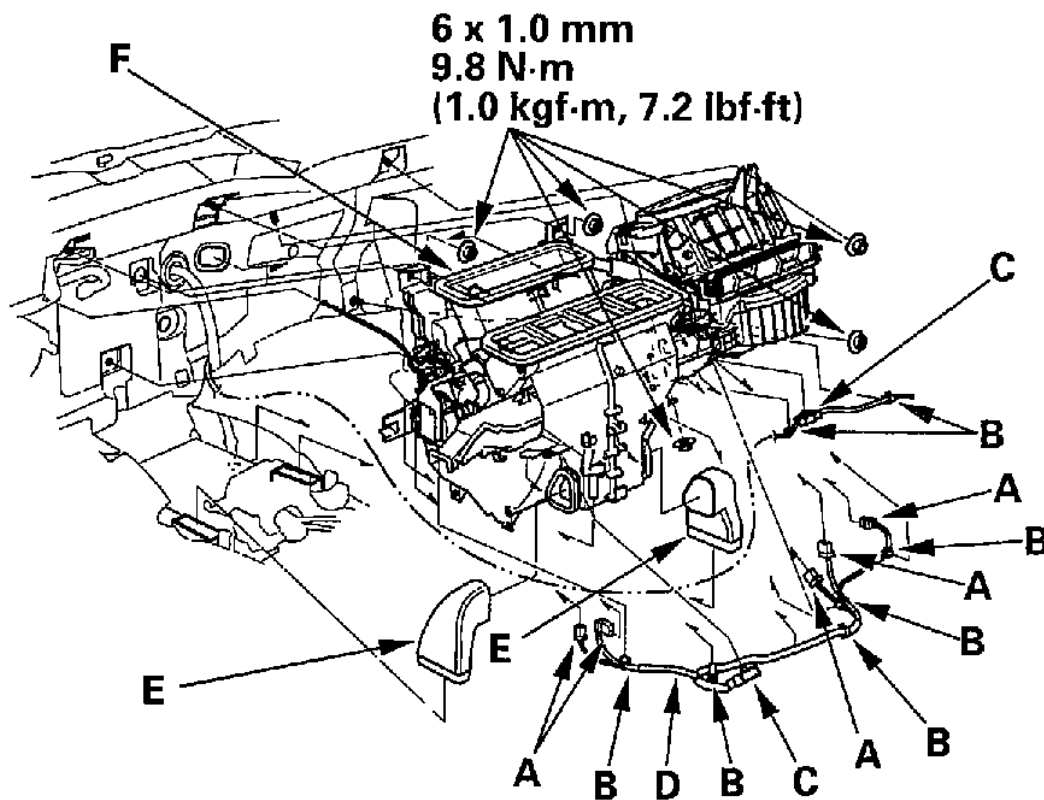
7. Remove the mounting nut from the heater unit. Take care not to damage or bend the fuel lines and the brake lines, etc.



G01822555

Fig. 122: Removing The Mounting Nut From The Heater Unit

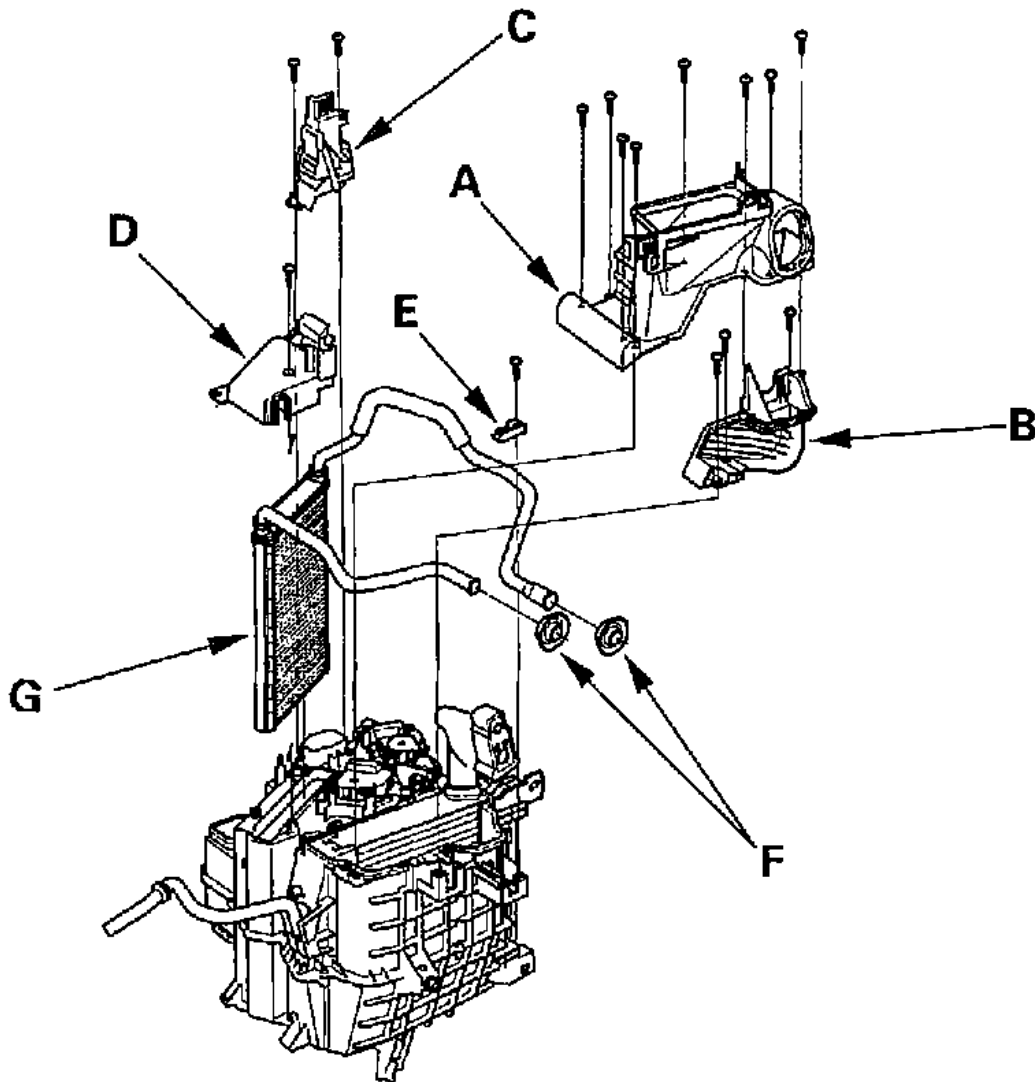
8. Remove the dashboard (see **DASHBOARD**).
9. Remove the footrest and the footrest bracket.
10. Disconnect the connectors (A) from the driver's air mix control motor, the evaporator temperature sensor, the power transistor, the mode control motor, passenger's air mix control motor, and the recirculation control motor, then remove the wire harness clips (B), the connector clips (C) and the wire harness (D). Remove the heater ducts (E). then remove the mounting nuts and the blower-heater unit (F).



G01822556

Fig. 123: Removing The Wire Harness, Heater Ducts & Blower-Heater Unit

11. Remove the self-tapping screws and the joint duct A, then remove the self-tapping screws and the joint duct B. Remove the self-tapping screws, then remove the passenger's heater outlet (C), and the heater core cover (D). Remove the self-tapping screws, the heater pipe brackets (E), the grommets (F) and carefully pull out the heater core (G) so you don't bend the inlet and outlet pipes.



G01822557

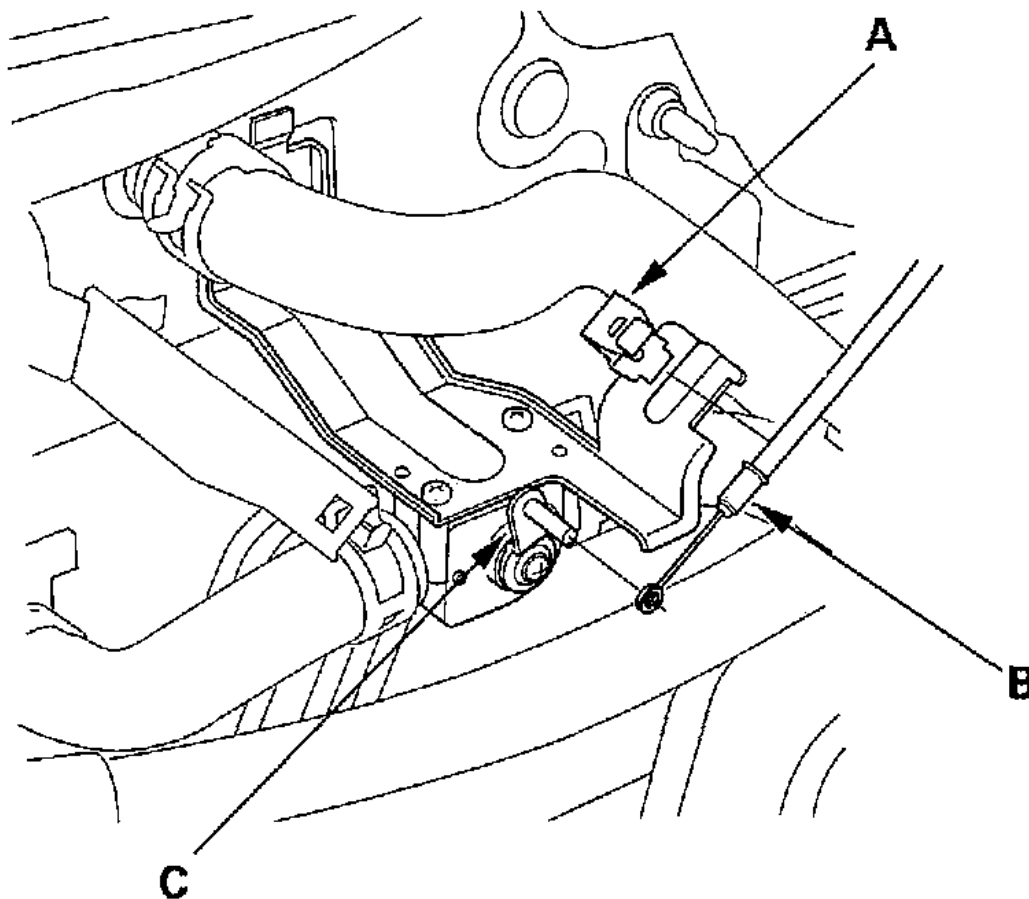
Fig. 124: Exploded View of Blower-Heater Unit Components

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 REPLACEMENT**).
 - Adjust the heater valve cable (see **HEATER VALVE CABLE ADJUSTMENT**).
 - Make sure that there is no coolant leakage.

- Make sure that there is no air leakage.
- Refer to evaporator core replacement (see step 6 of **EVAPORATOR CORE REPLACEMENT**).
- Do the PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
- Do the power window control unit reset procedure (see **RESETTING THE POWER WINDOW**).
- Enter the anti-theft codes for the radio and the navigation system, then enter the customer's radio station presets.

HEATER VALVE CABLE ADJUSTMENT

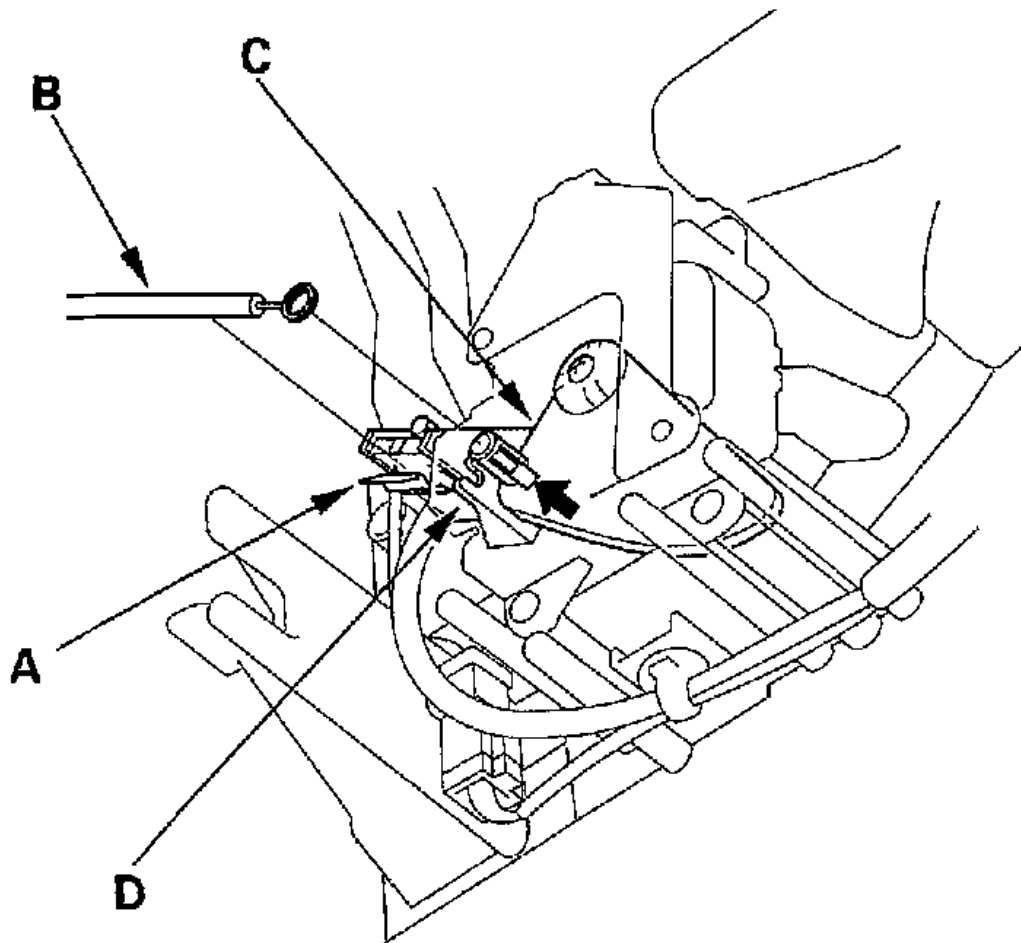
1. From under the hood, open the cable clamp (A), then disconnect the heater valve cable (B) from the heater valve arm (C).



G01822558

Fig. 125: Disconnecting The Heater Valve Cable From The Heater Valve Arm

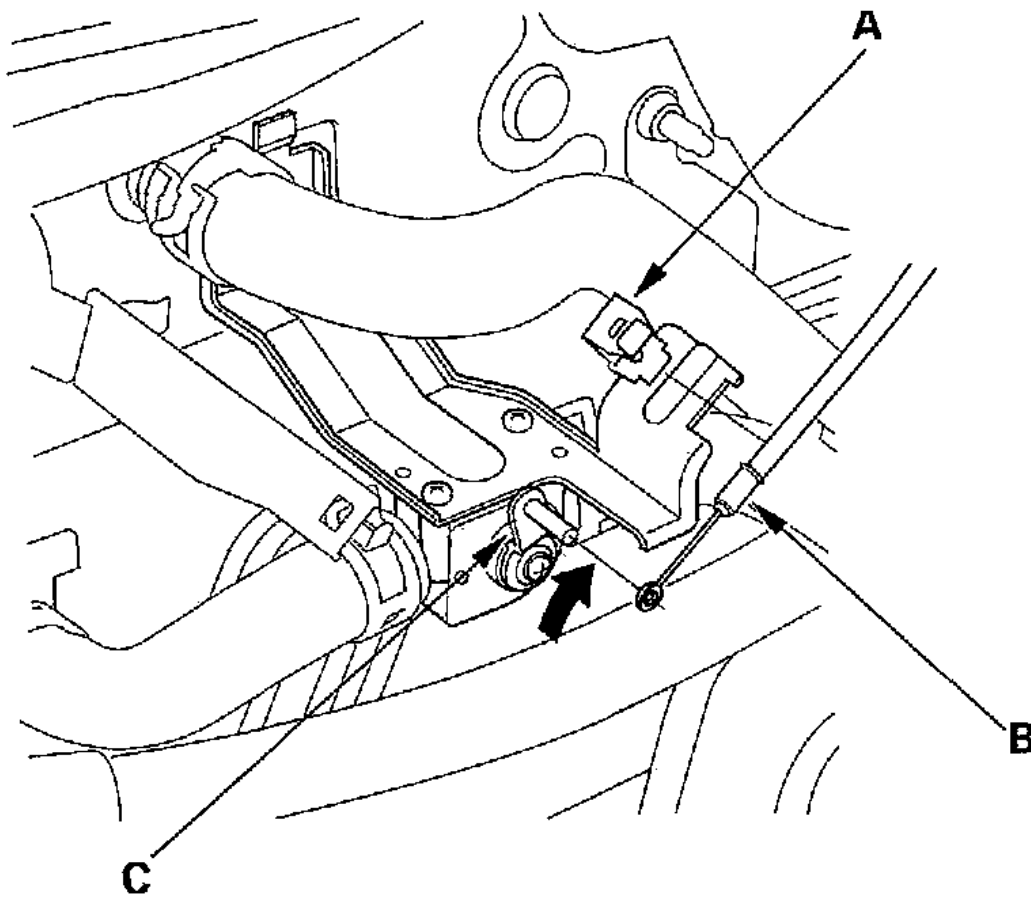
2. From under the dash, disconnect the heater valve cable housing from the cable (A), and disconnect the heater valve cable (B) from the air mix control linkage (C).



G01822559

Fig. 126: Disconnecting The Heater Valve Cable Housing From The Cable & Disconnecting The Heater Valve Cable From The Air Mix Control Linkage

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



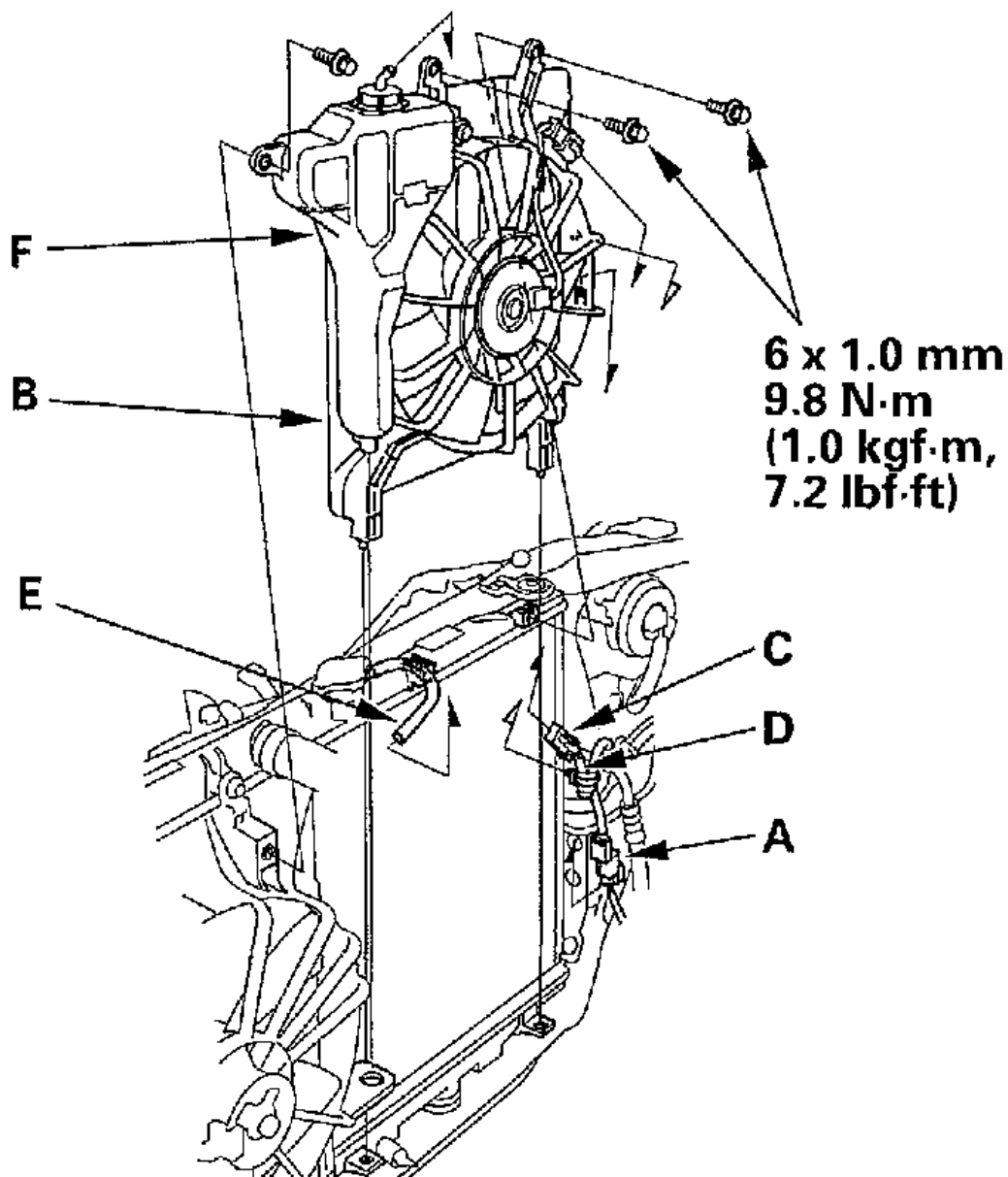
G01822560

Fig. 127: Attaching The Heater Valve Cable

COMPRESSOR REPLACEMENT

1. If the compressor is marginally operable, run the engine at idle speed, and let the air conditioning work for a few minutes, then shut the engine off.
2. Make sure you have the anti-theft codes for the radio and the navigation system, then write down the frequencies for the radio's preset buttons.
3. Disconnect the negative cable from the battery.
4. Recover the refrigerant with a recovery/recycling/charging station (see **REFRIGERANT RECOVERY**).
5. Remove the drive belt (see **DRIVE BELT**).
6. Remove the compressor clutch connector (A) from the condenser fan shroud (B). Disconnect the condenser fan connector (C), then remove the wire harness clip (D) from the condenser fan shroud.

Remove the hose (E) from the reserve tank (F). Remove the bolts and the radiator fan shroud. Be careful not to damage the radiator fins when removing the condenser fan shroud.

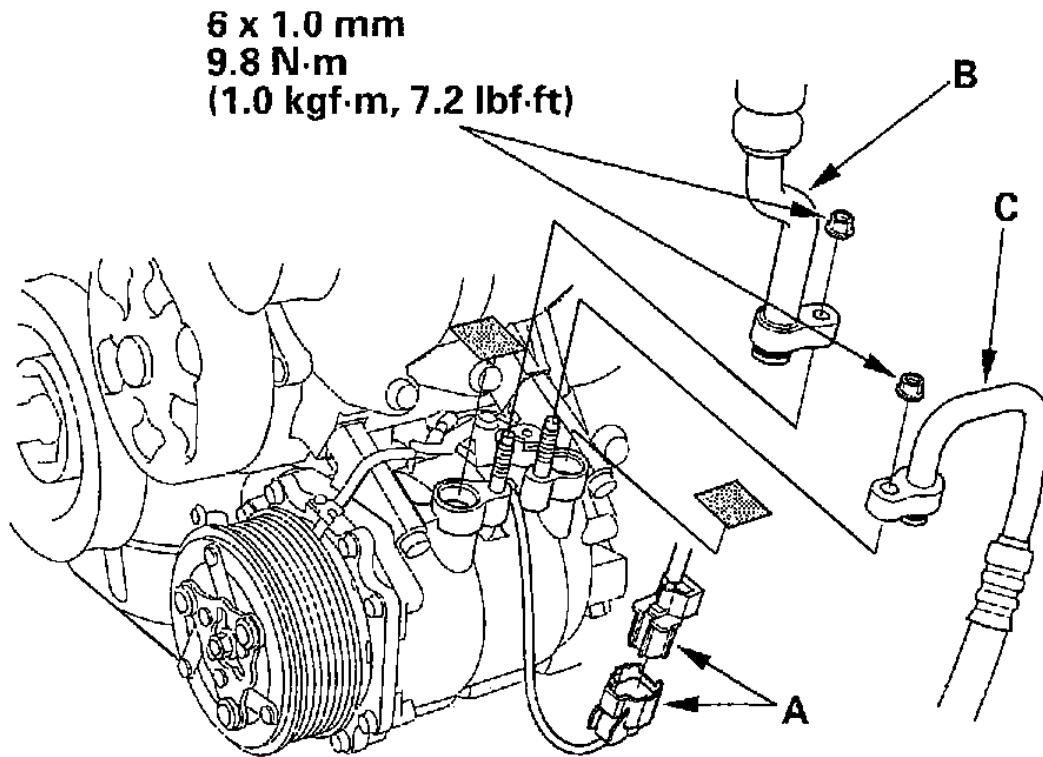


G01822561

Fig. 128: Removing Radiator Fan Shroud

7. Disconnect the compressor clutch connector (A). Remove the nuts, then disconnect the suction line (B)

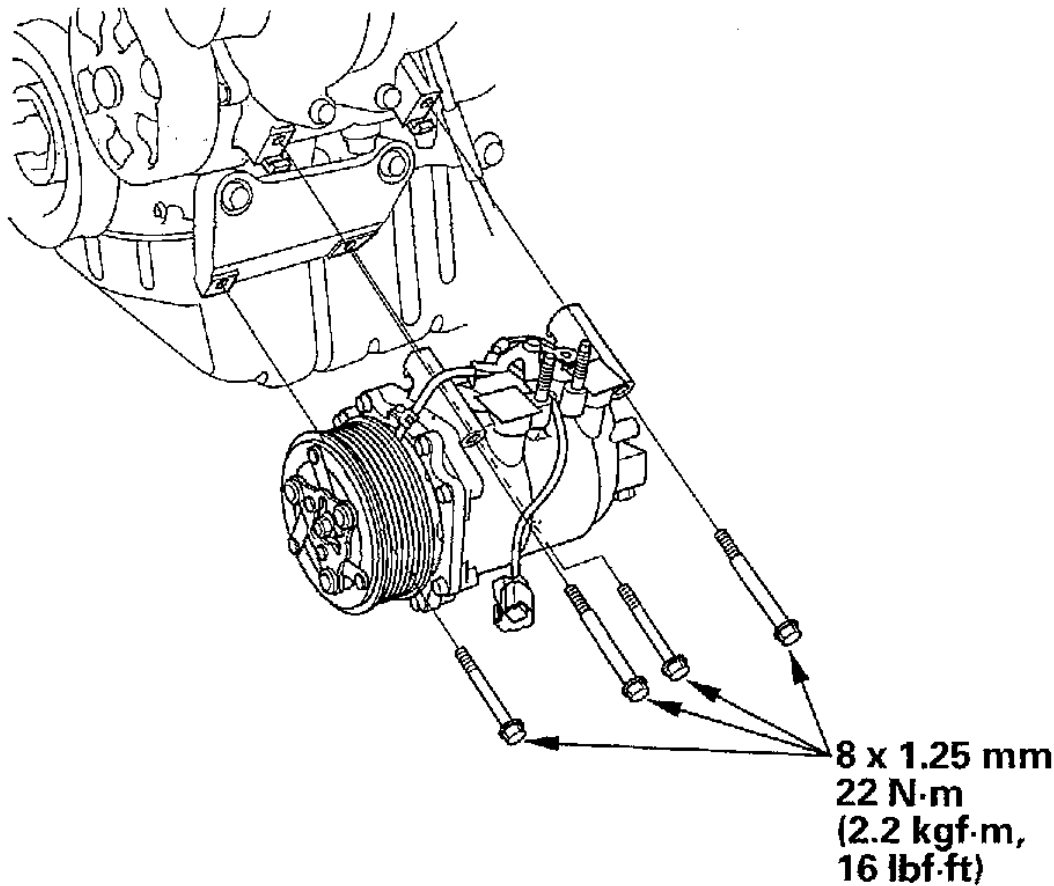
and discharge line (C) from the compressor. Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.



G01822562

Fig. 129: Disconnecting The Suction Line & Discharge Line

8. Remove the splash shield.
9. Remove the mounting bolts and the compressor. Be careful not to damage the radiator fins when removing the compressor.



G01822563

Fig. 130: Removing The Compressor

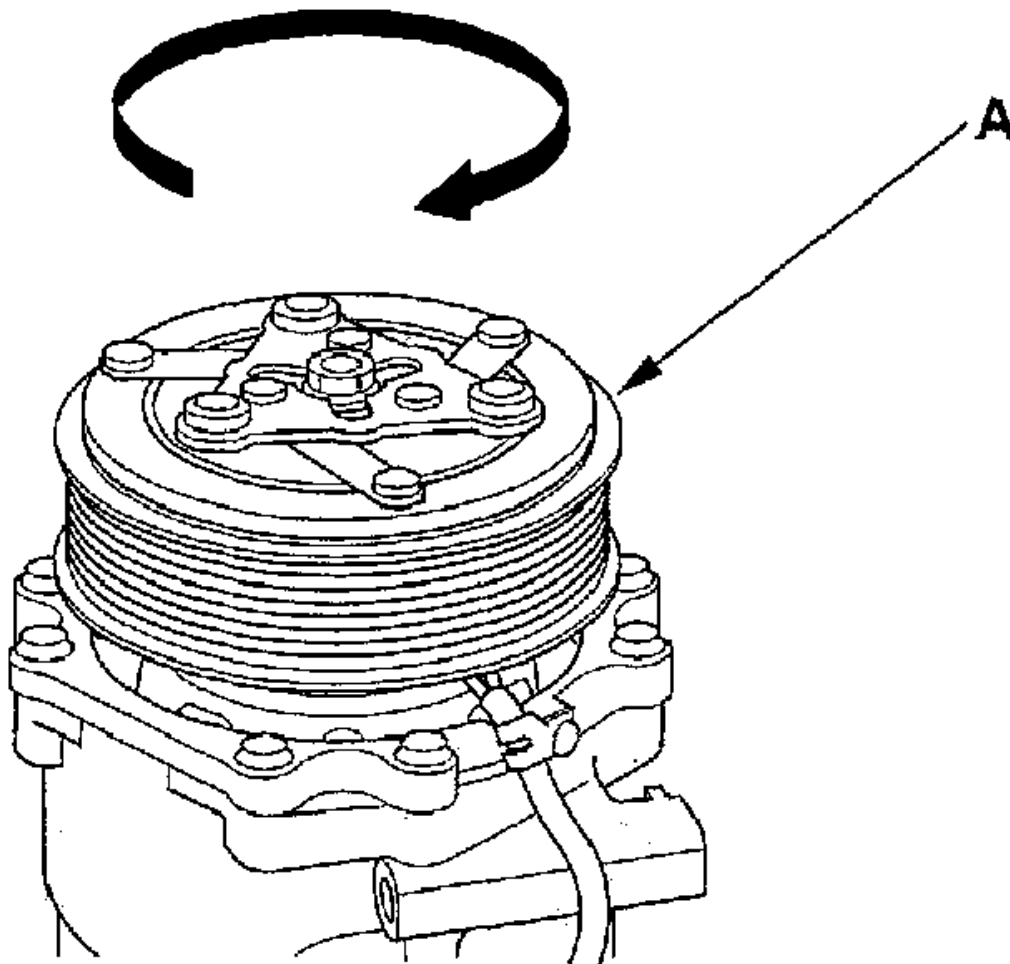
10. Install the compressor in the reverse order of removal, and note these items:
- If you're installing a new compressor, you must calculate the amount of refrigerant oil to be removed from it (see **A/C REFRIGERANT OIL REPLACEMENT**).
 - Replace the O-rings with new ones at each fitting, and apply 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 (KEIHIN SP-10) for HFC-134a KEIHIN piston type compressor only.
 - To avoid contamination, do not return the oil to the container once dispensed, and never mix it with other refrigerant oils.
 - Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
 - Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.
 - Be careful not to damage the radiator fins when installing the compressor and the condenser fan

shroud.

- Charge the system (see **SYSTEM CHARGING**).
- Do the PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
- Do the power window control unit reset procedure (see **RESETTING THE POWER WINDOW**).
- Enter the anti-theft codes for the radio and the navigation system, then enter the customer's radio station presets.

COMPRESSOR CLUTCH CHECK

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



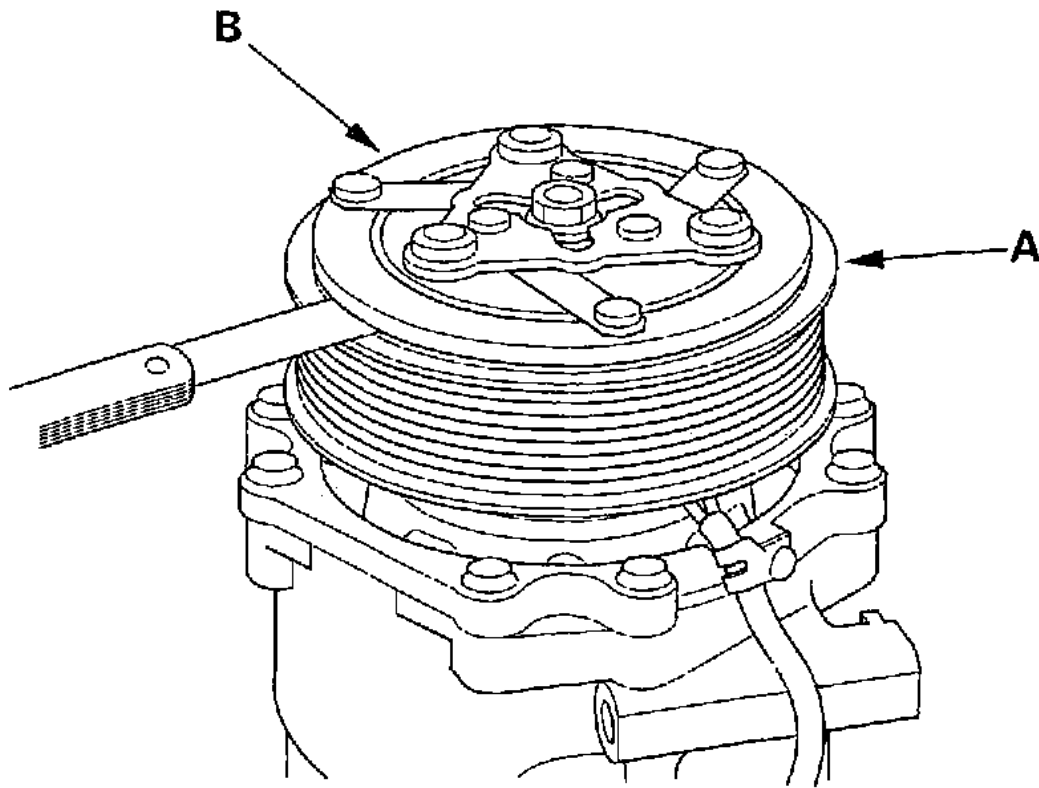
G01822564

Fig. 131: Rotating The Rotor Pulley

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

Clearance: 0.5 +/- 0.15 mm (0.020 +/- 0.006 in.)

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

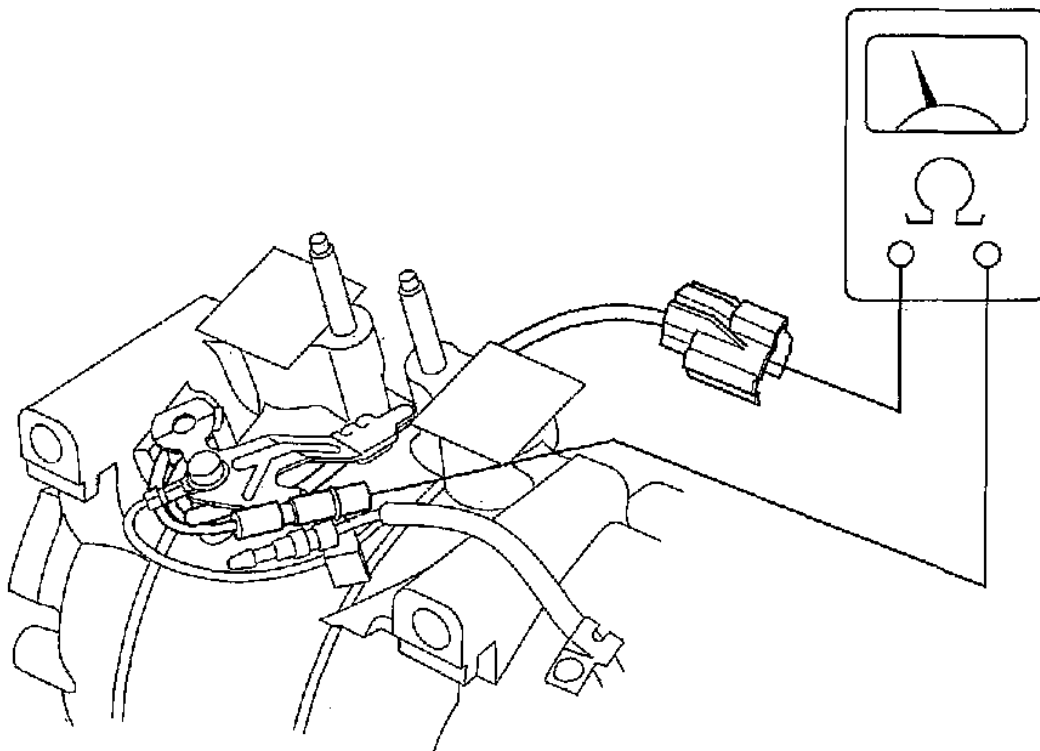


G01822565

Fig. 132: Measuring The Clearance Between The Rotor Pulley & The Armature Plate

4. Release the field coil connector from the holder, then disconnect it. Check the thermal protector for continuity. If there is no continuity, replace the thermal protector (see **COMPRESSOR THERMAL PROTECTOR REPLACEMENT**).

NOTE: The thermal protector will have no continuity above 252° to 270°F (122° to 132°C). When the temperature drops below 241° to 219°F (116° to 104°C), the thermal protector will have continuity.



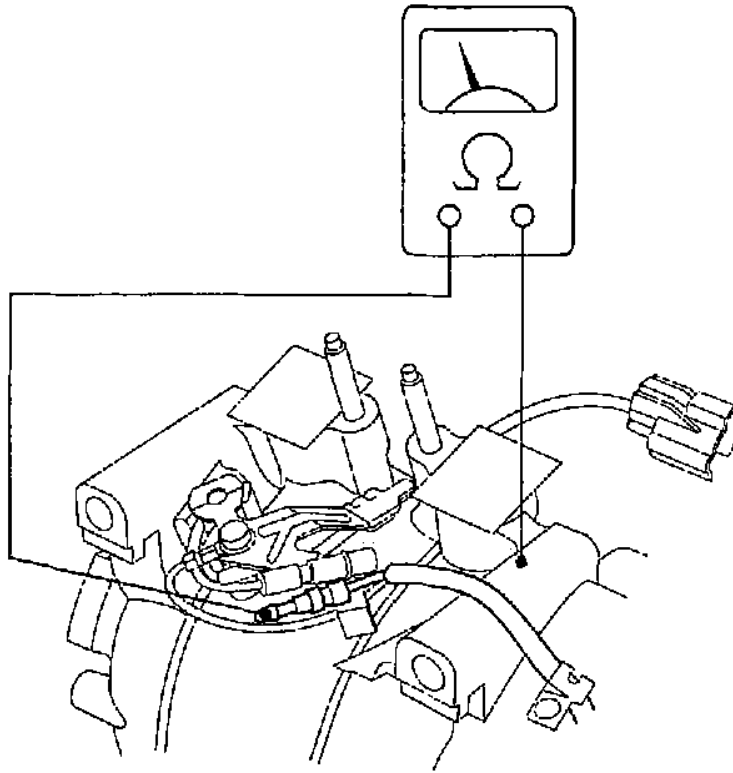
G01822566

Fig. 133: Testing Thermal Protector

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

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

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



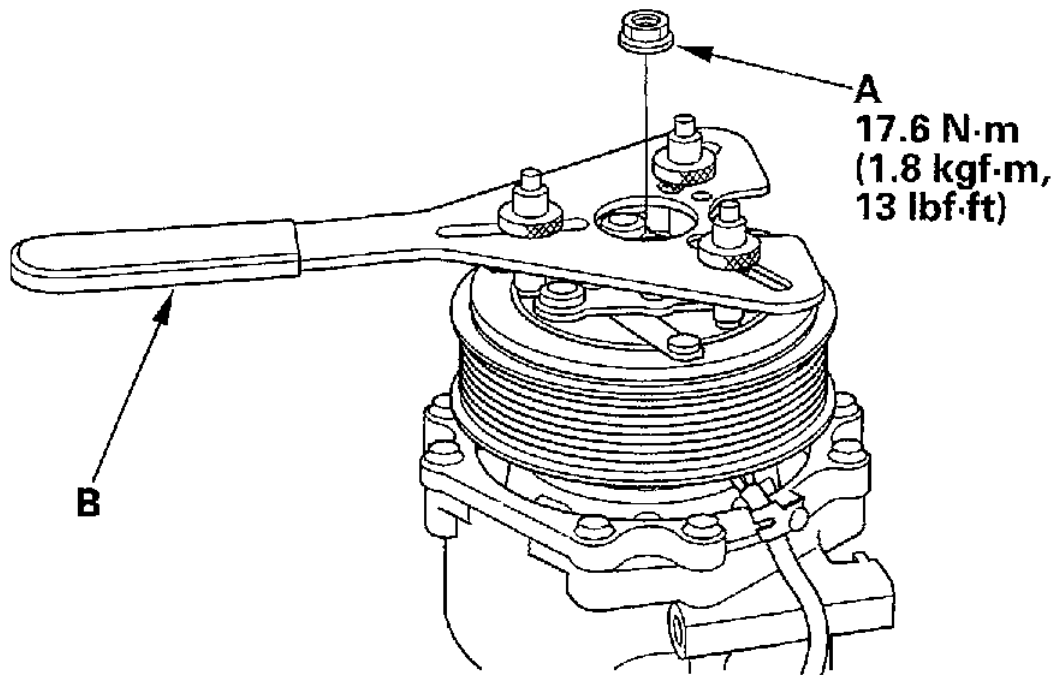
G01822567

Fig. 134: Checking Resistance Of The Field Coil

COMPRESSOR CLUTCH OVERHAUL

Special Tools Required: A/C clutch holder; Robinair 10204 or Kent-Moore J37872, Honda Tool and Equipment KMT-J33939, commercially available

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

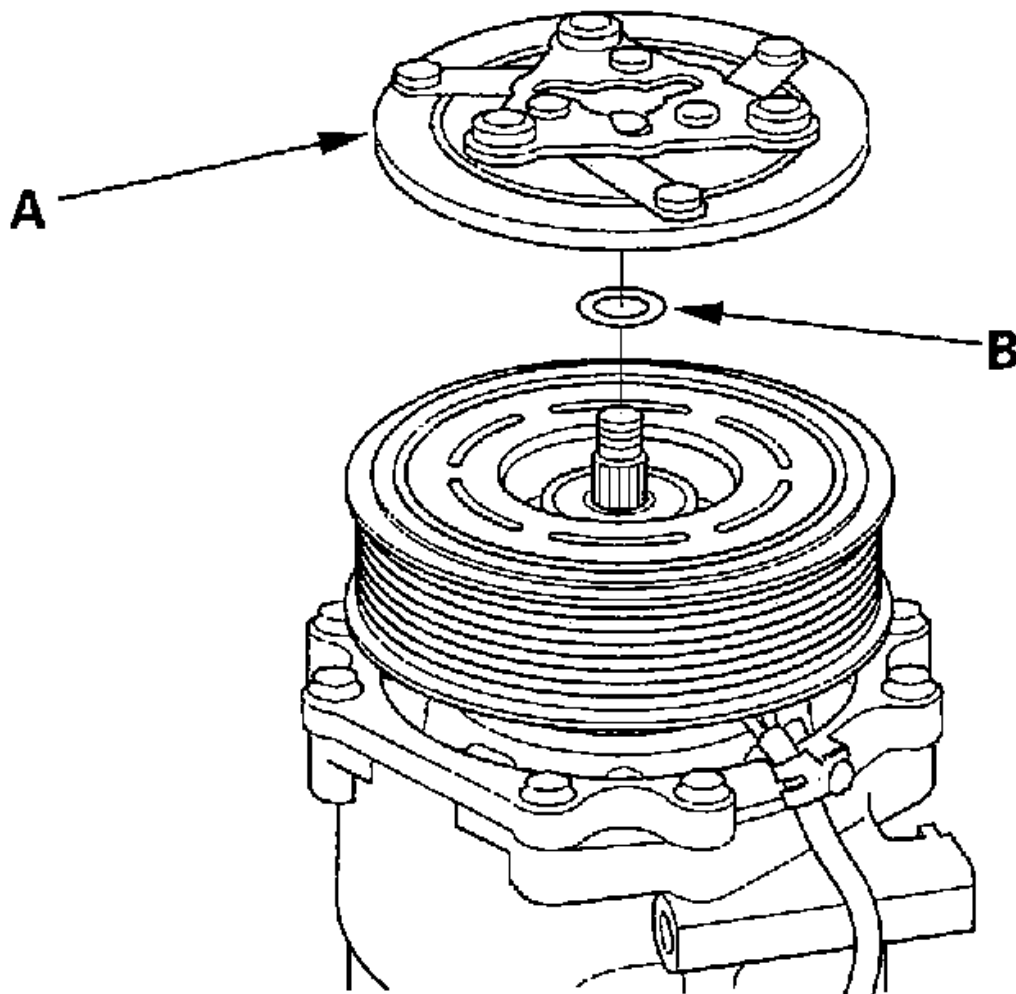


G01822568

Fig. 135: Removing The Center Nut

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

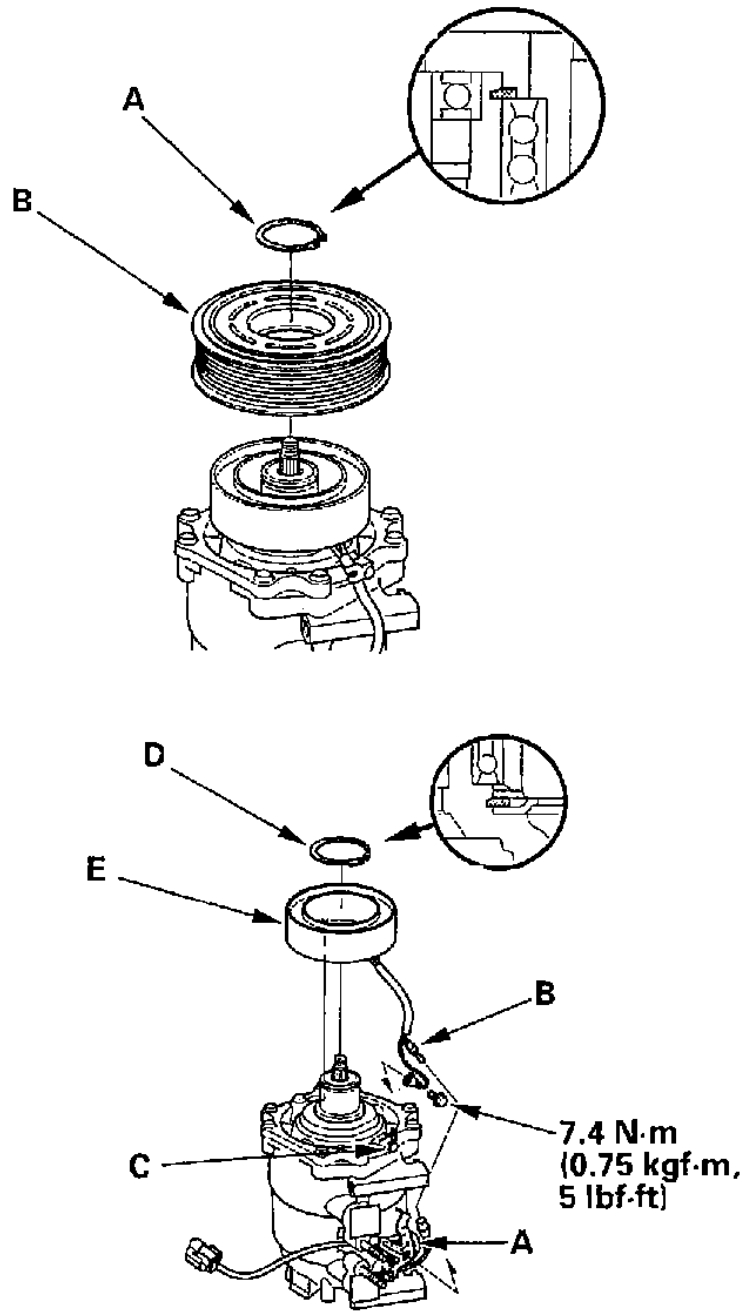
NOTE: The shims are available in four thickness: 0.1 mm, 0.2 mm, 0.4 mm and 0.5 mm.



G01822569

Fig. 136: Removing The Armature Plate & Shim(s)

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



G01822570

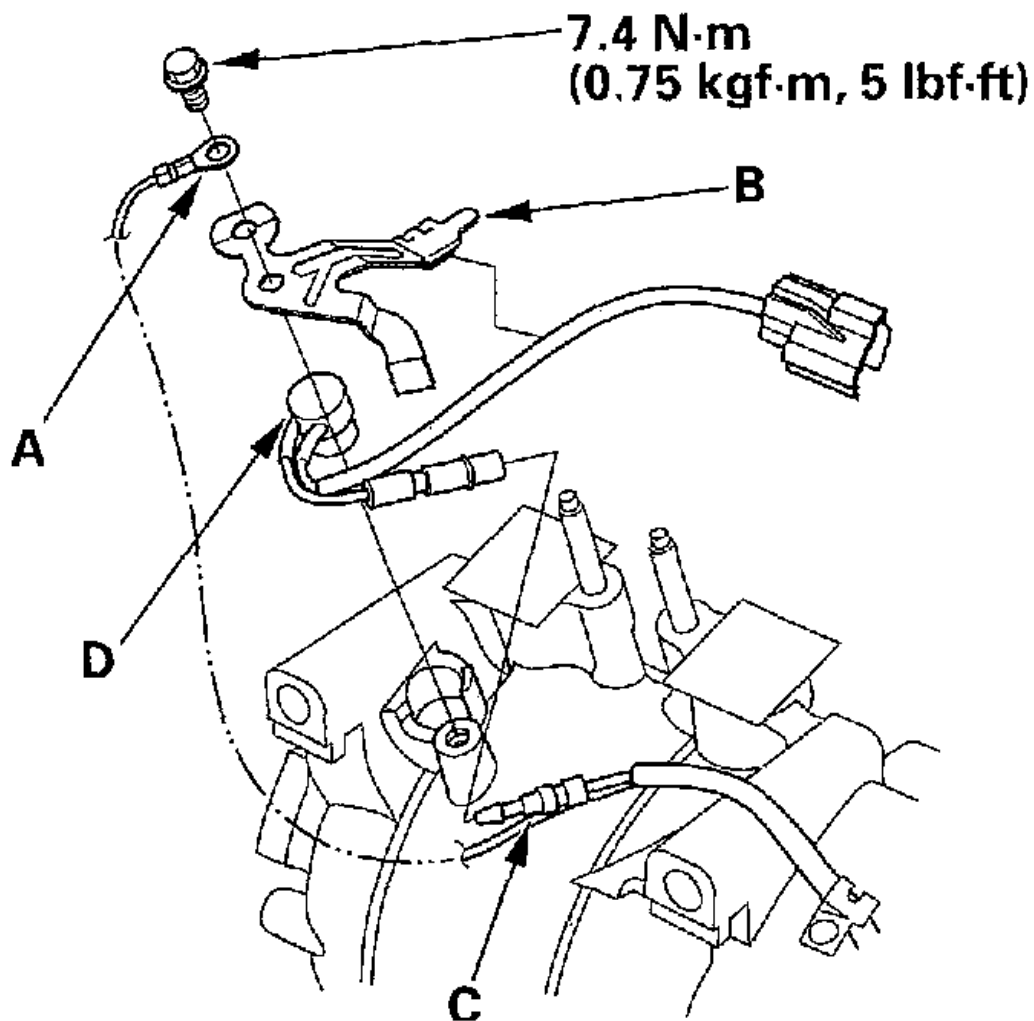
Fig. 137: Removing The Field Coil

5. Reassemble the clutch in the reverse order of disassembly, and note these items:
 - Install the field coil with the wire side facing down, and align the boss on the field coil with the hole in the compressor.

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

COMPRESSOR THERMAL PROTECTOR REPLACEMENT

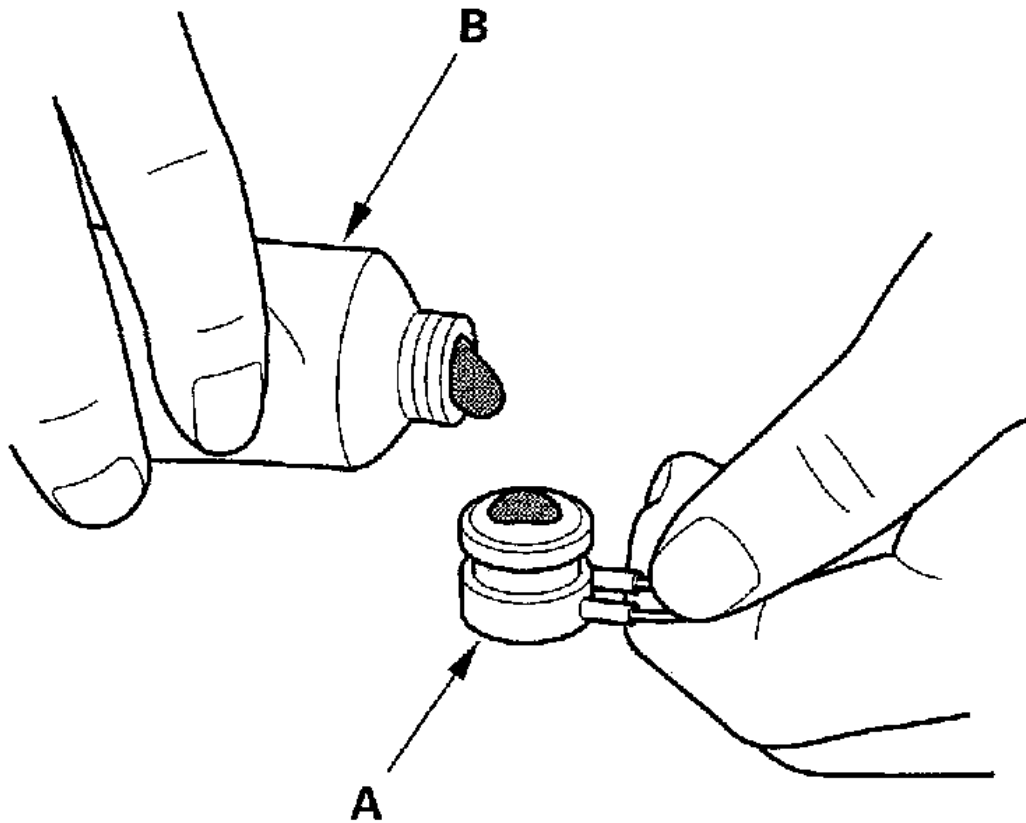
1. Remove the bolt, the ground terminal (A), and the holder (B). Disconnect the field coil connector (C), then remove the thermal protector (D).



G01822571

Fig. 138: Removing The Thermal Protector

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



G01822572

Fig. 139: Applying Silicone Sealant To The Bottom Of The Thermal Protector

3. Install in the reverse order of removal.

COMPRESSOR RELIEF VALVE REPLACEMENT

1. Recover the refrigerant with a recovery/recycling/charging station (see **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 compressor oil from running out.

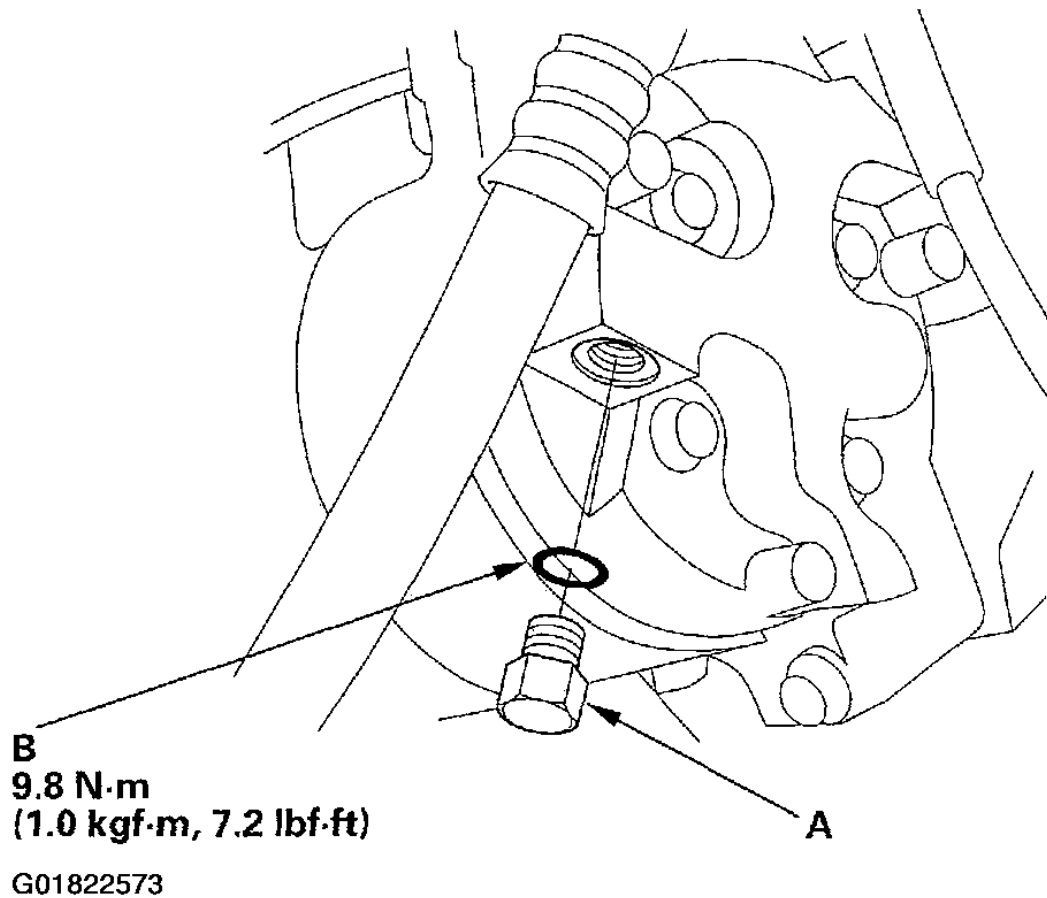


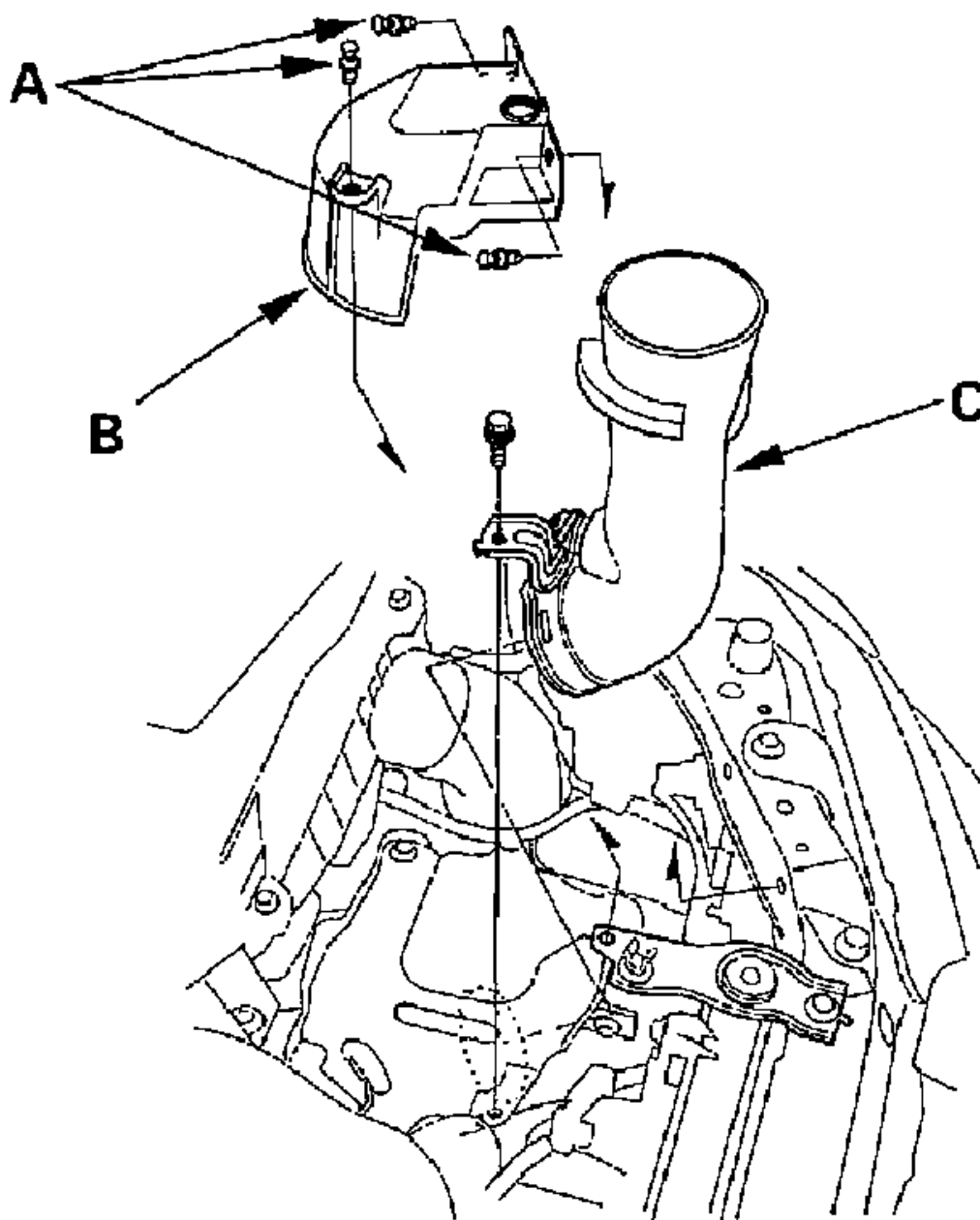
Fig. 140: Removing The Relief Valve & The O-Ring

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, then install and tighten the relief valve.
6. Charge the system (see **SYSTEM CHARGING**).

CONDENSER REPLACEMENT

1. Make sure you have the anti-theft codes for the radio and the navigation system, then write down the frequencies for the radio's present buttons.
2. Recover the refrigerant with a recovery/recycling/charging station (see **REFRIGERANT RECOVERY**).
3. Remove the front bulkhead cover.
4. Remove the battery and the battery box.

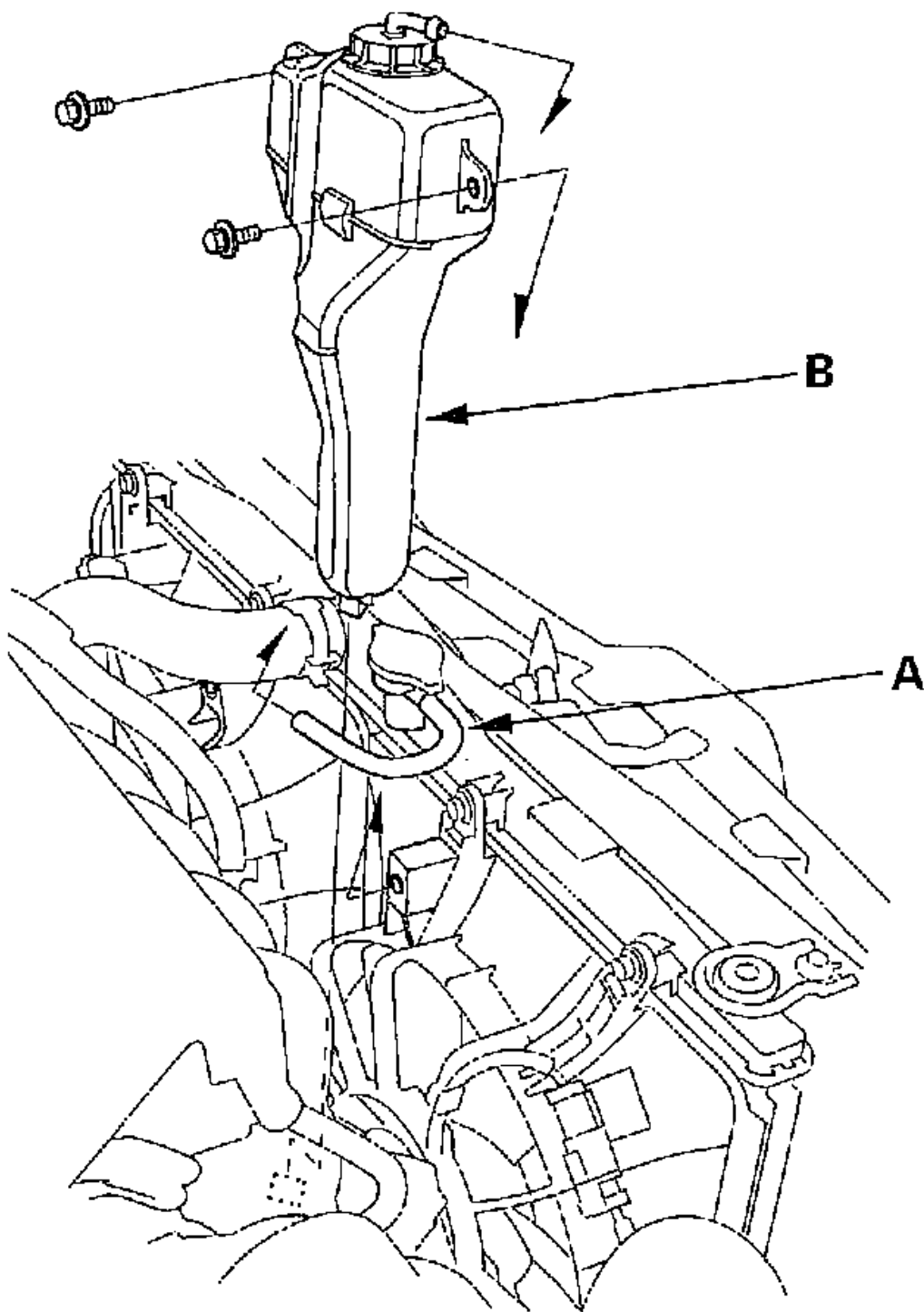
5. Remove the clips (A), then remove the air intake cover (B) and the air intake tube or duct (C).



G01822574

Fig. 141: Removing The Air Intake Cover & The Air Intake Tube Or Duct

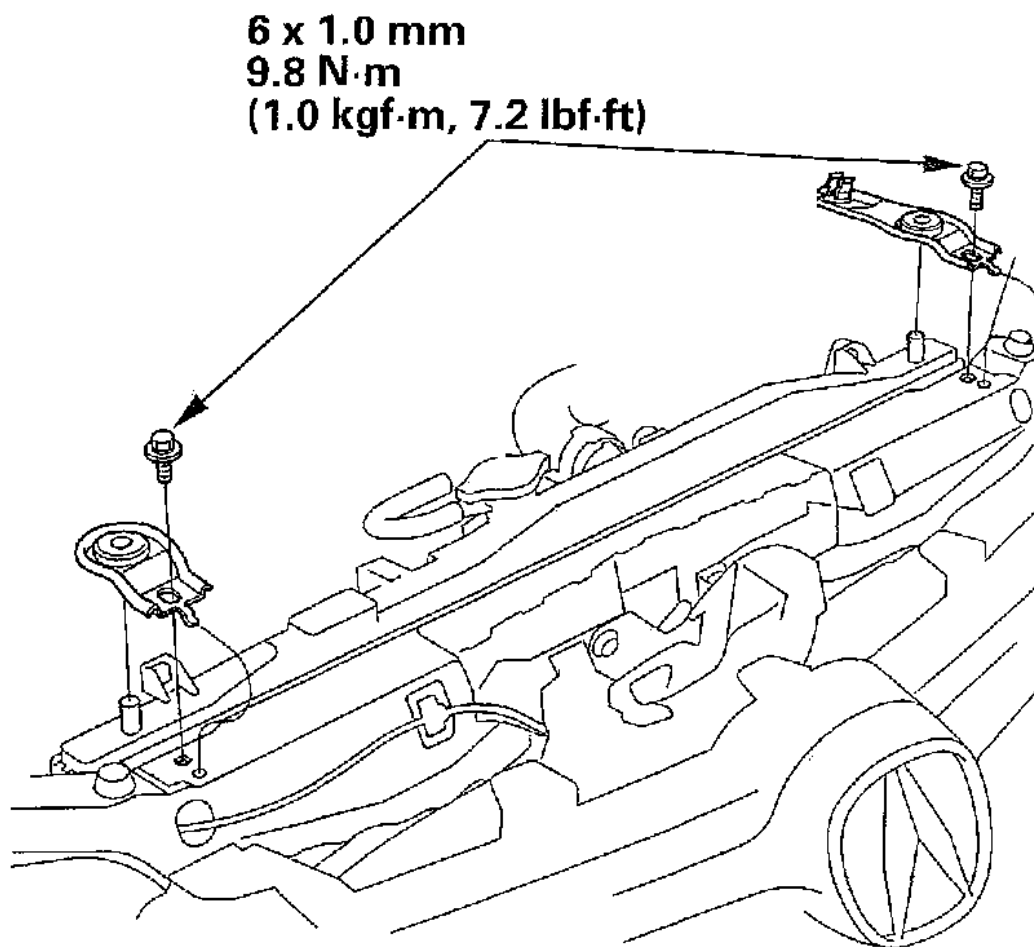
6. Remove the hose (A) from the reserve tank (B). Remove the bolts and the reserve tank from the condenser fan shroud.



G01822575

Fig. 142: Removing The Reserve Tank From The Condenser Fan Shroud

7. Remove the bolts and the radiator upper mount brackets.

**Fig. 143: Removing The Radiator Upper Mount Brackets**

8. Remove the bolt, then disconnect the receiver line from the condenser.

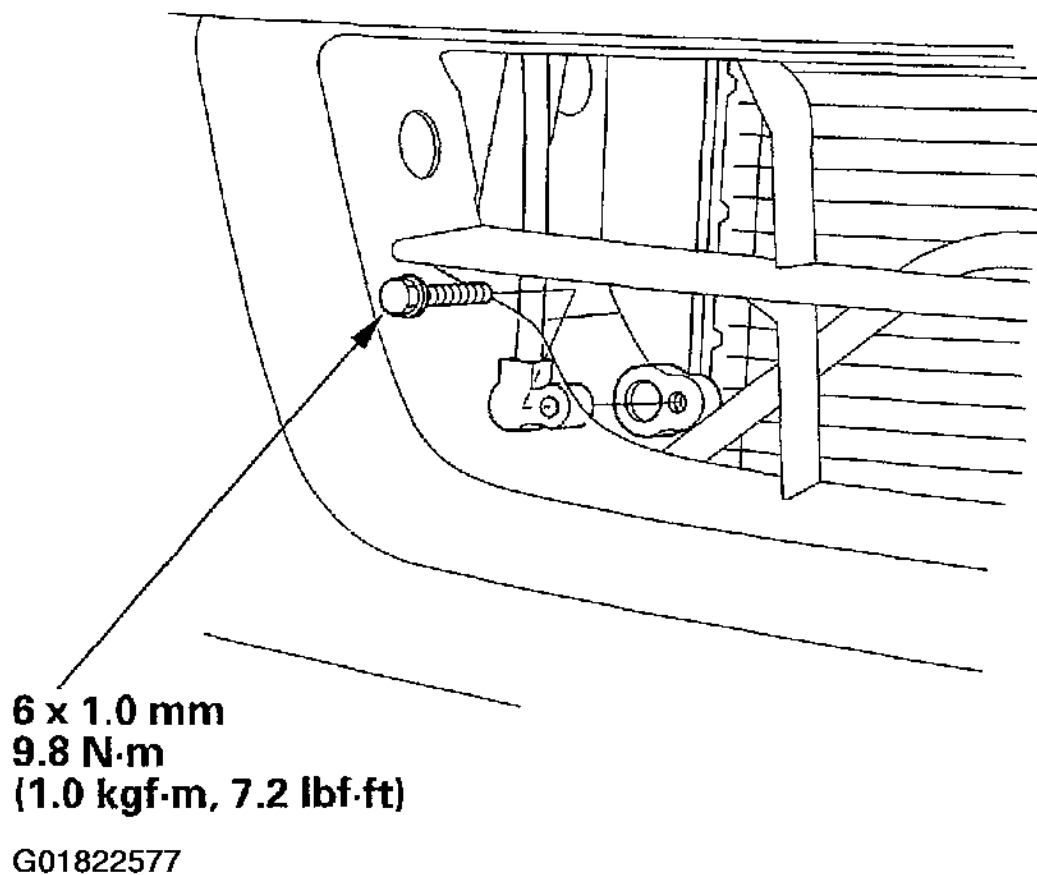
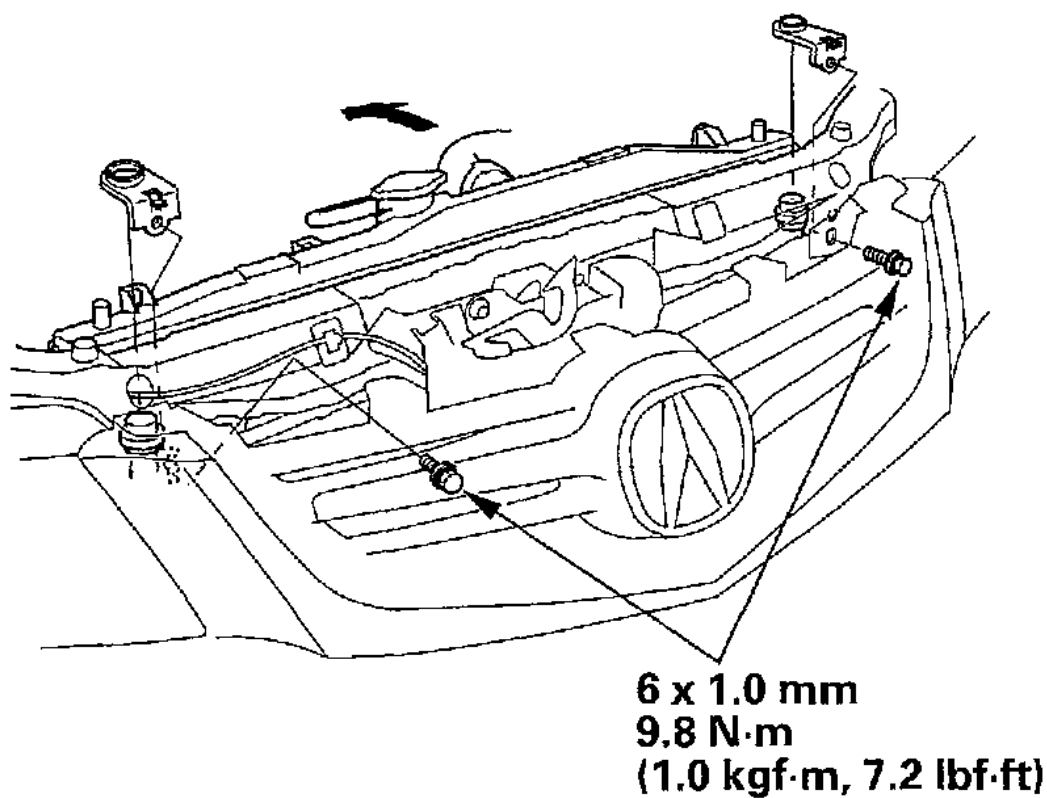


Fig. 144: Disconnecting The Receiver Line From The Condenser

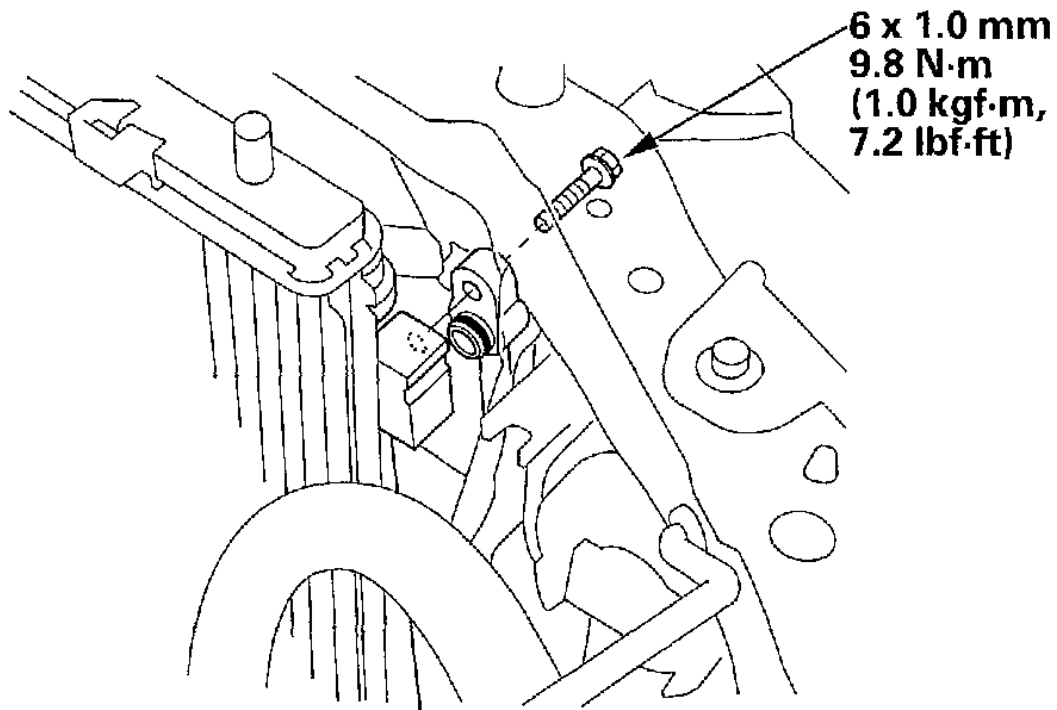
9. Remove the bolts and the condenser upper mount brackets.



G01822578

Fig. 145: Removing The Condenser Upper Mount Brackets

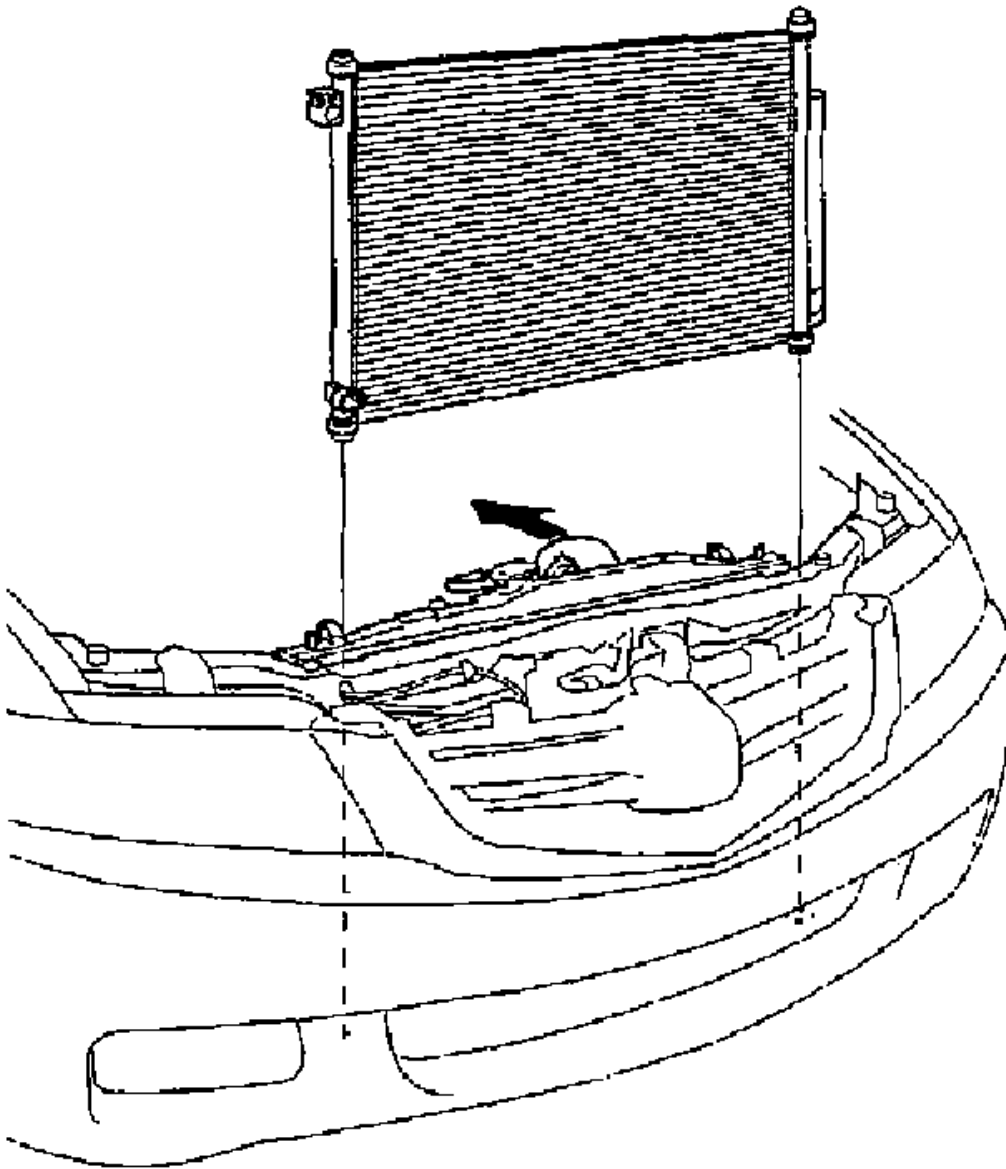
10. Remove the bolt, then disconnect the discharge line from the condenser.



G01822579

Fig. 146: Disconnecting The Discharge Line From The Condenser

11. Remove the condenser by lifting it up. Be careful not to damage the radiator and condenser fins when removing the condenser.



G01822580

Fig. 147: Removing The Condenser

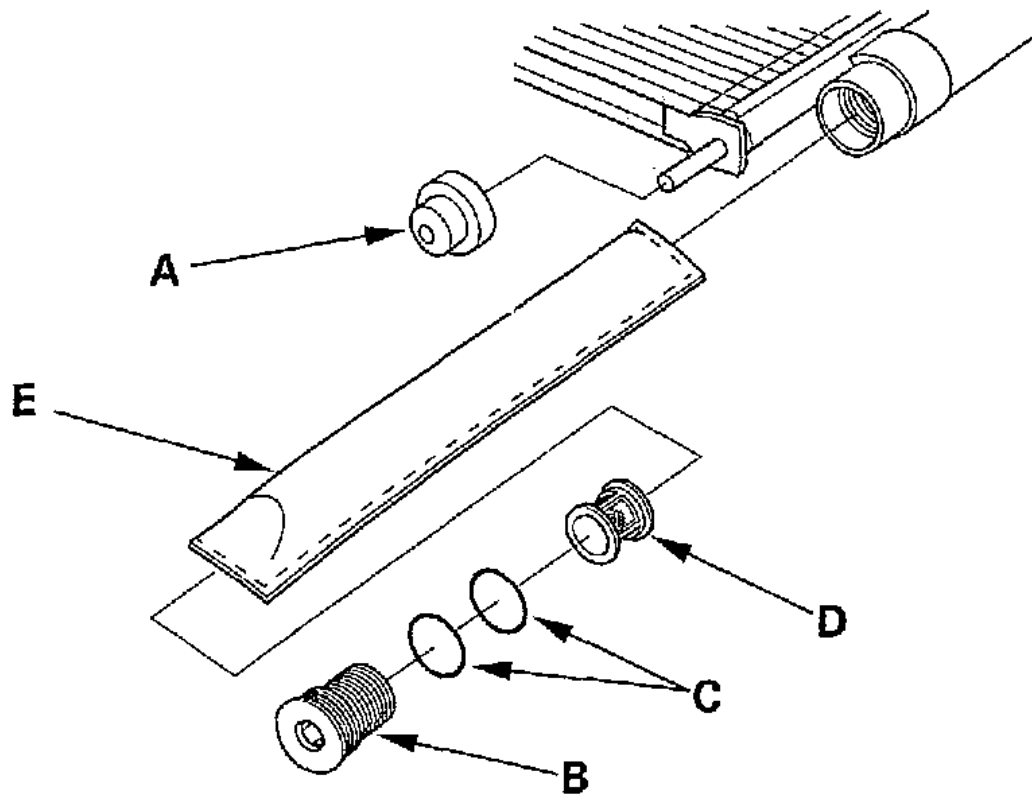
12. Install the condenser in the reverse order of removal, and note these items:
 - If you're installing a new condenser, add refrigerant oil (KEIHIN SP-10) (see **A/C REFRIGERANT OIL REPLACEMENT**).
 - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before

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 condenser fins when installing the condenser.
- Charge the system (see **SYSTEM CHARGING**).
- Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
- Do the power window control unit reset procedure (see **RESETTING THE POWER WINDOW**).
- Enter the anti-theft codes for the radio and the navigation system, then enter the customer's radio station presets.

RECEIVER/DRYER DESICCANT REPLACEMENT

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



G01822581

Fig. 148: Removing The O-Rings, The Filter & The Desiccant

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

REFRIGERANT RECOVERY

CAUTION:

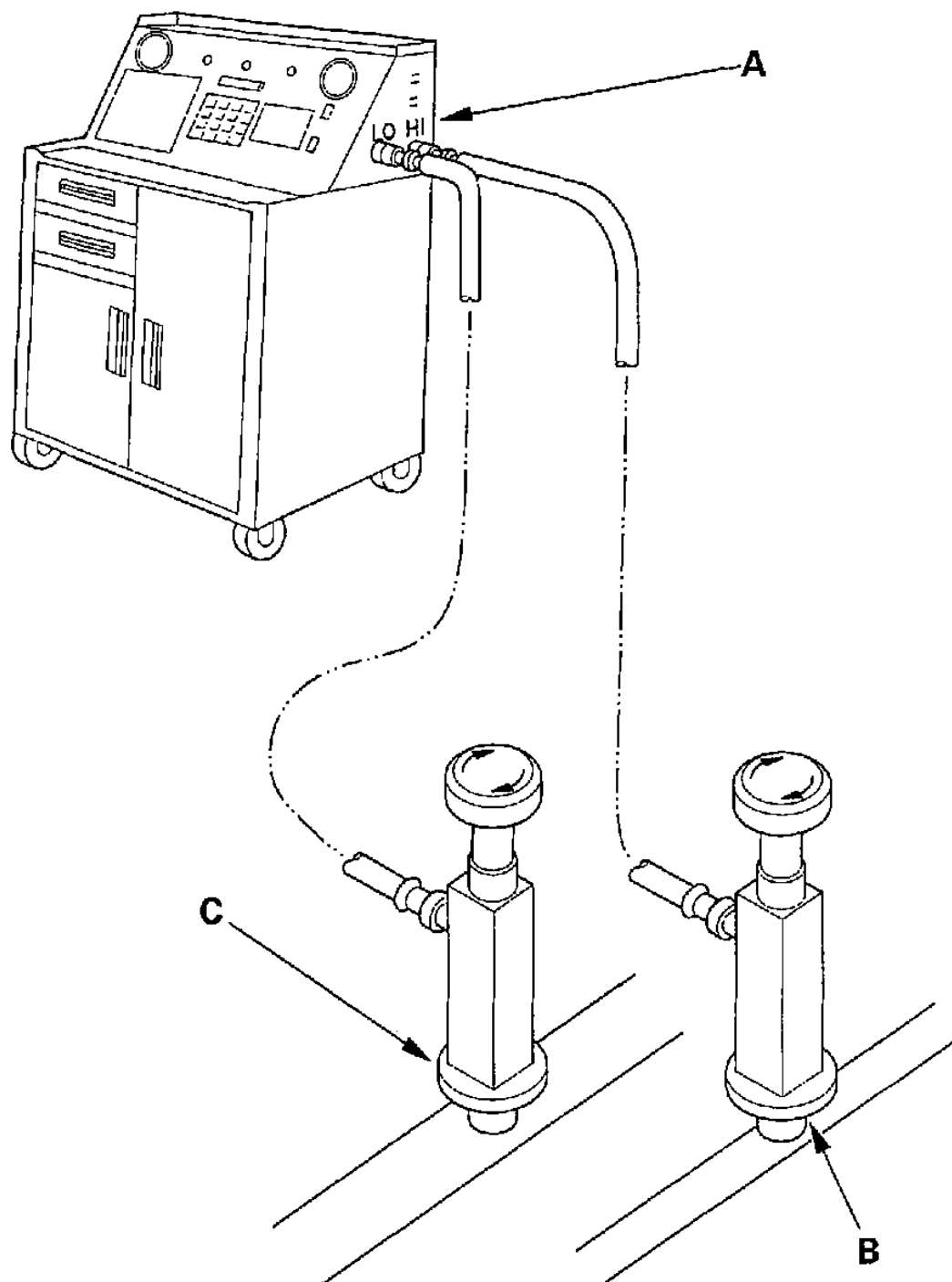
- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

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 work area before resuming service.

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

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



G01822582

Fig. 149: Connecting A R-134A Refrigerant Recovery/Recycling/Charging Station

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:

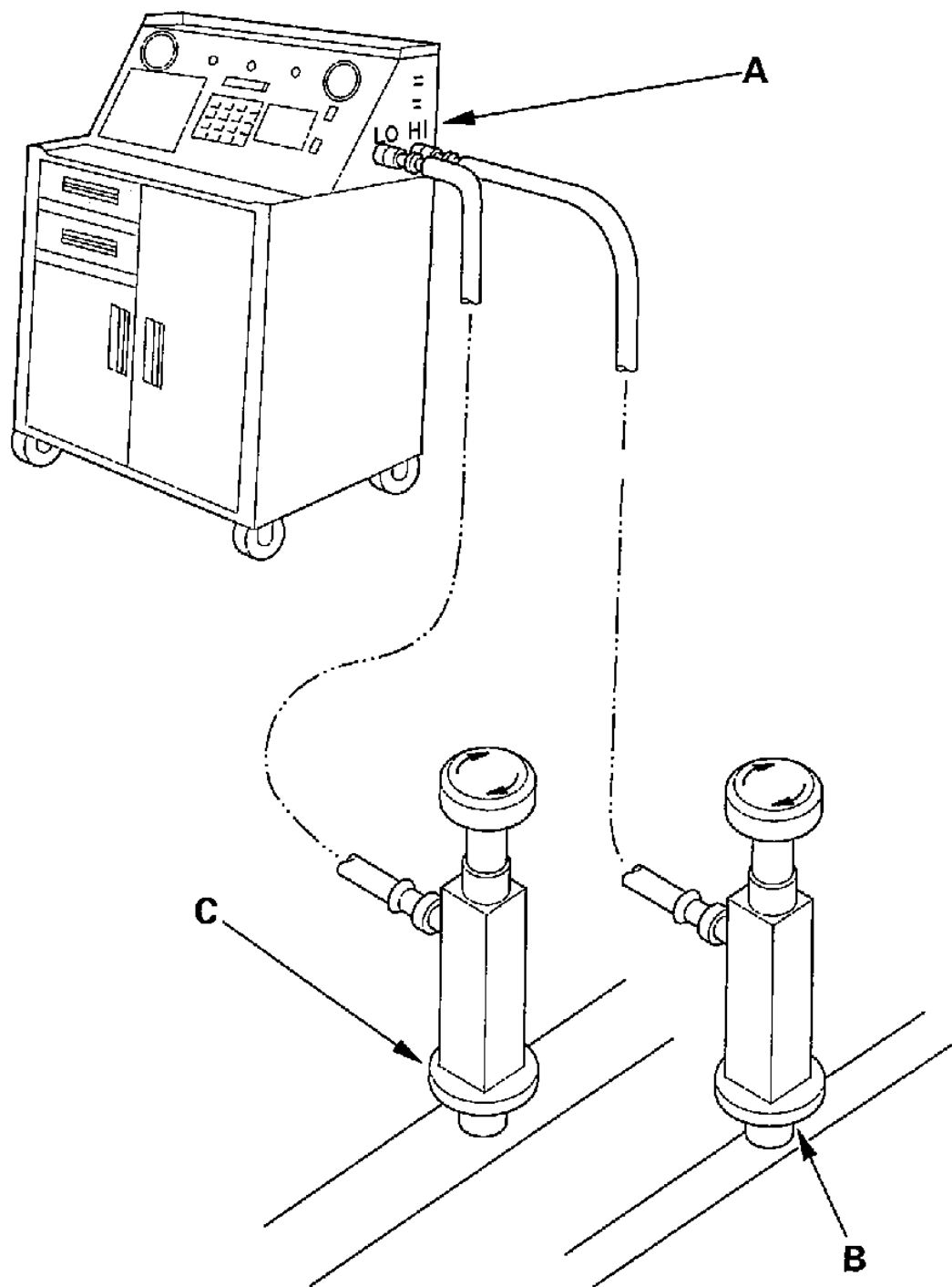
- **Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.**
- **Be careful when connecting service equipment.**
- **Do not breathe refrigerant or vapor.**

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

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

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

1. When an A/C System has been opened to the atmosphere, such as during installation or repair, it must be evacuated using a R-134a refrigerant recovery/recycling/charging station. (If the system has been open for several days, the receiver/dryer should be replaced, and the system should be evacuated for several hours.)
2. Connect a R-134a refrigerant recovery/recycling/charging station (A) to the high-pressure service port (B) and the low-pressure service port (C), as shown, following the equipment manufacturer's instructions. Evacuate the system.



G01822583

Fig. 150: Connecting A R-134A Refrigerant Recovery/Recycling/Charging Station

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

SYSTEM CHARGING

CAUTION:

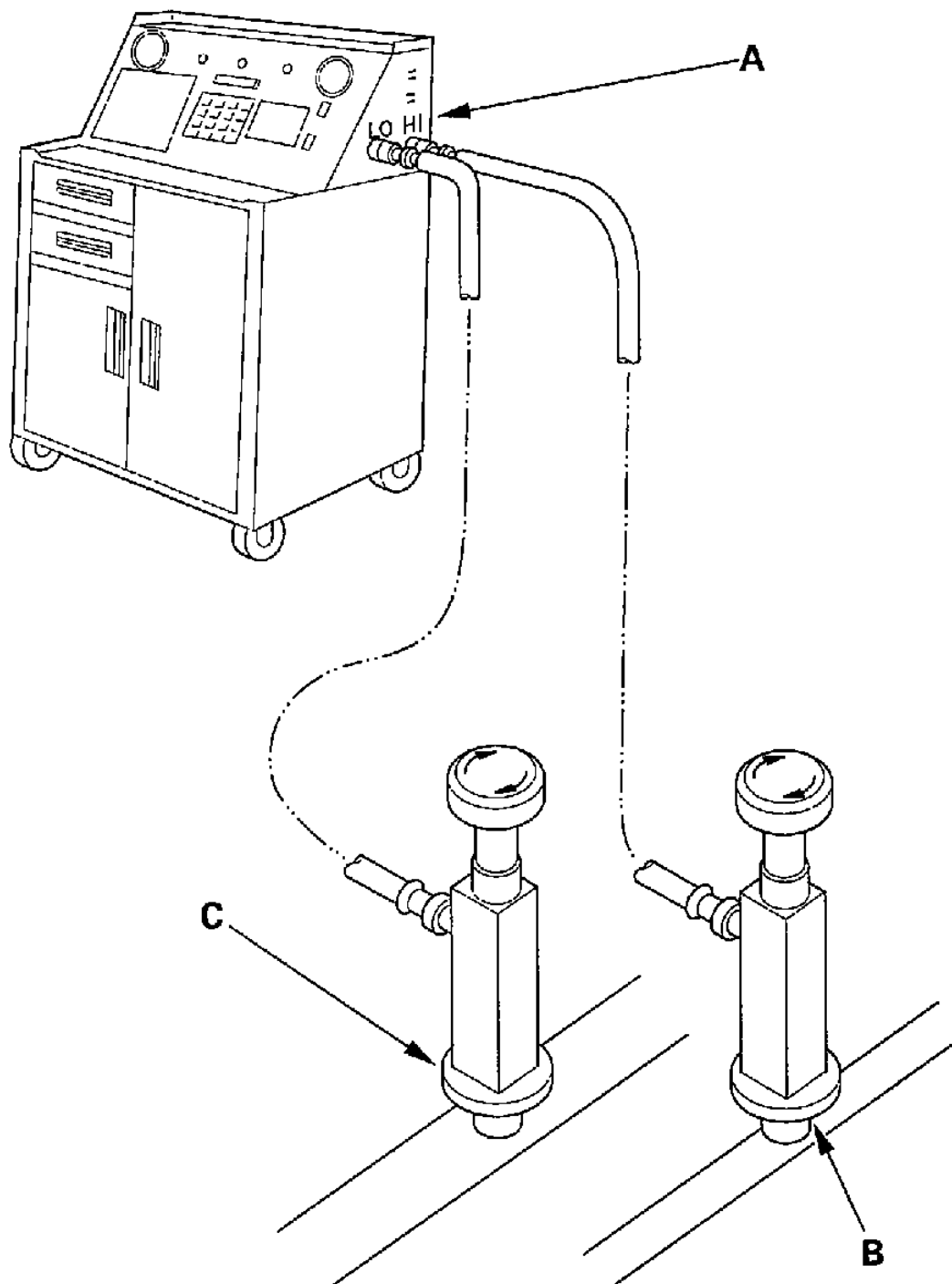
- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

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 work area before resuming service.

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

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



G01822584

Fig. 151: Connecting A R-134A Refrigerant Recovery/Recycling/Charging Station

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 compressor will be damaged. Select the appropriate units of measure for your refrigerant charging station.
Refrigerant Capacity: 500 to 550 g (0.50 to 0.55 kg; 1.1 to 1.2 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 system.

CAUTION:

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

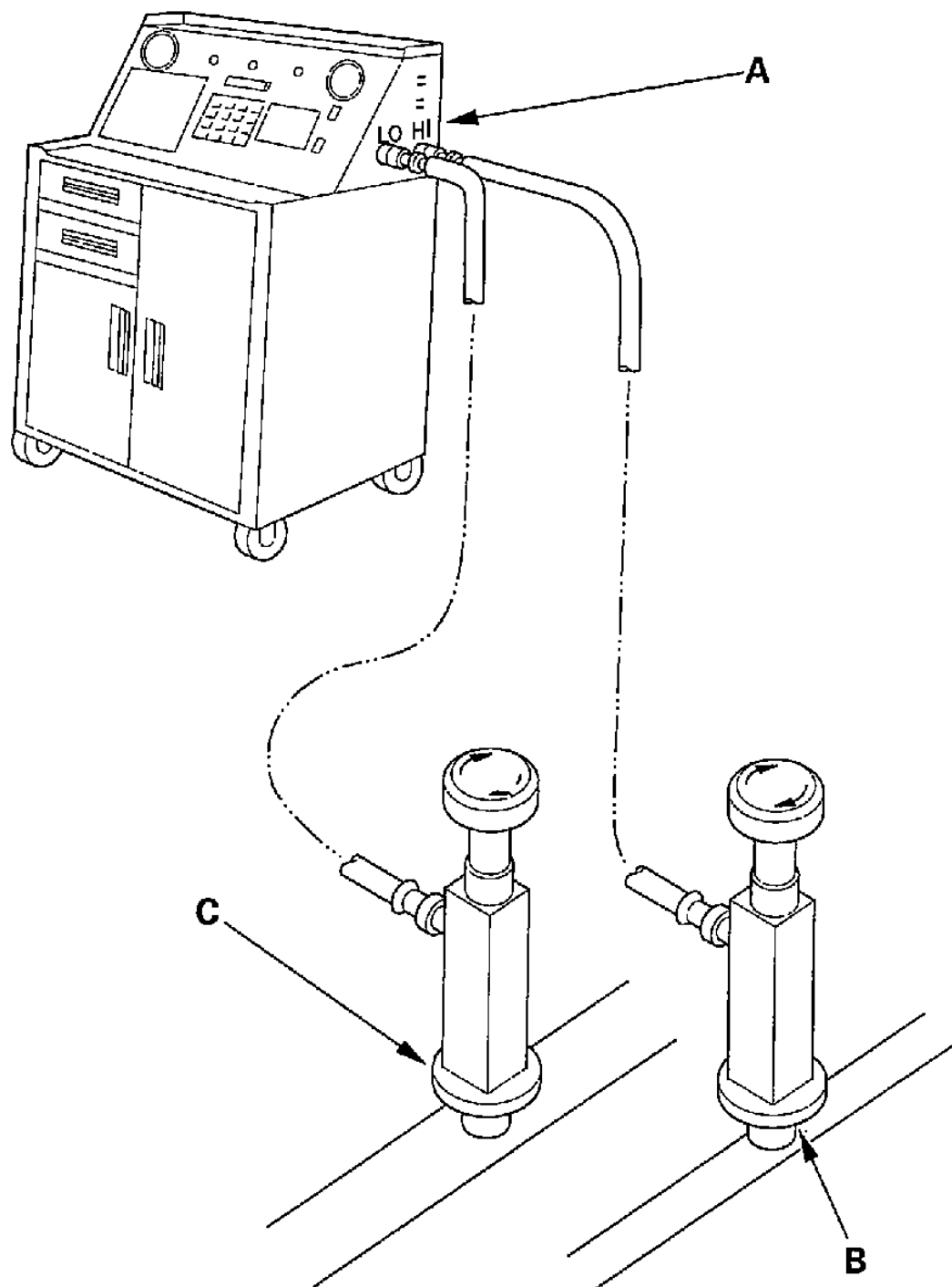
Use only service equipment that is U.L.-listed and is certified to meet the requirements of SAE J2210 to remove HFC-134a (R-134a) from the air conditioning system.

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

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

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

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



G01822585

Fig. 152: Connecting A R-134A Refrigerant Recovery/Recycling/Charging Station

2. Open high pressure valve to charge the system to the specified capacity, then close the supply valve, and disconnect the charging station fittings. Select the appropriate units of measure for your refrigerant charging station.
Refrigerant Capacity: 500 to 550 g (0.50 to 0.55 kg; 1.1 to 1.2 lbs; 17.6 to 19.4 oz.)
3. Check the system for leaks using a R-134a refrigerant leak detector with an accuracy of 14 g (0.5 oz.) per year or better.
4. If you find leaks that require the system to be opened (to repair or replace hoses, fittings, etc.), recover the system.
5. After checking and repairing leaks, the system must be evacuated.

A/C SYSTEM TEST

PERFORMANCE TEST

WARNING:

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

CAUTION:

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

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

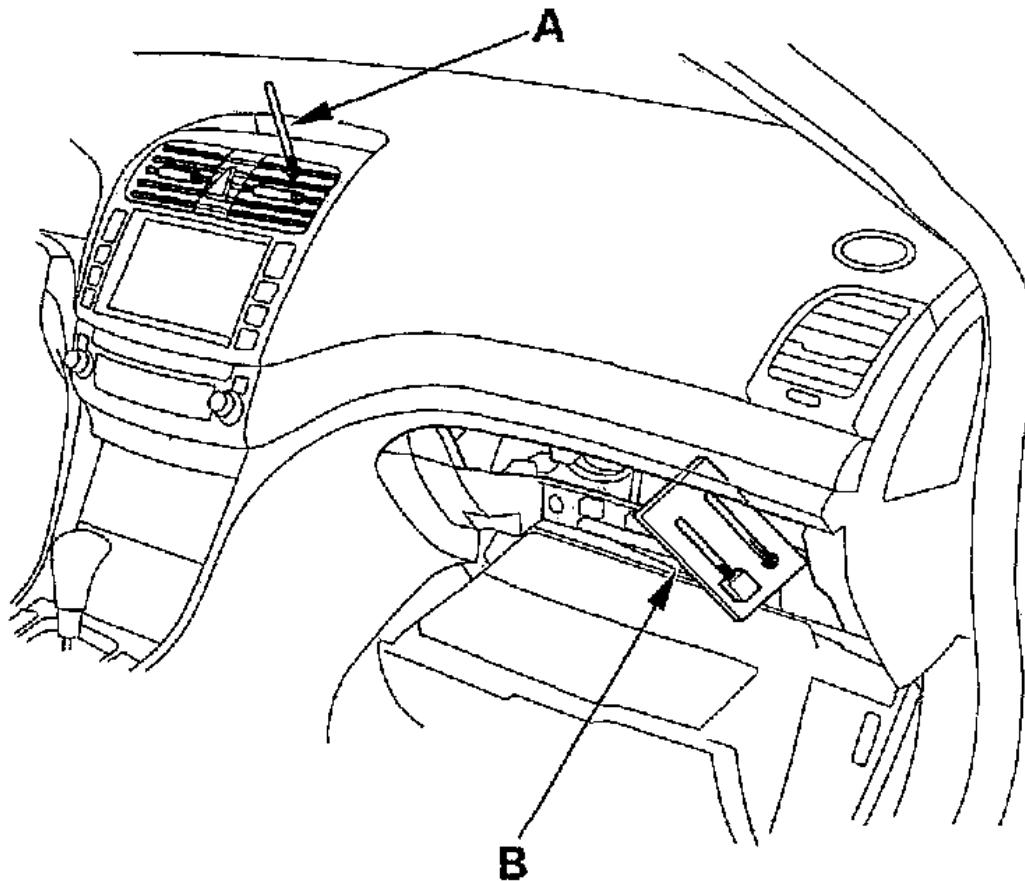
Use only service equipment that is U.L.-listed and is certified to meet the requirements of SAE J2210 to remove HFC-134a (R-134a) from the air conditioning system.

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

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

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

1. Connect a R-134a refrigerant recovery/recycling/charging station 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. Remove the damper from the glove box, then let the glove box hang down (see **GLOVE BOX REMOVAL/INSTALLATION**).
4. Insert a thermometer (A) in the center vent.



G01822586

Fig. 153: Inserting A Thermometer In The Center Vent

5. Place a thermometer (B) near the blower unit.
6. Test conditions:
 - Avoid direct sunlight.
 - Open hood.
 - Open front doors.
 - Set the temperature control dial to Max Cool, the mode control switch to Vent and the recirculation control switch to Recirculate.
 - Turn the A/C switch on and the fan switch to Max.
 - Run the engine 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. To complete the charts:

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

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

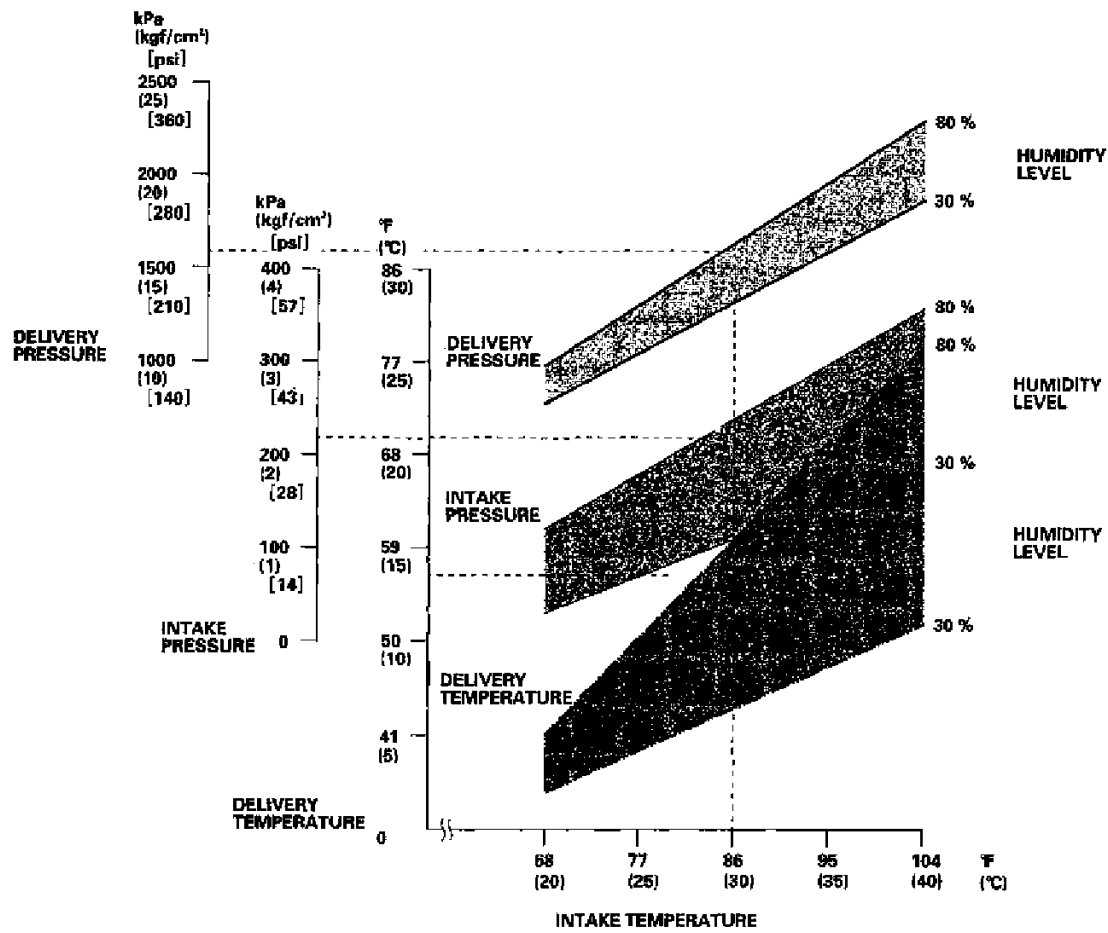
(wet): 77.9°F (25.5°C)

Intake pressure: 215 kPa (2.2 kgf/cm₂) (31.3 psi)

Delivery temperature: 56.5°F (13.6°C)

Delivery pressure: 1604 kPa (16.3 kgf/cm₂) (231.8 psi)

Results: within normal range



G01822687

Fig. 154: A/C System Performance Test Chart

PRESSURE TEST

Test results	Related symptoms	Probable cause	Remedy
Discharge (high) pressure abnormally high	After stopping compressor, pressure drops about 196 kPa (2.0 kgf/cm ² , 28 psi) quickly, and then falls gradually.	Air in system	Recover, evacuate (see page 21-84), and recharge with specified amount (see page 21-85).
	No bubbles in sight glass when condenser is cooled by water.	Excessive refrigerant in system	Recover, evacuate, and recharge with specified amount.
	Reduced or no air flow through condenser	- Clogged condenser or radiator fins - Condenser or radiator fan not working properly	- Clean - Check voltage and fan rpm. - Check fan direction.
	Line to condenser is excessively hot.	Restricted flow of refrigerant in system	Restricted lines
Discharge pressure abnormally low	Excessive bubbles in sight glass; condenser is not hot.	Insufficient refrigerant in system	- Check for leak. - Charge system.
	High and low pressures are balanced soon after stopping compressor. Low side is higher than normal.	- Faulty compressor discharge valve - Faulty compressor seal	Replace the compressor.
	Outlet of expansion valve is not frosted, low-pressure gauge indicates vacuum.	- Faulty expansion valve - Moisture in system	- Replace - Recover, evacuate, and recharge with specified amount.
	Excessive bubbles in sight glass; condenser is not hot.	Insufficient refrigerant in system	- Repair the leaks. - Recover, evacuate, and recharge with specified amount. - Charge as required.
Suction (low) pressure abnormally low	Expansion valve is not frosted, and low-pressure line is not cold. Low-pressure gauge indicates vacuum.	- Frozen expansion valve (Moisture in system) - Faulty expansion valve	- Recover, evacuate, and recharge with specified amount. - Replace the expansion valve.
	Discharge temperature is low, and the air flow from vents is restricted.	Frozen evaporator	Run the fan with compressor off, then check evaporator temperature sensor.
	Expansion valve is frosted.	Clogged expansion valve	Clean or replace.
	Low-pressure hose and check joint are cooler than the temperature around evaporator.	Expansion valve open too long	Repair or replace.
Suction pressure abnormally high	Suction pressure is lowered when condenser is cooled by water.	Excessive refrigerant in system	Recover, evacuate, and recharge with specified amount.
	High and low-pressure are equalized as soon as the compressor is stopped, and both gauges fluctuate while running.	- Faulty gasket - Faulty high-pressure valve - Foreign particle stuck in high-pressure valve	Replace the compressor.
	Reduced air flow through condenser.	- Clogged condenser or radiator fins - Condenser or radiator fan not working properly	- Clean - Check voltage and fan rpm. - Check fan direction.
Suction and discharge pressures abnormally high	No bubbles in sight glass when condenser is cooled by water.	Excessive refrigerant in system	Recover, evacuate, and recharge with specified amount.
	Low-pressure hose and metal end areas are cooler than evaporator.	Clogged or kinked low-pressure hose parts	Repair or replace.
	Temperature around expansion valve is too low compared with that around receiver/dryer.	Clogged high-pressure line	Repair or replace.
Refrigerant leaks	Compressor clutch is dirty.	Compressor shaft seal leaking	Replace the compressor.
	Compressor bolt(s) are dirty.	Leaking around bolt(s)	Tighten bolt(s) or replace compressor.
	Compressor gasket is wet with oil.	Gasket leaking	Replace the compressor.

G01822588

Fig. 155: A/C System Pressure Test Chart