

Heater and Air Conditioning

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SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

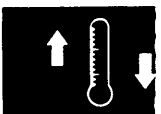
The Acura 1.6EL SRS includes a driver's airbag located in the steering wheel hub, and a passenger's airbag located in the dashboard above the glove box. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents page include, or are located near, SRS components. Servicing, disassembling or replacing these items will require special precautions and tools, and should therefore be done by an authorized Acura dealer.

⚠ WARNING

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

NOTE: The original radio has a coded theft protection circuit. Be sure to get the customer's code number before
— disconnecting the battery.
— removing the No. 47 (7.5 A) fuse from the under-hood fuse/relay box.
— removing the radio.

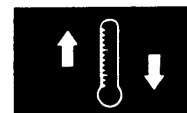
After service, reconnect power to the radio and turn it on. When the word "CODE" is displayed, enter the customer's 5-digit code to restore radio operation.



Heater

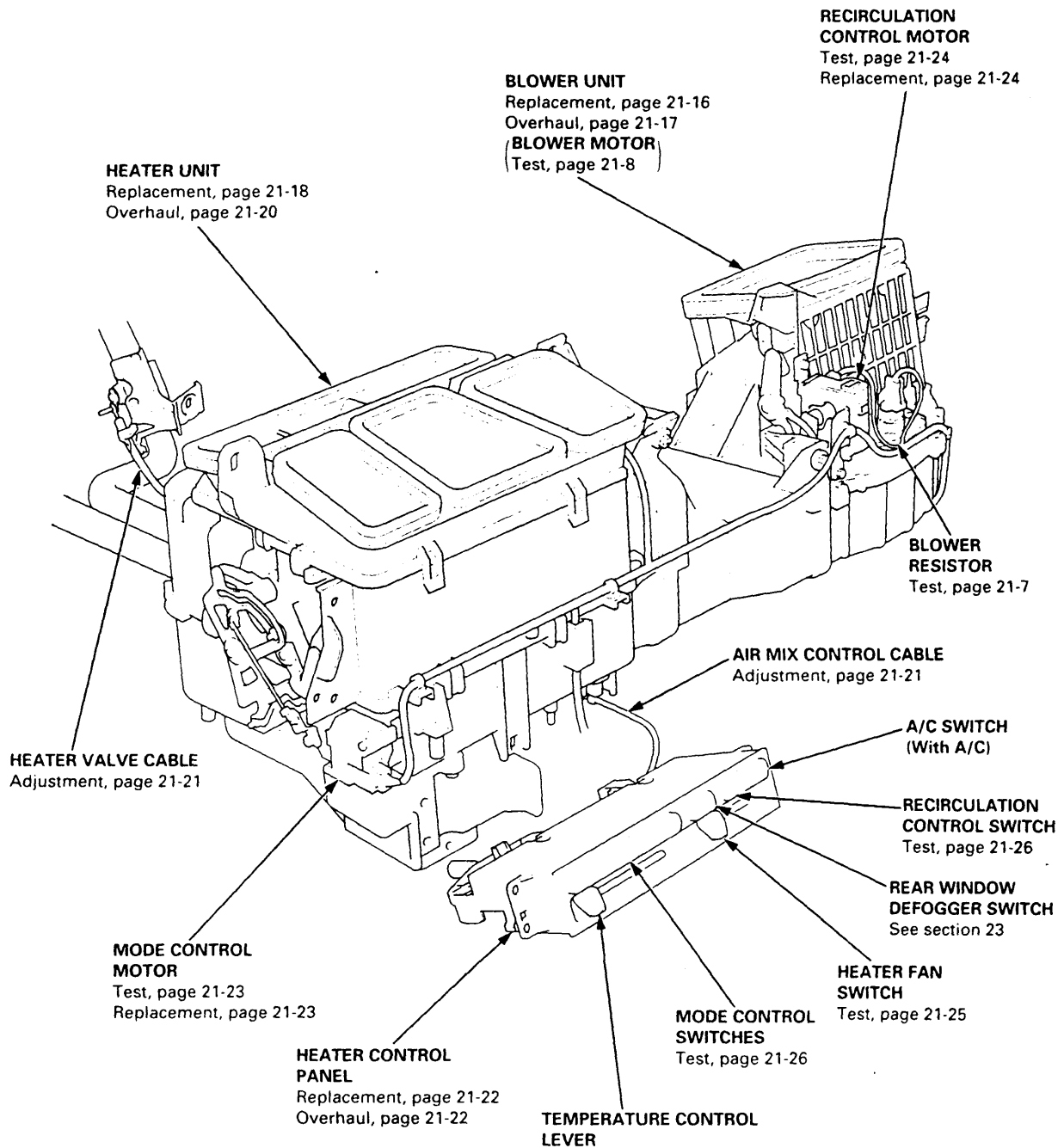
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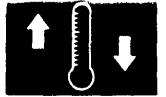
* Read SRS precautions before working in this area.



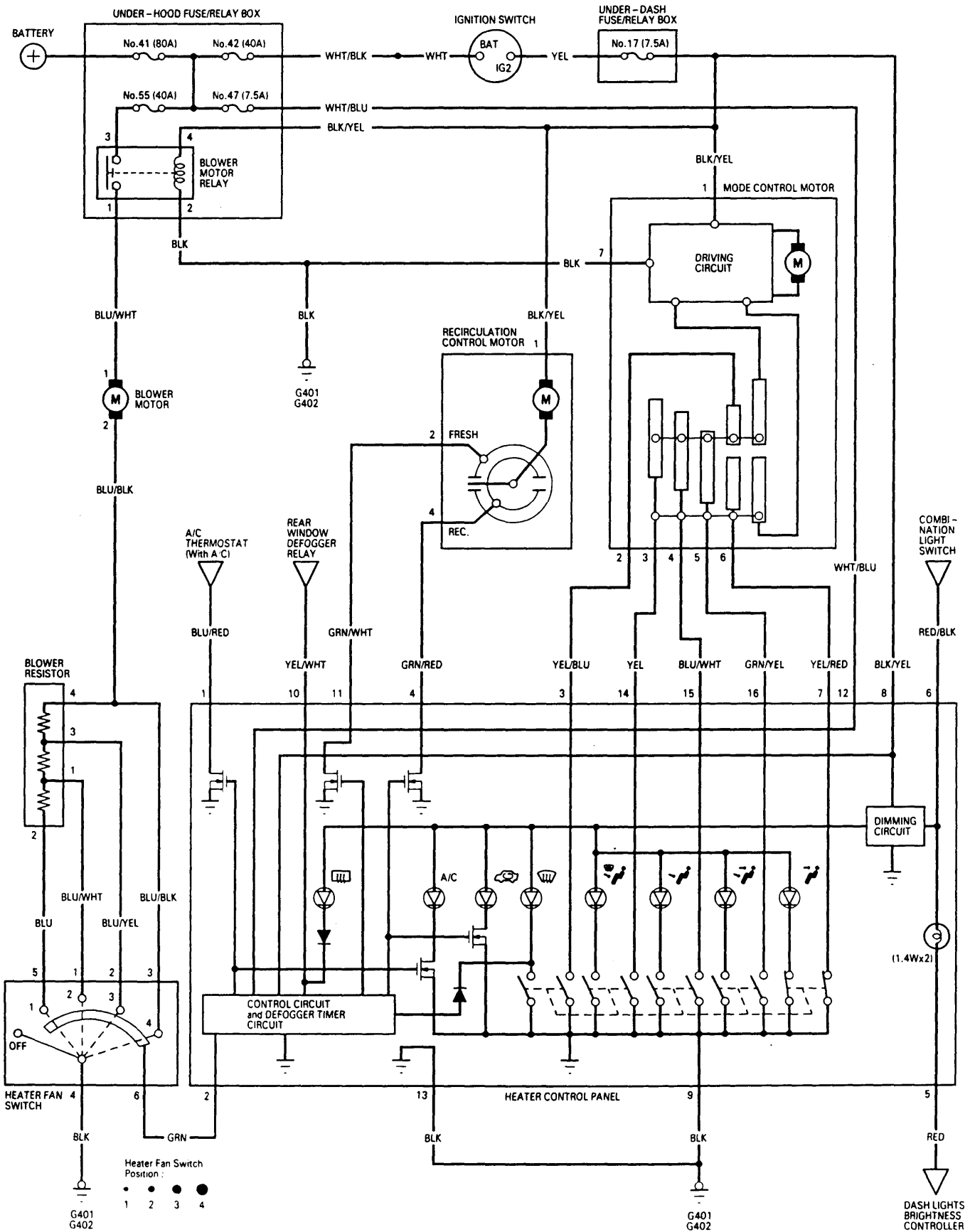
Illustrated Index

SRS components are located in this area. Review the SRS component locations, precautions, and procedures in the SRS section (24) before performing repairs or service.





Circuit Diagram



Troubleshooting

Symptom Chart

NOTE:

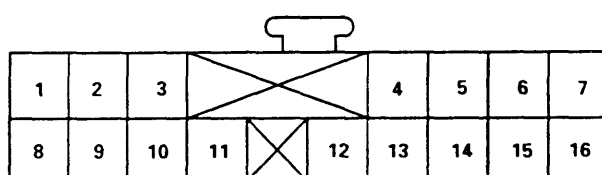
- Check the engine coolant level, and allow the engine to warm up before troubleshooting.
- Any abnormality must be corrected before continuing the test.
- Because of the precise measurements needed, use a multimeter when testing.
- Before performing any troubleshooting procedures check:
 - Fuses No. 47 (7.5 A), No. 55 (40 A) in the under-hood fuse/relay box, and No. 17 (7.5 A) in the under-dash fuse/relay box.
 - Grounds No. G401, G402
 - Cleanliness and tightness of all connectors

Symptom		Remedy
Hot air flow is low.	Blower motor runs, but one or more speeds are inoperative.	Perform the procedures in the flowchart (see page 21-6).
	Blower runs properly.	Check for the following: • Clogged heater duct • Clogged heater outlet • Incorrect door position
No hot air flow.	Blower motor does not run at all.	Perform the procedures in the flowchart (see page 21-8).
	Blower motor runs.	Check for the following: • Clogged heater duct • Clogged blower outlet • Clogged heater valve • Faulty air mix door • Heater valve cable adjustment (see page 21-21) • Air mix control cable adjustment (see page 21-21) • Faulty cooling system thermostat (see section 10) • Clogged evaporator (with air conditioning) • Frozen evaporator (with air conditioning)
Mode control motor does not run, or one or more modes are inoperative.		Perform the procedures in the flowchart (see page 21-11).
Recirculation control door does not change between FRESH and RECIRCULATE.		Perform the procedures in the flowchart (see page 21-14).



Heater Control Panel Input/Output Signals

HEATER CONTROL PANEL 16P CONNECTOR

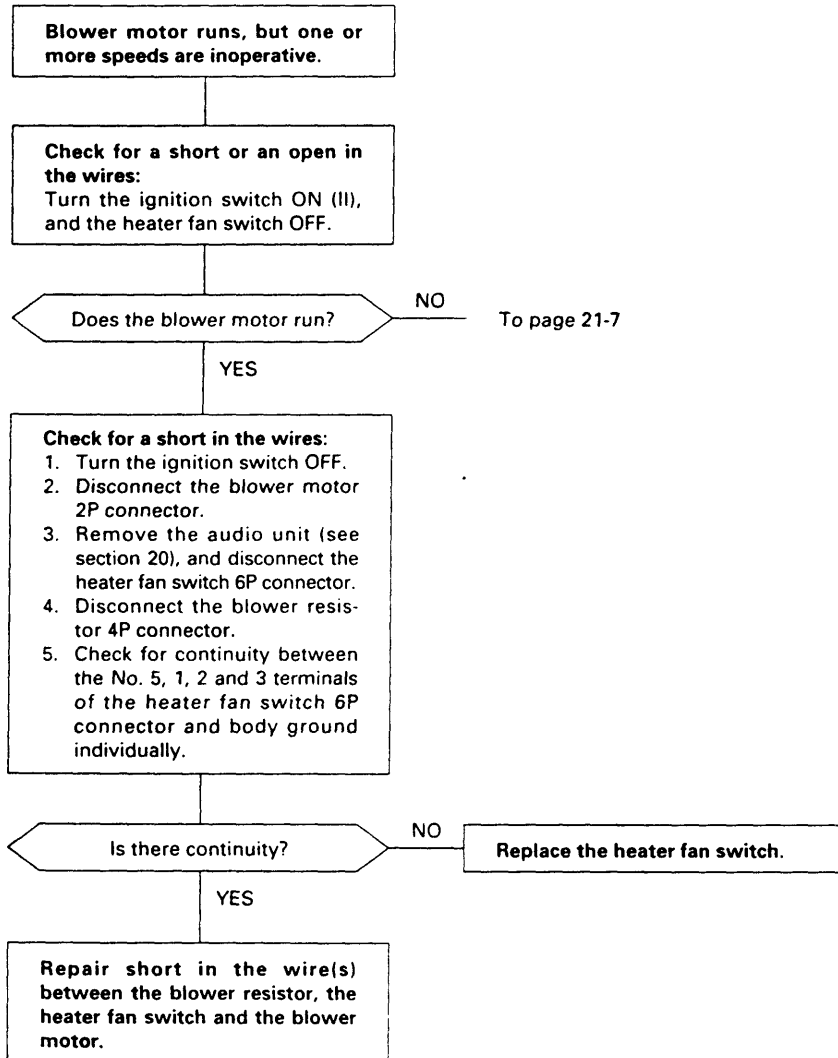


Wire side of female terminals

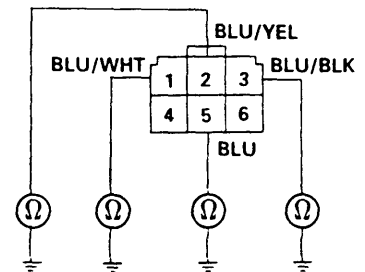
Cavity	Wire color	Signal		Cavity	Wire color	Signal	
1	BLU/RED	A/C THERMOSTAT	INPUT	9	BLK	MODE SWITCH GROUND	OUTPUT
2	GRN	HEATER FAN SWITCH	OUTPUT	10	YEL/WHT	REAR WINDOW DEFOGGER RELAY	INPUT
3	YEL/BLU	DEF	INPUT	11	GRN/WHT	FRESH	INPUT
4	GRN/RED	RECIRCULATE	INPUT	12	WHT/BLU	+B (Power)	INPUT
5	RED	DASH LIGHTS BRIGHTNESS CONTROLLER	OUTPUT	13	BLK	GROUND	OUTPUT
6	RED/BLK	COMBINATION LIGHT SWITCH (Via No. 30 (7.5 A) fuse)	INPUT	14	YEL	HEAT/DEF	INPUT
7	YEL/RED	VENT	INPUT	15	BLU/WHT	HEAT	INPUT
8	BLK/YEL	IG2 (Power)	INPUT	16	GRN/YEL	HEAT/VENT	INPUT

Troubleshooting

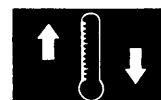
Blower Motor Speed



HEATER FAN SWITCH 6P CONNECTOR



Wire side of female terminals



From page 21-6

Check the blower resistor:

1. Turn the ignition switch OFF.
2. Disconnect the blower resistor 4P connector.
3. Measure the resistance between the No. 2 and No. 4 terminals of the blower resistor.

Is there approx. 2 – 3 ohms?

NO

Replace the blower resistor.

YES

Check for an open in the wires:

1. Reconnect the blower resistor 4P connector.
2. Remove the audio unit (see section 20), and disconnect the heater fan switch 6P connector.
3. Turn the ignition switch ON (II).
4. Ground each of the heater fan switch 6P connector terminals individually in the following order: No. 5, 1, 2 and 3.

Does the blower motor run at progressively higher speeds?

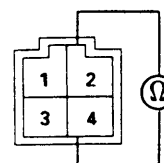
NO

Repair open or cause of excessive resistance in the appropriate wire(s) between the blower resistor and the heater fan switch.

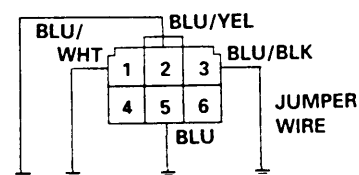
YES

Replace the heater fan switch.

BLOWER RESISTOR



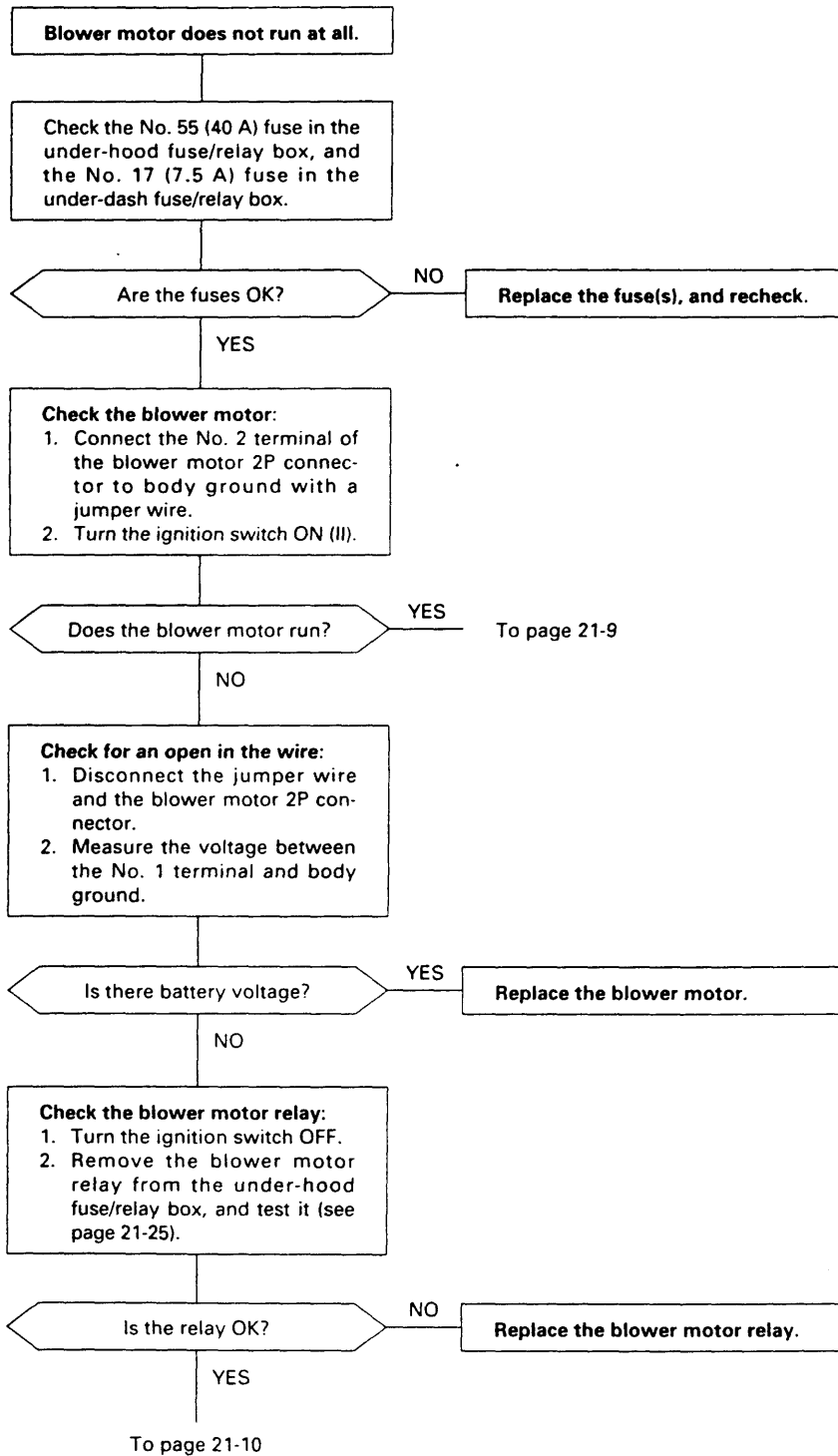
HEATER FAN SWITCH 6P CONNECTOR



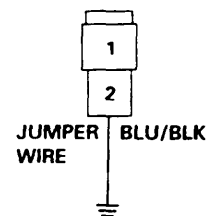
Wire side of female terminals

Troubleshooting

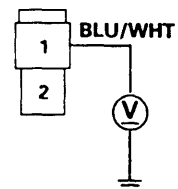
Blower Motor

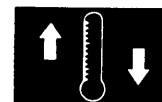


BLOWER MOTOR 2P CONNECTOR

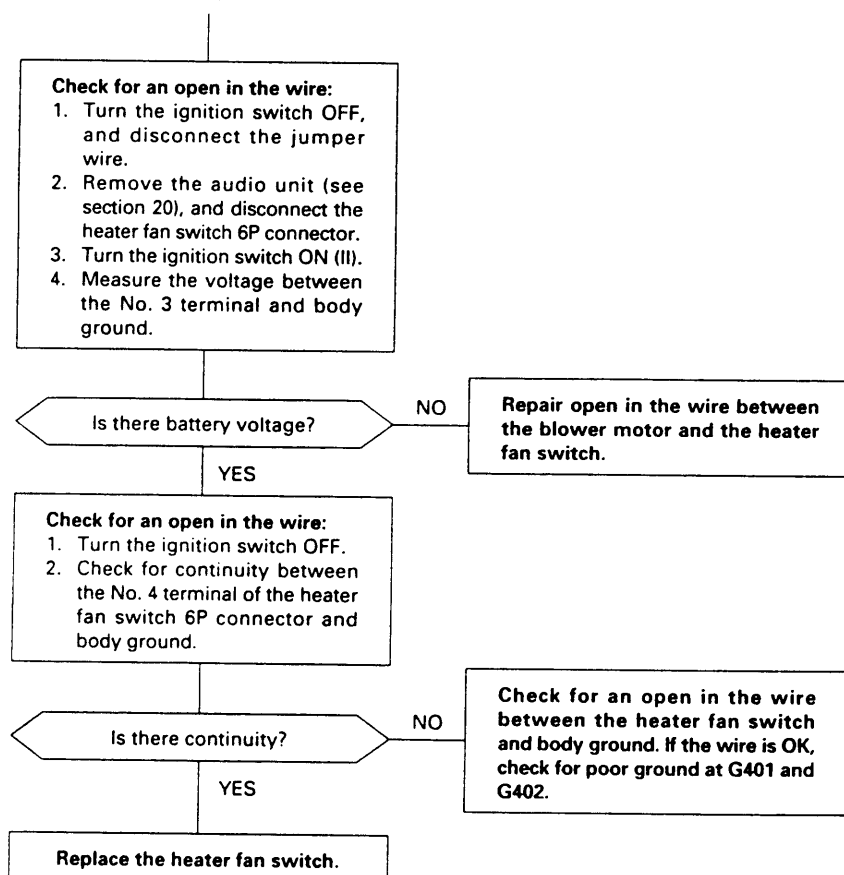


Wire side of female terminals

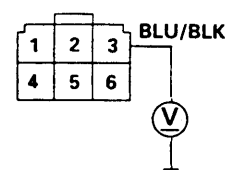




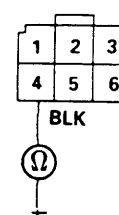
From page 21-8



HEATER FAN SWITCH 6P CONNECTOR



Wire side of female terminals

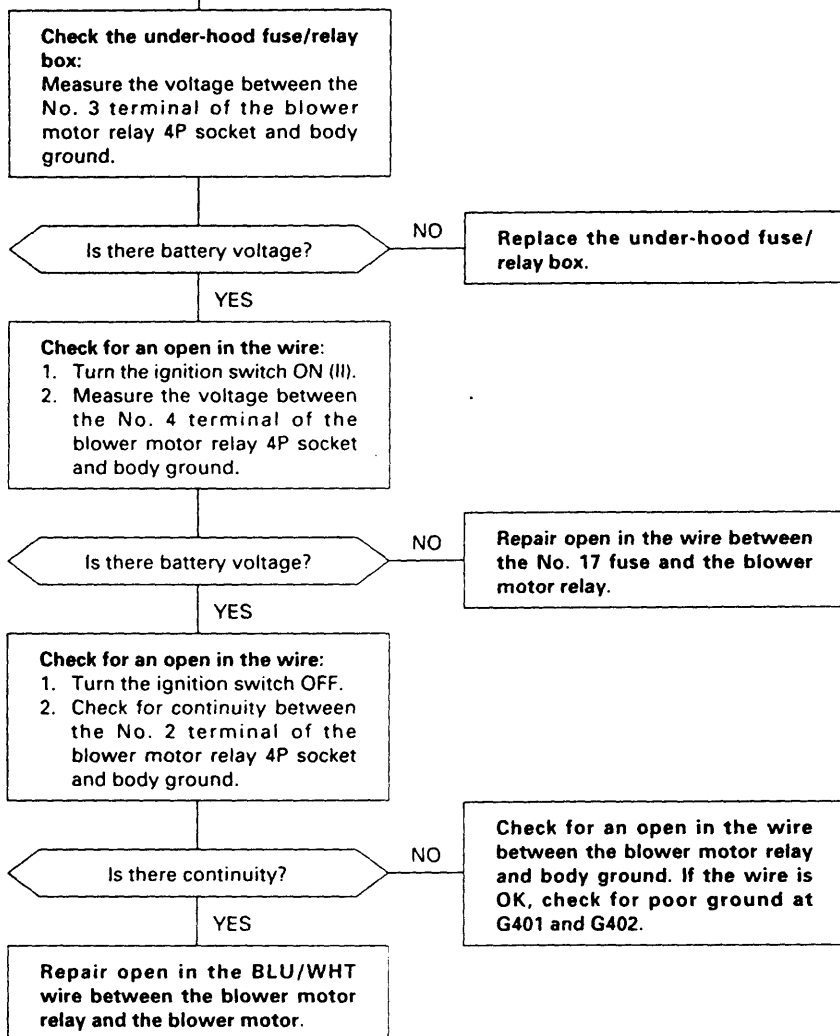


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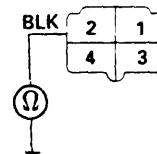
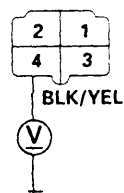
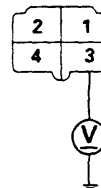
Troubleshooting

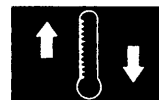
Blower Motor (cont'd)

From page 21-8

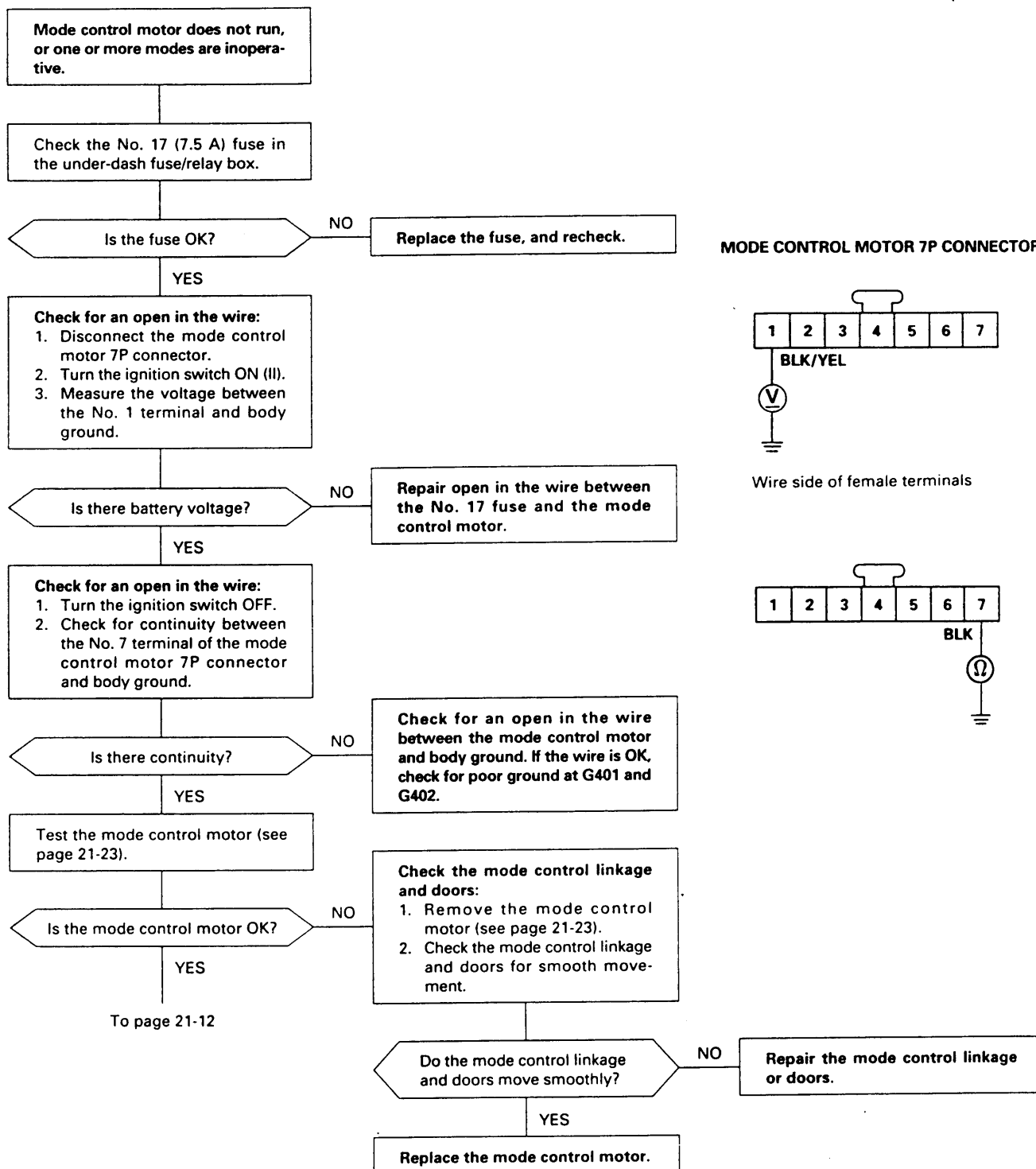


BLOWER MOTOR RELAY 4P SOCKET





Mode Control Motor



(cont'd)

Troubleshooting

Mode Control Motor (cont'd)

From page 21-11

Check for a short in the wires:

1. Remove the audio unit (see section 20), and disconnect the heater control panel 16P connector.
2. Check for continuity between the No. 3, 7, 14, 15 and 16 terminals and body ground individually.

Is there continuity?

YES

Repair any short in the wire(s) between the mode control motor and the heater control panel.

NO

Check for a short to power:

Check the same wires for voltage.

Is there any voltage?

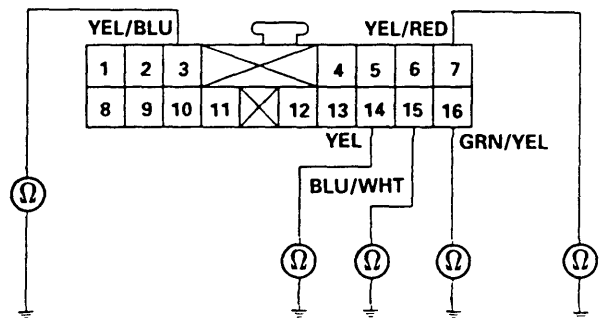
YES

Repair short to power in the wire between the mode control motor and the heater control panel. (This short damages the heater control panel.)

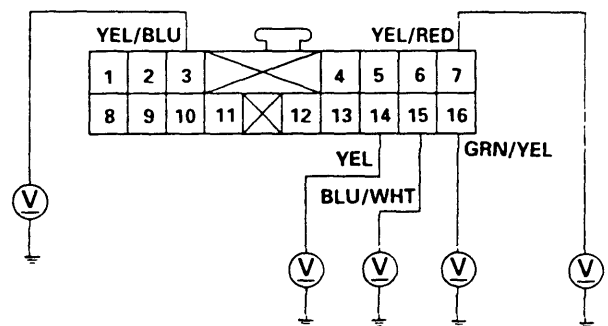
NO

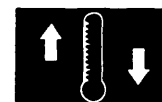
To page 21-13

HEATER CONTROL PANEL 16P CONNECTOR



Wire side of female terminals





From page 21-12

Check for an open in the wires:
Check for continuity between the following terminals of the mode control motor 7P connector and the heater control panel 16P connector.

7P: 16P:
No. 2 — No. 3
No. 3 — No. 14
No. 4 — No. 15
No. 5 — No. 16
No. 6 — No. 7

Is there continuity?

NO

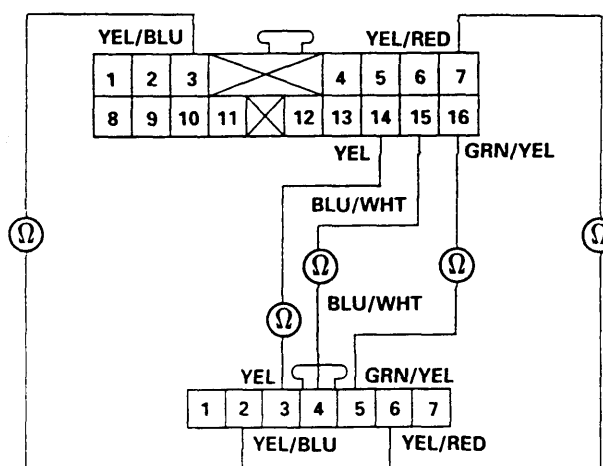
Repair any open in the wire(s) between the mode control motor and the heater control panel.

YES

Check for loose wires or poor connections at the heater control panel 16P connector and at the mode control motor 10P connector. If the connections are good, replace the heater control panel.

HEATER CONTROL PANEL 16P CONNECTOR

Wire side of female terminals

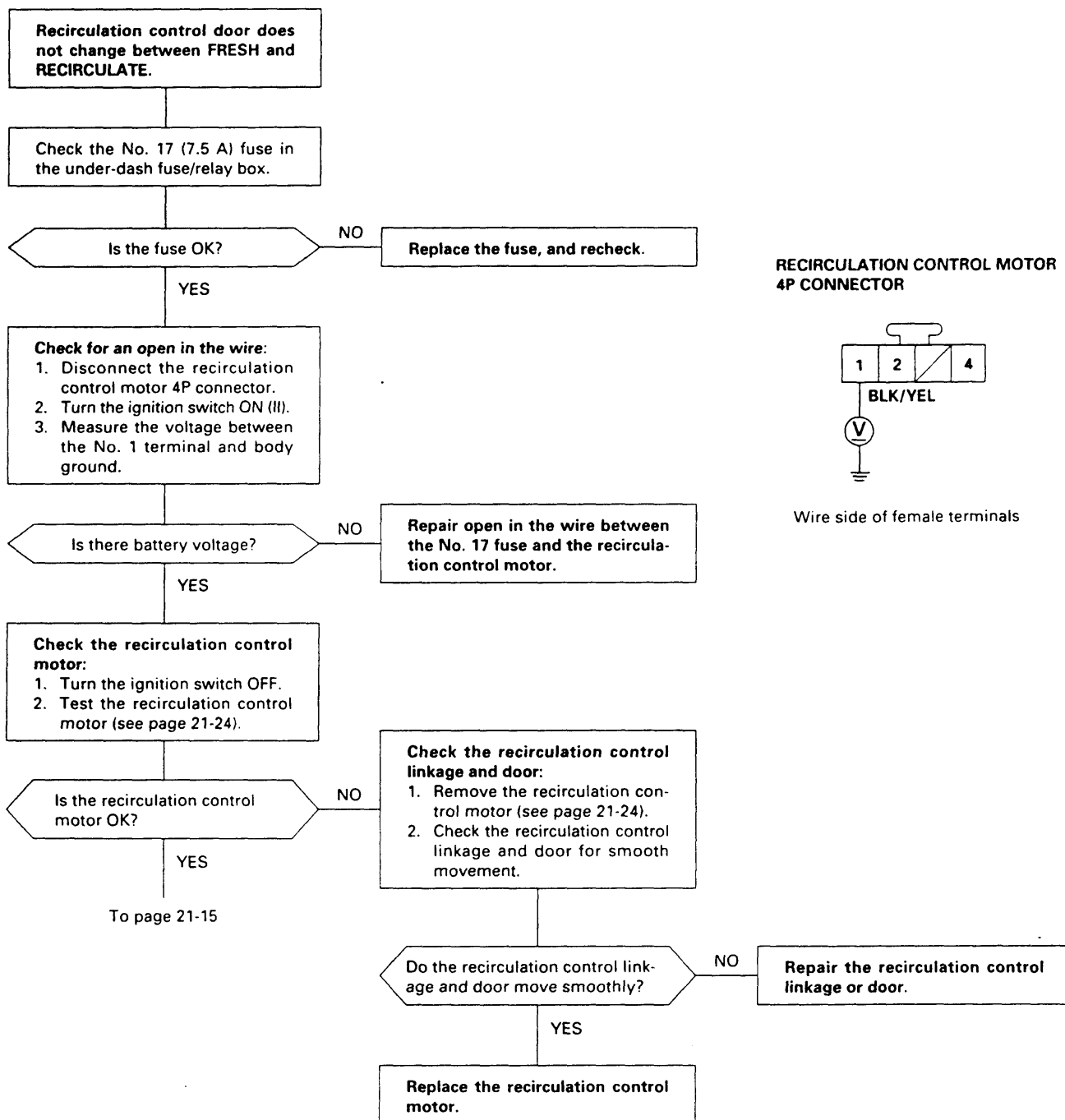


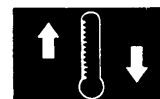
MODE CONTROL MOTOR 7P CONNECTOR

Wire side of female terminals

Troubleshooting

Recirculation Control Motor





From page 21-14

Check for a short in the wires:

1. Remove the audio unit (see section 20), and disconnect the heater control panel 16P connector.
2. Check for continuity between the No. 4 and No. 11 terminals and body ground individually.

Is there continuity?

YES

Repair short in the wire(s) between the recirculation control motor and the heater control panel.

NO

Check for a short to power:

Check the same wires for voltage.

Is there any voltage?

YES

Repair short to power in the wire between the recirculation control motor and the heater control panel. (This short damages the heater control panel.)

NO

Check for an open in the wires:

Check for continuity between the following terminals of the recirculation control motor 4P connector and the heater control panel 16P connector.

4P: 16P:
No. 2 — No. 11
No. 4 — No. 4

Is there continuity?

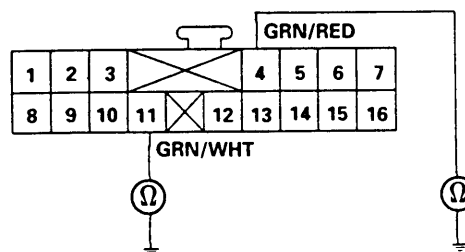
NO

Repair open in the wire(s) between the recirculation control motor and the heater control panel.

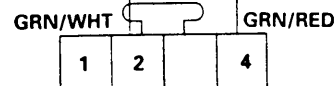
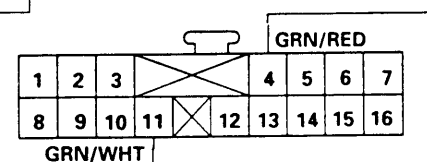
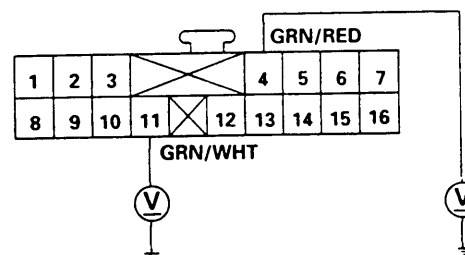
YES

Check for loose wires or poor connections at the heater control panel 16P connector and at the recirculation control motor 4P connector. If the connections are good, replace the heater control panel.

HEATER CONTROL PANEL 16P CONNECTOR



Wire side of female terminals



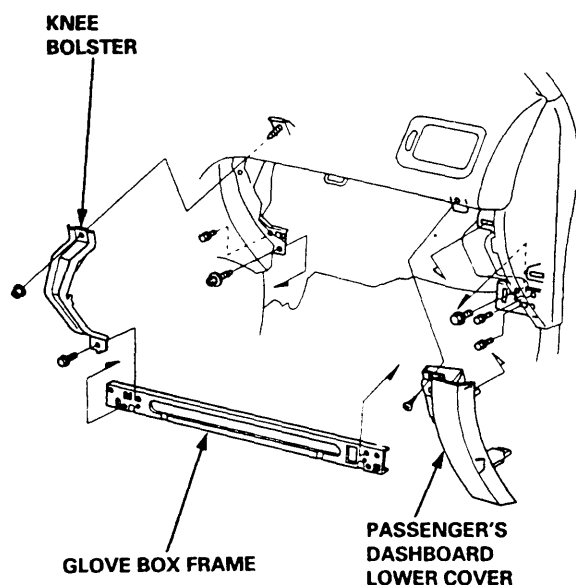
RECIRCULATION CONTROL MOTOR 4P CONNECTOR

Wire side of female terminals

Blower Unit

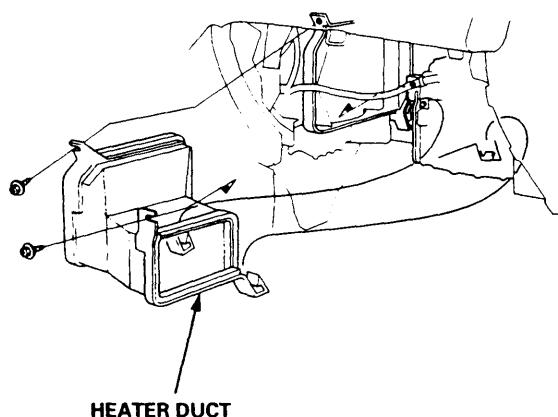
Replacement

1. Remove the glove box (see section 20).
2. Remove the self-tapping screw and the passenger's dashboard lower cover. Remove the bolt, the nut and the knee bolster, then remove the bolts and the glove box frame.



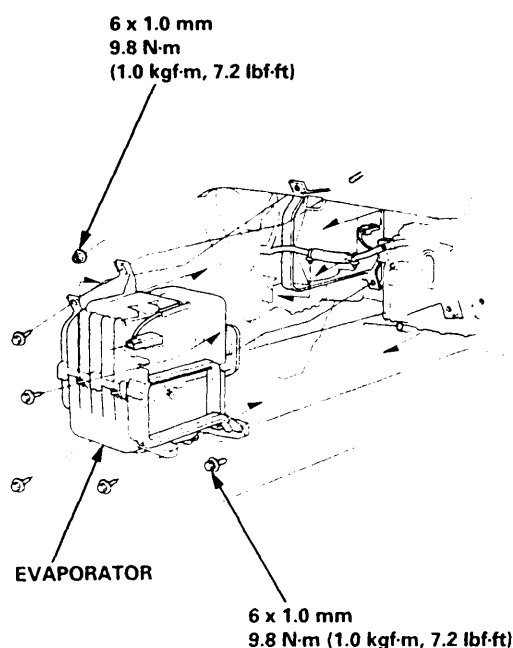
Without Air Conditioning

- 3-a. Remove the wire harness from the heater duct, then remove the self-tapping screws and the heater duct.

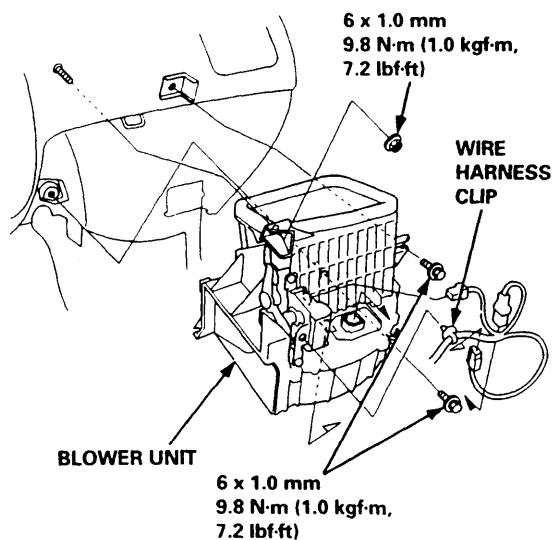


With Air Conditioning

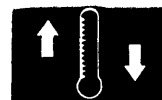
- 3-b. Remove the evaporator (see page 22-27).



4. Disconnect the connectors from the blower motor, blower resistor and recirculation control motor. Remove the wire harness clip from the recirculation control motor, and release the wire harness from the clamp on the blower unit. Remove the mounting bolts, the mounting nut and the blower unit.



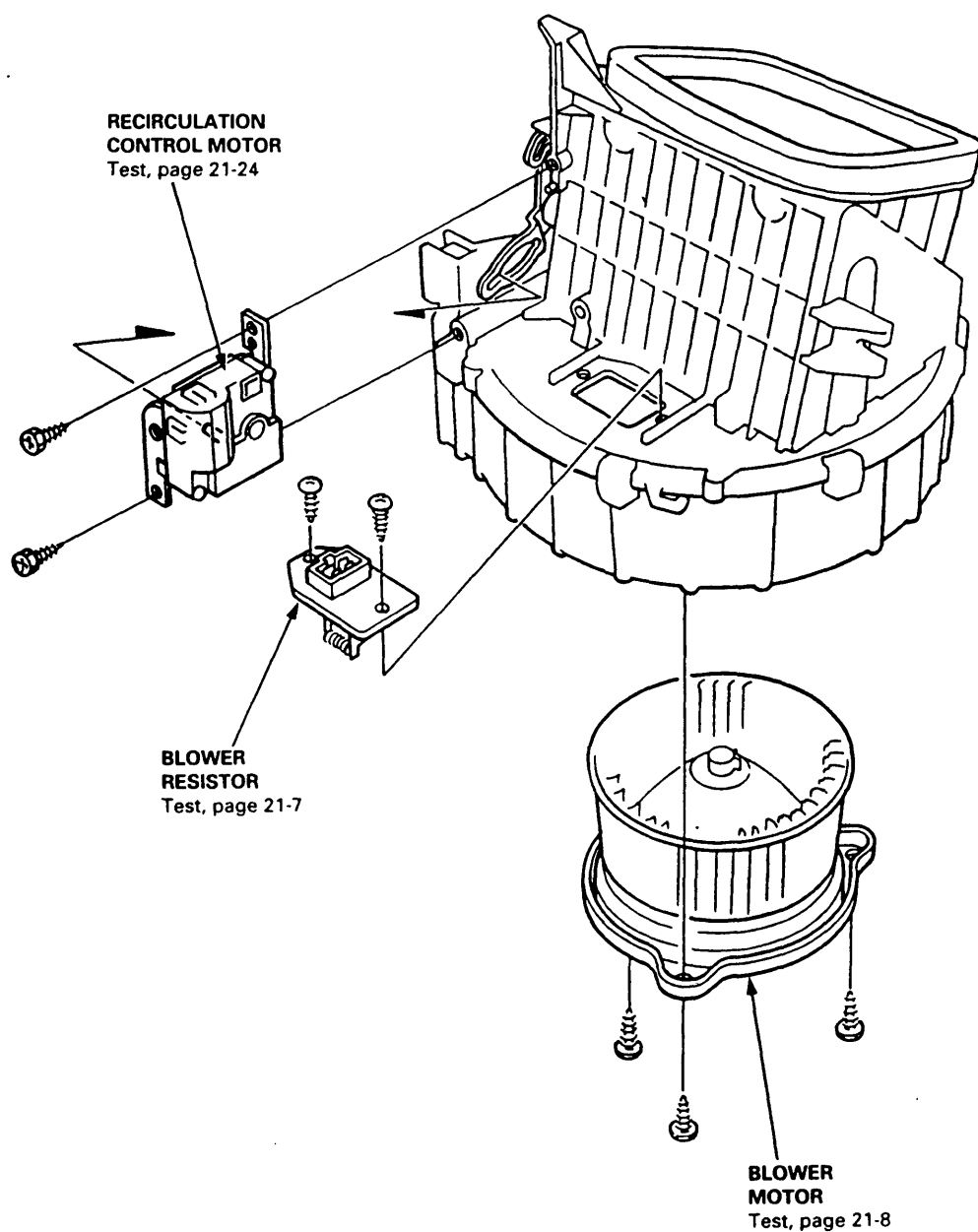
5. Install in the reverse order of removal. Make sure that there is no air leakage.



Overhaul

NOTE:

- The recirculation control motor, the blower resistor and the blower motor can be replaced without removing the blower unit.
- Before reassembly, make sure that the recirculation control door and linkage move smoothly without binding.
- After reassembly, make sure the recirculation control motor runs smoothly (see page 21-24).
- Make sure that there is no air leakage.



Heater Unit

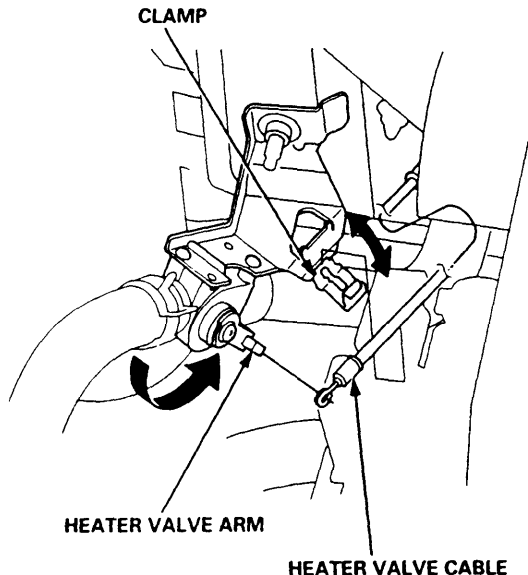
Replacement

SRS components are located in this area. Review the SRS component locations, precautions, and procedures in the SRS section (24) before performing repairs or service.

1. Make sure you have the anti-theft code for the radio, then write down the frequencies for the radio's preset buttons.
2. Disconnect the negative cable from the battery.
3. When the engine is cool, set the temperature control lever to MAX. HOT (open the heater valve), then drain the engine coolant from the radiator (see section 10).

⚠ WARNING Do not remove the radiator cap when the engine is hot; the engine coolant is under pressure and could severely scald you.

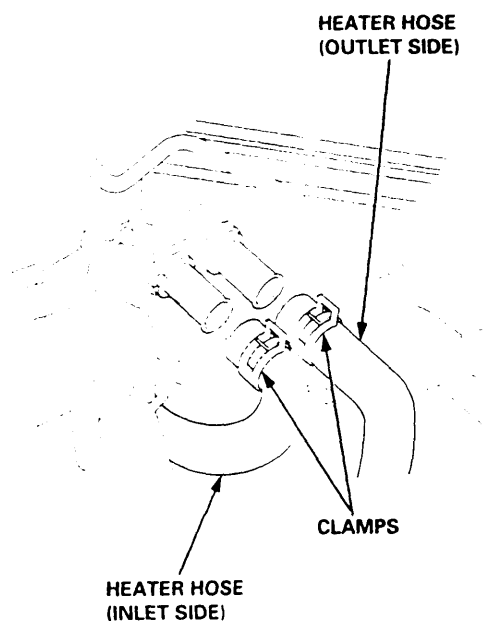
4. Open the clamp, then disconnect the heater valve cable from the heater valve arm.



5. Disconnect the heater hoses from the heater unit.

CAUTION: Engine coolant will damage paint. Quickly rinse any spilled engine coolant from painted surfaces.

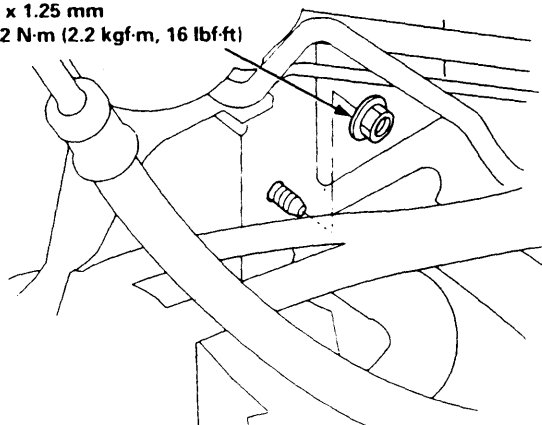
NOTE: Engine coolant will run out when the hoses are disconnected; drain it into a clean drip pan.

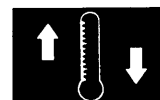


6. Remove the mounting nut from the heater unit.

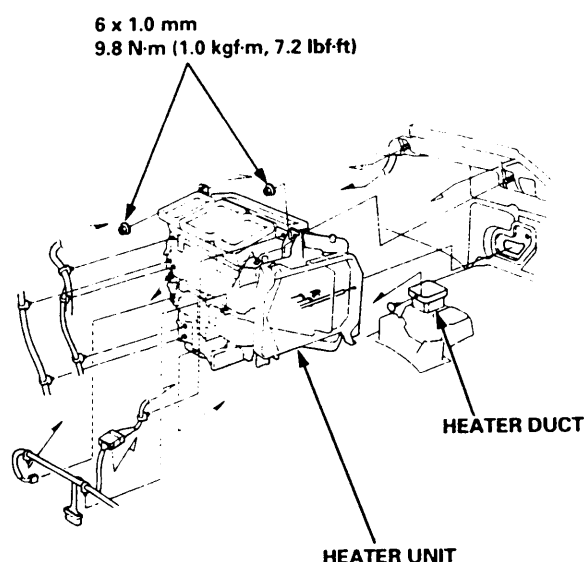
NOTE: When removing the mounting nut, take care not to damage or bend the fuel lines, the brake lines, etc.

8 x 1.25 mm
22 N·m (2.2 kgf·m, 16 lbf·ft)





7. Remove the dashboard (see section 20).
8. Remove the heater duct (see page 21-16) or evaporator (see page 22-27).
9. Disconnect the connector from the mode control motor, and remove the wire harness clips and wire harness from the heater unit. Remove the clip from the heater duct, then remove the mounting nuts and the heater unit.



10. Install in the reverse order of removal. Make note of the following items.
 - Apply sealant to the grommets.
 - Do not interchange the inlet and outlet heater hoses. Make sure that the clamps are secure.
 - Refill the cooling system with engine coolant (see section 10).
 - Adjust the air mix control cable and the heater valve cable (see page 21-21).
 - Make sure that there is no air leakage.
 - Enter the anti-theft code for the radio, then enter the customer's radio station presets.

Heater Unit

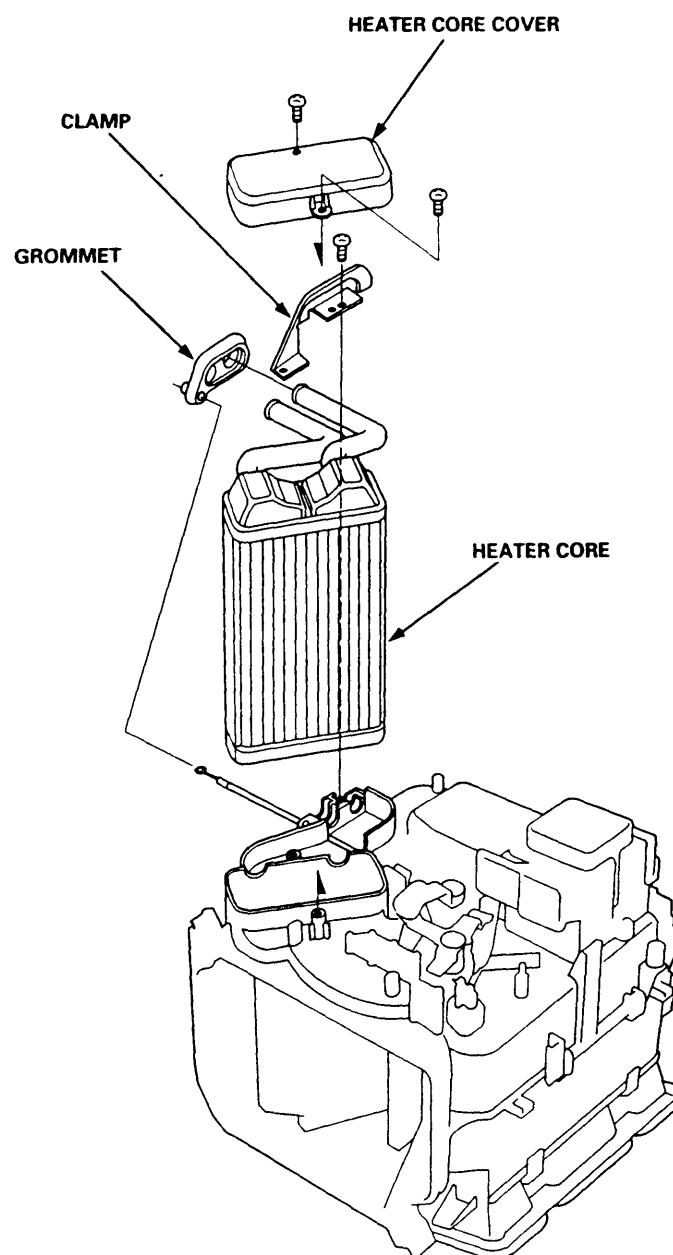
Overhaul

1. Remove the self-tapping screws and the heater core cover.
2. Pull out the grommet from the heater core pipes.
3. Remove the self-tapping screw and the clamp.

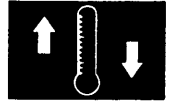
4. Pull out the heater core from the heater unit.

NOTE: Be careful not to bend the inlet and outlet pipes during heater core removal.

5. Assemble in the reverse order of disassembly.

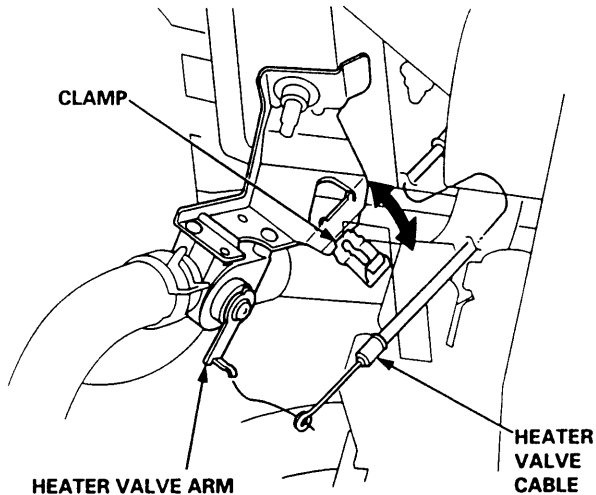


Temperature Control

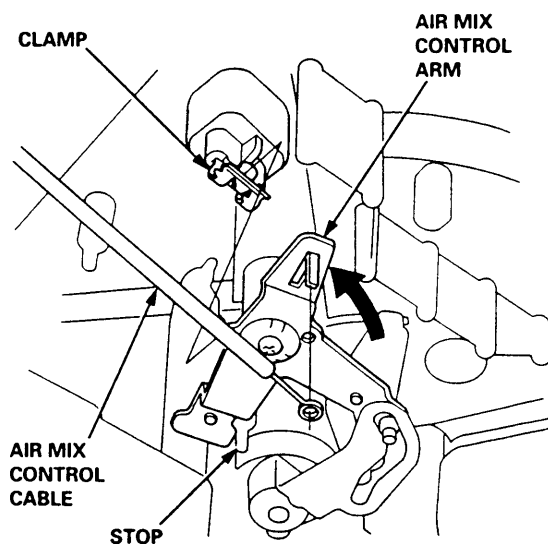


Adjustment

1. Under the hood. Open the cable clamp, then disconnect the heater valve cable from the heater valve arm.

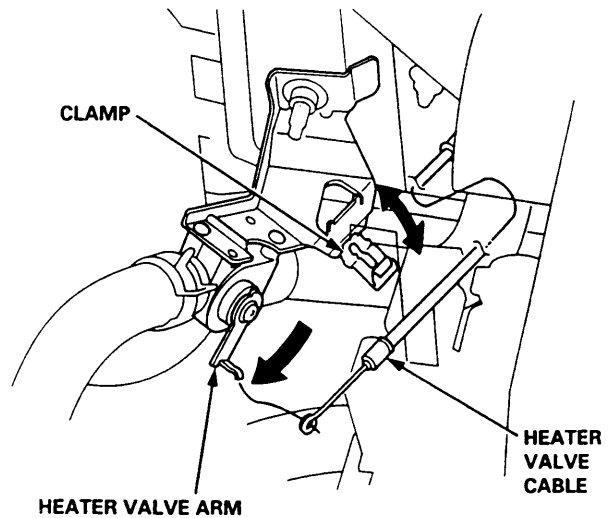


2. Under the dash, disconnect the air mix control cable housing from the cable clamp, and air mix control cable from the air mix control arm.



3. Set the temperature control lever to MAX. COOL.
4. With the air mix control cable attached to the air mix control arm, gently pull on the outer cable housing to fully close the door and to remove any slack in the cable. Don't pull too hard, or the temperature control lever will move.
5. Hold the air mix control arm against the stop, then snap the air mix control cable housing into the cable clamp.

6. Under the hood, move the heater valve arm to the fully closed position, then attach the heater valve cable to the heater valve arm.

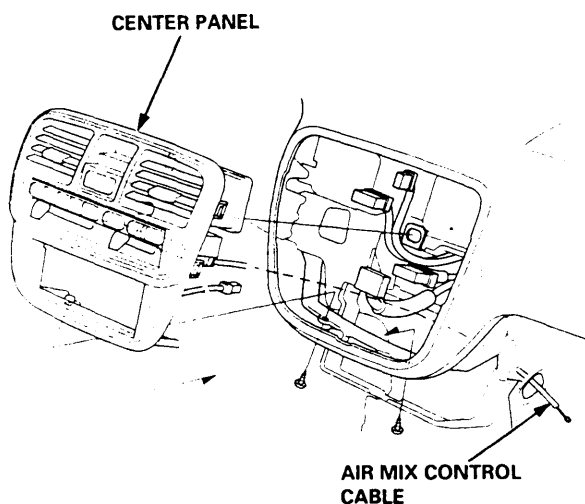


7. Hold the heater valve arm in the closed position, and gently pull on the heater cable outer housing to take up any slack, then install the heater valve cable housing into the cable clamp.

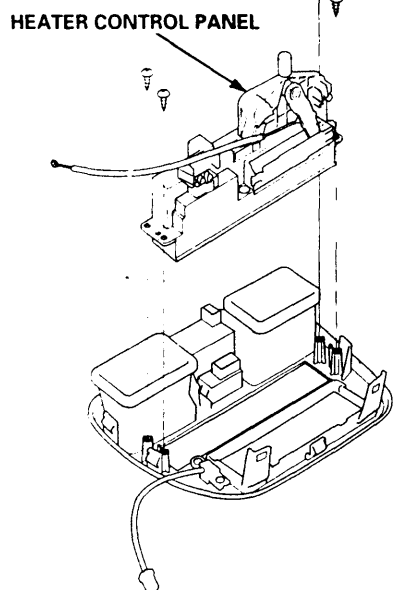
Heater Control Panel

Replacement

1. Remove the audio unit (see section 20).
NOTE: Make sure you have the anti-theft code for the radio, then write down the frequencies for the radio's preset buttons.
2. Disconnect the air mix control cable from the heater unit (see page 21-21).
3. Remove the center panel together with the heater control panel, then disconnect the connectors.

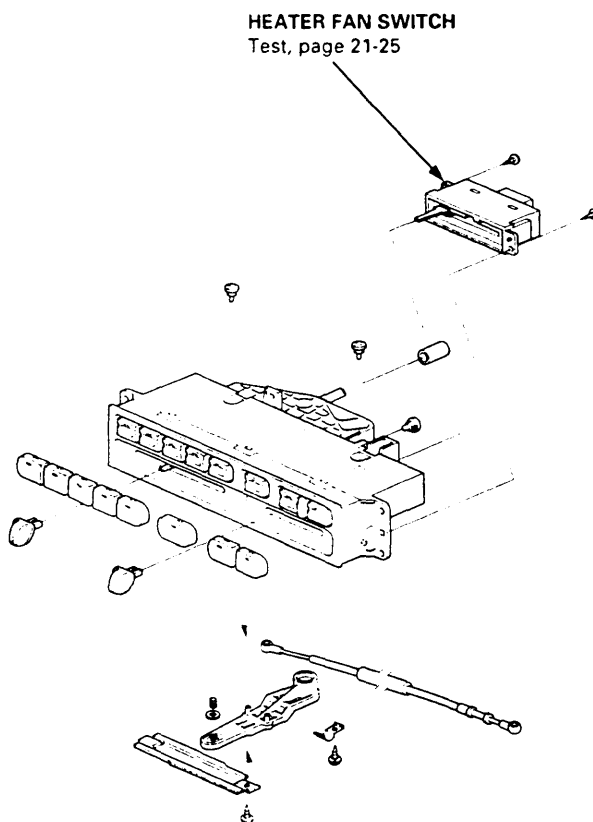


4. Remove the self-tapping screws and the heater control panel from the center panel.

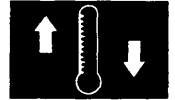


5. Install in the reverse order of removal. Make note of the following items.
 - Adjust the air mix control cable and the heater valve cable (see page 21-21).
 - Enter the anti-theft code for the radio, then enter the customer's radio station presets.

Overhaul



Mode Control Motor

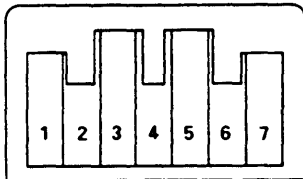


Test

1. Disconnect the 7P connector from the mode control motor.
2. Connect battery power to the No. 1 terminal, and ground the No. 7 terminal.

CAUTION: Never connect the battery in the opposite direction.

MODE CONTROL MOTOR



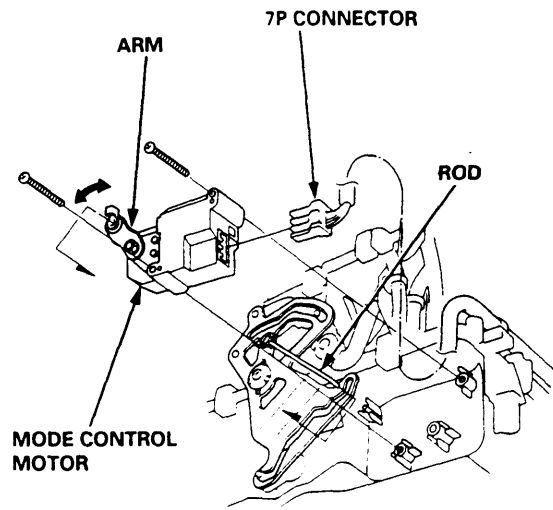
3. Using a jumper wire, connect the No. 7 terminal individually to the No. 2, 3, 4, 5 and 6 terminals in that order. Each time the connection is made, the mode control motor should run smoothly and stop.

NOTE: If the mode control motor does not run when jumping the first terminal, jump that terminal again after jumping the other terminals. The mode control motor is OK if it runs when jumping the first terminal again.

4. If the mode control motor does not run in step 3, remove it, then check the mode control linkage and doors for smooth movement. If they move smoothly, replace the mode control motor.

Replacement

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



2. Remove the rod from the arm of the mode control motor.
3. Remove the self-tapping screws and the mode control motor.
4. Install in the reverse order of removal. After installation, make sure the mode control motor runs smoothly.

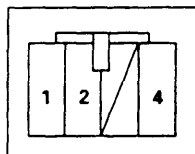
Recirculation Control Motor

Test

1. Disconnect the 4P connector from the recirculation control motor.
2. Connect battery power to the No. 1 terminal, and ground the No. 2 and No. 4 terminals; the recirculation control motor should run smoothly.

CAUTION: Never connect the battery in the opposite direction.

RECIRCULATION CONTROL MOTOR



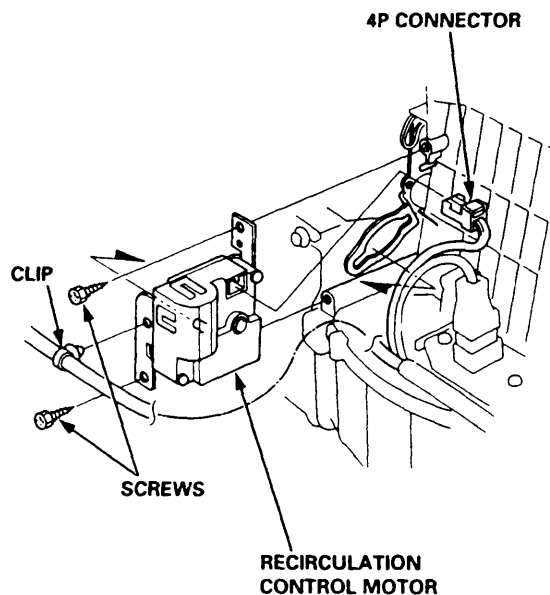
3. Disconnect the No. 2 or No. 4 terminals from ground; the recirculation control motor should stop at FRESH or RECIRCULATE.

NOTE: Don't cycle the recirculation control motor for a long time.

4. If the recirculation control motor does not run in step 2, remove it, then check the recirculation control linkage and door for smooth movement. If they move smoothly, replace the recirculation control motor.

Replacement

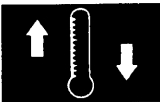
1. Disconnect the 4P connector and the wire harness clip from the recirculation control motor.



2. Remove the self-tapping screws and the recirculation control motor.
3. Install in the reverse order of removal. After installation, make sure the recirculation control motor runs smoothly.

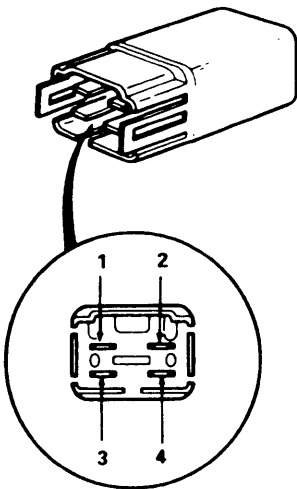
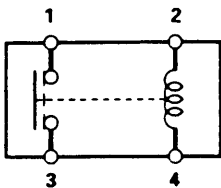
Relay

Heater Fan Switch



Test

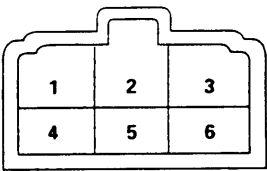
There should be continuity between the No. 1 and No. 3 terminals when power and ground are connected to the No. 2 and No. 4 terminals, and there should be no continuity when power is disconnected.



Test

Check for continuity between the terminals according to the table below.

Terminal Position	1	2	3	4	5	6
OFF						
•				○	○	○
•	○			○		○
•		○		○		○
•			○	○		○

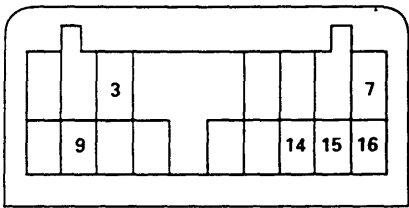


Mode Control Switch

Test

Check for continuity between the terminals according to the table below.

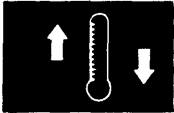
Terminal \ Position	3	7	9	14	15	16
Heat			○	○		
Heat/Def			○	○		
Def	○		○			
Vent		○	○			
Heat/Vent			○	○	○	○



Air Conditioning

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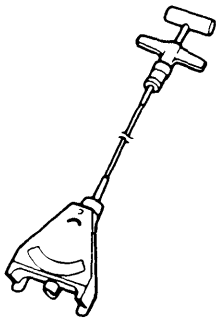
- A/C System Service
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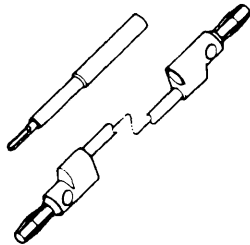
Special Tools

Ref. No.	Tool Number	Description	Qty	Page Reference
①	*07JGG – 001010A	Belt Tension Gauge	1	22-36
②	07SAZ – 001000A	Backprobe Set	2	22-12, 14
③	07947 – 6340300	Driver Attachment	1	22-33
④	07965 – 6920500	Hub Assembly Guide Attachment	1	22-34

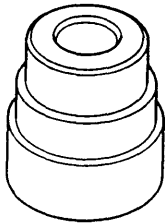
* Included in the Belt Tension Gauge Set, 07TGG – 001000A



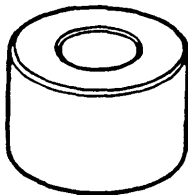
①



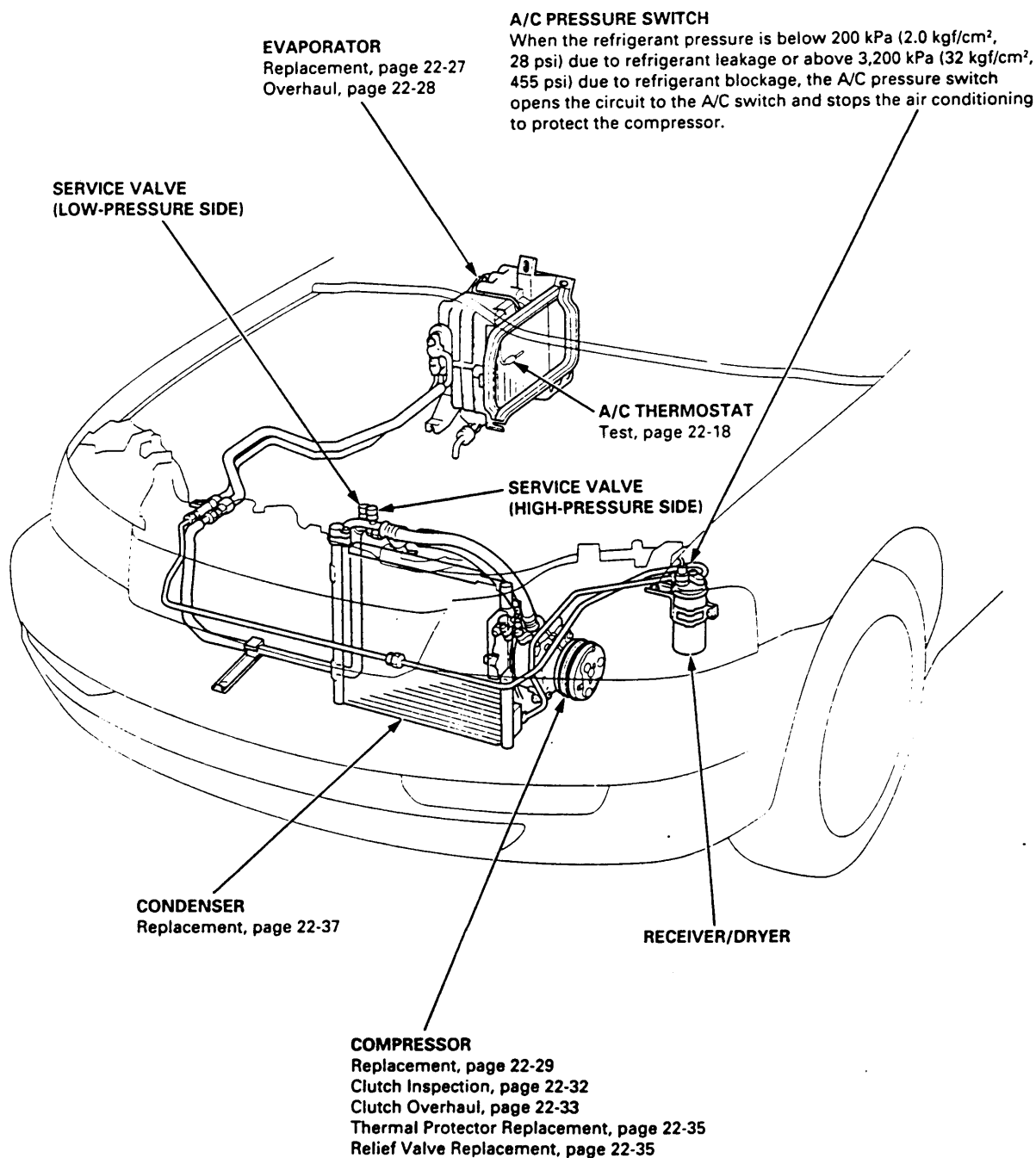
②



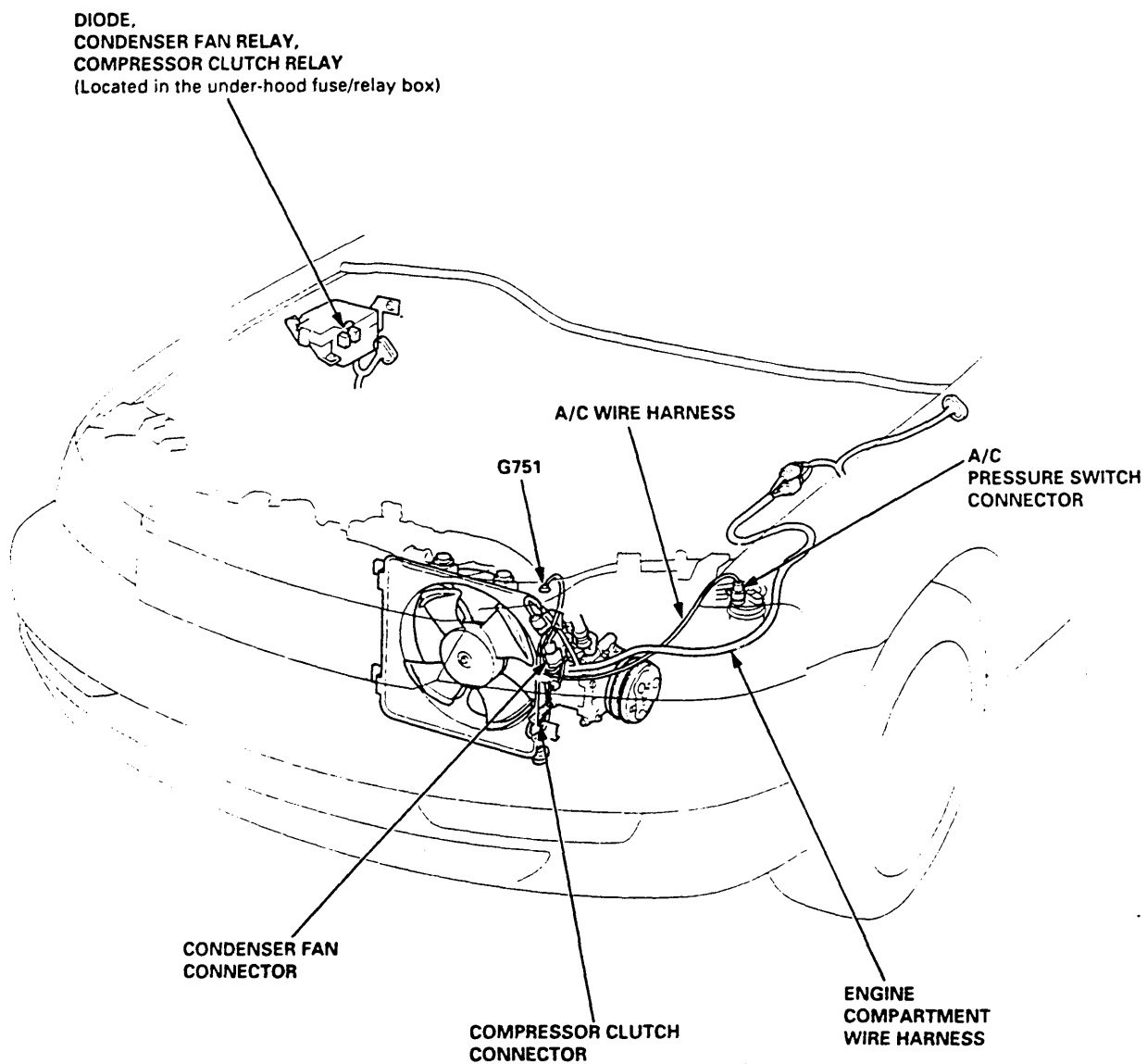
③



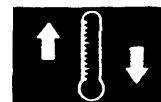
④



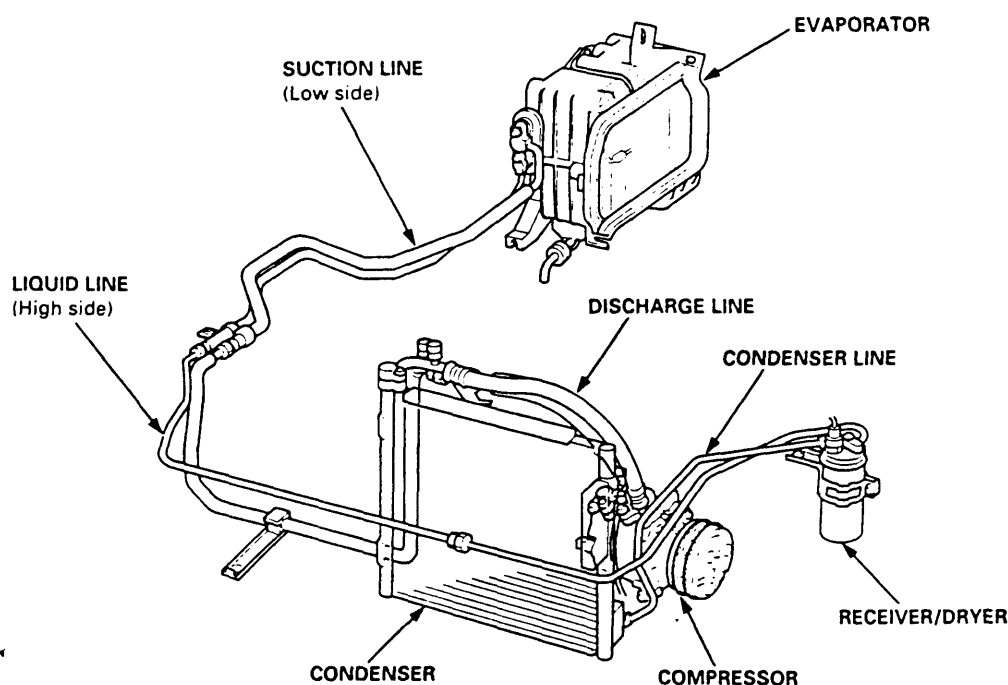
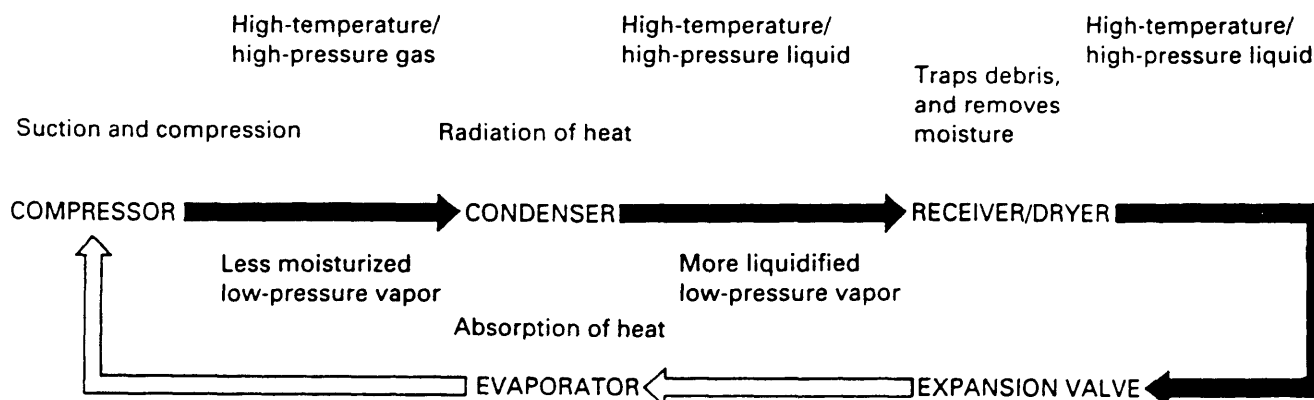
Wiring/Connector Locations



Description



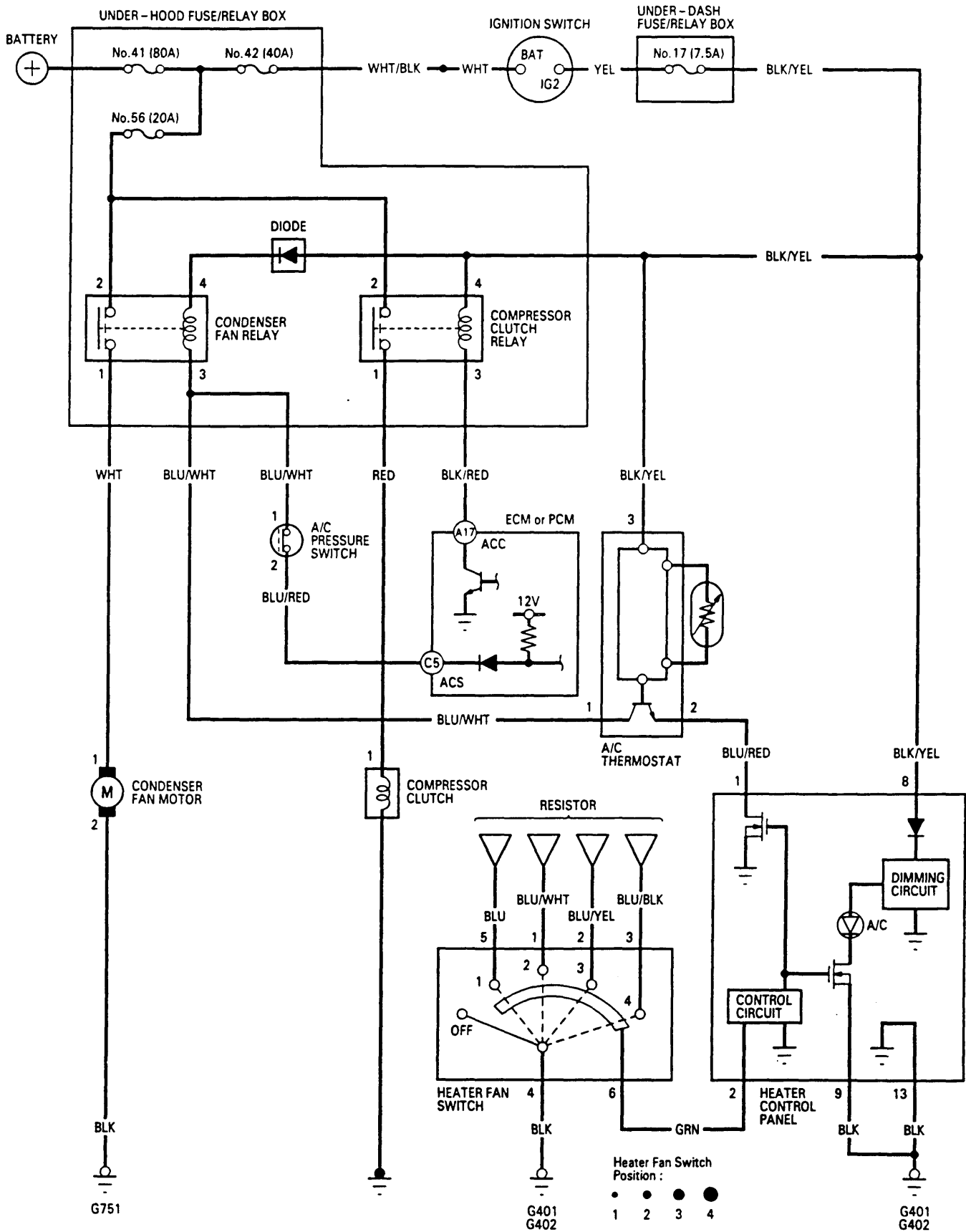
The air conditioner system removes heat from the passenger compartment by circulating refrigerant through the system as shown below.



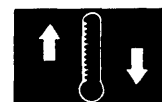
This vehicle uses HFC-134a (R-134a) refrigerant which does not contain chlorofluorocarbons. Pay attention to the following service items:

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

Circuit Diagram



Troubleshooting



Symptom Chart

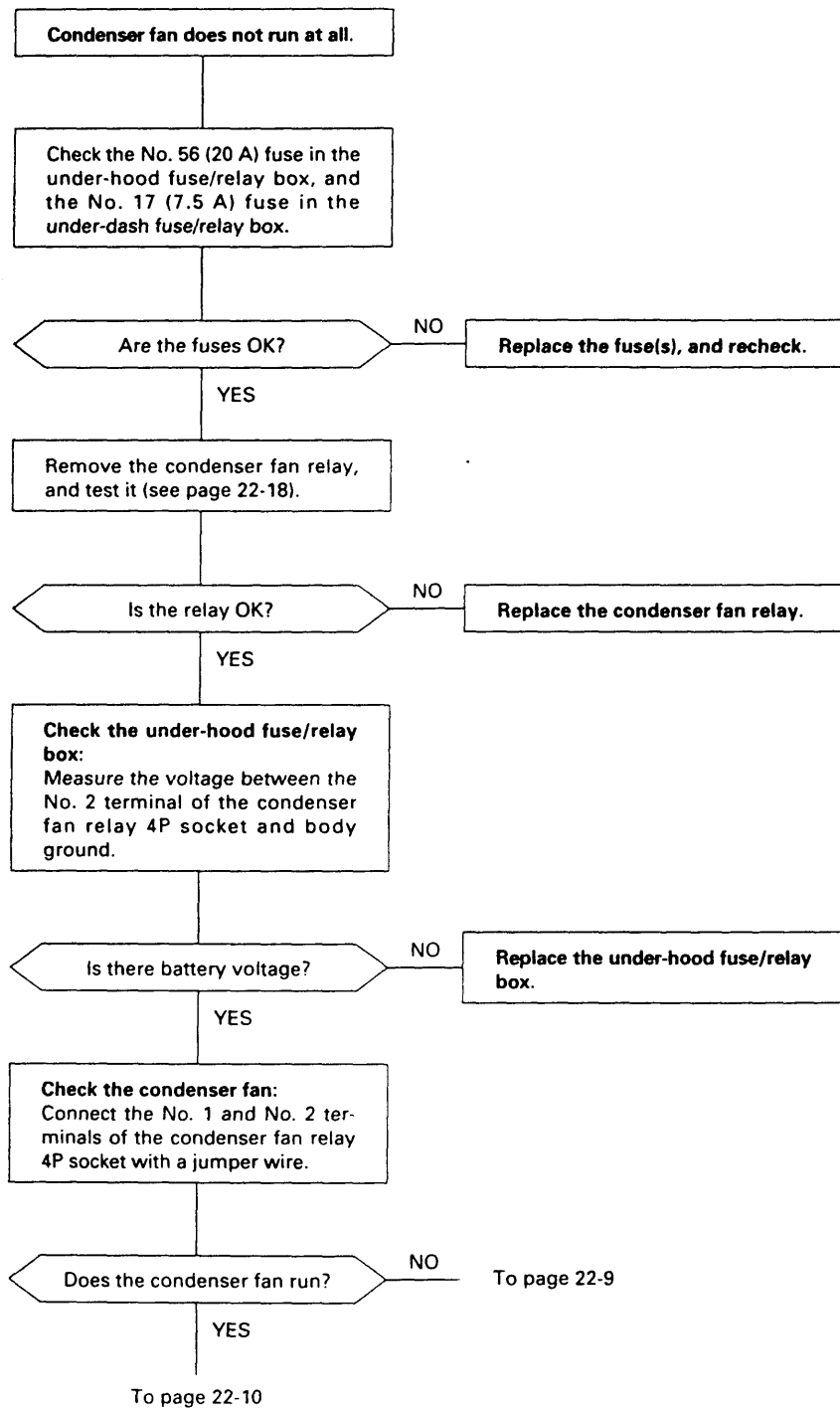
NOTE:

- Check the engine coolant level, and allow the engine to warm up before troubleshooting.
- Any abnormality must be corrected before continuing the test.
- Because of the precise measurements needed, use a multimeter when testing.
- Before performing any troubleshooting procedures check:
 - Fuse No. 56 (20 A) in the under-hood fuse/relay box and fuse No. 17 (7.5 A) in the under-dash fuse/relay box.
 - Grounds No. G401, G402, G751
 - Cleanliness and tightness of all connectors

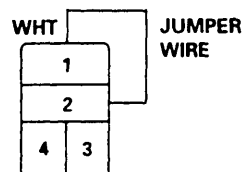
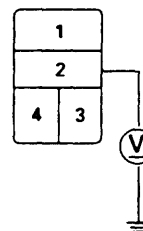
Symptom	See page
Condenser fan does not run at all.	22-8
Compressor clutch does not engage.	22-11
A/C system does not come on (condenser fan and compressor).	22-15

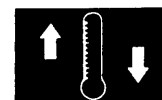
Troubleshooting

Condenser Fan

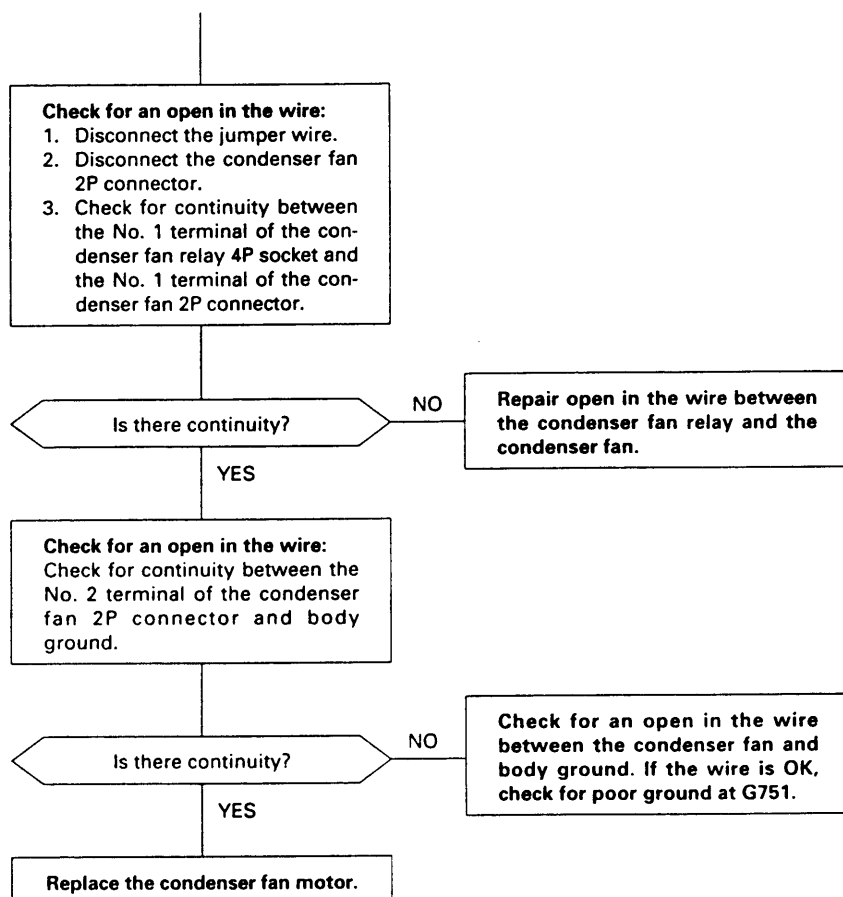


CONDENSER FAN RELAY 4P SOCKET

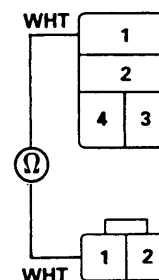




From page 22-8

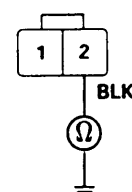


CONDENSER FAN RELAY 4P SOCKET



CONDENSER FAN 2P CONNECTOR

Wire side of female terminals



(cont'd)

Troubleshooting

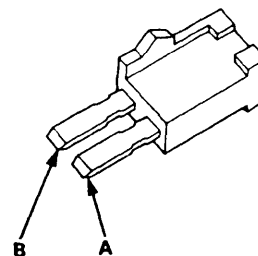
Condenser Fan (cont'd)

From page 22-8

Check the diode:

1. Disconnect the jumper wire.
2. Remove the diode from the under-hood fuse/relay box.
3. Check for current flow in both directions between the A and B terminals.

NOTE: Use a multimeter with diode checking capabilities.



Is there current flow in only one direction?

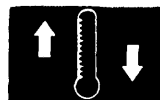
NO

Replace the diode.

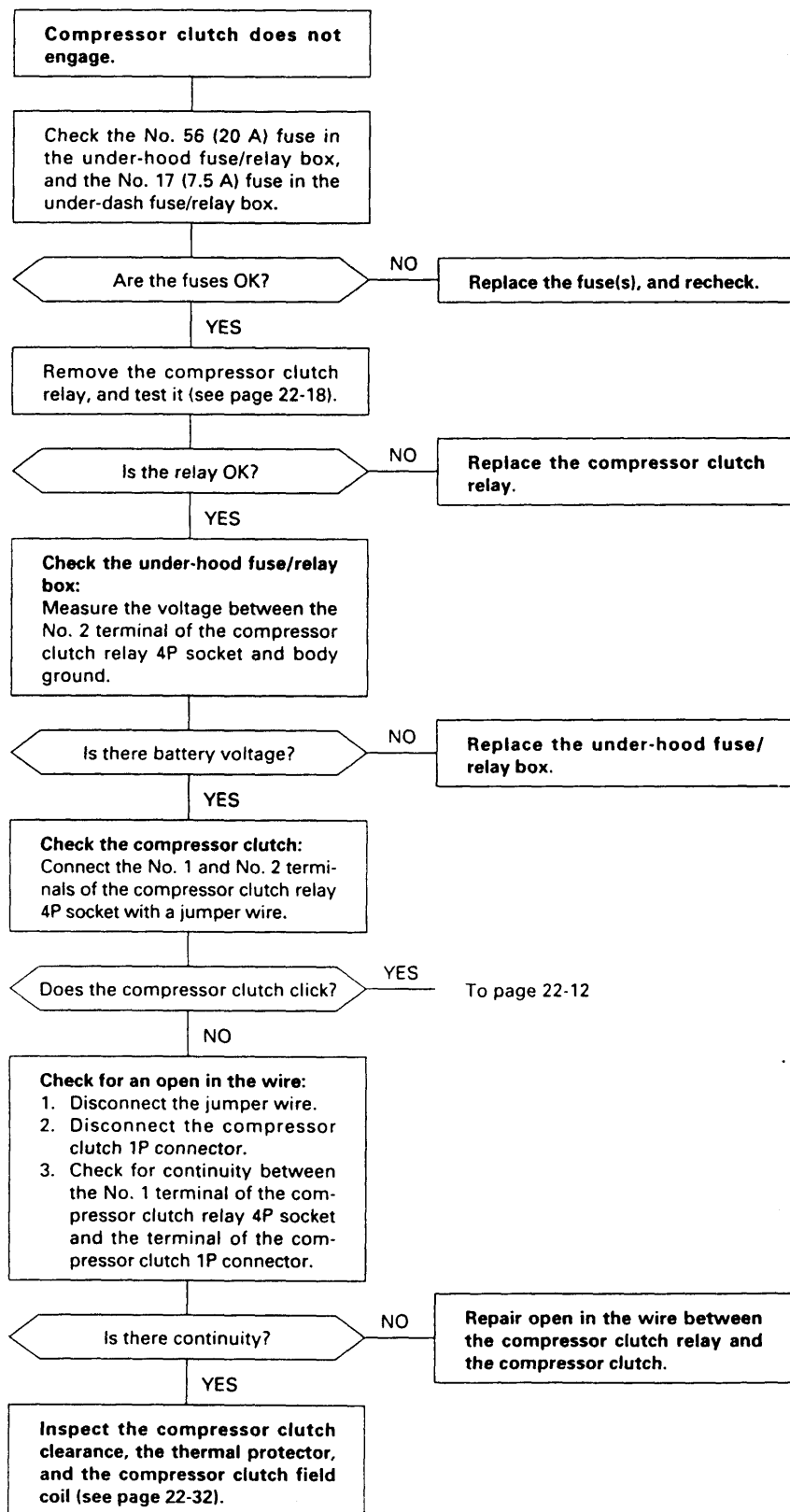
YES

Replace the under-hood fuse/relay box.

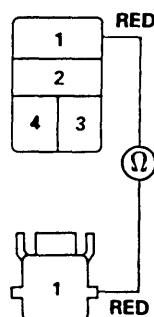
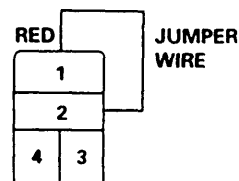
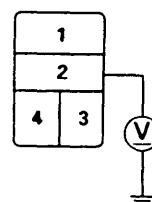




Compressor



COMPRESSOR CLUTCH RELAY 4P SOCKET



COMPRESSOR CLUTCH 1P CONNECTOR

Wire side of female terminals

(cont'd)

Troubleshooting

Compressor (cont'd)

From page 22-11

Check for an open in the wire:
 1. Disconnect the jumper wire.
 2. Turn the ignition switch ON (II).
 3. Measure the voltage between the No. 4 terminal of the compressor clutch relay 4P socket and body ground.

Is there battery voltage?

NO

Replace the under-hood fuse/relay box.

YES

Check for an open in the wire:
 1. Turn the ignition switch OFF, then reinstall the compressor clutch relay.
 2. Make sure the A/C and heater fan switches are OFF, then turn the ignition switch ON (II).
 3. Using a *Backprobe Set (T/N 07SAZ - 001000A), measure the voltage between the No. 17 terminal of the ECM/PCM connector A (32P) and body ground with the ECM/PCM connectors connected.

Is there battery voltage?

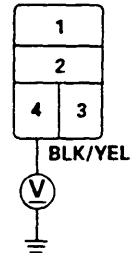
NO

Repair open in the wire between the compressor clutch relay and the ECM/PCM.

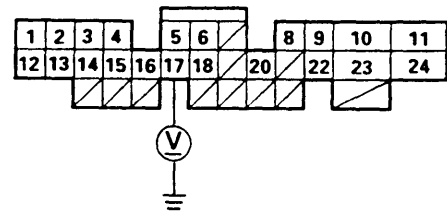
YES

To page 22-13

COMPRESSOR CLUTCH RELAY 4P SOCKET



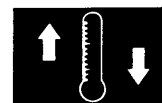
ECM/PCM CONNECTOR A (32P)



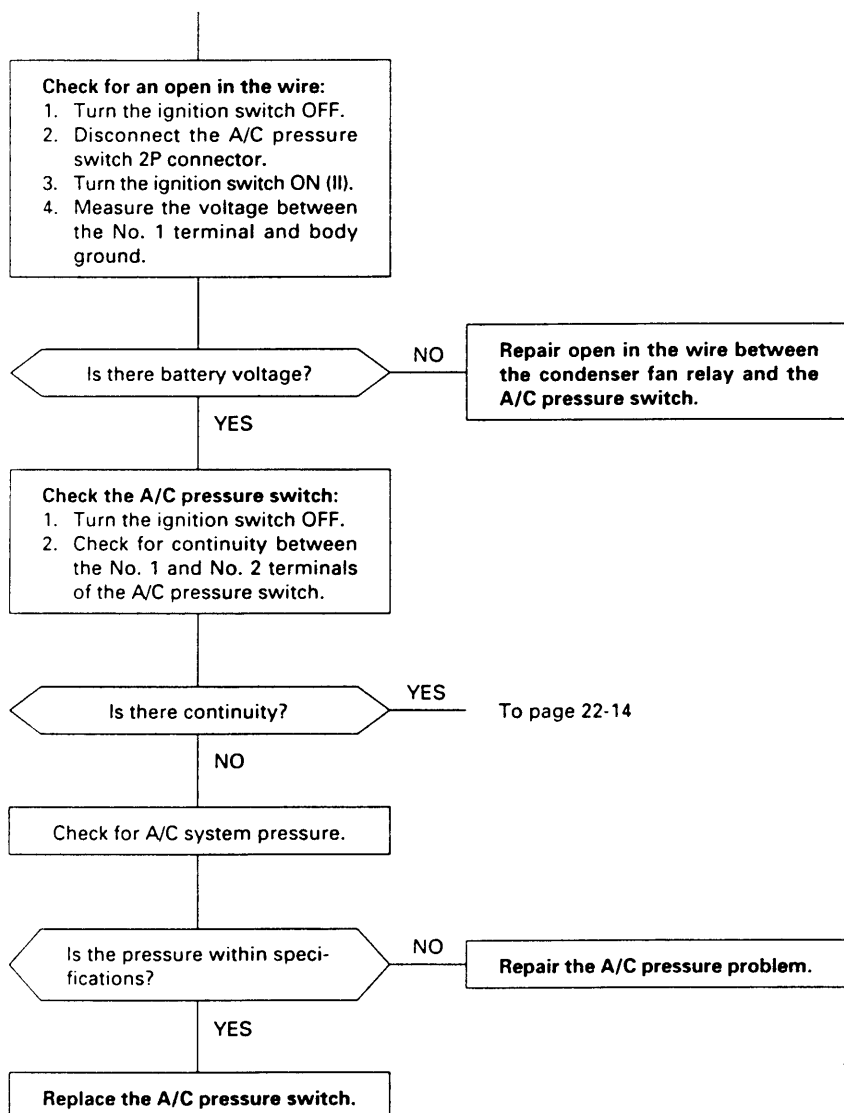
Wire side of female terminals

* How to use the backprobe sets

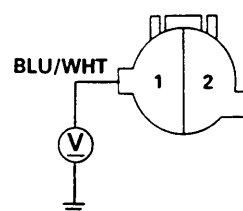
Connect the backprobe adapters to the stacking patch cords, and connect the cords to a multimeter. Using the wire insulation as a guide for the contoured tip of the backprobe adapter, gently slide the tip into the connector from the wire side until it comes in contact with the terminal end of the wire (see section 11).



From page 22-12

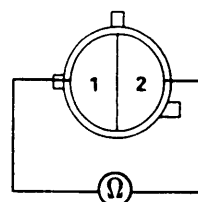


A/C PRESSURE SWITCH 2P CONNECTOR



Wire side of female terminals

A/C PRESSURE SWITCH



(cont'd)

Troubleshooting

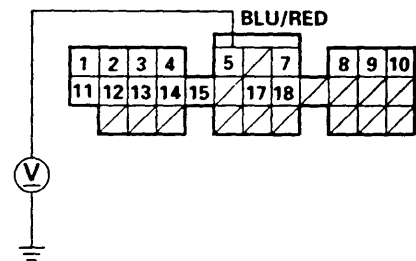
Compressor (cont'd)

From page 22-13

Check for an open in the wire:

1. Reconnect the A/C pressure switch 2P connector.
2. Turn the A/C and heater fan switches ON, then turn the ignition switch ON (II).
3. Using a *Backprobe Set (T/N 07SAZ - 001000A), measure the voltage between the No. 5 terminal of the ECM/PCM connector C (31P) and body ground with the ECM/PCM connectors connected.

ECM/PCM CONNECTOR C (31P)



Wire side of female terminals

Is there less than 1 volt?

NO

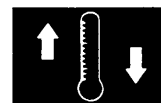
Repair open in the wire between the A/C pressure switch and the ECM/PCM.

YES

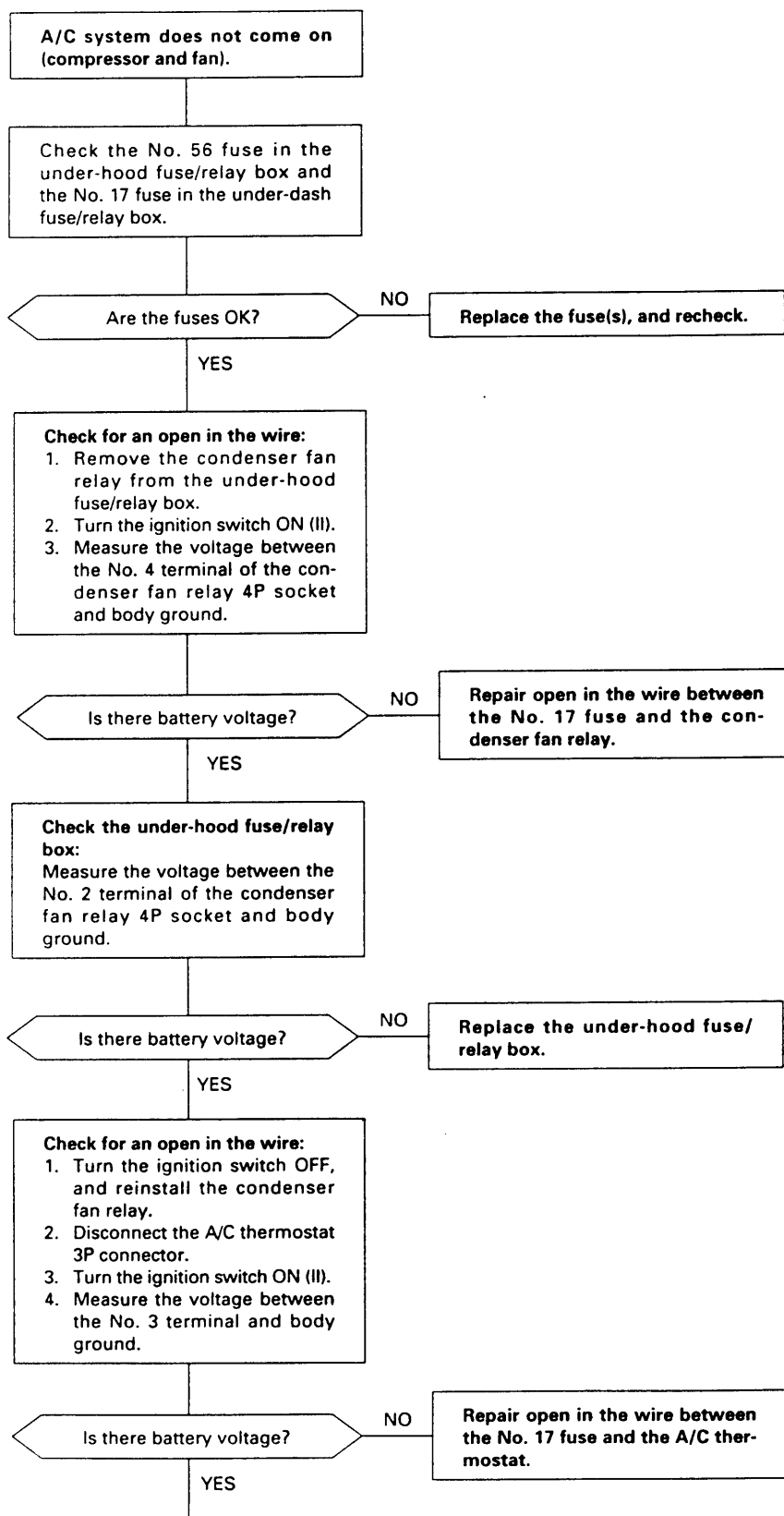
Check for loose wires or poor connections at the ECM/PCM connectors A (32P) and C (31P). If the connections are good, substitute a known-good ECM/PCM, and recheck. If the symptom/indication goes away, replace the original ECM/PCM.

* How to use the backprobe sets

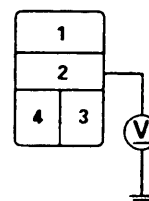
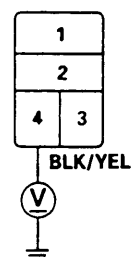
Connect the backprobe adapters to the stacking patch cords, and connect the cords to a multimeter. Using the wire insulation as a guide for the contoured tip of the backprobe adapter, gently slide the tip into the connector from the wire side until it comes in contact with the terminal end of the wire (see section 11).



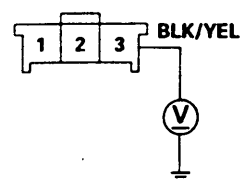
A/C System



CONDENSER FAN RELAY 4P SOCKET



A/C THERMOSTAT 3P CONNECTOR



Wire side of female terminals

(cont'd)

Troubleshooting

A/C System (cont'd)

From page 22-15

Check for an open in the wire:
Measure the voltage between the No. 1 terminal of the A/C thermostat 3P connector and body ground.

Is there battery voltage?

NO

Repair open in the wire between the condenser fan relay and the A/C thermostat.

YES

Check the A/C thermostat:
1. Turn the ignition switch OFF.
2. Reconnect the A/C thermostat 3P connector.
3. Connect the No. 2 terminal to ground with a jumper wire.
4. Start the engine.

Does the condenser fan run and does the compressor clutch engage?

NO

Replace the A/C thermostat.

YES

Check for an open in the wire:
1. Turn the ignition switch OFF, then disconnect the jumper wire.
2. Remove the audio unit (see section 20), and disconnect the heater control panel 16P connector.
3. Turn the ignition switch ON (II).
4. Measure the voltage between the No. 1 terminal and body ground.

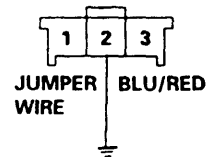
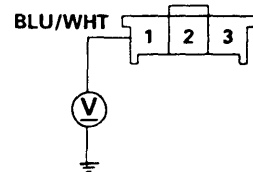
Is there battery voltage?

NO

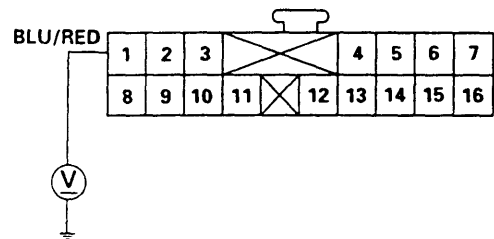
Repair open in the wire between the A/C thermostat and the heater control panel.

YES

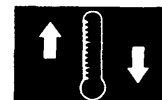
To page 22-17



HEATER CONTROL PANEL 16P CONNECTOR



Wire side of female terminals



From page 22-16

Check for an open in the wire:
1. Turn the ignition switch OFF.
2. Disconnect the heater fan switch 6P connector.
3. Check for continuity between the No. 2 terminal of the heater control panel 16P connector and the No. 6 terminal of the heater fan switch 6P connector.

Is there continuity?

NO

Repair open in the wire between the heater control panel and the heater fan switch.

YES

Check for an open in the wire:
Check for continuity between the No. 4 terminal of the heater fan switch 6P connector and body ground.

Is there continuity?

NO

Check for an open in the wire between the heater fan switch and body ground. If the wire is OK, check for poor ground at G401 and G402.

YES

Test the heater fan switch (see page 21-25).

Is the heater fan switch OK?

NO

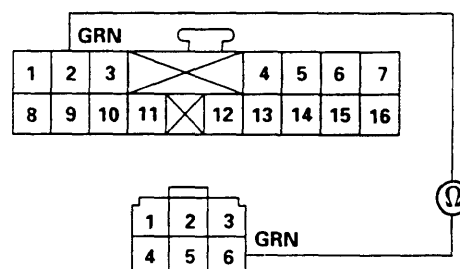
Replace the heater fan switch.

YES

Check for loose wires or poor connections at the heater control panel 16P connector. If the connections are good, replace the heater control panel.

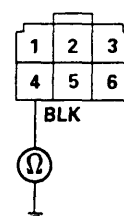
HEATER CONTROL PANEL 16P CONNECTOR

Wire side of female terminals



HEATER FAN SWITCH 6P CONNECTOR

Wire side of female terminals



A/C Thermostat

Test

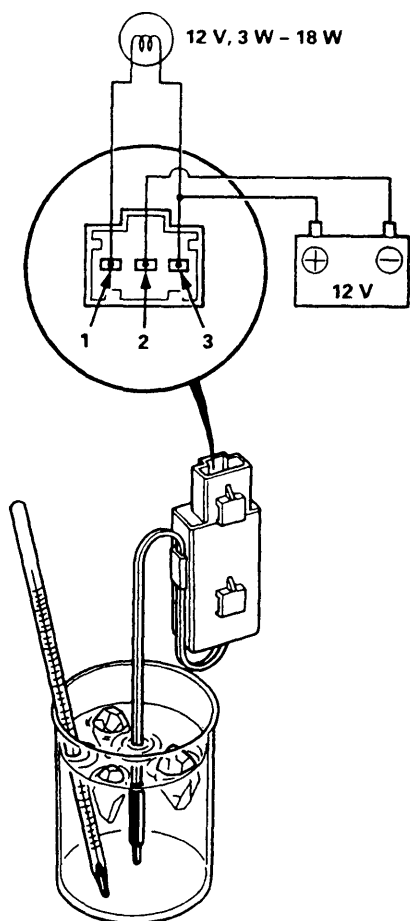
Connect battery power to the No. 3 terminal, ground the No. 2 terminal, and connect a test light between the No. 1 and No. 3 terminals.

NOTE: Use a 12 V, 3 W – 18 W test light.

Dip the A/C thermostat into a cup filled with ice water, and check the test light.

The light should go off at 36 – 39°F (2 – 4°C) or less, and should come on at 39 – 41°F (4 – 5°C) or more.

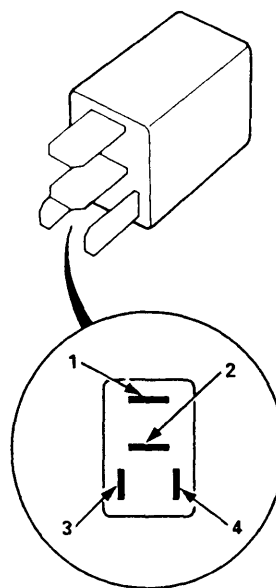
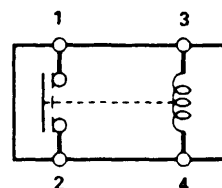
If the light doesn't come on and go off as specified, replace the A/C thermostat.



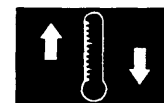
Relay

Test

There should be continuity between the No. 1 and No. 2 terminals when power and ground are connected to the No. 3 and No. 4 terminals, and there should be no continuity when power is disconnected.



A/C Service Tips and Precautions



The air conditioner 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 conditioner system or your servicing equipment will result.

* Sanden SP-10:

- P/N 38897 – P13 – A01AH: 120 ml (4 fl-oz, 4.2 Imp-oz)
- P/N 38899 – P13 – A01: 40 ml (1 1/3 fl-oz, 1.4 Imp-oz)

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 conditioner system.

CAUTION: Exposure to air conditioner refrigerant and lubricant vapor or mist can irritate eyes, nose and throat. Avoid breathing the air conditioner refrigerant and lubricant vapor or mist.

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

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

⚠ WARNING Some mixtures of air and R-134a have been shown to be combustible at elevated pressures and can result in fire or explosion causing injury or property damage. Never use compressed air to pressure test R-134a service equipment or vehicle air conditioner systems.

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

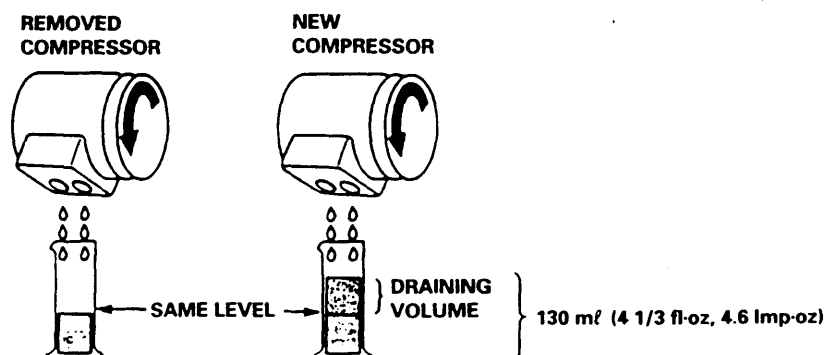
1. Always disconnect the negative cable from the battery whenever replacing air conditioning parts.
2. Keep moisture and dust out of the system. When disconnecting any lines, plug or cap the fittings immediately; don't remove the caps or plugs until just before you reconnect each line.
3. Before connecting any hose or line, apply a few drops of refrigerant oil to the O-ring.
4. When tightening or loosening a fitting, use a second wrench to support the matching fitting.
5. When discharging the system, use a R-134a refrigerant Recovery/Recycling/Charging System; don't release refrigerant into the atmosphere.
6. Add refrigerant oil after replacing the following parts:

NOTE:

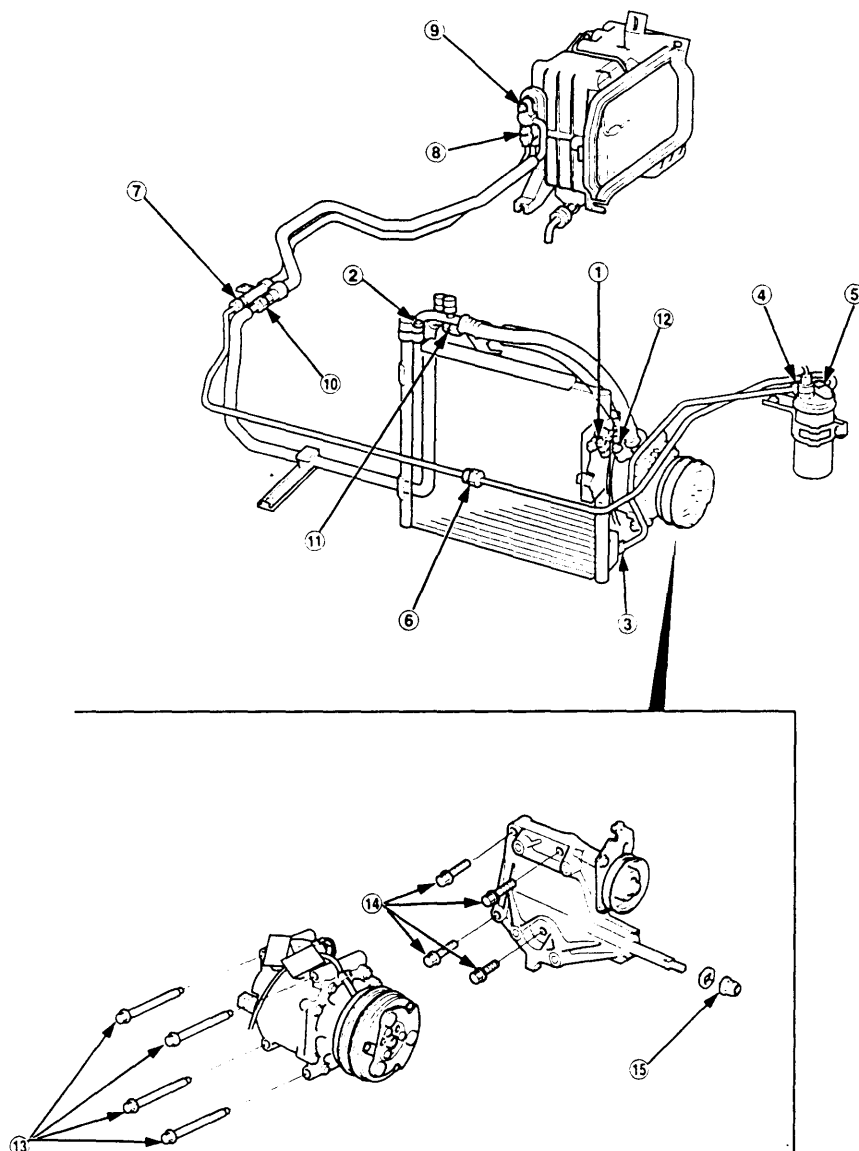
- To avoid contamination, do not return the oil to the container once dispensed, and never mix it with other refrigerant oils.
- Immediately after using the oil, replace the cap on the container, and seal it to avoid moisture absorption.
- Do not spill the refrigerant oil on the vehicle; it may damage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

Condenser	20 ml (2/3 fl-oz, 0.7 Imp-oz)
Evaporator	45 ml (1 2/3 fl-oz, 1.6 Imp-oz)
Line or hose	10 ml (1/3 fl-oz, 0.4 Imp-oz)
Receiver/Dryer	10 ml (1/3 fl-oz, 0.4 Imp-oz)
Leakage repair	25 ml (5/6 fl-oz, 0.9 Imp-oz)
Compressor	For compressor replacement, subtract the volume of oil drained from the removed compressor from 130 ml (4 1/3 fl-oz, 4.6 Imp-oz), and drain the calculated volume of oil from the new compressor: 130 ml (4 1/3 fl-oz, 4.6 Imp-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, 1.8 Imp-oz) from the new compressor.



A/C System Torque Specifications



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 Condenser line to the condenser (6 x 1.0 mm)	9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
④ Condenser line to the receiver/dryer (6 x 1.0 mm)	9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
⑤ Receiver line A to the receiver/dryer (6 x 1.0 mm)	9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
⑥ Receiver line B to the receiver line A	13 N·m (1.3 kgf·m, 9.4 lbf·ft)
⑦ Receiver line C to the receiver line B	13 N·m (1.3 kgf·m, 9.4 lbf·ft)
⑧ Receiver line C to the evaporator (6 x 1.0 mm)	9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
⑨ Suction line B to the evaporator (6 x 1.0 mm)	9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
⑩ Suction line A to the suction line B	31 N·m (3.2 kgf·m, 23 lbf·ft)
⑪ Suction hose to the suction line A	31 N·m (3.2 kgf·m, 23 lbf·ft)
⑫ Suction hose to the compressor (6 x 1.0 mm)	9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)
⑬ Compressor to the compressor bracket (8 x 1.25 mm)	24 N·m (2.4 kgf·m, 17 lbf·ft)
⑭ Compressor bracket to the cylinder block (10 x 1.25 mm)	44 N·m (4.5 kgf·m, 33 lbf·ft)
⑮ Compressor bracket to the left front mount (12 x 1.25 mm)	59 N·m (6.0 kgf·m, 43 lbf·ft)

A/C System Service



Pressure Test Chart

NOTE: Performance Test is on page 22-22.

Test results	Related symptoms	Probable cause	Remedy
Discharge (high) pressure abnormally high	After stopping compressor, pressure drops to about 200 kPa (2.0 kgf/cm ² , 28 psi) quickly, and then falls gradually.	Air in system	Recover, evacuate, and recharge with specified amount. Evacuation: see page 22-25 Charging: see page 22-26
	Reduced or no air flow through condenser	• Clogged condenser fins • Condenser 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	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.
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 • Faulty expansion valve	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 A/C thermostat.
	Expansion valve is frosted.	Clogged expansion valve	Clean or replace.
	Receiver/dryer outlet is cool, and inlet is warm (should be warm during operation).	Clogged receiver/dryer	Replace
Suction pressure abnormally high	Low-pressure hose and check joint are cooler than the temperature around evaporator.	• Expansion valve open too long • Loose expansion capillary tube	Repair or replace.
	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.
Suction and discharge pressures abnormally high	Reduced air flow through condenser.	• Clogged condenser fins • Condenser fan not working properly	• Clean condenser. • Check voltage and fan rpm. • Check fan direction.
Suction and discharge pressure abnormally low	Low-pressure hose and metal end areas are cooler than evaporator.	Clogged or kinked low-pressure hose parts	Repair or replace.
	Temperature around expansion valve is too low compared with that around receiver/dryer.	Clogged high pressure line	Repair or replace.
Refrigerant leaks	Compressor clutch is dirty.	Compressor shaft seal leaking	Replace the compressor.
	Compressor bolt(s) are dirty.	Leaking around bolt(s)	Tighten bolt(s) or replace compressor.
	Compressor gasket is wet with oil.	Gasket leaking	Replace the compressor.

A/C System Service

Performance Test

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 conditioner system.

CAUTION: Exposure to air conditioner refrigerant and lubricant vapor or mist can irritate eyes, nose and throat. Avoid breathing the air conditioner refrigerant and lubricant vapor or mist.

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

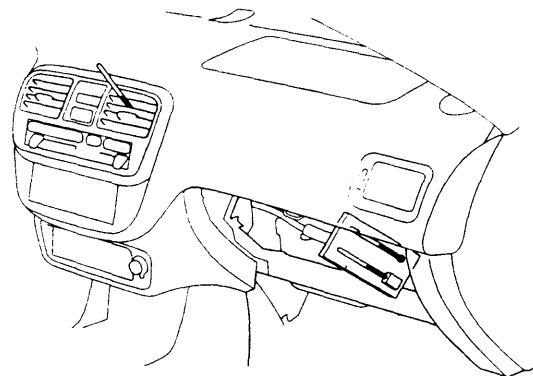
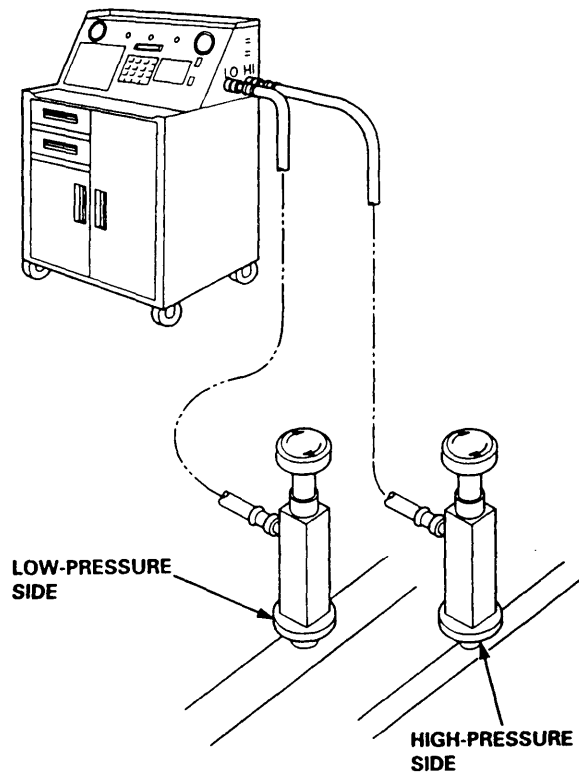
R-134a service equipment or vehicle air conditioner systems should not be pressure tested or leak tested with compressed air.

⚠ WARNING Some mixtures of air and R-134a have been shown to be combustible at elevated pressures and can result in fire or explosion causing injury or property damage. Never use compressed air to pressure test R-134a service equipment or vehicle air conditioner systems.

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

1. Connect a R-134a refrigerant Recover/Recycling/Charging System to the vehicle, as shown, following the equipment manufacturer's instructions.
2. Insert a thermometer in the center air vent. Determine the relative humidity and air temperature.
3. Test conditions:
 - Avoid direct sunlight.
 - Open hood.
 - Open front doors.
 - Set the temperature control lever to MAX. COOL, the mode control switch on VENT and the recirculation control switch on RECIRCULATE.
 - Turn the A/C switch on, and the heater fan switch on MAX.
 - Run the engine at 1,500 rpm.
 - No driver or passengers in vehicle
4. After running the air conditioning for 10 minutes under the above test conditions, read the delivery temperature from the thermometer in the dash vent and the high and low system pressure from the A/C gauges.

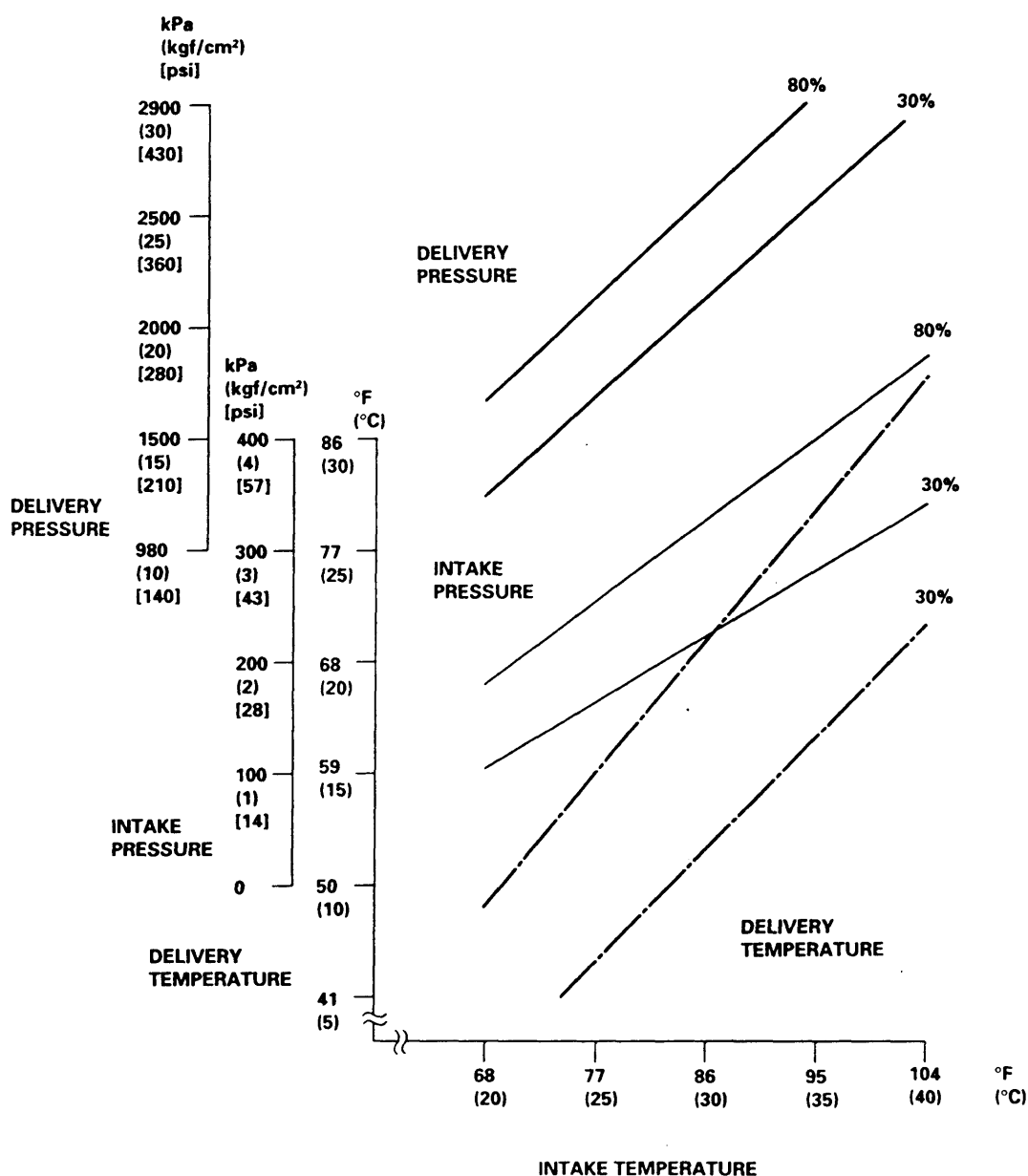
Recovery/Recycling/Charging System





5. To complete the charts:

- Mark the delivery temperature along the vertical line.
- Mark the intake temperature (ambient air temperature) along the bottom line.
- Draw a line straight up from the air temperature to the humidity.
- Mark a point one line above and one line below the humidity level (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.



A/C System Service

Recovery

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 conditioner system.

CAUTION: Exposure to air conditioner refrigerant and lubricant vapor or mist can irritate eyes, nose and throat. Avoid breathing the air conditioner refrigerant and lubricant vapor or mist.

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

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

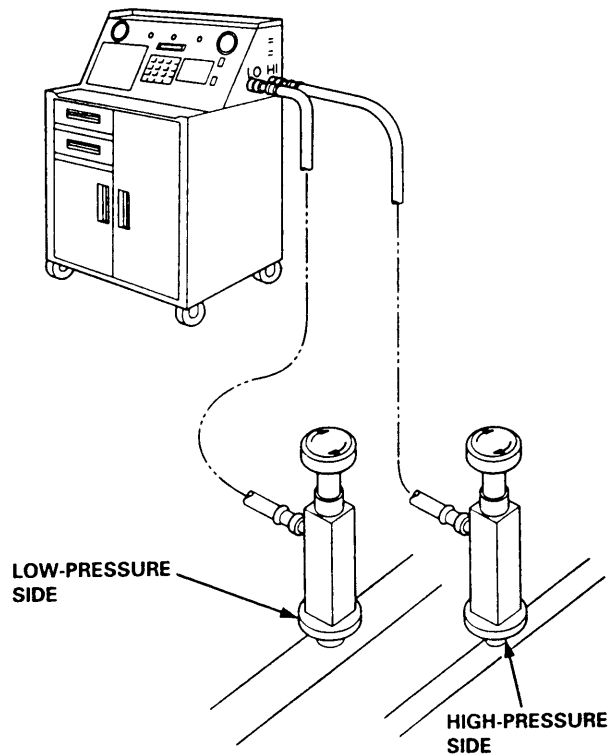
⚠ WARNING Some mixtures of air and R-134a have been shown to be combustible at elevated pressures and can result in fire or explosion causing injury or property damage. Never use compressed air to pressure test R-134a service equipment or vehicle air conditioner systems.

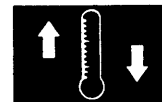
Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. Connect a R-134a refrigerant Recovery/Recycling/Charging System to the vehicle, as shown, following the equipment manufacturer's instructions.
2. Measure the amount of refrigerant oil removed from the A/C system after the recovery process is completed.

NOTE: Be sure to install the same amount of new refrigerant oil back into the A/C system before charging.

Recovery/Recycling/Charging System





Evacuation

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 conditioner system.

CAUTION: Exposure to air conditioner refrigerant and lubricant vapor or mist can irritate eyes, nose and throat. Avoid breathing the air conditioner refrigerant and lubricant vapor or mist.

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

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

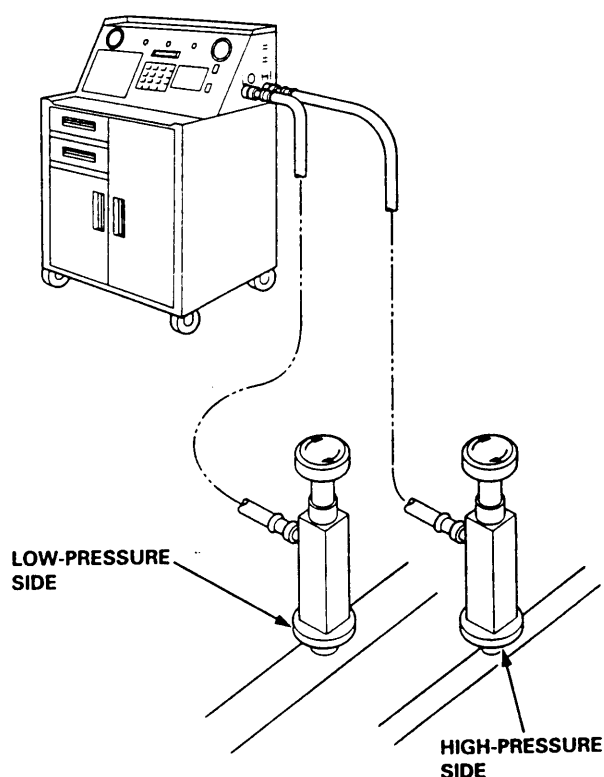
⚠ WARNING Some mixtures of air and R-134a have been shown to be combustible at elevated pressures and can result in fire or explosion causing injury or property damage. Never use compressed air to pressure test R-134a service equipment or vehicle air conditioner systems.

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 System. (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 System to the vehicle, as shown, following the equipment manufacturer's instructions.

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

Recovery/Recycling/Charging System



A/C System Service

Charging

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 conditioner system.

CAUTION: Exposure to air conditioner refrigerant and lubricant vapor or mist can irritate eyes, nose and throat. Avoid breathing the air conditioner refrigerant and lubricant vapor or mist.

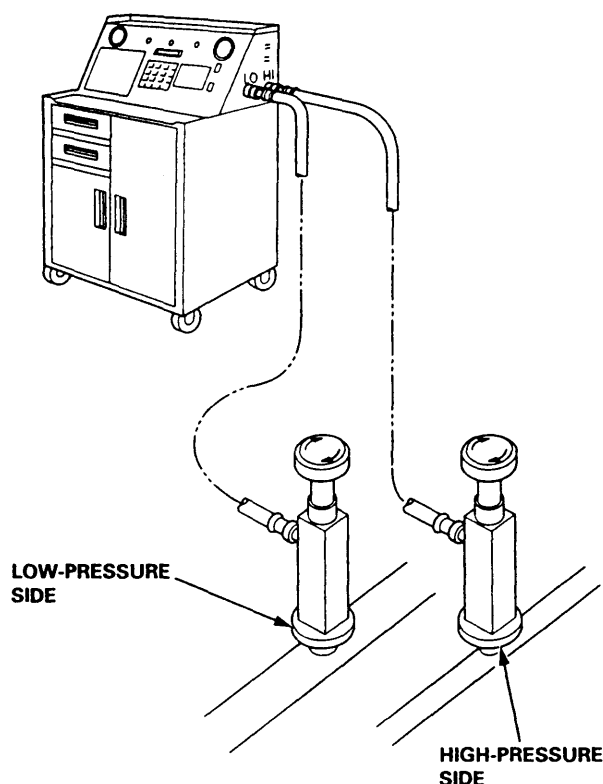
If accidental system discharge occurs, ventilate work area before resuming service. Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

Refrigerant capacity: 650 $\pm$ ₅₀ g (22.9 $\pm$ _{1.8} oz)

CAUTION: Do not overcharge the system; the compressor will be damaged.

Connect a R-134a refrigerant Recovery/Recycling/Charging System to the vehicle, as shown, following the equipment manufacturer's instructions.

Recovery/Recycling/Charging System



Leak Test

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 conditioner system.

CAUTION: Exposure to air conditioner refrigerant and lubricant vapor or mist can irritate eyes, nose and throat. Avoid breathing the air conditioner refrigerant and lubricant vapor or mist.

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

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

⚠ WARNING Some mixtures of air and R-134a have been shown to be combustible at elevated pressures and can result in fire or explosion causing injury or property damage. Never use compressed air to pressure test R-134a service equipment or vehicle air conditioner systems.

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

1. Connect a R-134a refrigerant Recovery/Recycling/Charging System to the vehicle, as shown in the previous column following the equipment manufacturer's instructions.

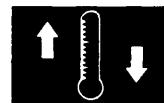
NOTE: Be sure to install the same amount of new refrigerant oil back into the A/C system before charging.

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

Refrigerant capacity: 650 $\pm$ ₅₀ g (22.9 $\pm$ _{1.8} 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 according to the Recovery Procedure on page 22-24.
5. After checking and repairing leaks, the system must be evacuated (see System Evacuation on page 22-25).

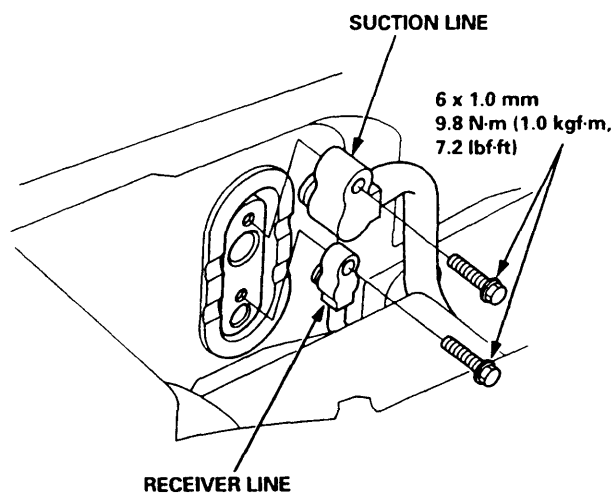
Evaporator



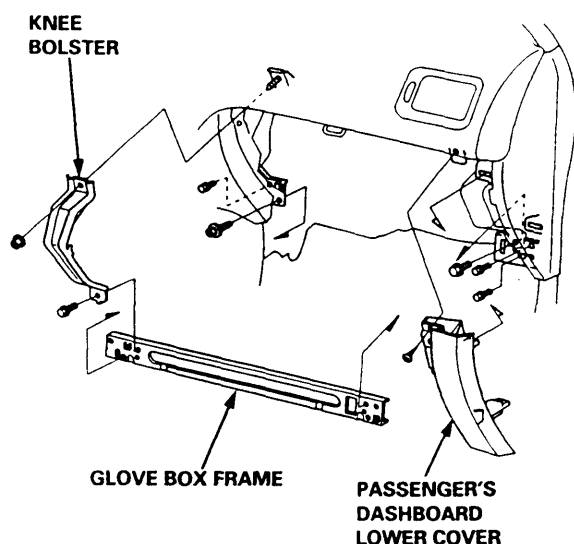
Replacement

1. Make sure you have the anti-theft code for the radio, then write down the frequencies for the radio's preset buttons.
2. Remove the battery.
3. Recover the refrigerant with a Recovery/Recycling/Charging System (see page 22-24).
4. Remove the bolts, then disconnect the suction and receiver lines from the evaporator.

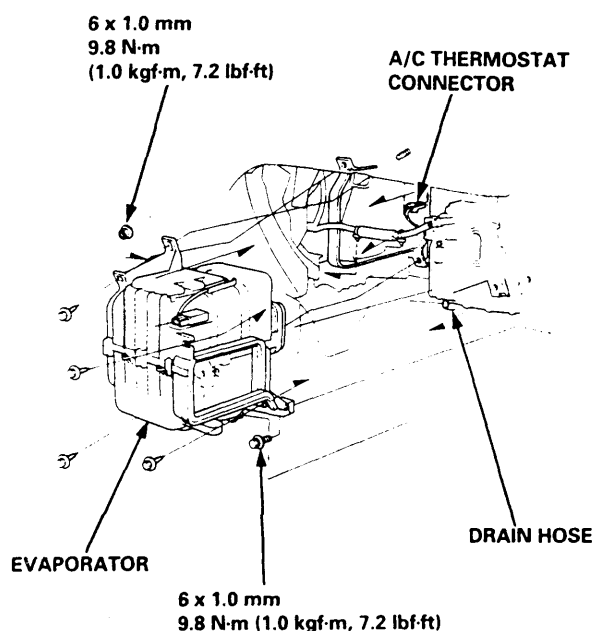
NOTE: Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.



5. Remove the glove box (see section 20).
6. Remove the self-tapping screw and the passenger's dashboard lower cover. Remove the bolt, the nut and the knee bolster, then remove the bolts and the glove box frame.



7. Disconnect the connector from the A/C thermostat, and remove the wire harness from the evaporator. Remove the self-tapping screws, the mounting bolt and the mounting nut. Disconnect the drain hose, then remove the evaporator.



8. Install in the reverse order of removal. Make note of the following items.

- If you're installing a new evaporator, add refrigerant oil (SP-10) (see page 22-19).
 - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them.
- NOTE: Be sure to use the right O-rings for HFC-134a (R-134a) to avoid leakage.
- Apply sealant to the grommets.
 - Make sure that there is no air leakage.
 - Charge the system (see page 22-26), and test its performance (see page 22-22).
 - Enter the anti-theft code for the radio, then enter the customer's radio station presets.

Evaporator

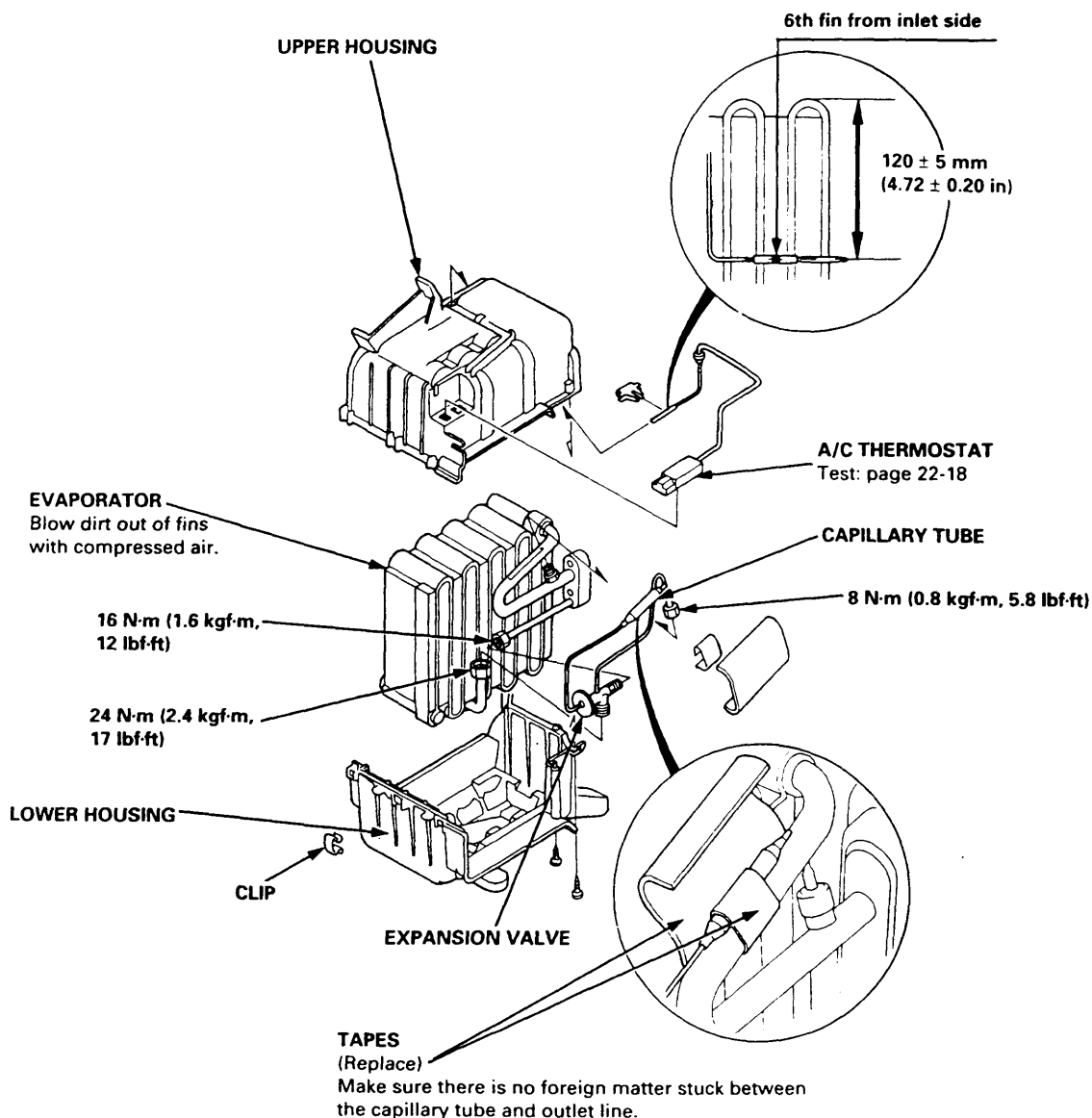
Overhaul

1. Pull out the A/C thermostat sensor from the evaporator fins.
2. Remove the self-tapping screws and clamps from the housings.
3. Carefully separate the housings, then remove the evaporator.
4. If necessary, remove the expansion valve.

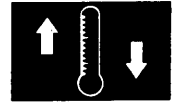
NOTE: When loosening the nuts of the expansion valve, use a second wrench to hold the expansion valve or the evaporator line. Otherwise, they can be damaged.

5. Assemble in the reverse order of disassembly. Make note of following items.

- Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them.
NOTE: Be sure to use the right O-rings for HFC-134a (R-134a) to avoid leakage.
- Install the expansion valve capillary tube with the capillary tube in contact with the outlet line, and wrap it with tape.
- Reinstall the A/C thermostat sensor to its original location.
- Make sure that there is no air leakage.



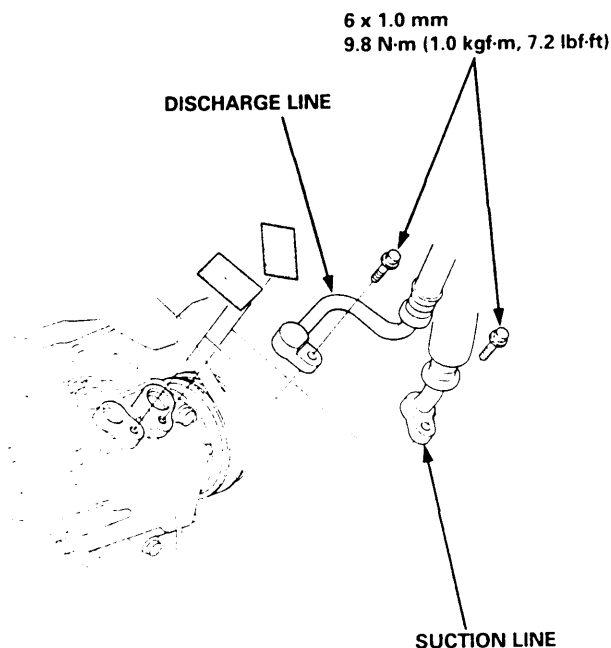
Compressor



Replacement

1. If the compressor is marginally operable, run the engine at idle speed, and let the air conditioner work for a few minutes, then shut the engine off.
2. Make sure you have the anti-theft code for the radio, 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 System (see page 22-24).
5. Remove the bolts, then disconnect the suction and discharge lines from the compressor.

NOTE: Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.

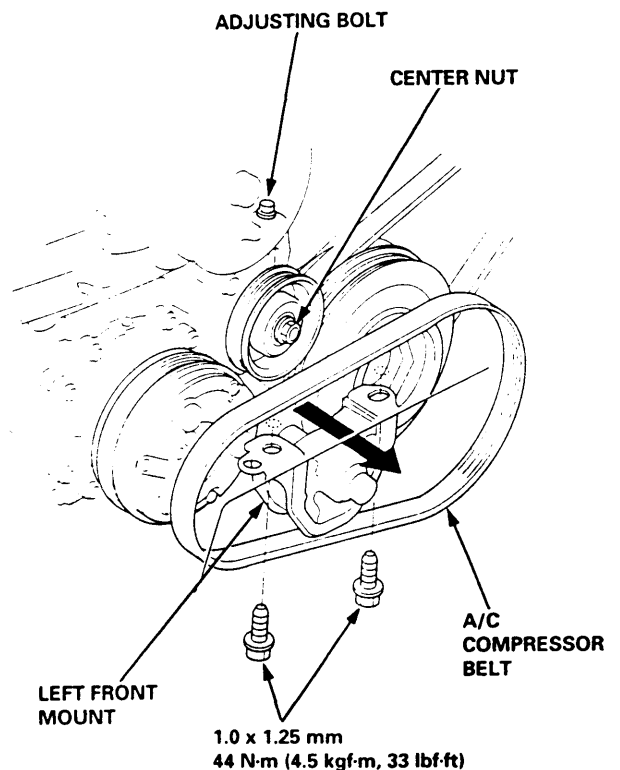


6. Remove the condenser (see page 22-37).

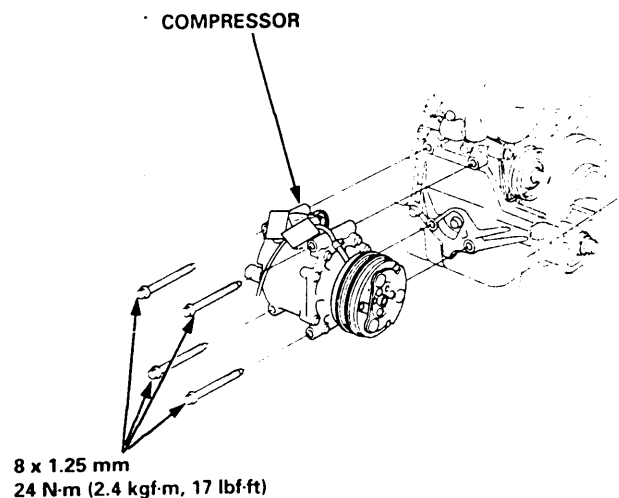
NOTE: Do not disconnect the discharge hose from the condenser.

7. Remove the power steering pump belt (see section 17).

8. Loosen the center nut of the idler pulley and the adjusting bolt, then remove the A/C compressor belt from the pulleys. If necessary, remove the mounting bolts from the left front mount, then remove the A/C compressor belt by passing it through the gap between the body and the left front mount.



9. Remove the mounting bolts and the compressor.



(cont'd)

Compressor

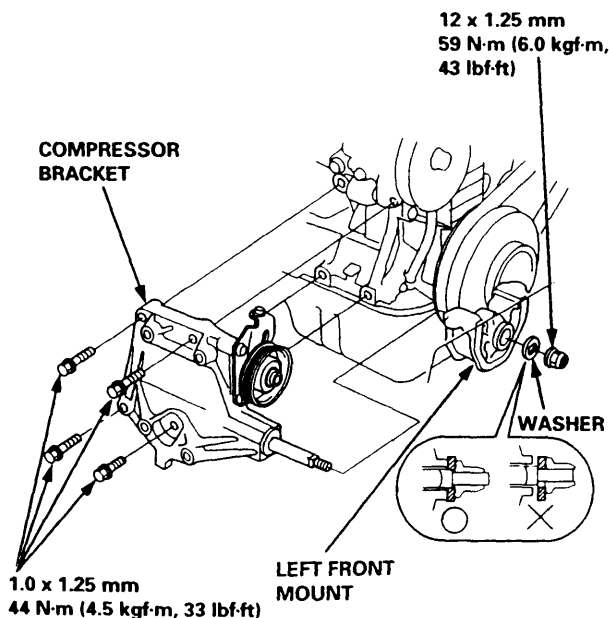
Replacement (cont'd)

10. If necessary, remove the compressor bracket as follows.

- Remove the nut and the washer from the left front mount.

NOTE: When tightening the nut to the left front mount, make sure the washer is set properly on the left front mount as shown.

- Remove the four mounting bolts and the compressor bracket.



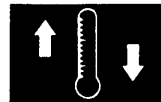
11. Install in the reverse order of removal. Make note of the following items.

- If you're installing a new compressor, drain all the refrigerant oil from the removed compressor, and measure its volume. Subtract the volume of drained oil from 130ml (4 1/3 fl-oz, 4.6 imp-oz); the result is the amount of oil you should drain from the new compressor (through the suction fitting).

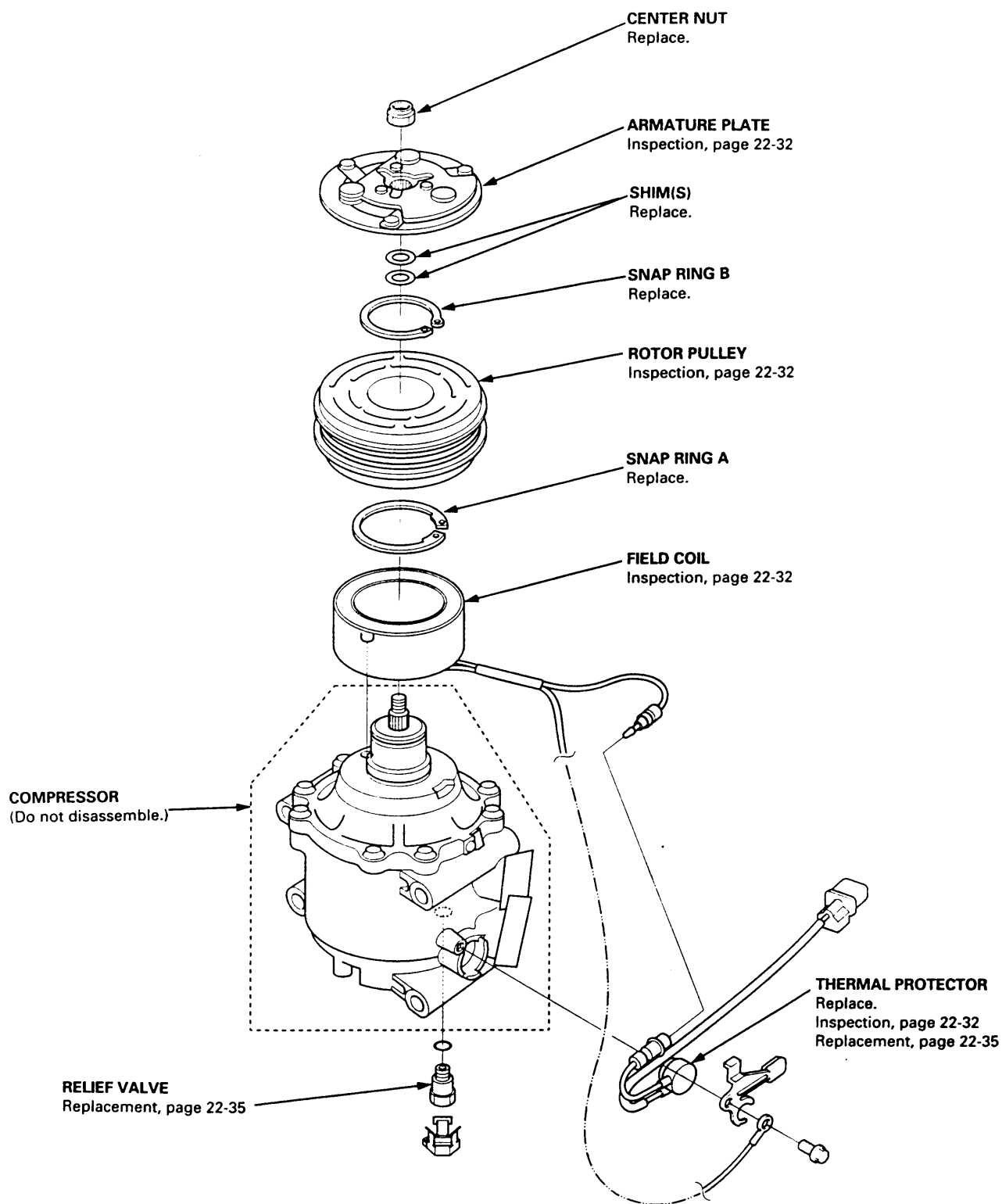
- Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them.

NOTE: Be sure to use the right O-rings for HFC-134a (R-134a) to avoid leakage.

- Use refrigerant oil (SP-10) for R-134a Sanden spiral type compressors only.
- To avoid contamination, do not return the oil to the container once dispensed, and never mix it with other refrigerant oils.
- Immediately after using the oil, replace the cap on the container, and seal it to avoid moisture absorption.
- Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.
- Adjust the A/C compressor belt (see page 22-36) and the power steering pump belt (see section 17).
- Charge the system (see page 22-26), and test its performance (see page 22-22).
- Enter the anti-theft code for the radio, then enter the customer's radio station presets.



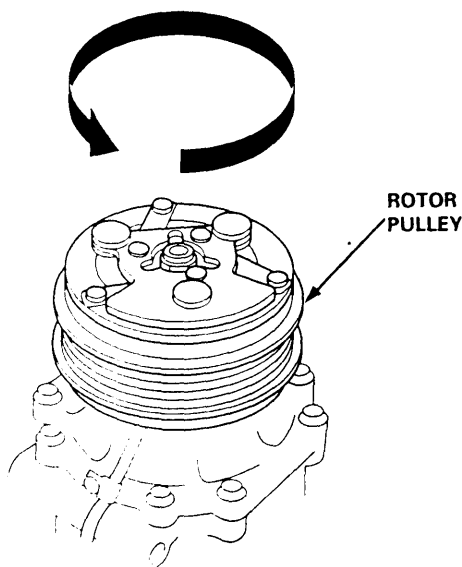
Illustrated Index



Compressor

Clutch Inspection

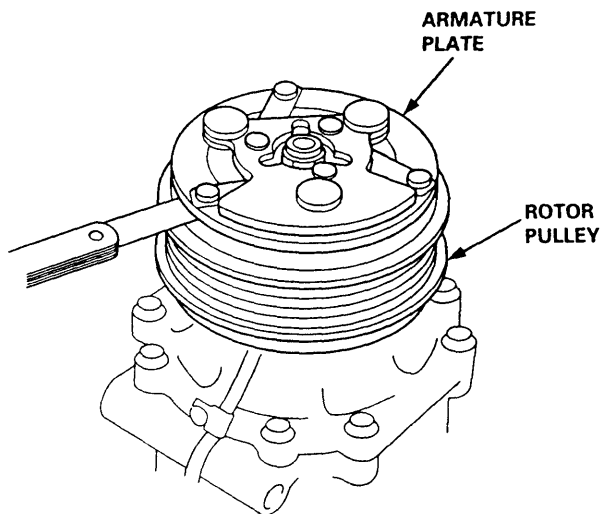
- Check the plated parts of the armature plate for color changes, peeling or other damage. If there is damage, replace the clutch set.
- Check the rotor pulley bearing play and drag by rotating the rotor pulley by hand. Replace the clutch set with a new one if it is noisy or has excessive play/drag.



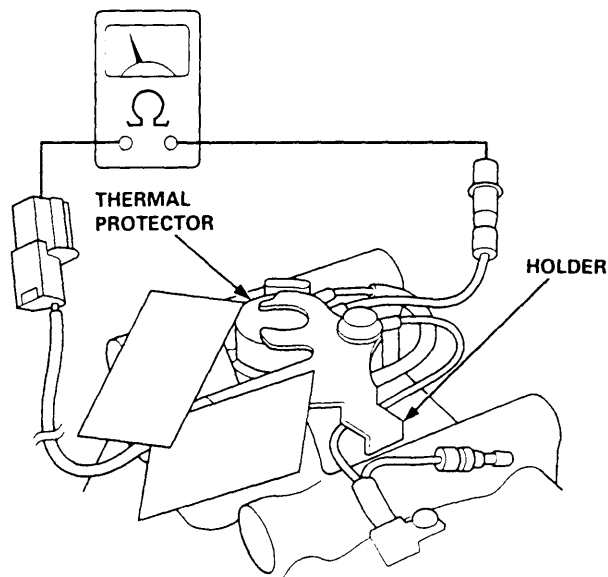
- Measure the clearance between the rotor pulley and the armature plate all the way around. If the clearance is not within specified limits, the armature plate must be removed and shims added or removed as required, following the procedure on page 22-33.

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



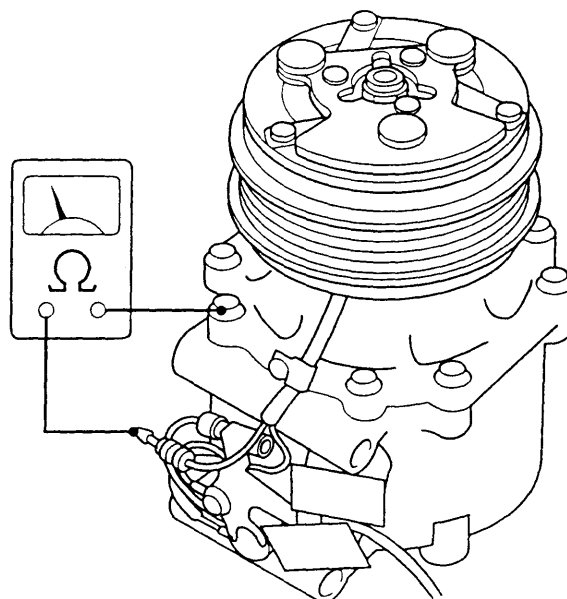
- Release the field coil connector from the holder, then disconnect it. Check the thermal protector for continuity. If there is no continuity, replace the thermal protector.

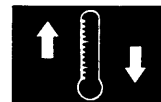


- Check resistance of the field coil.

Field Coil Resistance: 3.2 ± 0.15 ohms at 68°F (20°C)

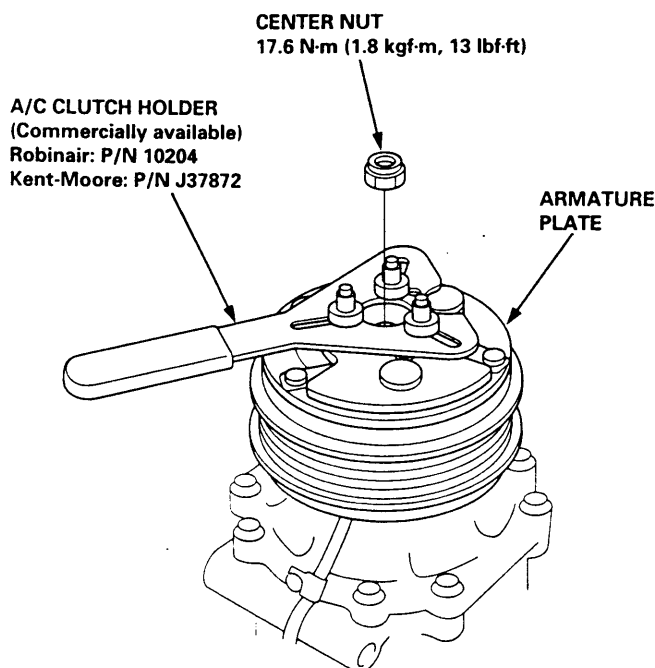
If resistance is not within specifications, replace the field coil.



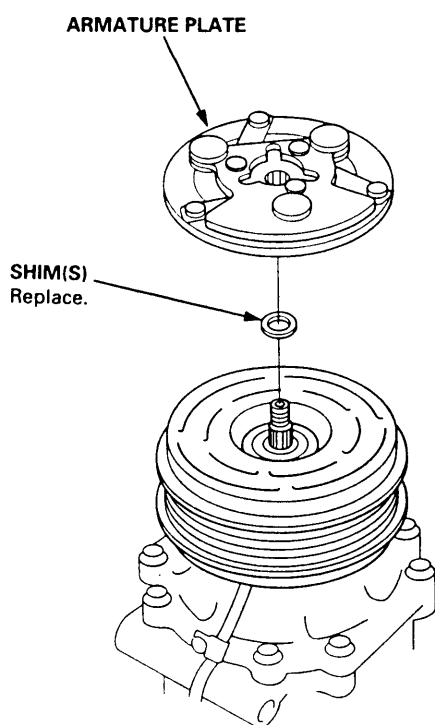


Clutch Overhaul

1. Remove the center nut while holding the armature plate with the tool.



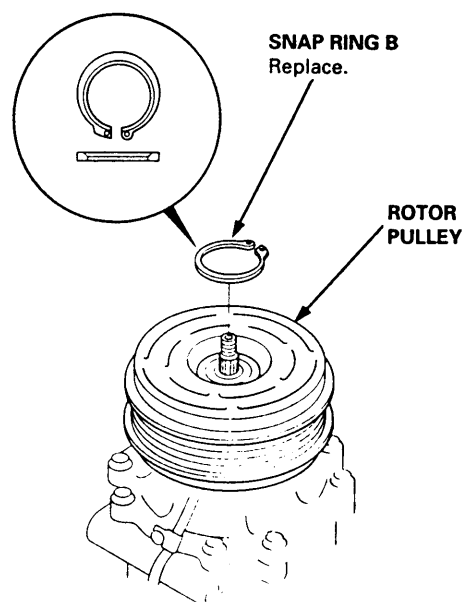
2. Remove the armature plate by pulling it up by hand.



3. Remove snap ring B with snap ring pliers.

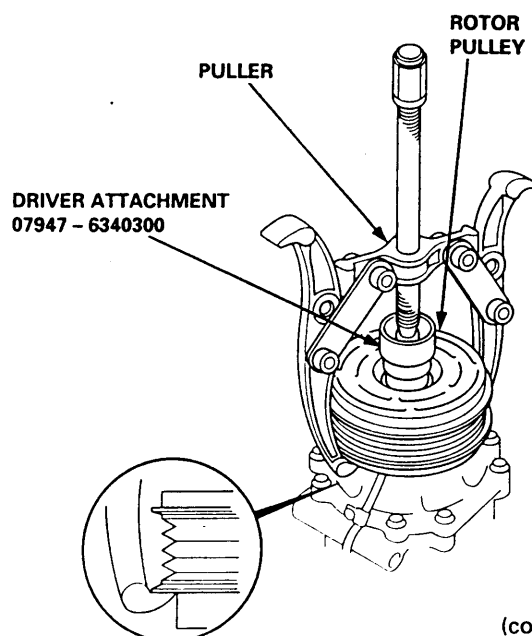
NOTE:

- Be careful not to damage the rotor pulley and compressor during removal/installation.
- Once snap ring B is removed, replace it with a new one.



4. Remove the rotor pulley from the shaft with a puller and the special tool.

NOTE: Put the claws of the puller on the back of the rotor pulley, not on the belt area; otherwise the rotor pulley can be damaged.



(cont'd)

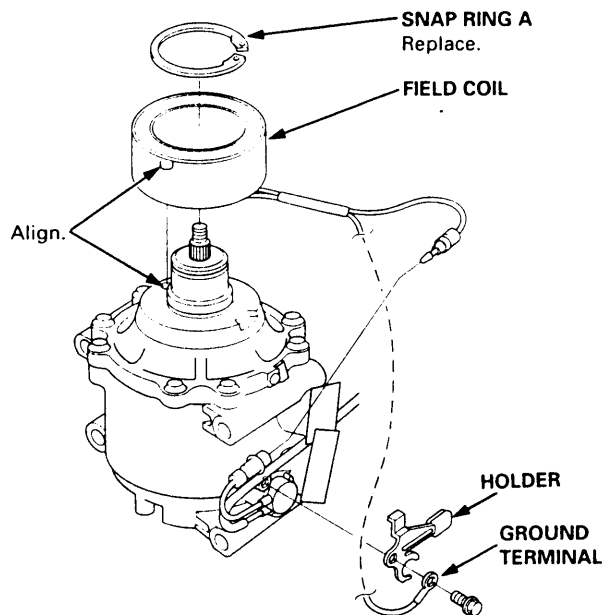
Compressor

Clutch Overhaul (cont'd)

5. Remove the screw from the field coil ground terminal, then disconnect the field coil connector. Remove snap ring A with snap ring pliers, then remove the field coil.

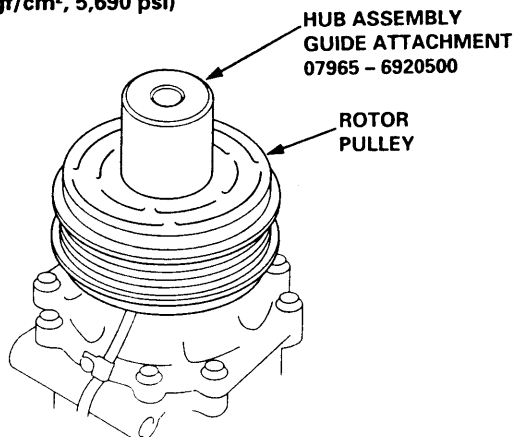
NOTE:

- Be careful not to damage the field coil and compressor during remove/installation.
- Once snap ring A is removed, replace it with a new one.
- When installing the field coil, align the boss on the field coil with the hole in the compressor.



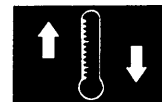
6. Position the rotor pulley squarely over the field coil. Press the rotor pulley onto the compressor boss with the special tool. If the rotor pulley does not press on straight, remove it, and check the rotor pulley and compressor boss for burrs or damage.

CAUTION: Maximum press load: 39,200 kPa (400 kgf/cm², 5,690 psi)



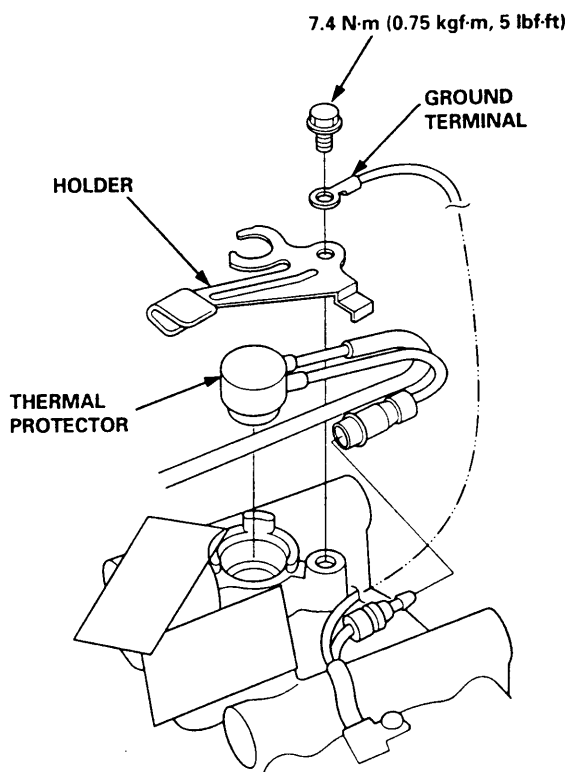
7. Assemble in the reverse order of disassembly. Make note of the following items.

- Install the field coil with the wire side facing down.
- Clean the rotor pulley and compressor sliding surfaces with non-petroleum solvent.
- Make sure the snap rings 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.

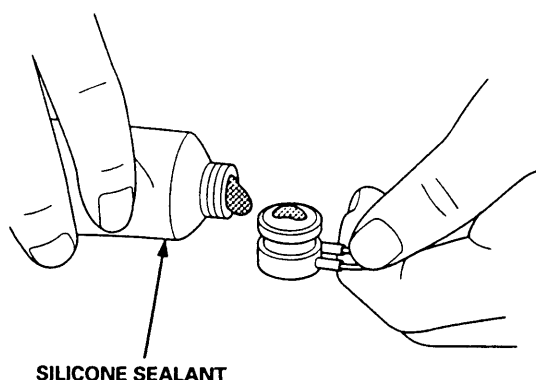


Thermal Protector Replacement

1. Remove the bolt, the ground terminal and the holder. Disconnect the field coil connector, then remove the thermal protector.



2. Replace the thermal protector with a new one, and apply silicone sealant to the top of the thermal protector.



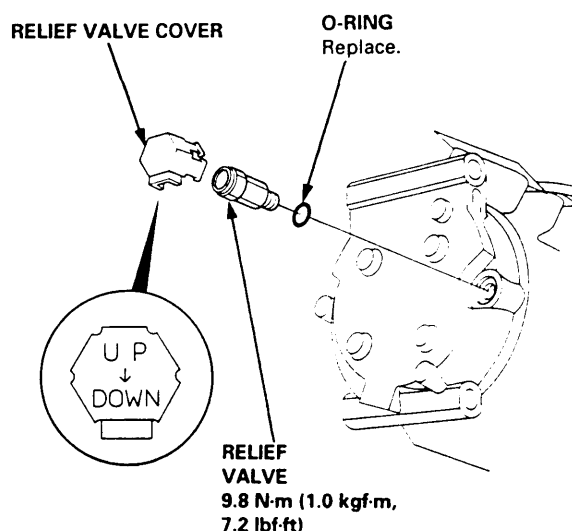
3. Install in the reverse order of removal.

Relief Valve Replacement

1. Remove the relief valve cover, the relief valve and the O-ring.

NOTE:

- Do not let the compressor oil run out.
- Make sure that no foreign matter enters the system.



2. Clean the mating surfaces.
3. Replace the O-ring with a new one at the relief valve, and apply a thin coat of refrigerant oil before installing it.

NOTE:

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

4. Install and tighten the relief valve.
5. Put the cover on the relief valve so that the arrow directs downwards as shown in the illustration above.
6. Charge the system (see page 22-26), and test its performance (see page 22-22).

A/C Compressor Belt

Adjustment

Deflection Method

1. Apply a force of 98 N (10 kgf, 22 lbf), and measure the deflection between the A/C compressor and the crankshaft pulley.

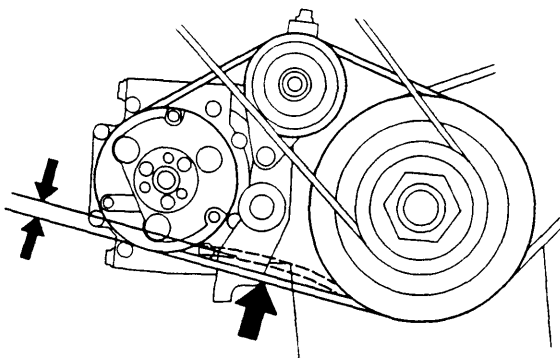
A/C Compressor Belt

Used Belt: 7.5 – 9.5 mm (0.30 – 0.37 in)

New Belt: 5.0 – 6.5 mm (0.20 – 0.26 in)

NOTE:

- If there are cracks or any damage evident on the belt, replace it with a new one.
- "Used belt" means a belt which has been used for five minutes or more.
- "New belt" means a belt which has been used for less than five minutes.



2. Loosen the center nut of the idler pulley.
3. Turn the adjusting bolt to get proper belt tension.
4. Retighten the center nut of the idler pulley.
5. Recheck the deflection of the A/C compressor belt.

Tension Gauge Method

1. Attach the special tool to the A/C compressor belt as shown below, and measure the tension of the belt.

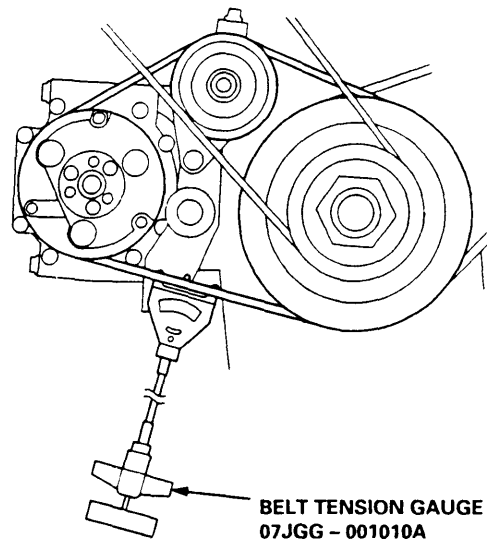
A/C Compressor Belt

Used Belt: 340 – 490 N (35 – 50 kgf, 77 – 110 lbf)

New Belt: 690 – 830 N (70 – 85 kgf, 150 – 190 lbf)

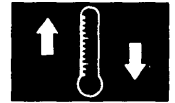
NOTE:

- Follow the manufacturer's instructions for the belt tension gauge.
- If there are cracks or any damage evident on the belt, replace it with a new one.
- "Used belt" means a belt which has been used for five minutes or more.
- "New belt" means a belt which has been used for less than five minutes.



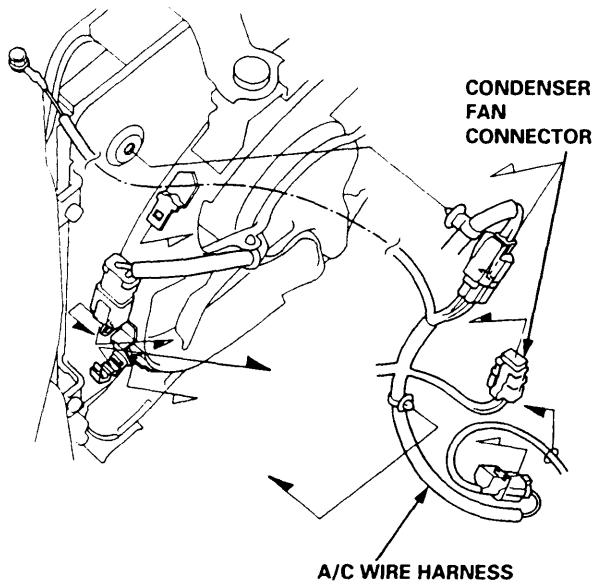
2. Loosen the center nut of the idler pulley.
3. Turn the adjusting bolt to get proper belt tension.
4. Retighten the center nut of the idler pulley.
5. Recheck the tension of the A/C compressor belt.

Condenser



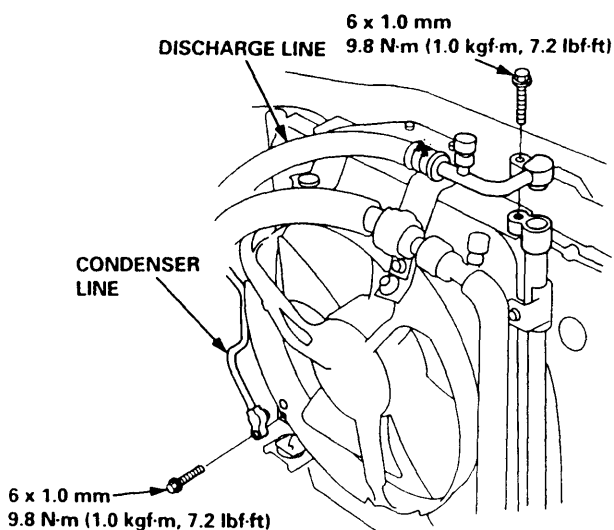
Replacement

1. Recover the refrigerant with a Recovery/Recycling/Charging System (see page 22-24).
2. Disconnect the condenser fan connector from the A/C wire harness, then remove the A/C wire harness from the condenser fan shroud.



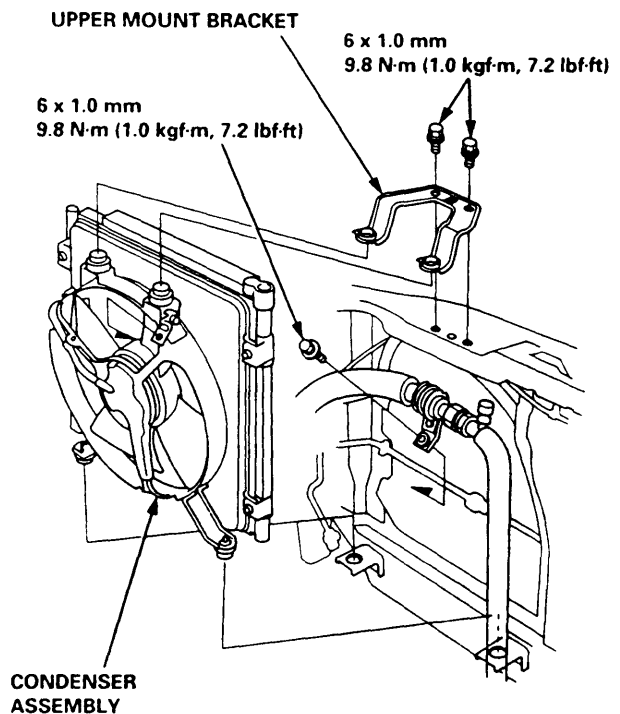
3. Remove the bolts, then disconnect the discharge and condenser lines from the condenser.

NOTE: Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.



4. Remove the bolt from the suction hose bracket, and remove the bolts and the upper mount bracket. Remove the condenser assembly by lifting it up.

NOTE: Be careful not to damage the condenser fins when removing the condenser assembly.



5. Install in the reverse order of removal. Make note of the following items.

- If you're installing a new condenser, add refrigerant oil (SP-10) (see page 22-19).
- Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them.
NOTE: Be sure to use the right O-rings for HFC-134a (R-134a) to avoid leakage.
- Be careful not to damage the condenser fins when installing the condenser assembly.
- Charge the system (see page 22-26), and test its performance (see page 22-22).

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

The Acura 1.6EL SRS includes a driver's airbag located in the steering wheel hub, and a passenger's airbag located in the dashboard above the glove box. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents page include, or are located near, SRS components. Servicing, disassembling or replacing these items will require special precautions and tools, and should therefore be done by an authorized Acura dealer.

⚠ WARNING

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

NOTE: The original radio has a coded theft protection circuit. Be sure to get the customer's code number before

- disconnecting the battery.
- removing the No. 47 (7.5 A) fuse from the under-hood fuse/relay box.
- removing the radio.

After service, reconnect power to the radio and turn it on. When the word "CODE" is displayed, enter the customer's 5-digit code to restore radio operation.