

Air Conditioning

Special Tools	22-2	*Evaporator	
Illustrated Index	22-3	Replacement	22-21
Wiring/Connector Locations	22-4	Overhaul	22-22
Circuit Diagram	22-5	Compressor	
Troubleshooting		Description	22-23
Reference Chart	22-6	Illustrated Index	22-24
Flowchart		Replacement	22-25
Condenser Fan	22-7	Clutch Inspection	22-27
Compressor	22-9	Clutch Overhaul	22-28
A/C System	22-12	Thermal Protector Replacement ...	22-30
A/C Thermostat		Relief Valve Replacement	22-30
Test	22-14	Belt Adjustment	22-31
Relay		Condenser	
Test	22-14	Replacement	22-32
Diode		A/C System Service	
Test	22-15	Evacuation	22-32
A/C Switch		Charging	22-33
Test	22-15	Leak Test	22-34
A/C Service Tips and Precautions ...	22-16		
A/C System Service		*: Read SRS precautions before working in this area.	
Recovery	22-17		
Performance Test	22-18		
Pressure Test Chart	22-20		



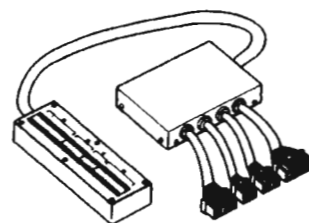
Ref. No.	Tool Number	Description	Qty	Page Reference
①	07JAC-SH20300	Shaft Ring Remover	1	22-29
②	07JGG-001010A	Belt Tension Gauge	1	22-31
③	07LAJ-PT3010A	Test Harness	1	22-11
④	07945-4150200	Seal Driver	1	22-28



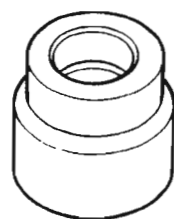
①



②



③



④

Illustrated Index



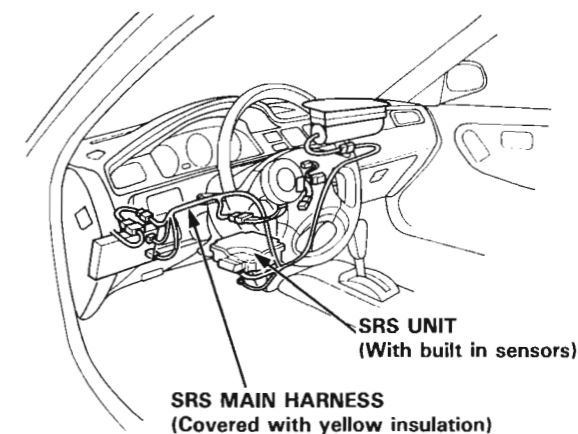
CAUTION:

- All SRS wire harnesses are covered with yellow insulation. Before you disconnect any part of an SRS wire harness, connect the short connectors.
- Whenever the ignition switch is ON (II), or has been turned OFF for less than three minutes, be careful not to bump the SRS unit; the airbags could accidentally deploy and cause damage or injuries.
- Refer to additional precautions beginning on page 23-305 in the SRS sub-section.

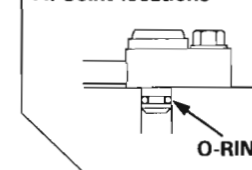
NOTE: The original radio has a coded theft protection circuit. Be sure to get the customer's code number before

- disconnecting the battery.
- removing the No. 32 (7.5 A) fuse from the under-hood fuse/relay box.
- removing the radio.

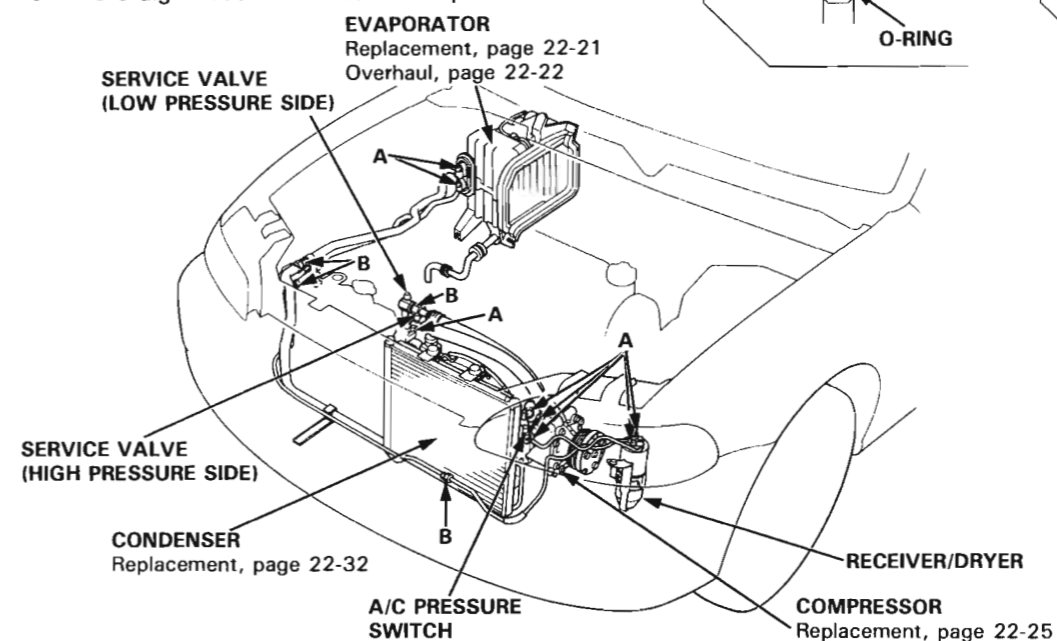
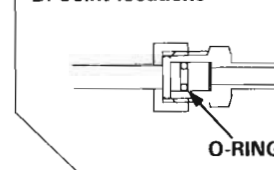
After service, reconnect power to the radio and turn it on. When the word "CODE" is displayed, enter the customer's 5-digit code to restore radio operation.



A: Joint locations



B: Joint locations



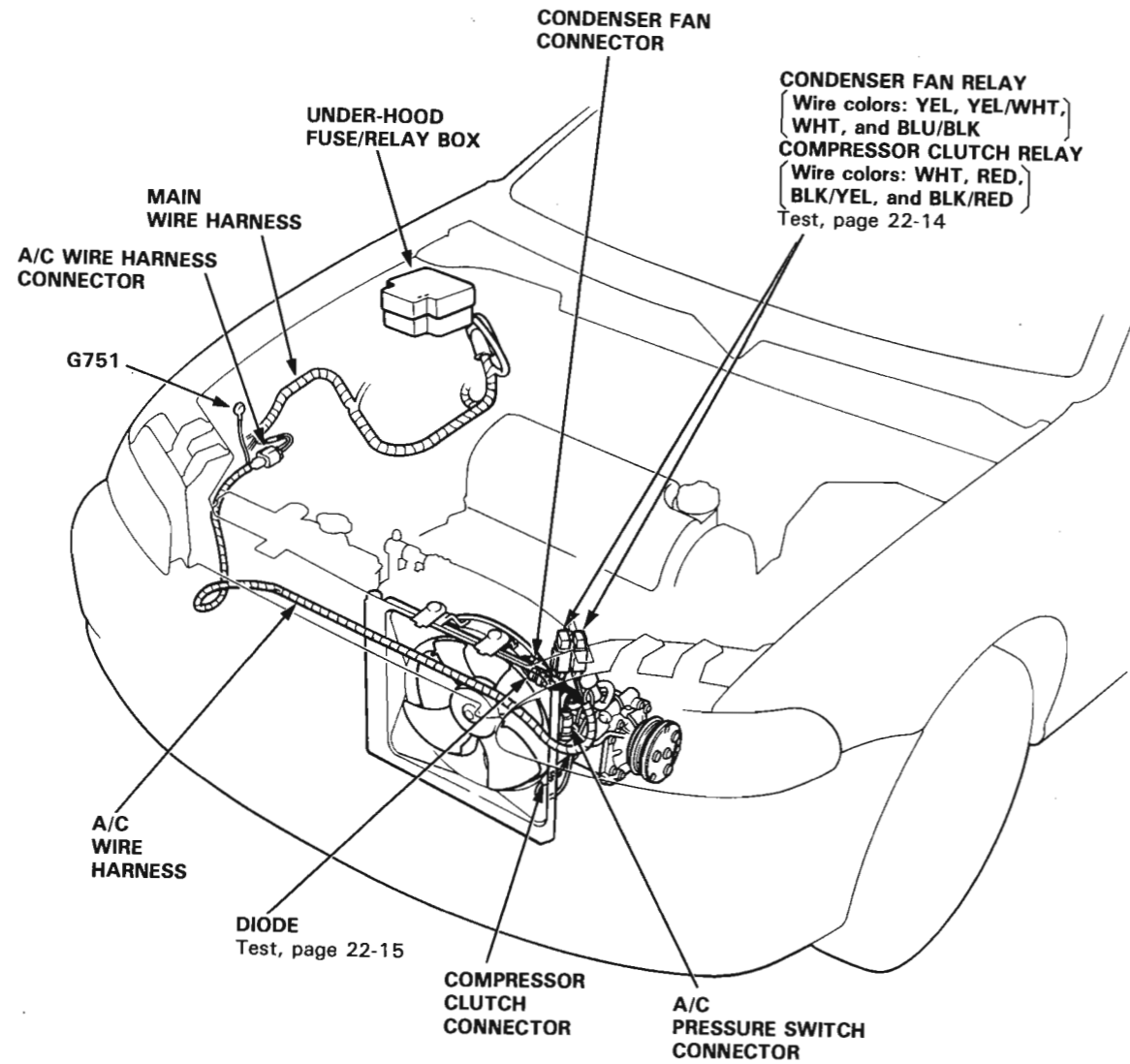
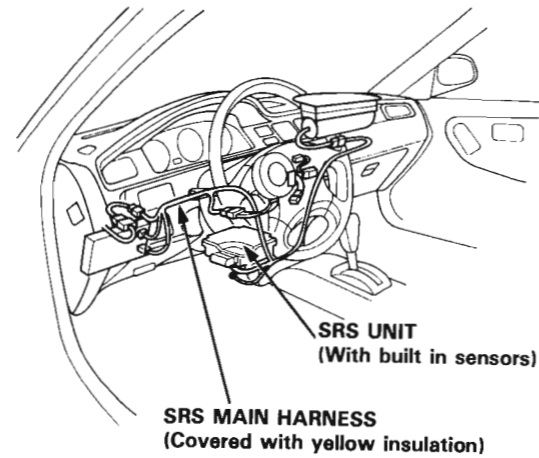
This car uses HFC-134a (R-134a) refrigerant which does not contain chlorofluorocarbons. Pay attention to the following service items:

- 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: P/N 38899-P13-A01) 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. Only use 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 Recover/Recycling/Charging System before disconnecting any A/C fitting.

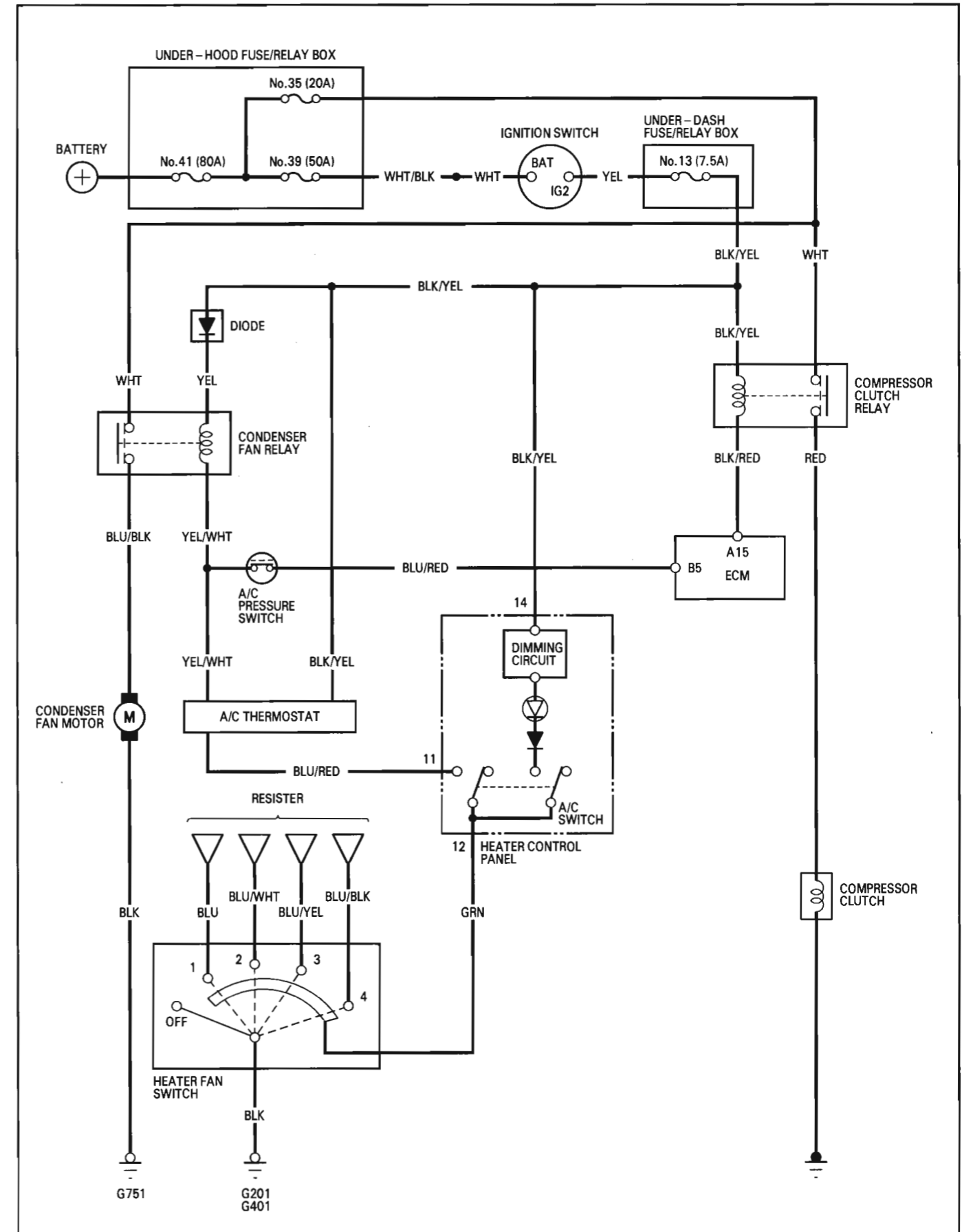
Wiring/Connector Locations

CAUTION:

- All SRS wire harnesses are covered with yellow insulation. Before you disconnect any part of an SRS wire harness, connect the short connectors.
- Whenever the ignition switch is ON (II), or has been turned OFF for less than three minutes, be careful not to bump the SRS unit; the airbags could accidentally deploy and cause damage or injuries.
- Refer to additional precautions beginning on page 23-305 in the SRS sub-section.



Circuit Diagram



Troubleshooting

Reference Chart

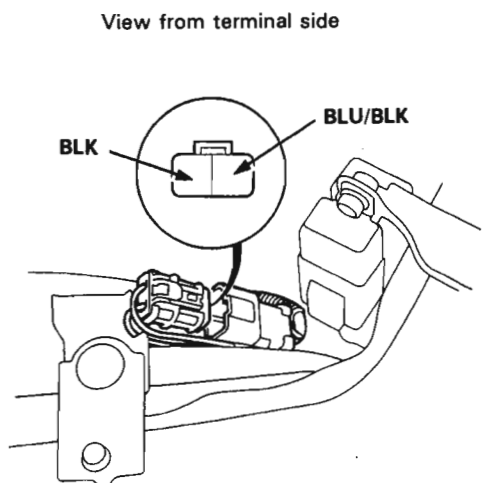
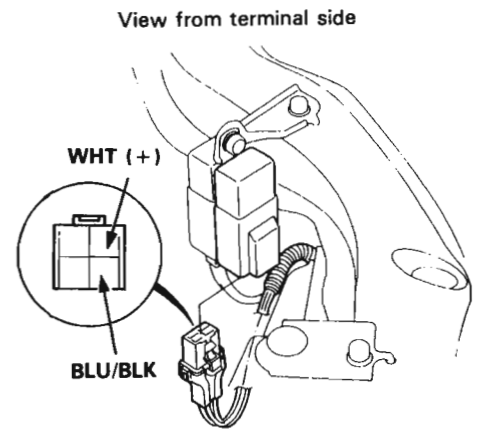
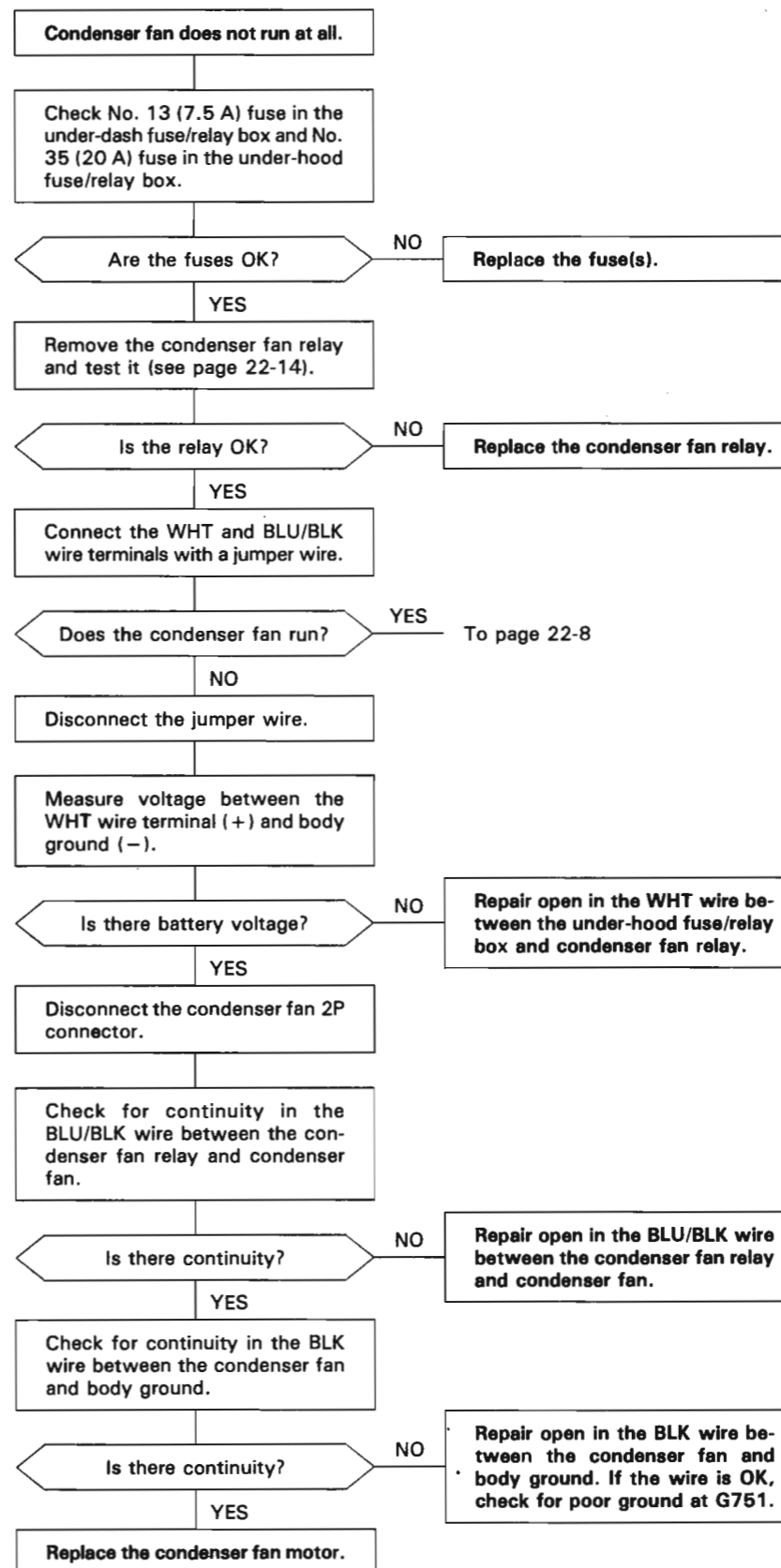
- Any abnormality must be corrected before continuing the test.
- Because of the precise measurements needed, use a multimeter when testing.

Before performing any troubleshooting procedures check:

- Fuses No. 41 (80 A), No. 39 (50 A), No. 13 (7.5 A), No. 35 (20 A)
- Grounds No. G751, G201, G401
- Cleanliness and tightness of all connectors.

SYMPTOM	REMEDY
Condenser fan does not run at all.	Perform the procedures in the flowchart (see page 22-7).
Compressor clutch does not engage.	Perform the procedures in the flowchart (see page 22-9).
A/C system does not come on (compressor and fan).	Perform the procedures in the flowchart (see page 22-12).

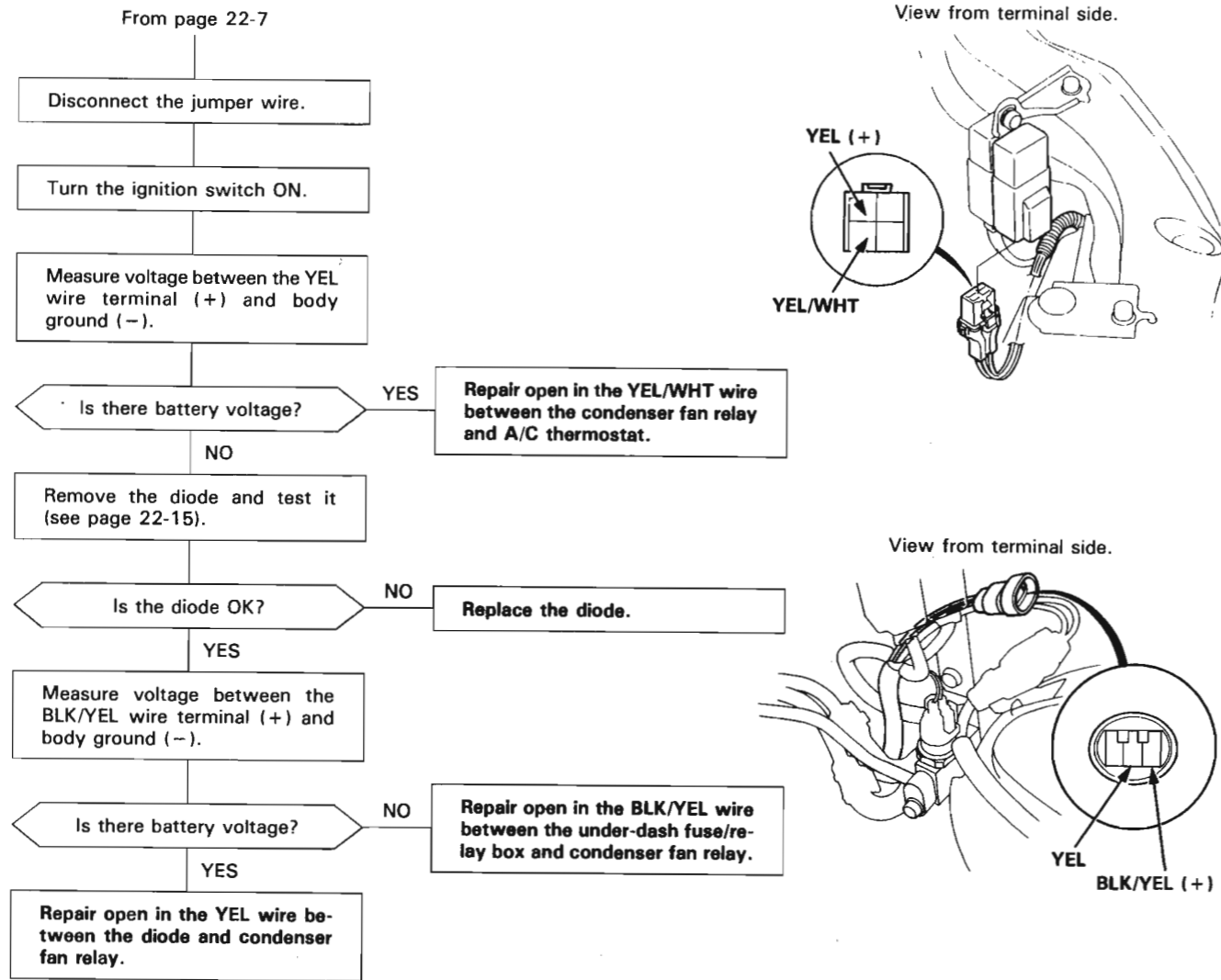
Flowchart — Condenser Fan



(cont'd)

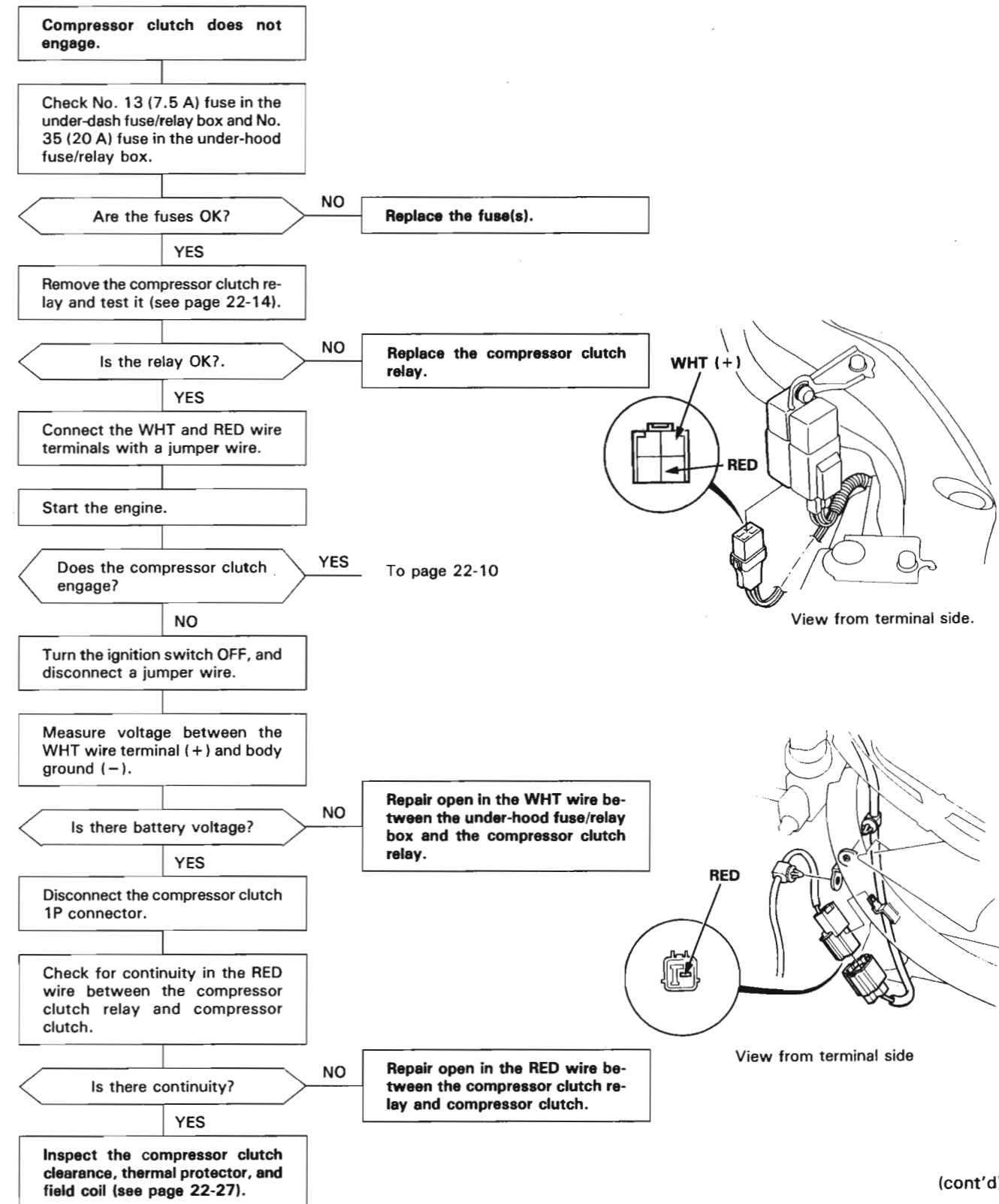
Troubleshooting

Flowchart — Condenser Fan (cont'd)



Flowchart — Compressor

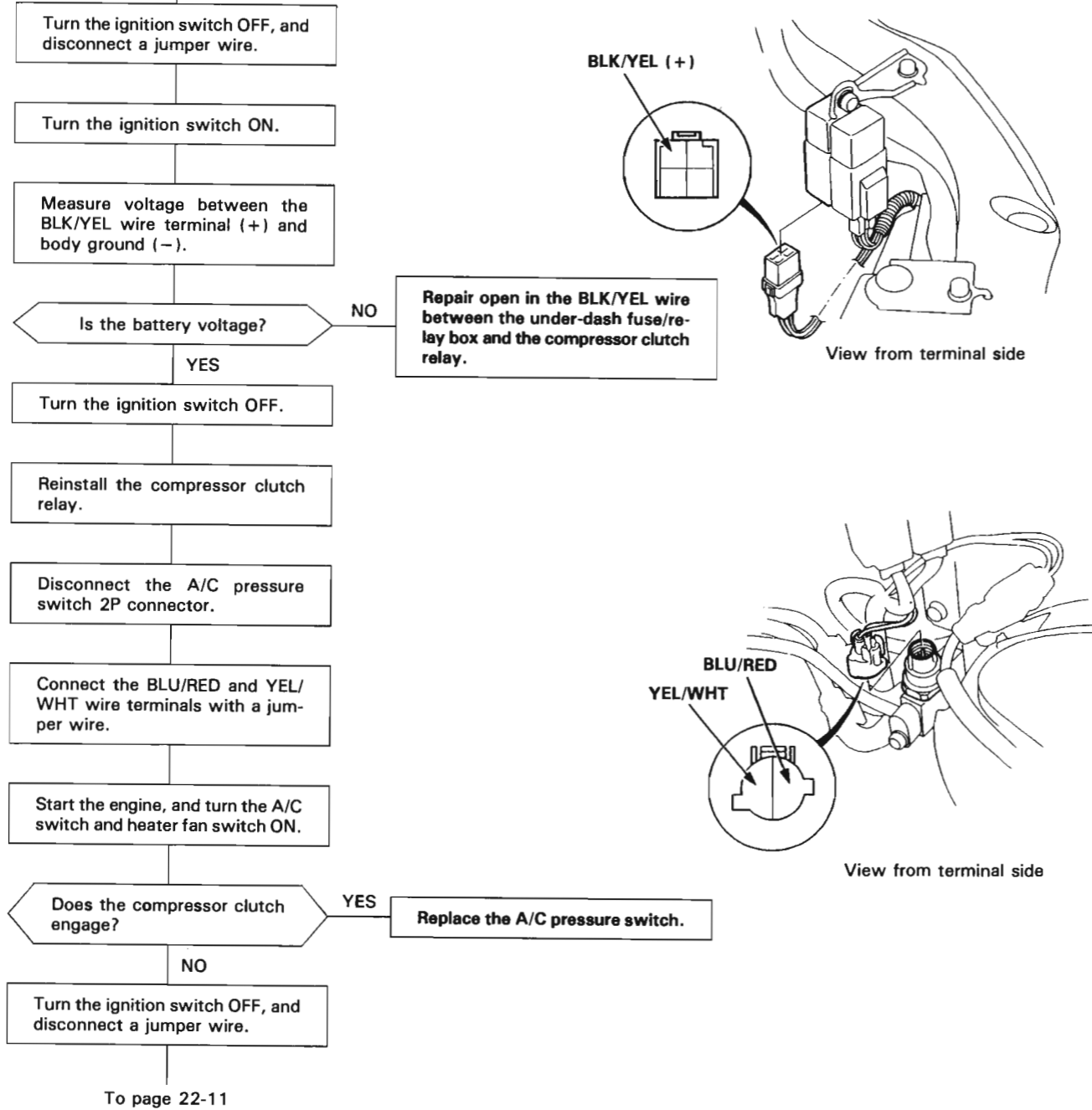
NOTE: First, check for refrigerant pressure.



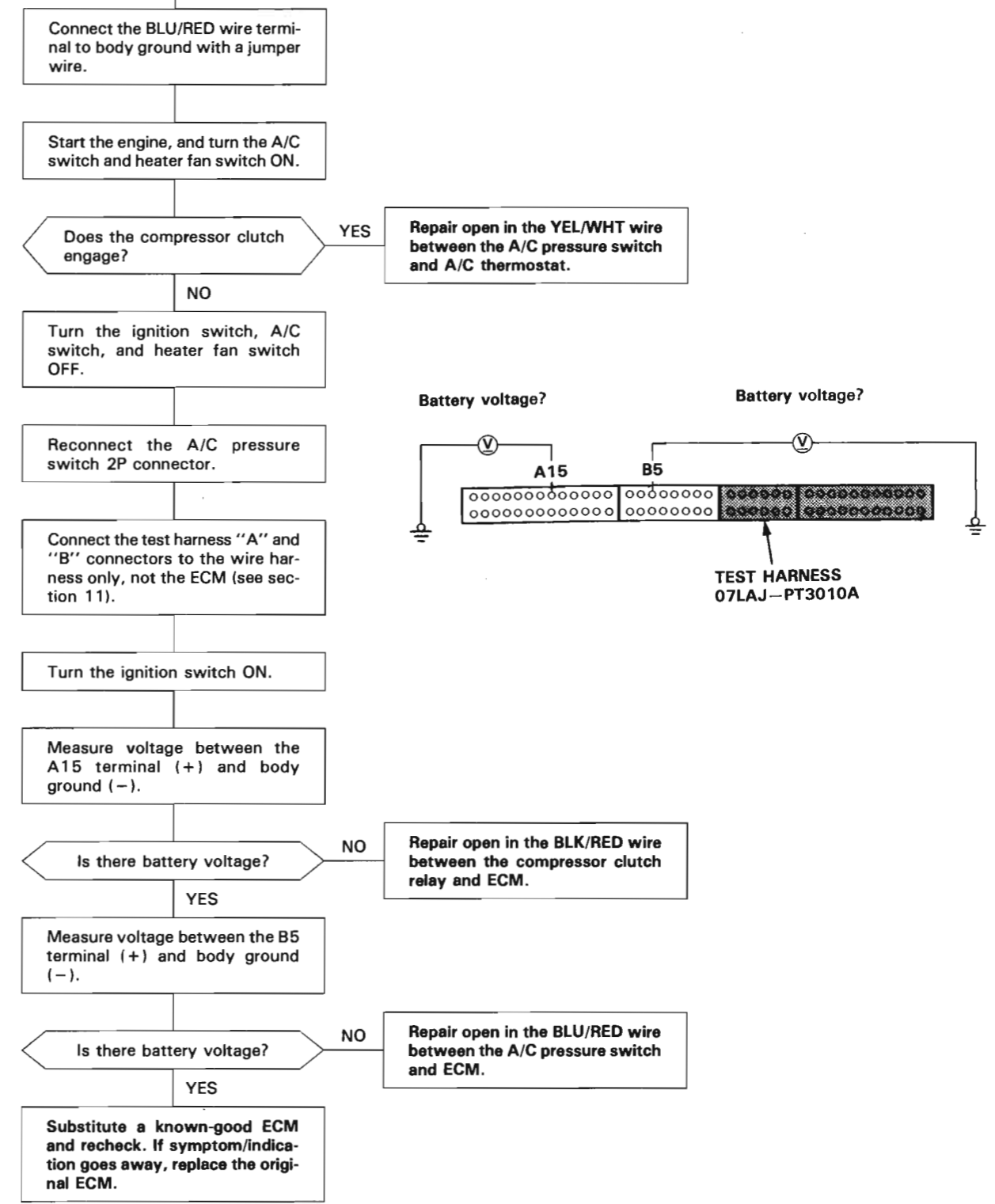
Troubleshooting

Flowchart — Compressor (cont'd)

From page 22-9

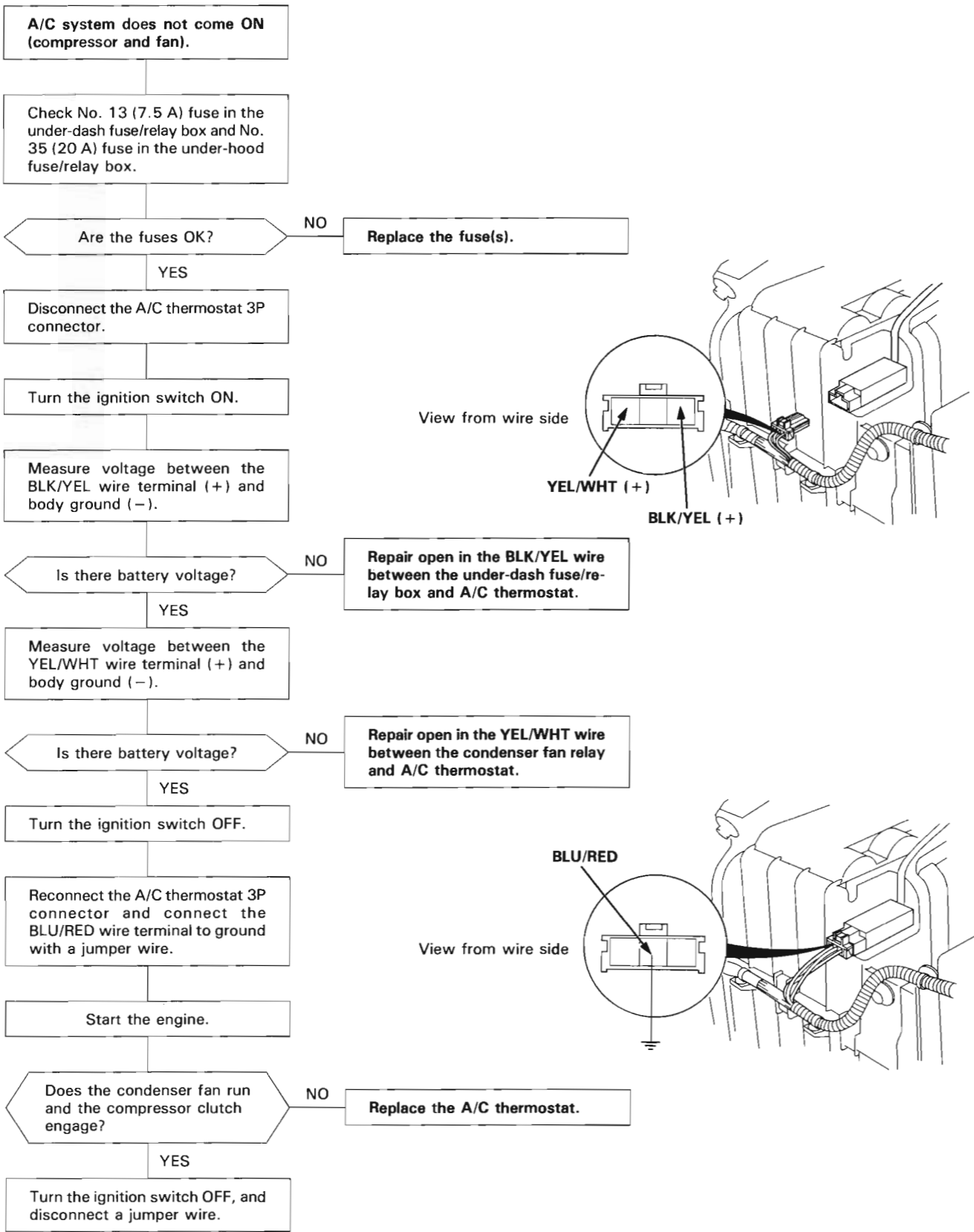


From page 22-10

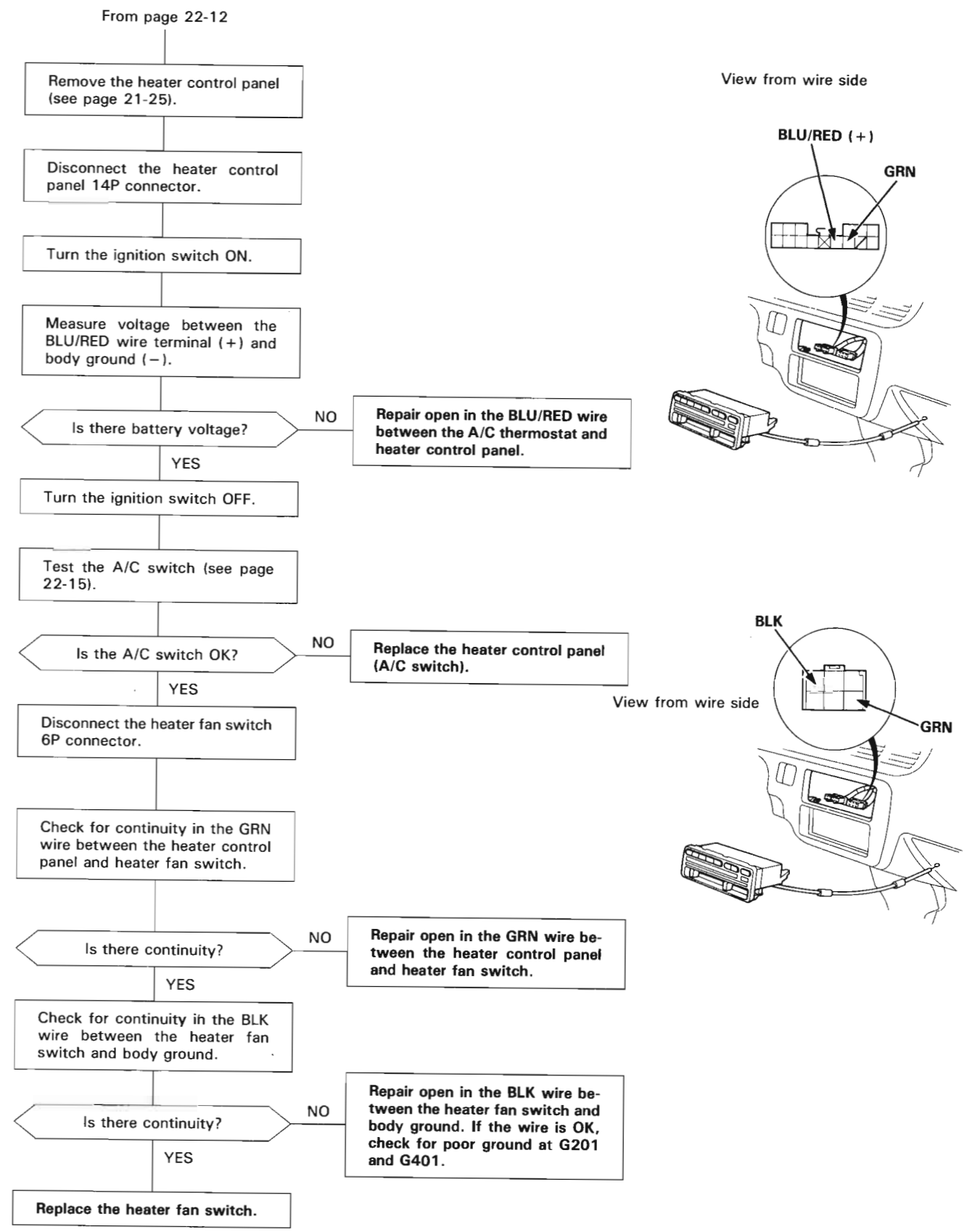
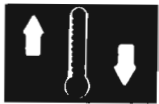


Troubleshooting

Flowchart — A/C System



To page 22-13



A/C Thermostat

Test

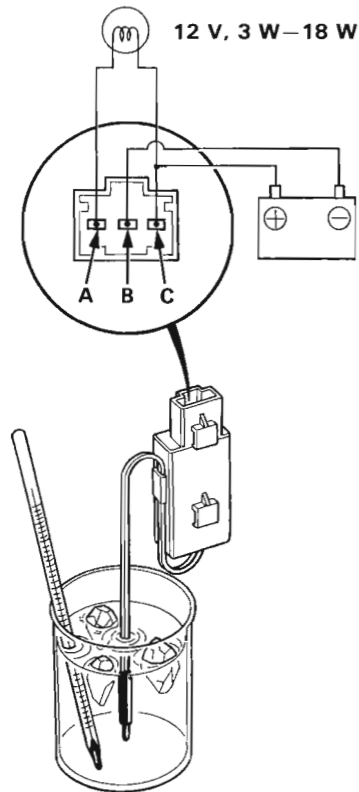
Connect battery power to terminal C and ground terminal B, and connect a test light between terminals A and C.

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 37°F (3°C) or less, and should come on at 39°F (4°C) or more.

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



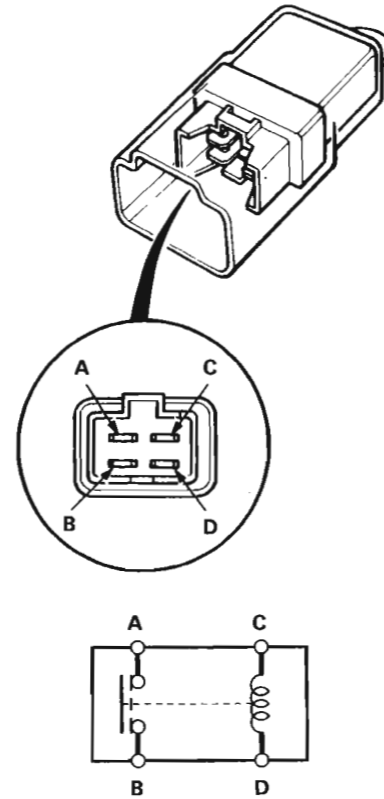
Relay

Test

There should be continuity between the C and D terminals.

There should be continuity between the A and B terminals when power and ground are connected to the C and D terminals.

There should be no continuity when power is disconnected.

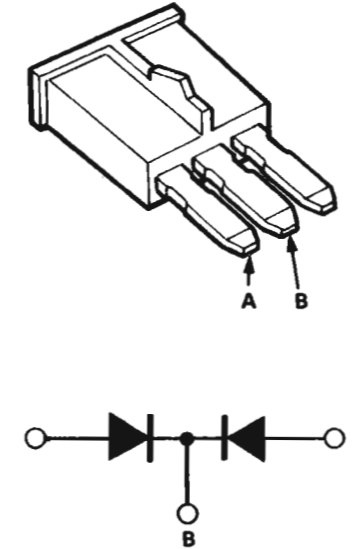


Diode

Test

NOTE: The diodes are designed to pass current in one direction while blocking it in the opposite direction. Most ohmmeters, unless equipped with a diode tester, should not be used to test diodes.

Check for continuity in both directions between the A and B terminals. There should be continuity in only one direction.

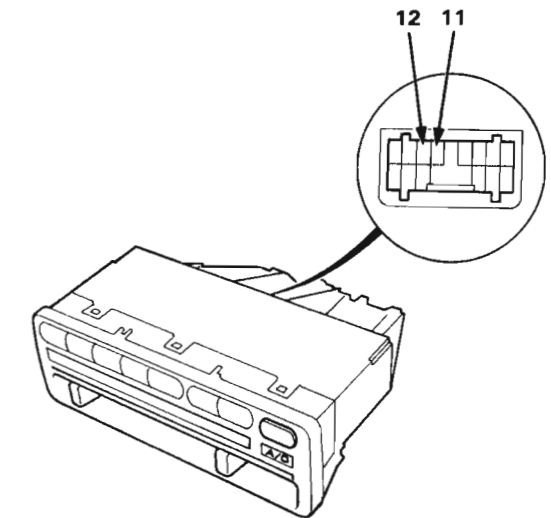


A/C Switch

Test

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

Terminal	12	11
Position		
ON	○	○
OFF		



A/C Service Tips and Precautions

The air conditioner system uses HFC-134a (R-134a) refrigerant and polyalkyleneglycol (PAG) refrigerant oil (SP-10: P/N 38899-P13-A01), 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.

Only use 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.

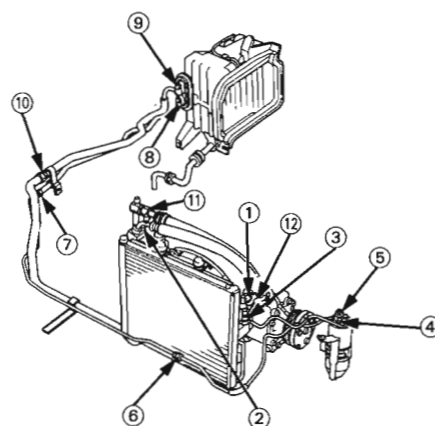
1. Always disconnect the negative cable from the battery whenever replacing air conditioning parts.
2. Keep moisture and dust out of the system. When disconnecting any lines, plug or cap the fittings immediately; don't remove the caps or plugs until just before you reconnect each line.
3. Before connecting any hose or line, apply a few drops of refrigerant oil (SP-10: P/N 38899-P13-A01) to the O-ring.
4. When tightening or loosening a fitting, use a second wrench to support the matching fitting.
5. When recovering the system, use a R-134a refrigerant Recovery/Recycling/Charging System; don't release refrigerant into the atmosphere.
6. Add refrigerant oil (SP-10: P/N 38899-P13-A01) 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 car; 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 1/2 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 120 ml (4 fl-oz, 4.2 Imp-oz), and drain the calculated volume of oil from the new compressor: 120 ml (4 fl-oz, 4.2 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.



- | | |
|--|-----------------------------|
| ① Discharge hose to the compressor (6 x 1.0 mm) | 10 N·m (1.0 kg-m, 7 lb-ft) |
| ② Discharge hose to the condenser (6 x 1.0 mm) | 10 N·m (1.0 kg-m, 7 lb-ft) |
| ③ Condenser pipe to the condenser (6 x 1.0 mm) | 10 N·m (1.0 kg-m, 7 lb-ft) |
| ④ Condenser pipe to the receiver/dryer (6 x 1.0 mm) | 10 N·m (1.0 kg-m, 7 lb-ft) |
| ⑤ Receiver pipe A to the receiver/dryer (6 x 1.0 mm) | 10 N·m (1.0 kg-m, 7 lb-ft) |
| ⑥ Receiver pipe A to the receiver pipe B | 13 N·m (1.3 kg-m, 9 lb-ft) |
| ⑦ Receiver pipe B to the receiver pipe C | 13 N·m (1.3 kg-m, 9 lb-ft) |
| ⑧ Receiver pipe C to the evaporator (6 x 1.0 mm) | 10 N·m (1.0 kg-m, 7 lb-ft) |
| ⑨ Suction pipe B to the evaporator (6 x 1.0 mm) | 10 N·m (1.0 kg-m, 7 lb-ft) |
| ⑩ Suction pipe A to the suction pipe B | 32 N·m (3.2 kg-m, 23 lb-ft) |
| ⑪ Suction hose to the suction pipe A | 32 N·m (3.2 kg-m, 23 lb-ft) |
| ⑫ Suction hose to the compressor (6 x 1.0 mm) | 22 N·m (2.2 kg-m, 16 lb-ft) |

A/C System Service

Recovery

Only use 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.

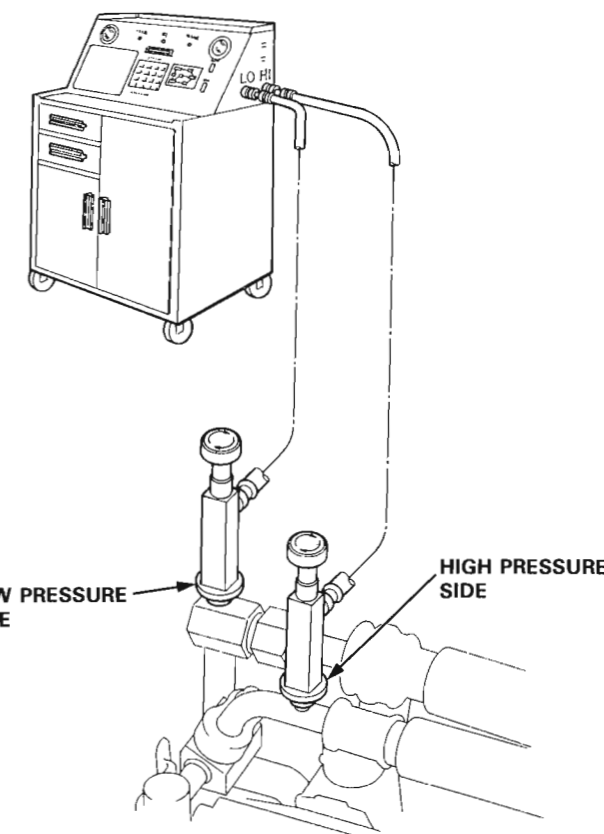
WARNING Some mixtures of air and R-134a have been shown to be combustible at elevated pressures and can result in fire or explosion causing injury or property damage. Never use compressed air to pressure test R-134a service equipment or vehicle air conditioner systems.

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 car, 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.



A/C System Service

Performance Test

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

Only use 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.

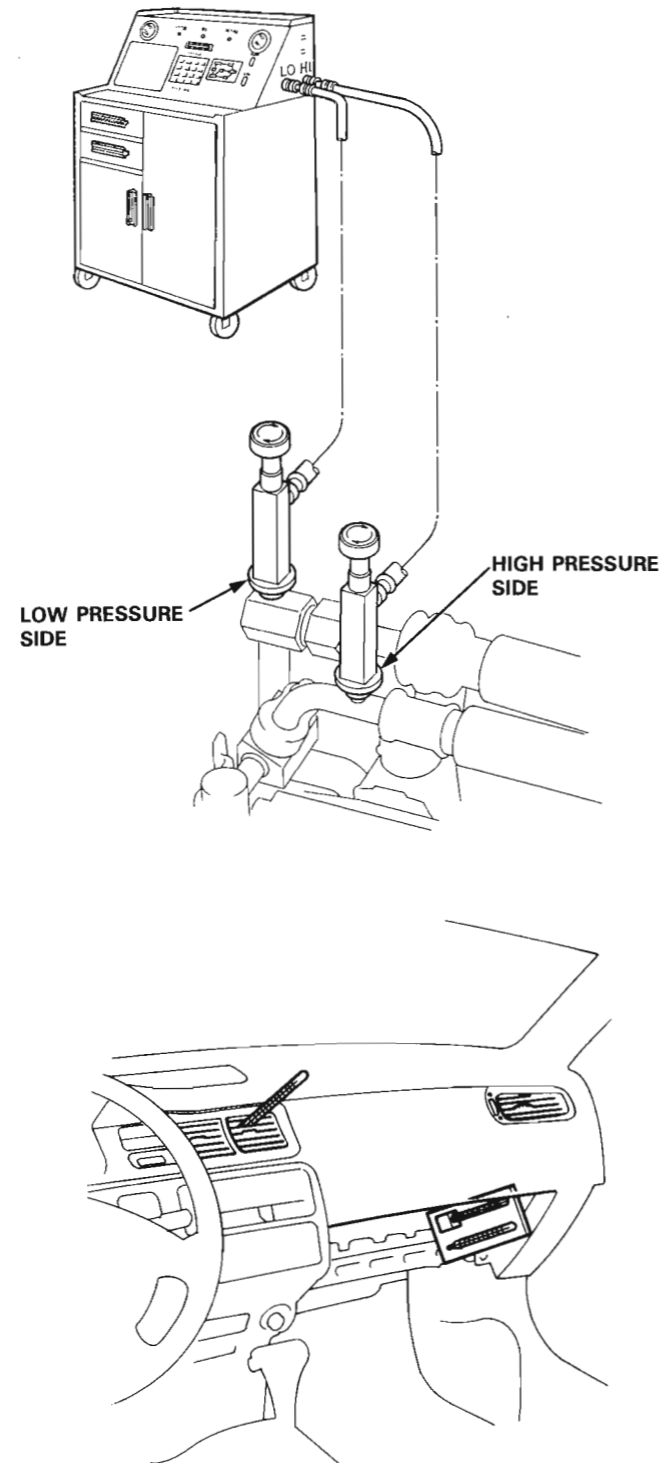
R-134a service equipment or vehicle air conditioner systems should not be pressure tested or leak tested with compressed air.

⚠ 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.

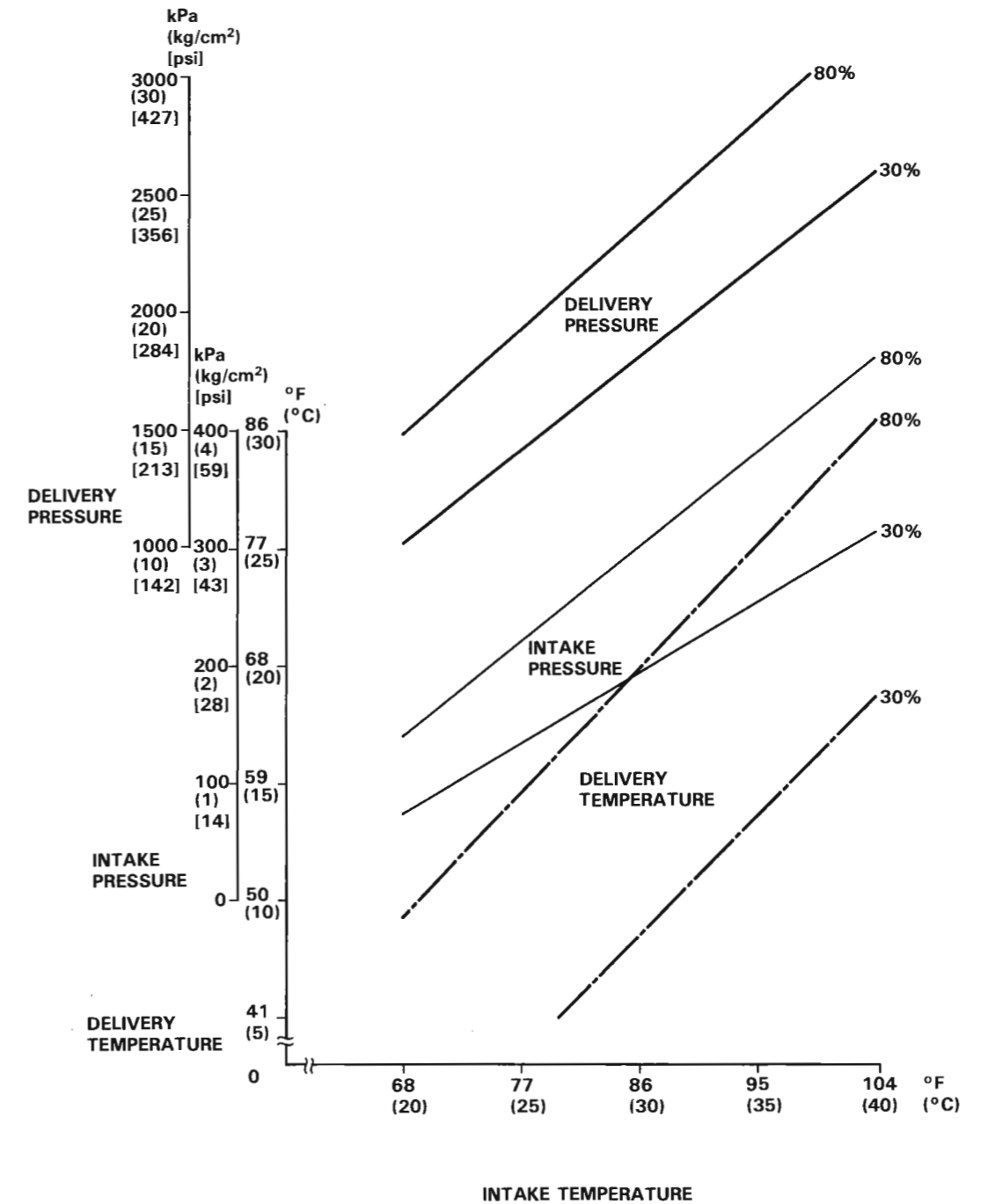
Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. Connect a R-134a refrigerant Recovery/Recycling/Charging System to the car, as shown, following the equipment manufacturer's instructions.
2. Insert a thermometer in the center vent outlet. Determine the relative humidity and air temperature by calling the local weather information line.
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.
 - Slide the 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

Pressure Test Chart

NOTE: Performance Test on page 22-18.

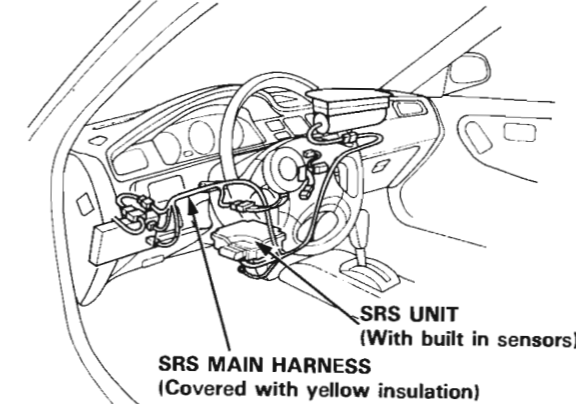
TEST RESULTS	RELATED SYMPTOMS	PROBABLE CAUSE	REMEDY
Discharge (high) pressure abnormally high	After stopping compressor, pressure drops to about 200 kPa (2.0 kg/cm ² , 28 psi) quickly, and then falls gradually.	Air in system	Recover, evacuate and recharge with specified amount. Evacuation: see page 22-33 Charging: see page 22-33
	Reduced or no air flow through condenser.	<ul style="list-style-type: none"> Clogged condenser or radiator fins Condenser or radiator fan not working properly 	<ul style="list-style-type: none"> Clean Check voltage and fan rpm Check fan direction
	Line to condenser is excessively hot.	Restricted flow of refrigerant in system	<ul style="list-style-type: none"> Restricted lines
Discharge pressure abnormally low	High and low pressures are balanced soon after stopping compressor. Low side is higher than normal.	<ul style="list-style-type: none"> Faulty compressor discharge valve Faulty compressor seal 	Replace the compressor.
	Outlet of expansion valve is not frosted, low pressure gauge indicates vacuum.	<ul style="list-style-type: none"> Faulty expansion valve Moisture in system 	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> Clogged condenser or radiator fins Condenser or radiator fan not working properly 	<ul style="list-style-type: none"> Clean condenser and radiator 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.

Evaporator

Replacement

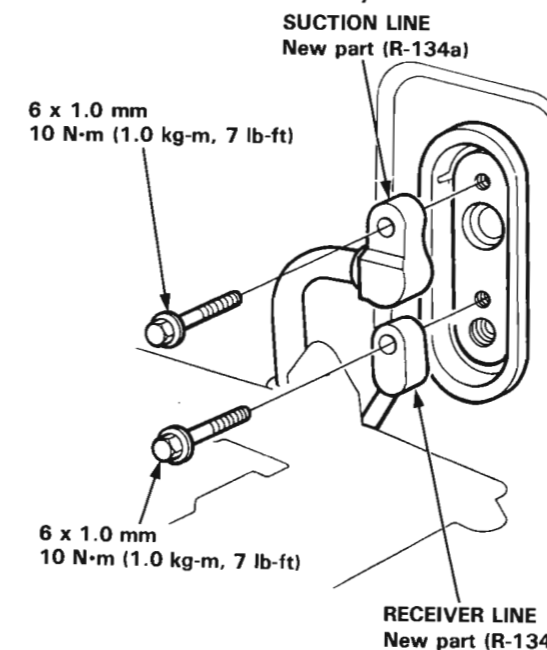
CAUTION:

- All SRS wire harnesses are covered with yellow insulation. Before you disconnect any part of an SRS wire harness, connect the short connectors.
- Whenever the ignition switch is ON (II), or has been turned OFF for less than three minutes, be careful not to bump the SRS unit; the airbags could accidentally deploy and cause damage or injuries.
- Refer to additional precautions beginning on page 23-305 in the SRS sub-section.

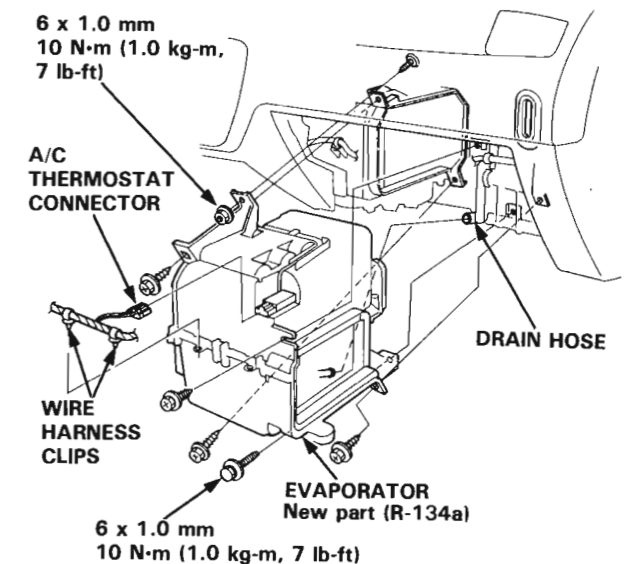


- Disconnect the battery negative cable, then disconnect the positive cable. Remove the battery.
- Recover the refrigerant using a Refrigerant Recovery/Recycling System (see page 22-17).
- Remove the bolts and disconnect the receiver line and suction line from the evaporator.

CAUTION: Cap the open fittings immediately to keep moisture out of the system.



- Remove the glove box and glove box frame (see section 20).
- Disconnect the connector from the A/C thermostat and, remove the wire harness clips from the evaporator.
- Remove the four self-tapping screws, bolt and nut.
- Disconnect the drain hose, and remove the evaporator.



- Install in the reverse order of removal, and:

- If you're installing a new evaporator, add refrigerant oil (SP-10: P/N 38899-P13-A01) (see page 22-16).
- Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil (SP-10: P/N 38899-P13-A01) before installing them.

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

- Apply a sealant to the gommets.
- Make sure that there is no air leakage.
- Charge the system (see page 22-33) and test performance (see page 22-18).

Evaporator

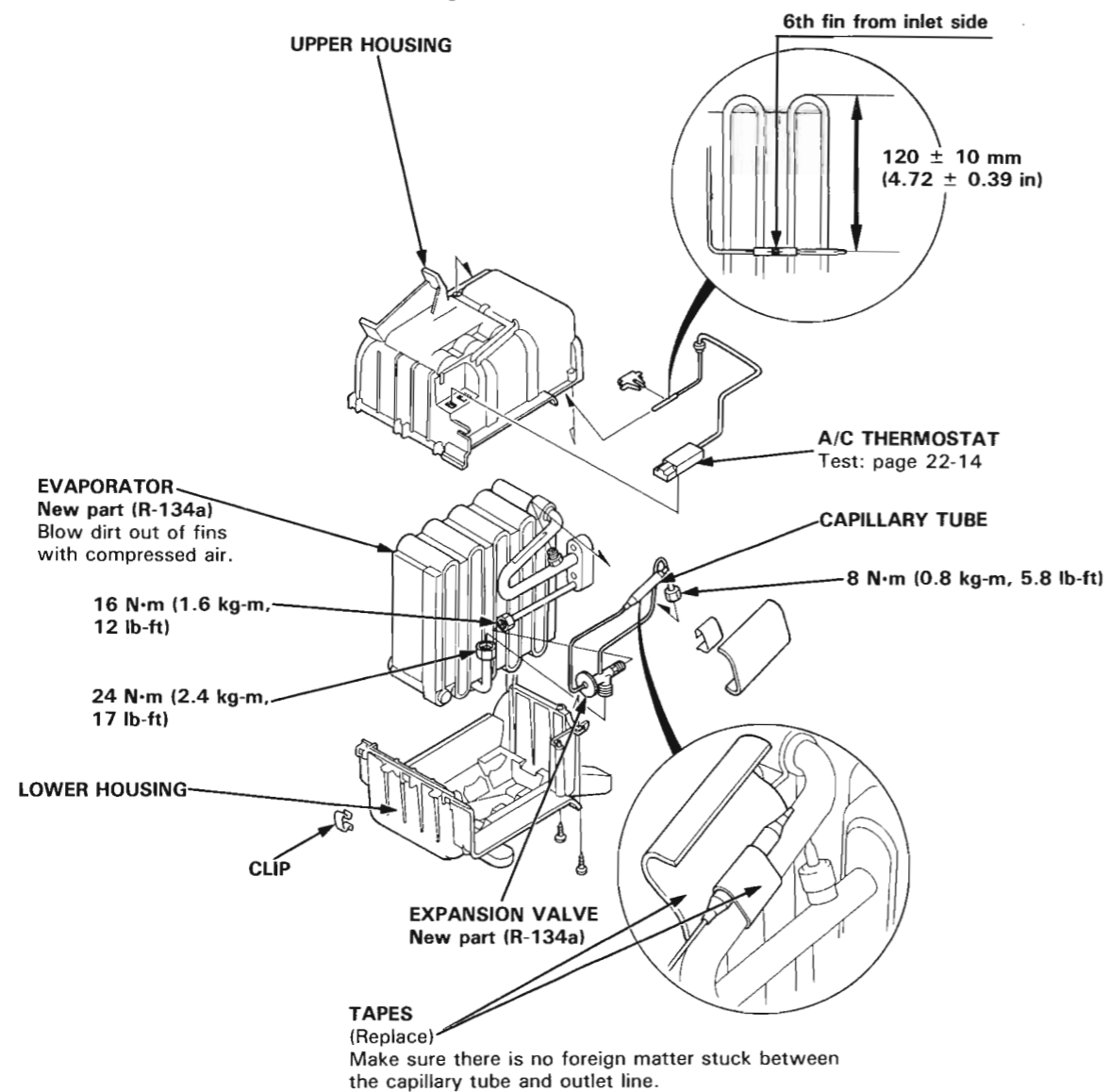
Overhaul

1. Pull the A/C thermostat sensor out of the evaporator fins.
2. Remove the self-tapping screws and clips from the housing.
3. Carefully separate the housings, and remove the evaporator covers.
4. Remove the expansion valve if necessary.

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

Assemble in the reverse order of disassembly, and:

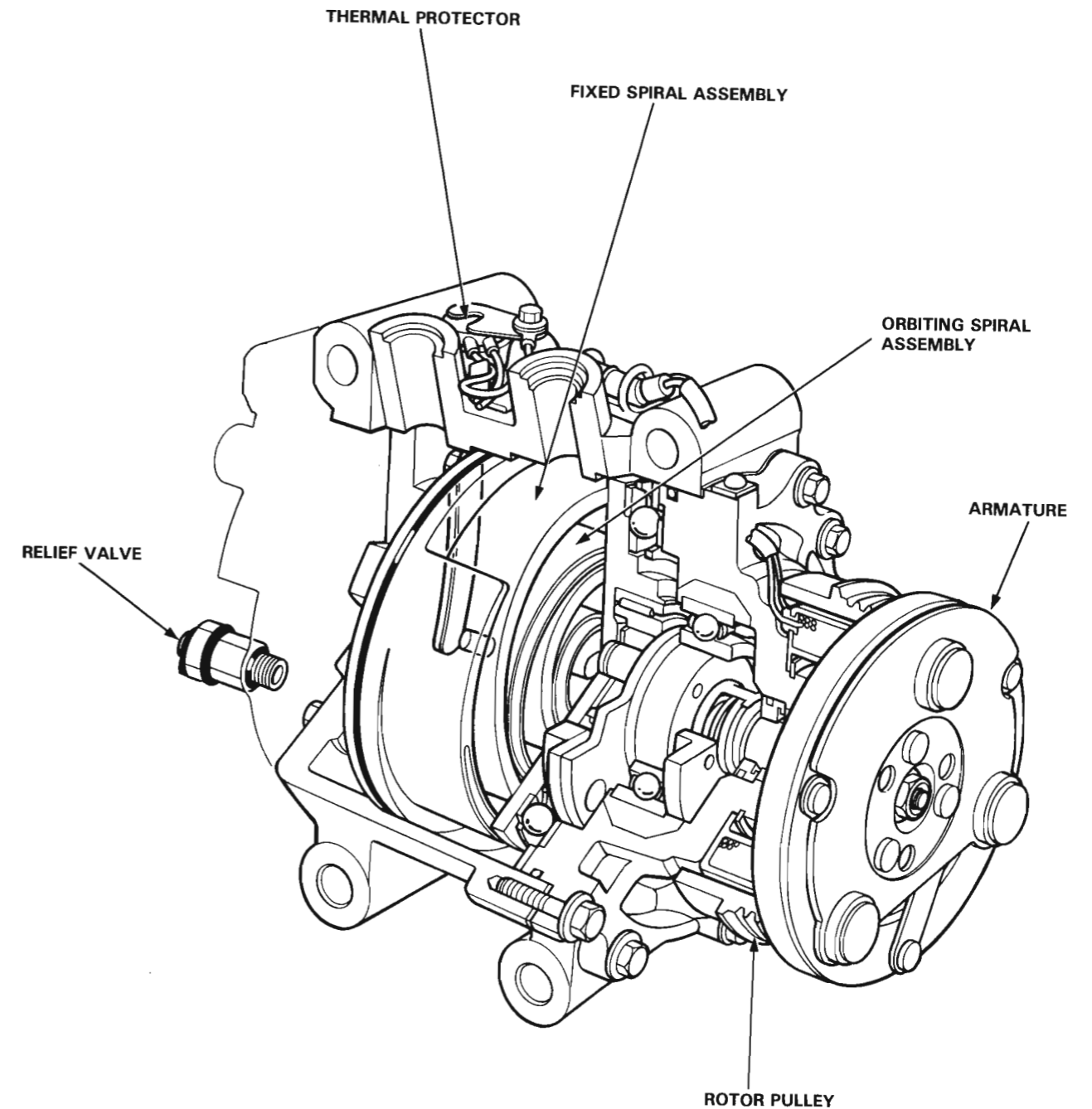
- Replace the all O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil (SP-10: P/N 38899-P13-A01) before installing them.
- NOTE: Be sure to use the right O-rings for HFC-134a (R-134a) to avoid leakage.
- Install the expansion valve capillary tube with the capillary tube in contact with the suction line directly, and wrap it with tape.
- Reinstall the A/C thermostat sensor to its original location.



Compressor

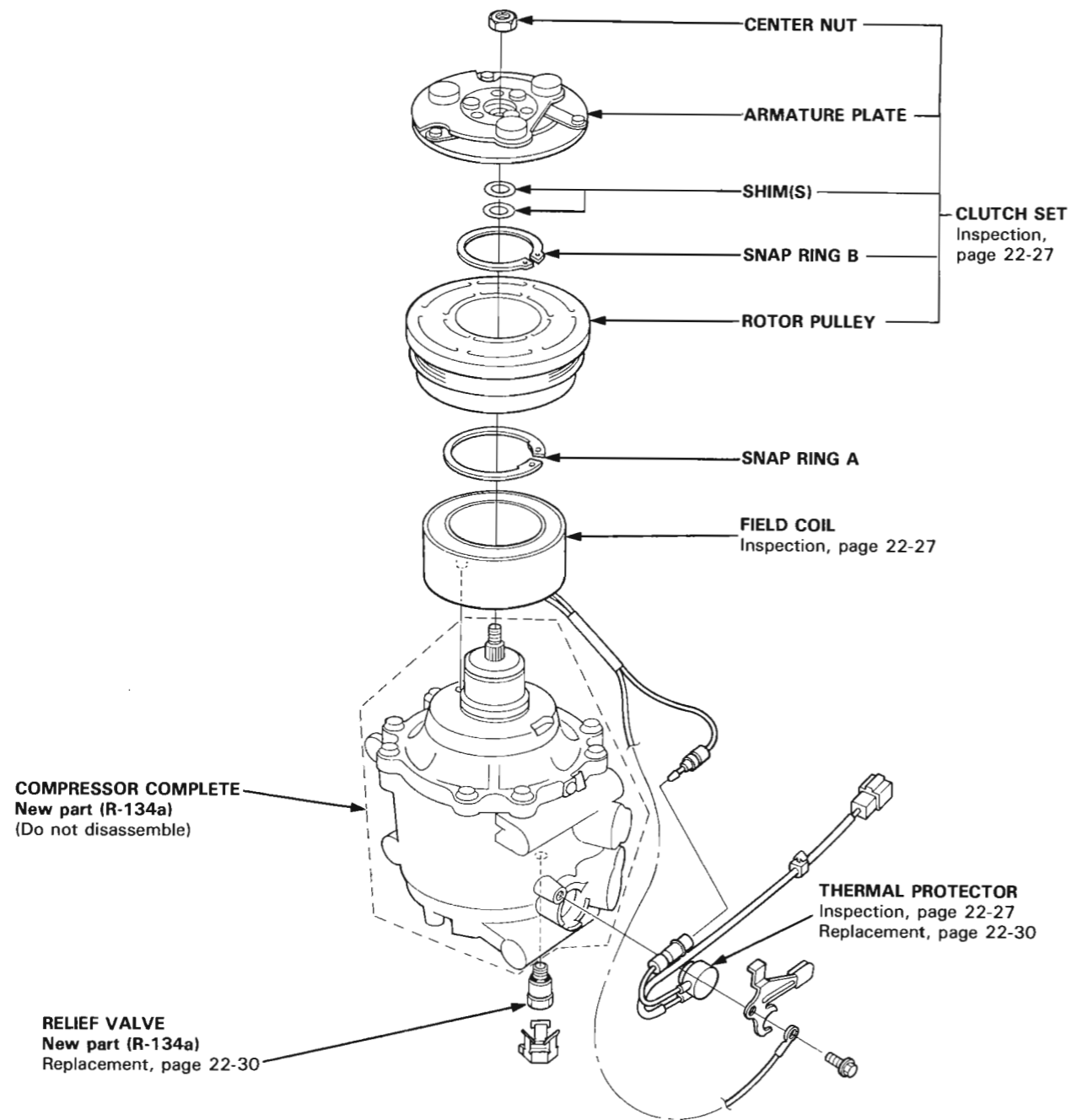
Description

This compressor is a Sanden spiral type compressor for HFC-134a (R-134a). Refrigerant is compressed between a fixed spiral assembly and an orbiting spiral assembly. A thermal protector is installed on this compressor.



Compressor

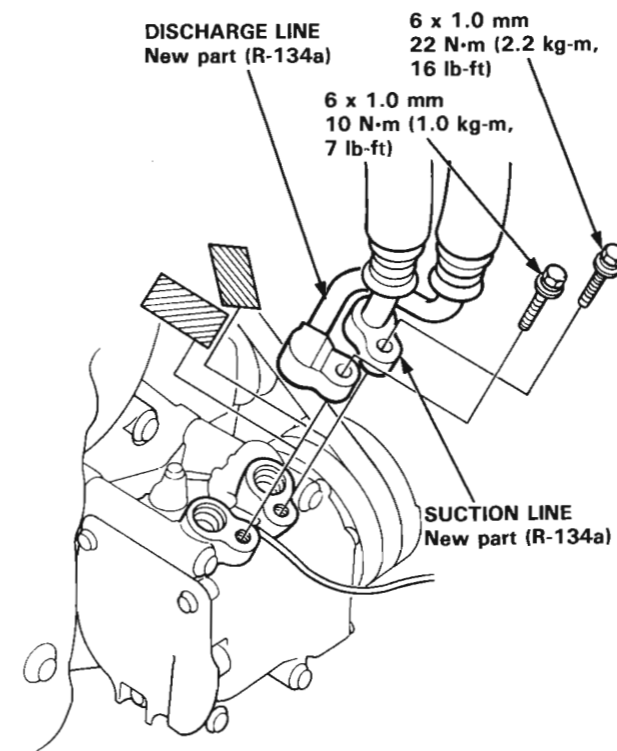
Illustrated Index



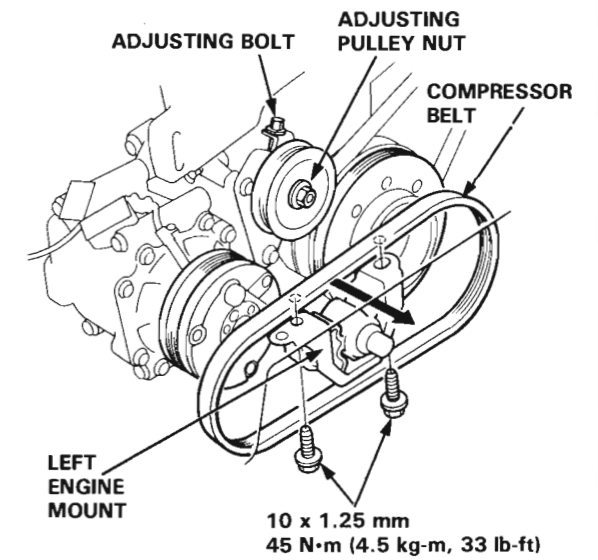
Replacement

1. If the compressor is marginally operable, run the engine at idle speed and let the air conditioning work a few minutes, then shut the engine off and disconnect the battery negative cable.
2. Recover the refrigerant using a Refrigerant Recovery/Recycling System (see page 22-17).
3. Remove the power steering pump (see section 17).
4. Remove the two bolts and disconnect the suction line and discharge line from the compressor.

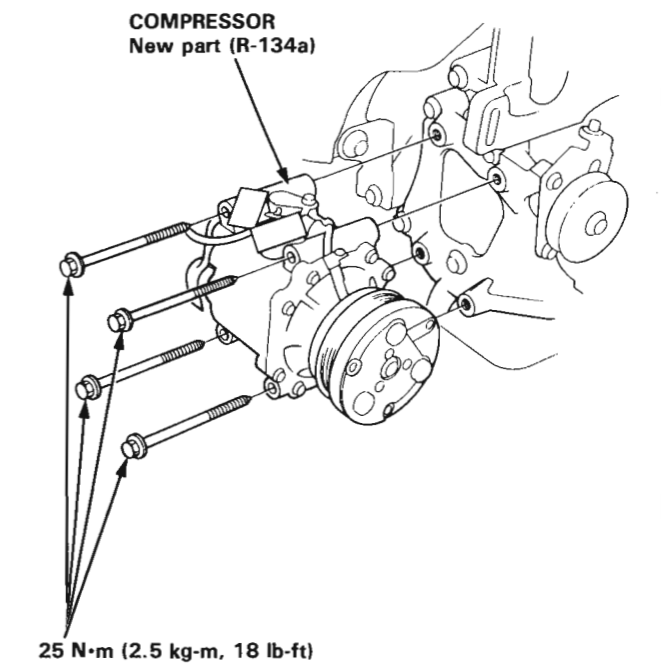
CAUTION: Cap the open fittings immediately to keep moisture out of the system.



5. Loosen the adjusting pulley nut and adjusting bolt, and remove the compressor belt. Remove the two left engine mount bolts, and pass the belt through the gap between the body and left engine mount.



6. Disconnect the compressor clutch 1P connector.
7. Remove the four compressor mounting bolts and compressor.



(cont'd)

Compressor

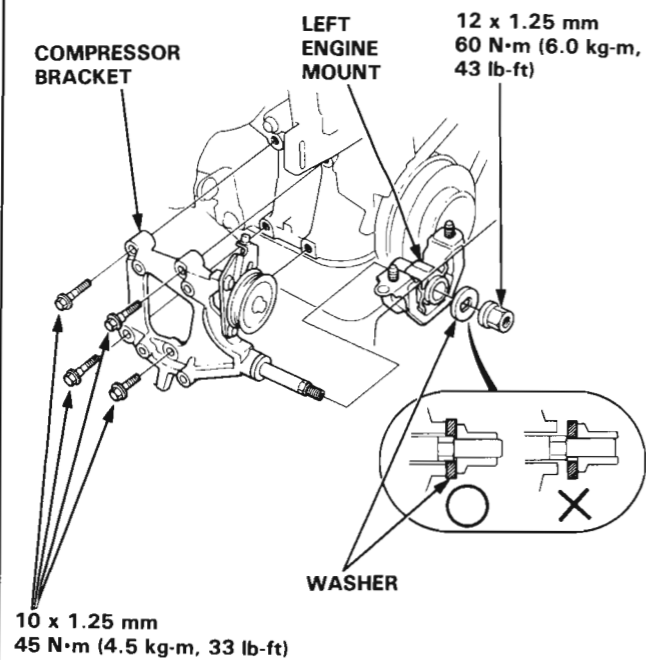
Replacement (cont'd)

8. If necessary, remove the compressor bracket as follows:

- Remove the nut, washer and left engine mount.

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

- Remove the four compressor bracket mounting bolts and bracket.

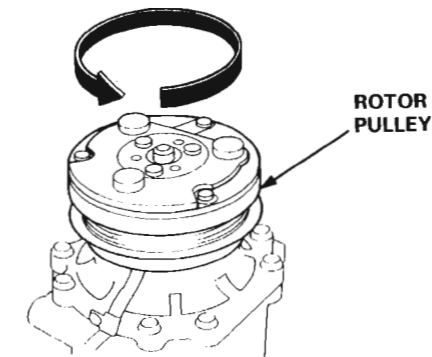


9. Install in the reverse order of removal, and:

- 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 120 ml (4 fl. oz, 4.2 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: P/N 38899-P13-A01) 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 car; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.
- Adjust the A/C compressor belt (see page 22-31).
- Adjust the power steering pump belt (see section 17).
- Charge the system (see page 22-33) and test its performance (see page 22-18).

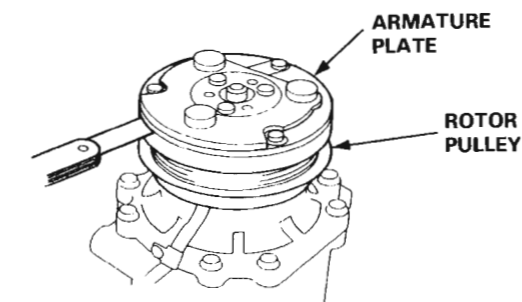
Clutch Inspection

- 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.

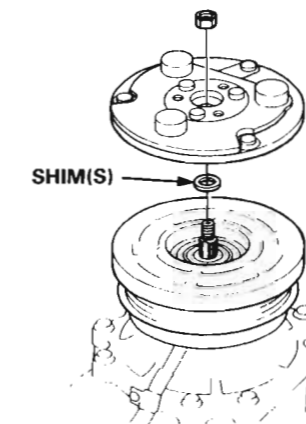


- Turn the rotor pulley by hand and measure the clearance between the rotor pulley and armature plate all the way around. If the clearance is not within specified limits, the armature plate must be removed and shims added or removed as required.

CLEARANCE: 0.50 ± 0.15 mm (0.020 ± 0.006 in)



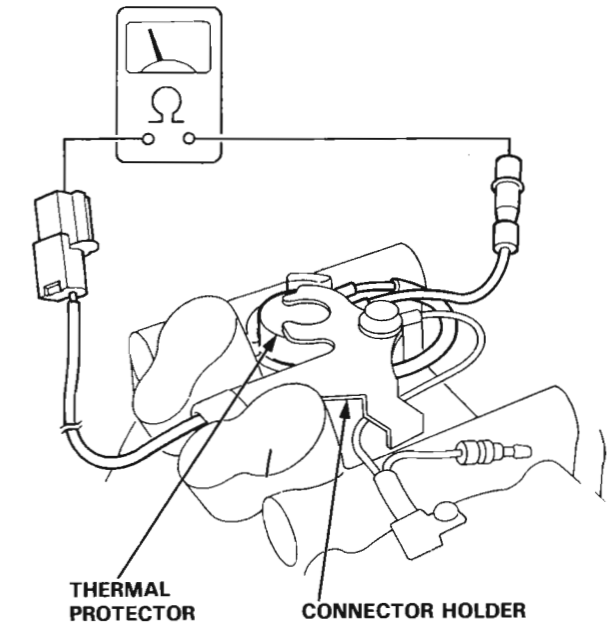
NOTE: The shims are available in four sizes: 0.1 mm, 0.2 mm, 0.4 mm and 0.5 mm of thickness.



- Release the compressor clutch connector from the connector holder.

Check the thermal protector for continuity.

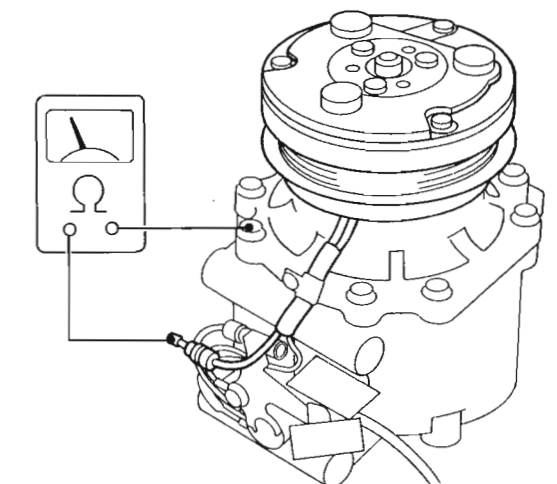
If there is no continuity, replace the thermal protector.



Check the field coil for resistance.

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

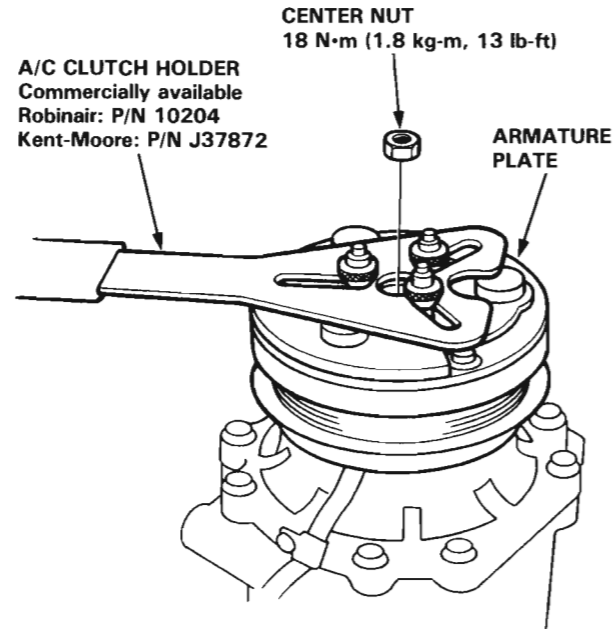
If resistance is not within specifications, replace the field coil.



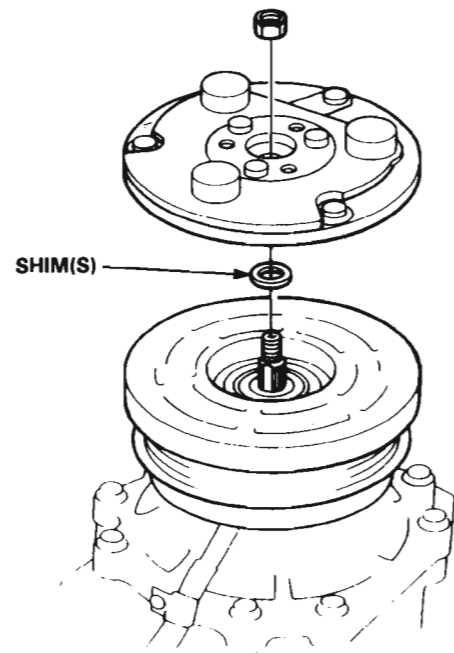
Compressor

Clutch Overhaul

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



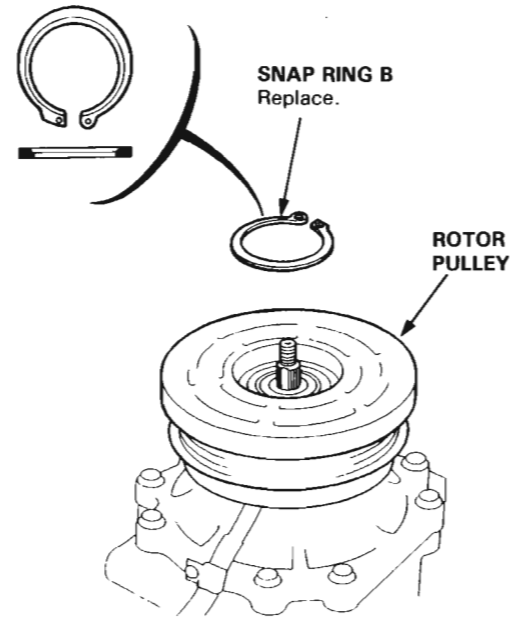
2. Remove the armature plate by pulling it up by hand.



3. Remove the snap ring B with a snap ring pliers.

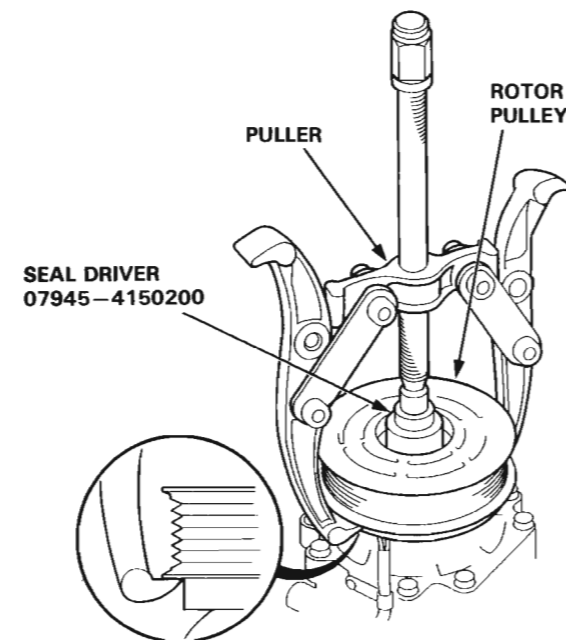
NOTE:

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



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

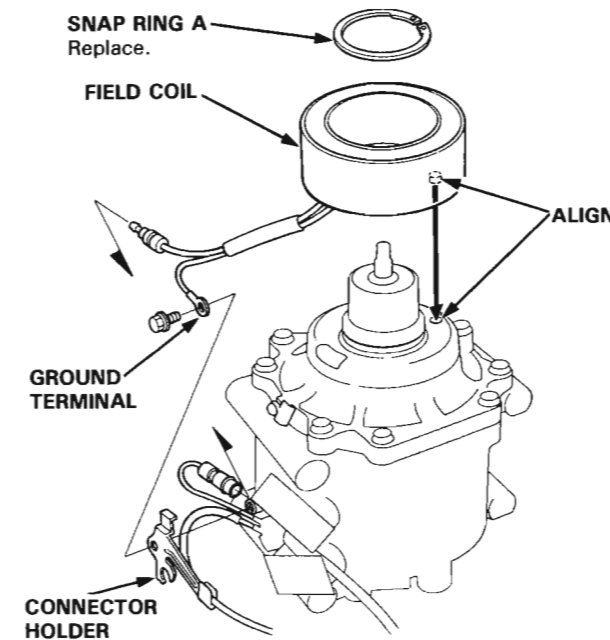
NOTE: Put the claws of the puller on the back of the rotor pulley, not on the belt area; otherwise the rotor pulley can be damaged.



5. Remove the snap ring A with a snap ring pliers. Release the field coil connector from the connector holder, and disconnect the connector and field coil ground terminal. Remove the field coil from the compressor.

NOTE:

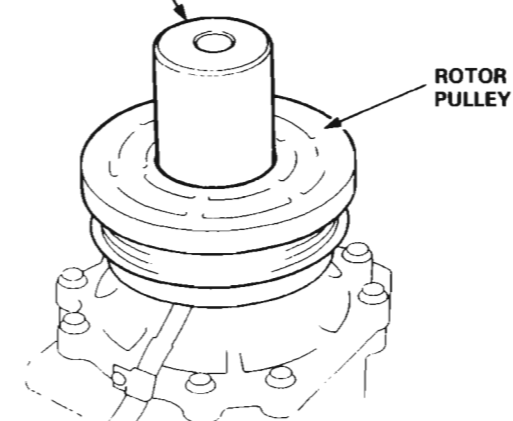
- Once the snap ring A is removed, replace it with a new one.
- When installing the field coil, align the boss on the field coil with the hole in the compressor.



6. Position the rotor pulley squarely over 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: 0.4 tons.

SHAFT RING
REMOVER 07JAC-SH20300



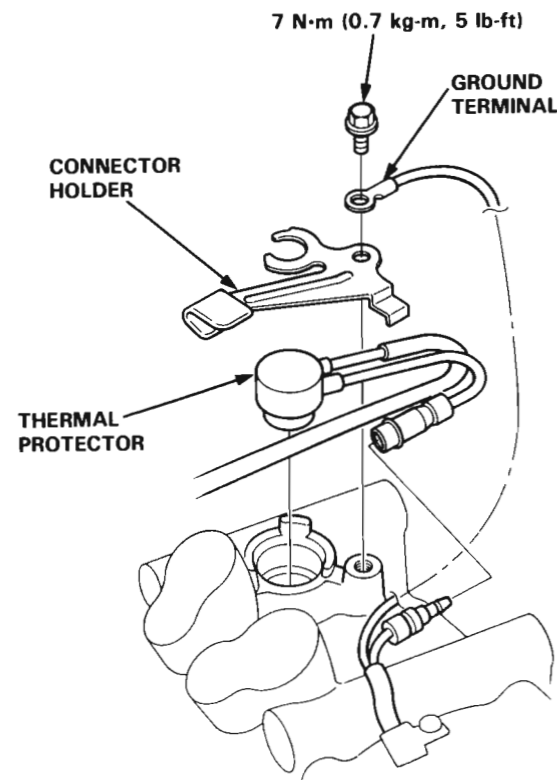
7. Install in the reverse order of removal, and:

- Clean the rotor pulley and compressor sliding surfaces with non-petroleum solvent.
- Install the snap rings with the chamfered side facing out and make sure the snap rings are in the groove completely.
- After installing, make sure that the rotor pulley turns smoothly.
- Route and clamp the wires properly or they can be damaged by the rotor pulley.

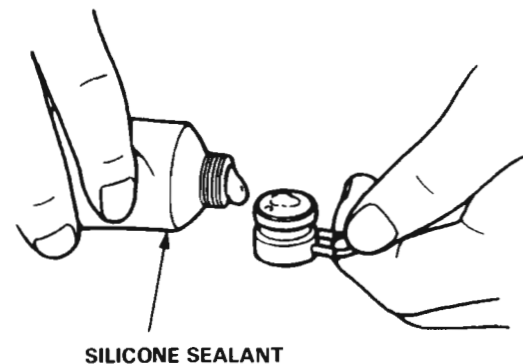
Compressor

Thermal Protector Replacement

1. Remove the bolt, ground terminal, and connector holder.
2. Remove the thermal protector. Remove the residue of silicone sealant from the top of the thermal protector.



3. Apply silicone sealant to the top of the thermal protector.



4. Install in the reverse order of removal.

Relief Valve Replacement

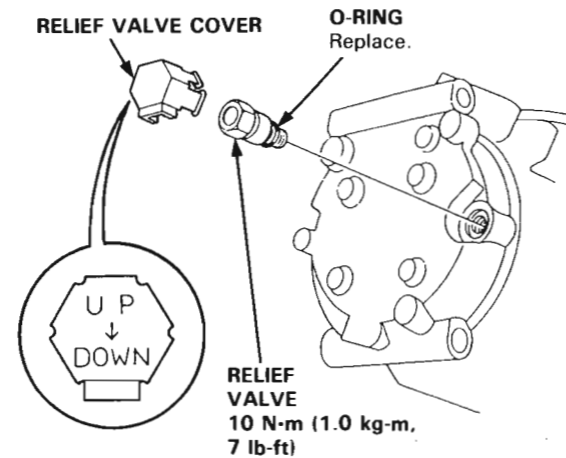
Removal

NOTE: Make sure the suction and discharge ports are plugged with caps.

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

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

CAUTION: Be careful not to spill compressor oil, and make sure there is no foreign matter in the system.



Installation

1. Clean off the relief valve mating surface.
2. Replace the relief valve O-ring with a new one and apply a thin coat of refrigerant oil (SP-10: P/N 38899-P13-A01) 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 car; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.

3. Tighten the relief valve.
4. Put the cover on the relief valve so that the arrow points downwards as shown above.
5. Check the relief valve for leaks.

Belt Adjustment

1. Attach the belt tension gauge to the belt and measure the tension of the belt.

Compressor Belt

Tension:

Used Belt: 350–500 N (35–50 kg, 77–110 lbs)
New Belt: 600–800 N (60–80 kg, 132–176 lbs)

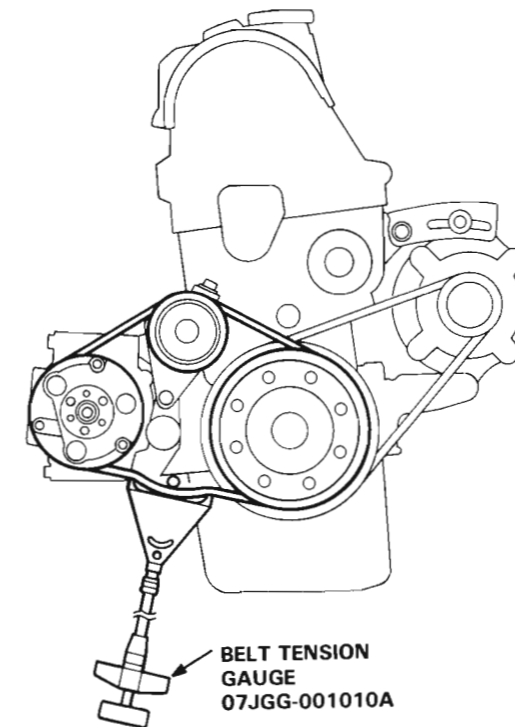
P/S Belt

Tension:

Used Belt: 350–500 N (35–50 kg, 77–110 lbs)
New Belt: 500–700 N (50–70 kg, 110–154 lbs)

NOTE:

- If there are cracks or any damage evident on the belt, replace it with a new one.
- See the instructions for the tension gauge.



2. Loosen the adjusting pulley nut and the adjusting bolt.
3. Turn the adjusting bolt to get proper belt tension, then retighten the adjusting pulley nut.
4. Recheck the deflection of the compressor belt.

If a belt tension gauge is unavailable, apply a force of 100 N (10 kg, 22 lbs) and measure the deflection between the A/C compressor and crankshaft pulleys.

Compressor Belt

Deflection:

Used Belt: 6.5–10.5 mm (0.26–0.41 in)
New Belt: 5.0–7.0 mm (0.20–0.28 in)

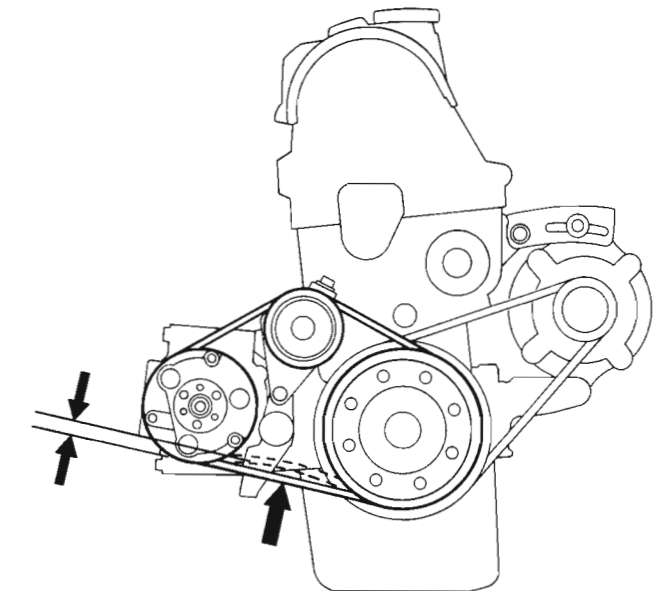
P/S Belt

Deflection:

Used Belt: 8.0–12.0 mm (0.31–0.47 in)
New Belt: 6.0–9.5 mm (0.24–0.37 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.



Condenser

Replacement

1. Recover the refrigerant using a Refrigerant Recovery/Recycling System (see page 22-17).
 2. Disconnect the A/C pressure switch connector and condenser fan connector.
 3. Remove the compressor clutch connector from the condenser fan shroud.
 4. Disconnect the discharge hose and condenser pipe.
- CAUTION: Cap the open fittings immediately to keep moisture and dirt out of the system.**
5. Remove the suction hose clamp bolt and condenser brackets.
 6. Remove the condenser assembly by pulling it up.

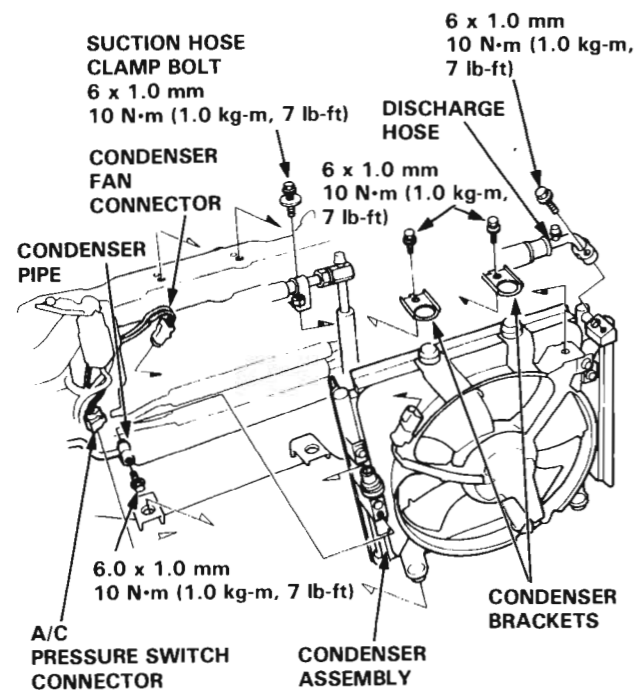
NOTE:

- Be careful not to damage the condenser fins when removing/installing the condenser.
- Be careful not to hit the side of the radiator during removal/installation.

7. Install in the reverse order of removal, and:
 - If you're installing a new condenser, add refrigerant oil (SP-10: P/N 38899-P13-A01) (see page 22-16).
 - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil (SP-10: P/N 38899-P13-A01) before installing them.

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

- Charge the system (see page 22-33) and test its performance (see page 22-18).



A/C System Service

Evacuation

Only use service equipment that is U.L.-listed and is certified to meet the requirements of SAE J2210 to remove HFC-134a (R134a) 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.

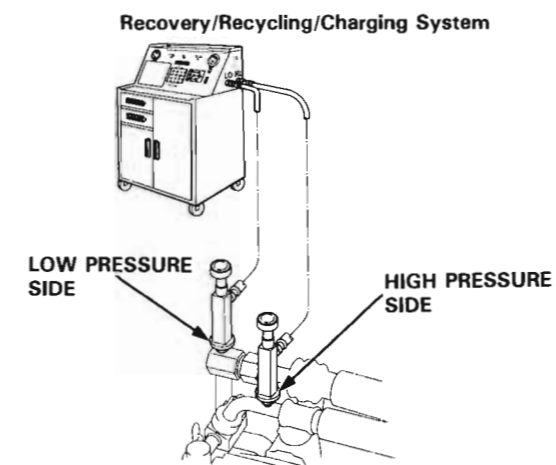
R-134a service equipment or vehicle air conditioner systems should not be pressure tested or leak tested with compressed air.

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 manufactures.

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

NOTE: If low pressure does not reach more than 700 mm Hg (27 in-Hg) in 15 minutes, there is probably a leak in the system. Partially charge the system and check for leaks (see Leak Test).



Charging

Only use 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.

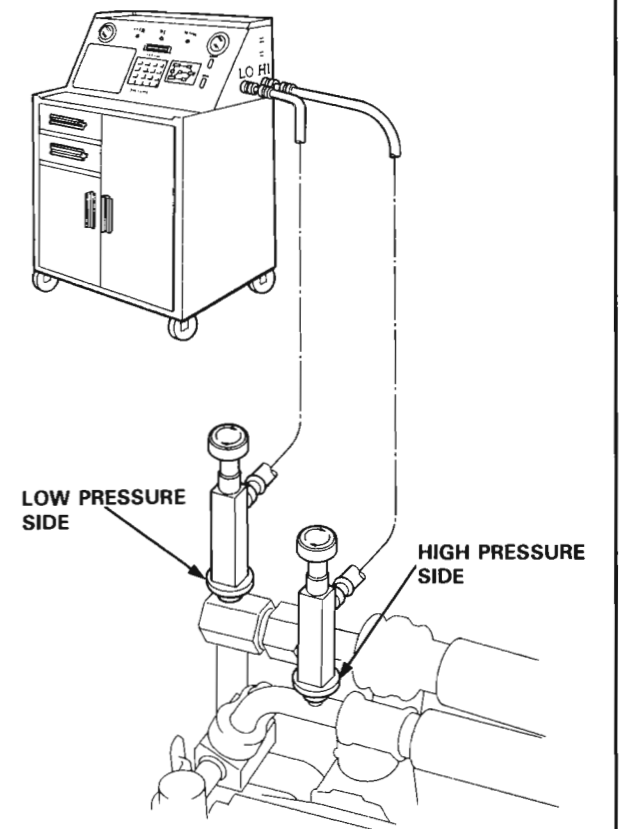
If accidental system discharge occurs, ventilate work area before resuming service. Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

Refrigerant capacity: 550 \pm 50 g (19 \pm 2 oz)

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

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

Recovery/Recycling/Charging System



A/C System Service

Leak Test

Only use 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 car as shown 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 about 100 kPa (1.0 kg/cm², 14 psi), then close the supply valve.
3. Check the system for leaks using a R-134a refrigerant leak detector with an accuracy of 0.5/oz. per year or better.
4. If you find leaks that require the system to be opened (to repair or replace hose, fittings, etc.), recover the system according to the Recover Procedure on page 22-17.
5. After checking and repairing leaks, the system must be evacuated (see System Evacuation on page 22-33).

Recovery/Recycling/Charging System

