

SERVICING

Insufficient air conditioning may be caused by problems other than A/C components.

Before removing any components, check for the following:

Leaves or other debris blocking radiator or condenser.

Leaves or other debris blocking fresh air inlet.

Blown fuse or faulty electrical system components.

Low freon charge.

Kinked or disconnected vacuum lines.

Observe following precautions before any service operations that require opening up freon system.

WARNING: Wear protective eye equipment while purging system. Do not discharge freon near open flame, a toxic gas may result.

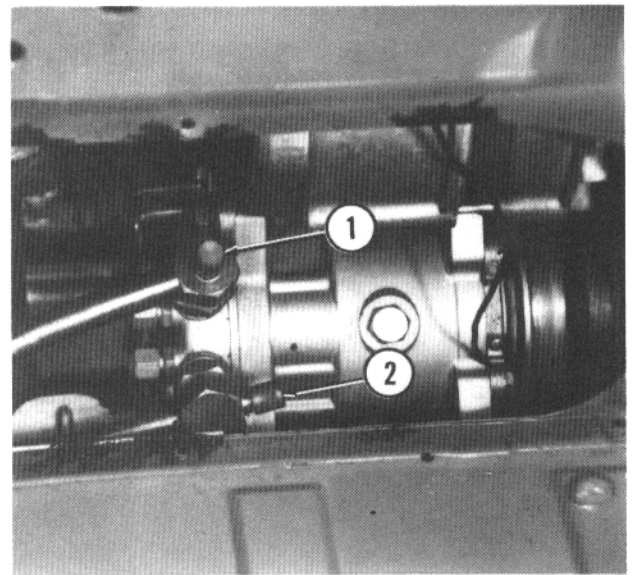
CAUTION: Purge system slowly to prevent excessive loss of system oil.

NOTE: Whenever system is purged, it must be evacuated and recharged.

Purging System

With both valves closed on A/C manifold gauge set, attach red hose (high pressure) to discharge fitting (2) and blue hose (low pressure) to suction fitting (1).

1. Suction fitting 2. Discharge fitting



Place yellow hose in a clean rag.

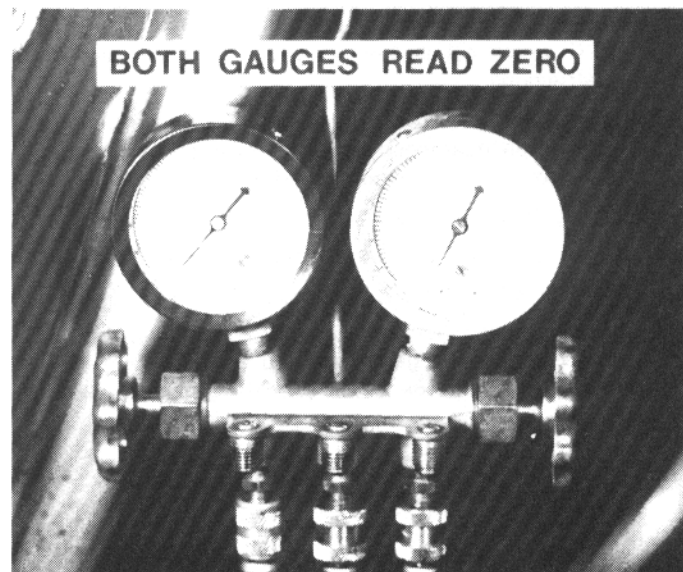
Slowly open low and high pressure valves on gauge set. Allow freon to bleed off through yellow hose.

CAUTION: Open valves only enough to bleed off freon slowly. Rapid bleeding will draw excessive oil from system.

Check rag for signs of oil, a small amount is to be expected. Replace oil if loss is excessive.

When both gauges read zero, system is purged.

Close valves on gauge set, and leave lines connected for evacuating.



Evacuating System

CAUTION: System must not be operating and must be purged before starting evacuation.

Connect yellow hose from A/C gauge set to vacuum pump. Start vacuum pump.

Open low pressure valve. Check that low pressure gauge indicates a slight vacuum. After a few minutes check that low pressure gauge reads about 24" Hg, and high pressure gauge reads slightly below zero. If high pressure gauge does not read below zero, check system for blockage.

After about 10 minutes of operation, low pressure gauge should read about 29" Hg.

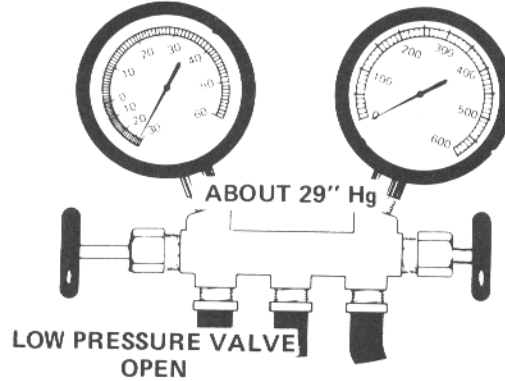
If gauge rises check system for leakage. Any leak must be repaired.

Operate vacuum pump for a minimum of 30 minutes at about 29" Hg (maximum vacuum will be 1" less for each 1000 ft. above sea level).

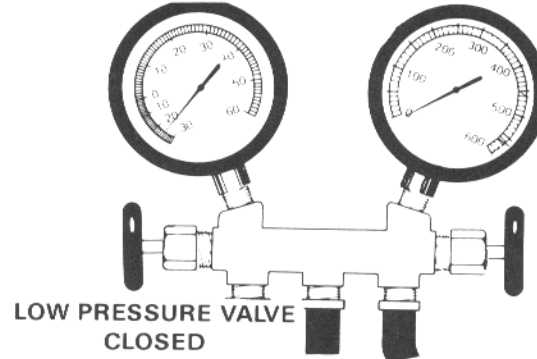
Close low pressure valve. Check low pressure reading, it should not rise faster than 1" in five minutes. If reading rises faster, check system for leak.

Shut off vacuum pump. Disconnect yellow hose from pump. System is now ready to be charged with freon.

LOW PRESSURE GAUGE



PRESSURE RISE
1" IN 5 MINUTES MAX.



Charging System Using Freon Pound Cans

NOTE: A/C gauge set is connected same as in preceding instructions.

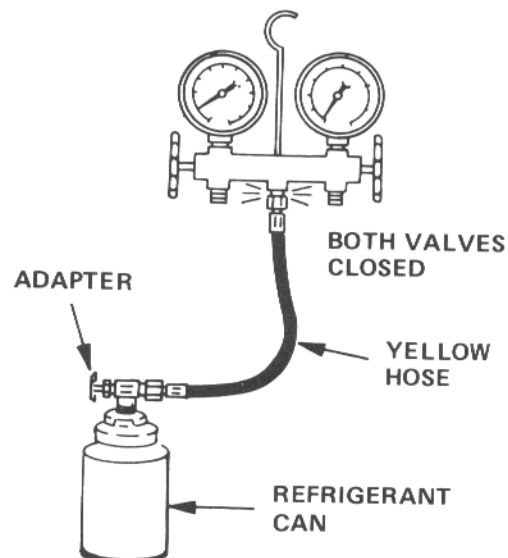
WARNING: Wear protective eye equipment. Do not discharge freon near open flame, a toxic gas may result. Avoid heating freon container.

System charge is about 2 lbs.

Place adapter on freon can. Attach yellow hose to adapter.

Make sure both valves on A/C gauge set are closed.

Pierce freon can and allow freon to enter yellow hose. Loosen yellow hose connector at gauge set and allow gas to escape for a few seconds to purge air in line. Retighten connector.



Make sure both valves on gauge set are closed.

Start engine.

Push "MAX A/C" button and set fan speed at "Hi"

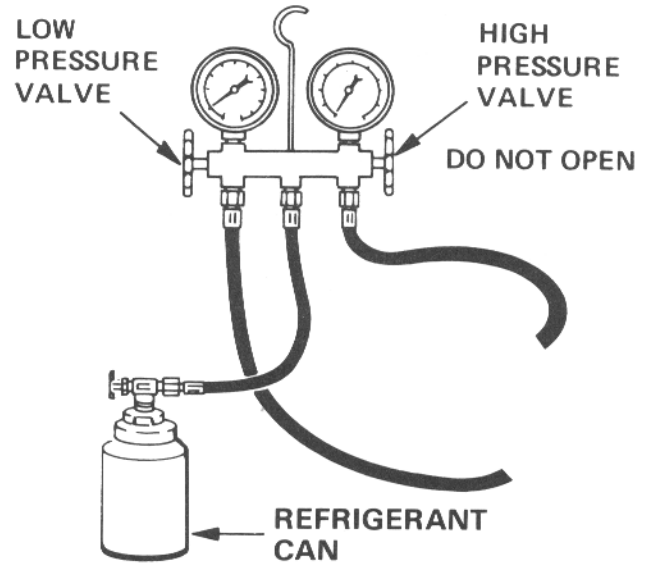
Set engine at fast idle (1500 to 2000 rpm).

With freon can upright, gradually open low pressure valve to allow freon into system.

CAUTION: Do not open high pressure valve.

If pressure on low pressure gauge drops below 40 psi, freon can may be inverted momentarily for faster charging. Do not hold can inverted for more than a few seconds since excessive amounts of liquid will be drawn into compressor and damage it.

To determine when can is empty tap it on bottom. A hollow ring should be heard when empty.



Repeat above with additional cans to charge system with a total of about 2 lbs.

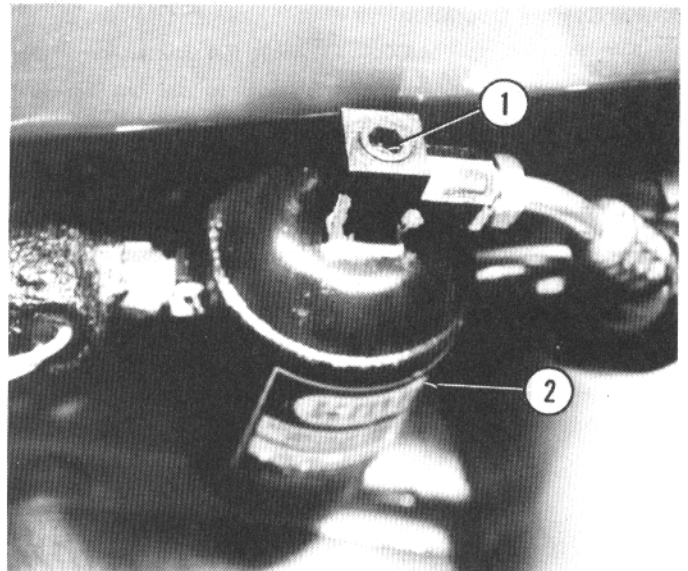
Whether just adding freon to a low system, or fully charging, check sight glass (1) on receiver/dryer (2) to determine when system is completely charged. When freon passing through sight glass is clear and free of bubbles, system is completely charged.

Close low pressure valve.

Disconnect yellow hose from can.

As quickly and carefully as possible, disconnect red and blue hoses from system connectors. Replace caps on connectors.

1. Sight glass 2. Receiver/dryer



Charging System Using Test Stand

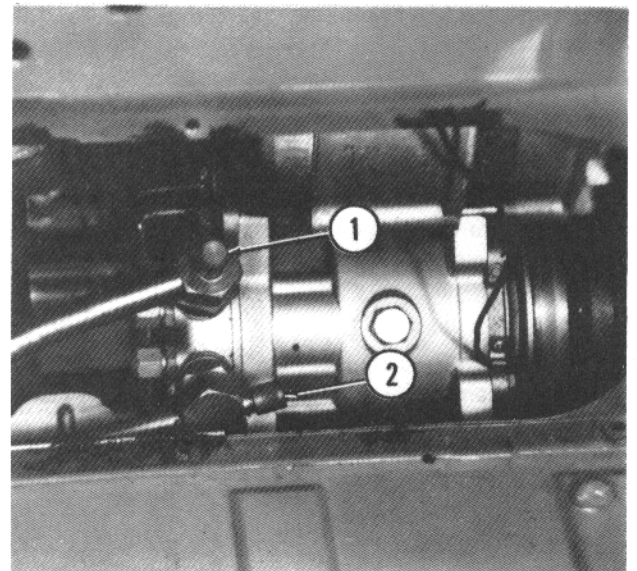
Refer to test stand manufacturer's instructions.

Connect high pressure hose from test stand to discharge fitting (2).

Connect low pressure hose from test stand to suction fitting (1).

Set charge indicator to about 2 lbs.

1. Suction fitting 2. Discharge fitting



OPERATIONAL CHECKS

Connecting Test Equipment

Close both valves on A/C gauge set.

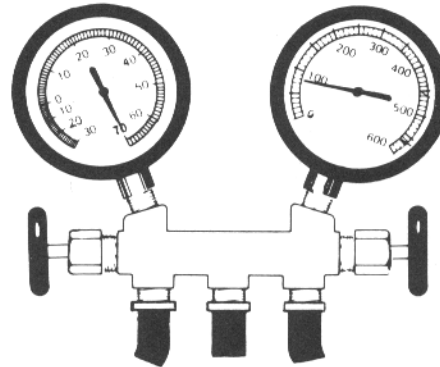
Remove caps from discharge and suction fittings (refer to preceding figure). Connect blue hose (low pressure) to suction fitting and red hose (high pressure) to discharge fitting.

Check that both gauges read 70 to 85 psi at 68° to 78°F.

NOTE: Pressure reading will vary according to ambient temperatures, relative humidity, and atmospheric pressure.

Provide a fan to flow air over front of vehicle during following checks.

**BOTH GAUGES
70 TO 85 PSI**



**BOTH VALVES
CLOSED**

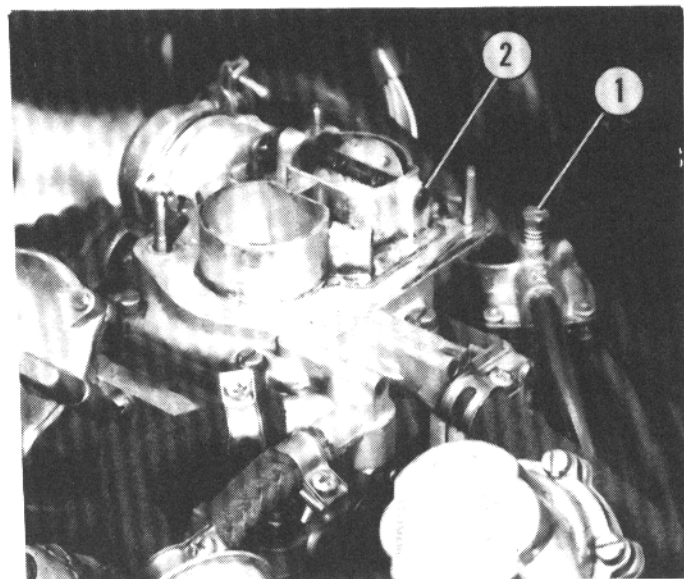
Normal System Operation

Set A/C controls to "MAX A/C" with fan switch on "Hi" Accelerate engine and allow it to decrease to idle. On vehicles with carburetor, check that idle is between 950 and 1050 rpm.

On vehicles with fuel injection, check that idle speed does not decrease with A/C on.

Accelerate engine to 1500 rpm. Check that low pressure gauge reads between 7 and 42 psi and high pressure gauge reads between 142 and 248 psi.

Check that freon passing through sight glass is clear and free of bubbles.



1. Idle speed step-up control 2. Carburetor

Compressor Clutch and Minimum Pressure Switch Check

Shut off engine. Turn ignition switch on.

Push "STOP" button and check that compressor clutch disengages.

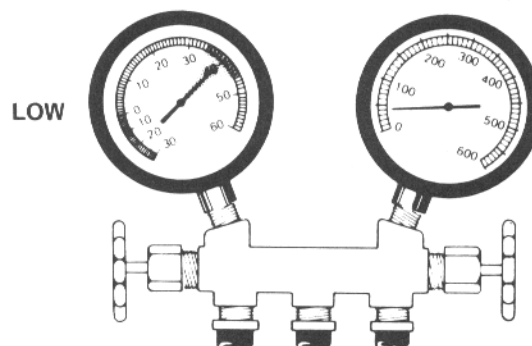
Push "MAX AC" button and check that clutch engages.

Open low pressure valve on gauge set and slowly bleed freon until clutch disengages. Clutch should disengage at 40 ± 5 psi on low pressure gauge.

Close low pressure valve.

Recharge system. Evacuating system is not required since system was not completely discharged.

35-45 PSI



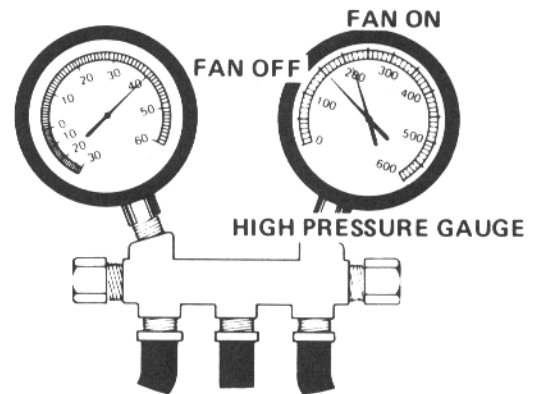
Condenser Fan Switch Check

NOTE: Do not use fan in front of vehicle unless ambient temperature is over 80°F.

Start engine and set A/C controls for maximum cooling. Run engine at about 2000 rpm.

Check that condenser fan comes on between 240 to 280 psi on high pressure gauge. This indicates that switch closed.

Allow engine speed to slow down. Check that fan goes off between 160 and 140 psi. This indicates that switch opened.



High Pressure Switch Check

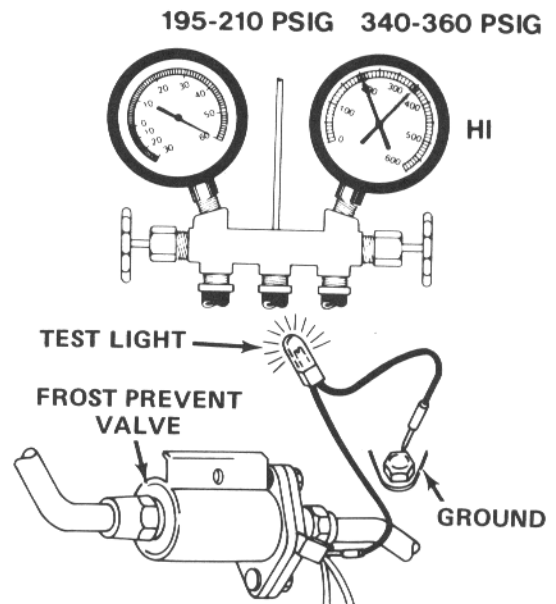
Connect test light to wire on frost prevent valve. Do not disconnect wire from valve.

Disconnect connector for condenser fan.

Increase engine speed to increase pressure. Check that test light comes on between 340 and 360 psi. This indicates that high pressure switch closed.

Check that pressure starts to drop. This indicates that frost prevent valve works.

Reconnect condenser fan connector. Check that test light goes out between 210 and 195 psi. This indicates that high pressure switch opened.



Frost Prevent Switch Check

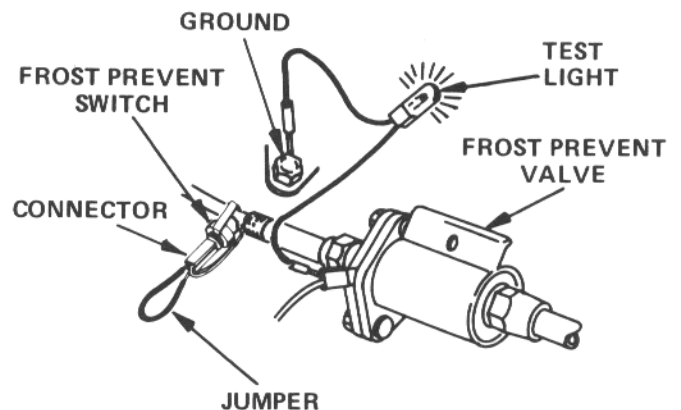
Leave test light connected to frost prevent valve wire.

Run engine at fast idle.

Place jumper wire into frost prevent switch connector.

Check that test light comes on and pressure starts to drop. This indicates that system wiring is good.

Shut engine off. Remove jumper and test light.



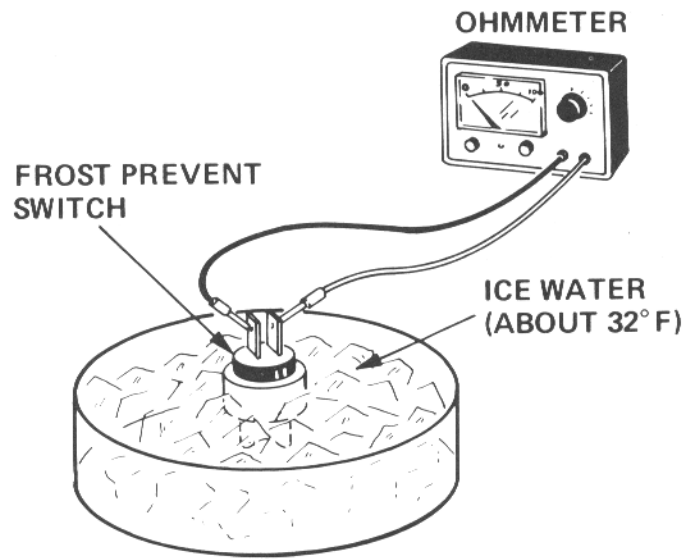
Remove frost prevent switch.

Provide ice cold water about 32°F.

Connect ohmmeter to terminals on switch. Place switch in water. Check that switch closes.

Remove switch from water. Check that switch opens as it warms up.

Install switch making sure surface of switch and pipe are clean.



A/C-HEATER VACUUM SYSTEM

Component Test

To test each vacuum component, apply vacuum to vacuum motor and check operation. If vacuum motor does not operate, check for binding linkage or broken vacuum motor.

System Test

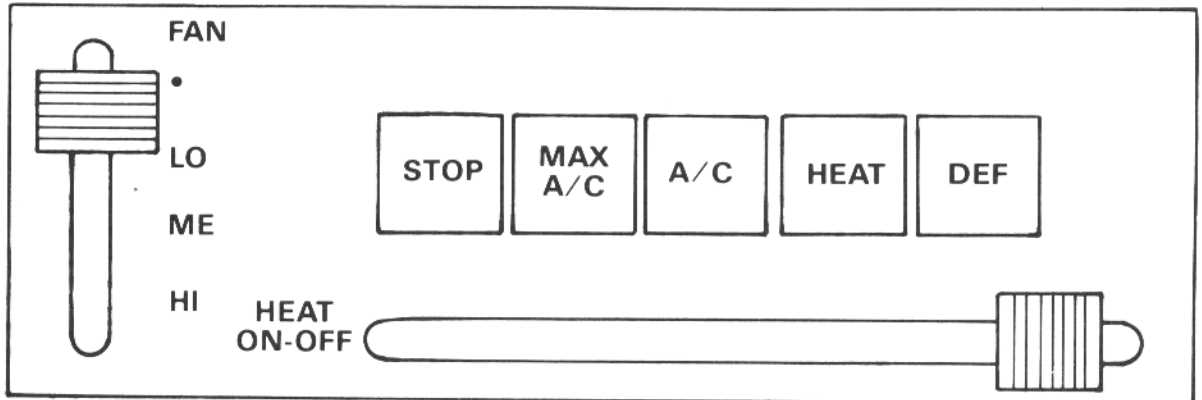
To test the vacuum system (engine running), press each push button on A/C-Heater Control, then check each component for the condition indicated. Test for vacuum at each component by removing vacuum hose from component, then manually blocking the hose.

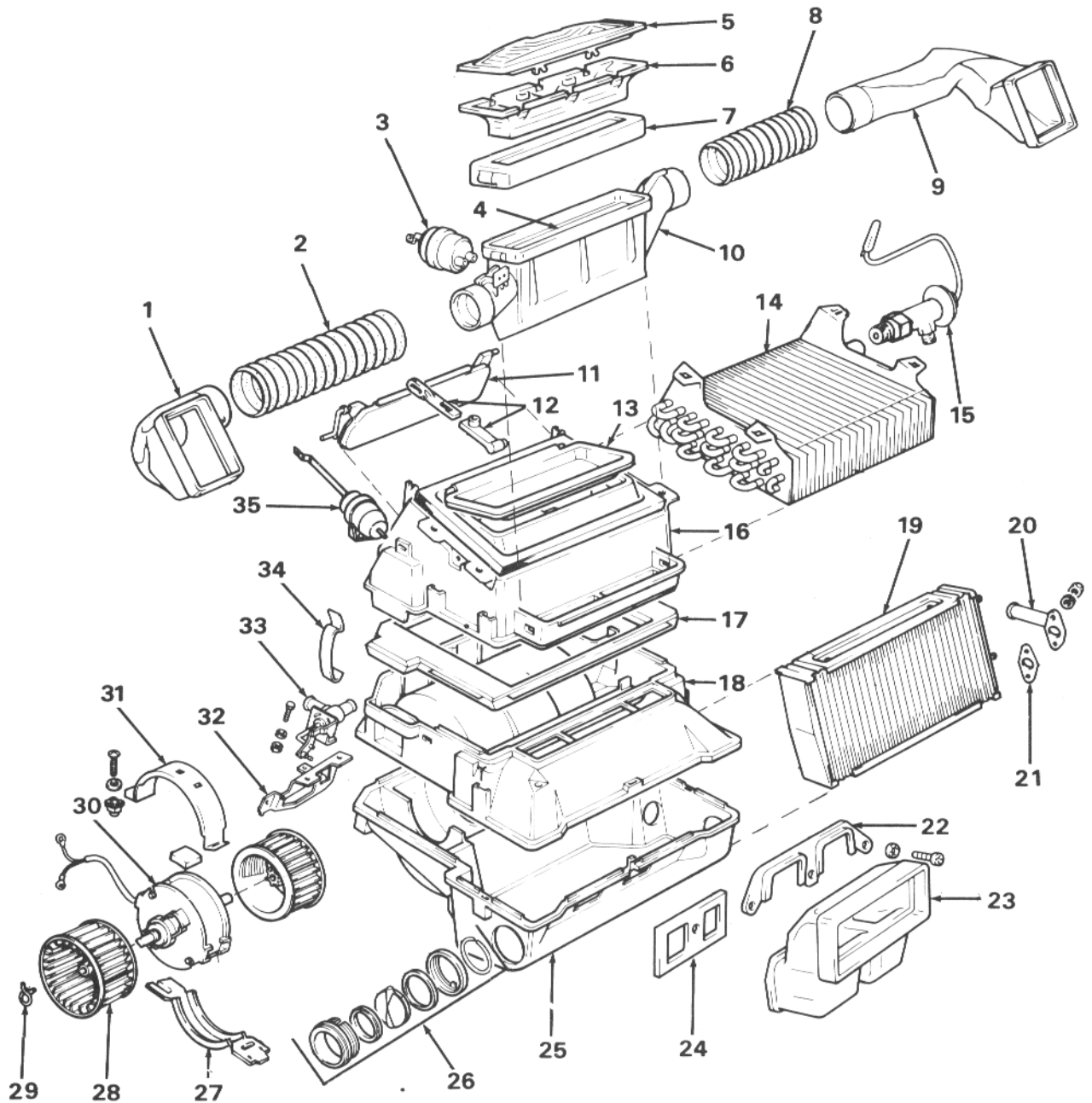
COMPONENT	A/C-HEATER CONTROL PUSH BUTTONS				
	STOP	MAX A/C	A/C	HEAT	DEF
COMPRESSOR	Off	On	On	Off	Off
BLOWER (30)	Off	On	On	Off/On*	Off/On*
FRESH AIR DOOR (13)	Closed-NV	Closed-NV	Open-V	Open-V	Open-V
RECIRCULATED AIR DOOR (11)	Open-NV	Open-NV	Closed-V	Closed-V	Closed-V
DEFROSTER DOOR (4)	Closed-V	Closed-V	Closed-V	Closed-V	Open-NV
WATER VALVE (33) (Controlled by HEAT lever)	Closed	Closed	Closed/Open*	Open	Open

* - Optional

V - Vacuum to vacuum motor

NV - No vacuum to vacuum motor





- | | | | | |
|------------------------------------|---------------------------|---------------------|-------------------|--------------------------------------|
| 1. Duct | 8. Duct tube | 15. Expansion valve | 22. Plate | 29. Clip |
| 2. Duct tube | 9. Duct | 16. Upper housing | 23. Duct | 30. Blower motor |
| 3. Vacuum motor for defroster door | 10. Defroster duct | 17. Gasket | 24. Gasket | 31. Bracket |
| 4. Defroster door | 11. Recirculated air door | 18. Gasket | 25. Lower housing | 32. Bracket |
| 5. Diffuser | 12. Door linkage | 19. Heater Core | 26. Vent assembly | 33. Water valve |
| 6. Duct | 13. Fresh air door | 20. Pipe | 27. Bracket | 34. Clip |
| 7. Gasket | 14. Evaporator | 21. Gasket | 28. Fan | 35. Vacuum motor for doors 11 and 13 |

EXPLODED VIEW OF A/C-HEATER ASSEMBLY

CONTROL PANEL

REMOVAL AND INSTALLATION

Disconnect battery ground cable.

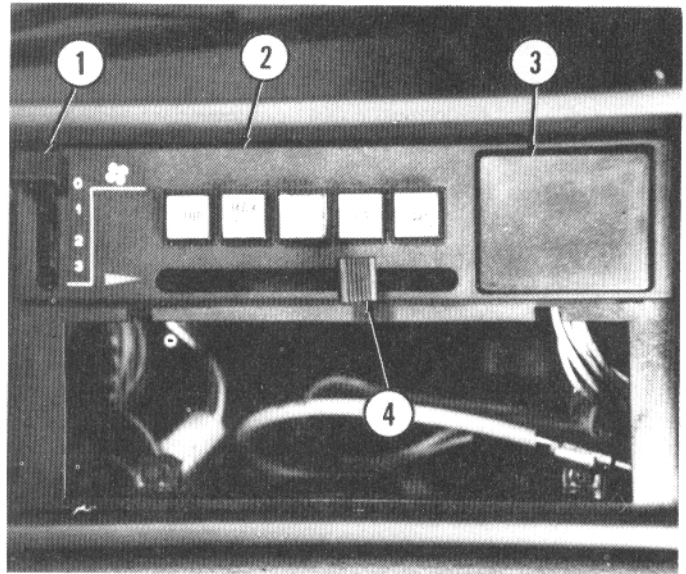
Remove radio.

Remove two knobs (1 and 4) from levers.

Remove fascia panel (2).

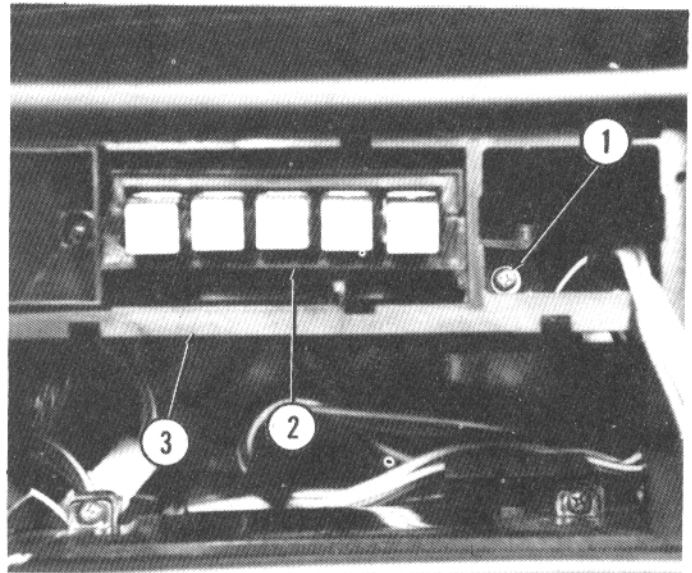
Remove and disconnect clock, or remove clock opening cover plate (3).

1. Knob 2. Fascia panel 3. Clock opening cover plate 4. Knob



Remove screw (1) holding control panel (2) to support (3).

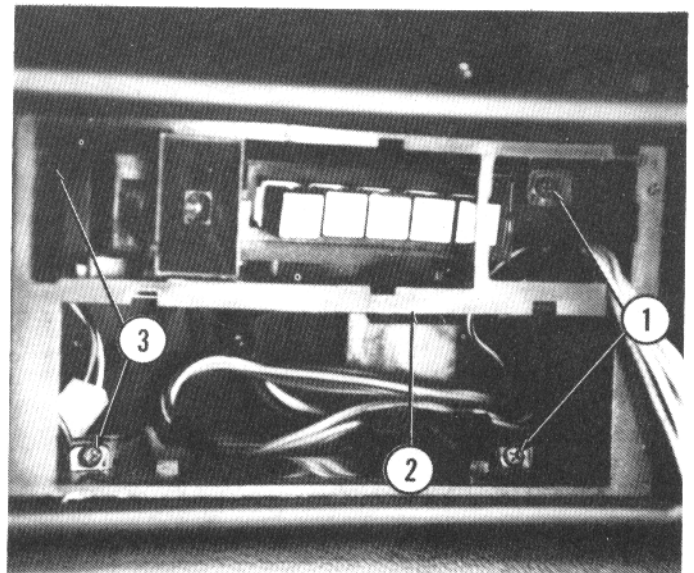
1. Screw 2. Control panel 3. Support



Remove four screws (1 and 3) holding support (2) to instrument panel.

Maneuver support out of instrument panel, leaving control panel in position.

1. Screws 2. Support 3. Screws



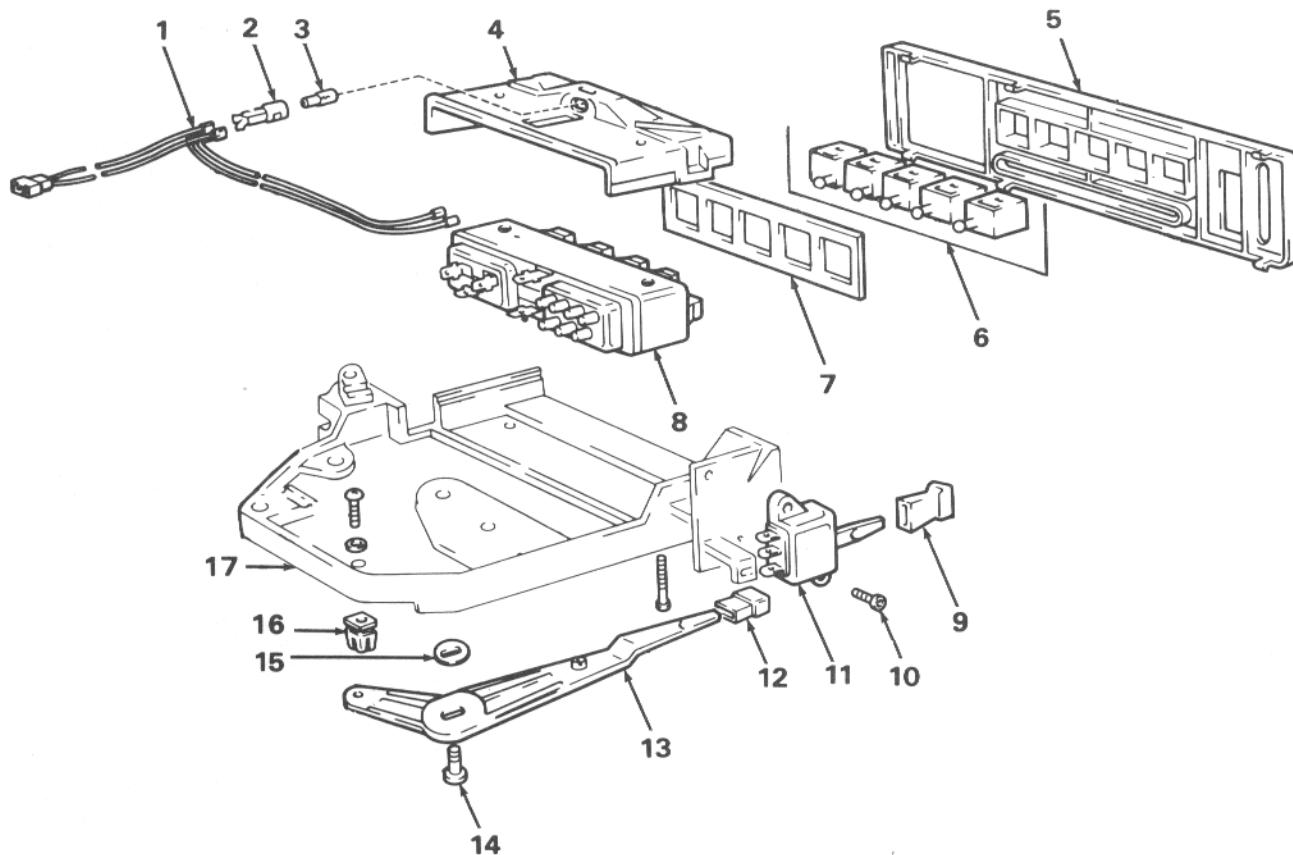
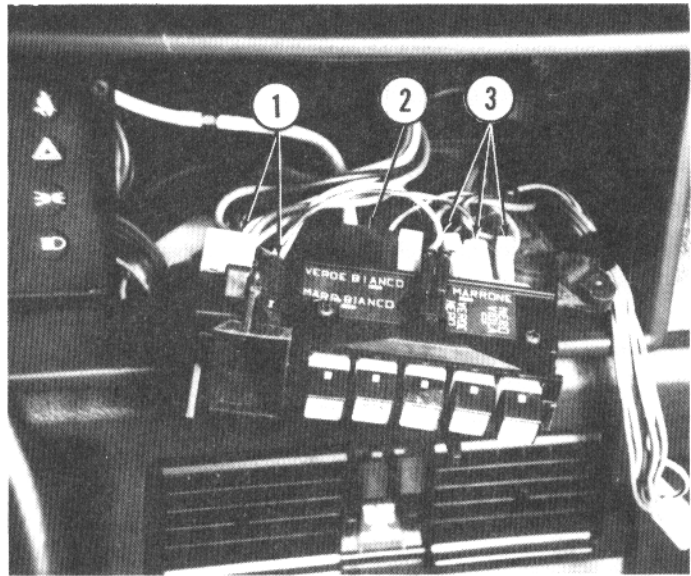
At top side of control panel, disconnect electrical connectors (1 and 3) and vacuum hose connector (2).

At bottom side of control panel, remove screw and clamp holding cable and disconnect cable from lever.

Remove control panel.

Install in reverse order.

- 1. Electrical connectors
- 2. Vacuum hose connector
- 3. Electrical connectors



- | | | |
|-----------------|-----------------|-------------|
| 1. Wires | 7. Gasket | 13. Lever |
| 2. Socket | 8. Switch panel | 14. Pin |
| 3. Bulb | 9. Knob | 15. Clip |
| 4. Cover | 10. Screw | 16. Pad |
| 5. Fascia panel | 11. Switch | 17. Support |
| 6. Push buttons | 12. Knob | |

EXPLODED VIEW OF CONTROL PANEL