

## AIR CONDITIONER

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Refer to *Section 1* for air conditioning system discharging information.

### Compressor

#### CAUTION

Please refer to *Section 1* of this manual before discharging/recovering the A/C system or disconnecting the air conditioning lines. Damage to the air conditioning system or personal injury could result. Consult your local laws concerning refrigerant discharge and recycling. In many areas it may be illegal for anyone but a certified technician to service the A/C system. Always use an approved recovery station when discharging the air conditioning.

## REMOVAL & INSTALLATION

### 1986-94 Vehicles-Except 3.8L Engine

Whenever a compressor is replaced, it will be necessary to replace the suction accumulator/drier.

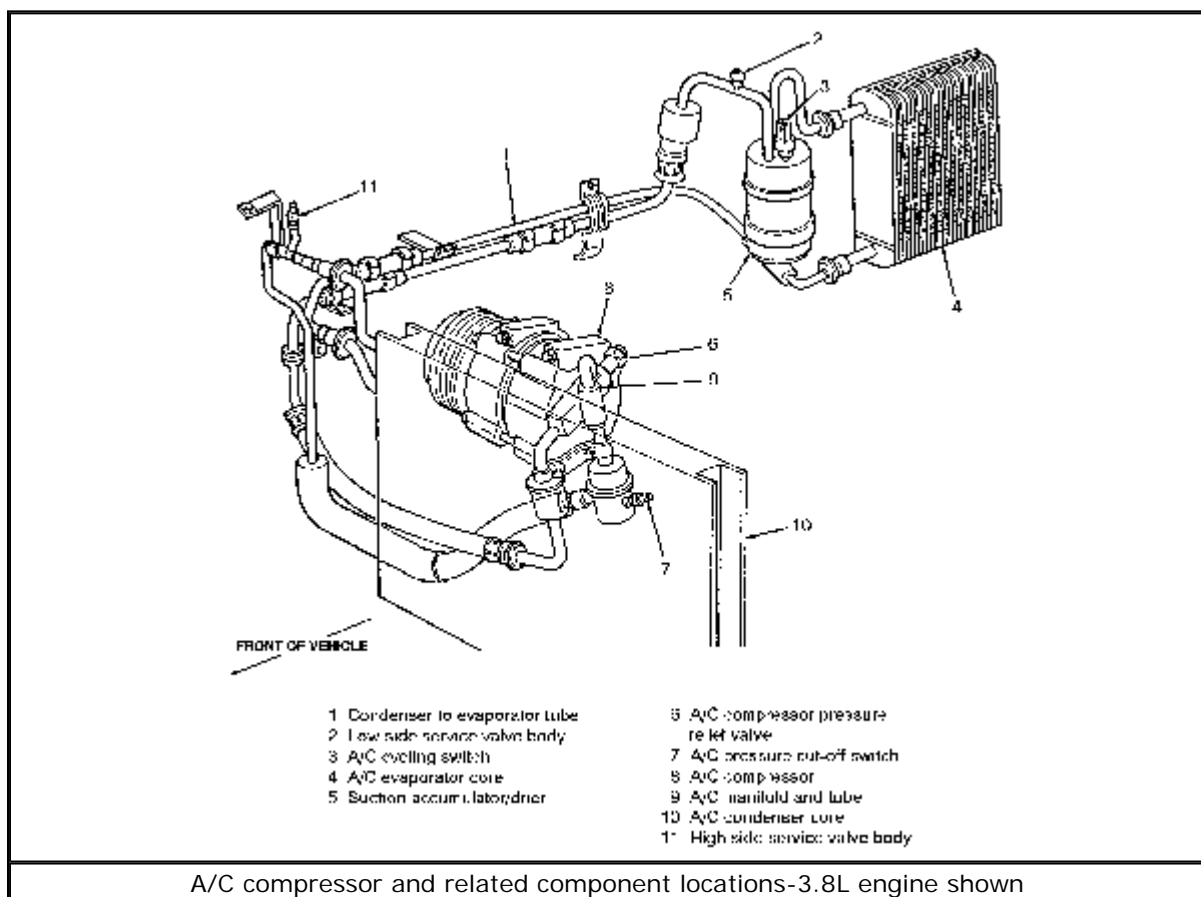
1. Disconnect the negative battery cable and properly discharge the system.
2. Disconnect the compressor clutch wires at the field coil connector on the compressor.
3. Loosen and remove the drive belt and disconnect the hose assemblies from the condenser and suction line.
4. Remove the mounting bolts, then remove the compressor and manifold and tube assembly from the vehicle as a unit. The assembly will not clear the sub-frame and radio support if an attempt is made to remove the unit from the bottom. It must be removed from the top.
5. Remove the manifold and tube assembly as an on-bench operation.
6. If the compressor is to be replaced, remove the clutch and field coil assembly.

To install:

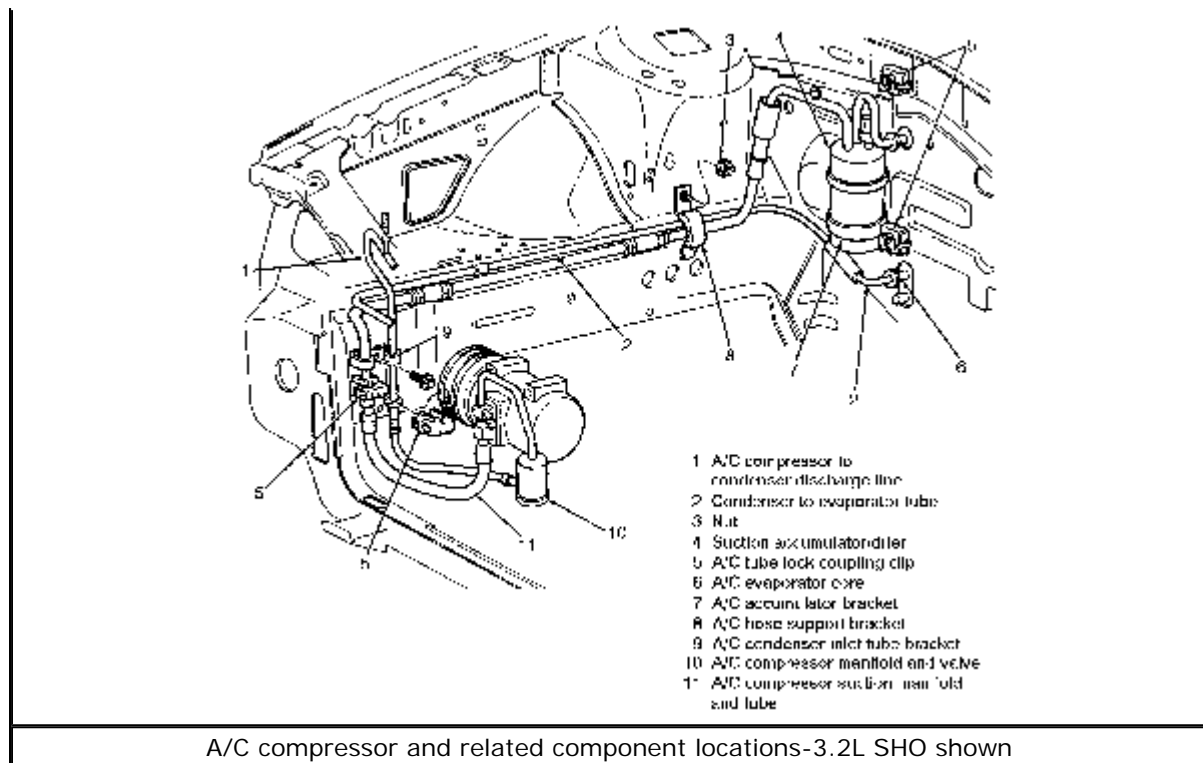
New service replacement FS-6 compressors contain 10 oz. (300 ml) of refrigerant oil. Before replacement compressor installation, drain 4 oz. (120 ml) of refrigerant oil from the compressor. This will maintain the total system oil charge within the specified limits. New service replacement 10P15F compressors contain 8 oz. (240 ml) of refrigerant oil and new service replacement FX15 compressors contain 7 oz. (207 ml) of refrigerant oil. Prior to installing either type replacement compressor, drain the refrigerant oil from the removed compressor into a calibrated container. Then, drain the refrigerant oil from the new compressor into a clean calibrated container. If the amount of oil drained from the removed

compressor was between 3-5 oz. (90-148 ml), pour the same amount of clean refrigerant oil into the new compressor. If the amount of oil that was removed from the old compressor is greater than 5 oz. (148 ml), pour 5 oz. (148 ml) of clean refrigerant oil into the new compressor. If the amount of refrigerant oil that was removed from the old compressor is less than 3 oz. (90 ml), pour 3 oz. (90 ml) of clean refrigerant oil into the new compressor.

7. Install the manifold and tube assembly on the air conditioning compressor.
8. Install the compressor and manifold and tube assembly on the air conditioning mounting bracket.
9. Using new O-rings lubricated with clean refrigerant oil, connect the suction line to the compressor manifold and tube assembly. Attach the discharge line to the air conditioning condenser.
10. Connect the clutch wires to the field coil connector.
11. Install the drive belt.
12. Leak test, evacuate and charge the system according to the proper procedure. Observe all safety precautions.
13. Check the system for proper operation.



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### 1988-95 Vehicles With 3.8L Engine; All 1995 Vehicles

Whenever a compressor is replaced, it will be necessary to replace the suction accumulator/drier.

1. Disconnect the negative battery cable and properly discharge the air conditioning system.
2. Position a suitable clean drain pan under the radiator and drain the coolant, keeping the coolant to refill the system during installation.
3. Disconnect and remove the integrated relay controller/constant control relay module.
4. Disconnect and remove the fan and shroud assembly.
5. Disconnect the upper and lower radiator hoses, then remove the radiator.
6. Disconnect the air conditioning compressor magnetic clutch wire at the field coil connector on the compressor.
7. Remove the top two compressor mounting bolts.
8. Raise and safely support the vehicle.
9. Loosen and remove the compressor drive belt.
10. Disconnect the HEGO sensor wire connector and remove the air conditioning muffler supporting strap bolt from the sub-frame.
11. Disconnect the air conditioning system hose from the condenser and suction accumulator/drier using the spring-lock coupling tool or equivalent. Immediately install protective caps on the open lines.
12. Make sure the compressor is properly supported, then remove the bottom two compressor mounting bolts.
13. Remove the compressor, manifold and tube assemblies from the vehicle as a unit.

The assembly can be removed from the bottom using care not to scrape against the condenser.

14. Remove the manifold and tube assemblies from the compressor.
15. If the compressor is to be replaced, remove the clutch and field coil assembly.

To install:

A new service replacement 10P15F compressor contains 8 oz. (240 ml) of refrigerant oil. Before installing a new compressor, drain 4 oz. (120 ml) of refrigerant oil from the compressor. This will maintain total system oil charge within specified limits.

16. Using new O-rings, lubricated with clean refrigerant oil, install the manifold and tube assemblies onto the new compressor.
17. Install the compressor, manifold and tube assemblies onto the compressor mounting bracket.
18. Using new O-rings lubricated with clean refrigerant oil, connect the suction line to the compressor and manifold assembly.
19. Using new O-rings lubricated with clean refrigerant oil, connect the discharge line to the compressor and manifold assembly.
20. Install the muffler support onto the sub-frame and connect the HEGO sensor wire connector.
21. Install the compressor drive belt and lower the vehicle.
22. Install the radiator and connect the radiator hoses.
23. Install the fan and shroud assembly and connect the integrated relay connector.
24. Connect the negative battery cable and fill the radiator with the coolant that was saved.
25. Leak test, evacuate and charge the system according to the proper procedure. Check the system for proper operation.

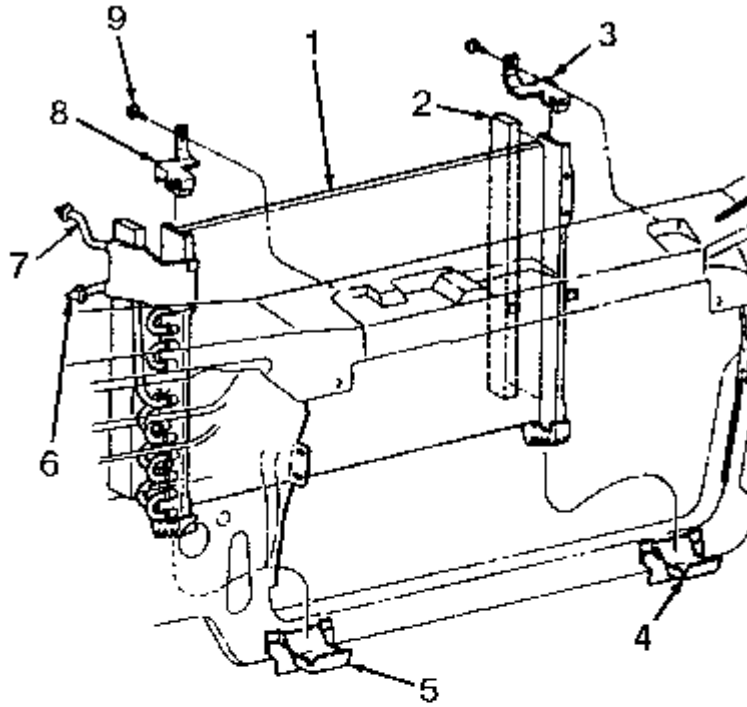
## Condenser

Refer to *Section 1* for air conditioning system discharging information.

## REMOVAL & INSTALLATION

Whenever a condenser is replaced, it will be necessary to replace the suction accumulator/drier.

1. Disconnect the negative battery cable and properly discharge the refrigerant from the air conditioning system. Observe all safety precautions.
2. Disconnect the two refrigerant lines at the fittings on the right side of the radiator. Perform the spring-lock coupling disconnect procedure located later in this section.
3. Remove the bolts or screws and washers attaching the condenser to the radiator support, then remove the condenser from the vehicle.



- 1 A/C condenser core
- 2 A/C condenser seal (2 req'd)
- 3 A/C condenser mounting bracket (upper LH)
- 4 A/C condenser mounting bracket (lower LH)
- 5 A/C condenser mounting bracket (lower RH)
- 6 To A/C evaporator core orifice and A/C evaporator core
- 7 From A/C manifold and tube
- 8 A/C condenser mounting bracket (upper RH)
- 9 Screw and washer assy (1 req'd each bracket assy)

A/C condenser core assembly-1995 vehicle shown

[Click to enlarge](#)

**To install:**

4. Add 1 oz. (30 ml) of clean refrigerant oil to a new replacement condenser.
5. Position the condenser assembly to the radiator support brackets, then install the attaching bolts or screws and washers.
6. Connect the refrigerant lines to the condenser assembly using new O-rings. Perform the spring-lock coupling connection procedure.
7. Leak test, evacuate and charge the refrigerant system following the proper procedures. Observe all safety precautions.

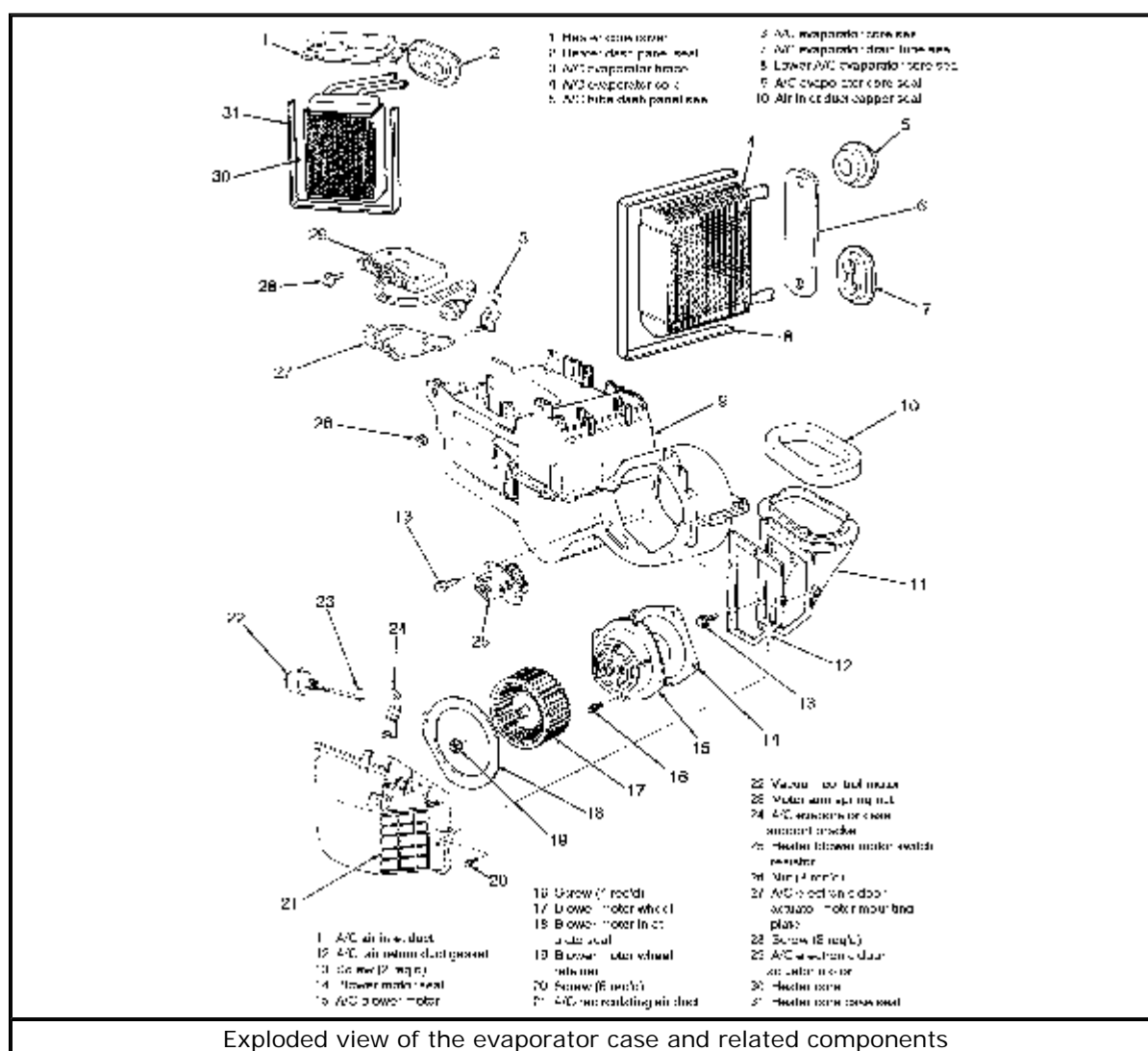
## Evaporator Core

Refer to *Section 1* for air conditioning system discharging information.

### REMOVAL & INSTALLATION

Whenever an evaporator is removed, it will be necessary to replace the accumulator/drier.

1. Disconnect the negative battery cable.
2. Drain the coolant from the radiator into a clean container.

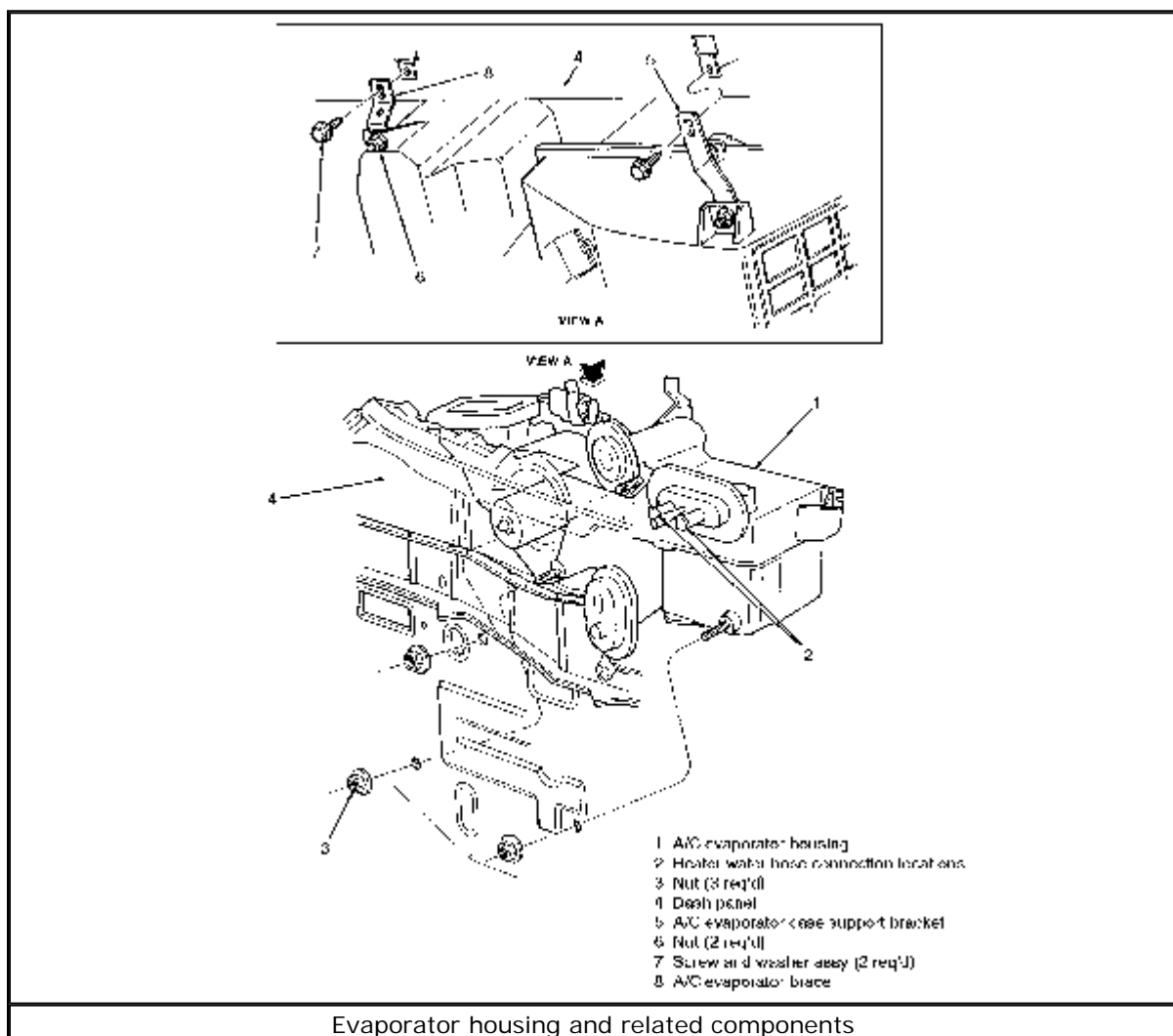


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3. Properly discharge the refrigerant from the air conditioning system.
4. Disconnect the heater hoses from the heater core. Plug the heater core tubes.
5. Disconnect the vacuum supply hose from the in-line vacuum check valve in the engine compartment.
6. Disconnect the liquid line and the accumulator from the evaporator core at the dash panel. Cap the refrigerant lines and evaporator core to prevent entrance of

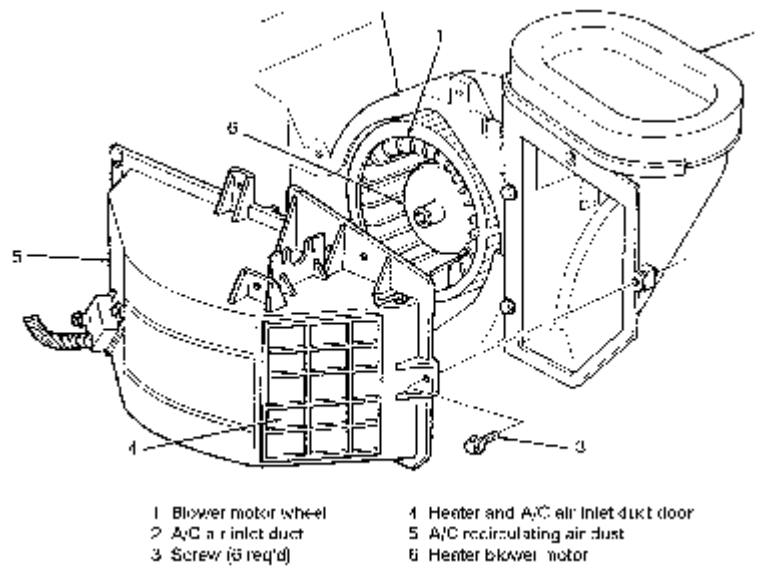
dirt and moisture.

7. Remove the instrument panel and place it on the front seat. For details, please refer to the procedure located in *Section 10* of this manual.
8. Remove the screw holding the instrument panel shake brace to the evaporator case, then remove the instrument panel shake brace.
9. Remove the two screws attaching the floor register and rear seat duct to the bottom of the evaporator case.
10. Disconnect the vacuum line, electrical connections and aspirator hose from the evaporator case.
11. Remove the three nuts attaching the evaporator case to the dash panel in the engine compartment. Remove the two screws attaching the support brackets to the cowl top panel.
12. Carefully pull the evaporator assembly away from the dash panel and remove the evaporator case from the vehicle.



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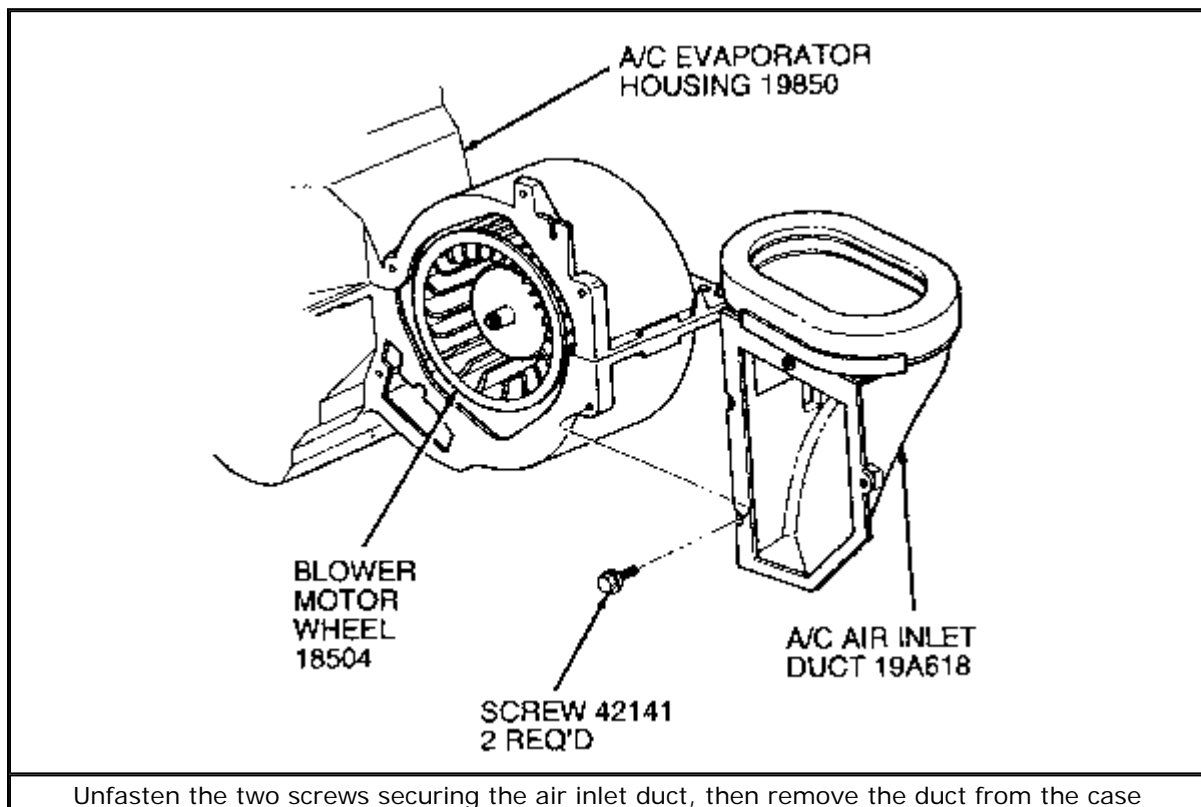
13. Disconnect and remove the vacuum harness.
14. Remove the six screws attaching the recirculation duct, then remove the duct from the evaporator case.



After unfastening the six retaining screws, remove the recirculation duct from the evaporator case

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15. Remove the two screws from the air inlet duct, then remove the duct from the evaporator case.



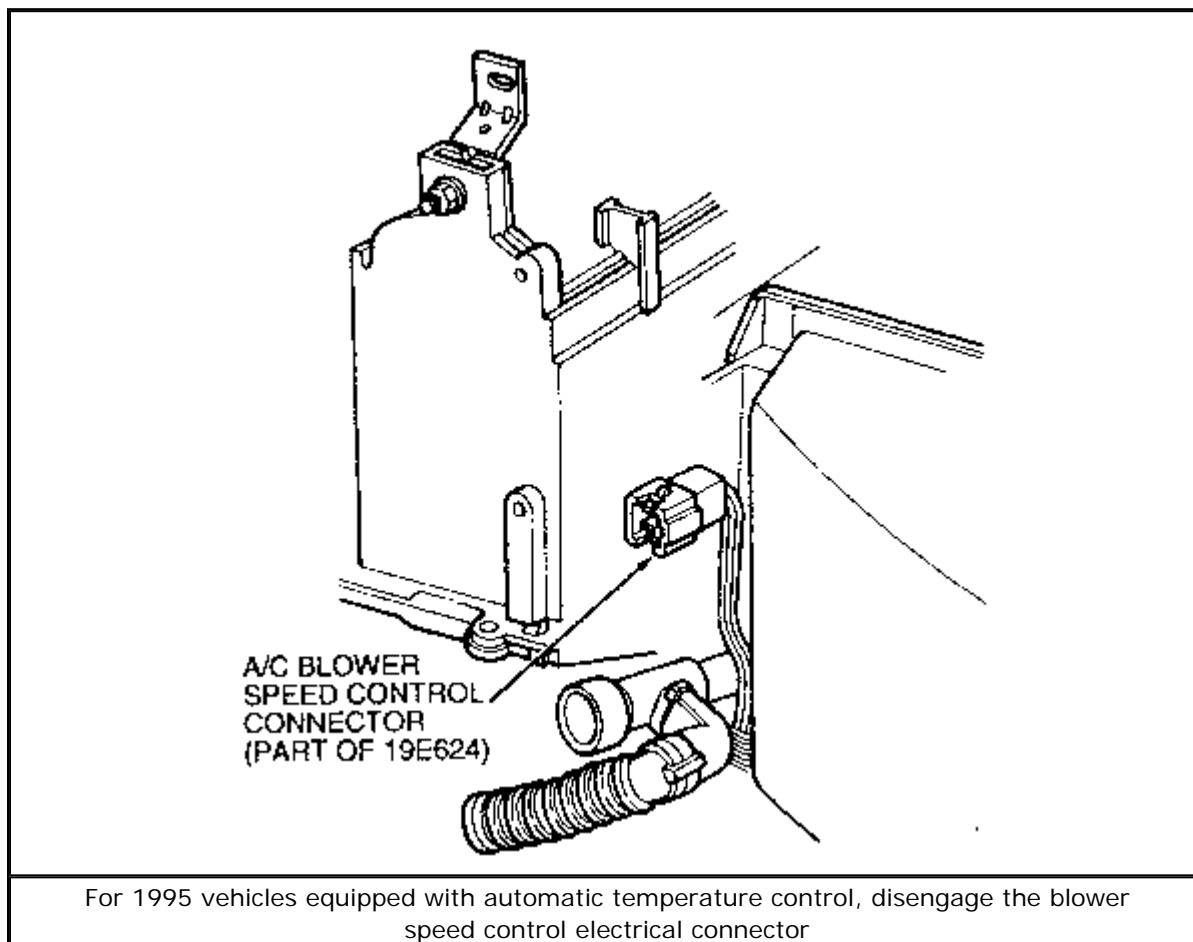
Unfasten the two screws securing the air inlet duct, then remove the duct from the case

[Click to enlarge](#)

16. Remove the support bracket from the evaporator case.
17. For 1986-94 vehicles if equipped with automatic temperature control, remove the screws holding the electronic connector bracket to the recirculation duct.
18. For 1995 vehicles if equipped with automatic temperature control, remove the



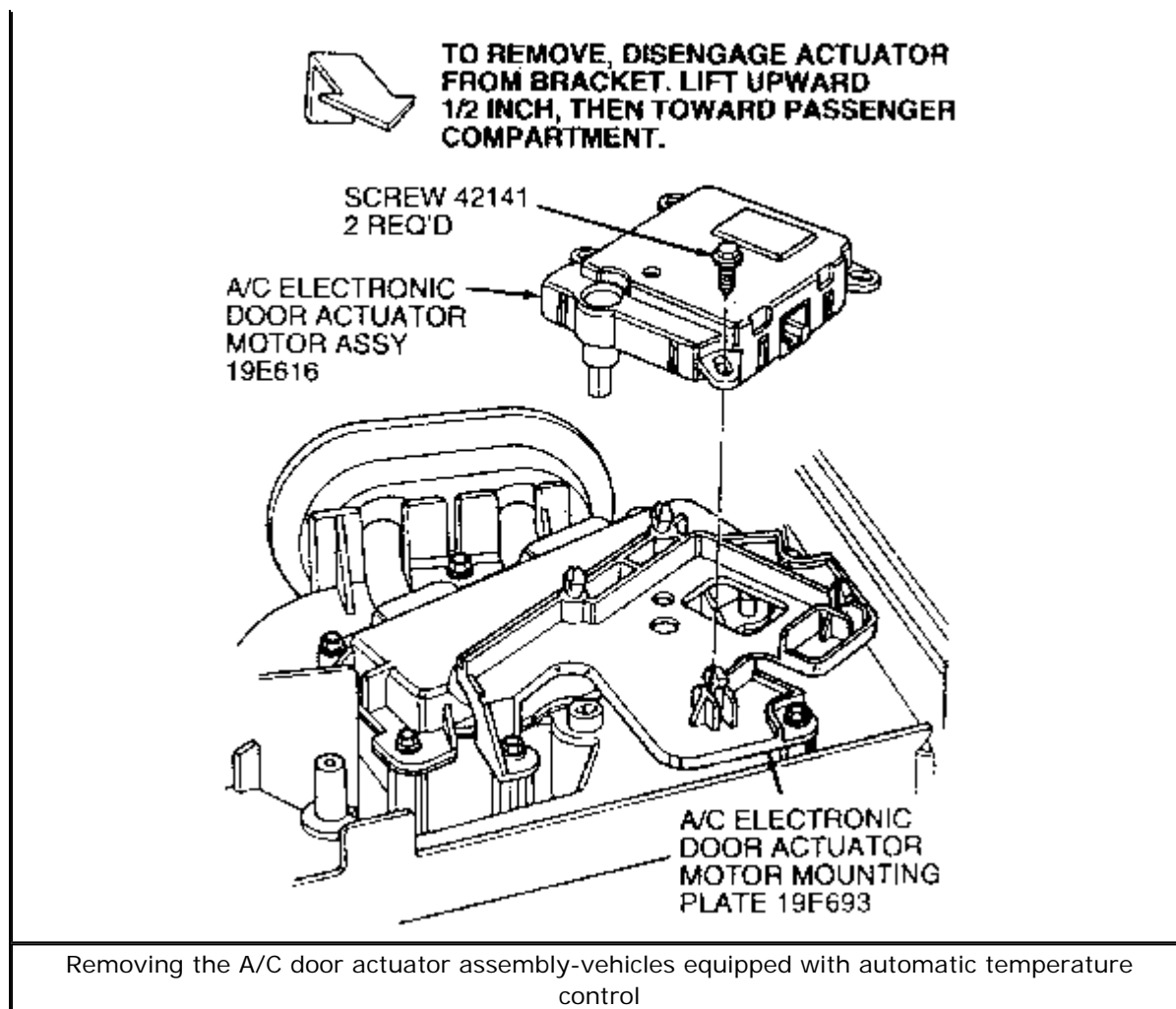
screw holding the electronic connector bracket to the A/C recirculating air duct. Disconnect the engine harness from the blower speed control connector. Release the three connectors from the bracket, then remove the bracket, then disconnect the aspirator duct.



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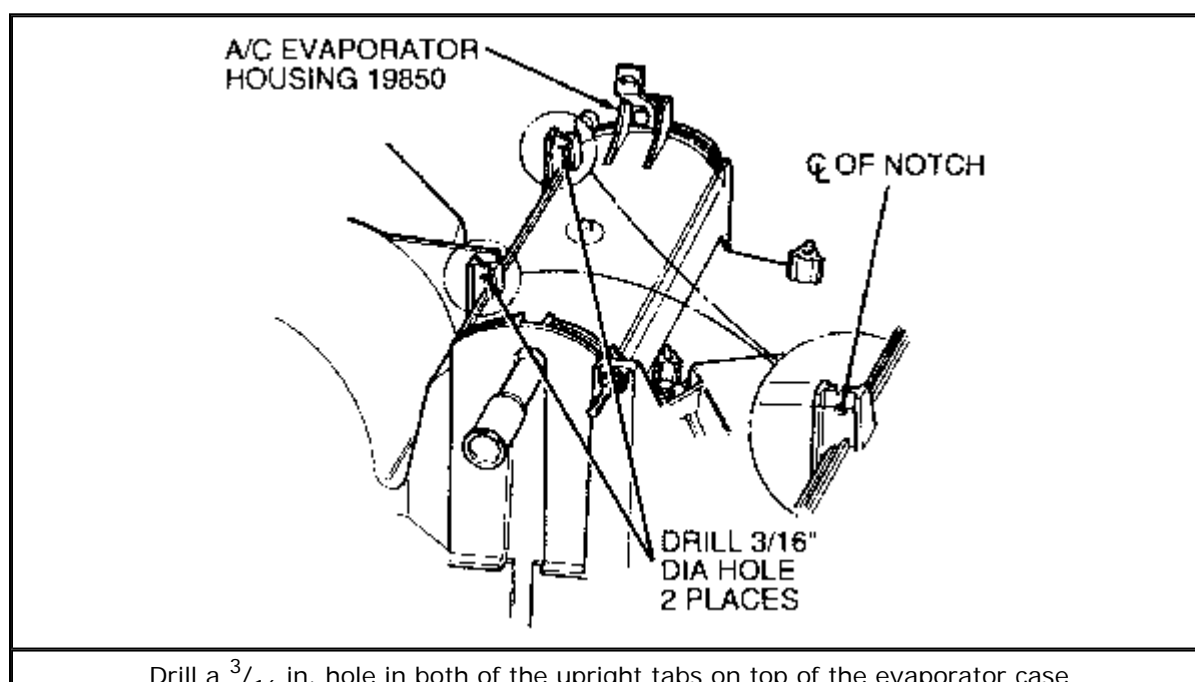
19. If equipped with automatic temperature control, remove the blend door actuator and cold engine lock out switch, which is held on by spring tension at the outermost heater core tube.





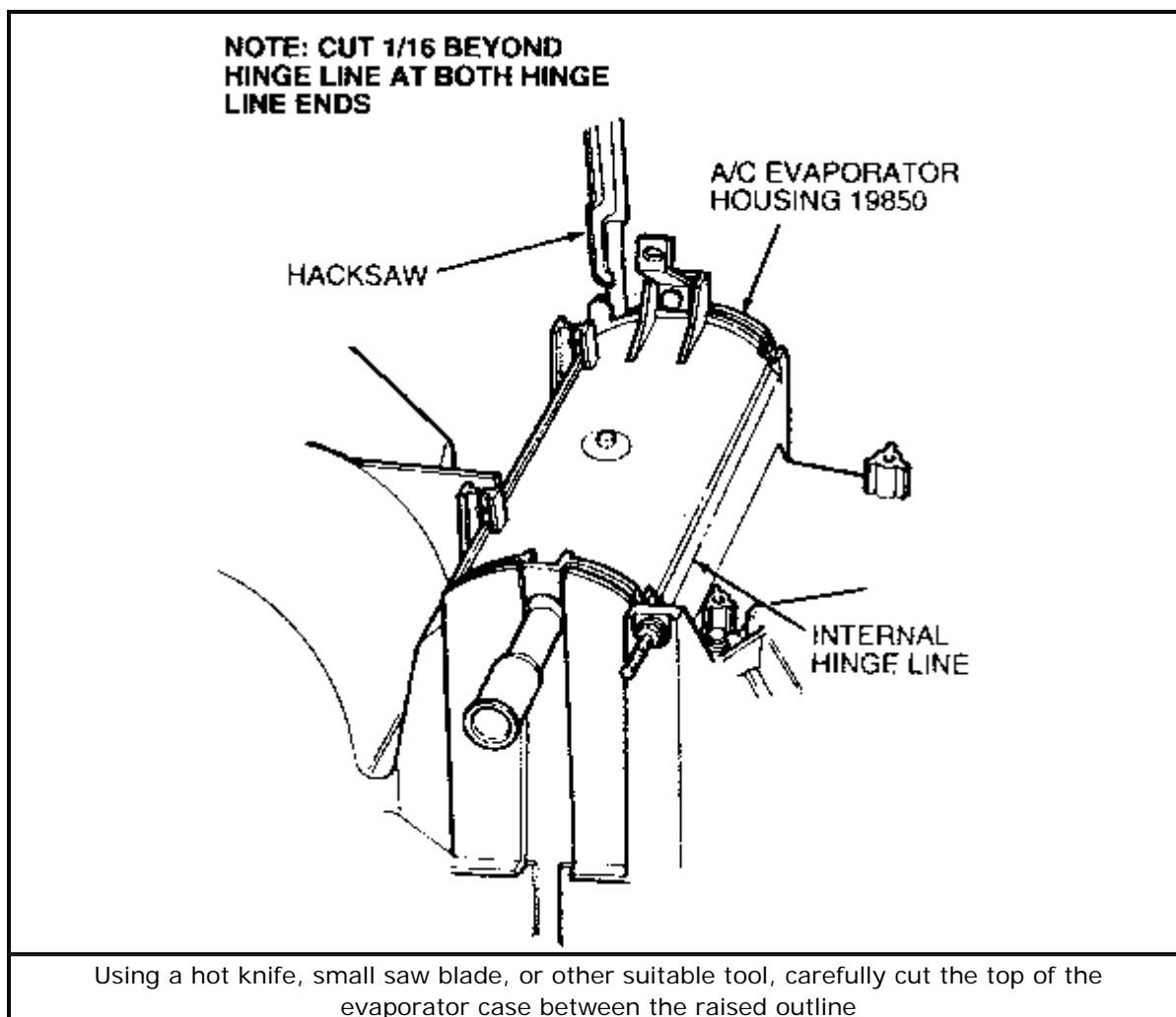
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20. Remove the moulded seals from the evaporator core tubes.
21. Drill a  $\frac{3}{16}$  in. (4.75mm) hole in both upright tabs on top of the evaporator case.



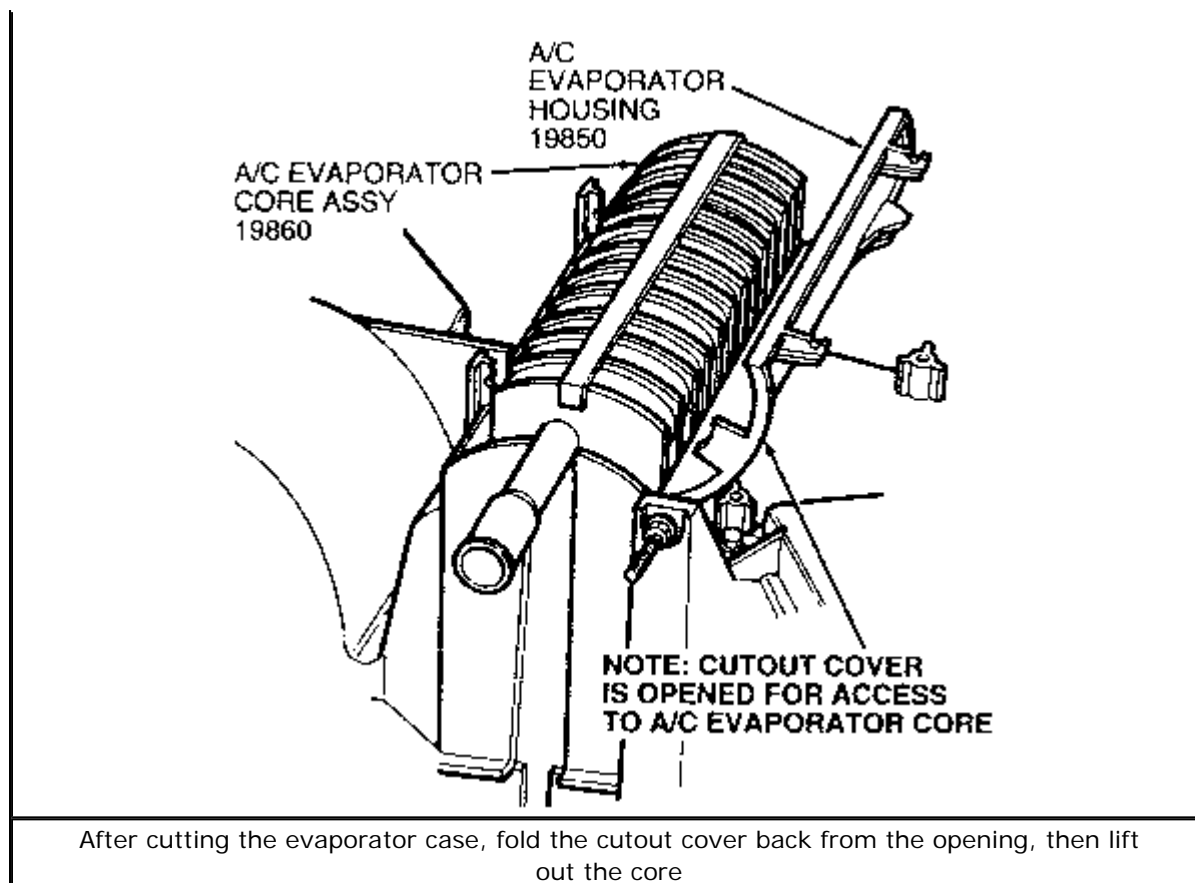
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22. Using a suitable tool, cut the top of the evaporator case between the raised outline. Fold the cutout cover back from the opening and lift the evaporator core from the case.



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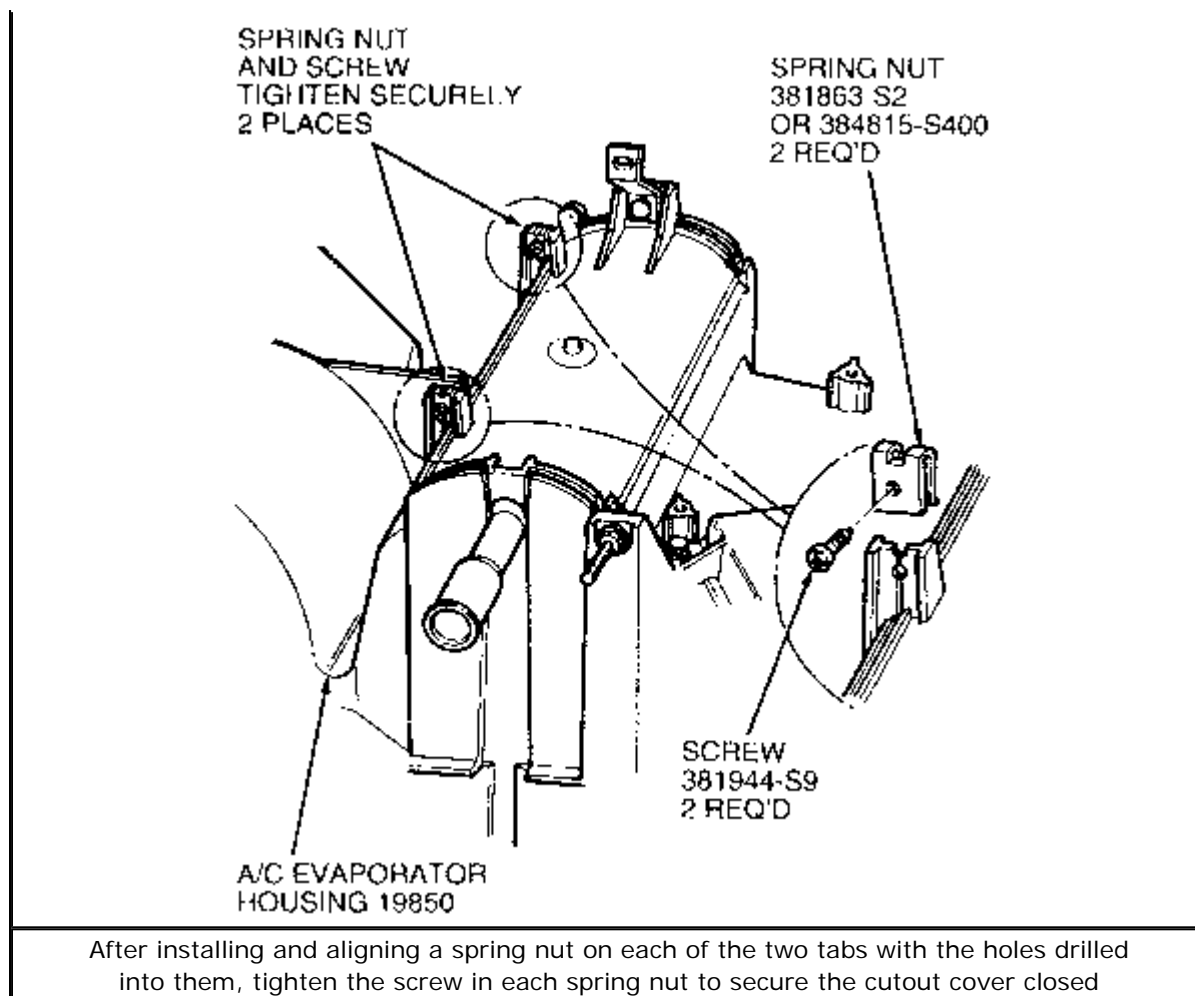


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**To install:**

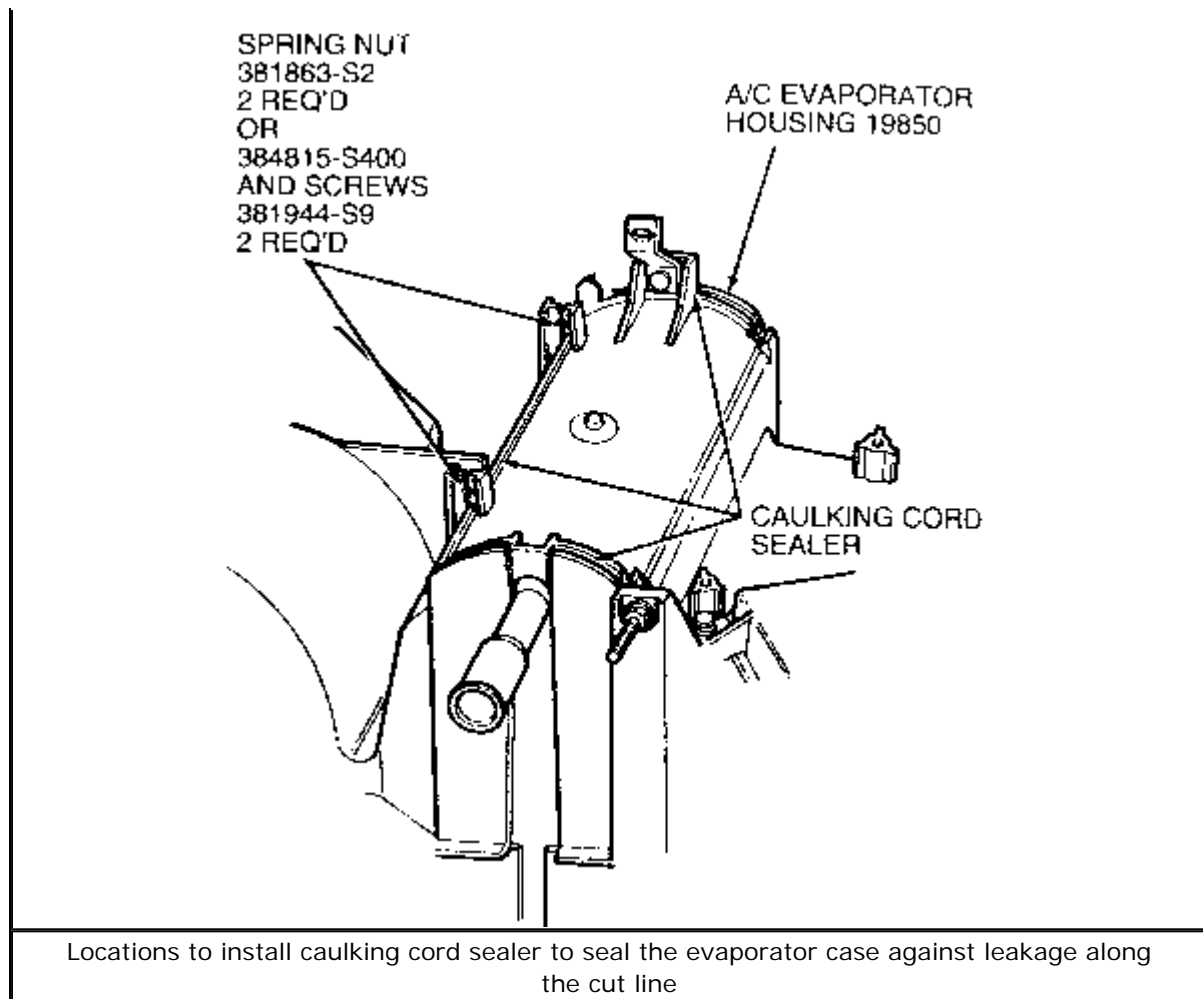
Add 3 oz. (90 ml) of clean refrigerant oil to a new replacement evaporator core to maintain total system refrigerant oil requirements.

23. Transfer the foam core seals to the new evaporator core.
24. Position the evaporator core in the case and close the cutout cover.
25. Install a spring nut on each of the two upright tabs with two holes drilled in the front flange. Make sure the holes in the spring nuts are aligned with the  $\frac{3}{16}$  in. (4.75mm) holes drilled in the tab and flange. Install and tighten the screw in each spring nut to secure the cutout cover in the closed position.



[Click to enlarge](#)

26. Install Caulking Cord D6AZ-19560-A or equivalent, to seal the evaporator case against leakage along the cut line.



[Click to enlarge](#)

27. Install the air inlet duct to the evaporator case and tighten the two screws. Install the recirculation duct to the evaporator case, then tighten the six screws.
28. If equipped with automatic temperature control, install the electrical connector bracket to the recirculation duct, install the speed controller connector to the bracket and attach the blend door actuator to the evaporator case. Install the electrical connector to the bracket. Attach the cold engine lock out switch by snapping the spring clip in place on the outermost heater core tube.
29. Install the vacuum harness to the evaporator case, then install the foam seals over the evaporator tubes. Assemble the support bracket to the evaporator case.
30. Position the evaporator case assembly to the dash panel and cowl top panel at the air inlet opening. Install the two screws attaching the support brackets to the top cowl panel.
31. Install the three nuts in the engine compartment attaching the evaporator case to the dash panel.
32. Connect the vacuum line, electrical connections and aspirator hose at the evaporator case.
33. Install the floor register and rear seat duct to the evaporator case and tighten the two attaching screws.
34. Install the instrument panel shake brace and screw to the evaporator case.
35. Install the instrument panel. For details, please refer to the procedure located in *Section 10* of this manual.

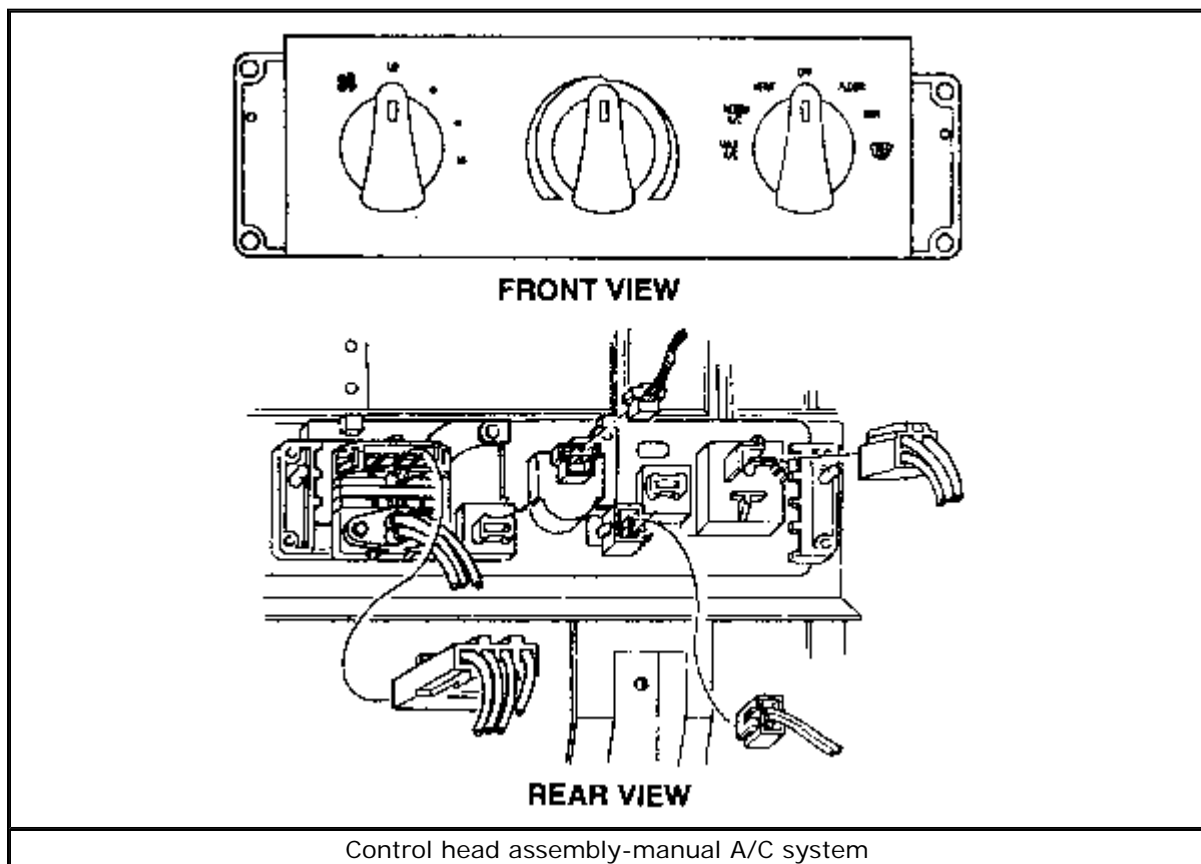
36. Connect the liquid line and accumulator/drier to the evaporator core and connect the heater hoses to the heater core.
37. Connect the black vacuum supply hose to the vacuum check valve in the engine compartment.
38. Fill the radiator to the correct level with the previously removed coolant.
39. Connect the negative battery cable and leak test, evacuate and charge the air conditioning system according to the proper procedure.
40. Check the system for proper operation.

## Control Panel

### REMOVAL & INSTALLATION

#### Manual Control Head

1. Disconnect the negative battery cable.
2. Remove the instrument panel finish applique.
3. Remove the four screws attaching the control assembly to the instrument panel. Pull the control head away from the instrument panel into a position which provides access to the rear connectors.
4. Disengage the two harness connectors from the control assembly by depressing the latches at the top of the connectors and pulling.
5. Disconnect the vacuum harness and temperature control cable from the control assembly. Discard the used pushnut from the vacuum harness.



[Click to enlarge](#)

To install:

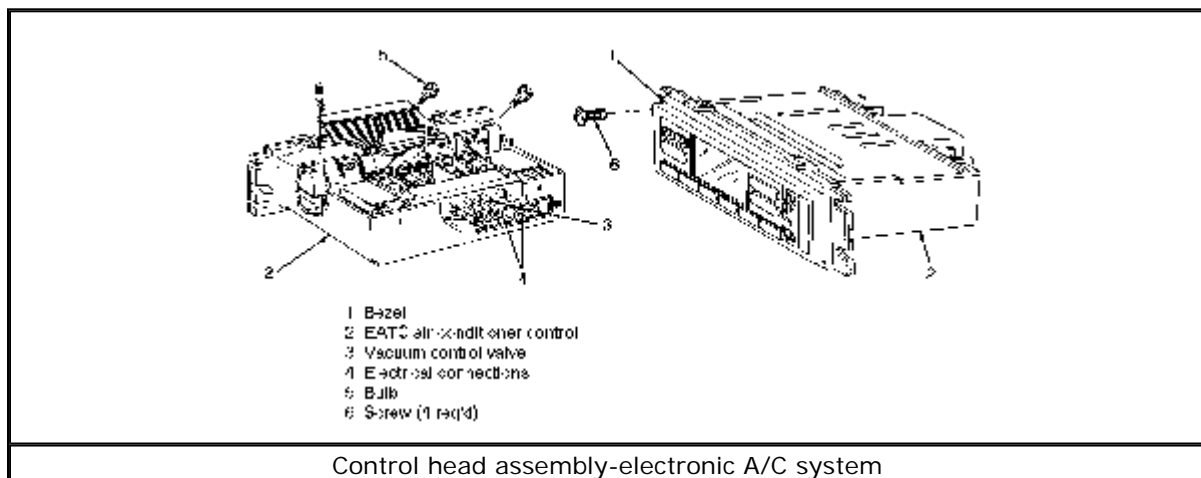
6. Connect the temperature cable to the control assembly.
7. Engage the harness connectors and vacuum harness to the control assembly using new pushnuts.

Push on the vacuum harness retaining nuts. Do not attempt to screw them onto the post.

8. Position the control assembly to the instrument panel opening and install four attaching screws.
9. Install the instrument panel finish applique.
10. Connect the negative battery cable and check the system for proper operation.

### Electronic Control Head

1. Disconnect the negative battery cable.
2. Perform the following:
  1. Pull out the lower left and lower right instrument panel snap-on finish panel inserts. Remove the eight screws retaining the upper finish panel.
  2. Pull the lower edge of the upper finish panel away from the instrument panel. It is best to grasp the finish panel from the lower left corner and pull the panel away by walking the hands around the panel in a clockwise direction.
3. Remove the four Torx® head screws retaining the control assembly. Pull the control assembly away from the instrument panel into a position which provides access to the rear connectors.
4. Disengage the two harness connectors from the control assembly by depressing the latches at the top of the connectors and pulling.
5. Remove the nuts retaining the vacuum harness to the control assembly. Pull the control assembly away from the instrument panel.



[Click to enlarge](#)

To install:



6. Engage the two electrical harness connectors to the control assembly. Push the keyed connectors in until a click is heard.
7. Attach the vacuum harness to the vacuum port assembly. Secure the harness by tightening the two nuts.
8. Position the control assembly into the instrument panel opening and install the four attaching Torx® head screws. Make sure, as the control is positioned, the locating posts are correctly aligned with their respective holes.
9. Carefully place the instrument panel applique into its assembly position. Make sure the spring clips are aligned with their proper holes. Press the applique into place. Make sure all spring clips and screws are secure.
10. Install the eight screws retaining the upper finish panel. Insert the lower left and lower right instrument panel snap-on finish panel inserts.
11. If removed, install the left and right shelf mouldings.
12. Connect the negative battery cable, then check the system operation.

## Blower Switch

Refer to *Section 1* for air conditioning system discharging information.

### REMOVAL & INSTALLATION

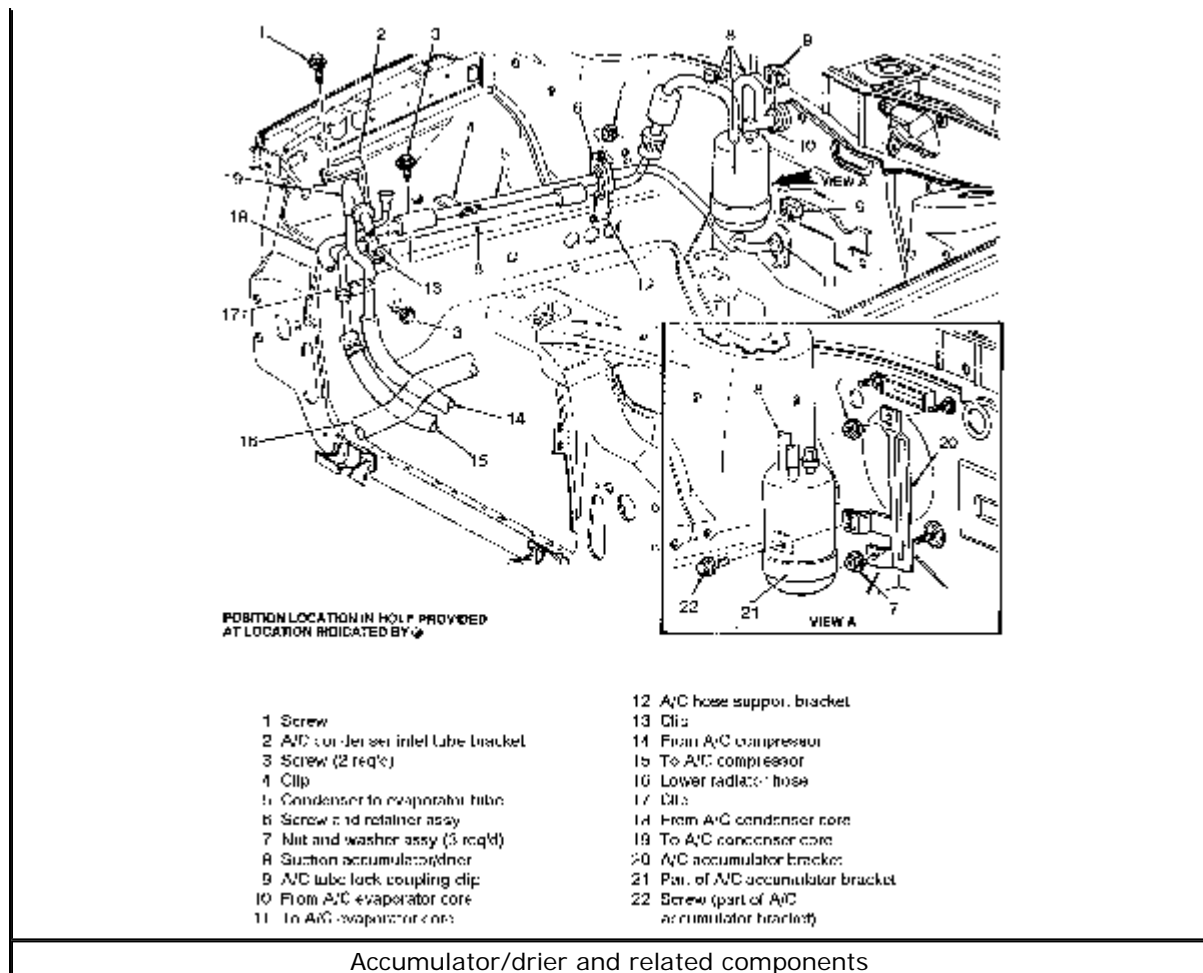
1. Disconnect the negative battery cable. Remove the control assembly from the instrument panel.
2. Remove the fan switch knob from the fan switch. Remove the screws attaching the control switch to the instrument panel.
3. Disconnect the electrical connector. Remove the switch retaining screw. Remove the switch.
4. Installation is the reverse of the removal procedure.

## Accumulator/Drier

Refer to *Section 1* for air conditioning system discharging information.

### REMOVAL & INSTALLATION

1. Disconnect the negative battery cable and discharge the refrigerant from the air conditioning system according to the proper procedure. Observe all safety precautions.
2. Disconnect the suction hose at the compressor. Cap the suction hose and the compressor to prevent entrance of dirt and moisture.
3. Disconnect the accumulator/drier inlet tube from the evaporator core outlet. Perform the spring-lock coupling disconnect procedure described in detail later in this section.
4. Disengage the wire harness connector from the A/C cycling/pressure switch on top of the accumulator/drier.
5. Remove the screw holding the accumulator/drier in the accumulator bracket, then remove the accumulator/drier.



[Click to enlarge](#)

#### To install:

6. On Taurus SHO, Taurus and Sable equipped with the 3.8L engine, drill a  $\frac{1}{2}$  in. hole in the removed accumulator/drier body and drain the refrigerant oil through the hole. Add the same amount of oil removed, plus 2 oz. (60 ml) of clean refrigerant oil to the new accumulator/drier. On all other vehicles, drain the oil from the removed accumulator/drier. Add the same amount plus 2 oz. (60 ml) of clean refrigerant oil to 3.0L engine equipped vehicles and the same amount plus 1 oz. (30 ml) to 2.5L engine equipped vehicles.
7. Position the accumulator/drier on the vehicle and route the suction hose to the compressor.
8. Using a new O-ring lubricated with clean refrigerant oil, connect the accumulator/drier inlet tube to the evaporator core outlet.
9. Install the screw in the accumulator/drier bracket.
10. Using a new O-ring lubricated with clean refrigerant oil, connect the suction hose to the compressor.
11. Connect the negative battery cable. Leak test, evacuate and charge the system according to the proper procedure. Check the system for proper operation.

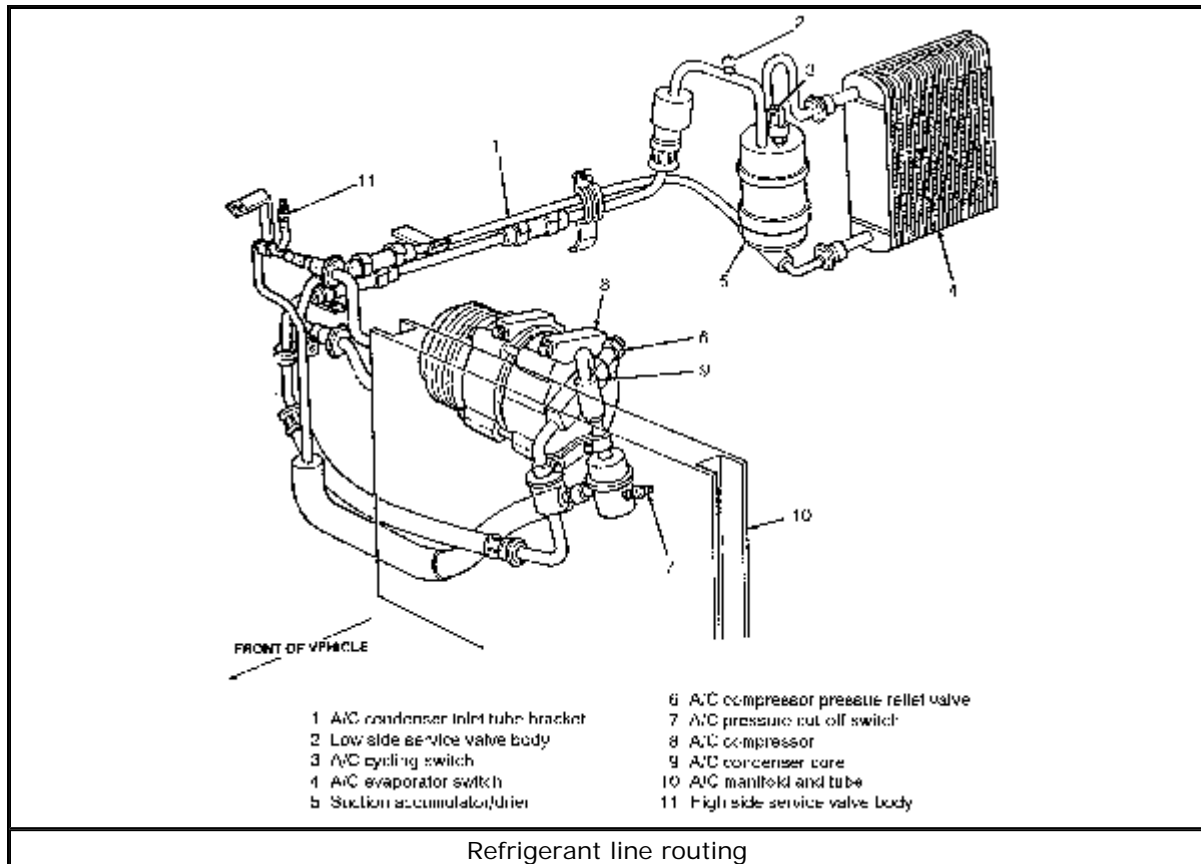
## Refrigerant Lines

Refer to *Section 1* for air conditioning system discharging information.

## REMOVAL & INSTALLATION

Whenever a refrigerant line is replaced, it will be necessary to replace the suction accumulator/drier.

1. Disconnect the negative battery cable. Properly discharge the air conditioning system using the correct equipment. Observe all safety precautions.
2. Disconnect the condenser-to-evaporator tube at the A/C condenser core inlet connections using the spring lock coupling procedure located later in this section.
3. Remove the condenser-to-evaporator tube from the vehicle.



[Click to enlarge](#)

To install:

4. Route the new condenser-to-evaporator tube (and integral A/C evaporator core orifice) with the protective caps installed.

Make sure that the correct green O-ring seals are installed on the spring lock coupling A/C fittings.

5. Remove the protective caps, then connect the new condenser-to-evaporator tube into the system using new O-ring seals lubricated with clean refrigerant oil. Connect the spring lock couplings.
6. Connect the negative battery cable, then leak test, evacuate and charge the A/C system using the properly equipment and observing all safety precaution.

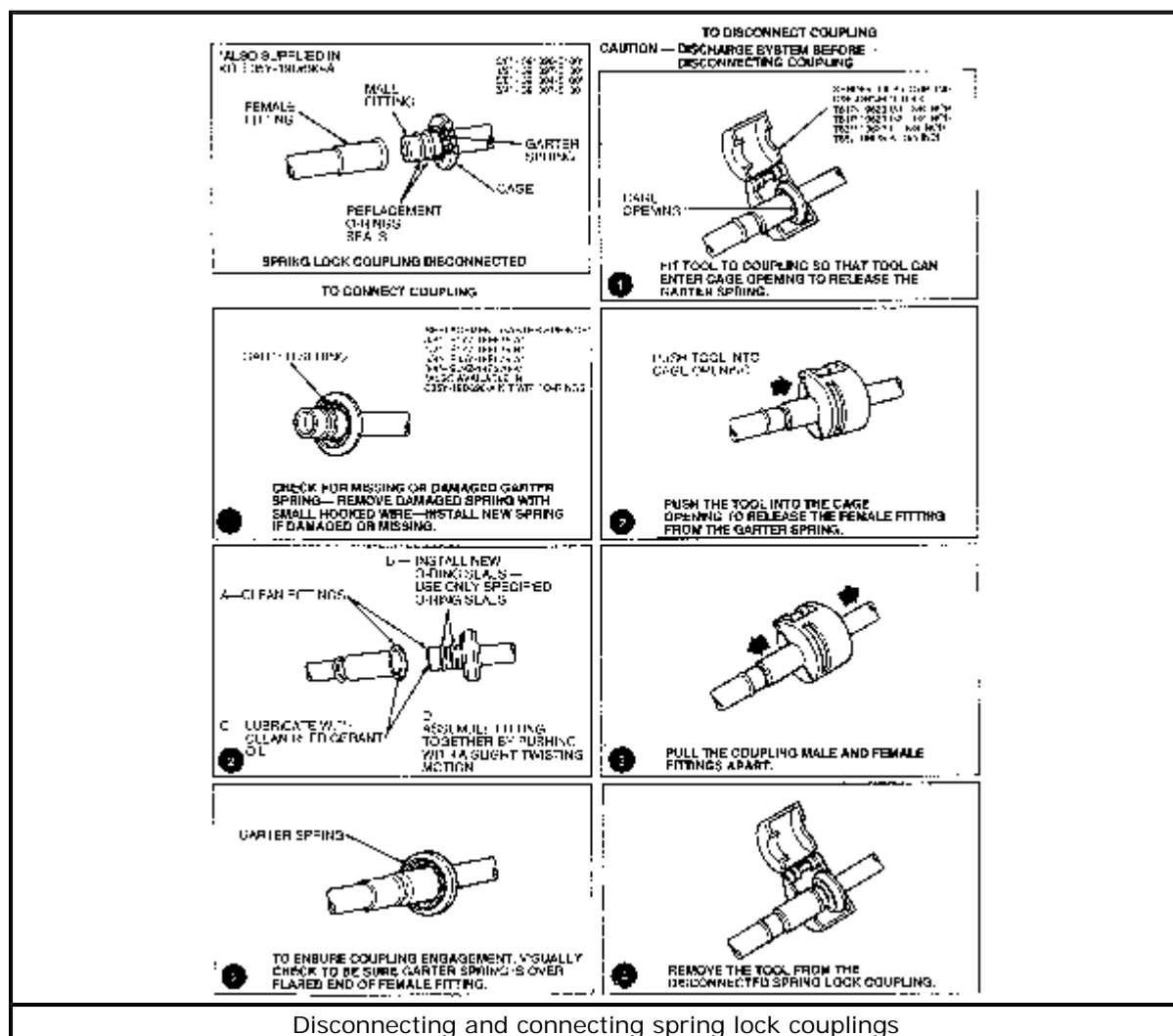
## Spring Lock Coupling

### REMOVAL & INSTALLATION

1. Disconnect the negative battery cable, then discharge the A/C system properly.
2. Fit a  $\frac{3}{8}$  in.,  $\frac{1}{2}$  in.,  $\frac{5}{8}$  in., or  $\frac{3}{4}$  in. Spring Lock Coupling Tool to the coupling.

The garter spring may not release if the tool is cocked while pushing it into the cage opening.

3. Close the tool and push into the open side of the cage to expand the garter spring and release the female fitting.
4. After the garter spring is expanded, pull the fitting apart, then remove the tool from the disconnected coupling.



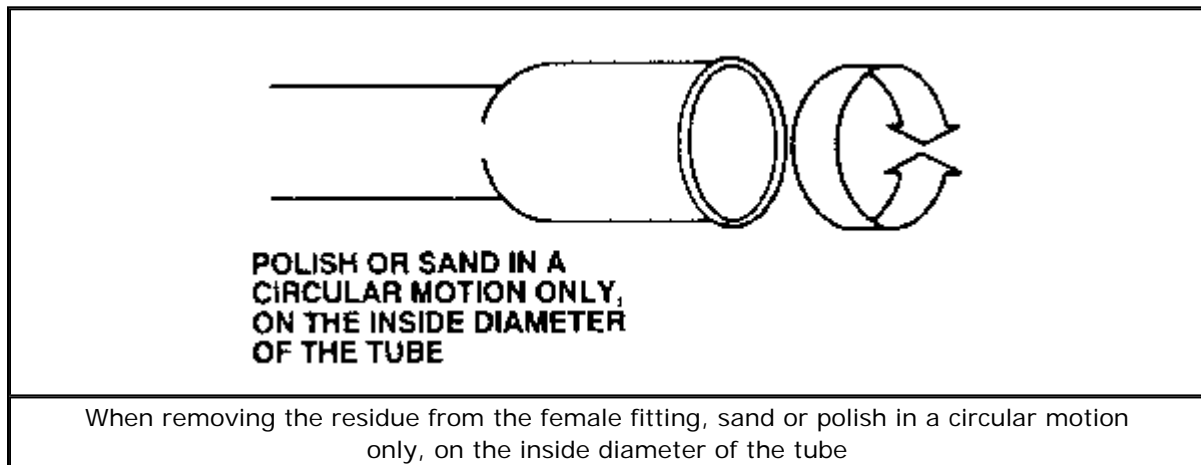
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To install:

5. Check to make sure the garter spring is in the cage of the male fitting. If the garter spring is missing, install a new spring by pushing it into the cage opening. If the garter spring is damaged, remove it from the cage with a small wire hook (do not

use a screwdriver), then install a new spring.

6. Clean all dirt or foreign material from both pieces of the coupling.
7. On the female spring lock design, check the inside of each fitting for scratches, corrosion, or debris from deteriorated O-rings. If any is found, the fitting should be cleaned as follow:
  1. Remove any surface residue from the inside of the female spring lock coupling by polishing with 400-grit emery cloth (or equivalent). Polish the female surface using a twisting motion so that any scratches make will not cross the O-ring sealing surface.
  2. Perform additional polishing of the surface using 600-grit emery cloth or equivalent.
  3. All residue from the polishing operations should be removed from the fitting by wiping with a line-free cloth.



8. Lubricate and install new green O-ring seals on the male fitting.

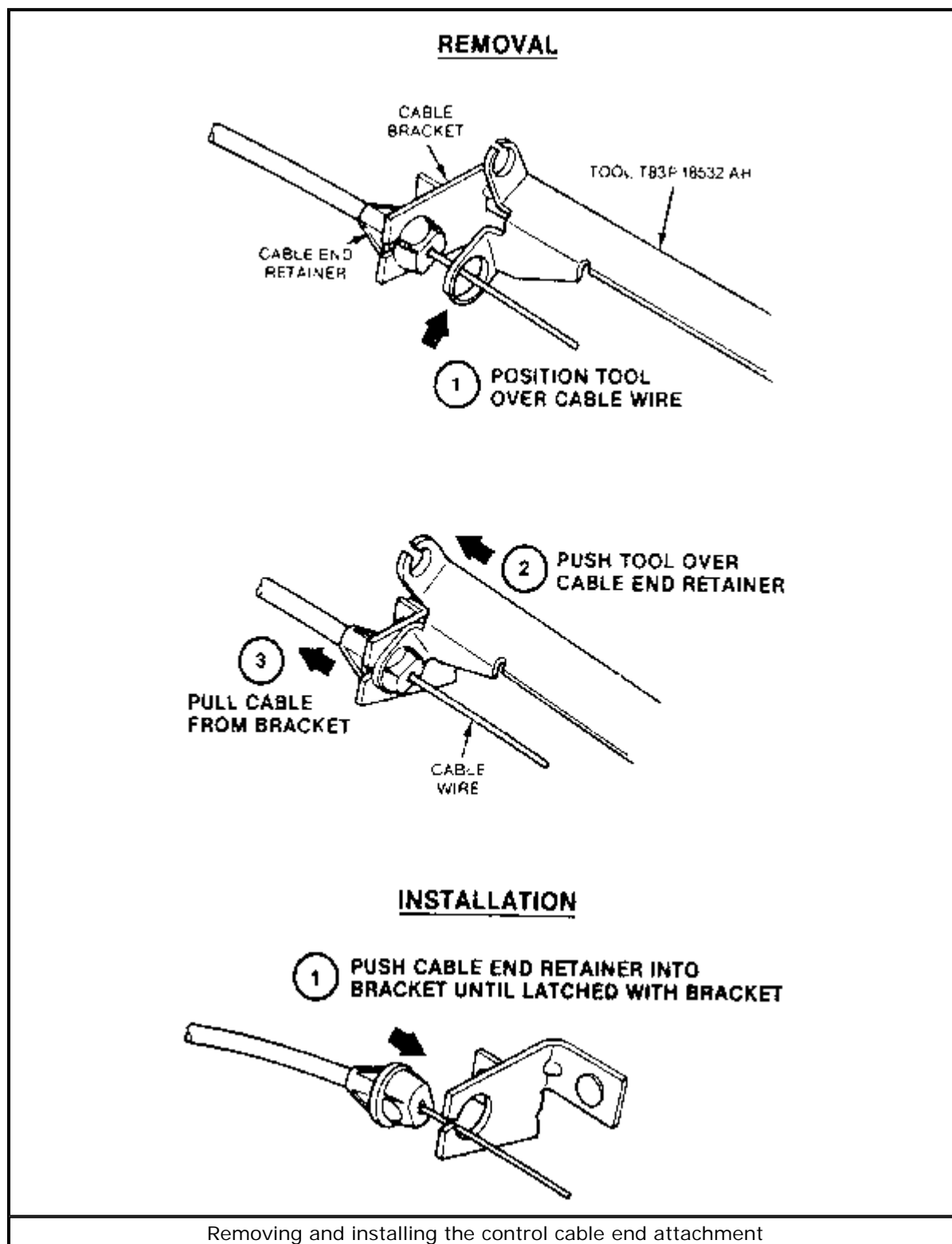
**Only use the specified green O-ring seals because they are made of a special material. The use of any O-ring seal other than the specified type, may allow the connection to leak intermittently during operation.**

9. Lubricate the male fitting, green O-ring seals and the inside of the female fitting with clean refrigerant oil.
10. Install a plastic indicator ring into the cage opening if the indicator ring is to be used.
11. Fit the female fitting to the male fitting, then push into the garter spring snaps over the flared end of the female fitting. If the plastic indicator ring is used, it will snap out of the cage opening when the coupling is connected to indicate engagement. If the ring is not used, check the coupling engage by making sure the garter spring is over the flared end of the female fitting.
12. Connect the negative battery cable, then properly leak test, evacuate and charge the system using the correct equipment. Check the system for proper operation.

## Control Cables

### REMOVAL & INSTALLATION

1. Remove the control assembly from the instrument panel.
2. Disconnect the cable retainer and wire from the control assembly.
3. Disconnect the temperature cable from the plenum temperature blend door crank arm and cable mounting bracket.



[Click to enlarge](#)

To install:

4. Check to make sure the self-adjusting clip is at least 1 in. (25.4mm) from the end loop of the control cable.
5. Route the cable behind the instrument panel and connect the control cable to the mounting bracket on the plenum.
6. Install the self-adjusting clip on the temperature blend door crank arm.
7. Snap the cable housing into place at the control assembly. Connect the "S" bend end of the control cable to the temperature lever arm on the control assembly.
8. Install the control assembly into the instrument panel.

## ADJUSTMENT

The temperature control cable is self-adjusting when the temperature selector knob is rotated to it's fully clockwise (red) position, as marked on the face of the control assembly. A preset adjustment should be made before attempting to perform the self-adjustment operation, to prevent kinking the control wire. The preset adjustment can be performed either with the cable installed in the vehicle or before cable installation.

### Before Cable Installation

1. Insert the end of a suitable tool in the end loop of the temperature control cable.
2. Slide the self-adjusting clip down the control wire, away from the loop, approximately 1 in. (25.4mm).
3. Install the cable assembly.
4. Rotate the temperature selector knob to the clockwise (red) position marked on the control assembly face to position the self-adjusting clip.
5. Check for proper control operation.

### After Cable Installation

1. Move the selector knob clockwise to the COOL position.
2. Hold the crank arm firmly in position and insert a suitable tool into the wire loop. Pull the cable wire through the self-adjusting clip until there is a space of approximately 1 in. (25.4mm) between the clip and the wire end loop.
3. Rotate the selector knob clockwise to allow positioning of the self-adjusting clip.
4. Check for proper control operation.

## Vacuum Selector Switch

Refer to *Section 1* for air conditioning system discharging information.

## REMOVAL & INSTALLATION

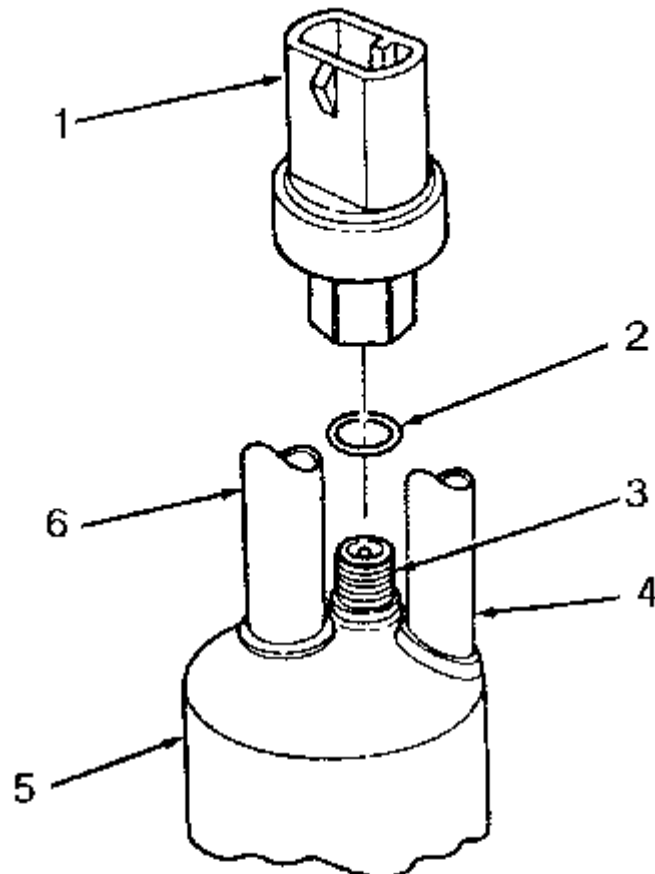
1. Disconnect the negative battery cable.
2. Remove the control assembly from the instrument panel. Remove the knob from the function selector shaft.
3. Remove the screw from the switch and its mounting. Remove the switch.
4. Installation is the reverse of the removal procedure. Before installation rotate the function selector shaft to the OFF position.

## Cycling Clutch Switch

Refer to *Section 1* for air conditioning system discharging information.

### REMOVAL & INSTALLATION

1. Disconnect the negative battery cable.
2. Disconnect the wire harness connector from the pressure switch. Unscrew the A/C cycling switch from the top of the suction accumulator/drier.



- 1 A/C cycling switch
- 2 O-ring seal
- 3 A/C cyclic switch fitting  
(part of suction accumulator/drier)
- 4 Outlet to A/C compressor  
(part of suction accumulator/drier)
- 5 Suction accumulator/drier
- 6 Inlet from A/C evaporator core  
(part of suction accumulator/drier)

A/C cycling clutch switch



[Click to enlarge](#)

**To install:**

3. **Install a new O-ring seal, lubricated with clean refrigerant oil, on the A/C cycling switch.**
4. **Lubricate the O-ring seal on the suction accumulator/drier nipple with clean refrigerant oil.**
5. **Screw the A/C cycling switch on the suction accumulator/drier nipple, then tighten the switch hand-tight.**
6. **Engage the wiring connector to the switch.**
7. **Check the switch installation for refrigerant leaks, then connect the negative battery cable and check the system for proper operation.**

## Orifice Tube

Refer to *Section 1* for air conditioning system discharging information.

The A/C evaporator core orifice should be replaced whenever the compressor is replaced for lack of performance.

The A/C evaporator core orifice located in the condenser to evaporator tube cannot be serviced as a component of the line. If replacement is necessary, use the procedure for refrigerant line removal and installation located earlier in this section.

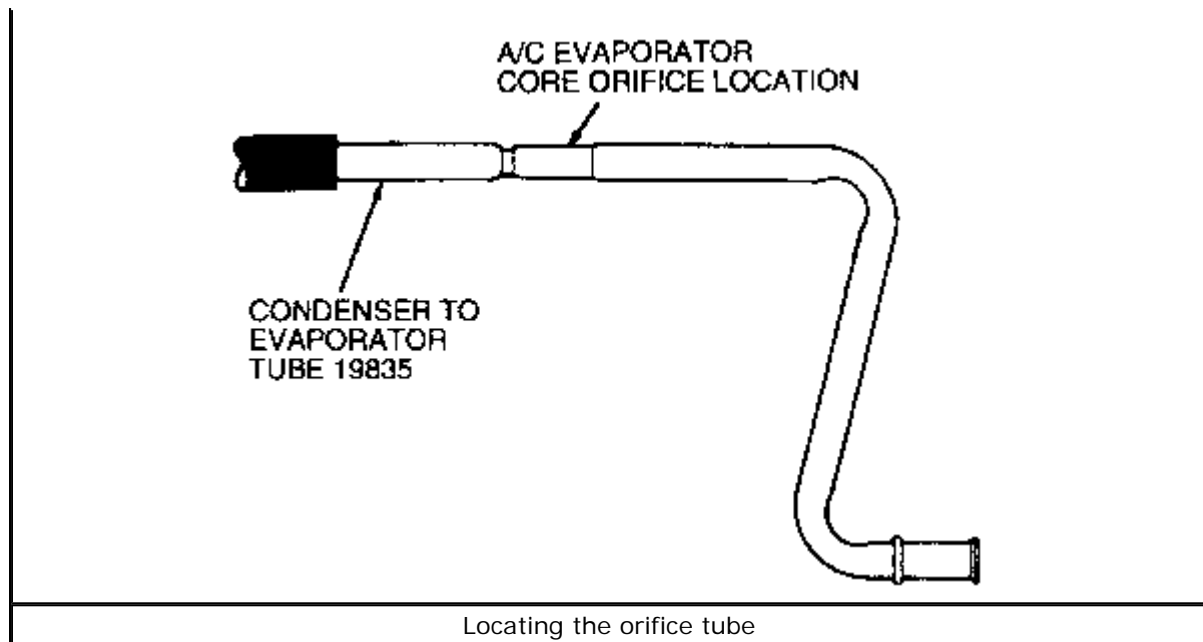
An orifice tube replacement service kit may be used for an optional service procedure. The procedure for installation and removal of the service it are as follows:

## REMOVAL & INSTALLATION

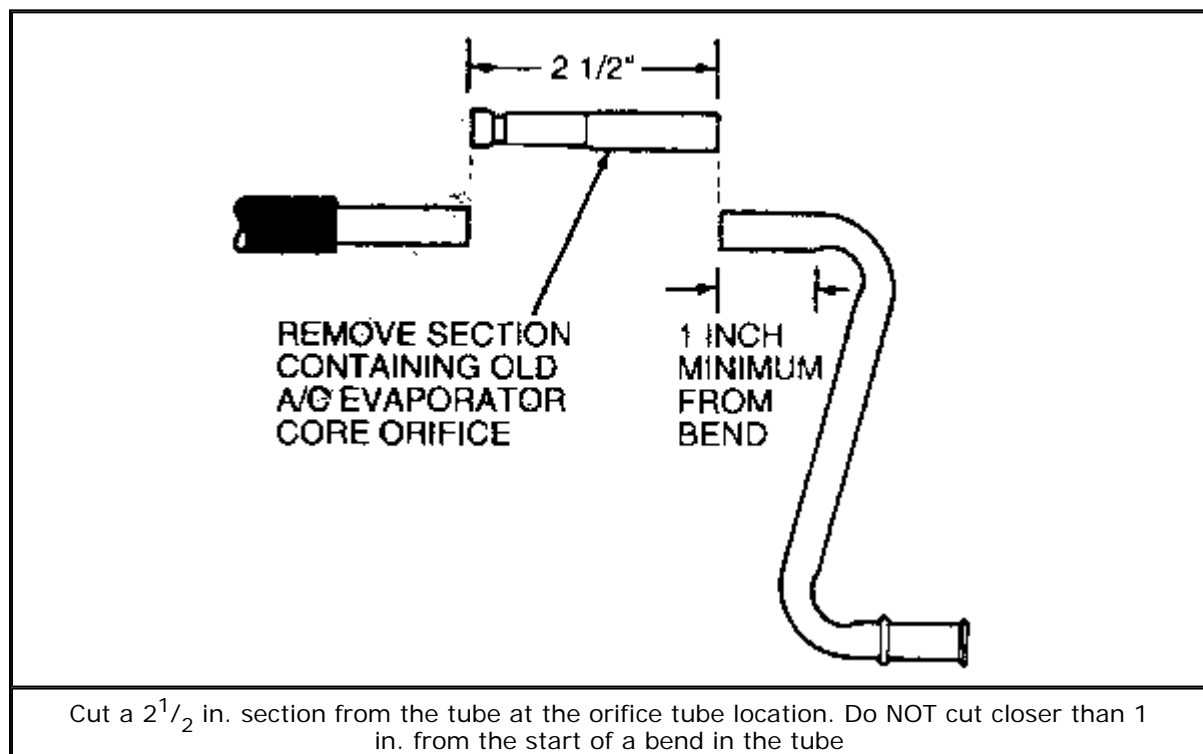
### Fixed Orifice Tube Replacement Kit

1. **Disconnect the negative battery cable.**
2. **Discharge the refrigerant from the air conditioning system according to the proper procedure.**
3. **Remove the liquid line from the vehicle.**
4. **Locate the orifice tube by three indented notches or a circular depression in the metal portion of the liquid line. Note the angular position of the ends of the liquid line so that it can be reassembled in the correct position.**



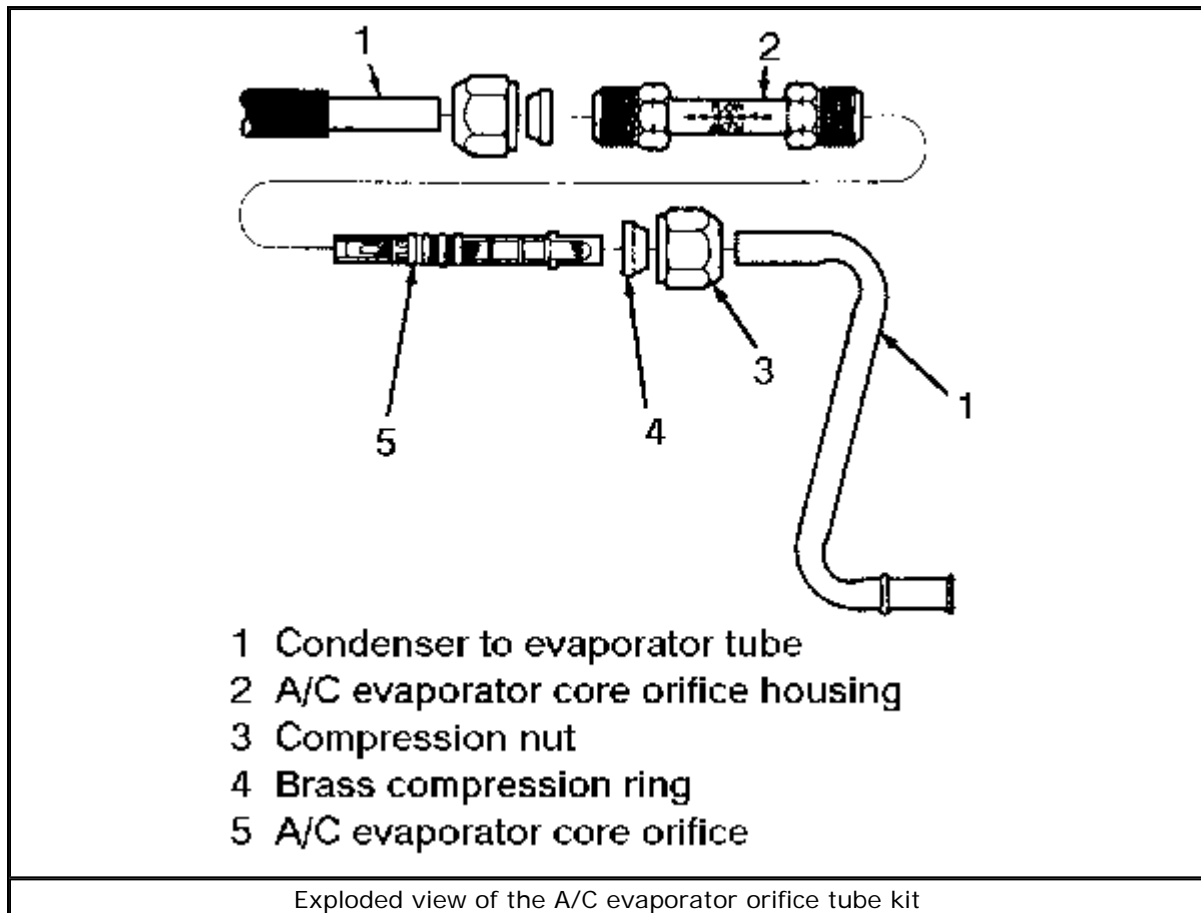


5. Cut a  $2\frac{1}{2}$  in. (63.5mm) section from the tube at the orifice tube location. Do not cut closer than 1 in. (25.4mm) from the start of the bend in the tube.



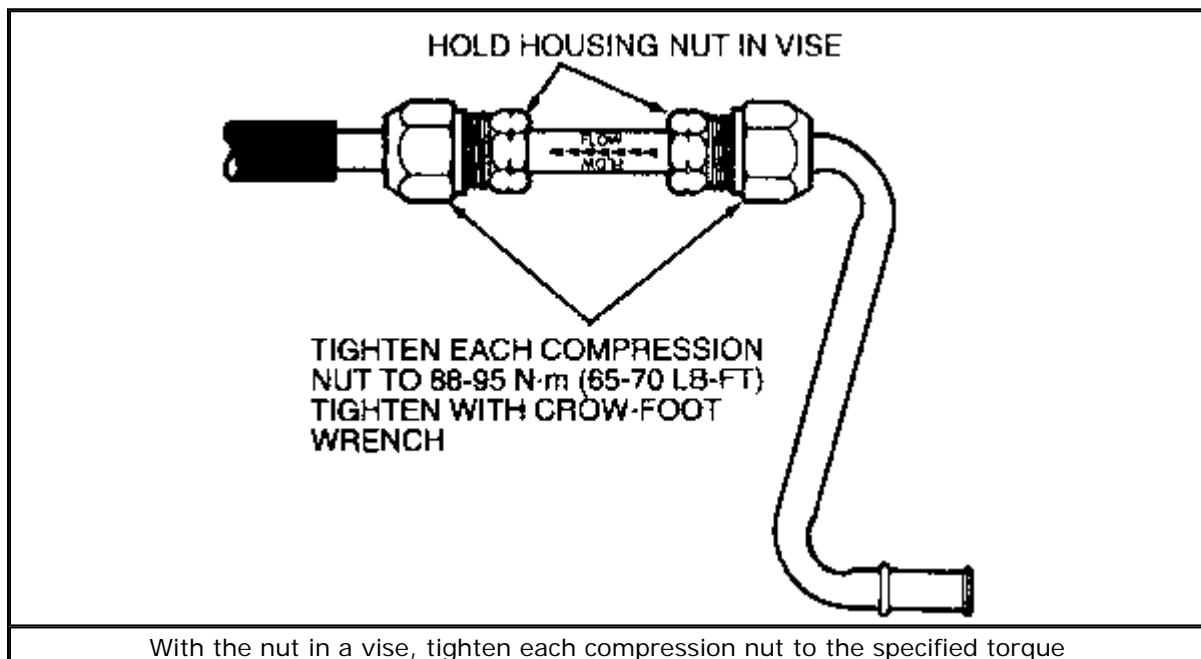
6. Remove the orifice tube from the housing using pliers. An orifice tube removal tool cannot be used.
7. Flush the two pieces of liquid line to remove any contaminants.
8. Lubricate the O-rings with clean refrigerant oil and assemble the orifice tube kit, with the orifice tube installed, to the liquid line. Make sure the flow direction arrow is pointing toward the evaporator end of the liquid line and the taper of each compressor ring is toward the compressor nut.

The inlet tube will be positioned against the orifice tube tabs when correctly assembled.



[Click to enlarge](#)

9. While holding the hex of the tube in a vise, tighten each compression nut to 65-70 ft. lbs. (88-94 Nm) with a crow foot wrench.



[Click to enlarge](#)

10. Assemble the liquid line to the vehicle using new O-rings lubricated with clean refrigerant oil. Use only the specified O-rings at the spring lock coupling.

11. Leak test, evacuate and charge the system according to the proper procedure. Observe all safety precautions.
12. Check the system for proper operation.

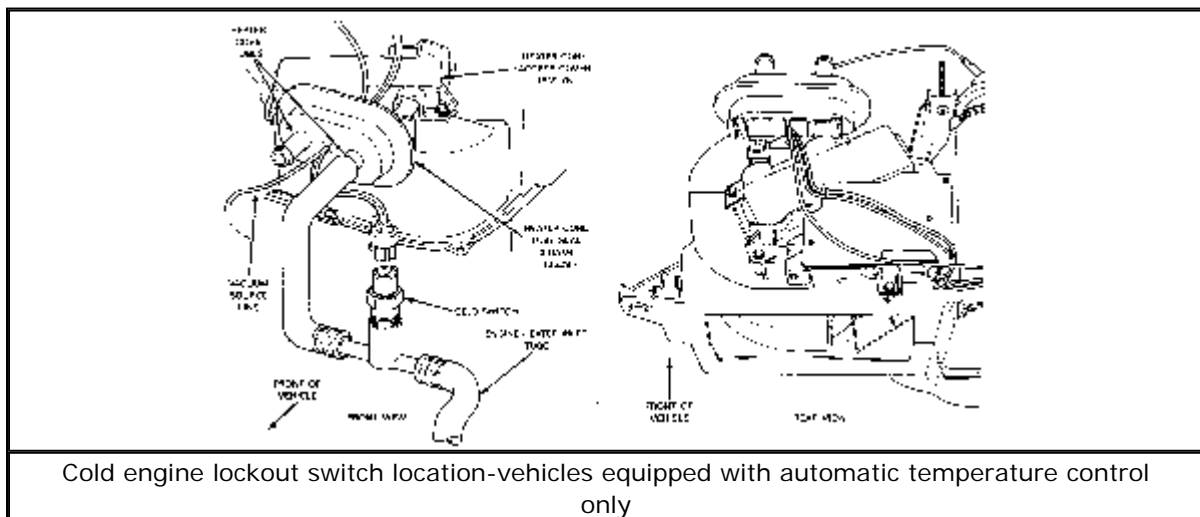
## Cold Engine Lockout Switch

### OPERATION

The cold engine lockout switch is used in the automatic temperature control systems. It prevents the air conditioning compressor from running when the engine is cold. The switch screws into a fitting in the heater core inlet tube in the engine compartment.

### REMOVAL & INSTALLATION

1. Disconnect the negative battery cable.
2. Disconnect the two-wire connector from the switch.
3. Partially drain the coolant from the radiator.
4. Unscrew the switch body from the fitting in the heater inlet tube.



[Click to enlarge](#)

To install:

5. Apply sealer to the switch threads and install it into the fitting in the heater tube. Tighten to 8-14 ft. lbs. (11-19 Nm).
6. Attach the electrical connector to the top of the switch.
7. Refill the radiator with the removed coolant to the proper level.
8. Connect the negative battery cable.

## Ambient Temperature Sensor

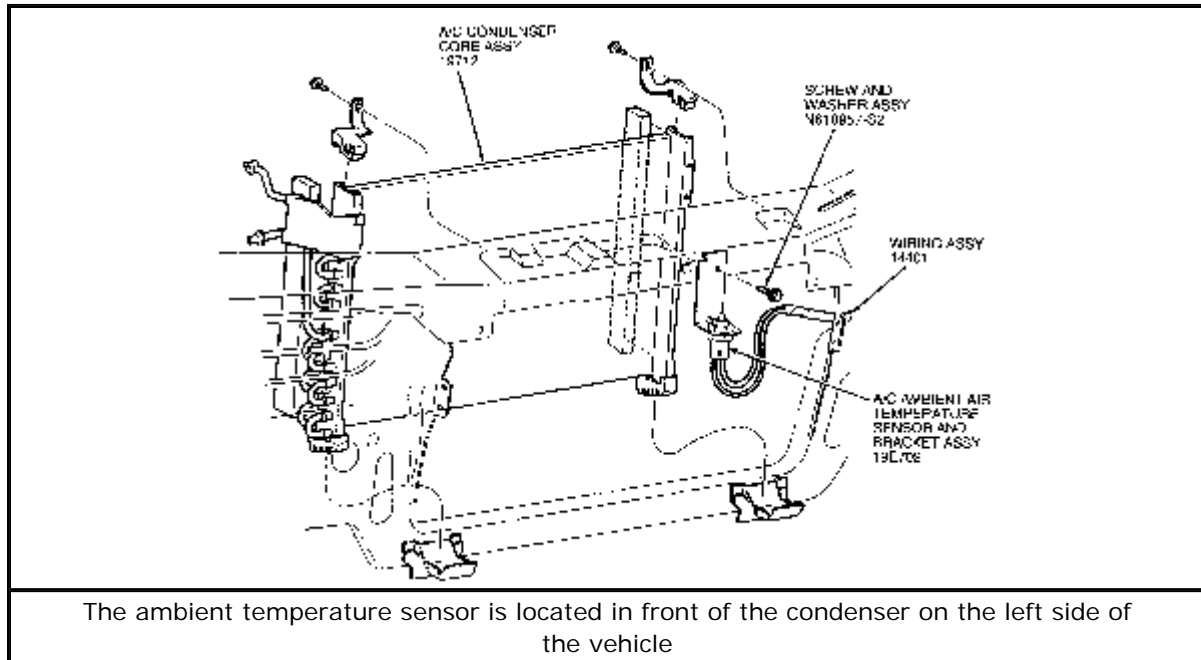
### OPERATION

The ambient temperature sensor is used in the automatic temperature control systems. It contains a thermistor which measures the temperature of the outside

air. The sensor is located in front of the condenser on the left side of the vehicle.

## REMOVAL & INSTALLATION

1. Disconnect the negative battery cable.
2. Remove the ambient sensor and bracket mounting nut, then remove the sensor.
3. Disengage the electrical connector from the ambient sensor and bracket.



[Click to enlarge](#)

To install:

4. Engage the electrical connector to the ambient sensor.
5. Position the ambient sensor and bracket, then install the mounting nut. Tighten to 55-65 inch lbs. (6.2-7.3 Nm).
6. Connect the negative battery cable, then check the system for proper operation.

## In-Vehicle Temperature Sensor

### OPERATION

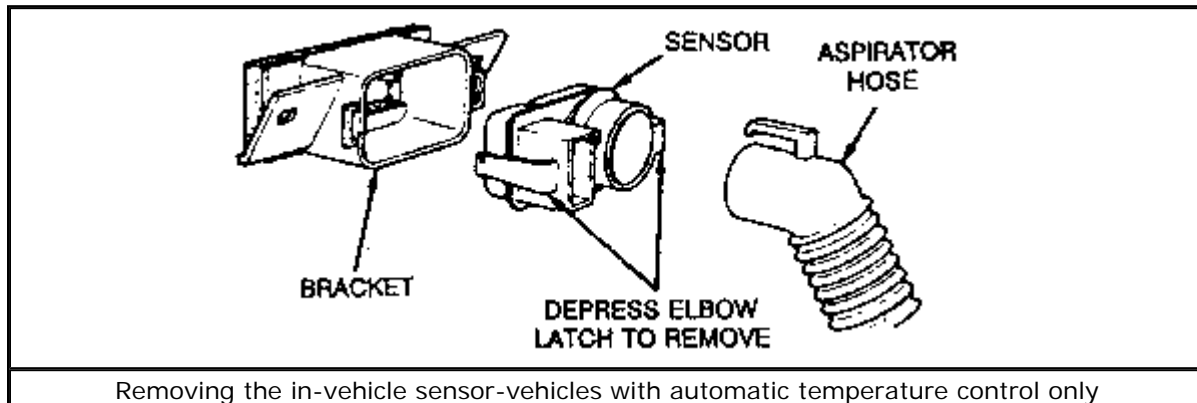
The in-vehicle temperature sensor is used in the automatic temperature control systems. It contains a thermistor which measures the temperature of the air inside the passenger compartment. The sensor is located behind the instrument panel above the glove compartment.

### REMOVAL & INSTALLATION

1. Disconnect the negative battery cable.
2. Disengage the glove compartment door stops and allow the door to hang by the hinge.
3. Working through the glove compartment opening, unclip the sensor from the

retainer by squeezing the side tabs.

4. Pull the sensor down into the glove compartment, then disengage the electrical connector and aspirator flex hose from the sensor.



[Click to enlarge](#)

To install:

5. Engage the electrical connector and aspirator flex hose to the sensor.
6. Working through the glove compartment opening, attach the sensor to the retaining clip.
7. Engage the glove compartment door stops, then close the door.
8. Connect the negative battery cable.

## Sunload Sensor

### OPERATION

The sunload sensor is used in the automatic temperature control systems. It contains a photovoltaic (sensitive to sunlight) diode that provides input to the system microcomputer. The sensor is located in the left radio speaker grille assembly, except on 1992-95 vehicles, where it is located on the right side upper outer finish panel.

### REMOVAL & INSTALLATION

1. Disconnect the negative battery cable.
2. Remove the left-hand speaker grille assembly, except 1992-95 vehicles. On 1992-95 vehicles remove the right side upper outer finish panel.
3. Remove the sunload sensor assembly from the two mounting studs and disconnect the electrical connector.

To install:

4. Connect the electrical connector to the sunload sensor.
5. Install the sensor to the speaker grille by pushing the sensor firmly over the two mounting studs.
6. Install the left-hand speaker grille assembly, except 1992-95 vehicles. On 1992-95 vehicles install the right side upper outer finish panel.

7. Install the negative battery cable.

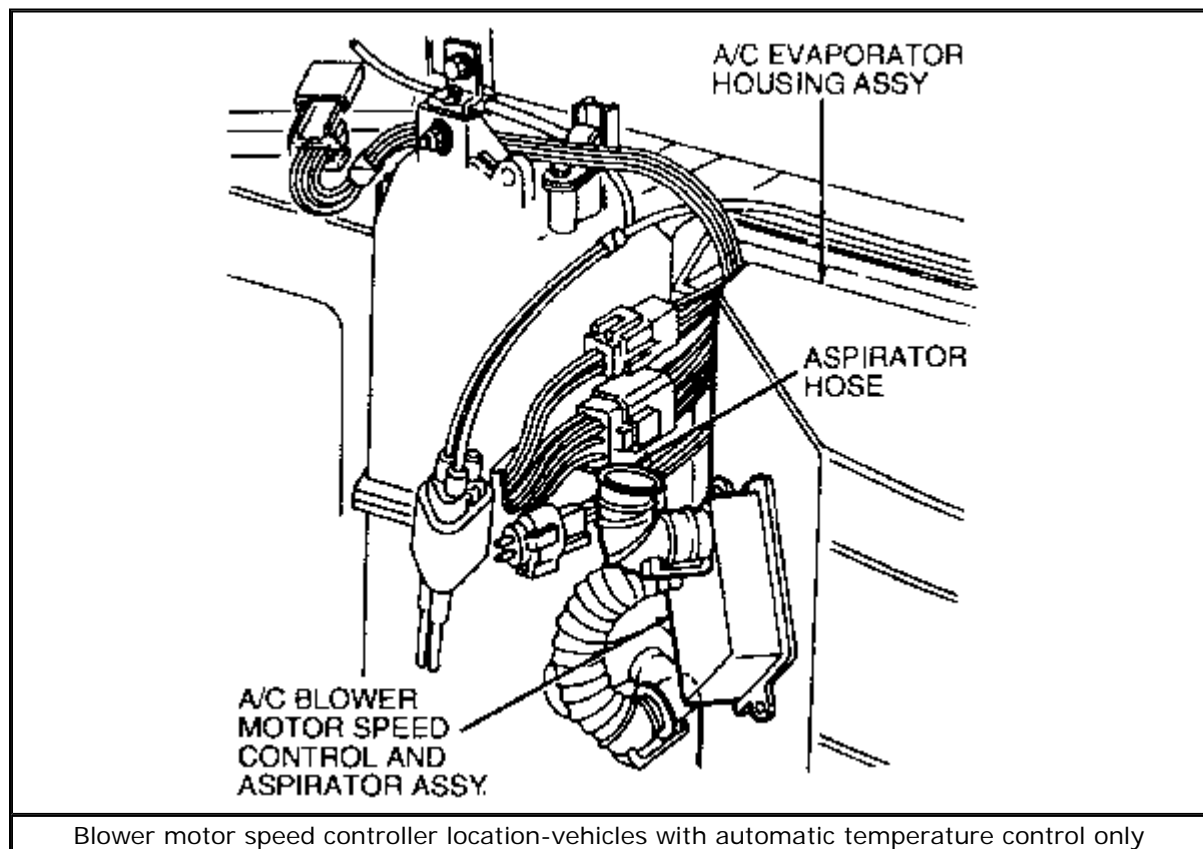
## Blower Motor Speed Controller

### OPERATION

The blower speed controller is used with automatic temperature control. It converts the base current received from the electronic control assembly into high current, variable ground feed to the blower motor. The blower fan speed is therefore infinitely variable. The blower speed controller is located in the evaporator case, upstream of the evaporator core.

### REMOVAL & INSTALLATION

1. Disconnect the negative battery cable.
2. Disengage the glove compartment door stops and allow the door to hang by the hinge.
3. Working through the glove compartment opening, unfasten the electrical snap-lock connector and aspirator hose at the blower motor controller. Also, disengage the snap-lock connector from its mounting bracket.
4. Remove the two screws attaching the blower controller to the evaporator case and remove the controller. Do not touch the fins of the controller until it has had a sufficient time to cool.



[Click to enlarge](#)

To install:

5. Position the blower controller on the evaporator case, then install the two

attaching screws.

6. Engage the wire connector and aspirator hose to the blower controller. Install the connector on the mounting bracket.
7. Close the glove compartment door, connect the negative battery cable and check the system for proper operation.

## Temperature Blend Door Actuator

### OPERATION

The temperature blend door actuator is used on vehicles equipped with automatic temperature control. The actuator controls blend door movement on command from the control assembly. The blend door actuator is located on top of the evaporator assembly.

### REMOVAL & INSTALLATION

1. Disconnect the negative battery cable.
2. Loosen the instrument panel and pull back from the cowl.
3. Remove the blend door actuator electrical connector and plastic clamp from the bracket on the evaporator case. Remove the three actuator attaching screws.
4. Lift the actuator vertically for a distance of approximately  $\frac{1}{2}$  in. (12mm) to disengage it from the bracket and blend door shaft. Pull the actuator back toward the passenger compartment.

The mounting bracket remains in place on the evaporator case.

To install:

5. Insert the blend door actuator horizontally over the actuator bracket on the evaporator case.
6. Insert the actuator shaft into the blend door. Manually moving the door will help engage the shaft.
7. Attach the actuator bracket with the three attaching screws.
8. Attach the actuator electrical connector and plastic clamp to the bracket on the evaporator case.
9. Install the instrument panel and connect the negative battery cable.

After replacement of the blend door actuator, the system must be recalibrated for proper operation. To recalibrate, disconnect the positive battery cable from the battery, wait 30 seconds and reconnect the battery cable. Calibration will be performed automatically when the automatic temperature control electronic control assembly is energized.

## Recirculate/Fresh Air Selector Door Actuator Motor

### OPERATION

The recirculate/fresh air selector door actuator motor is used on vehicles equipped with automatic temperature control. The motor controls the position of the door which allows fresh air or recirculated air, or a combination of the two,



into the vehicle. The motor is mounted on the recirculate/fresh air duct.

## REMOVAL & INSTALLATION

1. **Disconnect the negative battery cable.**
2. **Lower the glove compartment door to provide access to the recirculation duct assembly.**
3. **Disconnect the vacuum hose from the end of the vacuum motor and the motor arm retainer from the door crank arm.**
4. **Remove the two nuts retaining the vacuum motor to the recirculation duct, then remove the motor.**

To install:

5. **Position the vacuum motor to the fresh air/recirculate door crank arm, position the motor to the recirculation duct and install the two retaining nuts.**
6. **Install the retainer on the door crank arm.**
7. **Connect the white vacuum hose to the vacuum motor, connect the negative battery cable, then check the operation of the vacuum motor.**
8. **Close the glove compartment door.**

## Function Control Actuator Motor

### OPERATION

The function control actuator motor is used on vehicles equipped with automatic temperature control. The motor controls the door which directs the flow of air to the defroster ducts, instrument panel ducts or floor ducts. Two motors are used to perform the control function and they are both located on the plenum.

## REMOVAL & INSTALLATION

### Panel/Floor Door Vacuum Motor

1. **Disconnect the negative battery cable.**
2. **Remove the instrument panel.**
3. **Depress the tabs and disconnect the vacuum motor arm from the door shaft.**
4. **Remove the two screws retaining the vacuum motor to the mounting bracket.**
5. **Remove the vacuum motor from the mounting bracket and disconnect the vacuum hose.**

To install:

6. **Position the vacuum motor on the mounting bracket and door shaft.**
7. **Install the two screws attaching the vacuum motor to the mounting bracket.**
8. **Connect the vacuum hose to the vacuum motor and check the operation of the motor.**
9. **Install the instrument panel and connect the negative battery cable.**

## Panel/Defrost Door Vacuum Motor

1. Disconnect the negative battery cable.
2. Remove the instrument panel.
3. Remove the panel-defrost door vacuum motor arm to door shaft.
4. Remove the two nuts retaining the vacuum motor to the mounting bracket.
5. Remove the vacuum motor from the mounting bracket and disconnect the vacuum hose.

To install:

6. Position the vacuum motor to the mounting bracket and door shaft.
7. Install the two nuts attaching the vacuum motor to the mounting bracket and connect the vacuum hose. Check the operation of the motor.
8. Install the instrument panel and connect the negative battery cable.

## Air Conditioning System Diagnosis

### DIAGNOSTIC PROCEDURE

1. Perform the Self Diagnostic Test. Record all error codes displayed during the test.
2. If error codes appear during the Self Diagnostic Test, follow the diagnostic procedures indicated in the Error Code Key.
3. If a malfunction exists but no error code appears during the Self Diagnostic Test, perform the Functional Test.

### SELF-DIAGNOSTIC TEST

The control assembly will detect electrical malfunctions occurring during the self-test.

4. Make sure the coolant temperature is at least 120°F (49°C).
5. To display error codes, push the OFF and FLOOR buttons simultaneously and then the AUTOMATIC button within 2 seconds. The test may run as long as 20 seconds, during which time the display will be blank. If the display is blank for more than 20 seconds, consult the No Error Code Found Diagnosis and Testing chart.
6. The Self-Diagnostic Test can be initiated at any time with the resulting error codes being displayed. Normal operation of the system stops when the Self-Diagnostic Test is activated. To exit the self-test and restart the system, push the COOLER button. The self-test should be deactivated before powering the system down.

### FUNCTIONAL TEST

The Functional Test is designed to catch those system failures that the self-test is unable to test.

7. Make sure the engine is cold.
8. The in-vehicle temperature should be greater than 50°F (10°C) for proper evaluation of system response.

## 9. Follow the instructions in each step of the Functional Test.

### VACUUM SYSTEM DIAGNOSIS

To test the automatic temperature control vacuum system, start the engine and depress the function buttons slowly from one position to another. A momentary hiss should be heard as each button is depressed from one position to another, indicating that vacuum is available at the control assembly. A continuous hiss at the control assembly indicates a major leak somewhere in the system. It does not necessarily indicate that the leak is at the control assembly.

If a momentary hiss cannot be heard as each function button is depressed from 1 position to another, check for a kinked, pinched or disconnected vacuum supply hose. Also, inspect the check valve between the vacuum intake manifold and the vacuum reservoir to ensure it is working properly.

If a momentary hiss can be heard as each function button is depressed from one position to another, vacuum is available at the control assembly. Cycle the function buttons through each position with the blower on HI and check the location(s) of the discharge air. The airflow schematic and vacuum control chart shows the vacuum motors applied for each function selection along with an airflow diagram of the system. The airflow diagram shows the position of each door when vacuum is applied and their no-vacuum position. With this chart, airflow for each position of the control assembly can be determined. If a vacuum motor fails to operate, the motor can readily be found because the airflow will be incorrect.

If a vacuum motor is inoperative, check the operation of the motor with a vacuum tester. If the vacuum motor operates properly, the vacuum hose is probably kinked, pinched, disconnected or has a leak.

If the function system functions normally at idle, but goes to defrost during acceleration, a small leak exists in the system. The leak can best be located by shutting **OFF** the engine and using a gauge to check for vacuum loss while selectively blocking off vacuum hoses.