

INSTALLATION INSTRUCTIONS

CAP 7100 - 1957 Chevrolet Car

HURRICANE SERIES Heat Cool & Defrost System with integrated electronic controls

This system is a combination heat/cool defrost system. Installation is straight forward, appearance is neat, performance is unsurpassed, and requires basic mechanic tools, and a 5/8" drill bit or hole saw.

To be effective, an air conditioner must remove heat from the air in a vehicle faster than it is added. It is therefore very desirable to reduce the "heat added" by insulating the roof, firewall, and floorboards. You should also seal all holes in the firewall, insure air tight door and window seals, and consider window tinting.

For maximum cooling performance a clutch style or steel six-blade fan should be installed with shroud if possible. We do not recommend flex fans. Another alternative, and a definite plus for any system is the addition of an electric condenser fan, dedicated to the A/C System. If the vehicle is equipped with only an electric radiator fan, it MUST be wired to engage with the A/C system. A/C head pressure increases much faster than the engine temperature, which can damage the compressor and other components. High Quality Electric Radiator & Condenser Fans are available from Old Air Products or an authorized dealer.

Vehicles with V8 engines, the A/C compressor mounts on the passenger side of engine to make hose routing easier during installation and provide a neat clean appearance. Both passenger side compressor and driver side alternator brackets are available from Old Air Products or authorized dealer.

Before starting, we suggest that you read these instructions completely, unpack all the parts, and arrange in order according to steps in the instructions. This will help you become more familiar with both the parts and installation steps to complete this project.

PREPARE CAR FOR INSTALLATION

1. Disconnect the battery and drain the Cooling System.
2. Remove the stock glove box door and insert.
3. Remove the stock heater including: blower motor, firewall cover plate, heater valve, heater control panel & cables from the dash and the stock defroster duct.

Heater Control Modification

1. From the control: Remove original control cables, blower switch, and the wire harness connector on the driver side of control.
2. Insert the new wire harness and five-wire connector through the back of the control, between the "HEAT" and "DEFR" lever arms. (Photo #1)
3. Connect the BLUE wire to the "COM" connector on the micro-switch and the PINK wire to the "NC" connector on the micro-switch.
4. Push the five-wire connector all the way onto the blower switch. Use the original screws to attach the new blower switch and mounting plate on the control in the original stock location. (Photo #1)

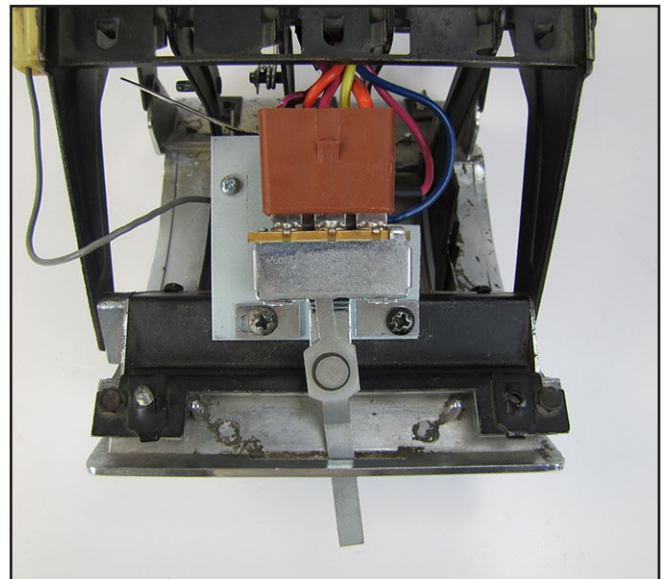


PHOTO #1

5. Secure wire harness to control with zip tie so that they do not rub the "HEAT" or "DEFROST" lever arms. (Photo #1)

6. Check the operation of the microswitch on the "AIR/VENT" lever. The microswitch should be engaged when the "AIR/VENT" lever is in the up position and disengage when moved downward approximately 1/4". If switch adjustment is needed carefully bend the arm with needle-nose pliers. **Caution:** This switch can be easily broken. (Photo #2)

7. Attach switch module to control assembly. (Photo #3)

- a) Slip control cable/wires through holes on slide switch.
- b) Align loops on cable/wires with pins on center Heat & Defrost levers, and attach module to control with 2) #8 x 3/8" Phillips screws provided.
- c) Secure cable/wires to pins on levers with 5/32" pushnuts
- d) Adjust the cable/wires by pushing the Heat and Defrost levers to the top position and push the slide switch levers all the way toward control and tighten screws to secure wire/cables.
- e) Plug matching 3 terminal connectors from slide switch into wire harness.
- f) Check to make sure levers and/or other moving parts do not interfere with wire harness.

8. Install short cable to "AIR/VENT" Lever and secure wire loop to pin with push nut. Make slight bend in wire to provide enough resistance for lever to keep microswitch engaged. (Photo #3)

9. Remove the factory blower switch terminals from the original stock electrical connector. Original electrical terminals may be removed from factory connector by using a small screwdriver to press the locking tab on the side of terminal and gently pushing it out of the plastic connector. Leave the gray wire (lamp terminal) in the connector. Check the lamp bulb, replace bulb if necessary and reinstall lamp socket on control. Reattach the factory electrical connector to the side of the control. (See Photo #4).

10. Remove the cable retainer clip and screw for the "Inside/Outside" lever control cable from the back of the control. Remove relay and attach connector to the control with new screw provided using the original cable retainer clip screw hole. Point the new screw downward (opposite from stock). Place original cable retainer clip on back side of new screw and secure with nut provided. Insert relay into electrical connector. (Photo #5)

11. Secure the round eyelet of the BLACK wire to the control. *Note: This wire is the ground (-) for the relay and must have a good clean connection for the system to work properly. If control does not provide a ground when attached to the dash then the black wire may be connected directly to dash or other ground source.*



PHOTO #2

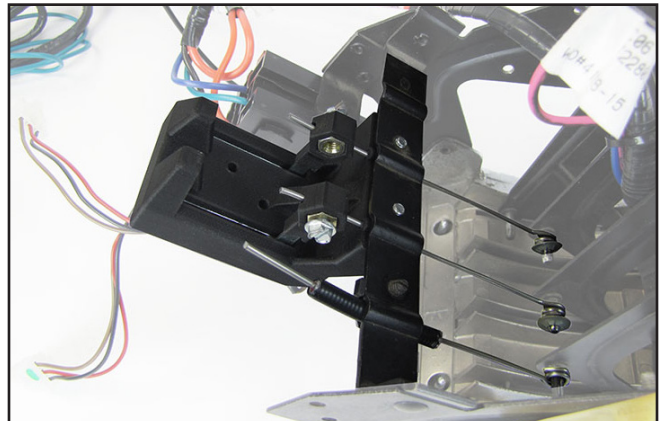


PHOTO #3

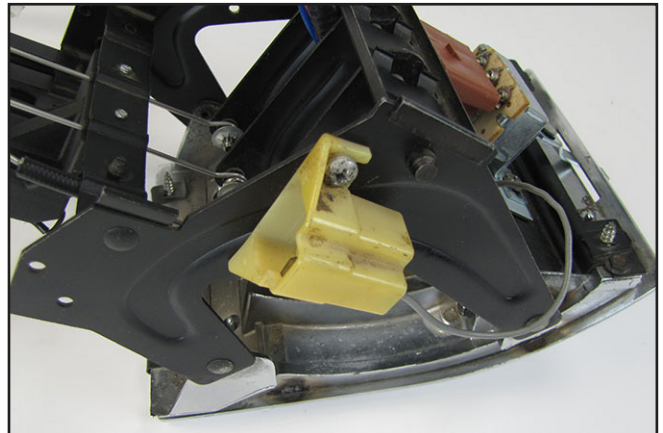


PHOTO #4

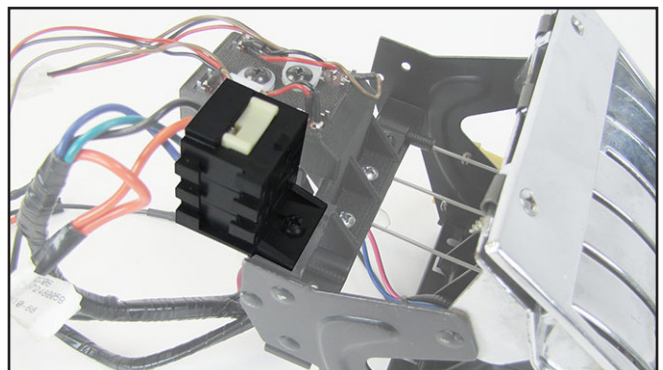


PHOTO #5 (Shown with relay removed for clarity)

UNIT INSTALLATION

1. Install the barrel grommet onto the firewall mounting plate and pass the drain tube hose through the rear of it.

Tip: Use a mild soap and water solution to make it easier to slip the grommet onto the plate.

2. Have a helper hold the unit with the tubes sticking through the fire wall. From the engine side of firewall loosely attach the mounting plate to the unit using four 1/4" X 1-3/8" bolts supplied with the kit, then attach the mounting plate to the firewall using the two stock slide bar clips. (Photo #6) *NOTE: On some Vehicles it may be necessary to trim the firewall insulation pad around the blower motor housing for the unit to fit into the mounting plate properly.*

3. Install the evaporator drain tube on the unit. Install the two hex-head screws in the two holes at the top of the plate, and two phillips-head screws in the two holes at the bottom of the plate.

4. Install the large round grommet over the heater and A/C fittings and tuck inner lip of grommet inside of firewall hole (photo #7) and tighten mounting bolts securing unit to the firewall.

TIP: Do not remove the caps on the tubes and use a mild soap and water solution to make it easier to slip the grommet over the tubes.

Caution: Do not over-tighten the four unit mount bolts, the case jack nuts could be damaged. And definitely DO NOT use bolts longer than 1 1/2" to mount the unit to the plate, the evaporator core could be punctured by longer bolts and void warranty.

5. Slide duct hose onto the drivers side defrost outlet and secure the outlet in place. Route the defrost duct hose to the left defrost outlet on unit. Be sure to stretch the plastic duct hose to remove all the extra slack in the hose before cutting of excess.

6. Install the passenger side defrost outlet using the same procedure as described in step #5.

7. Install the modified control back into the dash. Plug the stock '57 five-wire connector into the connector on the side of the heater control.

8. Connect the smaller (14ga) ORANGE wire into the spotlight terminal on the fuse block.

9. Connect larger (12ga) ORANGE wire to an ignition "Key-On" power source. *Tip: this wire can be connected to the original heater circuit if fuse box is in good condition.*

10. Check to make sure that the fuses in the fuse block are at least 20 AMP in both spotlight and heater circuits. If not, replace fuses at this time.

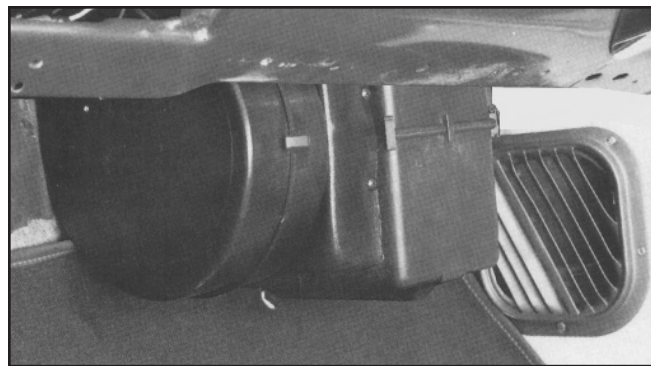


PHOTO #6

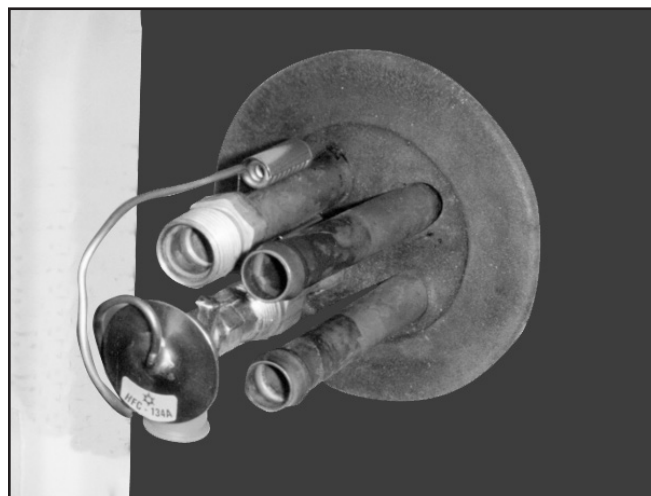


PHOTO #7

11. Install Air Inlet Grill using the following procedure - (see diagram #1).

- a) Insert the capillary sensor tube, from the thermostat, thru the predrilled hole on the top edge of the lip where the inlet grill attaches to the unit.
- b) Bend the capillary sensor tube at a 90° angle approximately 2" from the end.
- c) Insert the sensor tube 1-3/4" - 2" deep into the evaporator coil approximately 1/2 inch up from the bottom and 2 inches from the front of the grill opening.
- d) Attach the thermostat to the bracket on the inlet air grill.
- e) Snap the inlet grill onto the unit.
- f) Turn thermostat clockwise all the way then turn back counter-clockwise until you feel the notch (about 1/4 turn). This adjustable thermostat will give you some variation to adjust temperature to your personal preference once adjusted it should not require readjustment.

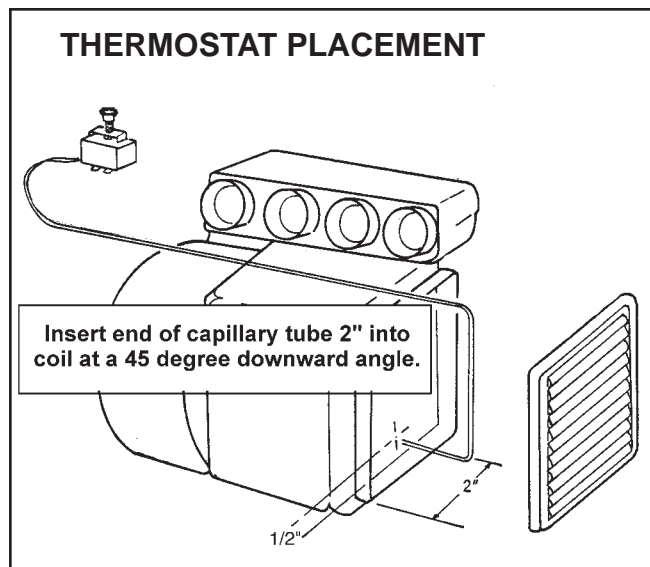


Diagram #1

Troubleshooting note: The thermostat will sense the coil temperature to cycle the compressor, If you experience problems with the coil freezing up you may have the thermostat sensor positioned to high in the coil it may be necessary reposition the thermostat sensor tube slightly lower in the coil.

12. Route the 2) GREEN wires (labeled thermostat) from the wire harness at the control and attach to the two terminals on the thermostatic switch mounted on the inlet grill. (Photo #9)

13. Route the remaining GREEN wire from the thermostat through the stock heater valve hole in firewall.

14. From under the hood, feed the GREEN wire for the clutch circuit through the grommet in the small rectangle block off plate supplied. (Photo #10) Using four phillips-head screws, secure the plate to the firewall, so that the screw holes closest to the vertical edge of the plate are toward the wiper motor.

NOTE: The GREEN wire will connect to the compressor clutch (or pressure safety switch if used) but do not make this connection until the system is ready to be charged with refrigerant.

15. Under the hood install the round plastic block-off plug into the fresh air intake duct on the passenger side of engine compartment.

16. Connect the flat 3 terminal electrical connector from the control (ORANGE, RED, YELLOW) to the matching connector on the unit. Secure the ground wire (Black wire with ring terminal on unit) to one of the factory holes in the bottom edge of the dash, using a nut and bolt and star washer from the kit. It is very Important to have a clean surface free from dirt, rust and paint for a good solid connection.

17. Route wire harness connector labeled DEF to servo motor on defrost plenum.

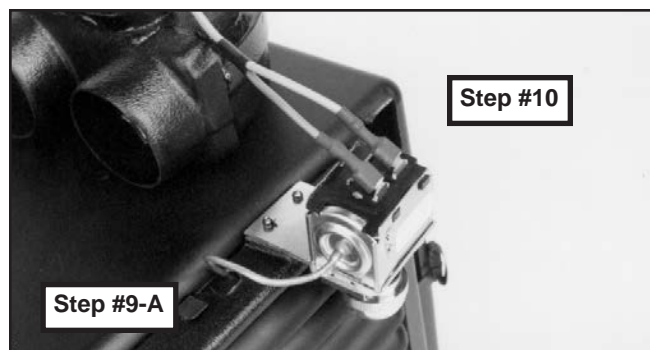


PHOTO #8

18. Choose a location in firewall to route wire harness for heater valve through firewall. Drill 1" hole for grommet and route heater valve wire harness and green wire for compressor/safety switch through firewall into engine compartment. Install grommet in firewall to protect wires. Wire harness will connect to heater valve servo motor and green wire will connect to compressor/safety switch when underhood components are installed.

Custom Tip: For a custom touch the kick panel vent bezels may be painted the same color of the dash before being installed in steps 15 thru 17. To remove the vent from the bezel, unscrew the hose adaptor from the louver. Clean black bezel thoroughly with isopropyl (rubbing) alcohol prior to painting.

19. Install drivers side kick-panel vent. First insert the 2" duct hose inside the hose adaptor on the back of the vent. Slip the outlet in between the kick-panel and the parking brake handle, Slide the front edge of the outlet into the same vertical slot that the kick-panel slides in, just in front of the door opening. (Photo #12) With screw supplied, secure the outlet to the factory hole in the dash. **note:** The distance between the brake handle and kick panels varies between cars. Some kick panel vents may have a tighter fit than others and it may be necessary to loosen or temporarily remove parking brake bracket to install the kick panel vent. (Photo #9)

20. Route the duct hose from the driver side kick panel vent over the steering column support, behind the fuse block, to the unit. Before cutting stretch the duct hose to remove loose sections that may cause a shortage of duct hose to complete installation the last duct. Connect this hose to the far left side outlet on the unit. (Photo #9)

21. Insert the 2" duct hose in the hose adaptor of the passenger side kick-panel vent. Slide the front edge of the outlet into the same vertical slot that the kick-panel slides in, just in front of the door opening. With screw supplied, secure the outlet to the factory hole in the dash. Stretch Duct hose to remove slack and attach to far right side outlet on unit. (Photo #9)

22. Install the new glove box insert into dash opening and secure with screws except the three that hold the door in places.

23. Attach the duct hoses to the back of the center vent under dash outlets. Slip the center vent into place making sure the top flange with the three slotted holes slides between the glove box and the dash flange.

24. Position the center vent as desired, (Photo #10) and reinstall the glove box door hinge UNDER the new bracket, so as to not misalign the top edge of the glove box door when it is closed. Loosely install the glove box door screws, and check the door alignment, before final tightening.

25. Secure all electrical wires and duct hose in the dash.

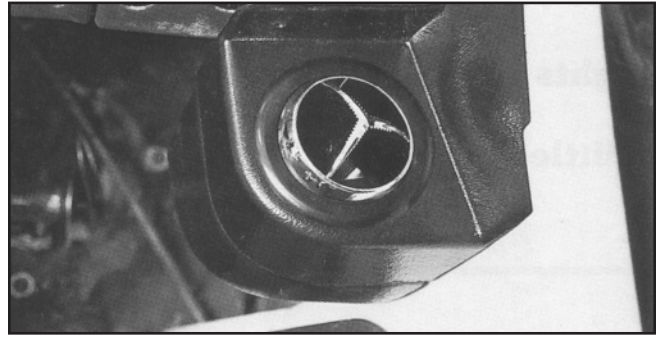


PHOTO #9

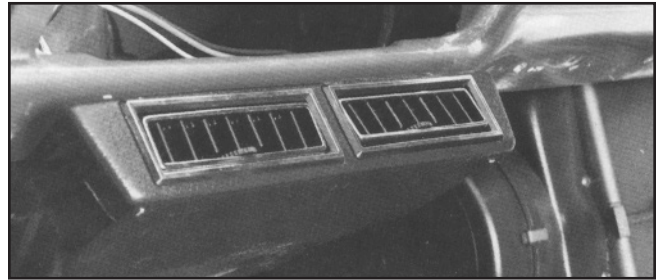


PHOTO #10

HEATER HOSE AND VALVE INSTALLATION

- 1) Locate area where heater valve will be installed (Be sure wire harness will reach and electronic servo motor on heater valve body is not to close to exhaust manifold).
- 2) Route section of heater hose from the engine heater outlet (usually on the intake manifold) to the heater inlet fitting (bottom tube) on the unit.
- 3) Route a second section of heater outlet fitting (top tube) on the unit to the heater return fitting on the engine (usually on the water pump).
- 4) Position the heater valve in desired location. Inlet fitting on heater valve can be rotated on valve body for installation of inlet heater hose. Splice into heater hoses and connect as shown in photo 1.
(If vehicle is equipped with 3/4 heater hose install sleeve adapters to water valve fittings.)

Tip: We recommend gear type clamps be used to fasten the heater hoses and caution should be taken not to over torque the clamps creating damage to the heater valve.

- 5) Fill radiator with antifreeze for a minimum protection of -10 degrees Fahrenheit.

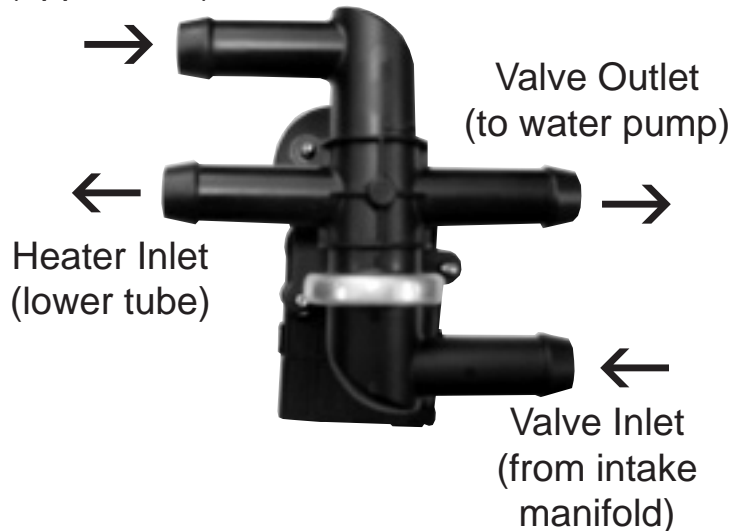
Caution

This is not a blend system. The heater valve should not be opened while operating the air conditioning. You must maintain adequate antifreeze in cooling system for -10 degrees fahrenheit.

The heater valves should be opened to allow antifreeze to flow into the heater core before operating the A/C system to prevent freezing and rupturing the heater core.

Neglect of these cautions will cause damage to your system and Void Manufacturers Warranty.

Heater Outlet
(upper tube)



If only the inside package was purchased your installation should now be completed. This system can now be used as a heater system until the under hood items have been added to complete the A/C system. If the complete system was purchased continue with installation of compressor, condenser, drier and hoses to complete the A/C system.

COMPRESSOR INSTALLATION

On V-8 engines it is recommend to mount the Sanden compressor on the passenger side of the engine and rotating it so that the fittings point towards the passenger side of the vehicle. This allows for neater hose routing and additional hood clearance.

Alternator brackets are not included with A/C system. If a driver side Alternator bracket is needed one may be purchased from any Old Air Products Dealer.

1. Install compressor and/or alternator by following instructions included with brackets.

NOTE: All compressors shipped directly from Old Air Products are serviced with adequate oil inside them for the complete system.

CONDENSER INSTALLATION

Refer to instructions in Condenser Mounting Kit

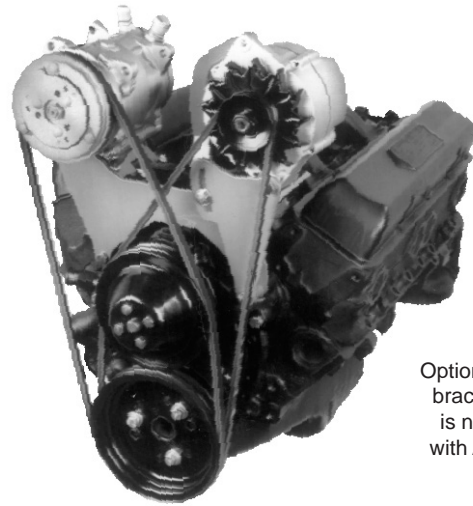
NOTE: There are two different condenser kits for the 1957's: The difference being is where the radiator is mounted. Six cylinder cars have the radiator mounted in front of the radiator support, and the V-8's are behind the support. Make sure you have the proper condenser tube and bracket mounting kit.

A/C HOSE INSTALLATION

NOTE: All A/C connections will require an O-ring seal on the fitting. The small white tube supplied with the kit contains refrigerant oil to lubricate the O-rings before installation. We strongly recommend the use of two wrenches to tighten all fittings to prevent twisting or damaging tubes and/or condenser fittings. Use caution when tightening fittings, overtightening can crush and/or damage the O-ring seals.

1. Attach expansion valve on the lower fitting of the unit using a lubricated O-ring seal, tighten using a backup wrench on the evaporator fitting to prevent damage to the evaporator tube. (Photo #15) (Caution: Overtightening fitting will damage O-ring seal)

2. Gently bend the expansion valve sensor tube up to the upper tube on the unit, and fasten it to the tube with the clip included in the kit. (Photo #15) Wrap the sensor tube and upper evaporator tube with the black (insulation) tacky tape provided.



Optional Alternator bracket pictured is not included with A/C system.

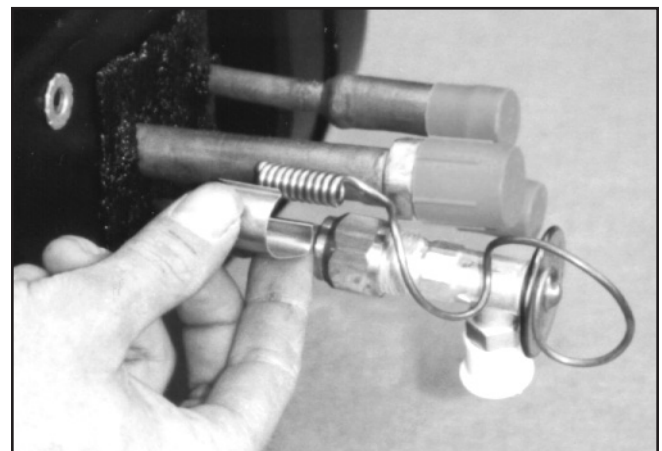
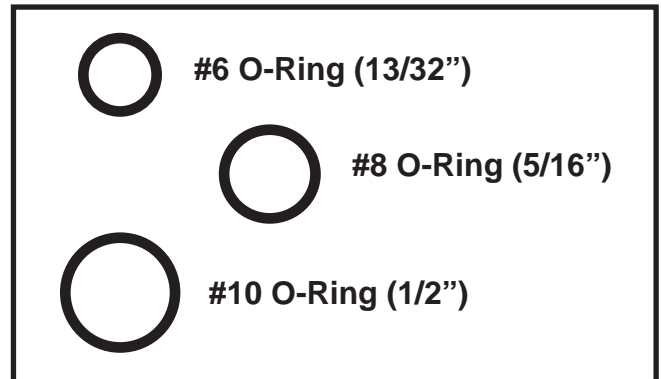


PHOTO #15 Install Expansion Valve

3. Route the smallest (# 6) 5/16" hose "A" (Photo #16) from the drier extension tube to the expansion valve. Double check that the flow arrow on the drier points AWAY from the condenser.
note: If the drier is installed backwards, the A/C system efficiency is reduced.

4. Route the (# 10) 1/2" hose "B" (Photo #15) from the upper unit A/C fitting to the suction fitting on the compressor.

5. Route the (# 8) 13/32" hose "C" (Photo #15) from the discharge side of the compressor to the upper fitting on the condenser.

6. Check to make sure that all hoses and wires are secured away from radiator fan and other moving parts to prevent damage to hoses.

This should complete your installation! We recommend that the A/C system be charged by a qualified A/C service technician.

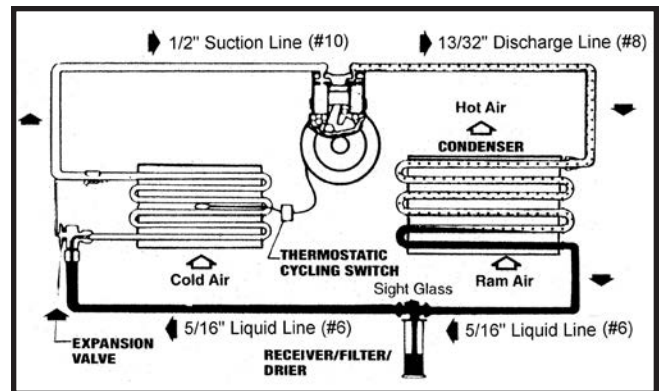
FREON SERVICE

1) This system should be serviced/charged by a certified technician and requires a minimal vacuum pump evacuation of 45 minutes. Longer evacuation time is recommended if outside temperature is below 80 degrees.

2) **R-12 Systems** will require 30 to 36 ounces of Freon. This is only a guide line, and the sight glass (under the dimple area) on top of the drier should be monitored. The exact charge will be relevant to the length of hose, compressor capacity, and size of condenser.

3) **134-A Systems** will require 26 to 32 ounces. Do not charge by sight glass on drier. 134a systems require 10-15% less refrigerant than R-12 systems. An exact charge with 134-A is more critical for maximum performance than that of R-12. The exact charge will be relevant to the length of hose, compressor capacity, and size of condenser. We recommend beginning with a partial charge of about 20 ounces and monitor temperature at vents with thermometer while slowly adding remaining charge, for point of maximum performance.
NOTE: This should be done with the doors shut, windows and convertible top up, on high blower, and a electric fan in front of radiator/car. If excessive high pressure exist, we recommend adding an electric condenser fan, provided room permits.

4) Leak test all A/C connections.



Refrigerant Flow Chart

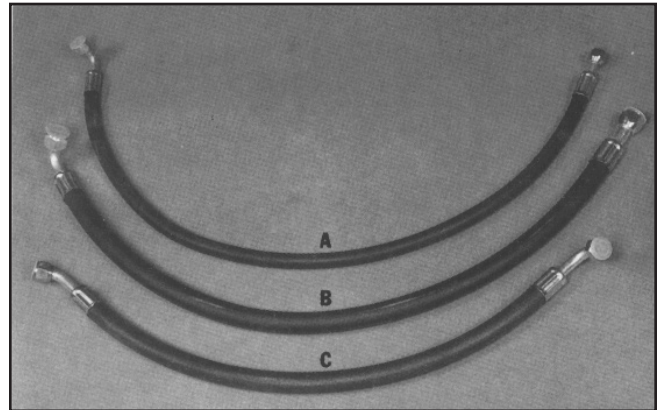


PHOTO #16

Please place a copy of these installation instructions in glove box or other safe place for future reference.

CAP-7100 Wiring Diagram

