

Installation Manual

1966-67 CHEVROLET NOVA

DOCUMENT #1-1059





Congratulations...

You have just purchased the highest quality, best performing A/C system ever designed for your vehicle.

Congratulations! ! You have just purchased the highest quality, best performing A/C system ever designed for your Classic Car. To obtain the high level of performance and dependability our systems are known for, pay close attention to the following instructions.

Before beginning the installation check the box for the correct components.

Evaporator

Face Duct Assembly

Inlet Air Block Off Assembly

Firewall Block Off Assembly

Flex Hose 2"dia. x 3ft.

Flex Hose 2"dia. x 4ft x 2ea..

Flex Hose 2 ½"dia. x 2 ft.

Sack Kit Louver

Sack Kit Hardware

Sack Kit Control

Glove Box



Check List, Pre-Installation:

- Before beginning the installation check the shipping box for the correct components. YOUR BOXED UNIT INCLUDES A LIST OF MAJOR COMPONENTS AND A LIST OF BAGGED PARTS. We have a 5 stage check process to make sure you have everything you'll need.
- If your vehicle has been or is being modified, some procedures will need to be adjusted to fit your particular application.**
- A basic cleaning of the engine compartment and interior before beginning will make things go more smoothly.
- Check condition of engine mounts. Excessive engine movement can damage hoses to A/C and/or heater.
- Before starting, check vehicle interior electrical functions (interior lights, radio, horn, etc). Make a note of anything that does not work as it's supposed to. During the installation you might find the opportunity to repair or upgrade non-working or out of date components. When you're ready to start the installation, **DISCONNECT THE BATTERY FIRST.**
- Drain the radiator. Retain the coolant and reuse, or dispose of properly.
- SAFETY FIRST: Wear eye protection while drilling/cutting, deburr sharp edges, and never get in a hurry or force a part.
- Tools: Your installation only requires the basic tools everyone has in their garage, nothing exotic or specific to A/C or Heat equipment.

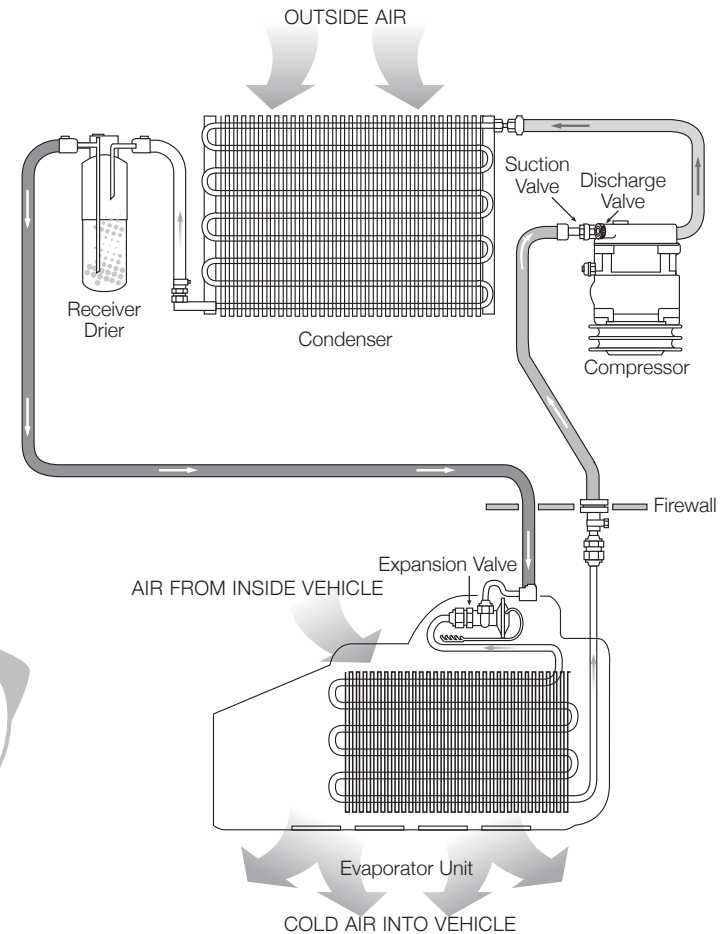
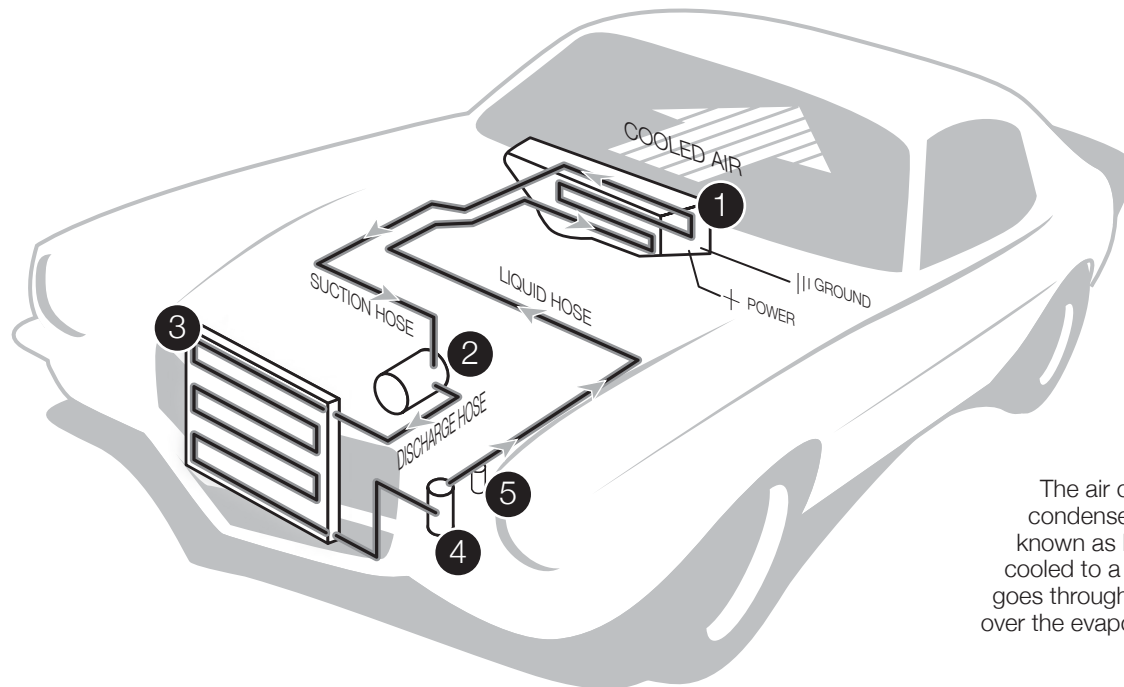
Procedures, During Installation:

- Fittings: Use one or two drops of mineral oil (supplied with your kit) on ALL rubber o-rings, threads and where o-rings seat in fittings. Do not use thread tape or sealants.
- Measure twice (or more), cut once
- Should you have any technical questions, or feel you have defective components (or missing items), call us immediately, we will be glad to assist you. Our toll-free number is listed on every page, we're here to help!**

CAUTION: DISCONNECT BATTERY GROUND CABLE
YOU CAN NOW BEGIN THE INSTALLATION...

A Basic Overview of Automotive A/C....

- 1 **Evaporator with Blower Fan** In order to remove the heat from the air in the vehicle, the A/C evaporator allows the refrigerant to absorb the heat from the air passing over it. The blower fan moves cool air out into the car interior.
- 2 **Compressor** The compressor pumps and circulates the refrigerant through the system.
- 3 **Condenser** The condenser is a heat exchanger mounted at the front of the vehicle. Heat drawn out of the interior of the car is expelled here.
- 4 **Receiver/Drier** The drier not only dries refrigerant, it also filters the refrigerant and stores it under certain operating conditions.
- 5 **High Pressure Switch** A pressure switch is used to shut down the system if high or low pressure is detected, basically it acts as a safety switch.



The air conditioning system in your car is comprised of a compressor, condenser, expansion valve, receiver/drier, and evaporator. Refrigerant (also known as Freon) is compressed in the compressor. In the condenser, gas is cooled to a liquid state and travels to the expansion valve. As the liquid refrigerant goes through the expansion valve it rapidly cools in the evaporator. A fan blows over the evaporator and cools the air that blows out your vents

**“PERFECT FIT SERIES”
IN-DASH
HEAT/ COOL/ DEFROST**

CONTROL & OPERATING INSTRUCTIONS

The controls on your new “Perfect Fit” system, offer complete comfort capabilities in virtually every driving condition. This includes Temperature control in all of the modes.

This system also provides the ability to blend the air between, Heat and Defrost modes.



THE PICTURE YOU SEE ABOVE SHOWS THE CONTROLS IN THE A/C MODE. THIS MEANS THAT THE AIR WILL BE DISTRIBUTED THROUGH THE DASH LOUVERS. THIS ALSO HAS THE TEMPERATURE LEVER IN THE COLD POSITION. WITH THE CONTROLS IN THIS POSITION YOU WILL GET THE AIR THROUGH THE LOUVERS AT THE COLDEST TEMPERATURE AVAILABLE.



Remove Glove box door and glove box, discard glove box, and retain original hardware.

Removal of the Original Heater Assembly can be accomplished by disconnecting (3) control cables.

One attached to the Fresh Air Door.

Disconnect electrical harness at the resistor block.

One attached to the Heat / defrost door cable.

The 3rd cable is attached on front of the unit and is attached to the Blend Air Door.

Remove control head assembly and retain the original hardware.





Locate behind glove box opening the heater support tab.

Remove and discard the screw.



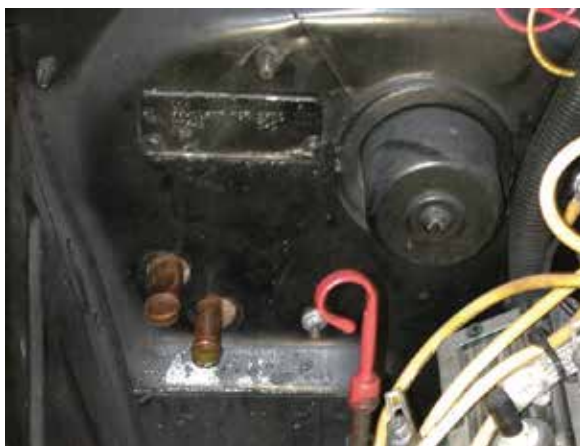
Locate on drivers side of the heater (1) bolt that attaches the ducts to the firewall.

Remove and discard this bolt.

DRAIN COOLANT FROM RADIATOR.

Remove Heater hoses from heater coil at firewall.

Remove (3) nuts that attach heater to the firewall.



Located behind the glove box, remove heater assembly and discard.



Locate behind glove box opening the air inlet flange.

Remove and discard flange and original hardware.

Locate the Air Inlet Block Off and (3) #10 x $\frac{3}{4}$ TEK screws.

Attach Block Off to the air inlet as shown.



Locate in the Hardware Sack kit (2) defrost hose adapters (1) piece 20" long of 2" flex hose and (1) piece 36" long. Attach the hose to the defrost adapters using (2) each #8 x $\frac{3}{8}$ " pan head screws.

Attach 20" long passenger defrost adaptor to under side of the defrost diffuser.

Attach 36" long drivers defrost adaptor to under side of the defrost diffuser.





Locate control head and remove (3) original control cables. Retain original hardware.

Locate remove, and discard the original blower switch.

Retain original hardware.

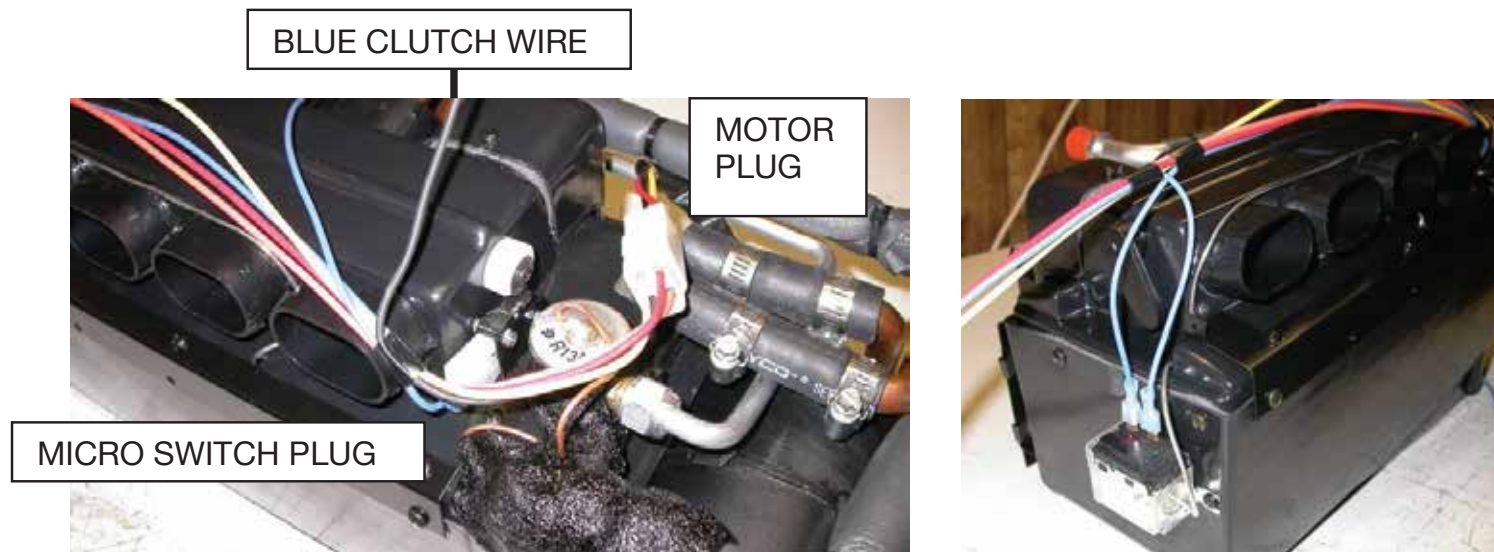
Locate original wire harness that provided power for the original heater assembly.

Cut off the plug and attach a Male Spade connector. This is the power wire for the a/c unit.

NOTE: check original heater fuse. Update to 25 amp minimum.

All modifications to the vehicle are complete. We will now begin the installation of the system.

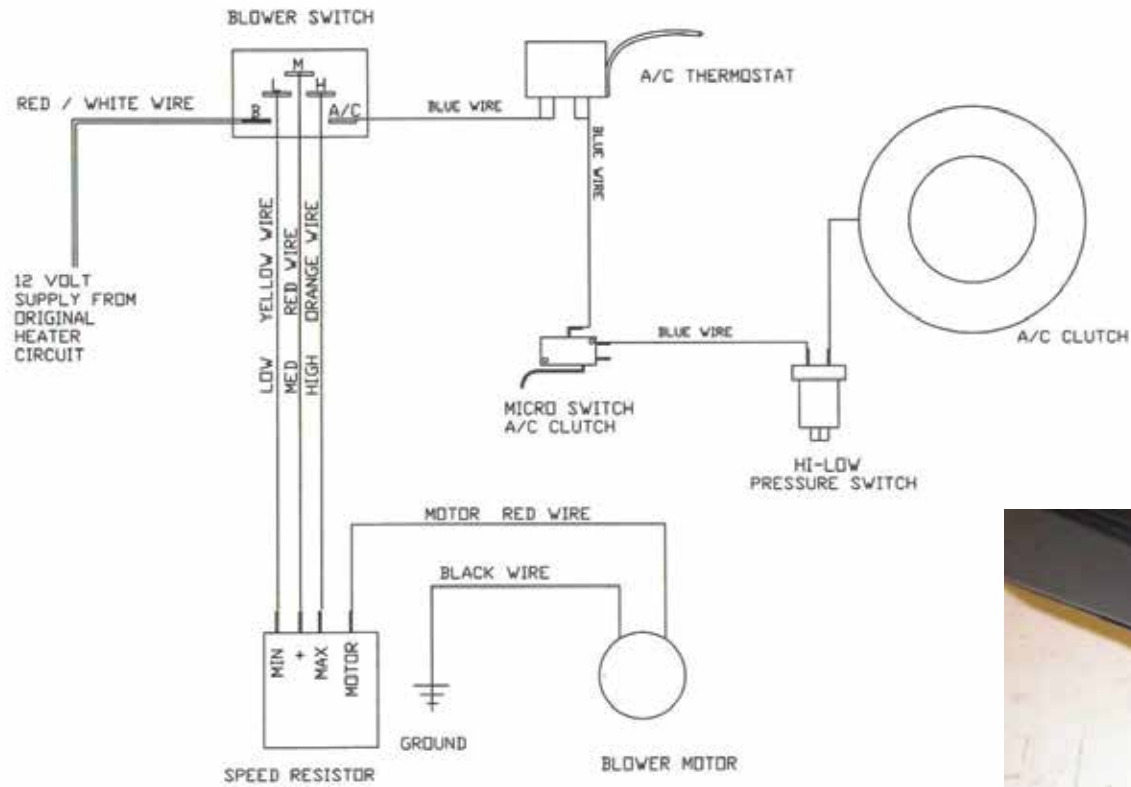




Locate the Evaporator, and Wire Harness.

Attach wire harness to the BLOWER connector, and micro switch plug to the micro switch. Route the blue clutch wire over the top and along the suction tube. Refer to diagram on next page.

Route wire harness across top of the evaporator and attach harness to the thermostat.



WIRING DIAGRAM

Carefully place evaporator upside down on the bench. Locate the heater duct from the main box.

Slide the heater duct over the heater outlet on the evaporator.

Push firmly so that the clips are fully engaged.



CAP PLUG



Lift evaporator up and behind the instrument panel. Insert tubes and clutch wire through opening in the firewall.

Attach unit to the firewall using (2) 1/4"-20 x 1" hex head screws and # 1/4" SAE washers.

Attach through the original heater mounting holes.

Locate in the hardware sack kit (2) 1" cap plugs. Insert over the original heater holes.

Located on side of the blower is a support brace, attach to bottom of the Instrument panel using (1) #10 x 3/4" TEK screw.

The 20" flex hose that is attached to passenger defrost outlet attaches to top of the evaporator on passenger side.

The 36" flex hose that is attached to drivers defrost outlet route across behind radio to left outlet on top of the evaporator.

CAUTION: BE SURE THAT THE WINDSHIELD WIPER CONTROL ARM DOESN'T INTERFERE WITH FLEX HOSE

Locate the original control head and place it on the bench upside down.

Locate the blower switch, (2) #6 x 3/8" pan head screws, actuator wire and 3/16 push nut.

Attach control bracket to control head using the original hardware.

Attach blower switch to control bracket using the #6 screws provided.

Insert actuator wire through hole in the switch and other end over the center lever pin. Secure using the push nut provided.

Locate (2) mode cables, (2) 3/16" push nuts and (2) cable retaining brackets.

Longest of the cables is attached to bottom lever using push nut and to the control head using a cable retaining bracket and original screw.

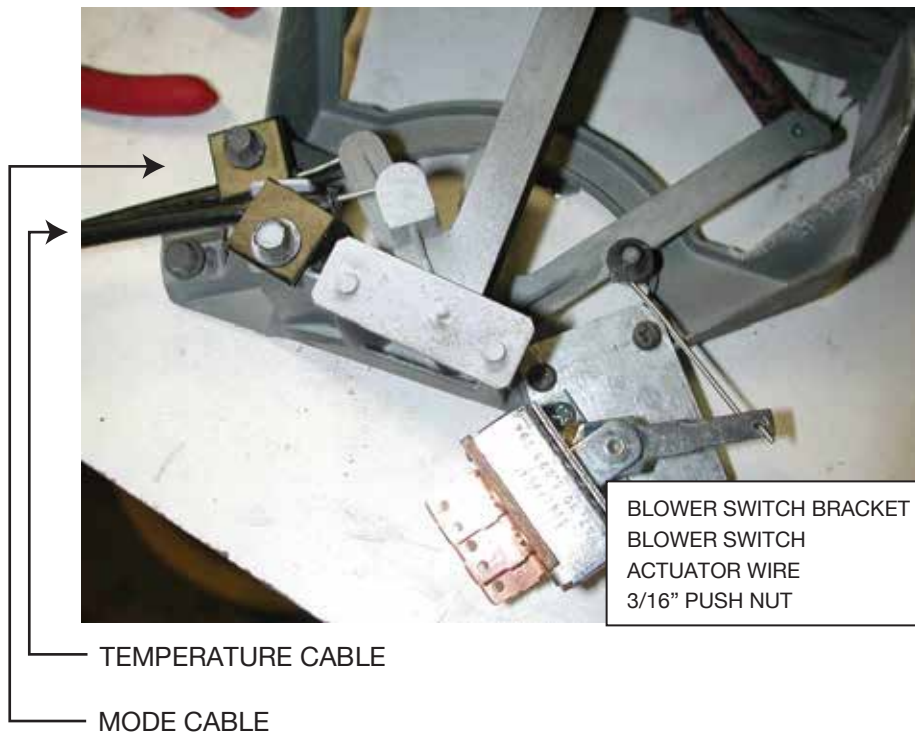
The shortest of the cables is attached to the top lever using the push nut and to the control head using (1) cable retaining bracket and original screw.

Reinstall control head using the original hardware.

Hookup electrical harness to the blower switch and the red / white striped wire to brown wire from the fuse box.

Route mode cable assembly over top of the radio and attach to mode door on the unit.

Insert off set end into 4th hole from pivot of the crank arm. Attach to the evaporator using (1) #8 screw.



TEMPERATURE CABLE

MODE CABLE



Route temperature cable around back of evaporator and out through hole in the firewall along with the tubes.

Locate the Firewall Block Off plate, and (3) #10 x 3/4" hex head TEK screws.

On engine side of firewall attach over hookup tubes and insert the clutch wire and temperature control cable through the holes as shown.

Attach using (3) #10 x 3/4" hex washer head TEK screws.

Locate refrigeration tape provided and seal around the hookup tubes.

Locate the Water Valve and (3) worm gear clamps.

Supply line from engine is attached to the left heater hookup tube. Cut 6" off end of the RETURN LINE and install water valve using (3) worm gear clamps as shown above.

Note: It is recommended that you replace heater hoses from the engine to the hookup tubes.

Locate temperature cable and attach to the water valve.

NOTE: WATER VALVE MUST BE CLOSED WHEN CONTROLS ARE ALL THE WAY TO THE LEFT POSITION.





Next few steps are in the interior of the car.

Locate in the hardware sack kit the drain hose.

Attach to evaporator and route over to 9/16" hole drilled in the firewall.

Seal the tube using refrigerant tape provided.

Locate (2) remote louvers, and (4) #10 x 3/4" TEK screws.

Attach one of the louvers at bottom of instrument panel between drivers door and steering column using #10 TEK screws as shown.

Attach other to the bottom of instrument panel below the glove box opening using #10 TEK screws.

Locate in the hardware sack kit the center louver assembly, (2) #10 TEK screws and (4) #8 x 3/8" pan head screws.

Remove the front louver bezel.

Attach the hose adapter to center of the instrument panel directly under control head, using #10 TEK screws.





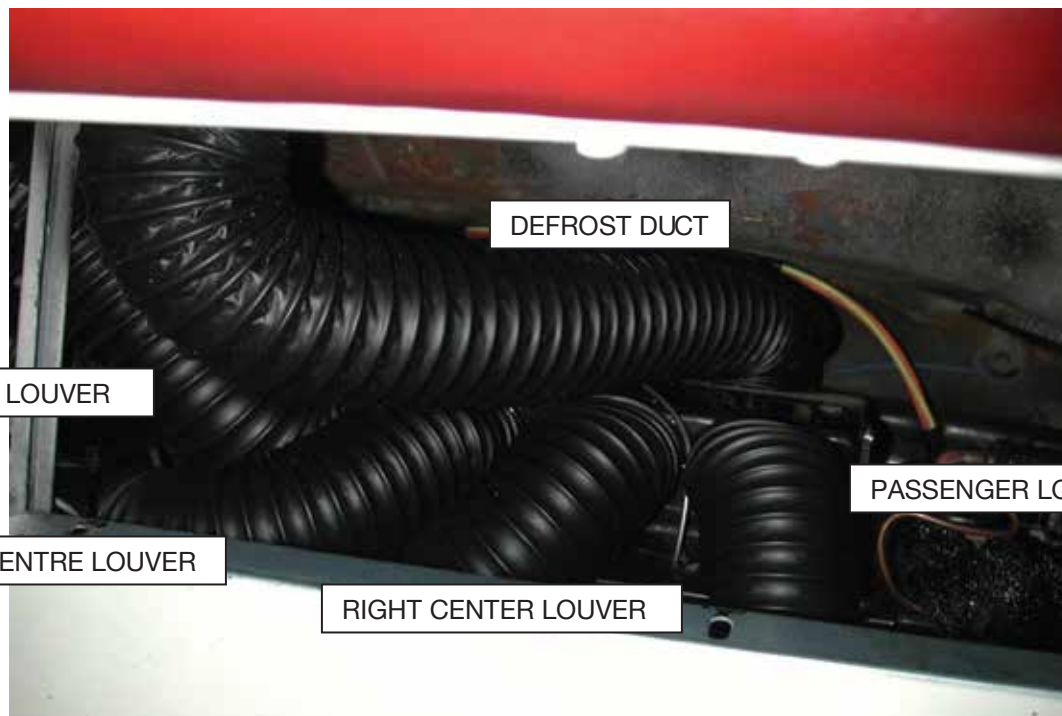
Attach bezel over the hose adapter using the (4) #8 screws.

Locate 2" Diameter flex hose. Cut (1) piece 42" long. Attach to face duct over the left outlet.

Route above radio behind instrument panel over the steering column and attach to the drivers louver.

Locate 2" Diameter flex hose. Cut (1) piece 20" long. Attach to face duct over 2nd outlet from the left. Route across and over the unit brace and attach to the left center louver.

Locate 2" Diameter Flex hose. Cut (2) pieces 16" long. Attach to face duct over the 2 outlets remaining. Route and attach (1) to right center and (1) to passenger louver.



DRIVERS LOUVER

DEFROST DUCT

LEFT CENTRE LOUVER

RIGHT CENTER LOUVER

PASSENGER LOUVER



Locate black ground wire that is attached to the motor and (1) #10 TEK screw.

Attach to body just above the air inlet block off.

Install the new glove box and glove box door using original hardware.

Caution: Carefully check under the Instrument Panel for all cables, electrical harness, or Flex Hose that might interfere with the safe operation of the vehicle.

Installation of the interior components is complete. We will now install the under hood portion of the unit.



INSTALL THE COMPRESSOR ADAPTER KIT AND COMPRESSOR AT THIS TIME PER THE MANUFACTURERS DIRECTIONS.

**NEXT PAGES COVER INSTALLATION FOR THE 6 CYL ENGINE:**

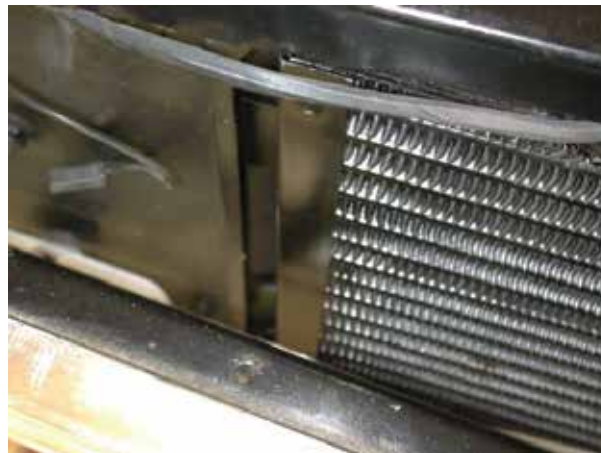
Remove radiator fan and radiator. Retain all original hardware.

Locate the condenser, (4) condenser mounting brackets and (8) #10 x 3/8" hex head screws.

Attach (4) brackets to the condenser as shown to right, using (2) #10 screw for each bracket.

Condenser is inserted from engine side of the radiator support. Reinstall the radiator using the original hardware.

Condenser brackets are clamped between the radiator mounting flange and the radiator support.





Locate the Discharge Tube and the Liquid Tube.

Loosely attach tubes to condenser and locate the center of the holes for the radiator support fittings.

Drill (1) $\frac{3}{4}$ " diameter hole at the top location, and (1) $\frac{5}{8}$ " diameter hole at the bottom location.



Reinstall tubes to condenser using a few drops of mineral oil at each of the connections.

Insert bulkhead fittings through the holes you just drilled. Tighten securely.

Reinstall the radiator fan.

Locate #6 liquid tube, #6 hose, #10 hose, filter drier, drier mounting bracket, Hi-Low pressure switch & electrical boot, (4) #6 o-rings, (2) #10 o-rings and (2) #10 TEK screws.

Attach liquid tube to fitting from the evaporator. Locate filter drier, drier mounting bracket and (2) #10 TEK screws.



Attach drier assembly to inner fender using the liquid tube as a guide. Attach using (2) #10 TEK screws.



Attach hose assembly using (2) #6 o-rings and a few drops of mineral oil on each fitting.

Attach #10 suction hose to #10 fitting on the firewall using (1) #10 o-ring and a few drops of mineral oil. Route other end along firewall and then to the compressor. Attach end with service port to the compressor using (1) #10 o-ring and a few drops of mineral oil.

Attach long liquid hose to outlet of the drier using (1) #6 o-ring and a few drops of mineral oil and route over the suction hose and forward to lower fitting on radiator support using (1) #6 o-ring and a few drops of mineral oil

Attach hi-low pressure switch & boot to port on the liquid tube using a few drops of mineral oil.



Locate Discharge Hose from the condenser kit. Attach to #8 fitting on radiator support and route over to the compressor.

Attach with service port at the compressor and (2) #8 o-rings and a few drops of mineral oil.

Locate Clutch wire (blue) from thermostat and attach it to one of the white wires from the Pressure switch. Other white wire from pressure switch attaches to the compressor clutch.

Locate double hose clamp and (1) #10 TEK screw from the condenser kit. Attach suction and liquid hoses to the firewall as shown.

Locate #6 hose clamp and (1) #10 TEK screw.

Attach liquid hose to the driver's side shock tower as shown.





NEXT SECTION IS FOR VEHICLES WITH V8 ENGINES.

Locate the condenser, (4) condenser mounting brackets and (8) #10 x 3/8" hex head screws.

Attach the (4) brackets to the condenser as shown above, using (2) #10 screw for each bracket.

The condenser is inserted from engine side of the radiator support. Reinstall radiator using the original hardware. NOTE: THE V8 CONDENSER ASSEMBLY IS INSTALLED WITH THE FITTINGS ON THE PASSENGER SIDE.

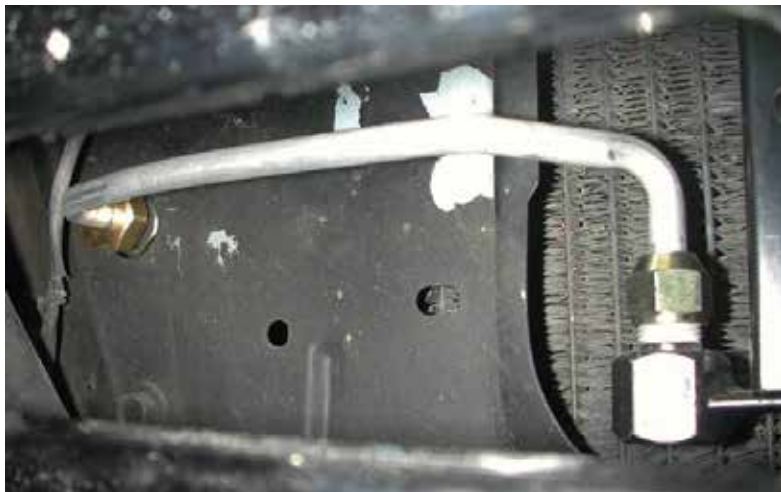
Locate in the condenser kit the liquid tube with the bulkhead fitting.

Attach tube to condenser and the bulkhead fitting through existing hole in the radiator bulkhead.

Locate the discharge tube from the condenser kit.

Holding tube in place using the condenser as a guide. Locate and drill (1) 7/8" diameter hole in the radiator bulkhead.

Install discharge tube.





Locate #6 liquid tube, #6 hose assembly, the #10 hose assembly, filter drier, drier mounting bracket, Hi-Low pressure switch & electrical boot, (4) #6 o-rings, (2) #10 o-rings and (2) #10 TEK screws.

Attach liquid tube to fitting from the evaporator. Locate the filter drier and the drier mounting bracket, and (2) #10 TEK screws.

Attach drier assembly to inner fender using the liquid tube as a guide. Attach using (2) #10 TEK screws.

Attach tube assembly using (2) #6 o-rings and a few drops of mineral oil on each fitting.

Attach long liquid hose to outlet of drier using (1) #6 o-ring and a few drops of mineral oil and route around shock tower and forward to lower fitting on the radiator bulkhead using (1) #6 o-ring and a few drops of mineral oil.

Attach hi-low pressure switch & boot to port on the liquid tube using a few drops of mineral oil.

Attach #10 suction hose to #10 fitting on the firewall using (1) #10 o-ring and a few drops of mineral oil. Route other end to the compressor. Attach end with service port to the compressor using (1) #10 o-ring and a few drops of mineral oil..





Locate the Discharge Hose from the condenser kit. Attach to #8 fitting on the radiator support and route over to the compressor.

Attach with service port end at the compressor and (2) #8 o-rings and a few drops of mineral oil.

Attach thermostat wire to pressure switch. Route the other wire to the compressor clutch wire.





**THE ENGINE COMPARTMENT OF YOUR SYSTEM IS COMPLETE.
THE UNIT IS READY FOR EVACUATION AND CHARGING.**

**THIS SHOULD BE DONE BY A QUALIFIED AND CERTIFIED AIR CONDITIONING
TECHNICIAN.**

**NOTE: COMPRESSOR IS SUPPLIED WITH THE
CORRECT OIL CHARGE. DO NOT ADD OIL TO
SYSTEM.**

**134a SYSTEMS 24 oz OF REFRIGERANT
Recommend that power fuse is 25amp minimum**

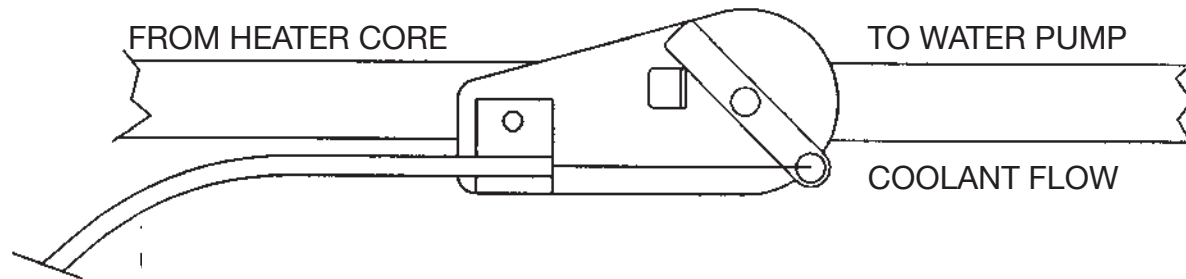
Congratulations you have completed the install of your CLASSIC AUTO AIR "Perfect Fit Series" system.

IMPORTANT!

CAUTION: WATER VALVE MUST BE INSTALLED PER THE INSTRUCTIONS.

Classic Auto Air has done extensive testing on the correct method to install the water valve in order to get a repeatable and progressive temperature control.

Locate the bottom connection from the evaporator/heater unit off of the firewall and attach a 6" piece of 5/8" dia. heater hose with the supplied hose clamp. Next attach the inlet side of the water valve using another supplied hose clamp, (make sure the arrow on the water valve points toward the engine) Attach a heater hose from the outlet side of the water valve and route to the connection on the water pump.



CAUTION: WATER VALVE MUST BE INSTALLED ON HEATER LINE ROUTED TO WATER PUMP.

**NOTE: COMPRESSOR PURCHASED WITH KIT IS
SUPPLIED WITH THE CORRECT OIL CHARGE. DO
NOT ADD OIL TO SYSTEM.**

**134A SYSTEMS 24 oz OF REFRIGERANT
Recommend that power fuse is 25amp minimum**

