

# ***Installation Manual***

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## ***1970-74 PLYMOUTH CUDA***

## ***1970-74 DODGE CHALLENGER***

DOCUMENT #1-1064

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# ***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 During the installation you might find the opportunity to repair or upgrade non-working or out of date components.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:

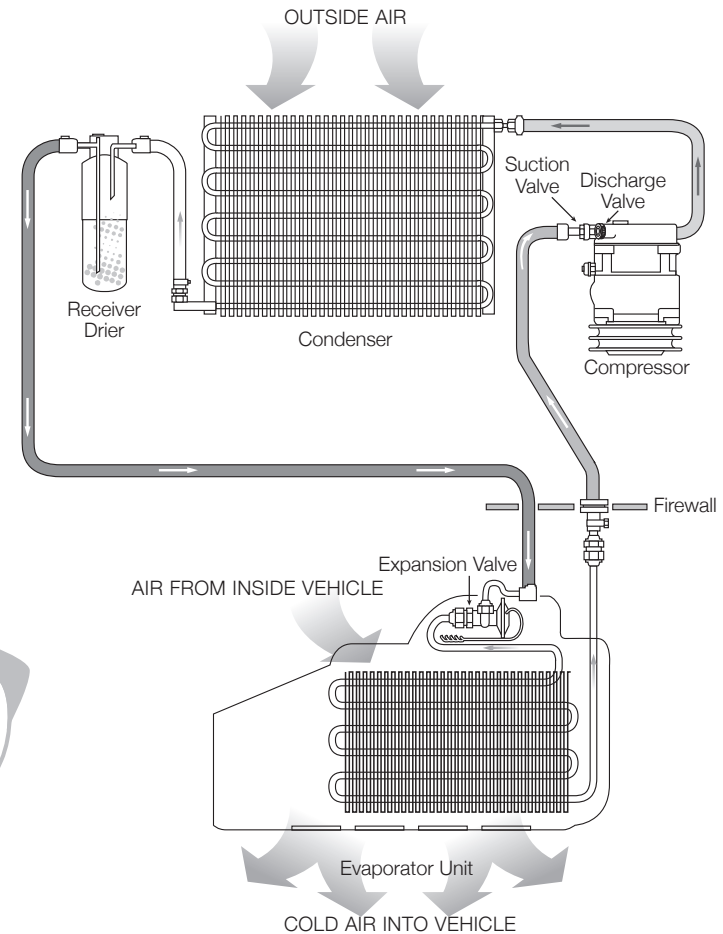
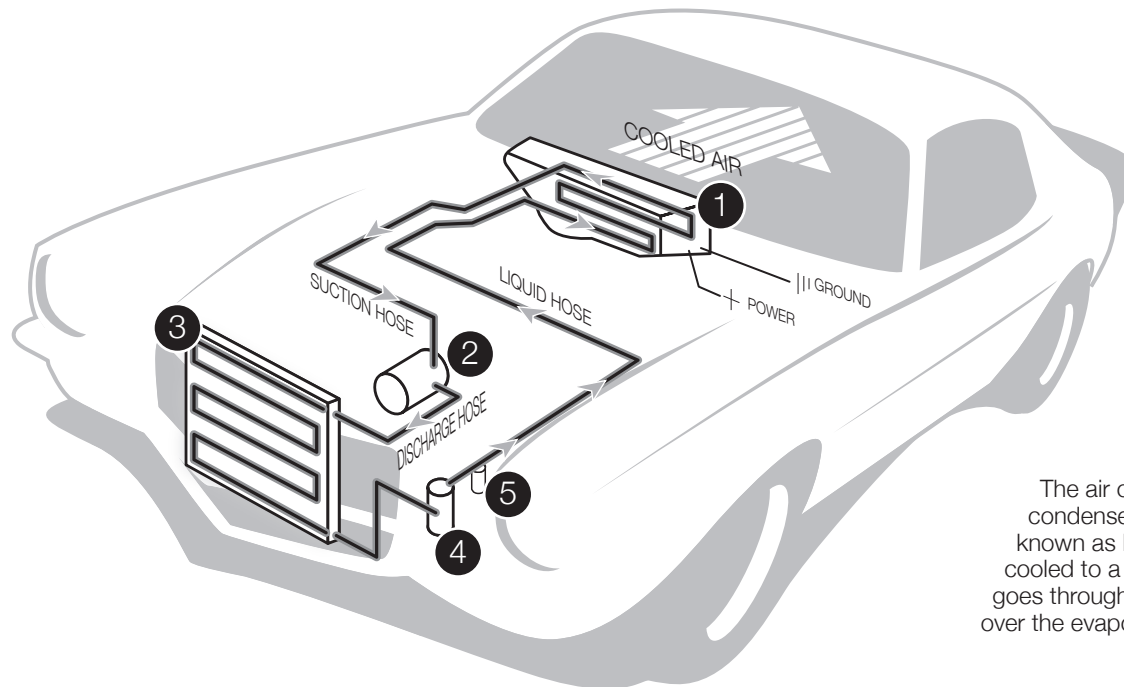
- ☐ Fittings: Use one or two drops of mineral oil (supplied with your kit) on ALL rubber o-rings, threads and where o-rings seat in fittings. Do not use thread tape or sealants.
- ☐ Measure twice (or more), cut once
- ☐ **Should you have any technical questions, or feel you have defective components (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.

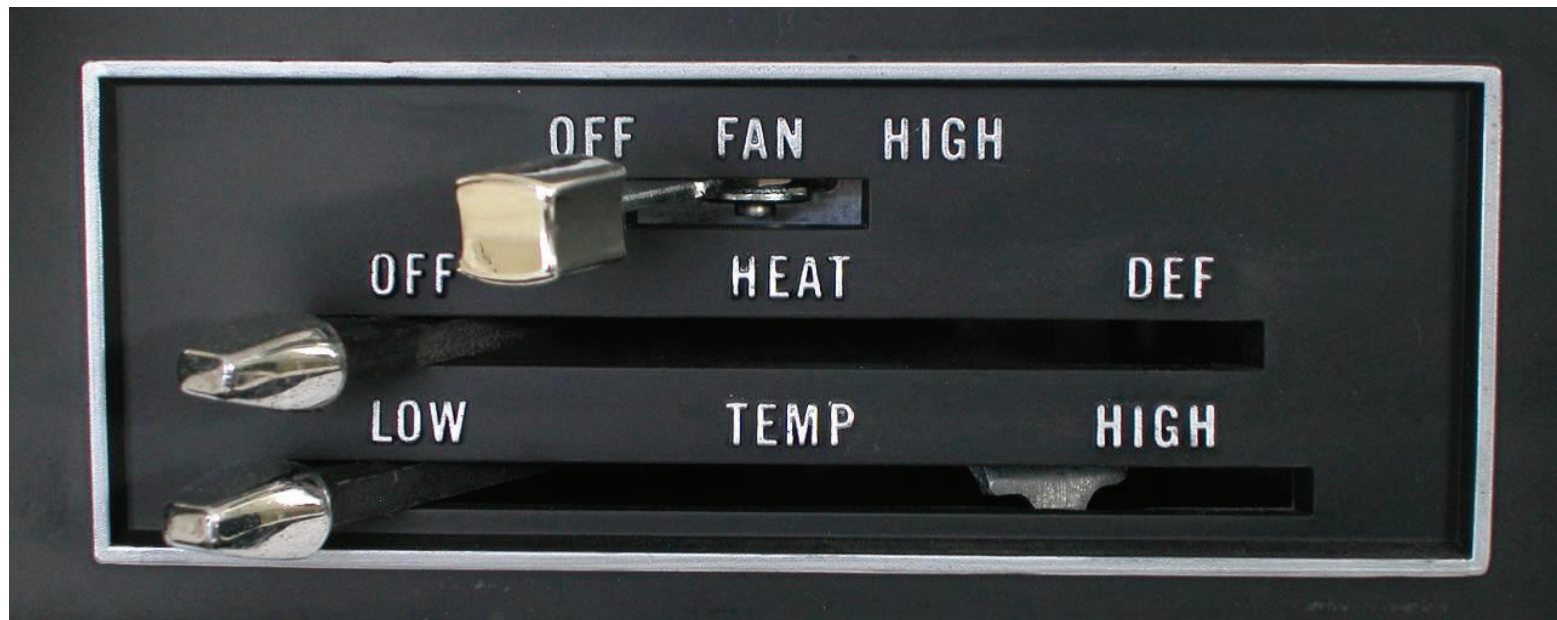


The air conditioning system in your car is comprised of a compressor, condenser, expansion valve, receiver/drier, and evaporator. Refrigerant (also known as Freon) is compressed in the compressor. In the condenser, gas is cooled to a liquid state and travels to the expansion valve. As the liquid refrigerant 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. Offers complete comfort capabilities in virtually every driving condition. This includes Temperature control in all of the modes.



THE PICTURE YOU SEE SHOWS THE CONTROLS IN THE HEAT MODE. THIS MEANS THAT THE AIR WILL BE DISTRIBUTED THROUGH THE HEATER OUTLETS. THIS ALSO HAS THE TEMPERATURE LEVER IN THE COLDEST POSITION. WITH THE CONTROLS IN THIS POSITION YOU WILL GET THE AIR THROUGH THE HEATER OUTLETS AND THE OUTLET TEMPERATURE AT THE COLDEST POSSIBLE DEGREE.



CAUTION: ALL OF THE OUTSIDE VENTS MUST BE CLOSED WHEN THE SYSTEM IS IN THE A/C MODE. THIS WILL ALLOW THE A/C SYSTEM TO FUNCTION AT ITS MAXIMUM PERFORMANCE LEVEL.

THE FOLLOWING SUMMARY WILL DESCRIBE EACH OF THE CONTROL LEVERS FUNCTION.

FAN SPEED SWITCH: There are 3 speeds plus Off. When the switch is in the off position it will disconnect the 12V power to the Blower Motor and the A/C Clutch. This will shut down the entire system. When the switch is moved to any of the blower speeds 1, 2 or 3 there is 12V supplied to the Micro-Switch that is mounted on the Face Duct.

FACE / DEFROST / HEAT DOOR CONTROL: When the Control Knob is pushed all the way to the RIGHT the air is distributed to the FACE outlets. In this position the compressor clutch is engaged. When the knob is pushed to the MIDDLE of the controls the air will go to the DEFROST outlets. In the Defrost position the compressor clutch is engaged for dehumidification. When the knob is pushed all the way to the LEFT the air will go to the FLOOR outlets. In the FLOOR position the compressor is not disengaged.

TEMPERATURE CONTROL: The Temperature Knob as shown is at the HOTTEST temperature position. As the lever is pushed to the LEFT temperature of the discharged air will FALL to the COLDEST point.

Note: The temperature lever will function in any of the modes.



Carefully remove Glove box door and glove box. Retain door, glove box and original hardware.

DRAIN RADIATOR AND DISCONNECT AND REMOVE BATTERY.

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

Disconnect the cable to the fresh air door.

Disconnect electrical harness from the resistor block.

Disconnect control cable from the blend air door.

Around perimeter of the Bower Motor remove the (3) nuts that hold heater assembly to the firewall.

Disconnect heater hoses to the heater core.



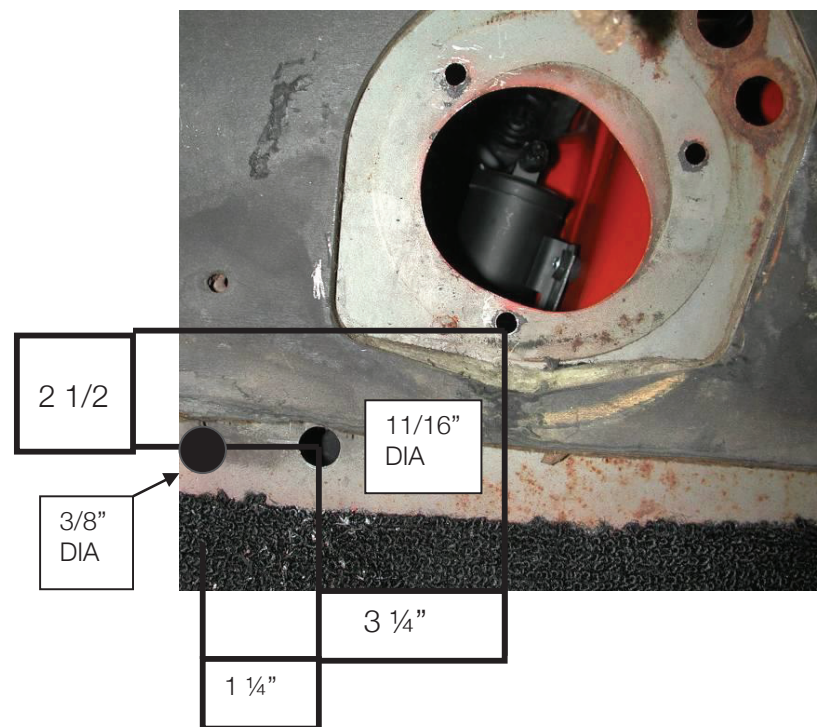
Locate behind the dash and on the firewall the hole that previously mounted the heater box.

Drill (1) 11/16" dia. hole for the drain tube as shown. Also drill (1) 3/8" dia. hole for the temperature cable.

Locate the Inlet Block off plate and (2) #10 x 3/4" tek screws.

Attach block off over the air inlet opening and attach using #10 screws.

NOTE: Block off needs to be located as far back as possible to allow for the front blower support bracket.



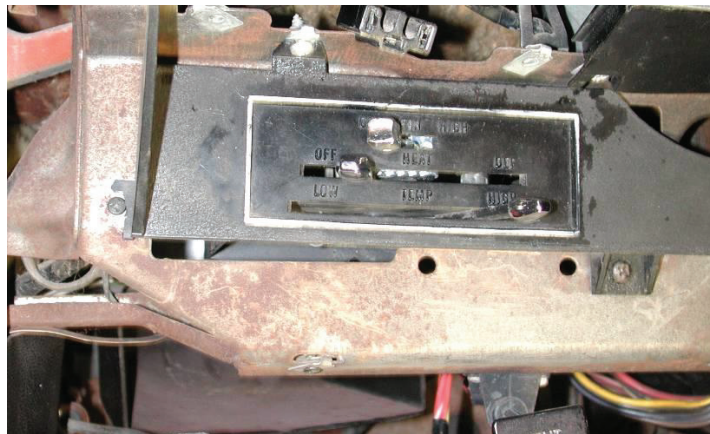


In order to remove the Control head the following components need to be removed in the following order.

Instrument Light panel  
Lower dash trim panel  
Light / Wiper control panel  
Control panel and lower brace.

Retain original hardware.

Locate original wire harness that was attached to the blower switch. Cut the connector off. Attach (1) ¼" male spade connector to the BROWN wire.





Locate the original control assembly. Remove and discard the following components. Retain all original hardware.

- 1) Original Blower Switch
- 2) Heat Cable
- 3) Temp Cable

Locate in the control sack kit the blower switch, blower switch bracket, (2) 3/16" push nut, switch knob and (2) #6 x 3/8" pan head Philips screws.

Attach blower switch to the switch bracket using (2) #6 x 3/8" pan head screws.

Attach assembly to original control head using the original hardware.

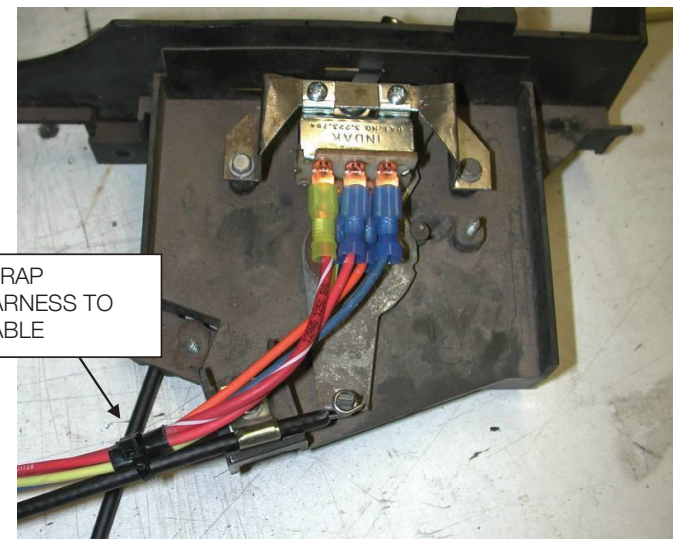
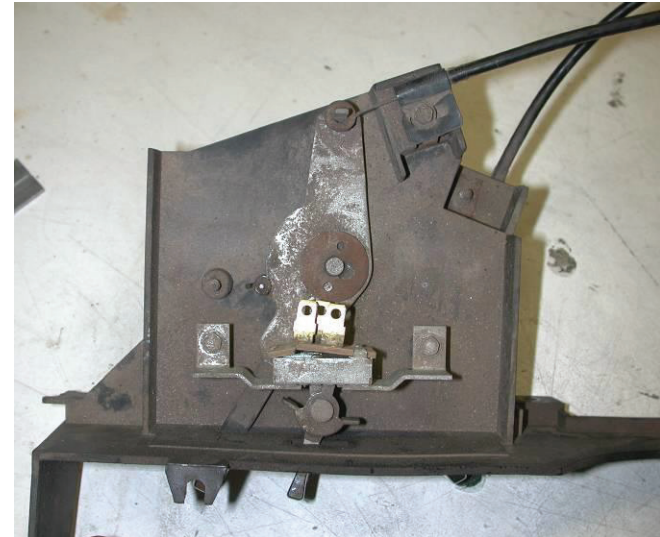
Attach knob to the switch lever.

Locate wire harness from the control sack kit.

Attach the harness to the blower switch according to the wiring diagram on page 12.

Locate in the control sack kit (1) SHORT control cables, (1) LONG Temperature control cable, (2) cable clips and (2) 3/16" push nuts.

Attach shortest cable to the Face / Heat lever. Using (1) push nut, original screw and cable clip. NOTE: Cable sleeve is at the control lever.





Attach temperature control cable to the lever on bottom of control head using the original hardware, cable clip and (1) 3/16" push nut.

NOTE: Cable sleeve is at the cable clip bracket.

Attach the Face / Heat cable to the bottom lever. Using (1) push nut and the original screw and cable clip. NOTE: The cable sleeve is at cable clip bracket.

**CLASSIC AUTO AIR OFFERS (2) OPTIONS FOR AIR DISTRIBUTION ON THIS CAR. NEXT FEW STEPS ARE ONLY NECESSARY FOR THE IN DASH LOUVER OPTION.**

Locate in the instructions: twotemplates for the center louver bezel and one for the passenger louver bezel.

Attach templates to the panel as shown in the pictures. Carefully cut out center of the template.

**CAUTION: CAREFULLY CUT TO THE LINE. AND THEN TRIM TO FIT THE LOUVER BEZEL.**

Passenger louver Template same procedures as Center template.





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

Reinstall control head using original hardware. Reinstall the trim panels using original hardware. Route electrical wires and control cables over the steering column.

Locate the evaporator, the Air Distribution Duct assembly and (4) #10 x 5/8" pan head screws.

Place evaporator on bench and attach the Distribution assembly onto the evaporator using (4) #10 x 5/8" pan head screws.

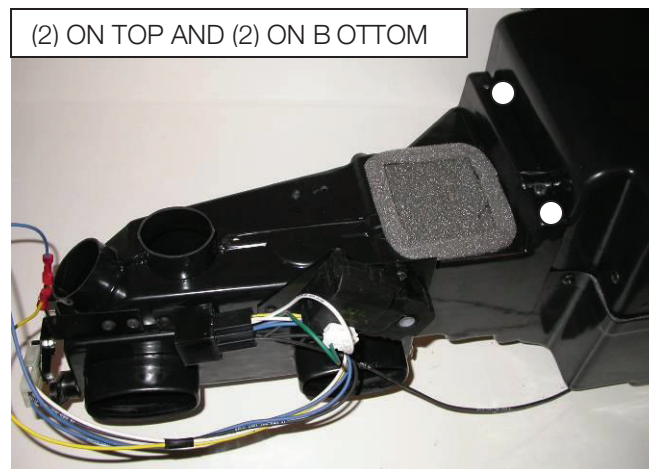
Locate the evaporator, and the defrost adaptor.

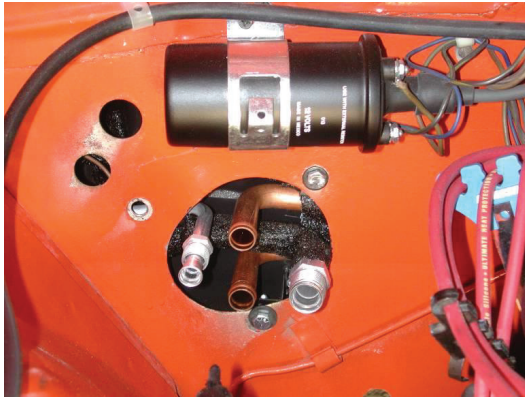
Locate the defrost adapter from the unit box and (1) #10 x 3/4" tek screw.

Insert adapter up into the defrost plenum before the unit is installed as shown.

After unit is located and attached, slide the defrost adaptor down and fasten in place using #10 tek screw.

Place evaporator on floor of the vehicle Lift unit up and behind the glove box opening.





Insert hookup tubes through the original heater motor hole.

Attach evaporator to the firewall using (2) ¼"-20 x 5/8" screws and flat washers provided.



Locate the blower support brace, and (1) #10 x ¾" tek screw.

Attach brace to the air box as shown. Make sure unit is level

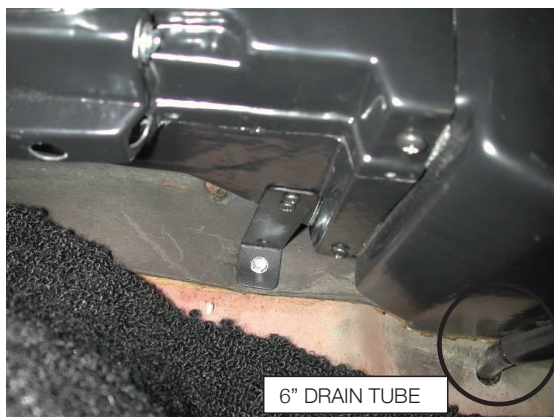
Locate in the hardware sack kit the unit support bracket, (1) #10 x ¾" tek screw and (1) #10 x 5/8" pan head philips screw.

Attach bracket to top pre drilled hole in the unit using #10 pan head screw.

CAUTION: DO NOT USE POWER SCREW DRIVER

Attach other end to body using the #10 tek screw.





Locate (1) #10 x 3/4" tek screw and (2) #8 x 3/8" pan head screw from the hardware sack kit.

Locate bracket in the hardware sack kit. Attach duct to the firewall using (1) #10 x 3/4" tek screw.

Carefully attach other end of bracket to bottom of the duct assembly using the #8 screws.

Locate 6" clear drain tube and attach it over the drain nipple and out through the firewall.

Locate the Firewall Block Off plate, (4) #10 x 3/4" tek screws.

On engine side of firewall attach over hookup tubes from the evaporator using #10 Tek screws.

NOTE: NEXT FEW STEPS ARE LOCATED BEHIND THE INSTRUMENT PANEL.

Locate the Center Duct Assembly and (2) #8 x 1/2" pan head screws.

Route door cable over top of the duct around back and attach to the Face / Heat door on side of the center duct assembly using (1) #8 screw.

Cable is located in 3rd hole from end of the crank arm.



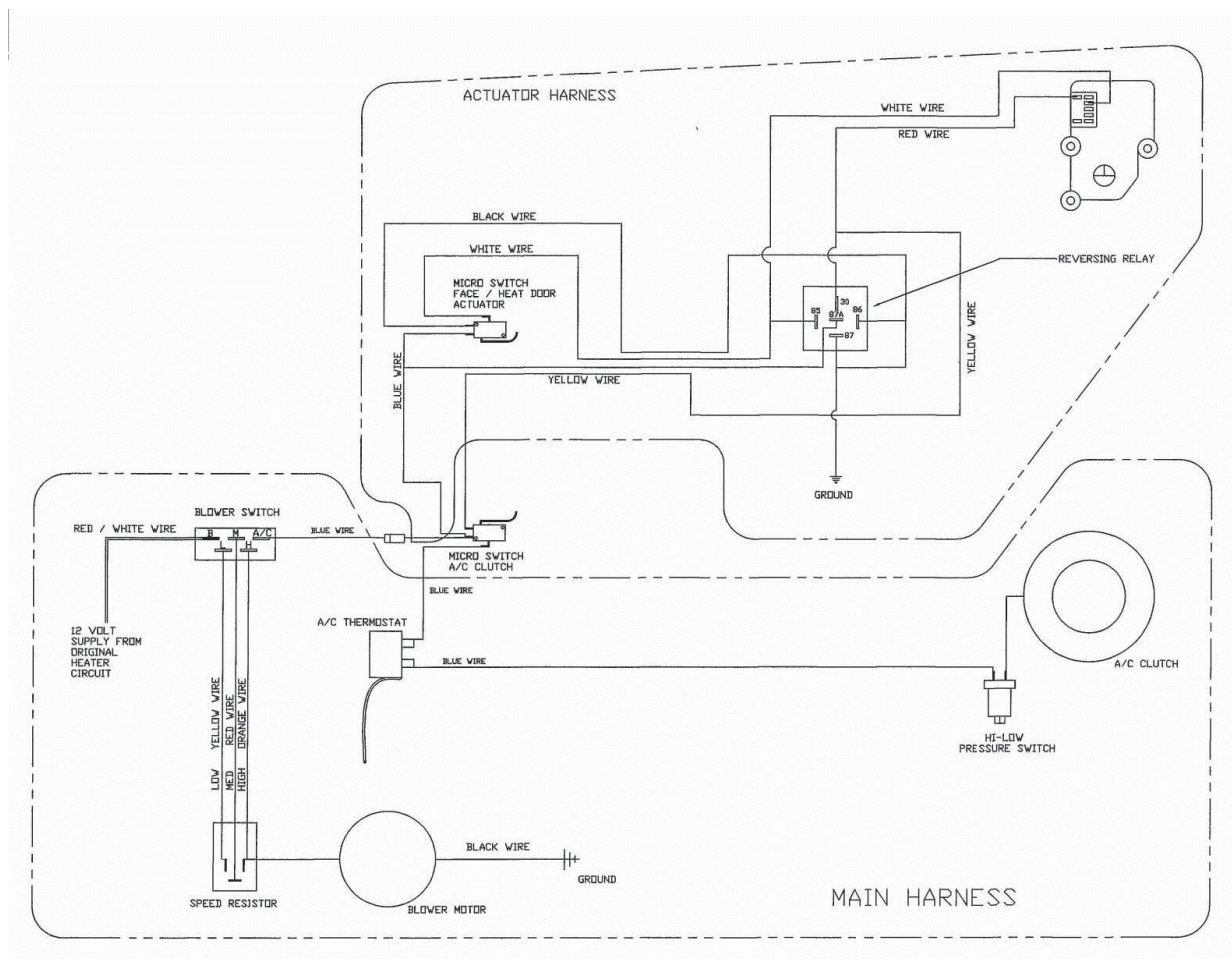


Route main harness across front of the unit and to the resistor, and blower motor. Route blue clutch wire over evaporator and out through hole in firewall along with the temp. cable. Secure ground from the blower motor using (1) #10 x 3/4 "hex head Tek screw.

REFER TO THE WIRING DRAWING FOR PROPER CONNECTIONS.

Route temperature cable behind center ducts and through 3/8" Dia. hole that was drill next to the drain tube in the firewall. Attach this cable to the water valve. Set control lever in the Cold position and be sure that water valve is closed.

Locate insulation tape and seal around cable at firewall.

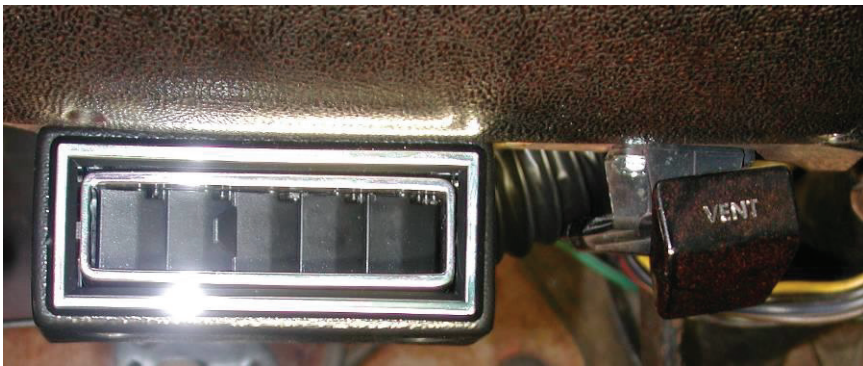




Locate in the hardware sack kit the remote louver, (2) #8 x 3/8" pan head screws and (4) #10 x 3/4" hex head tek screws.

Relocate vent cable assembly to the right. Attach using (2) #10 screws.

Attach remote louver on drivers side of instrument panel using (2) #10 tek screws.

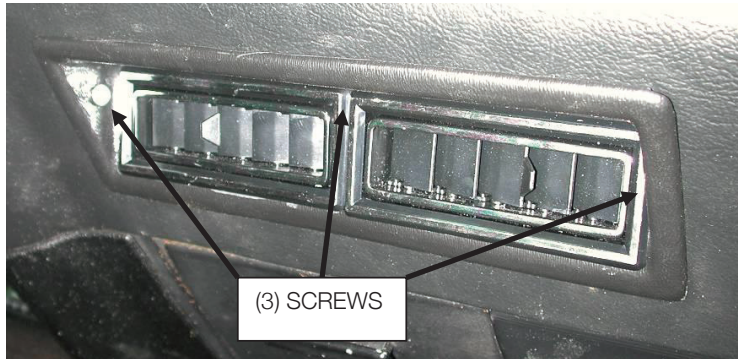


Locate 2" dia x 3ft.flex hose from the unit box. Locate the Louver with the 2" hose adaptor. Attach flex hose to the louver using (2) #8 x 3/8" pan head screws.

Insert the louver through the Louver housing and route 2"dia x 36" flex hose to left outlet on the duct.







IF YOU HAVE PURCHASED THE "INDASH LOUVER OPTION" THE NEXT FEW STEPS APPLY.

Locate the Center Louver Assembly, (2) pieces of 2 ½" dia. flex hose, (4) #8 x 3/8" pan head screws, and (3) #8 x 1 ½" pan head screws.

Attach flex hose to louvers. Insert louver assembly through the dash opening and attach using (3) #8 x 1 ½" pan head screws.

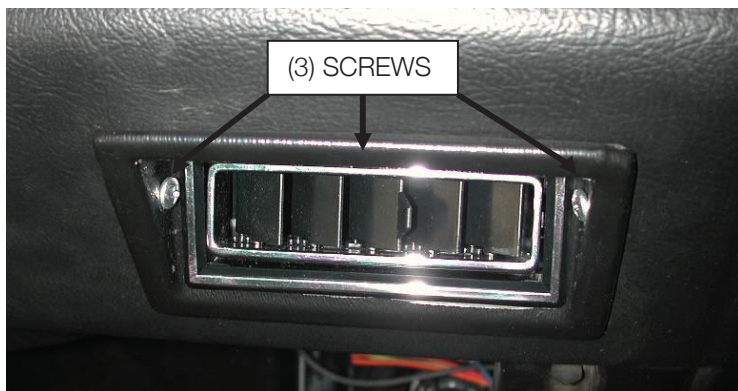
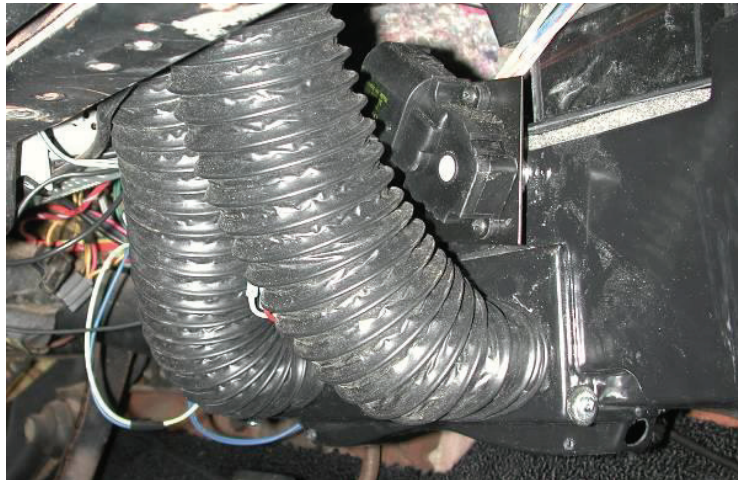
NOTE: HOLD LOUVER ASSEMBLY FIRMLY AGAINST DASH PAD WHILE SCREWING IN THE FASTENERS.

Route flex hose down through the dash and attach to outlets on the face / defrost duct assembly.

Locate the Passenger Louver, (3) #8 x 1 ½" pan head screws, (2) #8 x 3/8" pan head screws and (1) piece of 2" dia. x 3ft. flex hose.

Attach flex hose the hose adapter on the back of louver using (2) #8 x 3/8" pan head screws.

Insert louver through the dash pad. Attach using (3) #8 x 1 ½" pan head screws.



NOTE: HOLD LOVER ASSEMBLY FIRMLY AGAINST DASH PAD WHILE SCREWING IN THE FASTENERS.

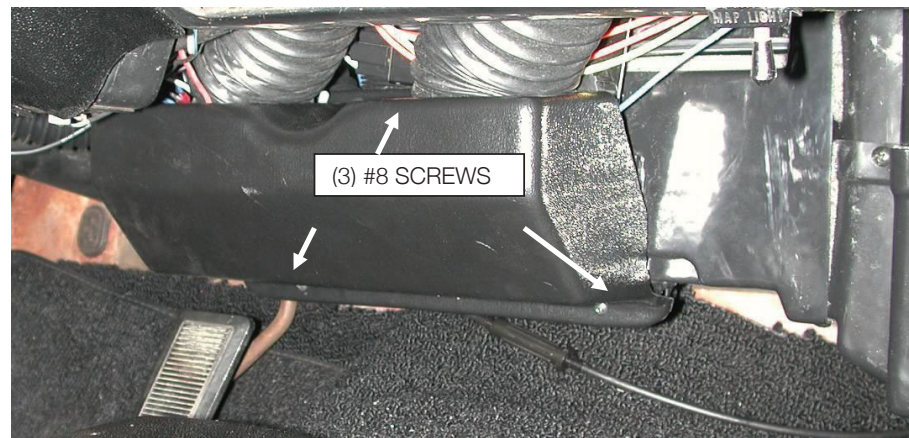
Route flex hose from passenger outlet and attach it to top hose adaptor on the center face duct assembly.

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

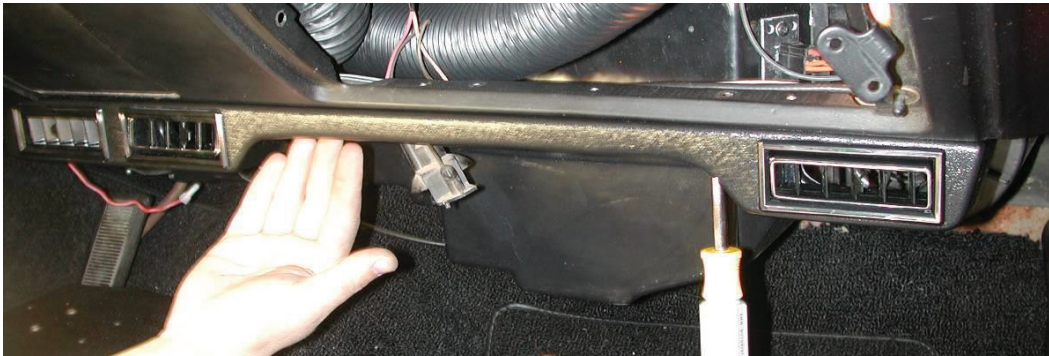
Locate the Hose Cover and (3) #8 x ½" pan head screws.

Attach cover to duct assembly as shown.

**IF YOU HAVE PURCHASED THE "UNDER DASH LOUVER OPTION" THE NEXT FEW STEPS APPLY.**







Locate the under dash louver assembly and (2) pieces of 2 ½" dia. flex hose 9" long, (1) piece of 2" flex hose 48" long, (2) snap in hose adaptor and (3) #10 x ¾" tek screws.

Attach 2" dia. flex hose to the hose adapter. Remove the Map light switch (if equipped).

Attach louver bezel to bottom of the instrument panel using (3) #10 x ¾" tek screws.

Mount Map light switch to bracket on the bezel.

Route 2" dia. flex hose across to top of the duct assembly and attach to outlet.

Attach (2) pieces of 2 ½" dia. flex hose to the snap in hose adapter using (2) #8 x 3/8" pan head screws. Snap hose adapters into center louvers and then attach to the face duct.

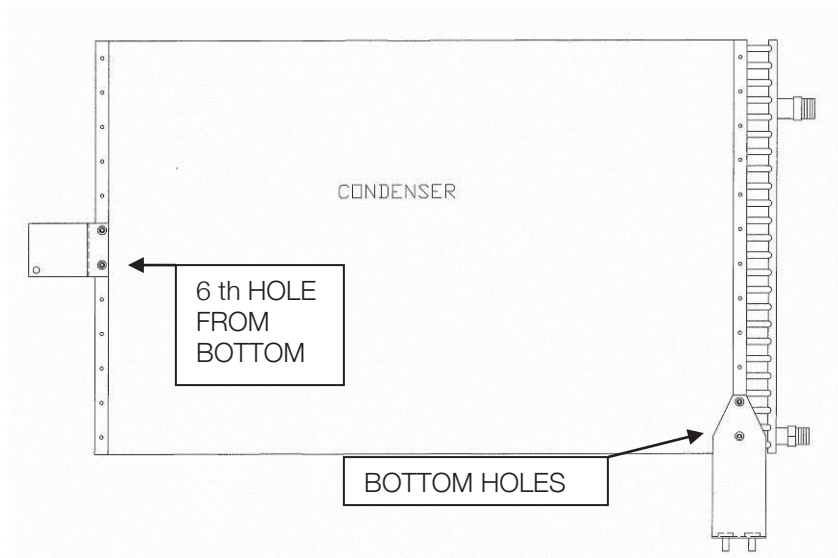
Reinstall the glove box and glove box door using original hardware.

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

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







Drain and remove the radiator and fan shroud.

Locate the Condenser, (1) Right hand lower condenser mounting bracket, (1) Left hand condenser mounting bracket, and (4) #10 x 3/8" hex head screws. Attach brackets to the condenser as shown.

Remove the hood latch assembly from in front of the radiator.

There are (2) screws that are located along vertical support brace under the hood latch assembly. Remove and retain these fasteners.

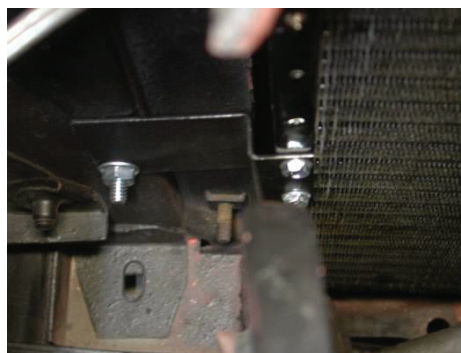
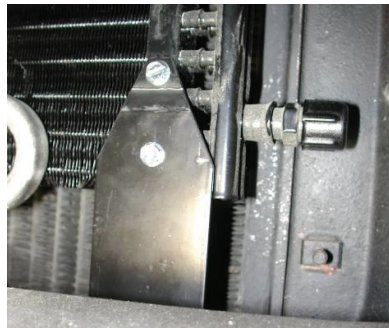
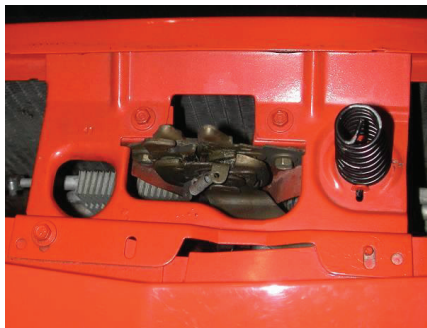
Carefully slide Condenser Assembly between radiator and the grill.

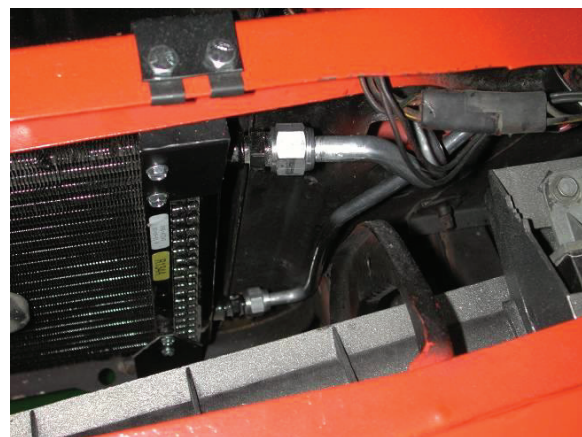
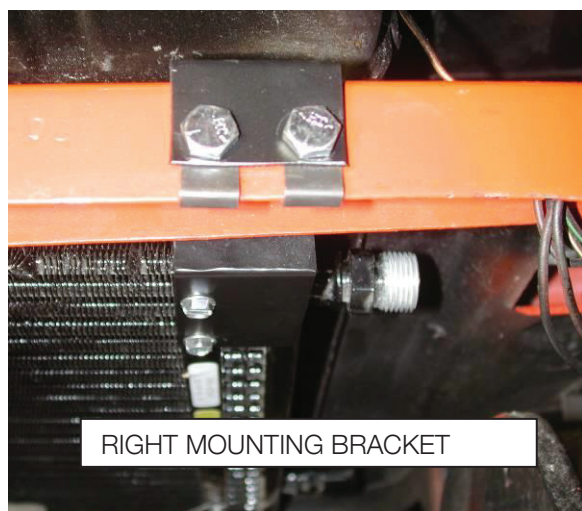
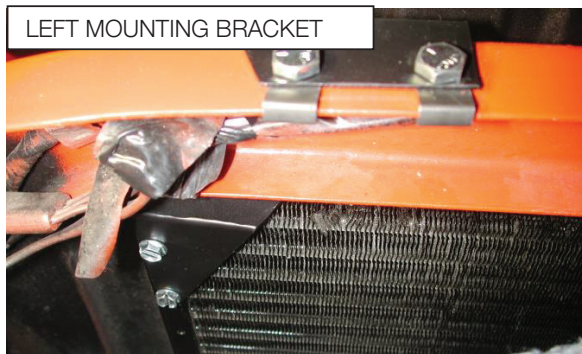
Locate lower right mounting bracket by inserting the studs through existing holes on the lower cross brace.

From under the car attach with (2) 1/4"-20 flange nuts and flat washers.

Left mounting bracket should line up with a slot in the radiator bulkhead.

Attach with (1) 1/4"-20 x 5/8" hex head screw and flat washer.





Locate the (2) upper condenser mounting brackets, (4) #10 x 3/8" hex head screws, (4) 1/4"-20 j-clips and (4) 1/4"-20 x 5/8" hex head screws.

Attach top (2) condenser mounting brackets over upper radiator support and down in front of the condenser as shown.

Attach condenser brackets to the condenser as shown.

Locate the Liquid Tube and (1) #6 o-ring.

Insert tube through bulkhead opening in front of the battery box. Attach to lower condenser fitting using (1) #6 O-ring and a few drops of mineral oil.

Locate the #8 discharge tube, and (1) #8 o-ring. Insert tube through bulkhead opening along with the #6 tube.

Attach to the upper condenser fitting using (1) #8 o-ring and a few drops of mineral oil.

Locate (1) #8 hose clamp, (1) #6 hose clamp and (2) #10 tek screws.

Attach tubes to the fender well as shown.

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

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

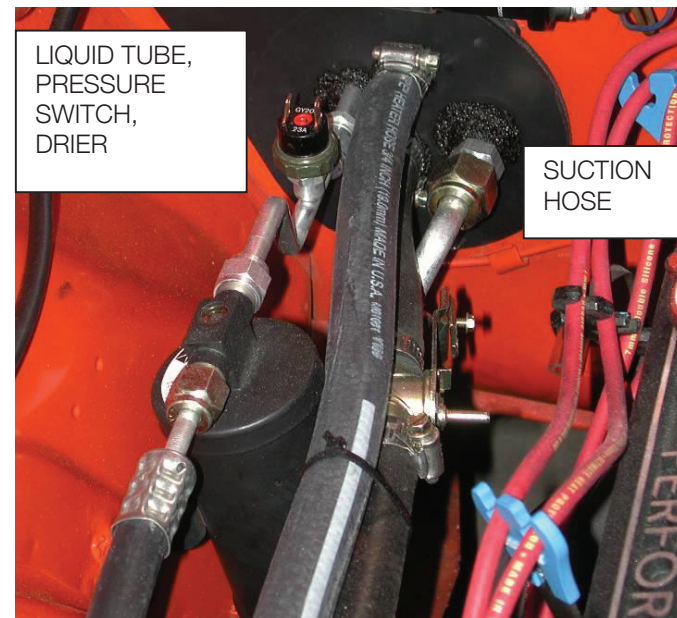
Locate the short Liquid Tube, (2) #6 o-rings, Receiver Drier, Hi/Low Pressure switch and (3) #10-32 x 1" screws & nuts.

Attach pressure switch to the liquid tube using a few drops of mineral oil.

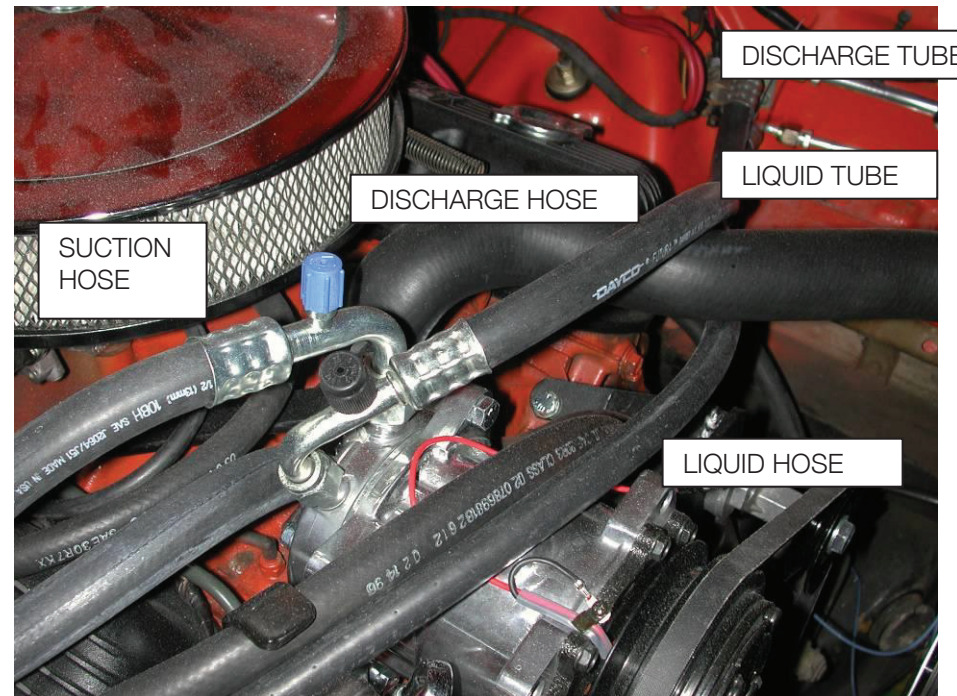
Attach tube to fitting from the unit using (1) #6 o-ring and a few drops of mineral oil.

Using the tube as a locating device. Mark and drill 3/16" dia. hole (3) places for the drier.

Attach drier using the #10 screws and nuts. Hookup liquid tube to the drier using (1) #6 o-ring and a few drops of mineral oil.







(3) #8 SCREWS Locate the Liquid Hose and (2) #6 o-rings. Attach 90 deg. end to the tube behind the battery. Use (1) #6 o-ring and a few drops of mineral oil. Route other end over compressor and along passenger fender well and attach to the drier using (1) #6 o-ring and a few drops of mineral oil.

Locate the Discharge hose and (2) #8 o-rings. Attach end with service port to the compressor and other end to the tube behind the battery. Use (1) #8 o-ring on each of the fittings and a few drops of mineral oil.

Locate the suction hose and (2) #10 o-rings. Attach end with service port to the compressor and other end to the fitting at the firewall. Use (1) #10 o-ring on each of the fittings and a few drops of mineral oil.

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

Route (1) of the white wires along with the #8 refrigerant hose. Attach to the compressor clutch. Other white wire attaches to Blue Clutch wire from the thermostat.

Reinstall the battery.



**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!

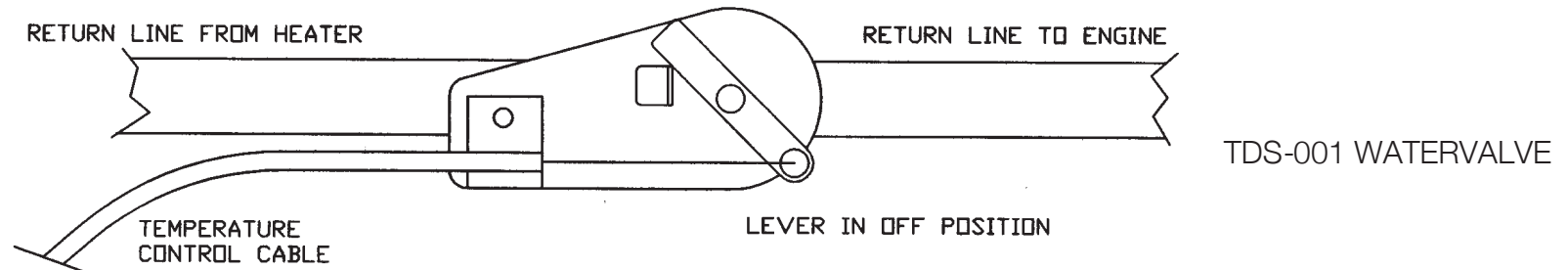
CAUTION: WATER VALVE MUST BE INSTALLED PER THE INSTRUCTIONS.

This data sheet covers the proper installation of the "Temperature Control Water Valve" that is supplied in your Air Conditioning , Heating, and Defrost unit. 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.

It is necessary to locate the "Supply Line" from the engine on the vehicle and route a hose directly to the heater connection.

NOTE: The supply line will be coming from the engine block after the water has passed through and absorbed heat from the engine. Typically it is located next to the return radiator hose from the engine to the top of the radiator.

Locate the "Return Line" from the heater connection. Cut 6" of 5/8" dia. heater hose and attach it to the inlet side of the water valve. Attach this assembly to the return heater connection. Attach a heater hose from the outlet side of the water valve and route to the return connection on engine. NOTE: The return connection is typically located 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**



CUT OUT CENTRE

BOTTOM EDGE OF INSTRUMENT PANEL

ALIGN WITH EDGE OF DASH TRIM

CENTRE LOUVER BEZEL  
TEMPLATE





CUT OUT  
CENTRE

BOTTOM EDGE OF INSTRUMENT PANEL

RIGHT EDGE OF PANEL

PASSENGER LOUVER  
BEZEL TEMPLATE

