

Installation Manual

1960 - 1963 Chevrolet Pickup

DOCUMENT #1-1031

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Congratulations...

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

Congratulations! ! You have just purchased the highest quality, best performing A/C system ever designed for you Classic Truck. 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

Flex Hose 2"dia x 1ft – 1 ea.

Flex Hose 2"dia x 2ft – 3 ea.

Flex Hose 2"dia. x 3ft. – 1ea.

Flex Hose 2"dia. x 4ft. – 1ea.

Sack Kit Hardware

Kit Control

Glove Box

Firewall Block Off (2)



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 During the installation you might find the opportunity to repair or upgrade non-working or out of date components.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

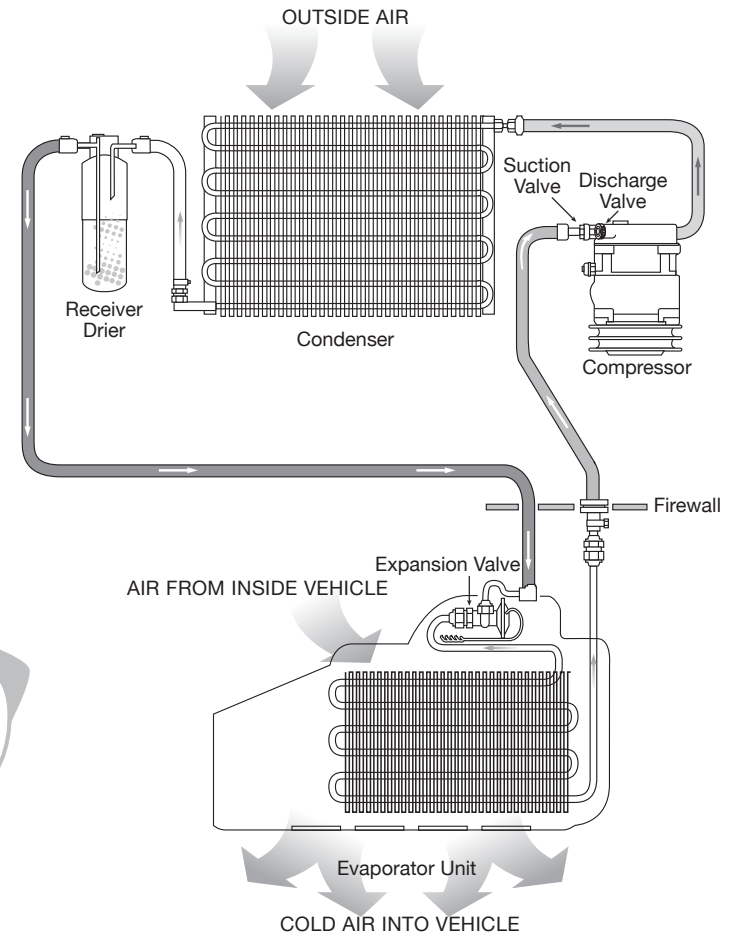
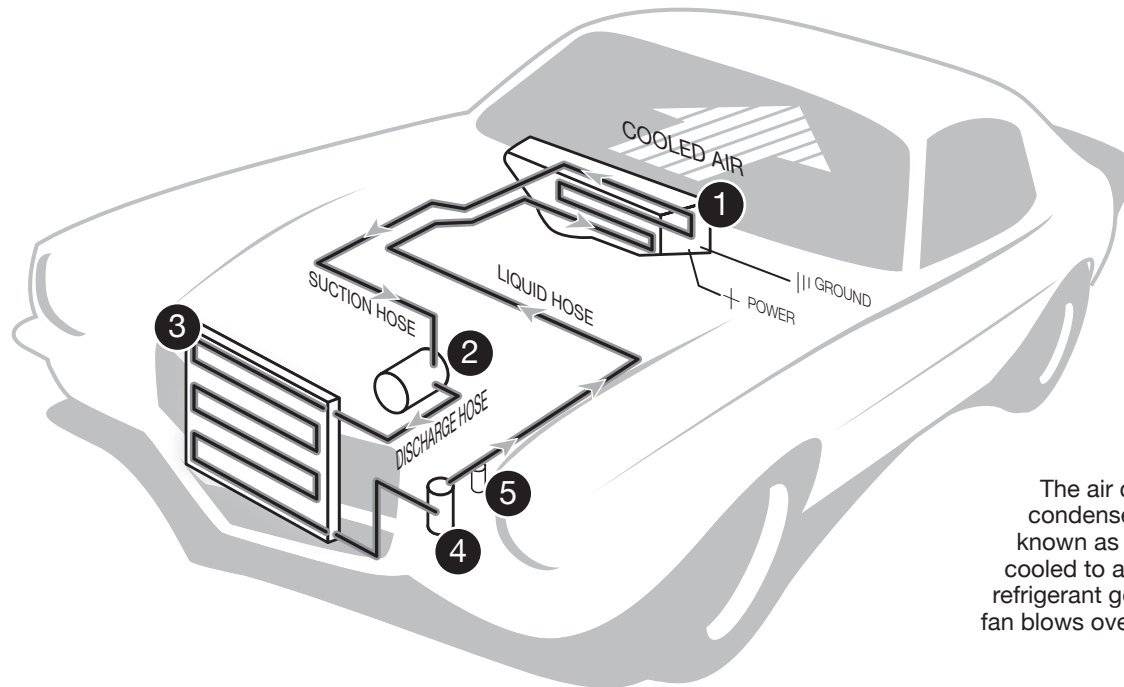
Procedures, During Installation:

- ☐ 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

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.

This system also provides DEHUMIDIFICATION in the defrost mode and the ability to blend the air between Face and Heat / Defrost modes.



THE PICTURE YOU SEE ABOVE SHOWS THE CONTROLS IN THE FACE MODE. THIS MEANS THAT THE AIR WILL BE DISTRIBUTED THROUGH THE FACE OUTLETS. THIS ALSO HAS THE TEMPERATURE LEVER IN THE COLD POSITION. WITH THE CONTROLS IN THIS POSITION YOU WILL GET THE AIR THROUGH THE FACE OUTLETS WITH THE COMPRESSOR ON.

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 main housing.

FACE AND FLOOR / DEFROST MODE: When the Control Lever is in the upper position it will direct the air to the floor / and defrost ducts. The cable can be moved any position from top to bottom. This will give blend between all distribution outlets.

DEFROST MODE: When the Control Lever is in the upper position the compressor is not on and the system is not running in the Dehumidification mode. The lever must be pushed down and this will engage the clutch.

TEMPERATURE CONTROL: The Temperature Lever as shown is in the COLDEST temperature position. As the lever is pushed down the temperature of the discharged air will rise to the HOTTEST point.

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

AIR CONDITIONING MODE: The picture shows the Control Lever the Face Mode (air-flow out the face outlets).

When the Mode control lever is in the top position the Air Conditioning is activated the compressor clutch is on. When the compressor is activated the Temperature Lever will control the air from maximum cold through maximum heat.



GLOVE BOX
DOOR

GLOVE BOX
HOUSING



AIR SHUTOFF DOOR
CABLE ATTACHMENT

DEFROST/FLOOR DOOR
CABLE ATTACHMENT



CAUTION: DISCONNECT BATTERY GROUND CABLE

Remove the Glove box door and glove box. Retain the glove box door and it's original hardware. Discard the glove box housing.

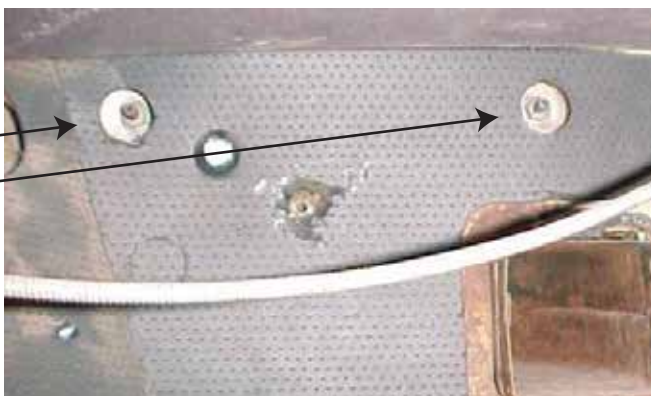
THIS SERIES OF TRUCK COMES EQUIPT WITH A STANDARD HEATER OR A DELUXE HEATER. IF YOUR TRUCK HAS THE DELUXE HEATER SYSTEM FOLLOW THE NEXT 8 STEPS FOR REMOVAL OF HEATER AND VEHICLE PREPARATION FOR THE NEW A/C, HEATING UNIT.

Under the glove box opening locate the defrost / floor distribution box.

Remove (3) screws around the housing flange. Remove the (2) control cables. One cable is attached to the floor / defrost door. One cable is attached to the air shutoff door.

On left side of the housing remove and discard the support screw.

CUT WIRE

DISCONNECT
WIREREMOVE
NUTS

Rotate the housing.

Located on the back is a speed control resistor. Disconnect wire connector. Cut the wire that goes through firewall and connects to the original heater motor.

Remove and discard housing.

Locate (2) nuts above the blower outlet. Remove and discard.

Drain radiator and then remove heater hoses from the heater connections. Also remove (5) screws that attach the heater assembly to firewall.

Discard original heater assembly and retain the original hardware.



5 SCREWS REMOVE AND RETAIN

NOTE: THE 5TH SCREW IS ON THE LEFT SIDE OF THE HEATER BOX



Remove (2) Philips Screws as shown along top edge of controls.

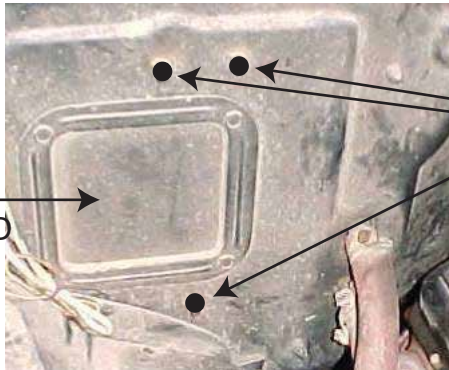
Also remove Philips Screw that attaches the brace for the control assembly.

Set aside for later modifications and reinstallation. Retain all of the original hardware.

IF YOUR TRUCK HAS THE STANDARD HEATER SYSTEM FOLLOW THE NEXT 6 STEPS FOR REMOVAL OF HEATER AND VEHICLE PREPARATION FOR THE NEW A/C, HEATING UNIT.



REMOVE
AND DISCARD



3 NUTS

HEATER HOSES



Drain radiator and disconnect Heater Hoses from heater assembly.

Locate (3) nuts that attach the heater assembly to firewall. Remove and discard

Locate original Firewall Cover as shown. Remove and discard. Retain the original hardware.

Locate attachment screw on left of heater housing, remove and discard. Also disconnect Control Cable for Heat / defrost door at the heater assembly.

Remove complete Heater Assembly from vehicle and discard.

Remove (2) Philips Screws as shown along top edge of controls. Also remove Philips Screw that attaches the brace for the control assembly.

Discard original control head. Retain all of the original hardware.



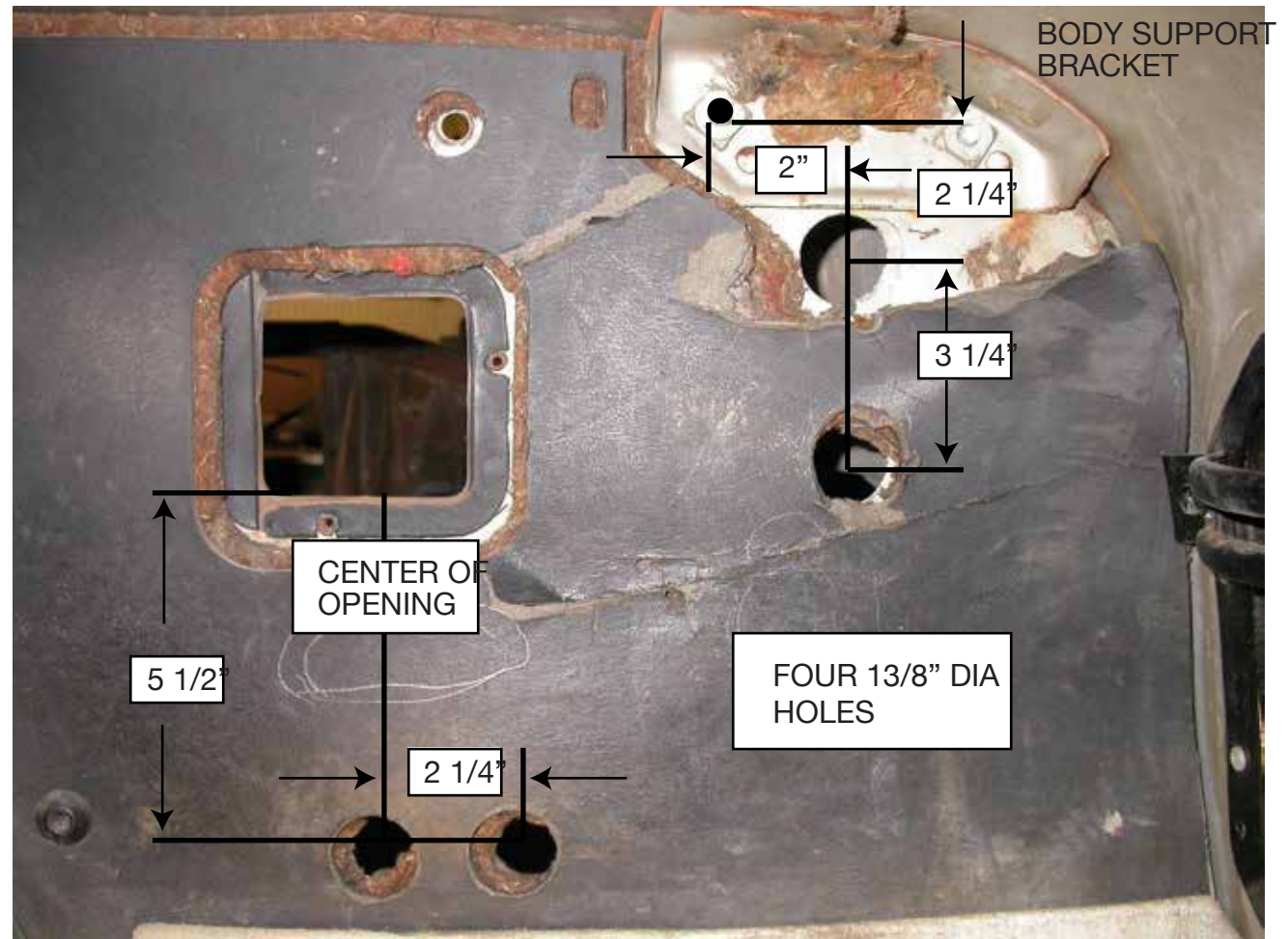
When removing control head disconnect electrical plug at blower switch. Cut Brown wire off the back of the connector housing as shown.

Discard original wire harness.

Behind glove box opening the following modifications to firewall are required.

Hole locations are for heater and air conditioning hoses. Carefully lay out as shown.

Cut (4) 1 3/8" holes using a good quality hole saw.





CENTER HOLE
OF THE CRANK ARM



Modifications to the vehicle are complete. You can now begin installing your new Classic Air "Perfect Fit Series" system.

Locate the Evaporator from kit. Carefully set the evaporator on a bench.

Locate in Control Sack Kit shortest of (2) control cables. Insert cable in to door crank arm as shown. Using (1) #10 x 5/8" pan head phillips screw, attach cable by mounting tab.

For trucks with "Deluxe Controls", cable uses a clamp supplied in kit.

Locate wire harness from the control sack kit. Attach (4) blue wires to the micro switches in parallel. Refer to the wiring diagram on page 16.

Attach resistor plug to resistor by the motor. Attach (2) blue wires to thermostat and 2 pin blower connector to the blower motor.

Locate defrost / heat duct assembly from the kit and (2) #10 x 5/8" pan head screws.

Attach duct to back of the evaporator through the metal u-clips

Carefully slide Evaporator into position behind glove box opening.(see picture on next page.)

Allow approximately 1/8" between the top of Evaporator and the body. Line edge of the mounting bracket to edge of the indentation in body.

Locate in Hardware Sack Kit (2) #14 x 3/4" Hex Head Tek Screws. Attach evaporator to the body.

ATTACH GROUND WIRE

LINE UP THE BRACKET
TO THE EDGE OF THE
INDENTATION IN THE BODY.



1/4-20 X 1"
SCREW



1/4-20
FLANGE
NUT

Locate in Hardware Sack Kit (1) #10 x 3/4" Hex Head Tek Screw. Locate Black wire with Ring Terminal from blower motor. Attach the wire as shown.

Locate on Evaporator the bracket to the right and under the blower motor as shown.

Drill 9/32" Dia. hole through bracket, insulation and the floor.

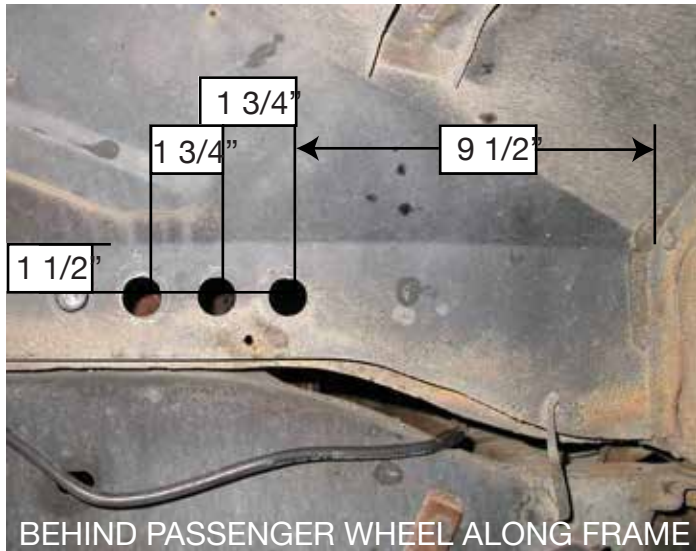
Locate from hardware sack kit (1) 1/4 - 20 x 1" hex head screw and (1) 1/4 - 20 flange nut. Insert screw through the drilled hole. Attach nut from behind passenger front tire. Tighten securely.

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

Attach bracket to firewall using the #10 screw.

Attach to bottom of the unit using the (2) #8 screws.





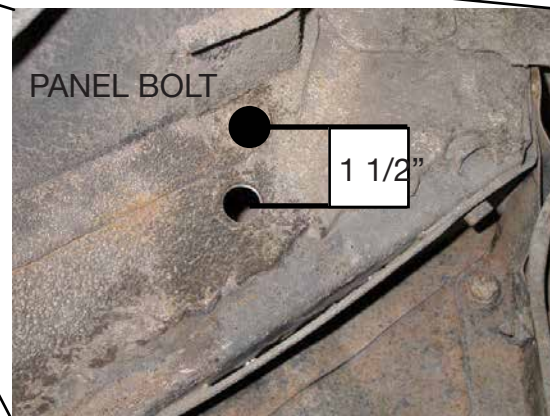
Remove the passenger wheel.

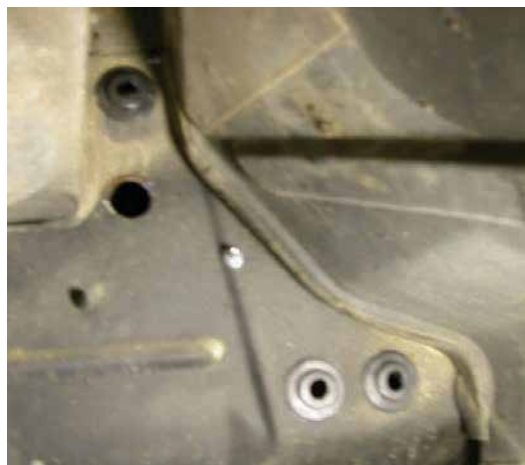
Locate and drill (3) 7/8" diameter holes in inner fender panel as shown in picture to the left.

The 9 1/2" dimension is located at the junction of fender panel and radiator bulkhead panel.

Locate the panel bolt behind the passenger head light.

Measure 1 1/2" down and drill (1) hole 5/8" diameter.





Locate (3) hole grommets from the hardware sack kit.

Install grommets into previously drilled holes in firewall. Leave one hole without a grommet.

Locate 42" long liquid hose (smallest diameter) with 90 degree and 45 degree fittings.

From inner fender insert 90 degree end through top hole with the grommet. And attach to the expansion valve using (1) #6 o-ring and a few drops of mineral oil.

Route blue clutch wire from thermostat through the grommet as a shown.



LIQUID HOSE

SUCTION HOSE

HEATER HOSES



BLUE CLUTCH WIRE



Locate the suction hose.



Insert 90 degree fitting end of hose from inner fender and attach to evaporator coil as shown. Use a #10 o-ring and a few drops of mineral oil.

Locate (1) #8 worm gear clamp and carefully attach sensing bulb from expansion valve to the metal on the suction fitting.

Be sure that the sensing bulb is off set from bottom of tube.
As shown in the picture



Locate in hardware sack kit the refrigerant tape. And wrap all exposed metal surfaces to prevent condensation.

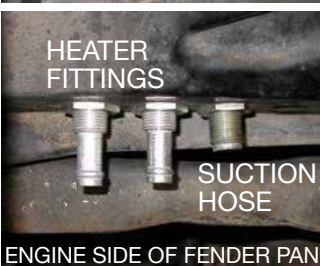
Also seal hose to the firewall using refrigerant tape.

Locate (2) heater hose bulkhead fittings from hardware sack kit.

Insert through the front (2) 7/8" dia holes previously drilled and attach using the nuts provided.

Insert bulkhead fitting on suction hose from under the inner fender panel. Attach using the nut provided.

Locate (2) 40" pieces of heater hose and (2) #8 worm gear clamps from the kit. Attach hoses to bulkhead fittings using worm gear clamps.





Route heater hoses across to firewall and insert through lower (2) grommets into the interior of truck.

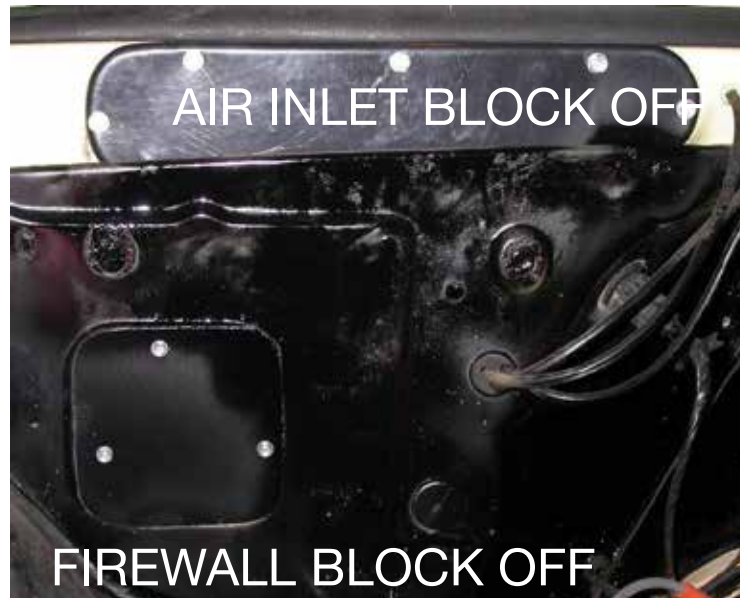
Route heater hoses up and attach to heater tubes on back of evaporator using (2) #8 worm gear clamps.



Access clamps through hole in firewall.

Locate firewall block off and air inlet block off from the kit.

Attach over the holes using (3) #10 x 3/4" tek screws on firewall block off, and #14 x 3/4" tek screws on air inlet block off.



AIR INLET BLOCK OFF

FIREWALL BLOCK OFF



Locate and drill (1) hole 11/16" diameter to the left and slightly down from drain nipple on bottom of evaporator.

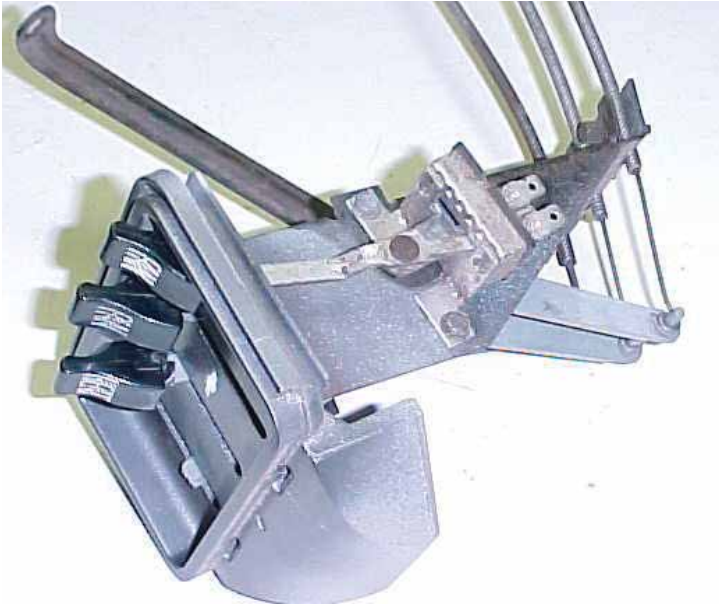
Locate the drain tube from hardware sack kit and attach to drain nipple and then insert through hole.



Locate in kit (1) piece of 2" dia.x 1 ft. of flex hose and (1) piece of 2" dia. x 2ft. flex hose

Use (1) piece 12" long, install it between right hose adaptor on defrost / heat duct and the passenger side defrost plenum.

Cut off (1) piece 18" long and install it between left hose adaptor on defrost / heat duct and the drivers side defrost plenum.



Locate Original Control Assembly that was set aside for modifications.

Remove blower switch knob and blower switch. Discard switch, knob.

Remove and discard all three original cables. Retain all cable clips and fasteners.

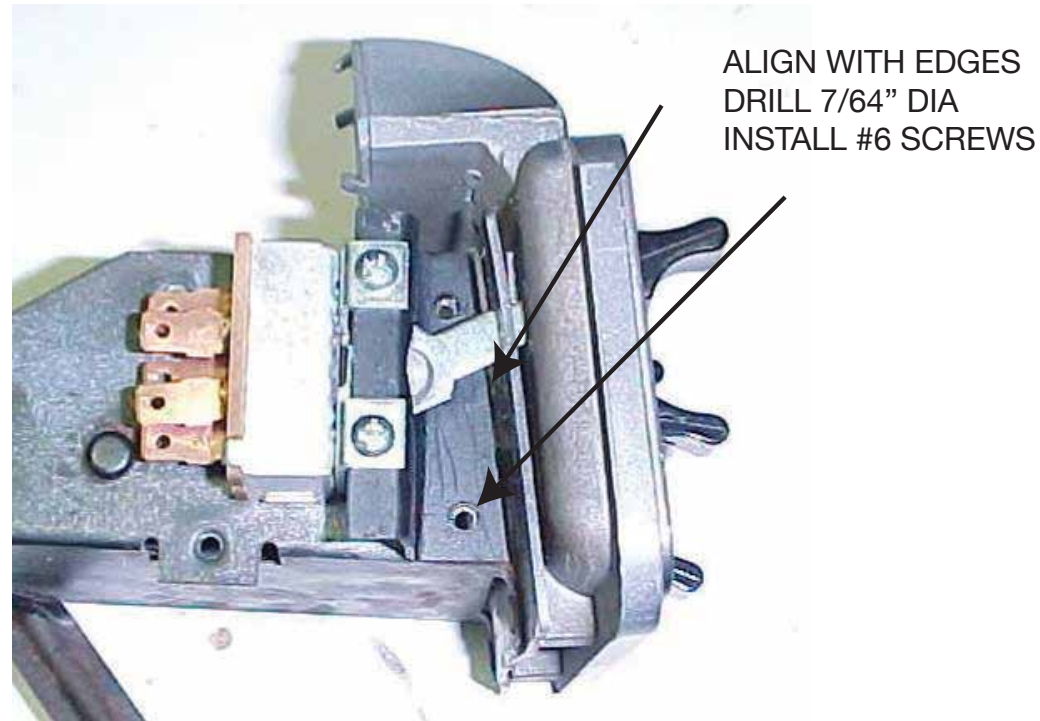
Locate in control sack kit the following items.

- 1) Blower switch assembly
- 2) Control knob (fan)
- 3) Temp cable

Place control assembly on its side. Insert Blower Switch through slot in the control face.

Rotating the switch for clearance slide new fan knob over the end of lever and tighten (1) #8 x 3/8" pan head screw securely.

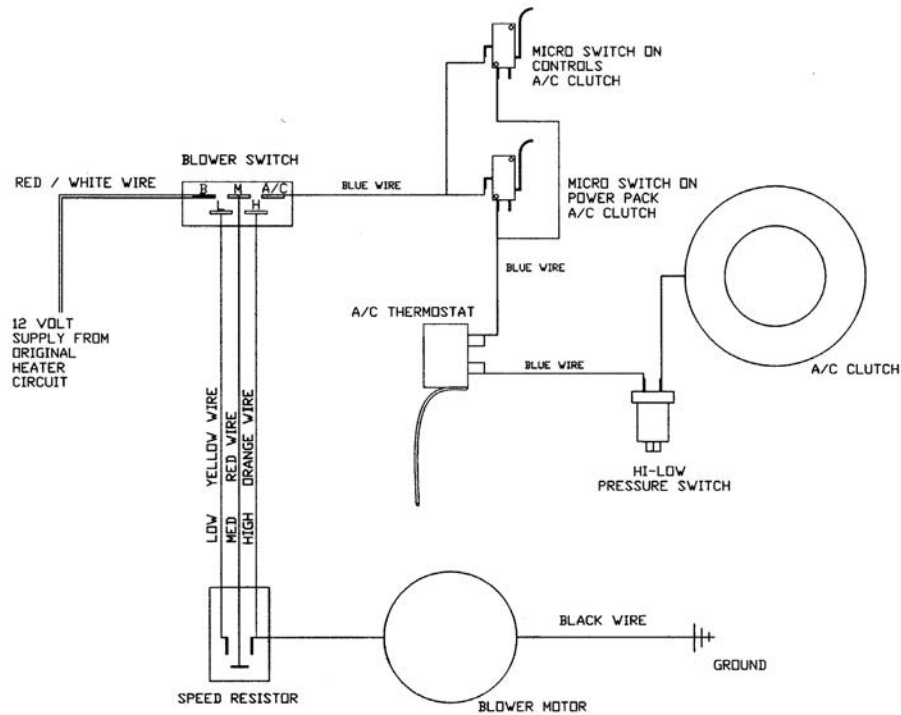




Place mounting bracket on side of control head. Align edges with the control. Drill (2) 7/64" dia. holes through switch bracket and into control bracket.

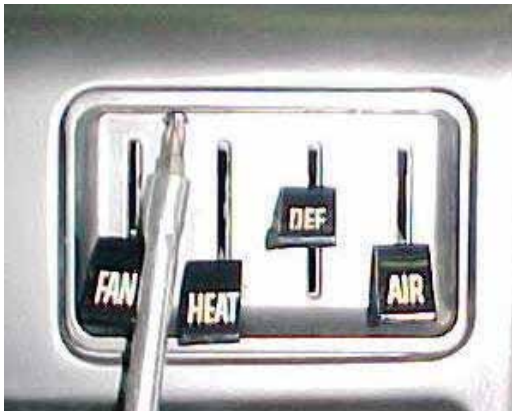
Locate in the control sack kit (2) #6 x 3/8" pan head screws. Attach switch assembly to the control head.

Remove center cable clamp and discard.



Reinstall control head using original hardware.

Route cables behind radio and to left of radio brace. Reattach radio support brace.



← RED / WHITE STRIP WIRE



Attach a male insulated 1/4" spade terminal to the brown wire that was cut.

Connect to Red / White stripe wire that comes from the new blower switch.
(Note: Last picture page 13)

NOTE: CHECK "HEAT" LEVER FOR SMOOTH OPERATION AND FULL DOOR TRAVEL.

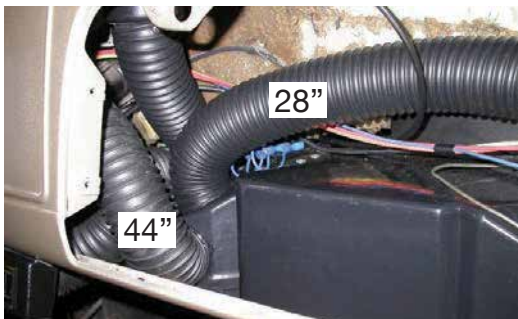
Route temperature control cable behind heat duct and down to the heater hoses below the unit. Insert cable through right grommet and out into wheel well.



Attach one end to right top outlet on duct.

Route flex hose up and over evaporator behind glove box.

Attach other end to hose adapter on back of passenger louver.





Locate in the hardware sack kit the (4) remote louver assemblies, and the #10 x $\frac{3}{4}$ " hex head tek screws.



Mount the (4) remote louver assemblies in desired location of dash. Locate 2" dia flex hose from the unit box and attach to the unit.



Locate in the kit, the new glove box.

Install along with Glove Box Door using original hardware.

Locate water control valve, (2) #8 worm gear clamps, (1) double hose clamp, and (1) #10 screw and nut.

Cut 5 1/2" from the firewall. Install water valve using the worm gear clamps.

Attach temperature cable and adjust so that when knob is all the way in water valve is off.

Using double hose clamp, with screw and nut, attach heater hoses to the fender.





CAUTION: Control cables are equipped with inline adjusters. Adjust the Defrost, Face / Heat door, and Water valve cable so that full travel of the Control lever, operates the door to its full travel. Make sure that water valve completely closes when Lever is in cold position.

The Micro Switch that is mounted on Face / heat door is used to turn on compressor clutch. This will occur when control lever is in face position. It may be necessary to adjust the thin metal arm on the switch. Make sure that Clutch Micro Switch is depressed when lever is in the face position.



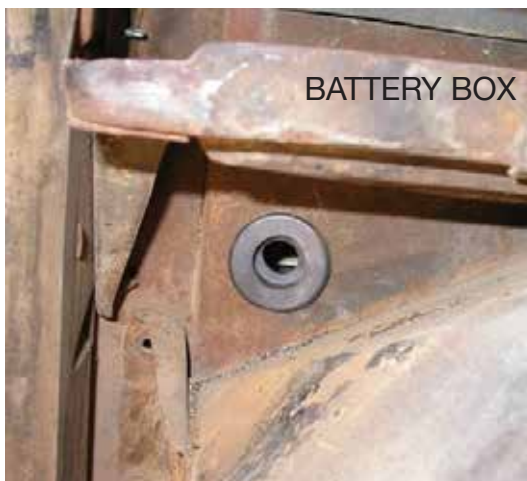
The engine compartment components should be installed at this time. Carefully follow the electrical diagram.

COMPRESSOR MOUNTING COMPONENTS WILL DIFFER DEPENDING ON ENGINE AND DRIVE ACCESSORIES THAT YOUR VEHICLE IS EQUIPT WITH. THE FOLLOWING INSTRUCTIONS SHOW PROPER INSTALLATION SEQUENCE FOR THIS VEHICLE

Remove bulkhead supports on drivers and passenger side. Retain all of original hardware.

Remove battery , original fan, fan shroud, drain and remove radiator. Retain all of the original hardware.

CAUTION: IF VEHICLE IS EQUIPTED WITH A (4) BLADE FAN IT IS NECESSARY TO UPGRADE TO A (6) BLADE FAN.



Locate following components from the under hood components box.

- Condenser
- Receiver Drier / Hi -Low pressure switch
- Drier mounting bracket
- Discharge Hose.
- Liquid Hose (2)
- Right and Left condenser mounting brackets
- (4) #10 x 3/8 hex washer head screws
- (2) #10 x 3/4" tek screws

Locate and cut (1) 1 3/8" dia. hole under battery box in radiator bulkhead.



Locate (1) grommet supplied and install into the hole.

Attach Hi / Low pressure switch to top of drier using a few drops of mineral oil.

Using drier bracket and #10 tek screws install drier assembly to passenger side radiator bulkhead between core opening and the grille.

Locate #6 liquid hose with 90 deg bulkhead fitting on one end.

Attach end with bulkhead through hole behind the head light previously drilled. Straight end connects to drier using (1) #6 o-ring and a few drops of mineral oil.

Attach the switch & boot to top of the receiver drier.

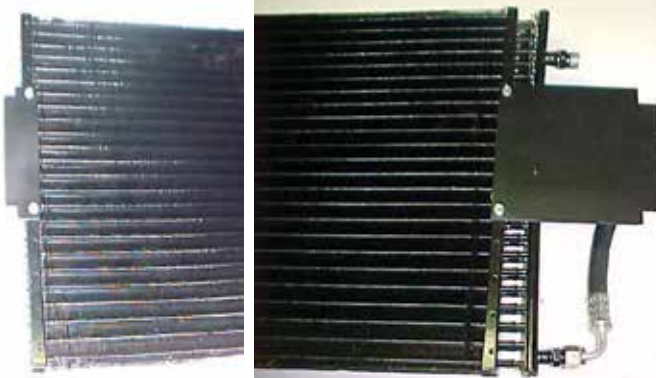




Locate under fender the liquid hose from firewall.

Route over body brace and attach to bulkhead fitting behind head light using (1) #6 o-ring and a few drops of mineral oil.

Drill (1) ½" dia hole to the left of fitting and install plastic grommet from kit. Route one wire from pressure switch through the grommet and connect to blue wire from thermostat.



Locate Condenser, short condenser mounting bracket, long condenser mounting bracket, and #6 liquid hose assembly.

Attach hose To lower connection on condenser. Use #6 o-ring and a few drops of mineral oil.

Attach brackets to condenser using (4) #10 x 3/8" hex head screws. Brackets are located in 4th hole from the top of condenser.

Place condenser assembly from engine side of bulkhead into the opening in bulkhead.

Condenser mounting brackets are designed to be clamped between the fan shroud mounting bracket and the bulkhead. Top (2) bolts need to be removed and others loosened. Slide condenser between and rest condenser brackets on the second set of bolts. The 2 top bolts can now be reinstalled. Tighten all mounting bolts.





Attach #6 hose to drier inlet using (1) #6 o-ring and a few drops of mineral oil.

Locate the discharge hose assembly.

Insert end without the service port through grommet and around front of the bulkhead.

The hose will route between drier and condenser mounting bracket. Attach to upper condenser fitting using (1) #8 o-ring and a few drops of mineral oil.

Insert second wire from pressure switch through same grommet as the hose. This will hookup to the compressor clutch.

Reinstall battery, original fan (or 6 blade heavy duty), fan shroud, and radiator. Use the original hardware.





Locate the suction hose and attach to compressor using (1) # 10 o-ring. Also attach discharge hose to compressor using (1) #8 o-ring adding a few drops of mineral oil to each connection. Tighten securely.

Route suction hose assembly from compressor to #10 bulkhead fitting on fender. Use (1) #10 o-ring and a few drops of mineral oil. Tighten both ends securely.

Reinstall the Bulkhead support cover both sides, and the Hood Latch mounting bracket.
Use the original hardware.

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

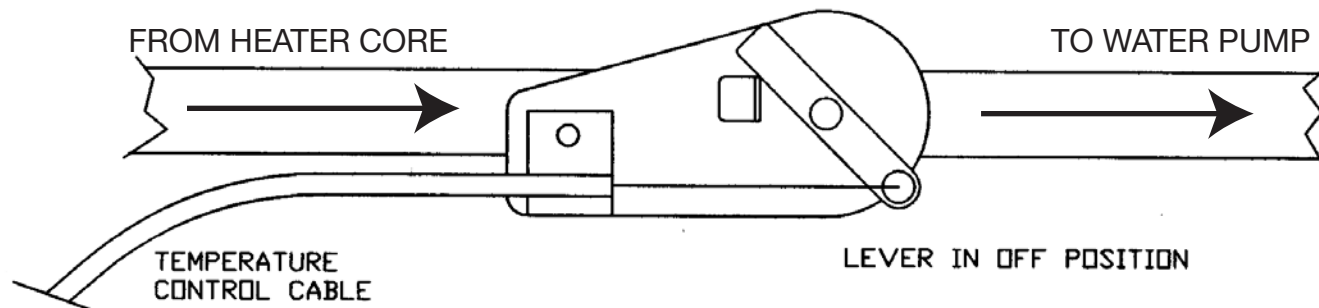
IMPORTANT

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.

NOTE: WATER VALVE = 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

New A/C System Preparation... A MUST READ!

Please read through these procedures before completing this new A/C system charging operation.

A licensed A/C technician should be utilized for these procedures to insure that your new system will perform at it's peak, and that your compressor will not be damaged.



- 1) Your radiator/cooling system is an integral part of your new system. Please insure that you have a 50/50 mix of distilled water and antifreeze. The heater coil **MUST** be purged (cycle heater control valve) to make sure no water, without antifreeze, is in the heater coil before you charge the A/C system.
- 2) Evacuate the system for 45 minutes (minimum).
- 3) **Your new compressor MUST be hand-turned 15-20 revolutions before and after charging with liquid. Failure to do this may cause the reed valves to become damaged** (this damage is NOT covered by your warranty).
- 4) Your new system requires 134a refrigerant. It will require 1.5 lbs (or 24 oz).
- 5) Your new compressor comes charged with oil - NO additional oil is needed.
- 6) Insure that the new belt is tight.
- 7) **DO NOT CHARGE SYSTEM WITH LIQUID REFRIGERANT!**

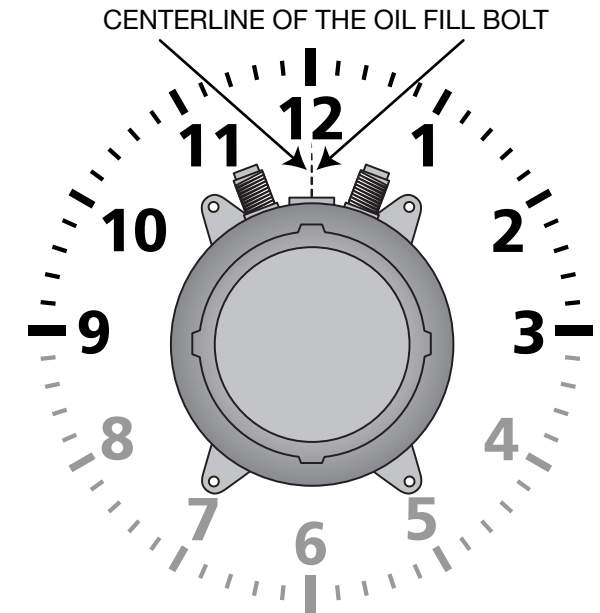
RECOMMENDED TEST CONDITIONS: (After system has been fully charged and tested for basic operation)

- Determine the temperature outside of the car
- Connect gauges or service equipment to high/low charging ports
- Place blower fan switch on medium
- Close all doors and windows on vehicle
- Place shop fan directly in front of condenser
- Run engine idle up to approx. 1500 rpm

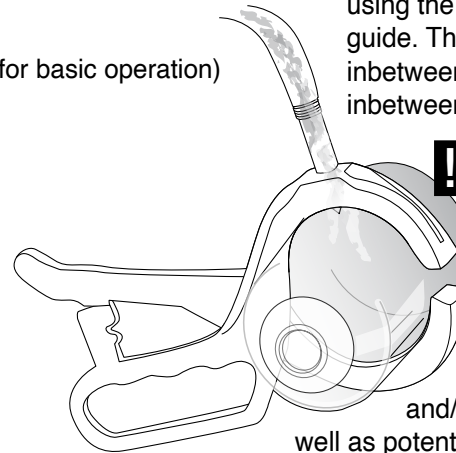
ACCEPTABLE OPERATING PRESSURE RANGES:

1. HIGH-SIDE PRESSURES (150-275 PSI)
2. LOW-SIDE PRESSURES (10-25 PSI in a steady state)

Readings above are based on an ambient temperature of 90° with an adequate airflow on condenser



CAUTION! When mounting your compressor and/or adjusting the belt use caution. Mount by using the centerline of the oil fill plug as your guide. The compressor can **ONLY** be mounted inbetween the 9 to 3 positions. **DO NOT** mount inbetween the 4 to 8 positions.



Do NOT tilt, shake or turn refrigerant can upside-down OR use a charging station to install refrigerant while the engine is running. Doing so will direct liquid refrigerant into the compressor piston

chamber, causing damage to reed valves and/or pistons and/or other components, as well as potentially seizing the compressor. Allow a minimum of 30 minutes for liquid to "boil off." You must hand turn the compressor hub (not the pulley) a minimum of 15 complete revolutions prior to starting the engine with the clutch engaged.

TROUBLESHOOTING GUIDE

TEST CONDITIONS USED TO DETERMINE SYSTEM OPERATION

(THESE TEST CONDITIONS WILL SIMULATE THE AFFECT OF DRIVING THE VEHICLE AND GIVE THE TECHNICIAN THE THREE CRITICAL READINGS THAT THEY WILL NEED TO DIAGNOSE ANY POTENTIAL PROBLEMS).

- B. CONNECT GAUGES OR SERVICE EQUIPMENT TO HIGH/LOW CHARGING PORTS.
- C. PLACE BLOWER FAN SWITCH ON MEDIUM.
- D. CLOSE ALL DOORS AND WINDOWS ON VEHICLE.
- E. PLACE SHOP FAN IN FRONT OF CONDENSER.
- F. RUN ENGINE IDLE UP TO 1500 RPM.

ACCEPTABLE OPERATING PRESSURE RANGES (R134A TYPE)

- 1. HIGH-SIDE PRESSURES (150-275 PSI) **Note- general rule of thumb is two times the ambient (daytime) temperature, plus 15-20%.*
- 2. LOW-SIDE PRESSURES (10-25 PSI in a steady state).

CHARGE AS FOLLOWS: R134A = 24 OZ.
NO ADDITIONAL OIL IS NECESSARY IN OUR NEW COMPRESSORS.

TYPICAL PROBLEMS ENCOUNTERED IN CHARGING SYSTEMS

NOISY COMPRESSOR. A noisy compressor is generally caused by charging a compressor with liquid or overcharging

- A. If the system is overcharged both gauges will read abnormally high readings. This is causing a feedback pressure on the compressor causing it to rattle or shake from the increased cylinder head pressures. System must be evacuated and re-charged to exact weight specifications.
- B. Heater control valve installation - Installing the heater control valve in the incorrect hose. Usually when this occurs the system will cool at idle then start to warm up when raising the RPM's of the motor. THE HEATER CONTROL IS A DIRECTIONAL VALVE; MAKE SURE THE WATER FLOW IS WITH THE DIRECTION OF THE ARROW. As the engine heats up that water transfers the heat to the coil, thus overpowering the a/c coil. A leaking or

faulty valve will have a more pronounced affect on the unit's cooling ability. Installing the valve improperly (such as having the flow reversed) will also allow water to flow through, thus inhibiting cooling. Check for heat transfer by disconnecting hoses from the system completely. By running down the road with the hoses looped backed through the motor, you eliminate the possibility of heat transfer to the unit.

- C. Evaporator freezing - Freezing can occur both externally and internally on an evaporator core. External freeze up occurs when the coil cannot effectively displace the condensation on the outside fins and the water forms ice (the evaporator core resembles a block of solid ice), it restricts the flow of air that can pass through it, which gives the illusion of the air not functioning. The common cause of external freezing is the setting of the thermostat and the presence of high humidity in the passenger compartment. All door and window seals should be checked in the event of constant freeze-up. A thermostat is provided with all units to control the cycling of the compressor.
- D. Internal freeze up occurs when there is too much moisture inside the system. The symptoms of internal freeze up often surface after extended highway driving. The volume of air stays constant, but the temperature of the air gradually rises. When this freezing occurs the low side pressure will drop, eventually going into a vacuum. At this point, the system should be checked by a professional who will evacuate the system and the drier will have to be changed.
- E. Inadequate airflow to condenser - The condenser works best in front of the radiator with a large supply of fresh air. Abnormally high pressures will result from improper airflow. Check the airflow requirements by placing a large capacity fan in front of the condenser and running cool water over the surface. If the pressures drop significantly, this will indicate the need for better airflow.
- F. Incorrect or inadequate condenser capacity - Incorrect condenser capacity will cause abnormally high head pressures. A quick test that can be performed is to run cool water over the condenser while the system is operating, if the pressures decrease significantly, it is likely a airflow or capacity problem.
- G. Expansion valve failure - An expansion valve failure is generally caused by dirt or debris entering the system during assembly. If an expansion valve fails it will be indicated by abnormal gauge readings. A valve that is blocked will be indicated by high side that is unusually high, while the low side will be unusually low or may even go into a vacuum. A valve that is stuck open will be indicated by both the high and low pressures rising to unusually high readings, seeming to move toward equal readings on the gauges.
- H. Restrictions in system - A restriction in the cooling system will cause abnormal readings on the gauges. A high-side restriction (between the compressor and the drier inlet) will be indicated by the discharge gauges reading excessively high. These simple tests can be performed by a local shop and can help determine the extent of the systems problem.

Trouble Shooting Your Classic Auto Air A/C System

PROBLEM: system is not cooling properly

ISSUE: cold at idle, warmer when raising engine RPM's

Make sure the Water Valve is positioned correctly

The water valve is a directional valve and should be installed with the arrow pointing towards the water pump, it should be connected to the heater hose that runs from the heater core to the water pump. If the water valve is connected to the incorrect hose it allows water to circulate through the system via the heater core over powering the cooling effect of the A/C coil, (normally the air conditioning is functioning properly).

Step 1: Check placement of the water valve, correct if needed. (In some cases changing the location of the water valve may not fix the above problem.) Continue to next step.

Step 2 If changing the location of the water valve does not rectify the issue, then possibly the water valve is permanently damaged and may need to be replaced. To check the integrity of the water valve completely remove the water hoses for the heater core and "loop" together. (This will remove the heater system completely from the possibilities) If the system now cools, replace the water valve

Verify Adequate Air Flow to Condenser

For an air conditioning system to function properly there has to be adequate airflow across the condenser. The function of the condenser is to dissipate heat, without proper airflow your system will not cool correctly in the cabin of your vehicle.

Step 1: connect gauges to a/c hoses. The pressures should be: with the ambient temp is 90, low side pressures should be between 10-25 psi, high side pressures should be between 150-275 psi

Step 2: IF the low side pressures are normal and the high side pressures are high then there might be an airflow issue, continue to next step.

To test air flow to Condenser do the following three tests:

1. Place a piece of paper on the condenser with the car in idle and see if paper is held in place.
2. With car in idle, attach gages, and place a large capacity fan in front of

the condenser. What happens to the pressures?

3. With car still in idle and gages attached, pour water down the front of the condenser. What happens to the pressures?

If the paper is held in place you are at least getting some air flow. If the high side decreases during test 2 & 3 then your condenser is not getting enough air which is causing your system to not cool properly. To correct this issue you will need a more powerful mechanical fan.

Step 3: Confirm correct Refrigerant charge in System

All of our systems should be charged with 24 oz or 1.5 lbs of R134A Refrigerant only. If overcharged you will need to evacuate the system and recharge with the correct amount.*

What measurements mean:

Low Temp and High Pressure seem to be equal...

You have a malfunctioning expansion valve that is stuck open.

High Side is extremely high and Low Side is extremely low (possibly into vacuum)...

There is a blockage in the system. Remove hoses and blow compressed air through in both directions. If pressures don't change its possible that your expansion valve is stuck closed and would have to be replaced.

*Compressor Concerns:

This is often misdiagnosed as a problem for the system not cooling properly. If you have a noisy compressor it is due to improper charging of refrigerant. An overcharged (more than 24 oz or 1.5 lbs R134A) compressor can cause rattling. If charged with pure liquid there is a high probability you have bent reed valves that are causing tapping sound.

SCAN QR code
with your mobile camera

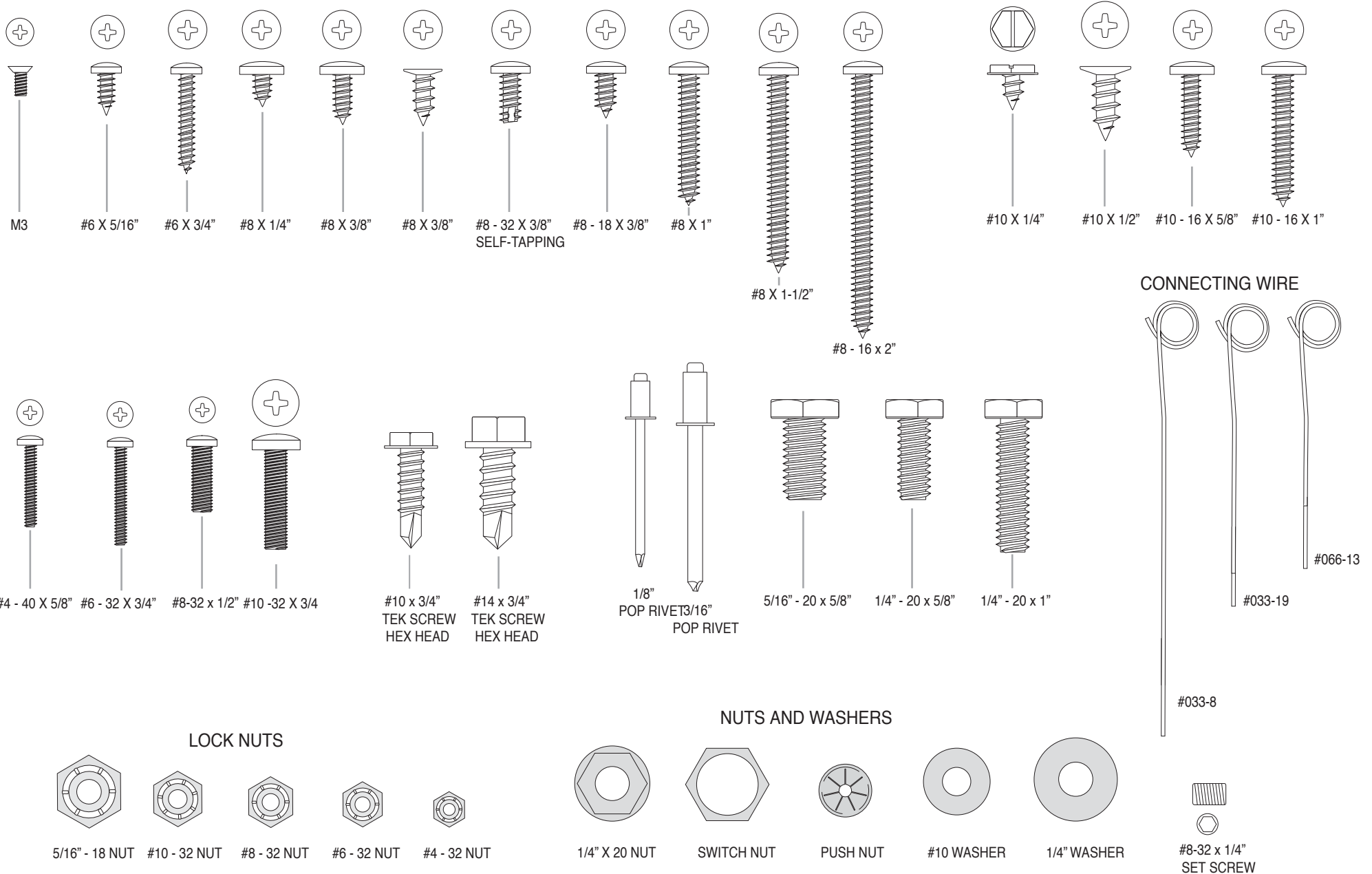
Get the technical support you want the moment you need it, with no wait times. Simply **SCAN** the **QR code** and be directly taken to our support section to troubleshoot all things A/C.



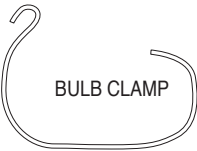
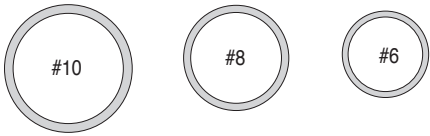


Classic Auto Air Hardware Reference Guide

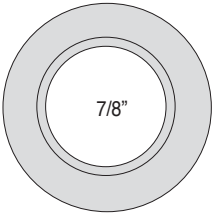
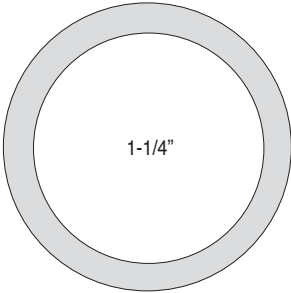
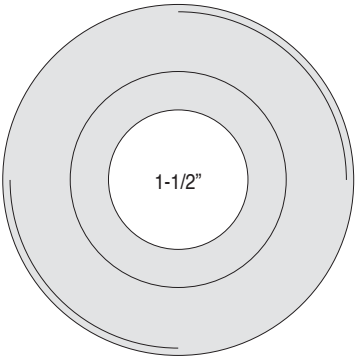
This is our basic line-up of hardware. No single kit will not contain all of these, but you can use this guide to match-up hardware for shape and size (all of these are actual size.)



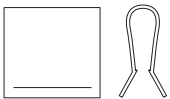
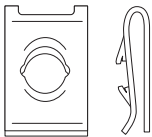
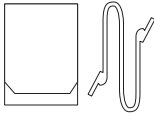
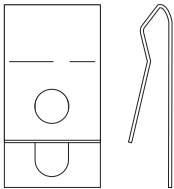
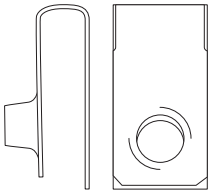
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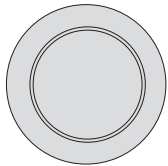
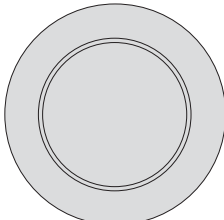
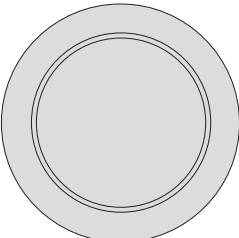
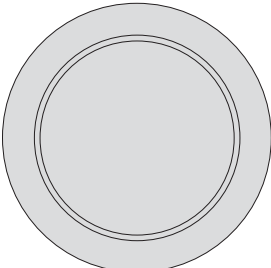
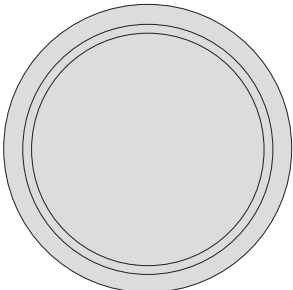
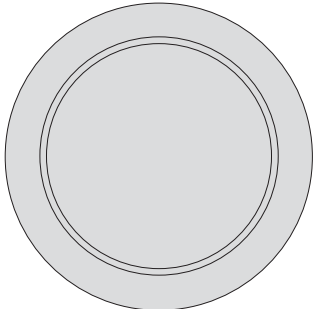
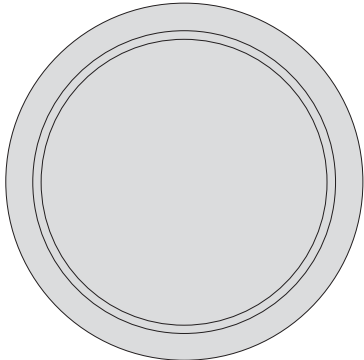
GROMMETS



CLIPS



HOLE PLUGS



HOSE CLAMPS

