Installation Manual

1964-65 CHEVROLET CHEVELLE
1964-65 CHEVROLET EL CAMINO
1964-65 CHEVROLET MALIBU

DOCUMENT #1-1047

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 During the installation you might find the opportunity to repair or upgrade non-working or out of date components.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

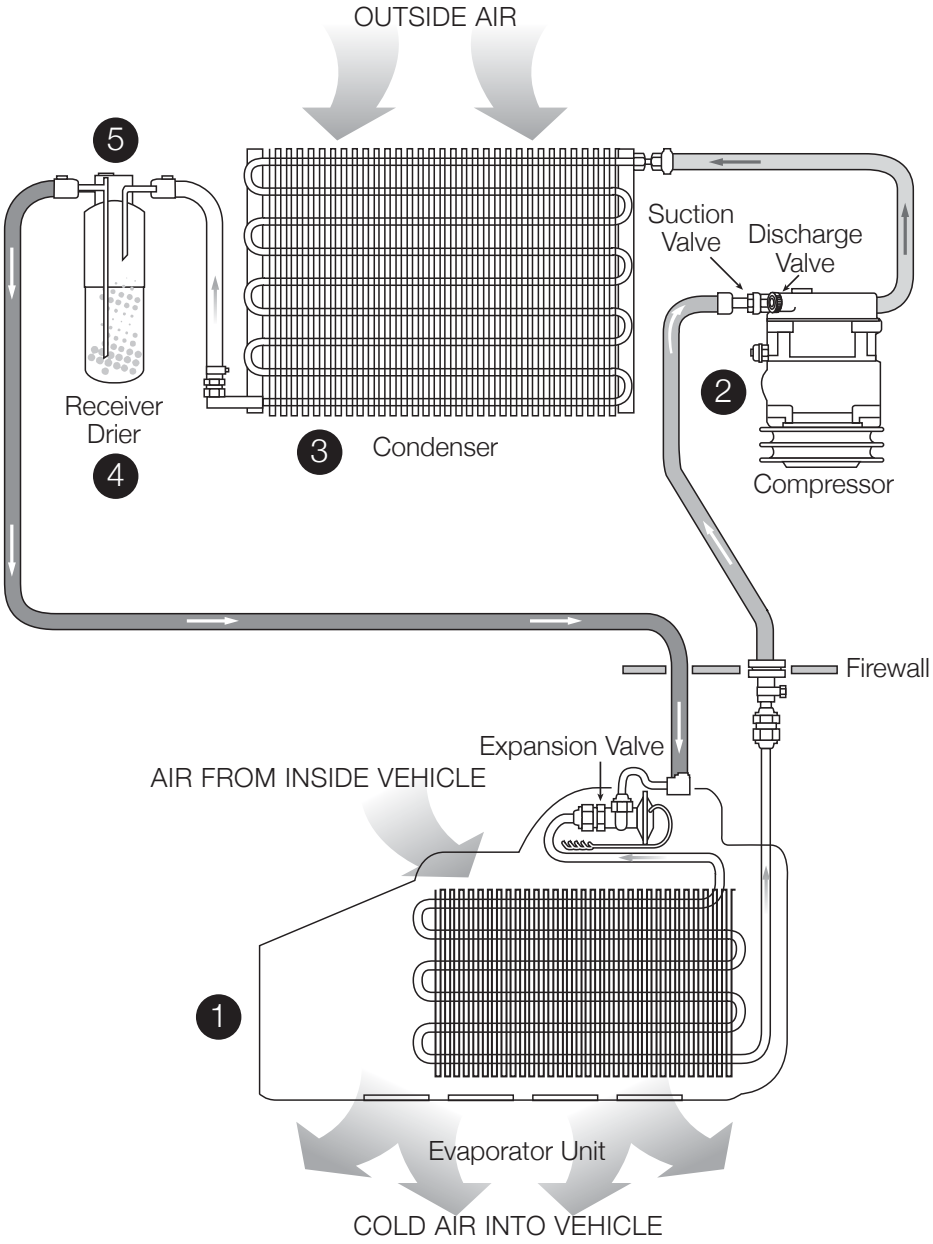
- ☐ Fittings: Use one or two drops of mineral oil (supplied with your kit) on ALL rubber o-rings, threads and where o-rings seat in fittings. Do not use thread tape or sealants.
- ☐ Measure twice (or more), cut once
- ☐ **Should you have any technical questions, or feel you have defective components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

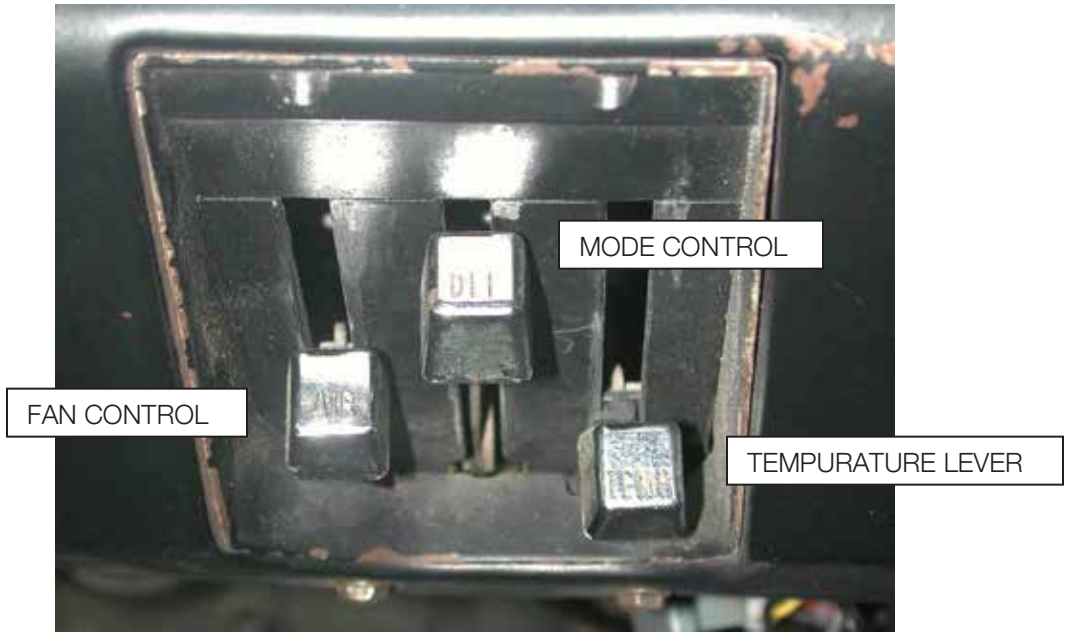
1. **Evaporator with Blower Fan** In order to remove the heat from the air in the vehicle, the A/C evaporator allows the refrigerant to absorb the heat from the air passing over it. The blower fan moves cool air out into the car interior.
2. **Compressor** The compressor pumps and circulates the refrigerant 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 vehicle 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
NOTE: INSTRUCTIONS DEPICT CHEVELLE
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 FUCTION 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 which is mounted on the defrost air housing.

FLOOR / FACE / DEFROST MODE: When the CENTER lever is pulled all the way to the TOP, it will direct the air to the defrost outlets. When the lever is moved into the CENTER position the air is directed to the Dash Louvers. When the lever is pushed to the bottom, the air will be directed onto the floor outlets. When the lever is in the Defrost position the A/C Compressor is activated and provides Dehumidification.

TEMPERATURE CONTROL: The temperature lever as shown is in the HOTTEST temperature position. As the lever is pulled up the temperature of the discharged air will
fall to the COLDEST point.
Note: The temperature lever will function in any of the modes.

AIR CONDITIONING MODE: The picture shows the controls in the A/C Mode (air-flow out the louvers).
When Air Conditioning is required the compressor clutch must be activated. This is accomplished when the CENTER lever is in the Center position. When the compressor is activated the Temperature Lever will control the air from maximum cold through maximum heat.

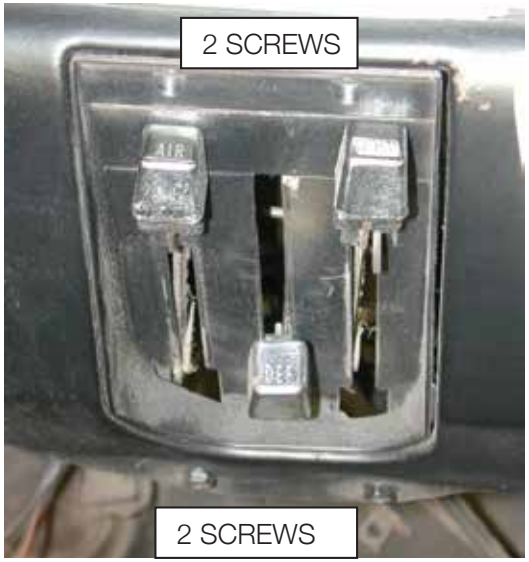
Remove Glove box door and glove box, discard glove box retain original hardware.

Removal of Original Heater Assembly can be accomplished by disconnecting the three control cables. One attached to the Temperature door.

One attached to the Heat / defrost door. This can be found behind heater box next to the throttle cable.

The third cable is located on top of heater next to the defrost ducts.

Disconnect electrical harness at the resistor block.



Remove (4) screws located under the control head.

Remove the control head and set aside for modification and reinstall.

In order to remove the heater assembly it is necessary to remove the Blower Housing Assembly first.

Carefully lift vehicle and place support stands under center of the vehicle as shown.

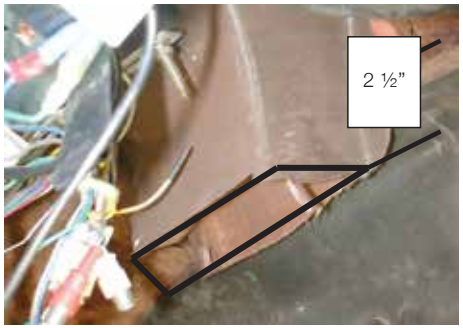
It is necessary to lower the inner fender well on the passenger side. Remove the passenger front tire. Remove and retain (9) bolts from around the inner fender. Lower the inner fender well to gain access to (2) screws above and below the blower motor assembly.

Remove (7) screws around the perimeter of the Blower Housing. The (2) screws around the blower motor can be accessed from below and between fender well and fender.

Retain the (2) screws around blower motor.

Locate the Air Inlet Block Off Plate. Attach the block off behind the Hood Hinge assembly. Use the original hardware.

Reinstall Inner Fender Well using the original hardware. Reinstall front tire and remove the jack and stands.



DRAIN COOLANT FROM RADIATOR.

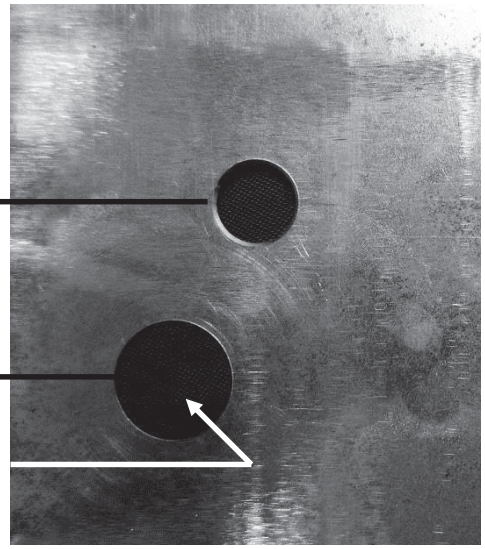
Remove Heater hoses from heater coil at firewall.

Remove heater assembly, located behind the glove box and discard.

Locate the Defrost Air Duct behind radio in the instrument panel.

Carefully trim the bottom section up to line as shown.

Locate in the hardware sack kit the 1/8” seal. Wrap around the opening as shown.



Locate on firewall the hole that previously mounted the heater box. From engine side drill (1) ¾" dia. hole for the drain tube as shown.

On last page of the instructions you will find a template.

Above radio and in the middle of instrument panel
place template on dash.

Carefully ruff cut center out of dash using template as a guide.

Then go back with a file and open the hole so that the louver slides through and snaps in place. Insert louver into opening.

Locate behind control opening the original wire harness.

Cut off plug to the resistor.

Locate wire harness that was attached to the blower switch. Cut brown wire and attach a Male Spade connector. This is the power wire for the a/c unit.

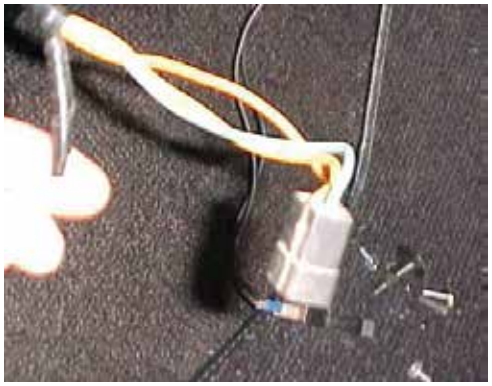
Cut remaining wires from the plug as far as back possible.

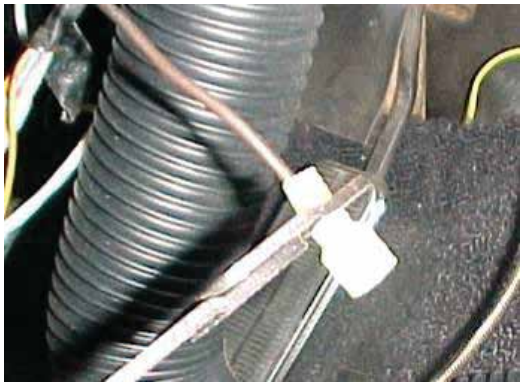
Attach a Male spade connector to the brown wire as shown.

All of the modifications to the vehicle are complete we will now begin the installation of the Unit.

Locate the Evaporator, Defrost Duct Assembly and (2) #10 x 5/8" pan head screws.
Attach defrost duct to evaporator using
(2) #10 screws. Be sure that s-clips are pushed over outlet on the back side.

Attach wire harness from the actuator using diagram






NEXT STEP SHOWN FROM THE ENGINE SIDE

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

Insert upper rear Evaporator mounting stud through the original hole as shown. Attach using (1) ¼" – 20 flange nut provided.

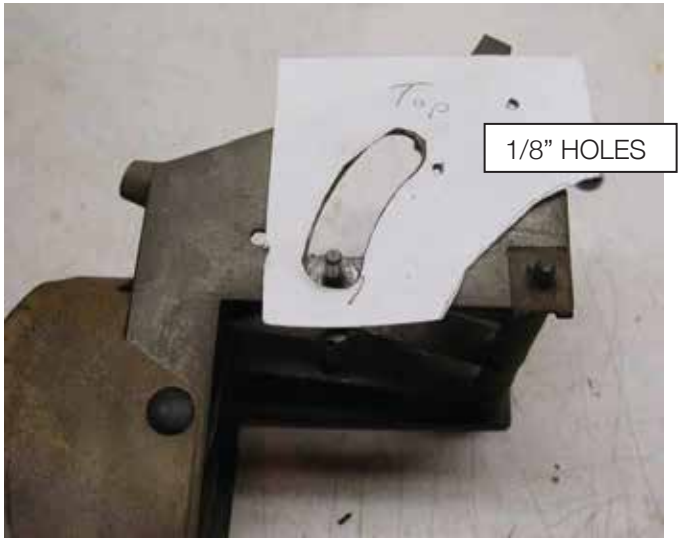
Locate on front of the evaporator
(2) evaporator support brackets.

Drill (2) 1/8" dia. holes through the braces and into the lower instrument panel.

Attach braces to the panel using (2) #10 x 5/8" pan head screw.

Locate Firewall Block Off plate, and (7) #10 x ¾" hex head tek screws.

On engine side of the firewall attach over the hookup tubes from evaporator using (7) #10 x ¾" 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 upper heater hookup tube. Cut 6” off end of the RETURN LINE and install the 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 the original control assembly. Remove and discard the following components. Retain all original hardware.

(1) Original Blower Switch
(2) Heat Cable
(3) Temp Cable
(4) Air Shutoff Cable

Locate the control head.

Locate the Drill Template provided.

Align with the curved slot on side of the control head.

Drill (2) holes 1/8” dia.

Locate in control sack kit the blower switch, switch connecting wire, (1) 3/16” push nut, and
(2) #6 x 3/8” pan head Philips screws..

Place the blower switch into position. Attach using (2) #6 x 3/8” pan head screws.

Hook the wire through blower switch hole in the lever and then over the Control Lever. Use push nut to hold the connecting wire.

Locate in the control sack kit the (SHORT) Heat / Defrost control cable, the (LONG) Temperature control cable, (2) 3/16” push nuts and (2) Cable Clips.

Attach temperature control cable and clip to TOP lever using the original screw and 3/16” push nut.

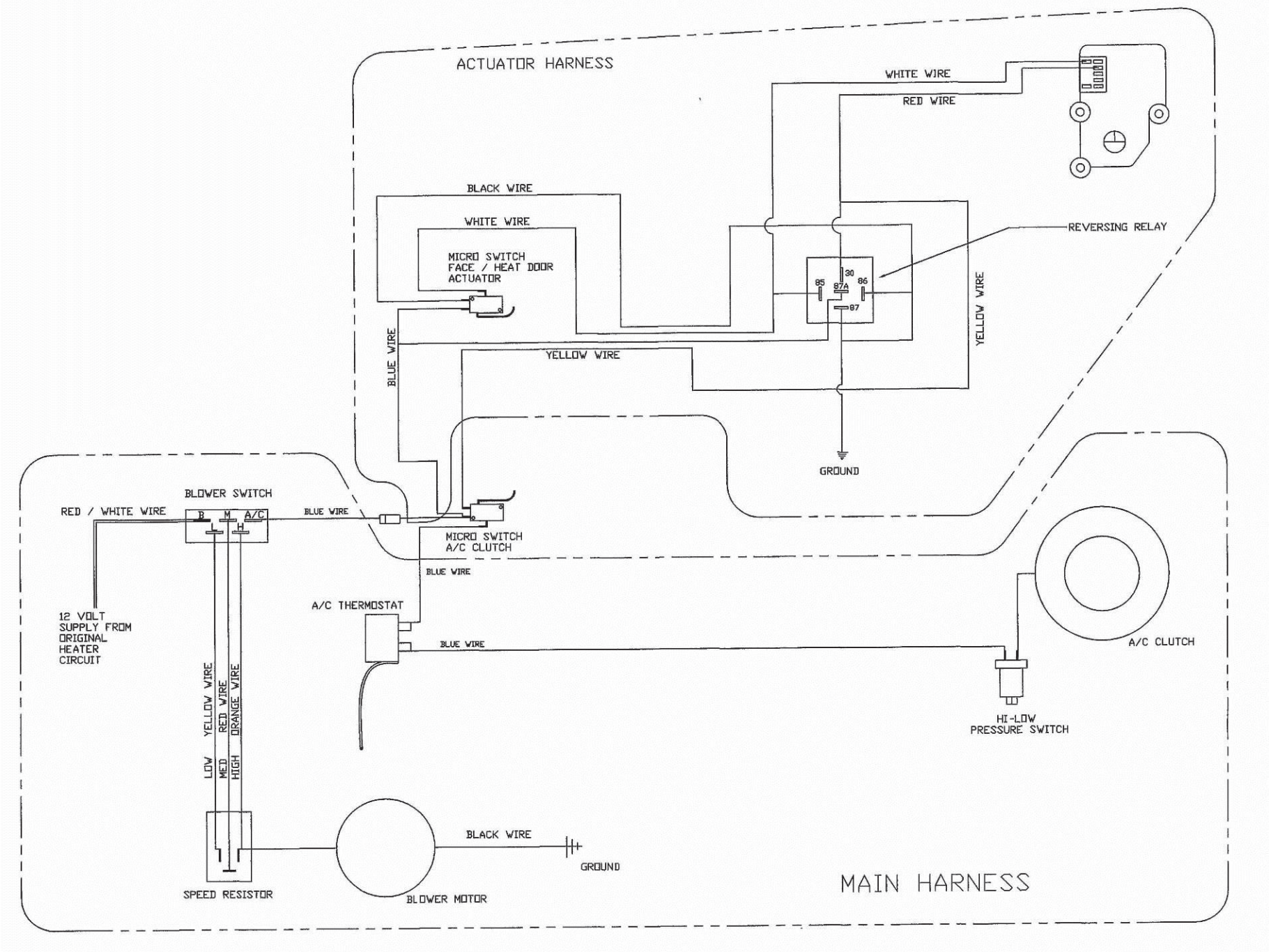
Attach the Heat / Defrost cable to the MIDDILE lever using (1) cable clip, (1) push nut and the original screw.

Attach Wire Harness supplied in unit to the blower switch. Reference the wiring diagram on next page.

Reinstall control head using original hardware.

Route electrical assembly to Defrost Duct assembly and hookup the micro switch. Route main harness to resistor and blower motor. Route blue clutch wire over evaporator and out through hole in firewall above the unit. Secure ground from electronic actuator and blower motor using (2) #10 x ¾ “ hex head Tek screw.

REFER TO WIRING DRAWING ON NEXT PAGE FOR PROPER CONNECTIONS.


ACTUATOR HARNESS
WHITE WIRE
RED WIRE
BLACK WIRE
WHITE WIRE
MICRO SWITCH
FACE / HEAT DOOR
ACTUATOR
REVERSING RELAY
30
85
87A
86
87
YELLOW WIRE
BLUE WIRE
YELLOW WIRE
GROUND
BLOWER SWITCH
RED / WHITE WIRE
B
M
A/C
L
H
BLUE WIRE
MICRO SWITCH
A/C CLUTCH
BLUE WIRE
A/C THERMOSTAT
12 VOLT
SUPPLY FROM
ORIGINAL
HEATER
CIRCUIT
BLUE WIRE
A/C CLUTCH
HI-LOW
PRESSURE SWITCH
LOW YELLOW WIRE
MED RED WIRE
HIGH ORANGE WIRE
BLACK WIRE
GROUND
SPEED RESISTOR
BLOWER MOTOR
MAIN HARNESS

Connect power wire (brown / from the original harness) to Red / White stripe from the new harness supplied.

Insert light socket back into the control head.

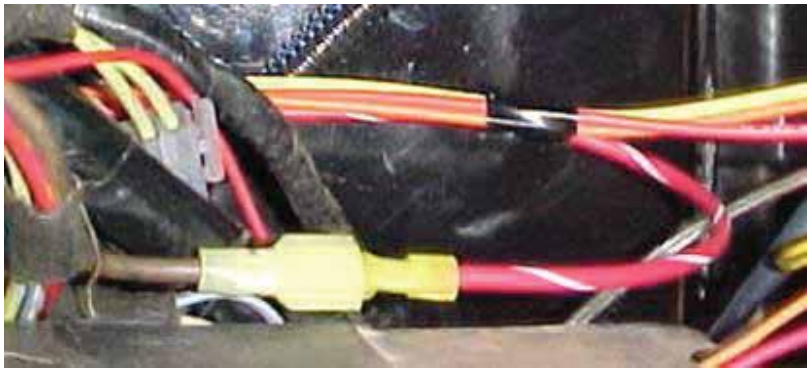
Route temperature cable in front and over the evaporator assembly and out through hole above the unit. Attach this cable to the water valve.

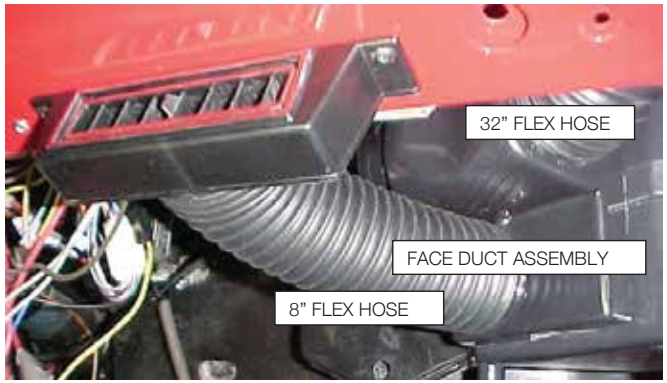
Set control lever in the Cold position and be sure that the water valve is closed.
Locate insulation tape and seal around cable at firewall.

Route defrost cable and attach to the defrost / heat duct. Insert cable into third hole at the bottom.

Attach using (1) #8 x 1/2” pan head Phillips screw.

Locate the face duct assembly. Attach to the evaporator outlet using s-clips at top and bottom of the duct.





Locate 2“ Dia. flex hose, find (1) piece 36” long and cut to 32”. Attach to face duct to right outlet. Route above and behind glove box opening and down to the passenger kick panel.

Locate 2“ Dia. flex hose, find (1) piece 36” long. Attach to face duct to left outlet. Route above and behind instrument cluster and down to the drivers kick panel.

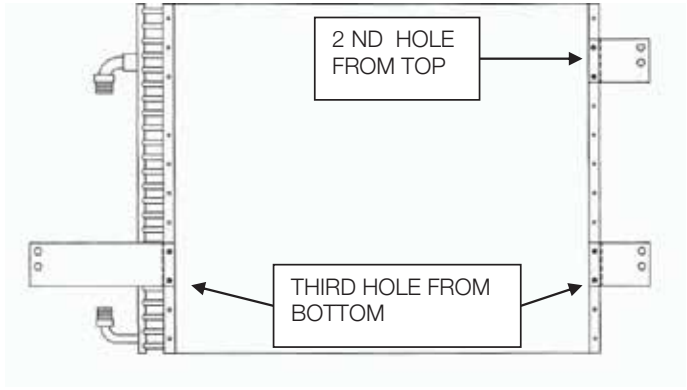
Locate the 2“ Dia. flex hose, find (1) piece 24” long and cut to 16”. Attach to face duct to top outlet. Route straight up and attach to the center louver.

Locate in the hardware sack kit (3) Under Dash Louvers. Attach (1) under center of Instrument Panel as shown. Attach using (2) #10 x 5/8” pan head screws. Also find (1) 12” of 2” dia. flex hose and cut to 8”. Attach flex hose to louver and back to front outlet on the face duct..

Attach (1) of the louvers under passenger side of the instrument panel using (2) pan head screws as shown.

Attach (1) of the louvers under drivers side of the instrument panel using (2) pan head screws as shown.

ATTACH FLEX HOSE TO BACK OF THE PASSENGER AND DRIVERS LOUVER ASSEMBLY



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

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

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

Remove the hood latch assembly.

Retain all original hardware.

Locate the Condenser, (3) condenser mounting brackets and (6) #10 x 3/8” hex head screws. Attach brackets to the condenser as shown.

Slide condenser assembly between radiator bulkhead and the grille assembly.

Locate over the radiator mounting studs. Locate in the condenser kit (3) 5/16” nuts. Install 5/16” nuts as shown.

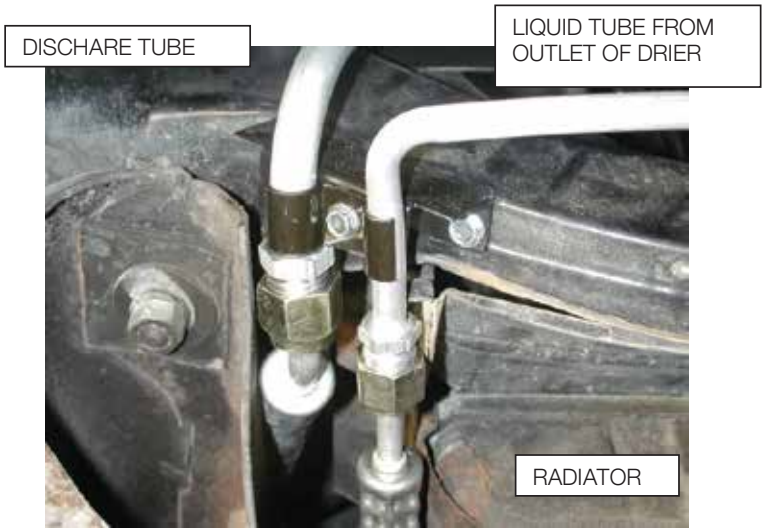
Locate the Top Left condenser mounting bracket, Receiver / Drier, Drier Mounting Bracket, #8 discharge Aluminum Liquid tube, #6 liquid tube (condenser to drier) , (2) #6 o-rings, (1) #8 o-ring, and (2) #10 x 3/8” hex head screws.

Install Receiver drier to condenser on the bottom hole only. Location is fifth hole from the top.

Attach the Liquid Tube (condenser to drier) as shown. Install using a few drops of mineral oil on the o-ring fittings, and secure.

Picture shows attachment from lower condenser fitting to the drier.

IT IS NECESSARY TO REMOVE THE FRONT BUMPER TO INSTALL LIQUID TUBE



Attach discharge tube from the upper condenser fitting and route down.

Locate condenser tube support bracket, and (3) #10 tek screws from the condenser kit.

Attach bracket to bottom of the radiator bulkhead as shown.

Locate the liquid tube (drier outlet)
and (1) # 6 o-ring.

Attach liquid tube to outlet of the drier using (1) #6 o-ring and a few drops of mineral oil. Route under drier and over to the tube support bracket.

Attach the (2) tubes to the support bracket as shown. Tighten all fittings.

Locate the last condenser mounting bracket, (1) 5/16” nut, and (1) #10 x 3/8” hex head screws.

Attach bracket over the radiator stud. Attach mounting bracket to top hole of drier bracket and the condenser using (2) #10 x ½ hex head screws, and the 5/16” nut on the radiator stud.

Locate hi-low pressure switch and electrical harness from the condenser kit. Attach the switch to top of the drier using a few drops of mineral oil.

Attach electrical harness to the pressure switch and route wires into the engine compartment.

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

Locate the Discharge Hose from the condenser kit. Attach to #8 fitting below radiator and route up to the compressor.

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

Locate Liquid Hose, (2) #6 o-rings, Suction Hose and (2) #10 o-rings.

Attach liquid hose to firewall fitting and route down to fitting below the radiator. Use (2) #6 o-rings and a few drops of mineral oil.

Attach Suction Hose to fitting at firewall and other end to the compressor as shown. Use (2) #10 o-rings and a few drops of mineral oil.

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

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.

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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.

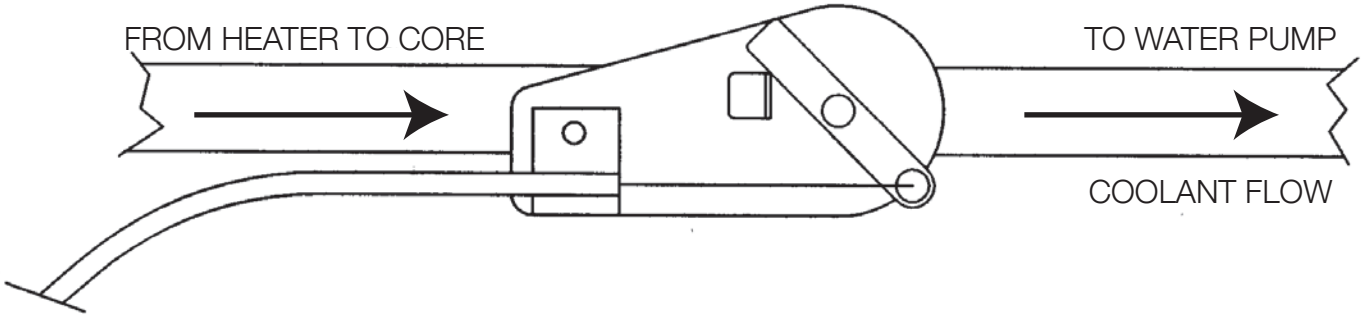
IMPORTANT!

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.

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!**

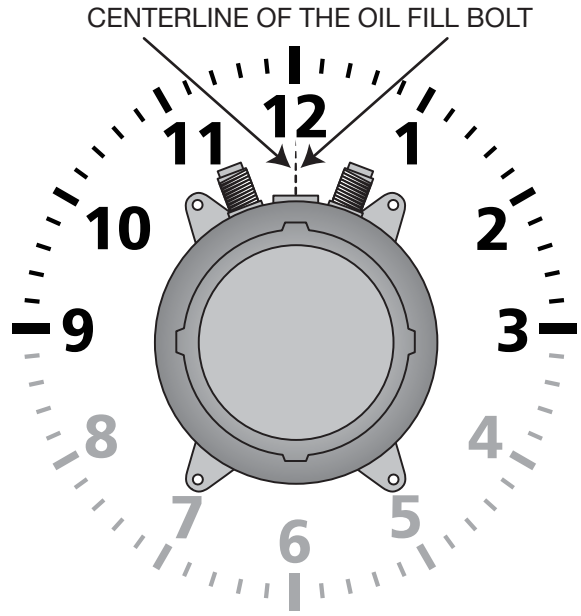
RECOMMENDED TEST CONDITIONS: (After system has been fully charged and tested for basic operation)

- 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

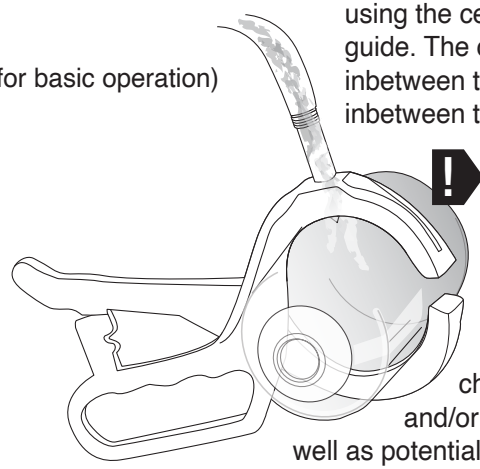
ACCEPTABLE OPERATING PRESSURE RANGES:

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:

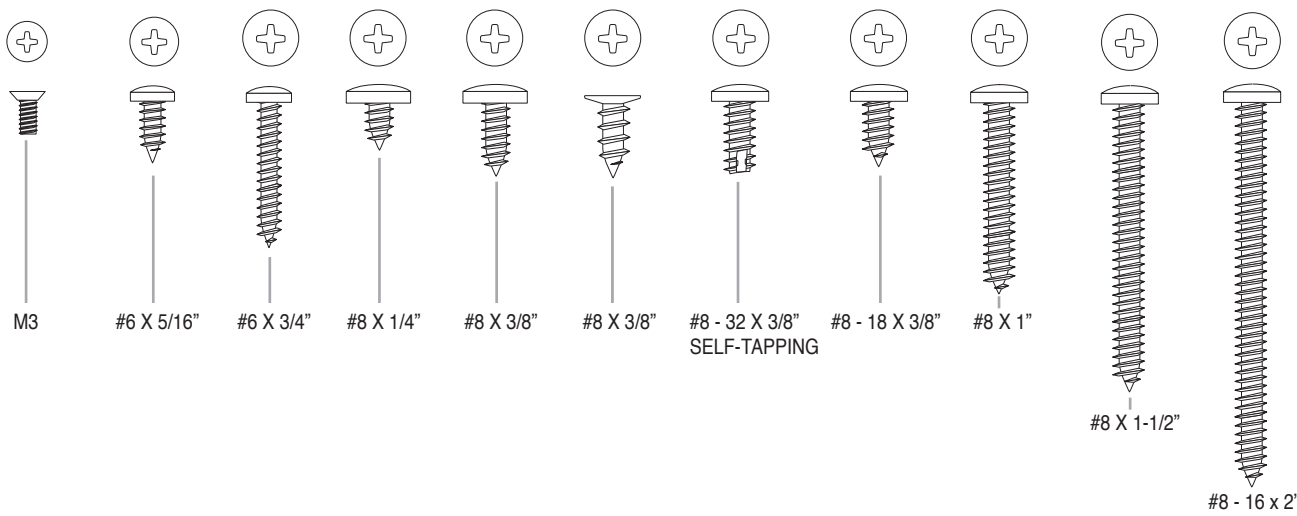
This is often misdiagnosed as a problem for the system not cooling properly. If you have a noisy compressor it is due to improper charging of refrigerant. An overcharged (more than 24 oz or 1.5 lbs R134A) compressor can cause rattling. If charged with pure liquid there is a high probability you have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

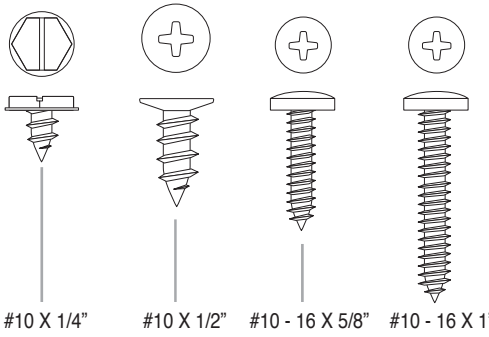
SCAN QR code
with your mobile camera

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.

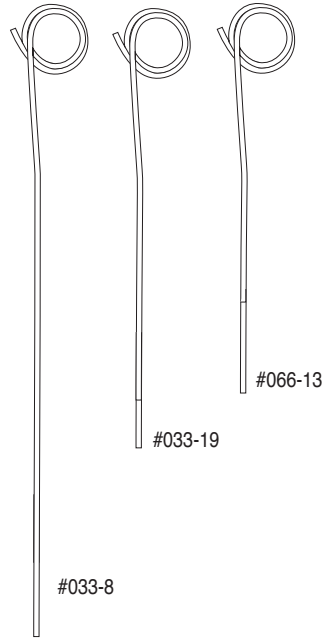
Classic Auto Air Hardware Reference Guide

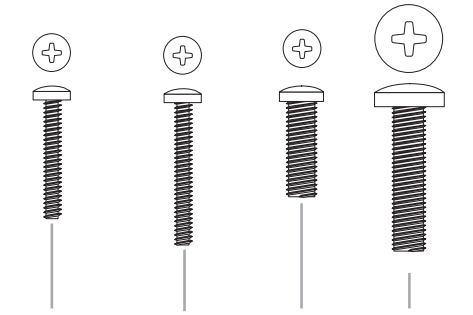
This is our basic line-up of hardware. No single kit will not contain all of these, but you can use this guide to match-up hardware for shape and size (all of these are actual size.)

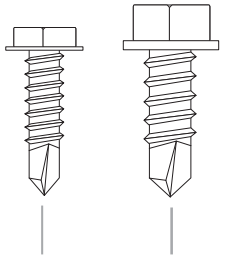


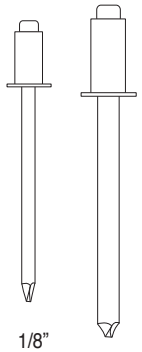


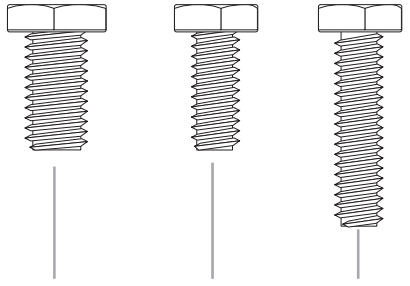
CONNECTING WIRE



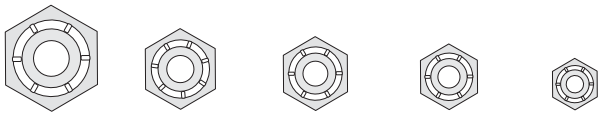






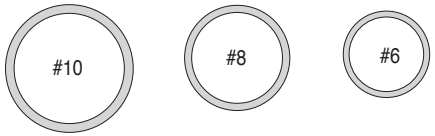


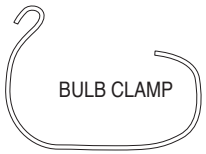
LOCK NUTS



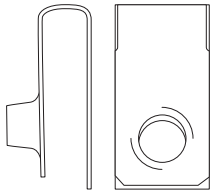
NUTS AND WASHERS

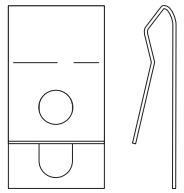
ORINGS

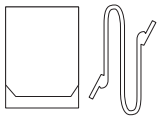


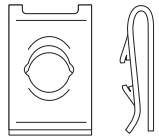


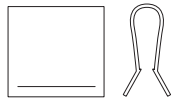
CLIPS



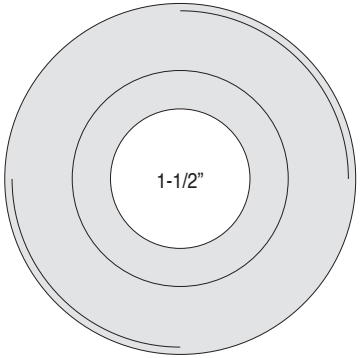


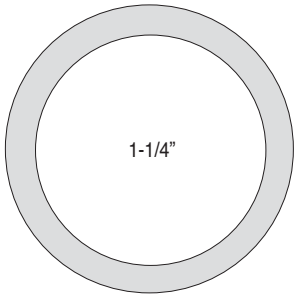


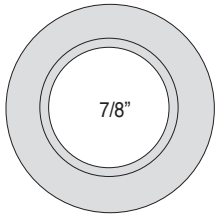




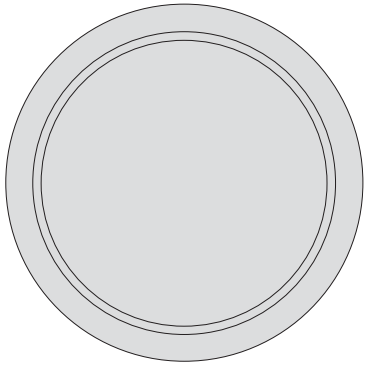
GROMMETS

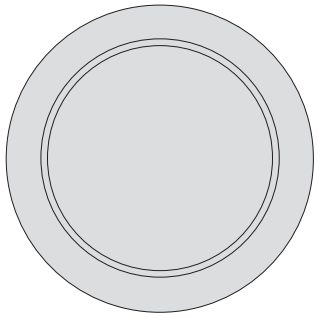


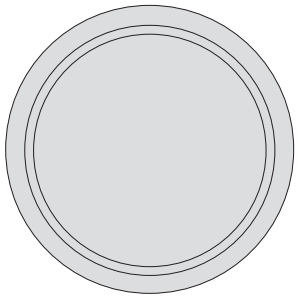


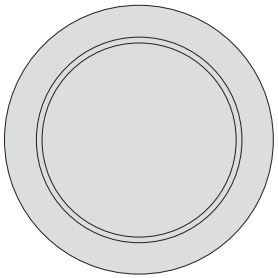


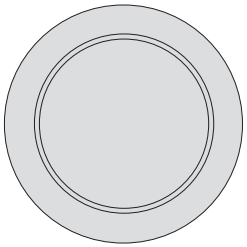
HOLE PLUGS

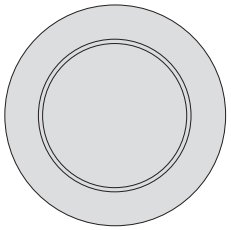


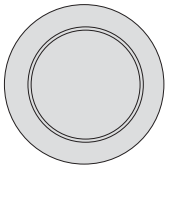




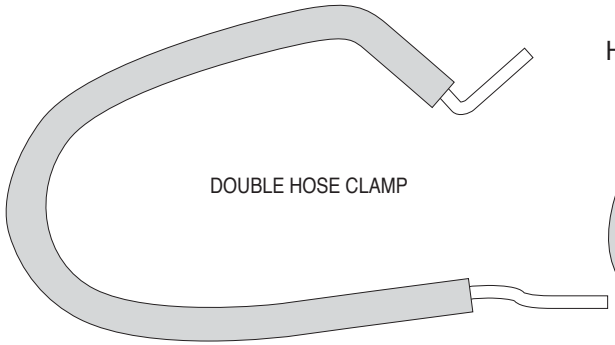


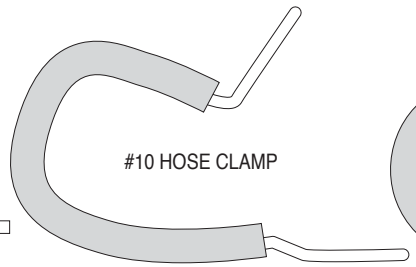


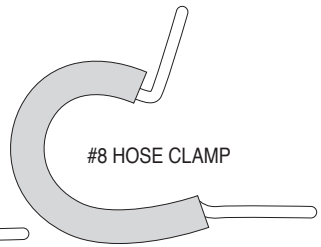


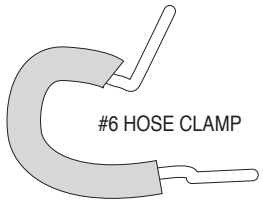


HOSE CLAMPS

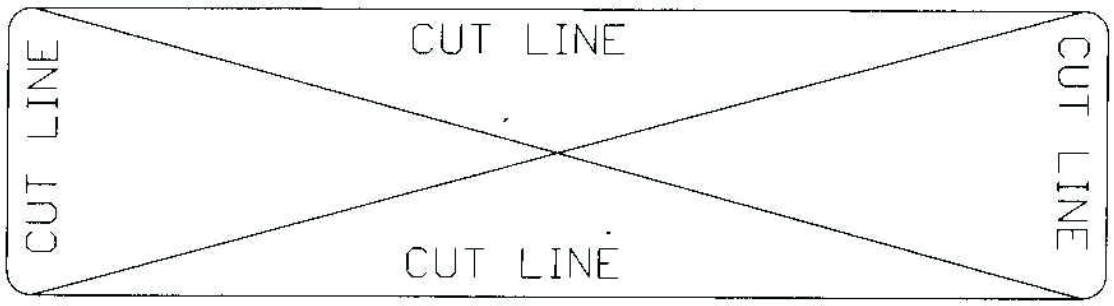






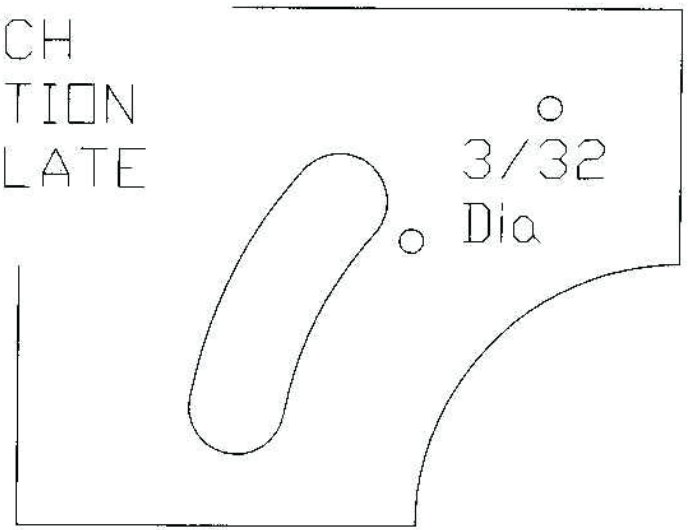


DASH LINE



CENTRE LOUVER TEMPLATE

SWITCH
LOCATION
TEMPLATE



1964 - 65 CHEVELLE