Installation Instructions

Important information about your new a/c system.

Please read the following directions prior to installing this a/c system.

1949-1952 FORD PICKUP

♦Contact us by email or phone if you need any assistance or information regarding this a/c system.

888-977-8889

Sales@nostalgicairparts.com

The Nostalgic Air Parts team would like to thank you for your recent purchase of a complete a/c kit for your truck. There are a few steps that must be followed in order for your a/c system to operate properly.

→ The **HIGH SIDE** gauge reading should not exceed 230 PSI. We **MUST** have the **HIGH SIDE** gauge reading if you need any assistance in correcting a potential problem.

→ If you purchased the a/c compressor from **NAP, DO NOT ADD ANY OIL, DYE, LEAK SEALANTS, OR OTHER ADDITIVES TO ANY PART OF THE SYSTEM**. If oil is required NAP will provide an additional sheet with directions on filling the system with oil.

→ Be sure you have the correct pulleys for the engine prior to installing the kit. Pulleys are not included unless specified when the kit is ordered.

→ Insulation is very important. Be sure to insulate the firewall and floorboard prior to installing the evaporator unit. It is very important to insulate the floor and firewall behind the evaporator unit.

→ There should be adequate airflow from the radiator fan, and a sufficient amount of room between the condenser and radiator. Make sure the **CONDENSER HAS A TUNNEL EFFECT OF AIRFLOW THAT FLOWS THROUGH THE CONDENSER AND RADIATOR.** Foam can be put in between condenser and the radiator edges to achieve a proper airflow effect. There should be ¼" to 1" gap in between the radiator and condenser. **EFFECTS OF INADEQUATE AIRFLOW:** the compressor may act like it is "locking up", warm air only from the vents, overheating of the engine, high head pressure, air blows cold at idle and blows warm while driving, and more.

→ Find the proper flow of the water prior to installing the heater control valve. Water should be turned off prior to entering the evaporator / heating unit. It should only be turned off when the heat is needed. If you are experiencing warm air out of the evaporator check the compressor low side fitting. If it is ice cold then the heater valve is not hooked up properly.

→ **DO NOT USE THE SIGHT GLASS!** The system should be charged with R-134a ONLY. If you do not follow this instruction your warranty may be void and you may not be eligible for technical assistance. **EFFECTS OF OVERCHARGING:** Compressor is "noisy", engine overheating, warm air only from the vents, and more.

→ If a problem exists after checking all these conditions you may call or email for technical assistance. **IF YOU DO NOT HAVE THE HIGH SIDE GAUGE READING WE WILL NOT BE ABLE TO ASSIST YOU IN FIXING THE PROBLEM.**

PARTS CHECKLIST

□ Compressor with Oil	PN: 15-5001
□ Evaporator Unit	PN: UD-180-2
□ Drier	PN: 4-1000
□ High Low Pressure switch	PN: 119-9900
□ Binary Pig Tail	PN: 119-9904
□ Condenser	PN: 44-1622
□ Engine Mount kit	(Engine specific)
□ Hardware bag kit	PN: 77-4015

Includes:
Four grommets
12 self tapping screws
#6,8,10 orings
Cork tape
Evap. Mount Brackets
Drain Tube
Nuts / Bolts / Washers
Heater control valve electric

□ Hose Kit	PN:HK-920
□ Driver side vent	PN: P-313 & 5016
□ 2” duct hose x 6	PN: DH20
□ Condenser / Drier Brackets	PN: CS1000 / 999-1002
□ R-134a Sticker	PN: SZ100
□ Directions	

STEP ONE

Installing the Evaporator unit:

1) The evaporator mounts under the dash between the passenger side of the dash over to the driver side, near the steering column. If you have gauges, or a radio under the dash they will have to be relocated. If the vehicle is a manual shift make sure the unit clears the shifter prior to installation.
2) After a location has been selected attach the included "L" brackets to the evaporator unit. One L bracket will have a flat extension mounted onto it. The extension is for the driver side of the unit, this allows the L bracket to reach the bottom of the dashboard. Hold the unit up to the bottom of the dash and mark the holes on the bottom of the dash where the "L" brackets will screw to. Unbolt the "L" brackets from the unit and mount the brackets to the dashboard.
3) If the expansion valve is not attached to the unit, you must attach it at this point.
4) The expansion valve will mount to the smaller fitting on the evaporator unit. If the valve is already attached disregard this step. We normally mount the expansion valve on the evaporator prior to shipping it. The simplest way to tell if the expansion valve is mounted is by looking at figure 1.1. If the evaporator fittings are perpendicular to each other the expansion valve is mounted. If you need to rotate the valve for hose purposes make sure to recover the valve with the black cork tape after re-positioning it. If the expansion valve is mounted the evaporator fittings will look similar to figure 1.2.
5) IF THE EXPANSION VALVE IS NOT MOUNTED FOLLOW STEPS FIVE AND SIX. The expansion valve will require a # 8 O-ring when connecting it to the evaporator. The bulb on the valve will attach to the large tube on the evaporator, see pictures for details. There will be a "C" clip in the package to attach the bulb.

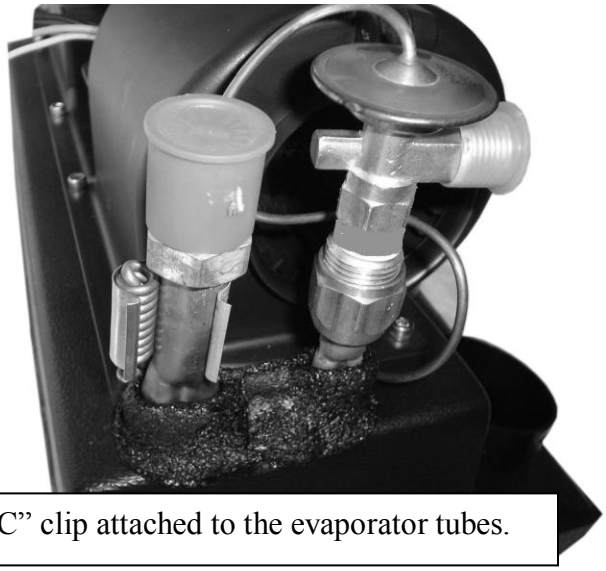


Fig. 1.1

Bulb and "C" clip attached to the evaporator tubes.

6) After the expansion valve bulb and "C" clip are attached place some black insulation (cork) tape over the tubes and expansion valve. Do not cover the threads or hex area of the tube. More tape will be needed later to cover all the connections and fittings.

Fig. 1.2

7) At this point the evaporator can be mounted but it may have to be dismounted to attach the a/c hoses. See step six.
8) Prior to installing the a/c lines find a location in the firewall to run the hoses through. We recommend running the hoses through the firewall near the battery as pictured in step 1.7. Select according to which side of the unit the fittings are on and which side of the engine the compressor is on. Be sure to use the grommets to protect the hoses when running them through the firewall. The grommets will require a 1-1/4" hole, unless it is a large single grommet for both hoses. Our recommendation for the firewall holes is as follows: Mount the unit in its mounting location. Take the # 6 (5/16" hose) and the # 10 (1/2" hose) and push a 90 degree fitting into each. Attach the fittings (finger tight) to the evaporator. If the hoses will run straight back to the firewall without any kinks make a small mark where the hose meets the firewall, Figure 1.3. That will be the location for the grommet. If the hose is kinked or tight try a straight fitting on the evaporator connection. We do carry many fittings if a 45 or 180 degree is needed please contact us.
9) If you are using a bulkhead fitting on the firewall mount the evaporator unit first then find an area for the bulkhead fitting on the firewall. Mark where the bulkhead fitting will mount then run the hoses to that point on the firewall. If the hoses are not kinked, and out of the way the bulkhead will be ok to mount. The bulkhead can be mounted at your discretion. We normally mount the bulkhead during step six. It is better to have all of the components in the vehicle before cutting holes into the firewall. Figure 1.4
10) The drains need to be run through the floorboard; the hole for the drain tube should be ¾". Both drains have to be hooked up into the drain hose. Please remember if the evaporator unit is mounted on an angle greater then 45 degrees the evaporator may blow water out of the vents.
11) If the unit is not draining properly there may be a "sour milk" smell from the stagnate water in the evaporator housing. The drain hose should be attached without any kinks. Make sure the drain flows down; the water will not drain if the tubes go up from the evaporator box to the firewall. The drain can be located anywhere the installer chooses.

12) We recommend keeping the drain out of site, out of the feet area, and not draining onto the exhaust. Figure 1.5
13) After the a/c hoses are connected use the black cork tape to cover the metal fittings, and connections at the evaporator box. See figure 1.6

Fig. 1.3

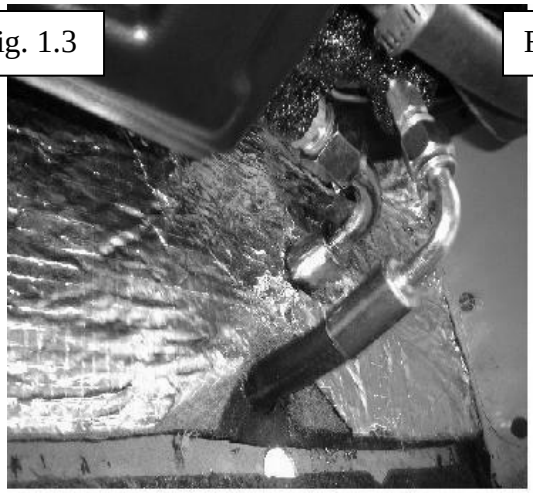
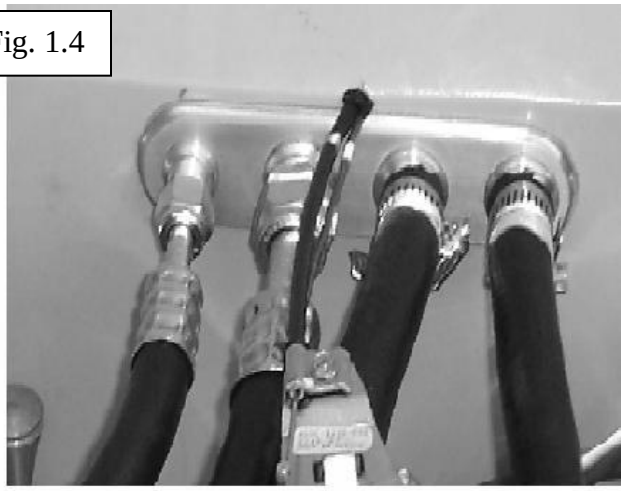


Fig. 1.4



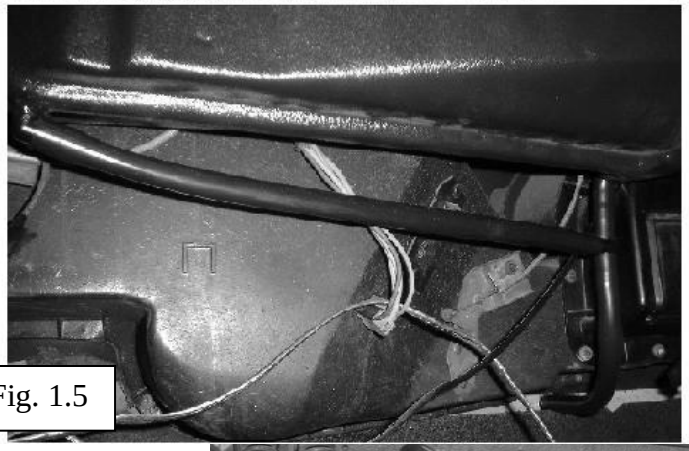


Fig. 1.5

Fig. 1.6

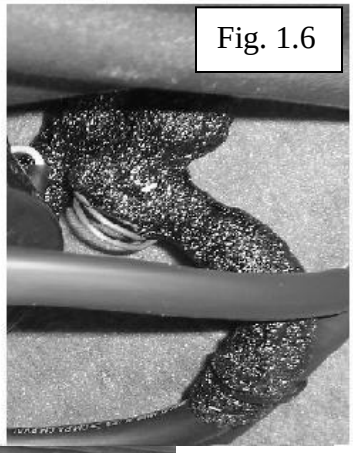
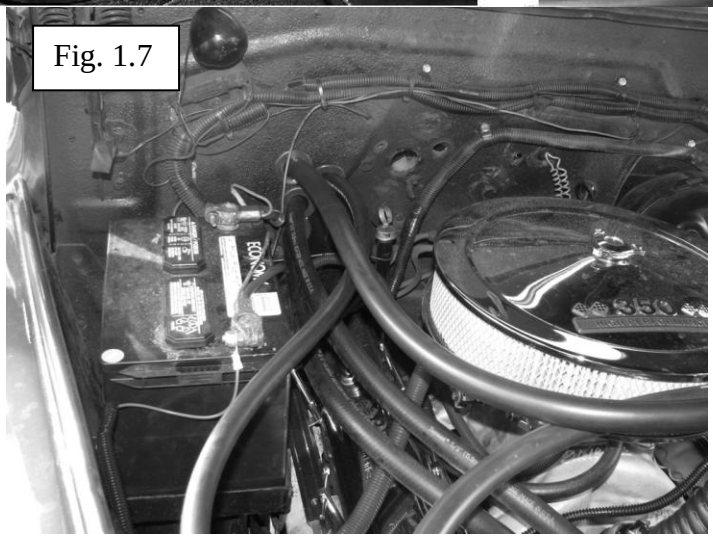


Fig. 1.7



The evaporator unit L bracket is mounted to the bottom of the dash between the kick panel and the evaporator unit..

STEP TWO

Controls, wiring, and vents:

1) This a/c system has the controls inside the evaporator box. Wiring up the unit consists of hooking up five wires. The unit can be wired up at this point, or you can return to this step later to wire the system.
2) There is a separate vent included with this kit. The vent gets mounted on the driver side of the truck, under the dash board between the steering column and the end of the dash. See figure 2.1

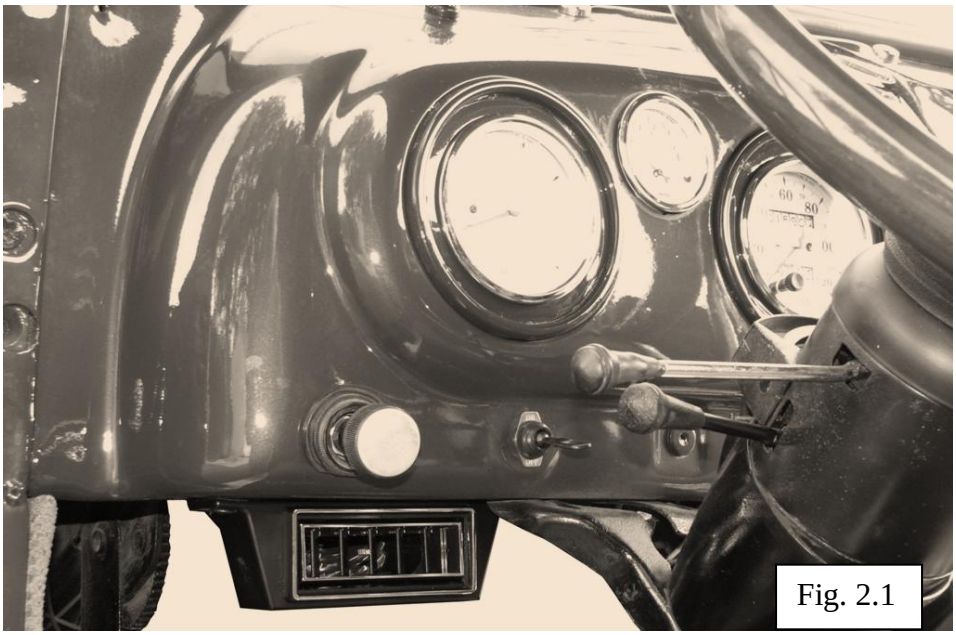


Fig. 2.1

3) The vent and stock defrost outlets require duct hose to be attached to them. The hose will push over the ends of outlets. The dash vent has an oval outlet, the duct hose can be pushed down to fit over the oval. We recommend using screws or “zip ties” to secure

the hose onto the outlet, but it is not required. When routing the duct hose stretch it out so it is tight, drooping duct hose will affect the airflow.

4) After the unit is mounted, and the duct hose is secured you can wire the a/c unit.

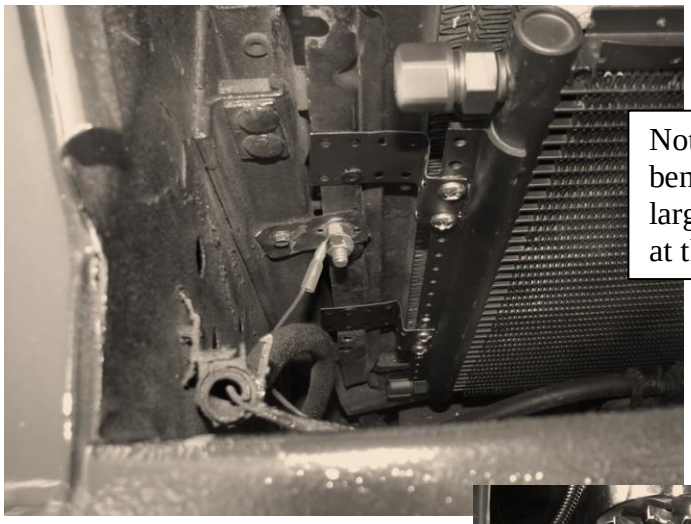
Wiring the unit:

5) There is a three-plug wire on the controls and the evaporator unit, the plug will have two male and one female barrel connector, they plug together. There will be a ground wire on the back of the unit; it will have to be grounded. If you do not see the three plug connector (red, yellow, orange wires) we have already plugged them together, and left it inside the evaporator box during assembly. There will also be two groups of wire in loom with an 18 gauge red and black wire protruding from them.
6) Most underdash units will have all the wires already hooked up except for the blower motor ground, 12 volt wire, the compressor wire, and electric servos.
7) The compressor wire will run out through the firewall, so a small hole is necessary, if there is already an existing hole try to use it, but seal the excess area up after its routed.
8) The first wire is the ground wire on the blower motor. The blower motor will have a black wire with a loop connector. Ground this wire to any metal surface on the vehicle. If the wire is to short extend the wire with the proper wire connectors. Do not leave wire without insulation exposed.
9) The second wire is the 12 volt lead, this wire can be any color but it is normally red or blue. The easiest way to recognize it is by the inline fuse. This wire is to be hot when the key is on. Find an ignition source in fuse box to tap into. After the ground wire and the power wire are connected you can test the blower motor on the unit. If the motor does not have three speeds or the motor is not working check that the blower wheels move free. Sometimes the motors will get jarred during shipping causing the wheels to bind in the blower motor housing. If the wheels are stuck remove the clip holding the wheel and readjust the wheel so it moves freely. If the evaporator does not have three speeds call us for technical service.
10) The two white plugs are for the servos that are used for the electric controls. At this point you cannot hook up the heater control valve. The defrost wire might already be plugged in. The two 18 gauge black and red wires are to be hooked up as follows.
11) The 18 gauge black wires is get grounded to any metal surface on the truck. The two 18 gauge red wires get hooked up to any ignition source with the key on.
12) After the heater control valve is installed you can plug the servo harness into the servo.
13) The last wire is the compressor lead. This wire will run to the high / low (binary) pressure switch then to the compressor. The high low pressure switch should be mounted in the drier. See the drier installation for high low pressure switch mounting. We recommend hooking up this wire last. The barrel connector on the wire will match the compressor connector; two spade connectors will be required to hook up the binary switch. The compressor lead wire can attach to either side of the binary pressure switch.
14) DO NOT HOOK UP THE COMPRESSOR WIRE UNTIL THE SYSTEM IS READY TO BE CHARGED, DOING SO COULD CAUSE MAJOR HARM TO THE COMPRESSOR.

STEP THREE

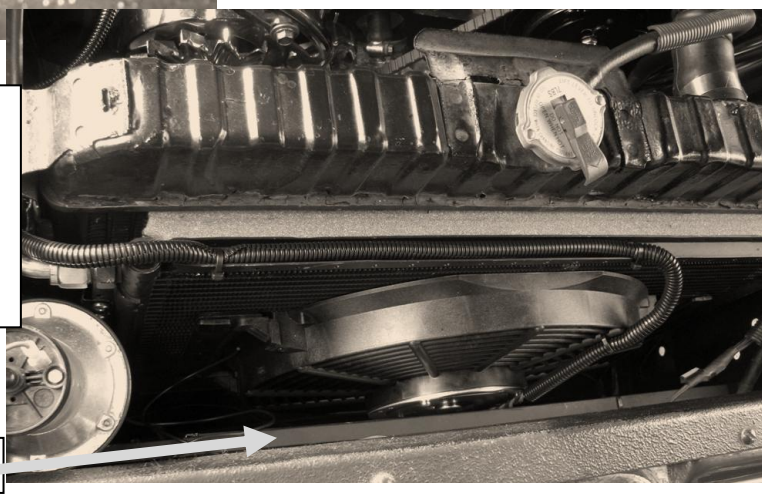
Installing the condenser:

1) When mounting the condenser in front of the radiator, make sure the small fitting is on the bottom, and the large fitting is on the top. Use the flat brackets to install the condenser, with the included screws attach the brackets to the radiator core support and to the condenser. The fittings can be pointed to the passenger or driver side. We recommend pointing to the side that the compressor is on (the engine).
2) DO NOT INSTALL THE CONDENSER ON THE INSIDE OF THE RADIATOR, between the motor and the radiator.
3) Please be sure not to puncture the condenser when installing it, there are holes designated for the mounting brackets.
4) The condenser should be a 1/4" to 1" away from the radiator, if more space is needed be sure to fill the sides of the condenser in with a foam fill. The object is to get a tunnel effect of air through the condenser and radiator; you do not want air to escape between the two.
5) If you are using an electric fan on the condenser attach it to the condenser prior to installing the setup.



Notice the condenser straps bent into a Z for fitment. The large fitting of the condenser is at the top.

There is foam between the radiator and condenser to get a tunnel effect of air through the condenser and radiator. The electric fan is behind the oil cooler in the picture.

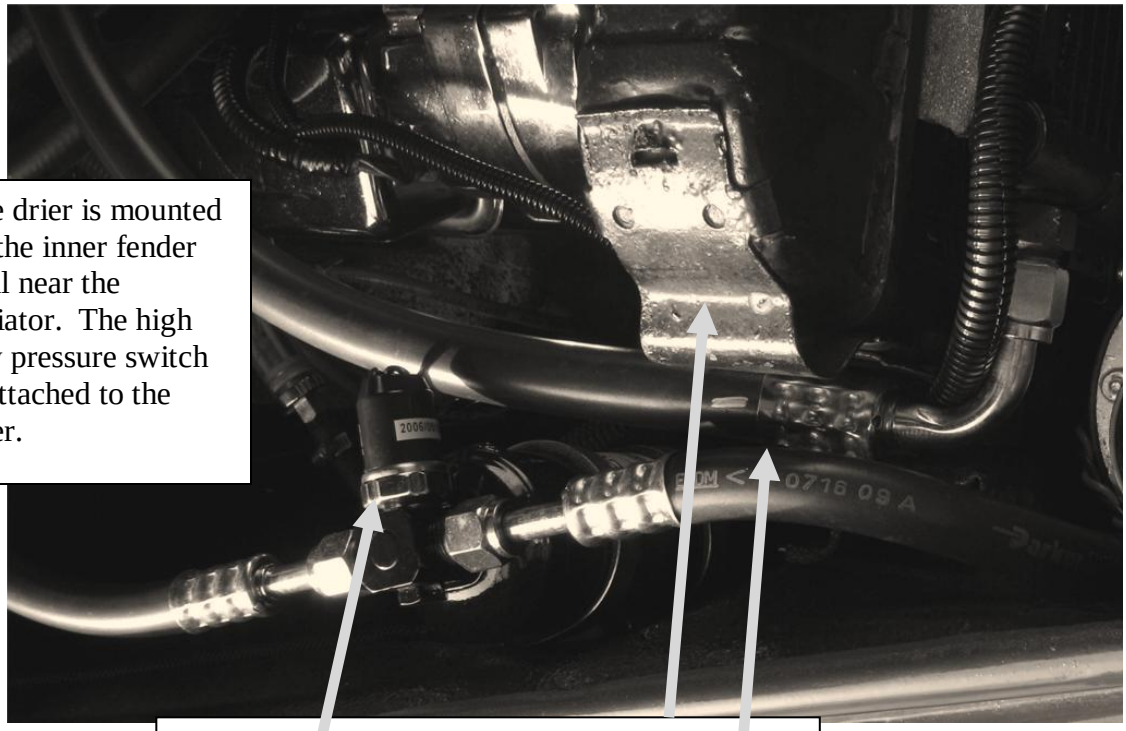


OIL COOLER

STEP FOUR

Installing the drier and binary switch:

1) The drier can be installed in any location you choose, be sure to mount the drier so the fittings are on the top. The drier has to be vertical, if you would like a horizontal mount drier please contact us. The drier can lay on an angle, for example, on the inside of a fender well it will lay at a slight angle 10 to 20 degrees.
2) The drier says "IN" on the top, the "IN" should be facing the front of the car, the hoses will run from the condenser "IN" the drier and out to the expansion valve.
3) If you are using R-134a refrigerant DO NOT USE THE SIGHT GLASS.
4) The binary switch is to be mounted in the drier. There are two plugs (hex head bolts) on both sides of the drier (some driers only have one). Unscrew one plug and install the binary into the switch port. Be sure the o-ring is on the binary switch.
5) The binary switch should be tightened one quarter of a turn past snug.
6) The binary switch is a round switch with a green boot covering the threads. We put the binary in the bag with the fittings when you purchase one of our a/c kits. Remove the green boot to install it into the drier.



STEP FIVE

Installing the mount kit and compressor:

1) The mount kit will include directions for installation, please use those directions. Please note that mount kits are designed for specific engines, but many engines are built with components that do not match applications to the original setup. If the bracket does not fit exact please understand some minor fabrication may be required.
2) When installing the bracket, leave the bolts loose until the compressor is mounted. It is very easy to crack a compressor if the bracket is not installed properly. Please tighten the entire bracket in a random order, while tightening do not put strain any one point.
3) If a belt is not included, use a small diameter rope to measure the length of the belt, or refer to the mount kit directions for the belt size.
4) Pulleys are not included with kits, unless it is specified. Chevy engines require double groove water pump pulley, triple groove crank pulley if running power steering, and a double groove power steering pulley.
5) When mounting the compressor be sure to make sure the hoses and charging ports clear the hood and the inner fender.
6) The compressor can be mounted with the fittings pointing in any direction. If the fittings are pointed at any angle lower than 45 degrees be sure to attach the crimped a/c hoses first. It is not recommended to mount the compressor on any angle over 45 degrees, only do so if the bracket is designed to fit the compressor at an odd angle. If the hoses are not attached first the oil can drain out, which can cause a system failure
7) THE COMPRESSOR IS FULL OF OIL NO ADDITIONAL OIL IS REQUIED TO ANY PART OF THE SYSTEM. Attach the hoses, and leave the oil alone, don't add any oil to any part of the system. If oil is added the system could have many problems. A few are a sour milk smell from the vents, improper cooling, low side pressure is low, expansion valve failure, and a noisy compressor.

STEP SIX

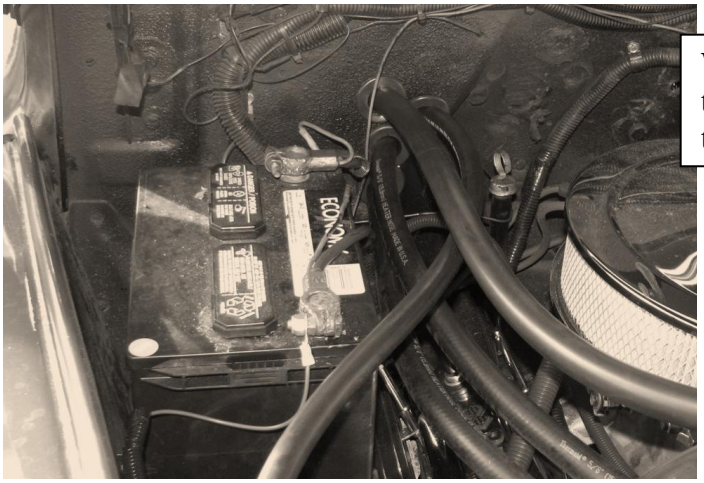
A/C hose routing and installation:

1) The a/c hoses are to be crimped with an a/c hose-crimping tool. Most a/c stores and some auto parts stores have crimping tools. The hoses can be hooked up in any order you choose. The hose kit is a universal hose kit there will be left over fittings and hose when the job is done. The charge ports are normally attached to the compressor fittings. They do not have to be put on the compressor; it is up to the installer. Prior to having the hoses crimped together. Put the fittings on the hose with masking tape around each end to mark with a marker for clocking Do not crimp the fittings over the tape.
2) Starting with the large hose #10 or ½". This hose goes from the large fitting on the compressor to the evaporator unit. The compressor will get the fitting with the charging port, low side. This hose will run through the firewall so be sure to use a grommet, 1-1/4" hole required.
3) The next size hose is #8 or 13/32". This hose runs from the compressor to the condenser. The compressor will get the fitting with the high side charging port. The condenser fitting connects to the fitting at the top of the condenser. When running the hose through or around the core support make sure it is protected with loom. A hole can be rubbed into the hoses if the hose is against metal edges.
4) The third and fourth hose to install is the # 6 or 5/16" hose. Start with the # 6 hose that runs from the bottom fitting on the condenser to the "IN" fitting on the drier. From the drier the hose will go through the firewall and grommet, 1-1/4" hole, to the expansion valve on the evaporator. After this hose is attached, place the black insulation tape over the fittings that are attached to the evaporator. Keep the #10 and #6 hoses close together when routing through the firewall, it makes the evaporator installation process easier.
5) The fittings included with the hose kit can be used in any manner necessary to run the hoses without kinking the lines. Make sure the hoses do not rub on metal edges without protection, and be sure to put O-rings on all the fitting connections. Oil is not necessary on the O-rings; it can be added to the threads on the fittings to stop them from seizing. DO NOT USE TEFLON TAPE. Tie the hoses down from flopping around, and keep the hoses off of the exhaust.

Heater hose installation:

1) The heater hoses on the evaporator will attach into the existing heater hose connections on the engine. The hoses can be hooked up to either side of the heater core in the car. If the heater hoses are kinking due to the directions of the heater outlets and the dashboard, 180-degree pre-made hoses are available at most parts stores. This will eliminate the kinking of the heater hose under the dashboard. The heater hoses are 5/8 on the heater core, if your vehicle has ¾" outlets, step down adapters are available at most parts stores.

2) After the heater hoses are installed, the heater control valve needs to be placed in the heater hose. This valve MUST turn the water off prior to the water entering the heater core. If the water flows through the core, the A/C gauges will read correct, but the temperature of the unit will only get to 65 degrees out of the vents. If you are unsure of the water flow, turn the engine over with the heater hoses disconnected from the engine to determine the direction of flow. We have seen vehicles with backflow through the heater hoses. If the hoses at the heater core are hot when the car is running the water may be flowing back through the system. A manual heater control valve is needed if this situation occurs.
3) The valve should go under the hood in the engine compartment or under the dashboard near the heater hose connections.
4) The heater control valve servo can be plugged in at this time.
5) Below are some images of grommets in the firewall. Hose routing for long hoses, and charge ports on the compressor.



When routing the hoses through the firewall keep them close together for a cleaner look.

The heater control valve is located inside the cab of this truck.

STEP SEVEN

Installing the drain tube:

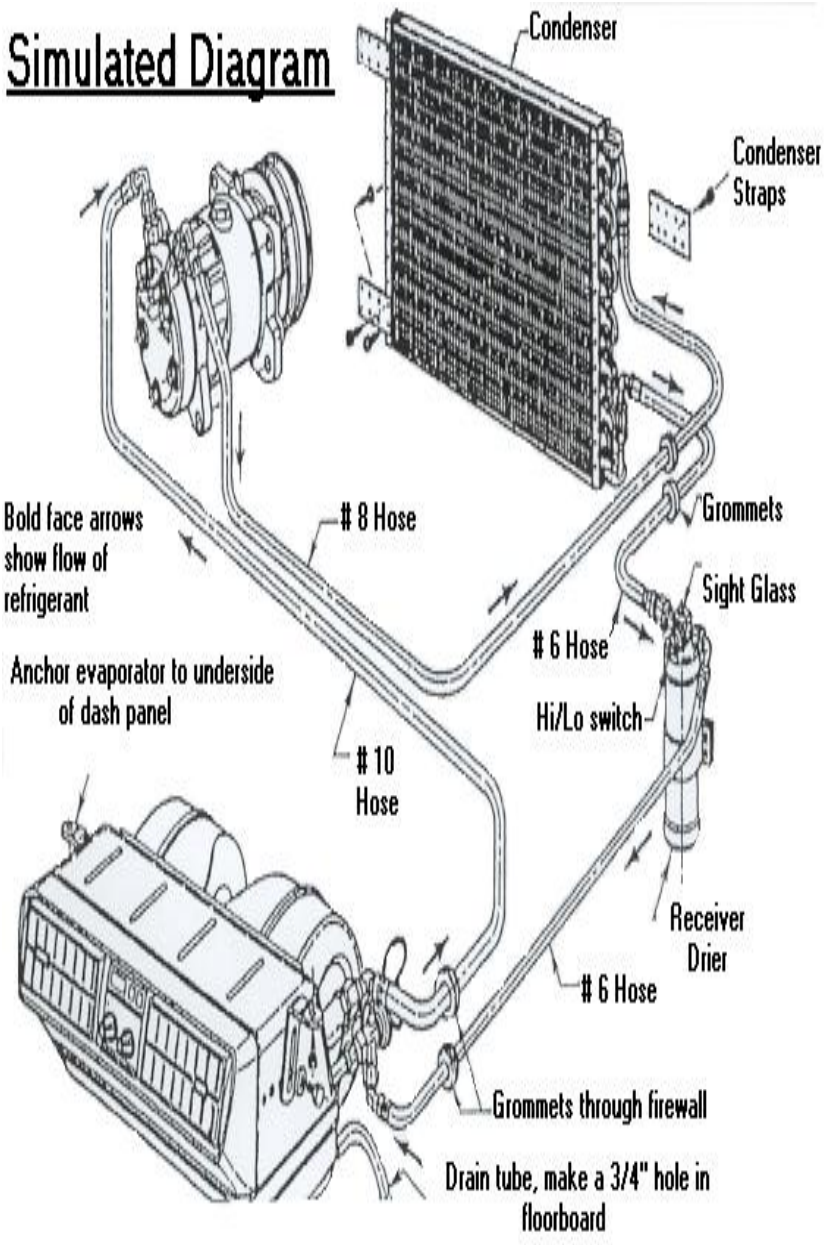
1) If the evaporator drain tube was not installed during step one you can do it now. This section serves as a reminder to install it. The drain tube goes from the drain outlets on the evaporator through the floorboard of the vehicle. The hole should be ¾" and the drain tube should be straight without any kinks Do not let the drain hose rub on any sharp edges that can cut a hole in it.

STEP EIGHT

Charging the system:

1) DO NOT ADD OIL TO ANY PART OF THE SYSTEM. DO NOT USE DYE, LEAK SEALANTS, OR ALTERNATIVE REFRIGERANTS IN THE SYSTEM. We are not able to diagnose problems if the directions are not followed.
2) The system should be evacuated in order to achieve maximum cooling from the system. Evacuate the system for 45 – 60 minutes. If the system is not evacuated the system may not cool properly.
3) After the system is evacuated and ready to charge, plug the compressor wire in.
4) When charging the system start with 1.5 LBS of R-134a refrigerant. The ideal pressures of the system are 15-28 on the low side and 180-220 on the high side. If the system is not within this range with 1.5lbs of R-134a add more R-134a in .25LB increments. If the high side gets high, and the low side stays low you have a condenser-cooling problem. Please see the first page.

Simulated Diagram



Wiring Diagram