

# JEEP AIR

SPECIALIZING IN JEEP A/C COMPONENTS AND A/C KITS

*Important information about your new a/c system.*

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

PN's: CK-7586HC258, CK-7586HC42,  
CK-7586HC304, CK7586HCSBC, CK-  
7486HCNC

## Jeep CJ Series

**Aftermarket Air Conditioning and Heat**

### Installation instructions

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# **IMPORTANT INFORMATION ABOUT THE INSTALLATION FOR THE CJ HEAT AND A/C KIT**

## **Evaporator / Blower Unit information:**

Prior to installing your evaporator unit, make sure the blower motor spins without rubbing the case. The motor gets knocked around in shipping and may move. If the wheel is rubbing, loosen the spring clamps and readjust.

## **Wiring information:**

In order to make the installation process less complex we have simplified the wiring for this a/c system.

There are only three wires to hook up. A test light will be used to hook up one wire.

- 1) Wire with a fuse inline. This wire hooks into an ignition source, a hot wire with the key on. Use the test light to find this source.
- 2) Wire with an inline plug. The inline plug goes to the switch on the drier, from the plug in the drier to the compressor. **DON'T HOOK THIS UP UNTIL YOU CHARGE THE SYSTEM.**
- 3) Ground wire, there will be one wire on the blower motor that is not plugged in. Ground this wire to the chassis. (Normally Yellow or Red)

**Refrigerant Requirements:** The Jeep Air CJ kit is designed to work with **R134A refrigerant only**. R12 and other variants of refrigerant will destroy the system. With R134A refrigerant, the system is engineered to produce vent temperatures between 37-45 F degrees with a high side pressure reading between 200-220psi. At no time should the high side exceed 250 PSI of stabilized pressure. If the installation is performed correctly, the low side pressure will stabilize after a brief drop in pressure immediately after charging. The system requires approximately 1.5 lbs of refrigerant, which could slightly vary depending on pressure readings.

Jeep Air highly recommends the system be evacuated and charged by a professional A/C shop in your local area if you've never done this type of work before. Though evacuating and charging is not difficult, specialty tools are required to perform the job. For the person with do-it-yourself capabilities, we've incorporated supplemental instructions so you can charge the system yourself.

## **Important information about your system, and warranty**

- ➔ DO NOT ADD ANY OIL TO ANY PART OF THE SYSTEM.
- ➔ DO NOT USE THE SIGHT GLASS TO CHARGE THE SYSTEM.
- ➔ DO NOT OVERCHARGE THE SYSTEM.

Your system comes pre-oiled. DO NOT ADD any oil, dyes, leak solutions, etc. to your system as it may result in system failure and void your warranty. \*\*If you purchased a no compressor kit you will have to contact the compressor manufacturer for the oil charge\*\*

If you have a problem with the system we ask to call before diagnosing or changing any parts. We can fix problems easier if the system is not tampered with. If you have a warranty claim you need to call or email prior to shipping any parts back. OUR POLICY IS TO GET THE OLD PART BACK PRIOR TO SHIPPING ANY NEW PARTS OUT UNLESS A REPLACEMENT IS PURCHASED FROM US.

Warranty Returns can be handled in two ways:

1. Ship the warranted part back to us for inspection. Once the part is approved for warranty you will be shipped a replacement part. (For further clarification on why a part would not be approved for warranty please see below)
2. If you need a replacement part immediately, you can provide us with a credit card and you will be charged for a replacement part and one will be shipped out. Once the warranted part is shipped back to us, inspected and approved for warranty you will be issued a refund on your credit card.

Reasons why a part would not be approved for a warranty claim:

Cracked compressors from improper installation

Compressor with broken valves from overcharging of oil or refrigerant

Burned up clutches from too high of head pressure

If the technical department is unable to determine any defect with the part. If no defect is found, the part will be returned to the customer and a proper diagnosis will need to be done to find the real issue. If a part is not approved for a warranty claim we will do our best to offer you a replacement product at a fair discounted price. Jeep Air will not refund your account if you purchase another part in replacement of the defective part.

Should you run into any problems, Jeep Air is here to help! We're available Monday through Friday. Please note when planning the installation we do observe all major holidays and are closed the last two weeks of December. Please contact us if you need assistance. 800-223-7167 or sales@JeepAir.com.

## Parts List

- Compressor with Oil PN: 91-4001  
PN: 91-4000 \*CK-7586HCSERP
- Compressor adapter CK-7486NC PN: \_\_\_\_\_
- Evaporator Unit PN: UD-180
- Drier PN: 192-8254
- High Low Pressure switch PN: 119-9900
- Condenser PN: 44-1418
- Engine Mount kit with belt  
CK-7586HC258 PN: 8005  
CK-7586HC42 PN: 8011  
CK-7586HC304 PN: 8000 & 2400  
CK-7586HCSBC Depends on engine  
specs, per customers setup  
CK-7486HC NC No compressor  
bracket  
CK-7586SERP PN: 80012 (No belt)
- Hardware bag kit PN: 77-4002D
- Condenser Brackets PN: CS1000
- Drier Strap PN: (1) DC0002
- Duct Hose 4 Feet
- Hose Kit PN: HK-920
- R-134a Sticker PN: SZ100
- Directions

The Jeep Air team would like to thank you for your recent purchase of a complete a/c kit for your car or 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 220 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 **Jeep Air**, **DO NOT ADD ANY OIL, DYE, LEAK SEALANTS, OR OTHER ADDITIVES TO ANY PART OF THE SYSTEM**. If oil is required, Jeep Air 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 on 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.**

## STEP ONE

### **Installing the Evaporator unit:**

- 1) An under dash a/c unit mounts under the dash in the area of your choice. If you have gauges, or a radio under the dash they may need to be relocated. If the vehicle is a manual shift make sure the unit clears the shifter prior to installation. The underdash unit will mount in the center of the dashboard or the main part of the unit may fit under the glove box with the unit vent outlets spanning across the bottom of the dashboard.
- 2) After a location has been selected attach the included “L” brackets to the evaporator unit. 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.

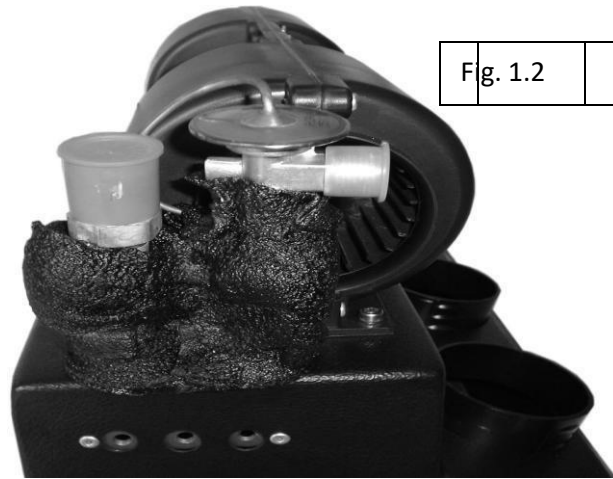
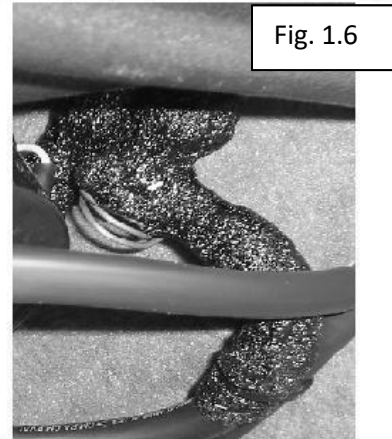
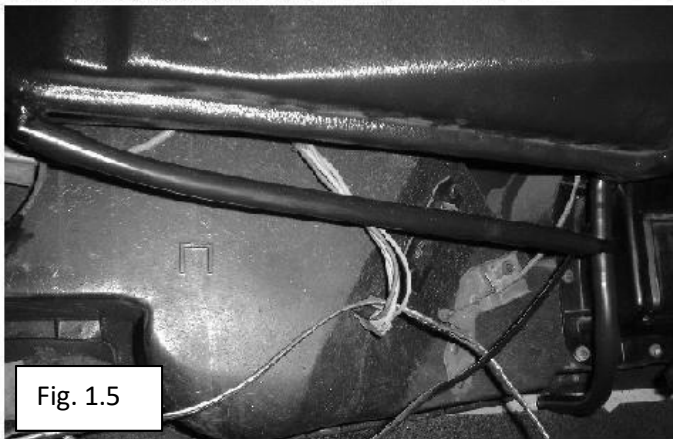
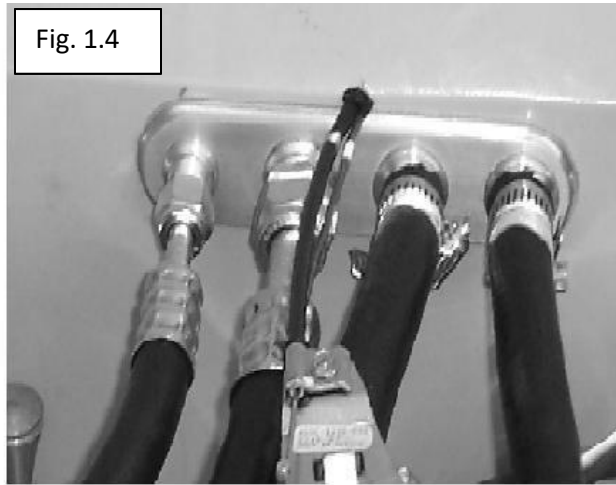
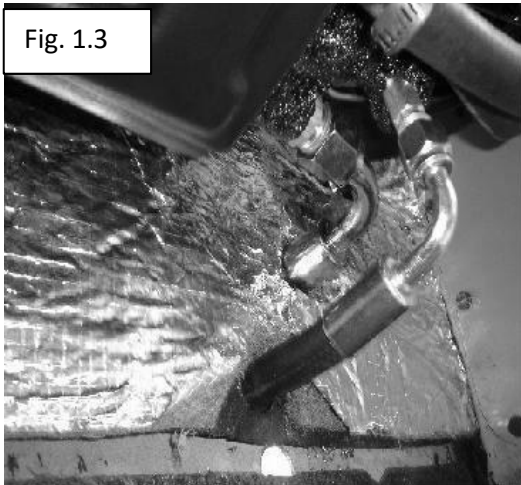


Fig. 1.2

- 7) At this point the evaporator can be mounted but it may have to be dismantled 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. 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 3/4”. Both drains have to be hooked up into the drain hose. Please remember if the evaporator unit is mounted on an angle greater than 45 degrees the evaporator may blow water out of the vents.

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.

- 11) We recommend keeping the drain out of sight, out of the feet area, and not draining onto the exhaust. Figure 1.5
- 12) 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

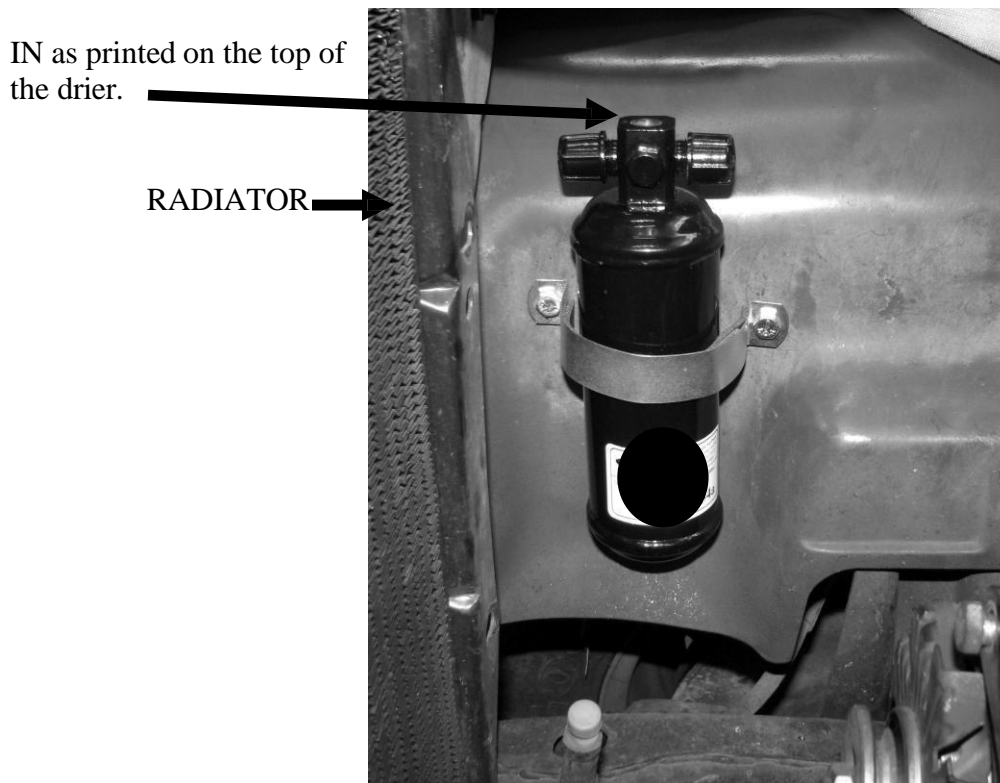




## Step Two

### Installing the Drier

1. If the switch is not attached to the drier, attach it at this time. The switch only goes on “hand Tight” use a wrench to tighten it. **BE SURE TO ONLY SNUG THE SWITCH.**
2. On the passenger side inner fender well near the front of the jeep is where the drier will mount. Be sure to mount the drier on the flat surface of the inner fender well. With two self tapping screws secure the drier to the inner fender well.

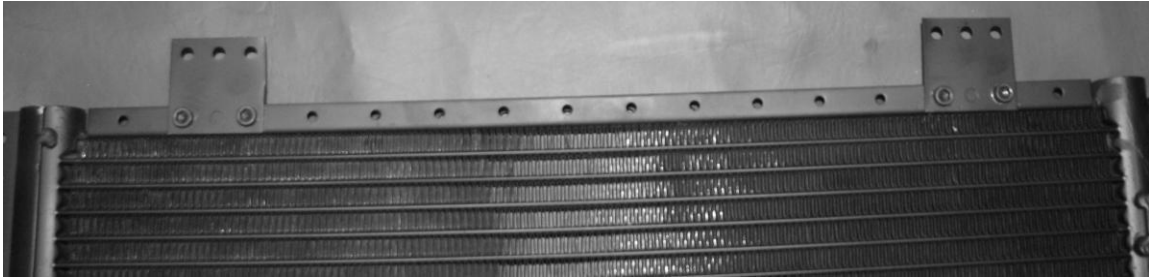


3. The switch of the drier can be installed on either side. The important part of the drier is that the “IN” marked on the top faces the front of the Jeep.

# Step Three

## Installing the condenser

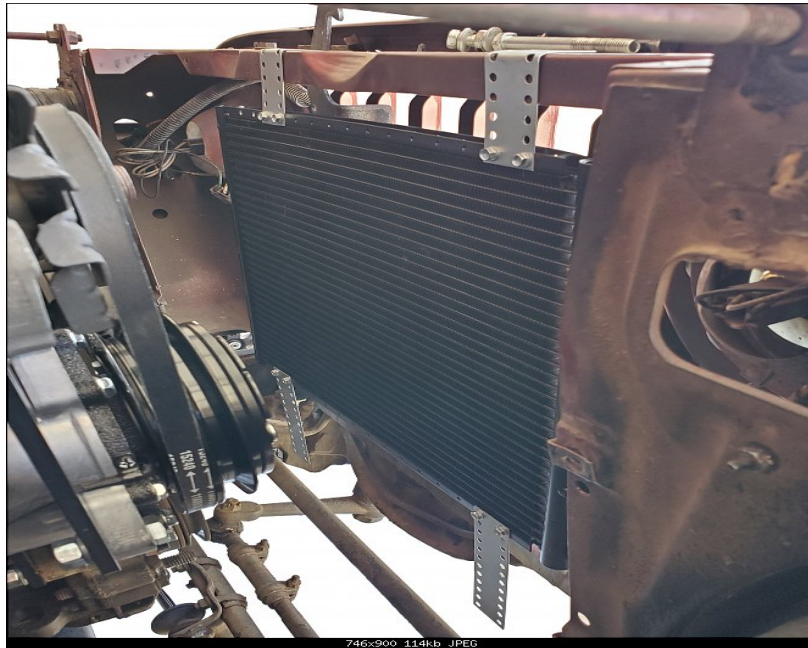
1. This is not a direct fit in condenser for a CJ. We use the largest universal condenser in this vehicle. The condenser brackets can be bent by hand or in a vice.
2. Drain the radiator into a clean drain pan.
3. Remove the radiator fan shroud from the radiator.
4. Remove the radiator.
5. With the radiator out of the Jeep place the condenser in the Jeep. Align the condenser so it is centered with the core support.
6. The condenser has to be placed in the CJ so the fittings are on the passenger side and the LARGE FITTING IS AT THE TOP.
7. Cut a condenser mount so there are three holes on the top and bottom, repeat this step so you have two small brackets.
8. Attach the two small brackets to the second hole (across the top rail) on each end.



9. Use the self tapping screws to attach the condenser to the radiator core support.
10. After the condenser is secured in the Jeep you can make the lower brackets. These two brackets need to be bent into a “L” so they can attach to the flat part of the radiator core support.
11. Place the lower bracket against the radiator to find the bend to attach the bottom part of the condenser. Bend both brackets the same.
12. Attach the lower brackets to the condenser across the bottom rail. The brackets will attach to the second hole from the end.



13. We recommend attaching the hoses to the condenser before reinstalling the radiator.
14. Once the hoses are attached reinstall the Radiator, and shroud
15. Fill the Radiator with the antifreeze and water. You may have to run the Jeep in order to fill the radiator to its full capacity.



## Step Four

### Installing the compressor mount and compressor

1. This kit is designed to work with many different engine combinations; Please use the directions supplied with the mount kit to install the mount, compressor and belt.
2. The compressor can be mounted with the fittings on the side or straight up.
3. The compressor (if purchased with the kit) will be full of oil. **DO NOT ADD OIL TO THE SYSTEM.** \*If you purchased a no compressor kit please refer to the compressor manufacturer for the oil charge\*



4. Please note this is a stock compressor image and might not match your compressor. If you have a 304 / 360 engine you will not need any additional pulleys. The original setup used two belts on the compressor. The new compressor does not require that kind of tension. One belt will run the alternator; the other belt will run the compressor.

## **Step Five**

### **Connecting the Hoses**

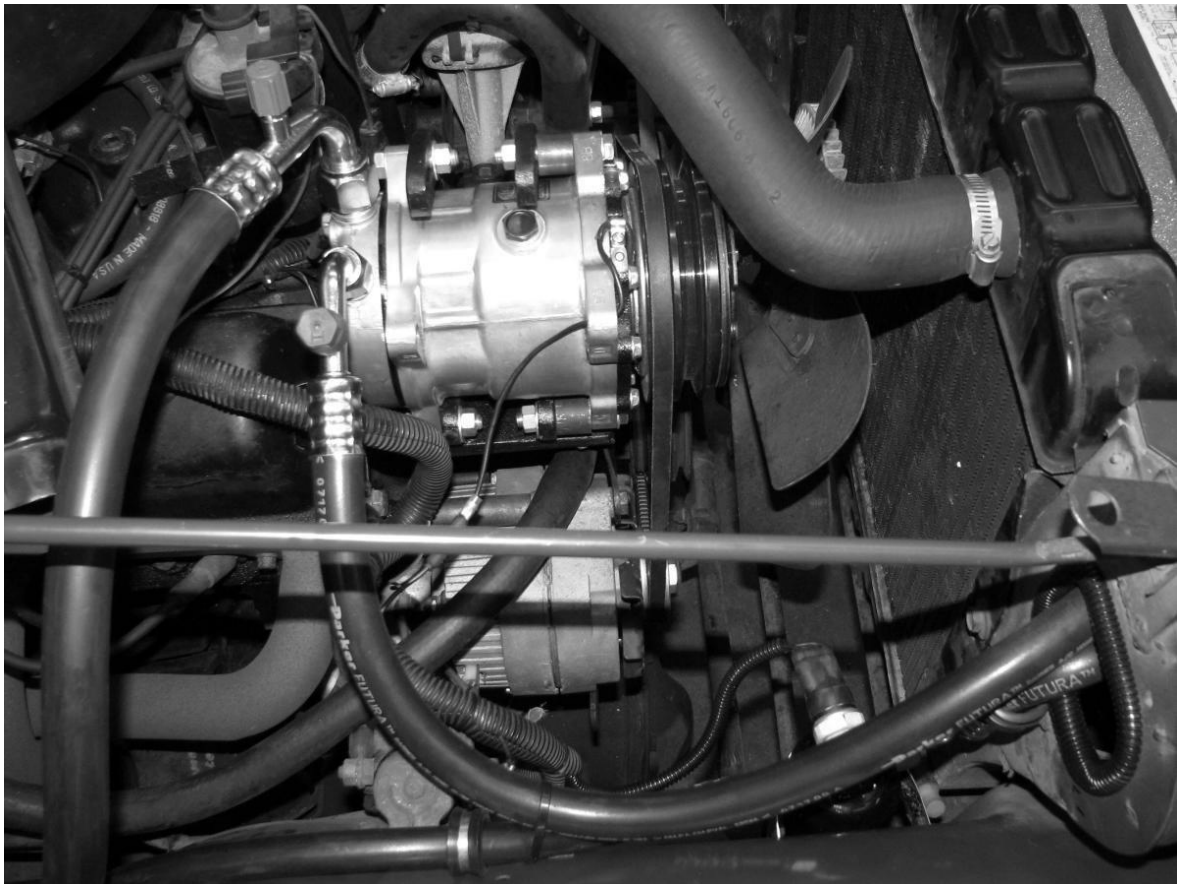
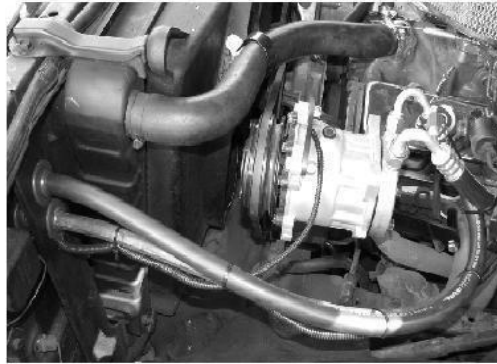
#### **A/C hose routing and installation:**

- 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. \*We have a crimp specification sheet attached at the back of the instructions\*
- 2) Starting with the largest hose #10 (marked 1/2"). 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 (marked 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 (marked 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. Routing of heater hoses: Thermostat housing to front of intake manifold, water pump to evaporator fitting, rear of intake manifold to evaporator fitting. 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 3/4" 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) A cable is provided to operate the heater valve. This cable needs to be attached to the valve so the valve opens when the cable is pulled. The valve should go under the hood in the engine compartment or under the dashboard near the heater hose connections. If you wish to use the original heater controls, use the existing cable to hook up to the control valve; or the pull cable can be mounted in or under the dash.
- 4) Below are some images of grommets in the firewall. Hose routing for long hoses, and charge ports on the compressor. The charge ports are on the side of the 135 degree fittings. These fittings allow for low hood clearance.





## **Step Six**

### **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  $\frac{3}{4}$ " 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 Seven**

### **Finishing the installation**

1. Wiring the system: This system only needs three wires to hook up the system.
2. The first wire is a red wire with an inline fuse. This is an ignition wire. Find a source that gets power with the key on, and splice / plug it into that connection.
3. The second wire is a ground wire on the blower motor. The ground wire will be yellow with a black wire plugged into it. The black wire has a loop connector on the end. Ground the loop connector to a screw on the firewall.
4. The last wire is the high low pressure switch / compressor wire. This wire has a bullet connector that allows you to unplug it to get it through the firewall. Drill a 3/16 hole or find a spare hole in the firewall to run this wire out to the engine compartment. Route the wire behind the engine, plug the round plug onto the switch on the drier, any way you cannot hook it up wrong. Plug the other end to the compressor. **DO NOT TURN THE A/C ON UNTIL THE SYSTEM IS CHARGED.**
5. Use the supplied hose hold-downs to keep the hoses from rubbing on moving parts; this can cause a leak in the system.
6. Place the supplied a/c system sticker to the bottom of the hood.
7. The system requires 1.5 lbs of R-134a refrigerant. Do not use substitutes, dyes, or oil mixed refrigerants.

### **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.

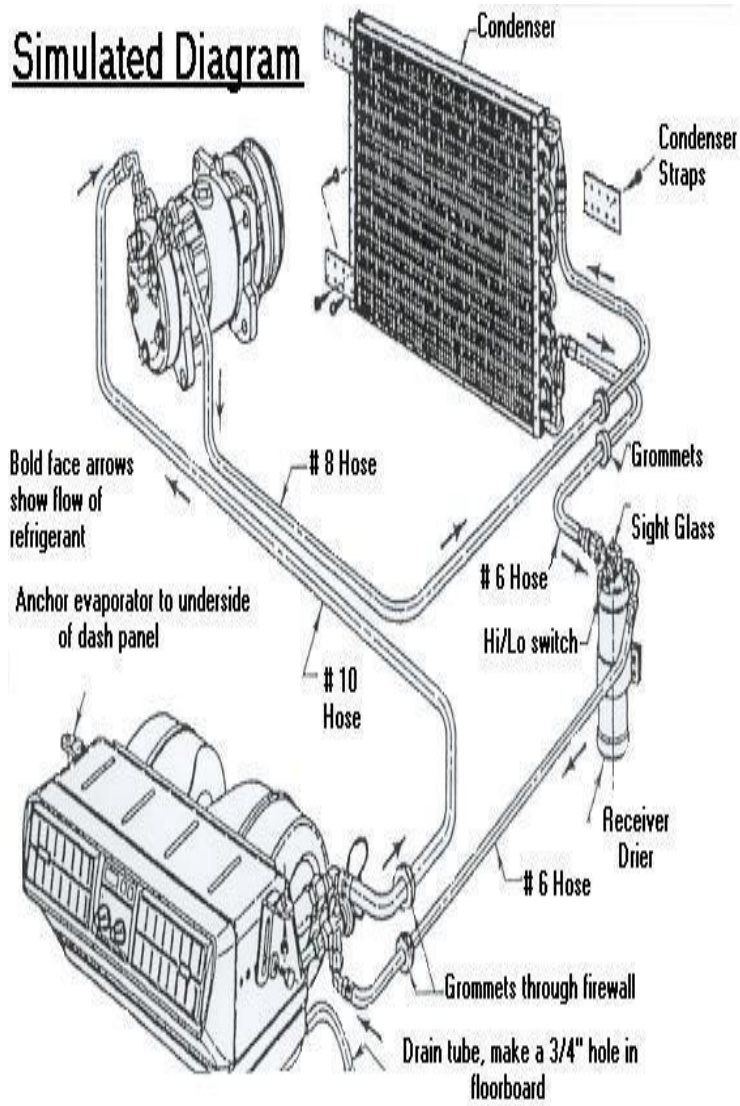
This completes the installation process. If you need any assistance please feel free to contact our technical support team by phone or email.

We thank you again for the business.

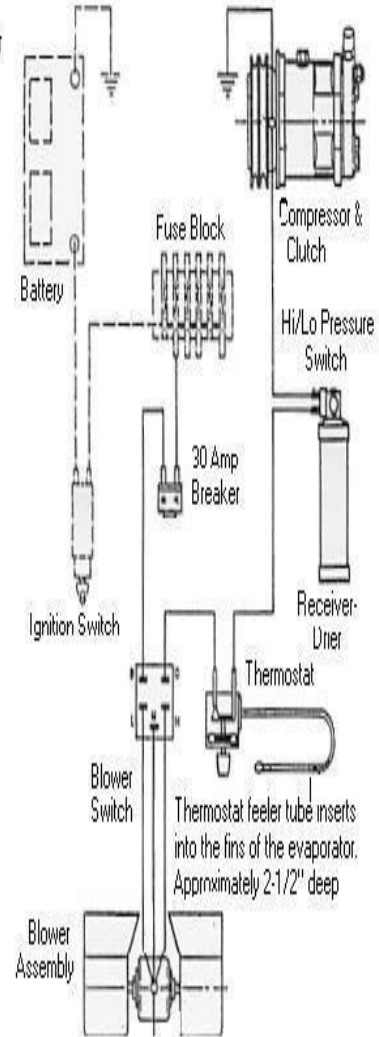
www.JEPAIR.com  
Air Parts  
3611 NW 27<sup>th</sup> Ave  
Ocala, FL 34475  
800-223-7167 sales@jeepair.com



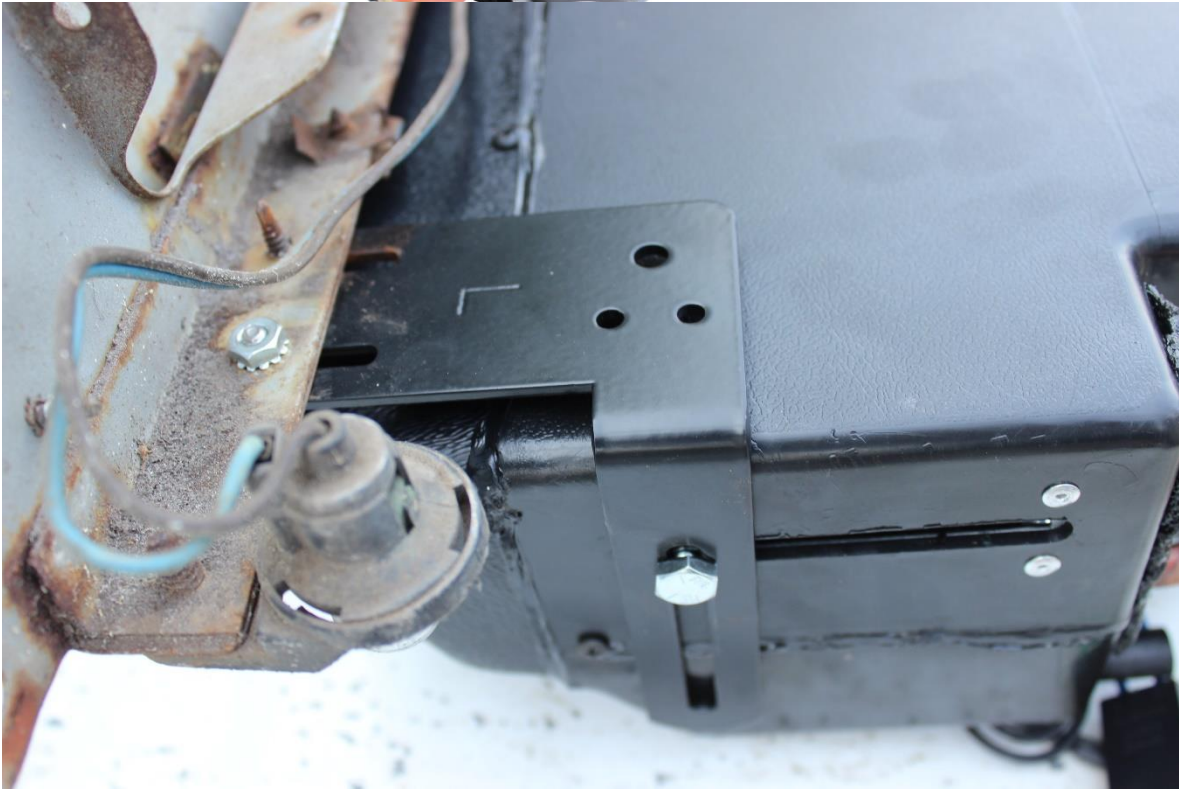
## Simulated Diagram



## Wiring Diagram



Supplemental photos of the UD-180 and mounting brackets:



## SUPPLEMENT

### CRIMP INSPECTION GUIDE

Always inspect crimps visually and dimensionally.



#### Visual Inspection

Visually inspect the first crimp to make sure that the correct dies were used, crimp location is correct, crimp is uniform, and there is no internal deformation of the fitting. A good crimp will be properly centered on the ferrule, meet the target depth dimension, and be symmetrical in shape.

#### What to look for:

- 1) The first visual criteria for a good crimp is the location of the crimp rings on the ferrule. The instructions provided should produce a crimp that is well centered on the ferrule. The first crimp ring will be approximately  $\frac{1}{4}$ " from the open end of the ferrule.
- 2) The second visual characteristic is symmetry. When the Crimper is properly setup, used, and maintained, it will produce a crimp which is evenly shaped with respect to the crimp depths and the pinched ears in between. Many conditions in the process could cause an irregular crimp including: worn guide blocks, dies not seated, missing woodruff key, or deterioration in the plastic die carriers. These faults will produce crimps that are noticeably irregular with varying depth of crimp, or several prominent "ears" between crimp segments.

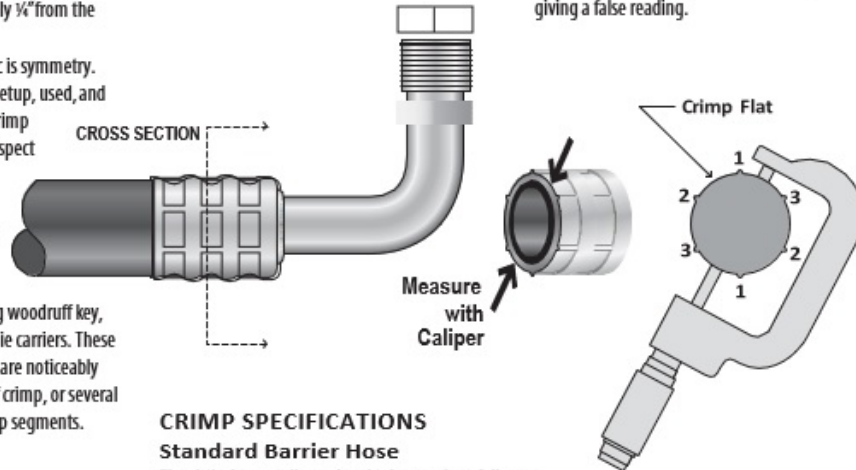
#### Dimensional Inspection

If the crimp is properly centered and regular, the crimp depth is the only remaining characteristic to check. The target dimensions can be measured with a set of blade or pin micrometers. The dimensional gauging should be used to verify the proper setup or when the tool is disassembled for maintenance. Gauges also should be used periodically during operation to verify continued acceptable crimps.

#### What to Measure

With the use of a micrometer measure across the diameter at the center of the crimp. The tooling manufacturer recommends checking in three locations: one reading on each of the three crimp bands, rotating the part to the next facet each time to assure checking each opposing die segment. In this manner each band and facet are checked.

NOTE: Using a Vernier Caliper may be an acceptable alternate gauge for the larger size fittings but not the smaller ones. Depending on ferrule size, the crimped "ears" may extend higher than the crimp diameter giving a false reading.



#### CRIMP SPECIFICATIONS

##### Standard Barrier Hose

The critical target dimensional tolerance is as follows:

Die Size	Target Diameter	Tolerance Range
#6	.660"	.650" to .675"
#8	.830"	.820" to .845"
#10	.936"	.926" to .951"
#12	1.035"	1.025" to 1.050"