INSTALLATION INSTRUCTIONS

CASE 580L & 590L (SERIES 2) BACKHOE LOADER

ARCTIC WOLF™
BY HAMMOND AIR CONDITIONING LTD.

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CASE 580L&590L (SERIES 2)
INSTRUCTIONS

EVAPORATOR COIL:

The evaporator coil goes inside the headliner alongside the existing heater assembly.

1. Remove the headliner from the cab. Set the headliner aside and keep clean.
2. Ensure the drain tubes on the integral drain pan are clear of obstruction. (2 tubes run forward and 2 tubes to the back)
3. Set the evaporator assembly in along side the heater coil in the headliner. Secure in place by making sure the end tabs on the evaporator are held in with the heater coil. Make sure the expansion valve is oriented toward the back of the cab with the inlet fitting pointed up.
4. Connect the drain tubes in the kit to the drain outlets from the integral drain pan and run out of the cab as shown in the pictures. There will be a total of four drain lines – two running down the forward columns and two down the side columns (one down each).

Evaporator mounted in position.

Fitting end of evaporator (left end).

Heater tube end of evaporator coil.

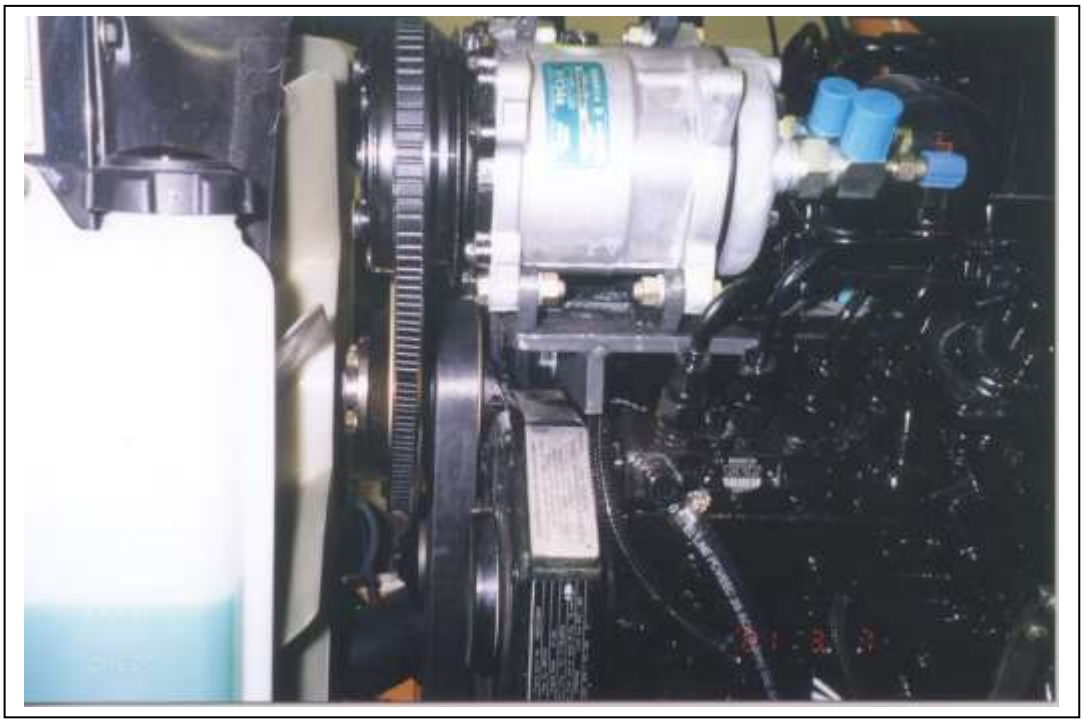
Drain lines (4) running front and back. Down corner posts at front and down side columns at rear.

Evaporator hoses running back around back of cab headliner area.

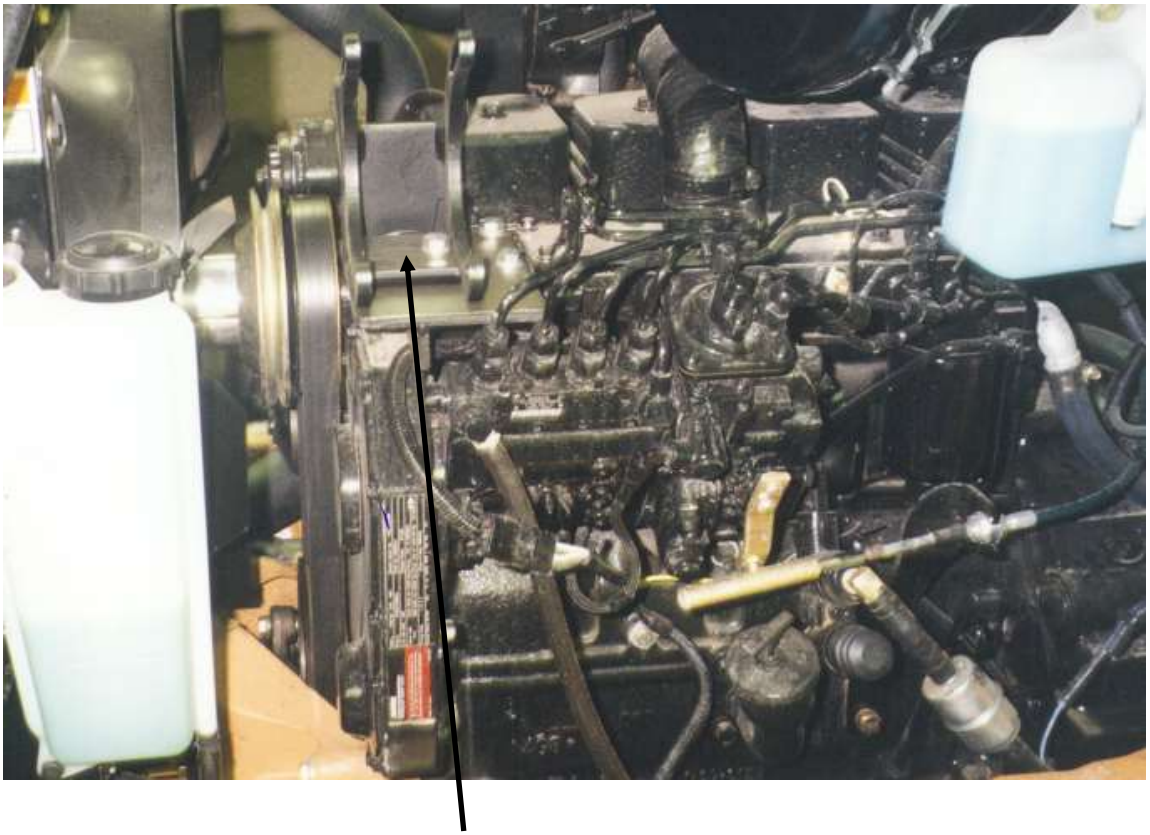
COMPRESSOR:

The compressor is mounted on the engine in the location on the top left of the engine.

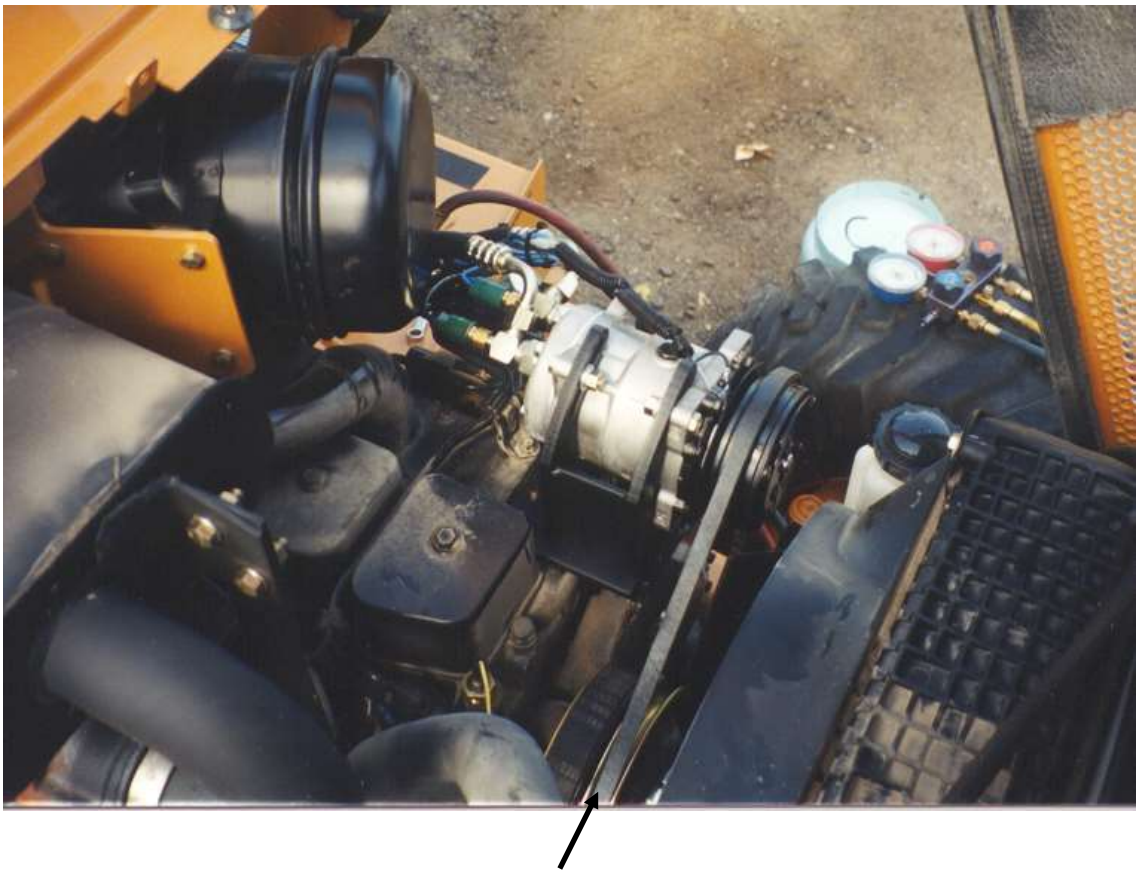
1. Open the engine area and access the radiator fan and engine mount area.
2. Remove the fan assembly. Install the add-on pulley supplied in the kit. (NOTE) FOR MACHINES WITH A THERMOSTATIC FAN, THE TENSIONER ARM NEEDS TO BE PULLED UP AND THE PULLEY INSTALLED AND THEN THE TENSIONER ARM PUT BACK DOWN. THERE WILL ONLY BE ABOUT 2mm CLEARANCE FROM THE TENSIONER ARM TO THE PULLEY.
3. Set the compressor mount in place on the top of the engine and secure with the metric hardware provided. Make sure the front stabilizing bolt is in place.
4. Mount the compressor on the compressor mount and secure with the hardware provided. Ensure that the oil fill port is oriented 'UP'.
5. Install the V-belt over the pulley added onto the fan hub and over the front groove on the compressor. A selection of V-belts is included in the kit so that the best fit can be selected. Adjust to the desired tension and secure with the compressor mounting hardware.



Compressor in place on engine.
(Old style hose connections)



Compressor mount location on engine.



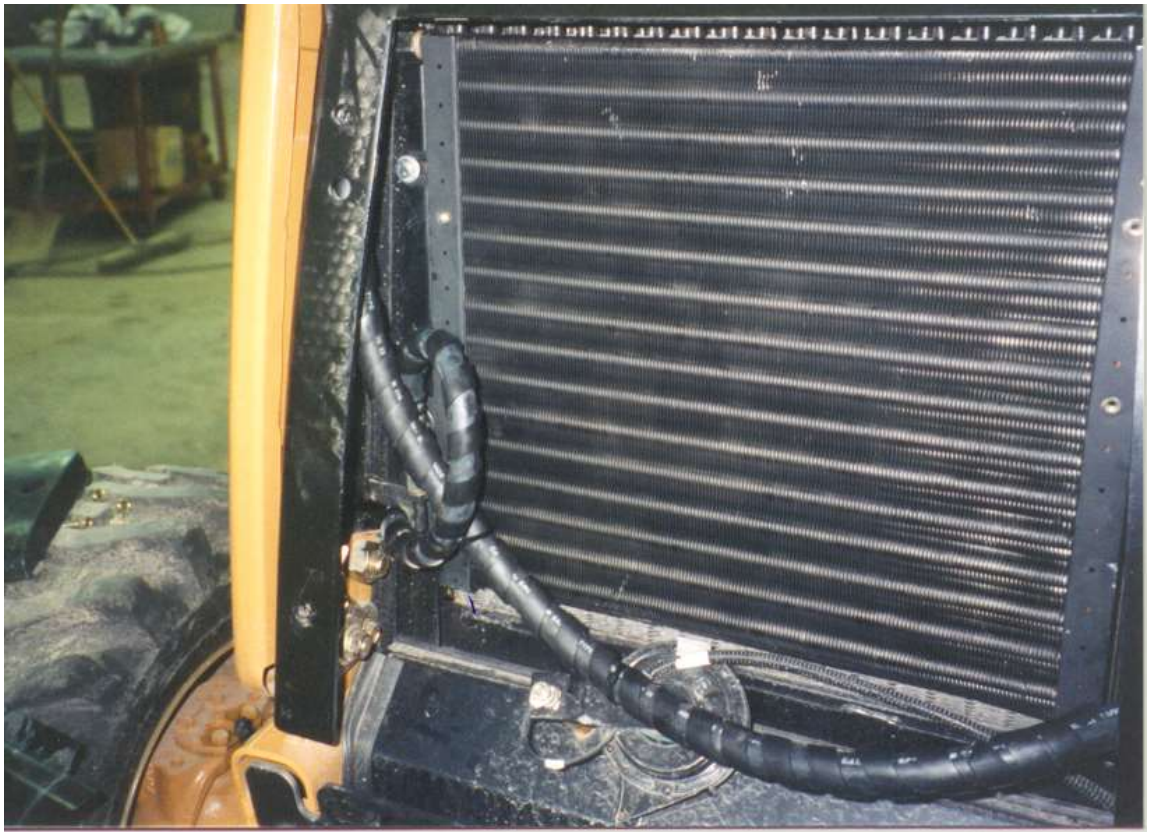
Compressor mounted showing belt and add on pulley.
(Old style hose connections)

Compressor in place showing new style pad fitting and hose connections.

CONDENSER:

The condenser mounts across the face of the radiator on existing bolt points.

1. Remove the front grill from the hood of the machine.
2. Mount the condenser and frame assembly to the four existing bolt points with the hardware provided in the kit. Place the spacers between the condenser frame and the radiator frame.
3. Secure tightly.
4. **NOTE:** It may be necessary to remove the horn assembly to install the condenser. If so remount as close as possible to its original location.



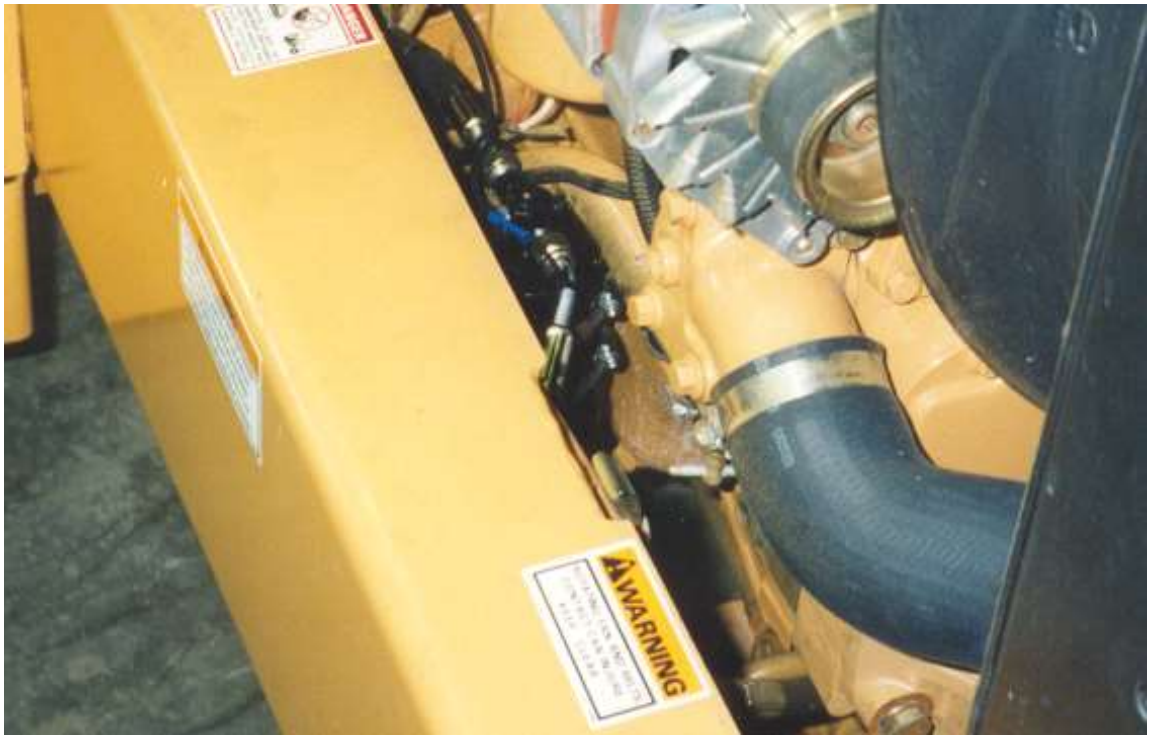
Condenser mounted with hoses in place.

Condenser in place showing hose routing.

DRIER:

The receiver drier is mounted on a straight drier bracket along the frame on the right side of the engine.

1. Locate the existing bolt to be used to mount the drier bracket and remove. (see picture for location)
2. Mount the drier bracket, reinstall bolt and tighten.
3. Mount drier to bracket using the two #48 gear clamps provided. Ensure the 'INLET' fitting of the drier is oriented toward the front of the machine.



Drier in place on right side frame member.

HOSE RUNS:

The hoses are all pre-crimped and pressure tested for leaks.

13/32" Hose Compressor to Condenser:

The hose runs from the compressor fitting (the 90o at the end of the hose with the 134a access tee in place) to the top fitting on the condenser. The hose is routed back toward the cab from the compressor down, around and forward along the side of the radiator and across the front of the condenser and up to the top fitting on the coil. The 90o fitting connects to the top fitting with the seal in place. See the pictures for the condenser installation above.

5/16" Hose Condenser to Drier:

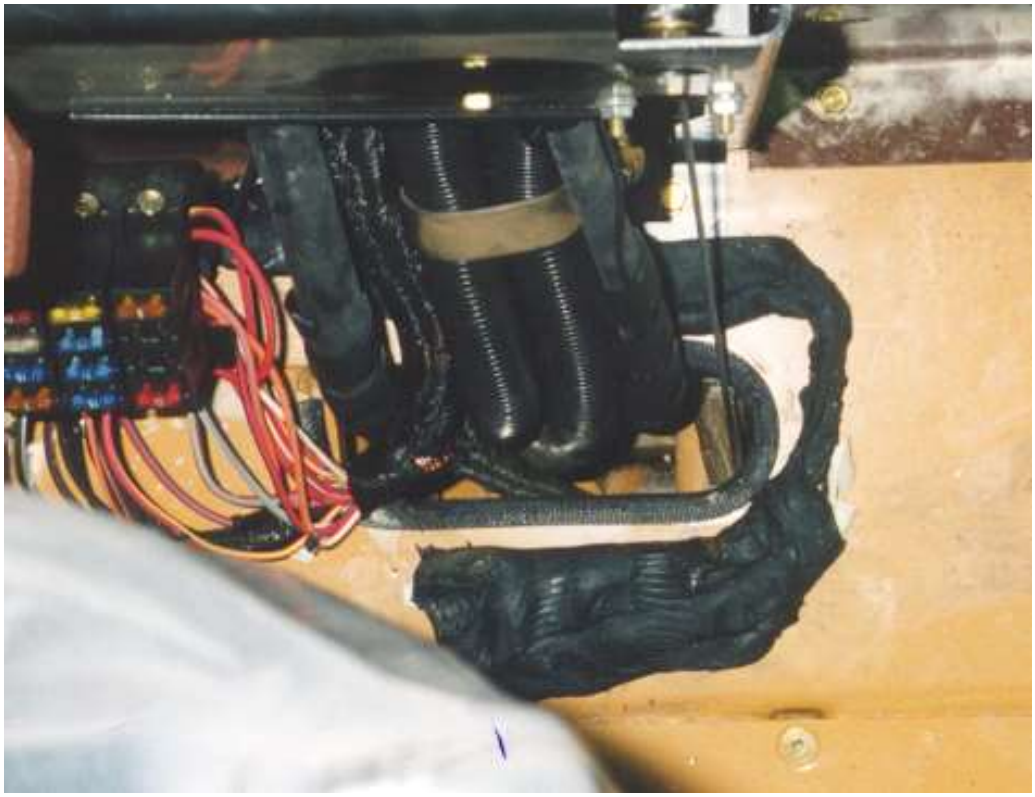
The hose runs from the condenser outlet fitting (bottom) to the drier along the right hand side of the engine. Connect the straight fitting to the condenser and loop the hose up and around along the side of the condenser and out along the frame on the right side of the machine. Connect the other fitting to the 'INLET' fitting on the drier.

5/16" Hose Drier to Evaporator:

The hose runs from the drier along the side of the frame and up into the cab on the right side of the operator. The hose is run into the cab with the ½" suction line from the compressor. Run both the lines up the right side column (behind the cover and brackets) and across the back of the cab (see pictures). Loop the hoses around and connect to the evaporator. The other 90o fitting on the hose is connected to the expansion valve.

1/2" Hose Evaporator to Compressor:

The ½" hose is first connected at the compressor using the 90o fitting with the access port for charging crimped next to it. Connect this fitting to the compressor fitting and run the hose back as shown. The hose will cross over to the right side of the machine under the cab and behind the engine. It then follows the 5/16" hose into the cab and up to the evaporator. Connect the 90o fitting at this end to the evaporator outlet fitting.

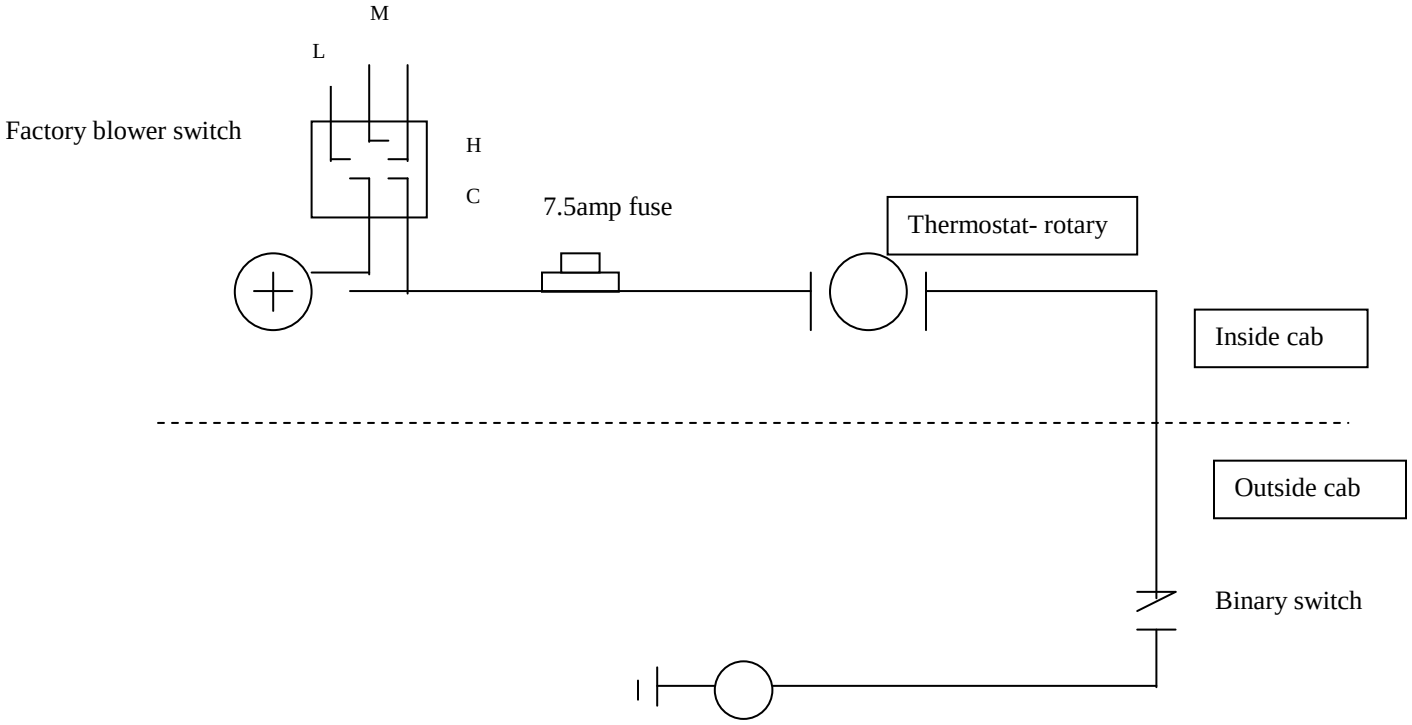


Hoses routed through floor of cab.

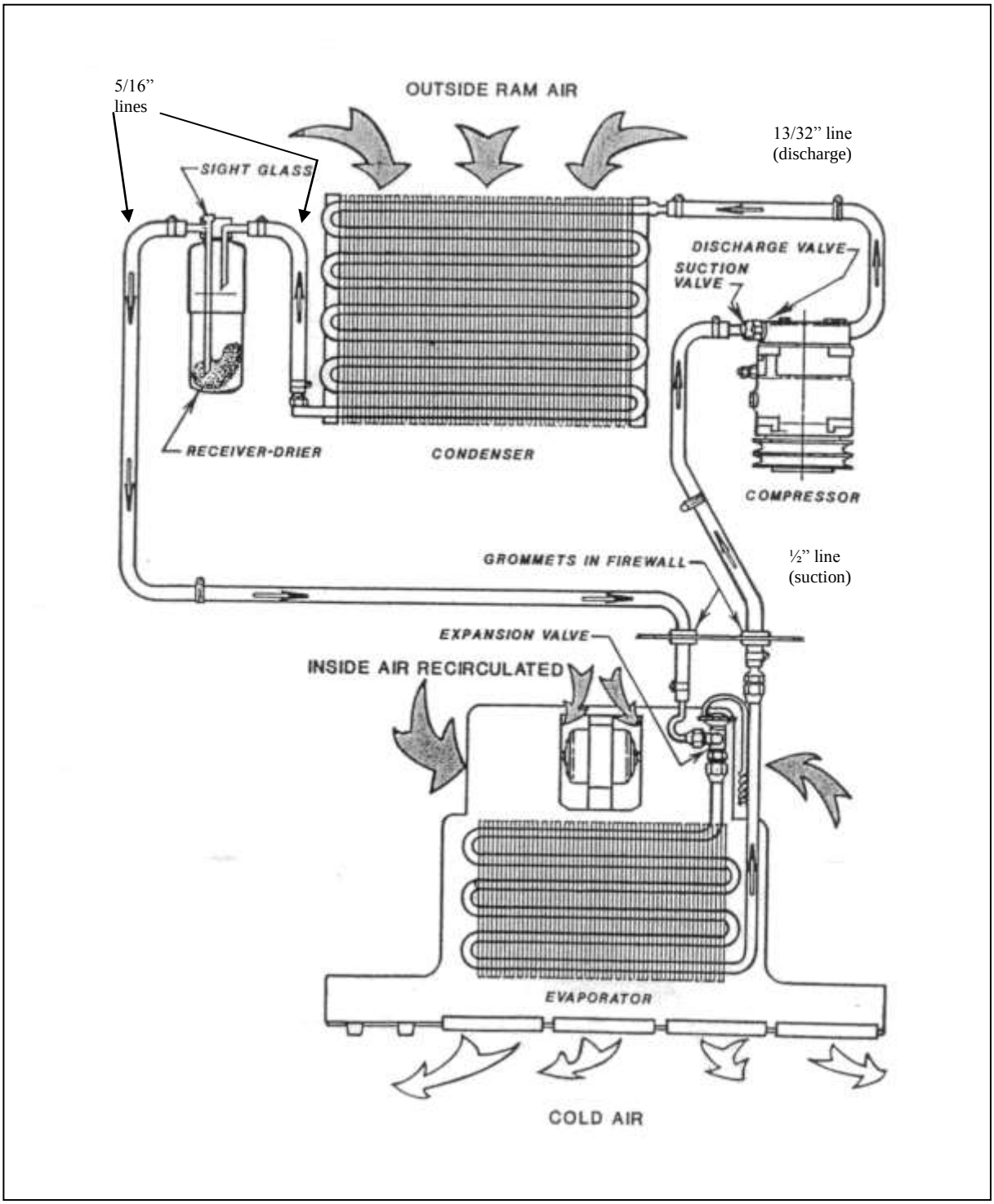
Hoses running up column on right side of cab.

ELECTRICAL:

The electrical system for the Air Conditioning takes power off the clutch terminal of the blower switch. This is the terminal that is live when the blower fans are running. Take power from this terminal and run to the thermostat. The thermostat is mounted in the same console as the blower switch and other controls, and is in the factory location. From the thermostat run the black 14ga clutch wire in the split loom out of the cab with the hoses. Run forward with the 1/2" hose to the compressor and connect to the pressure switches. Connect to the clutch wire running out of the compressor.



Refrigerant Flow Pattern in a Standard Air Conditioning System



Thermostat Setting Procedures

1) Thermostat types a) preset
b) adjustable

a) A preset thermostat is adjusted to its specific cut in and cut out temperatures when manufactured and does not have a rotary adjustment for the operator.
b) An adjustable or rotary thermostat has been manufactured to a predetermined cut in and cut out temperatures, but it is also operator adjustable to achieve the desired comfort level.

Both types of thermostats can have their factory settings adjusted by turning the setting screws on the body of the thermostat. One body type has the setting screws mounted externally and labeled for direction of rotation. The other body type requires the removal of the plastic end plate to expose the set screw.

2) Thermostat probe location: The location of the thermostat probe in an evaporator coil can be very important to achieve the maximum cooling potential of the coil while also preventing coil freeze-up. There is no set location for the thermostat probe to be put that will be optimum for all systems, but several rules of thumb may be followed:
    a) Insert the probe in the coldest area of the evaporator coil.
    b) Insert the probe from the top of the coil down, if possible.
    c) Make sure that at least the last 3" of the thermostat probe are in the coil.

To find the most likely area where the coil is the coldest, consider these factors:
    1) Direction of air flow through the coil.
    2) The coil area likely to have the lowest air flow.
    3) The inlet locations of the refrigerant into the coil.
    4) The inlet of the hotter outside air into the coil area.

1) Usually the coldest side of the evaporator coil will be the air outlet side. Often the thermostat probe can be inserted between the last and second last row of tubes.
2) The lower air flow area of the evaporator coil in most systems tends to be near either end of the coil. These areas will be colder
3) The area of the coil that the refrigerant inlet tube(s) occupy should be the coldest part of the coil.
4) If the system is equipped with an outside air intake, where and how that air is brought into the evaporator area can have a large effect on the coil temperature. If all the outside air is piped into the evaporator in one area, that area will be considerably warmer in hot weather.

By looking at all these different factors, the area of an evaporator coil most likely to be the coldest can be determined.

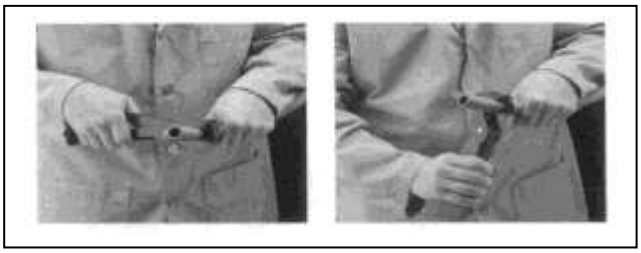
Once the probe is inserted, the A/C system needs to be tested. Run the system to ensure that the thermostat is cycling the compressor off at the appropriate temperature. A core temperature ranging between 25° and 30° F should cause the thermostat to cycle off. The air temperature at the vent outlet closest to the evaporator coil should be between 38° F and 45° F when the compressor cycles off.

If the thermostat doesn't cycle off after a reasonable cool down period, and the air outlet temperature has dropped below 40° F, the cut in and cut out settings should be adjusted until the compressor is cycling on and off regularly. Let the system run for a decent time period (at least 15 min) and then check the evaporator coil for any signs of freezing.

Aeroquip E-Z Clip

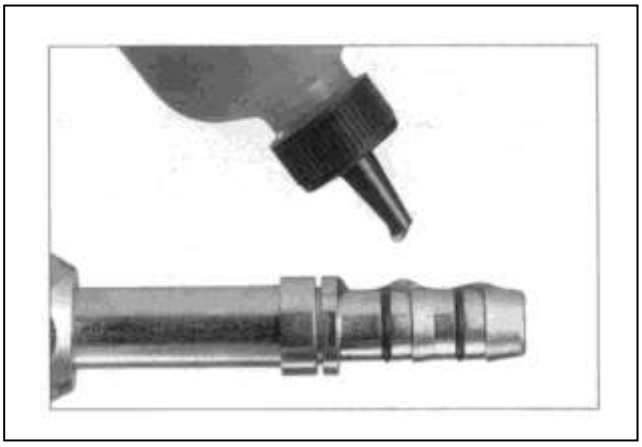
Assembly Instructions

Step 1. Cut the hose to proper length with an appropriate cutting tool. Aeroquip's hand held hose cutter has been specially designed for cutting all non-wire reinforced hose, such as GH-134 Multi-Refrigerant hose. Be sure the cut is made square to the hose length.



Step 2. Install two proper-sized clips onto the cut end of the hose. Orientation of the clips does not affect the performance of the connection. However, for ease of assembly, both clips should have the same orientation. NOTE: Failure to slide the clips over the hose at this time will require the clips to be stretched over the hose or fitting later. This may permanently damage the clip.

Step 3. Lubricate the nipple with a generous amount of the refrigeration or A/C system's compressor lubricating oil. This MUST be done to lower the force of nipple insertion.



Step 4. Insert the nipple into the hose. To ensure that the nipple is fully inserted, check the gap between the cut end of the hose and the shoulder on the nipple. Care should be taken to avoid kinking or other damage to the hose during nipple insertion. NOTE: Be sure to wipe excess oil from the nipple and hose.

Step 5. Snap the cage into the groove on the nipple. The arms should extend over the hose length. When the cage has been correctly installed in the cage groove, the cage will be able to rotate in the groove. This step MUST be performed to ensure:

1. The clips will be located over the O-rings on the nipple.
2. The connection will be compatible with the connection's pressure rating.

Step 6. Slide the clips over the cage arms and into the channels on each arm.

For easiest assembly, the clasp should be closed between the cage arms.

Step 7. Use the pliers to close the clips. The pliers should be positioned squarely on the clip connection points and should remain square during the closing of the clip.

NOTICE: E-Z Clip components should not be reused.