

# INSTALLATION INSTRUCTIONS

## CAT 769C/773B ROCK TRUCK



HAMMOND AIR CONDITIONING LTD

INGERSOLL, ONT.

1-800-267-2665

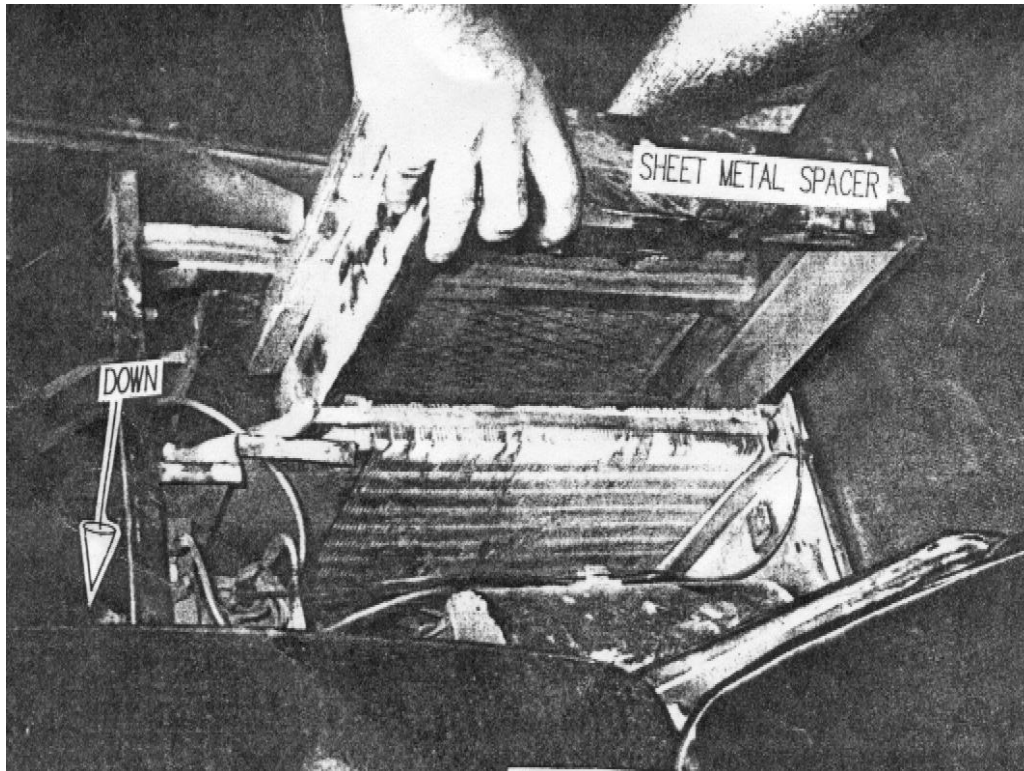
1-888-267-3745 (FAX)

## CAT 769C/773B INSTRUCTIONS

### EVAPORATOR COIL:

The evaporator coil goes alongside the heater core in the heater blower assembly under the 'jump seat' in the cab

1. Remove the heater box cover (jump seat), by removing the two bolts on the front side of the heater box.
2. Open the front access panel of the heater box.
3. Remove the sheet metal spacer between the heater core and the recirculation filter.
4. Clean out any loose dirt or debris in the heater box. Clear the drain hole in the floor of the heater box. Any filters should also be cleaned at this time.
5. Connect the pre-crimped straight male fittings on the long #6 hose and on the #12 hose to the expansion valve on the evaporator. Feed the hoses through the floor and lower the evaporator into position where the sheet metal spacer was removed.

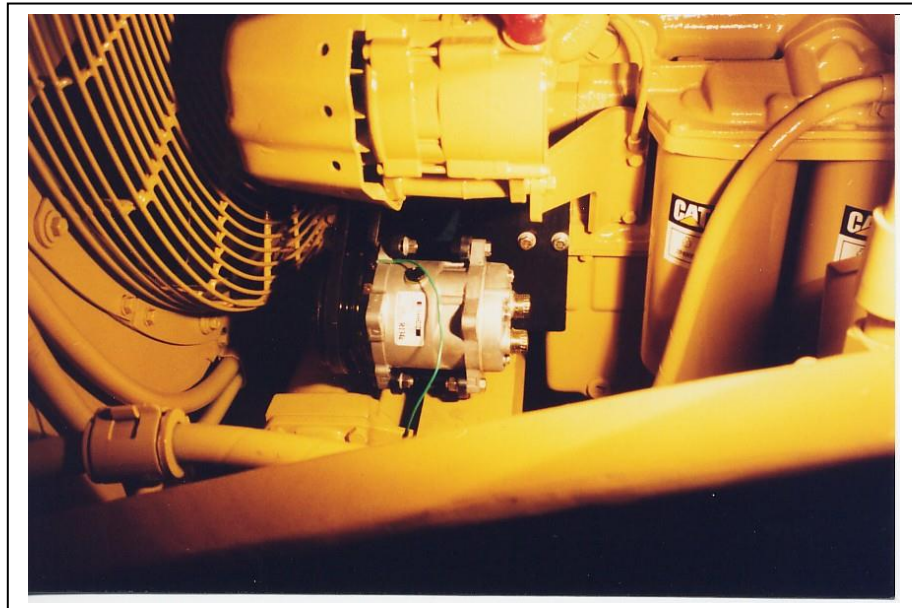
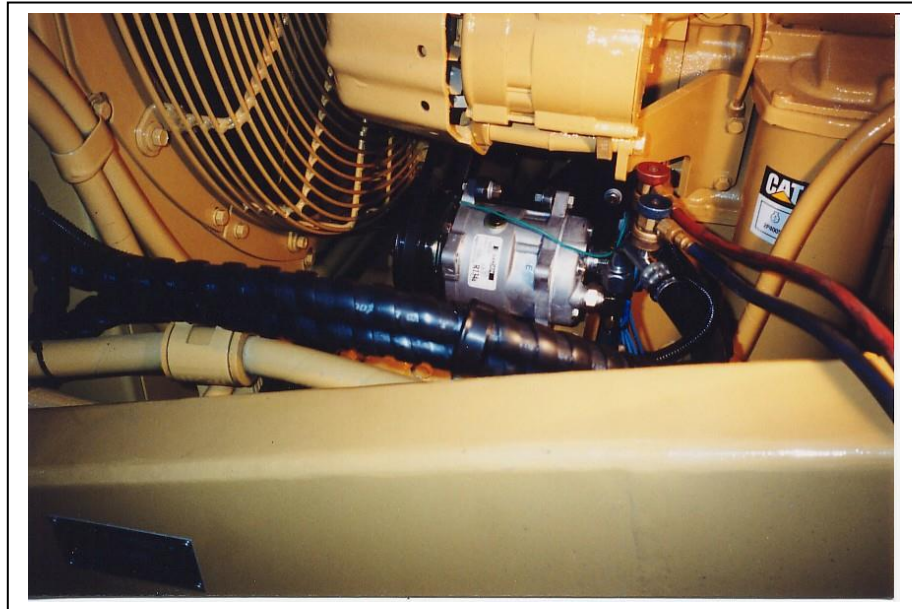


Spacer being removed where evaporator coil is installed.

## **COMPRESSOR:**

The compressor mount is to be fastened to the left side of the engine directly below the original alternator position and drives off an open groove on the crankshaft.

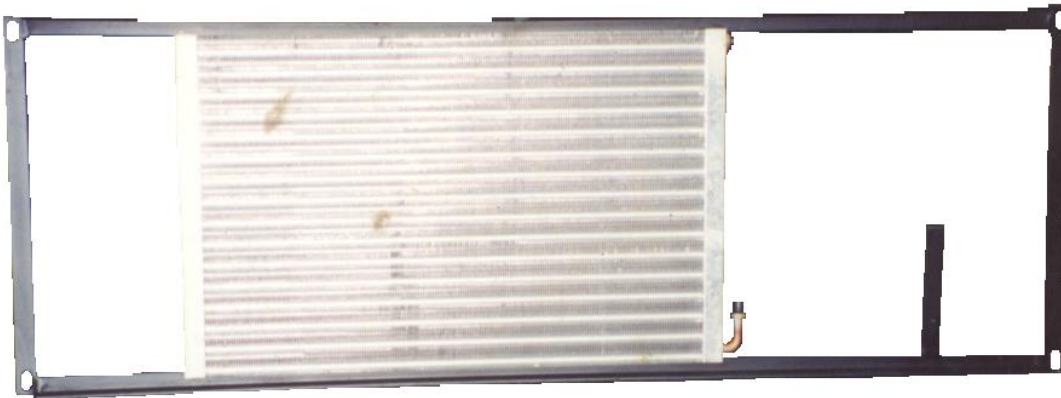
- 1) Set the compressor onto the mount with the hardware provided.
- 2) Install the compressor and mount onto the engine as shown in picture using 3/8" x 1 1/2" bolts, locks and flats.
- 3) Install the belt and carefully check alignment. Adjust mount as required and tighten mount, belt and compressor.



## CONDENSER:

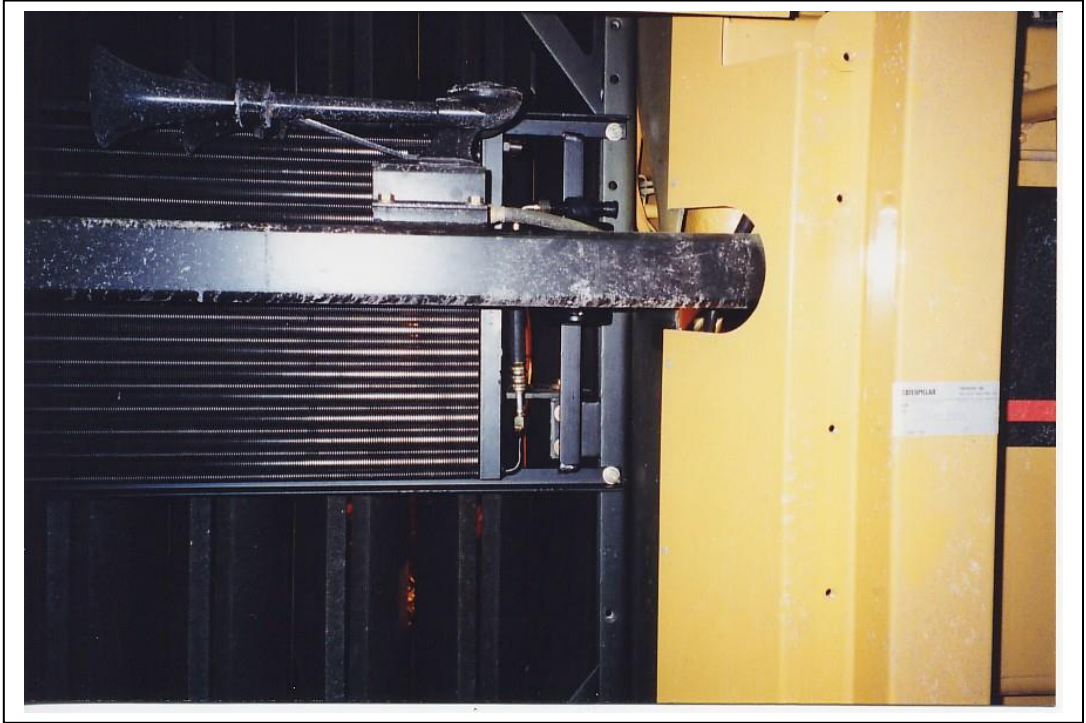
The condenser mounts to the face of the radiator mounted on the brackets bolted to the side frames.

1. Remove the frame and screen from in front of the radiator in order to access the front of the radiator assembly.
2. Position the condenser assembly over the existing bolt points on the radiator frame and mount into place with the hardware provided. If the existing mounting points do not line up, drill and tap new mounting holes instead.
3. Connect the pre-crimped straight fitting on the #8 hose to the top fitting on the coil.



Condenser and frame assembly (drier bracket to the right).

- 4) The drier should be pre-assembled to the condenser frame. An additional drier bracket and hose is provided as some machines have an obstruction on the designated drier spot.
- 5) This condenser and drier may also be installed on the opposite side of the condenser frame. Some machines have obstructions not allowing the condenser to mount closer to the rad and therefore it can also be mounted to the rad cowling.



## HOSES:

The hoses for the air conditioning are all pre-crimped and need only to be routed and secured by the installer.

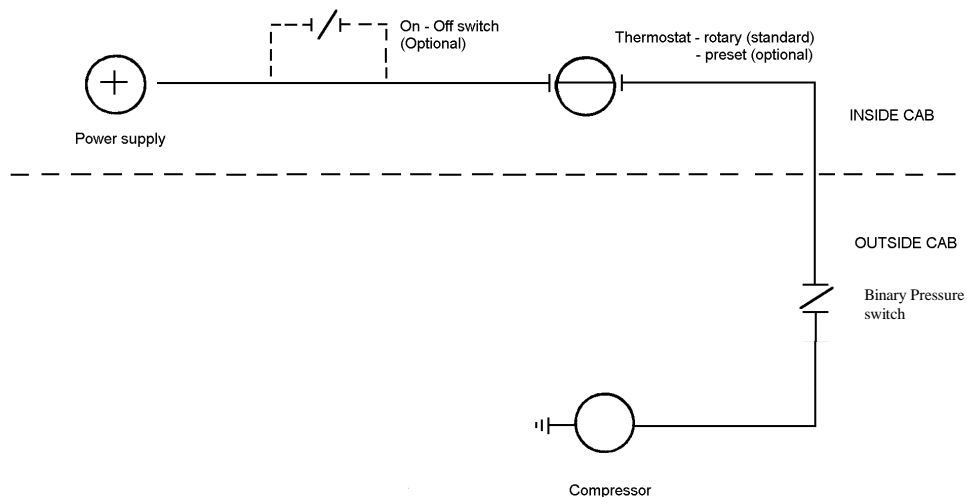
1. The 13/32" (#8) hose runs from the condenser and feeds back around the side of the radiator down to the compressor location on the cross member. It may be necessary to notch out the flange around the side of the radiator to allow the hose to be fed through. The 90o fitting with the 134a charging port is to be connected onto the discharge side rotolock fitting (will have the pressure switch with the black leads) at the compressor.
2. The 5/16" (#6) hose runs from the expansion valve through the bottom of the evaporator housing into the engine compartment with the #12 suction hose. Route it forward to the condenser assembly through the side flange of the radiator with the #8 hose running back to the compressor. Connect the 90o fitting to the 'OUTLET' fitting of the drier and tighten.
3. The 5/8" (#12) hose runs from the return fitting on the expansion valve down through the bottom of the evaporator housing into the engine compartment with the #6 liquid line. It follows the #6 line to where it meets the #8 line from the compressor. The #12 line then follows the #8 line back to the compressor and connects to the suction side rotolock fitting (the one with the pressure switch with the blue leads). The 90o fitting with the 134a charging port is connected at the compressor.



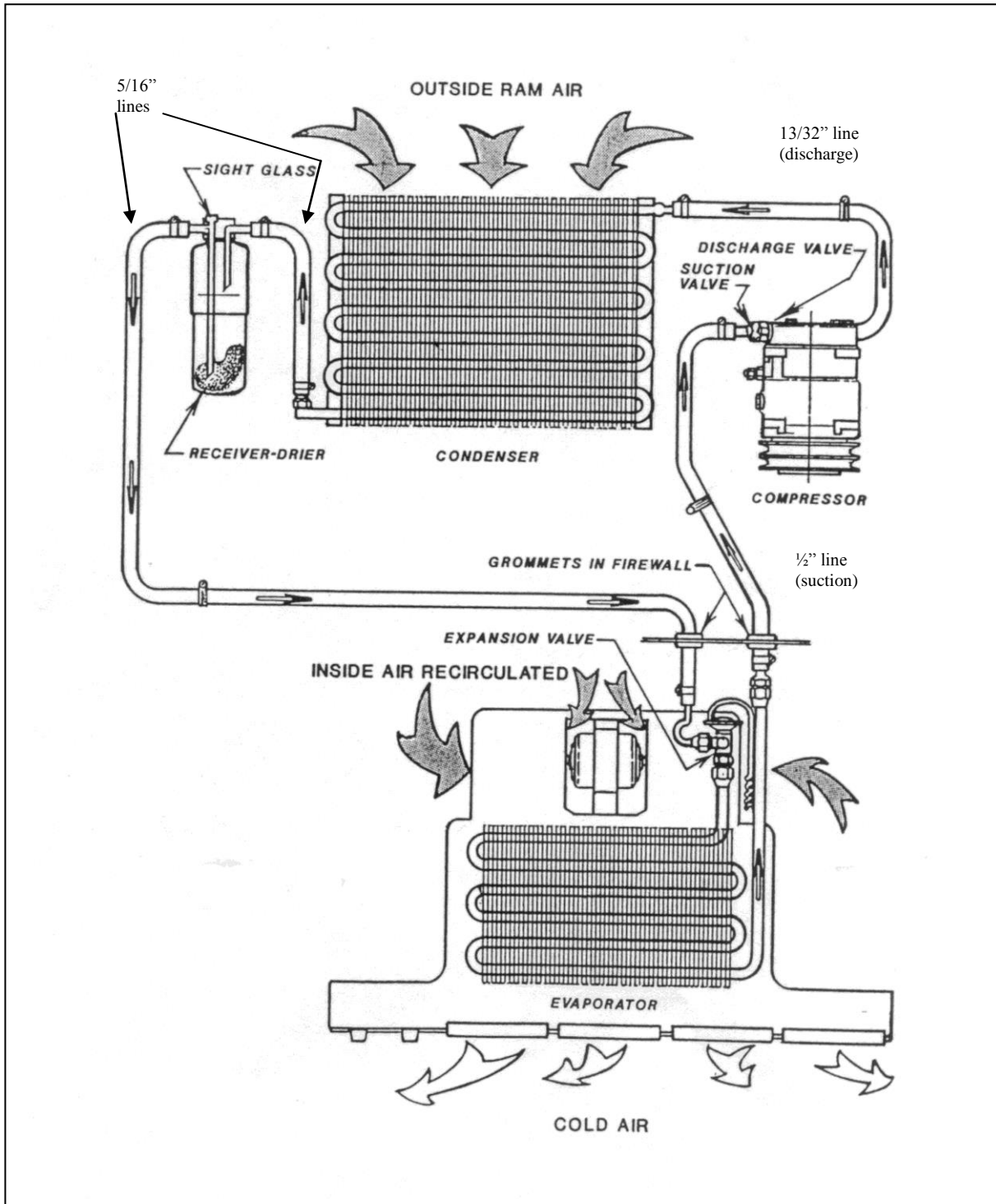
## ELECTRICAL:

The electrical system is designed to be simple and straightforward to install and to service. All connections are in series and require no special tools. The system is available with an optional toggle switch and pre-set thermostat and is shown in the wiring diagram below as 'optional'.

1. In the face of the heater box, near the existing switches, drill a 7/16" diameter hole to mount the thermostat (or toggle switch – needs a 1/2" hole).
2. Mount the thermostat in position, making sure that none of the terminal posts are in contact with any metal parts of the housing. Insert the thermostat probe into the evaporator coil at a point near the end with the expansion valve and approximately 2" from the bottom of the coil.
3. From the blower switch there will be one post that is live in all the fan speed positions except 'OFF'. This is the clutch terminal post.
4. Connect the thermostat to the clutch post of the blower switch.
5. Connect the 14ga black wire with the wire loom to the other terminal on the thermostat and run back to the compressor with the suction hose.
6. Connect to the pressure switches in series and then to the compressor clutch wire.



## 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.
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- 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.

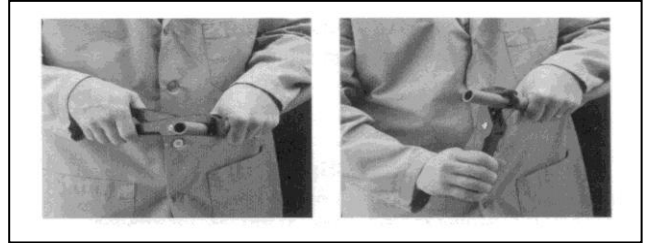
By looking at all these different factors, the area of an evaporator coil most likely to be the coldest can be determined.

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.

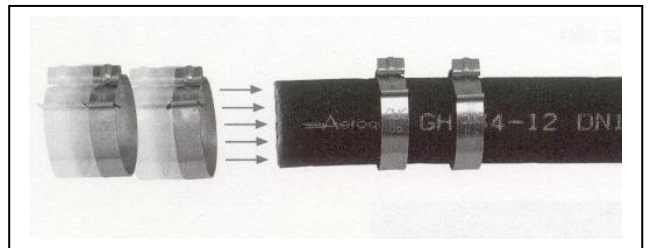
If the thermostat doesn't cycle off after a reasonable cool down period, and the air outlet temperature has dropped below 40° F, the cut in and cut out settings should be adjusted until the compressor is cycling on and off regularly. Let the system run for a decent time period (at least 15 min) and then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

## Aeroquip E-Z Clip Assembly Instructions

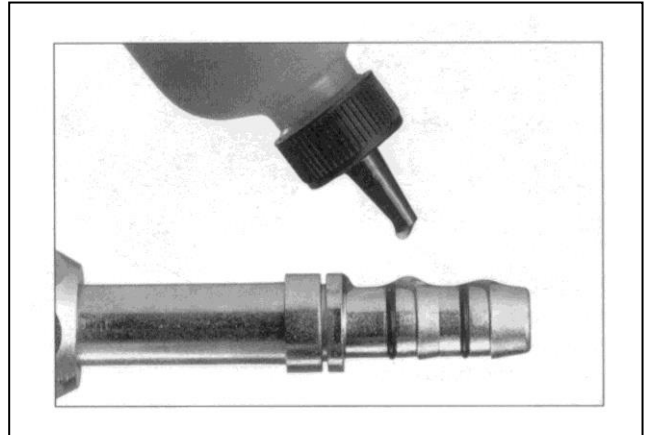
Step 1. Cut the hose to proper length with an appropriate cutting tool. Aeroquip's hand held hose cutter has been specially designed for cutting all non-wire reinforced hose, such as GH-134 Multi-Refrigerant hose. Be sure the cut is made square to the hose length.



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.

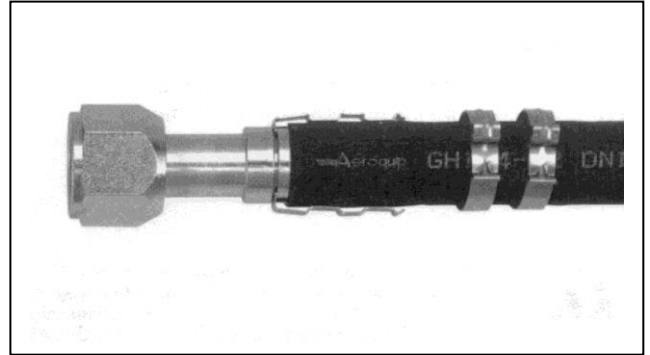


Step 4. Insert the nipple into the hose. To ensure that the nipple is fully inserted, check the gap between the cut end of the hose and the shoulder on the nipple. Care should be taken to avoid kinking or other damage to the hose during nipple insertion. NOTE: Be sure to wipe excess oil from the nipple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

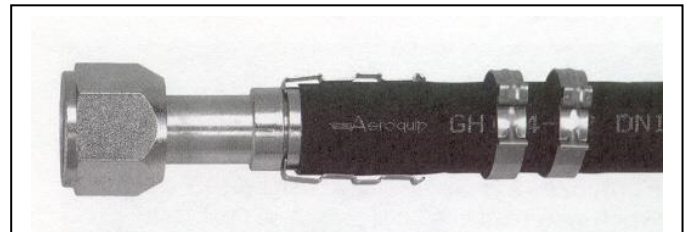


Step 5. Snap the cage into the groove on the nipple. The arms should extend over the hose length. When the cage has been correctly installed in the cage groove, the cage will be able to rotate in the groove. This step **MUST** be performed to ensure:

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.



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.

