

INSTALLATION INSTRUCTIONS

CAT 777D HAUL TRUCK



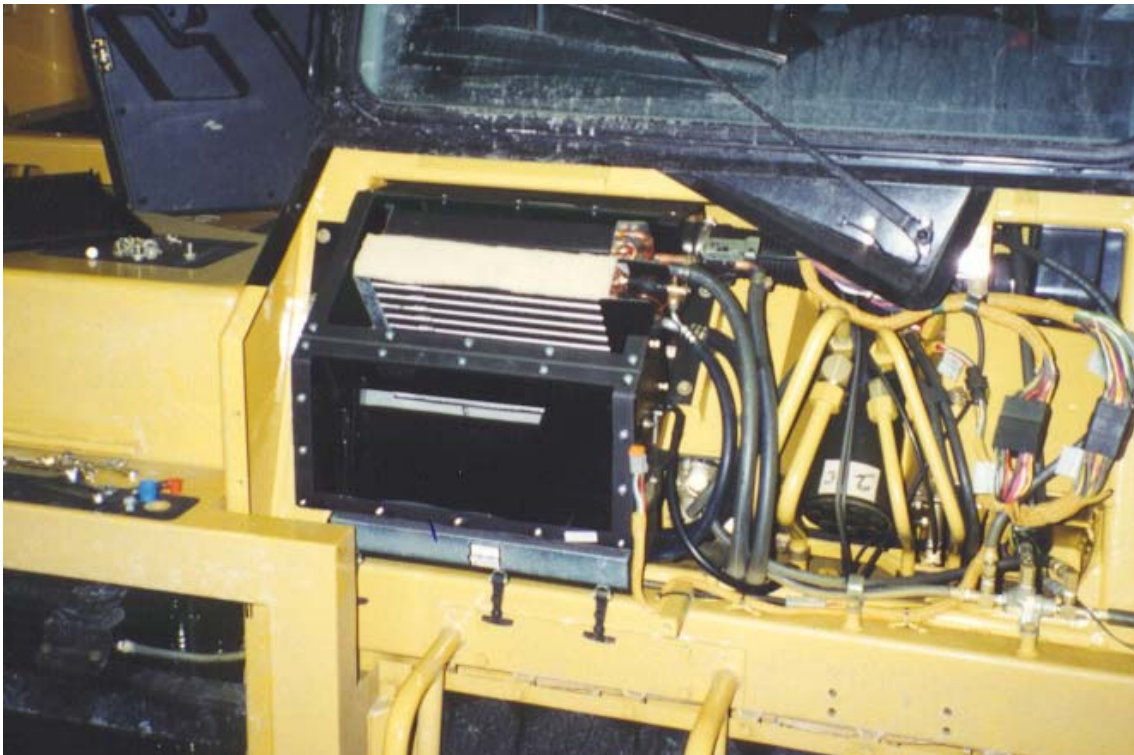
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CAT 777D INSTRUCTIONS

EVAPORATOR COIL:

The evaporator coil goes alongside the heater core in the heater blower assembly in front of the cab

1. Remove the exterior cover from in front of the operator's windshield. Remove the cover over the heater box assembly to access the heater core area.
2. Ensure the drain tubes are clear and attach the drain lines with the air inlet restrictors to the exposed drain tubes with the #4 gear clamps provided.
3. Insert the evaporator coil assembly into place beside the heater coil and secure. Make sure the expansion valve is 'UP' and oriented as shown in the pictures.
4. Do not resecure the cover until the system has been leak tested.



Evaporator in position beside heater coil in box.

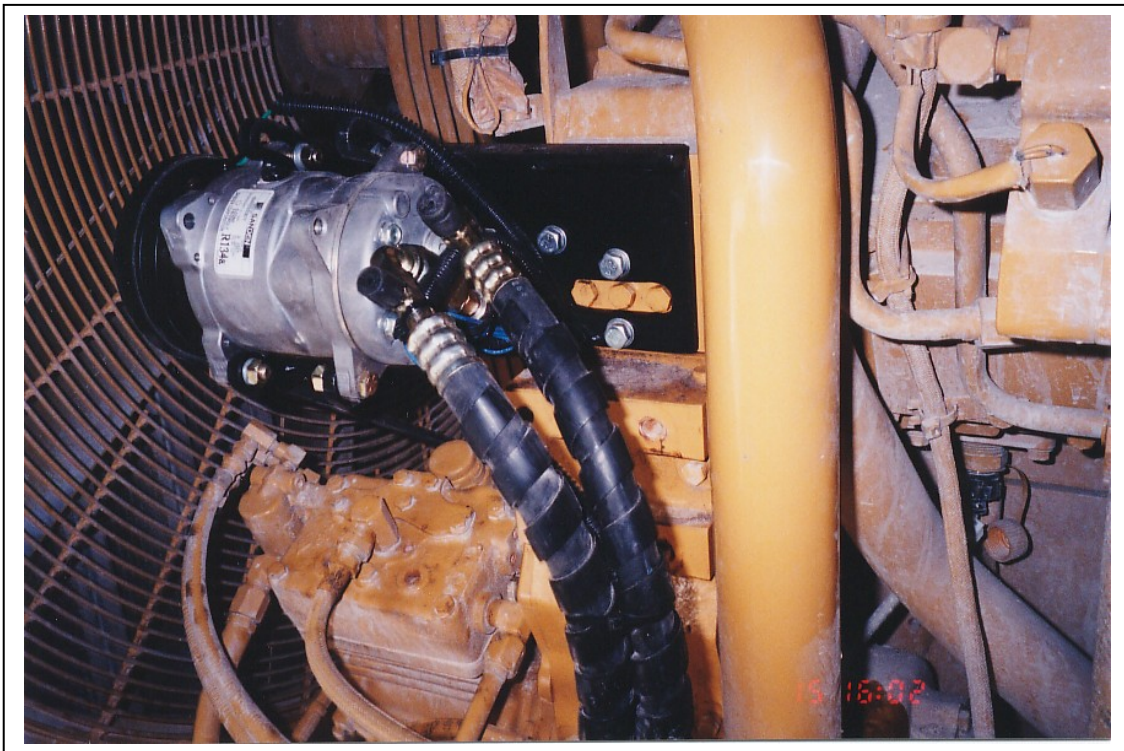


Assembly with cover re-installed.

COMPRESSOR:

The compressor mounts on the lower left-hand side of the engine below the alternator and drives off an open groove on the crankshaft pulley.

- 1) Install the mount to the location as shown . There will be three open threaded holes. The holes may need to be run through with a tap to remove any paint from the threads.
- 2) Check for alignment and secure the mount in place.
- 3) Mount the compressor onto the mount as shown and install the drive belt. The belt will drive the front groove on the compressor.



Compressor mounted in place showing bolt locations.



Compressor showing set-up and hose routing.

CONDENSER:

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

1. Remove the frame and screen from in front of the radiator in order to access the front of the radiator assembly.
2. Slide the condenser assembly across in front of the radiator and behind the box beam cross member.
3. Bolt to the existing threaded holes on the radiator flanges with the hardware provided.



Right side of condenser with drier as viewed from front of truck.



Left side of condenser as viewed from in front of the truck.

RECEIVER-DRIER:

The receiver drier assembly is mounted on the right side of the condenser assembly as viewed from the front of the truck. See picture on previous page.

HOSES:

The hoses for the air conditioning are all pre-crimped on one end and will require being cut to length and crimped by the installer.

1. The 13/32" (#8) hose runs from the compressor discharge rotolock fitting (the one with the pressure switch with black leads – high pressure) toward the front of the truck and up to the inlet fitting at the top of the condenser. The 90o fitting with the 134a charging port is to be connected at the compressor. See the compressor pictures and the following picture for hose set-up.
2. The 5/16" (#6) hose runs from the drier to the expansion valve. It is routed from the drier back to the engine compartment with the 13/32" hose and then up to the evaporator with the 5/8" suction hose. Connect to the 'INLET' fitting of the expansion valve and tighten.
3. The 5/8" (#12) hose runs from the compressor suction rotolock fitting (the one with the pressure switch with blue leads – low pressure) up toward the cab. From the compressor the hose is routed tied to the 13/32" hose and then runs up to the cab with the 5/16" hose. See the pictures for accurate descriptions of the outing. The 90o fitting with the 134a charging port is for use at the compressor and the other 90o fitting is for use on the outlet side of the evaporator.



Hose routing in engine compartment of truck.



Hoses at condenser/drier assembly.

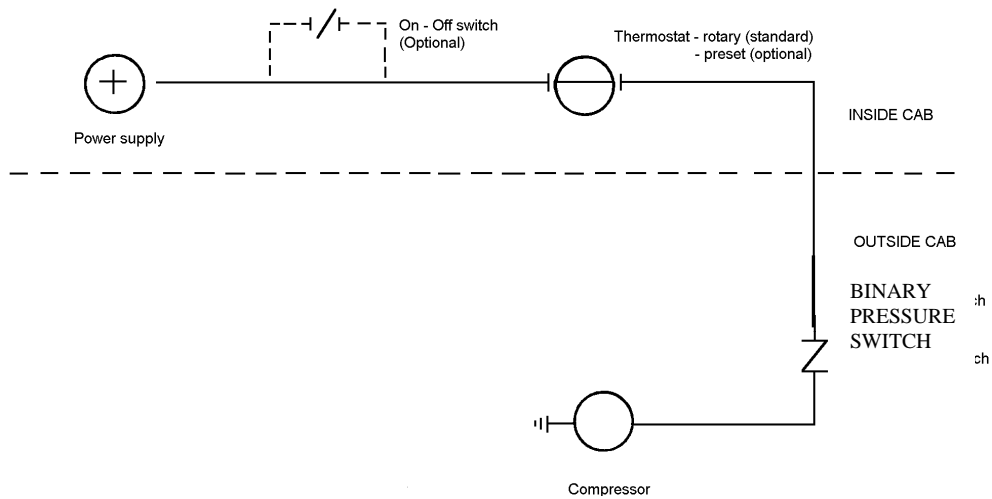


Hoses and routing at evaporator.

ELECTRICAL:

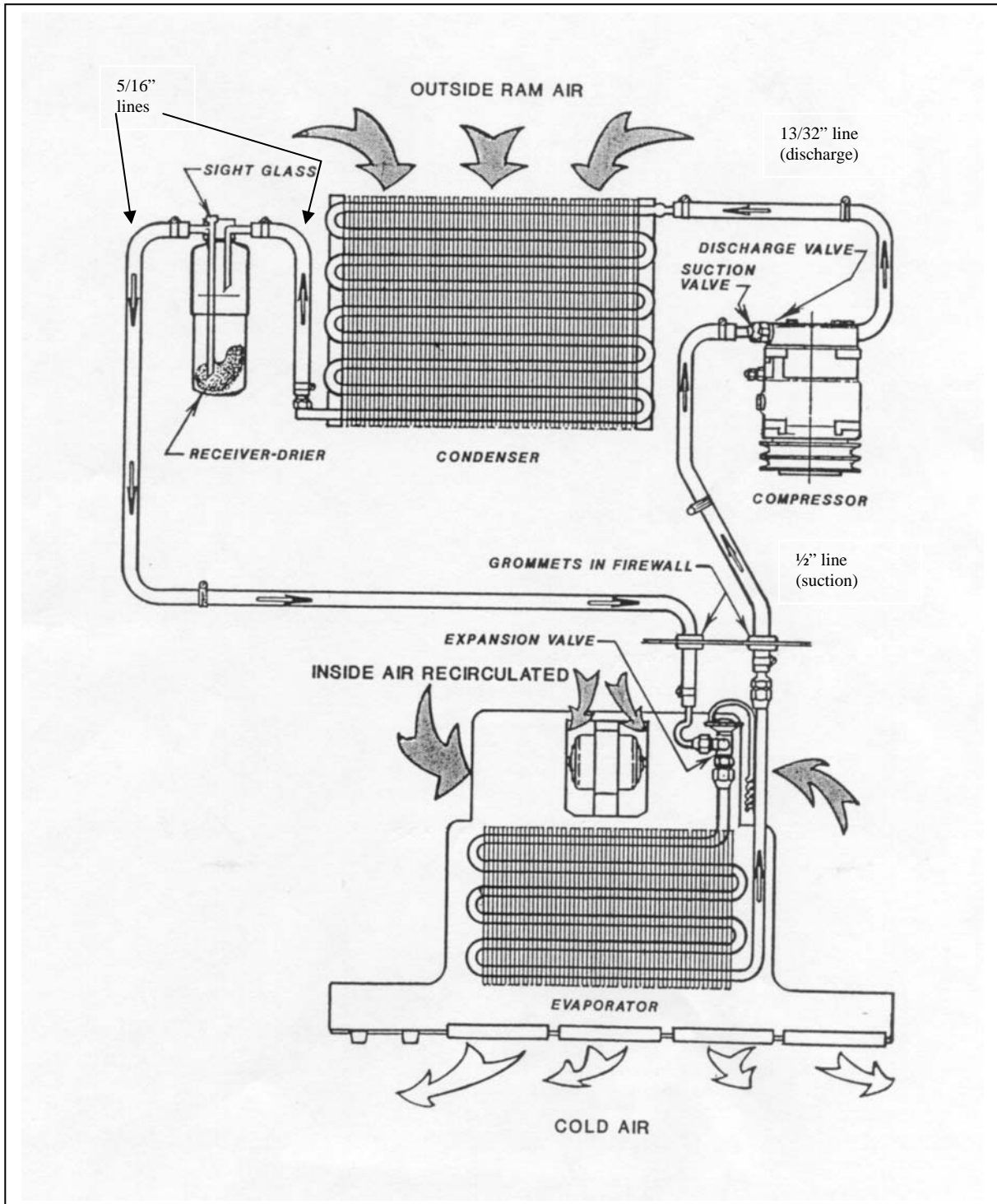
The electrical system is designed to be simple and straightforward to install and to service. All connections are in series and require no special tools. The system is available with an optional rocker switch and pre-set thermostat and is shown in the optional wiring diagram below.

1. 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.
2. Connect the thermostat to the clutch post of the blower switch.
3. 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.
4. Connect to the pressure switches in series and then to the compressor clutch wire.



Thermostat on dash panel.

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.

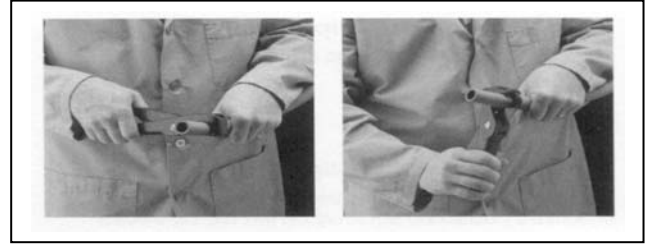
By looking at all these different factors, the area of an evaporator coil most likely to be the coldest can be determined.

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.

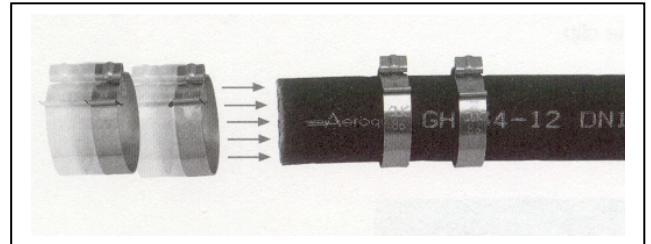
If the thermostat doesn't cycle off after a reasonable cool down period, and the air outlet temperature has dropped below 40° F, the cut in and cut out settings should be adjusted until the compressor is cycling on and off regularly. Let the system run for a decent time period (at least 15 min) and then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

Assembly Instructions

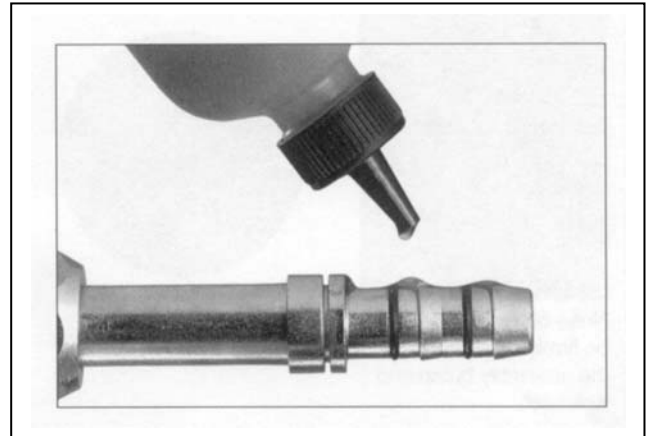
Step 1. Cut the hose to proper length with an appropriate cutting tool. Aeroquip's hand held hose cutter has been specially designed for cutting all non-wire reinforced hose, such as GH-134 Multi-Refrigerant hose. Be sure the cut is made square to the hose length.



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

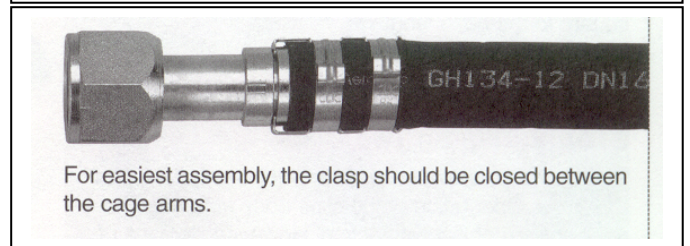
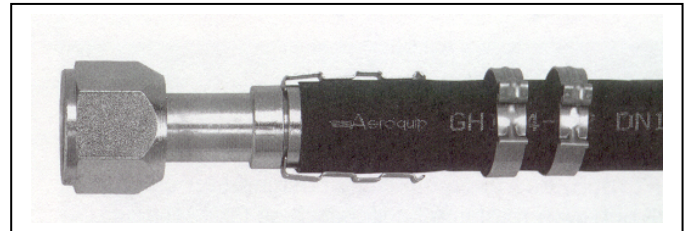


hose length. When the cage has been correctly installed in the cage groove, the cage will be able to rotate in the groove.

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.

