906H / 908H
W/ C3.4 ENGINE
CAT WHEEL LOADER
INSTALLATION INSTRUCTIONS

ARCTIC WOLF ™
BY HAMMOND AIR CONDITIONING LTD.

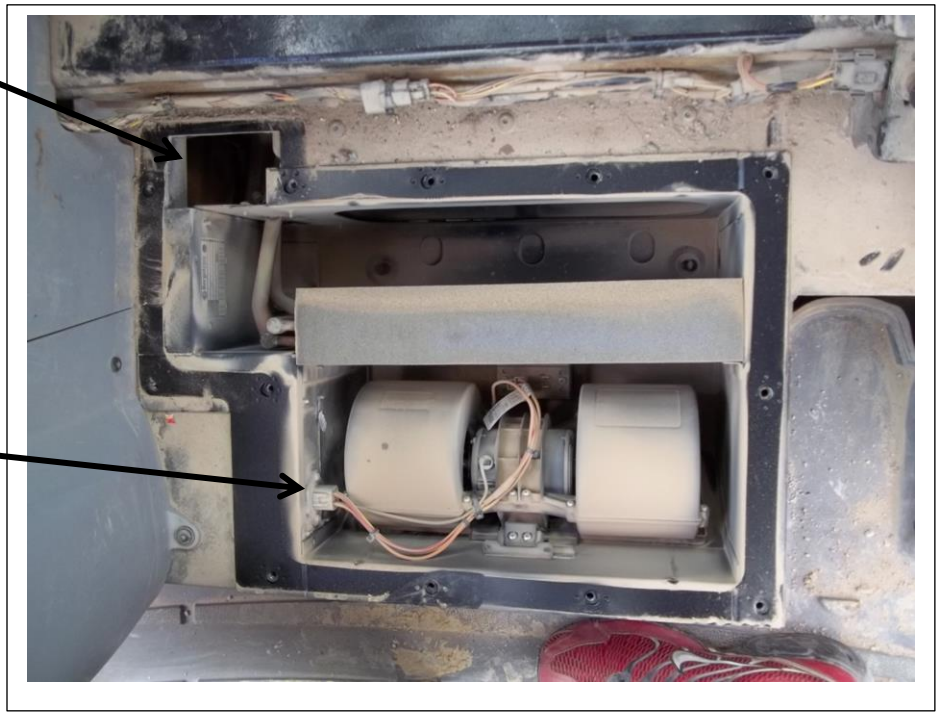
PHONE: (519) 485-5961 OR 1-800-267-2665
FAX: (519) 485-3745 OR 1-888-267-3745

EVAPORATOR

Remove the seat, left hand storage box and upper section of the floor liner. Remove the bolts from the lid of the heater blower box to access the interior.

Heater lines can be accessed from outside the cab. Clamp off and disconnect at the heater box.

Blower wire plug disconnect on the outside of the box.



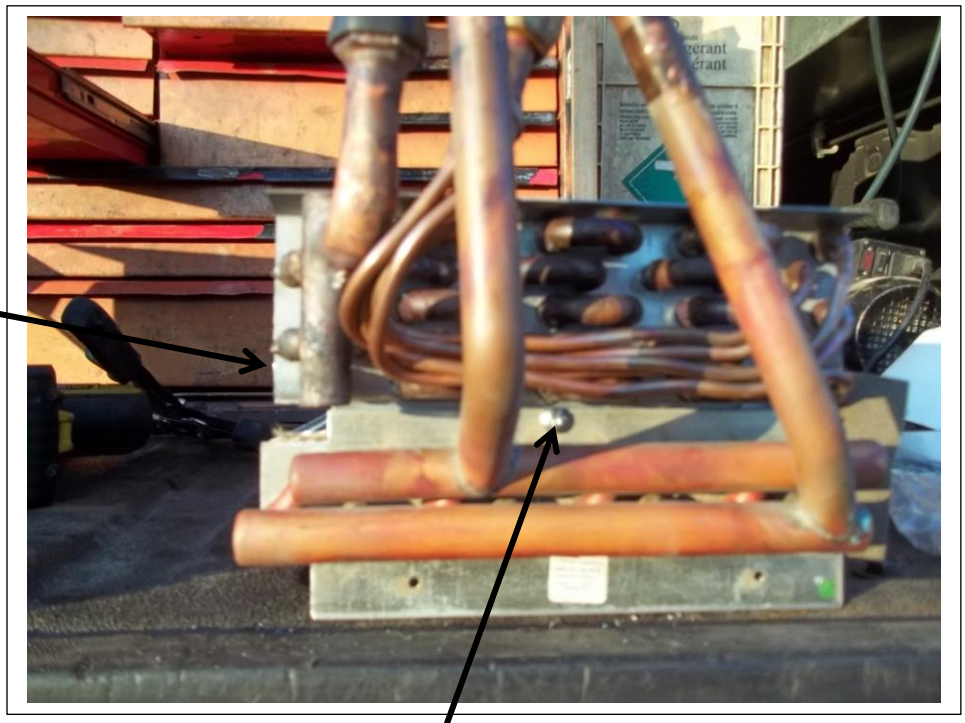
Lid removed. The blower box cannot be removed until the heater lines and blower wiring are disconnected. The access panel is on the side of the machine.

Remove this panel to get access to the heater hose connections. On the 906/908 H and H2 machines, remove the plastic fender first.

Blower electrical plug.

Heater box removed.

Keep the evaporator coil up 1/2” from the bottom of the heater coil when screwing together. Evap coil comes with 1/2” foam on top and bottom.



Remove the heater coil from the box and fasten the new evaporator to the heater coil as shown using self drilling screws provided.

Trim back the foam on top of the heater coil so it butts up tight to the foam on the top of the evaporator coil. (the evaporator foam is not shown in this early picture.

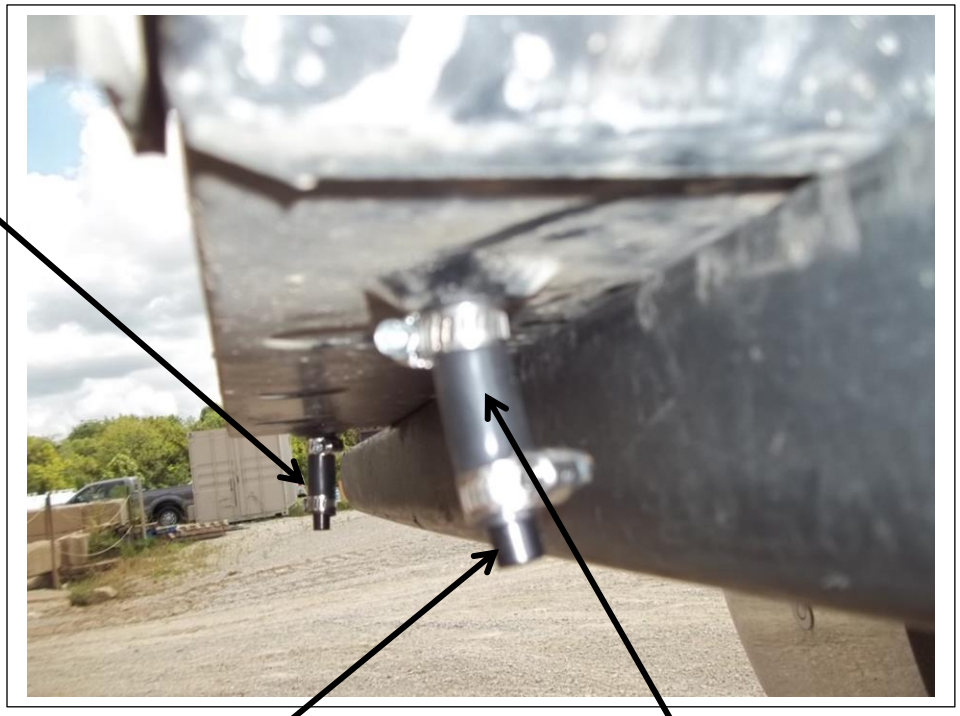
Heater coil

Evaporator coil.

Drill out to 9/16” the two existing holes as shown and install the glue-in drain tubes into the bottom of the heater box. Use fast dry epoxy to glue in.

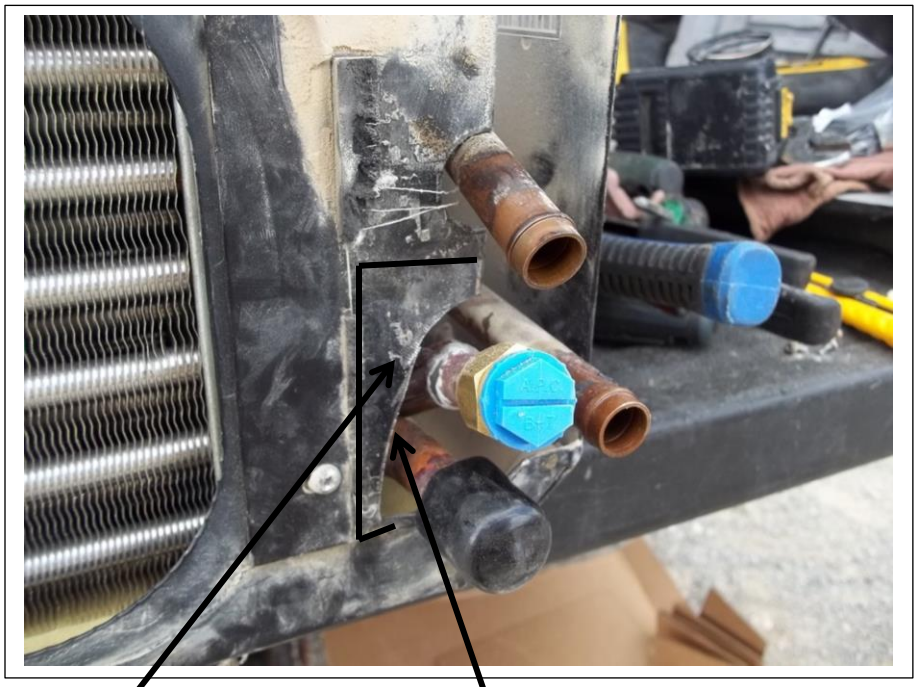
Install the short drain tube onto the copper extension previously glued into the box on the fitting end of the box. Add the drain tube restrictor and tighten the clamps.

On this end of the box DO NOT install the drain tube. (hits the fuel tank) Squeeze the end of the copper pipe together to reduce the size of the opening. Leave small openings for water to drain.



Drain tube restrictors.

Drain tubes

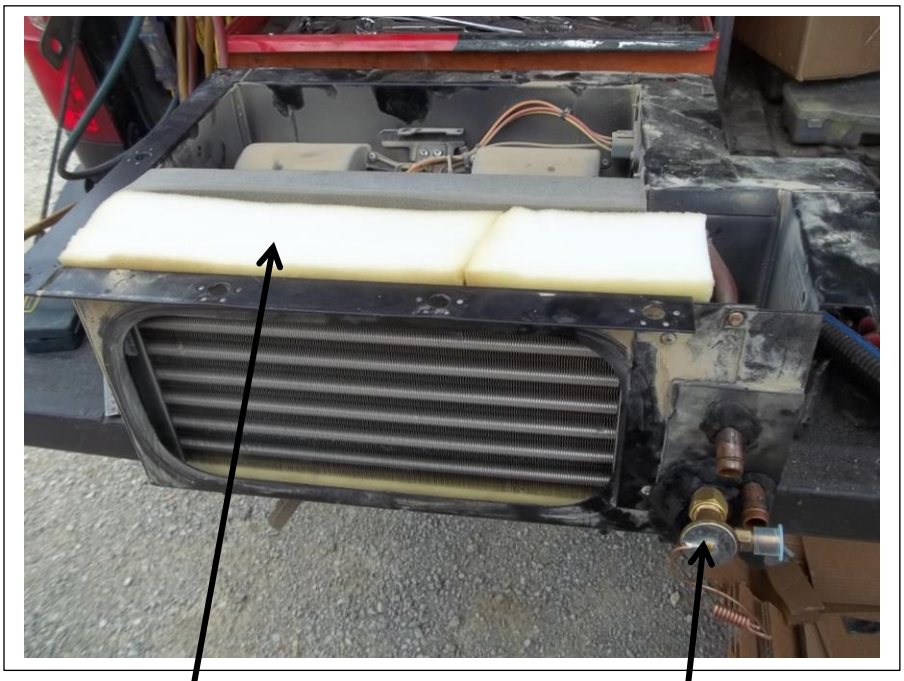


Cut out this are of this metal plate to accommodate the AC lines.

Some minor cutting of the flange may be required in order to set the two coils in the box.

Both coils shown in the heater box.

Reinstall this plate and foam gasket. Reinstall all screws in the two plates and heater coil flange. (7 screws in total)



Add the 1/8” x 5” x15.5” piece of self adhesive foam across the top of both coils to ensure no air leakage.

Install the “O” ring and expansion valve and tighten in the orientation shown

Seal all openings around the tubes with tar tape as shown.

Set the heater box back into place in the cab. Be careful of the drain tubes when setting in place.

Thermostat probe

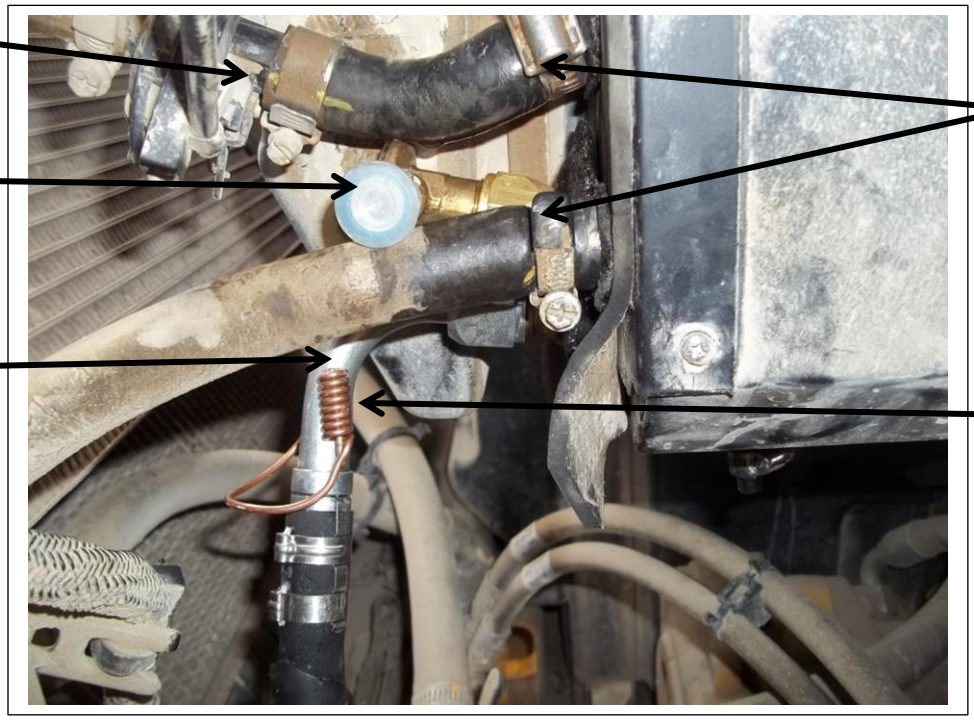
Install the thermostat probe from the electrical compartment into the seating area through this lowest hole in the electrical compartment. Install after heater box is back in place.

Insert about 6” of the thermostat probe into the evaporator coil as shown between the second and third rows of the coil. Note this area will already have the 1/8” foam on it. Install the probe through it as well.

Reconnect this heater line first.

Expansion valve

1/2” 90^{o} suction line fitting. Connect this line second. The fitting for the 1/2” AC line must be installed onto the hose. It is shipped loose to facilitate the running of the 1/2” line from the engine compartment.



Heater lines

Expansion valve bulb.

Reconnect the upper heater line with the heater control valve first. Connect the 1/2” AC line next for best access. Use stubby 1 1/6” and 7/8” wrenches to tighten. Don’t forget the “O” ring. Reconnect the lower heater line.

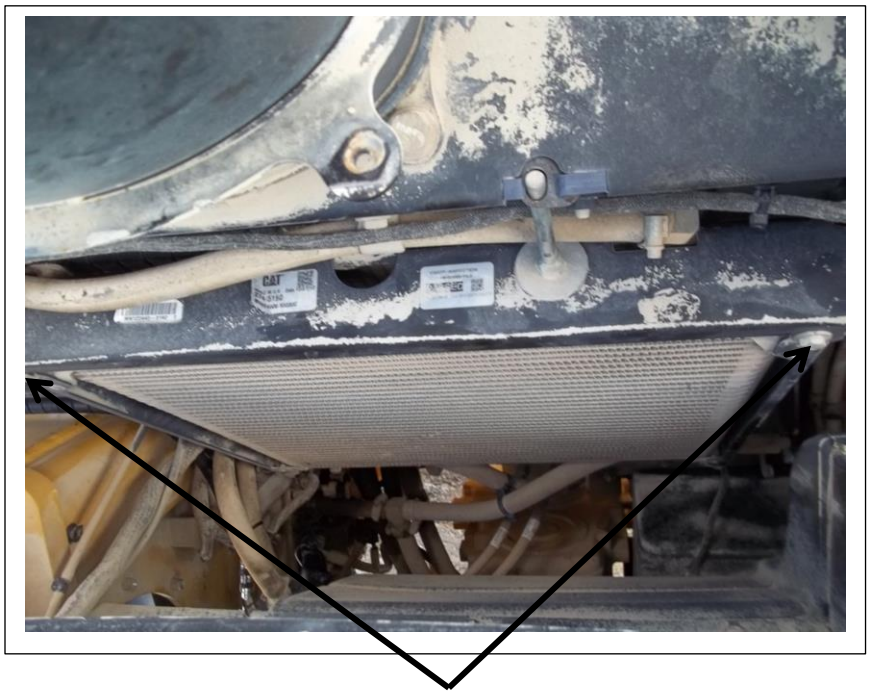
Expansion valve bulb clamp. Install as shown

Secure all lines to prevent breakage from vibration

Picture shows all line connected. Note how the suction line fitting is completely tar taped to help insulate the expansion valve bulb. Put several layers of tar tape around the bulb area.

CONDENSER

The condenser will mount to the front of the oil cooler and the assembly allows for easy cleaning by simply removing two bolts.



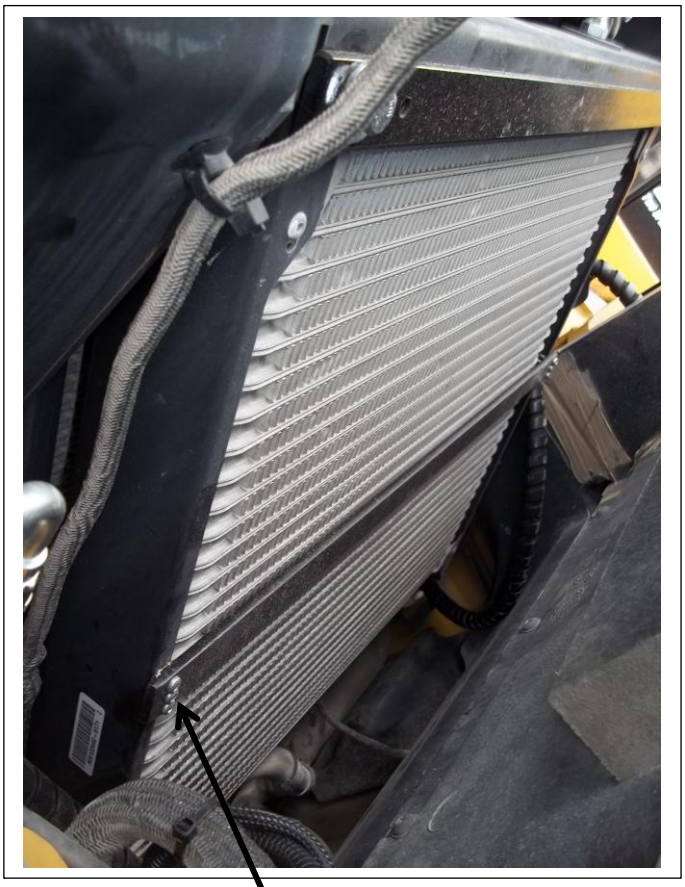
Remove these two bolts (one on each side) at the top of the existing oil cooler.

Bolt the top condenser bracket in place across the top of the oil cooler frame. Use the longer M* bolts provided.

With the bottom bracket in place on the back of the condenser coil, slide the condenser into place on the face of the oil cooler. Use the 1/4" hardware provided to bolt the top of the condenser to the threaded holes on the top condenser bracket. Ensure that the lower bracket is centered on the oil cooler frame flanges. There are three holes on each end for screws that must be centered on the flanges. Use a right angle drill and a short #2 Robertson drive bit to install one self drilling screw in each side of the lower bracket.

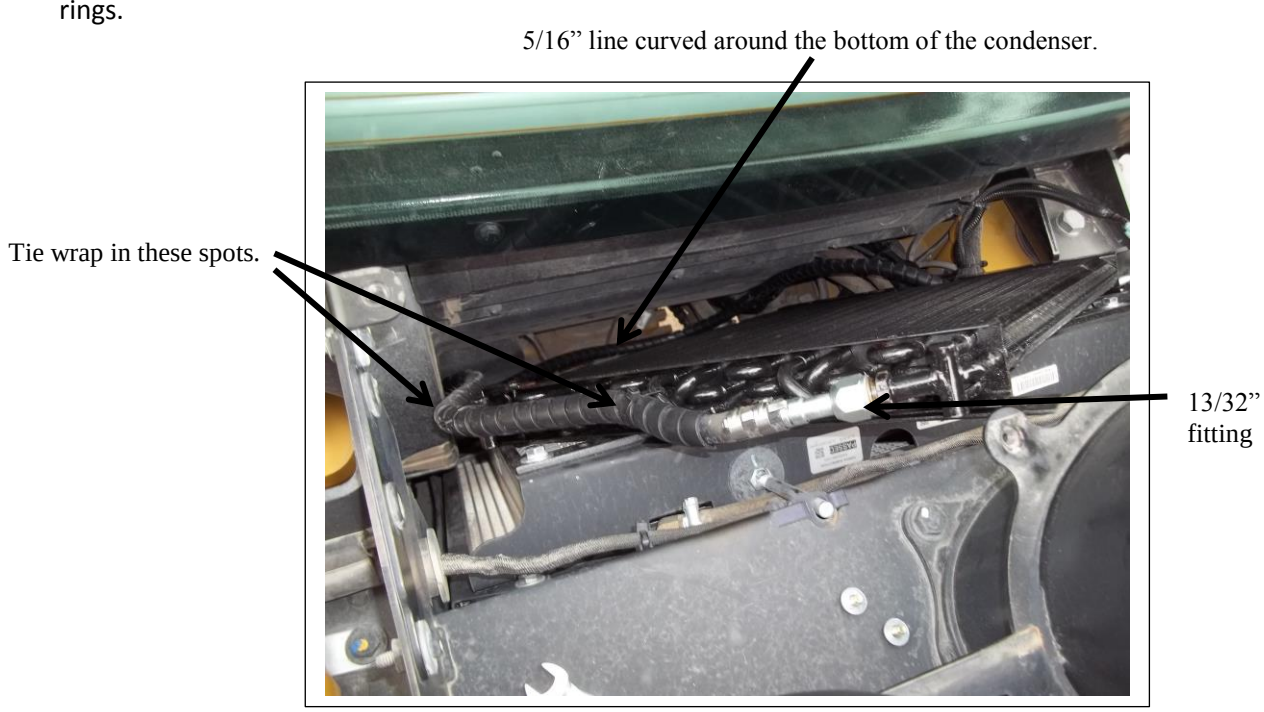
Gently lower the condenser down in front of the oil cooler and bolt the top bracket in place as shown. (two places)

NOTE: Condenser fittings are different from the ones shown.



Remove the condenser from the machine and install the rest of the self-drilling screws in the bottom bracket.

Attach the 64” long 5/16” hose (90° fitting on both ends) to the bottom fitting on the condenser. Connect the fitting so the hose goes straight down (parallel to the condenser). Don’t forget the “O” rings.

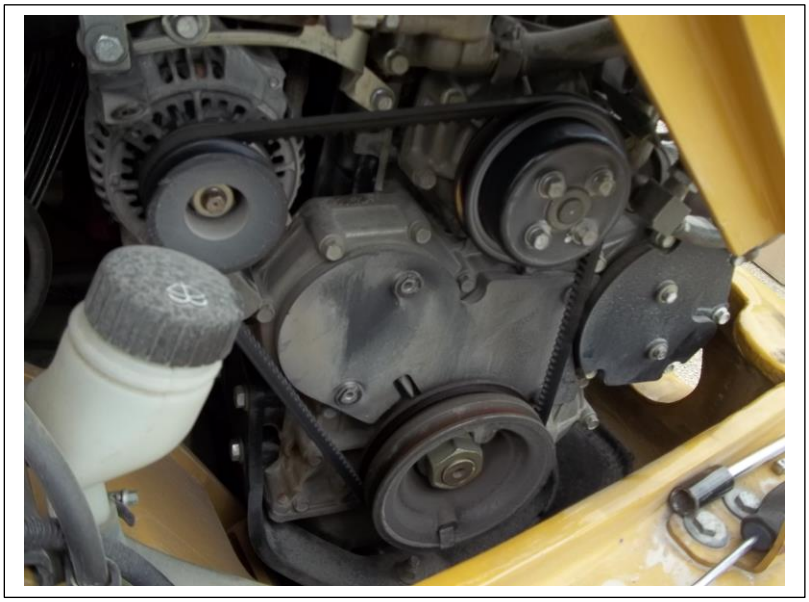


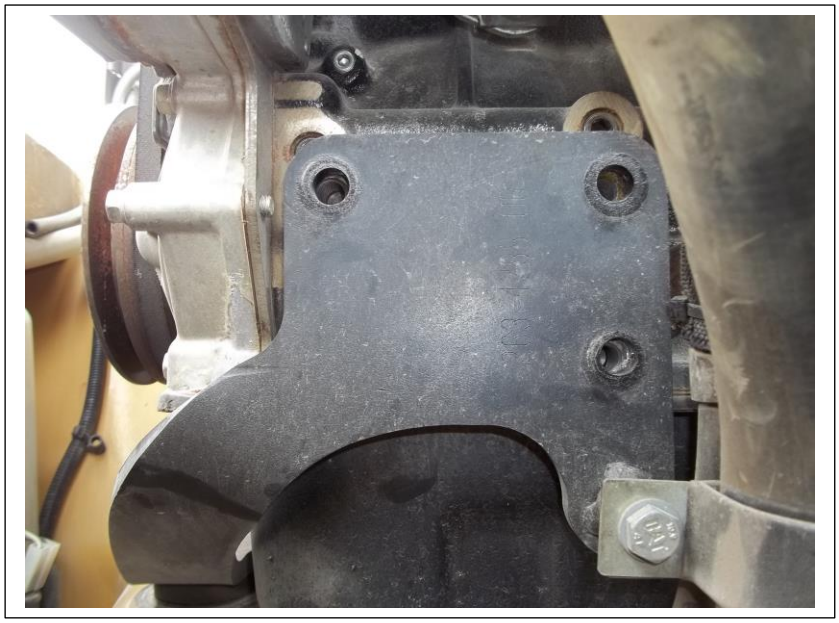
Slide the condenser and the 5/16” hose down the front of the oil cooler with the fitting side of the condenser tilted up as shown. Connect the 13/32” fitting (with “O” ring) to the top fitting on the condenser. Tie wrap the 13/32” hose to the side of the condenser as shown. Slide the condenser fully back into place. Make sure the condenser hooks the bottom bracket. Bolt the top of the condenser to the upper bracket with the 1/4” hardware provided.

For cleaning, the top two 1/4” bolts can be removed and the coil pulled up. The hoses have been left long to allow for this cleaning procedure.

COMPRESSOR

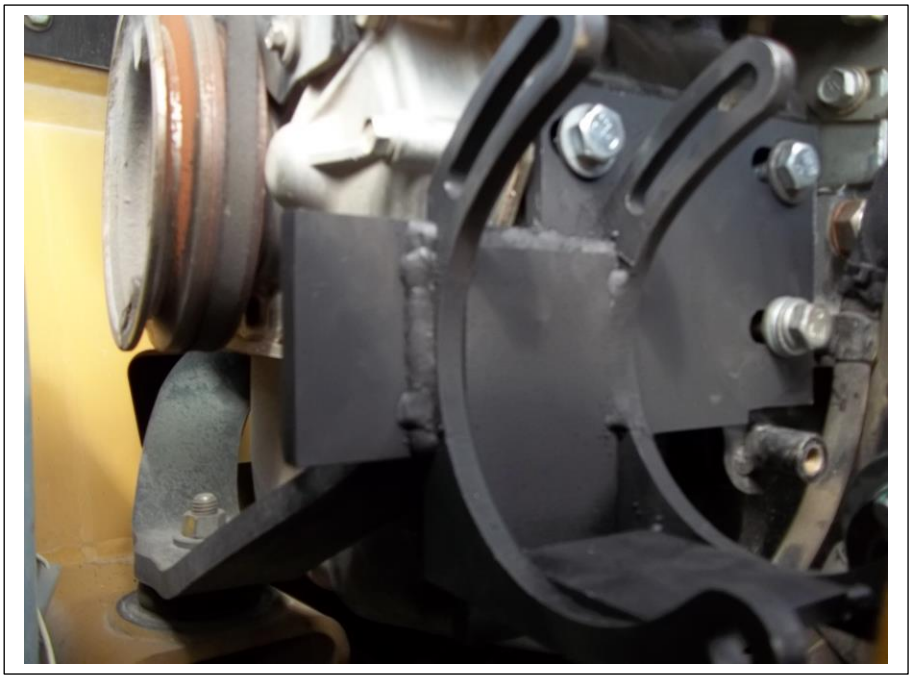
The compressor is mounted on the opposite side from the alternator. An open pulley exists to drive the compressor.





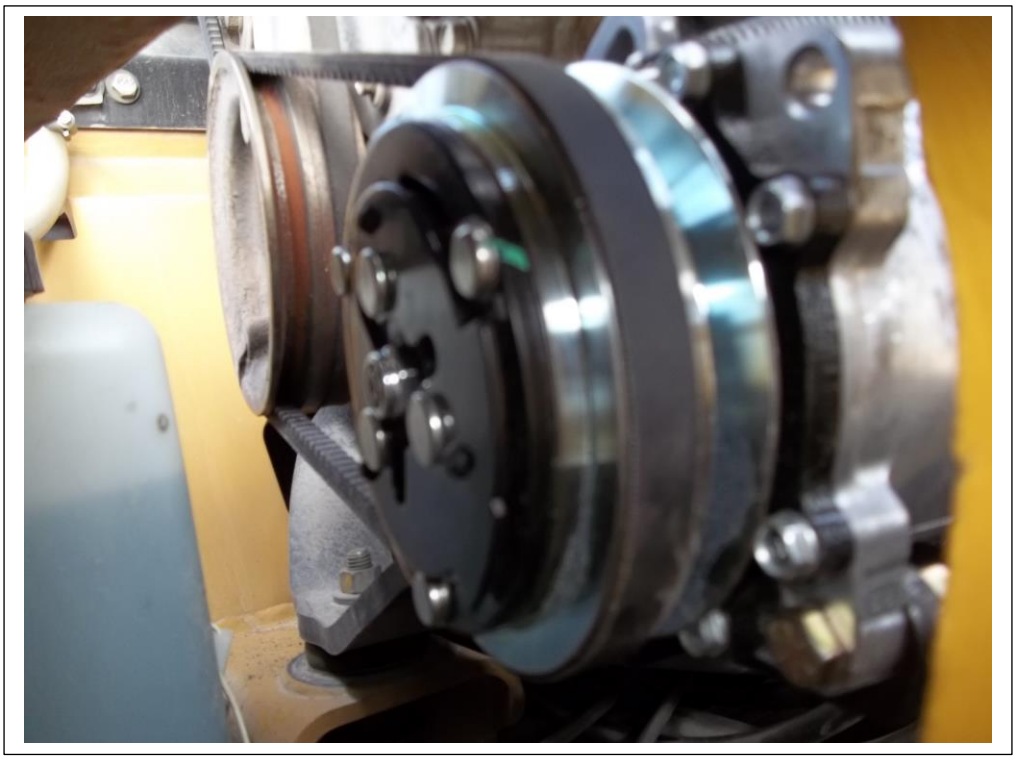
Compressor location.

The compressor mount may appear a little different than shown however it will mount to the engine. Hardware is provided in the kit.



Compressor mount in place

Compressor installed.

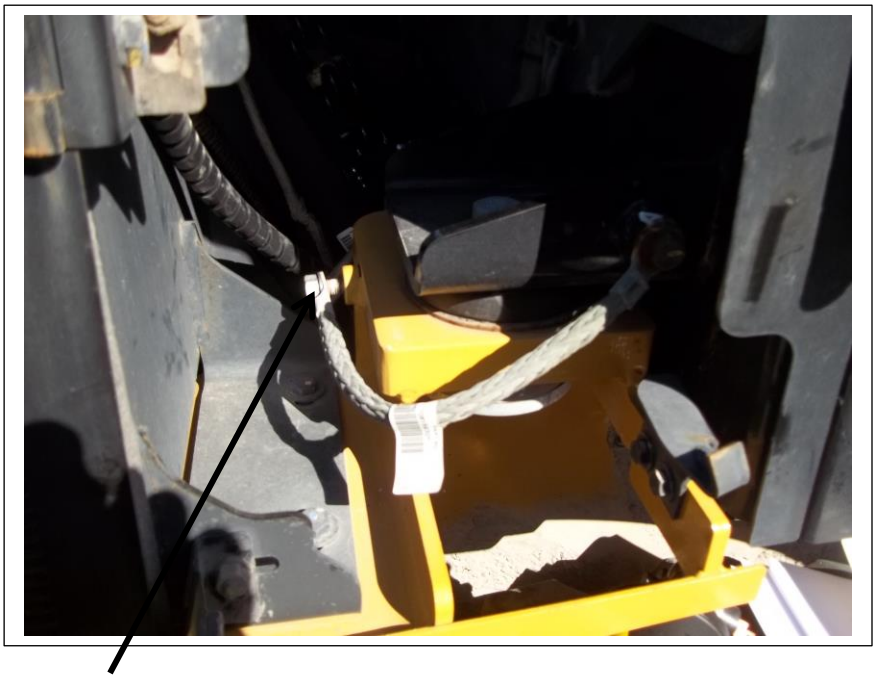


Compressor with belt installed.

Belt cover re-installed with # 8 AC hose secured and running to the condenser.

RECIEVER DRIER

The straight drier bracket bolts to the ground stud just below the right read cab mount.

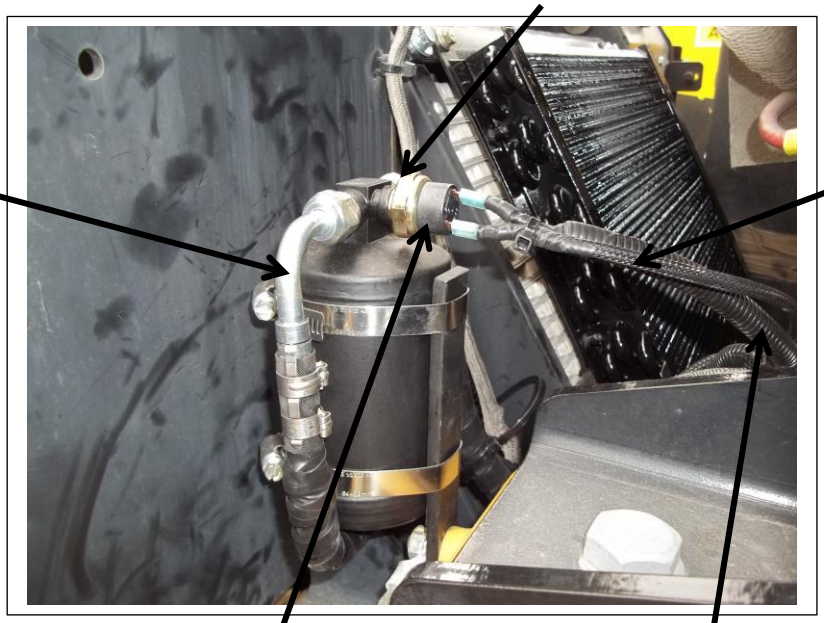


Receiver drier will mount here.

Drier bracket

Bolt the drier bracket on the inside of the ground lug as shown.

Drier hoses and clutch wire installed.

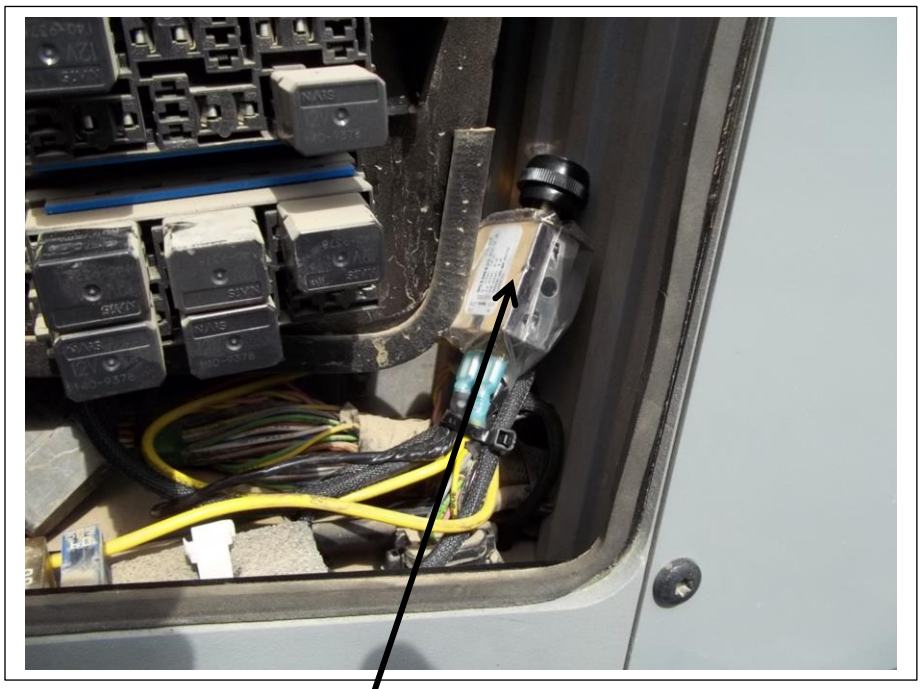


ELECTRICAL

Replace this switch with new switch in kit

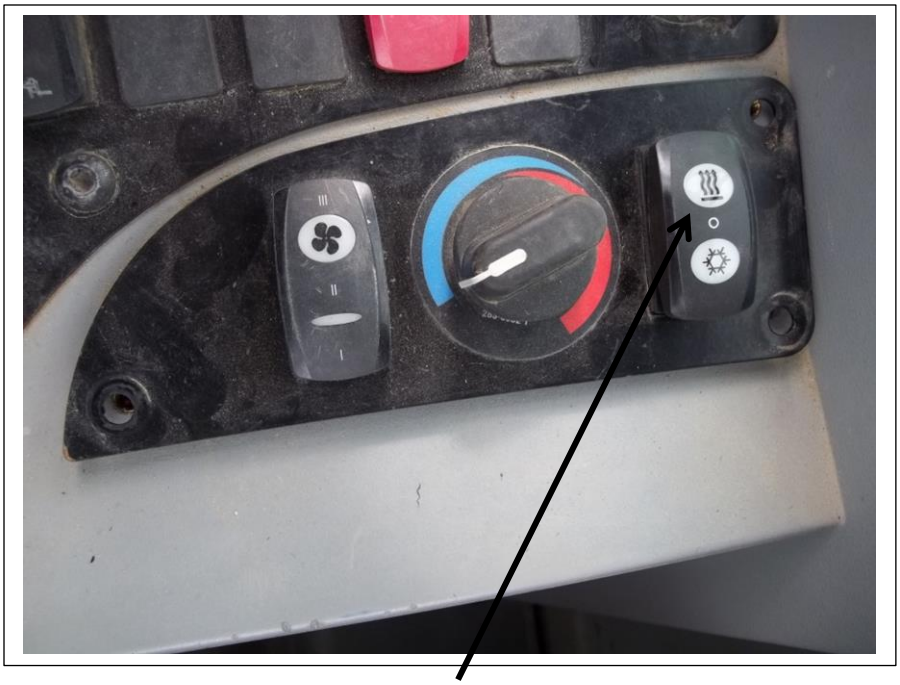
Remove these three bolts to access the wiring

Butt connect the wire from the thermostat as shown, to the existing yellow wire # 521 that will be cut and stripped.



Thermostat

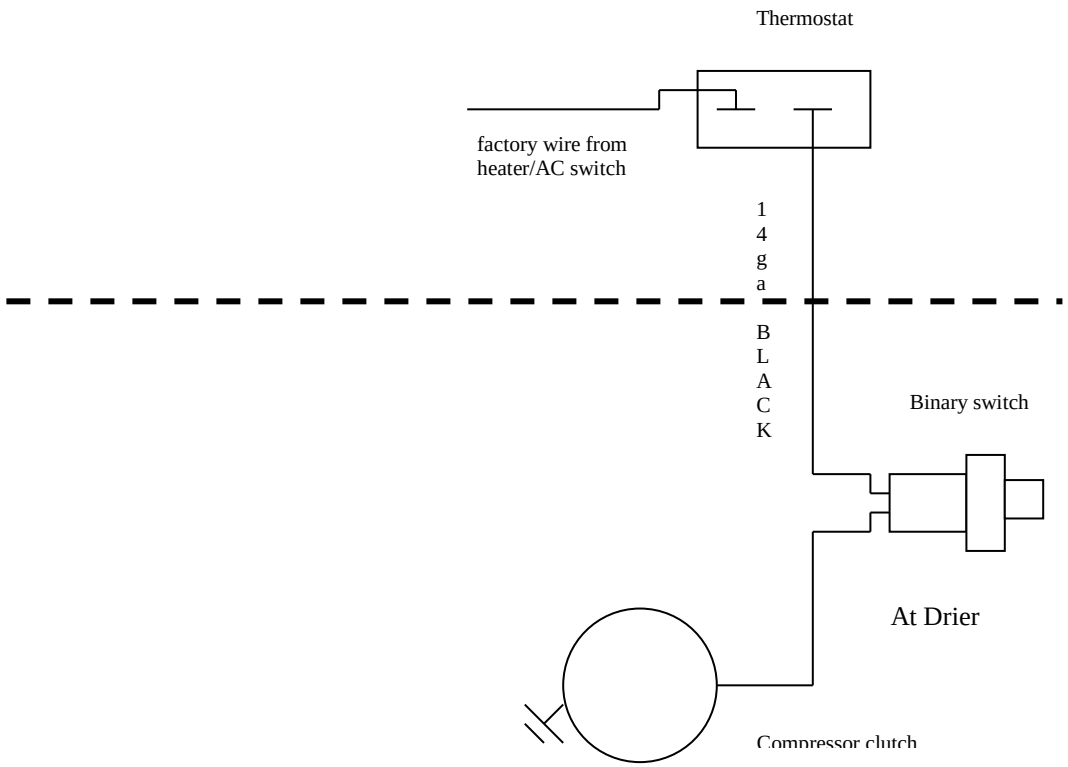
Install the thermostat as shown. Turn the knob all the way clockwise. Although it is an adjustable thermostat there is no need for operator access. Connect the wire from the switch to the thermostat and then from the thermostat to the binary pressure switch on the drier. From the binary switch at the drier the wiring will connect to the compressor. It's a very simple wiring setup. Insert the thermostat probe through the plastic cover towards the heater box. It will be inserted into the evaporator coil prior to lid install.



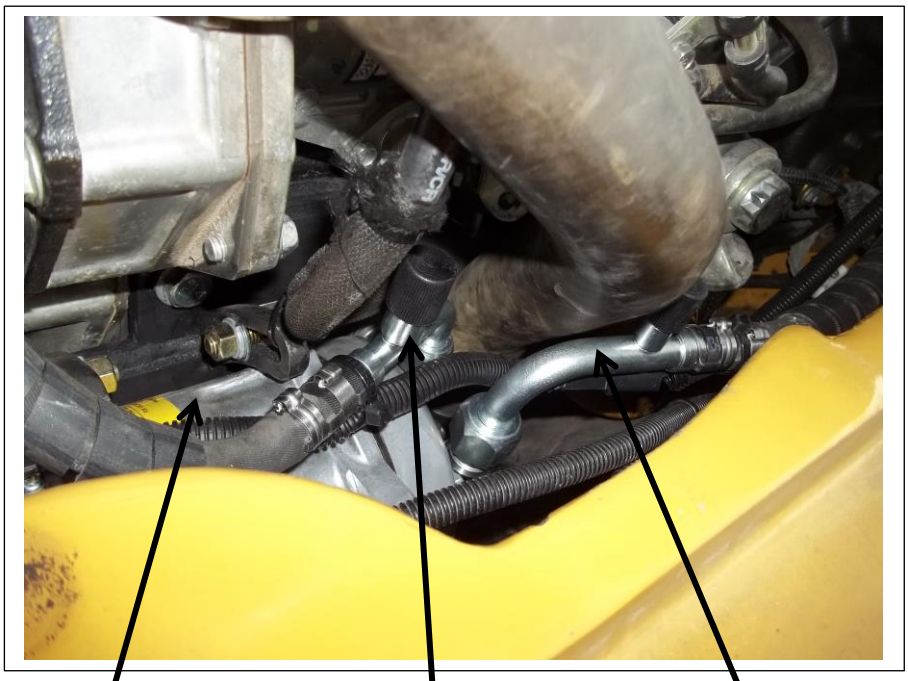
New heat/AC rocker switch

906H-2/ 908H-2 CAT LOADER

12 Volt System



HOSE CONNECTIONS

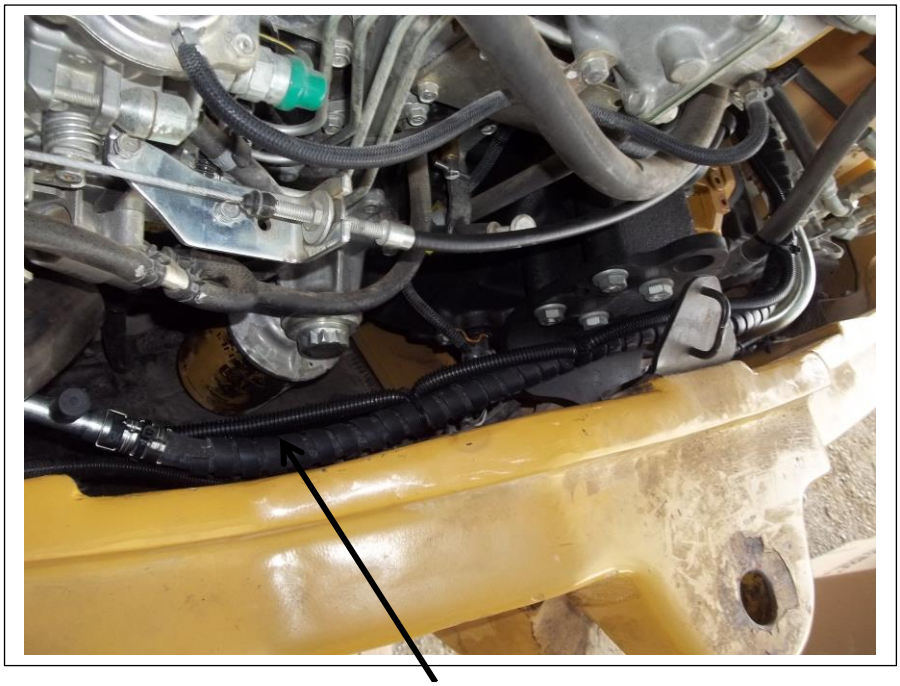


Compressor

#8 fitting and hose going to the condenser.

#10 hose coming from the evaporator

NOTE: Use “O” rings on all fittings.



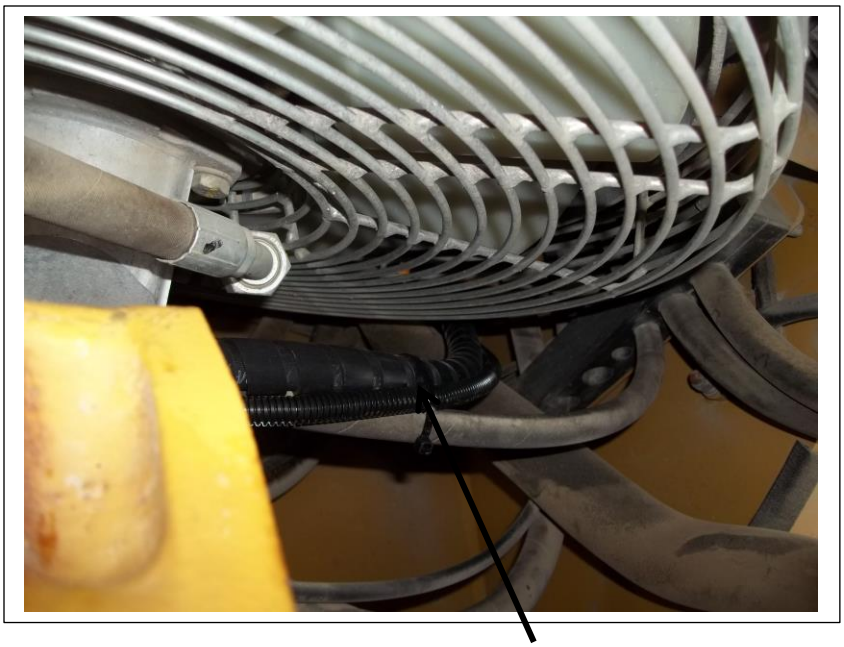
1/2” hose going to back of engine towards the evaporator. Ensure that the hoses and clutch wire are tied securely.

13/32” hose running into radiator / oil cooler area through and existing hole

1/2” hose and clutch wire running across the back of the engine and down beside the right side of the radiator fan.

Existing hole on the left side of the radiator fan.

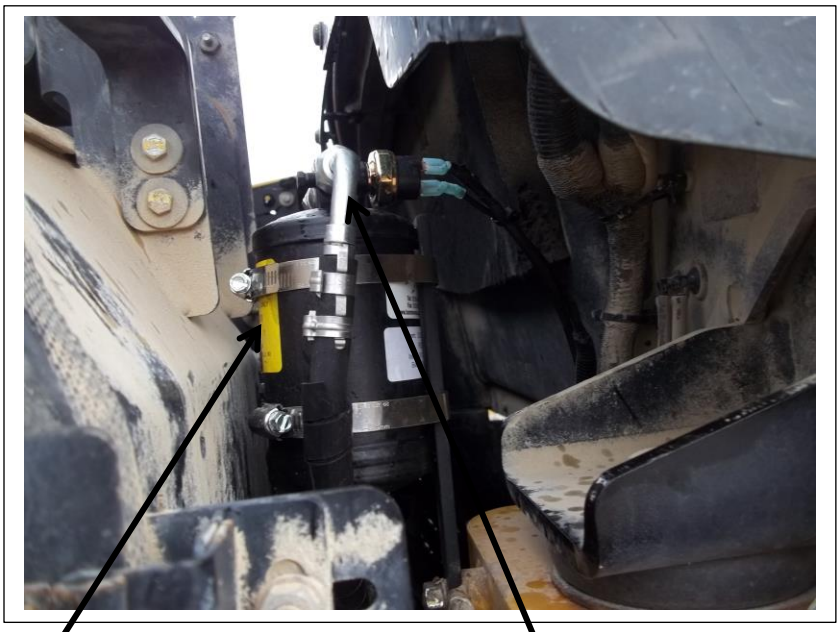
13/32” hose running through to the condenser mounted to the oil cooler.



1/2” hose and clutch wire running beside the radiator fan and out of the engine compartment to the right of 3 or 4 hydraulic lines. The hose will come out just over top of the right rear axle.

5/16” hose (64” long) mounted on the bottom fitting of the condenser going over to the drier on the right side of the radiator.

** See the condenser installation section for more pictures of the hose connections on the condenser.
** See the end of the evaporator installation section for pictures of hose connections at the evaporator.



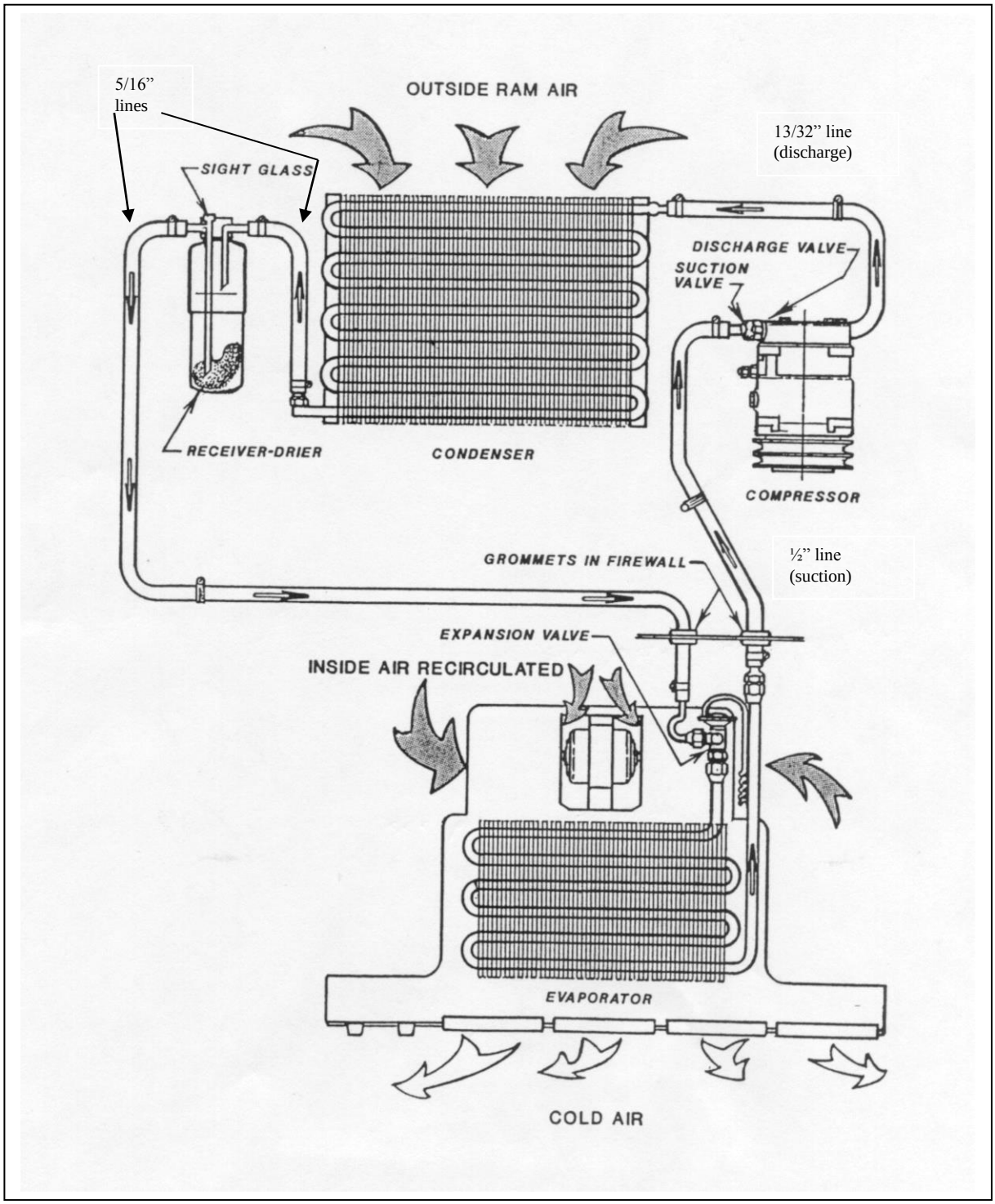
Receiver drier

5/16” hose from the condenser to the drier.

CHARGING AND TESTING

1) Pressure test the system using nitrogen to a pressure of 250 psi. Check for leaks.
2) Add 2oz of SP20 Sanden PAG oil to the system.
3) Vacuum the system for at least ½ hour.
4) Check that the vacuum holds.
5) Fill the system with 2.5 lbs of R134a refrigerant. DO NOT USE ANY OTHER TYPE OF REFRIGERANT OR IT WILL VOID THE WARRANTY.
6) Test the system. Check the cycling temperature of the thermostat. Adjust the thermostat settings if required to avoid coil freeze up problems. See the thermostat setting procedures at the end of these instructions.

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.

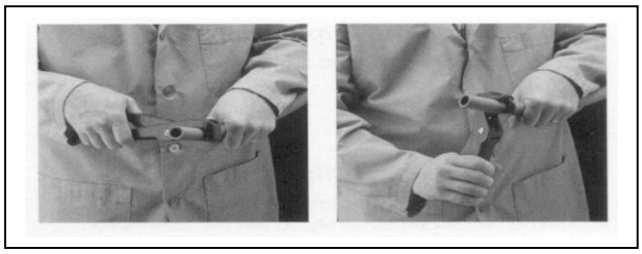
Once the probe is inserted, the A/C system needs to be tested. Run the system to ensure that the thermostat is cycling the compressor off at the appropriate temperature. A core temperature

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.

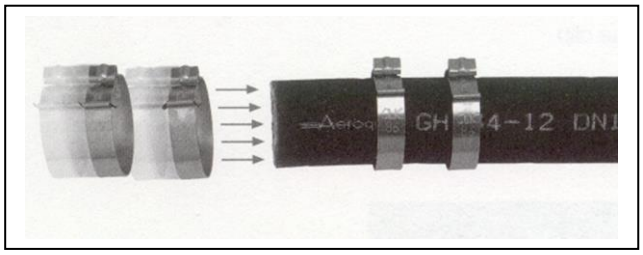
If the thermostat doesn't cycle off after a reasonable cool down period, and the air outlet temperature has dropped below 40° F, the cut in and cut out settings should be adjusted until the compressor is cycling on and off regularly. Let the system run for a decent time period (at least 15 min) and then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

Aeroquip E-Z Clip
Assembly Instructions

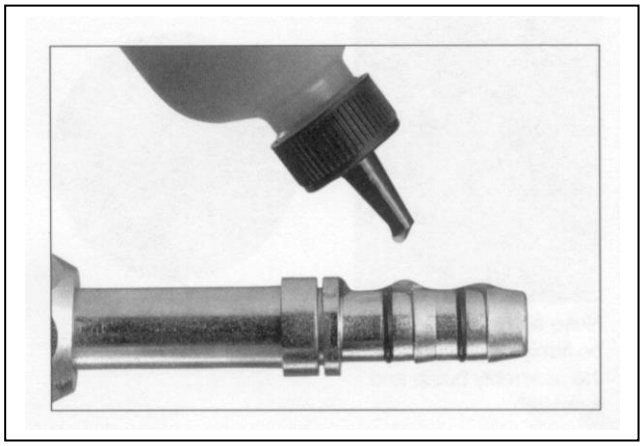
Step 1. Cut the hose to proper length with an appropriate cutting tool. Aeroquip's hand held hose cutter has been specially designed for cutting all non-wire reinforced hose, such as GH-134 Multi-Refrigerant hose. Be sure the cut is made square to the hose length.



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.



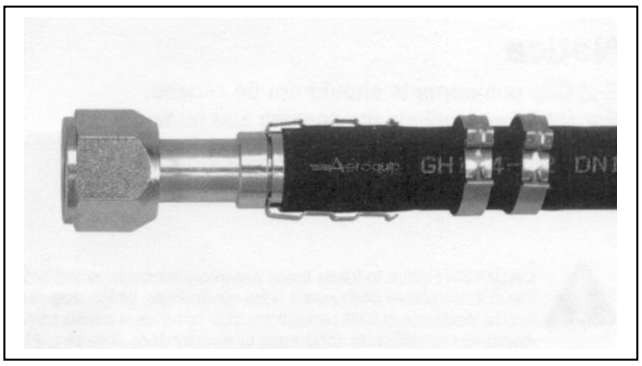
Step 3. Lubricate the nipple with a generous amount of the refrigeration or A/C system's compressor lubricating oil. This MUST be done to lower the force of nipple insertion.



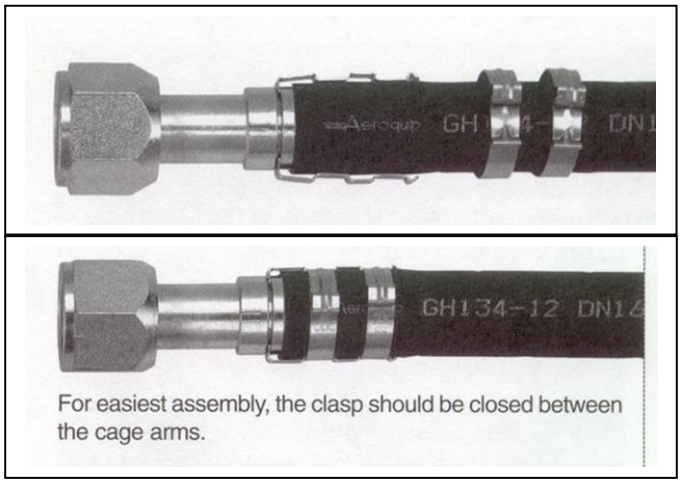
Step 4. Insert the nipple into the hose. To ensure that the nipple is fully inserted, check the gap between the cut end of the hose and the shoulder on the nipple. Care should be taken to avoid kinking or other damage to the hose during nipple insertion. NOTE: Be sure to wipe excess oil from the nipple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



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.