

JCB 3CX
INSTALLATION INSTRUCTIONS
Tier 3 & 4 engines



Phone: 519-485-5961 or 1-800-267-2665

Fax: 519-485-3745 or 1-888-267-3745

EVAPORATOR

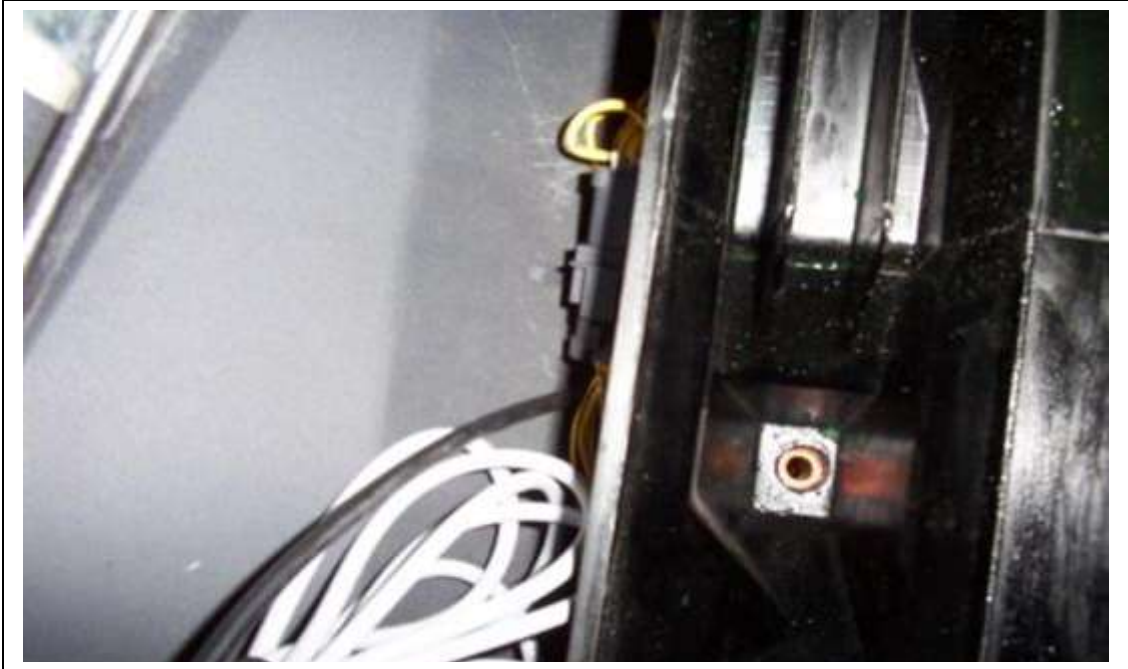


Remove this cover by removing all spring clips holding it in place

Remove console cover leaving the electrical gage and switch panel connected.
Unbolt the seat from floor and move aside.



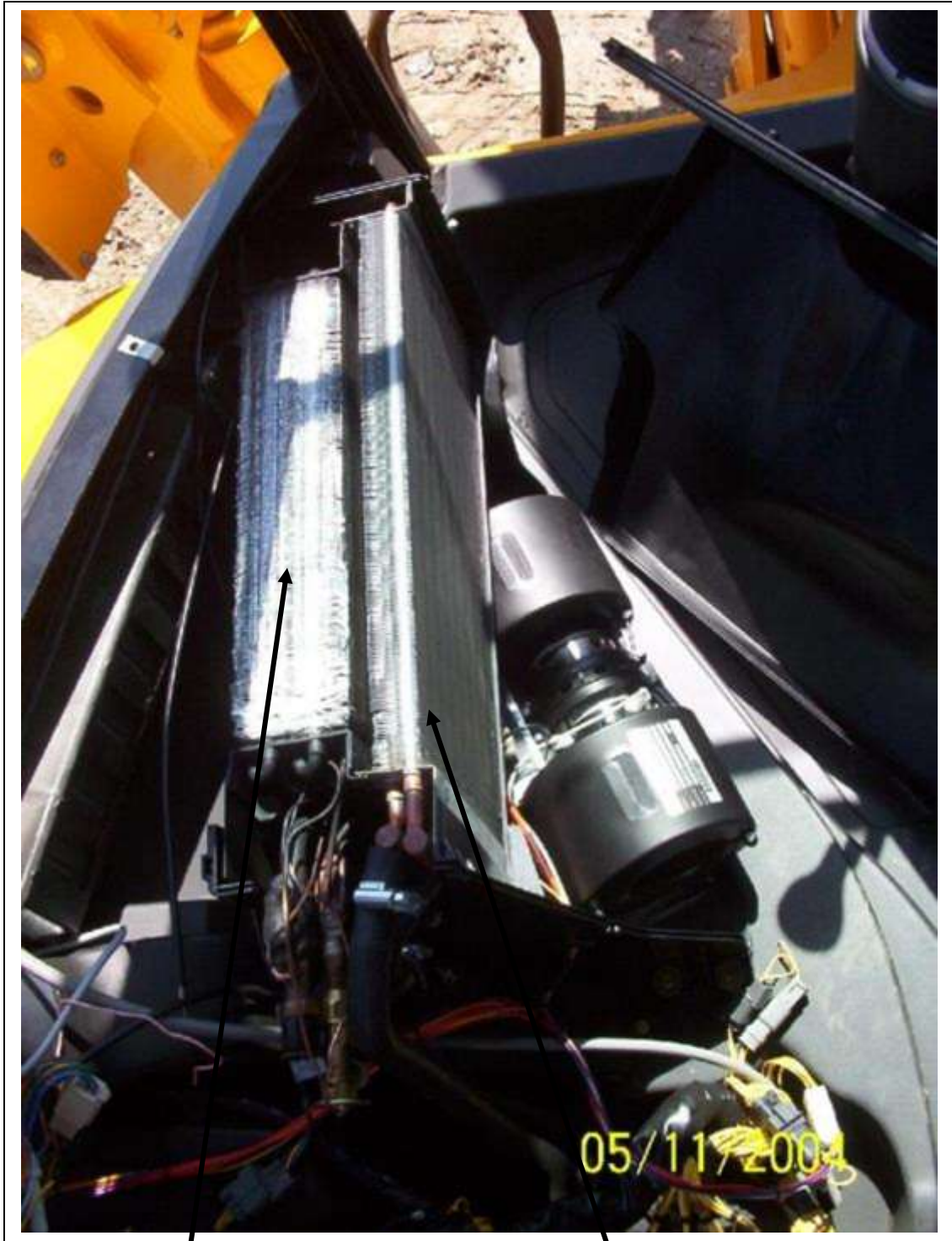
Pull the heater core out of box and remove the screw on flanges. This can be done without disconnecting the heater lines.



Use 5 minute epoxy to install glue in copper drain tube in drain hole in box if there isn't one there already.



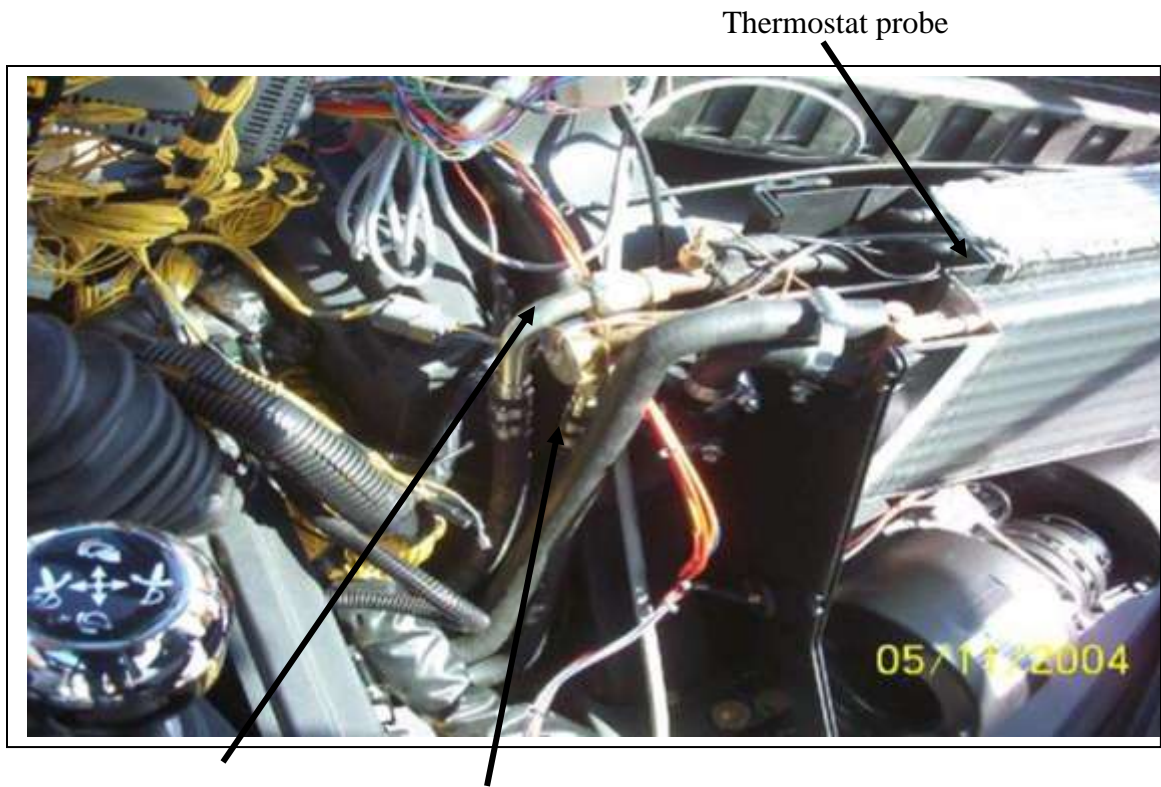
When the glue has dried, install the drain tube and restrictor on the outside of the box located behind the right rear tire.



Evaporator core

Heater core

Slide the evaporator coil into place beside the heater coil



Insert the thermostat probe into the coil as shown before re-installing the heater box lid.



Lid re-installed with hoses tar taped.

COMPRESSOR



Remove the lower idler pulley by removing the bolts. The original belt is reused. The A/C compressor replaces the idler pulley.



Slide the compressor into place from this position.

Two of three compressor mount bolts. Third bolt is in the lower front hole. Use M8 x 100 bolts, locks and flats.



Compressor – not exactly as shown.
Tail plate configuration is different.

Dip Stick tube may have to be moved
back towards the filter to make room for
compressor fittings.



1/2" rotolock fitting
on suction side

13/32" rotolock fitting on
discharge side

Note: It is often easier to install the rotolock fittings on the compressor before installing the compressor on the engine.

CONDENSER



Remove radiator front grill



Grill mounting frame.

Condenser

Remove the bolts from the front grill mounting frame so it can hinge forward and give room for the condenser coil to be slid in behind it.

There are four sets of two M8 bolts holding the oil cooler to the radiator. Remove the inside bolts from each set. Use the long M8 bolts, washers and spacers to mount the condenser in front of the oil cooler. ****Be careful that the bolts don't stick out behind the oil cooler mount bracket too far and damage the radiator.****



Outside bolt hole

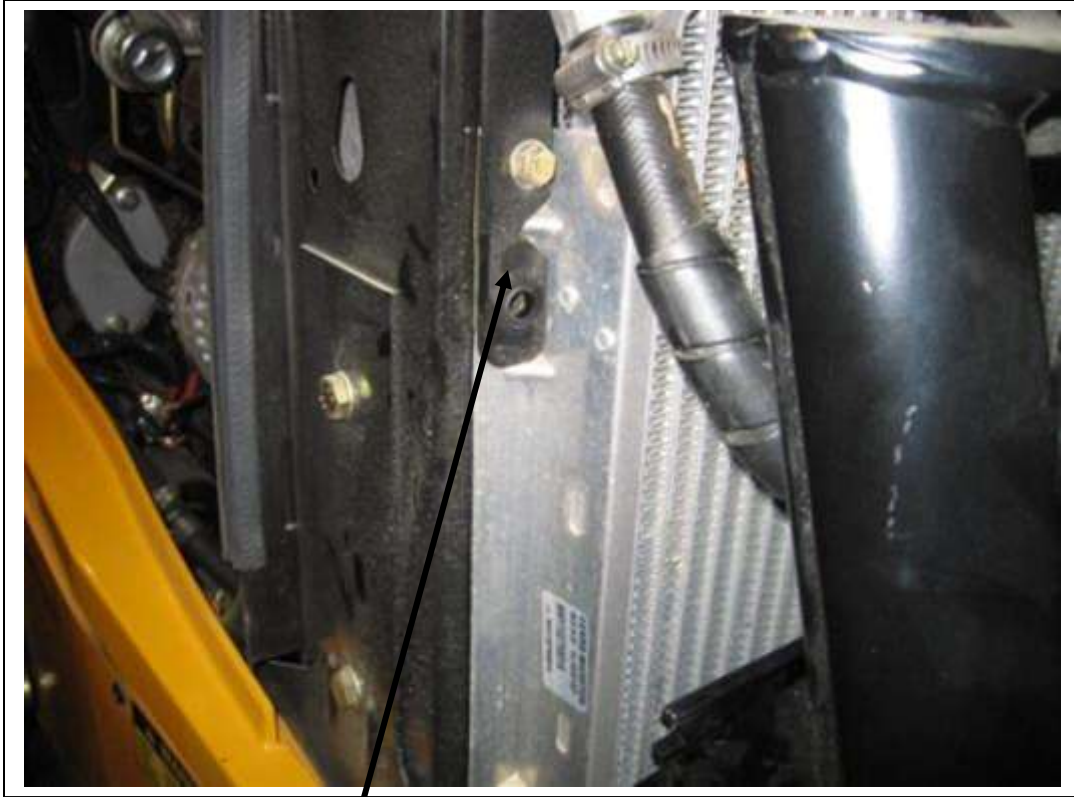
Inside bolt hole

2 11/16" long spacer

M8 X 90mm bolt



Lower condenser mount spacer



Use shorter spacers on top of these brackets if they are present.

On older machines with this upper bracket present, use the two shorter spacers supplied in the kit. Ensure that the bolts do not stick through too far between the oil cooler and the radiator. If threads stick out the back nut, use extra washers on the bolt or shorten the thread penetration.

DRIER

The drier mounts in front of the radiator and condenser to the right of the battery. Depending on the age of the machine, the drier bracket will either bolt as shown on this picture or as shown in the next picture.



Install drier bracket in top hole here.



Use top hole of 90° bracket with 5/16" hardware supplied.



Bolt 90⁰ drier bracket using existing M10 bolt here on older machines.

HOSE RUNS

Clutch wire from thermostat in the cab.

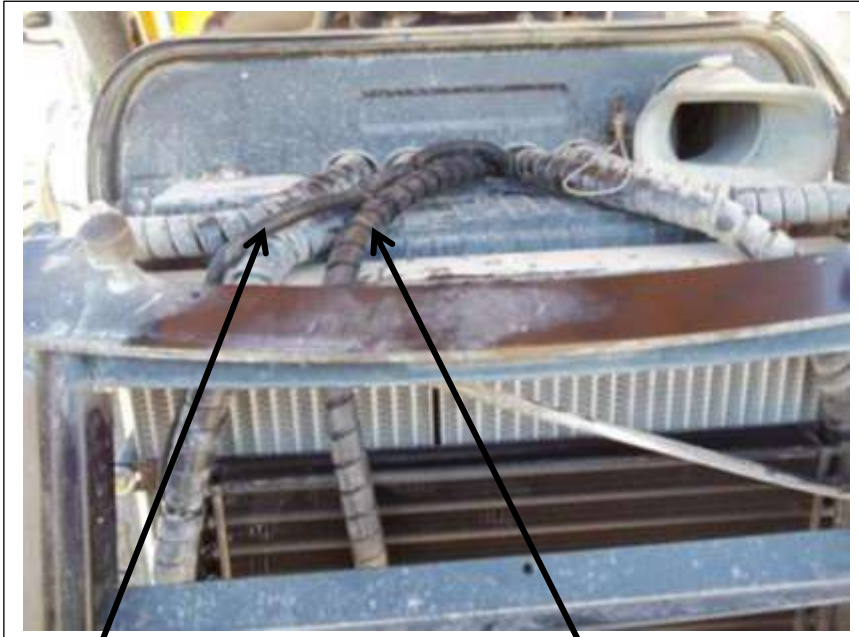
Clutch wire to compressor.

13/32" line from compressor discharge.



5/16" line to evaporator in the cab.

5/16" line from the condenser



Clutch wire to compressor.

13/32" line to compressor



On newer machines, an extra hole needs to be made above the radiator to allow the 13/32" hose into the engine area.

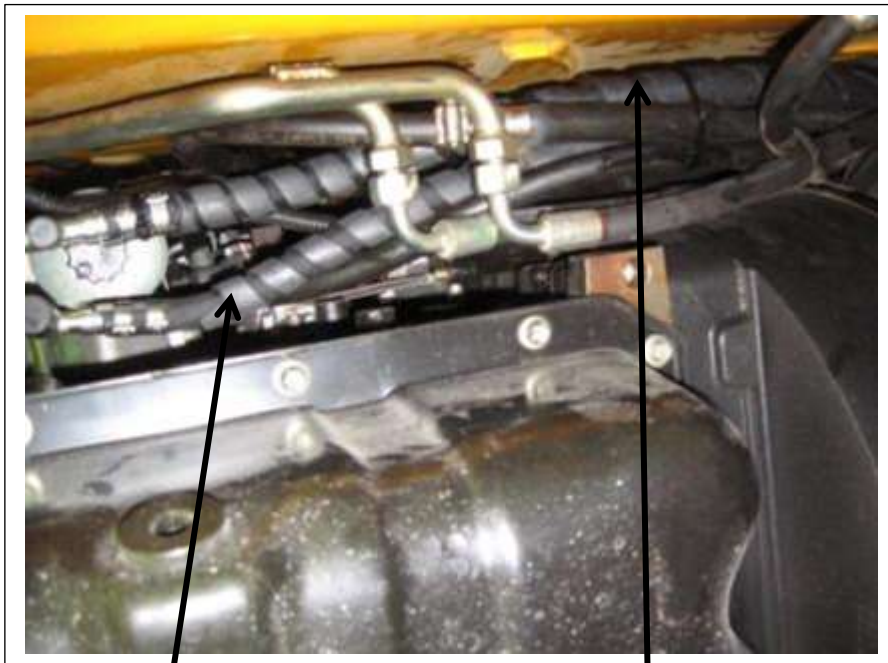
Clutch wire from the pressure switch on the drier to the compressor.



Run the 5/16" line down the right side of the machine along with the clutch wire.



Heater shut off tap installed in one heater line. Exact position varies depending on the age of the machine.



13/32" line looping up and around the top of the radiator.

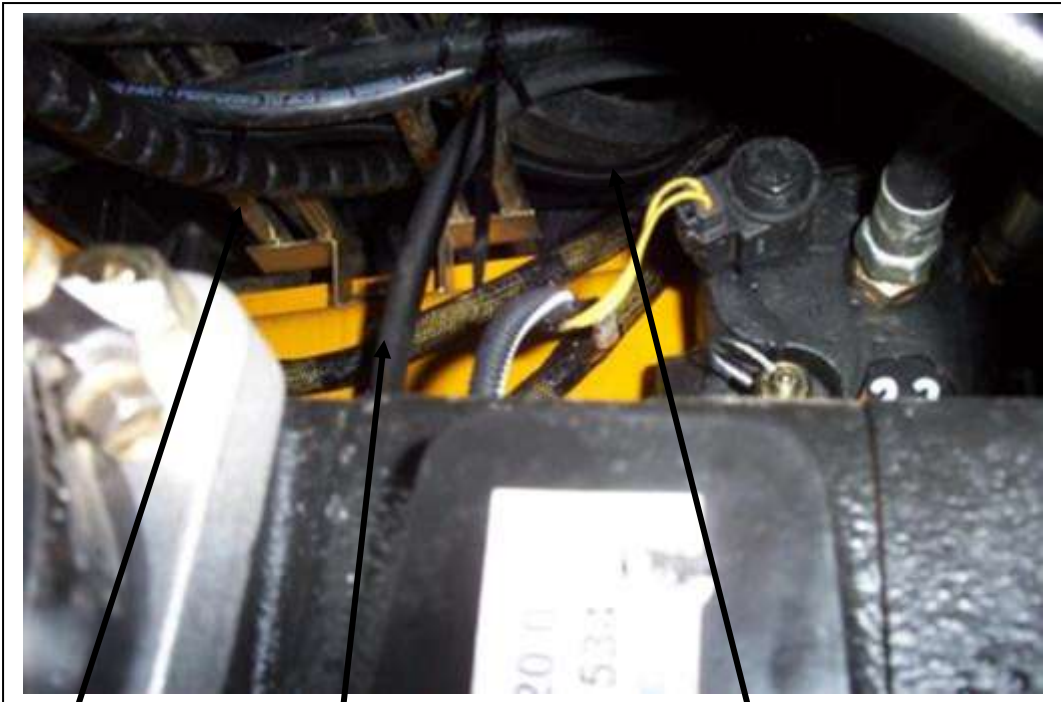
1/2" line running back towards the evaporator.



1/2" line at compressor

Rotolock compressor

13/32" line at compressor



1/2" hose to evaporator coil

5/16" hose to expansion valve

Clutch wire



A/C hoses and clutch wire coming up through the floor to the left of the fuse panel



A/C lines passing through existing holes beside heater lines. *NOTE: the fittings cannot be installed on these hoses until they have been put through these holes.*



A/C lines running up to the evaporator coil



Fitting connections shown at evaporator coil with box out of machine.
*NOTE: Do not take box out.**

ELECTRICAL



Mount A/C on-off push button switch in existing hole in metal panel behind decal.

Wire out to thermostat



A/C on-off push button switch plug

Inline ATO fuse holder between blower switch and A/C on-off push button

Wire for ground from A/C on-off push button switch to ground wire on unused plug.

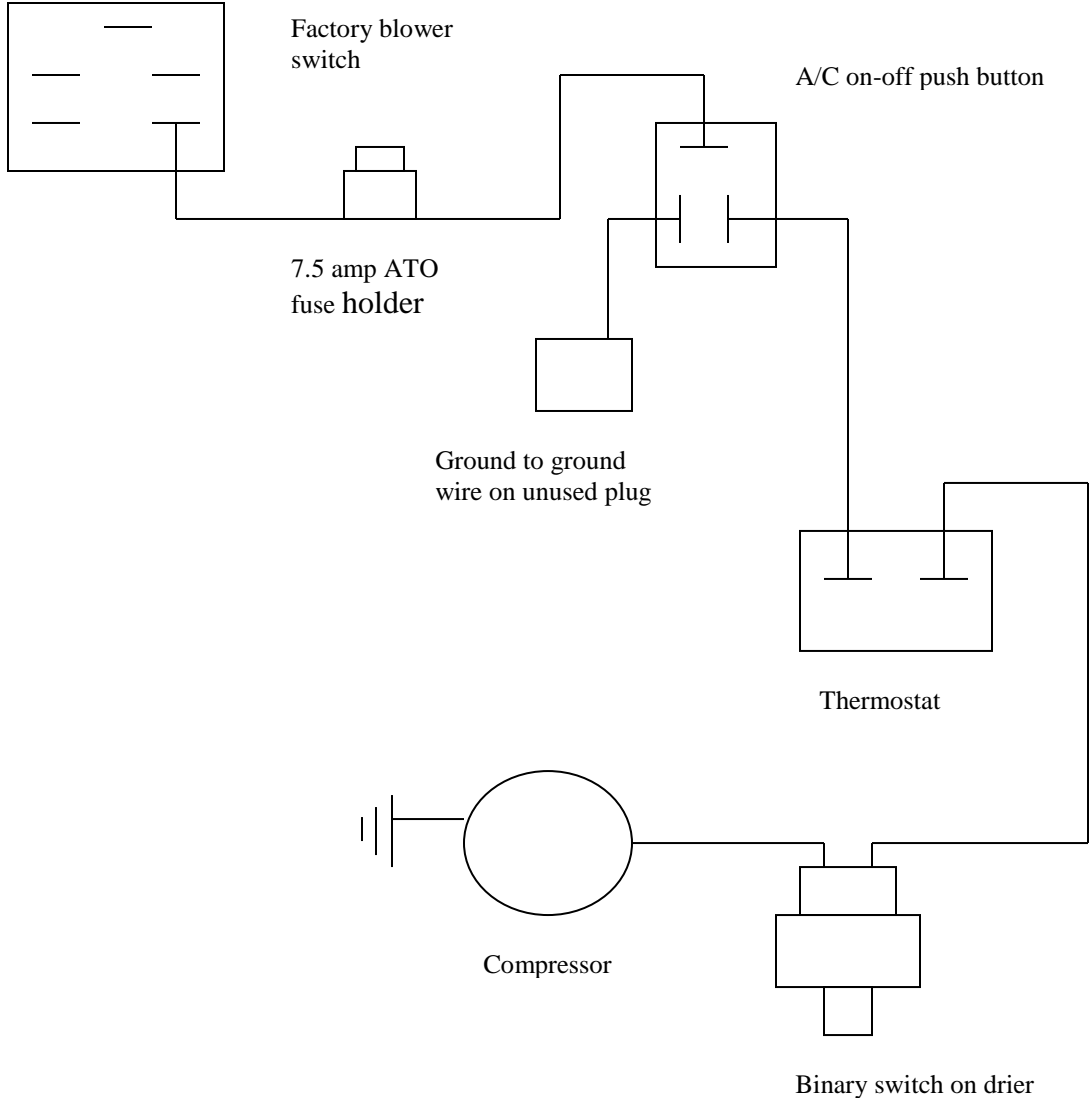
Wire from a/c on-off push button switch.



Tie thermostat down here and open all the way

Wire out to binary switch

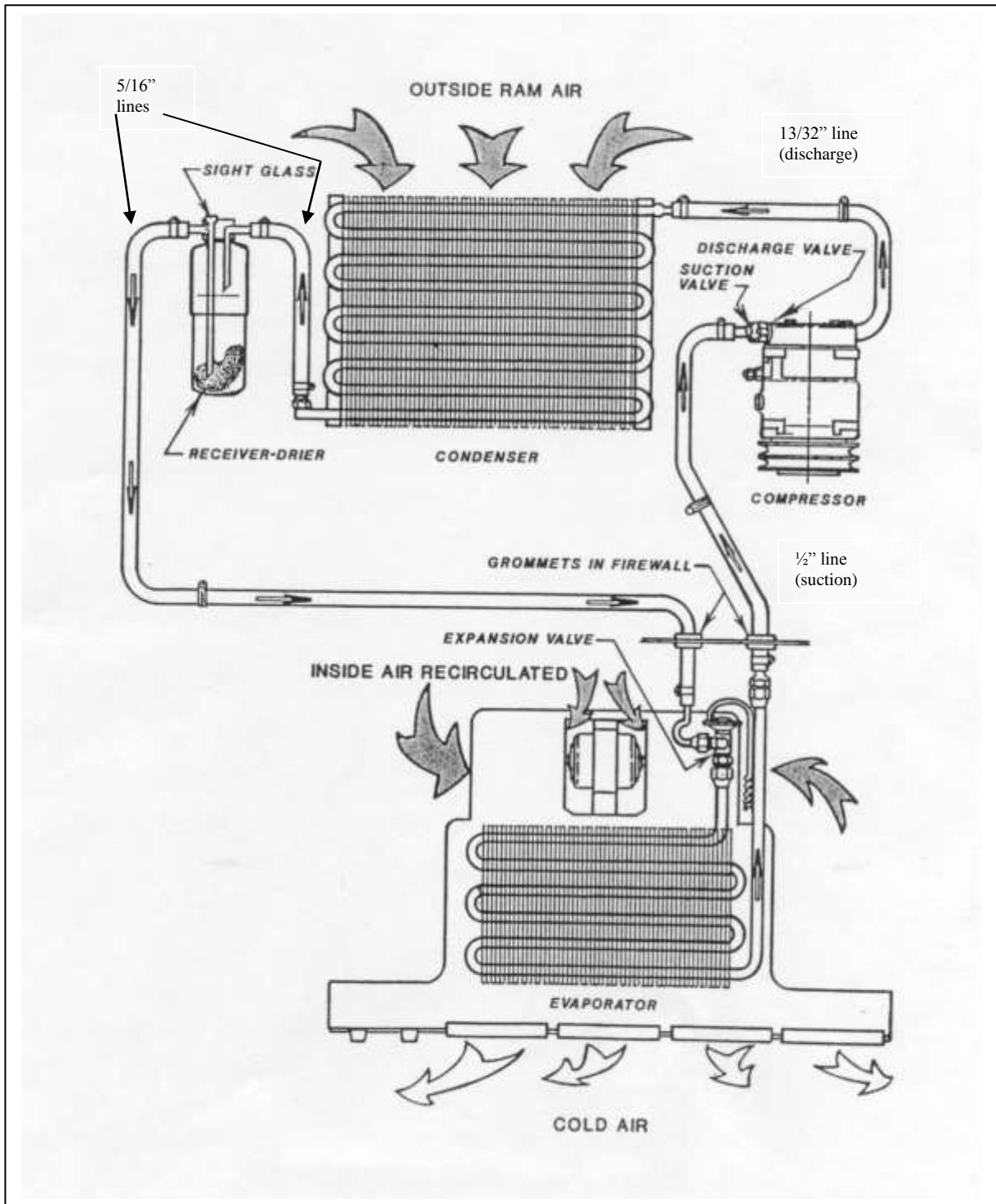
Wiring Diagram



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 2.75 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.
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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.

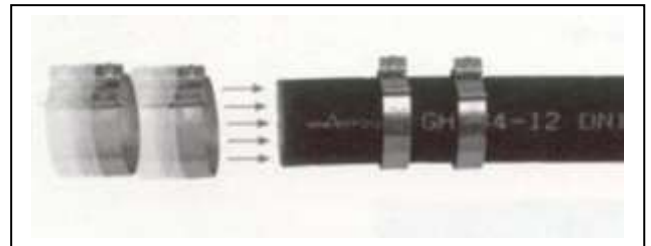
If the thermostat doesn't cycle off after a reasonable cool down period, and the air outlet temperature has dropped below 40° F, the cut in and cut out settings should be adjusted until the compressor is cycling on and off regularly. Let the system run for a decent time period (at least 15 min) and then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

Aeroquip E-Z Clip Assembly Instructions

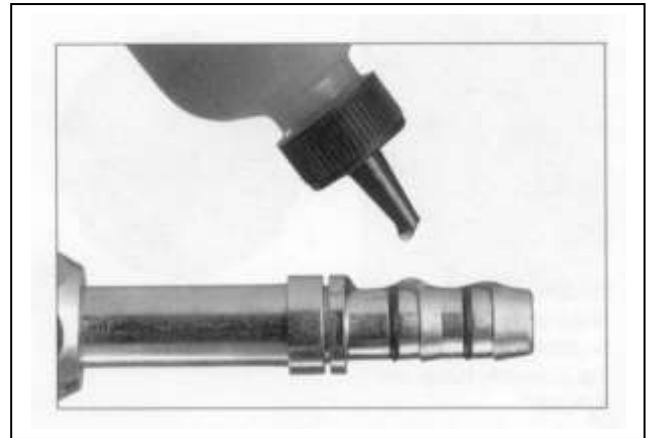
Step 1. Cut the hose to proper length with an appropriate cutting tool. Aeroquip's hand held hose cutter has been specially designed for cutting all non-wire reinforced hose, such as GH-134 Multi-Refrigerant hose. Be sure the cut is made square to the hose length.



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.



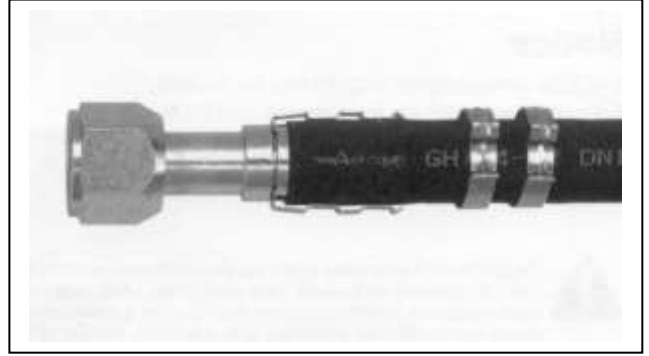
Step 4. Insert the nipple into the hose. To ensure that the nipple is fully inserted, check the gap between the cut end of the hose and the shoulder on the nipple. Care should be taken to avoid kinking or other damage to the hose during nipple insertion. NOTE: Be sure to wipe excess oil from the nipple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

