

JCB 520-40 INSTALLATION INSTRUCTIONS



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

COMPRESSOR



Remove three fan assemble bolts

Temporarily remove alternator and bracket.



Remove this engine bolt and turn it over. (nut on top as shown)

Remove both mount bolts from engine



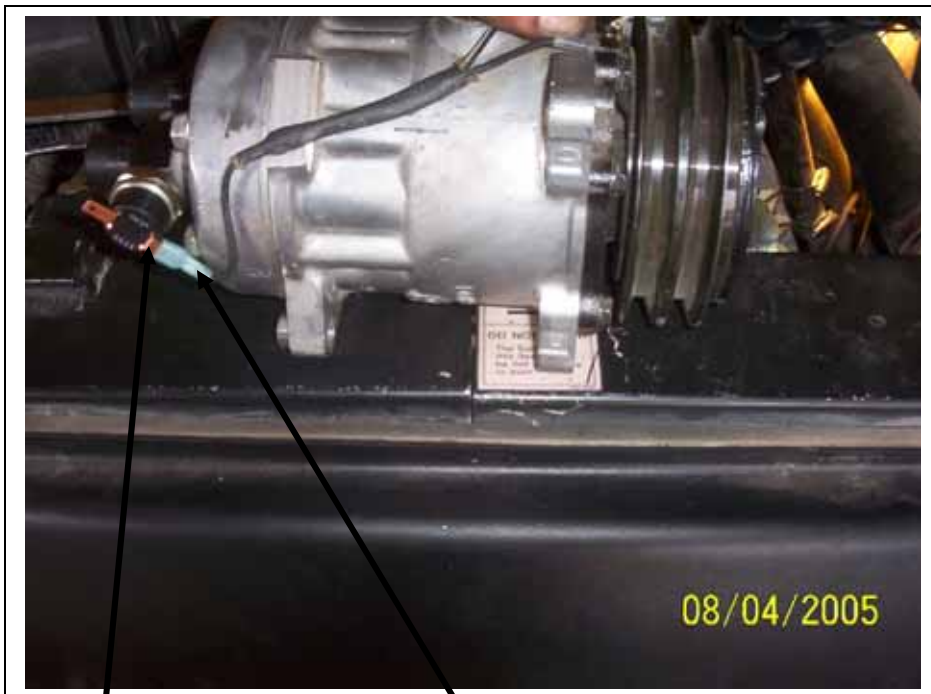
Install compressor mount with two M14 bolts provided.



Tighten bolts

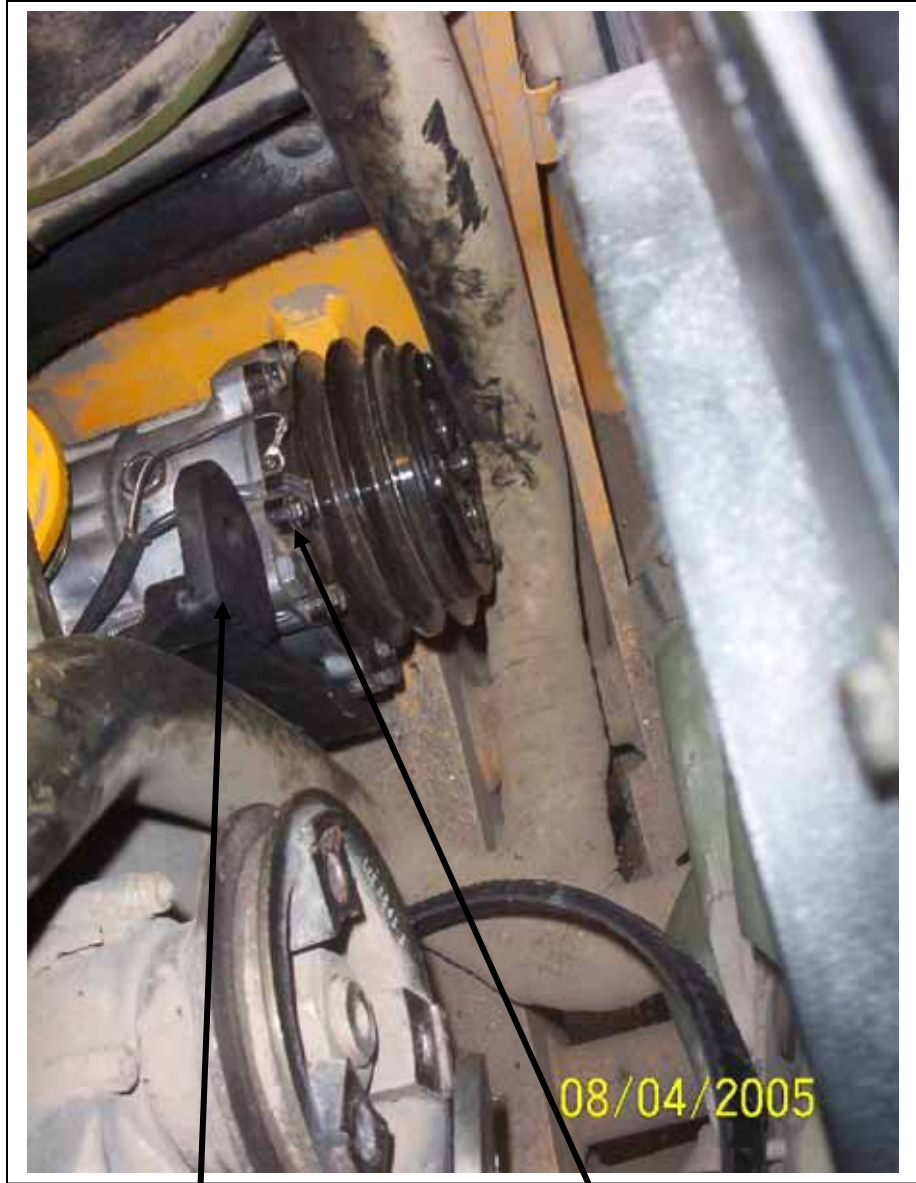


Install rear pad onto compressor. Smaller fitting on discharge side, larger fitting on suction side as shown.



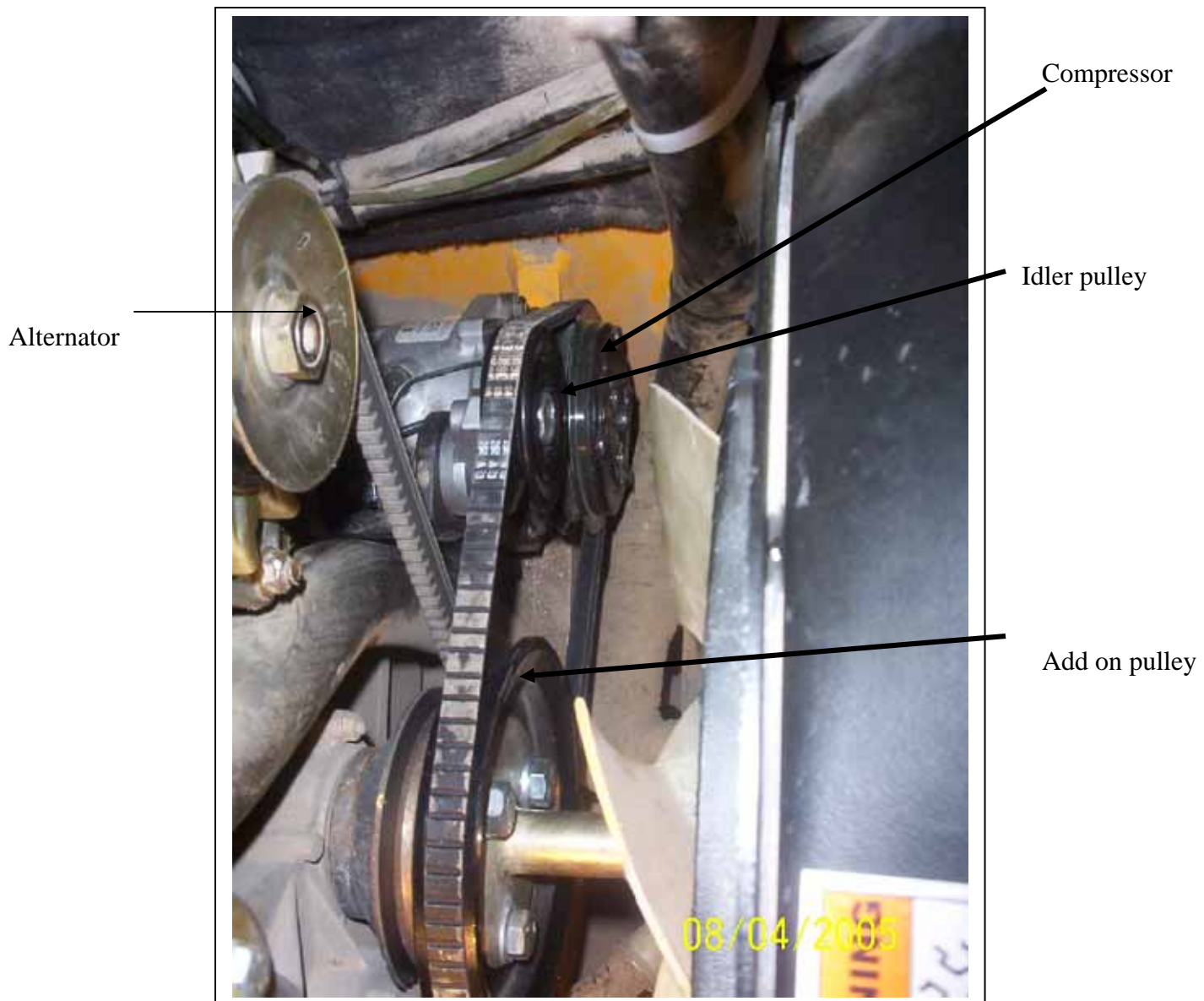
Binary pressure switch.

Connect the compressor wire to the binary switch as shown.



Compressor mount

Compressor



Install the add on pulley as shown. This will be used to tighten the belt.
Re-install the alternator and tighten as required.
Install the add on pulley and re-install the fan assembly with the new hardware provided.



CONDENSER



Cut 12" x 20" hole into engine cover. The condenser will be mounted underneath this area.

Install black edge trim around cut edges.

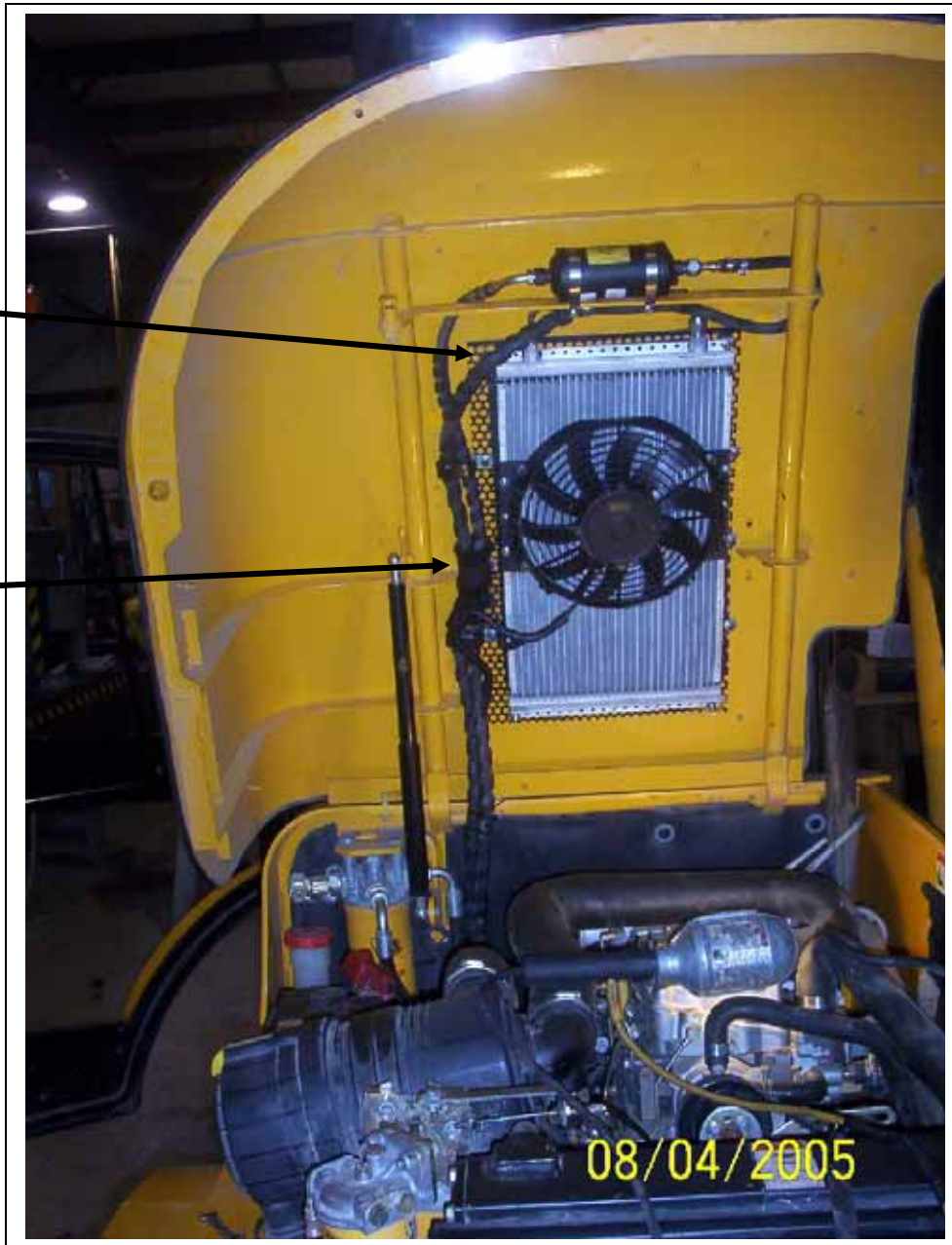


Six $\frac{1}{4}$ " x $\frac{3}{4}$ " button head bolts used to mount the screen on the inside of the hood.

Four $\frac{1}{4}$ " x $1 \frac{3}{4}$ " bolts used to mount the condenser with $\frac{3}{4}$ " spacers.

14" x 23"
screen

This bracket is
cut to fit
condenser coil.



6 hose to expansion valve

Drier mounted on hood bracket using two #40 gear clamps.

#6 hose condenser to drier.

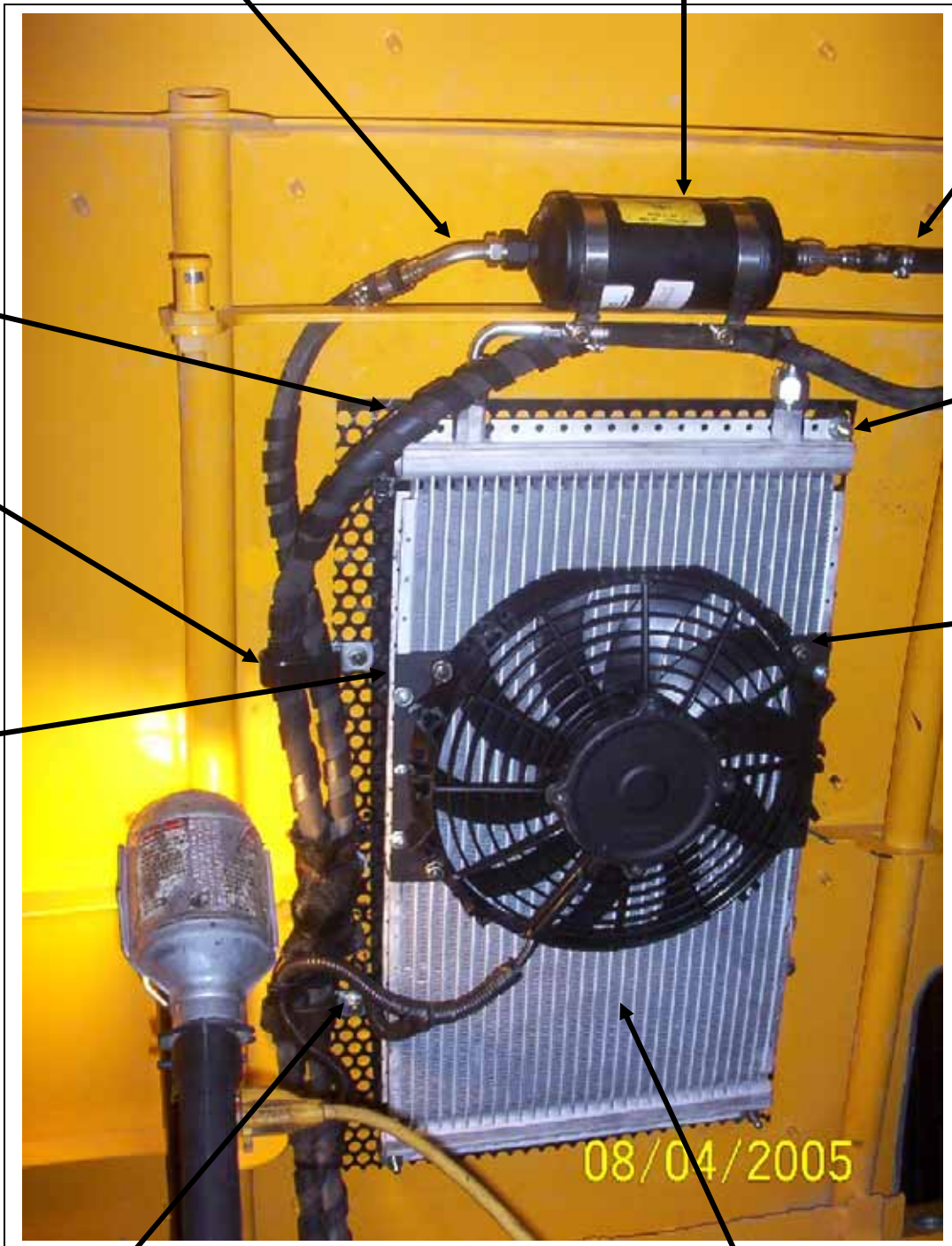
#8 hose to compressor

1/4" x 1 3/4" bolts mounting condenser to hood using 3/4" spacers.

Hose clamp.

Counter sunk bolts mounting brackets to condenser fan.

#10 x 1/2" self drilling screws to mount fan on condenser coil.



Condenser fan ground wire mounted to bottom left button head bolt using blue ring connector.

Condenser coil.

EVAPORATOR

- 1) Remove the seat (four M8 bolts on seat mount plate)
 - 2) Remove two metal side console covers
 - 3) Clamp off heater lines
 - 4) Loosen gear clamps and disconnect from heater splices.
 - 5) Loosen gear clamps and disconnect flex ducts from the heater box
 - 6) Disconnect the electrical plug.
 - 7) Cut the fan motor wires.
 - 8) Undo the M8 nut from the front mount foot.
 - 9) Undo the two M8 bolts from the back of the box.
 - 10) Disconnect the right hand foot pedal, (pull pin and clip)
 - 11) Pull the heater box out from under the side console and remove the lid to access the heater shut off tap and remove the heater cable.
 - 12) Once the heater cable and lid are removed the heater box can be completely removed from the vehicle.
 - 13) Remove the existing heater components.
- NOTE: Be sure to save all heater components to use with the new heat/cool coil. (gear clamps, shut off tap, etc)



Drain holes

Heater box removed

2 1/2" x 20" foam installed



Heater lines clamped off and flex duct removed



2 1/2" hole cut for air recirculation louver.

Butt connect 10" wire extensions to fan wires.



1/4" black a/c foam. 2 pieces (4x6) one each end.

Thermostat tie wrapped in place.



Thermostat electrical wires

Thermostat probe mounted
in coil.



Drain pan.

Rear of evaporator
box.



Drain holes drilled in evaporator box using the drain pan supplied as a pattern. Ensure holes line up with the holes in the body of the machine for drainage.



Silicone around drain tube holes then place drainpan in place. Ensure the drain pan holes are lined up with the box holes.

The evaporator is secured in place with four #8 self tapping screws through the back side of the box.



Evaporator/heater coil in place.

Drain pan



#8 self tapping screws used to mount the coil.



Re-use rubber 90° and gear clamps





Electrical for power fans with 10" extensions.

Electrical wires from thermostat.



10" extension with 4 pin weatherpak plug connected to the fan wires

Thermostat wires. In from relay and the out to binary switch at



9" 14ga black wire with ring terminals

1/4" grey A/C foam

Thermostat and fan wires

ELECTRICAL



Remove left front dash panel



Remove fan switch connection, cut off and crimp on female quick disconnects supplied.



Wiring re connected to fan switch with female QD's installed.



ATO fuse holder

Wires to A/C on off pushbutton

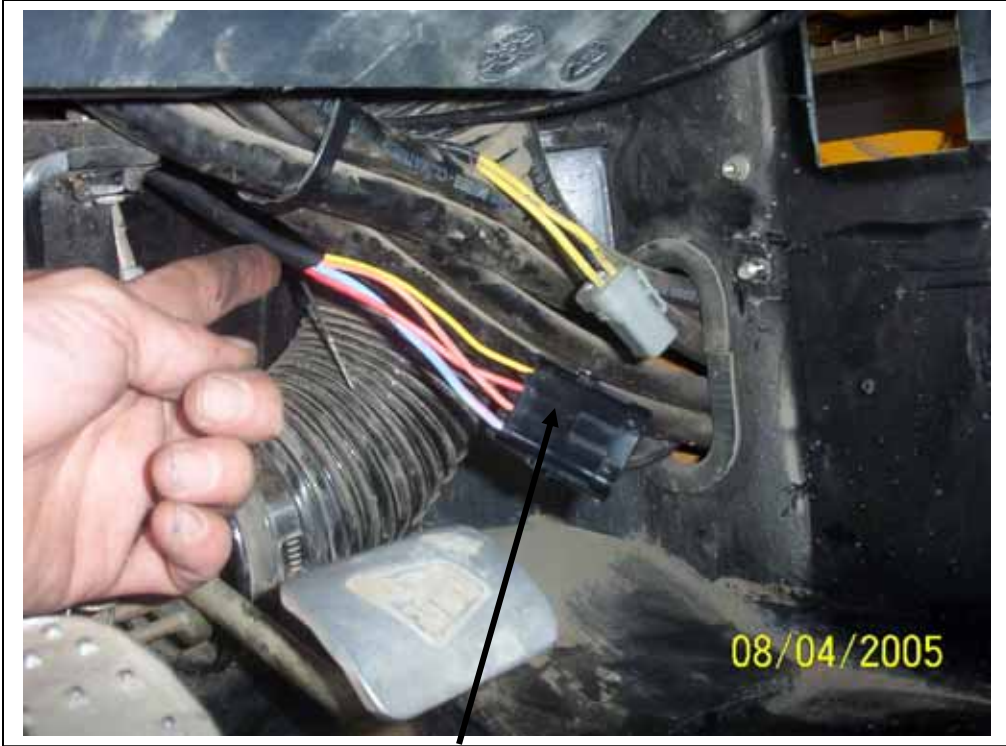
A/C on-off switch installed with 7.5 amp fuse and holder.



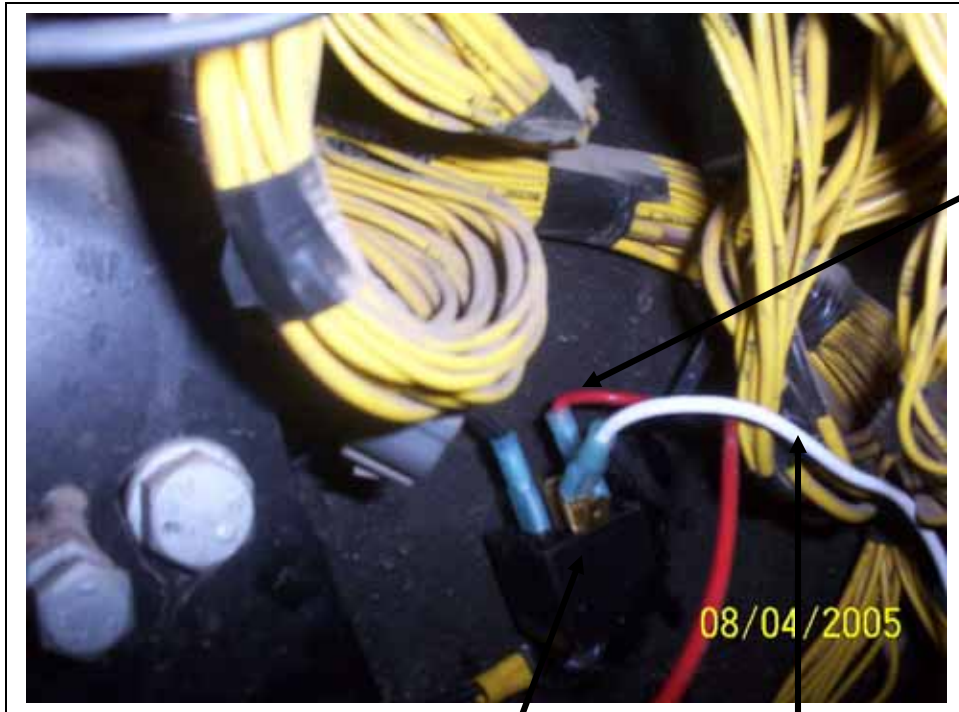
Ground wire from A/C switch.



A/C switch installed.



4 pin female weatherpak connector attached to fan wires from the switch to be plugged into male connector on the fans.



Red wire to A/C switch

Relay location

White wire to thermostat.



Heater hoses

Relay location

A/C lines to evaporator



1/2" line to compressor.

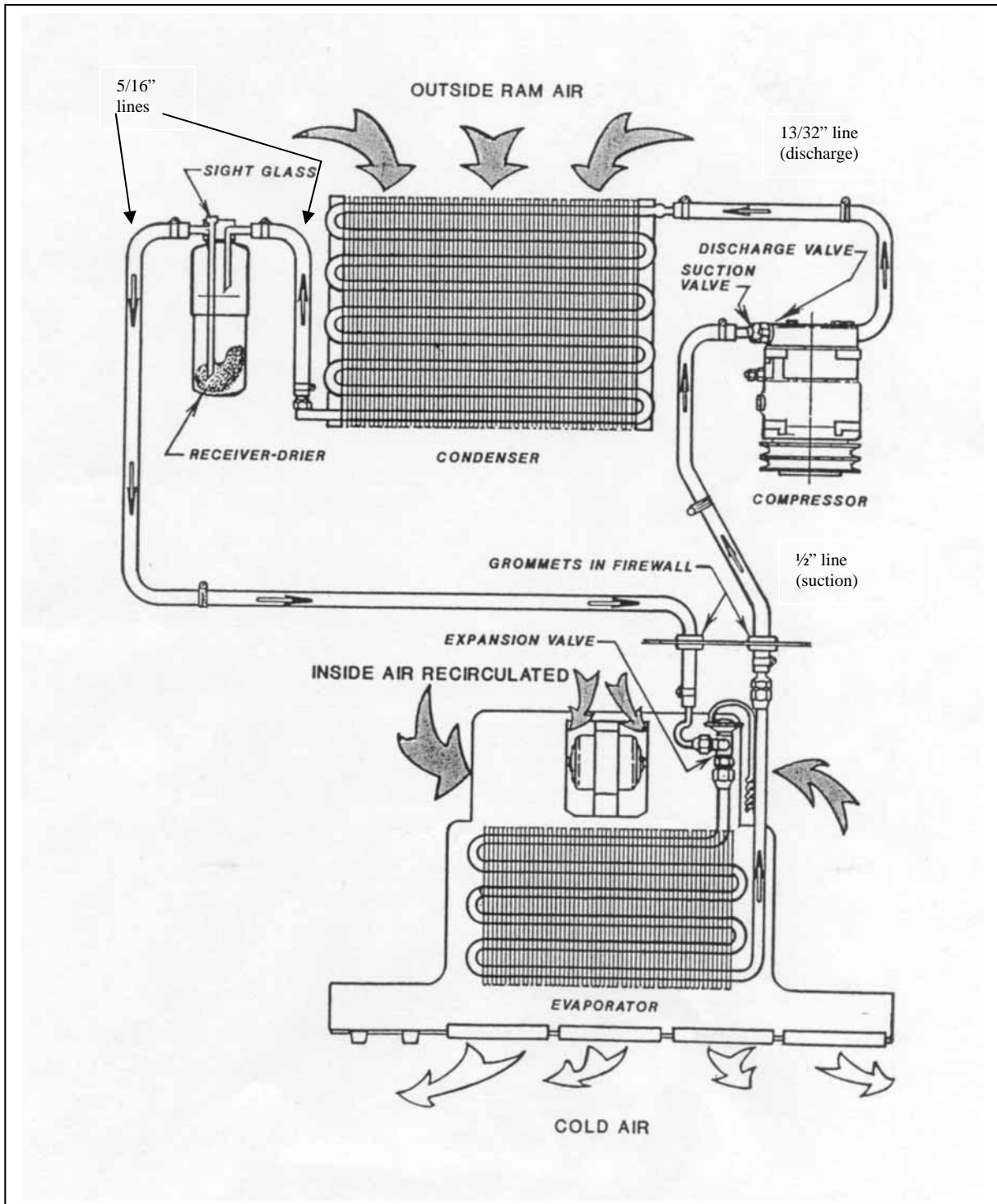
5/16" A/C line to receiver drier.

Heater shut off control now mounted outside the box.

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 2.25 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.
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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.

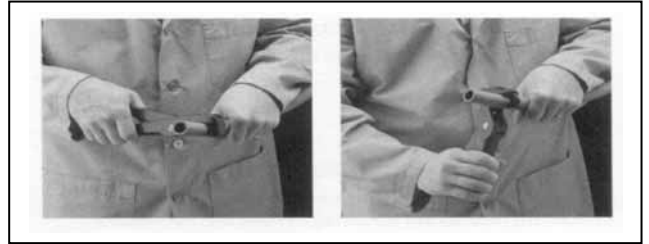
By looking at all these different factors, the area of an evaporator coil most likely to be the coldest can be determined.

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.

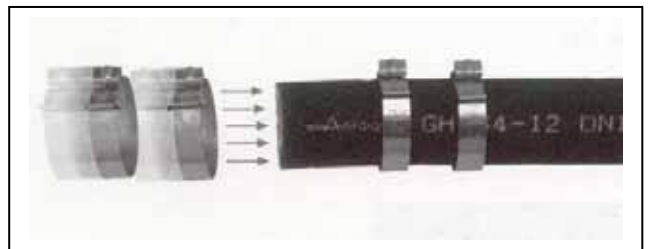
If the thermostat doesn't cycle off after a reasonable cool down period, and the air outlet temperature has dropped below 40° F, the cut in and cut out settings should be adjusted until the compressor is cycling on and off regularly. Let the system run for a decent time period (at least 15 min) and then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

Aeroquip E-Z Clip Assembly Instructions

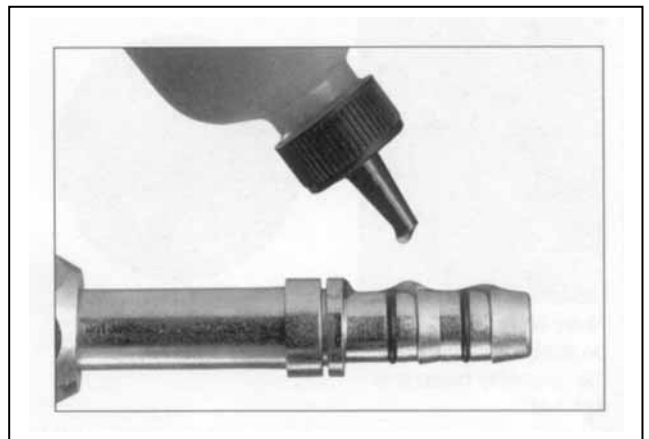
Step 1. Cut the hose to proper length with an appropriate cutting tool. Aeroquip's hand held hose cutter has been specially designed for cutting all non-wire reinforced hose, such as GH-134 Multi-Refrigerant hose. Be sure the cut is made square to the hose length.



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.

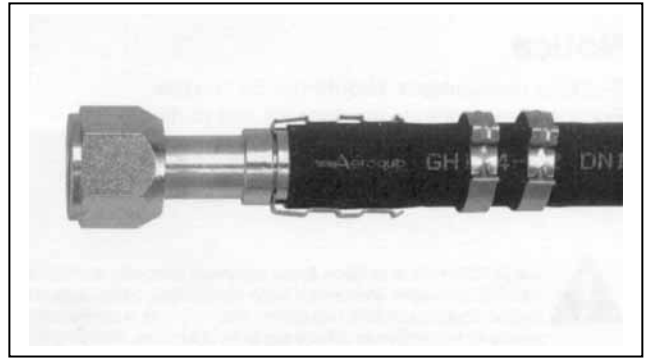


Step 4. Insert the nipple into the hose. To ensure that the nipple is fully inserted, check the gap between the cut end of the hose and the shoulder on the nipple. Care should be taken to avoid kinking or other damage to the hose during nipple insertion. NOTE: Be sure to wipe excess oil from the nipple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

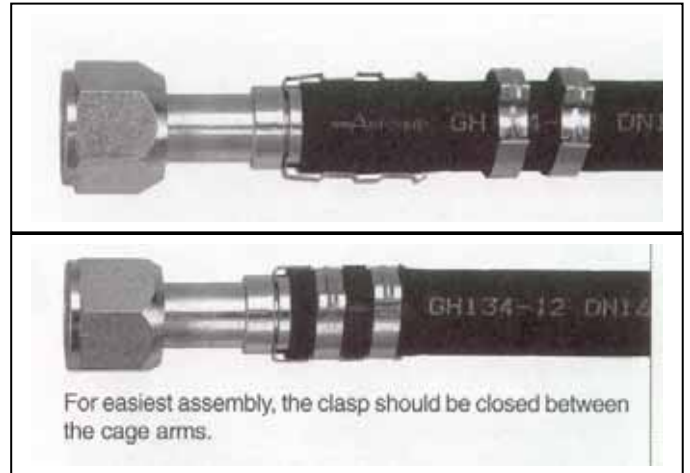


Step 5. Snap the cage into the groove on the nipple. The arms should extend over the hose length. When the cage has been correctly installed in the cage groove, the cage will be able to rotate in the groove. This step **MUST** be performed to ensure:

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.

