

**250/255/320
THOMAS SKID STEER
INSTALLATION INSTRUCTIONS**



**PHONE: 1-800-267-2665
FAX: 1-888-267-3745**

CAB REMOVAL

Remove the door after first disconnecting the wiper motor power wire and removing the retaining clip from the door shock.



Remove the floor panel by unscrewing the panel hold downs.



To remove the seat disconnect seat belt wiring harnesses and remove the rubber grommet. Unscrew the seat hold down. Feed the wire harness through the hole (grommet) out of the cab.



Hold down bolts



Seat belt wiring harness



Speed indicator

Access panel

Remove the speed indicator switch and feed the wire harness out the bottom of the column. Use the access panel if required.





Wiring harness out the bottom of column



Open the rear cab panel, disconnect and remove the batteries. Feed the wire harness out of the cab through the existing hole.

The removal of the control arms is optional.

Option A) Remove the four screws located at the bottom of the control arm boot and lift and tilt out of the way while lifting the cab.



Screws fastening the control arm boot.

Option B) Remove the four control arm boot hold down screws. Remove the bolt from the “pivot” point and remove the nut and bolt from the control lever and remove the armature. (control arm assy)



Control arm boot

Pivot point

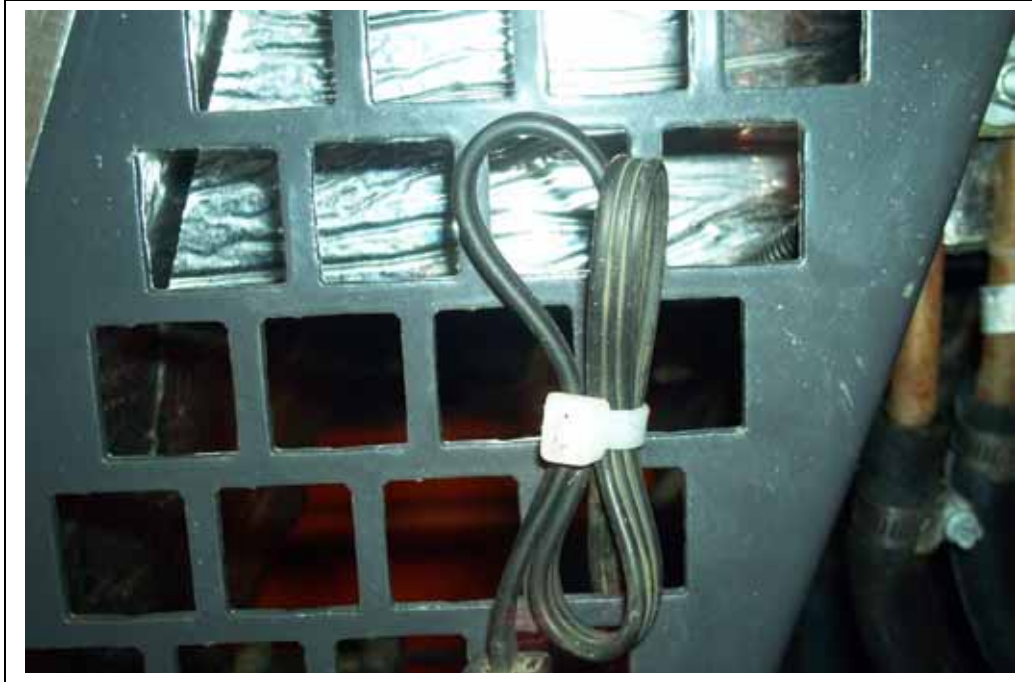


Control lever

Pivot point



Control lever



Cut the cable tie holding the block heater plug and remove the cord from the cab.





Disconnect the two wire harnesses located on the right hand side of the machine that runs from the engine compartment into the rear of the cab. Undo the two “P” clamps holding the harnesses running to the cab and disconnect the ground strap from the cab. Label or mark all connections to enable re-assembly.(Remove the air cleaner for easy access to these harness plugs)





"P" clamps holding wire harness

Ground



Disconnect here

Ground strap

FOR EXISTING HEATER

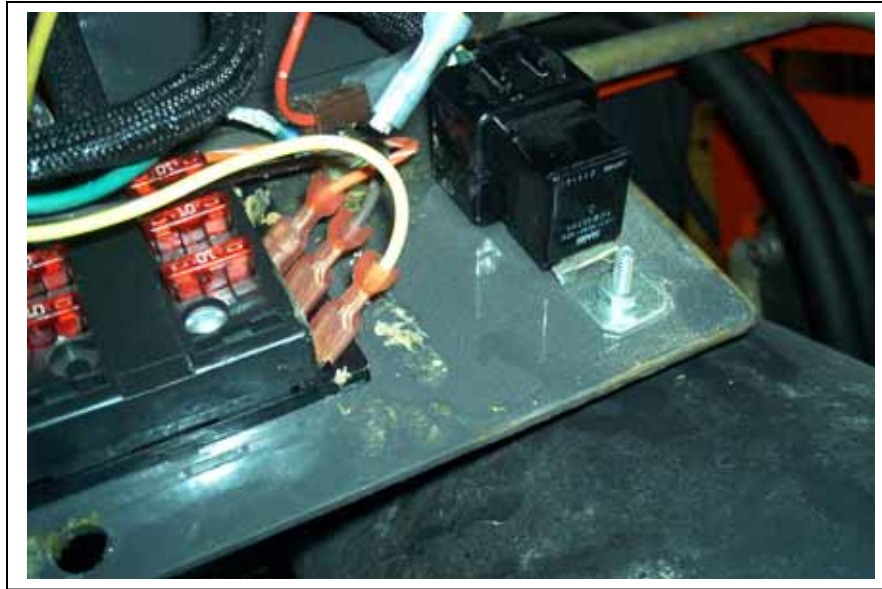
Clamp off heater lines, loosen the gear clamps and remove the lines. (there may be some leakage.)

Disconnect the yellow and red wires from the heater. Disconnect the red wire bullet connector at the “P” clamp (back of cab) and disconnect the yellow wire from the fuse panel.

Also remove the “P” clamp.



Fuse panel



Disconnect yellow wire



Red wire (with bullet connector).

Remove "P" clamp

After disconnecting the yellow and red wires from the heater unit and removing the “P” clamp, cut any cable ties from the MAIN wire harness and disconnect them.



Main harness

Disconnect the FIVE cab mounting bolts. Four are located in the corners of the cab and the fifth is located at the rear window inside the cab.



Cab corner bolt. One in each corner



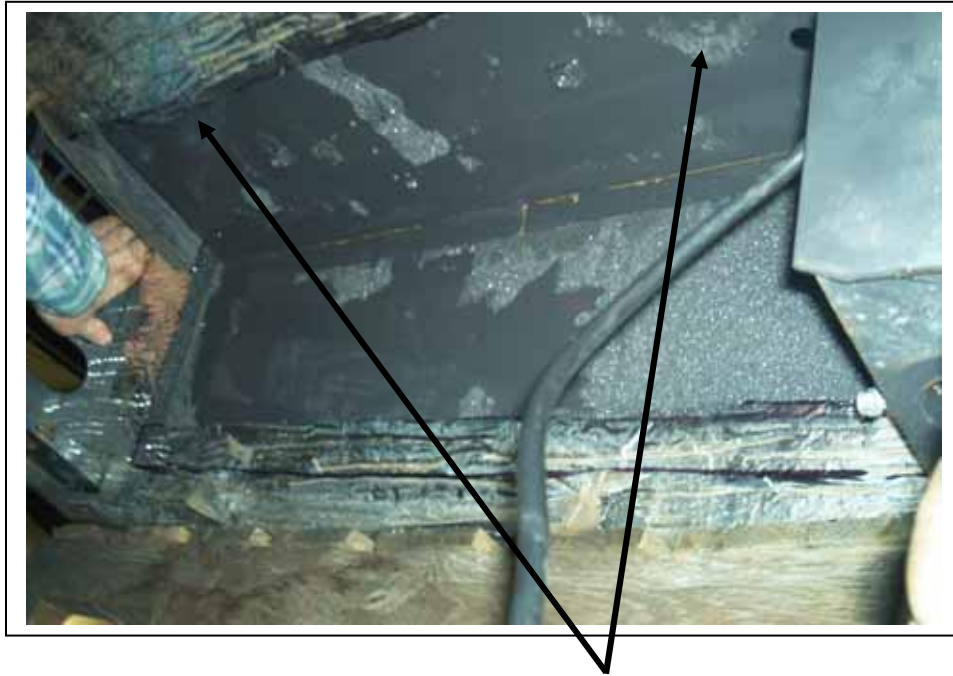
Fifth cab mount bolt at rear window in cab.

This bolt will be covered by foam cloth of the optional inside sound deadening package is present.

The cab is now ready for removal. Be sure to inspect the cab before and during the removal for any further obstructions.



Once the cab is removed, cut and remove the insulation from the back of the cab. Once the insulation is removed, cut off the studs left over from the “P” clamp under the battery box area.



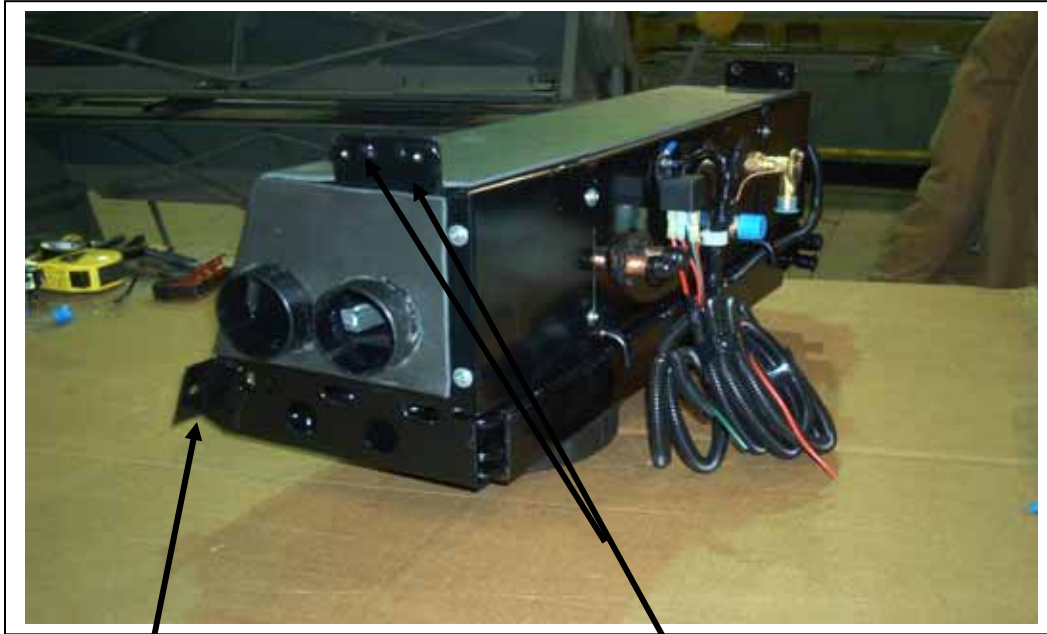
Stud removed



Using the supplied templates, mark and drill all the holes for the two lower louvers, the three control switches, and the air intake cut out. The two upper louvers have been relocated to the top of the panel to distribute air to the air ducts.

EVAP/CONDENSER ASSEMBLY

Push the A/C unit against the back of the cab and mark and drill the mounting holes.



Bottom mount hole

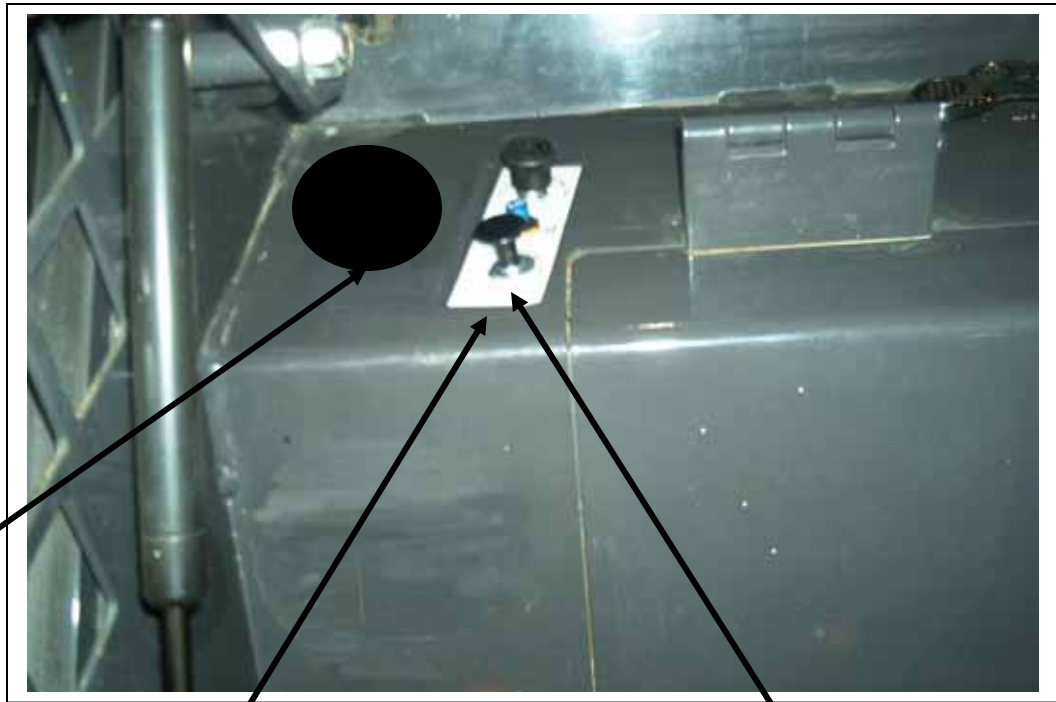
Top mount hole

Position the box in place as tight to the bottom of the battery box as possible (should be about a 3/8" gap) and mark the two lower mount holes, drill the holes and loosely bolt the box into place AFTER all the holes and cut outs are done.





Intake filter hole



Approximate location of upper 2 1/2" hole for the flex ducting.

If the heater control exists, don't install this one.

Original location of A/C controls. New location will be on the front face of this panel depending on the location of the hole for the flex duct to join the upper duct work.

Mount the A/C unit onto place using the hardware supplied



Heater line connections

Unit mounted in place

Condenser fans

Expansion valve

Heater control cable



Top two 1/4" mount bolts on the A/C box drilled into the side of the battery box. Use a long 1/4" drill bit to make these holes.



Filter hold down clips

Filter

Filter mount bracket

Align the filter over the intake hole and mark the location for the mounting bracket. Use self drilling screws to mount the bracket so the filter covers the mount screws. Center the filter on the mount bracket and mark the locations of the filter clips mount holes. Use self drilling screws to secure the filter clips. It is a good idea to drill 1/8" pilot holes for the screws because of the thick metal.



Filter and clips in place

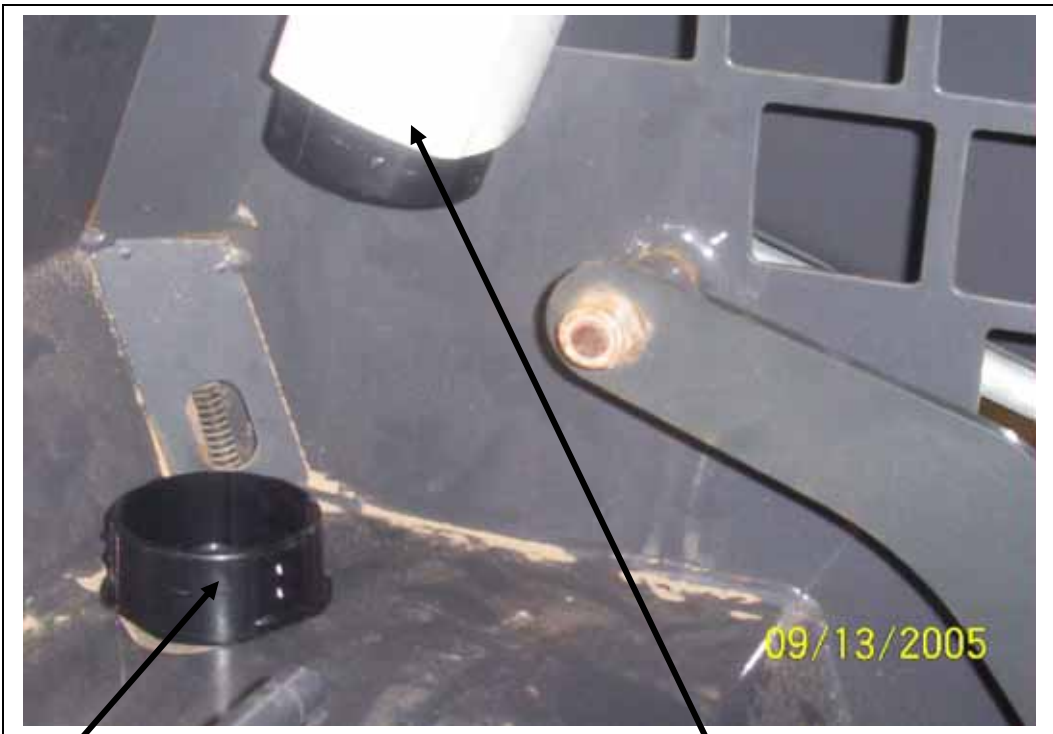
Connect the two weatherpac connectors from the A/C unit to the switch harness. Connect the four 2 ½” flex ducts from the unit to the louvers using the cable ties supplied.



Connect the flex hose to the louver and then install it back into the 3” round hole.



The 2 upper louvers are no longer required here. They are now located on the top of this shelf to supply the upper ducting.



Hole saw a 2 1/2" opening here to allow flexible ducting to connect to the upper venting. (Hose adapter is only to show the location of the hole)

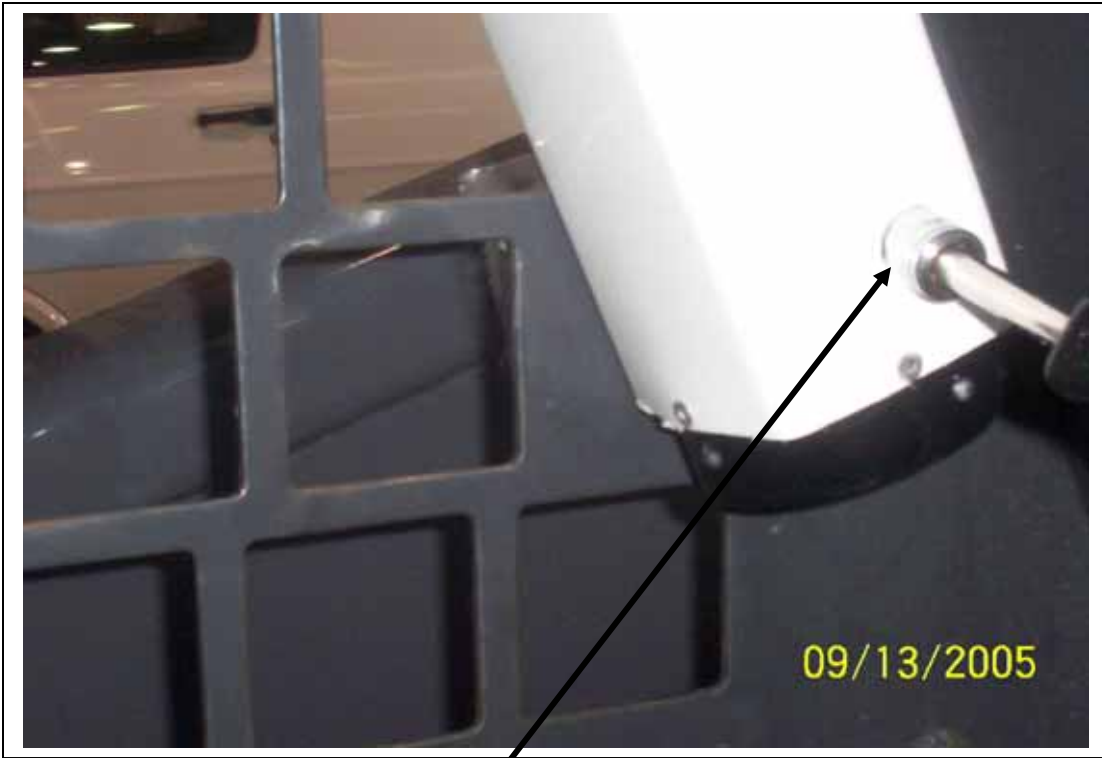
Left side ducting. Flex hose between this ducting and the hose adapter.



Bolts here



Mounts as shown.



Use 7/16" x 1/4" drive socket to fasten the ducts at the rear of the cab. Plugs are provided for use after the ducts are fastened.



Plugs installed.

RECIEVER DRIER

The receiver drier mounts to an existing hole on the left of the engine compartment. Secure using the hardware supplied.

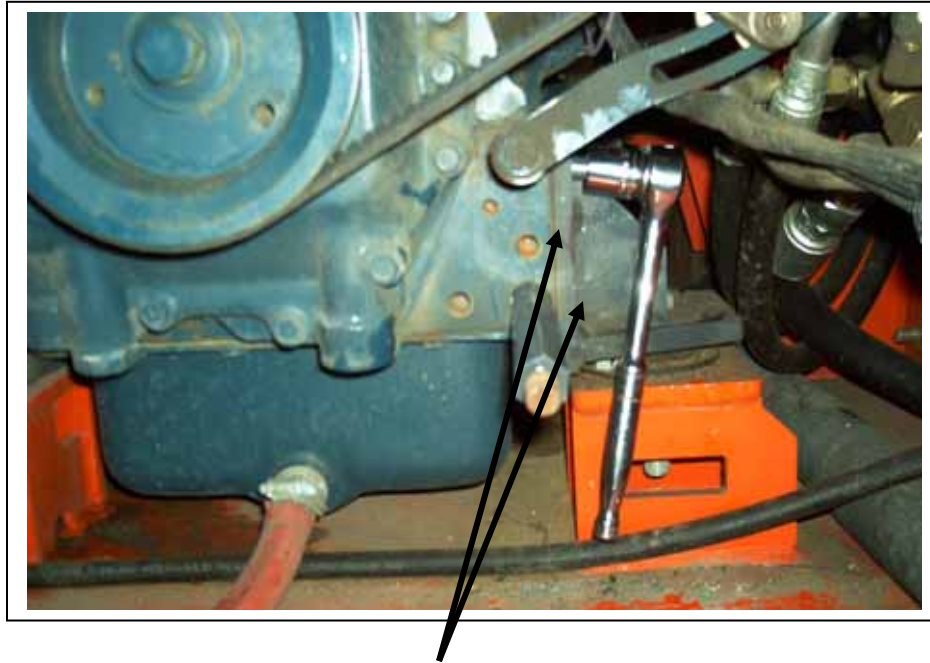


If the machine is a high flow hydraulic setup, this area will have a valve mounted in it. Mount the drier directly below the valve instead. Use the large fender washer to secure the drier bracket to the large horizontal slots.

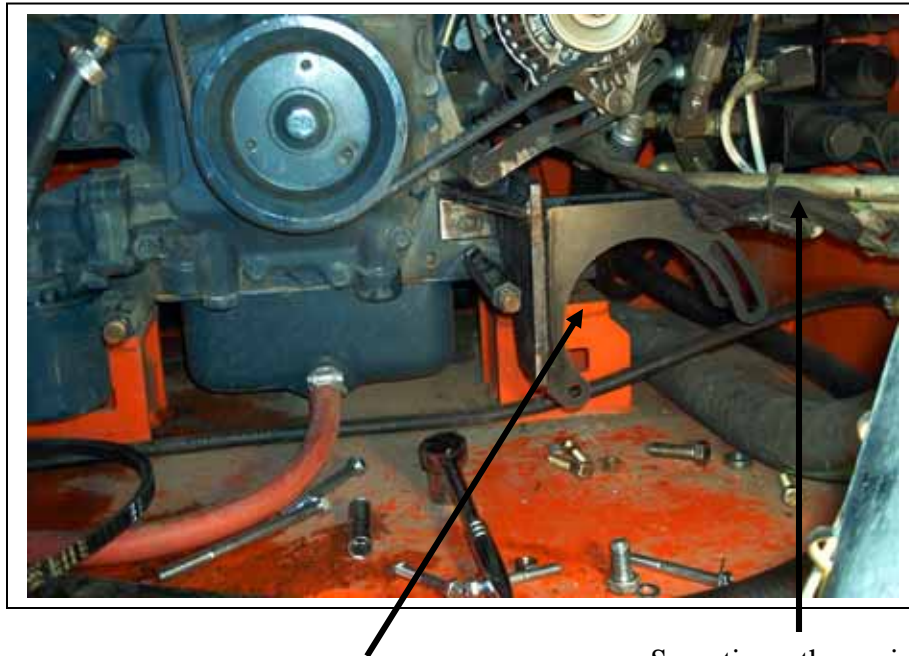
COMPRESSOR



Engine compartment with fan and guard removed.



Remove 2 engine mount bolts so compressor mount can be fastened there.



Mount in place

Sometimes these pipes need to be adjusted up for proper clearance on the compressor mount.

Use the two longer bolts for the side holes and reuse one original bolt for the front hole.



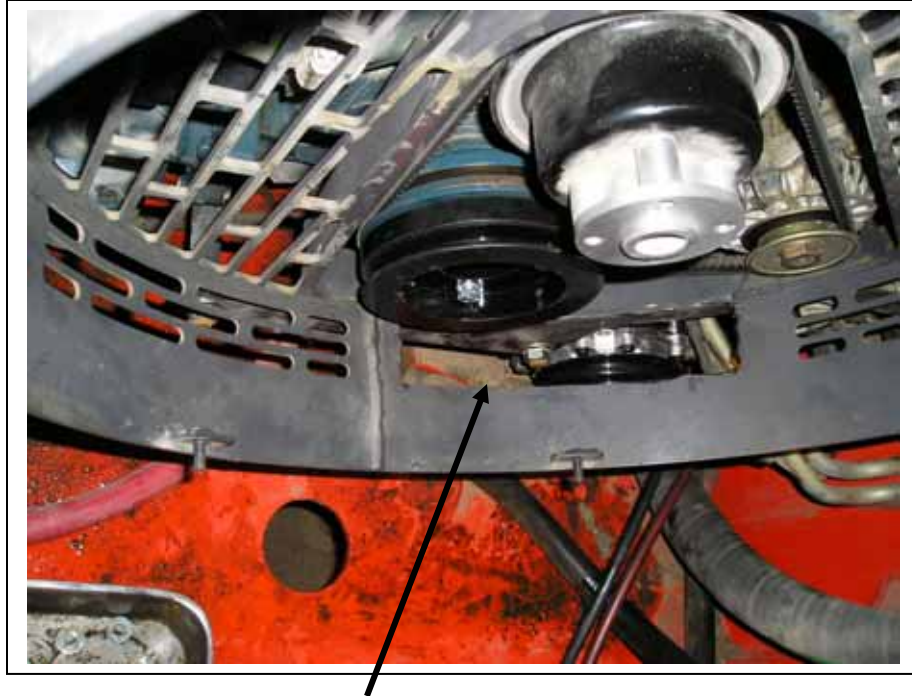
M8 mount bolts

Add on pulley in place.

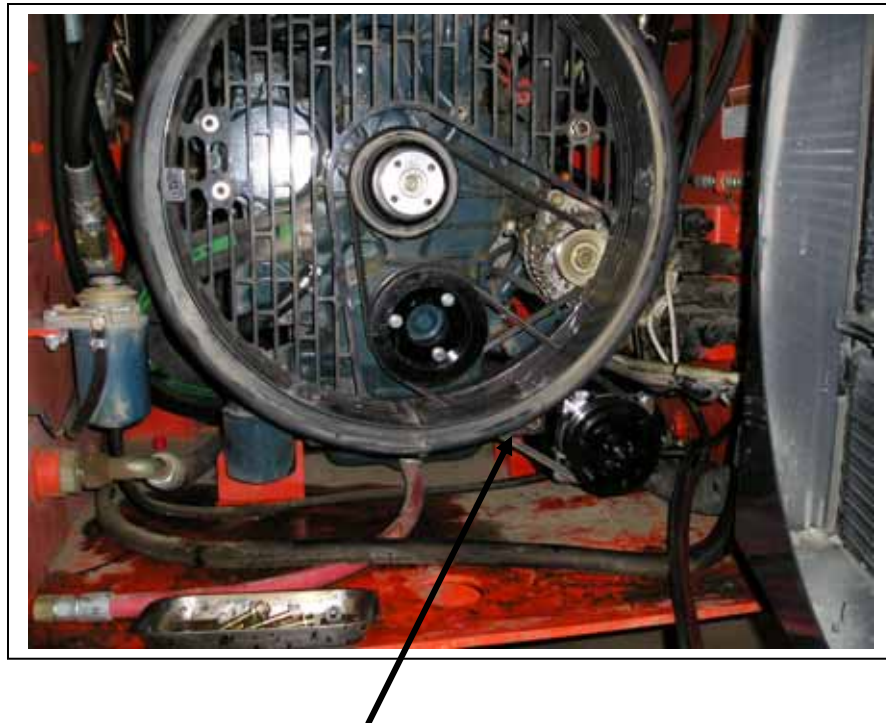
Use locktite on all mount bolts.



Compressor in mount bracket, with the fittings pointed towards the right side of the machine. Do not put the belt on until the fan shroud is in place.



Cut out a slot in the fan shroud to accommodate the compressor drive belt.



Compressor drive belt in place before the fan goes back on.



Fan back in place



Compressor in place with fan and guard re-assembled.

Connect the refrigerant lines at the A/C unit. Hose wrap and cable tie where necessary

NOTE: the heater line connection as well as the refrigerant line connections in the cab will be made once the cab is lowered.

Run the clutch wire from the A/C unit harness to the binary switch on the receiver drier.

Run the (2) two 12GA red power wires from the A/C unit wire harness to the fuse panel. Use the 20 Amp ATO fuse supplied in one of the two "SPARE" fuse holders and connect the (12GA) red power wire labeled relay to that terminal.

Use the 25 Amp ATO fuse supplied in the other "SPARE" fuse holder and connect the (12GA) red power wire labeled blower to that terminal

Run the clutch wire from the compressor to the binary on the receiver drier.

Reconnect the two (2) main wire harnesses.



Power wire for relay

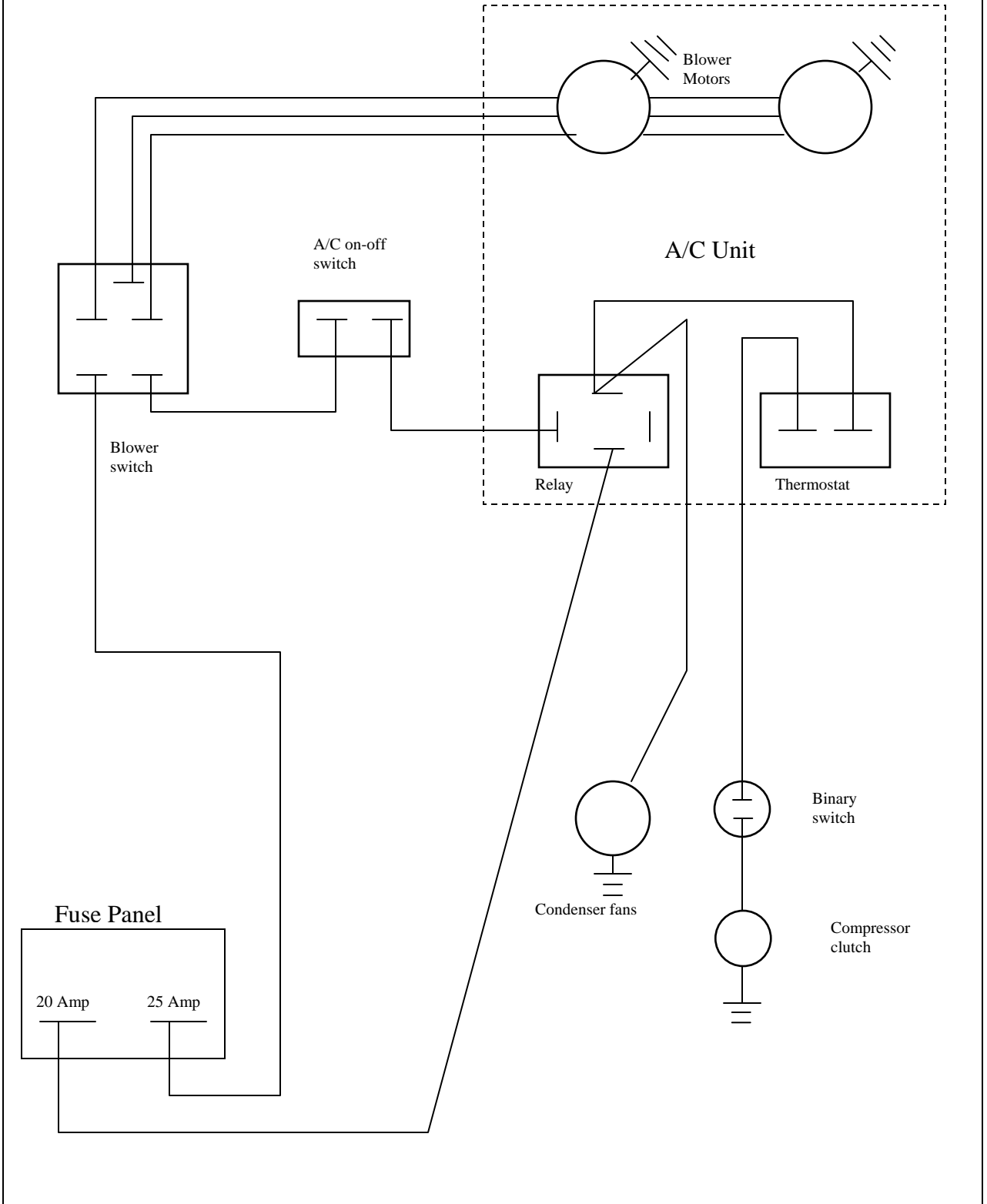
Spare fuse holders

Power wire for blowers



Binary pressure switch on receiver drier. One terminal goes to the compressor and the other goes to the A/C unit.

Thomas 255 Wiring



LOWERING CAB

While lowering the cab, be sure that it is clear of all obstructions, (hoses, wire harness, flex hose). All the harnesses get fed back into place.

Make sure that all hoses are omni wrapped and tightened.

Guide the hoses in place as the cab is lowered. Run the heater cable with the hoses.

Secure the cab using the hardware retained during the removal of the cab.

Once the cab is lowered the A/C lines can be connected at the receiver drier and the compressor.

The heater lines can also be connected at this time and the cable control heater shut off and be cut into place.

NOTE: EXISTING HEATER

If an existing heater exist, run the heater lines in series into the A/C unit, from the A/C unit to the to existing heater, from existing heater to block. Also reconnect the yel/red wires from the heater unit.

At this time secure all the hoses and wiring into place using the supplied tie wraps.

The system can be pressure tested and vacuumed at this point.

While the system is being evacuated, you can complete the re-assembly of the cab.

- mount batteries and battery tie down,
- connect battery cables,
- connect speed indicator switch and harness,
- secure control arms,
- mount floor panel,
- mount seat and plug in electrical harness,
- re-attach door, be sure to plug in wiper motor and return retaining clip on door shock.
- Install the supplied filter



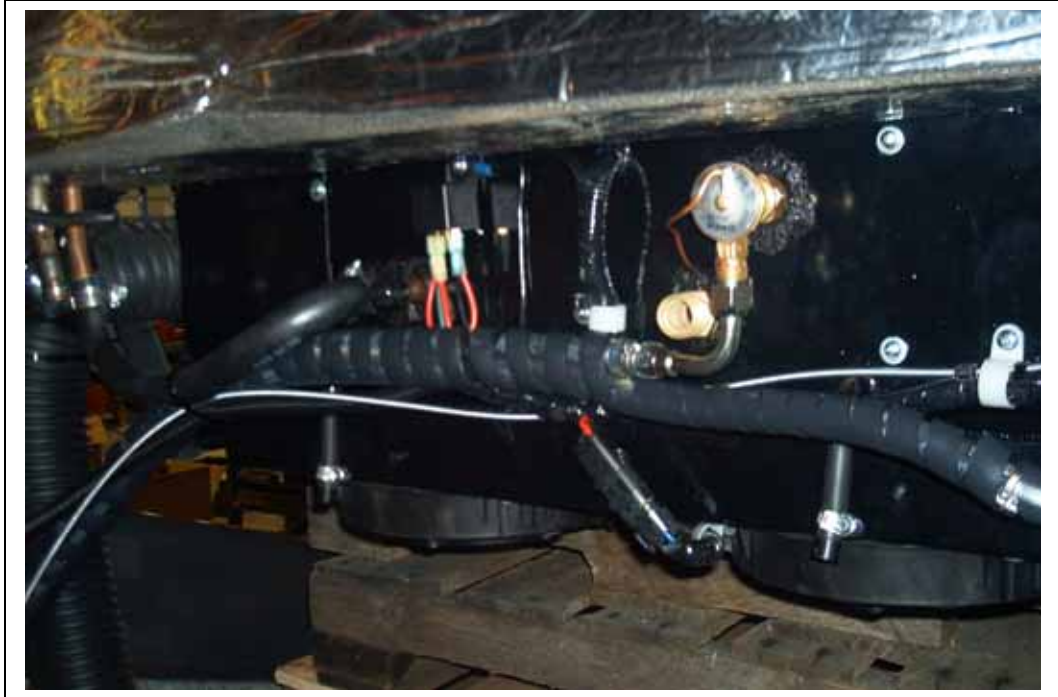
Heater line

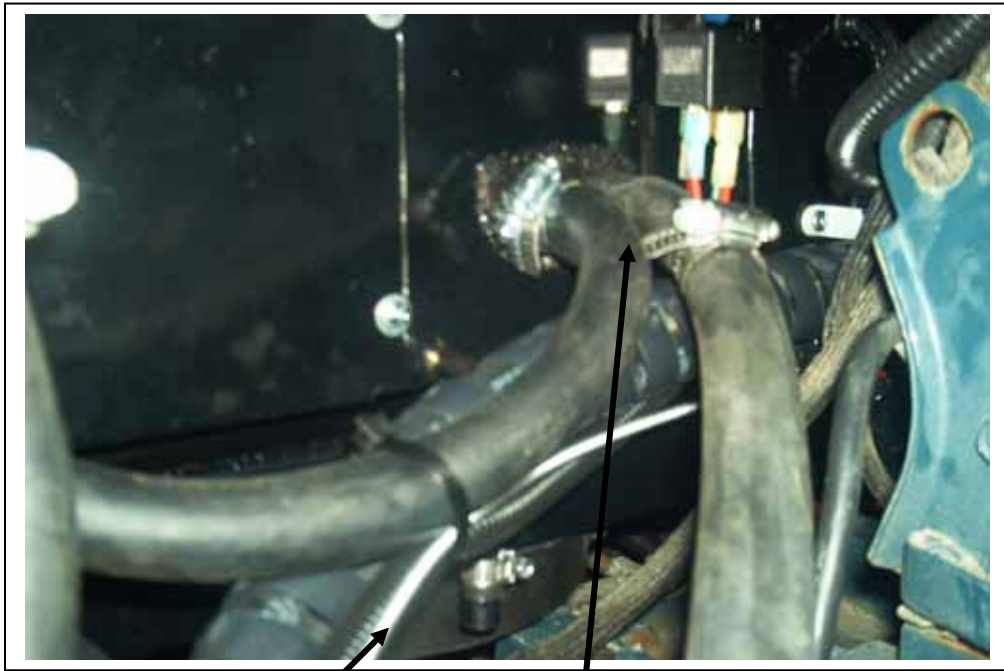
Drain tubes

A/C unit in place

A/C lines

Expansion valve





Heater control cable

Heater lines installed



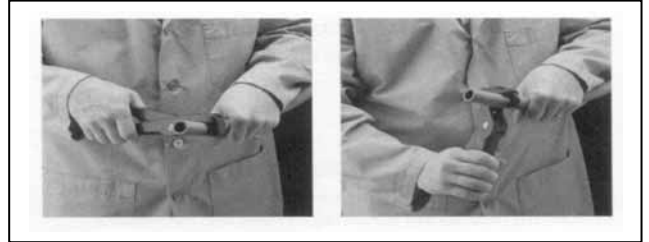
Cable controlled heater shut valve.

CHARGING AND TESTING

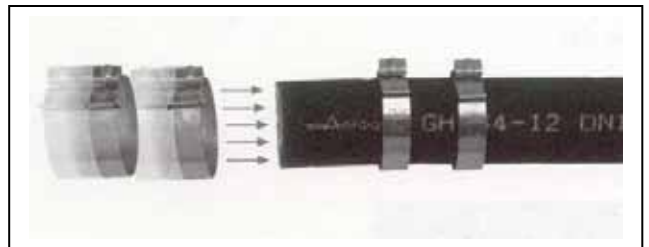
- 1) Pressure test the system using nitrogen to a pressure of 250 psi. Check for leaks.
- 2) Add 2oz of SP15 Sanden PAG oil to the system.
- 3) Vacuum the system for at least ½ hour.
- 4) Check that the vacuum holds.
- 5) Fill the system with to 2 lbs of R134a refrigerant. **DO NOT USE ANY OTHER TYPE 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.

Aeroquip E-Z Clip Assembly Instructions

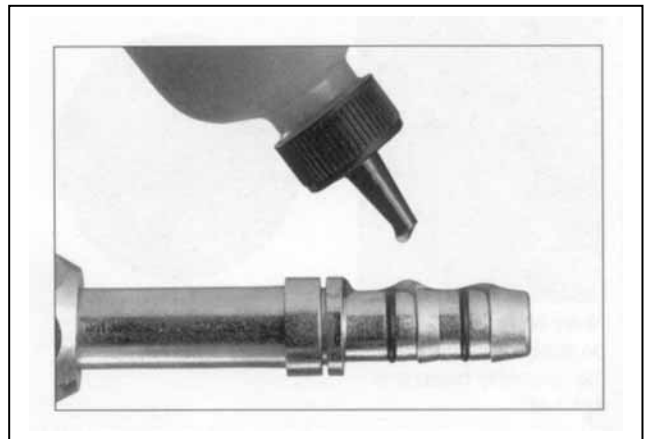
Step 1. Cut the hose to proper length with an appropriate cutting tool. Aeroquip's hand held hose cutter has been specially designed for cutting all non-wire reinforced hose, such as GH-134 Multi-Refrigerant hose. Be sure the cut is made square to the hose length.



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.

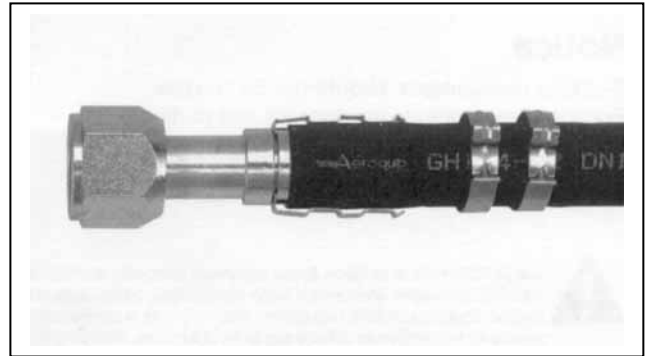


Step 4. Insert the nipple into the hose. To ensure that the nipple is fully inserted, check the gap between the cut end of the hose and the shoulder on the nipple. Care should be taken to avoid kinking or other damage to the hose during nipple insertion. NOTE: Be sure to wipe excess oil from the nipple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

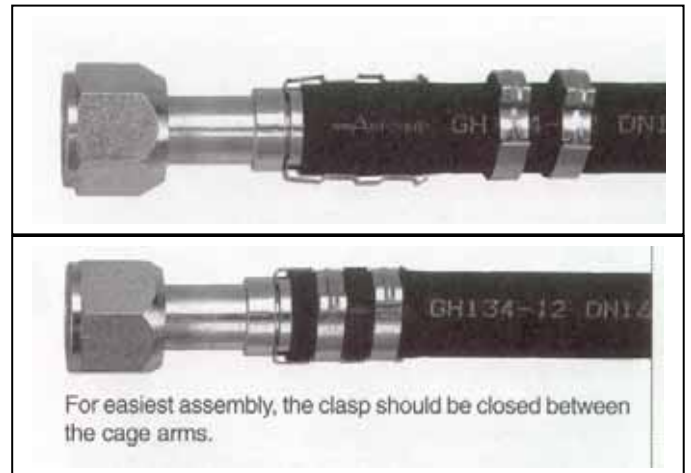


Step 5. Snap the cage into the groove on the nipple. The arms should extend over the hose length. When the cage has been correctly installed in the cage groove, the cage will be able to rotate in the groove. This step **MUST** be performed to ensure:

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.

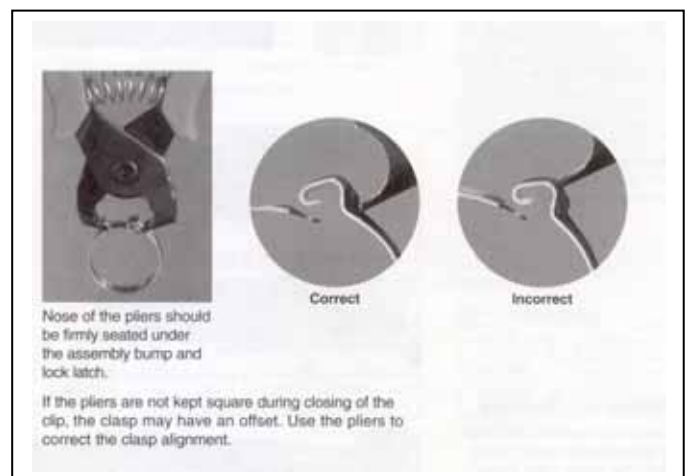


Step 6. Slide the clips over the cage arms and into the channels on each arm.

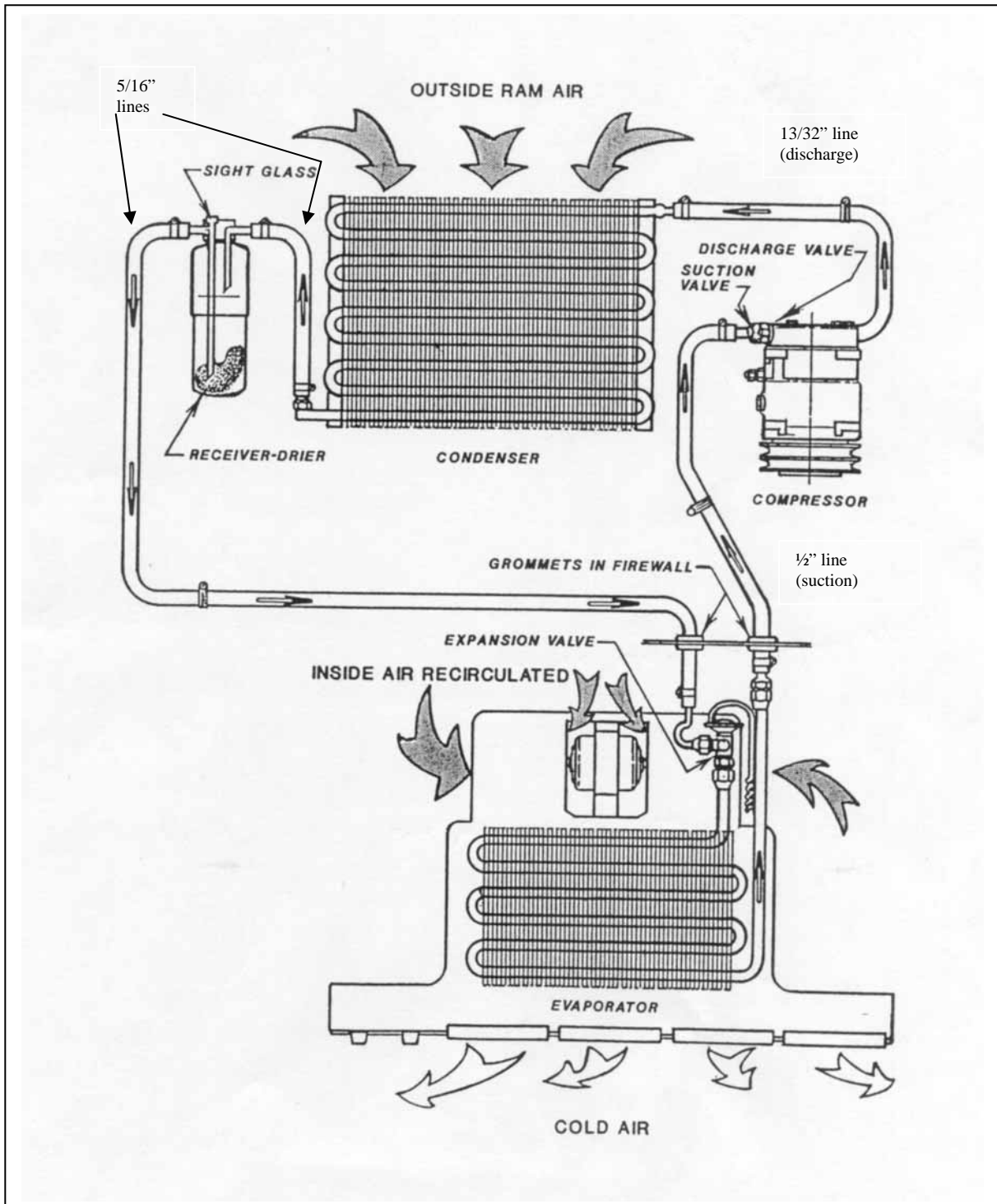


Step 7. Use the pliers to close the clips. The pliers should be positioned squarely on the clip connection points and should remain square during the closing of the clip.

NOTICE: E-Z Clip components should not be reused.



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.