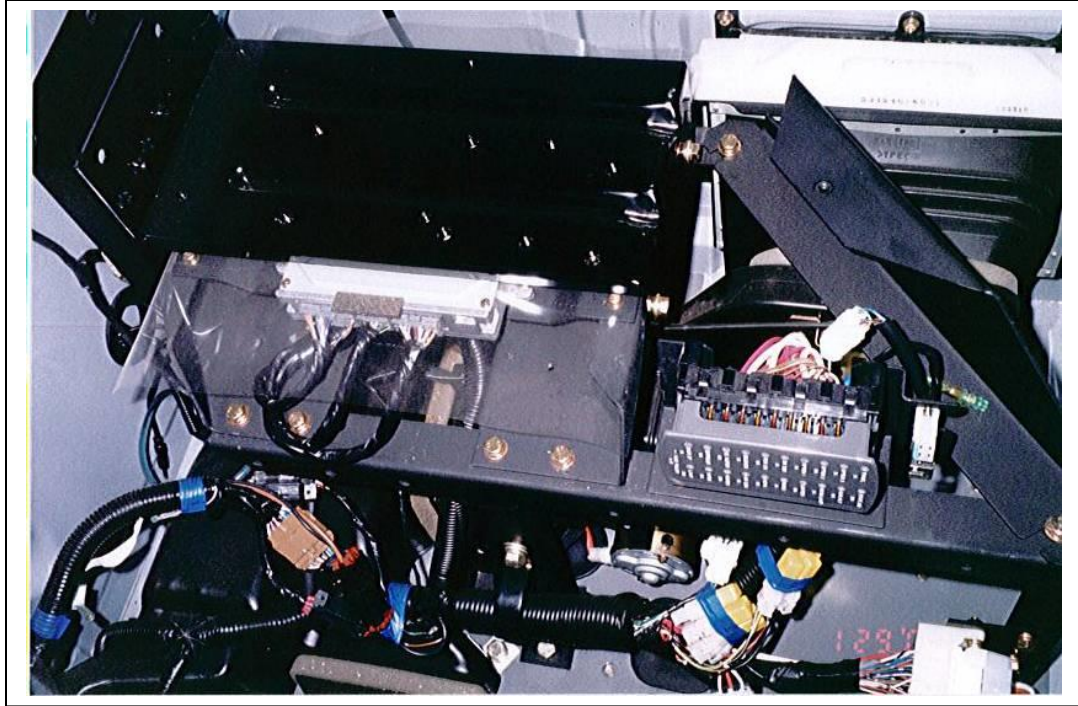


EX270-5
HITACHI EXCAVATOR
HEAT / COOL
INSTRUCTIONS



1-800-267-2665

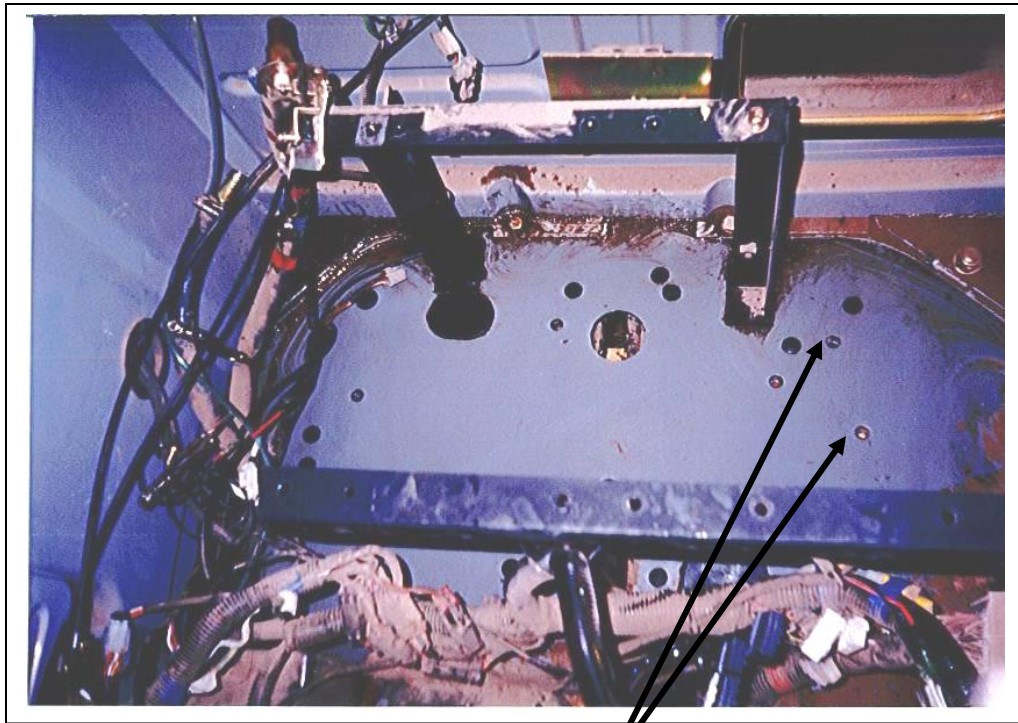
1-888-267-3745 FAX



New AC/heat box goes under the computer in the location of the existing heater.

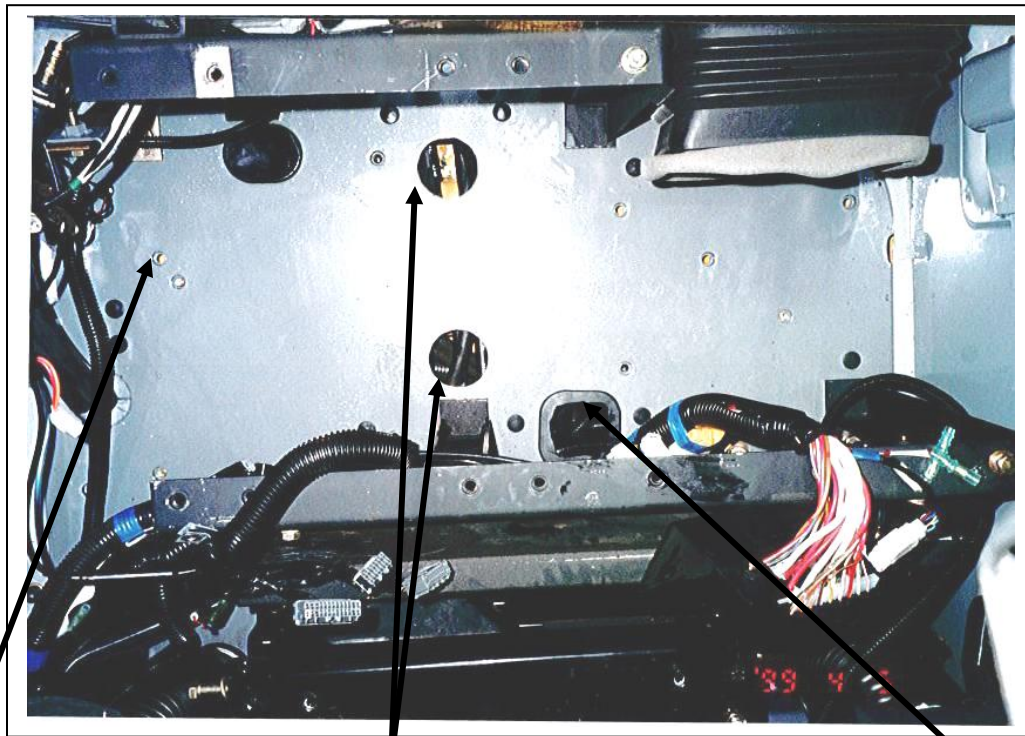


Heater still in place with all the necessary parts removed from above it.



Left hand M10 mount holes for heat/AC box.

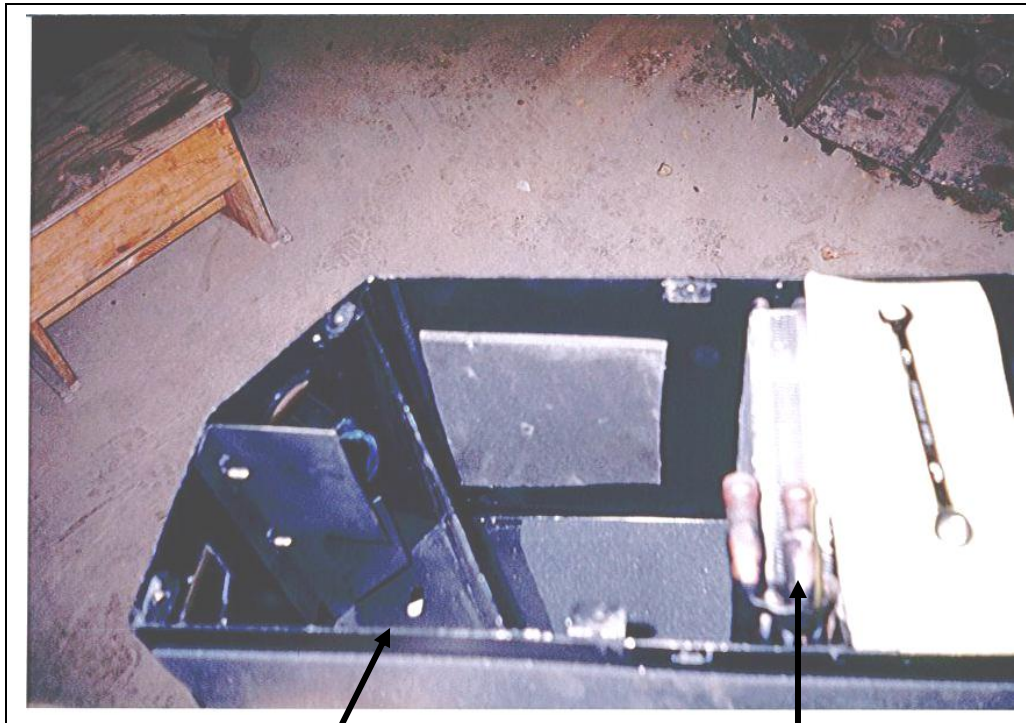
Area exposed and cleaned for AC/heater box installation



Right hand M10 mount hole for heat/AC box.

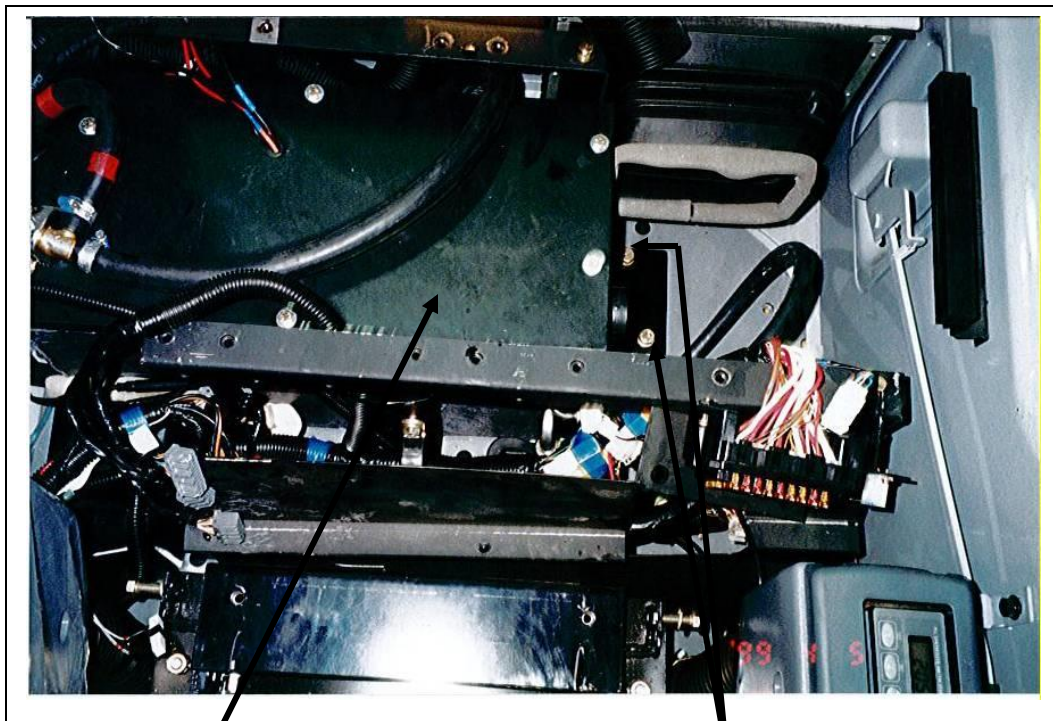
Existing holes for drain tubes

Rubber cut out of the center of this grommet for AC lines and clutch wire.



Right hand side mounting hole.
Access by removing box lid.

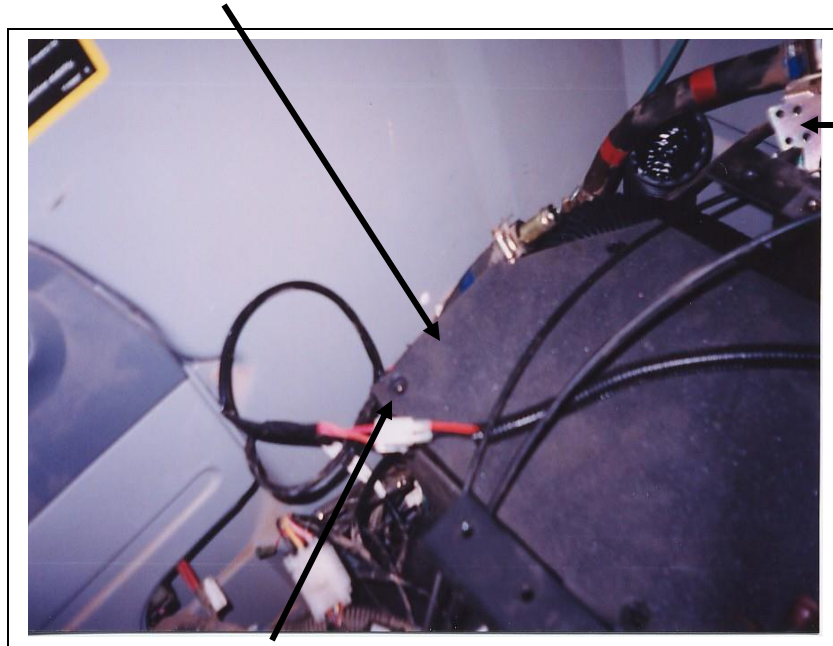
Heater line connections



Heat/AC box in place

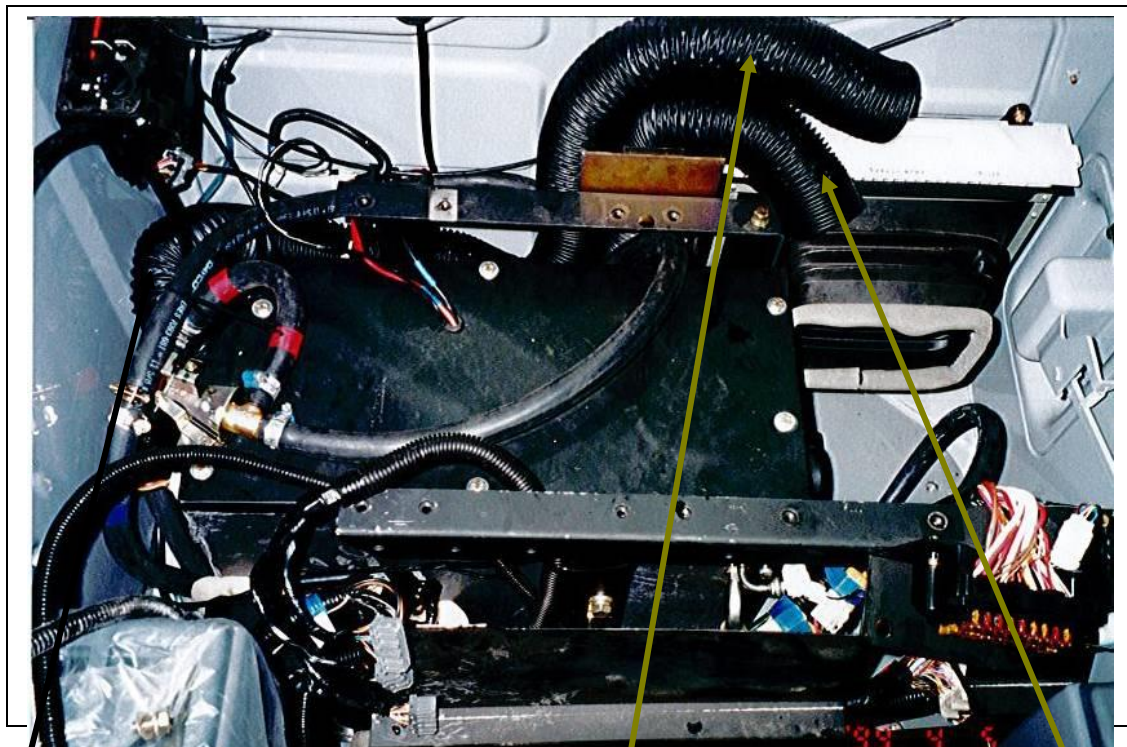
Two left hand side mount bolts.
Use existing hardware from old
heater for all three mounts.

Existing resistor from old heater mounts on side of new box in hole supplied. Use self drilling screws provided. Install before placing box in the cab



Factory heater control valve to be mounted to a lid bolt on the right rear corner.

Plug ground and power wires from box into original blower wire plug. Ensure that the air output is maximized by having the blowers turn the correct way. Reverse the two wires at the plug to check for maximum air flow.



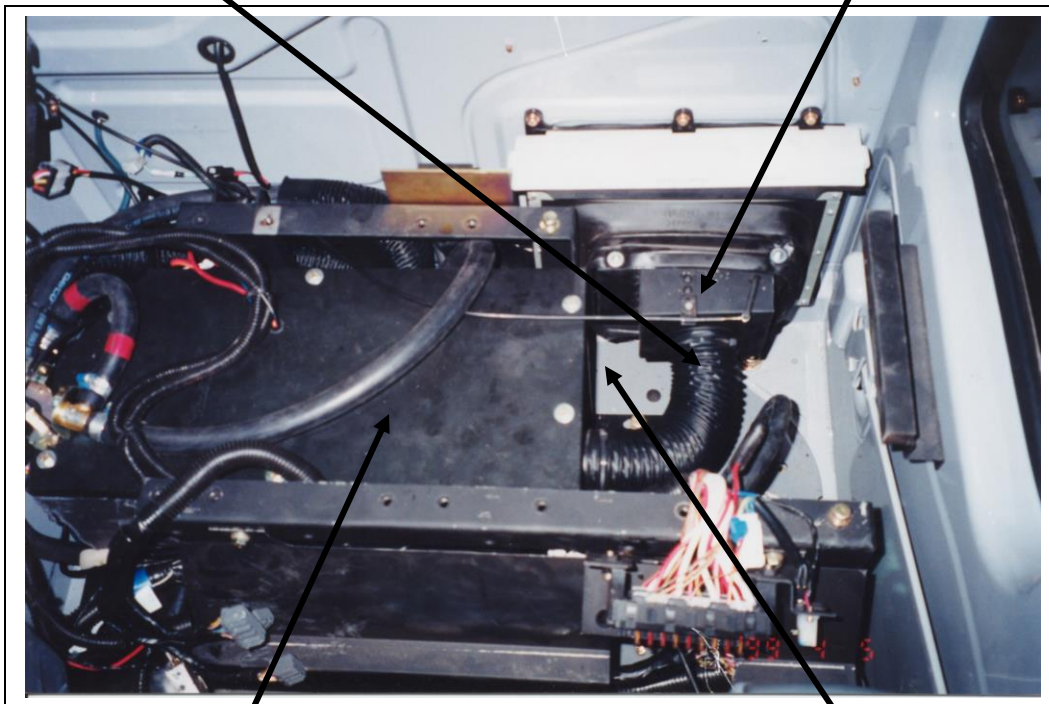
Two flex ducts for the two additional louvers. Attach to the 2 1/2" hose adaptors on this end of the box.

Flex hose for right hand louver

Flex hose for left hand louver.

Flex duct connecting outside air intake to the AC box.

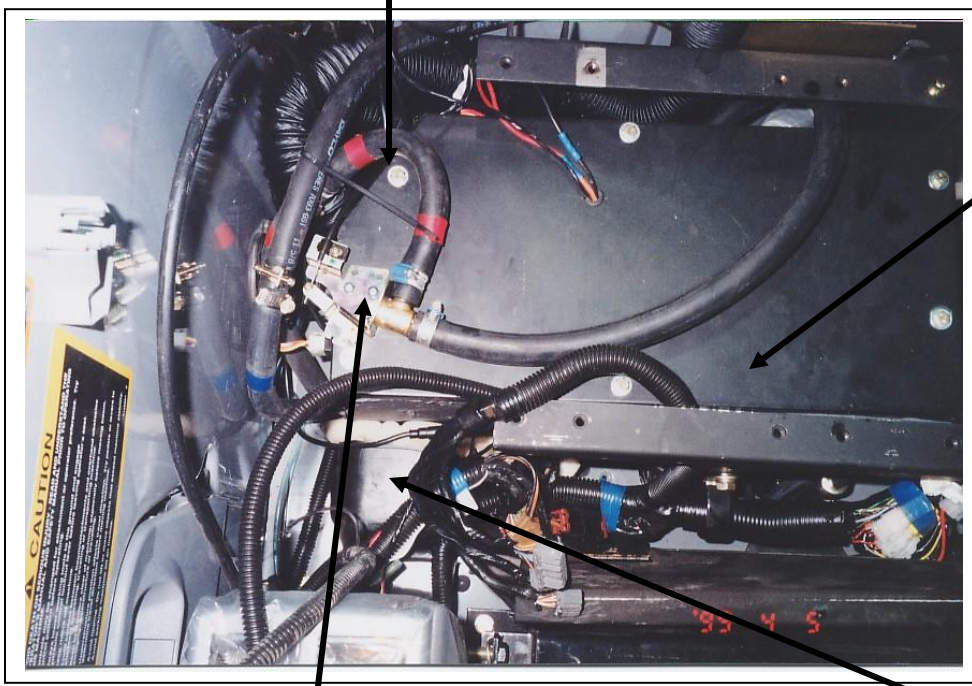
New outside air intake control box



Heater lines now connect in this area.

AC lines connect up to this end of the box. The 1/2" to the evaporator coil outlet and the 5/16" to the expansion valve.

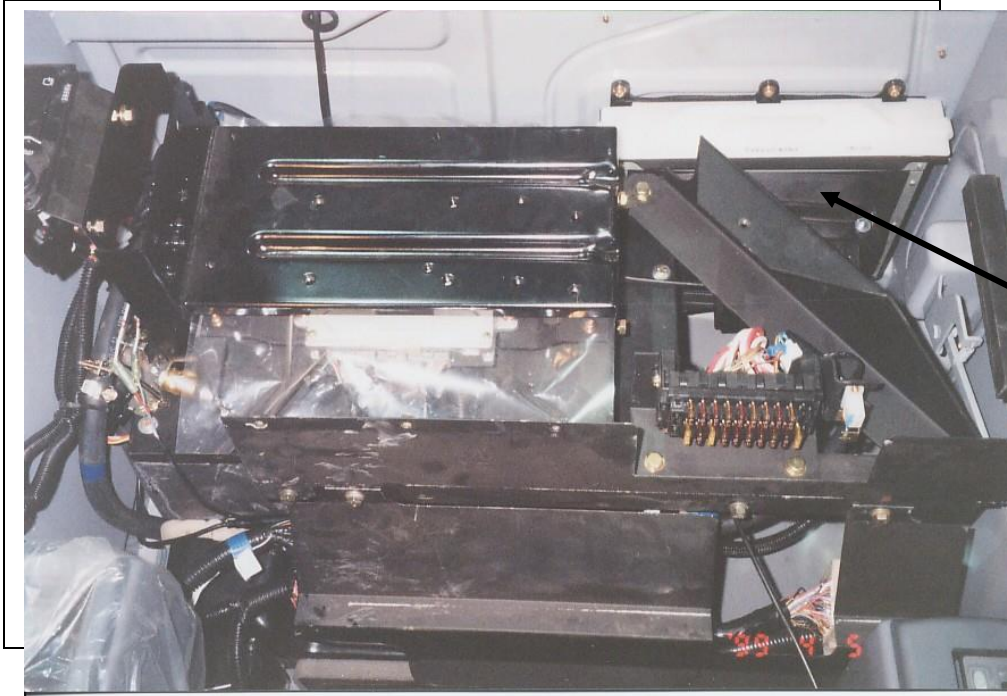
The heater control valve is often mounted off this lid bolt as well



Heater lines now connect to the coil in this area.

One possible location for the factory heater control valve, mounted with self drilling screws.

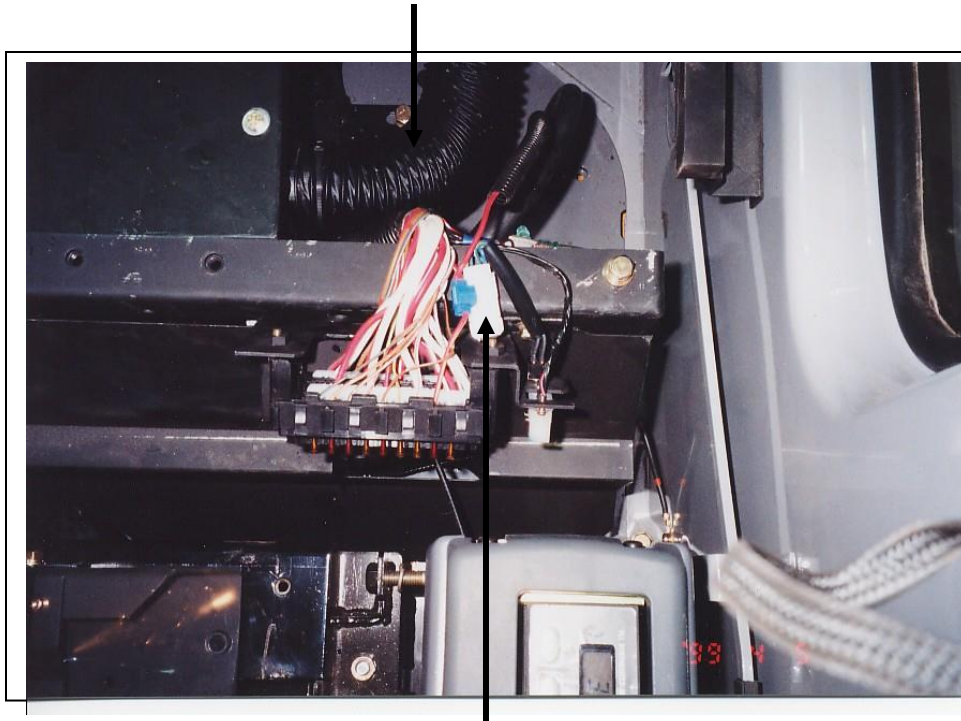
Modified front air duct reinstalled.



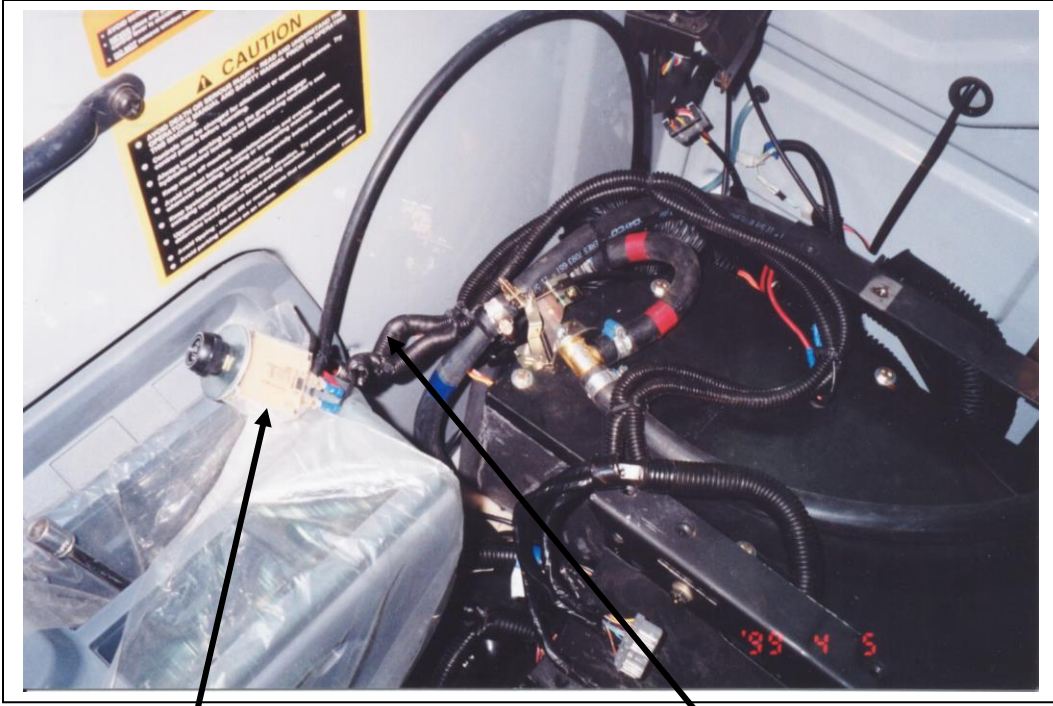
Outside air intake with new control box installed.

This shows the cab all reassembled except for the plastic tray and rear metal panel that has thee two extra rectangular louvers cut into it.

Flex hose connecting outside air intake box to the heat/cool box



Possible tie in point for the thermostat/clutch power supply for the A/C system. Use a 5 Amp ATO fuse for protection.



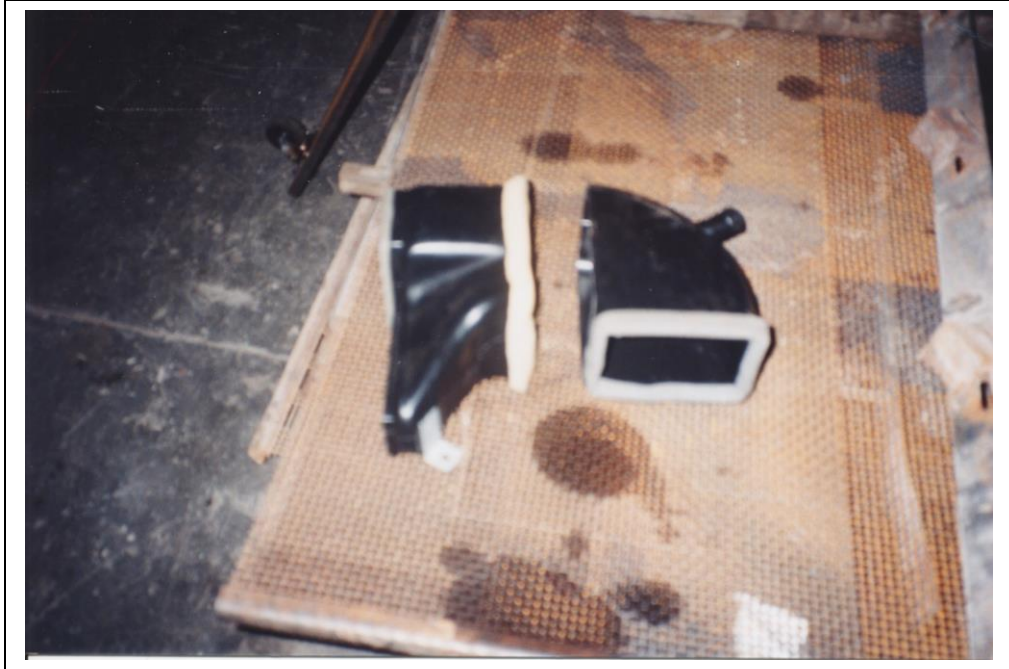
Thermostat ready to be mounted beside the existing heater controls when the cab is reassembled.

Power wire and clutch wire for the AC system.



Retain and reinstall after the heat/cool box has been mounted. Seal to the box with tar tape and self adhesive foam tape. Cut with a knife or hack saw. The retained section is approximately 8 6" long

Cut off and discard flush with 90° bend.



1" x 1" foam tape installed around front air duct piece where it will seal to the new AC box.



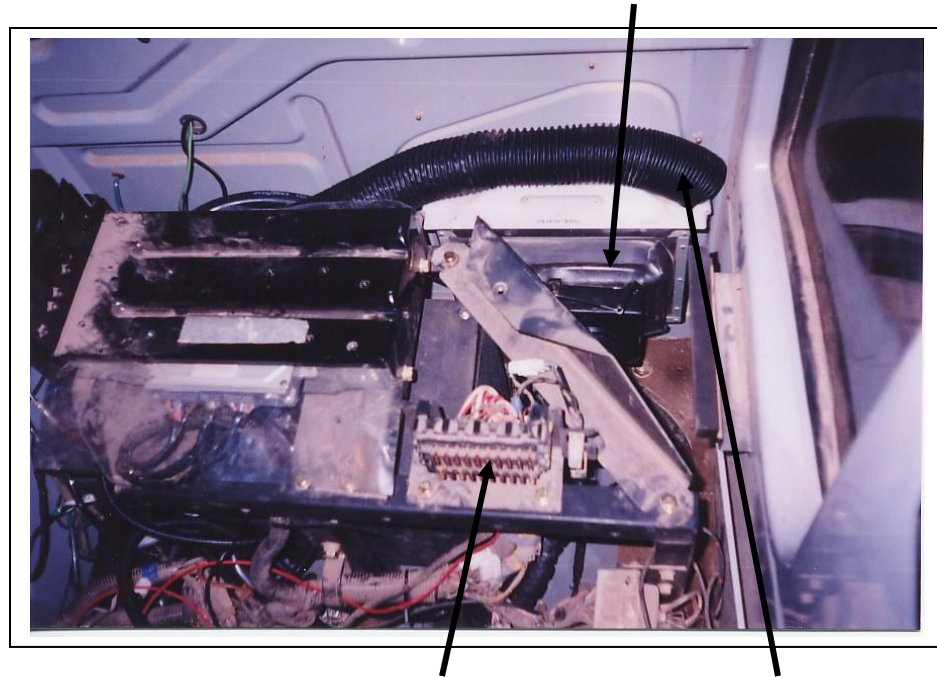
Retain and reinstall once the outside air intake box is mounted to it with self drilling screws and insulation tape.

Cut off and discard between the second and third accordion bump from the front.



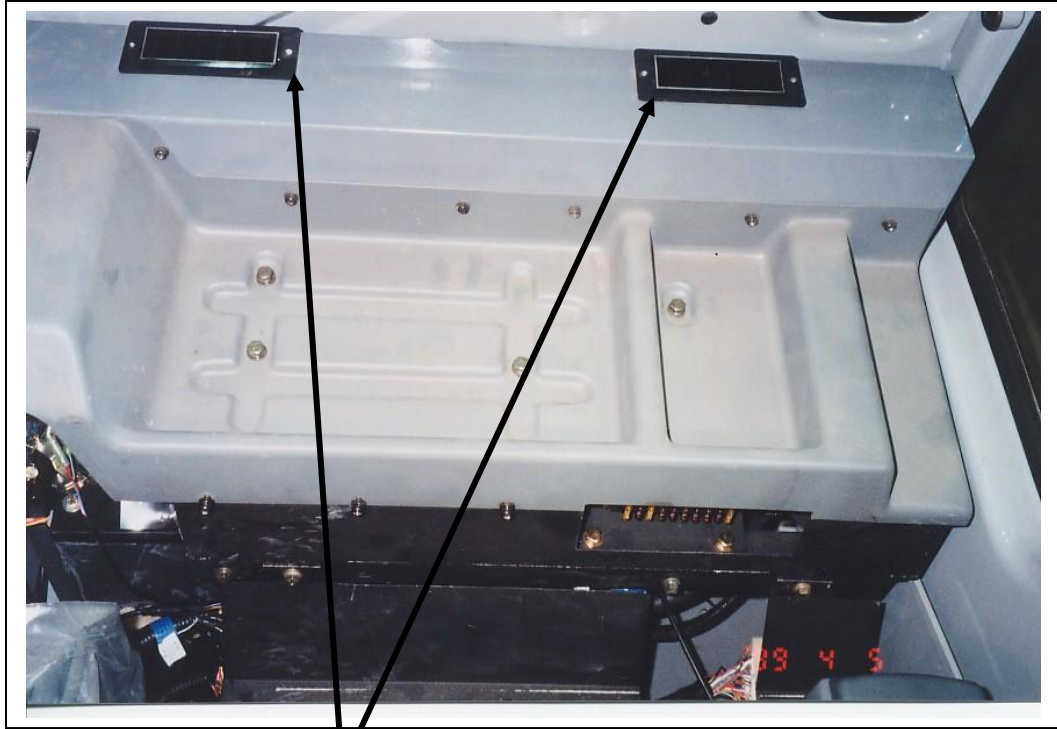
Outside air filter assembly with outside air intake box mounted and ready for reinstallation.

Outside air intake box mounted to shortened outside air plenum with screws and sealed with self adhesive tape.

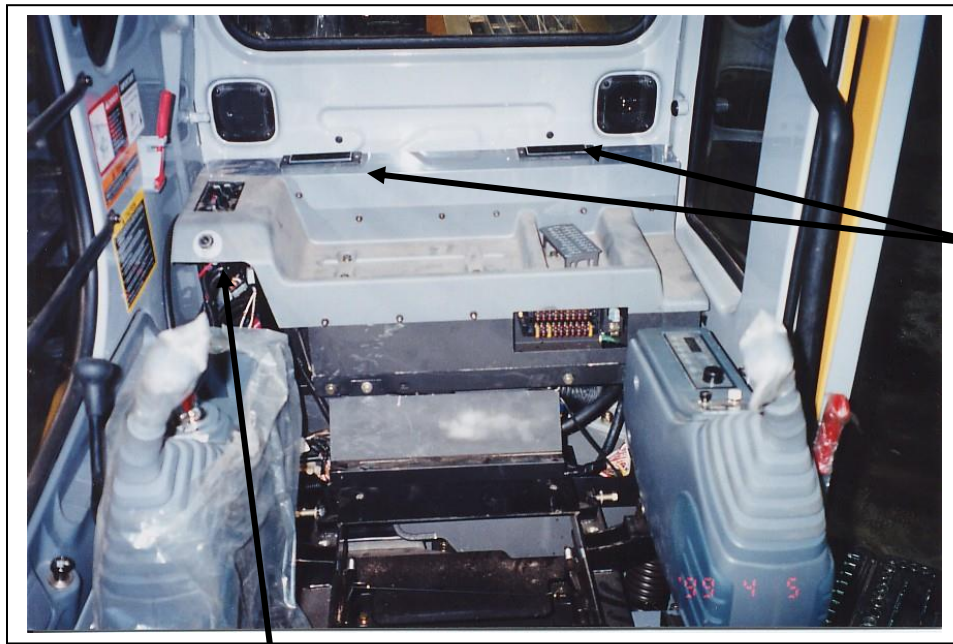


Find the ignition live power on the back of the fuse panel for the thermostat power supply.

Left hand flex duct for extra louver on left rear side of the cab.



Rear metal panel with two extra louvers added into it. Use the louvers as a guide and notch the metal out so the back flange of the louver is flush with the back of the metal panel. Connect two flex hoses to the louvers while reinstalling the plastic panel.
 NOTE: The plastic panel in the Hitachi's are different but the setup is the same.



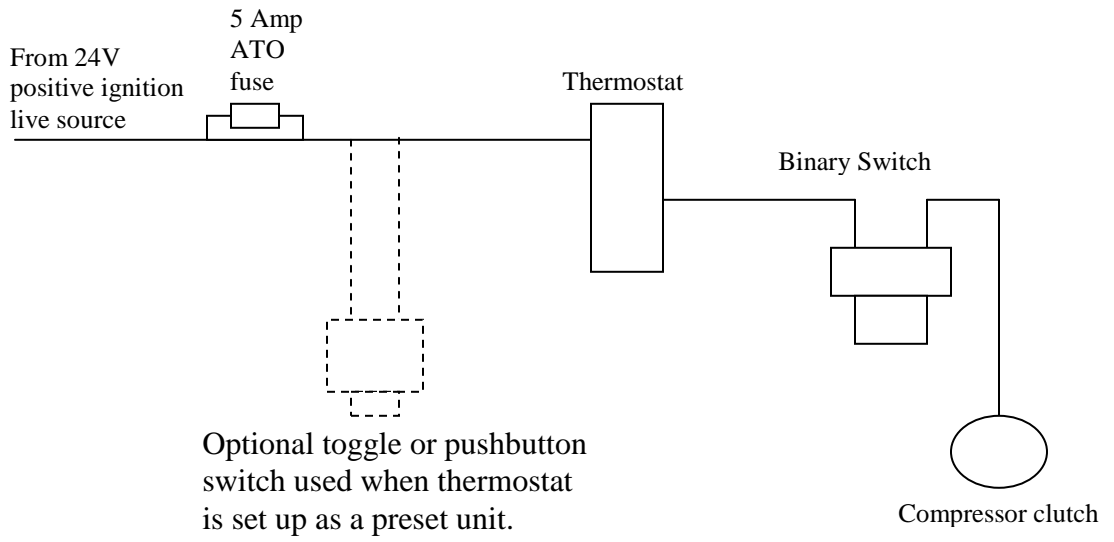
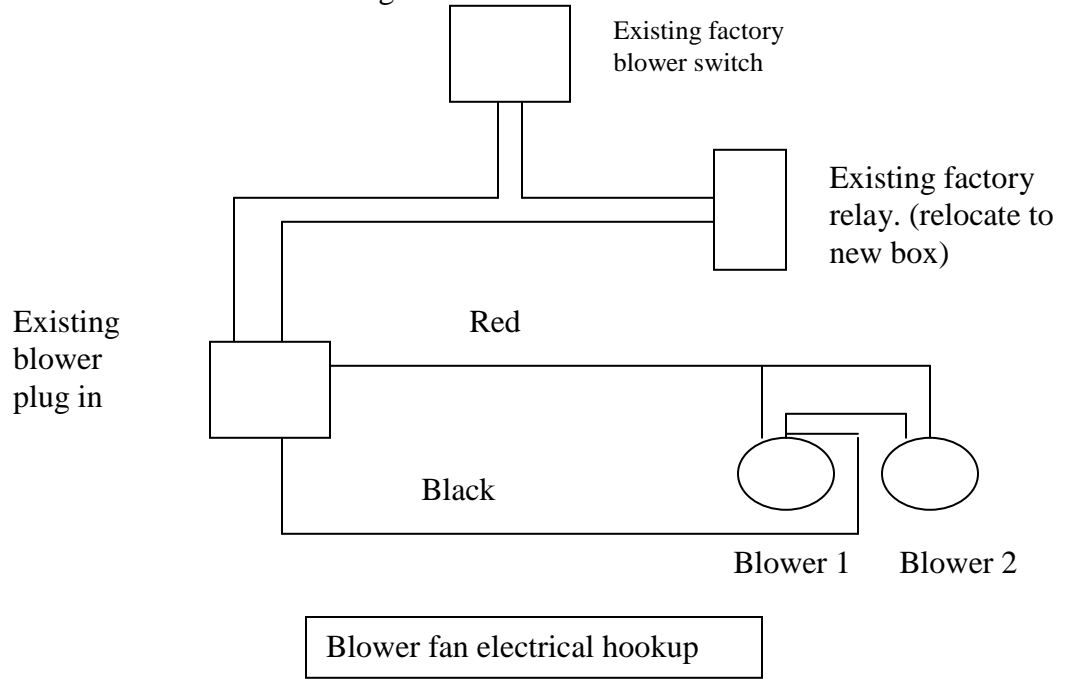
Extra rear louvers

Common thermostat location. The thermostat can also be left on the heat/cool box as a preset, but then an on/off toggle or push button control will be needed for the A/C system



Another common area to mount the AC thermostat control.

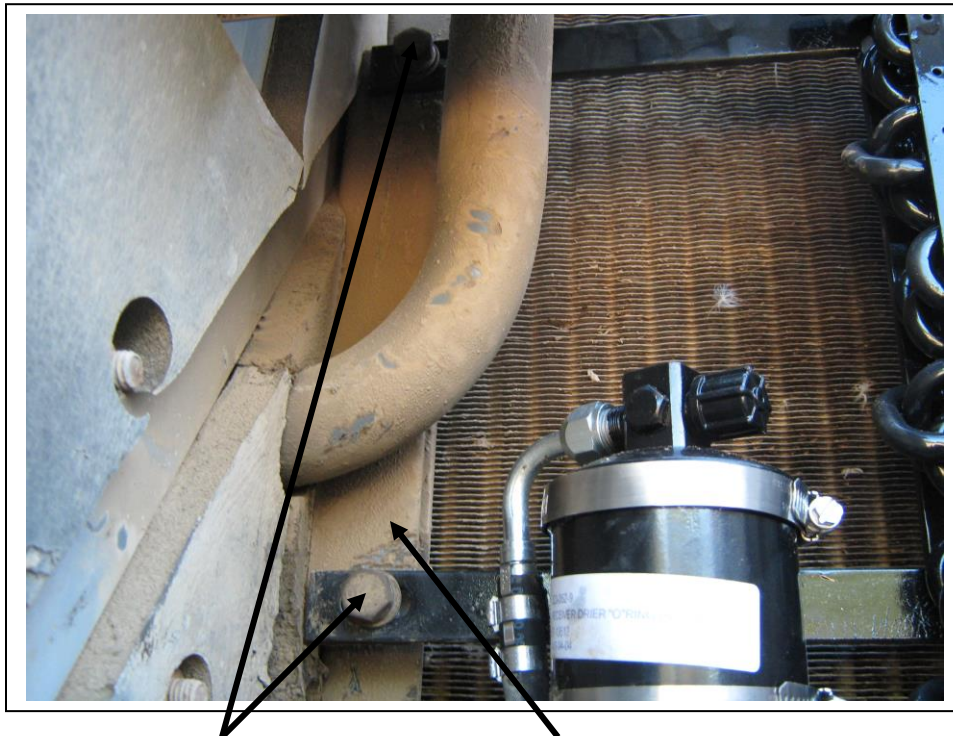
HA 600 Heat/ Cool box Wiring.



CONDENSER

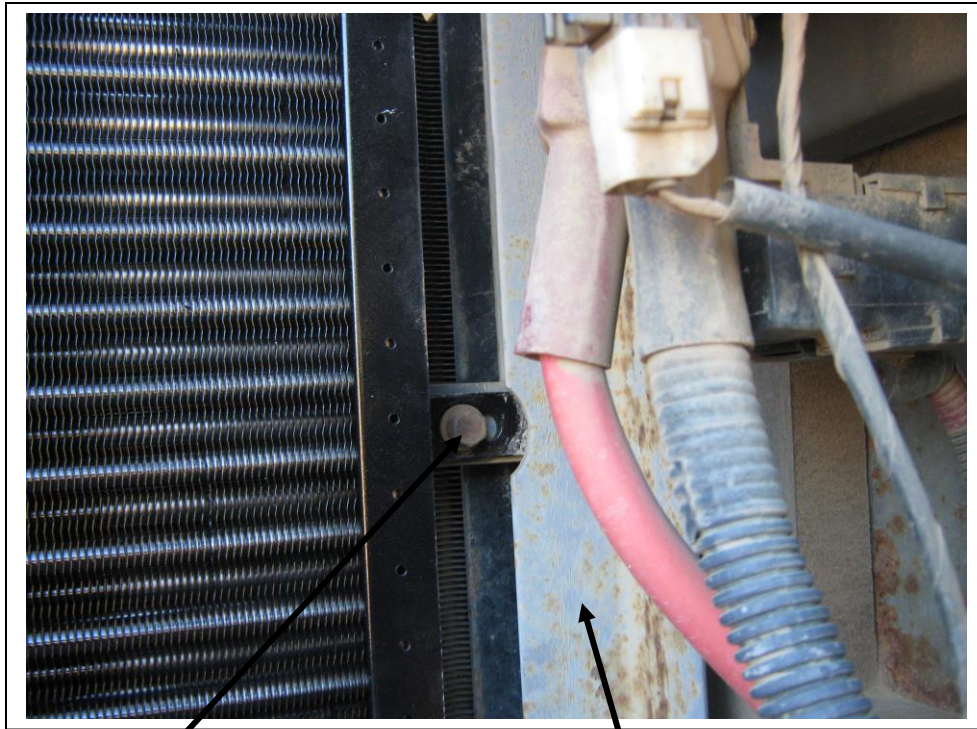


The condenser bolts to existing brackets on the radiator. If they don't exist the radiator frame on the left must be drilled and tapped. Use the extension brackets supplied on the right side to pick up the angle iron up right.



M10 mount bolts on left side of condenser

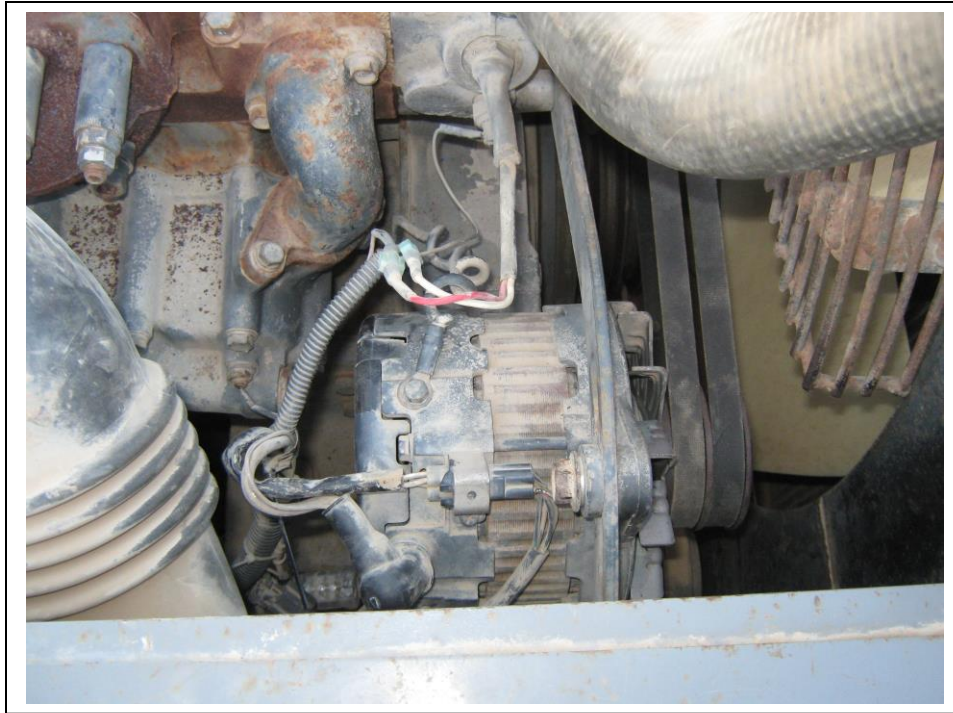
Radiator frame.



M8 mount bolts on right side of condenser.

Angle iron upright.

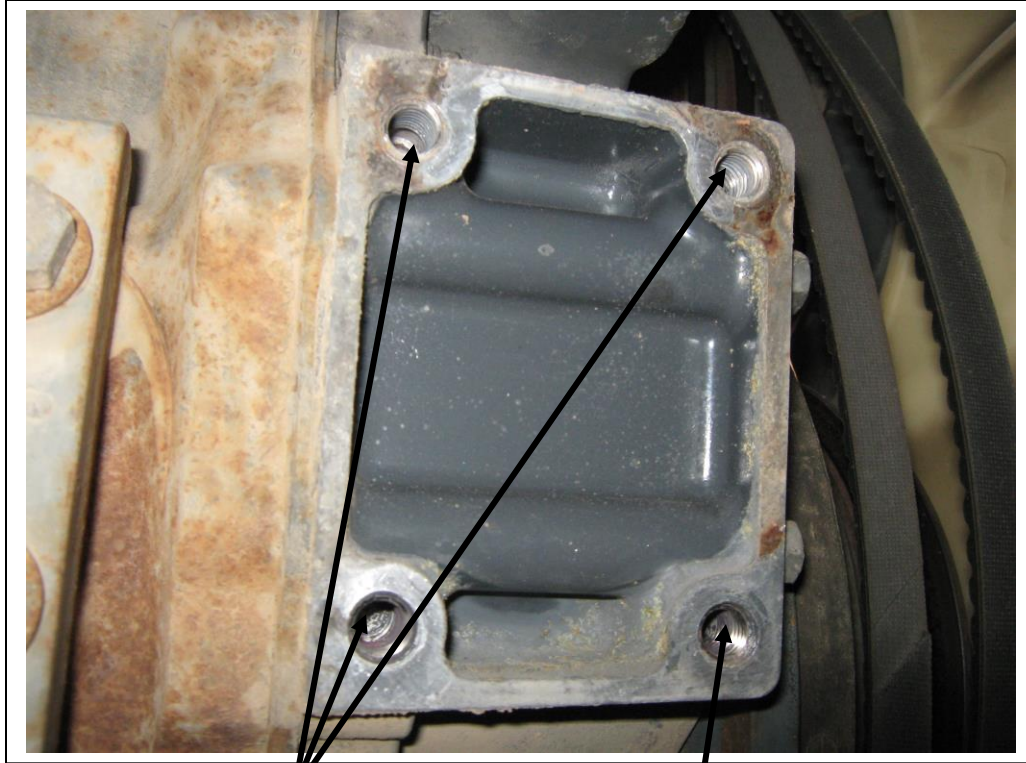
COMPRESSOR



The compressor mounts under the alternator and drives off the forward most open pulley on the crank. Remove the alternator and mount to get at the compressor mounting area.

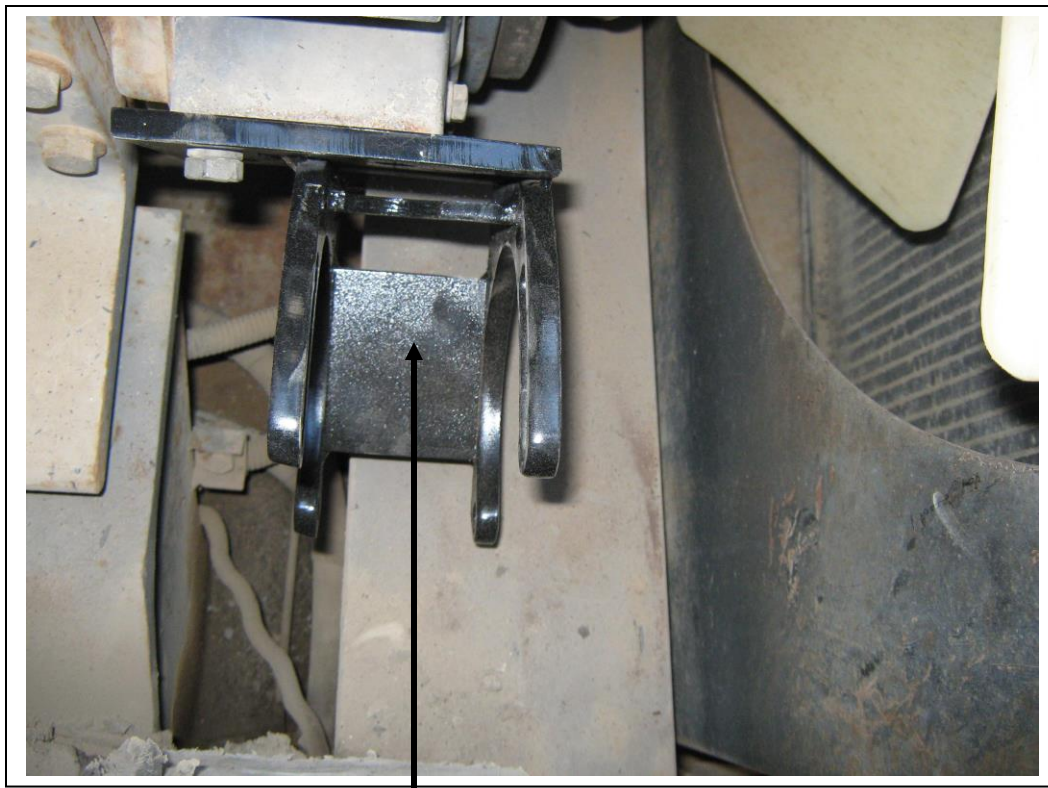


Alternator and mount removed.



Compressor mounting holes.

This hole is not used on our mount.



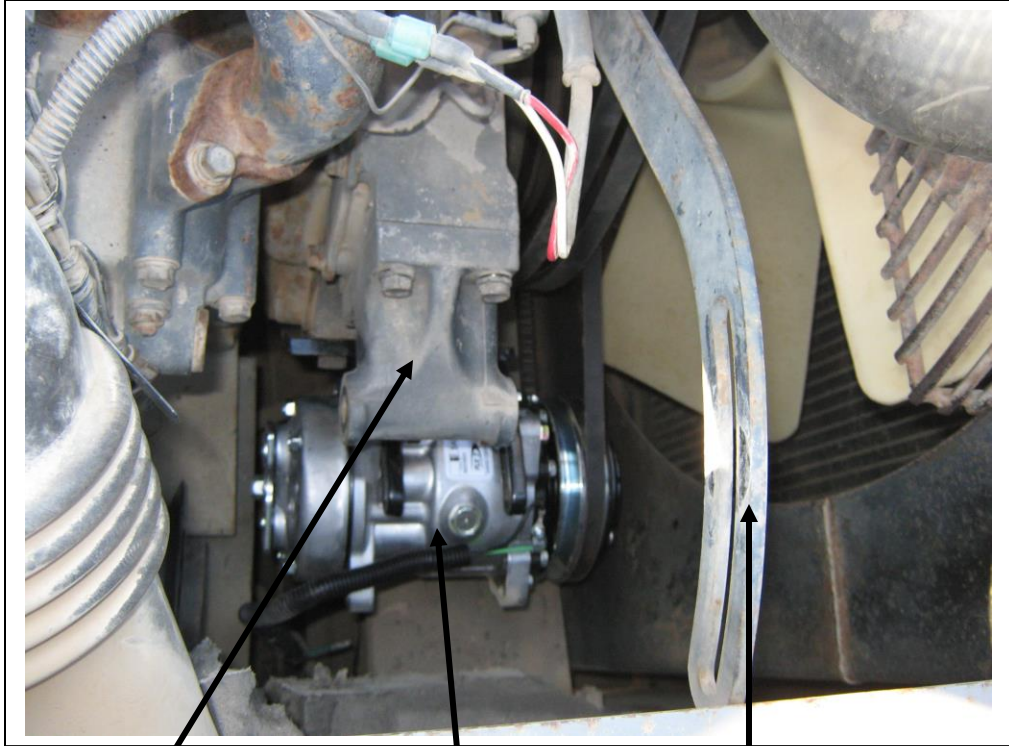
Compressor mount in place.



Compressor placed on mount.



17410 belt

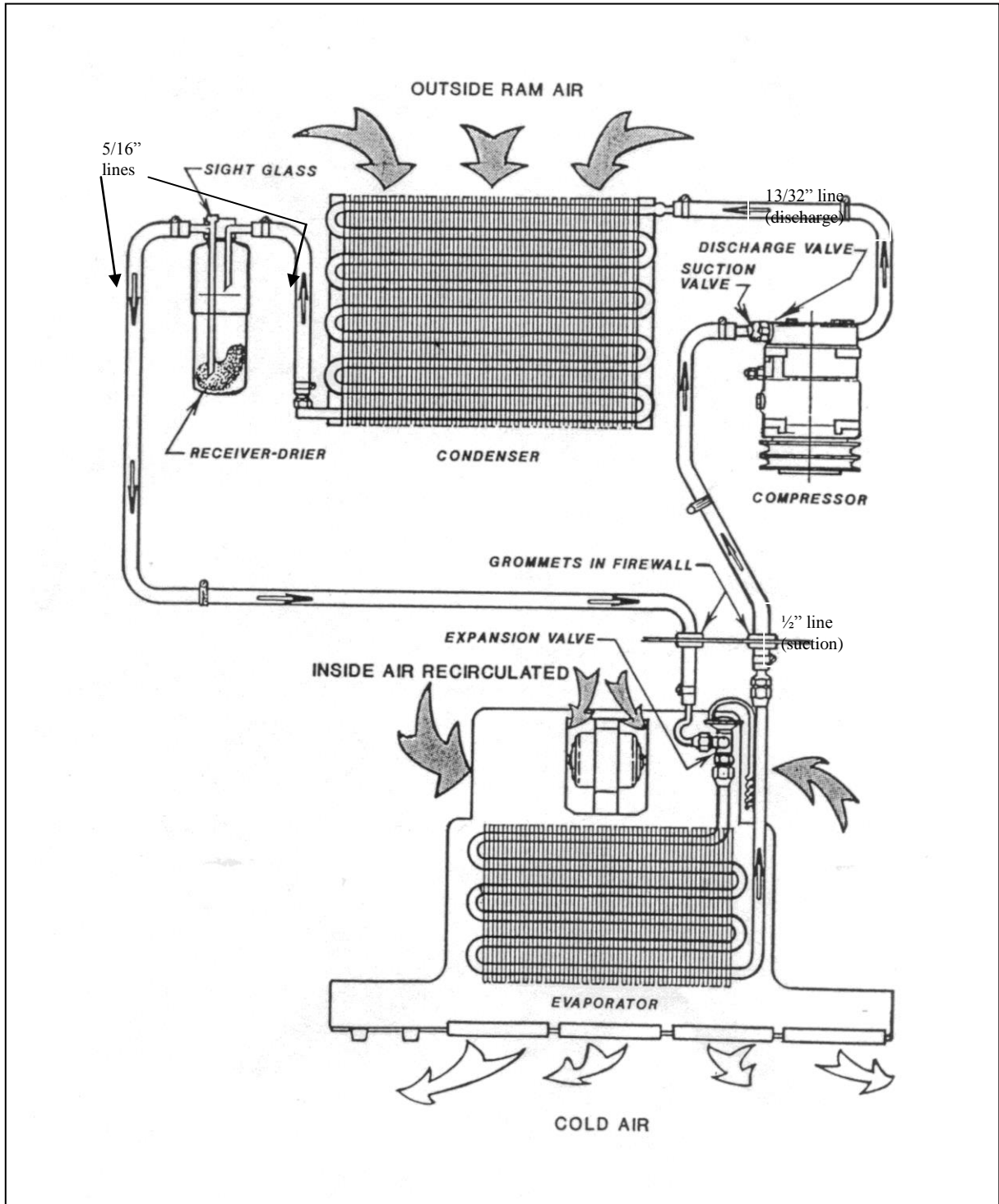


Alternator mount

Compressor

Alternator tightener

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.

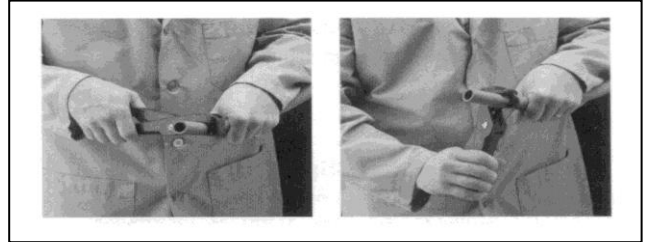
By looking at all these different factors, the area of an evaporator coil most likely to be the coldest can be determined.

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.

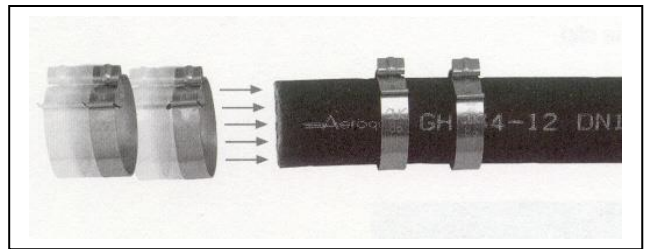
If the thermostat doesn't cycle off after a reasonable cool down period and the air outlet temperature has dropped below 40° F, the cut in and cut out settings should be adjusted until the compressor is cycling on and off regularly. Let the system run for a decent time period (at least 15 min) and then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

Aeroquip E-Z Clip Assembly Instructions

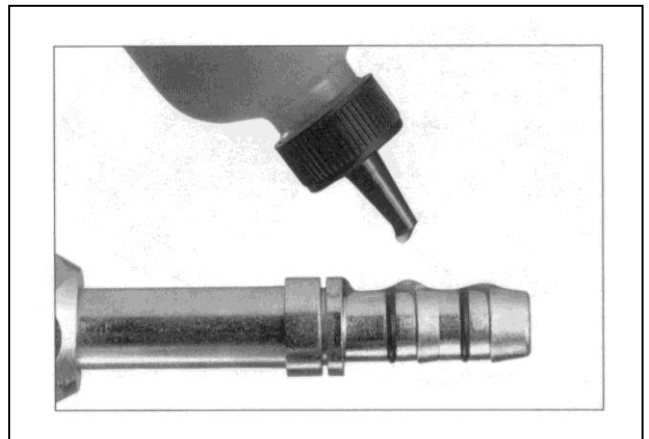
Step 1. Cut the hose to proper length with an appropriate cutting tool. Aeroquip's hand held hose cutter has been specially designed for cutting all non-wire reinforced hose, such as GH-134 Multi-Refrigerant hose. Be sure the cut is made square to the hose length.



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.

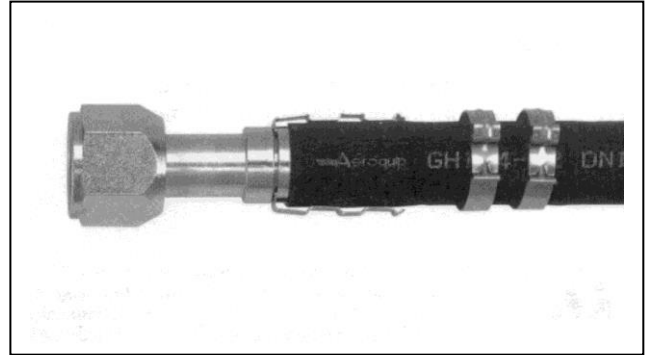


Step 4. Insert the nipple into the hose. To ensure that the nipple is fully inserted, check the gap between the cut end of the hose and the shoulder on the nipple. Care should be taken to avoid kinking or other damage to the hose during nipple insertion. NOTE: Be sure to wipe excess oil from the nipple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

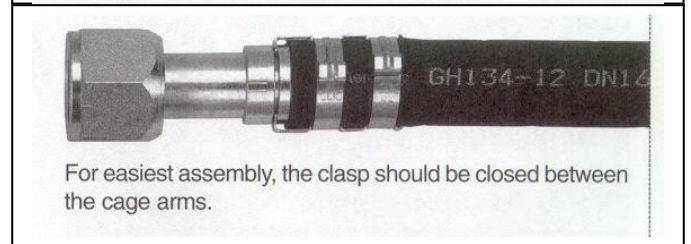


Step 5. Snap the cage into the groove on the nipple. The arms should extend over the hose length. When the cage has been correctly installed in the cage groove, the cage will be able to rotate in the groove. This step **MUST** be performed to ensure:

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.

