TL80
TIER 3
Terex Mini Loaders

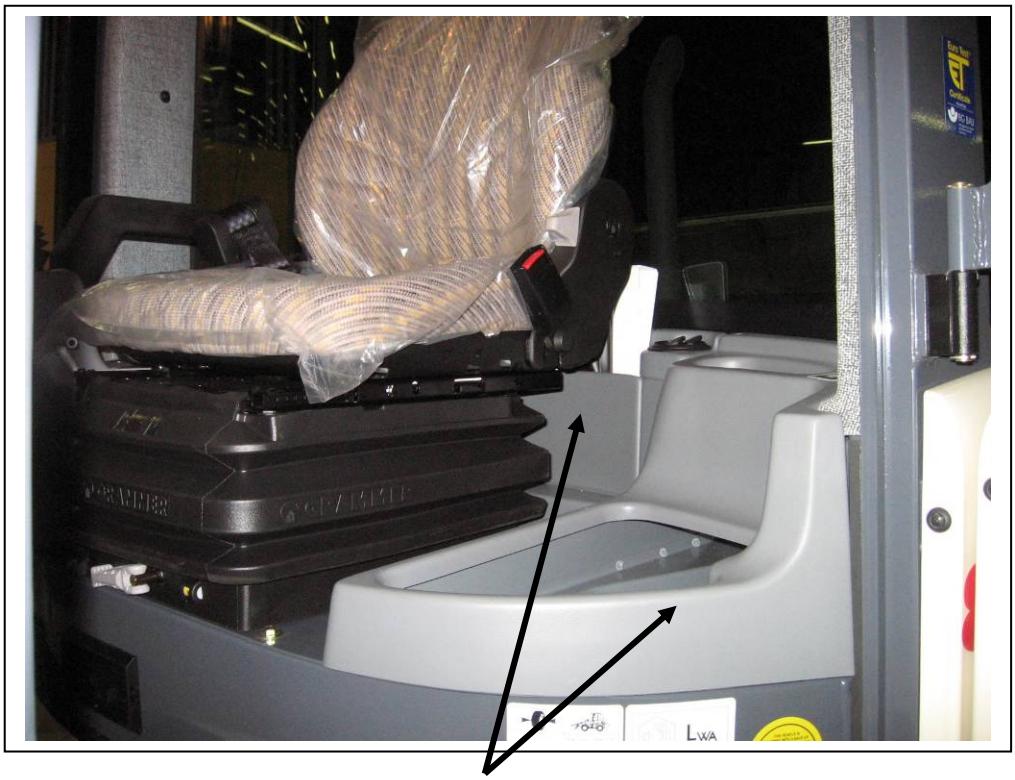
Installation Instructions

1 800-267-2665

Evaporator: The evaporator setup for the Terex loader is a "drop in" design that goes in under the operator's seat. It uses the original heater blowers, air ducts, louvers, blower controls and air filters with some minor modifications to reduce the outside air intake.

Steps:

1. Open the storage compartment to the right of the operator's seat. Remove the contents of the compartment. Remove the rubber mat on the bottom of the compartment. Remove the plastic compartment to the left of the operator's seat. Remove the plastic panel directly behind the seat as well.

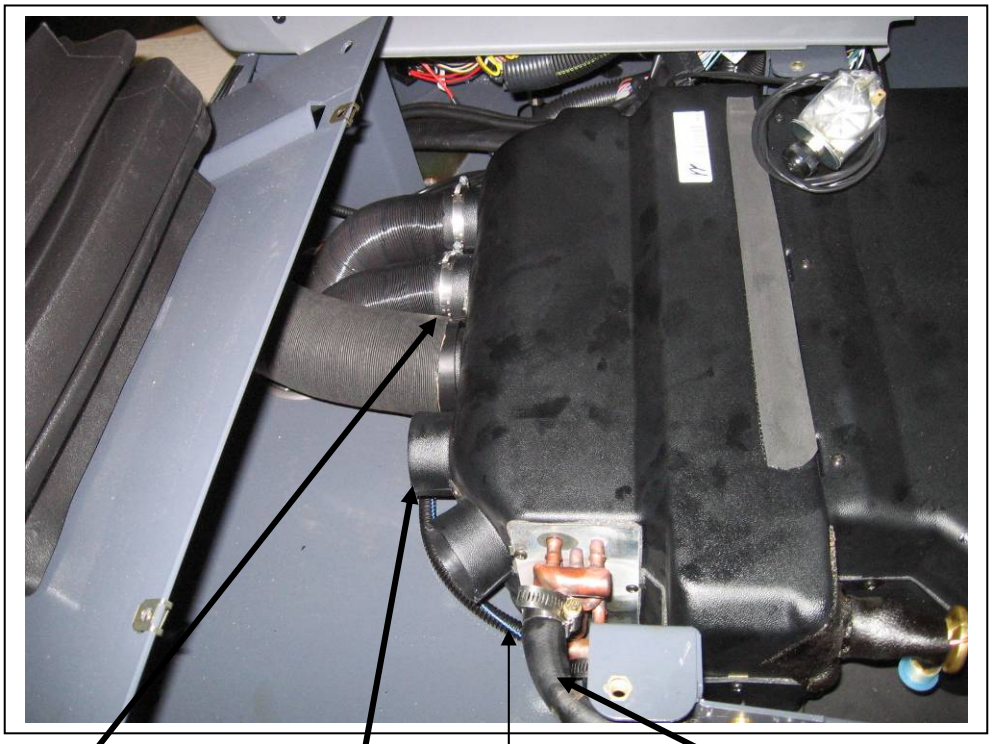


Remove before unbolting seat plate.

2. Unbolt the seat plate from the seat platform. Leave the seat attached to the plate. Slide the seat plate forward towards the steering wheel to expose the blowers and foam piece that covers the top of the heater box. Remove the foam piece and put aside for later re-installation.

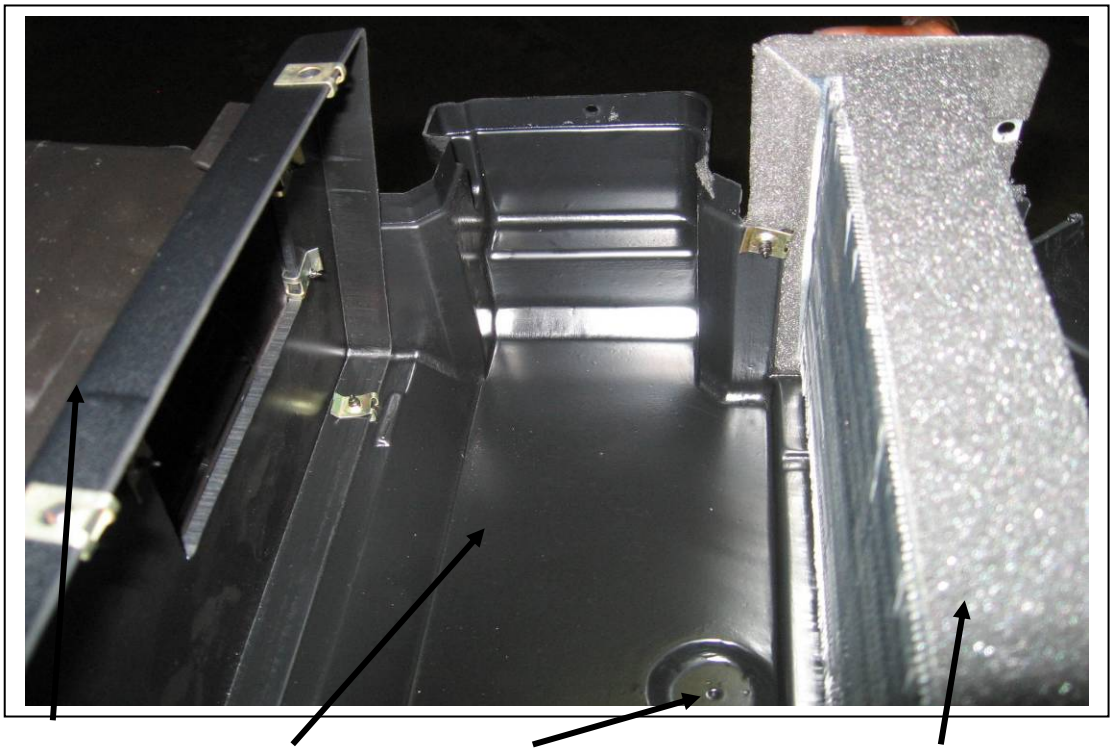
Seat plate slid forward. Heater coil Evaporator goes in here.

3. Disconnect the two heater lines from the heater box. Remove all five flex ducts from the heater box.. Unscrew the front L mount bracket from the floor of the cab. (found between the 3rd and 4th air outlet.)



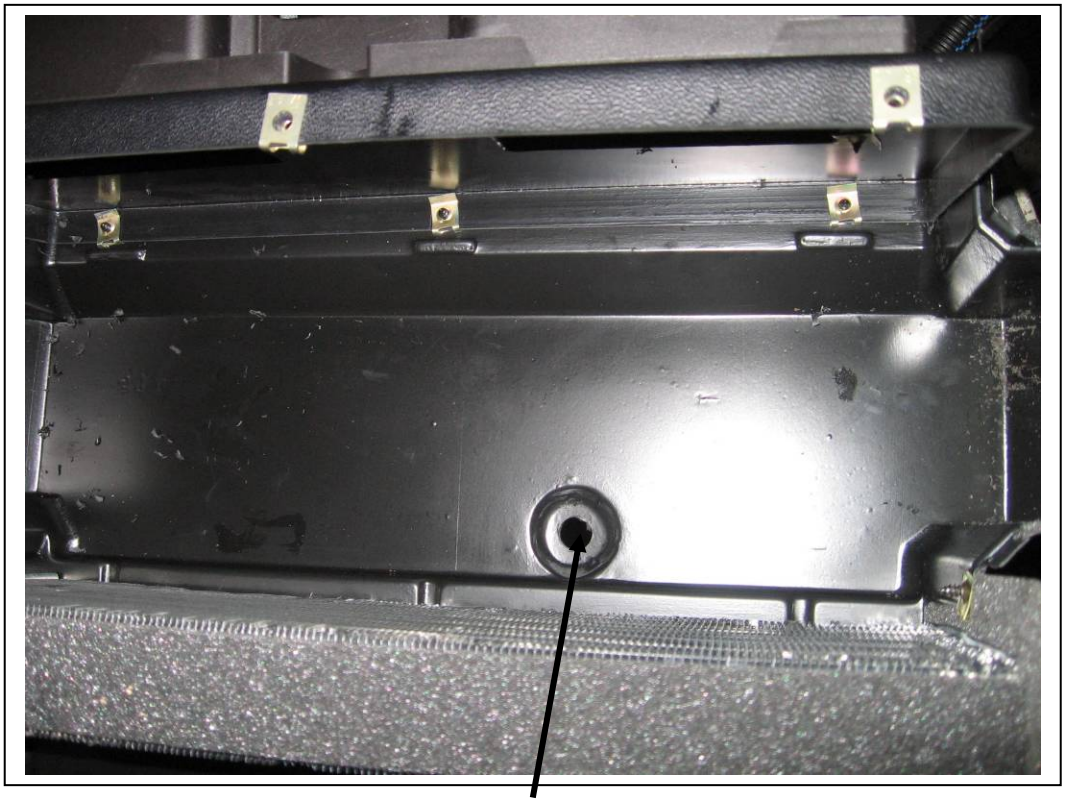
Unscrew L bracket from the floor. Remove flex ducts. Unplug blower wire harness. Heater lines to be disconnected.

4. Remove the box from the cab and unscrew the top half of the box and remove the lid.



Blowers Evaporator area Spot for drain tube. Heater

5. Drill a ½" hole in the box bottom in the middle of the dimpled area on the box.

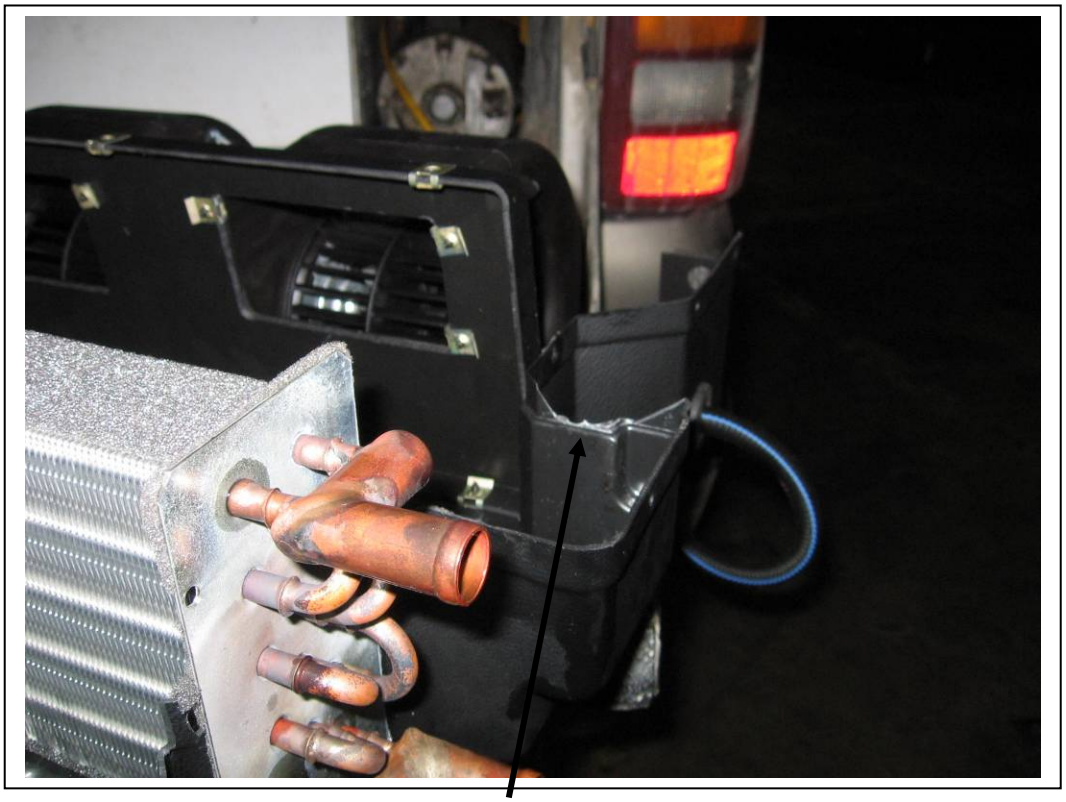


½" hole drilled for drain tube.

6. Glue the copper drain tube adaptor into the ½” hole using 5 min epoxy.

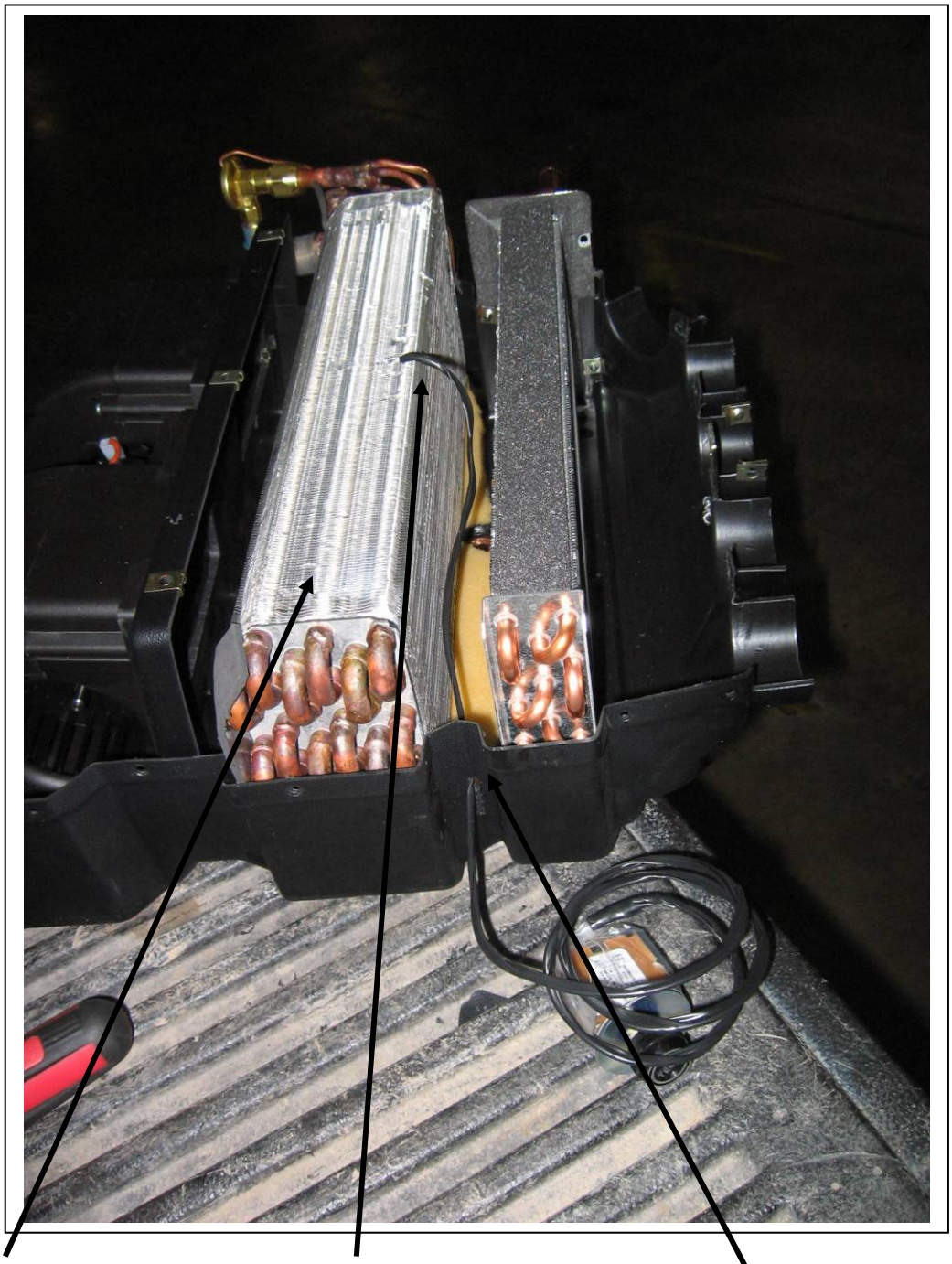
Copper glue in drain tube adapter in place.

7. Notch out the bottom right side of the box as shown to accommodate the bottom fitting of the evaporator coil.



Plastic cut out of this area for evaporator fitting.

8. Slide the evaporator coil into place with the fittings out the right side of the box.



Evaporator coil in place.

Insert thermostat probe in between first and second row of tubes four inches deep.

Drill 1/8” hole to install thermostat probe as shown.

9. Drill a 1/8” hole in the left end of the box between the two coils for the thermostat probe.

Thermostat probe. L mount bracket. ½” drain tube adaptor

10. Notch the top half of the box to accommodate the evaporator fitting and then re-install it. Seal all around the fittings with Tar tape.

Notch out this area of the lid.

Seal with tar tape

Screws holding the box together.

11. Install the heat/cool box back into the cab and secure by screwing down the L bracket. Re-connect wiring and heater lines. Re-install all flex ducts.

12. Connect the A/C fittings to hoses by bringing the hoses up under the cab through the existing foam grommet and onto the evaporator fittings. Also bring the clutch wire up with the hoses. Tar tape all metal parts to stop sweating of the fittings.

½” 90° female fitting. Clutch wire 5/16” 90° female fitting.

13. Remove the inside vanes of the inside air recirculation louver to maximize the inside air recirculation in the cab.

Remove the inside vanes.

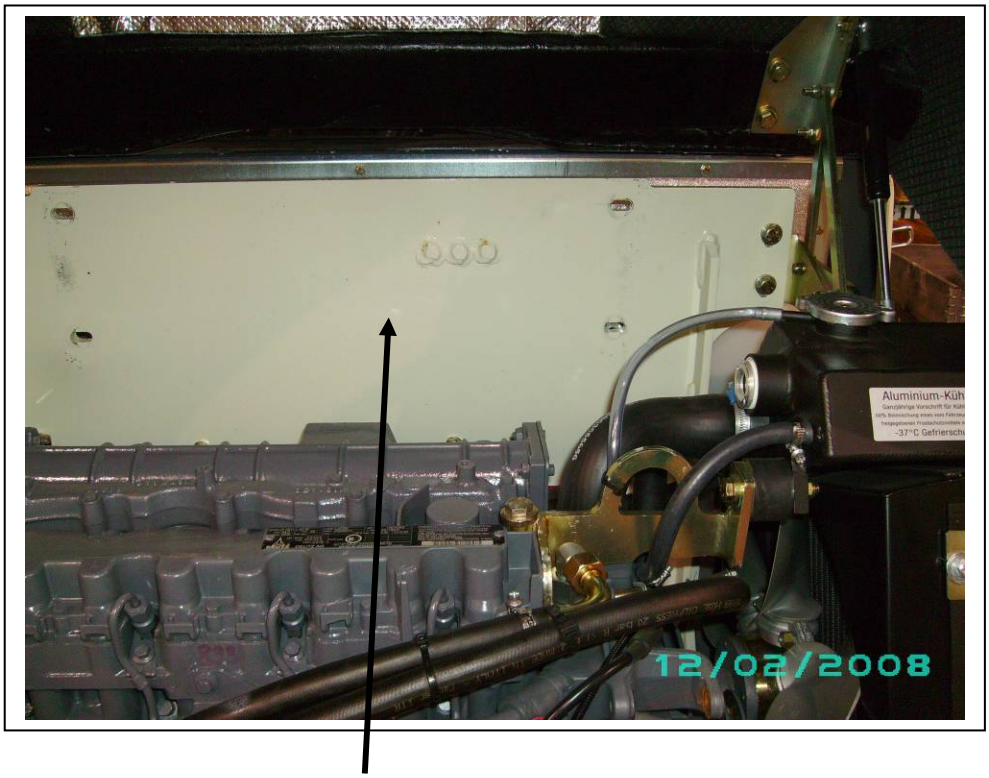
14. The outside filtered air intake for the cab is not designed for extreme climates and needs to be restricted to achieve the maximum cooling potential. This is done by removing the outside air intake panel on the right side of the cab, just behind the right door. On the back side of the air intake panel install the 6.5” X 6.5” piece of self adhesive foam so that it covers all but the bottom two louvered vents.

One vent left open Foam panel in place

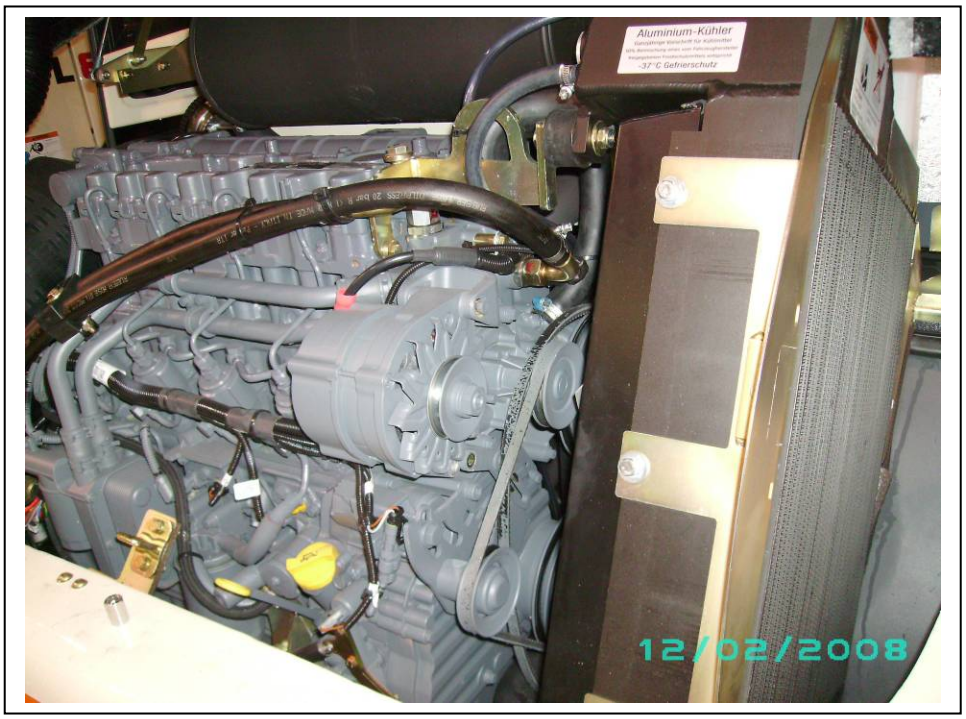
Air intake panel back in place.

15. Replace the outside air intake panel

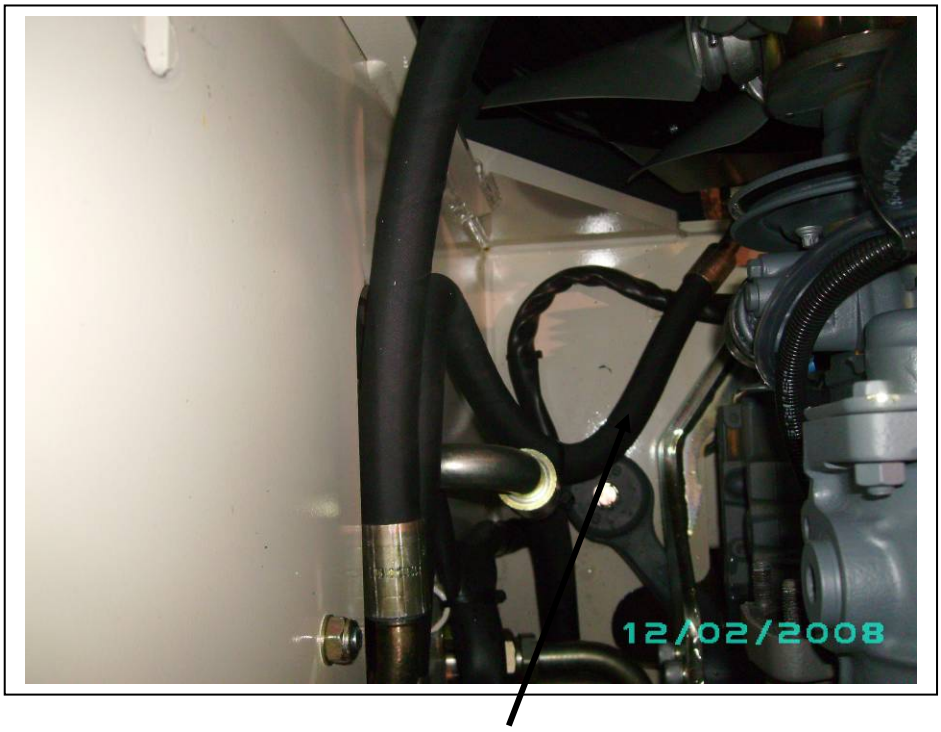
Compressor Mount: The compressor mounts on the back side of the engine and drives off an add on pulley the crank.



Remove the muffler assembly from the engine compartment wall and from the engine exhaust manifold.

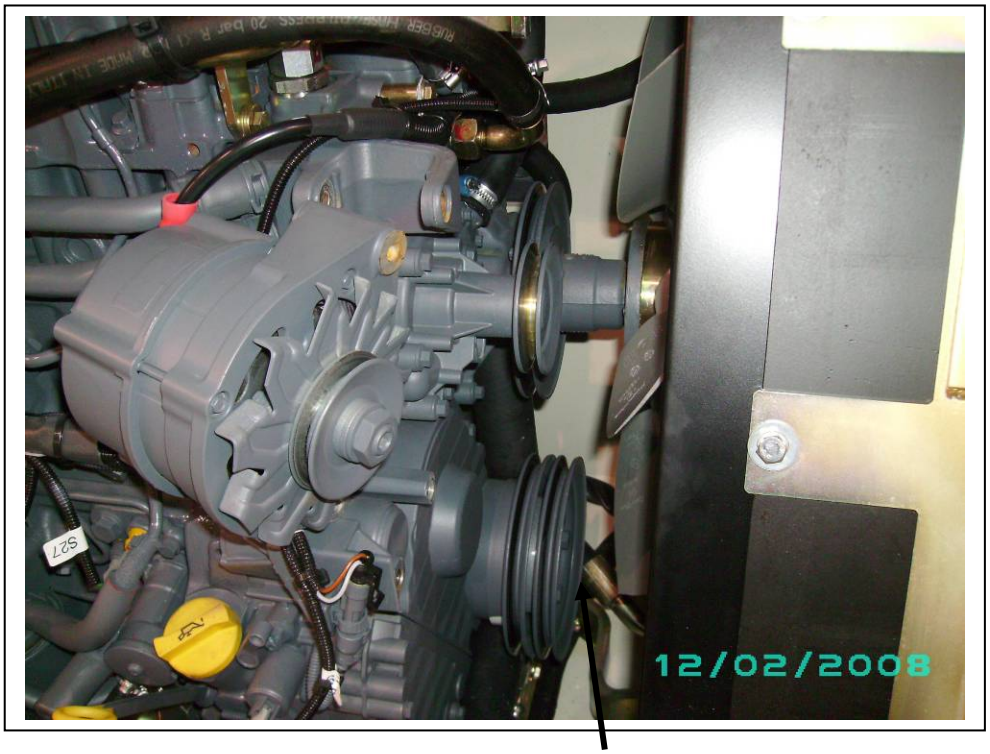


Remove fan guard

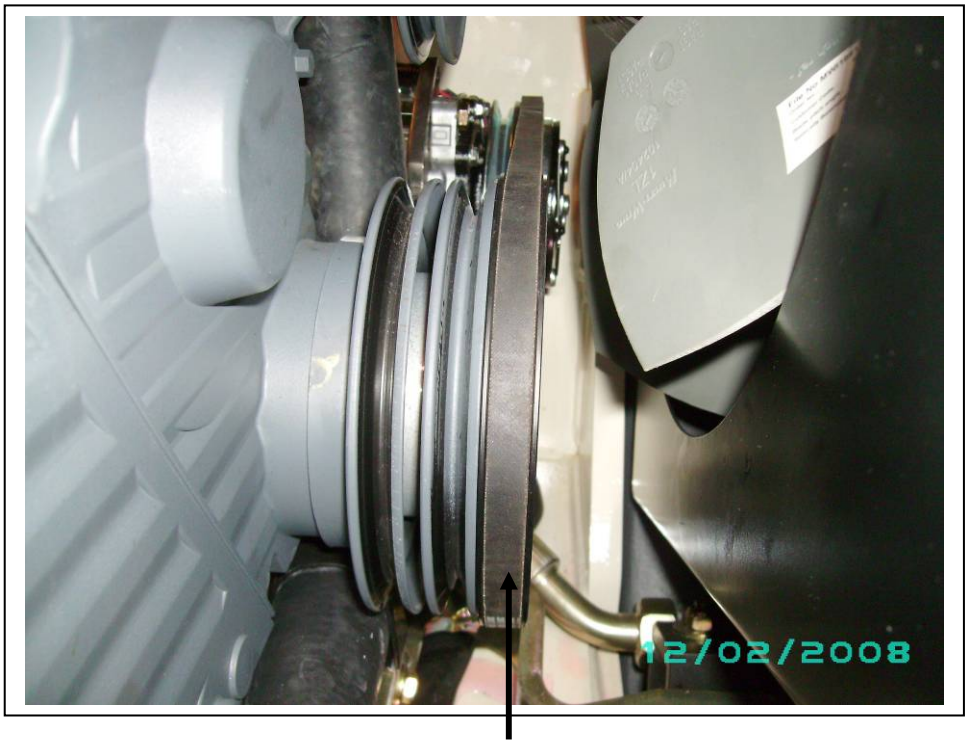


This hydraulic line must be rerouted

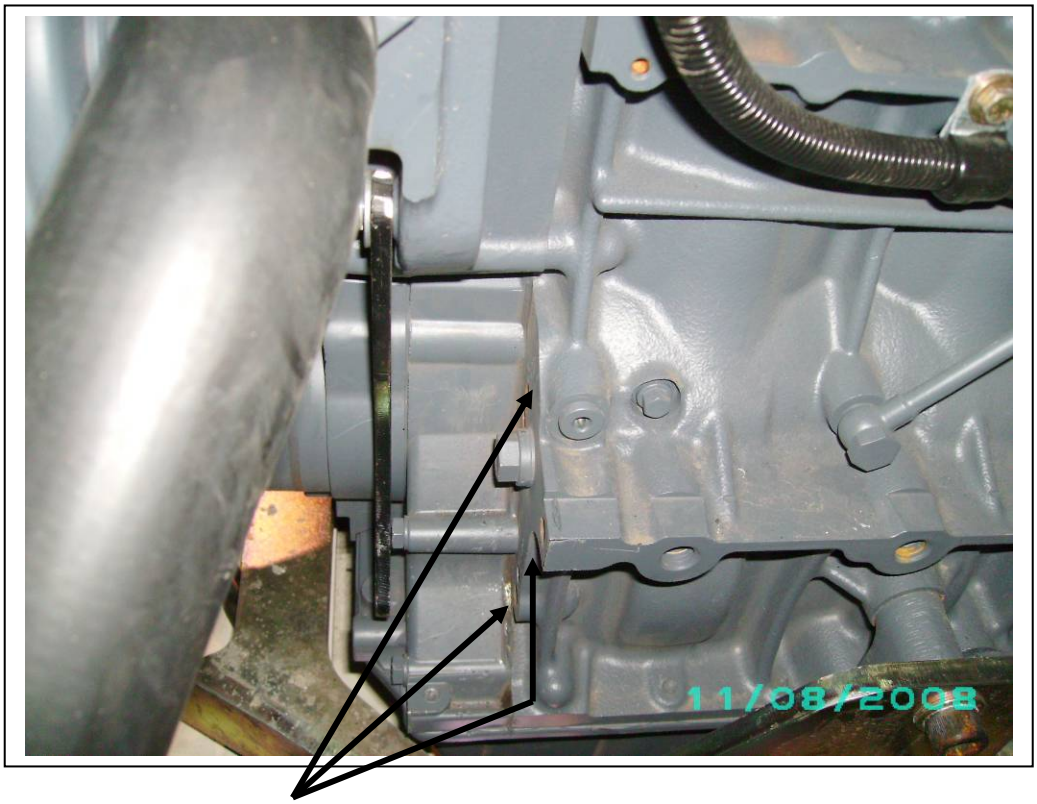
Hydraulic line rerouted under 90^{o} hydraulic elbow.



Remove existing four bolts on crank pulley to install an extra crank pulley.

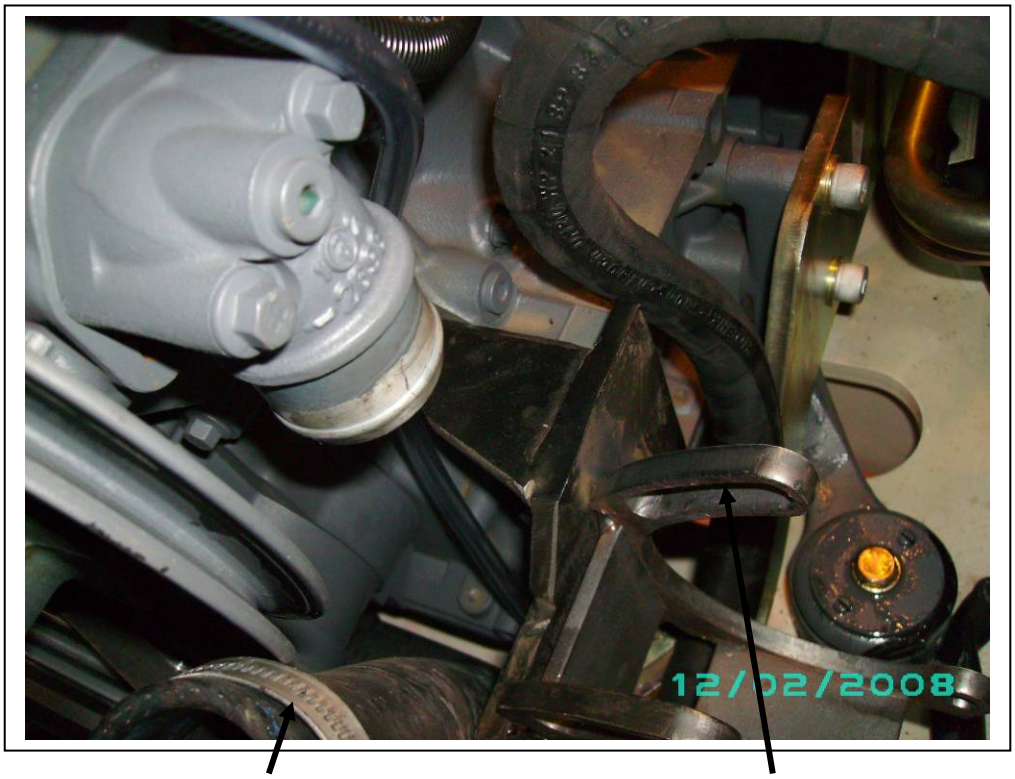


Add on crank pulley added to crank and secured with original bolts.



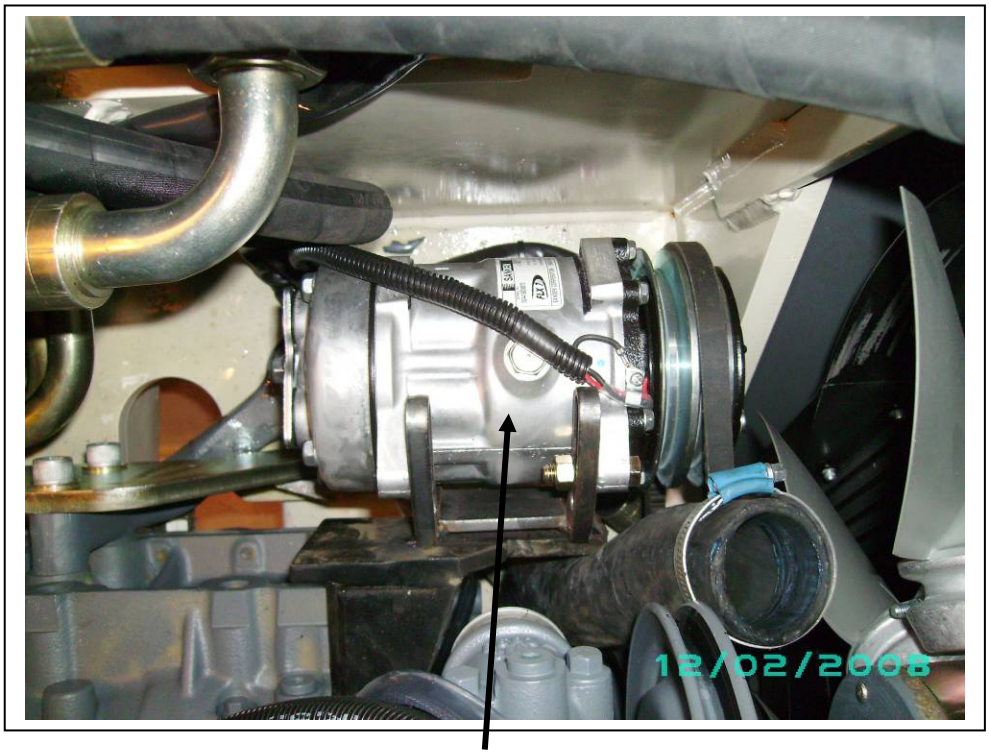
Main mount bracket bolts to these three M10 holes.

Main mount bracket with three M10 mounting holes showing engine side.

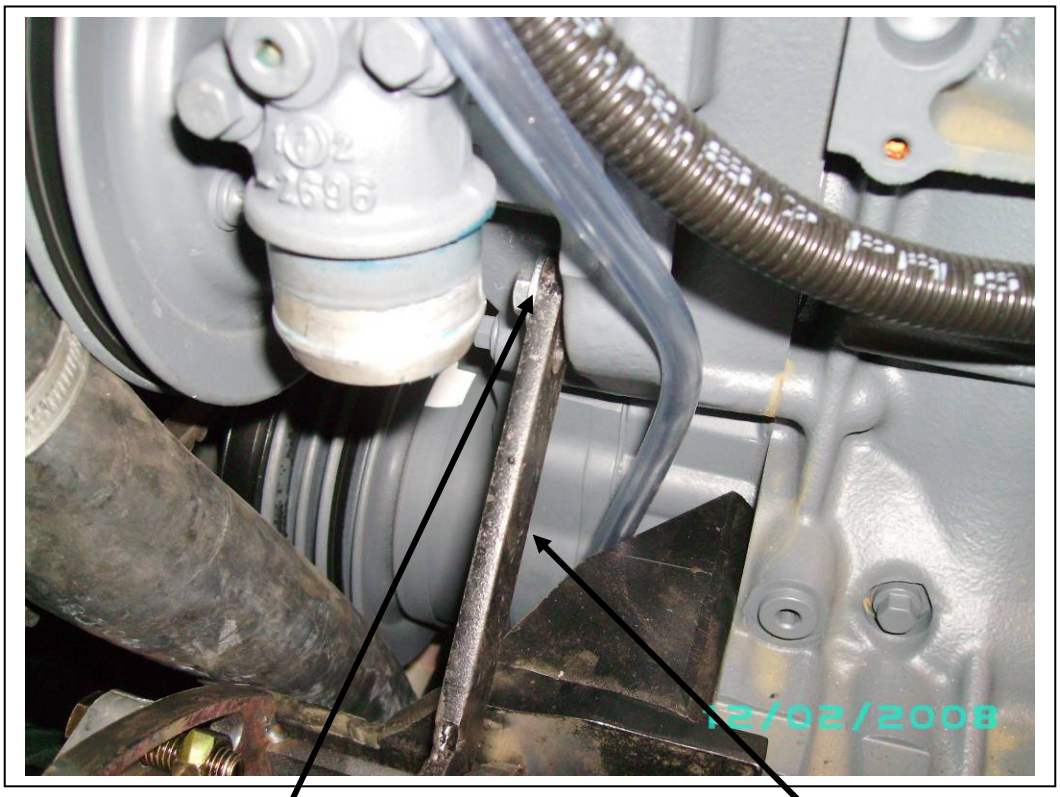


Lower radiator hose removed from engine to allow easy access to the three main mount bolt points.

Main compressor mount bolted in place



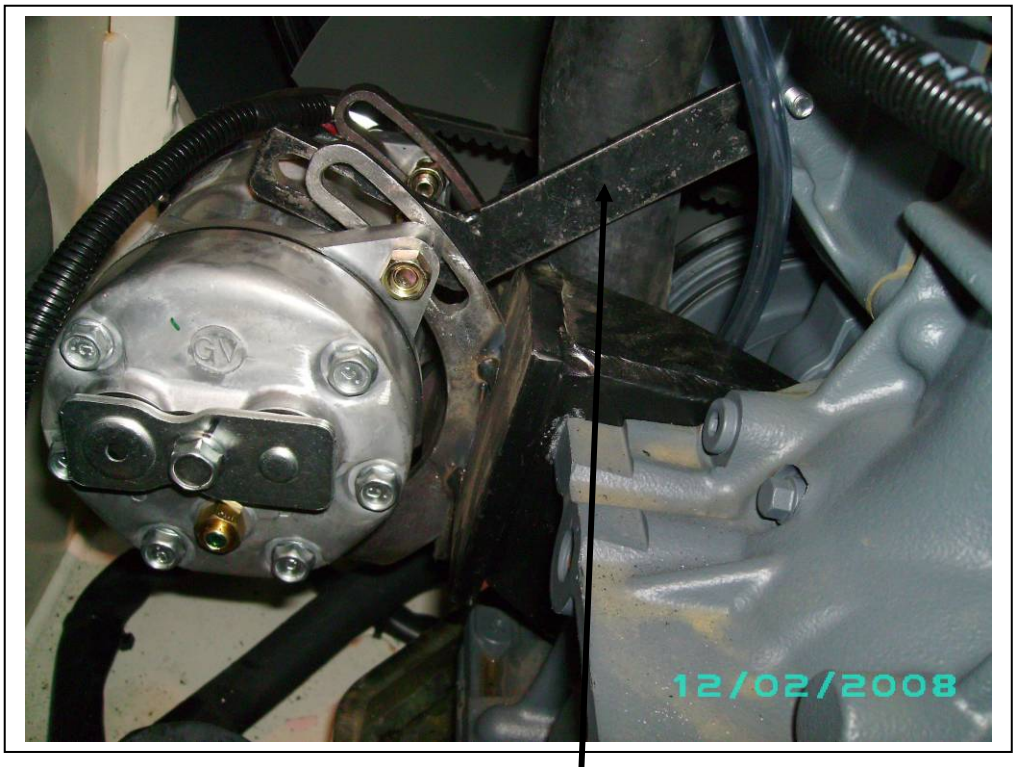
Compressor and belt in place on mount bracket



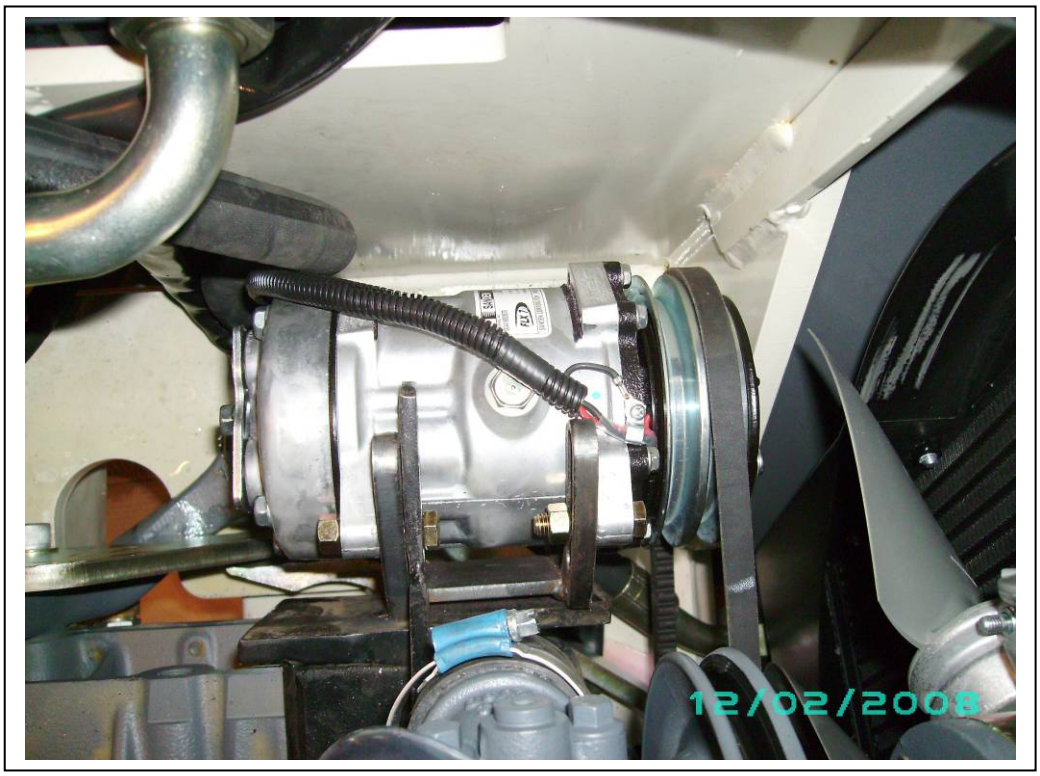
M8 bolt

Compressor mount stiffener bracket

Bolt the stiffener bracket in place using the M8 bolt provided.



Side view of compressor mount stiffener bracket in place and bolted to the compressor.



Top view of installed compressor, stiffener bracket and belt.

Condenser Installation: The condenser is mounted to the intake side of the radiator.

Condenser mounted to air dam with ¼" hardware and ½ spacers to stand off the condenser from the radiator.

½" spacers with ¼" x 1 ¼" bolts

¼” x 1 ½” bolts

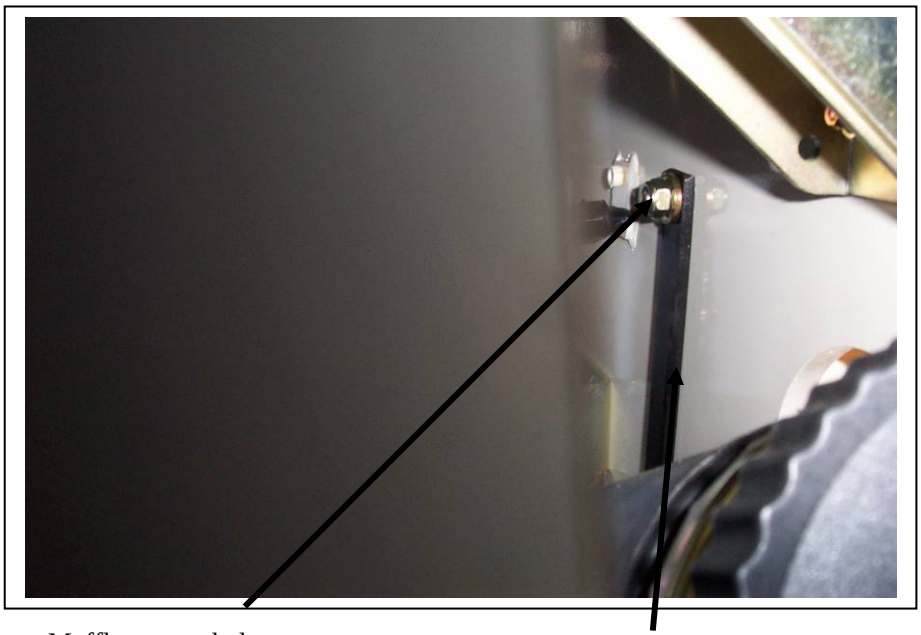
½” spacers

Fitting side of the condenser showing brackets bolted in place. Brackets are shipped loose.

Drier Installations: The drier mounts right behind the cab off one of the existing exhaust muffler mount bolts. It is just behind the fuel fill pipe.

Steps:

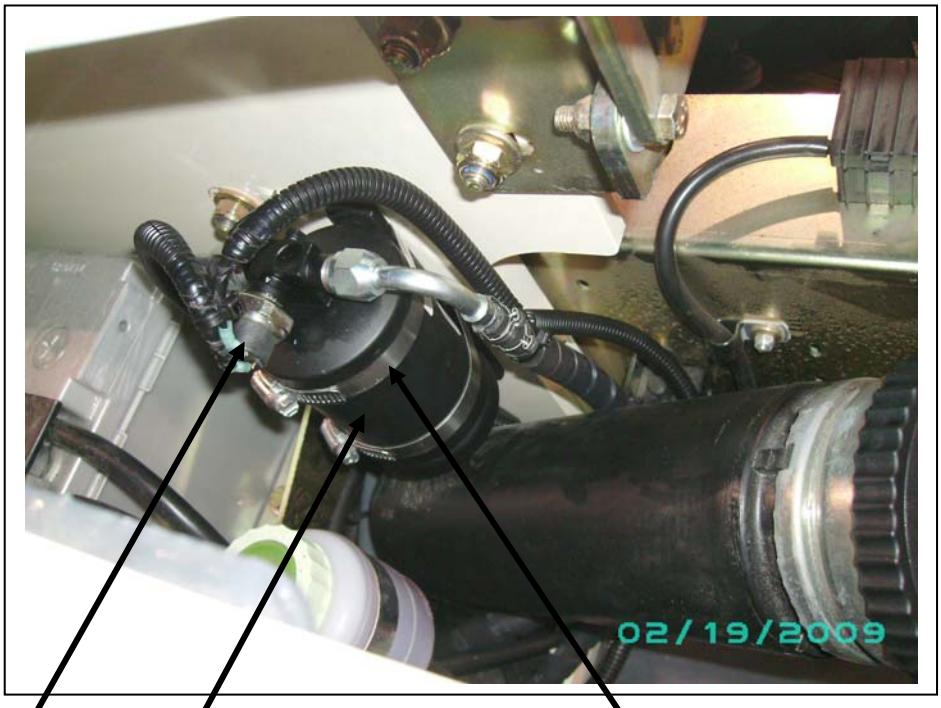
1) Remove the top left muffler mount bolt.
2) Install the straight drier bracket on the top left muffler mount bolt.



Muffler mount bolt

Drier bracket

3) Attach the receiver drier to the mount bracket using the two #48 gear clamps provided. Orient the drier with the outlet pointed towards the battery.



Binary pressure switch

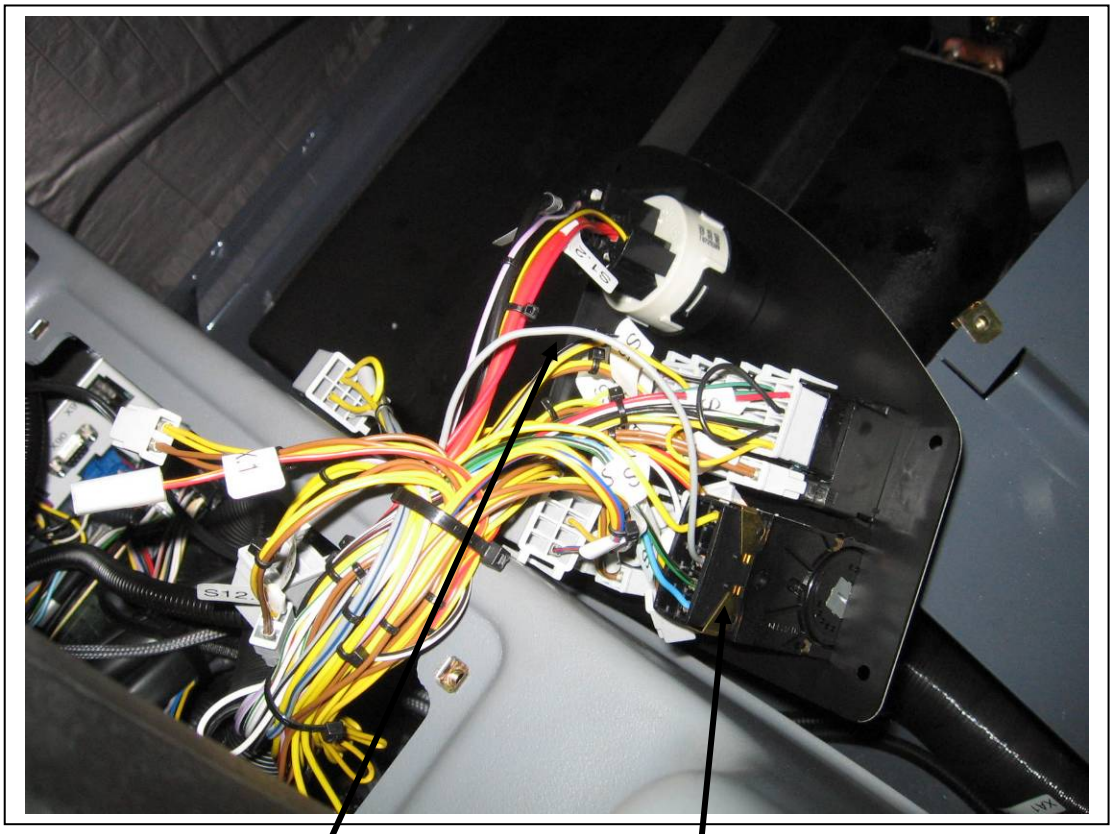
Drier

48 gear clamps

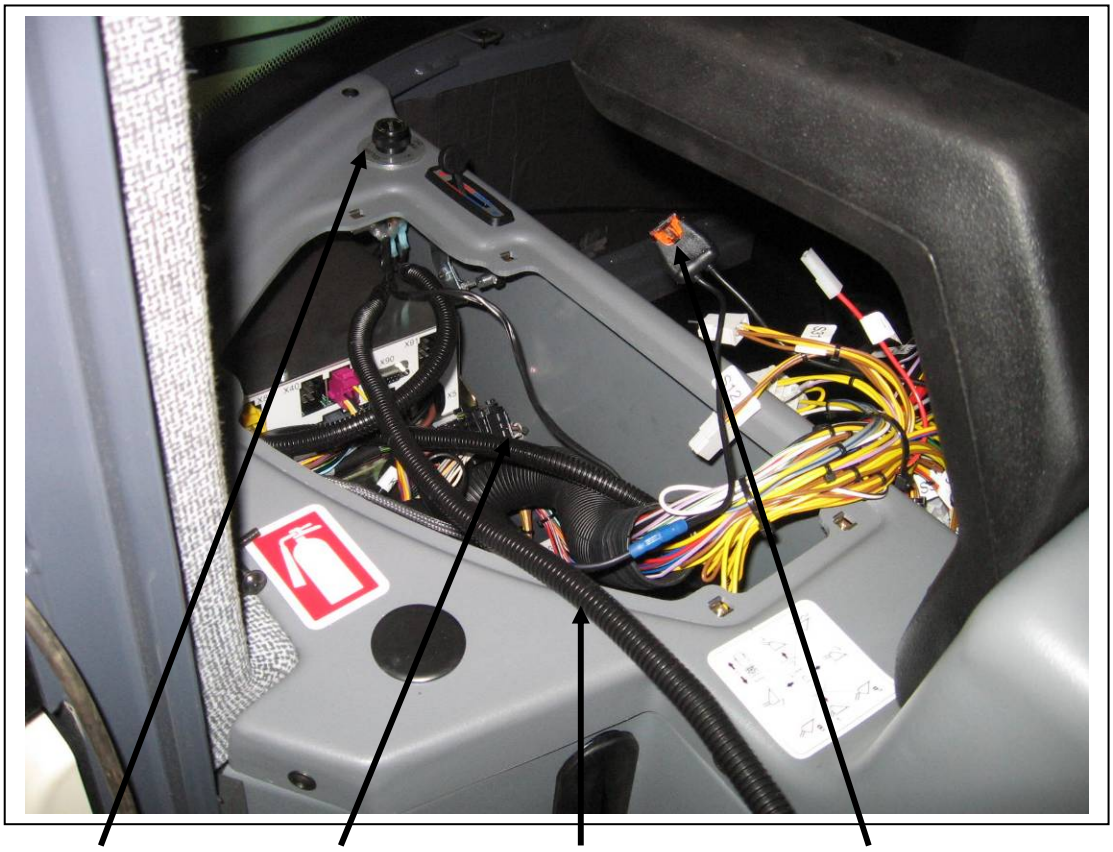
Electrical: The electrical system for the A/C is very straight forward. Power is taken from the blower switch wiring, over to the thermostat and then out of the cab through a hole in the bottom of the right hand console. From there it is routed over to the A/C hoses and back to the compressor.

Steps:

1. Drill a 7/16” hole to mount the thermostat just behind the heater control. Use the decal for proper spacing from the heater control.
2. Remove the switch panel containing the blower switch from the console.



3. Splice into the wire coming off the blower switch that has full 12 volt power when the switch is set on any of its speeds. This should be the light grey. Splice into the wire using the in line ATO fuse holder. Connect the other end of the fuse holder to the thermostat. Install the 7.5 amp ATO fuse into its holder.



Thermostat with decal and knob.

Clutch wire out to compressor

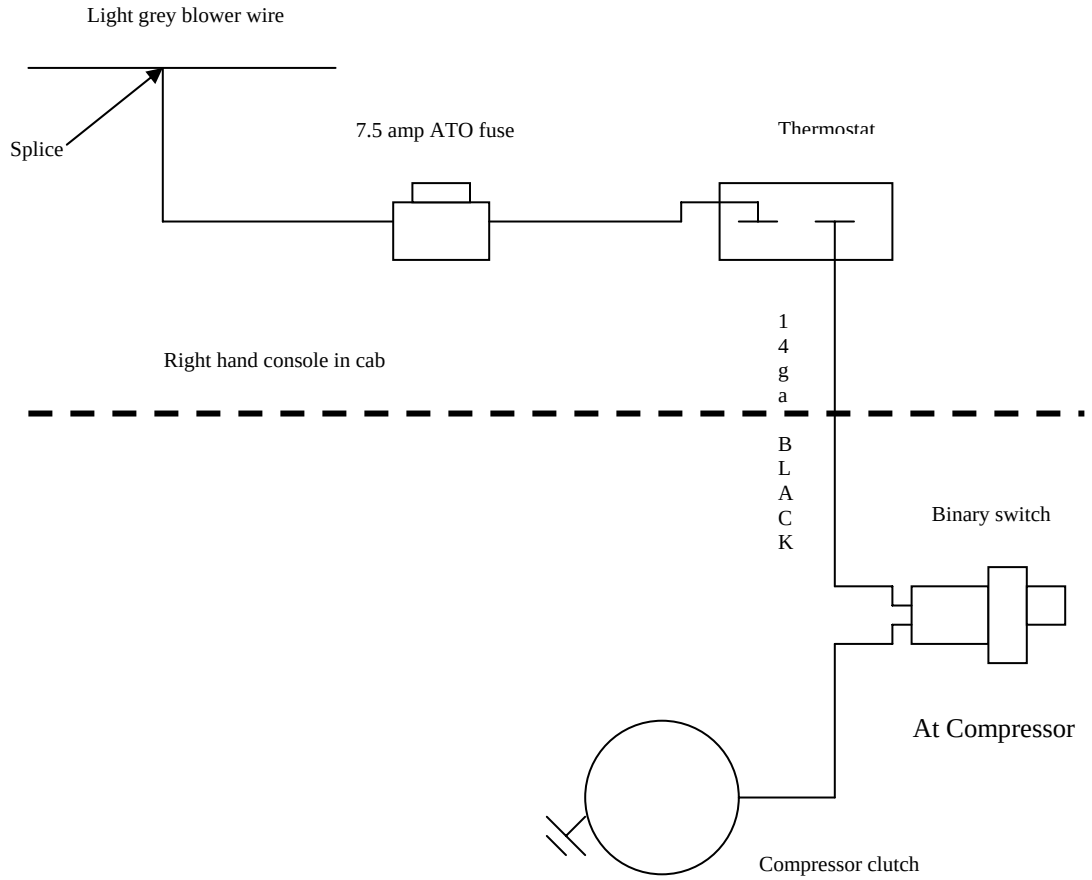
Wire from ATO fuse to thermostat.

In line ATO fuse holder

4. From under the cab, run the 14 gauge black wire in loom up into the right hand console and connect it to the other terminal on the thermostat. Run the thermostat probe as explained in the evaporator installation instructions.
5. Once the system has been tested and any adjustments made, the thermostat can be installed in the hole behind the heater control. Install the thermostat decal and knob as well.
6. Complete the running of the 14 gauge black wire from underneath the cab to the compressor by routing it along with the A/C hoses. At the compressor, plug the wire into one side of the binary switch. Connect the clutch wire coming off the compressor to the other side of the binary switch. Secure the wiring as required. In extreme environments all connections should be covered in a protective film i.e.: grease or silicone.

TL80 Electrical

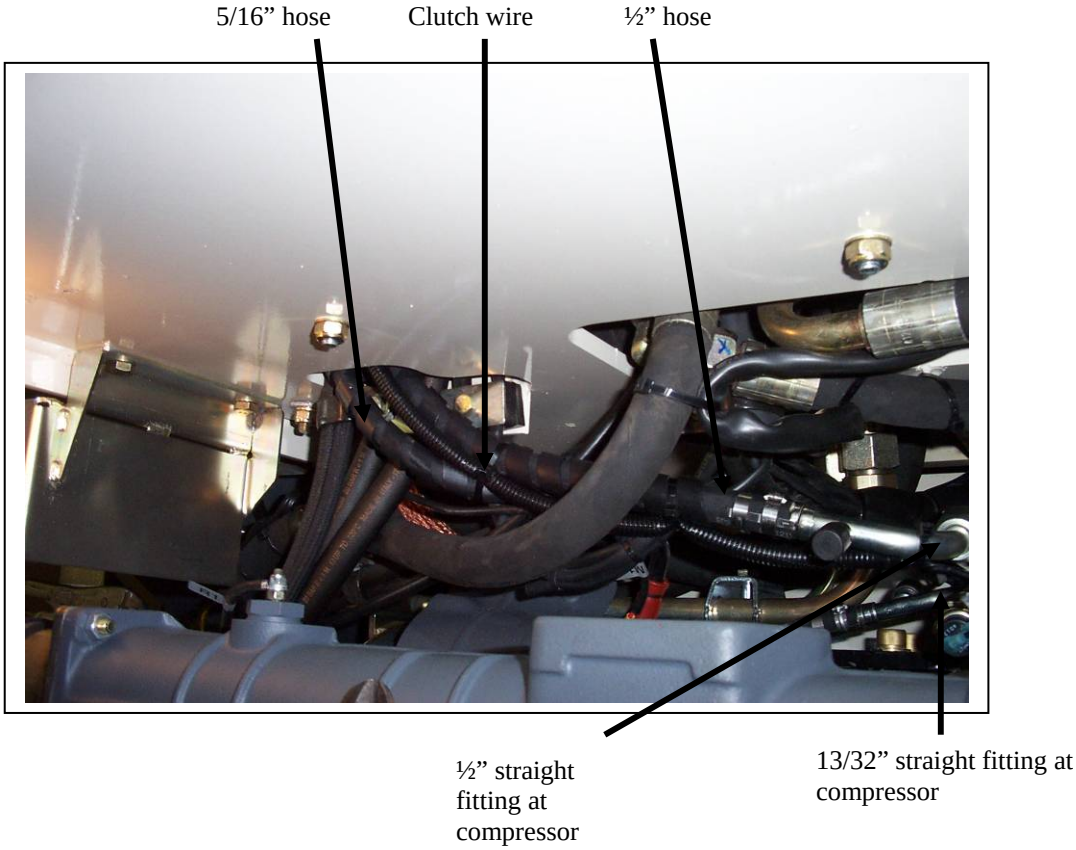
12 Volt System



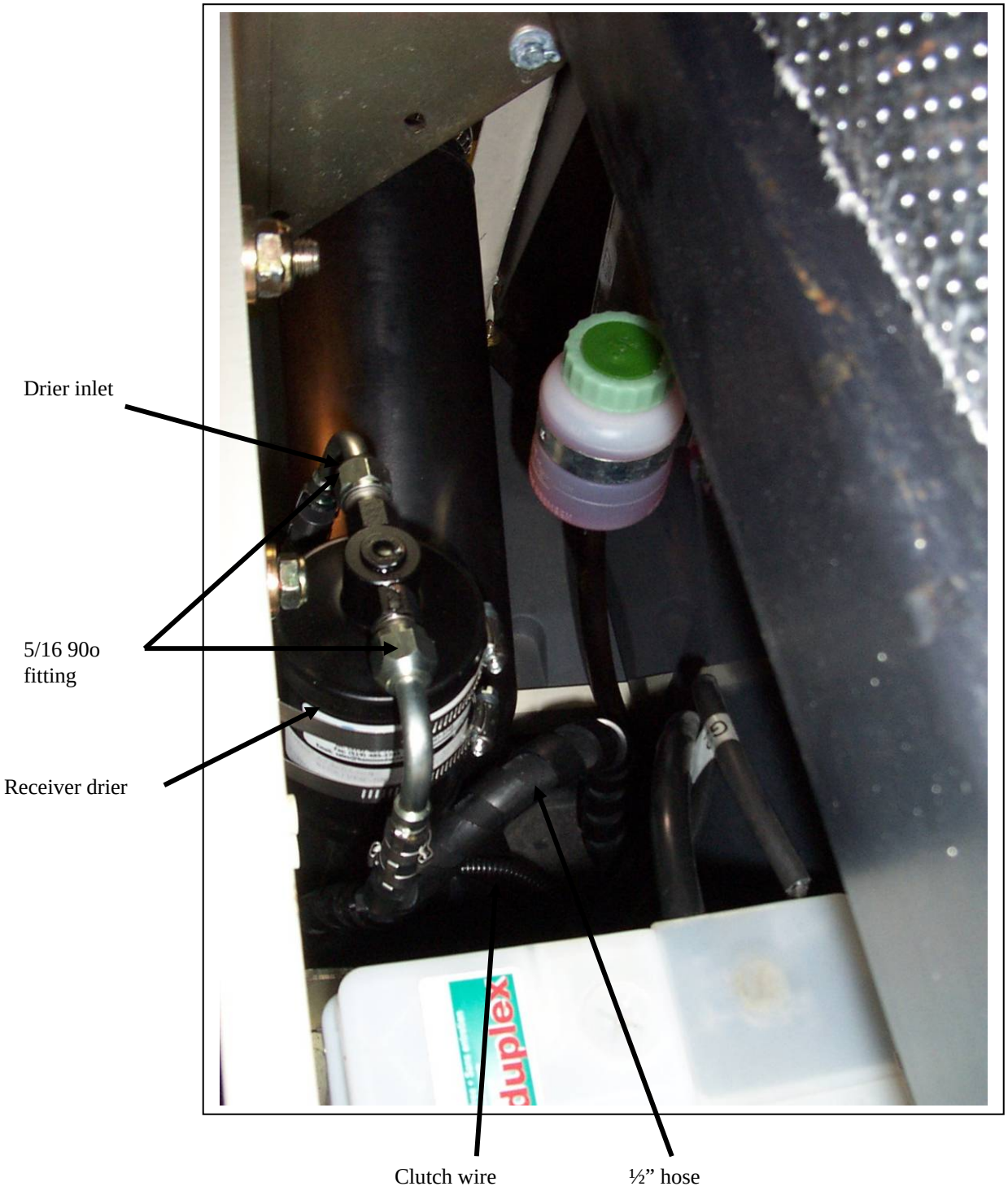
Hose runs: The A/C hoses connect all the major components of the system together. They are all pre-cut and crimped. All the fittings require the proper sized "o" ring to be installed on them and all contact surfaces to be lightly oiled with refrigerant oil before final assembly on the machine.

Steps:

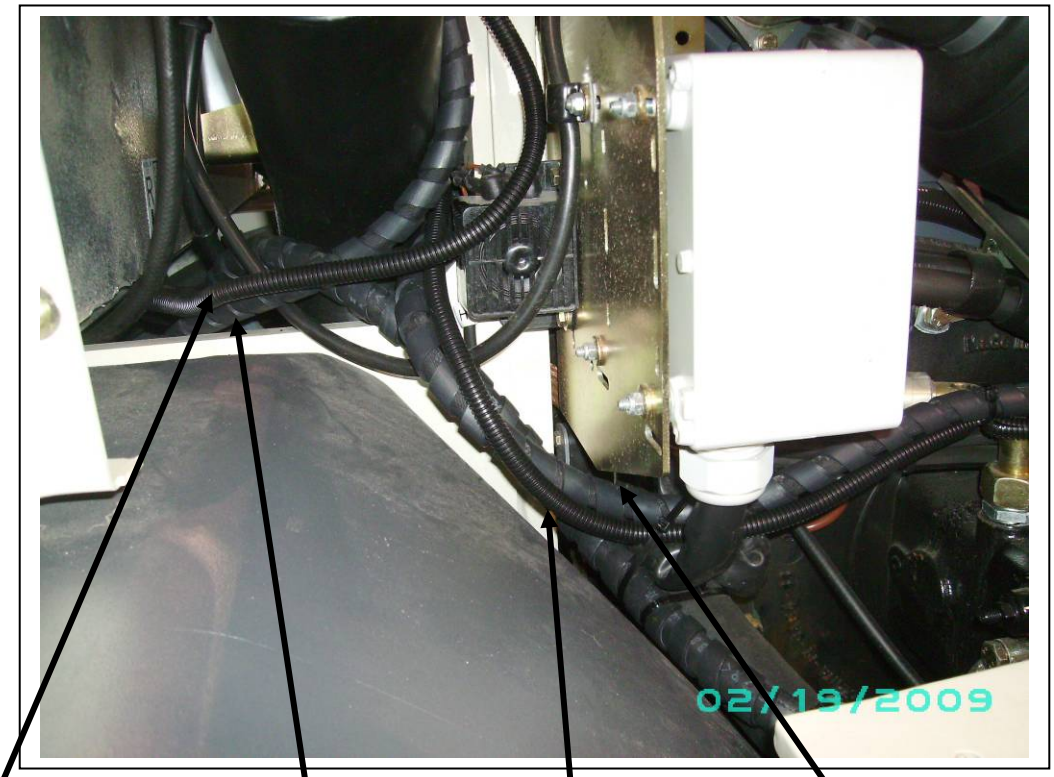
1. Starting at the compressor, the ½" hose connects to the ½" pad fitting on the compressor. Connect the ½" straight female fitting with the R134a access on it to the ½" pad fitting (closest to cab). Run the hose from the compressor to the left side of the engine compartment, and forward through to the drier area. Cross over the top of the fuel tank and under the cab and into the cab beside the heater hoses. Connect the 90° ½" female fitting to the outlet pipe on the evaporator coil.



2. Starting at the compressor, the 13/32" hose connects to the 13/32" pad fitting on the compressor (closest to engine with binary switch). The straight 13/32" female fitting with the R134a access on it attaches to the pad fitting and runs to the left side of the engine and forward to the back side of the radiator. Run the hose through the existing metal knockout in the side air dam. Connect the 90° 13/32" fitting to the top fitting on the condenser coil.



3. At the lower fitting on the condenser connect the female straight 5/16" fitting on the long 5/16" hose. Loop the hose up. Run the hose with the 13/32" hose to the left end of the engine. Meet up with the ½" hose and run it up on top of the fuel tank. Connect it to the inlet side of the drier. Connect the 90° 5/16" female fitting to the side of the drier marked "in". This should be pointing towards the right side of the machine.

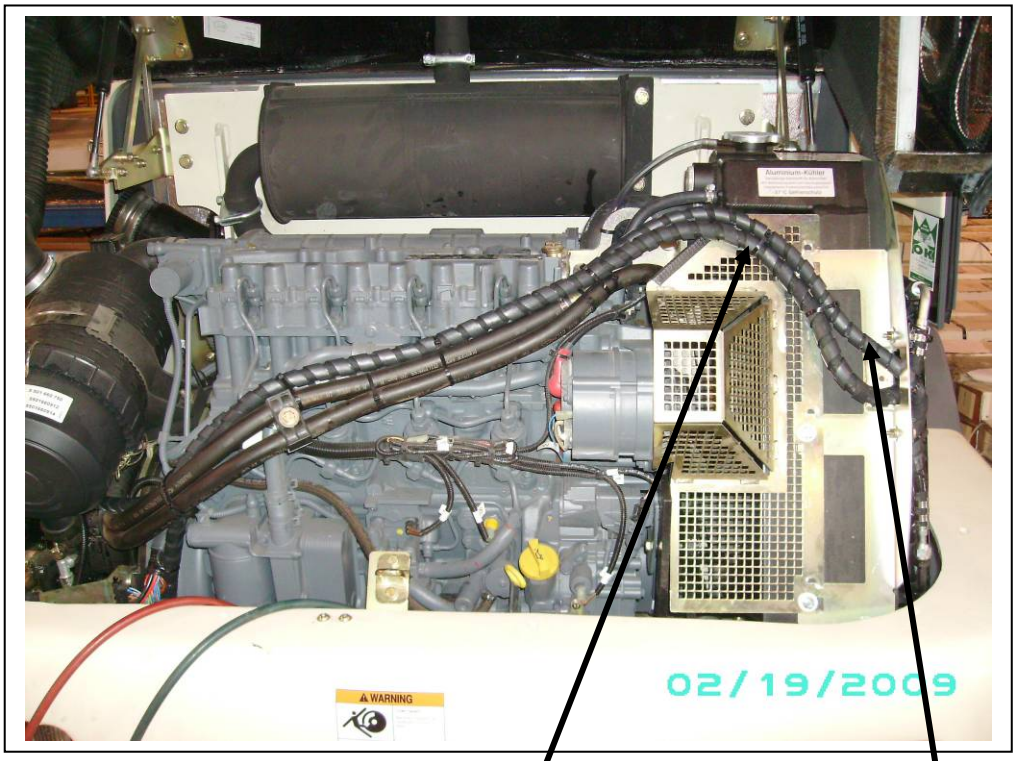


Clutch wire into cab

5/16” line from the drier outlet to expansion valve.

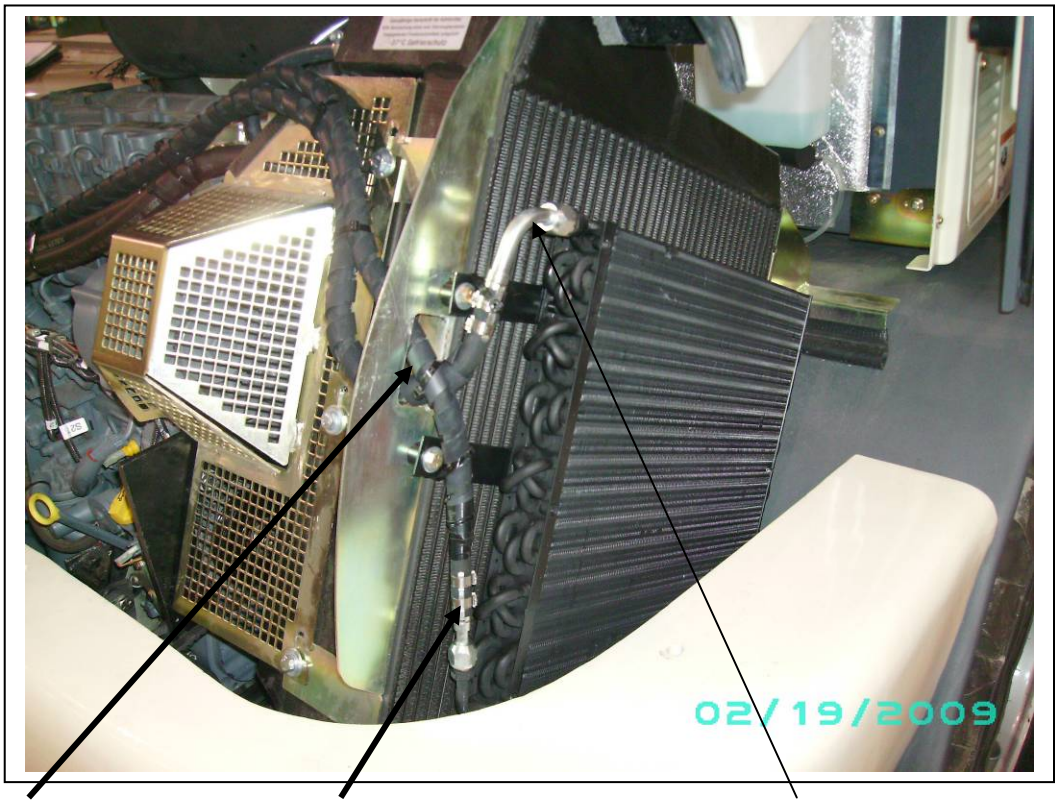
Clutch wire from compressor.

½” hose from compressor



13/32” line to condenser

5/16” line from condenser



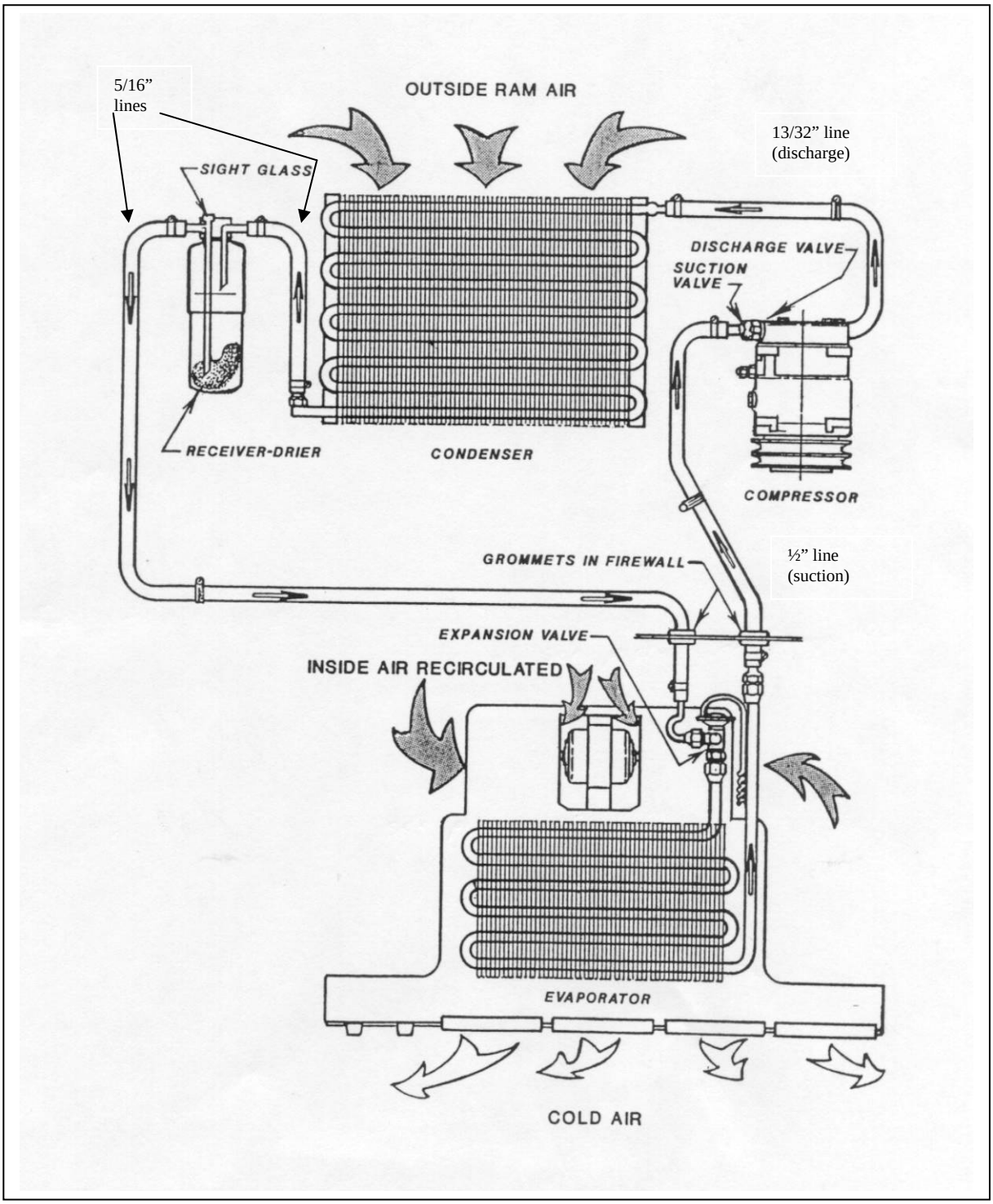
Existing metal knockout.

5/16” straight fitting at condenser

13/32” 90° fitting

4. Connect the 90° 5/16” female fitting to the outlet of the drier and run it straight down and then forward under the cab along with the ½” hose. Bring the hose up into the cab and connect the 90° 5/16” female fitting to the expansion valve on the evaporator coil.
5. Using tar tape, seal all the air gaps around the evaporator line into the evaporator/heater area and around all the lines exiting the cab. Secure all hoses and wiring using the tie wraps provided. Protect hoses from chaffing and rubbing using the hose wrap provided. Make sure the hoses are well secured close to all the fittings to reduce stress on the connections.
6. On many machines, the factory heater control valve does not close very tight and will leak a small amount of radiator fluid past the valve. This can greatly reduce the cooling performance of the A/C system. To solve this problem an inline heater shut off tap may have to be installed. It should be installed in an easily accessible area of one of the heater lines.

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.

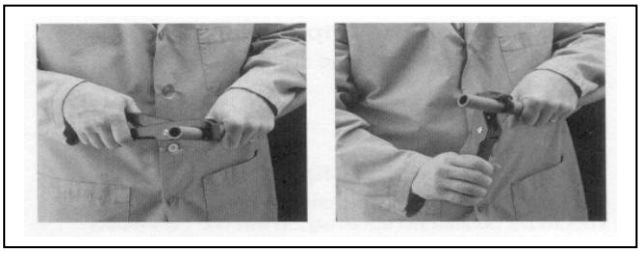
By looking at all these different factors, the area of an evaporator coil most likely to be the coldest can be determined.

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.

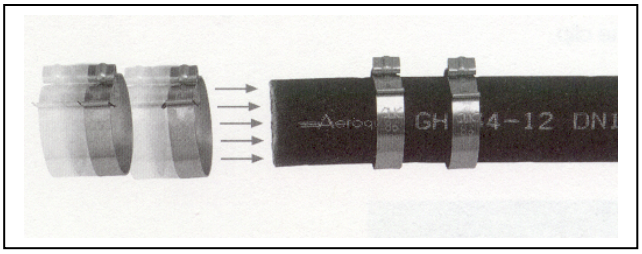
If the thermostat doesn't cycle off after a reasonable cool down period, and the air outlet temperature has dropped below 40° F, the cut in and cut out settings should be adjusted until the compressor is cycling on and off regularly. Let the system run for a decent time period (at least 15 min) and then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

Aeroquip E-Z Clip Assembly Instructions

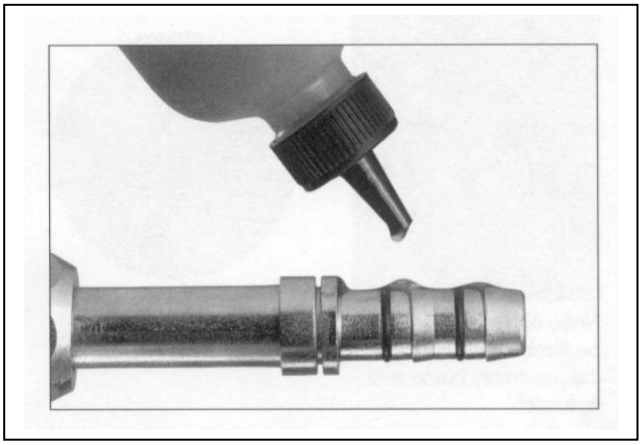
Step 1. Cut the hose to proper length with an appropriate cutting tool. Aeroquip's hand held hose cutter has been specially designed for cutting all non-wire reinforced hose, such as GH-134 Multi-Refrigerant hose. Be sure the cut is made square to the hose length.



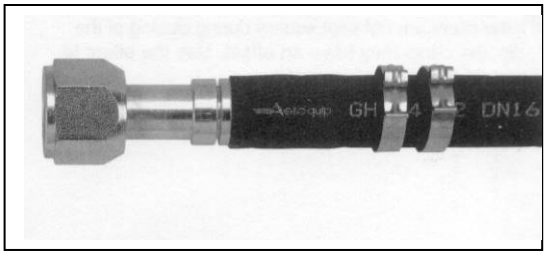
Step 2. Install two proper-sized clips onto the cut end of the hose. Orientation of the clips does not affect the performance of the connection. However, for ease of assembly, both clips should have the same orientation.
NOTE: Failure to slide the clips over the hose at this time will require the clips 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.

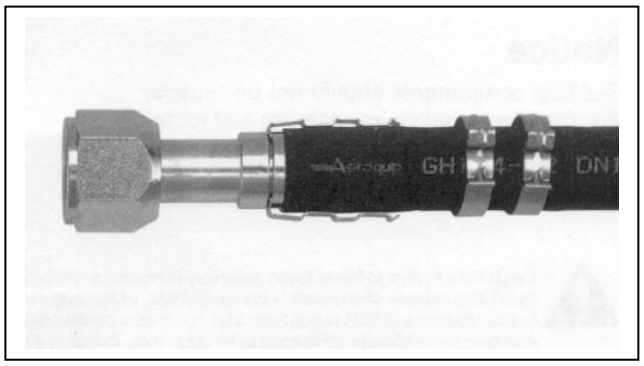


Step 4. Insert the nipple into the hose. To ensure that the nipple is fully inserted, check the gap between the cut end of the hose and the shoulder on the nipple. Care should be taken to avoid kinking or other damage to the hose during nipple insertion.
NOTE: Be sure to wipe excess oil from the nipple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

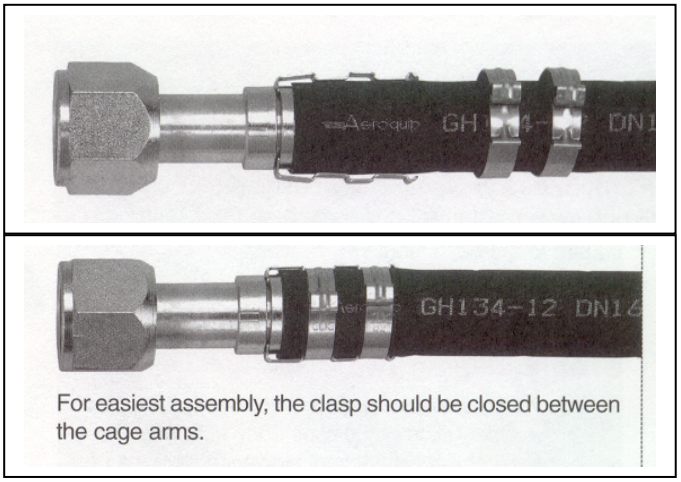


Step 5. Snap the cage into the groove on the nipple. The arms should extend over the hose length. When the cage has been correctly installed in the cage groove, the cage will be able to rotate in the groove. This step MUST be performed to ensure:

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.



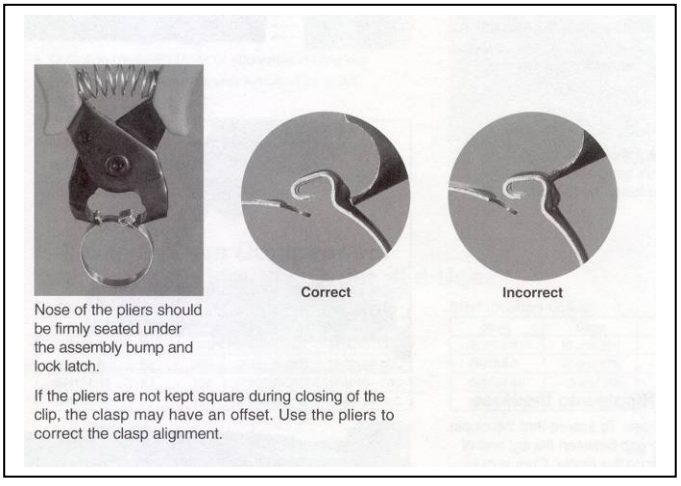
Step 6. Slide the clips over the cage arms and into the channels on each arm.



For easiest assembly, the clasp should be closed between the cage arms.

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.



Nose of the pliers should be firmly seated under the assembly bump and lock latch.

If the pliers are not kept square during closing of the clip, the clasp may have an offset. Use the pliers to correct the clasp alignment.