

# INSTALLATION INSTRUCTIONS CAT 908 WHEEL LOADER



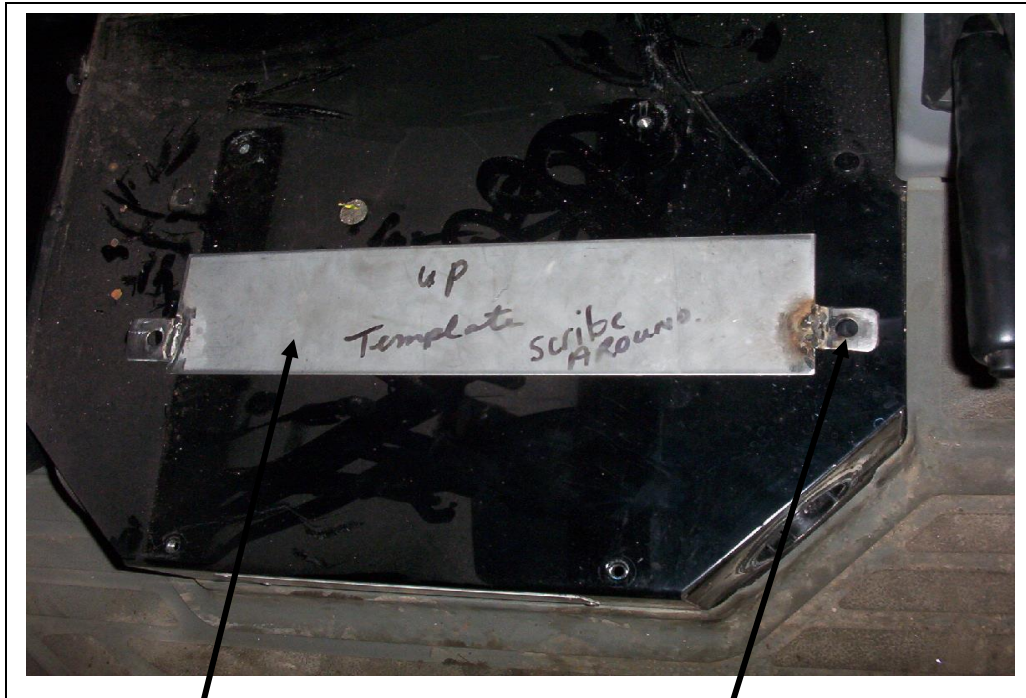
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## EVAPORATOR INSTALLATION (902/906/908)



Seat removed



Cut out template

Center template over front two metal plugs.



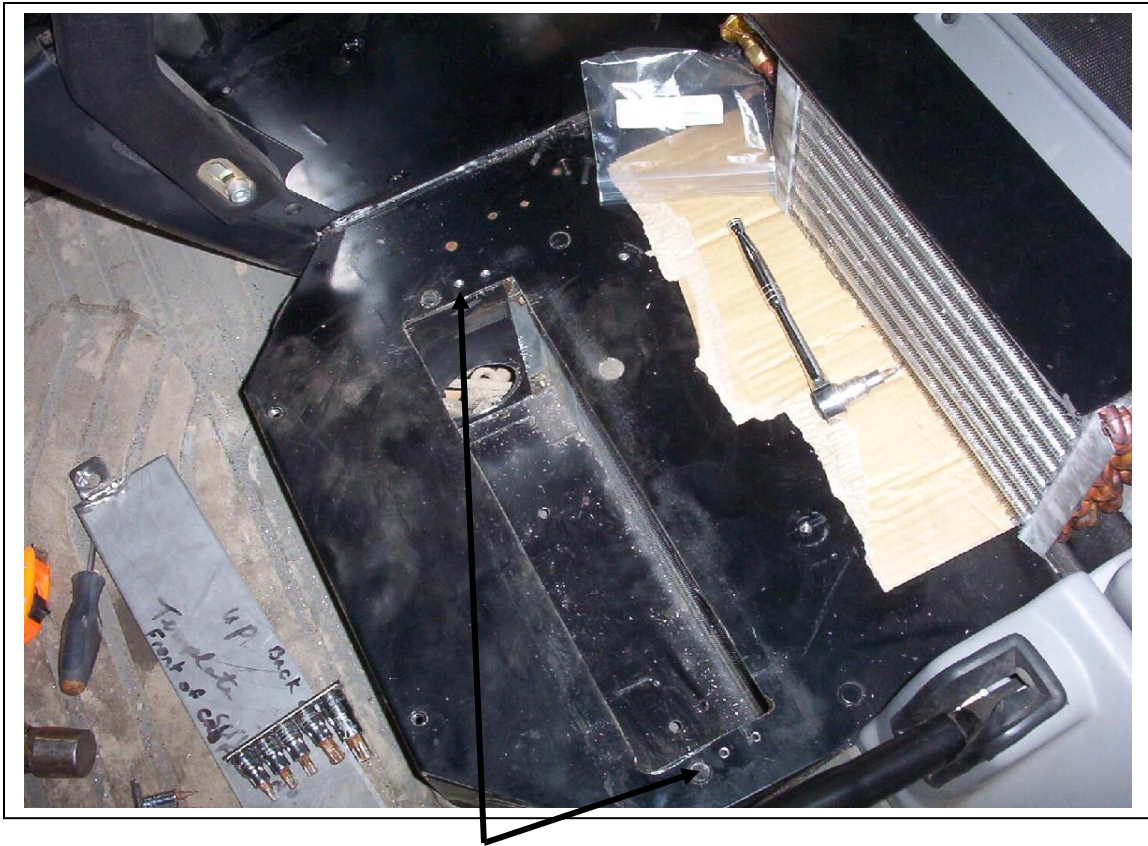


Hole scribed and pilot holes drilled for jigsaw blade.



Cut out a 3" diameter hole as shown for the evaporator lines to go through.

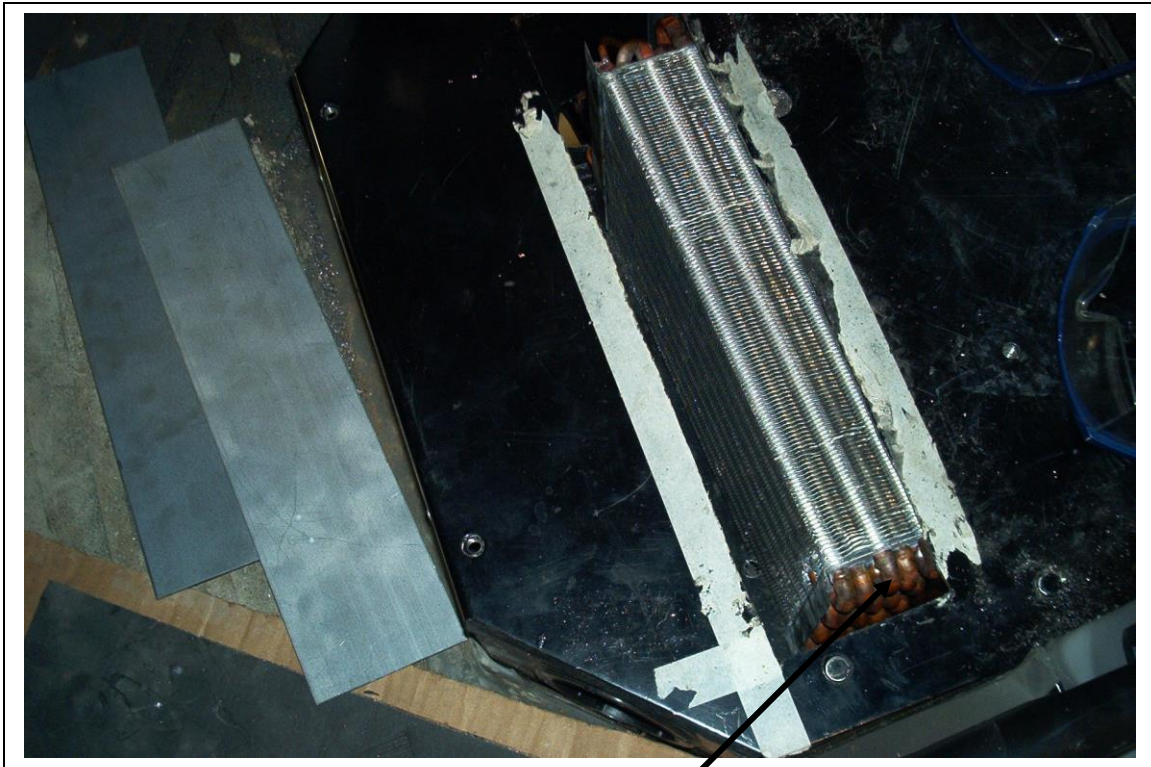
Drill two 1/4" holes for drainage.



Fit the lid in place and drill and tap for  $\frac{1}{4}$ " bolts. One bolt per end.

Place the evaporator coil in the box with the fittings out through the 3" hole. Slide the coil towards the left side of the box and hook the evaporator flange behind the heater coil mounting flange.





Hook flange of the evaporator coil behind the mounting flange for the heater coil to secure this end of the coil.



Install the retaining plate on the fitting end of the coil. Hold the plate tight to the coil and secure with the self drilling screws provided.



Run the thermostat probe from the right control console area, out through the floor and into the evaporator through the 3" hole. Install into the coil as shown.



Retaining plate in place

Thermostat probe in place.

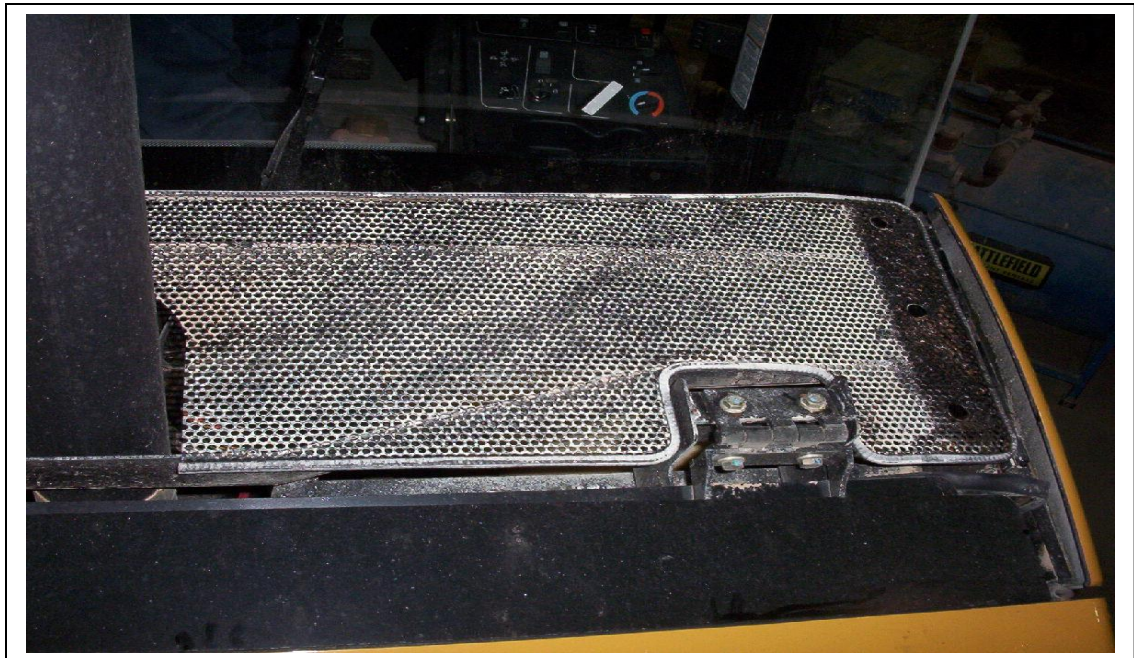
Once the A/C lines have been connected to the evaporator coil, seal the 3" hole with tar tape.



## CONDENSER (908)



The condenser mounts in front of the radiator on hinged brackets to existing radiator mount bolts.



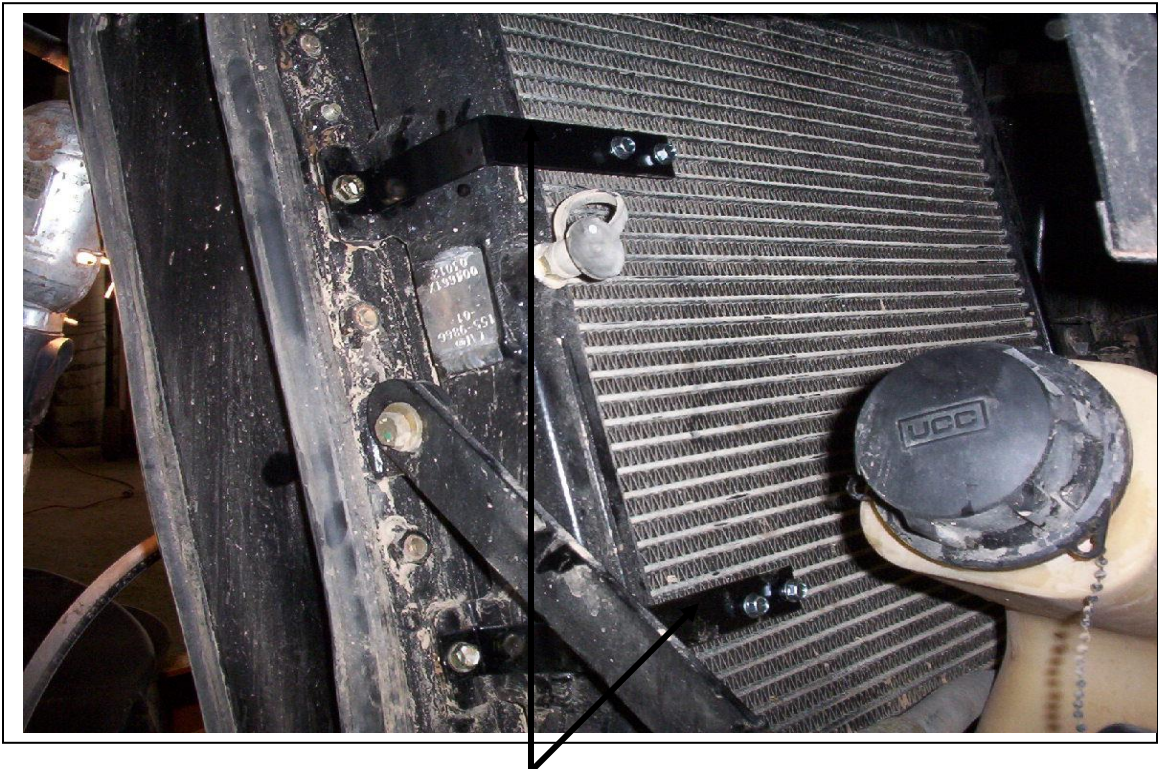
Remove this cover for top access to condenser area. Replace when done.





One of four mount bolts

Remove this bracket to install condenser and hoses. Reinstall when done.

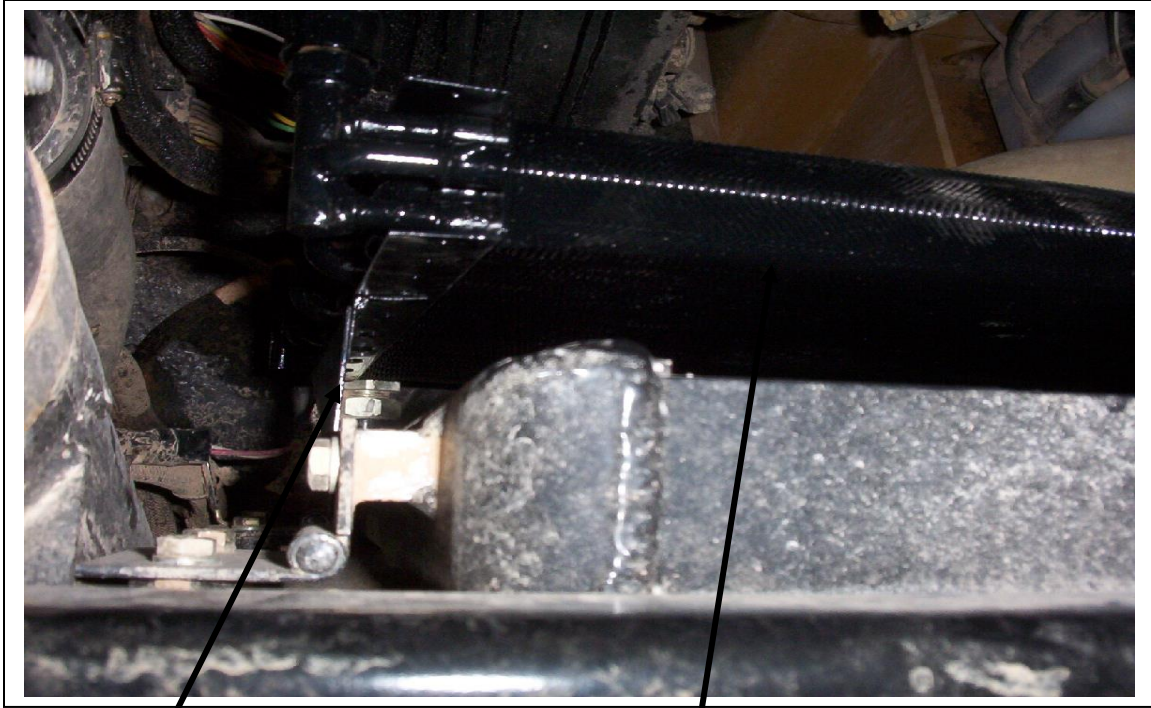


Right hand condenser mount brackets installed.





Loosen the inside set of bolts on the left end of the oil cooler.



Fit the slotted hinged bracket behind the loosened bolts and re tighten.

Slide the condenser down into place.





Use the wing bolts to secure the right end of the condenser coil to its mount brackets.



13/32" hose on condenser

5/16" hose on condenser

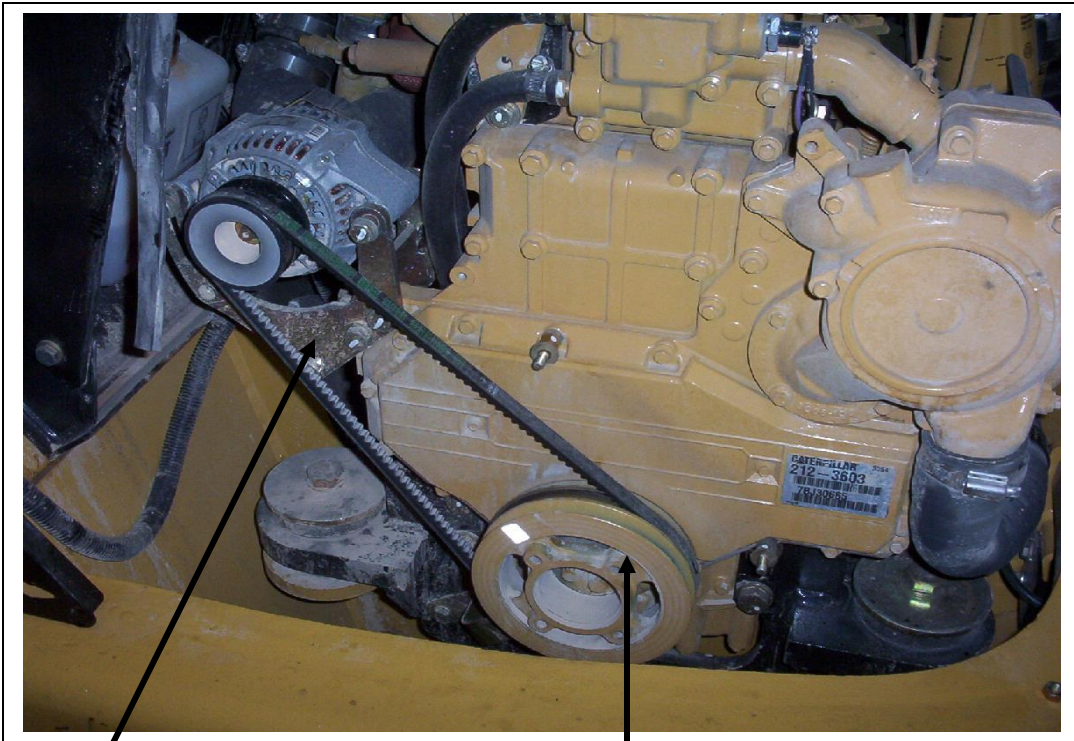


## COMPRESSOR (908)

\*NOTE\* On older machines the alternator mount may not be setup for the A/C compressor. If this is the case, obtain the updated alternator mount from a Cat dealer.



Remove cover to access pulley and belts.



Compressor mounts off  
bottom of alternator bracket.

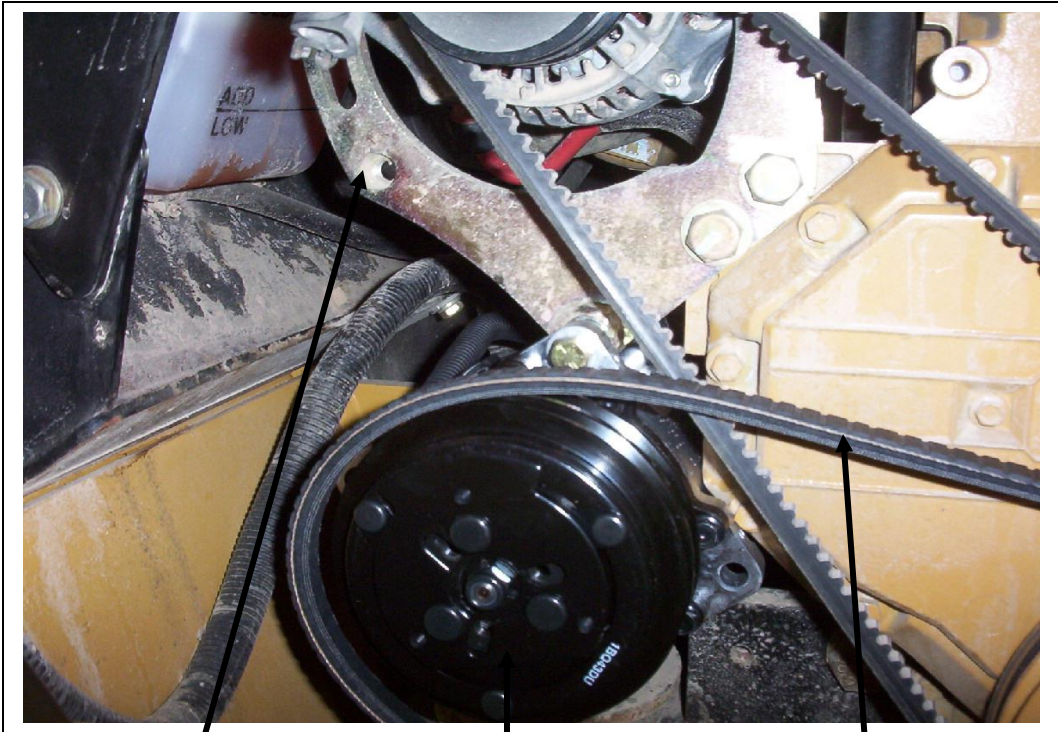
Open pulley on crank.



Compressor ear "E" bolts here

Compressor ear "A" bolts here

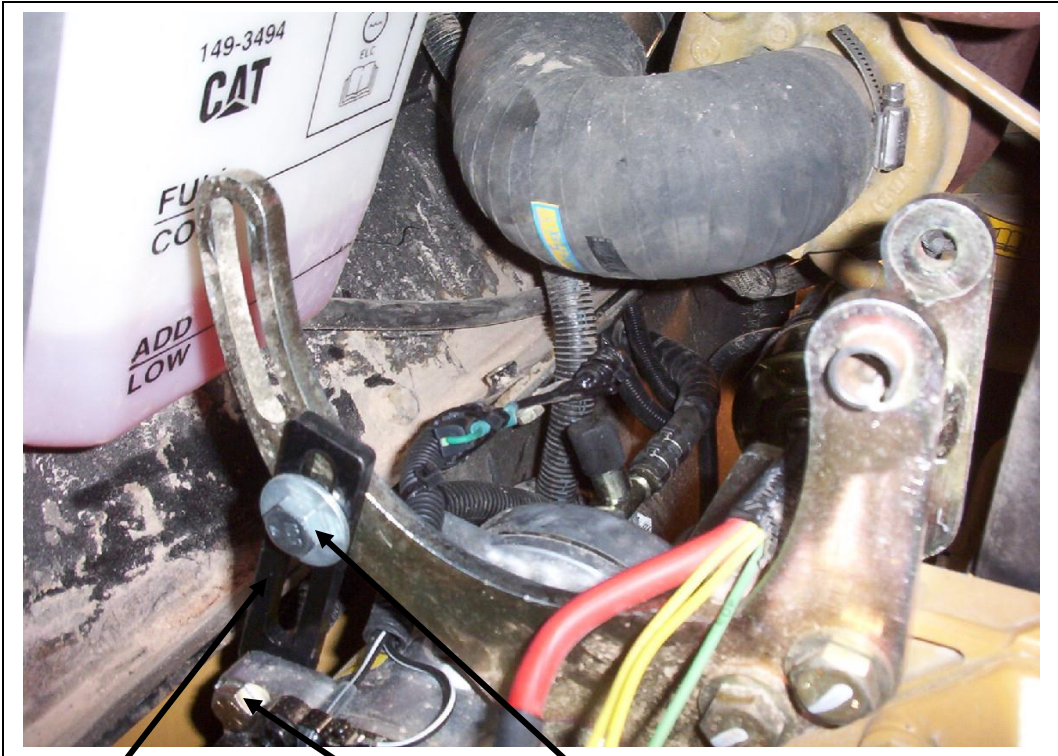




Upper tightener bracket bolts here.

Compressor in place

Belt in place



Upper tightener bracket.

3/8" bolt.

M10 bolt





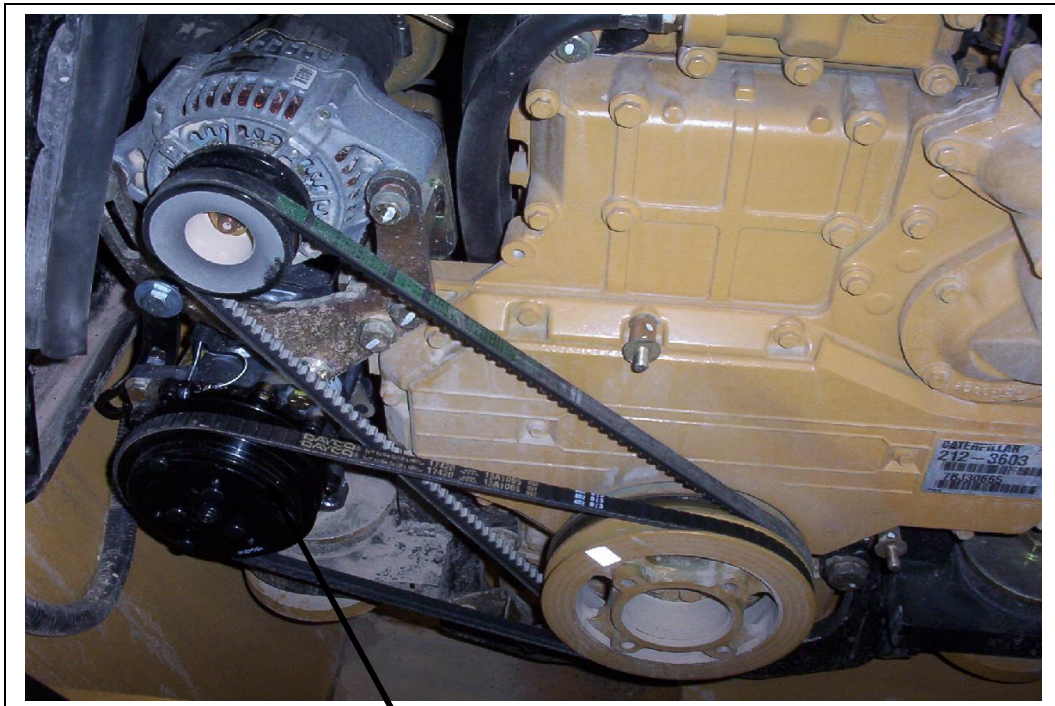
3/8" x 2 1/2" bolt

3/4" spacer

Lower tightener bracket.

M10 x 40mm bolt

3/4" spacer



Compressor in place





Clutch wire to compressor

13/32" fitting

1/2" fitting

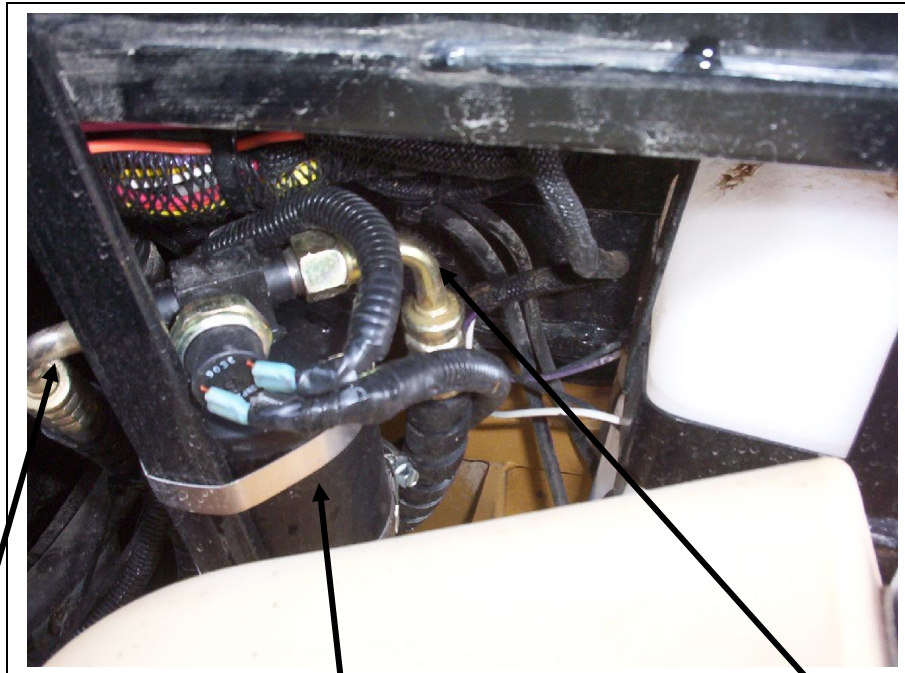


**DRIER (908)**



M8 x 25mm bolt, lock and flat in threaded hole.

Long drier bracket in place.



5/16" line from condenser

Receiver drier with binary

5/16" line to expansion valve



Drier mounts to forward side of mount bracket.



**ELECTRICAL 9902-906-908)**

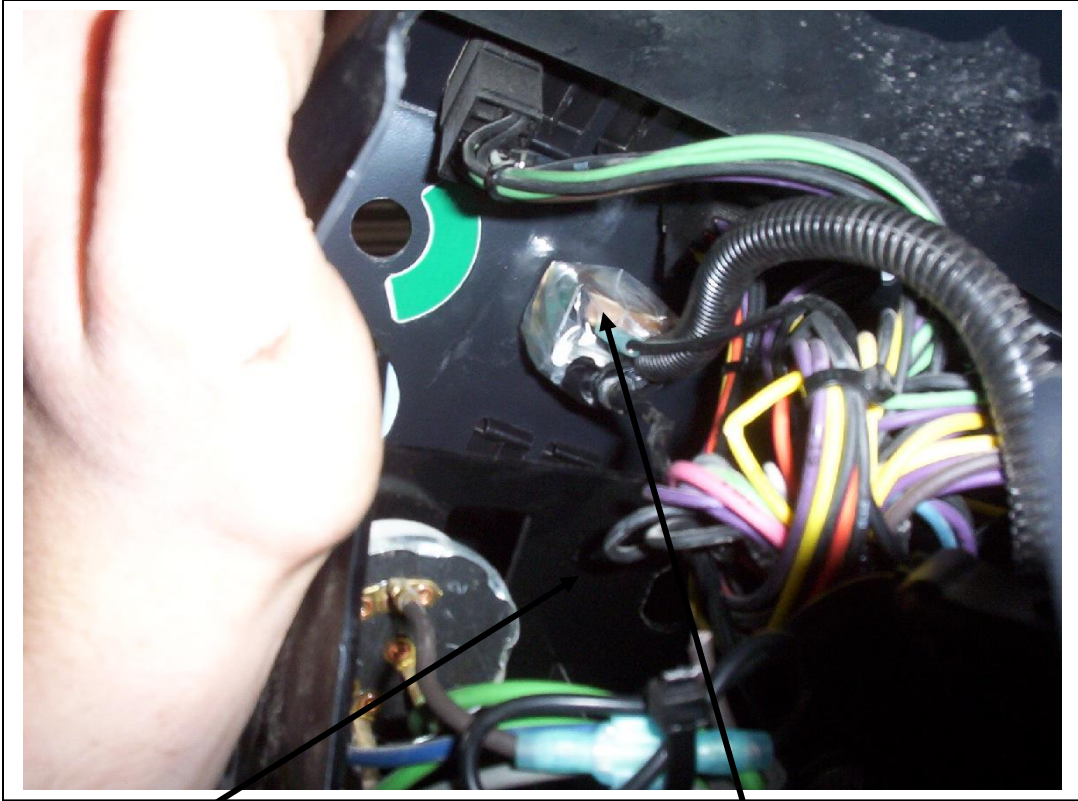


Thermostat and decal in place in right hand control console.



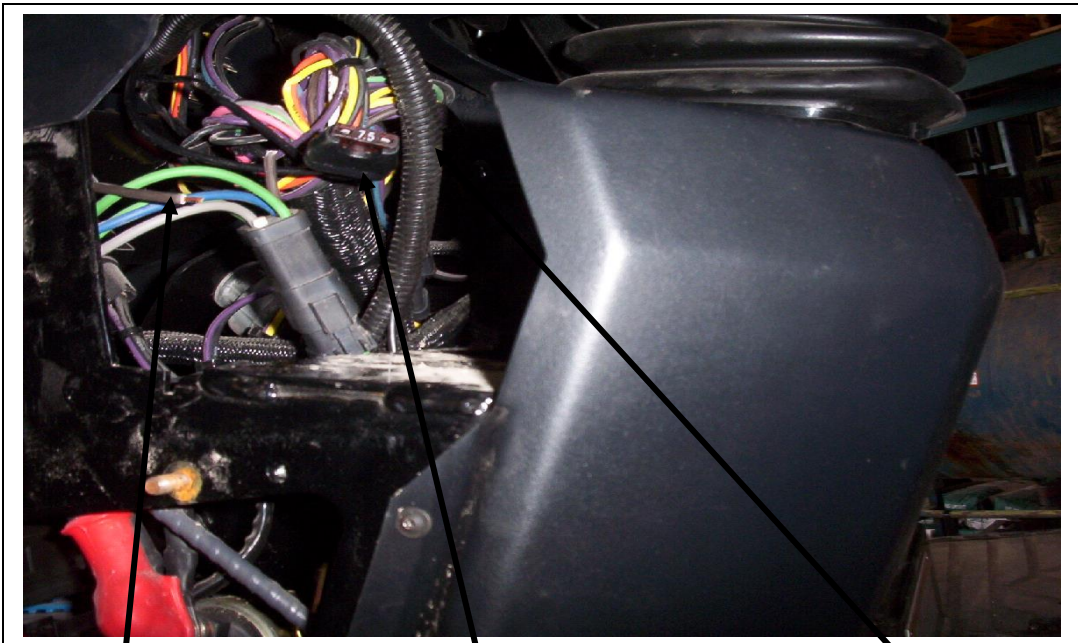
Unbolt console cover





Thermostat mounts to metal frame with the fender washer on the outside of the metal frame.

Thermostat wired and ready to mount to metal frame beside the blower switch

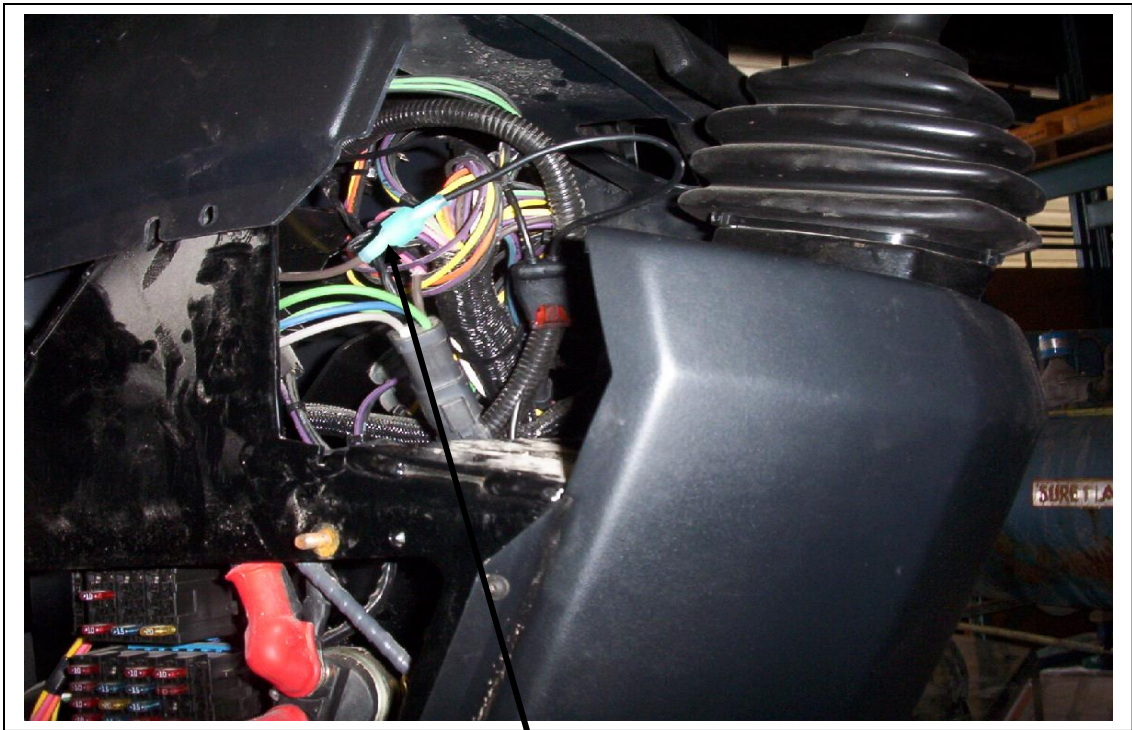


Cut this wire coming off the blower switch

Inline ATO fuse connected to the clutch wire.

Clutch wire run from the binary switch on the drier.





Wire from blower switch connected to the ATO fuse.



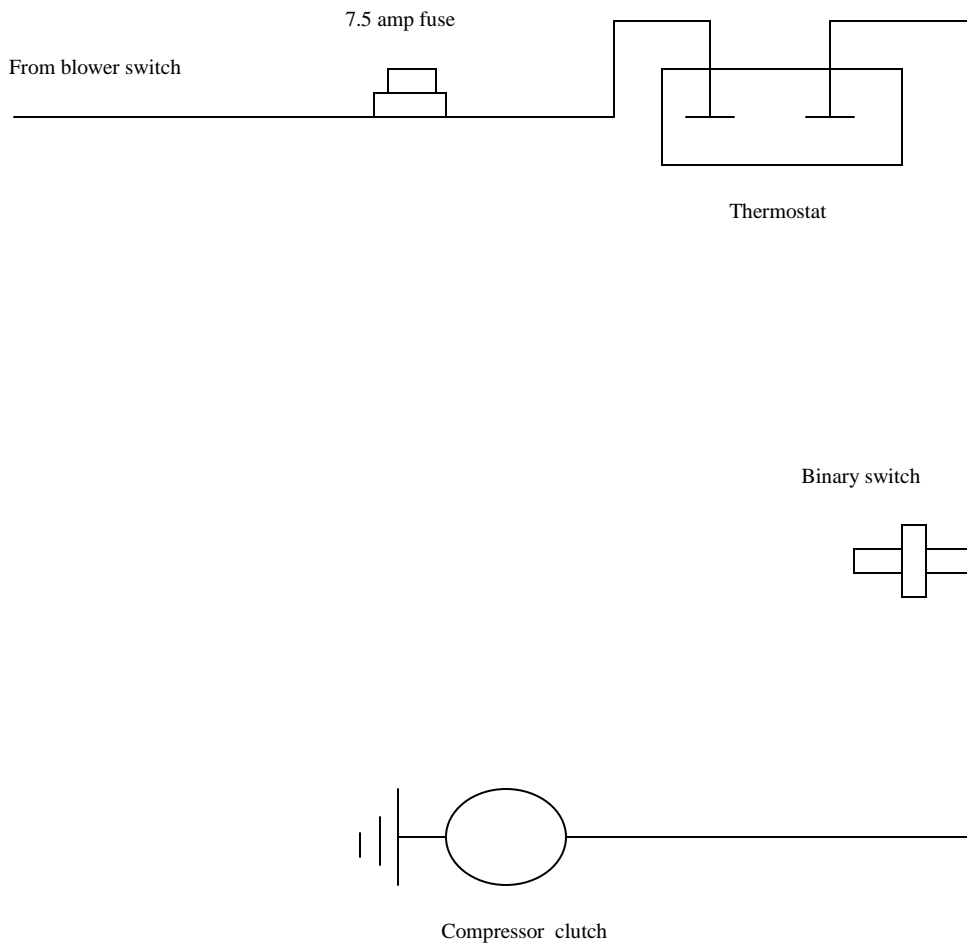
Clutch wire and thermostat probe going down and out of the cab through the floor to the drier and the evaporator.



Clutch wire and thermostat probe  
under the cab.



902/906/908 Electrical



## Hose Installation

The hoses provided are Aeroquip with easy clip fittings. This type of hose is very flexible yet durable. For added protection hose wrap has been provided and should be installed onto hose where there is risk of rubbing or contact with other hose or objects. Be sure to insert "O" ring seals at all connections and lubricate those seals with PAG oil prior to final connections.

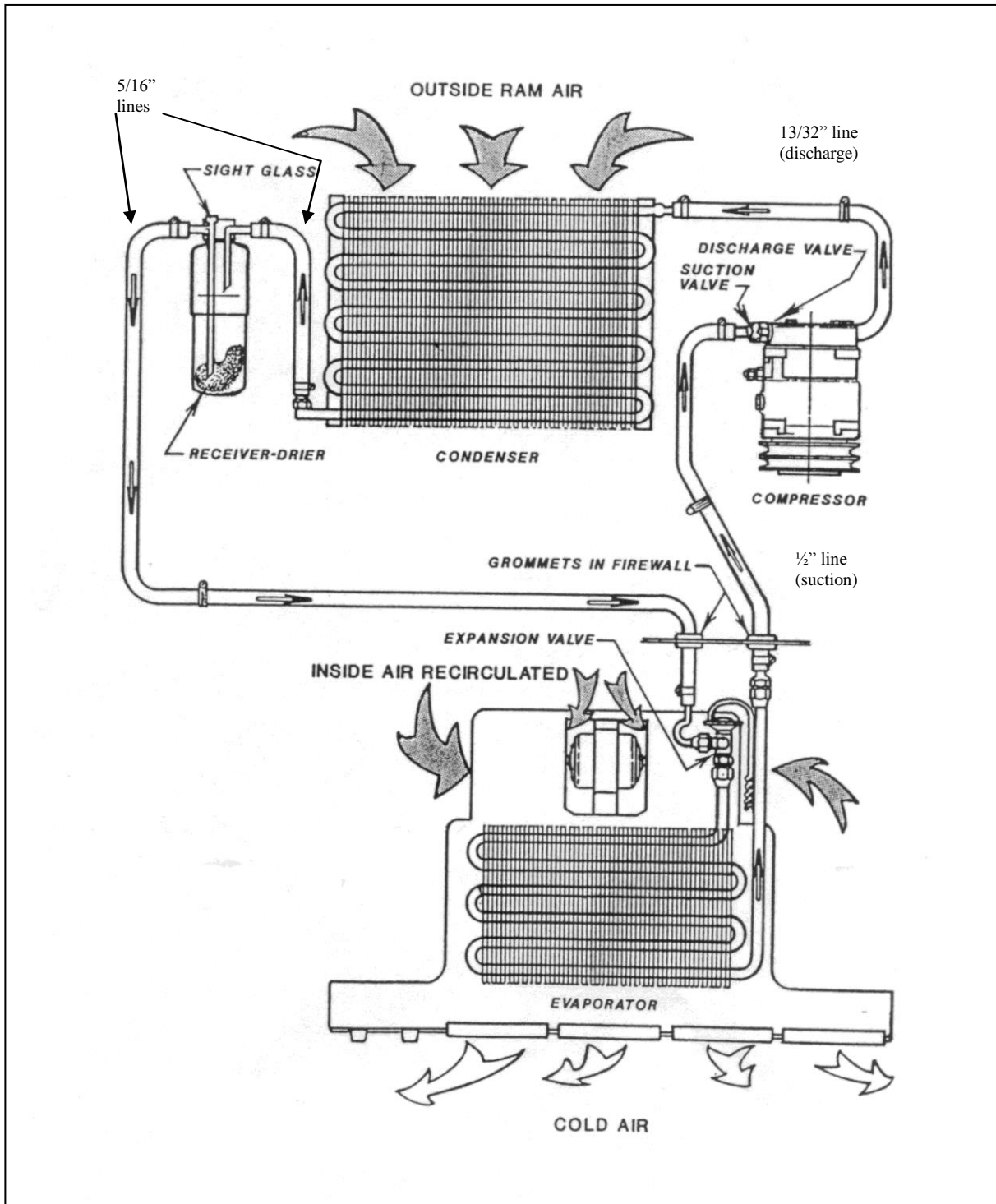
1. The 13/32" (#8) hose with the 134a fitting connects to the discharge side pad fitting at the compressor. This is the side with the binary switch. Do not final tighten until all hoses are in place so you can arrange them to prevent problems. The other end of this hose connects to the condenser coil. A loop should be made in the hose in front of the condenser coil to allow the coil to slide out.
2. The 1/2" (#10) hose should be connected to the evaporator, and now the end with the R134 charge port should be connected to the other fitting at the compressor.(suction side)
3. The 5/16" (#6) hose already connected to the expansion valve at the evaporator coil, with the straight fitting. can now be connected to the dryer.
- 4 The other 5/16" (#6) hose with two 90° fittings should run from the condenser to the inlet side of the dryer. This hose should also have a loop made in front of the condenser coil to allow the condenser coil to slide out.
5. Arrange all hoses to minimize contact, tighten fittings and strap hoses.



## **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 2.5lbs 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.
- 
- 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.

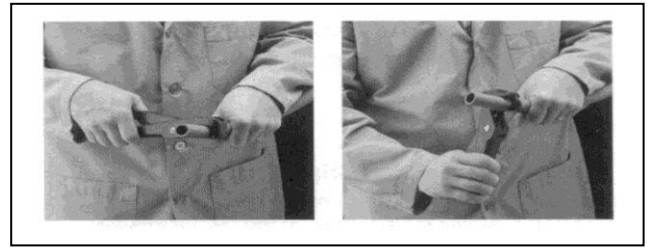
Once the probe is inserted, the A/C system needs to be tested. Run the system to ensure that the thermostat is cycling the compressor off at the appropriate temperature. A core temperature ranging between 25° and 30° F should cause the thermostat to cycle off. The air temperature at the vent outlet closest 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.

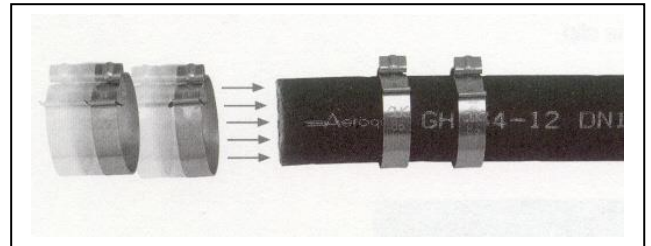


## Aeroquip E-Z Clip Assembly Instructions

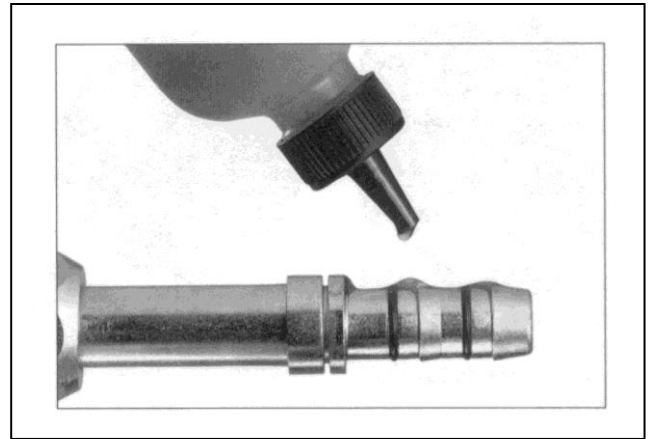
Step 1. Cut the hose to proper length with an appropriate cutting tool. Aeroquip's hand held hose cutter has been specially designed for cutting all non-wire reinforced hose, such as GH-134 Multi-Refrigerant hose. Be sure the cut is made square to the hose length.



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.



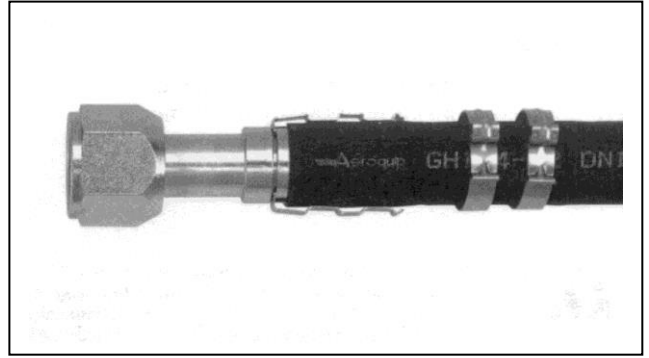
Step 4. Insert the nipple into the hose. To ensure that the nipple is fully inserted, check the gap between the cut end of the hose and the shoulder on the nipple. Care should be taken to avoid kinking or other damage to the hose during nipple insertion.

NOTE: Be sure to wipe excess oil from the nipple and hose.

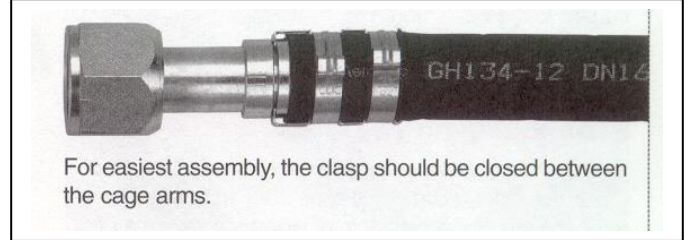
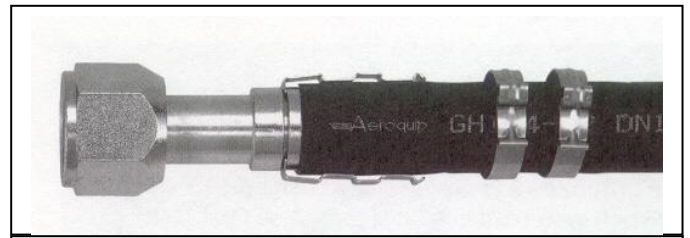


Step 5. Snap the cage into the groove on the nipple. The arms should extend over the hose length. When the cage has been correctly installed in the cage groove, the cage will be able to rotate in the groove. This step **MUST** be performed to ensure:

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.

