

INSTALLATION INSTRUCTIONS

CAT 928/IT28F WHEEL LOADER

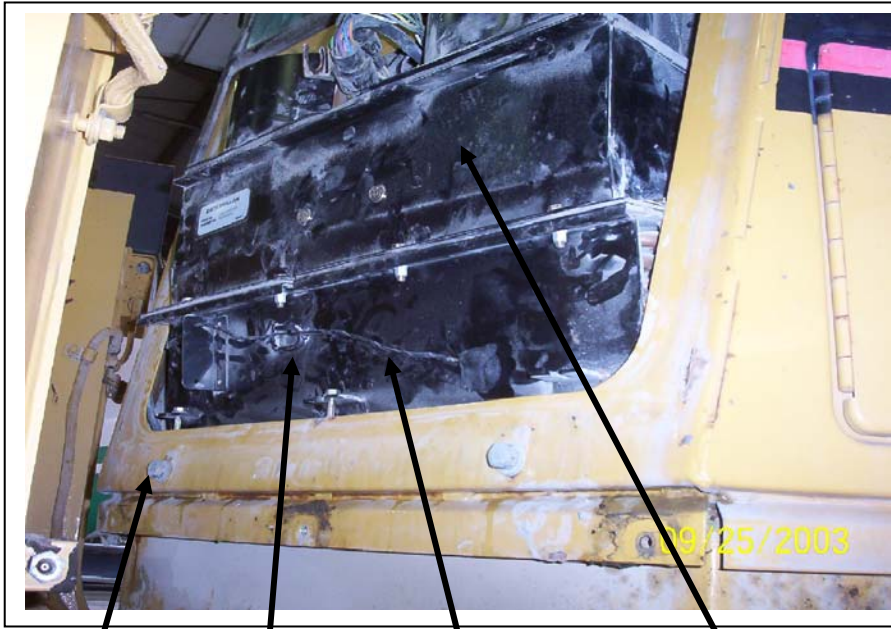


HAMMOND AIR CONDITIONING LTD
INGERSOLL, ONT.
1-800-267-2665
1-888-267-3745 (FAX)

EVAPORATOR COIL:

The evaporator coil mounts with the heater coil assembly, which is mounted in front of the operator's location. This assembly is accessible from the front of the cab.

1. Remove the access panel from in front of the cab. This will allow access to the heater/blower area. Remove the heater box from the machine. It is easier to get the heater box out of the cab if the machine is articulated all the way to the right side.
2. Remove the cover from the heater box and remove the spacer blocks from under the heater. The process is easiest if the heater core is completely removed.
3. Insert the evaporator assembly into location. One end cap is provided to replace the original spacer on the fitting end of the box.
4. Secure the refrigerant lines to the bracket extending down. A new plate is provided with cutouts for the lines. ****The washer nipple will have to be re-installed on the plate****.
5. Re-install the heater core and re-secure the cover.
6. Install the thermostat probe into the coil at this time, as it will be easier than when the unit is back in the machine. There is a hole present for this in the heater core.
7. Remove the knockouts on the bottom of the cab directly below the heater box location. Glue in the copper drain tube pieces using a quick set epoxy.
8. Re-install the heater box and blower box into the cab.
9. After testing , install the front access panel.



Bolts for access cover Heater box Thermostat probe in place through existing knockout Blower box



Heater box removed from cab Heater box lid



Locator pins on box. Trim these two off to 1/8" long to clear the suction header pipe.

End cap

Locator pins on heater coil



End cap flipped over so it cups out to accommodate the evaporator coil

New plate supplied with a cutout for the A/C lines. Reuse the nipple for the window washer hose.

Heater box disassembled



Heater coil back in place

Evaporator coil in place

End cap supplied on evap coil

The A/C pipe work may have to be bent slightly to fit down through the slot



Slotted replacement plate

Use tar tape to seal the area around the A/C lines coming out of the box and through the plate.

Heater cover re-installed



Heater coil

Use silicone or tar tape to seal any air leaks around the end caps.



Reused nipple for the windshield washer hose.

Slotted plate

Seal this area with tar tape



Remove knockouts and glue in copper drain extensions before replacing the heater A/C box.

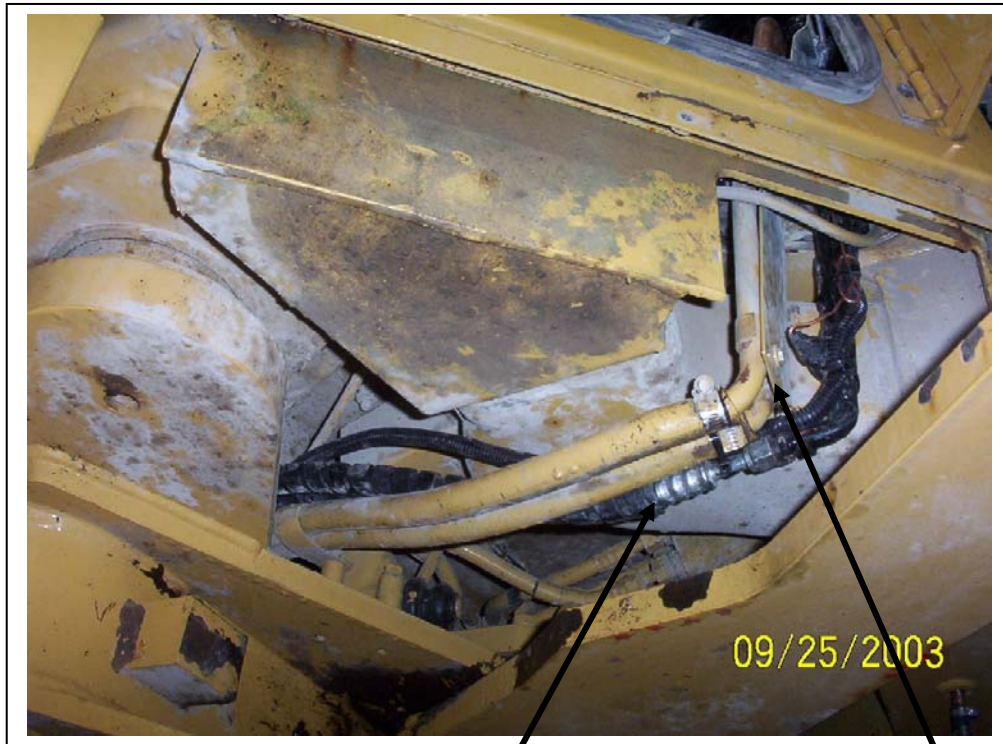


Install short sections of drain tube and restrictor once the epoxy is hard.



A/C hoses connected to the A/C pipes.

RE-connect the heater control cable and run the clutch wire up with the A/C lines through the tar tape.



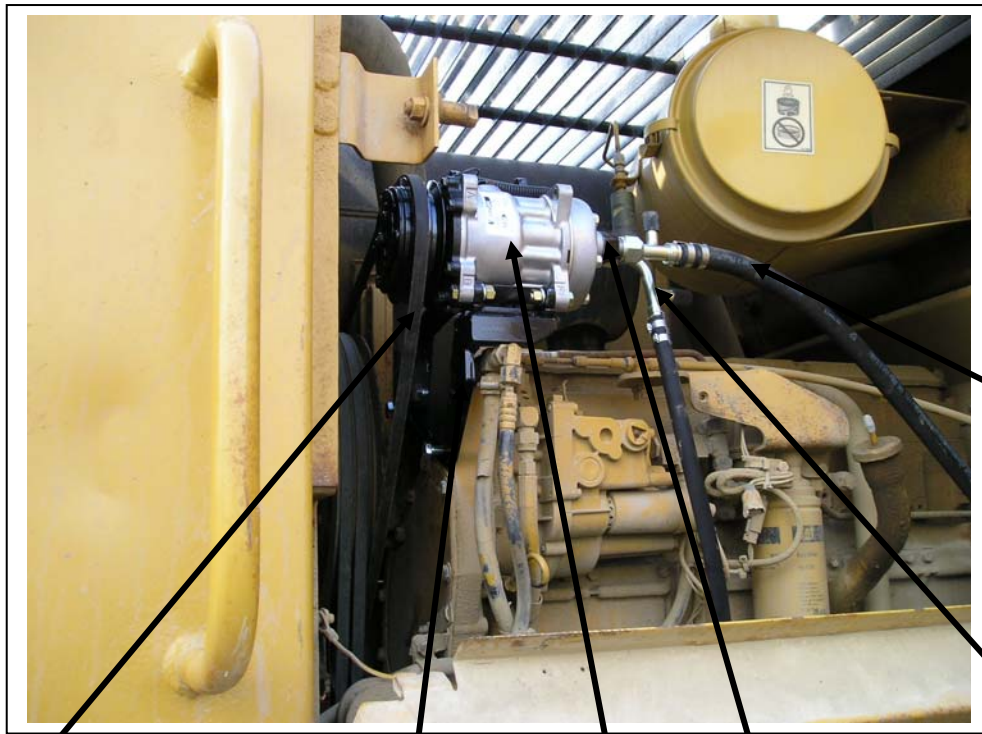
A/C hoses connected and secured to heater lines.

Trim this bracket shorter if required.

COMPRESSOR:

The compressor mounts on the right hand side of the engine and drives off an open pulley on the fan hub. The compressor mount bolts on the factory mount point just ahead of the injector pump.

- 1) Remove the upper half of the fan screen. This will be necessary to make the installation of the drive belt easier. Install the drive belt around the fan hub.
- 2) Re-install the upper fan screen. Before installing the compressor and mount, install the condenser for the fan screen. This is easier without the compressor in place. See condenser mounting instructions.
- 3) Install the compressor mount to the location shown in the pictures using the hardware provided.
- 4) Install the compressor onto the mount, oriented as shown in the pictures.
- 5) Install the belt provided and tighten.



17620 belt driven off an open pulley on the fan hub.

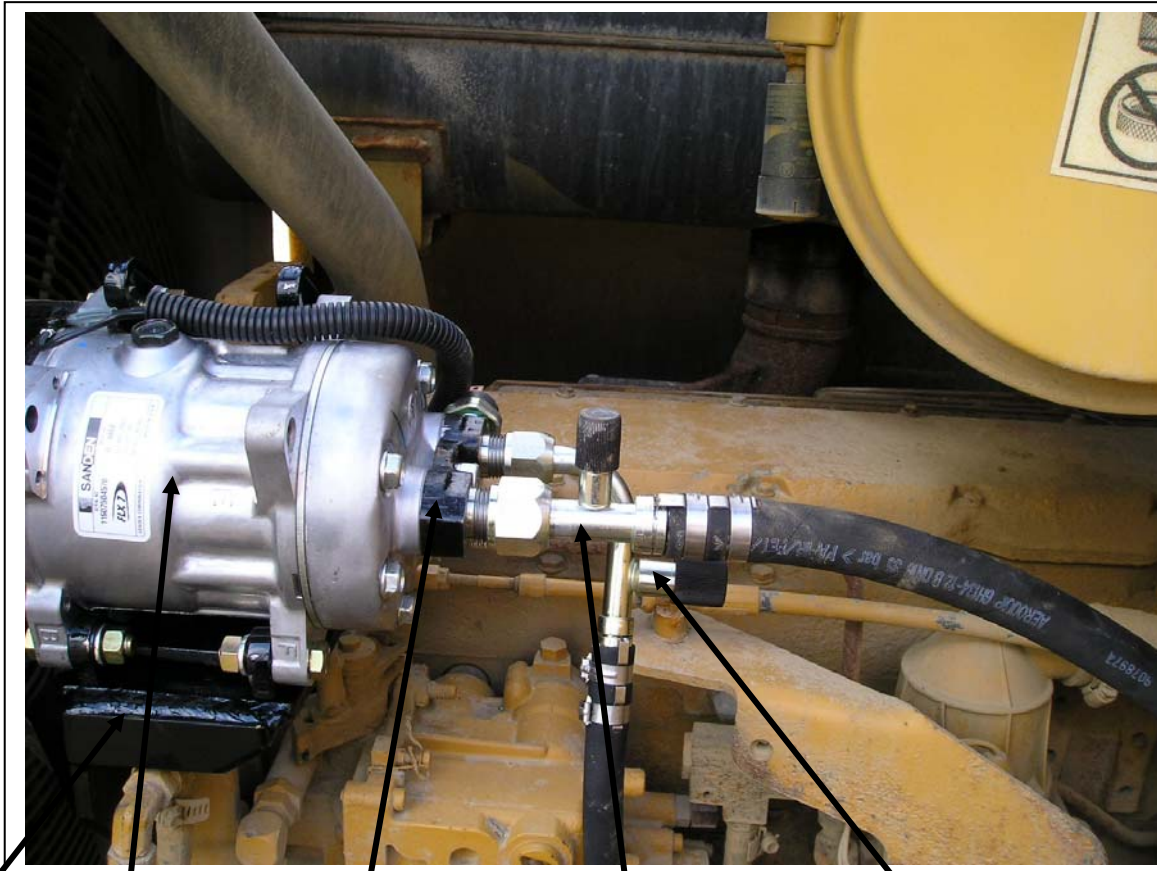
Compressor mount in place secured with five M10 x 25mm bolts.

Compressor

Horizontal "O" ring pad.

90° fitting on 13/32" discharge line.

Straight fitting on 5/8" suction line



Mount.

Compressor

Horizontal "O" ring pad,
complete with binary
switch.

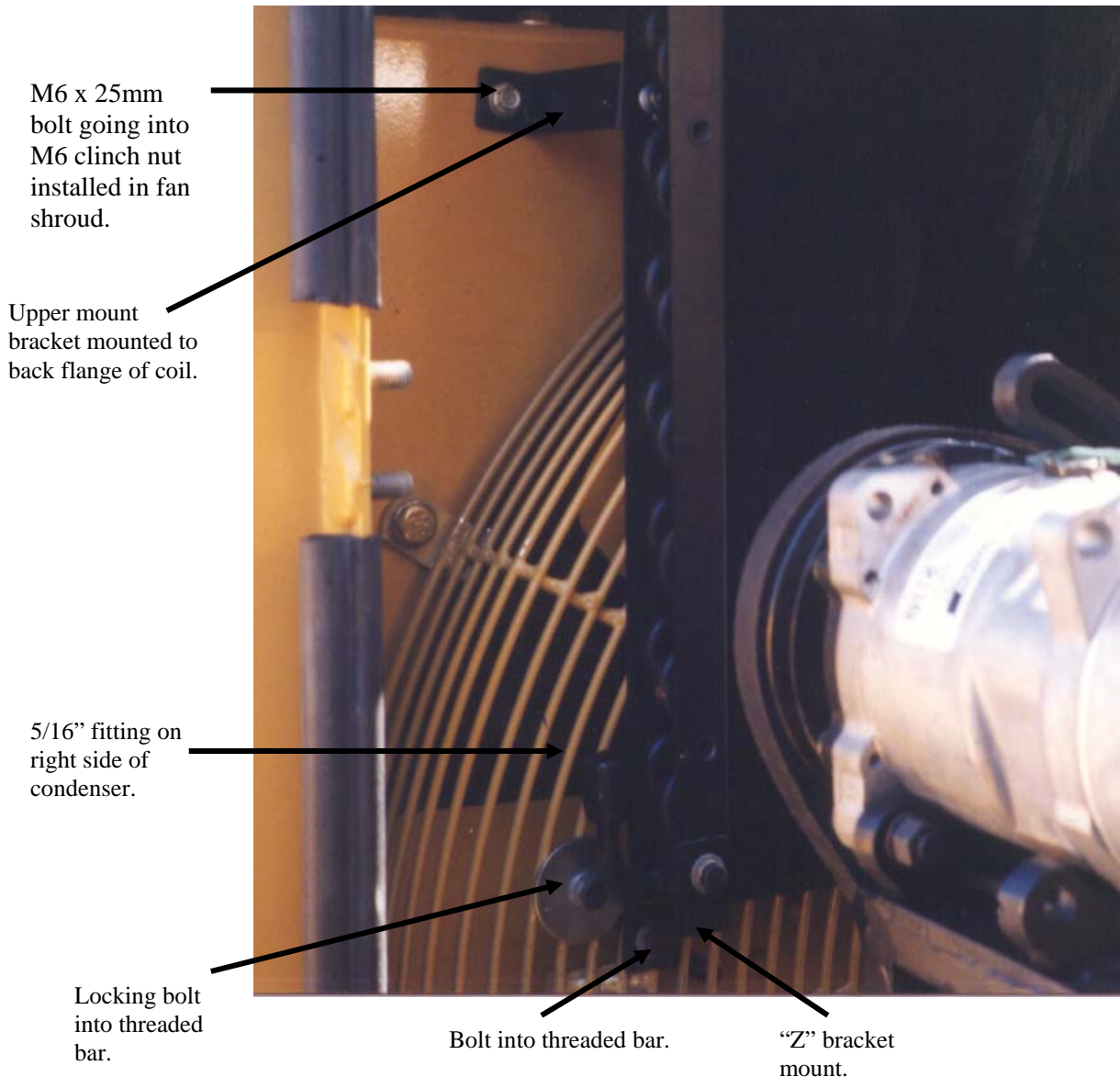
5/8" suction line

13/32" discharge line.

CONDENSER:

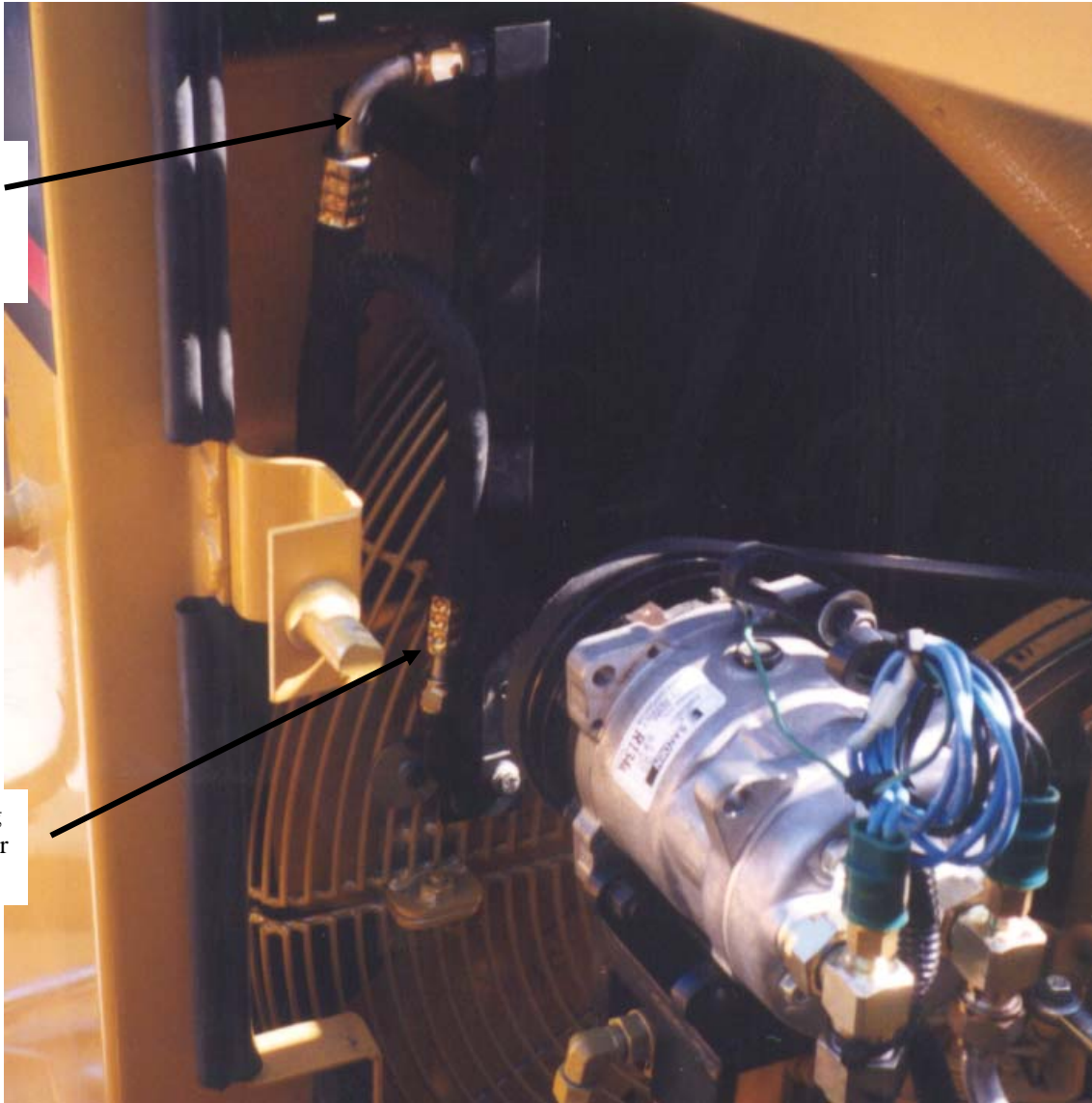
The condenser mounts on the engine side of the fan screen across the top.

1. Set the condenser assembly in place as shown in the pictures.
2. The upper mounting brackets on the condenser must be positioned and the holes then marked for drilling. Drill the marked holes for mounting through the radiator shroud to 3/8". Install the M6 clinch nuts into the holes.
3. The lower mounting arrangement is the locking bar set-up standard for the fan screen mounting arrangements. Insert the slightly bent locking bars through the fan screen and tighten into place. Thread the locking bolt with the large flatwasher into the open threaded hole on the bar and tighten into place.
4. Bolt the upper brackets into place with the hardware supplied.



The left side of the condenser mounts in the same way.

This 13/32" 90° fitting has been replaced with a 45° fitting.

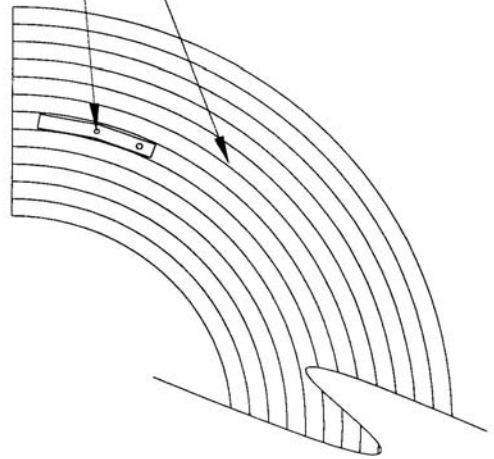


5/16" straight fitting on bottom condenser fitting.

Right side of condenser assembly with hoses in position.

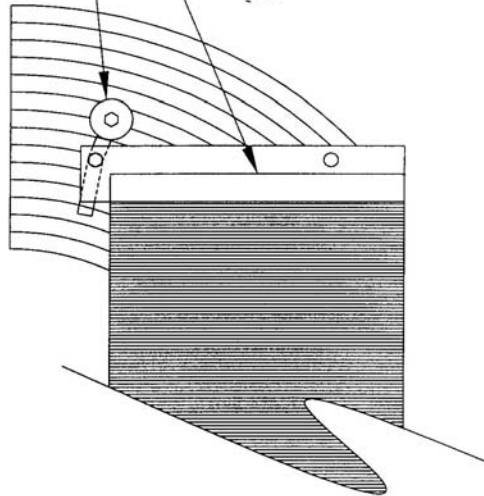
SLIP THE SPINLOCK
BETWEEN THE FAN
SCREEN BARS

FAN SCREEN
SPINLOCK



AND ROTATE 90 DEG.
AND TIGHTEN DOWN

CONDENSER
FENDER WASHERS



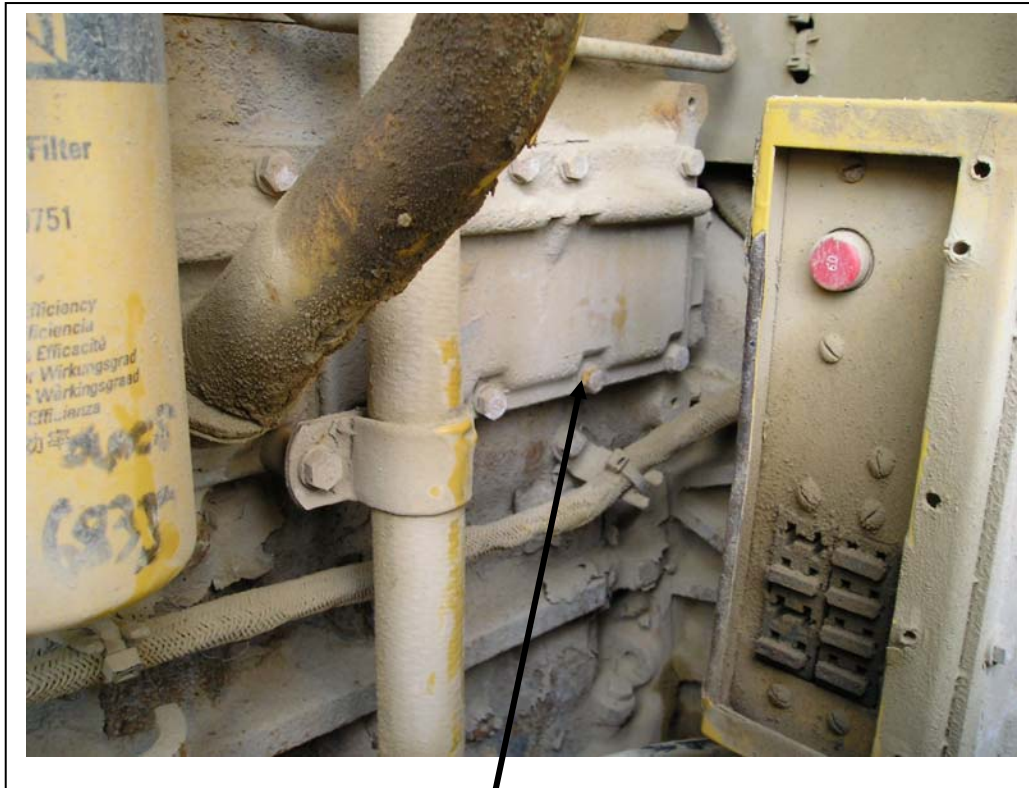
DRAWING TITLE:
SPINLOCK INFO.

DRAWN BY:	J.S.
APPROVED BY:	J.L.
MODIFIED ON:	MAR. 15, 2002
REV.:	0
UNITS:	S.A.E.

RECEIVER DRIER:

The receiver drier is mounted on an existing M8 bolt in the location shown in the picture below.

1. The straight drier bracket is bolted to an existing M8 bolt hole with hardware supplied.
2. Attach the drier to the bracket with the two #48 gear clamps provided.
3. Orient the drier so the 'INLET' fitting is toward the condenser.

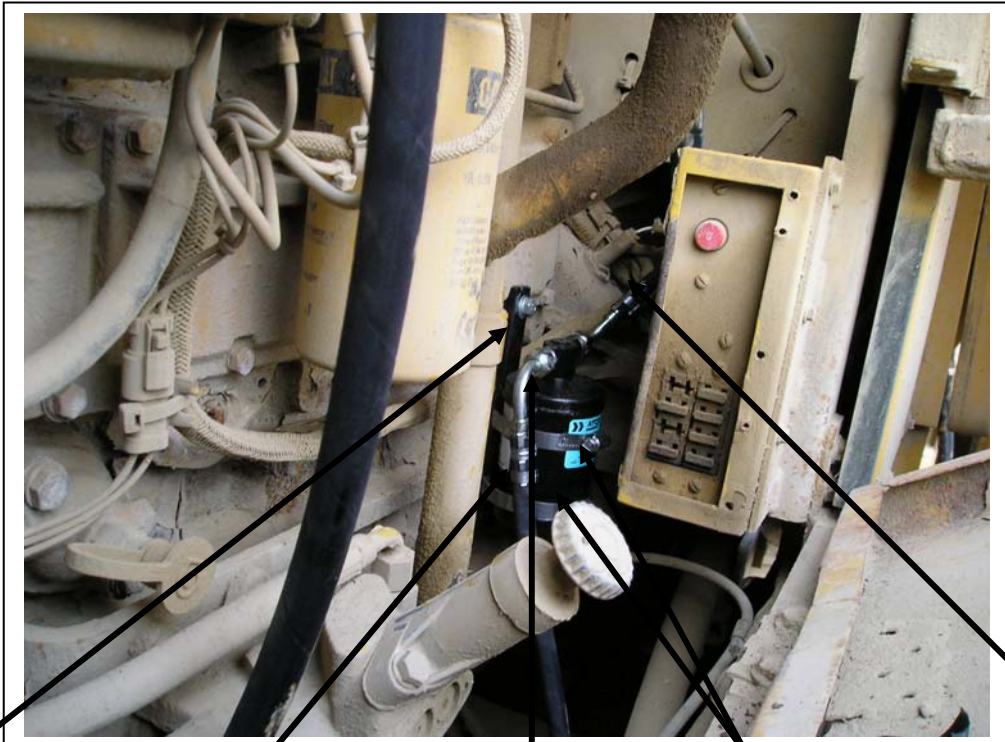


Receiver drier bracket mounts off this M8 bolt.



M8 bolt and 1/4" thick spacer
behind mount bracket.

Straight drier bracket.



Drier mount bracket

Receiver Drier.

5/16" 90° fitting
on inlet of drier.

Two gear clamps
securing drier to
the mount bracket.

5/16" 45°
fitting on
outlet of
drier.

HOSE ROUTING AND INSTALLATION

The hoses and fittings necessary for installation are supplied complete.

13/32" Hose Compressor to Condenser:

Install the pre-crimped 90o fitting with the 134a charging port to the compressor pad. Route the hose to the condenser and install the 45° fitting to the top fitting on the condenser.

5/16" Hose Condenser to Drier:

The liquid lines comes pre-assembled. The longer section of hose runs from the condenser to the drier. Connect the straight fitting to the condenser and loop the hose down with the 13/32" hose and up to the drier. The 90o fitting connects to the drier. On the longer hose, connect the 90o fitting to the outlet side of the drier and run forward under the cab to the front of the machine. Connect the straight fitting to the evaporator fitting under the cab.

5/8 Hose Evaporator to Compressor:

The suction line runs from the compressor to the evaporator outlet fitting. The straight fitting with the charging port attaches to the compressor suction pad. The hose is routed forward with the 5/16" line and connects to the evaporator outlet fitting. Run the 14g black clutch wire in loom along with the 5/8" line.

*****NOTE*****

Use O-ring seals on all fittings and lubricate with a small amount of refrigerant oil.

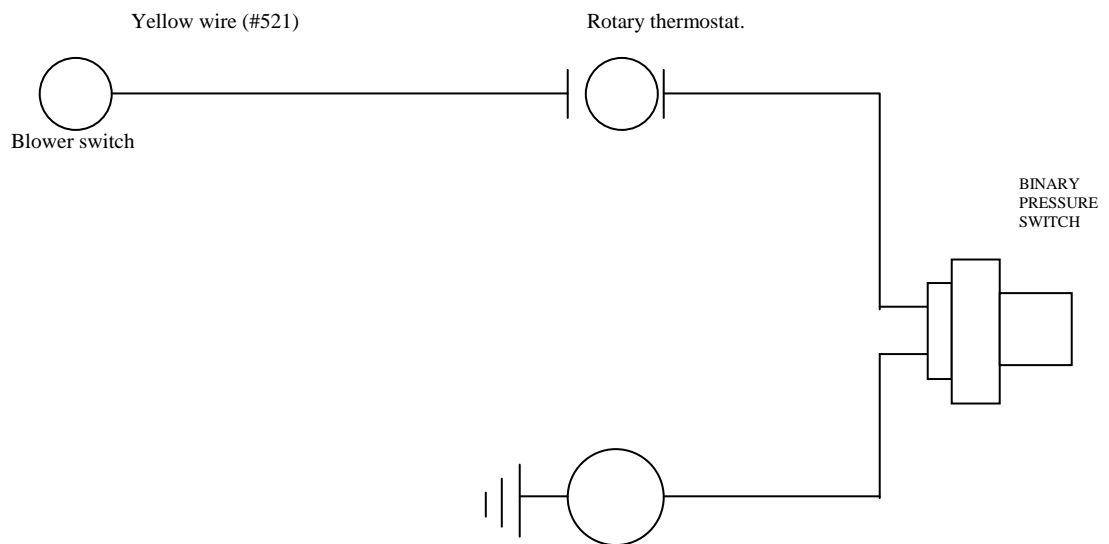
Hosewrap and secure the hoses where required to prevent chafing and rub through.



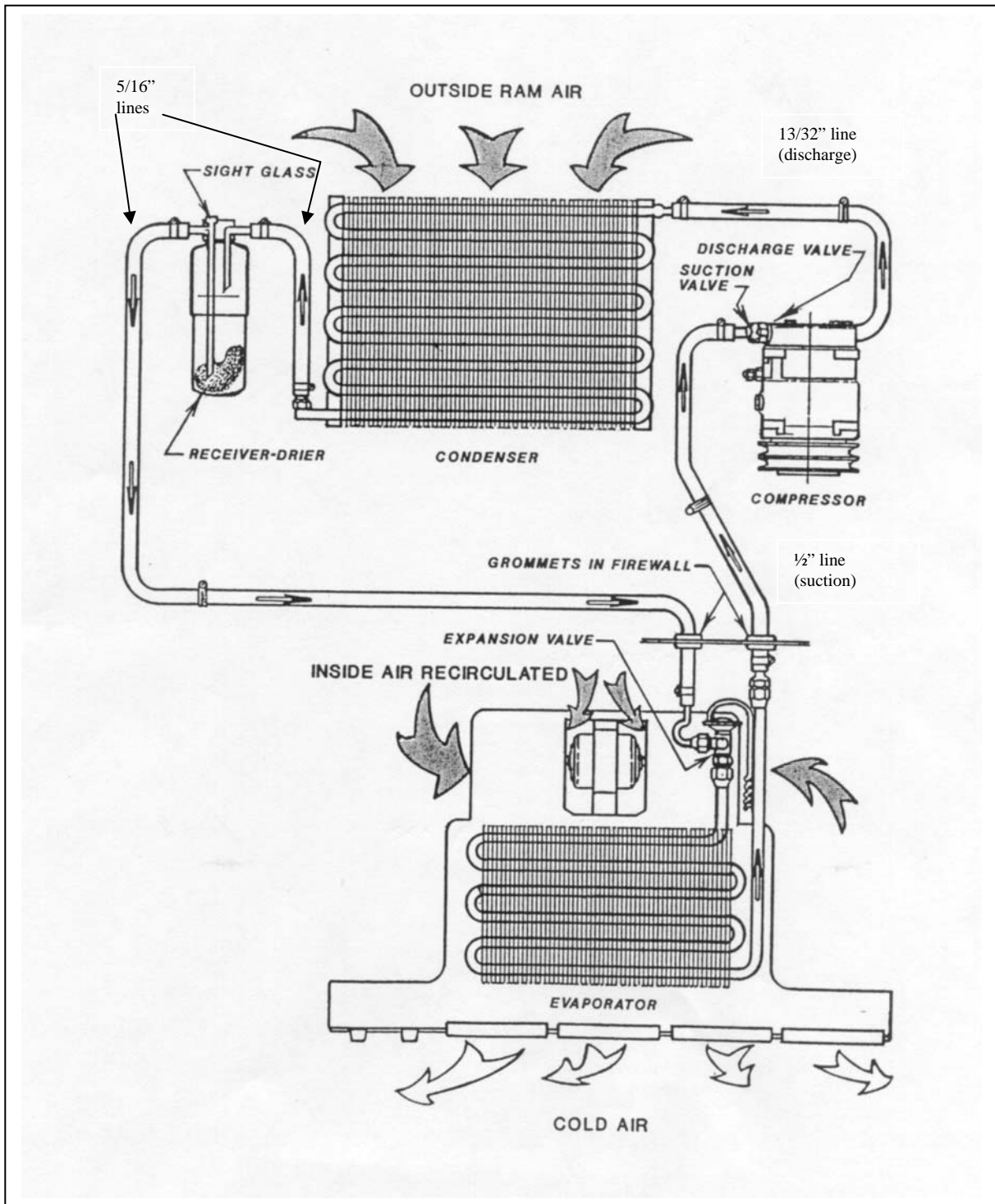
Hoses under cab.

ELECTRICAL:

Mount the thermostat on the evaporator cover somewhere near the blower motor. Find the yellow (#521) clutch wire running off the blower switch, it will be live in all blower positions on the A/C side of the switch, and cut the wire out of the bundle. Extend the wire with enough length to reach the thermostat terminal. Crimp on a female spade connector and install the wire to the thermostat. Connect the 14ga black clutch wire to the other terminal on the thermostat and route it down out of the heater compartment and along with the 5/16" hose. At the pressure switch, connect the clutch wire to the press switch terminal. Connect the wire from the compressor to the other terminal of the pressure switch.



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.

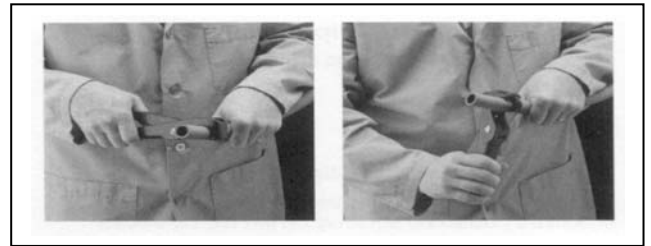
By looking at all these different factors, the area of an evaporator coil most likely to be the coldest can be determined.

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.

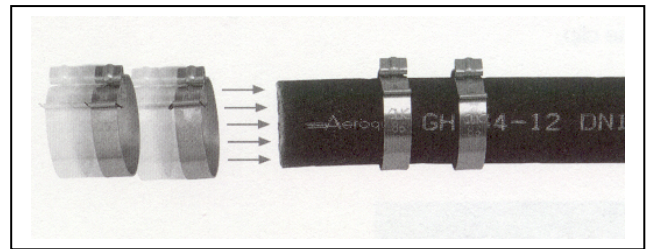
If the thermostat doesn't cycle off after a reasonable cool down period, and the air outlet temperature has dropped below 40° F, the cut in and cut out settings should be adjusted until the compressor is cycling on and off regularly. Let the system run for a decent time period (at least 15 min) and then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

Aeroquip E-Z Clip Assembly Instructions

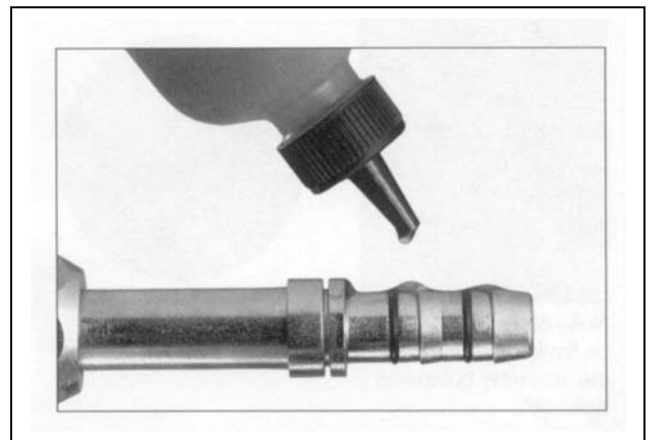
Step 1. Cut the hose to proper length with an appropriate cutting tool. Aeroquip's hand held hose cutter has been specially designed for cutting all non-wire reinforced hose, such as GH-134 Multi-Refrigerant hose. Be sure the cut is made square to the hose length.



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.

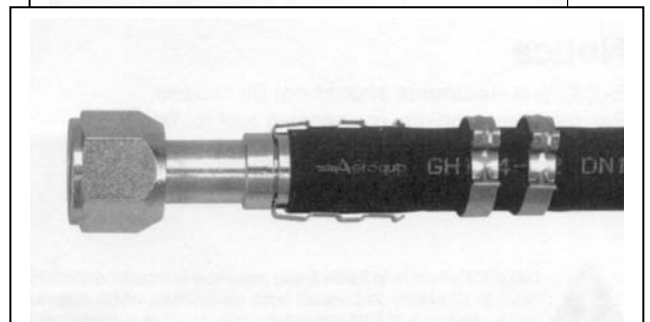


Step 4. Insert the nipple into the hose. To ensure that the nipple is fully inserted, check the gap between the cut end of the hose and should be taken to avoid kinking or other damage insertion.

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

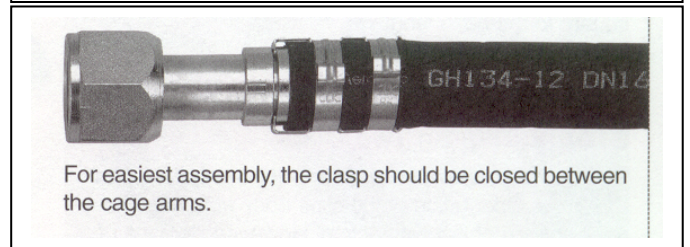
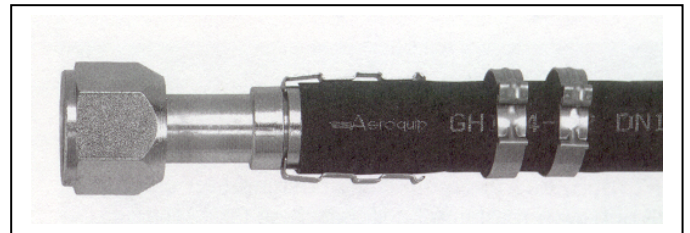


correctly installed in the cage groove, the cage will be able to rotate in the groove.

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.

