

INSTALLATION INSTRUCTIONS

FOR

AIR CONDITIONING CAT D7H

MODEL SEQUENCES: 79Z, 4AB, 5BF, 2RG, 80Z, 5WB, 4FG, 3XG, 77Z, 82Z

HAMMOND AIR CONDITIONING LTD
INGERSOLL, ONT, CANADA
1-800-267-2665

EVAPORATOR COIL: The evaporator coil mounts in front of the heater coil directly ahead of the cab windshield.

1. To access, remove the filter intake cover and the air filter coil and A/C hose knockouts. Loosen the two bolts that hold the heater coil in.
2. Insert the evaporator core into the area in front of the heater coil. Line the slots on the mounting flanges on the evaporator coil up with the two bolts that held the heater coil in place.
3. Tighten down the heater bolts to clamp the evaporator into position.
4. Seal any air gaps around the top or sides of the coil.
5. Leave covers off until the thermostat has been installed and the system has been tested for leaks.



Evaporator in place alongside heater coil.



Top of evaporator assembly in heater box.



Evaporator assembly showing hoses.



Evaporator cover in place with thermostat.

THERMOSTAT: The thermostat mounts in the factory position on the front dashboard.

1. Open the control panel in front of the operator's position to access the wiring and set-up locations for the thermostat.
2. Locate the factory position for the thermostat (see photograph) and cut out the covering over the mounting hole. Make sure the thermostat has the backing nut in place before installing. Insert the thermostat into the hole. Tighten down the securing nut and install "Temp" knob.
3. Run thermostat probe out of the cab (through the factory knockout) into the evaporator coil area. Insert the probe into the evaporator coil about 6".



Thermostat in location on dash control panel.

RECEIVER DRYER: The receiver drier is mounted at the back of the engine compartment.

1. Mount the dryer bracket in the position indicated in the installation pictures with the hardware provided.
2. Secure the dryer to the mount using the large gear clamps provided. Ensure that the inlet side of the dryer points towards the right hand side of the machine.



Drier in location with hoses run.

COMPRESSOR: The compressor mount is bolted to the lower right side engine bracket. There are pre-threaded mounting holes in place.

1. Remove the side panels on the right hand side of the engine compartment to gain access to the compressor mount area at the bottom of the engine on the engine mount bracket.
2. Bolt the compressor mount to the two (2) threaded holes and to the one through hole using the hardware provided in the kit. It may be necessary to clean out the threads on the threaded holes using an appropriate tap.
3. Place the compressor on the mount with the oil fill port oriented up and slightly away from the engine. Loosely secure with the hardware provided.
4. Remove the rotolock fitting covers on the back of the compressor. Insert the white nylon seals into the square cut grooves in the compressor fittings and put on the rotolock service fittings. **MAKE SURE THAT THE FITTING WITH THE SMALLER OUTLET FITTING IS ON THE DISCHARGE (D) COMPRESSOR PORT AND THE LARGER OUTLET FITTING IS ON THE SUCTION(S) PORT.** Tighten finger tight until the hose fittings are on, and then secure tightly.



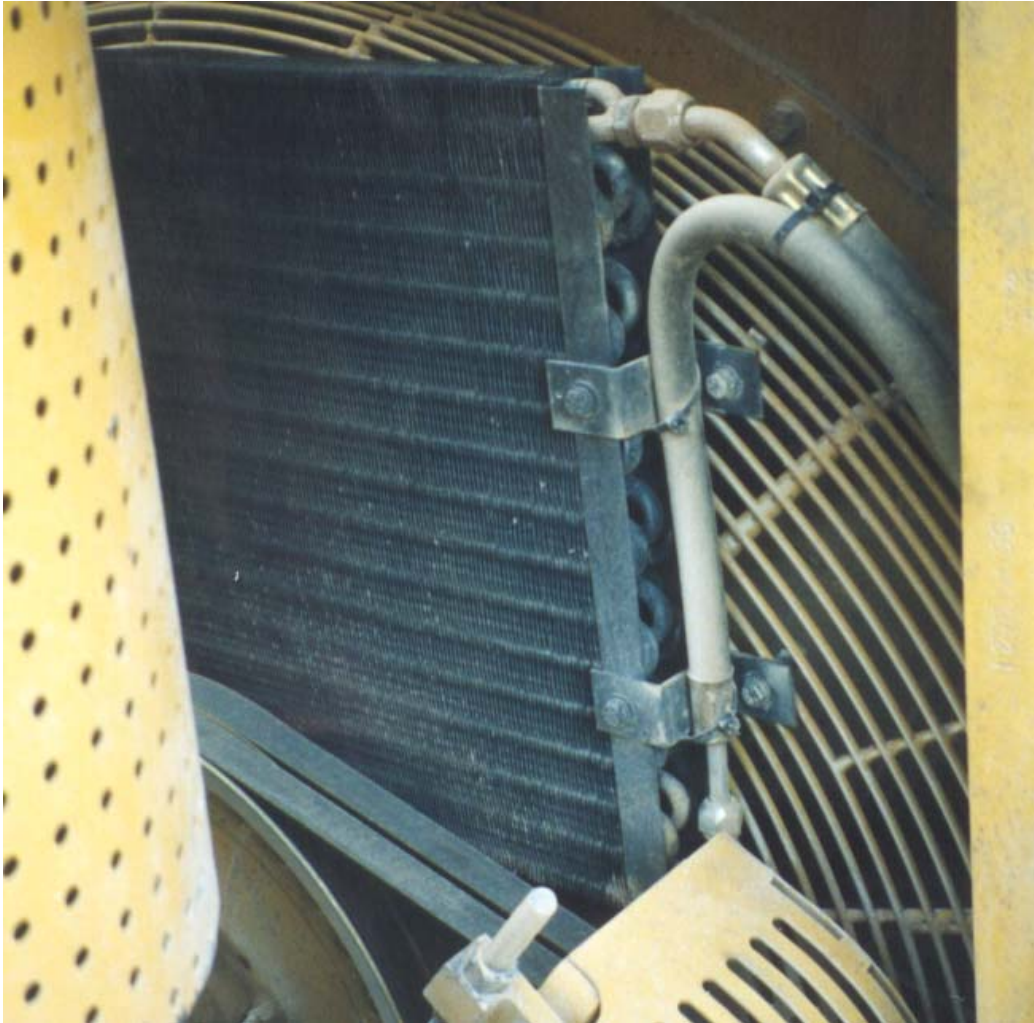
Compressor mount and compressor in place. (Old style compressor)



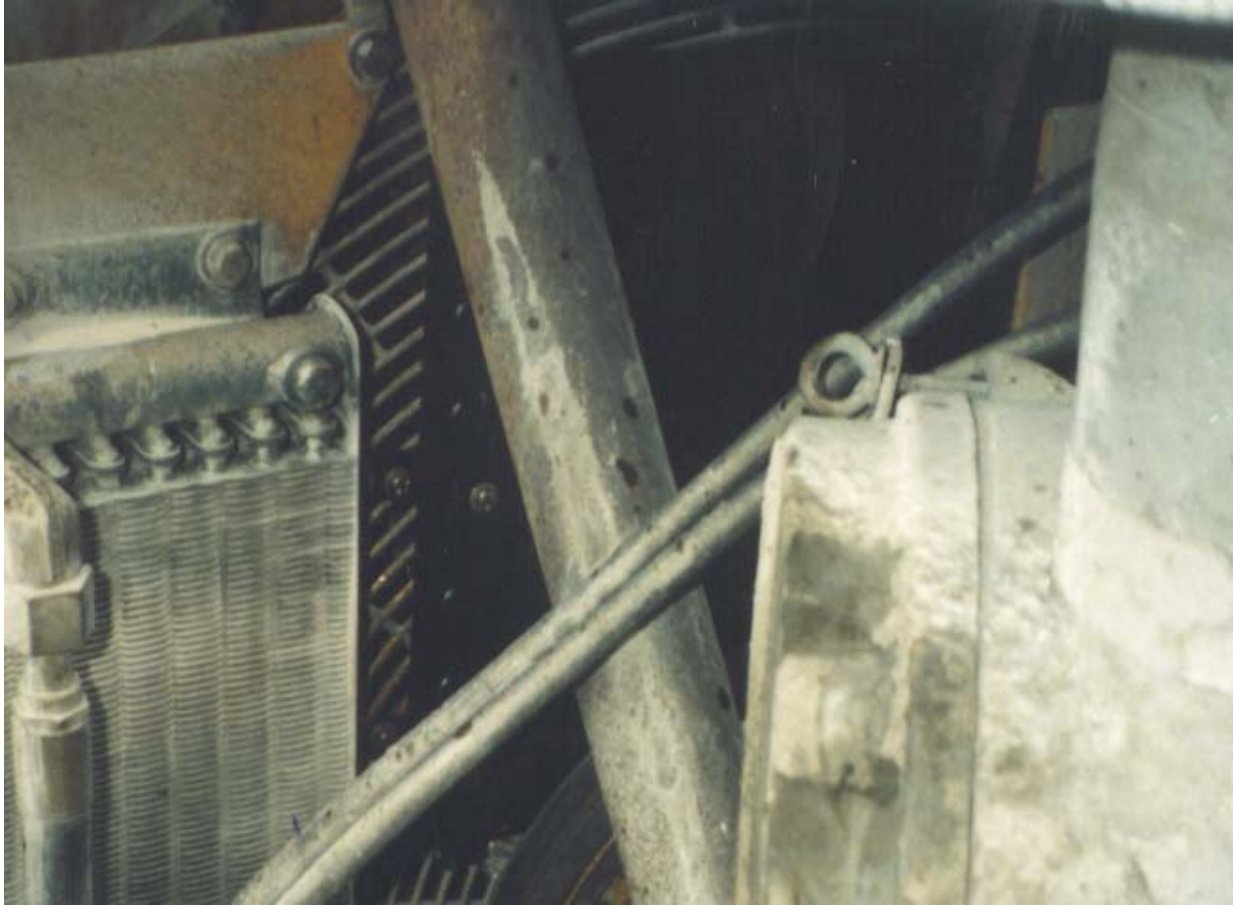
Compressor mounted in place - new style compressor.

CONDENSER COIL: The 16" x 20" 3 row condenser is located on the fan screen just above the fan hub assembly.

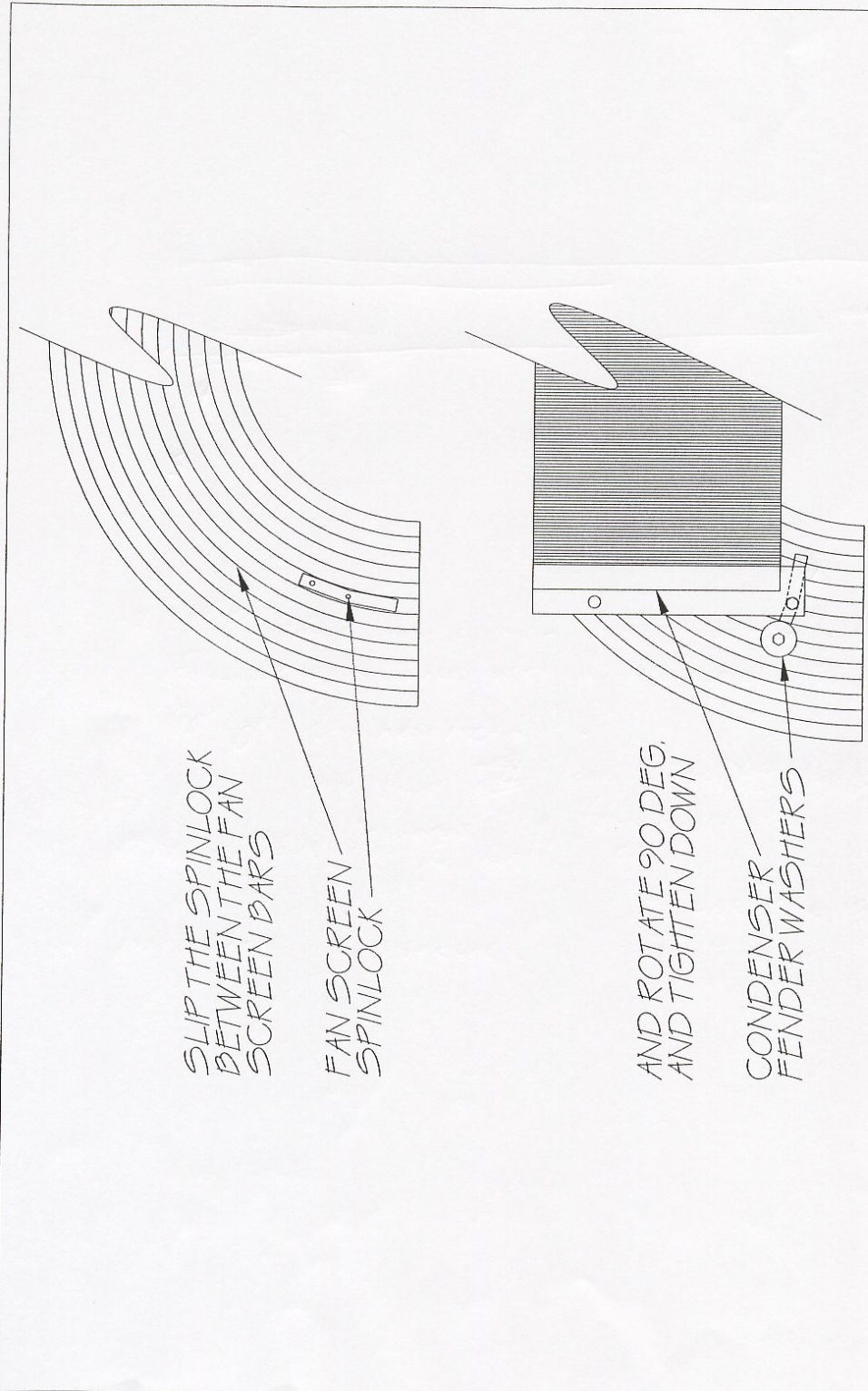
1. With the condenser and brackets assembled, hold the compressor in the desired location with the fittings toward the right side of the machine (as shown in the pictures). The larger of the fittings should be on the top.
2. Align the slightly bent 3/8" square hold down bars so they can be inserted through the fan screen. Rotate the locking bars so that they are crosswise to the fan screen bars. Make sure the locking bolt holes are accessible through a different location on the screen.
3. Tighten the pivot bolts down and then tighten down the locking bolts (use the large OD flatwashers on these bolts).



Right side of condenser in place with hoses and fittings.



Left side of the condenser with hold down brackets in place.



SLIP THE SPINLOCK
BETWEEN THE FAN
SCREEN BARS

FAN SCREEN
SPINLOCK

AND ROTATE 90 DEG.
AND TIGHTEN DOWN

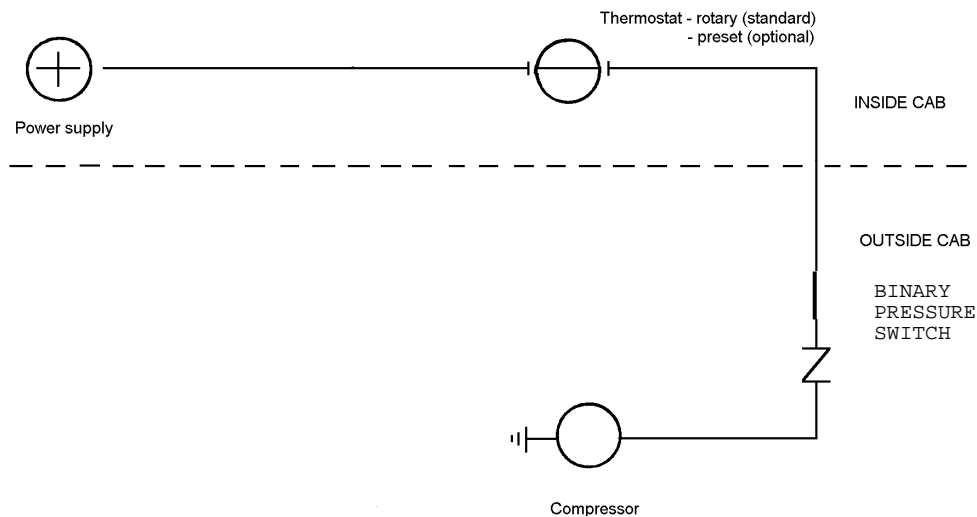
CONDENSER
FENDER WASHERS

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

ELECTRICAL:

The wiring set-up used in this system is designed to be very straightforward to install and understand.

1. The thermostat is mounted in, or behind, the panel as described above and draws power from the blower switch. The blower switch will have one position that is live when the switch is in any of the 'Air Condoning' blower positions.
2. Cut the yellow wire coming off this post into the wiring bundle long enough to reach the thermostat. Crimp a #14 female spade terminal to the end and connect to the thermostat.
3. Run the black 14 gauge clutch wire (with loom) out into the heater box along with the thermostat probe. The probe is inserted into the coil through the hole in the cover plate and at lease 6" into the coil.
4. The clutch wire runs out of the heater box with the suction hose and runs up to the compressor where the pressure switches are located.
5. Connect in series through the switches (order is not important) and connect to the compressor lead.



HOSE RUNS: All the hose fittings have been pre-assembled and tested for leaks.

5/16" hose condenser to drier:

Connect the straight hose fitting to the lower fitting on the condenser and route up and around as shown in the condenser pictures. The hose follows down the side of the fan screen and along the side of the engine to the 'INLET' fitting on the drier. Connect the 90o fitting, on this end of the hose, to the fitting on the drier.

5/16" hose drier to expansion valve:

Connect the 90o fitting on the hose to the 'OUTLET' fitting on the drier. Route the hose up around the back of the engine to the evaporator inlet cap plug. The cap plug will have to be slit as shown below to get the hoses through. Connect the straight fitting up to the expansion valve.

13/32" hose compressor to condenser:

Connect the 90o fitting with the 134a charging port up to the rotolock fitting on the discharge side of the compressor. Route the hose down to the frame and then up along the side of the engine screen. Tie to the fan screen with the 5/16" hose and connect the 45o hose fitting to the top fitting on the condenser as shown in the condenser pictures.

Suction hose compressor to evaporator:

Connect the 90o fitting with the 134a charging port up to the rotolock fitting on the suction side of the compressor. Route the hose down to the frame (with the 13/32" hose) and back along with the 5/16" hose to the evaporator assembly. Route the hose through the cap and connect to the outlet side of the evaporator.

IMPORTANT: Make sure "O" rings are used on all fittings. Use refrigeration oil on all "O" rings to achieve a proper seal.

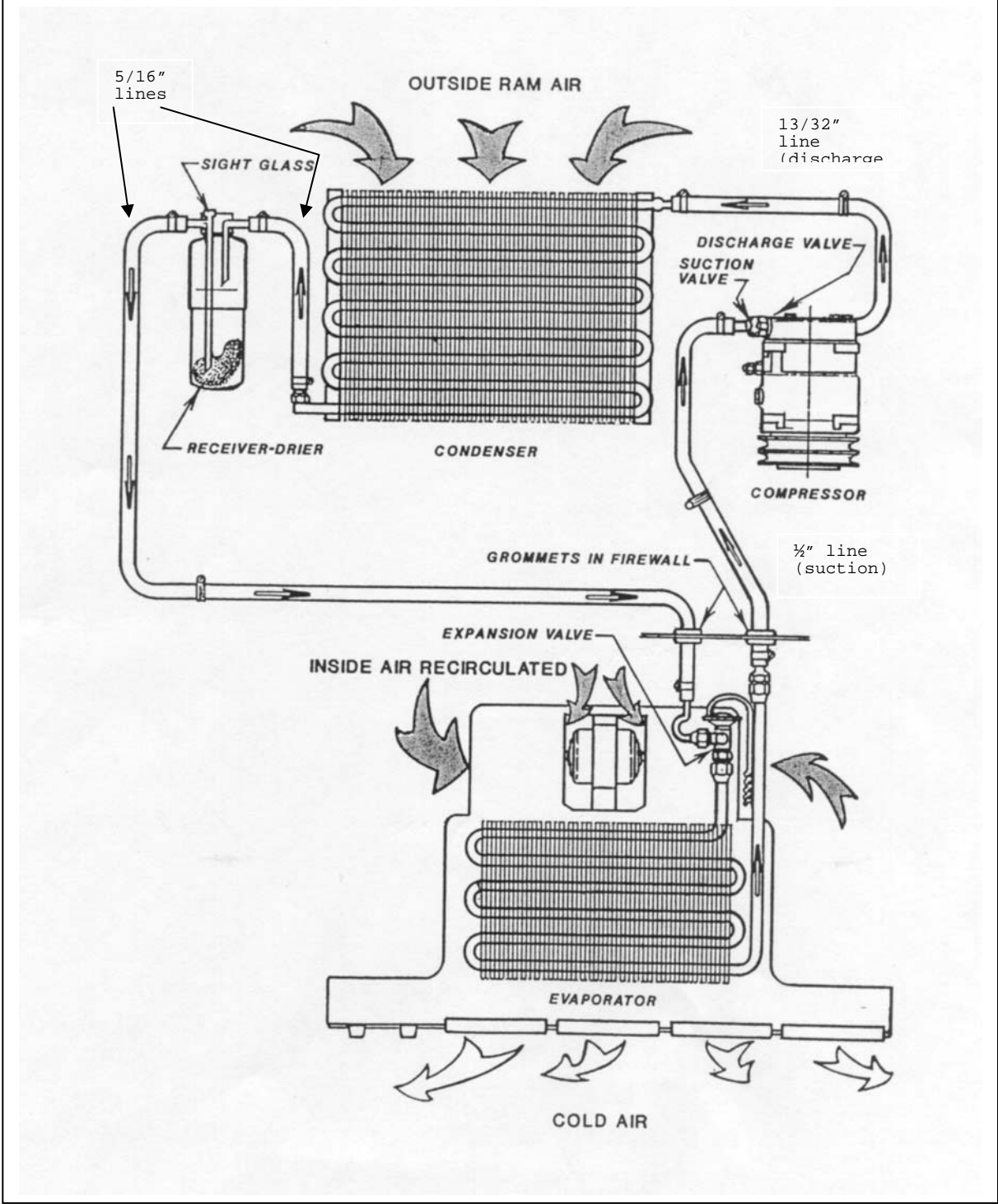


Hoses into evaporator box with clutch wire in background.



Condenser hose routing down fan screen.

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.
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- 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.

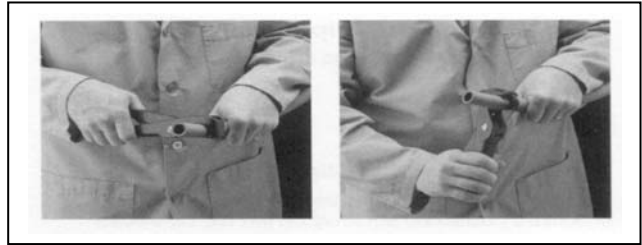
By looking at all these different factors, the area of an evaporator coil most likely to be the coldest can be determined.

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.

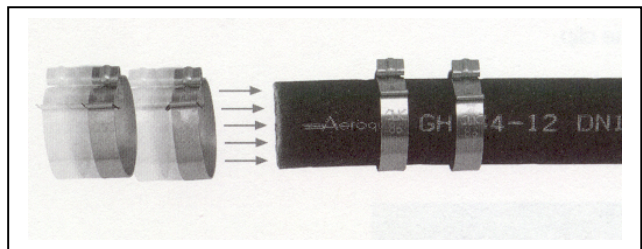
Assembly Instructions

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.

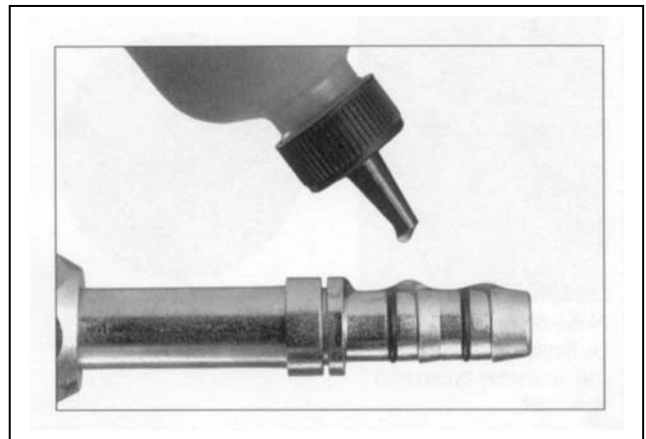


Step 2. Install two proper-sized clips onto the cut end of the hose. Orientation of the clips does not affect the performance of the connection. However, for ease of assembly, both clips should have the same orientation.

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.



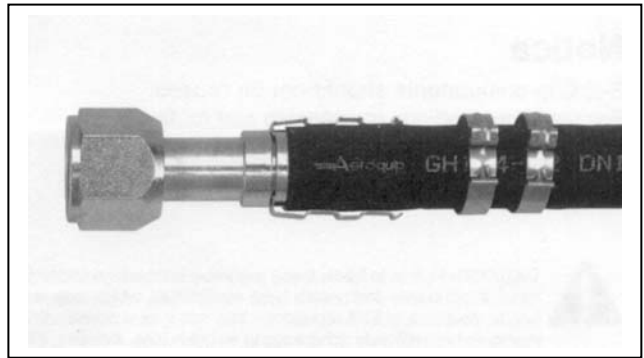
Step 4. Insert the nipple into the hose. To ensure that the nipple is fully inserted, check the gap between the cut end of the hose and the shoulder on the nipple. Care should be taken to avoid kinking or other damage to the hose during nipple insertion.

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

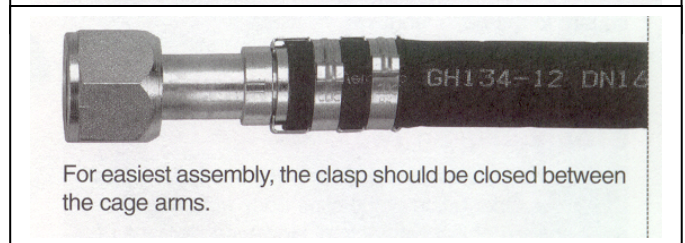
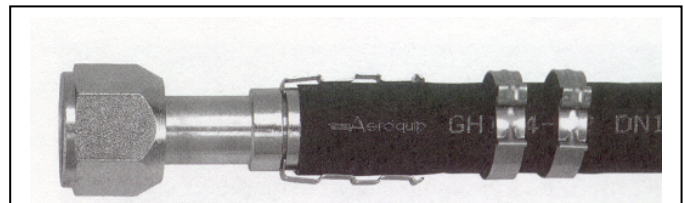


Step 5. Snap the cage into the groove on the nipple. The arms should extend over the hose length. When the cage has been correctly installed in the cage groove, the cage will be able to rotate in the groove. This step MUST be performed to ensure:

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.

