

CAT
M318D/M322D
MATERIAL HANDLER



PHONE: (519) 485-5961 OR 1-800-267-2665

FAX: (519) 485-3745 OR 1-888-267-3745

EVAPORATOR



Switch box to mount here.

Remove this lid from storage area behind the seat. Clean out everything and discard the lid.

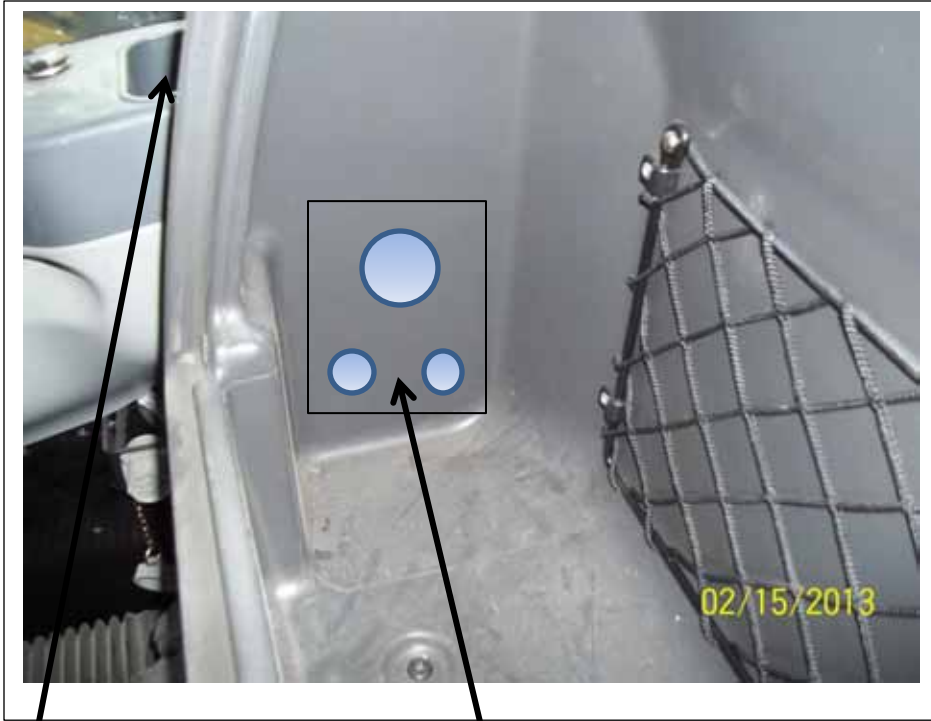


Pull pins to remove the lid completely



Cut plastic here

Remove these two screws and discard.
Lower evaporator bolts will fasten here.



Control panel will mount outside compartment.

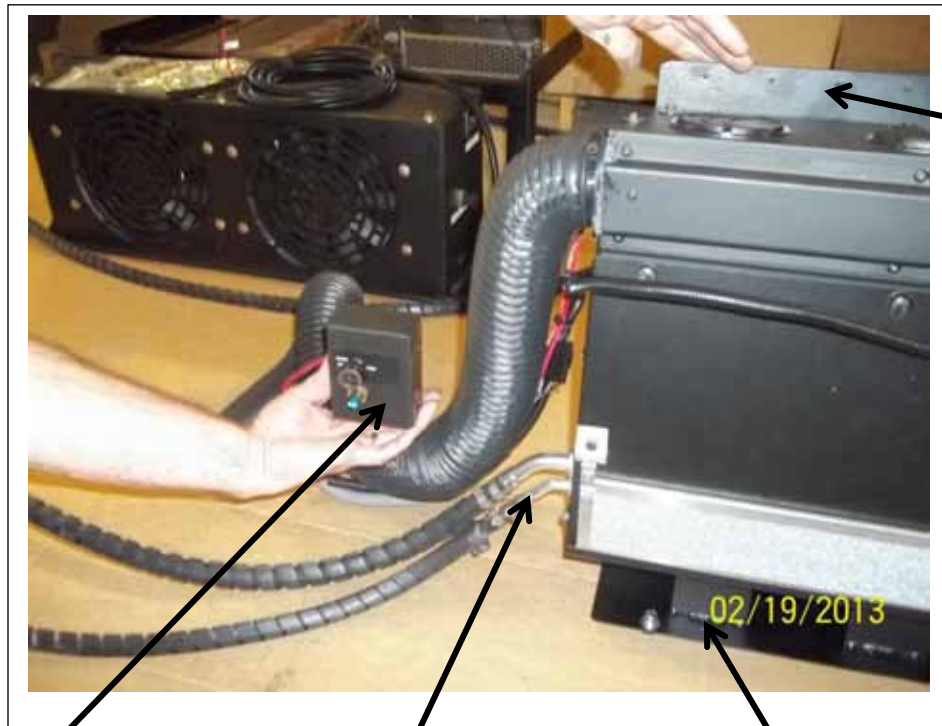
Cut this plastic away for 2 ½" flex hose AC lines and electrical.



Split this duct and insert the plastic pipe so the 2 ½" flex hose can connect and blow air to the front.



Split the duct going to the front of cab and insert this pipe into it. Use the foam to create a good seal.



Top mounting plate. Drill and screw into plastic to secure evaporator.

Mount the switch box at a comfortable location outside the storage bin.

The electrical, flex hose, AC lines and drain hoses will all go out the storage bin near the bottom.

Lower mount plate.

COMPRESSOR



Replace the existing compressor with the one supplied.



Compressor plate is already installed.

The fittings should be installed as show once the AC hoses have been cut to length.

Pressure switch



HEAVY DUTY CONDENSER ASSEMBLY: (pictures from a CAT Dozer)

The condenser is designed to be mounted off the back of the cab with the 'Z' brackets included in the kit. Use the hardware provided.

1. Set the brackets in place to ensure the assembly is going to clear. The bracket also has two bolt down flanges that attach to the factory bolt points on the outside of the back of the cab.
2. Mark and drill the bolt holes for mounting the brackets and set in place. Surround the bolt holes with silicon to prevent leakage and secure the brackets into place. Seal the bolts heads with silicon as well.
3. Mount the condenser to the brackets as shown in the pictures and secure with the hardware provided.
4. Route and secure the hoses as shown.



Condenser mounted with brackets in place.



Condenser assembly viewed from side.



Condenser assembly viewed from back of machine.



Condenser with drier
mounted inside the box.

Condenser mounting bracket.

The condenser can mount directly on the roof or use the “Z” to hang off the back of the roof as on previous pictures from a Cat Dozer. Drill and tap the mounting holes in the roof or drill through and use nuts.



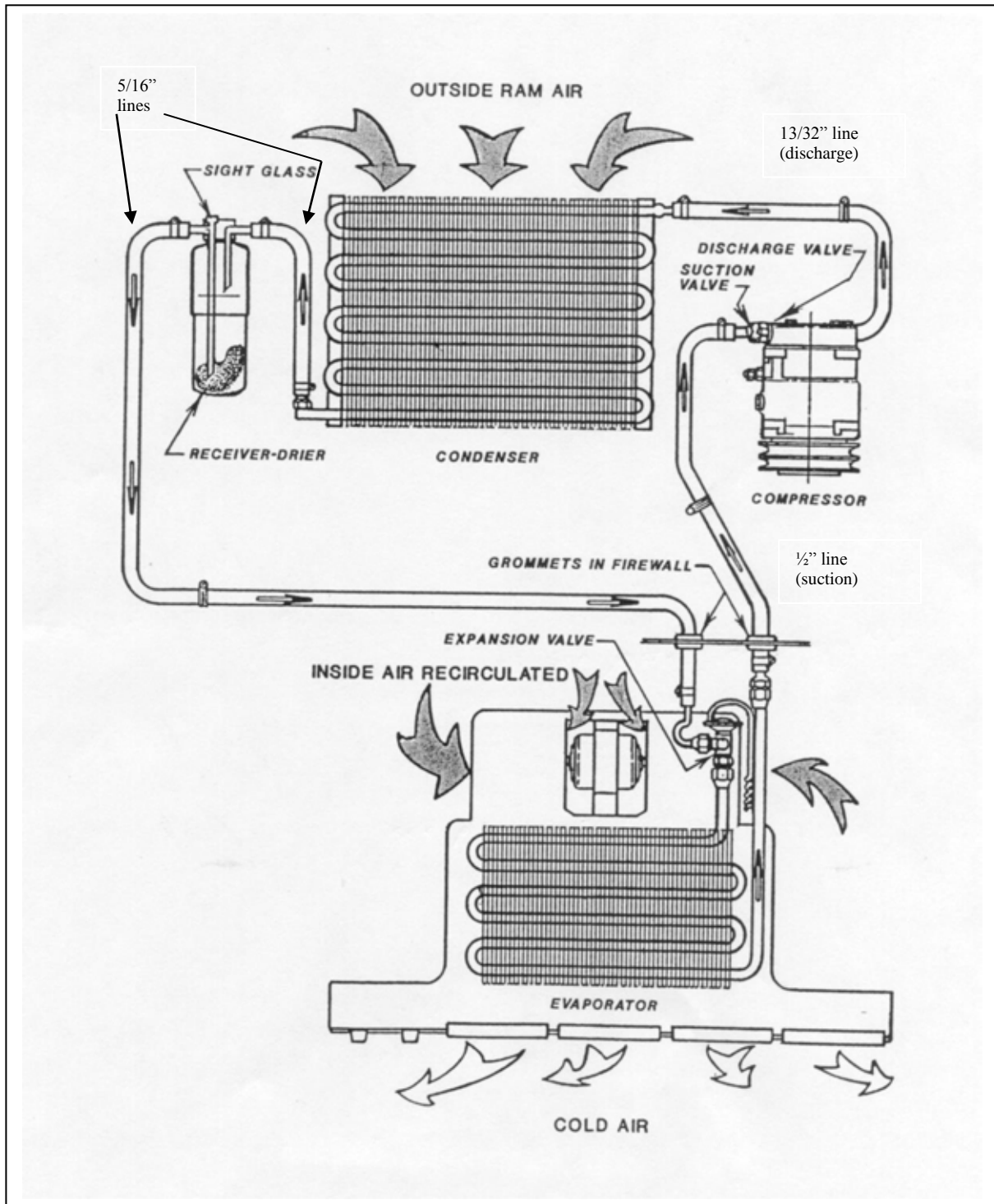
The hose lengths are longer than required and will need to be cut to length and use the hose clip pliers to secure the fittings.

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 2.75 to 3 lbs 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.

All the lines and electrical are marked for easy installation.

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.

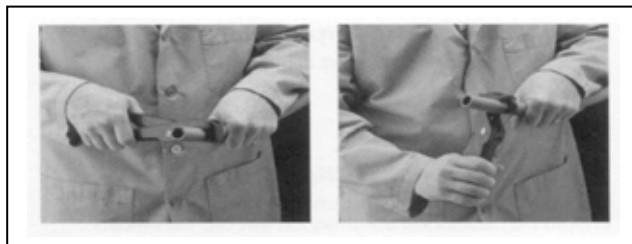
Once the probe is inserted, the A/C system needs to be tested. Run the system to ensure that the thermostat is cycling the compressor off at the appropriate temperature. A core temperature

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.

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.

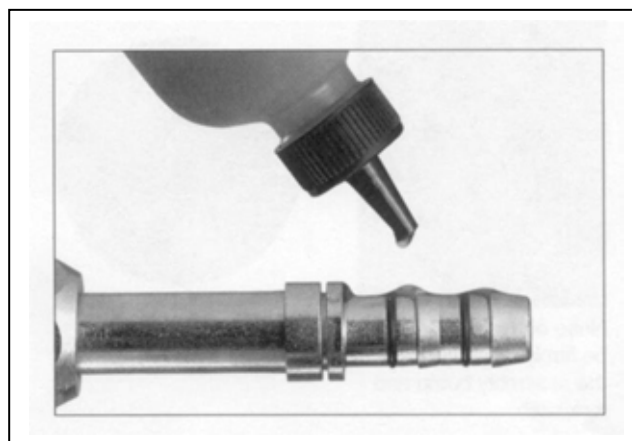


Step 2. Install two proper-sized clips onto the cut end of the hose. Orientation of the clips does not affect the performance of the connection. However, for ease of assembly, both clips should have the same orientation.

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.

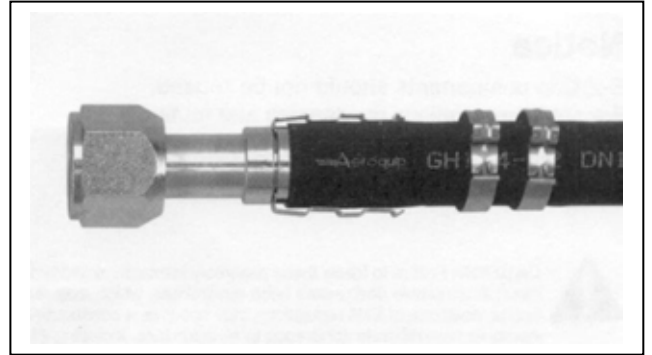


Step 4. Insert the nipple into the hose. To ensure that the nipple is fully inserted, check the gap between the cut end of the hose and the shoulder on the nipple. Care should be taken to avoid kinking or other damage to the hose during nipple insertion. NOTE: Be sure to wipe excess oil from the nipple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

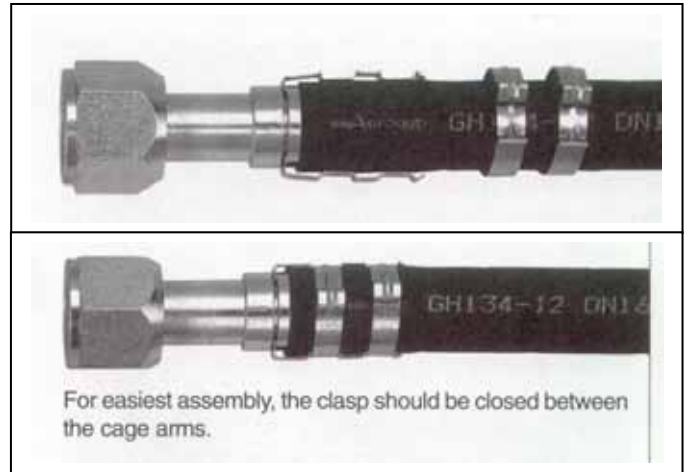


Step 5. Snap the cage into the groove on the nipple. The arms should extend over the hose length. When the cage has been correctly installed in the cage groove, the cage will be able to rotate in the groove. This step **MUST** be performed to ensure:

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.

