



Repair Procedure for Environ™ Coil System All-Aluminum Coils



This procedure is intended for repair of damage that has created a leak site on the leading or trailing edge of the refrigerant tube. This repair procedure is similar to that used for tube and fin coils. The main difference between the Environ™ all-aluminum coil procedure and the tube and fin coil procedure is the amount of heat applied. Less heat should be used when repairing a leak on an Environ all-aluminum coil.

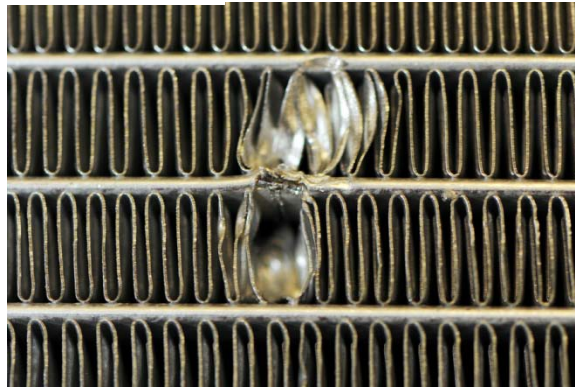
LIST OF NEEDED TOOLS/SUPPLIES

- Refrigerant Gauge Manifold
- Refrigerant Recovery Machine
- Long Needle Nose Pliers
- Steel Bristle Brush
- Small Sheet Metal Pieces (used as heat shields)
- Foil Tape
- Aluminum Flux Core Braze Rod
- #2 Torch Tip
- Oxy/Acetylene Torch Kit or Mapp Gas Torch
- Vacuum Pump
- R-410A Refrigerant
- Filter Drier

PREPARATION

1. Turn power off using the lock out/tag out procedure and install gauge manifold on the unit suction and discharge lines.
2. Locate the damaged area (see Figure 1) and verify the leak site using industry standard leak detection practices. Note: Due to its recessed fin pack, the Environ all-aluminum coil's tube construction is capable of withstanding mild impact, provided the impact is not sharp and does not cut into the tube.

Figure 1



3. Ensure that the HVAC circuit is free of refrigerant and nitrogen.
4. Remove refrigerant using gauge manifold and recovery machine.

COIL REPAIR

Step 1:

Depending upon the location of the leak, it may not be necessary to remove the fins to repair the coil. If a leak is found on the manifold, do not attempt to repair it. However, in instances where it becomes necessary to remove fins in order to access the repair area, follow the procedure below:

Use long needle-nose pliers to remove the fins by grabbing them and slowly tearing the fin away from the tube above and below the tube needing repair (see Figure 2). Do not remove the fins more than approximately 1 inch on either side of the repair location (see Figure 3).

Note: This fin removal technique has no affect on coil performance.

Figure 2

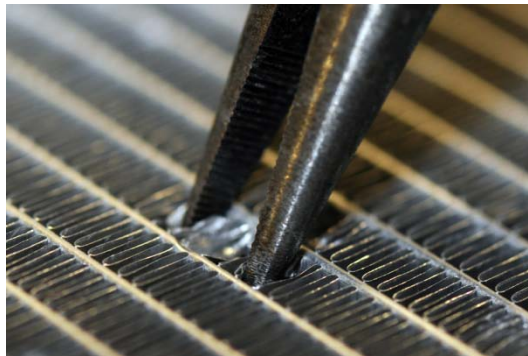
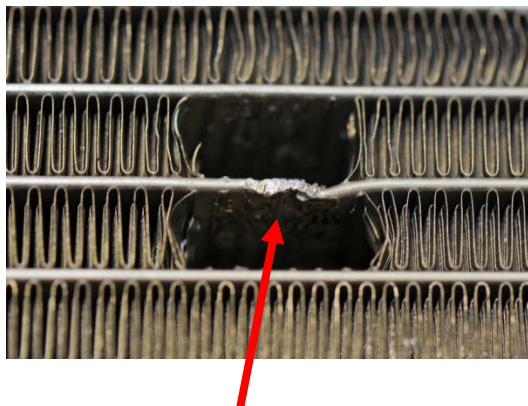


Figure 3



Damaged area to be repaired

Step 2:

Use a small stainless steel bristle brush to remove all debris around the damaged area (see Figure 4). Avoid contaminating the damaged area.

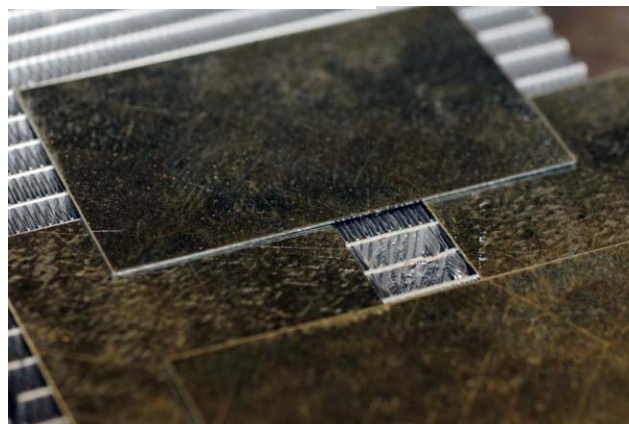
Figure 4



Step 3:

This step is optional depending on the brazing experience of the technician making the repair. Use metal cutting shears to cut sheet metal into four small pieces. These would be used as heat shields around the damaged area. It is recommended to use four sheet metal pieces 2" x 2" in size. Use foil tape to hold the sheet metal pieces onto the coil (see Figure 5).

Figure 5



Step 4:

Select an Aluminum Flux Core Braze Rod (see Figure 6). Use a #2 torch tip and portable Oxy/Acetylene Torch Kit (see Figure 7), or Mapp Gas Torch (see Figure 8) to apply heat evenly to the damaged tube area. Place the end of the Aluminum Flux Core Braze Rod against the damaged area which is exposed in the middle of the four heat shields. Gradually heat the tube within the repair area. Heat until braze material wicks into the damaged tube void.

Figure 6



Figure 7



Figure 8



FINAL STEPS

- Once the repair area has sufficiently cooled, remove the heat shields and foil tape, replace the unit's filter drier, and use nitrogen to pressurize the coil for leak testing. Complete leak test of the repaired area per established industry standards to ensure the repair was successful.
- If no other leaks are found, use a vacuum pump to pull a steady state vacuum down to 500 microns to ensure that there is no moisture left in the system.
- Once the system is pulled down below 500 microns, charge system by weighing in the proper charge listed on the unit's nameplate.
- Return unit to normal operation.

