

# Troubleshooting Guide – Compressor Runs; No Cooling

This situation could be the result of one of three main conditions:

- 1) System is low on refrigerant (undercharge/leak) or has an excess of refrigerant (overcharge). 90% of the time this condition is due to a lack of refrigerant due to a large or small leak. Aeroquip connectors are known to leak small amounts of refrigerant over time (5 years or so after installation). The system only contains 3-4 oz of refrigerant, and losing only 1 oz can cause poor performance or no cooling.
- 2) Compressor is damaged and unable to achieve sufficient differential pressures. This is highly unlikely.
- 3) There is a blockage somewhere in the refrigerant circuit. This is possible. Sea Freeze systems use a capillary tube (cap tube) metering device to separate the high and low pressure sides of the system. This is a very small tube that looks like a piece of copper wire and has a micro-bore in the center through which the liquid refrigerant is forced by the high pressure from the compressor. When the refrigerant leaves the other end of the cap tube, which is at the entrance to the evaporator, it is exposed to the suction pressure of the system and boils (evaporates) rapidly inside the channels of the evaporator at very low temperatures. There are three possible types of cap tube blockage;

**a) Dirt or Debris** There is a filter drier installed on all Sea Freeze compressor units, downstream from the condenser. The filter drier is designed to remove any tiny particles and absorb any moisture still in the system after evacuation. It is possible that a small piece of debris could break loose after years of use, but its not very likely.

**b) Moisture** If a significant amount of moisture is present in the system, and the filter drier is unable to absorb it, it can freeze into an ice plug, typically right at the end of the cap tube where it enters the evaporator. Heating the end of the cap tube at the evaporator with a hot, wet towel will melt an ice blockage and start the system working again, but the moisture will remain in the system and further freeze-ups are inevitable. Our refrigerators are evacuated of all air and moisture to very low levels when our units are built. If you are having moisture and freezing cap tube problems, it is probably due to a low side leak, which can cause the system to run in a vacuum and pull outside air and moisture into the system. The system should be leak tested, any leaks repaired, a new Filter/Drier installed, the system evacuated fully and then recharged following the proper procedure.

**c) Hydraulic Lock** Under rare circumstances, an accumulation of some of the refrigerant oil that naturally circulates with the refrigerant can be forced back into the cap tube at the evaporator end and prevent refrigerant from flowing. Applying heat to the cap tube at the entrance to the evaporator will expand the cap tube and lower the viscosity of the oil enough for it to clear the cap tube and allow refrigerant to flow. This is best done with a hot, wet rag or towel, and the process may require repeating several times before the system reverts to normal operation.