

## **HOW THE "SYSTEM 70" WORKS**

The "System 70" operates using a thermoelectric solid state heat pump, digital controller and an electronic interface unit. This system will heat and cool by adding or removing heat from a compartment and exhausting it into the ambient cabin area.

**Cooling:** The "System 70" unit can cool a well insulated compartment approximately 20-40 degrees F\* lower than the ambient cabin air temperature. Please monitor the external cabin ambient temperature during very hot days. The higher the cabin temperature rises from the external air temperature the less effective the cooling will be. One solution is to opening a window, activating the on board ventilation system or installing a ventilation system.

**Heating:** The "System 70" unit heats very efficiently. Compartments have maintained 75 degrees F\* warmer than the external ambient temperature. \* Cooling and heating temperature ranges are effected by the air flow around the system and the efficiency of the insulation in the compartment. Results vary per application.

**Ventilation:** It is important to understand that by removing heat from the compartment it must go somewhere. Directing the heat to a small non ventilated area will raise the ambient air around the unit decreasing its efficiency. We advise that the unit vent into a large ventilated area available. Utilizing extra brush less fans may increase efficiency. No equipment or obstructions can be stored around the heat pump.

**Power requirements:** The "System 70" operates from the vehicle's 12 volt DC electrical system and will draw approximately 12 amps. This should pose no problems when the vehicle is running or when attached to shore power providing the vehicle is equipped with an adequate shore power charging system. The "System 70" includes an on/off switch to idle the system when not in use. To maintain compartment temperature the switch must be left on.

**Operation:** The "System 70" operates by programming the controller to the desired temperature. This will direct the unit to heat or cool as needed to maintain the set temperature. The readout will always show the internal compartment temperature. By pressing the \* button you can review the set temperature. The "System 70" is user friendly and easy to program by pressing the \* button and using the up or down buttons to set the desired temperature.

**Back up battery:** To maintain temperature and relieve the load on the electrical system we suggest using the back up battery system. This system includes an Optima deep cycle gel battery which releases no dangerous gasses and can be installed inside the vehicle. Isolating from the main battery this system will supply power to the "System 70" for up to 5 hours independent of the vehicle's onboard battery and charging system.

**Temperature monitoring devices:** There are inexpensive units available that will record the compartment temperature and include software to graph the results on your computer.