Active Thermal Management

The trusted name in thermal protection

Parts list – before proceeding, check that you have received all of the following:

(1) Cool-cube motor/fan unit	**(1) 4" to 3" adapter (3" model) OR**
(1) Hot air collector	**(1) 4" to 2" adaptor (2" model)**
(1) length, 2", 3", or 4" tubing	**(no adapter needed with 4" tubing)**
(1) Thermal probe	**(1) Power supply**

Instructions for installation of the Cool-cube-E™

The Cool-cube will move moderate amounts of heated air from an enclosure to a point up to 6 feet away (8 feet with 4" tubing). It can be ordered with either 2", 3" (both ID) or 4" ID/6" OD tubing, and is powered by a group of five high-quality 120mm axial-flow fans mounted within a small enclosure. A flexible cooling system, Cool-cubes are often used to ventilate smaller closets housing home theater equipment and enclosed video projectors (up to about 300 watts power consumption).

The speed of the fans is controlled by an electronic thermal switch assembly which will turn the fans on at slow speed at 90 degrees and at high speed at 100 degrees (F). The electronic switching is controlled by the temperature of a remote probe. In normal operation, the fans should run at low speed only; operation for significant periods at high speed may indicate that the Cool-cube is either underpowered for the amount of heat to be removed, or cannot breathe freely due to an intake opening that is too small.

The fan assembly should preferably be used to PULL, not PUSH, hot air from the enclosure; i.e., the tubing should be connected (using the clamps provided) to the suction end of the fan assembly, and not the pressure end. **(The pressure end is the end at which the fan manufacturer's label can be seen on the hub of the end fan by looking into the assembly.)** Friction tape is supplied in a small envelope; apply it around the end of the suction port on the Cool-cube's fan assembly to prevent the tubing from sliding off the tapered opening.

For best results, the fan assembly should be located at the very end of the tubing, using the shortest possible length of tubing between the audio-video enclosure and the fan assembly. The fan assembly can be mounted using the included plastic strapping and screws; the entire length

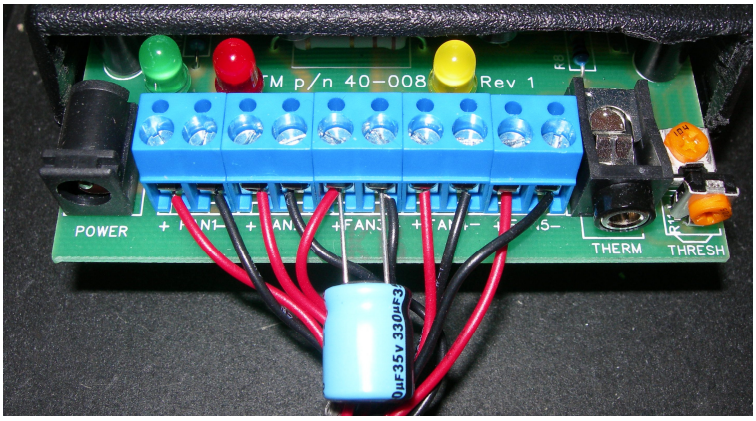
can be used as a "bail", or it can be cut into shorter pieces, each of which can be used as an attachment strap.

Installation is simply a matter of cutting a 2 ½" - 2 5/8" hole (2" - 3" tubing; 4" for 4" tubing) in the enclosure, mounting the hot air collector over it, and running the tubing to a suitable location. The hole should be made in the enclosure at a point where heated air would be expected to accumulate. The top of the rear panel, or the top of an internal compartment in which the heat-generating equipment is located are typical locations.

Equally important to the location of the exhaust point is the size and location of a fresh-air inlet. Heated air cannot be exhausted unless fresh "make-up" air can enter.

The best location allows entering air to flow around the heated equipment as it flows toward the exit point; an entry opening that lets air flow directly to the exhaust port without "washing over" the equipment to be cooled will not result in a satisfactory installation.

The thermal probe is then placed where it can sense enclosure and/or equipment heat, and the power supply is plugged into an always-live power outlet. The probe can be held in place by peeling the release paper from the probe holders and adhering them so that the probe can sense the heat of the component whose temperature is being monitored.



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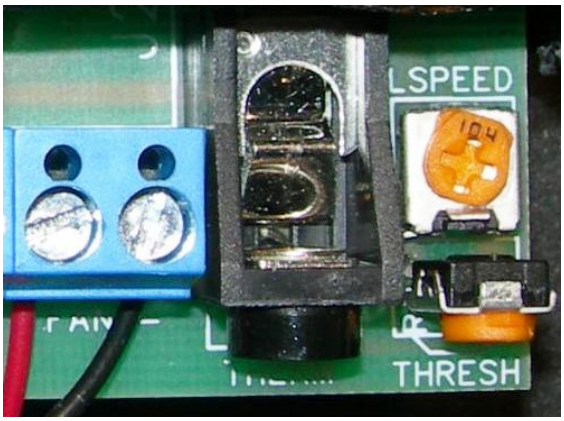

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With the thermal probe disconnected from the control box, plug the power supply output lead into the POWER jack on the control box (figure 1), then plug the supply into any always-live AC socket. The Cool-cube should begin to operate at full speed. Plug the thermal probe into the THERM jack; the fans will stop, go to low speed, or remain at high speed, depending on the temperature at the thermal probe.

As shipped, the fans do not operate below approximately 90 degrees (F), operate at low speed between 90 and 100 degrees, and switch to full speed above 100 degrees.

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There are two adjustments available (figure 2); one controls the slow speed, and the other adjusts the temperature at which low speed begins. Using a small screwdriver, adjust the L SPEED control for the speed desired when the fans are operating in low speed mode. (Clockwise rotation increases speed.)

Turning the THRESH control clockwise will increase the temperature at which low speed begins.

NOTE: There will always be a fixed 10 degree difference between the low and high speed operation.

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