## Coleman Air, Inc

As part of our on going quality control and research, we are often making improvements and updates to the software running within the microprocessors of our controllers. To allow our customers to take advantage of these updates, we may send out updated processors from time to time. These updates may be as a result of our finding a "bug" or you may simply desire to have the latest version of the software; which, if available for your particular controller, may be purchased for a nominal charge.

This document describes the procedure for replacing the microprocessor in the Coleman Air, HVAD diversion controller.

The C440-HVAD uses three printed circuit boards (PCBs), plus two PCBs for the display unit. The main board (called a motherboard or M/B), has two child boards. These are the smaller boards that plug into the M/B. The child board on the right is the power supply unit (PSU) and the board on the left is the Microprocessor board (Processor PCB).

## Firstly ensure all power is removed from the C440-HVAD controller. The wire from the controller to your battery must have a fuse or disconnect in order to safely perform this procedure. Be sure that disconnect is off.

To replace the microprocessor, we will want to remove the Processor PCB to allow us better access to the 20-pin socket that the processor sits in.



Gently rock the small processor board out of the upper and lower sockets. Be careful not to bend these pins.



Shown here, the processor board has been removed. Note: You may find it more convenient to first remove the 12-pin ribbon cable and tuck it out of the way until you have completed the replacement.



With a letter opener, small screwdriver or small knife, remove the microprocessor by inserting the blade under the processor and twisting the blade from right to left, rocking the processor out of the socket. Be careful not to apply pressure to any other components or they may damaged. It is best to use the tool on each end of the processor to ensure it comes out easily without bending the legs.

Please take note of the direction of the notch on the processor before you remove it.



Inspect the legs of the new processor to ensure they have not been damaged in shipping.



Straighten as required.



Pushing the new processor into place.

The notch on the processor will face the same direction as the notch in the socket. (And of course it should be the same direction as the processor being replaced).

If the processor is put in backwards, it will most likely be damaged when the unit is powered up.

Be sure to align all of the legs before pushing into place. Once the processor has been properly positioned, push gently, then inspect again and push in the remaining distance until it is securely seated.



Once the processor has been inserted, you are ready to re-install the Processor PCB.

The easiest way to ensure the processor PCB is properly aligned is to first place the male pins into the female socket on the M/B. Looking under the processor PCB ensure that the pins are properly aligned. Once you have verified the proper location (side to side), then lower the front portion and insert the two forward pins into the lower female socket of the M/B.



Once you have verified the alignment of all pins, then gently push the PCB down until it is firmly seated.

If you have disconnected the 12-pin cable, then please re-install it.

After a final inspection of your work, you are ready to reapply power and begin using your newly updated controller!

Please don't hesitate to contact us at <u>Sales@ColemanAir.us</u> or 325-625-5419 if you have any questions.

Stay safe and enjoy your projects!

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