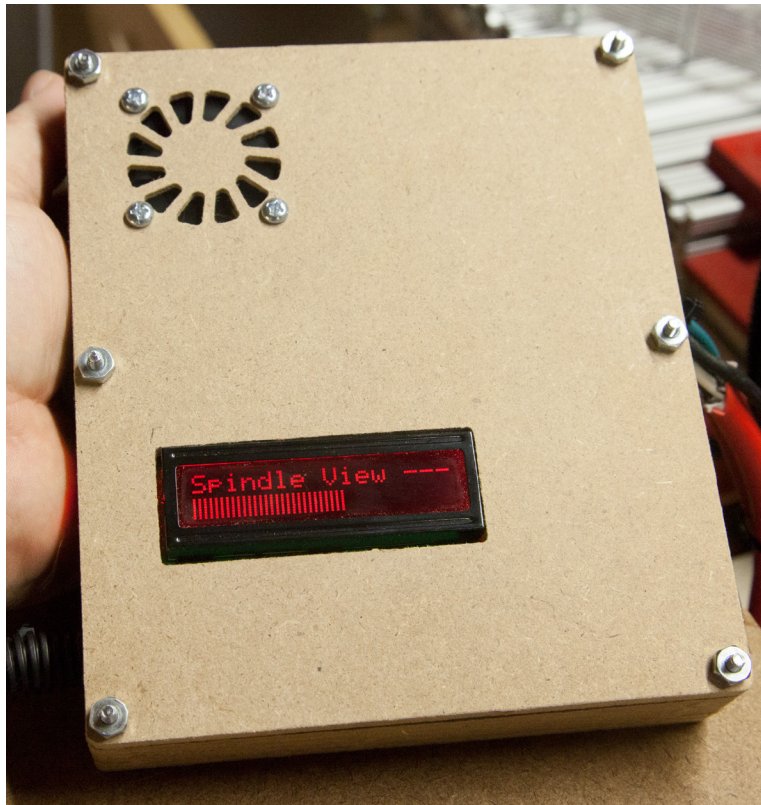


Super-PID Enclosure

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In this project, I will show you how to construct an enclosure for your Super-PID 2.

Tools Needed For This Project

- Phillips screwdriver
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Other Items Needed For This Project

- 6, #6 x 1-1/2" Machine screws
- 8, #6 x 5/8" Machine screws
- 14, #6 Hex nuts
- 6, #6 Lock Washers
- 4, 1/4" spacers (note you can also use 8, hex nuts)
- Super-PID miniFan
- Enclosure stock. Four pieces 7" x 8" .22 thick (See text)

Tip

You can get a regulated 5v power source a from your PC via the USB cable or from one of the hard drive connectors inside your PC. The connector will have four wires.

Yellow = 12V

Black = GND

Black = GND

Red = 5V

You will want to use one of the black wires and the red wire.

The following is the power supply that I used on this project.

Prerequisites

See router conversions, and wiring projects. It is assumed that you have pre wired your router or will do so at some point in this project.

Its also assumed you have attached a heatsink to your Super-PID.

Note that in this project you can use what ever stock you wish as long as it is .22-.25 inches thick. If you do decide to go with plastic or aluminum you will need to make adjustments to the bit and speed of your job. In this project I plan on eventually mounting the enclosure within another enclosure so I am not going for a very good look. Also note that the opening for the LCD is enlarged for extra clearance to accommodate all LCD's.

You should also download the Super-PID instructions. They can be found here:

Warning

The triac and metal heatsink should always be treated as LIVE and dangerous and connected to the AC mains. This is the safest option.

If the triac ever fails there is a possibility that the heatsink could then short to AC mains. So it is always best to be absolutely safe.

Step 1

Cut a piece of stock 8" tall by 7" wide. It should be between .22" and .25" thick. Clamp it and your wasterboard to your CNC and zero your X,Y, and Z". Place a 1/8" two flute up spiral router bit into the router and set the Z height to your stock.

Load the Gcode file called Bottom.txt and machine the job. The spindle speed should be set to 10000 RPM. Cut the part shown in Figure 1.

Note that you will be machining the bottom of the part. When you go to assemble, you will flip the part over.

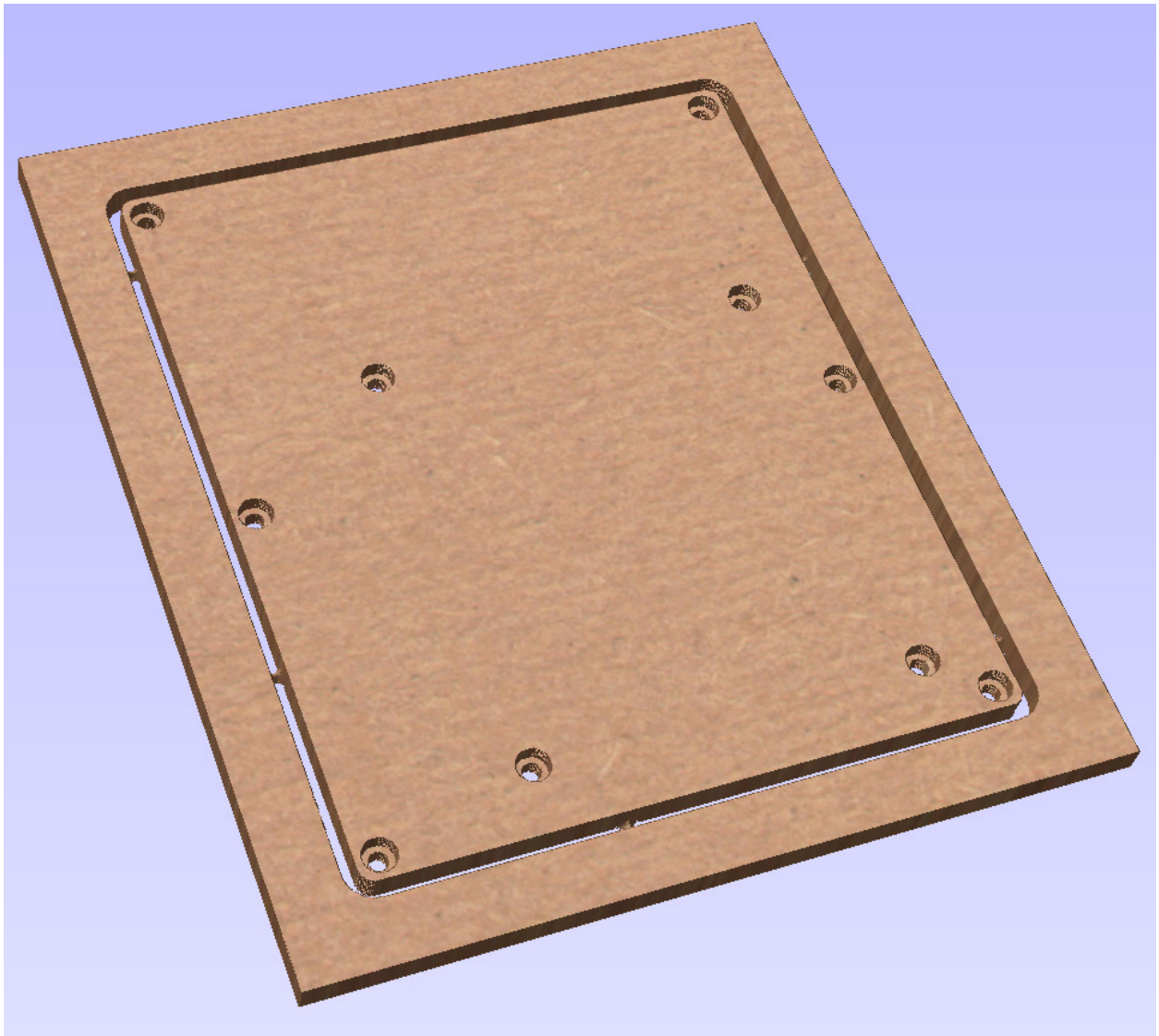


Figure 1

Step 2

Load another piece of stock (same size) on to your CNC and load the Gcode file called Top.txt and make the part shown in Figure 2.

Note that you will be machining the bottom of the part. When you go to assemble, you will flip the part over. Note also that the fan is installed into the pocket with the lettering showing.

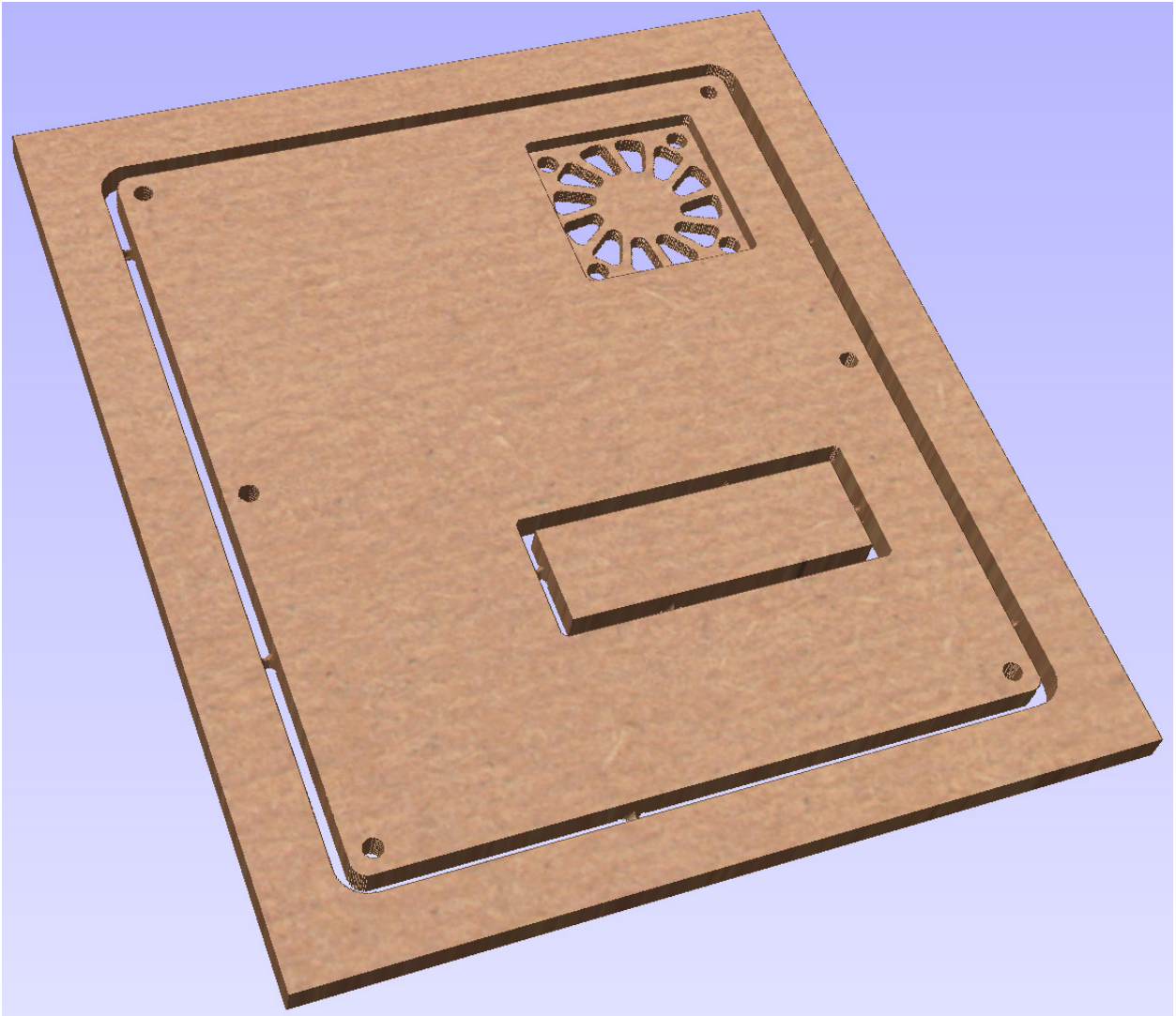


Figure 2

Step 3

Load another piece of stock (same size) on to your CNC and load the Gcode file called Gaskets.txt and make the part shown in Figure 3. You will need to cut two of these.

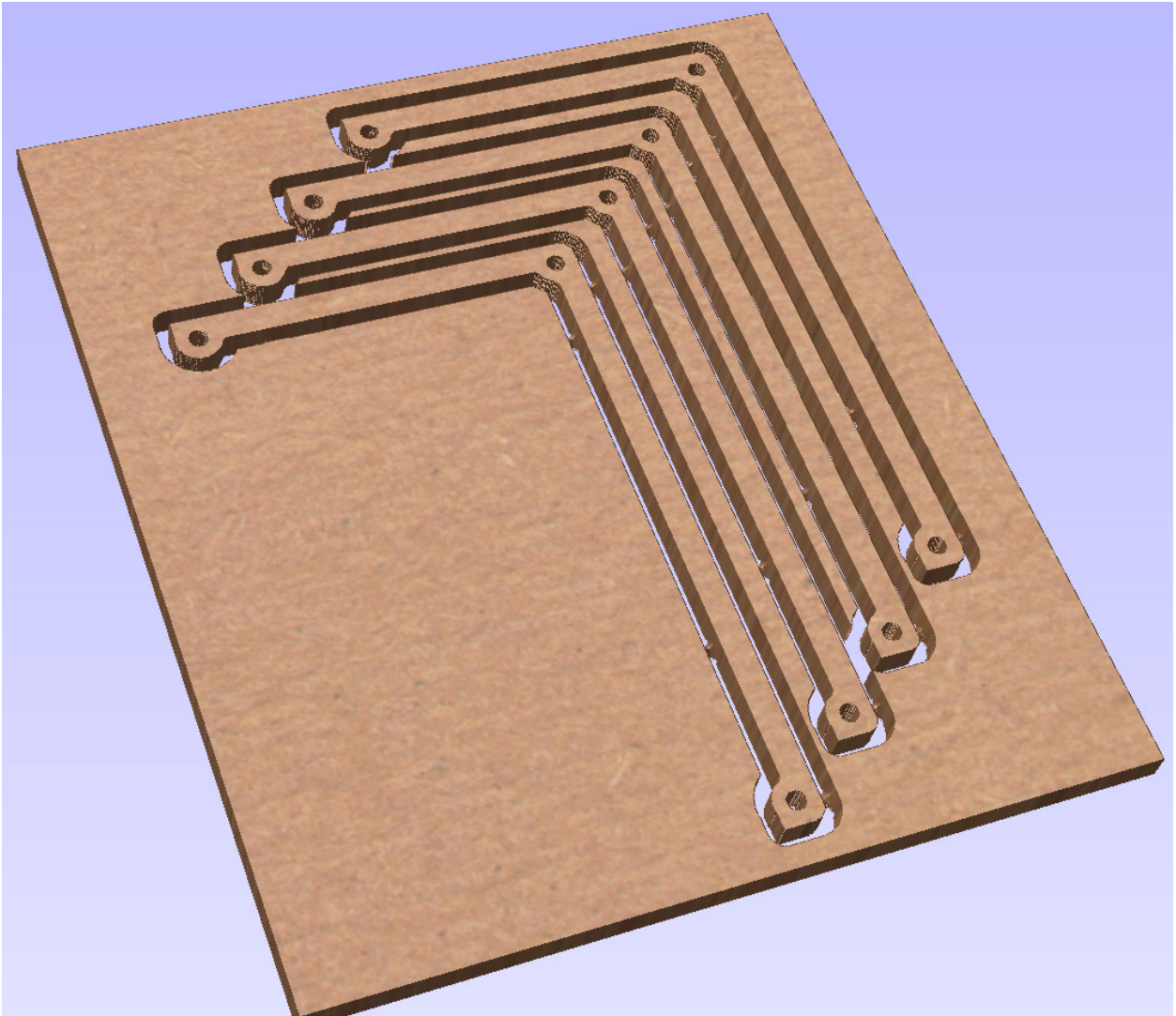


Figure 3

Step 4

Mount the miniFan into the pocket you cutout of the top. The lettering on the fan should be pointed down. Use four #6 x 5/8" machine screws and hex nuts to attach the fan as shown in Figure 4.

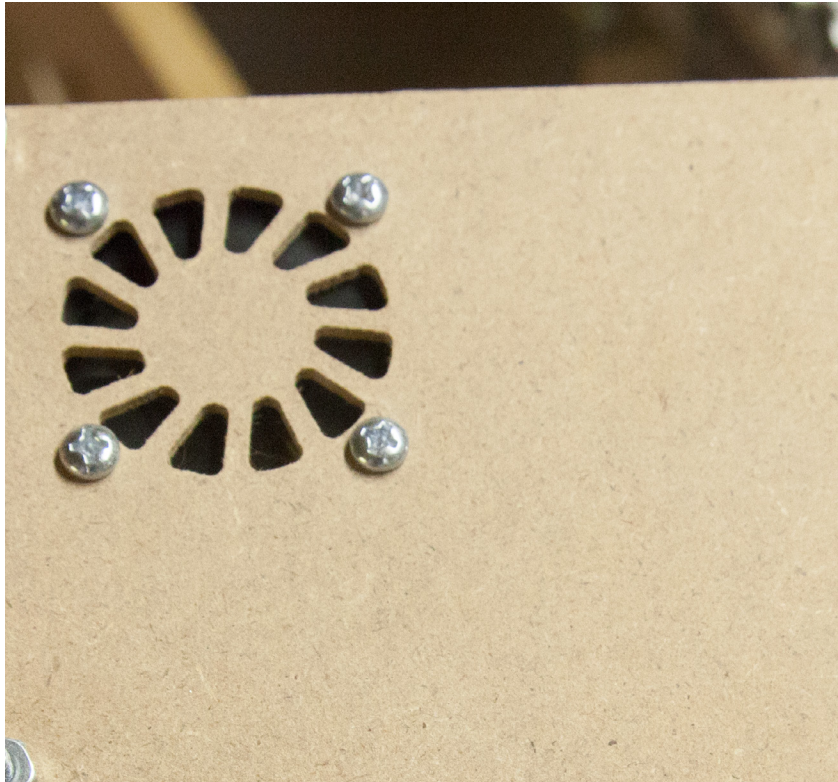


Figure 4

Step 5

Insert four of the #6 x 5/8" screws into the four holes near the center of the bottom piece. Add a 1/4" spacer (or two hex nuts). Slip the Super-PID board over the screws and add a hex nut as shown in Figure 5.

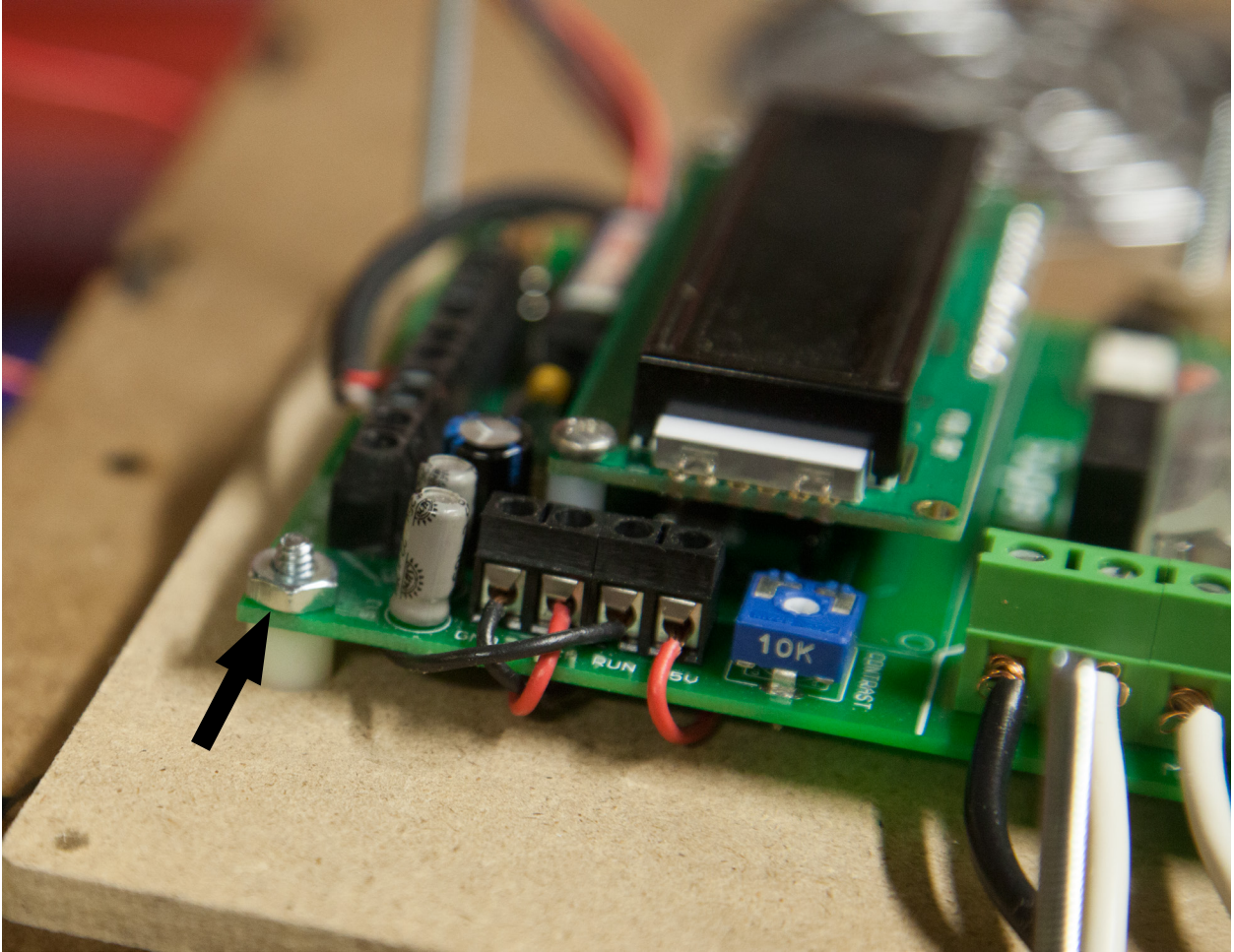


Figure 5

Step 6

Insert the size #6 x 1-1/2" machine screws into the six outside holes. With the bottom and screws sitting flat on a surface, add the gaskets pieces shown in Figure 6.

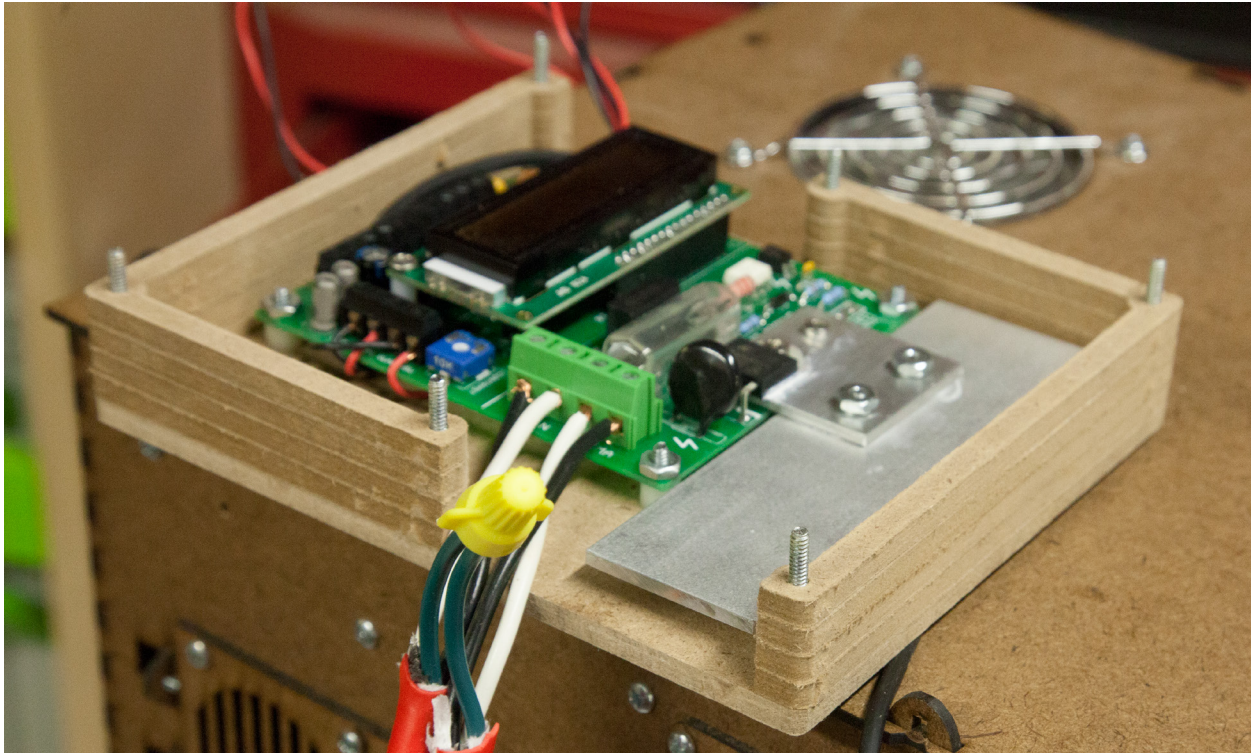


Figure 6

Step 7

Add your fan wires to the two terminals shown in Figure 7.

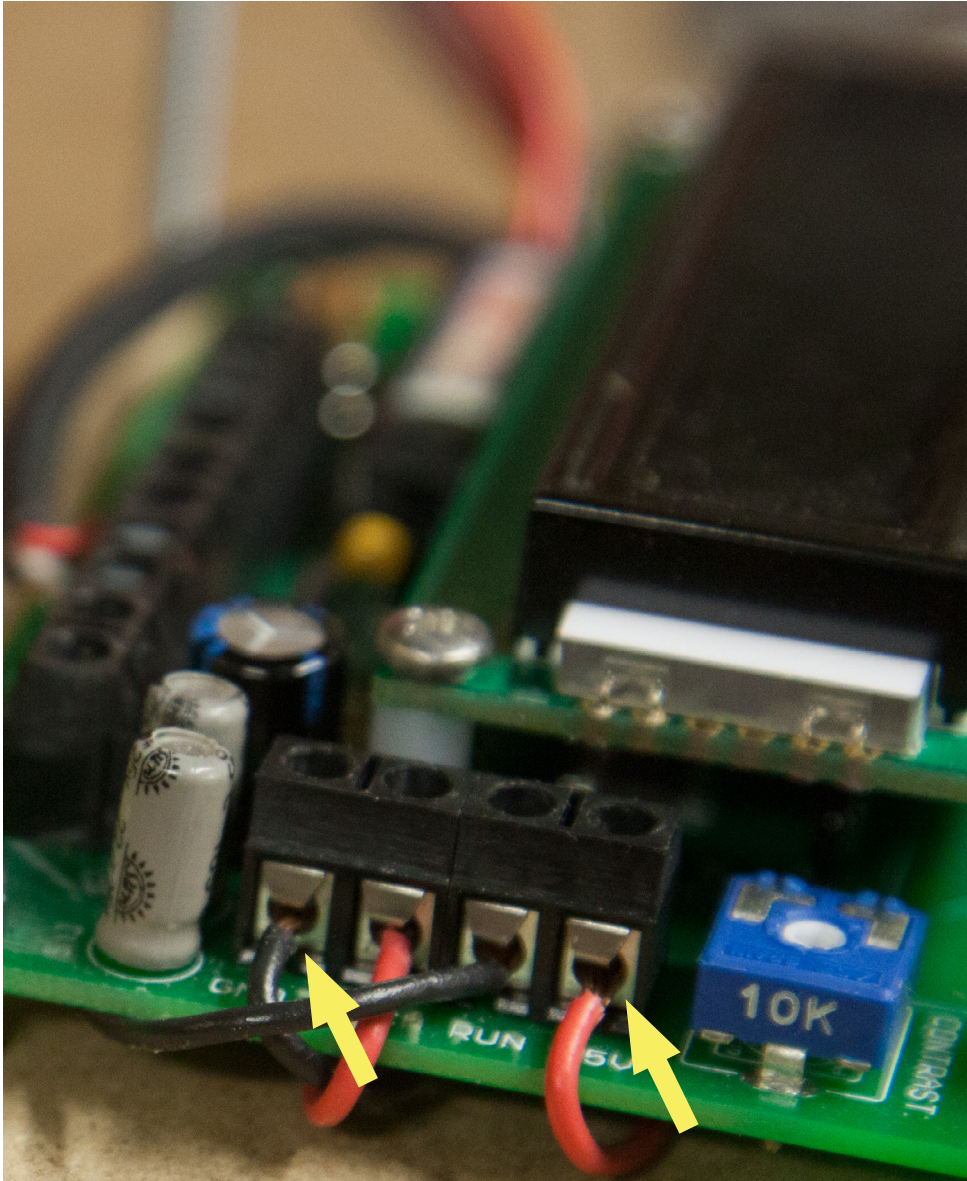


Figure 7

Step 8

Slip the top part down over the six screws. Add a lock washer and hex nut to each screw as shown in Figure 8.

Note that you can add tie wraps or split tubing to protect all the wires.

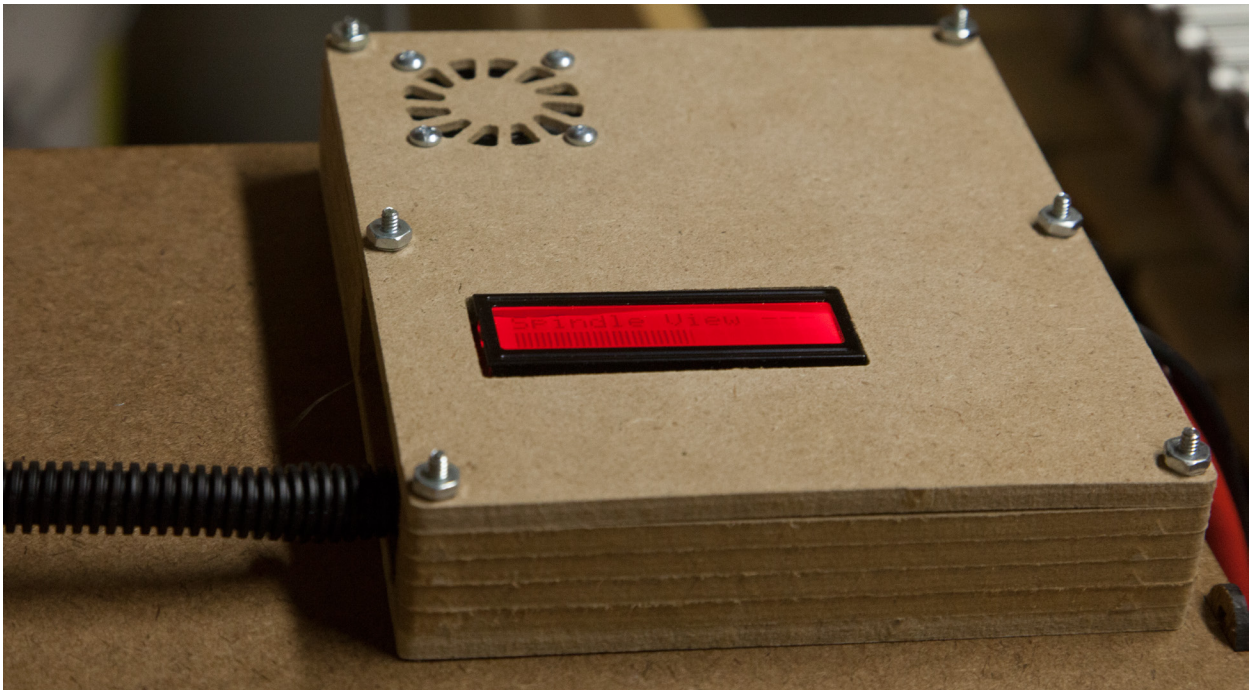


Figure 8

Conclusion

If you want your enclosure to look good, you may want to preassemble it without the Super-PID and do some sanding on the edges.

If you use MDF, you can also paint the enclosure.