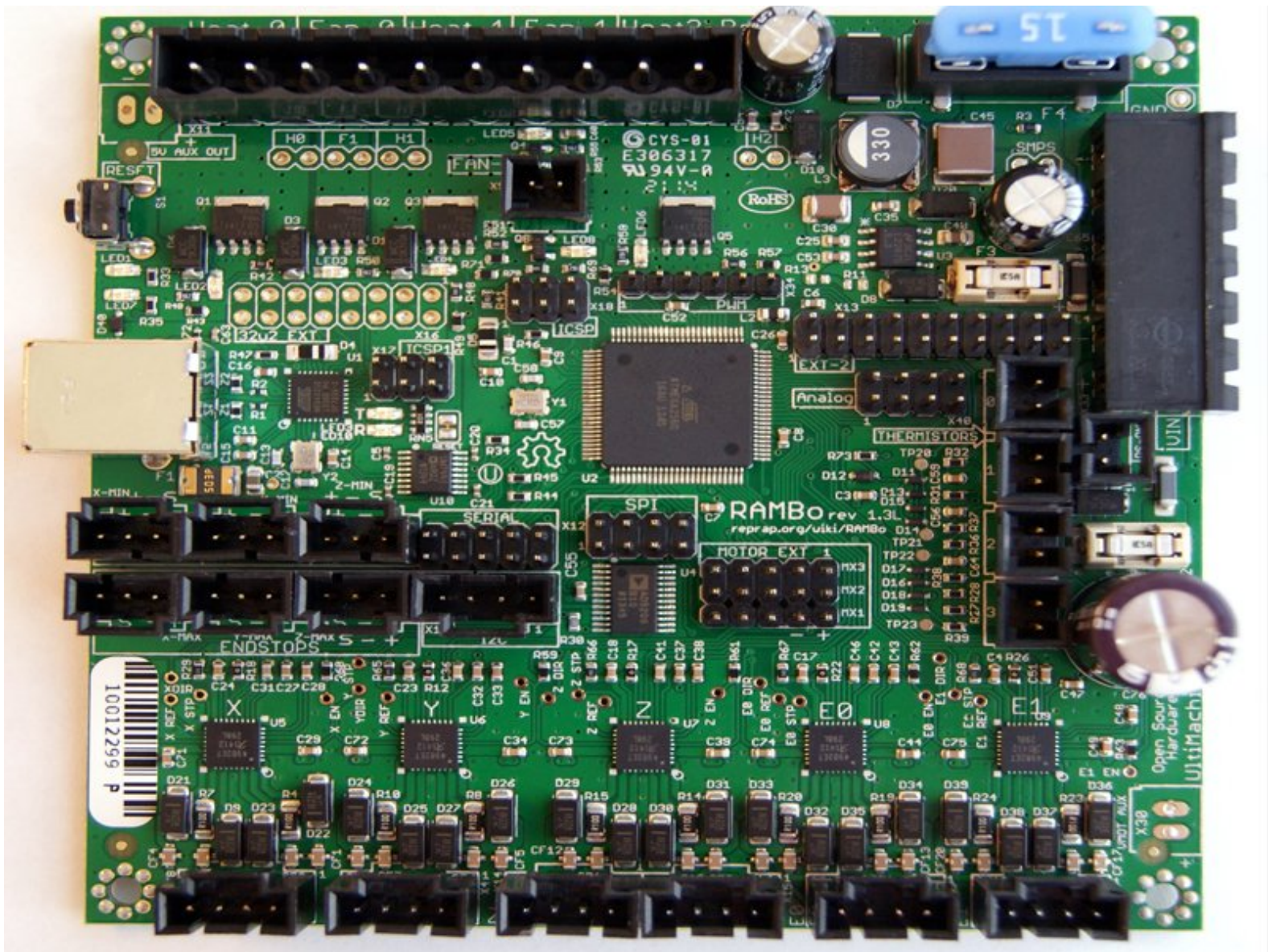


# Wiring Rambo Electronics & Power Supply

## Wiring methods used by MTW Printers using the Rambo Electronics.

Written By: Micro





## TOOLS:

- [Screw Drivers](#) (1)
  - [Wire Strippers](#) (1)
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## Step 1 — Getting Started

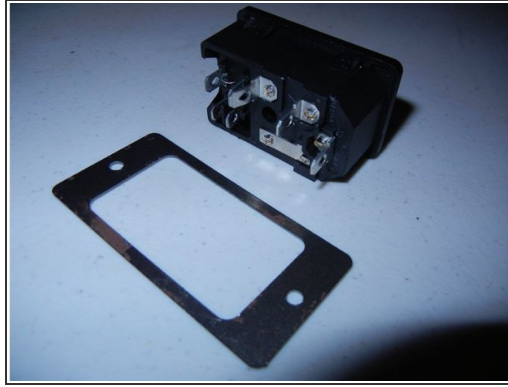
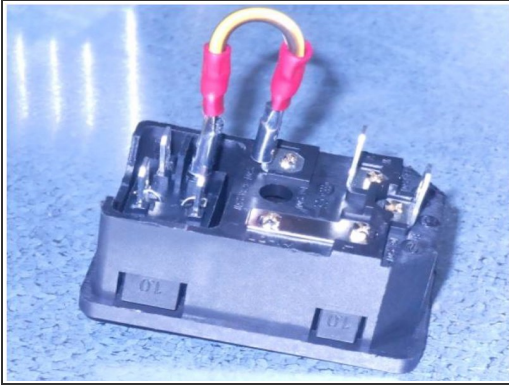


- i** On the PSU, look for selector switch for 115 v/230 v and select the appropriate voltage for your location. Note: The PSU does not automatically sense the input voltage, so be certain to select the appropriate value (If in North America, most likely 115 volts).

**⚠ Never unplug the motor connector to the Rambo Controller with power turned on. This can cause the motor driver chip to be damaged.**

- Latch the Fuse into the Fuse Holder.
- Install the Fuse Holder in the IEC Socket housing.
- Install the Switch into the IEC Socket.

## Step 2



- Add the short wire jumper between the Switch And fused terminal.
- Fit the IEC Socket into the Mounting Plate, this might require some filing to make it fit.
- Mount the plate in the Back Plate before attaching to wires.

**⚠ When installing any of the wires that have the push on connector on the end check to see if any of the cables seem loose after pushing them onto the post. Remove the connector and slightly squeeze the end with pliers so the connection will be tighter.**

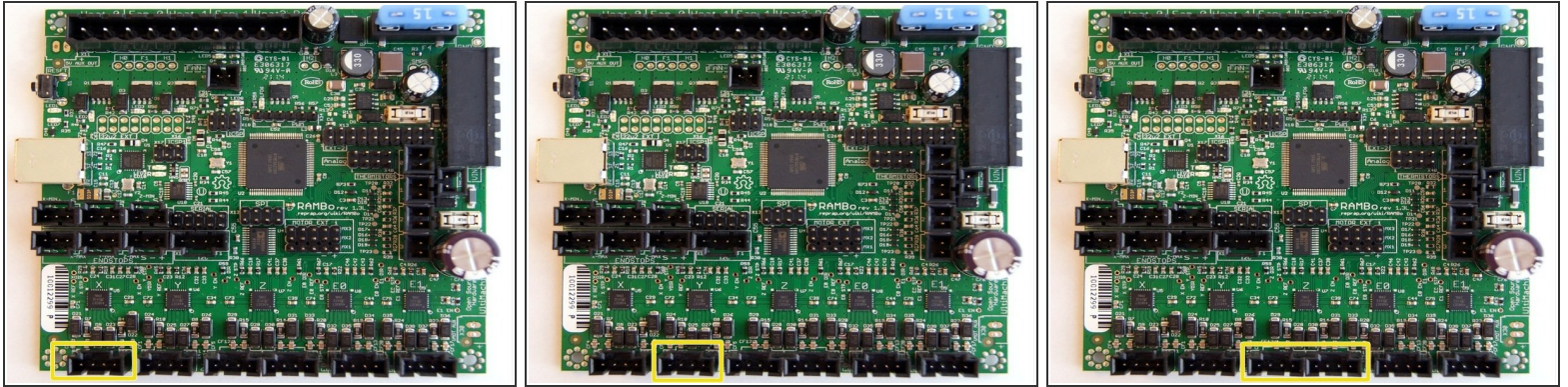
### Step 3



- Wire the IEC Socket to the Power Supply by connecting the Live, Neutral and Ground Wires to the Power Supply as shown. Black=L on the PSU, White=Neutral on the PSU, Green = Ground on the PSU.
- Wire the 3 24v Power Wires to the Power Supply. Place the solid red wire on the "+" terminal. Place the striped black and red of the cable on the "-" terminal.

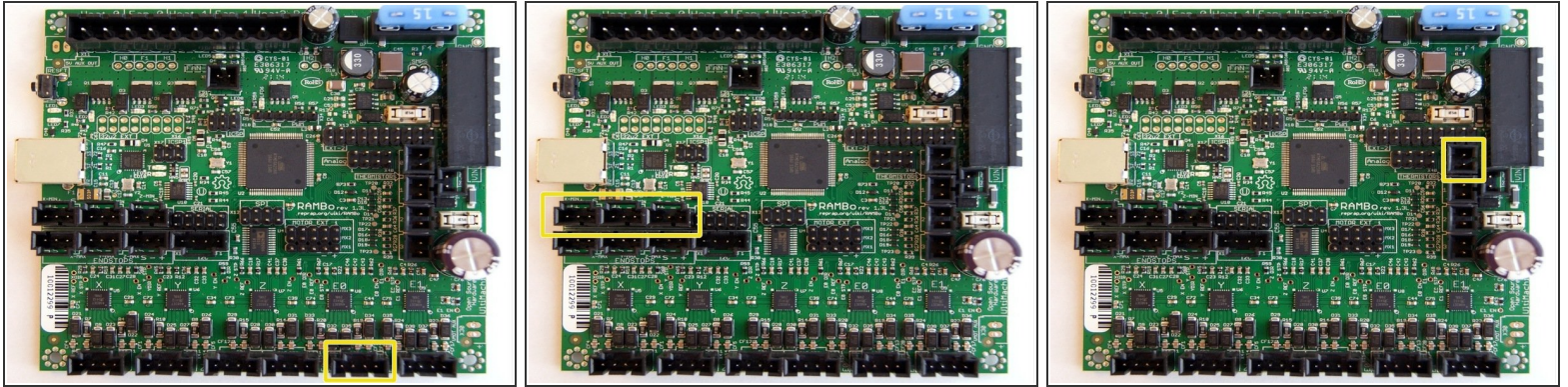
**⚠ Do not do any of these steps with the power cord plugged in. This section deals with installing the wires that will handle the high voltage. With the power cord plugged in there is a shock hazard.**

## Step 4



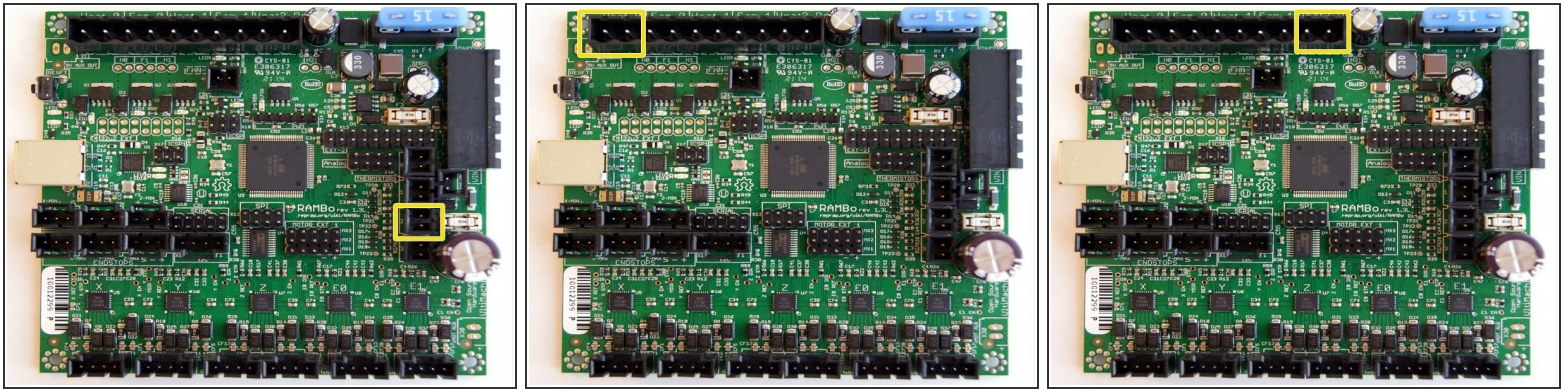
- For the connections for the Rambo controller please refer to the supplied paperwork supplied with the Rambo. Changes to the controller may not have been updated to this document.
- Attach the X Axis Stepper to the RAMBo Y Driver plug, the blue goes toward the USB Port. ( Left picture )
- Attach the Y Axis Stepper to the RAMBo Y Driver plug, the blue goes toward the USB Port. ( Center Picture )
- Attach the Z Axis Stepper to the RAMBo Z Driver plug, the blue goes toward the USB Port. If your printer model uses two Z stepper motors insert the second Z stepper into the next marked port. (Right Picture )

## Step 5



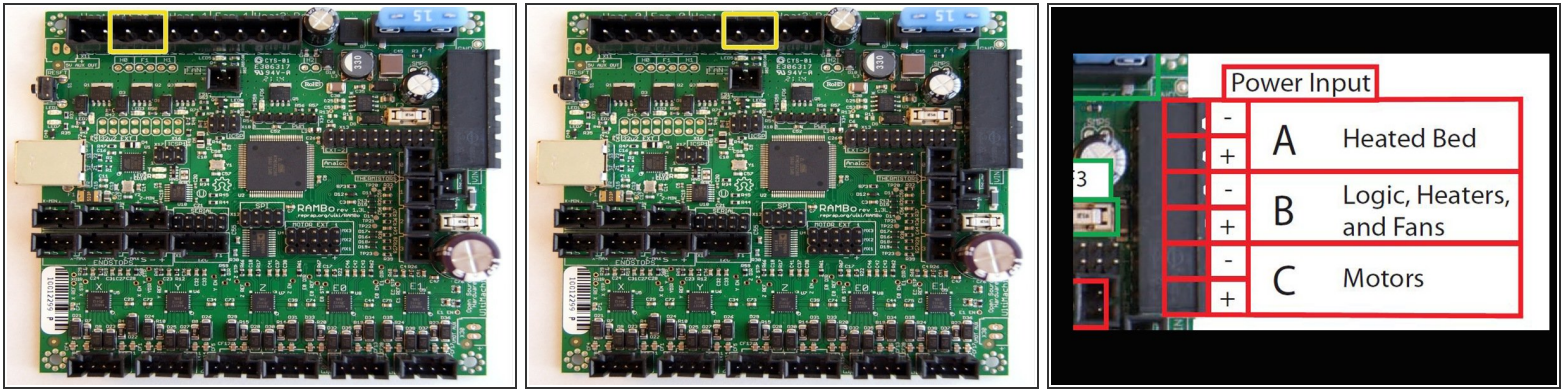
- Attach the Extruder Stepper to the RAMBo E0 Driver plug, the blue goes toward the USB Port. ( Left Picture )
- Attach the endstop cables provided with the rambo. These will be black and white wires with a keyed connector on one end and push on connectors on the other. ( Center Picture )
- Install the Thermistor for the Hotend to the **T0** plug. ( Right Picture )

## Step 6



- i Install the thermistor cable from the bed heater to the **T2** jack. Please note that there is no connection to the T1 jack, this port is skipped. Shown in ( left picture ).
- Included in the rambo controller are push in connectors with screws terminals for wire termination. You may need to strip the ends of the cables before insertion into the connector.
- If after stripping the cable the wires fray out you will need to twist the ends so they go cleanly into the connector. Once the cable is twisted you place the wire into the open hole and tighten the screw down. When done make sure there are no frayed wires that can short to another wire sticking out.
- ⚠ On the cables for the bed heater pay special attention that the screws are very tight compressing the wire and that the plug is fully secured into its plug. If this connection is loose it will cause excess heat in the connection and will melt the plug plastic.
- Install the wires for the hotend into the two pin screw terminal connector and insert into the plug labeled **Heat0**. Shown in ( center picture ).
- Install the large wires from the heated bed into a two pin connector and install into the plug **heated bed** shown in the ( right picture ).

## Step 7



- The kit may come with one or two fans to cool the print. ( a special fan is provided to cool the E3D hotend barrel and is addressed later ) These fans may come with a white plug on the end. Cut this white connector off.

**⚠ Strip the cables of the fan so that about 5mm of copper wire is exposed. Twist the two red wires from each fan together. Twist the two black wires from each fan together. The red wires will go into the screw connector that goes to the small + on the controller board. The black wires will go to the -.**

- If you get the fan connections wrong you will melt down your fans. ( replacements are in the store! ) please double check that the red wires end up going to the + and the - goes to the black wires. Do this after you install the plug since its easy to get it backwards in your hand.
- The print fans install into the port labeled **fan0** shown on the ( Left Picture )
- ⓘ If your kit was supplied with a E3D hotend it came with a 30mm fan to cool the E3d barrel. This fan must be running at all times you are printing or it will cause you to have filament jams. Do not run the E3D hotend without this fan installed and operating.
- This fan connects to the plug labeled fan1. Like the fans in the previous step install the cables into the plug with the screws. Tighten down and make sure the + and - are in the right position as indicated on the board in small print. The plug for fan1 is shown in the ( Center Picture ).
- The PSU connection to the Rambo controller is done with 3 cables that were connected to the PSU in the beginning of this guide. Each cable has a red wire and a red wire with a black stripe. One cable will go to the "A" terminals of the picture on the right side. Red will go to + and Red with Black stripe will go to -.

**⚠ Do this for B and for C. When done ensure that all of the reds are on + and all of the red with black stripe are on -. Starting from the bottom of the plug it will be : red, black, red, black, red, black. Failure to wire this section properly will damage your controller.**

## Step 8



- Your kit may have included a USB extension cable. The cable plugs into the USB port on the rambo and mounts to the rear of the printer.
- Verify all connections one more time. Plug the power cord in and turn on the switch. You should see a power on light next to the + and - terminals and you should see a power on light next to the USB connector on the rambo.
- ⓘ If the power supply led is on and there is no leds on the Rambo its possible you may have a blown fuse. F3 . This is most common when you accidentally plug the heated bed into the hotend connector.
- Return to the [MendelMax 3 Build Guide](#)