

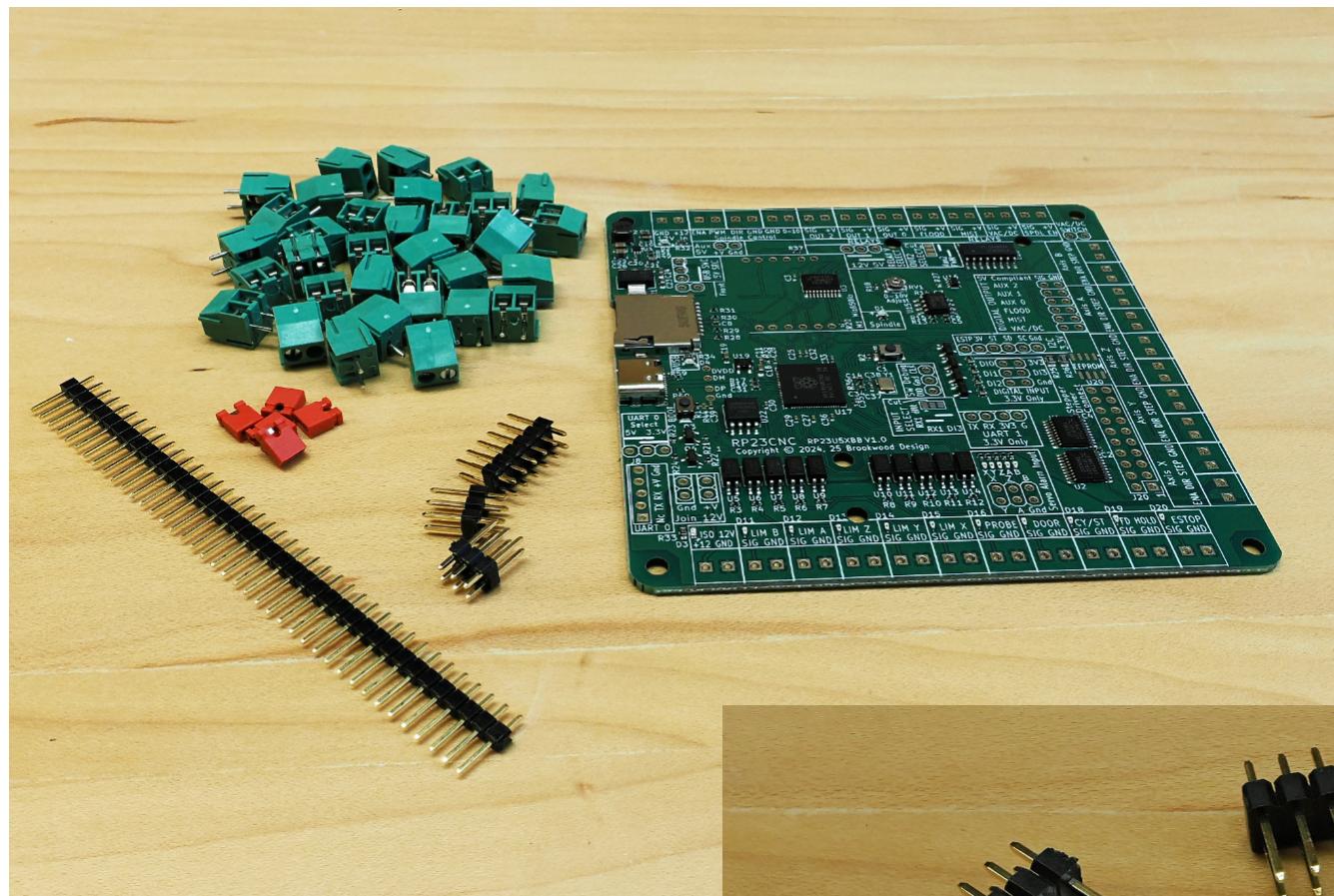
Assembling the RP23U5XBB

These instructions assume you have the optional assembly kit. If you are sourcing the connectors yourself, gather them together.

Step 1. Take inventory.

You should have

- 1 RP23U5XBB PCB
- 32 3.5mm Screw Terminals
- 1 1x40 2.54mm pin header
- 1 2x6 2.54mm pin header
- 2 2x3 2.54mm pin headers
- 5 2.54mm shorting plugs

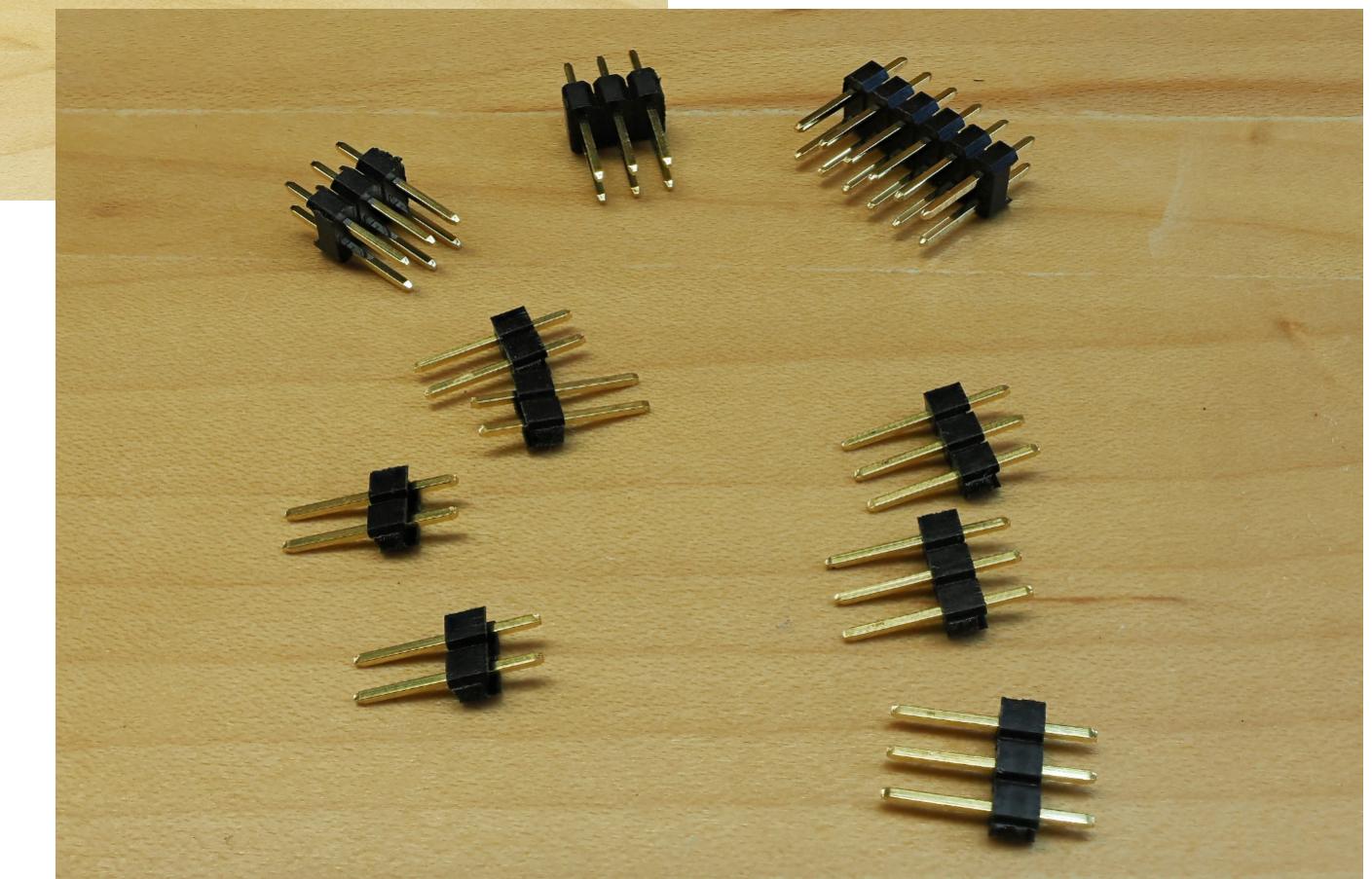


Step 2. Prepare headers.

Break off smaller headers from the 1x40 strip.

You will need four 1x2 headers and three 1x3 headers.

Locate the 2x3 and 2x6 headers.

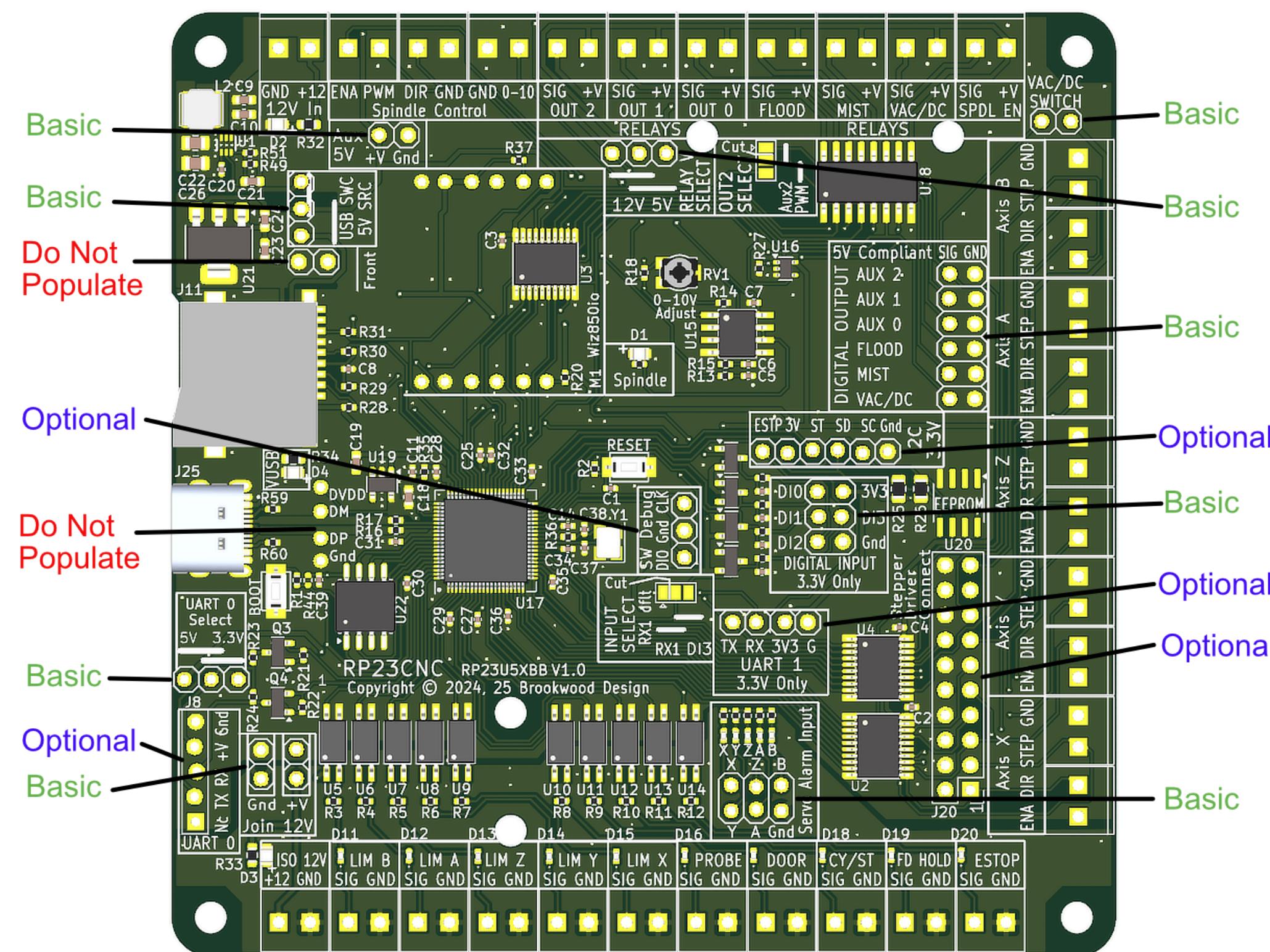


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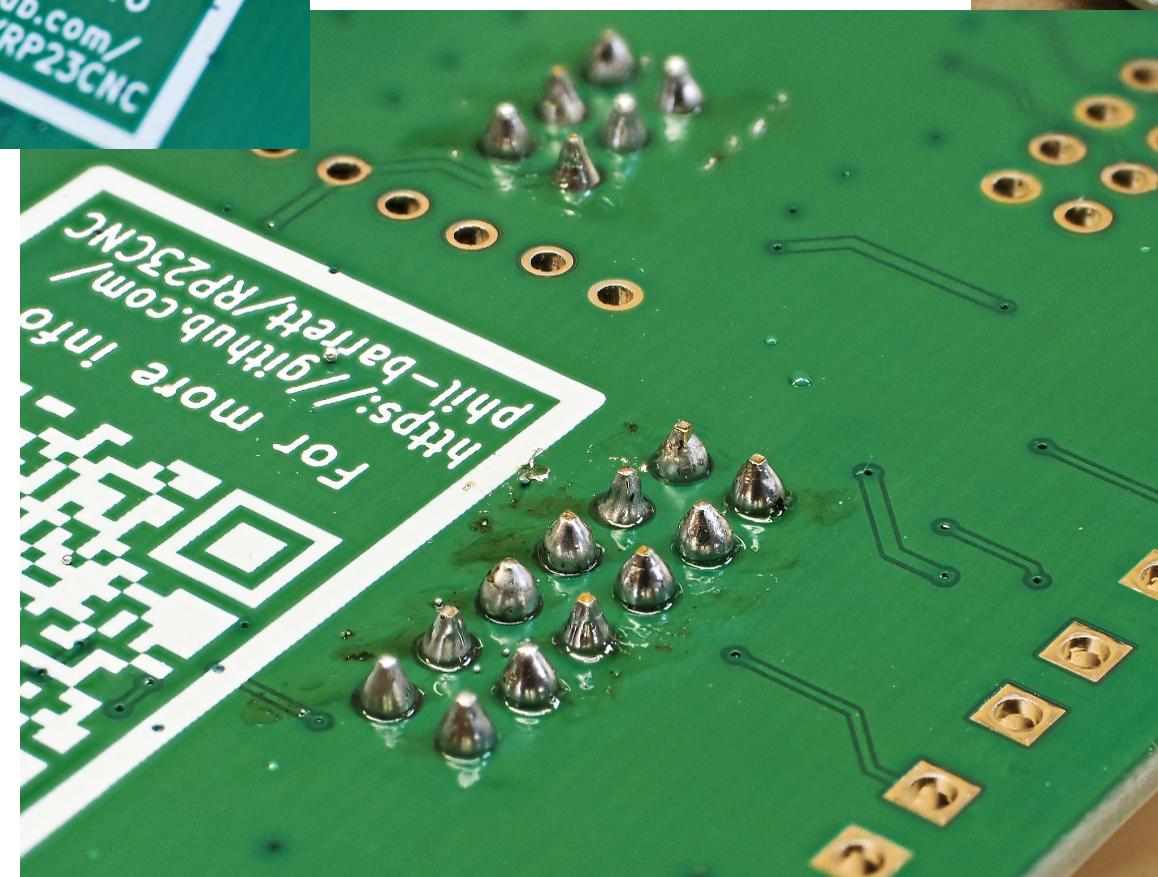
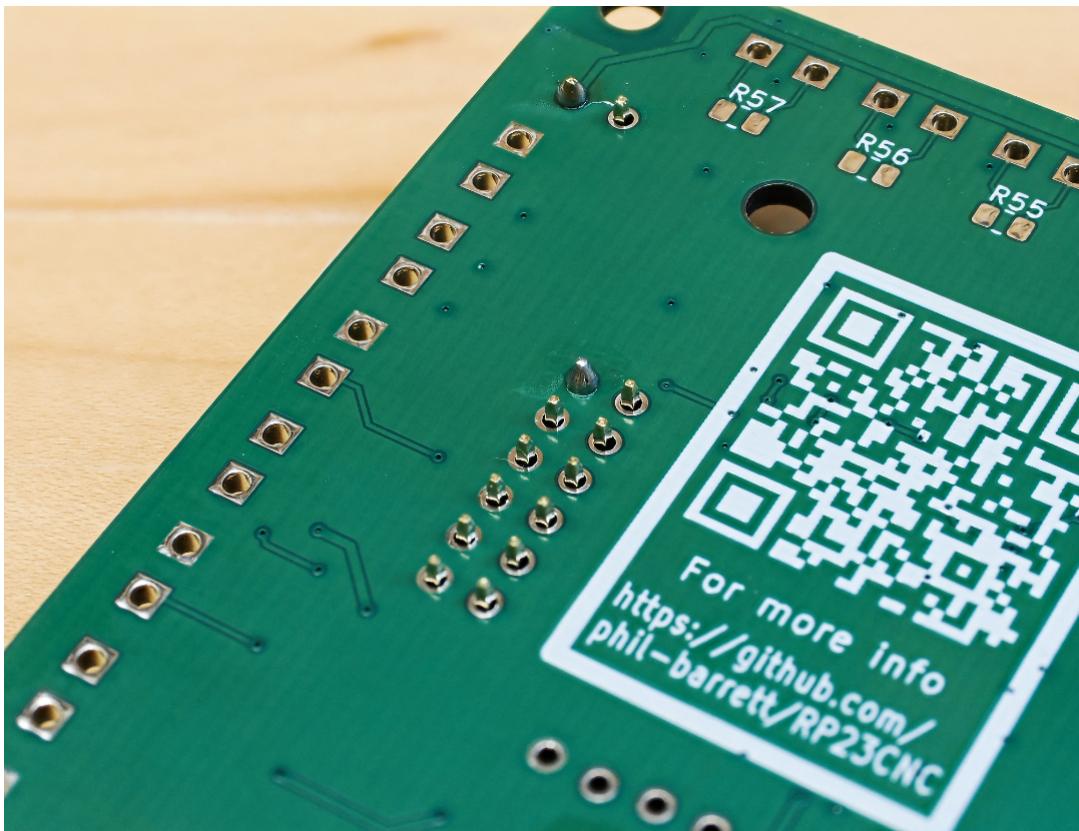
Step 3. Assemble the headers

Insert headers in the Basic locations indicated in the illustration. The headers should snap into place but if they don't, use a bit of painter's tape to hold them in place. Flip the board over and solder one pin of each header. Check for proper seating.

Note that the Optional headers should only be installed if you have a specific application that will use them. The 1x40 header provided in the kit is enough to populate all headers on the board. However, you may want to use sockets instead of pin headers based on what you will be connecting to them.



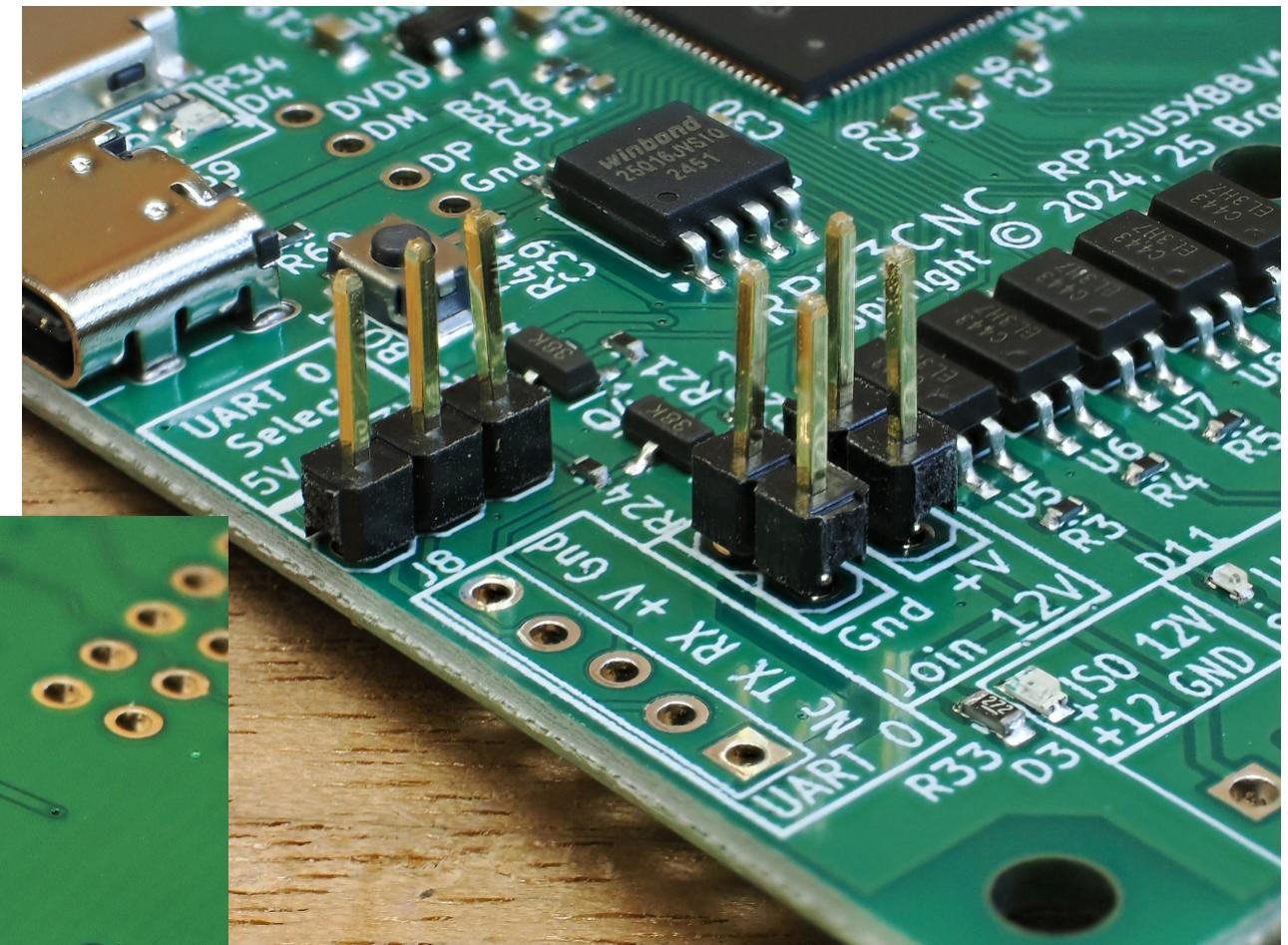
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Step 3. Assemble the headers (cont.)

If any header is not properly seated, use a finger to press the header in position while touching the soldering iron to the previously soldered pin. Be careful not to push on the pin that has the solder (it will get hot very fast).

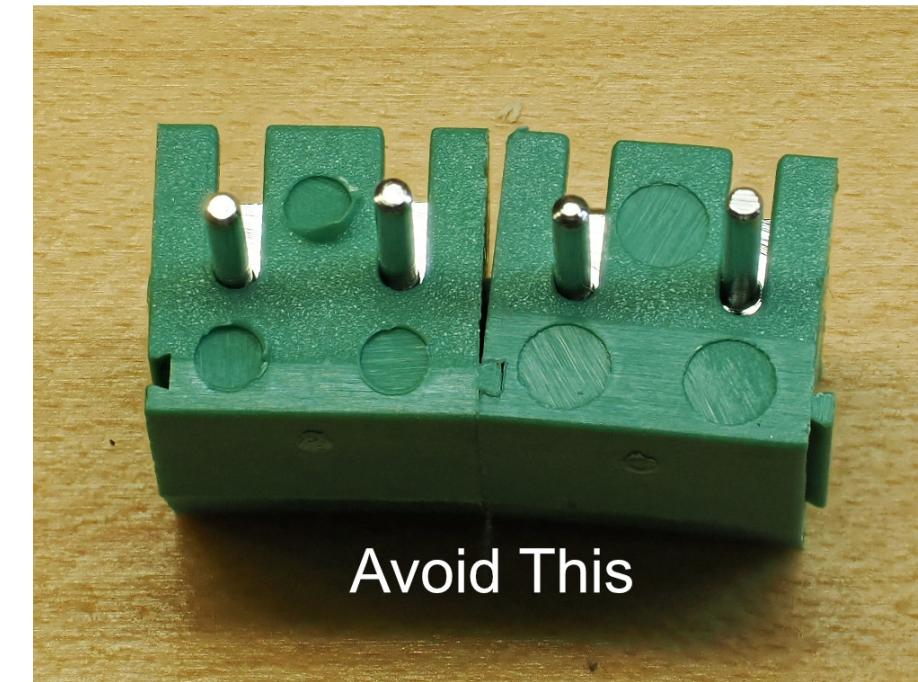
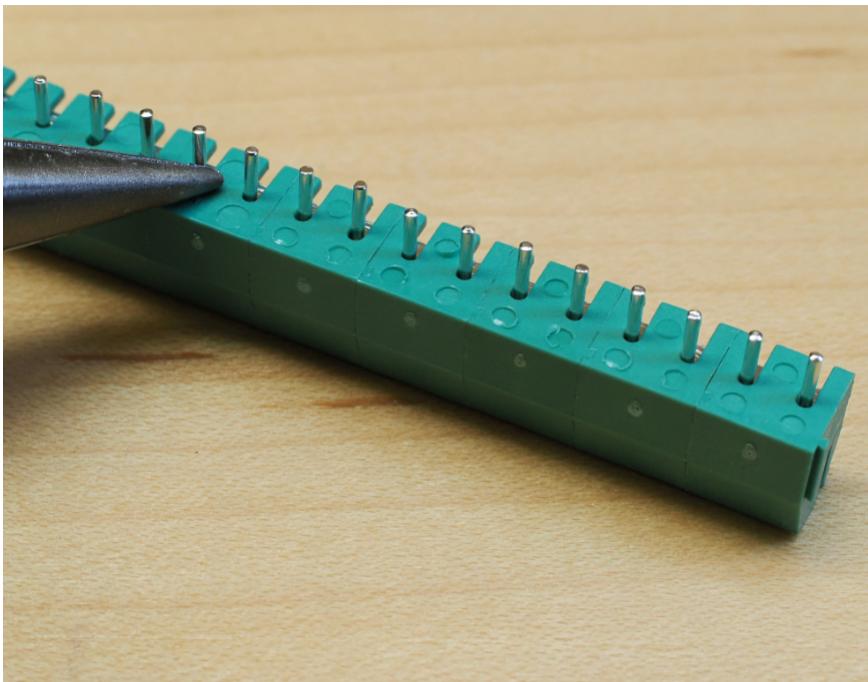
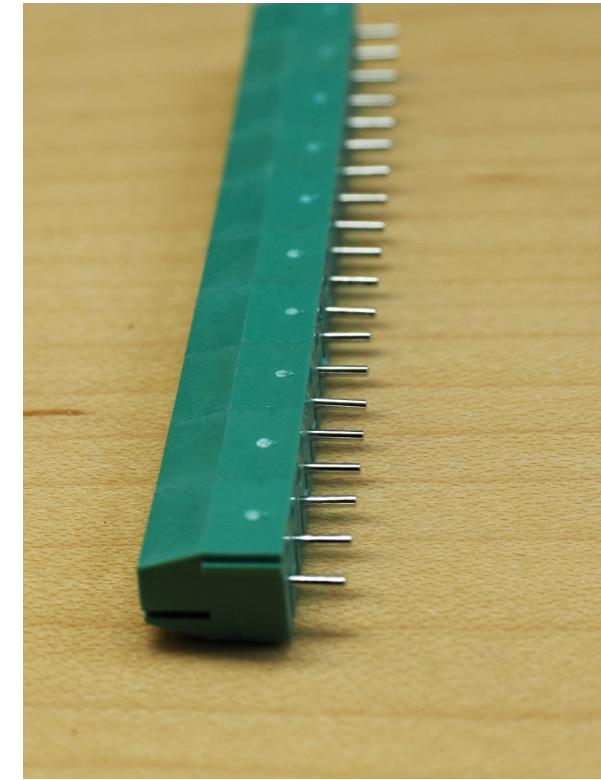
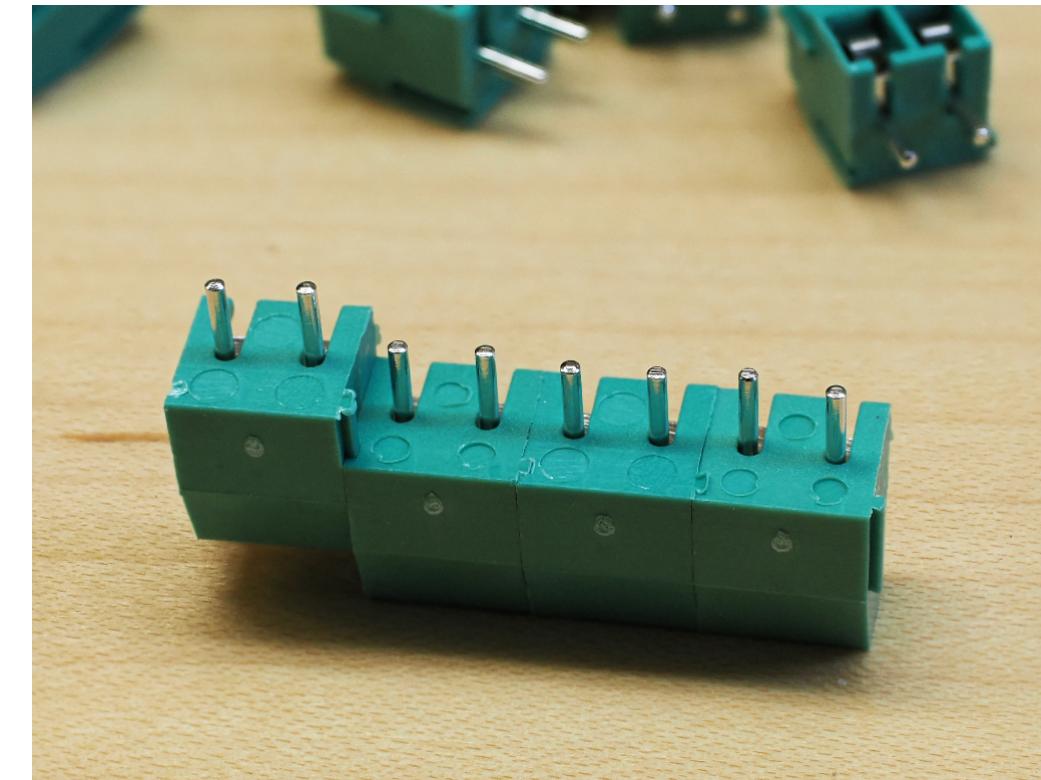
Once the headers are properly seated, flip the board bottom side up and solder the remaining pins.



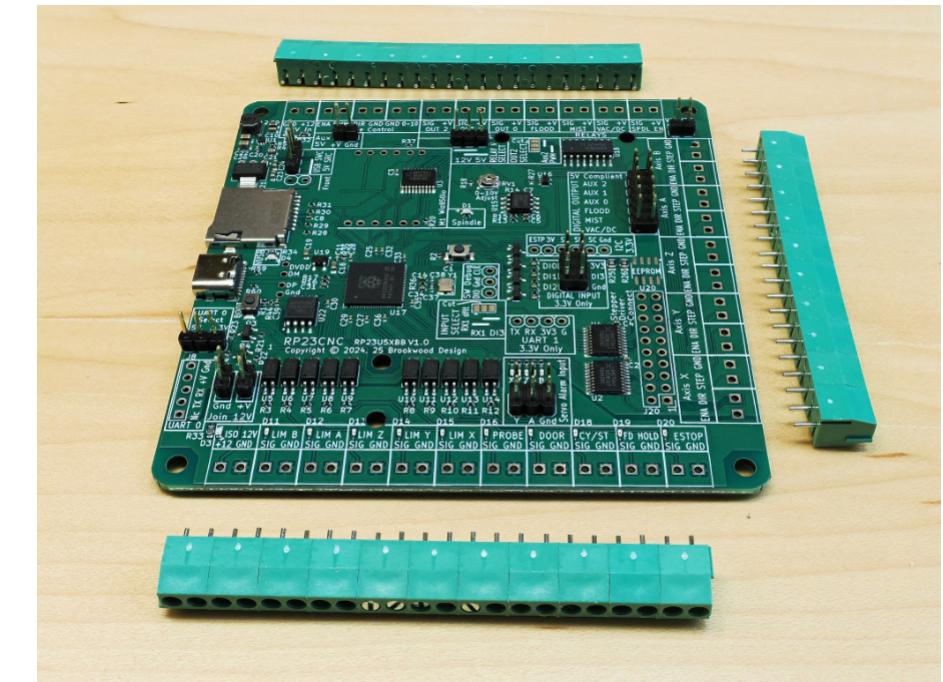
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Step 4. Install the screw terminals.

Join the screw terminals together. They slide together via interlocking “dove tails”. You will need to create 3 strips. Two of 11 pieces and one of 10 pieces. Take care to make all the terminals in a strip perfectly flush. Place the strip upside down on a hard surface and use a screwdriver, needle nosed pliers or similar to force each terminal flush.



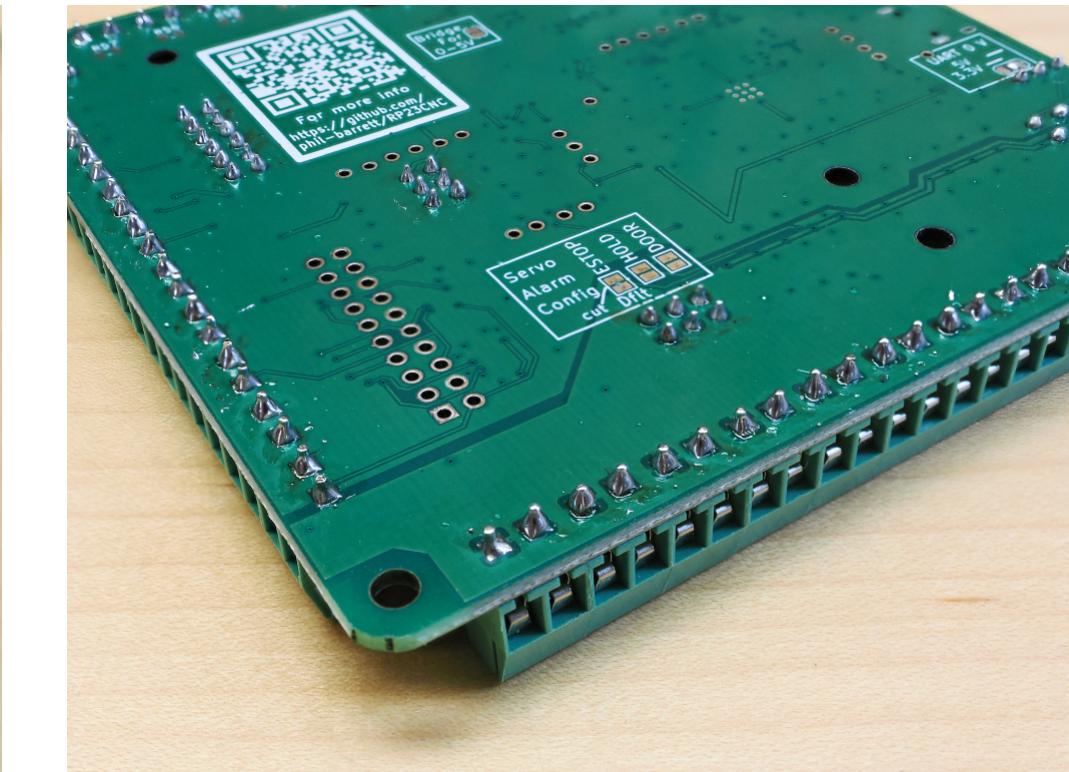
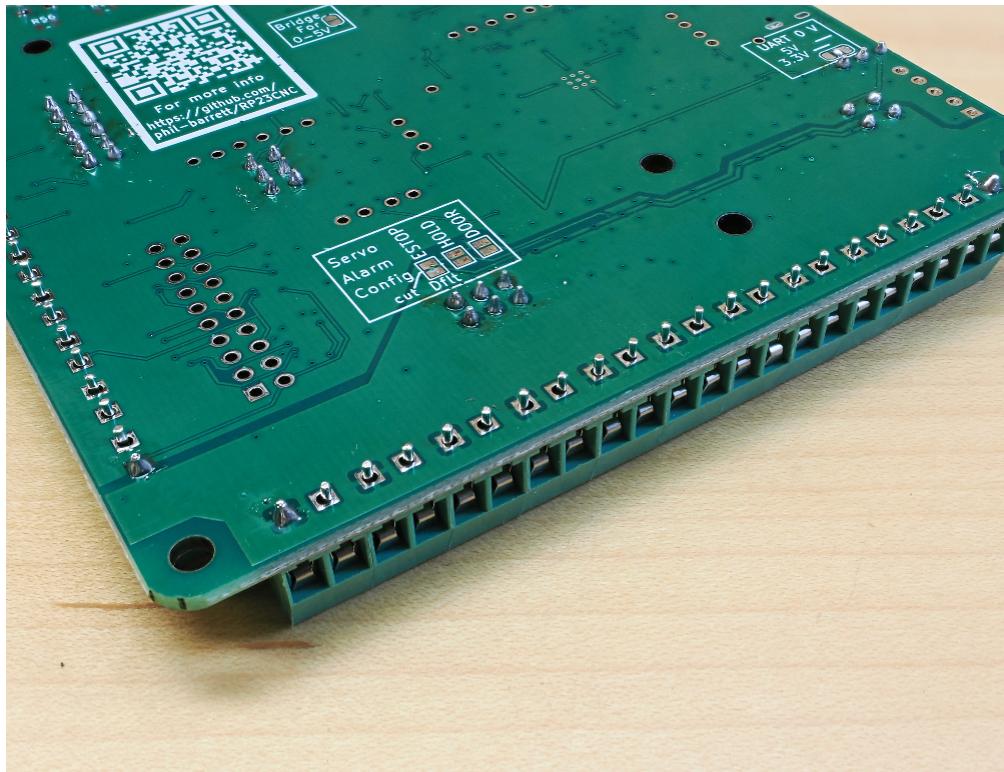
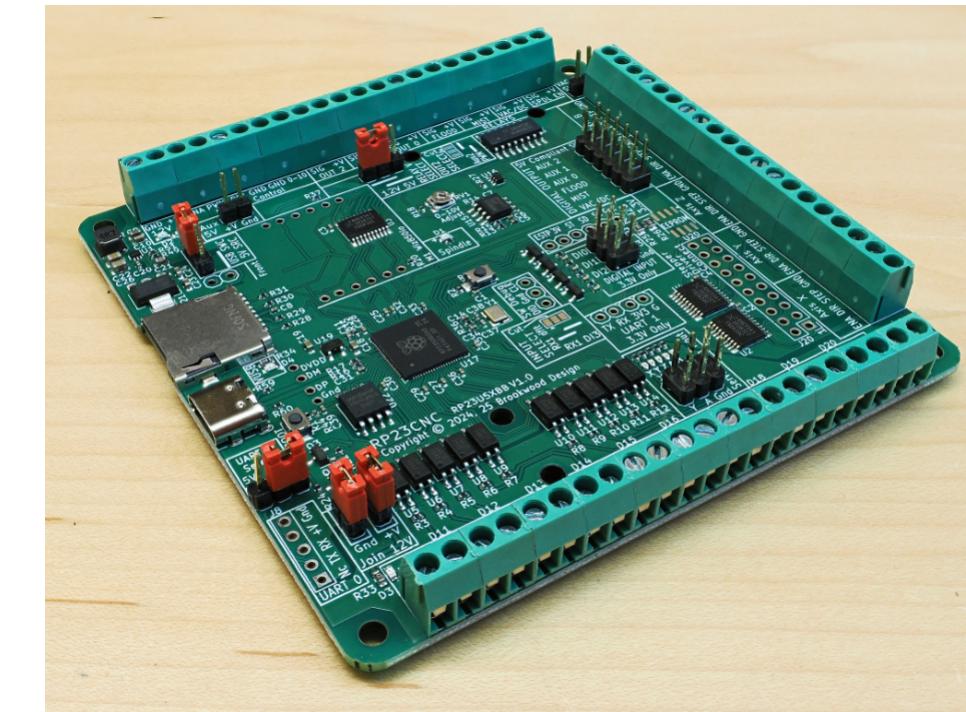
Avoid This



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Step 4. Install the screw terminals. (cont.)

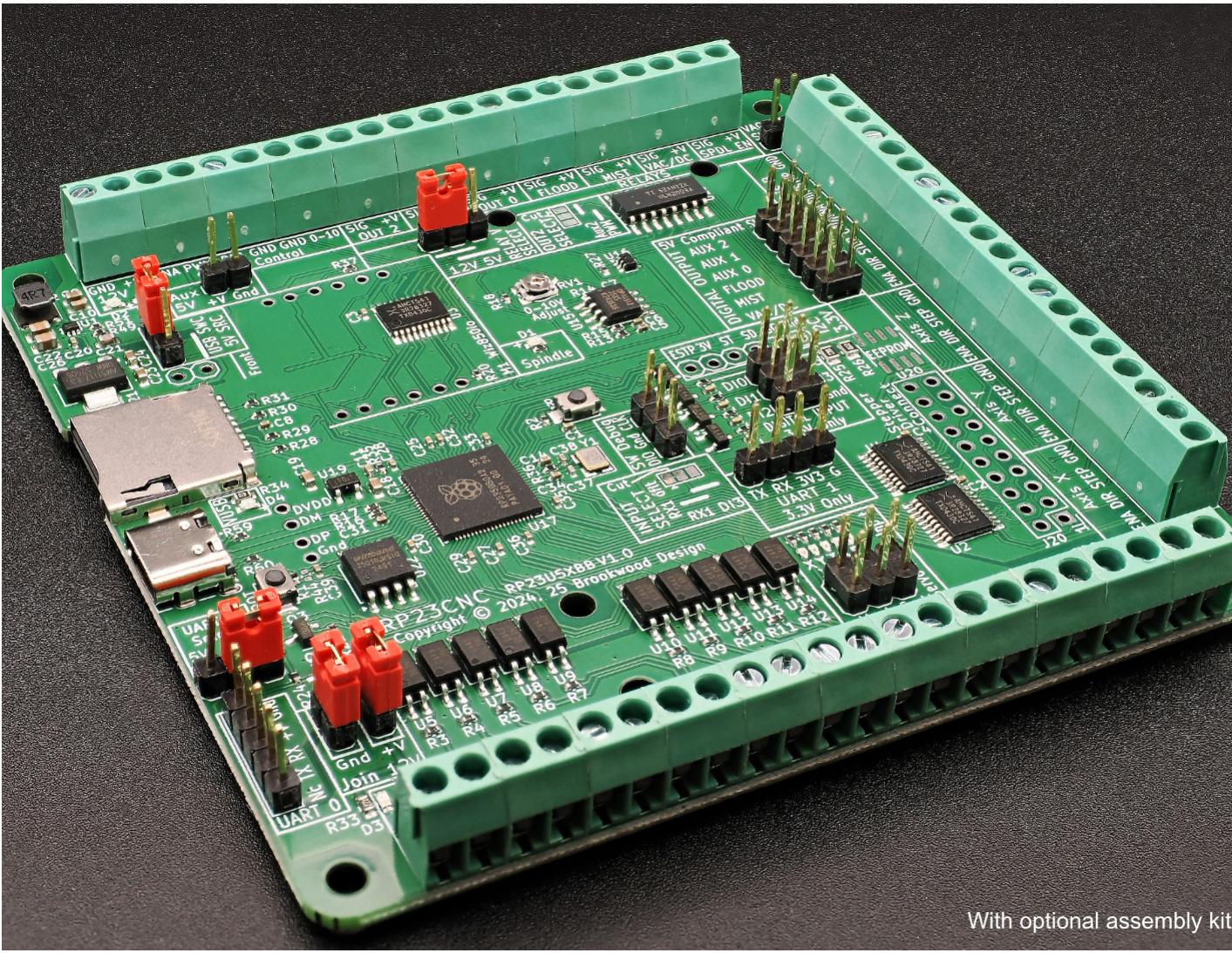
Insert the terminal strips into the holes on the board. Flip the board bottom side up and solder one pin at each end of the terminal strips. Verify alignment and seating. Similarly to how we seated the pin headers, use your thumb to push each end terminal into place while holding a soldering iron to the one previously soldered pin. Verify alignment and then solder the rest of the pins. If the strip is very bowed, you can solder a middle pin first while pushing on the strip to straighten it out. Note: make sure you install the screw terminals with the wire openings outward – don't ask how I know this.



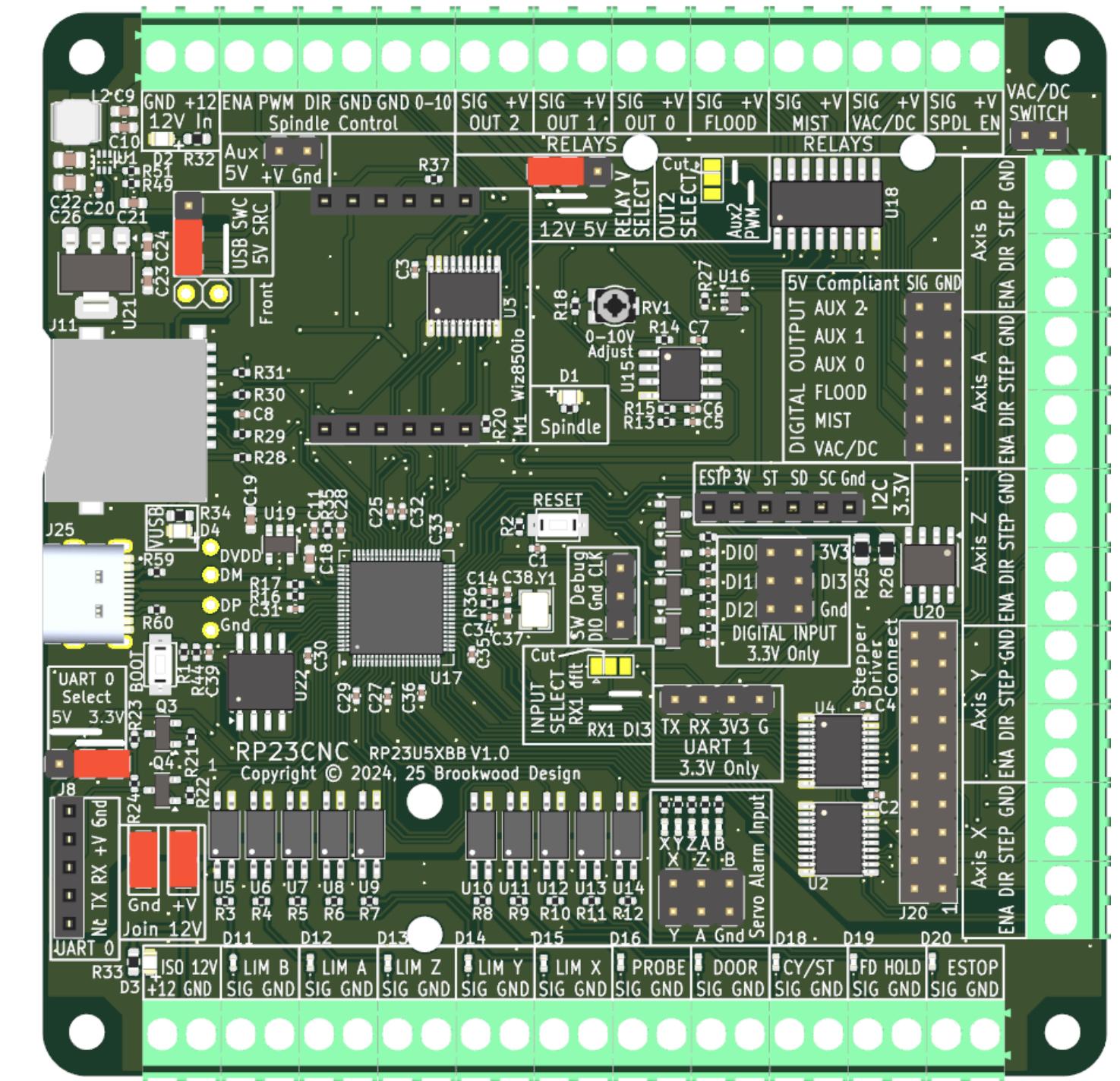
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The basic board is now assembled. Install the shorting plugs in the indicated locations in the illustration to the right. This will allow you to bench test your board with USB power. See the User Manual section Creating and loading grblHAL Firmware for the next steps.

Note, before installing the board into your machine cabinet, move the shorting plug on the 5V SRC header to SWC (board generated 5V).



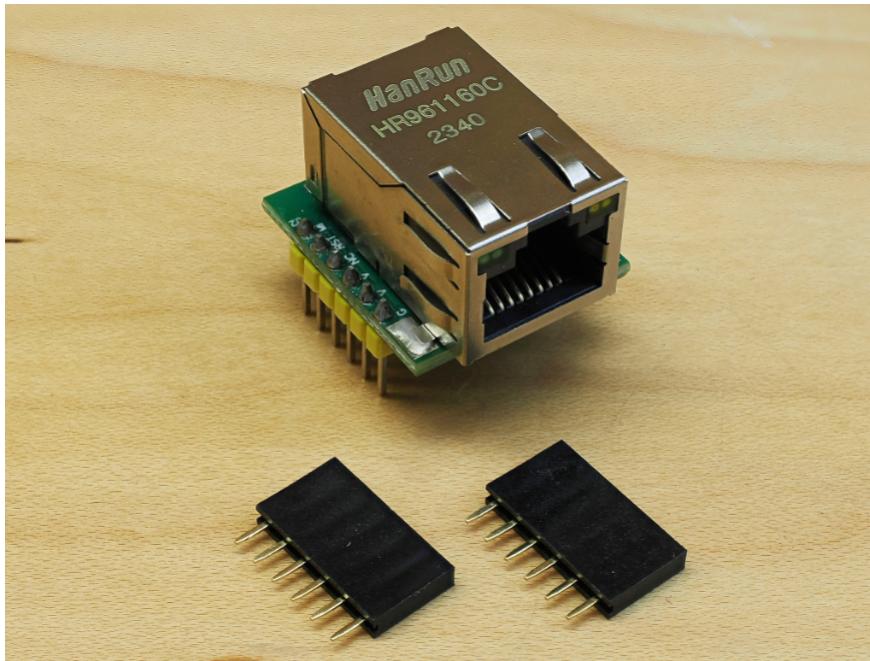
With optional assembly kit



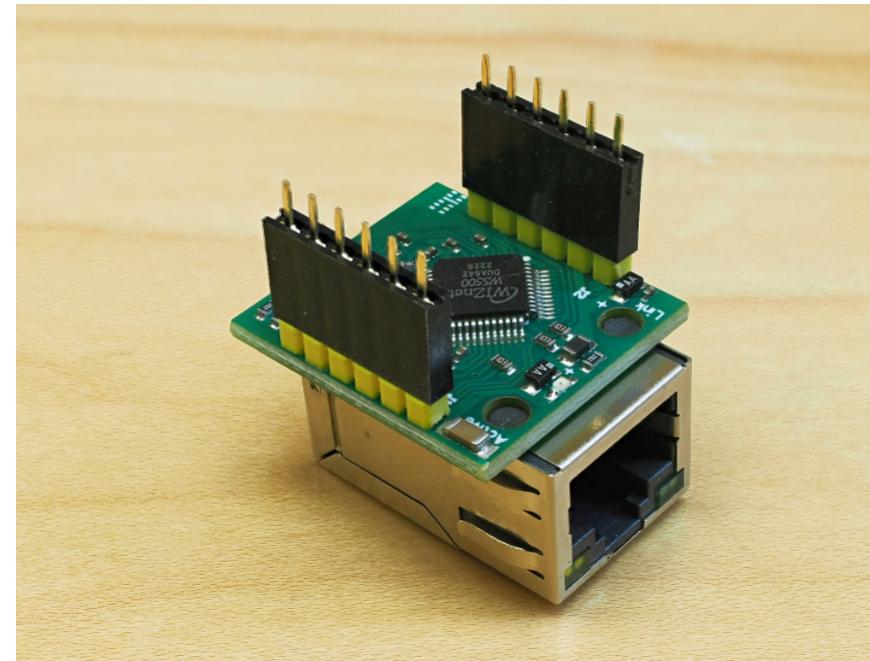
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Installing the optional Ethernet Kit

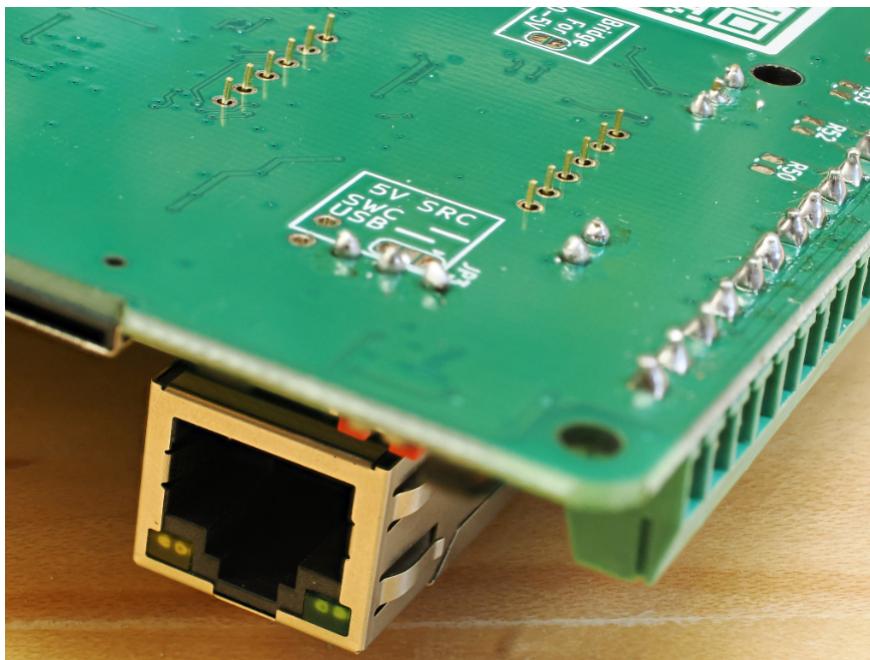
Take inventory. You should have two 1x6 2.54mm sockets and the Wiz850io module with pin headers installed.



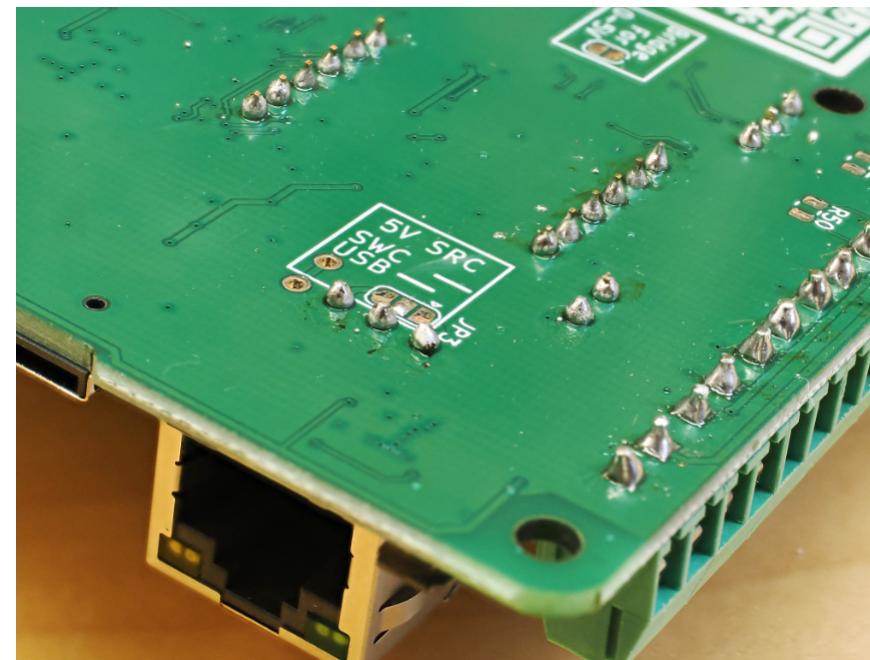
Insert the sockets onto the pin headers on the Wiz850io.



Insert this assembly into the holes for the Wiz850io on the RP23U5XBB. Solder one pin on each socket. Verify the sockets are properly seated and correct if necessary.



Solder the remaining pins.



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Assembly is complete. See the User Manual section Setting up Ethernet for instructions on how to get Ethernet running.

