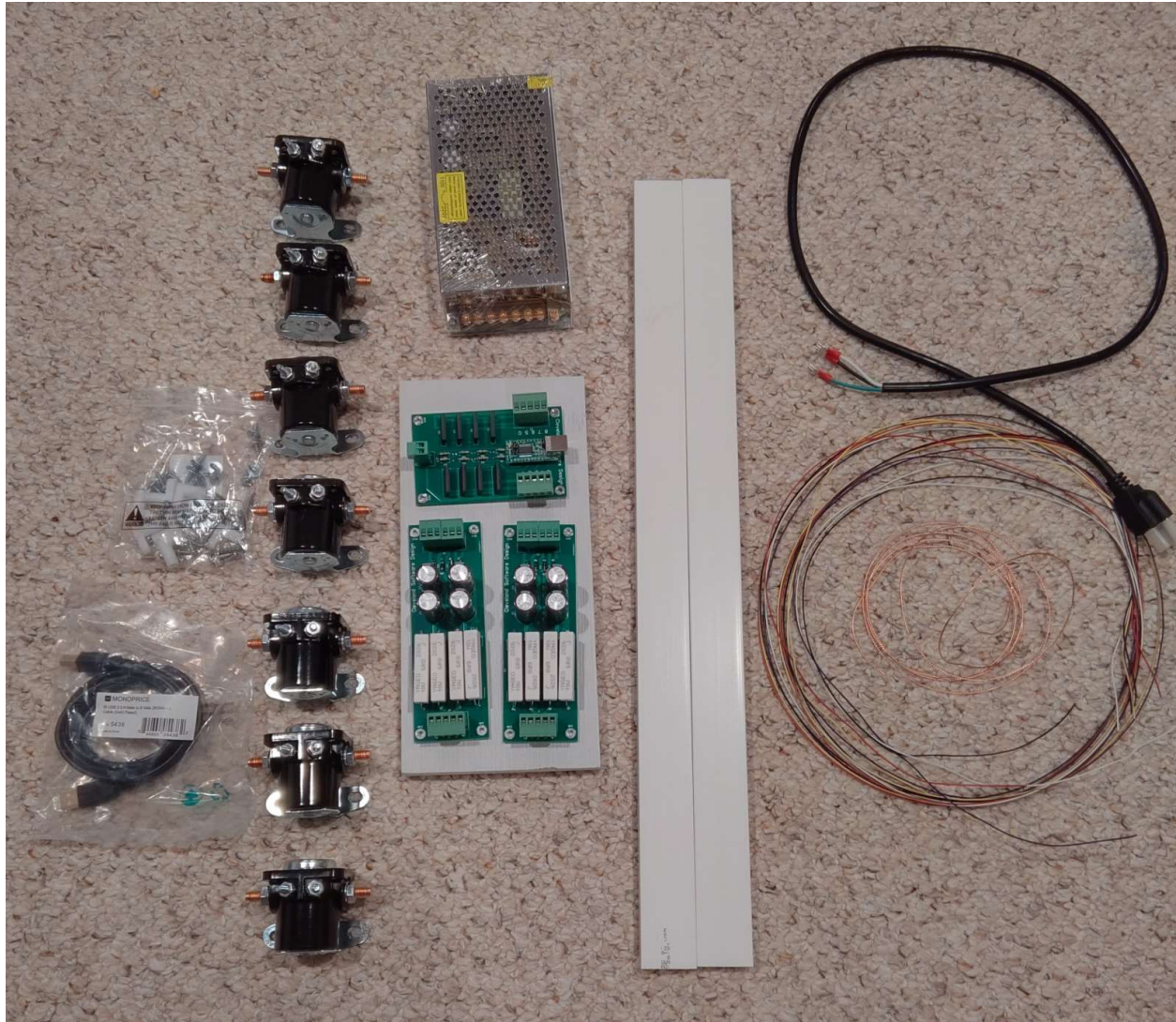
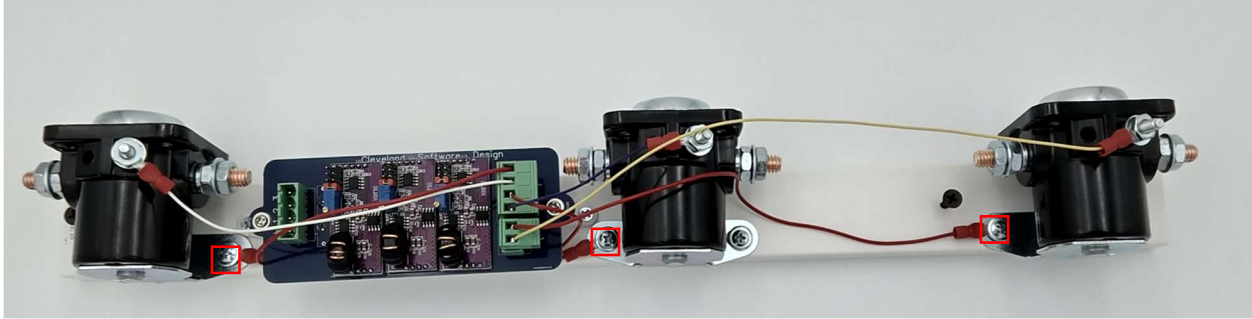


# Instructions for assembling the complete kit



\*Note that parts might look different from the picture above as I have made a lot of improvements to the original design – the solenoid life extenders have been redesigned and use a much more efficient circuit and the relay board now uses negative switching transistors that can handle more current, have LED indicator lights that help with troubleshooting and are modular to make them easy to replace in case of a failure down the road.

1. Start by mounting all the solenoids and the life extender boards on to the solenoid boards
  - a. For this step, you need 4 smaller mounting screws, 4 PCB mounting feet and hardware as well as 2 of the 1/2" solenoid mounting screws for each solenoid.



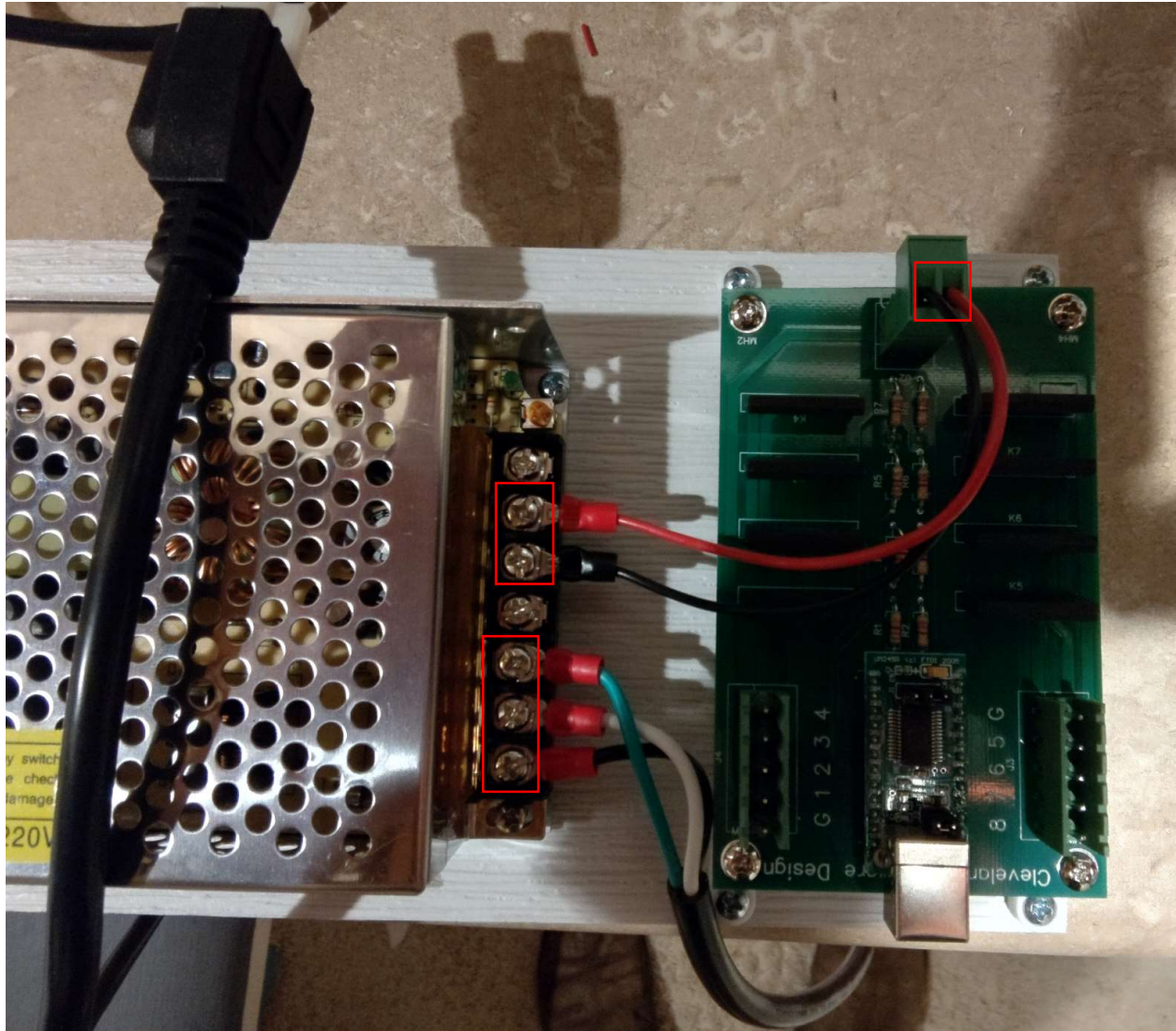
2. Connect all the solenoids into the 1-4 (or 1-3 for a 6 solenoid setup, as shown above) connection on the solenoid life extender board \*\*\* IMPORTANT!!! ON NEWER V3 SOLENOIDS, BOTH WIRES CONNECT ON TOP OF SOLENOID \*\*\* – Instead of connecting the wire to the base of the solenoid like in the picture, there are two terminals on the solenoids and you should connect the negative wire to the other terminal on the top of the solenoid.
  - a. For this step you will use the supplied wire and 8 of the supplied ring terminals
  - b. Connect the base of the solenoids to each of the negative terminals on the output side of the life extender board, and the top of the solenoids to each of the positive terminals of the life extender board. It is not actually important which part of the solenoid goes to the positive or negative side of the life extender board, but it's best to keep it consistent
  - c. From left to right, the solenoids are connected to terminal 1, 2, 3, 4 (This is not critical, but if you wire it this way, then the DOF configuration will match the instructions I have on my website)
  
3. Now start assembling the power supply and relay board. First step is to mount the power supply and relay board (Shown is the Sainsmart board, but if you purchased the KL25Z board, the mounting is very similar)
  - a. For this step you will need 6 of the smaller mounting screws and 4 PCB mounting feet and hardware



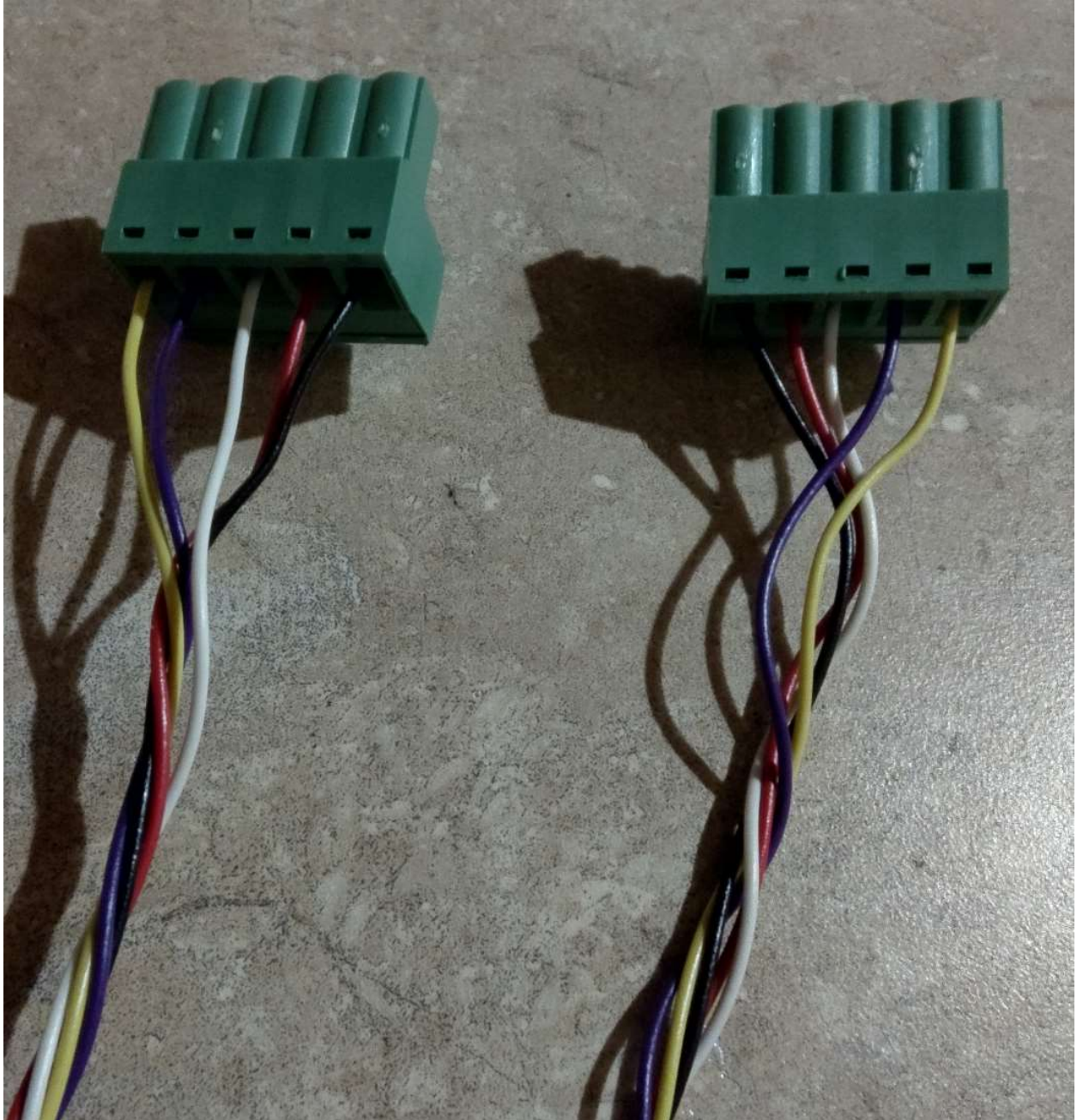
- b. Back of power supply showing the other screw mounting position



4. Now connect the power supply to the relay board and the power cable
- For this step you will need a small length of 18 gauge wire, two spade terminals and the power plug

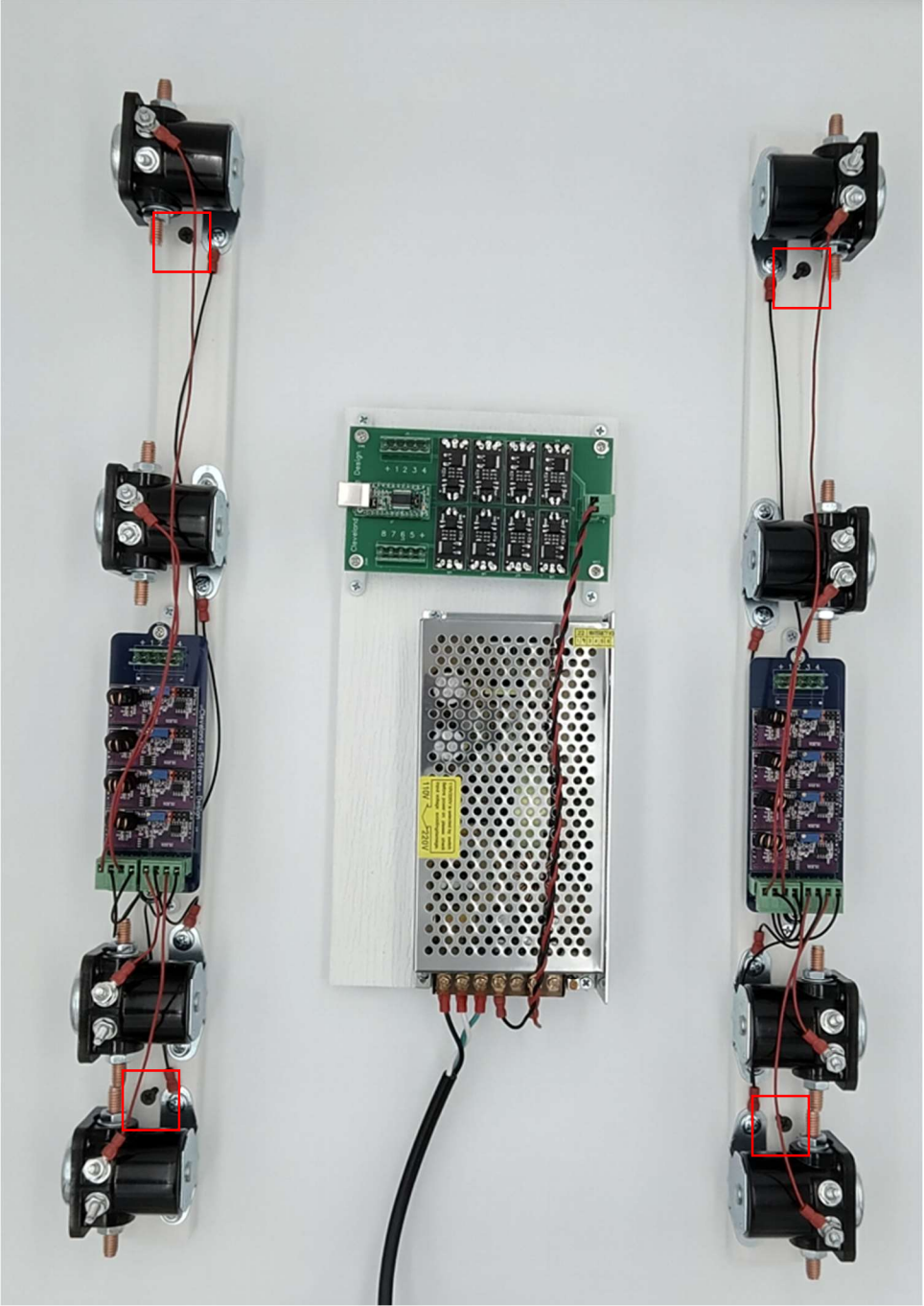


5. The next step is to use the remaining wire to the plugs that connect the relay board to the solenoid life extenders
  - a. Make sure to line up the numbers and the “+” on the life extender boards with the relay board “+” (The newer relay board and KL25Z board shares the positive terminal and switches the negative side)
  - b. If you are using the Sainsmart board, you will want to use ports 1-8 for your solenoids. On the KL25Z, use 1-5 (max) for the left side, then 6-10 for the right side. you have a lot of options for other devices too, but for this tutorial we will assume just solenoids.
  - c. I provide enough wire to make at least a 3’ connection between the board and the solenoid bars, this should be plenty for any cabinet.
  - d. You can optionally twist the wires to make for a cleaner looking installation.

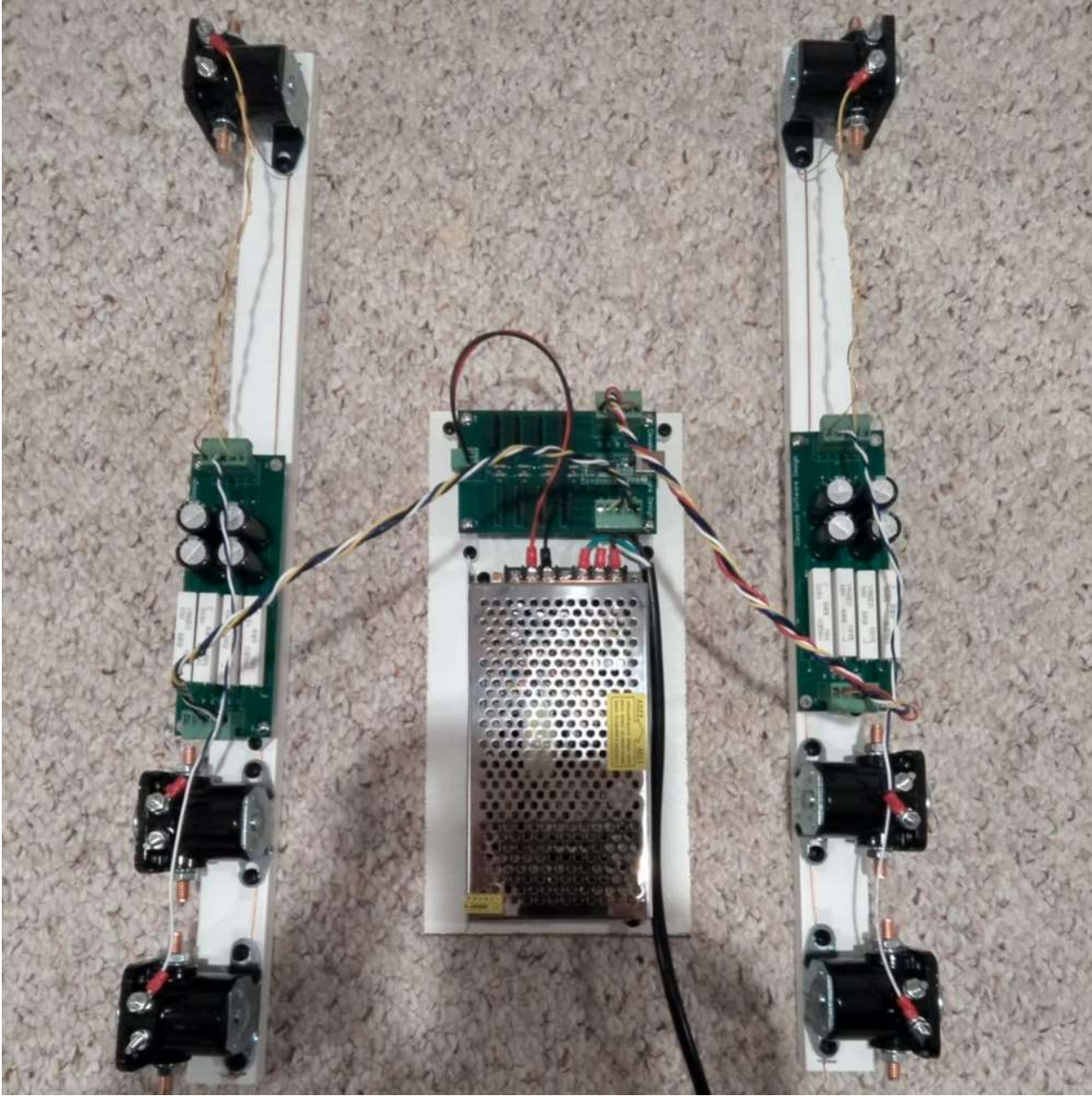


6. Now plug everything in and you are almost done! The last step is to pre-set the included 1" drywall screws to make installation on the side of your cabinet fairly easy

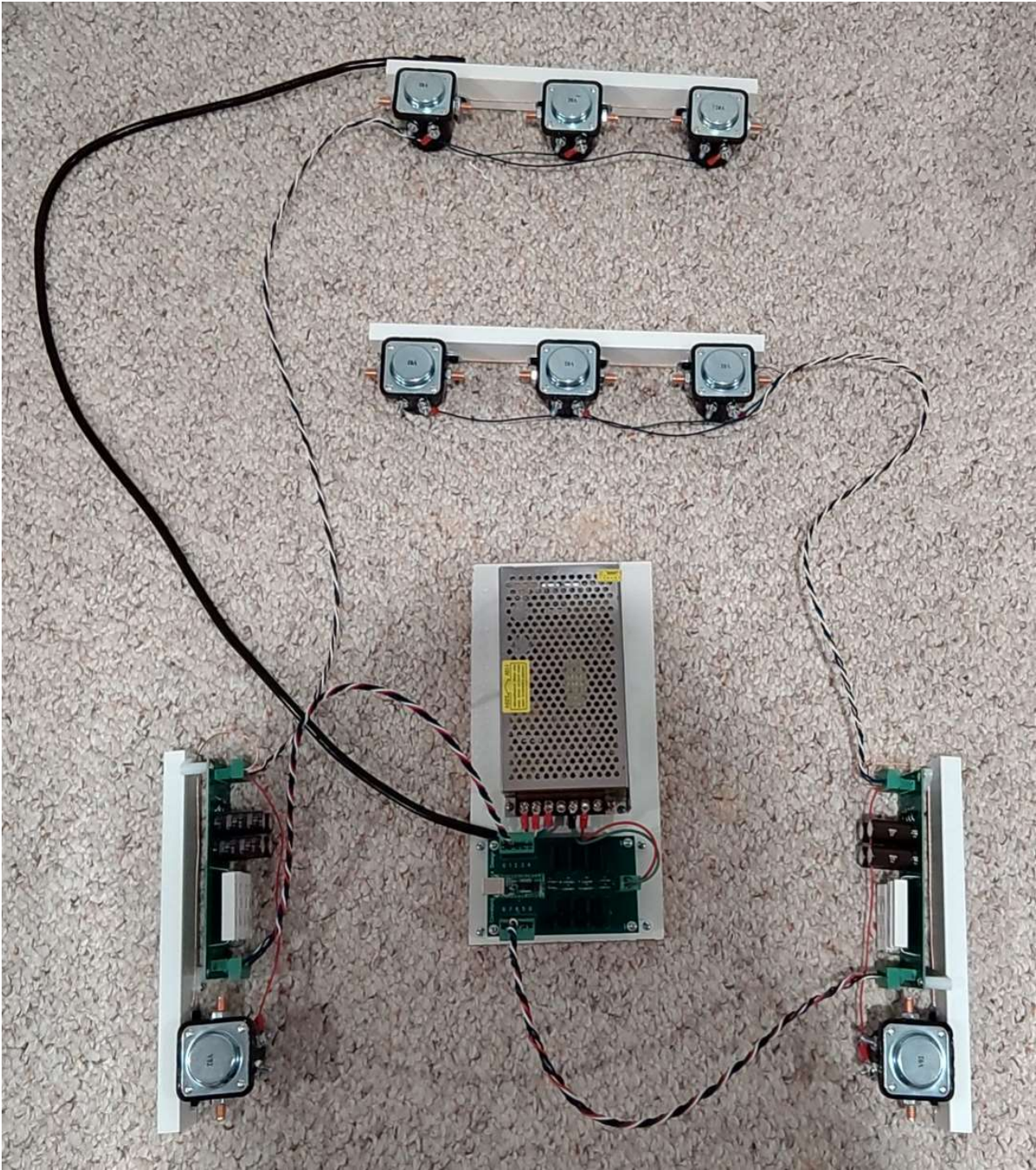
7. You can do a lot of different types of configurations that meet the need of your setup, all of these use the 24" solenoid bars that are included, some examples are below:



6 Solenoid Configuration

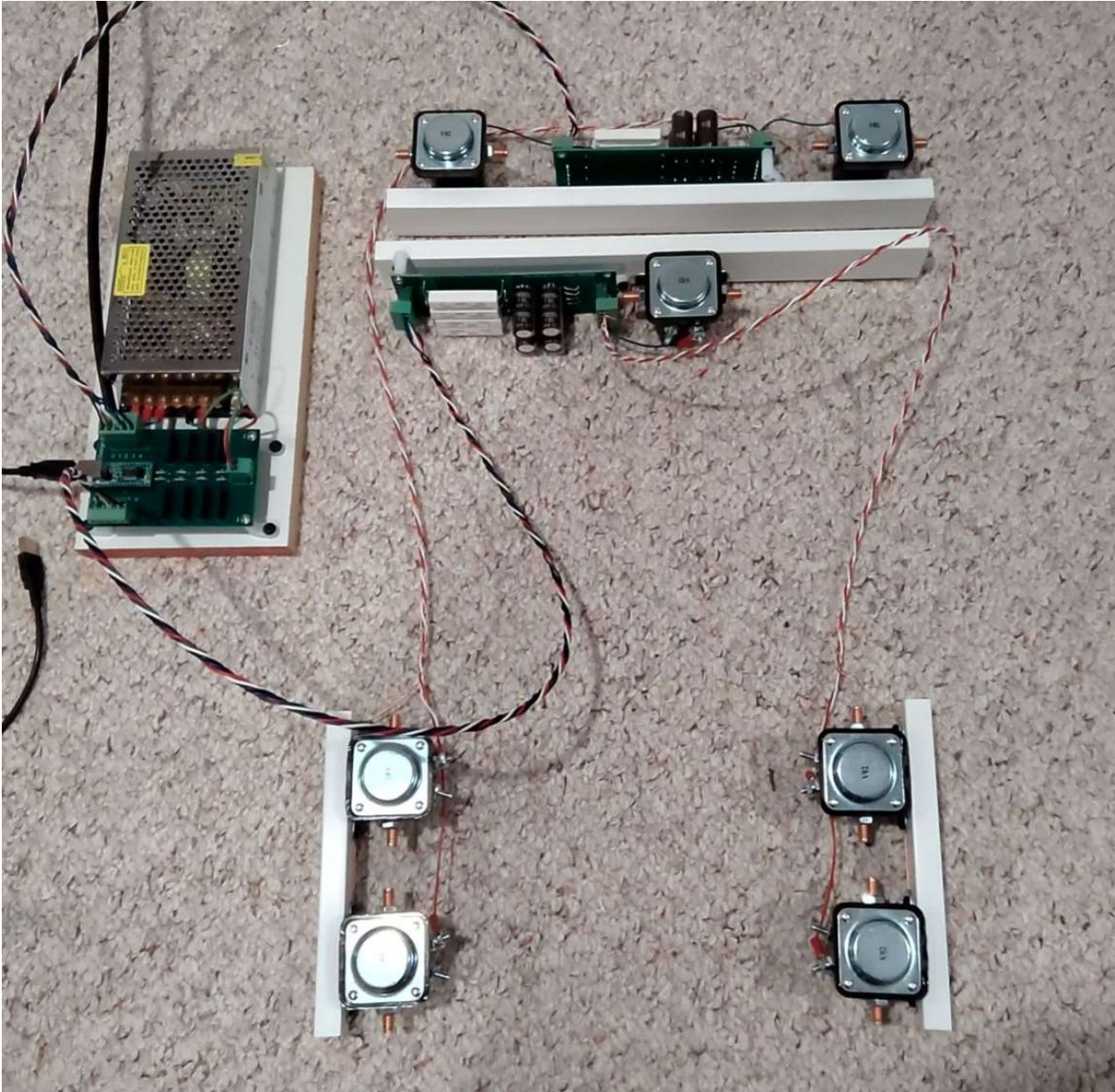


Configuration to add to a flipper solenoid setup to have a 10 solenoid configuration with all solenoids in their proper positions





A nice 7 solenoid setup



Setup combining the flipper solenoids board with the 8 solenoid kit

