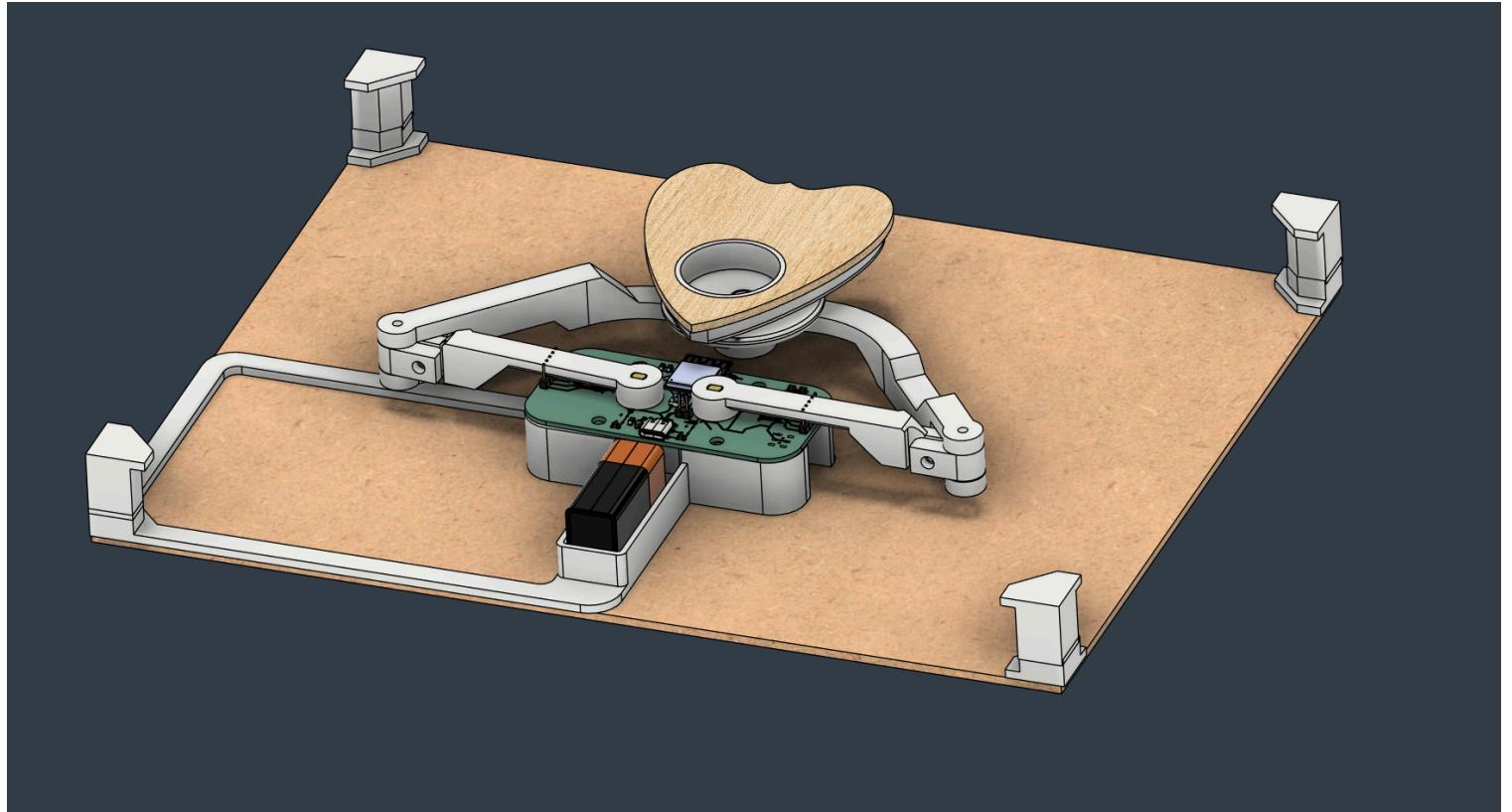


The WijiBoard construction consists of an MDF "Base" board with all of the functional components mounted on it. A 11 x 14 wooden box that is magnetically connected to the top provides the Ouija surface with the necessary graphics, and hides the internal workings of the design.

If you purchased the fully complete board, you can use this guide as reference for repair, self education, modification, enhancement. Essentially you don't explicitly need to know any of this but maybe you find it interesting.

If you purchased the Circuit board, you're in the right place!

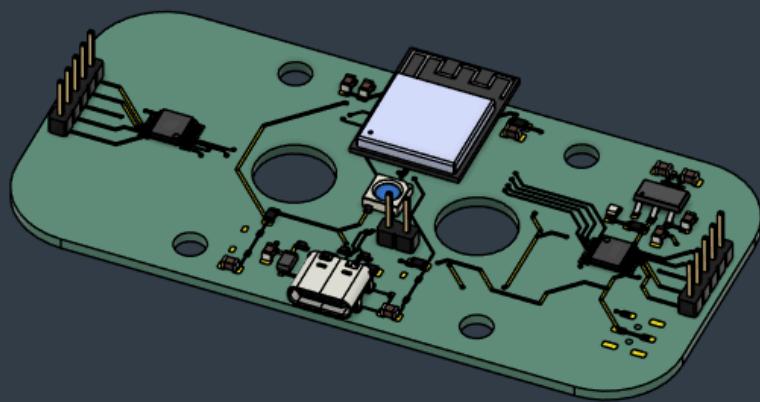


## Assembly

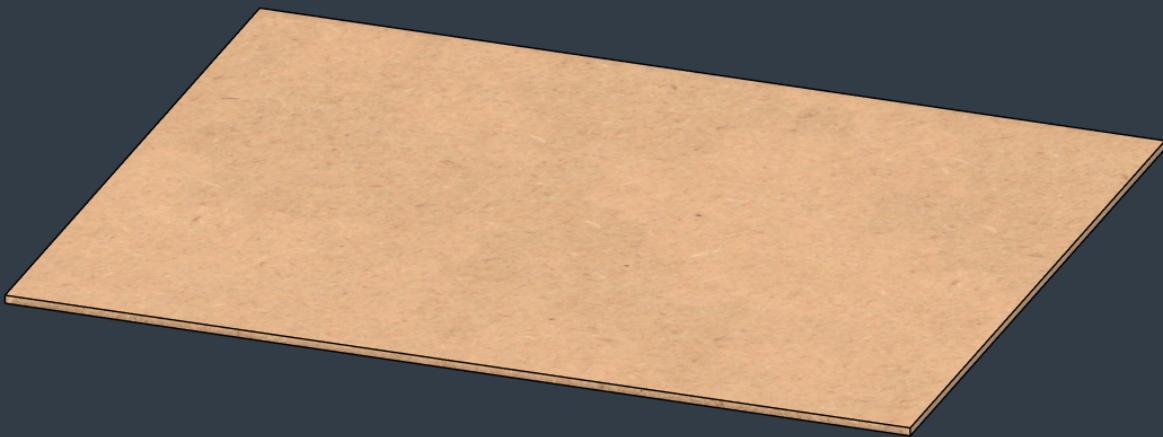
### Step 1 - Mise en Place

#### Components

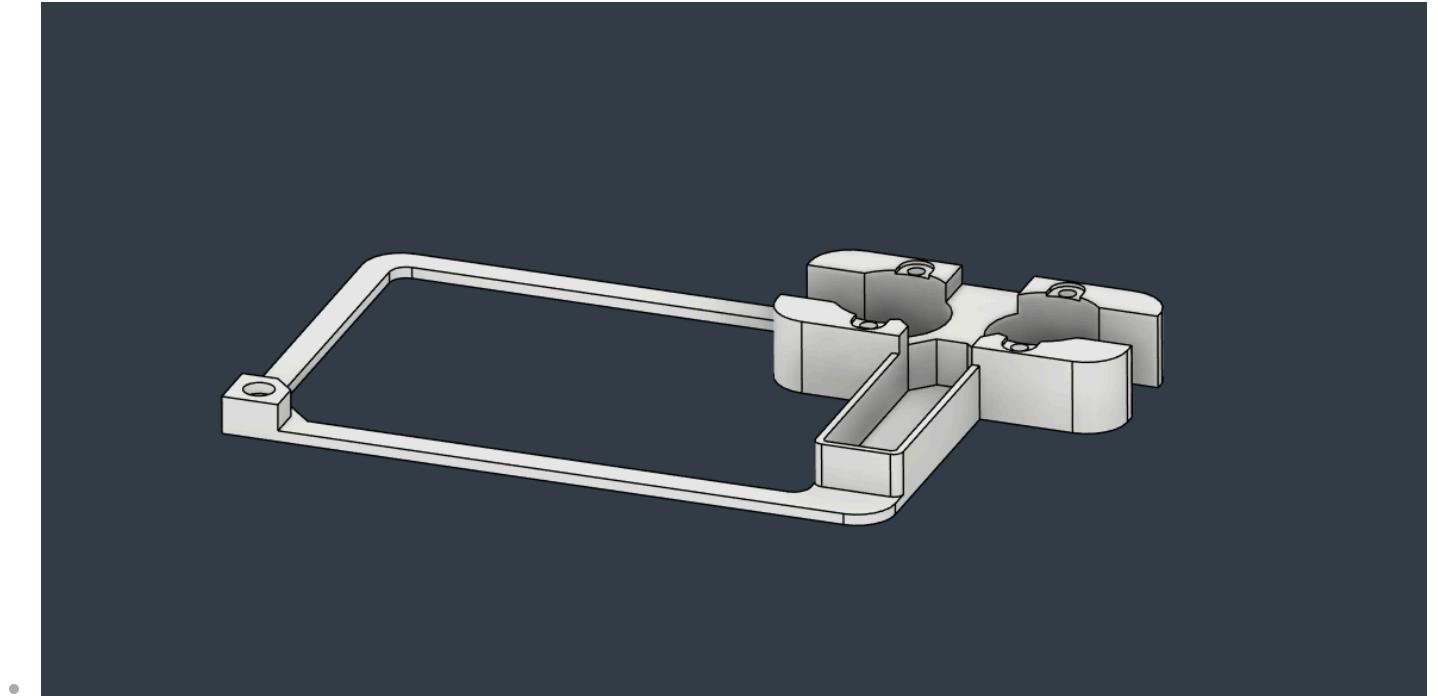
- PCB



- MDF Base Plate



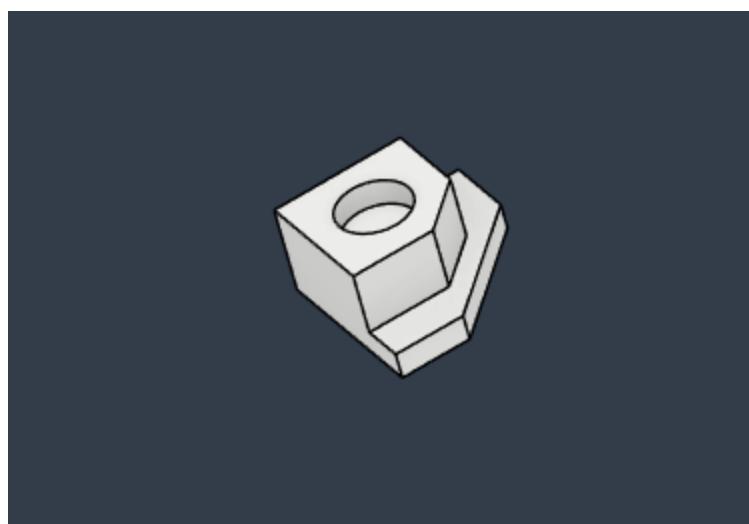
- 3D printed Parts
  - Center Plate



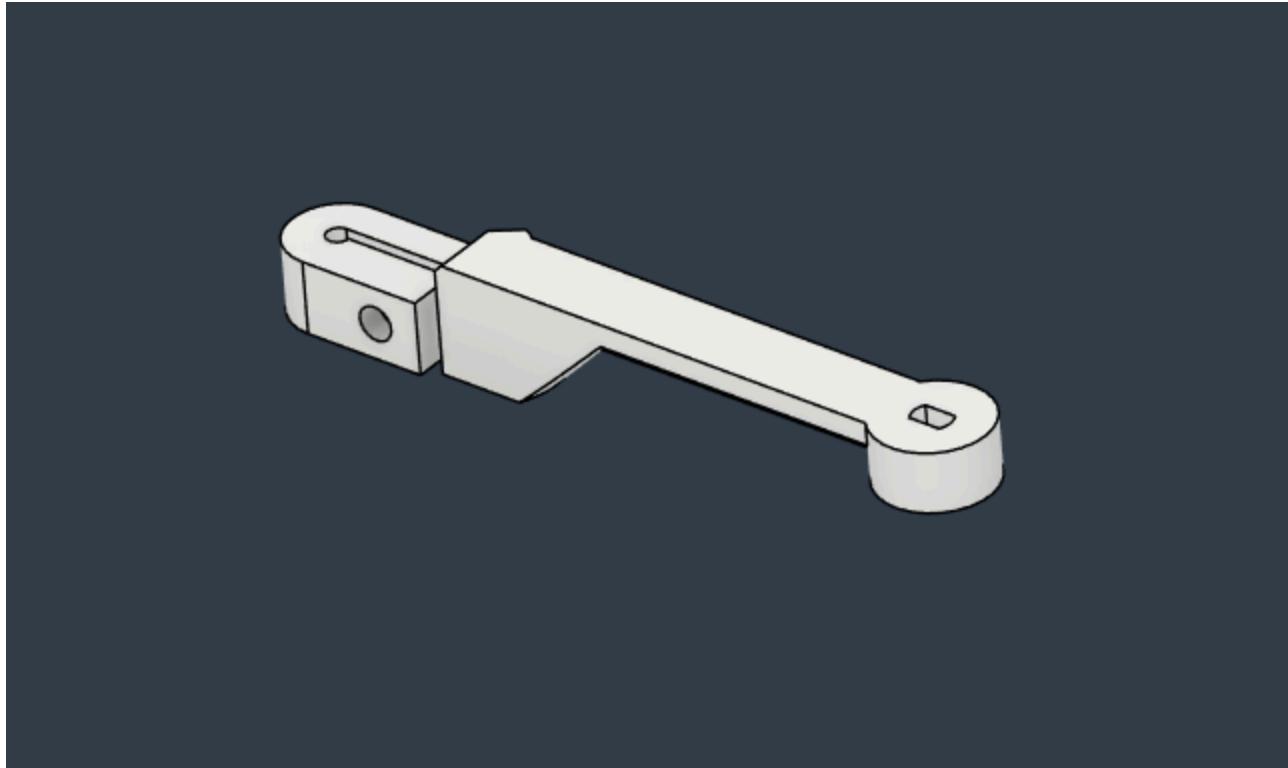
- Top Magnet Connector (4x)



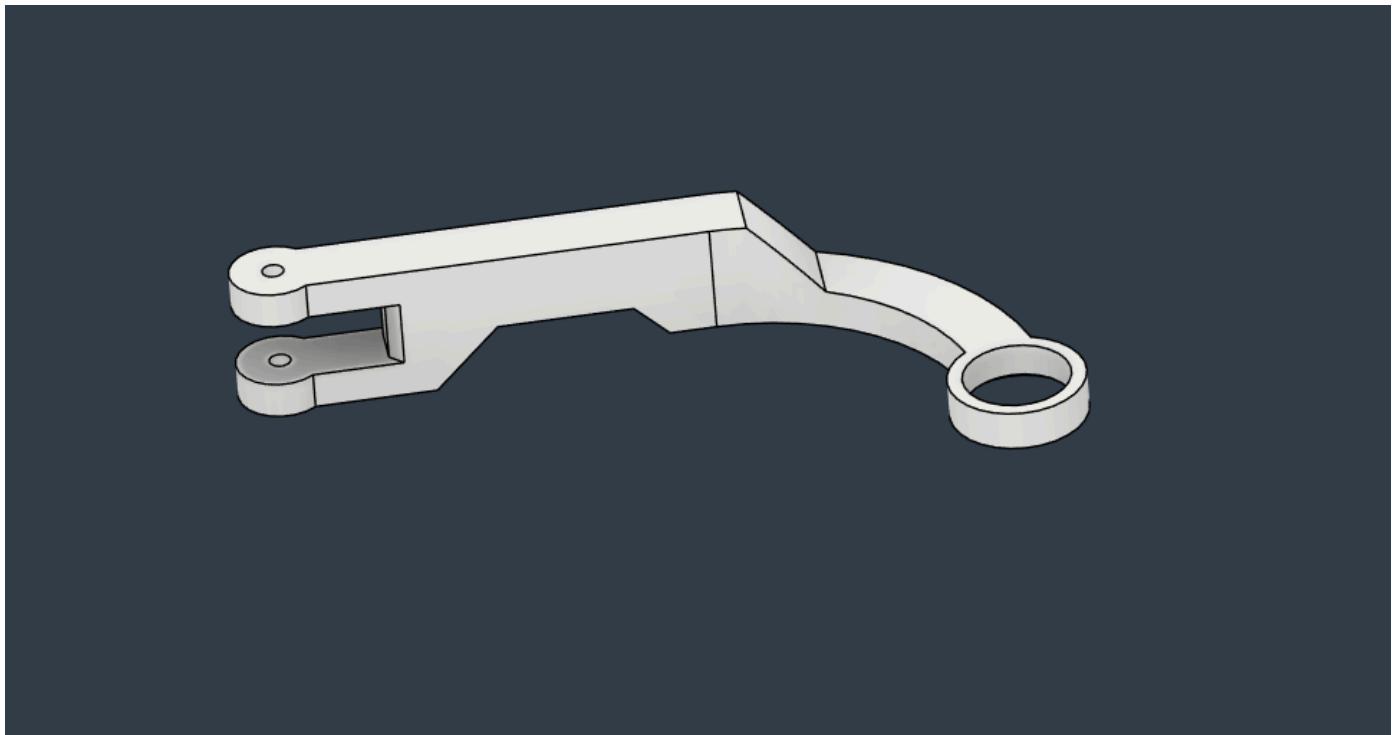
- Bottom Magnet Connector (3x)



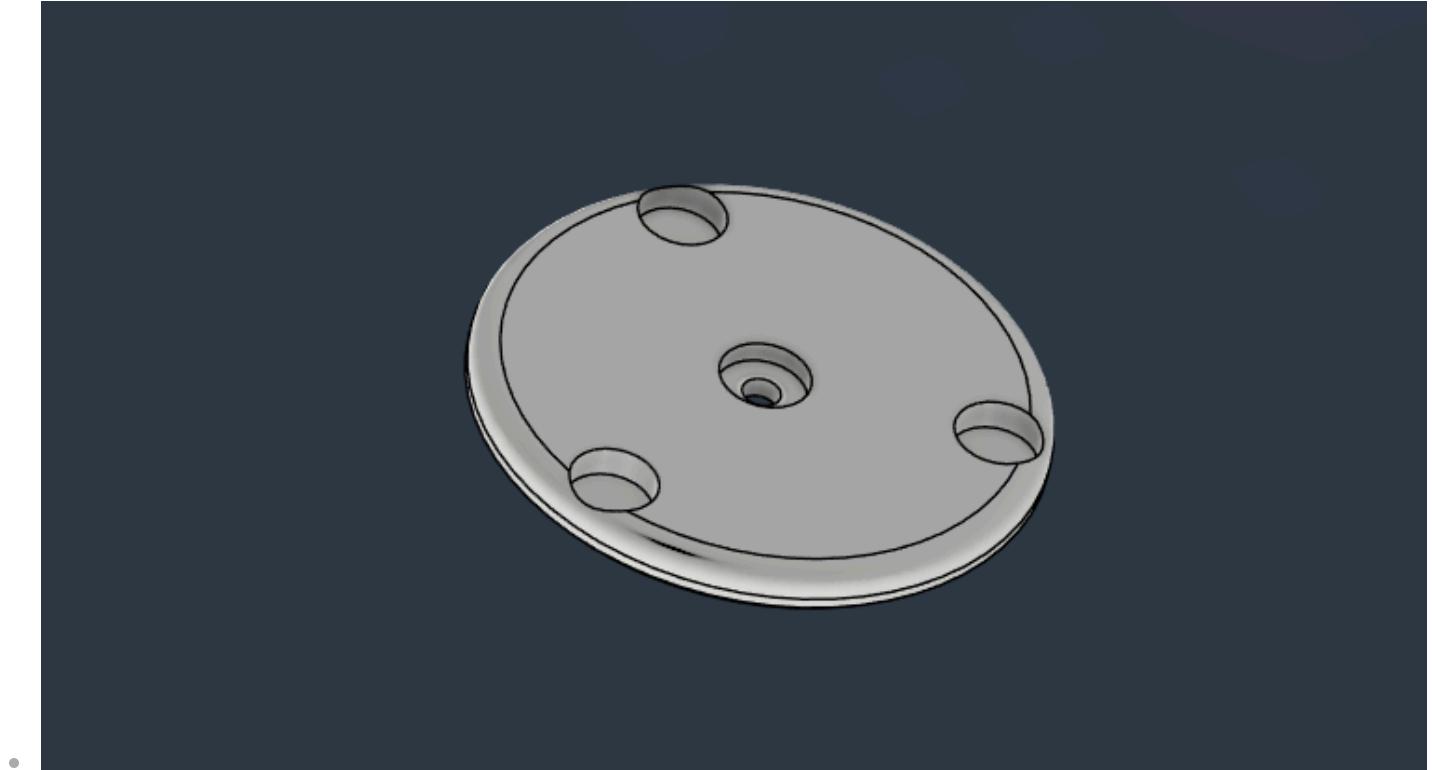
- Arms (2x)



- Hands



- Planchette Connector



- Bearing Base



- Planchette Wood



- 11 x 14 box

- Magnets 8 x 3 (14x)



- 3mm x 21mm Pins (2x)
- Bearings F688ZZ (2x)



- M3 Heat Press Inserts
- m3 Button head cap screw

## Step 2 - Magnets

I typically start the assembly process by collecting all of the 3D printed parts and preparing them with the External components. I.E. Magnets, and Heat threaded inserts. Each of the Top magnet and Bottom magnet Connectors have a magnet pressed into them, the polarity specifics isn't important but it is important that the top plate is attracted to the bottom plate pieces. These are the pieces that hold the MDF base (and all the electronics) into the Wooden Box. In addition to the Top and Bottom Magnet pieces, the Planchette 3D print and the Planchette Connector also need magnets. the specific orientation of the magnets once again is not important, but they *should* be attracted to each other, this is the magnetic connection that connects the planchette to the moving mechanism "under the hood"

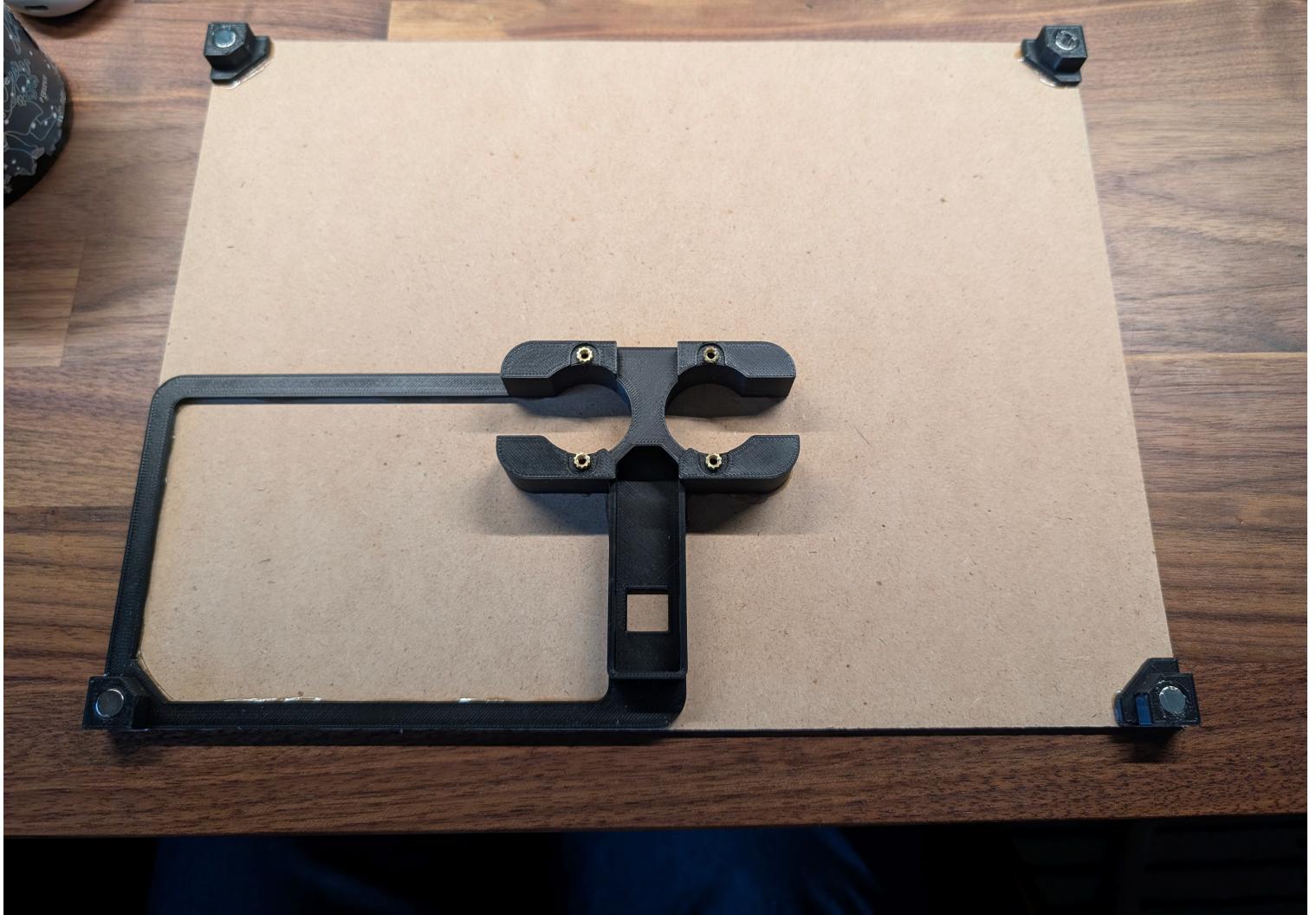
All of the magnet's are sized for a 8 x 3 nominal magnet size, depending on your print settings, a dab of E6000 Glue might be helpful to keep the magnets in securely.

Once the magnets are place, the Bottom Magnet connectors can be glued down to the MDF board, and the top connectors can be secured with E6000 Glue into the 11 x 14 box assembly.

The Planchette 3D print can be glued to the corresponding Planchette wood piece, and the Planchette connector can be set aside.

## Step 3 - Heat Set inserts

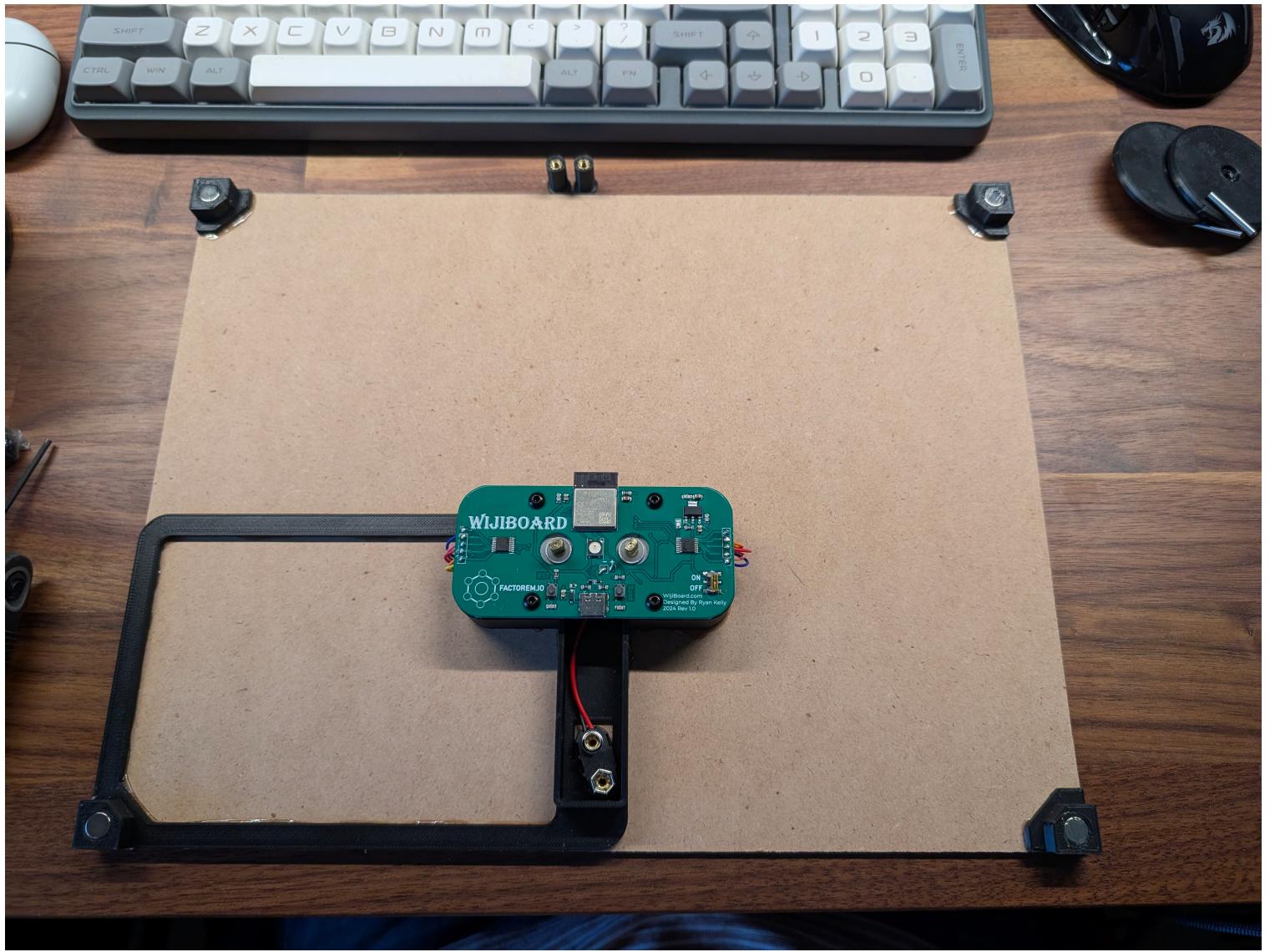
The entire assembly uses m3 Butten Head Fasteners. For longevity I designed the screw holes to use brass heat set inserts, there are countless tutorials online on how to insert these but the gist is, heat up a soldering iron, apply to heat set insert, the hot metal melts the plastic and when the plastic cools, the threaded insert is trapped in the plastic. The Bearing Connector, and Central Body both have heat set inserts pressed in. Below you can see and image of these in the "ready" position, as well as the bottom connectors glued to the MDF board in the correct position.



## Step 4 Installing the electronics.

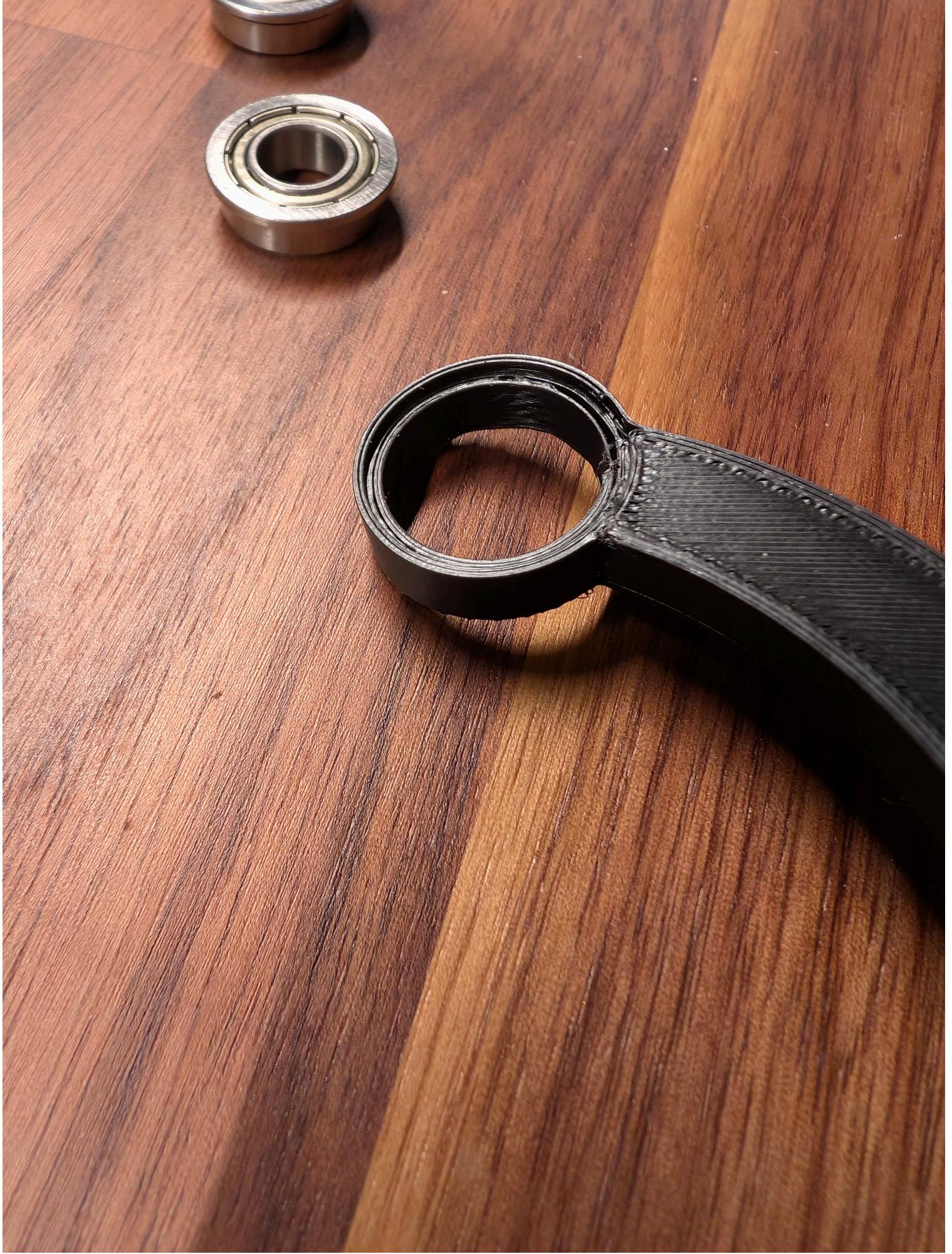
The circuit board is a self contained unit that consists of all the power handling electronics, motor controller, WIFI chip, and the physical connection to the motors. to install it you tuck the Stepper motors, into the hole in the 3D print, ensuring the flanges from the motor sit in the recesses in the print. and then secure the assembly with the

M3 button head screws.



## Step 5 Installing Bearings And Linkage Hand Assembly

Flanged roller bearings are pressed into the linkage hands of the mechanism. The hands are symmetrical.

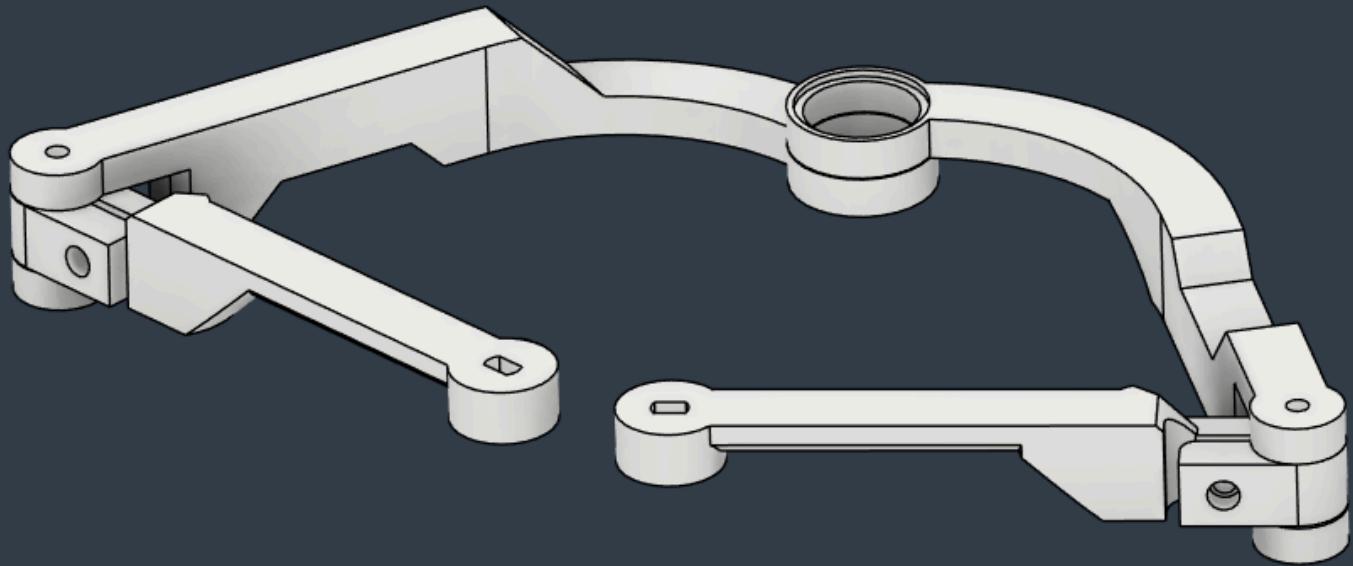




The bearing flange should sit flush in the recess of the 3D print. The hands are connected to the Linkage arm via a 3 mm pin.

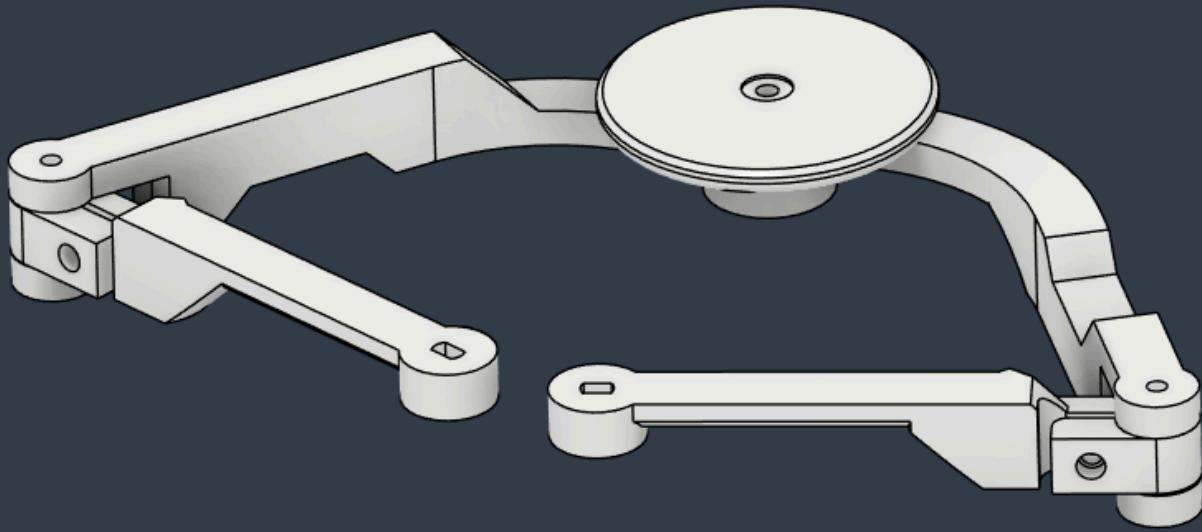


Depending on your print settings the hand linkage parts may need the hole for this pin to be opened up a little bit. The design intent is to have the arm linkage hold onto the pin, and for it to be a slip fit on the hand linkage side of the connection. This is why the arm linkage has a slot in the pin connection, to allow for a tighter friction fit. **MAKE SURE TO MIRROR THE ASSEMBLY.** The parts themselves are reversible but the way they go together has a left and right as seen below.



## Step 6 Installing the Planchette connector.

The final step is to connect the planchette connector to the hand assembly. First align the bearings and press the bearing connector into both of the bearings, the top of the connector should sit proud of the bearings. The Planchette connector then goes on top of this proud section, and is secured with a screw.



## Step 7 (optional) Smoothing things out

I will often put some Teflon tape on the underside of the planchette as well as on the planchette connector. This helps reduce the friction (and noise) of the system as it moves around.

## Step 8 - Playing with it

At this point the WijiBoard is ready to go. Plug in your desired power source (either 9V or USB-C) The Stepper should do a little homing routine dance. It's safe to close up the box once the dance starts. After the arms stop moving they will be centered on the board. I will typically bring the planchette in contact with the inner magnets by sliding it across the board surface and rotating it a few times until I'm confident it's connected by all 3 magnets. The magnet connection to all 3 is very noticeable and feels like the Planchette doesn't want to rotate. it's hard to describe the difference in feeling between a single magnet connection and 3 magnets connected.

Connecting to the device is simple. Upon power up, the WijiBoard Controller broadcasts a Wifi network. The default network is "WijiBoard" and has no Password. Select that WIFI network and connect to it. For most phones you'll have to wait a few seconds, a message appears saying something to the effect of "this wifi network has no internet access do you want to proceed?" The answer is yes. Some phones don't show this and still work, it comes down to the specific make and model of phone.

Once you're connected to the WIFI network, open your browser of choice and navigate to either 192.168.4.1 OR WijiBoard.Local either of these should pull up a stylized webpage with a keyboard. This is the main interface and all you need to make the WijiBoard operate.