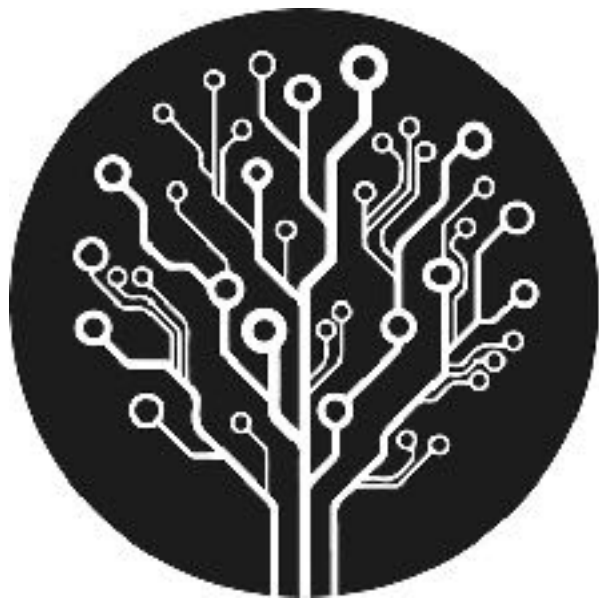




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Magnetic Stirrer Design



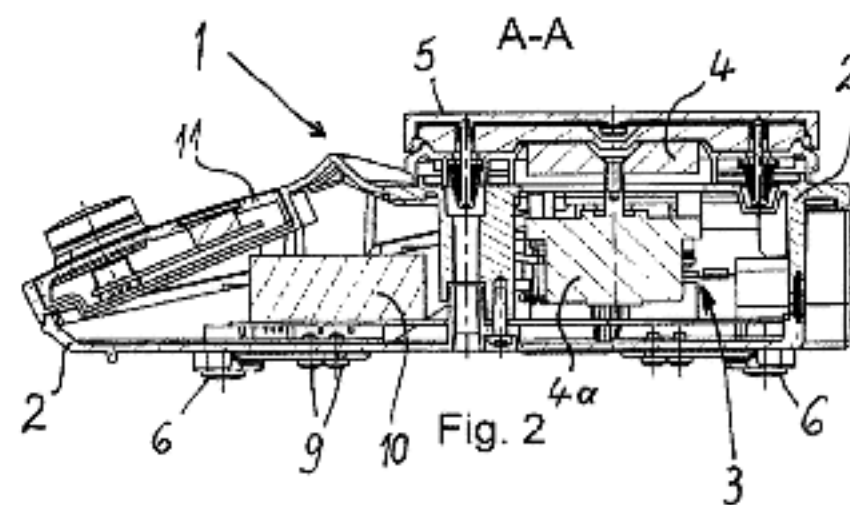
Magnetic stirrer use

- Mixing reactor content
- Nice to have:
 - Heat the liquid



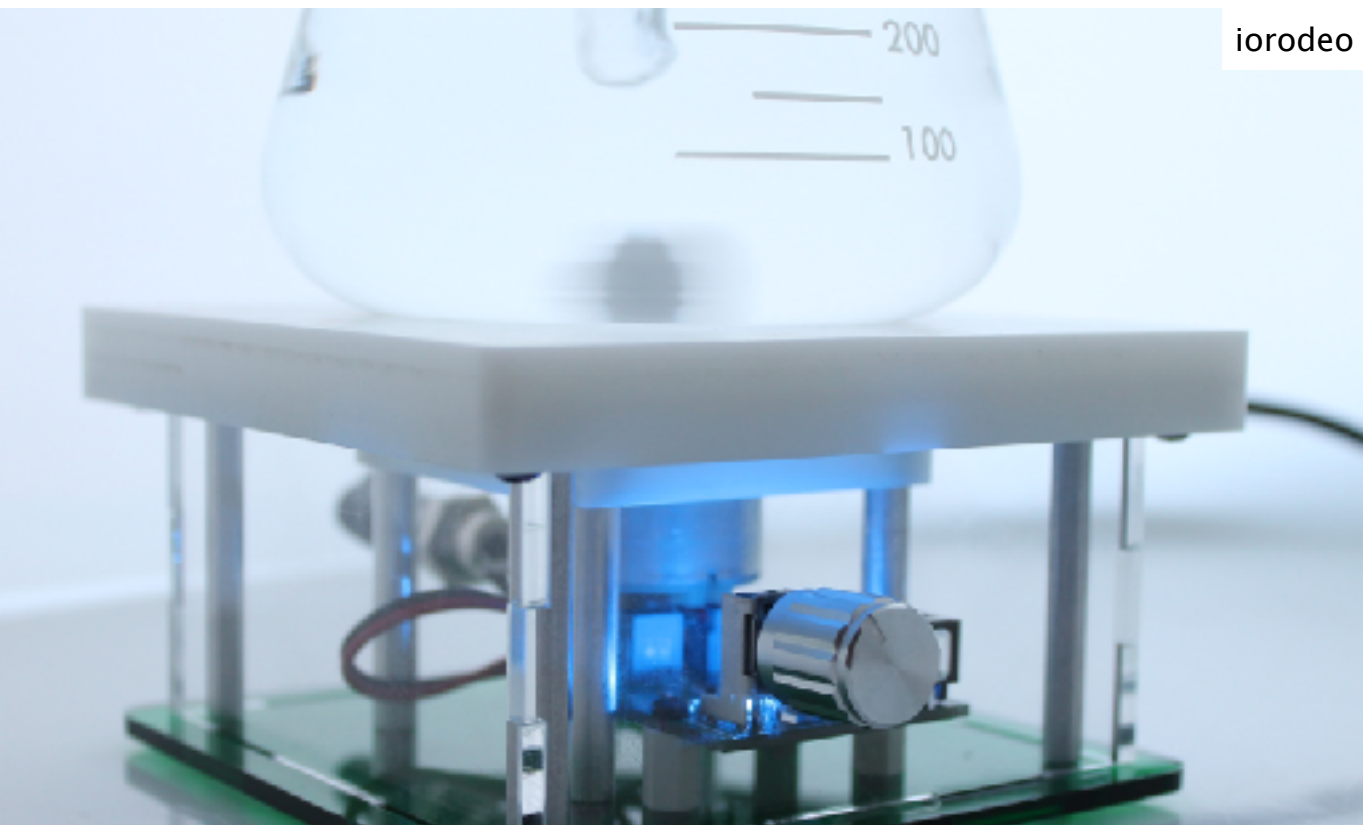


Industry standard

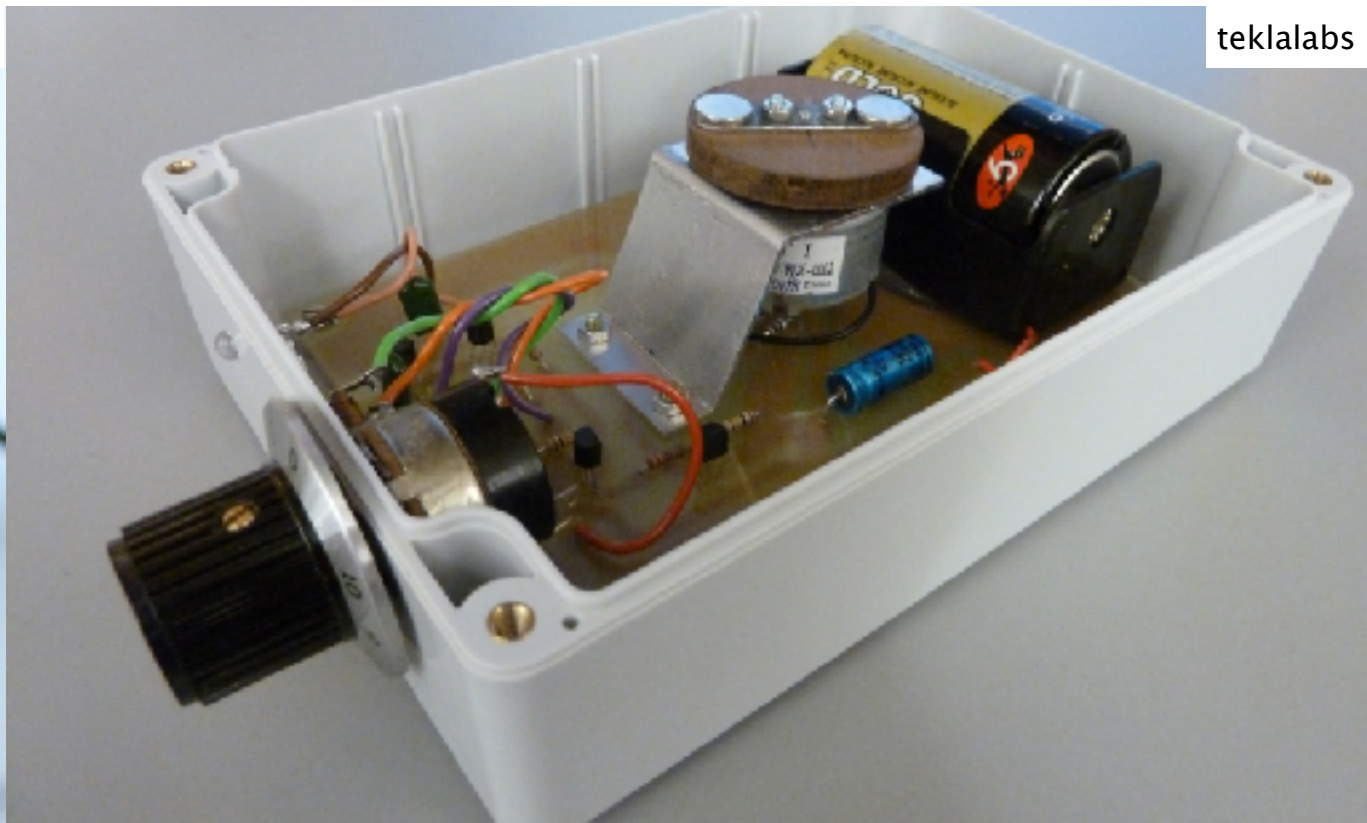




Stirrer hacks



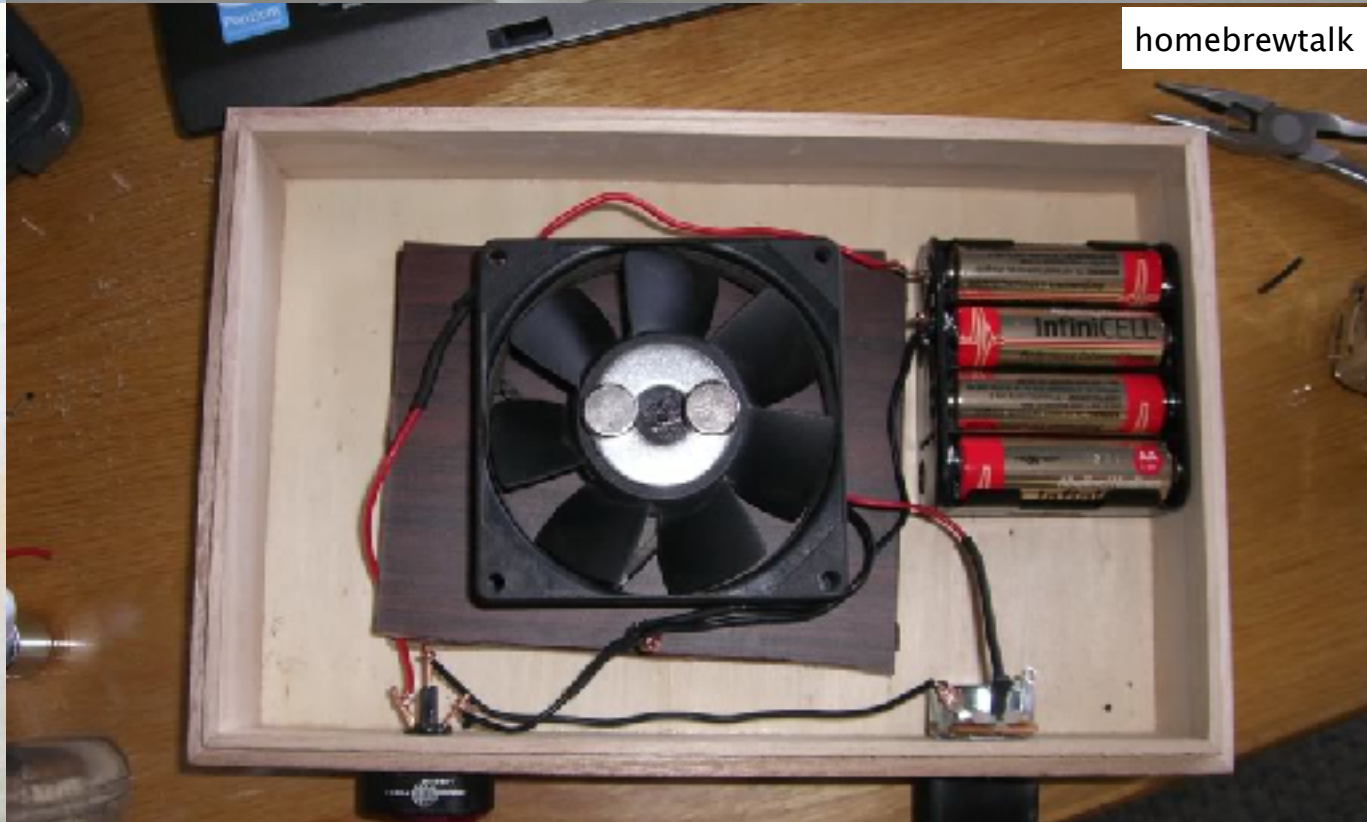
iorodeo



teklalabs



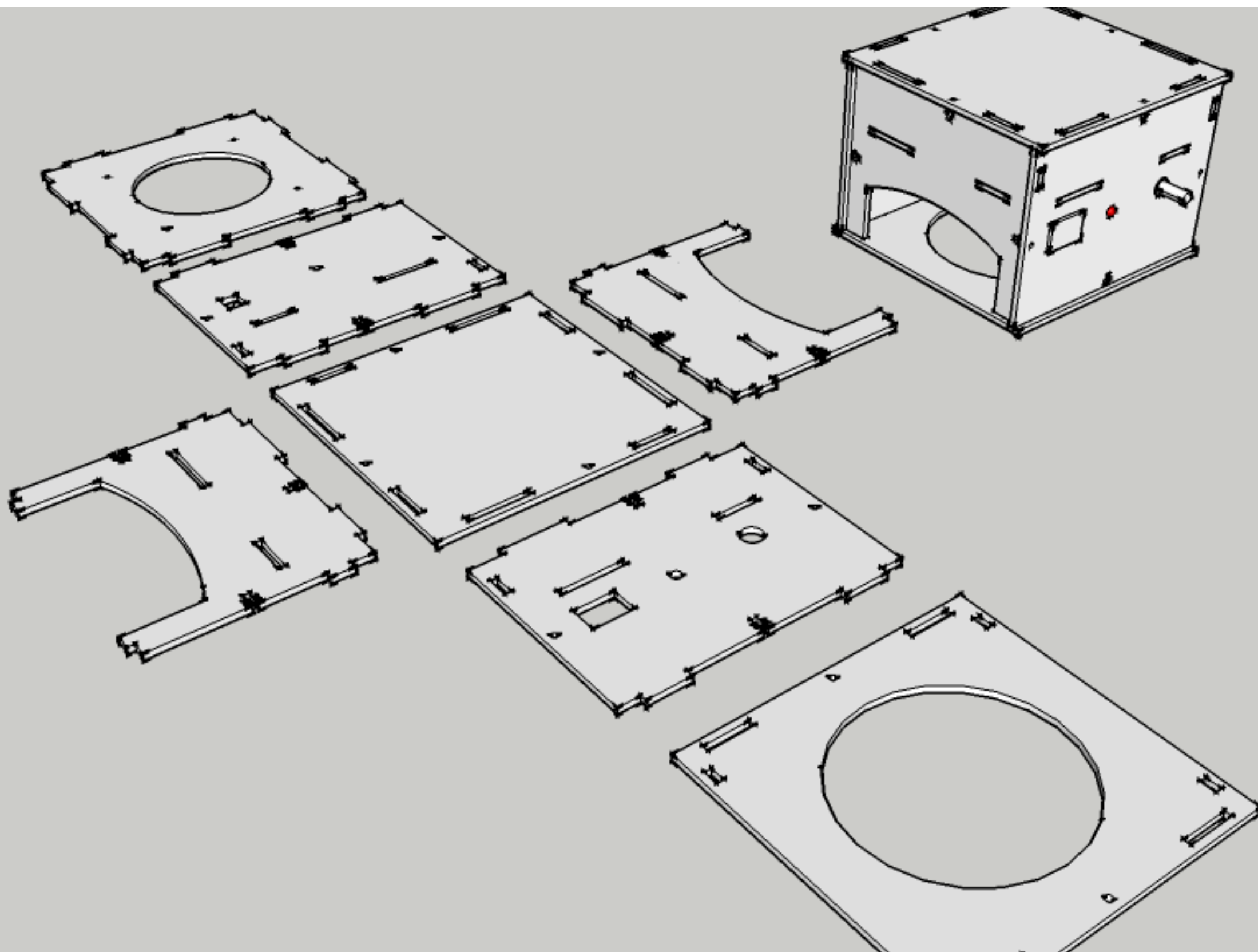
azoxx



homebrewtalk

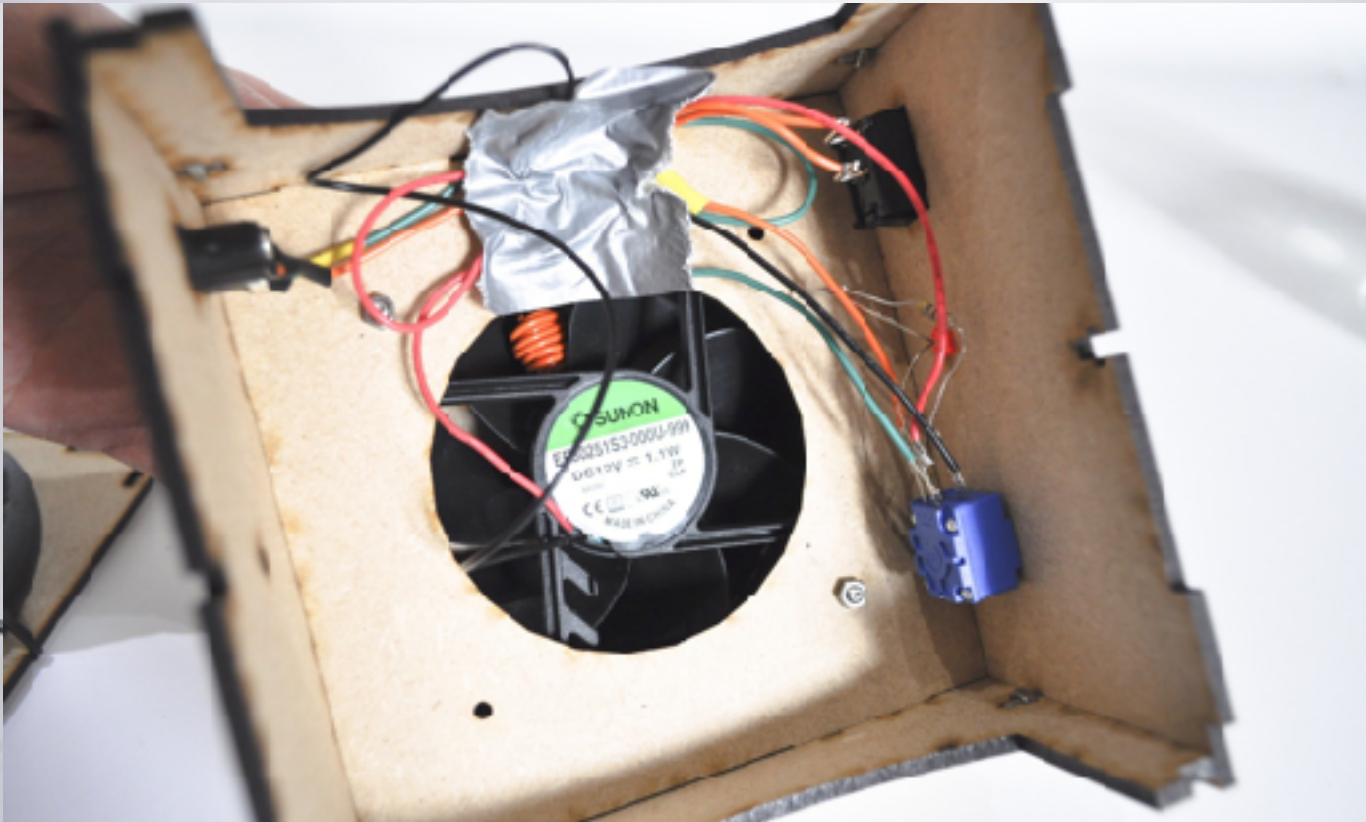


BioHack Academy 1 Design



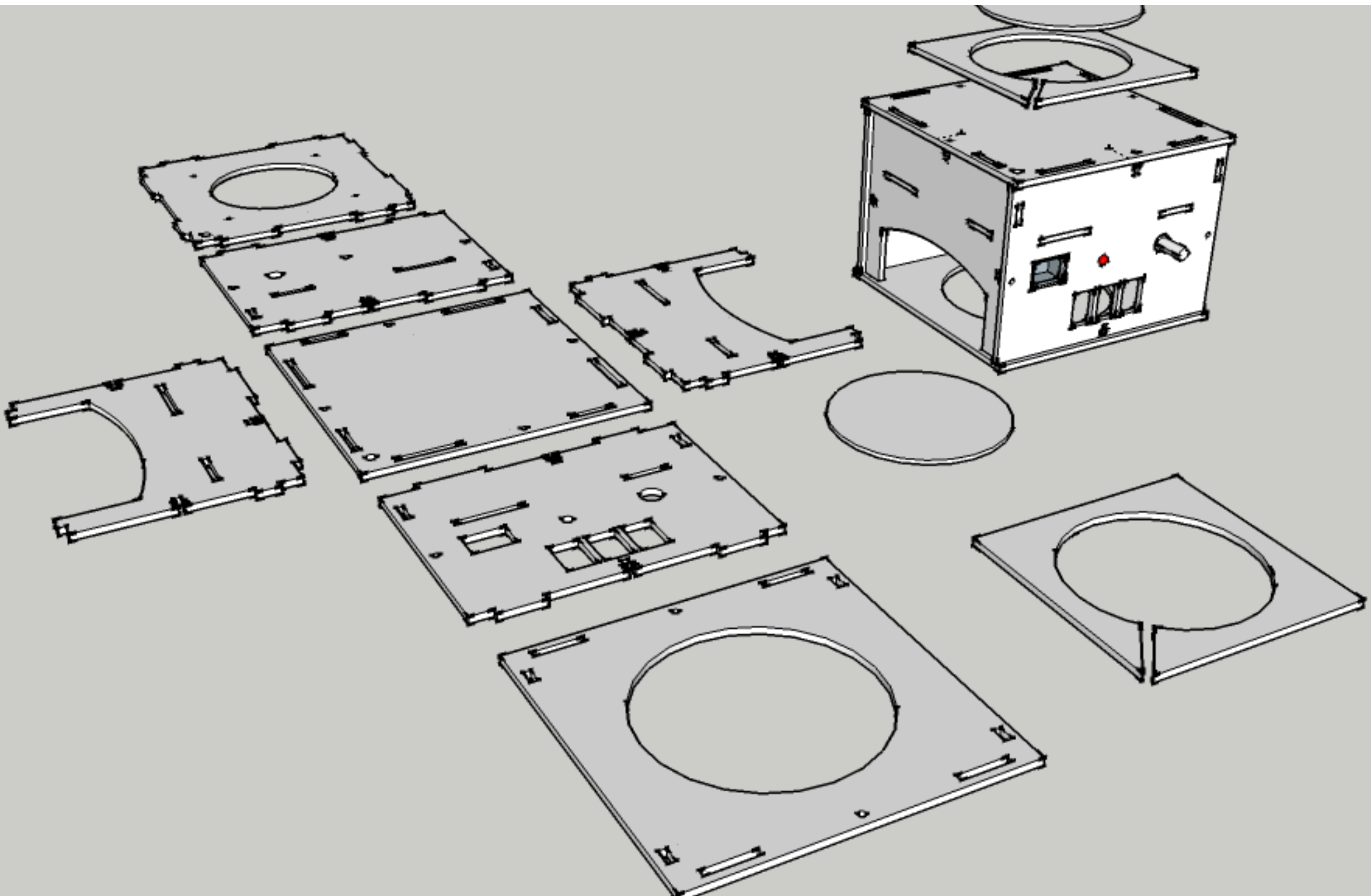


Some pictures



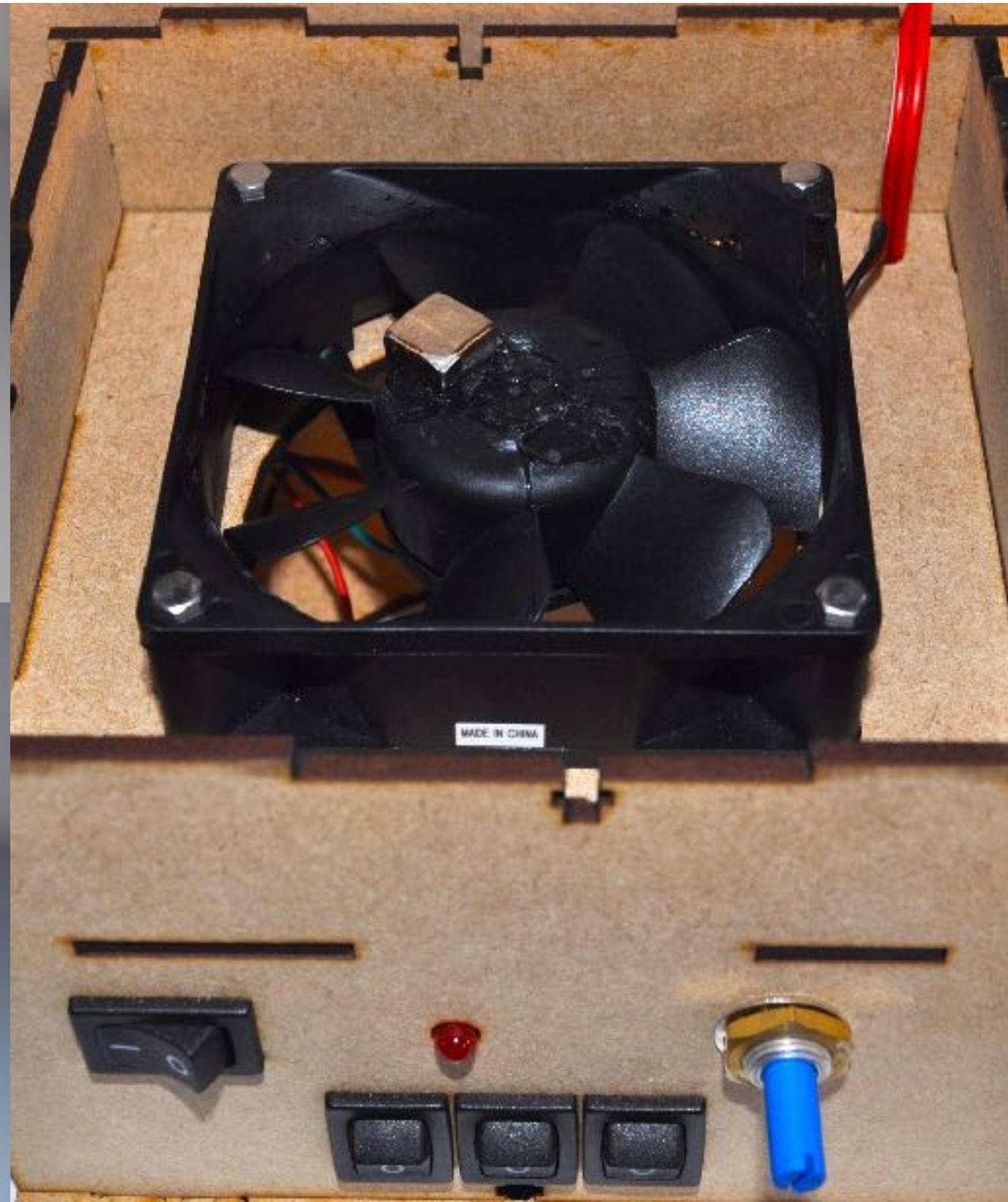
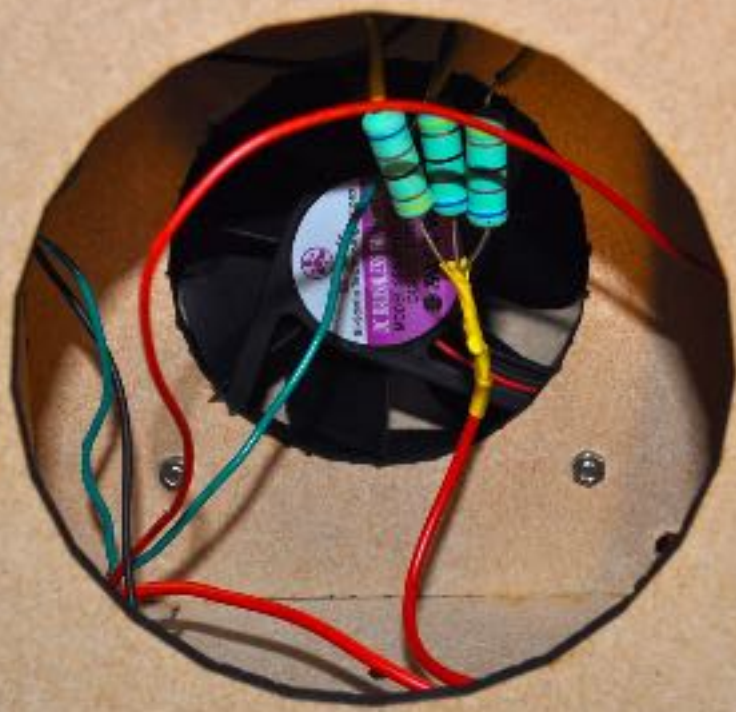


BHA 2 Design





Some pictures





Bill of Materials

#	Amount	Description
---	--------	-------------

1	1 Fan
---	-------

2	2 Permanent magnets
---	---------------------

3	1 Potentiometer 100 ohm 2W
---	----------------------------

4	1 Knob
---	--------

5	4 Power switch
---	----------------

6	1 Power jack
---	--------------

7	1 Power supply
---	----------------

8	1 Red LED
---	-----------

9	1 470 ohm resistor
---	--------------------

10	1 Magnetic stirring rod
----	-------------------------

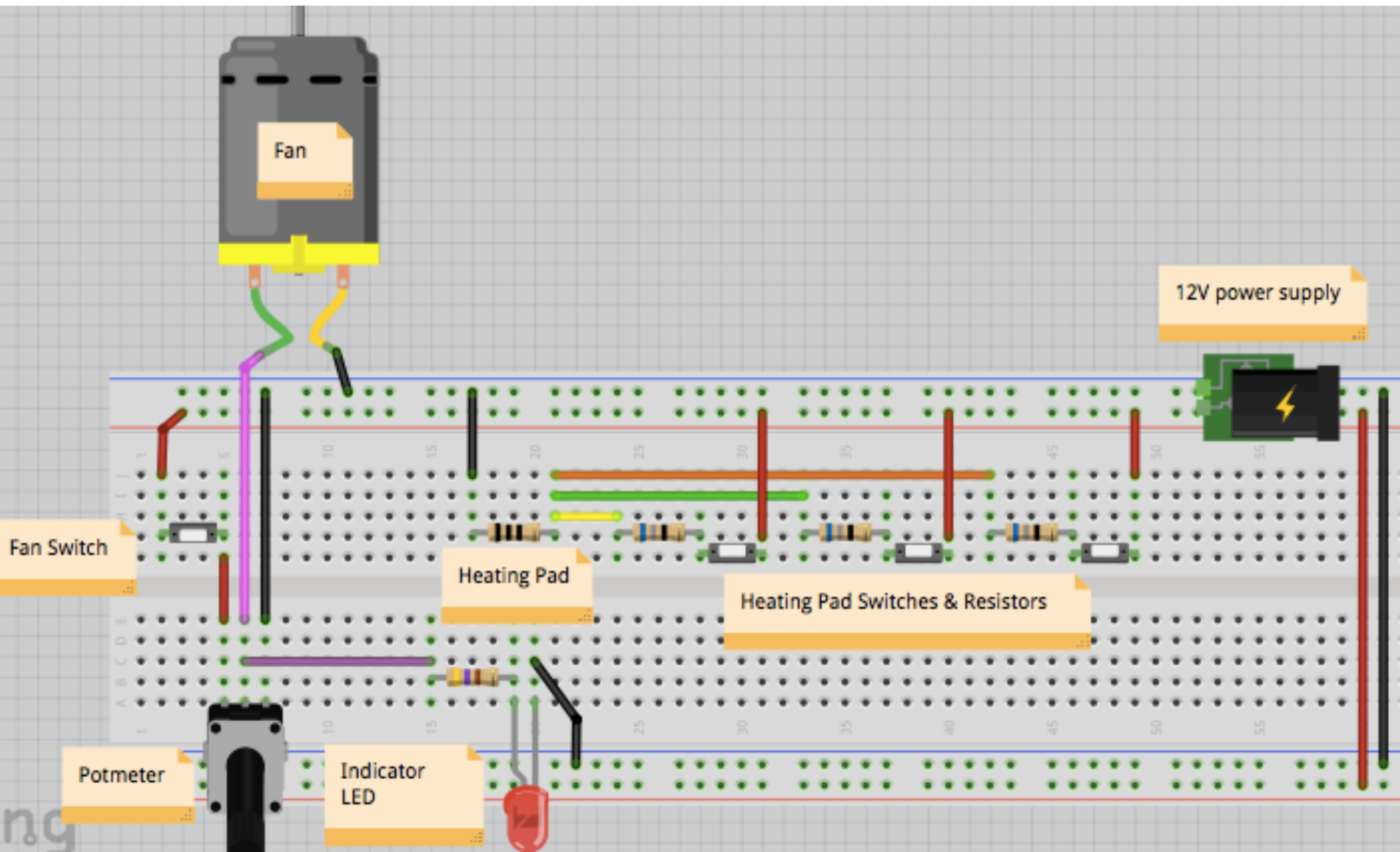
11	1 Heating foil
----	----------------

12	4 Rubber feet
----	---------------

13	3 68 Ohm 5W power resistors
----	-----------------------------

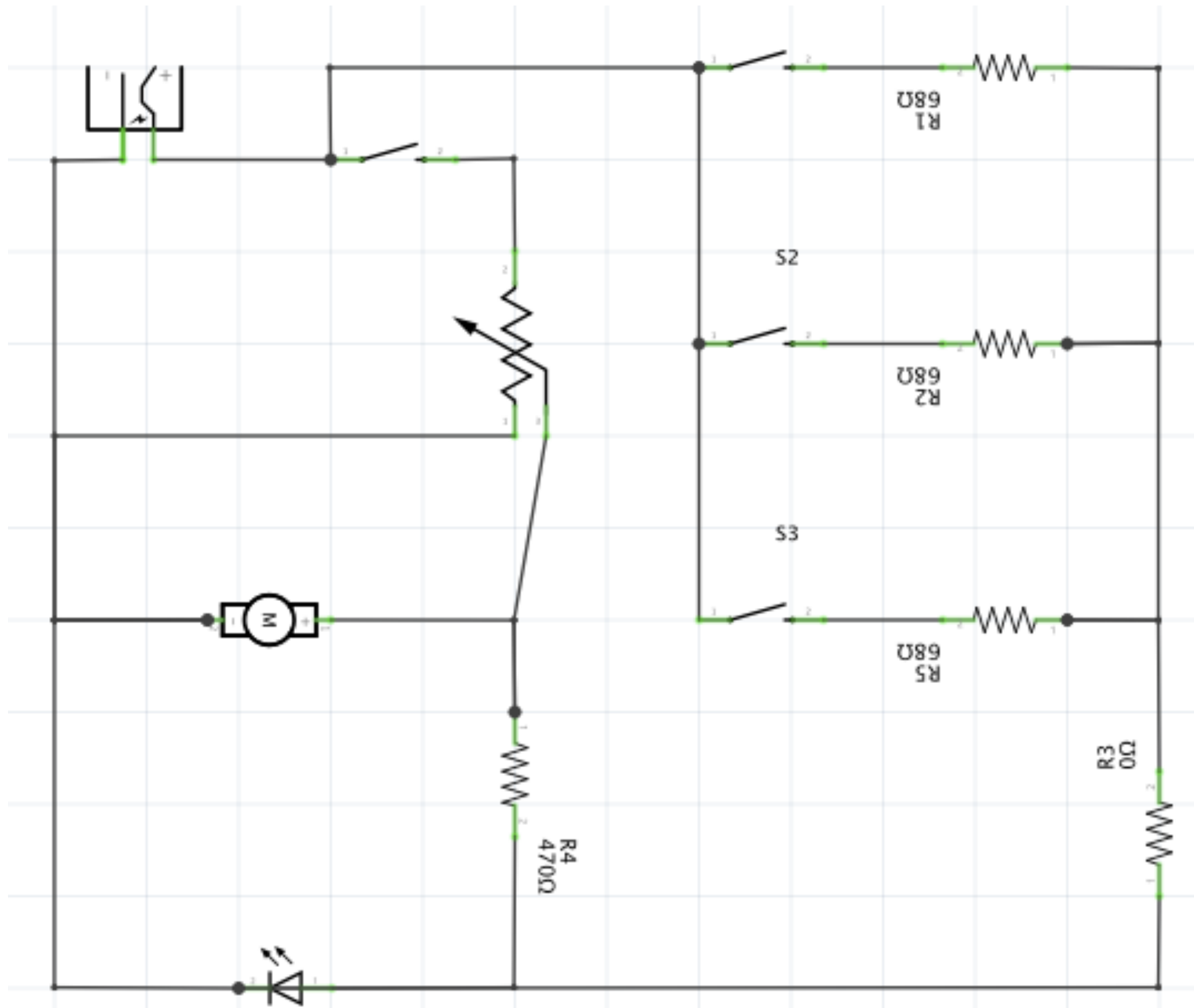


Wiring of the stirrer





Wiring scheme of the stirrer





Choosing a potmeter

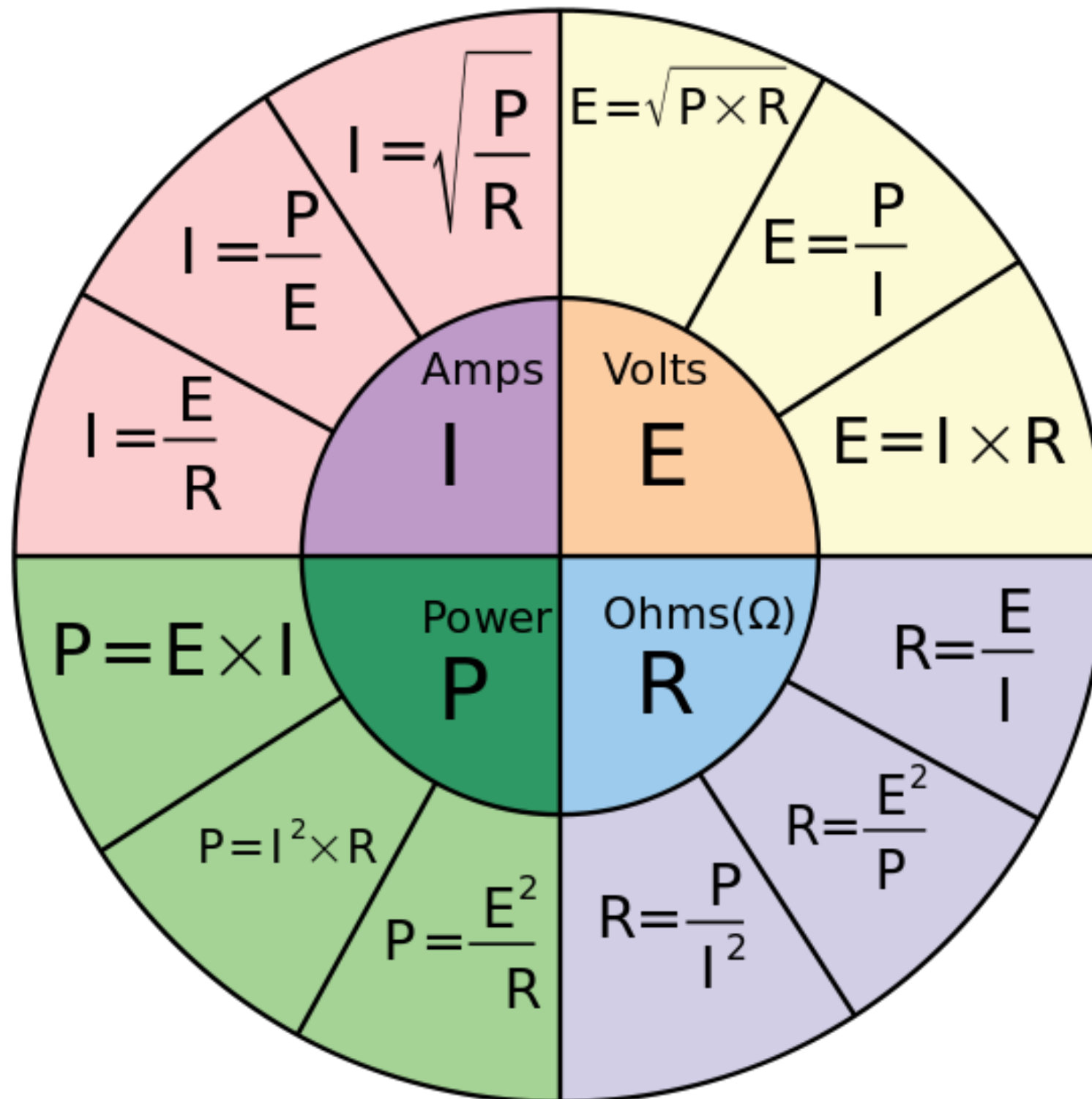
- 0.15 Ampere fan
- Resistance Fan = Voltage / Current
- Resistance Fan =
 $12 / 0.15 =$
80 Ohm
- So 100 Ohm to be sure



Farnell



Ohm's Law





Choosing LED resistor

- LED forward voltage = 2.4
- Max current = 20 mA
- $R = V / I$
- $R = (12 - 2.4) / 0.02 = 480 \text{ ohm}$
- 470 ohm will be fine too

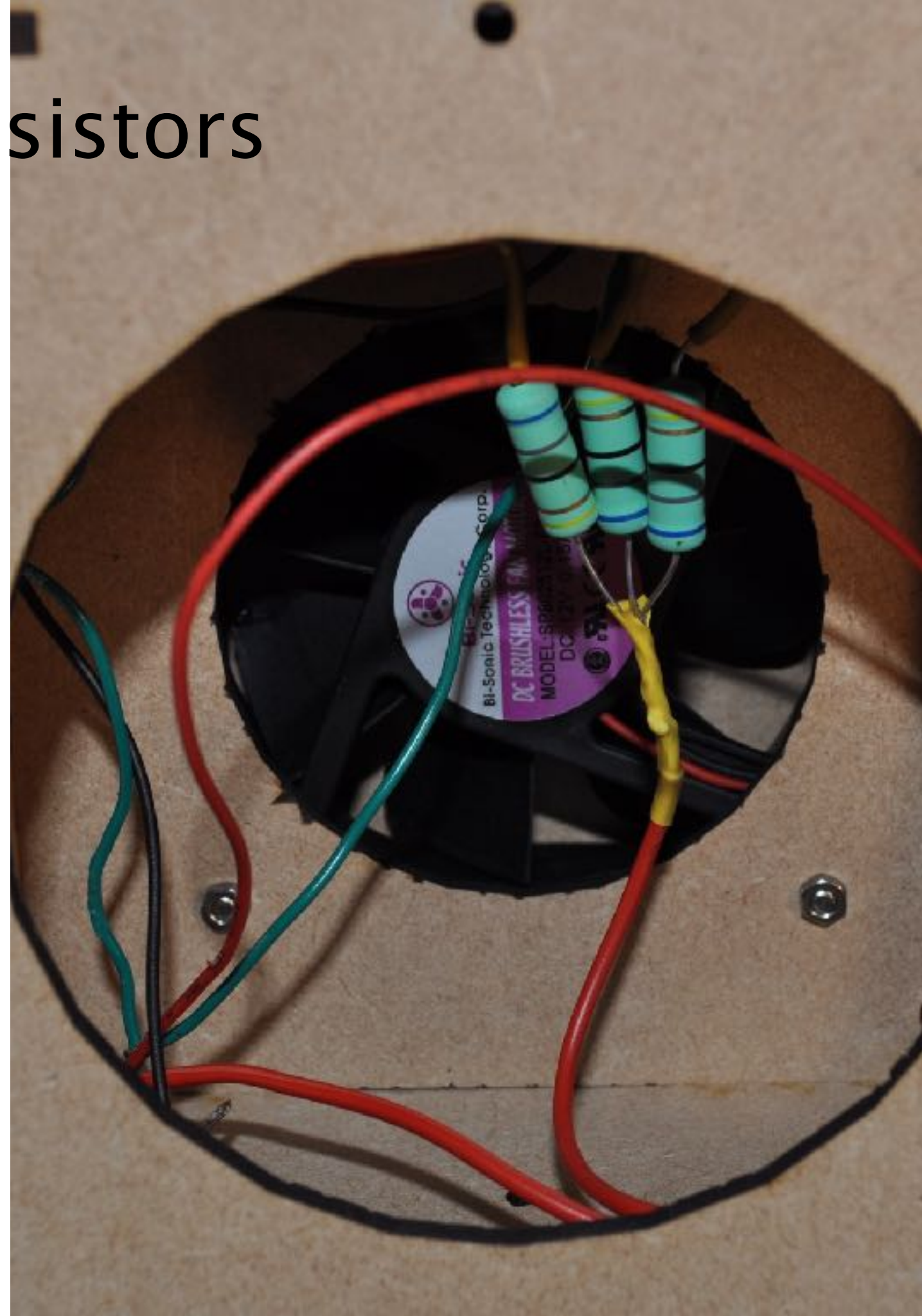




Heating Pad Resistors

- 68 Ohm
- 5 W
- 12 V

Current = Power /
Voltage = $5 / 12 = 0.41$
Amps





Heating Pad

- 12 Volts
- 22 Watts
- 0.41 Amps
- Power = Voltage x Current = 4.9 Watts





DC Fan Controller 555 | Electronics Lab

 **Code Editor**



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