



**VAMISOUND**

THE SOUND  
IS YOURS

**V49PTP**

BUILDING  
INSTRUCTIONS



## VAMISOUND V49PTP BUILDING INSTRUCTIONS

WE SOUND BETTER

# Dear **DIY** friend,

first of all thank you for your support and choice of the VAMISOUND product.  
We wish you a happy DIY and the joy of a new microphone in your arsenal!!

Jan and Milan





WE SOUND BETTER

## VAMISOUND M49PTP BUILDING INSTRUCTIONS

Before you start building your new microphone please carefully read this building instructions.

**Attention: VAMISOUND M49PTP is a medium-heavy project. It should be borne in mind that certain manual skills will be required or the successful completion of the mic construction. Good soldering experience and soldering stations with fine soldering tip are recommended. If you do not have this, please delegate the construction to a more experienced technician with proper equipment. We are not responsible for malfunctioning construction or injuries associated with improper assembly of our kits.**

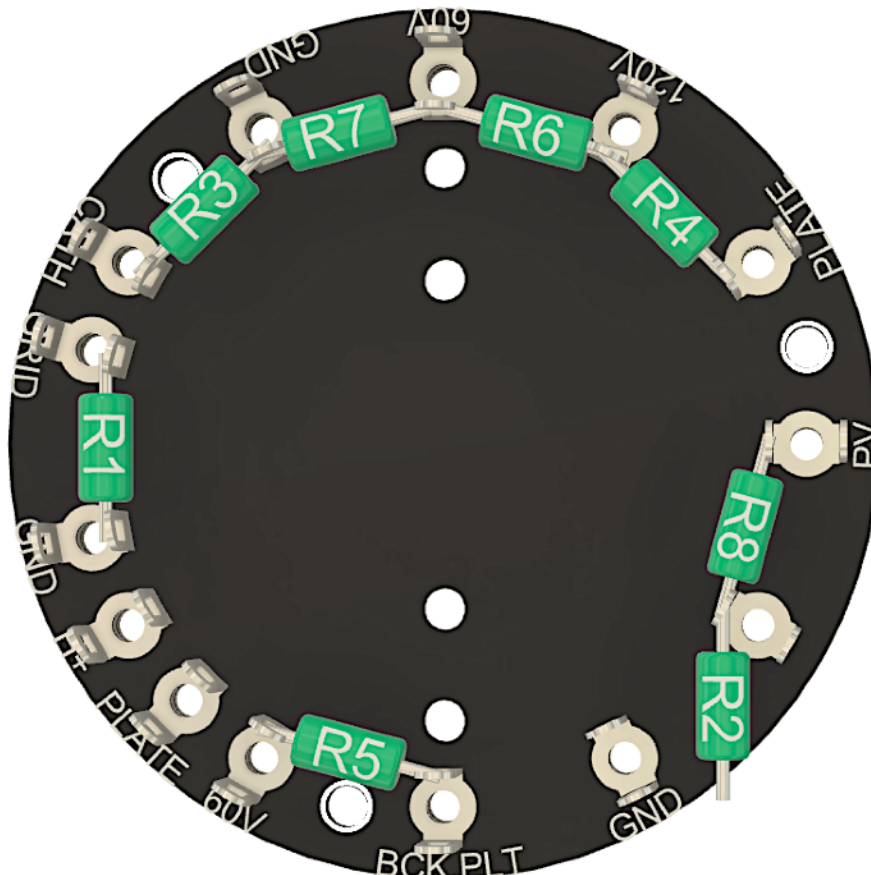
This project leads to the construction of a tube microphone, which requires a cable and a power supply. These are not included with the kit and must be built by yourself or by a knowledgeable person. Tube microphones are powered by high voltage which can cause fatal injury. We reserve no responsibility for any injuries caused by unprofessional intervention. If you do not have the necessary knowledge to operate the entire tube microphone system, please pass its construction and tuning to a knowledgeable person. It's really not fun, so don't take it lightly.

Document info	
Document name	V49PTP building instructions
Document revision	1.0
PCB revision	1.0
Date	Januar 2025
Project difficulty	★★★★★
Complexity of soldering	★★★★★
Risk of electrick shock	★★★★★
Changes and notes	

V49PTP printed circuit board set consists of three boards - transformer board, main component board, and capsule board. Soldering lugs are already installed on all these boards. The set also includes one rubber pad under the transformer pcb, small rubber ring for possible use under the microphone capsule stand and a rubber tube holder. A grounding metal ring is also included.

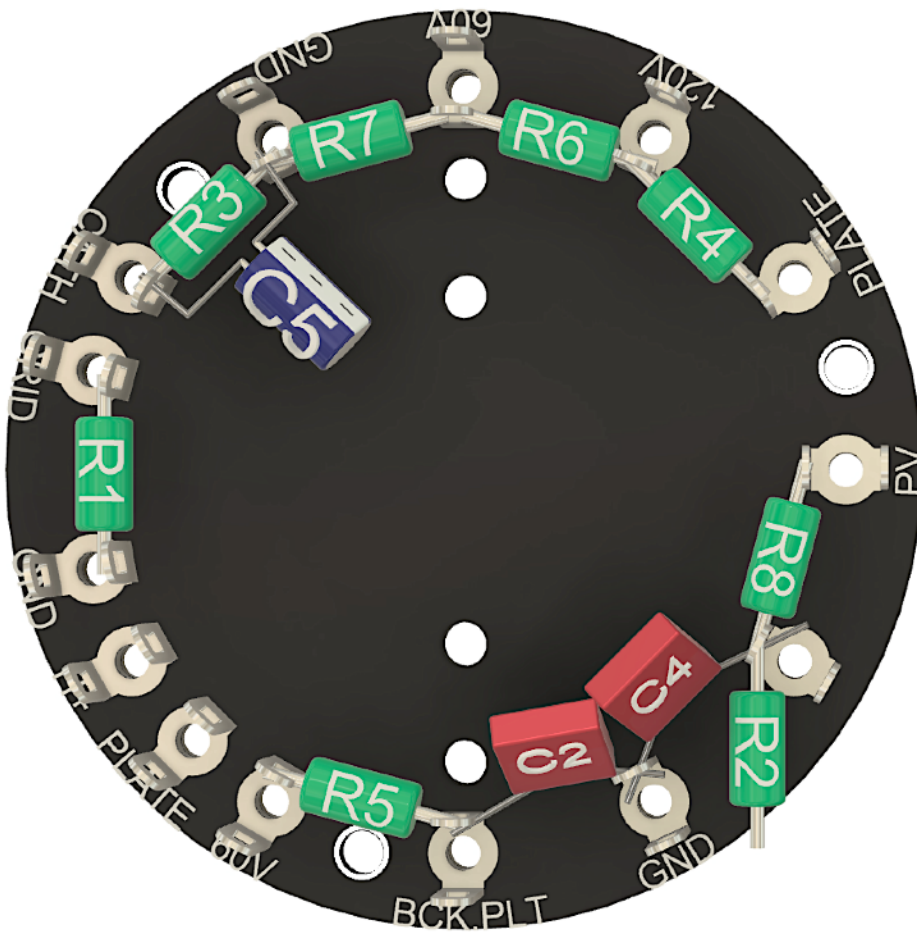


The soldering iron is already hot, so we can get to work. Start by soldering all the resistors on the main parts board as you see in the picture. Note that R2 is installed differently. It will serve as a connection between the main part board and the capsule board. So you can leave its installation for later.

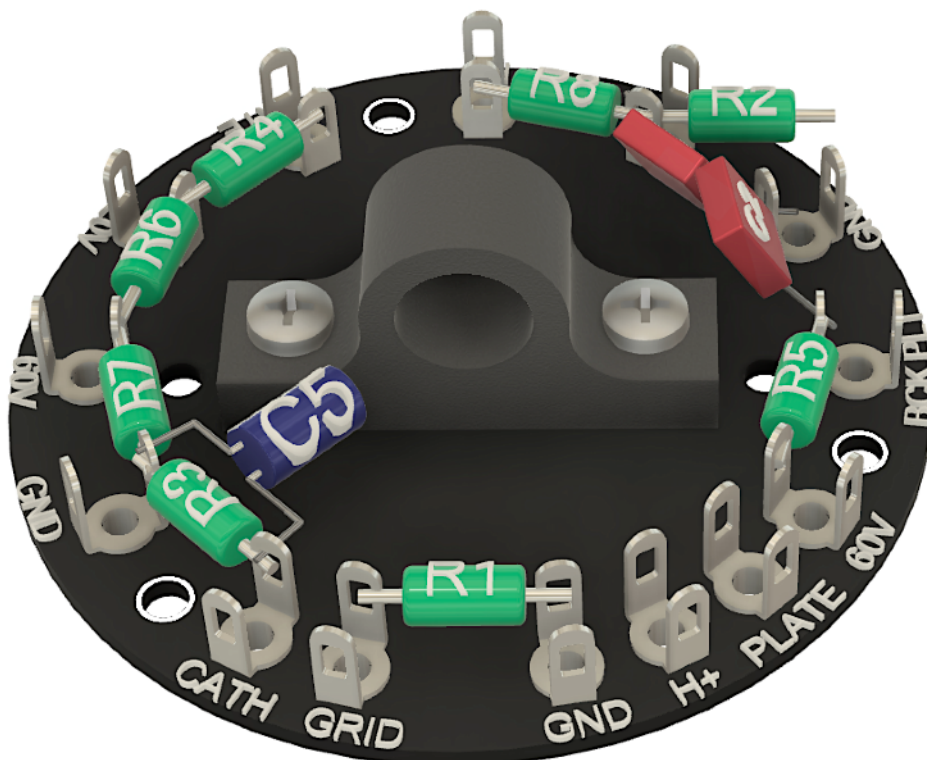




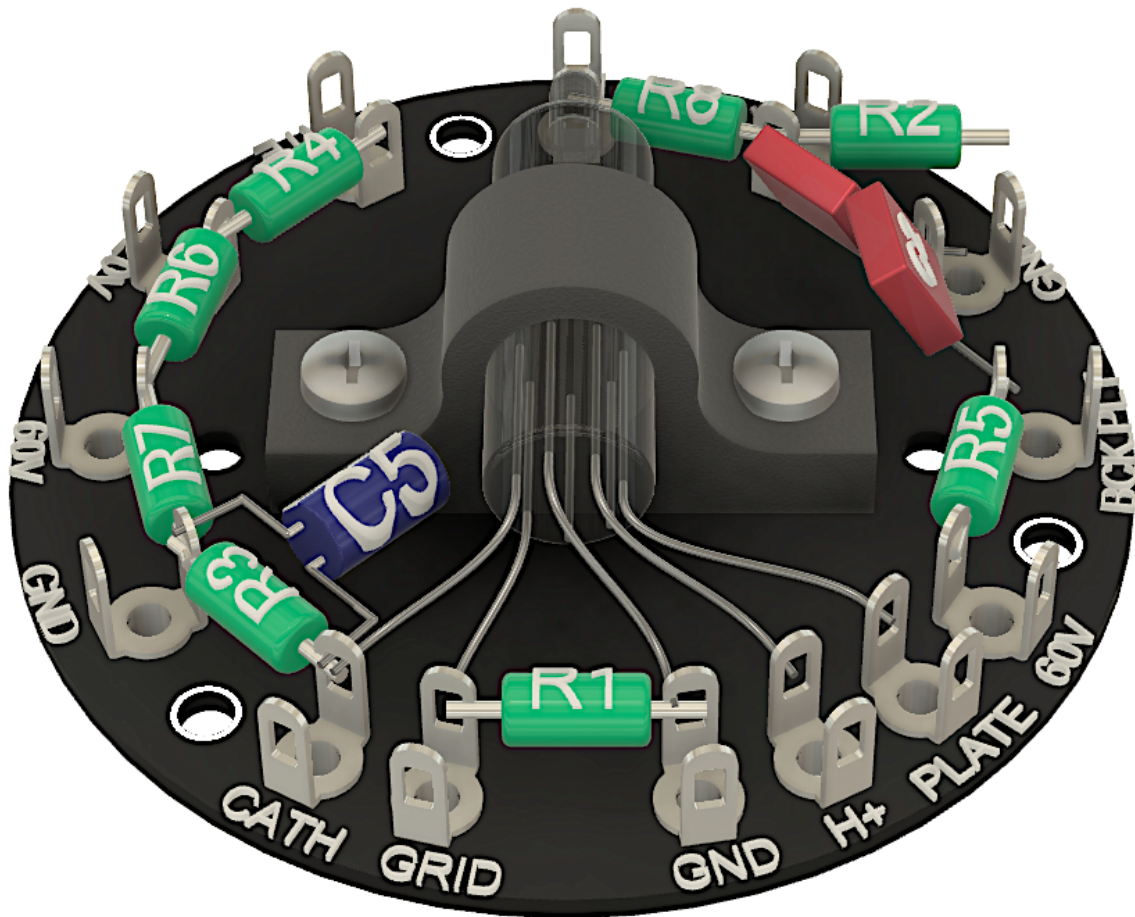
Now you install film capacitors C2 and C4 and electrolytic capacitor C5.



Attach the rubber tube holder with two 14mm long M3 screws. It is always a good idea to use a non-slip washer under the nut of the bolt.



Insert the tube into the rubber holder as you see in the picture. Check with the datasheet of the particular tube you are using to see which wire leads are which. Accordingly, connect the leads from the tube to the appropriate lugs/eyelets on the main parts board. Heater to H+ lug/eyelet, heater ground to GND lug/eyelet, ANODE of the tube to PLATE lug/eyelet, CATHODE of the tube to CATH lug/eyelet on the main parts board.



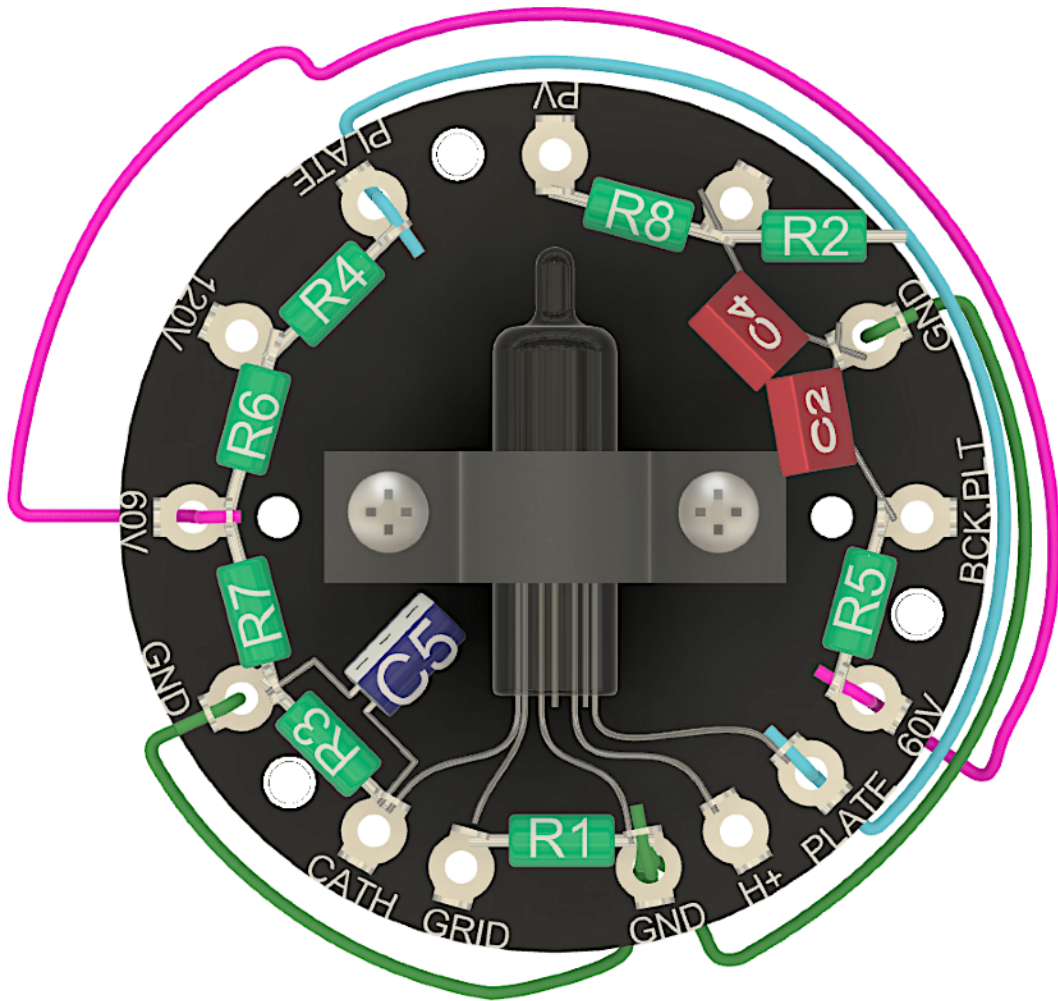
The main parts board is now completely assembled and we can proceed to the next step. This is to install the wiring. It may be a little more difficult, but with a little skill you can certainly do it.

It is essential that you **ONLY** use thin teflon insulated cables with a cross section of 24AWG (0.2mm).

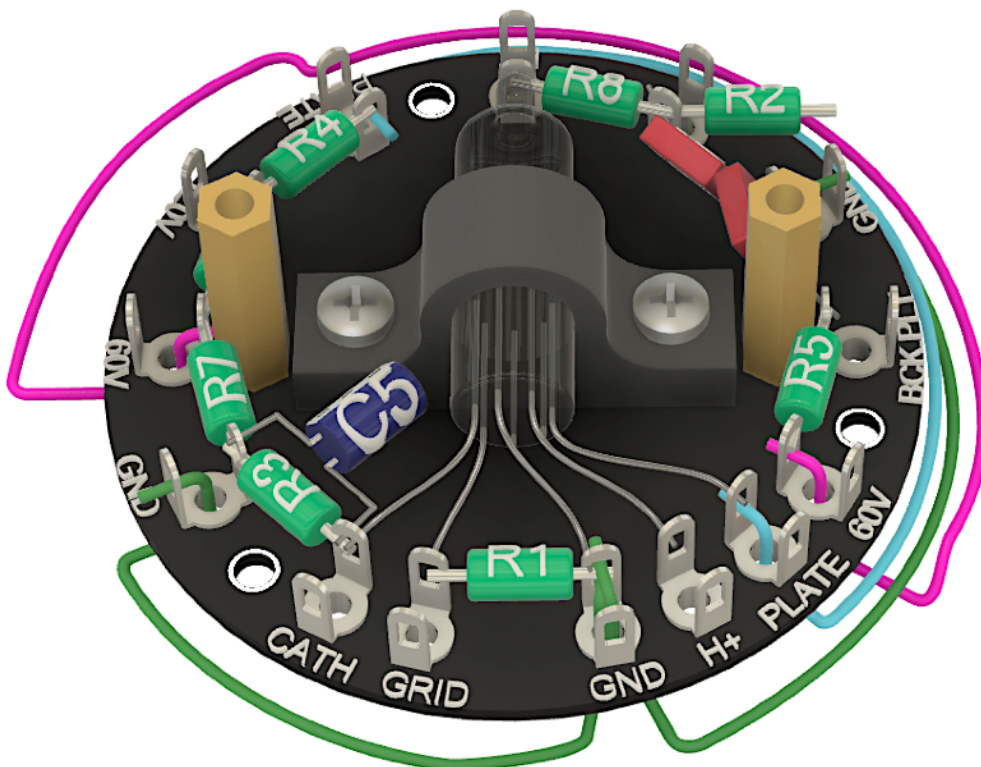
Larger ones might not fit into the holes in the eyelets through which you will thread them. So we can't recommend these cause you will need to thread three cables through one eyelet hole. You wouldn't be able to do that with a larger diameter cable.

Also, cables that do not have teflon insulation which is resistant to heat can be burned by the heat from the solder and create unwanted contact and subsequent non-functionality of the microphone. So definitely don't use them for this build.

Start by connecting PLATE eyelets (blue wire in the picture), 60V eyelets (pink wire) and also all GND eyelets as you see in the picture (green wires). Do not solder the (green) cables in the GND eyelet because you can still connect one cable here. Leave them in the eyelet, but don't solder them yet. See next step.



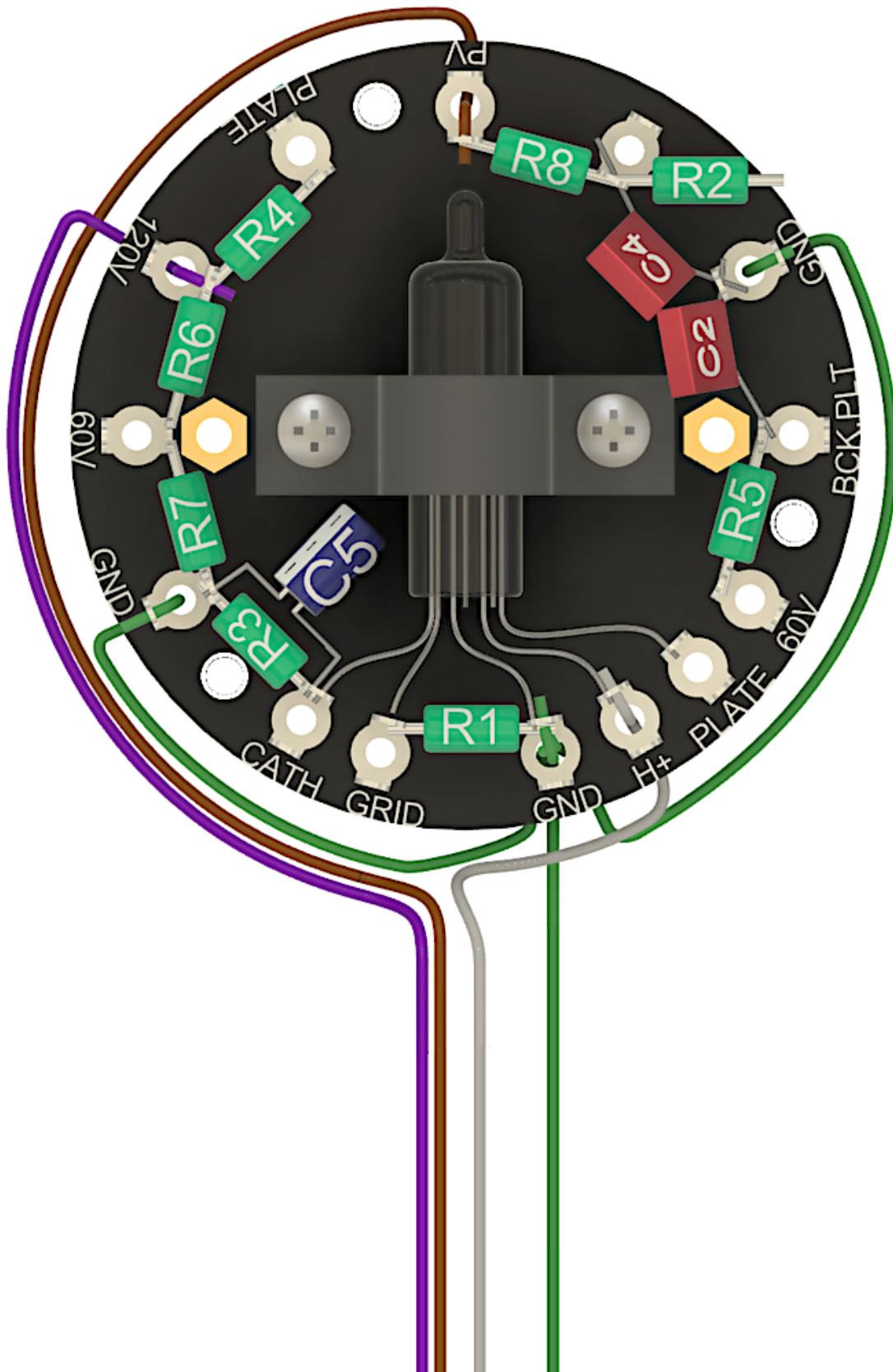
Screw in two 20mm high spacers.



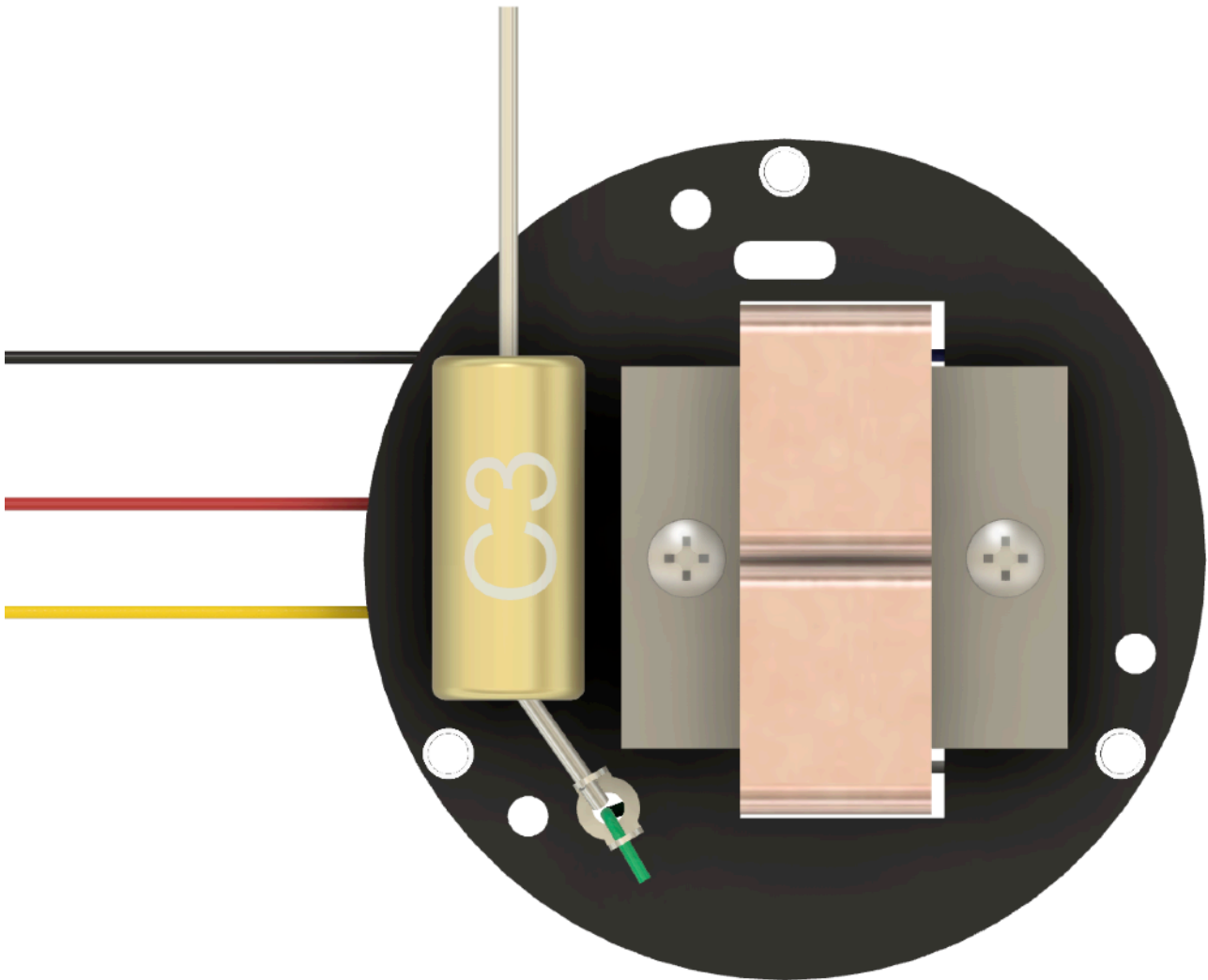


Part of the wiring from the previous picture is intentionally not shown for clarity.

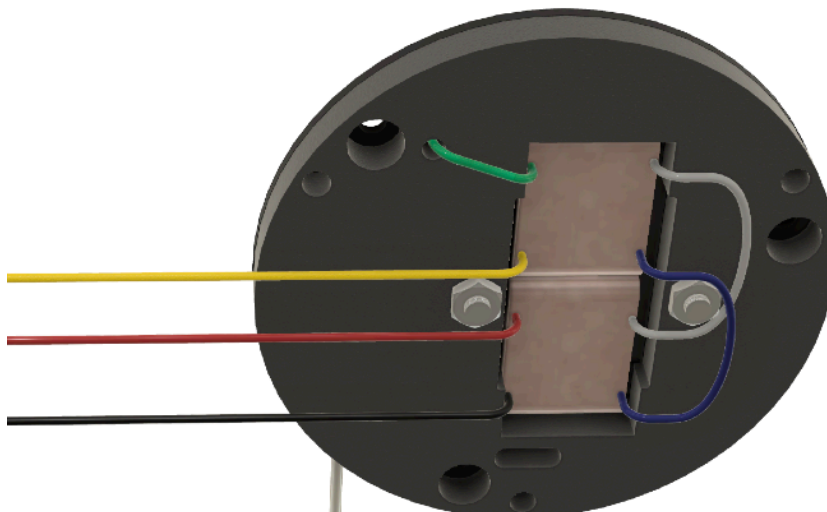
Connect the cable to the PV eyelet (brown cable in the picture), to the 120V eyelet (purple cable), to the H+ eyelet (grey cable) and finally to the GND eyelet (green cables). These cables (=the grey, green, purple and brown cable) will lead to the Binder connector on the bottom of the microphone, so leave them longer. About 15-20 cm might be enough.



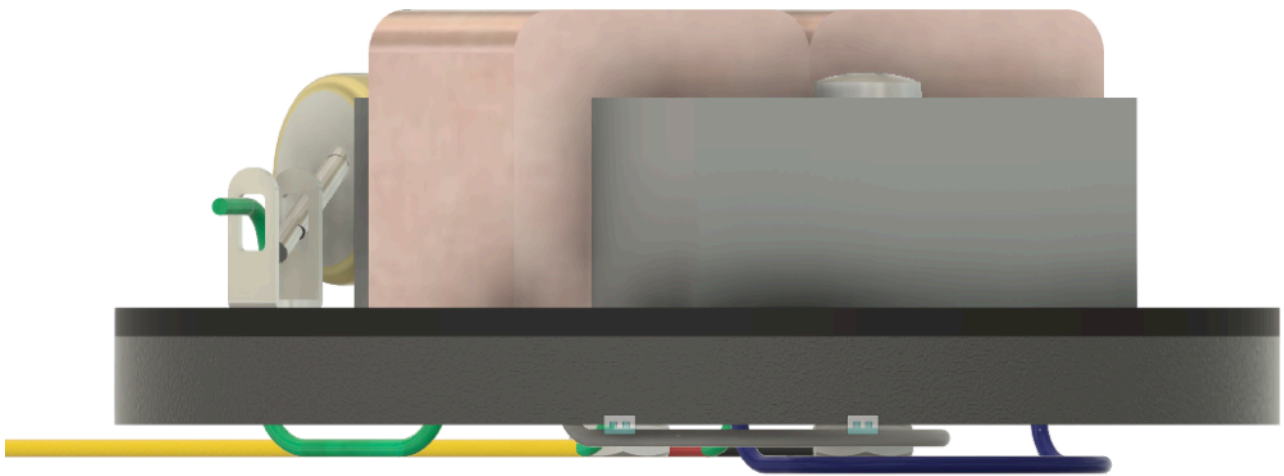
Screw the BV11 transformer onto the transformer plate, with the cables sticking out of the bottom of the transformer board. Be sure to put a rubber pad under the transformer plate before doing this. At this stage you can also insert the C3 output capacitor into the eyelet.



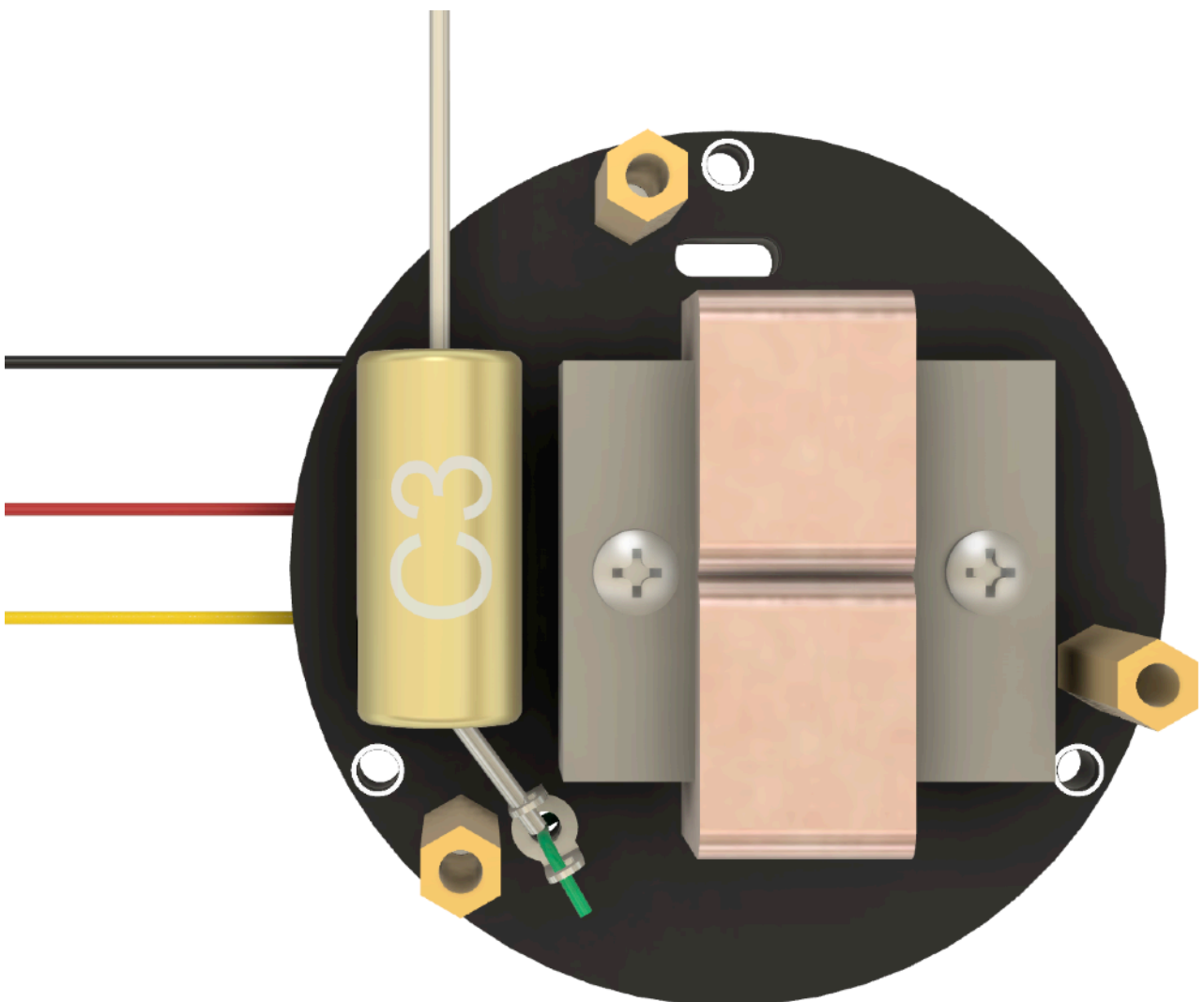
This is what it looks like from the underside. Notice that the green wire from the transformer is poking through the eyelet hole. Also note the blue and white wires of the transformer that are connected. See the manufacturer's manual for the transformer wiring set up.



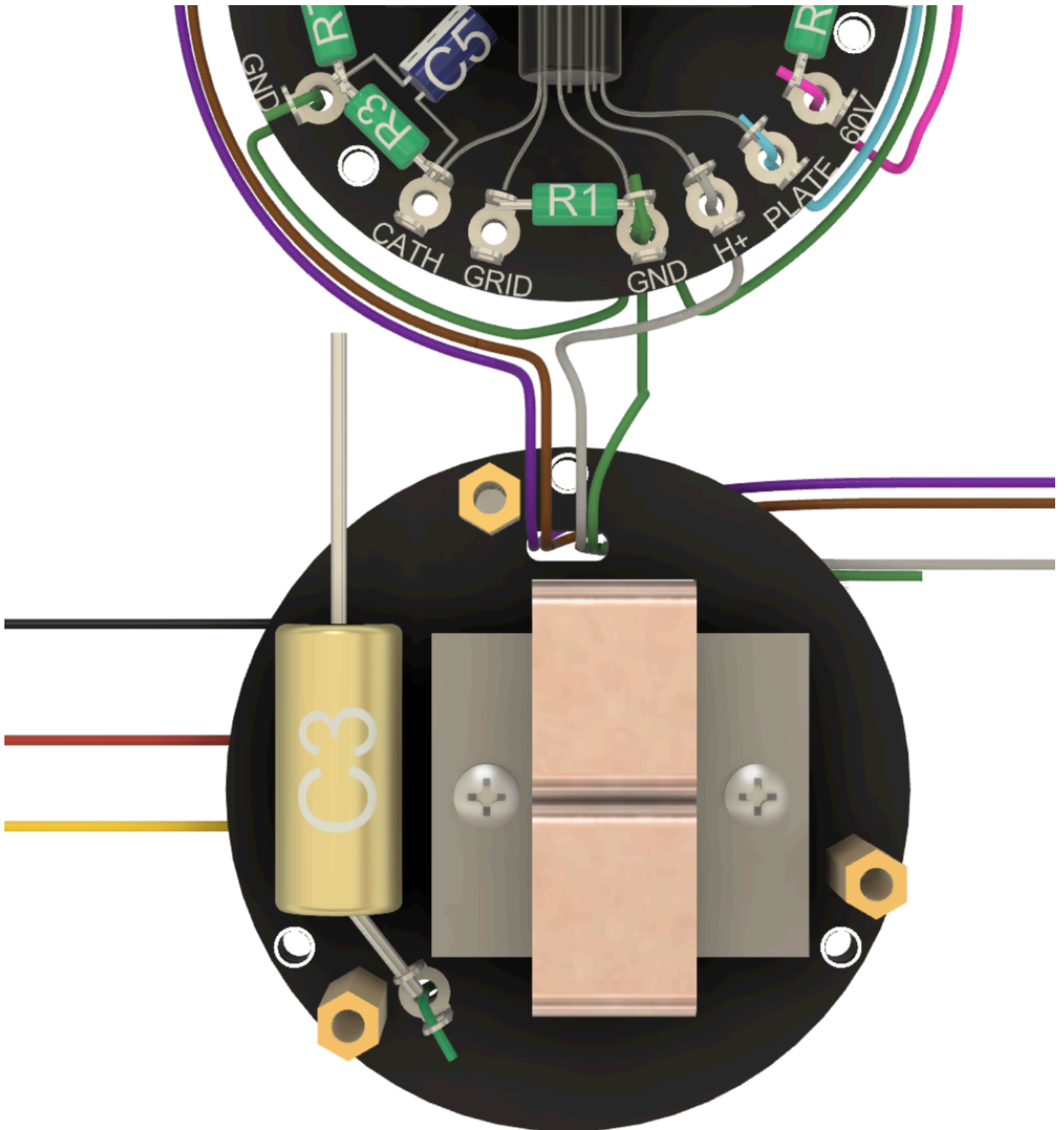
Another view.



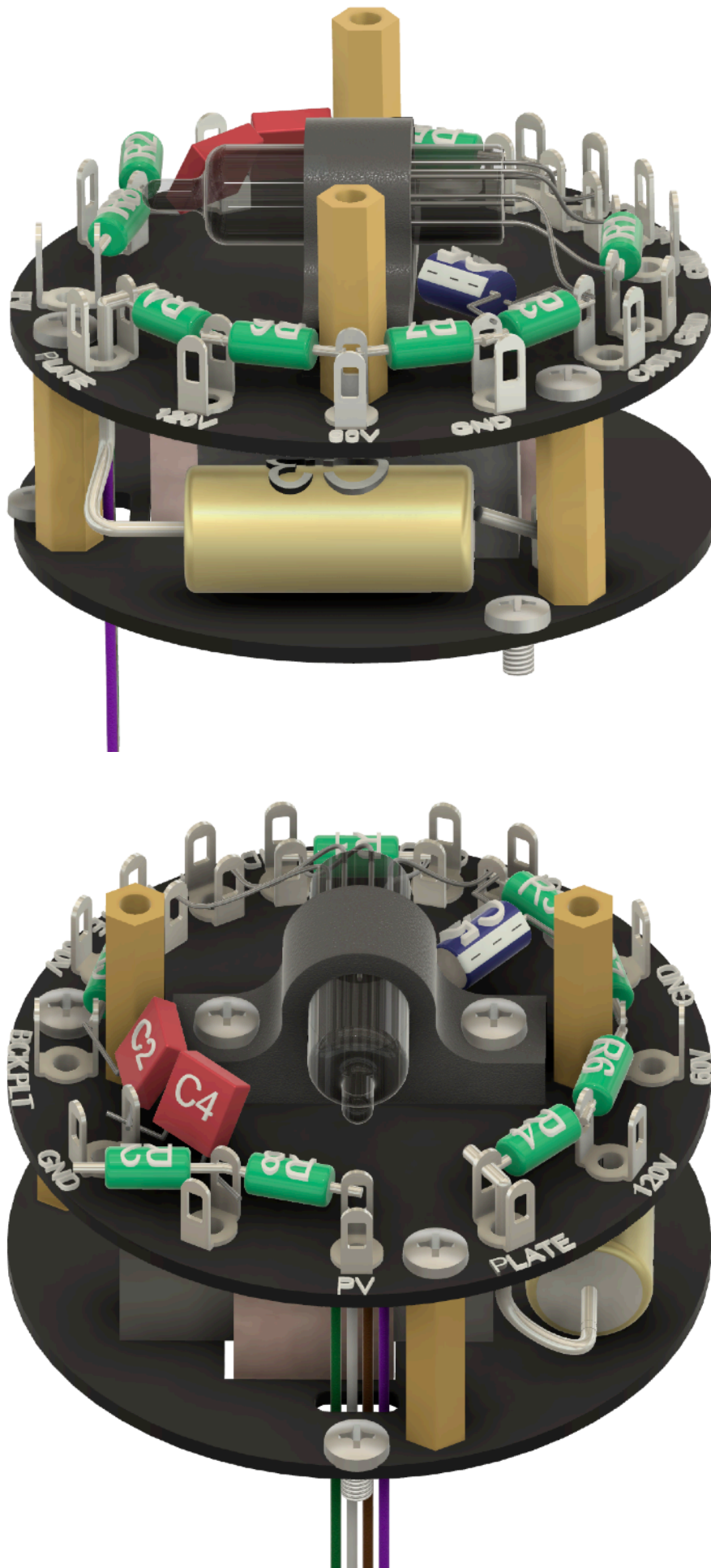
Now you can install three brass 20 mm high spacers on the transformer plate.



Before connecting the transformer board and the main parts board, run all cables leading from the main parts board down through the hole in the transformer board. These cables will lead all the way to the Binder connector and ground ring as you can see later.

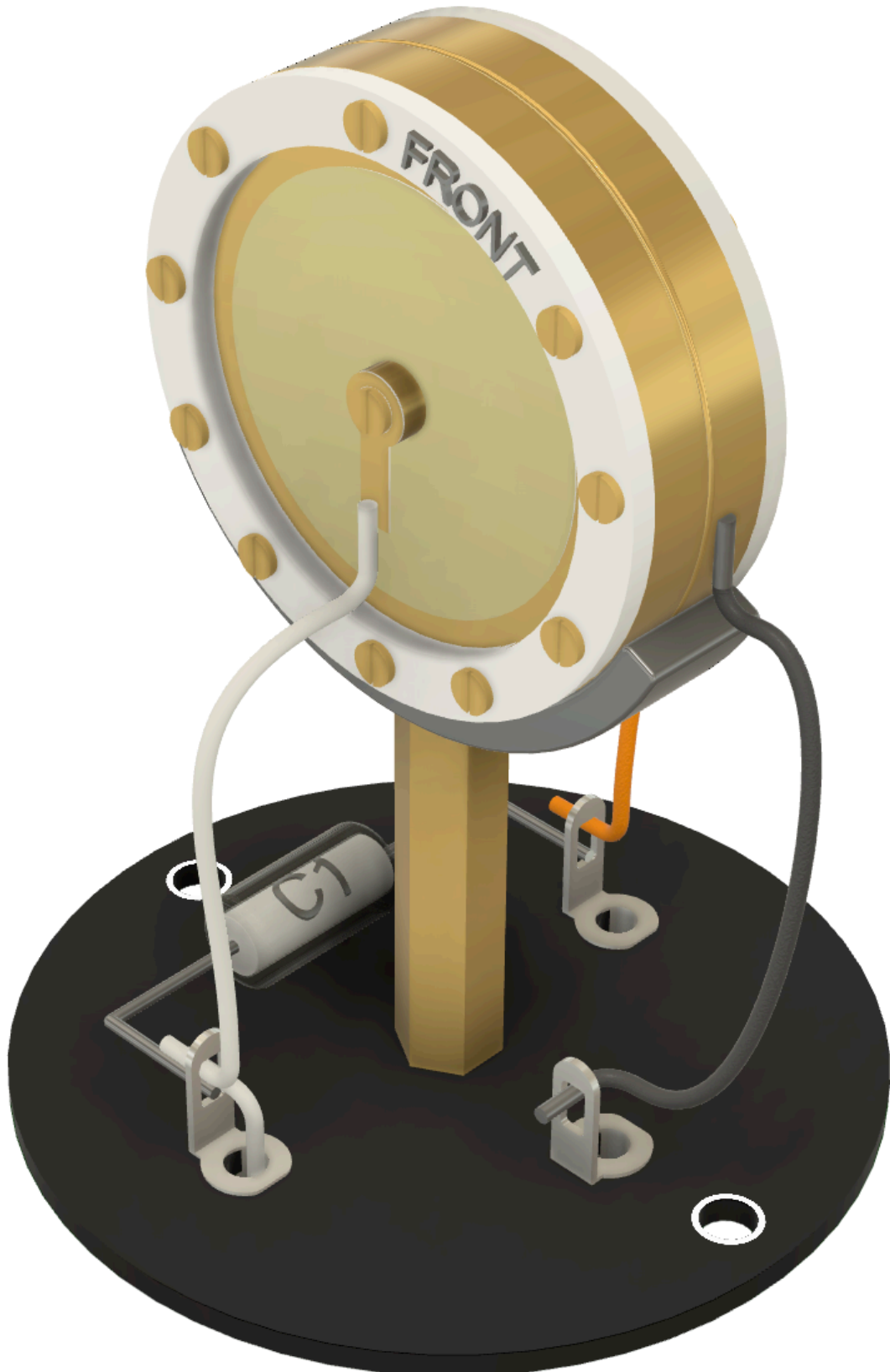


Also remember to push one of the C3 output capacitor legs up through the PLATE eyelet. You can insulate this leg with shrink wrap, for example.

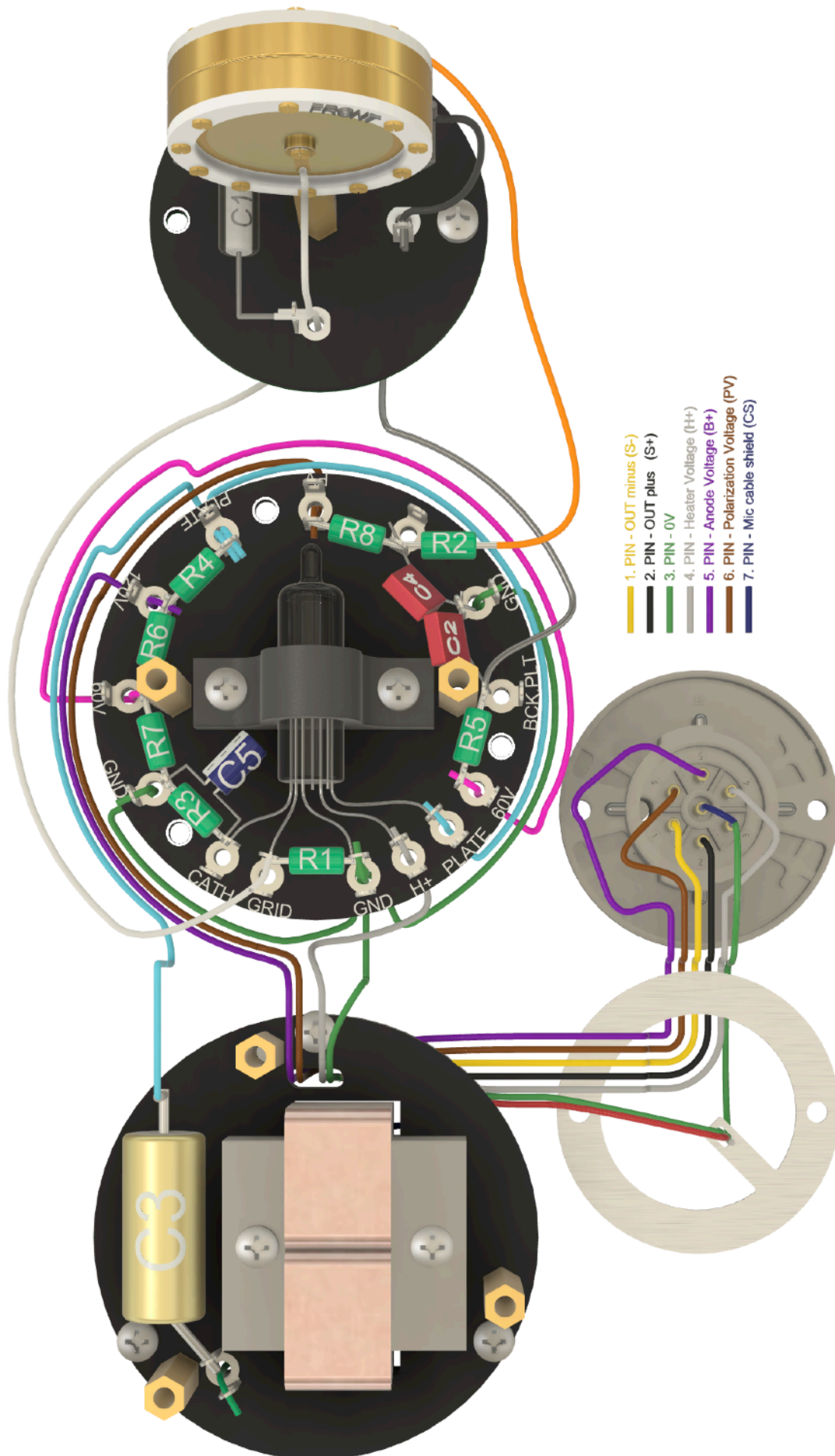




Get your capsule board ready. Connect the capsule pins like this. C1 is the capacitor between the front and rear diaphragm of the capsule.



Here is the complete wiring diagram.

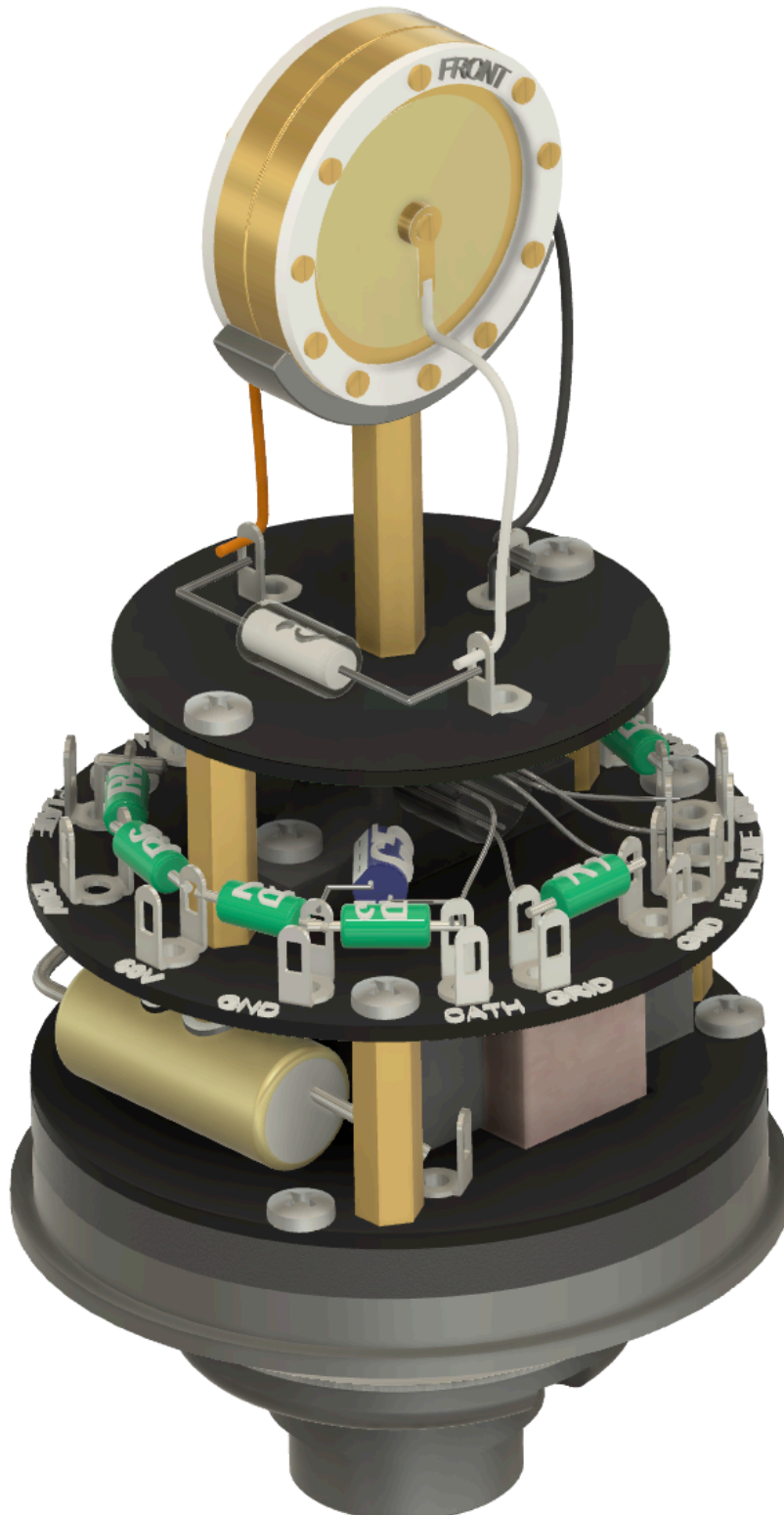


Connect the green ground cables from the main board and also from the Binder connector and the red cable from the transformer to the ground ring eyelet with a screw. Make sure that this connection is mechanically as strong as possible and does not loosen. A cable solder end loop and M2 or M2.5 screw and double nut should serve perfectly.

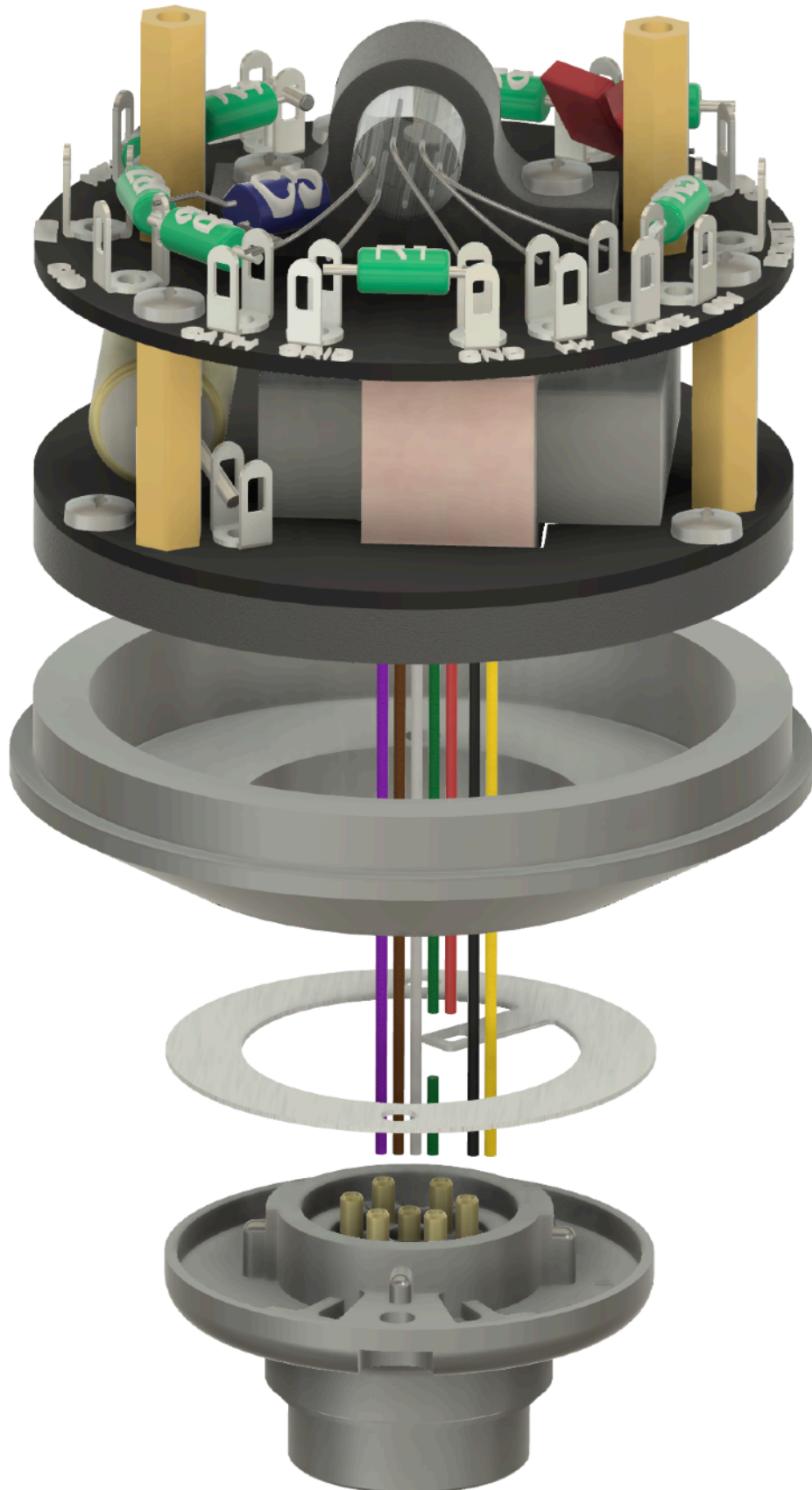
Also note that inside the binder connector, pin 7 is connected to pin 3 by a short cable or the remaining resistor leg.

Be sure to pass the cables through the ground ring before soldering them to the Binder connector.

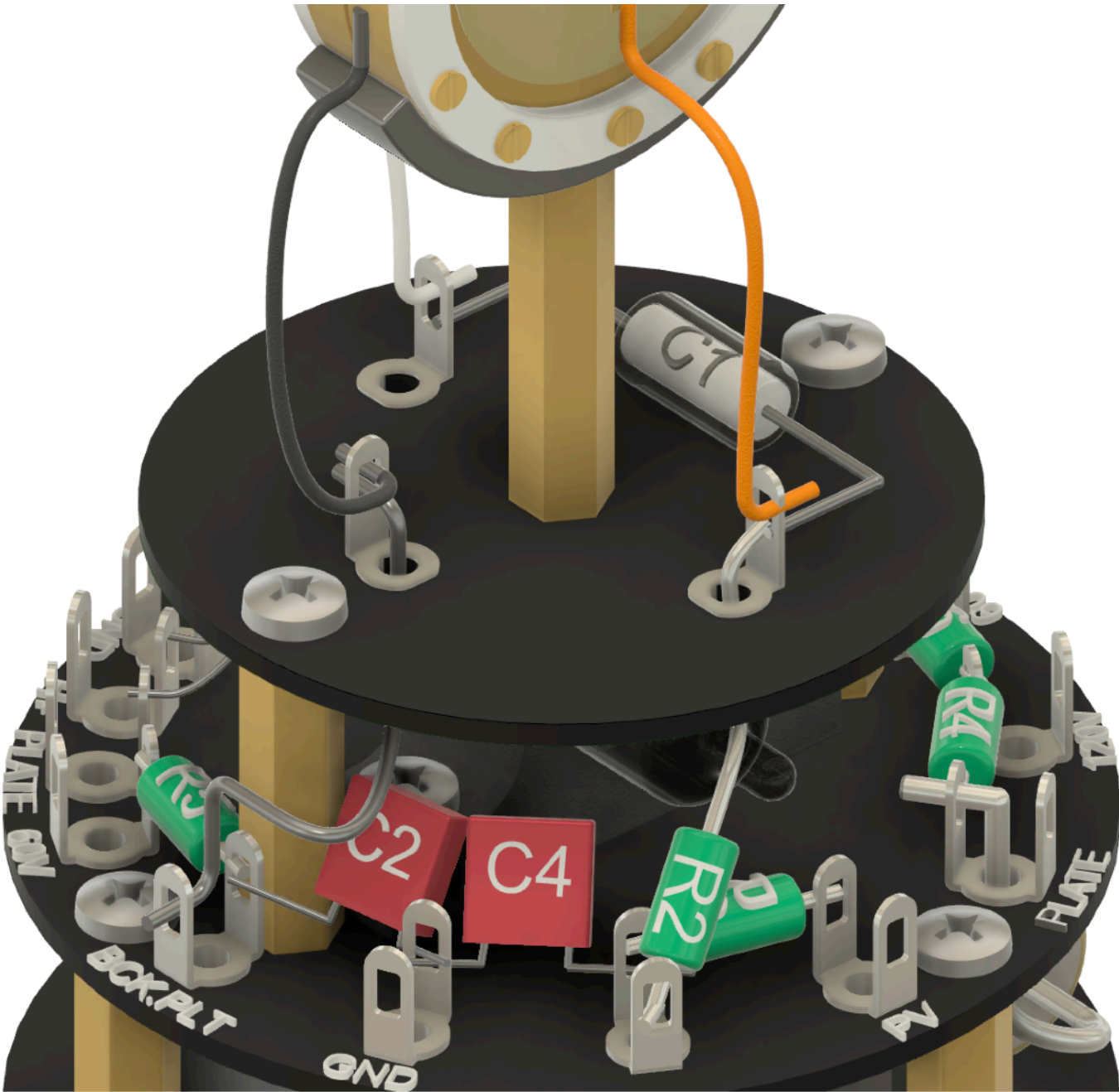
Here is the result after complete bolting.



Another example to give you an idea (cables not connected in the ground ring and Binder connector).

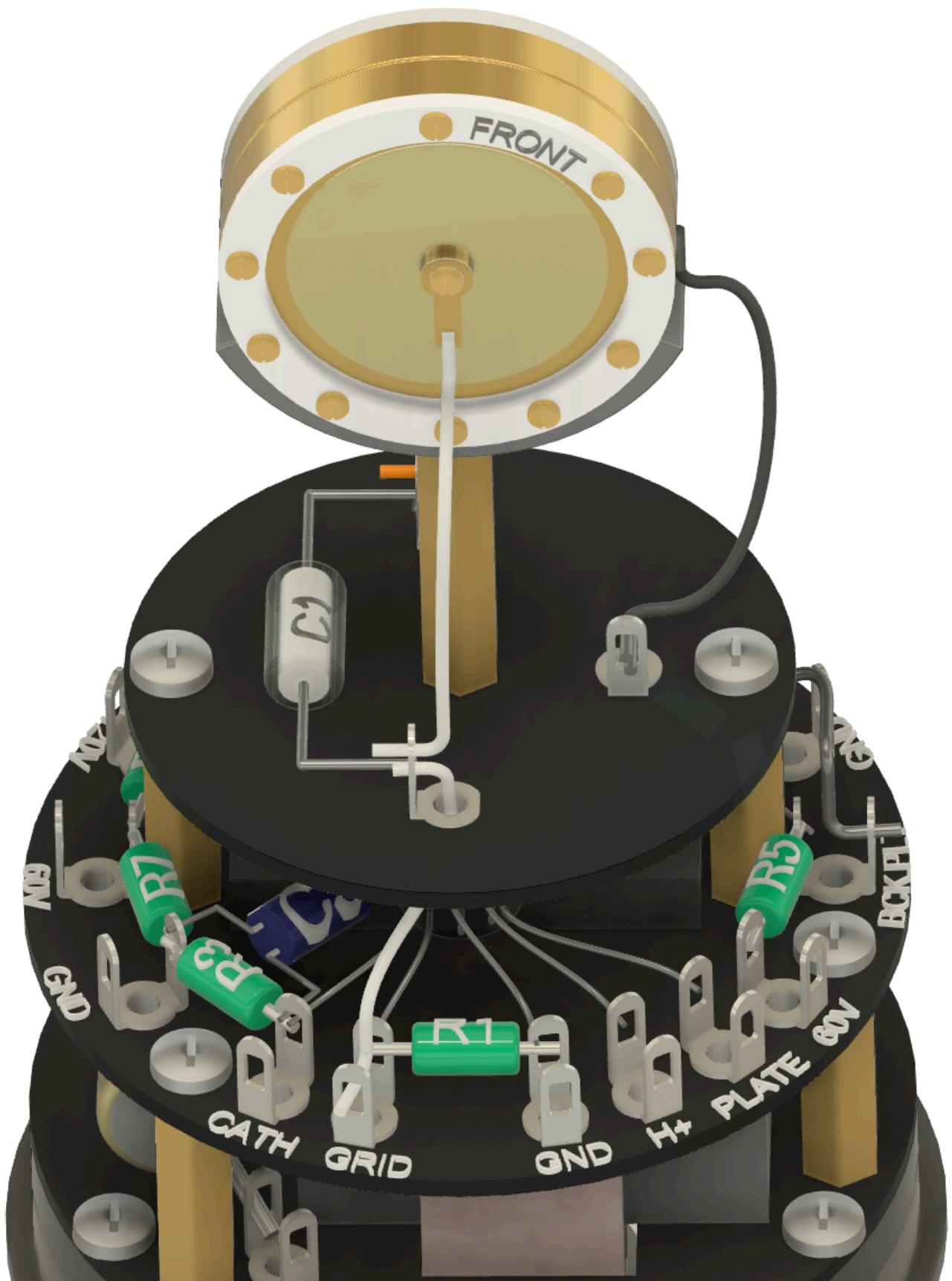


Here is a detail on R2, which connects the main parts board with the capsule board.





Here is a detail of the connection of the front diaphragm to the GRID leg of the tube using a short white cable.



# WIRING INFO

- 1) Its always great idea to check phase of DIY microphone against commercial microphone. In case it was reversed, just swap the two cables on the XLR insert in PSU case.
- 2) Transformer wiring: Check the transformer manual. Also, there is a detailed photo description of what to connect where in this manual.
- 3) Binder connector wiring: There is a detailed photo description of what to connect where in this manual.

# ADDITIONAL INFO

Take you time when soldering the Binder connector pins. You don't want to burn the plastic of the Binder insert. Take a break while soldering the individual wires.

When soldering polystyrene capacitors, be as fast as possible and do not overheat them. They could be easily damaged. Also, you can't clean them with isopropyl alcohol!!!!

# BILL OF MATERIAL

Part	Value	Tol.	Min. V olt.	Dimmensions	link 1	link 2	notes
<b>Resistors</b>							
R1	150M	5 %		6.5x2.2mm	<a href="#">mouser link</a>		
R2	100M	5 %		6.5x2.2mm	<a href="#">mouser link</a>		
R3	2K2	1 %		6.3x2.4mm	<a href="#">mouser link</a>		
R4	100K	1 %		6.3x2.4mm	<a href="#">mouser link</a>		
R5	100M	5 %		6.5x2.2mm	<a href="#">mouser link</a>		
R6	1M	1 %		6.3x2.4mm	<a href="#">mouser link</a>		
R7	1M	1 %		6.3x2.4mm	<a href="#">mouser link</a>		
R8	100M	5 %		6.5x2.2mm	<a href="#">mouser link</a>		

Part	Value	Tol.	Min. V olt.	Dimmensions	link	type	notes
<b>Capacitors</b>							
C1	1nF		630V		<a href="#">mouser link</a>		
C2	10nF		400V		<a href="#">mouser link</a>		
C3	1uF		400V		<a href="#">mouser link</a>		output capacitor

Part	Value	Tol.	Min. V olt.	Dimmensions	link	type	notes
C4	10nF		400V		<a href="#">mouser link</a>		
C5	22uF		16V		<a href="#">mouser link</a>	electrolytic	
C6	3.3pF		250V		<a href="#">mouser link</a>	ceramic	1pF-10pF

Part	Value	Tol.	Min. V olt.	Dimmensions	link	type	notes
Other							
Capsule	M7 or K47 style						
Caps. mount	depends on capsule						
Grounding ring	1x						included in set
Tube holder	1x						included in set
Tube	6S6B-V, 5840W, 5718						
Rubber pad	1x						included in set
Transformer	BV11 from Moby				<a href="https://www.mobytransformers.com/bv-11">https://www.mobytransformers.com/bv-11</a>		
Mic body	M49 style				<a href="https://www.vamisound.com/parts/m49-body/">https://www.vamisound.com/parts/m49-body/</a>		
Binder connector (male)	part of M49 style body						
Binder cabel side connector (female)	Binder part nr. 09-0042-00-07						
M3 stand	20mm	5x					
M3 stand	25mm	1x			Under the capsule saddle		
Pcb		3x					included in set
Cables	24awg (0,2mm) teflon silver cables				<a href="#">eBay.com</a>		
M3 cable eyelet	1x						
M3 screws	various lengths						



## Some photos from real buildings:

