



Supersonic Mk3

Desktop Speaker

Build Guide



You're in the right place

Whether this is your first speaker build or you've made plenty before, follow the steps in order for a clean build and a great result.

Take your time with the details that affect fit and finish.

Build time

Around two afternoons for a pair, excluding print time.

Skill level

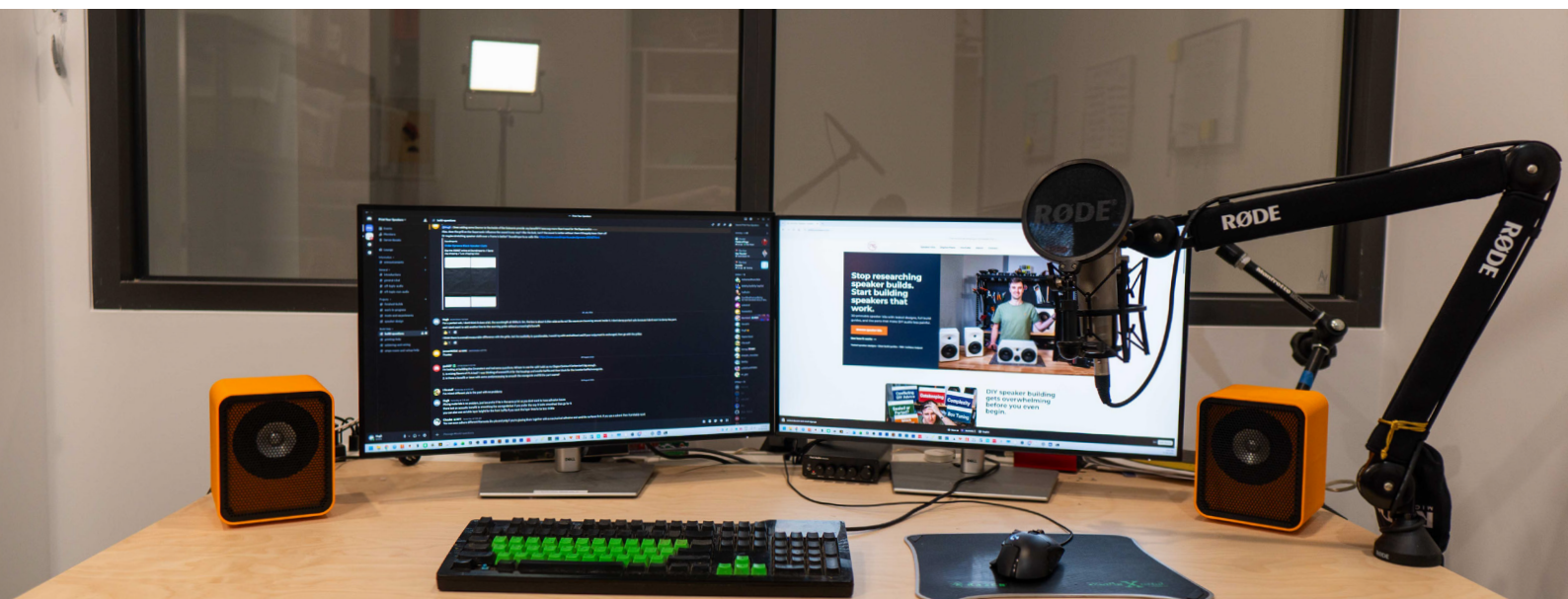
Beginner

The biggest challenge

Assembling the crossover: a chance to learn basic soldering.

The end result

By the end of this build, you'll have a finished speaker you can be proud of, and a proper piece of audio gear you made yourself.



What's in the box (parts for a pair)

Check every item before assembly. Use the checklist below.

QTY	COMPONENT	CHECK
Drivers		
2	Markaudio 3-inch driver	☐
2	Driver gasket rings (with drivers)	☐
Crossover components		
2	Jantzen 15 μ F capacitor	☐
2	Jantzen 0.35 mH inductor	☐
2	Jantzen 0.05 mH inductor	☐
2	Jantzen 3.9 Ω resistor	☐
Wiring		
4	Binding posts	☐
80 cm	Speaker wire	☐
Hardware		
24	M4 $\times$ 20 mm self-tapping screws	☐
16	M4 $\times$ 12 mm self-tapping screws	☐
8	Rubber feet	☐
10	Zip ties	☐
Other		
25 $\times$ 50 cm	300 gsm Dacron sheet	☐
1.25 m	Enclosure gasket tape	☐

Something missing?

Email help@printyourspeakers.com and we'll sort it out.

Gather these tools and supplies for the build.

You can organise the remaining tools and supplies while the parts are printing.

Reliable FDM 3D printer

Minimum build volume: W 140 mm × D 170 mm × H 130 mm

Tools you'll need

- Soldering iron and solder
- Hot glue gun and glue sticks
- 3 mm Allen key
- Phillips-head screwdriver
- Needle-nose pliers
- Hammer
- Wire cutters and wire strippers
- Scissors (for Dacron and tape)
- Ruler or measuring tape

What you'll need to supply

0.8–0.85 kg of PLA per speaker. This design is optimised for PLA. Other materials may work, but PLA is recommended.

These parts are designed to be 3D printed at home using common FDM printers. The settings below have been tested and are known to produce parts that fit and assemble correctly.

Grille exception: use 0.42 mm line width with a 0.4 mm nozzle (see next page).

Recommended Material

- **PLA** (tested and validated)

Other materials may work, but this build guide assumes PLA.

Part Orientation

- Parts are pre-oriented for printing. Do not rotate them.
- You can confirm the orientation by comparing to the examples on the next page.

Print Time

- Large enclosure parts may take 24+ hours each, this is normal.
- Small parts can print in as little as an hour.
- Load the parts into your slicer to check the time on your printer.

Print Settings

- Nozzle Size: 0.4 mm
- Layer height: 0.2 mm
- Line Width: 0.6 mm (important for overhangs, print time, strength)
- Perimeters: 3
- Infill: 30% (Cubic)
- Top Shell Thickness: 1.5 mm
- Bottom Shell Thickness: 1.5 mm
- Supports: Off
- Aux/Chamber Fan: Off

Larger nozzles and thicker layers may work, but the settings above are recommended.

All parts are designed to print support free.

Common Mistakes

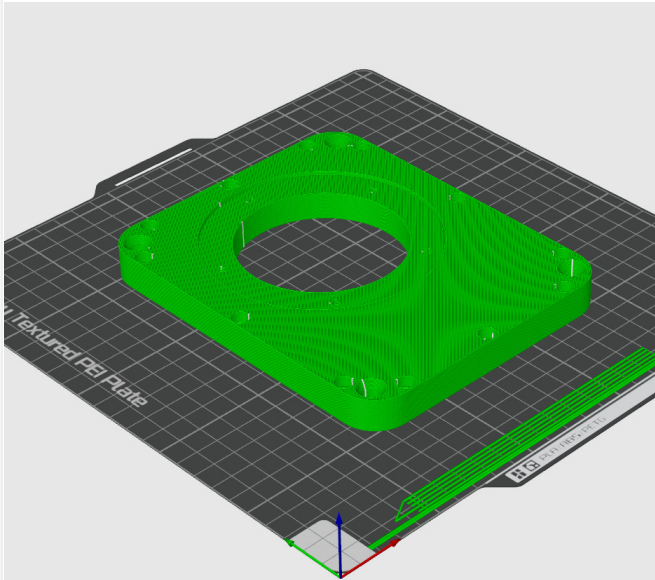
- Increasing infill 'just to be safe'
- Adding supports
- Printing in an incorrect orientation

Start with the baffle to confirm your settings before moving on to larger parts.

Print all parts exactly as shown below

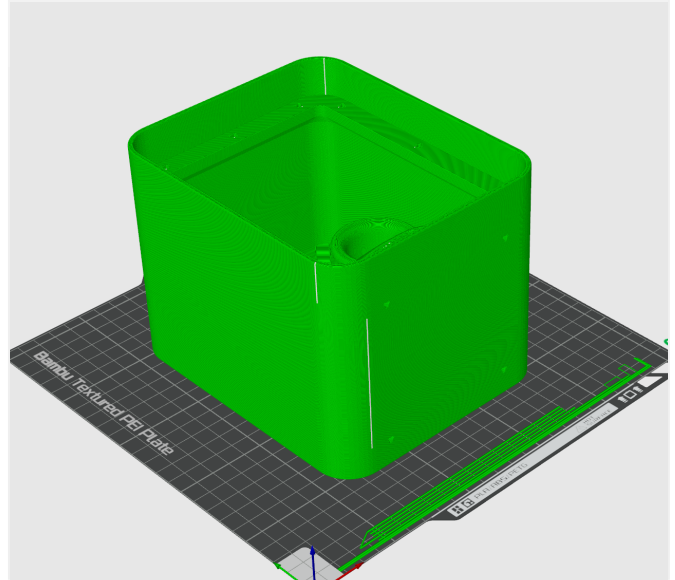
Parts will import in the correct orientation by default.

Front Baffle



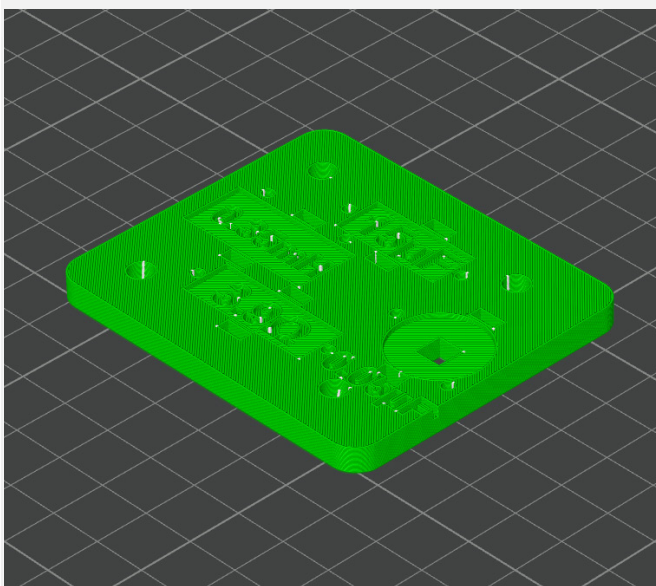
Print with the outside face facing up

Main Enclosure Section



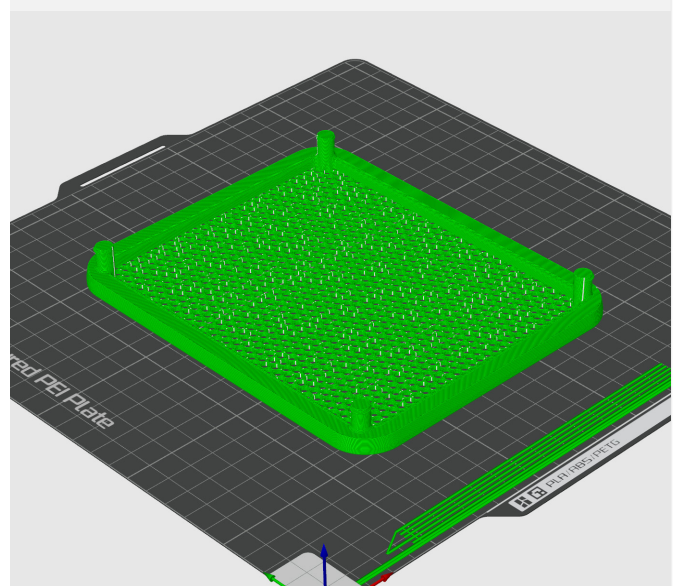
Print with the back face on the build plate

Crossover Board



Print with the component side facing up

Grille

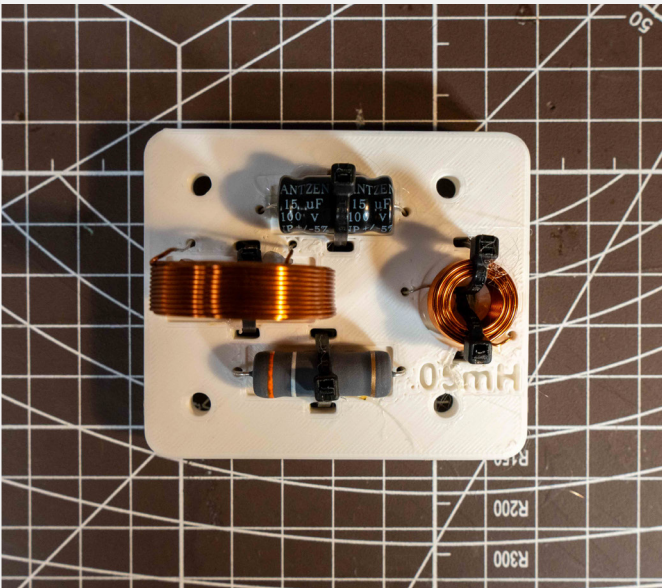


Print face down, use a 0.4 mm nozzle with 0.42 mm line width



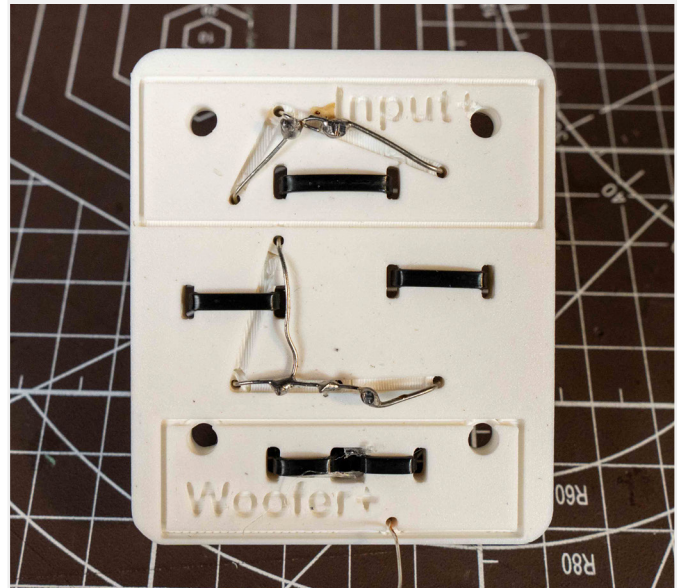
Do not rotate or re-orient these parts. They will require supports and may fail.

1A Lay out the components



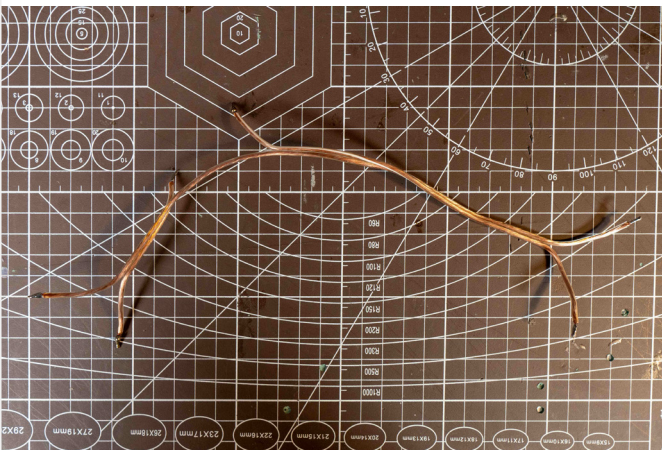
Place the components on the board, following its labels. Secure them with hot glue and zip ties to prevent rattles.

1B Solder the components



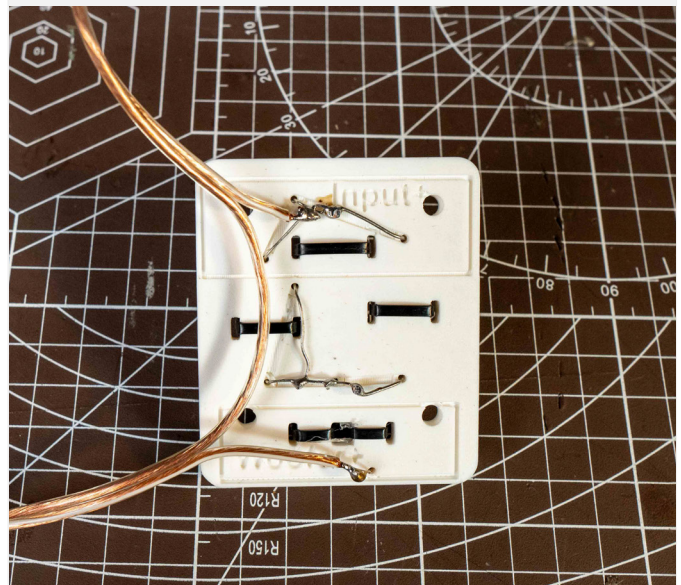
Solder the matching leads on the underside, following the printed paths. If labels are hard to read, view the board in your slicer.

1C Prepare the wire



Use 40 cm of speaker wire. At 12 cm from one end, cut only the positive conductor; leave the negative intact. Strip about 5 mm of insulation from the ends, then tin them.

1D Solder the wire



Solder the short positive wire to Input+ and the long positive wire to Woofers+.



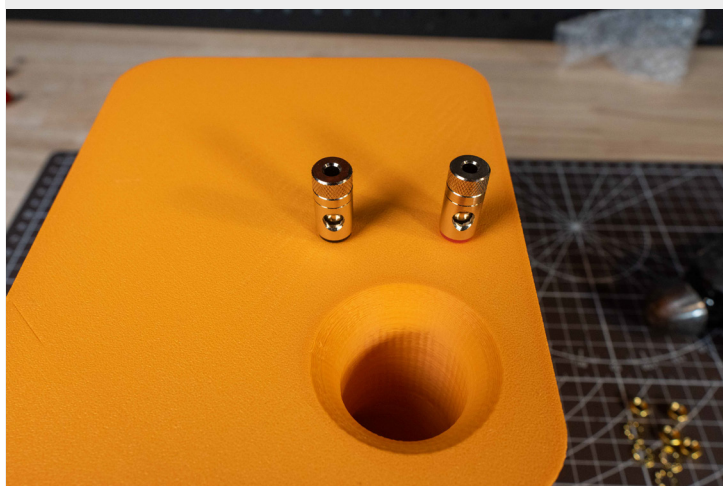
Triple-check polarity before moving on. If + and - are swapped, the speaker may still play, but it will not sound right.

2A Prepare the binding posts



Disassemble the binding posts. Solder a spade terminal to each conductor at the short end of the speaker wire.

2B Fit the binding posts

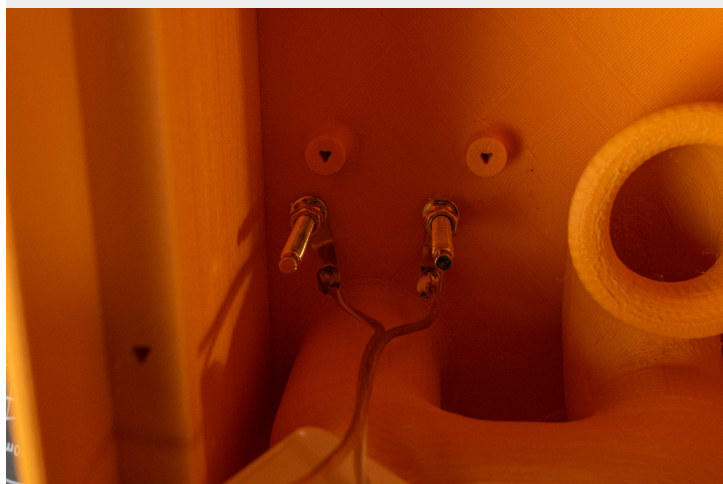


Gently tap the binding posts into the holes with a hammer.



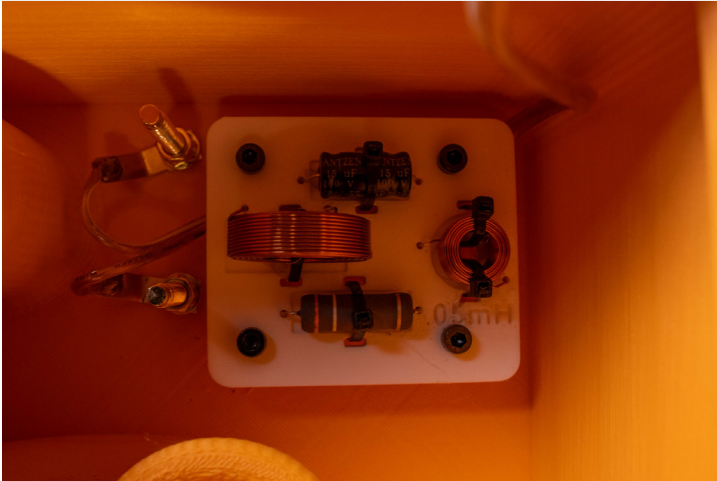
Be gentle. Too much force may split the enclosure.

2C Wire up the binding posts



Slide the spade terminals back onto the binding posts. Refit the washers and nuts, then tighten them using the 3D-printed binding-post hex driver included in the project files.

3A Mount the crossover



Keep wires clear of the screw holes and mounting area.

Secure the crossover board with four M4 × 12 mm self-tapping screws.

3B Apply the Dacron



Use half the supplied Dacron in each speaker. Cut it to fit the back and side walls, keeping the port opening completely clear.

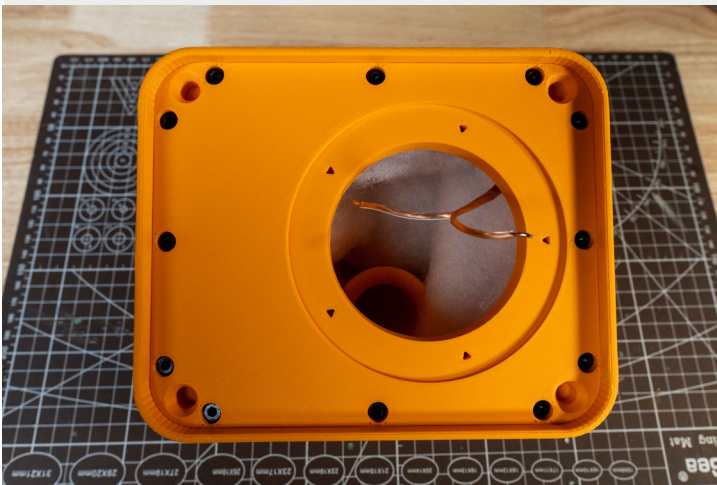
Fix it in place with hot glue.

4A Apply the gasket tape



Apply gasket tape around the entire baffle mounting surface. Overlap the ends slightly to ensure a complete seal.

4B Secure the baffle

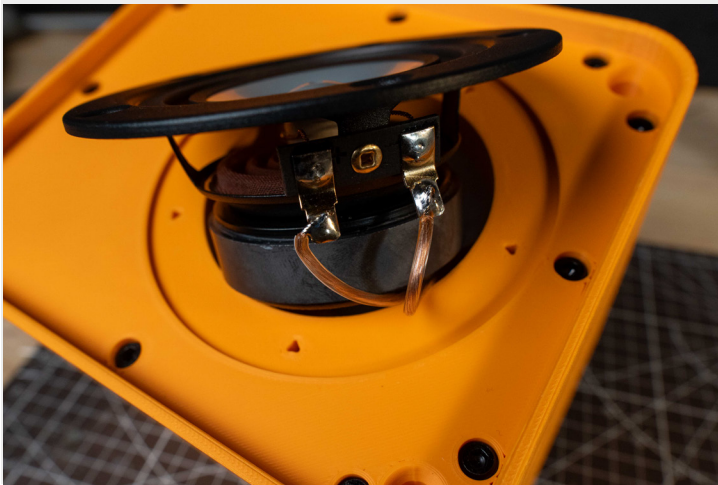


Mount the baffle with twelve M4 × 20 mm self-tapping screws. Start all screws loosely, then tighten evenly in several passes until the gasket tape is compressed and the screws feel firmly seated.



Do not fully tighten one screw at a time. This may damage or distort the baffle.

5A Connect the driver

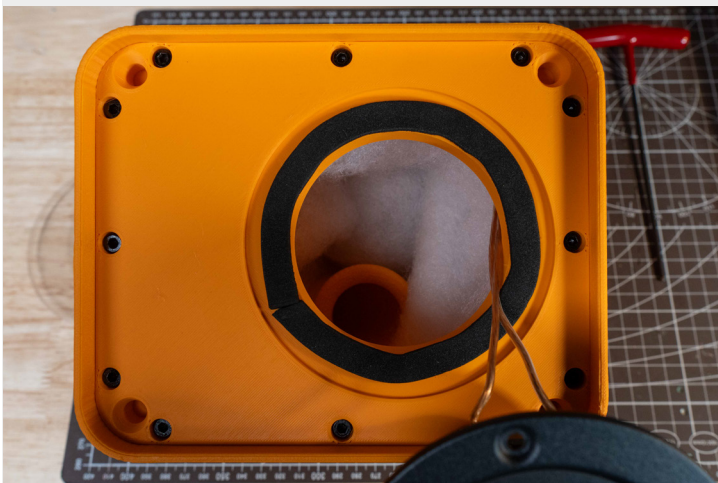


Solder the loose ends of the speaker wire to the driver, making sure the positive wire goes to the positive terminal and the negative wire to the negative terminal.



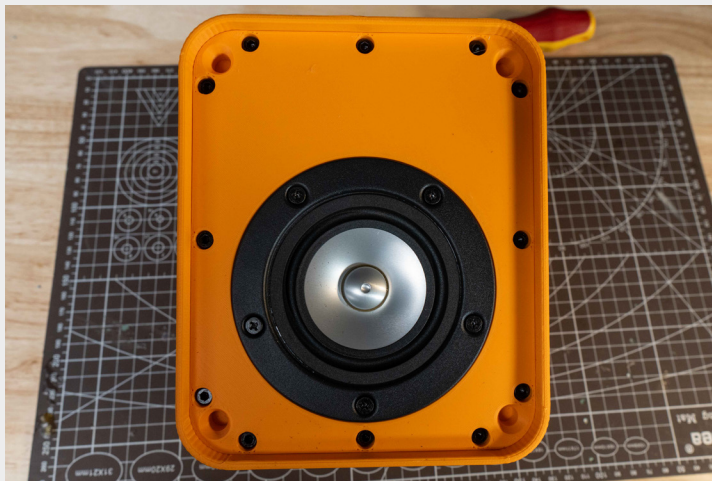
Don't throw away the driver packaging, the mounting screws are hidden in the foam.

5B Apply the gasket ring



Apply the gasket ring supplied with the driver around its mounting surface to create a complete seal.

5C Mount the driver



Mount the driver with the four screws supplied in its packaging. Tighten evenly in several passes.

6A Attach the feet



Flip the speaker over. Attach the four feet with four M4 × 12 mm self-tapping screws.

6B Mount the grille



Press-fit the grille into place.



Not just assembled. Built.

You printed the parts, wired the crossover, mounted the driver, built the enclosure, and turned a pile of components into a real bookshelf speaker.

That's worth feeling pretty good about.



Help us spread the word

If you enjoyed the build and would like to help us out, share a photo of your finished build on Reddit, Instagram or your favourite DIY audio or 3D printing community.

It helps a small project like this reach more builders, and your speakers might inspire someone else to start their own.

Having trouble? Start here

- **No sound from either speaker:**
Check your connections at the crossover and binding posts.
- **Crackling, buzzing or distortion:**
Tighten all connections and check for any loose solder joints.
- **Amplifier shuts down or won't power on:**
Inspect for any shorts in the wiring, particularly around the crossover and binding posts.
- **Weak bass or strange sound:**
Verify polarity at every connection and check the wiring against the board's printed paths. View the board in your slicer if its labels are hard to read. Keep the port unobstructed.

Still stuck? Email help@printyourspeakers.com.
Chat with Hugh and fellow builders on Discord:
<https://discord.gg/SSNYCheZaB>

We Value Your Feedback!

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