Assembly Instructions DIY headphone MushRoom

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Material List

- 2x Peerless HPD-50N25PR00-32
- 2x Rean NYS 240 BG
- 1x Headphone cable (1x 3.5 mm stereo to 2x 3.5 mm mono)
- approx. 150g of PCTG or PETG
- 3 mm spacer fabric of the size 15 cm x 20 cm
- 3 mm felt of the size 10 cm x 10 cm

Necessary tools

- Soldering iron
- Nose pliers or similar
- cutter
- Scissors

1 Download files

If you haven't already downloaded all files, do so at:
`https://github.com/adude995/DIY-Open-Headphone`

2 3D-Printing

Printing settings are the same for all parts, except for the scaling factor of the earcup part which is 1.05 and should be applied manually in the slicer of choice. Since the parts are hold together by friction, the fit should be tight, but not too tight. Depending on the printer, without scaling, the inserted driver expanding the driver_insert could make it hard to put the piece into place afterwards as seen in 3.3.

Print Settings:
"Glass"-settings for strength (and look if used with transparent filament) but slow

3 Assembly

Make sure all the support material as well as any strings left from 3D printing are removed precisely from the prints. Stringing in the driver_insert, for example, can result in rattling afterwards.

3.1 Driver housing

Carefully push the drivers into of the driver_housing parts.
Make sure air is not encased between the driver and some flat surface. This will dent the membrane and could damage it.

Figure 1: Peerless HPD-50 driver inserted into 3D-printed housing part.

Then take the inner brass part of the REAN connector and screw it into the designated hole in the ear cup. Use nose pliers and try not to slipp off too often since the brass parts can wear off fast.

Figure 2: Earcups with REAN NYS 240 screwed directly into the 3D print.

3.2 Wiring

Start by soldering the wires to the driver.
To avoid any force to the driver, caused by cables not fitting the ear cup later on, hold the driver in place first, to the idea of how the wires need to be orientated.

Figure 3: Cables soldered to the driver in a way it fits in the earcup.

Push the driver housing with the inserted driver into the earcup. Watch out that there is no force from the cables to the driver.

Cut the cable to the appropriate length and solder them to the connector with the pin allocation in mind.

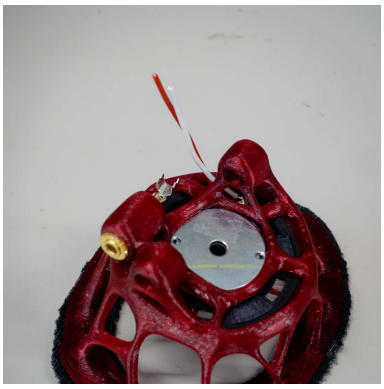

Figure 4: Driver placed in the earcup.

Figure 5: Earcup with soldered driver

3.3 Spacer Fabric and Felt

Cut Fabric and glue into place.

Figure 6: Finished headphone

A Printing parameters

Printer Settings	
Layer height	0.2 mm
Perimeters	∞
Solid layers	n.a
Seam position	Aligned
Perimeter generator	Arachne
Infill	n.a
Speed perimeter	20mm/s
Speed small perimeter	?
Speed external perimeter	?
Filament Settings	
Extrusion multipl.	1.05
Nozzle temperature	250 ° - 255 °
Bed temperature	90 ° - 100 °
Fan speed	25 %
Retraction length	0 mm