



Earplug Case



Ordinary Contraptions

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Summary

A 2-part magnet held case for a pair of standar earplugs



2.62 hrs



1 pcs



0.20 mm



0.40 mm



PLA



19 g



Ender 3 Pro

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[earplugcontainer](#) [ordinarycontraptions](#)

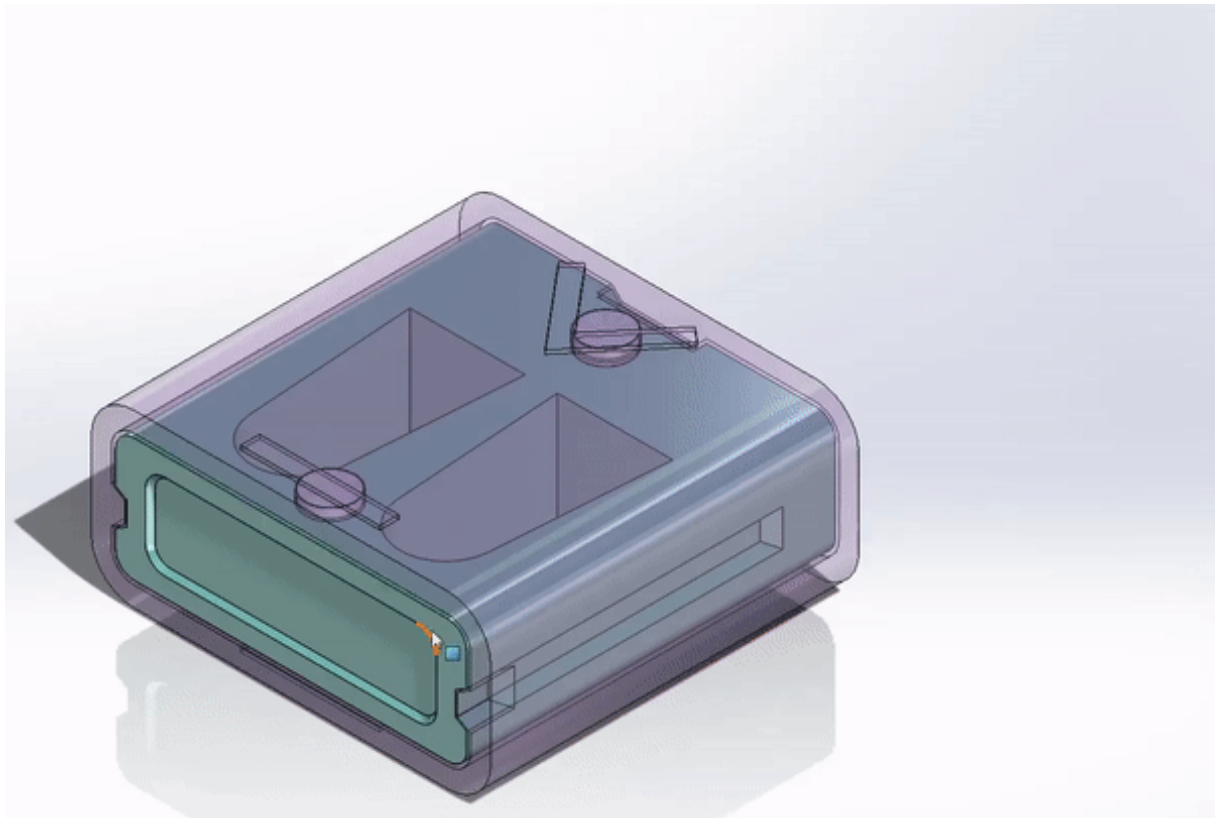
EDIT (04/11/2022): Added a version with bigger earplug holes (see the dimensions in the annex).

EDIT (17/12/2022): Added a version for cylindrical earplugs, with diameter of 13.5 and a length of 19.5mm.

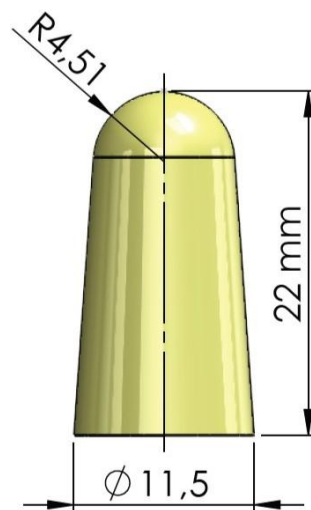
The 3M earplugs - <https://www.amazon.com/310-1060-Uncorded-Disposable-Drilling-Machining/dp/B0B37K7NPW>

As the title indicates, this is a model for a 2-piece earplug case to be held by 3 neodymium magnets. The magnets I used in my case where Ø 5 x 1 mm.

In the following GIF we can see the alignment and how the magnets keep the box open or shut:



The plug model that this case accommodates has more or less the following general dimensions:



Of course, since the plugs themselves are quite flexible, you could theoretically put larger ones in the case without modifying anything.

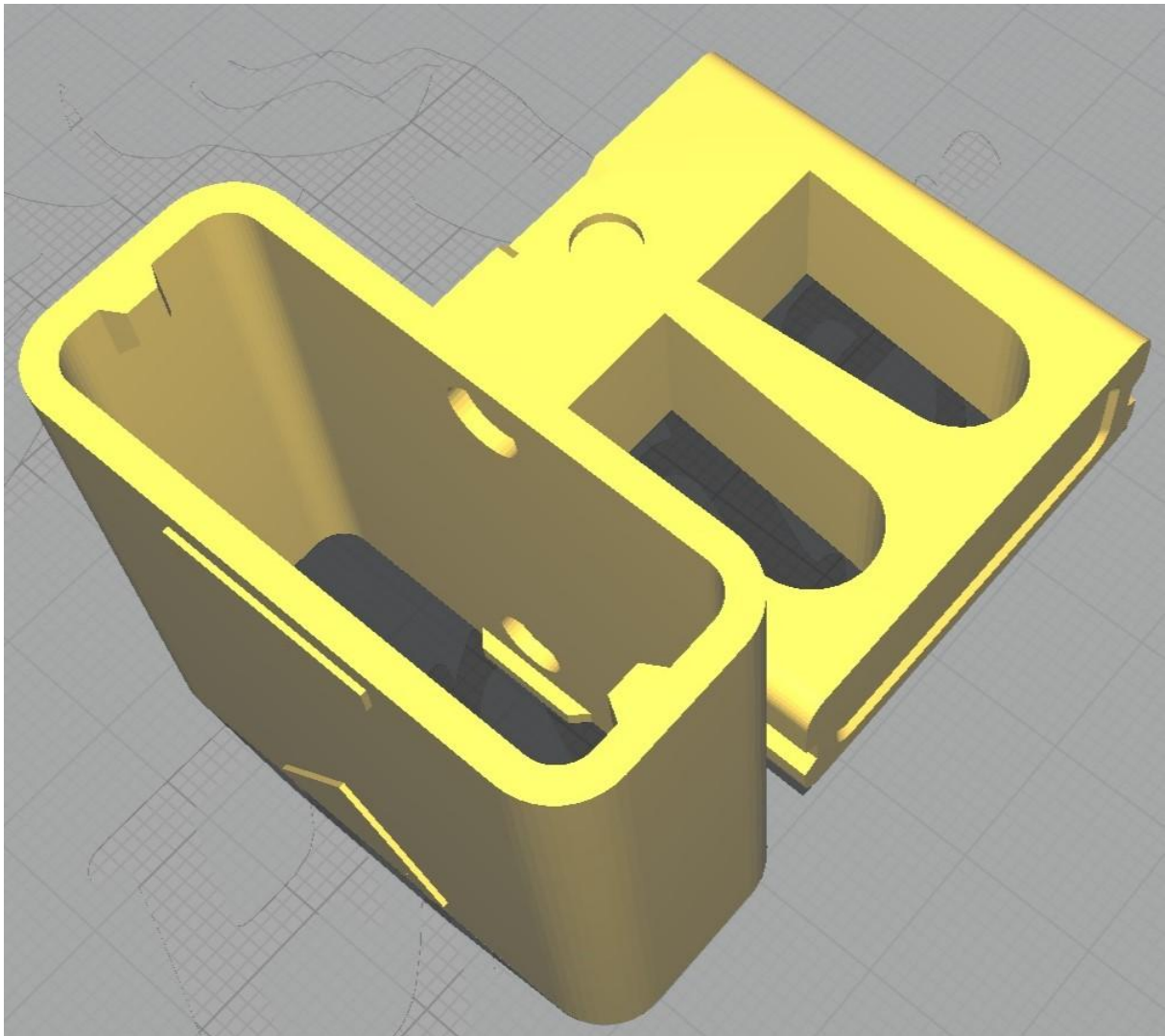
In case you don't want to use magnets, in addition to the version I have used, I have also attached the .STL models of the core and cover without holes for the magnets.

Since you may want to modify the model, apart from the .STL I also included the SOLIDWORKS 2020 files.

Print Settings

Printed in PETG & PLA, without supports or rafts, at 0.2mm resolution and 100% infill for the cover and %15 for the core.

The printing of these two models is quite simple, the only caveat I would mention is the correct orientation of the models on the bed, the following being the one I used:



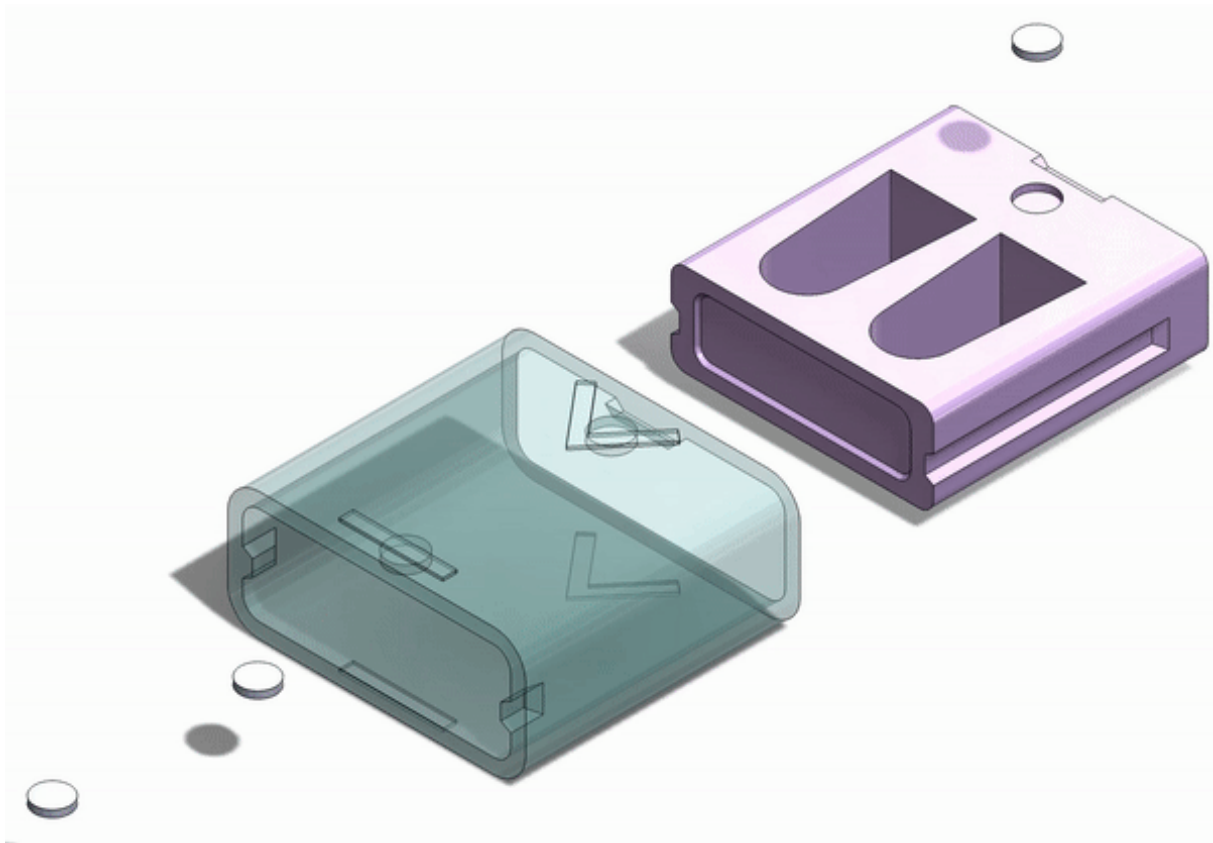
Assembly

The assembly process is fairly simple and a little glue should be enough.

First, the magnets are glued to the core and the cover and, second, the two parts are slid together.

You should also check the orientation of the magnets relative to each other before gluing them in place, to make sure that the case will stay closed and that the magnets do not repel each other.

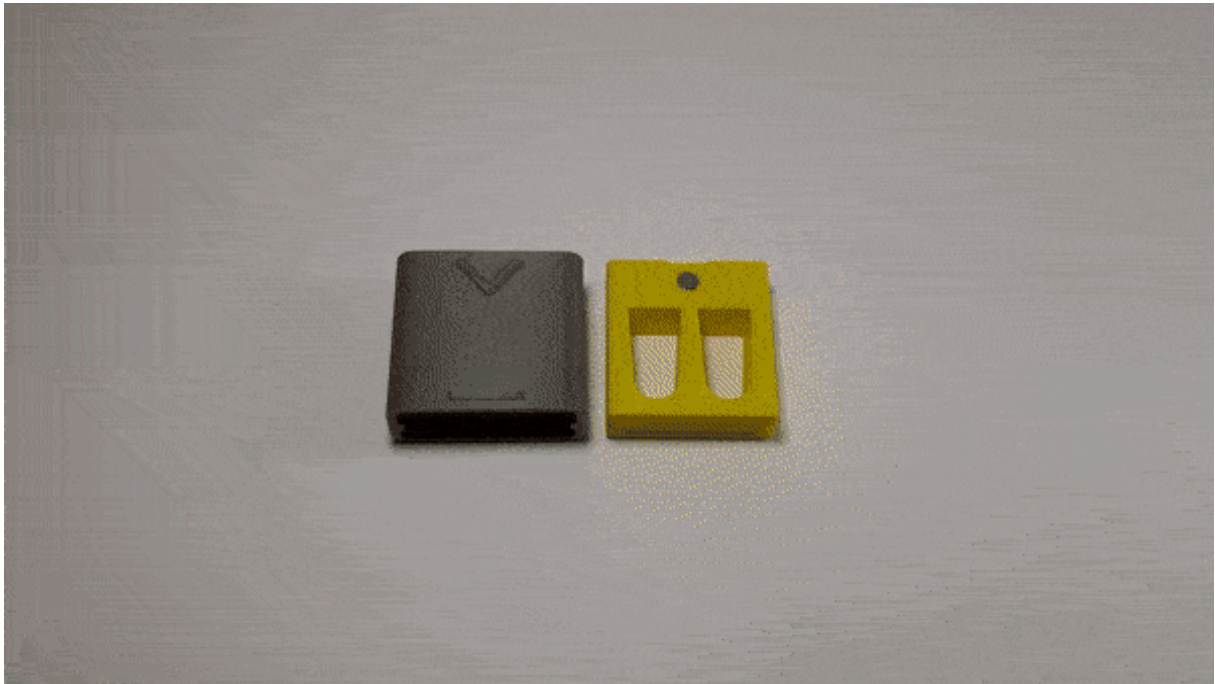
In the following GIF we can see the whole assembly process and how the magnets are put in place:



To better illustrate the final stage of the assembly, here is another GIF showing the sliding part.

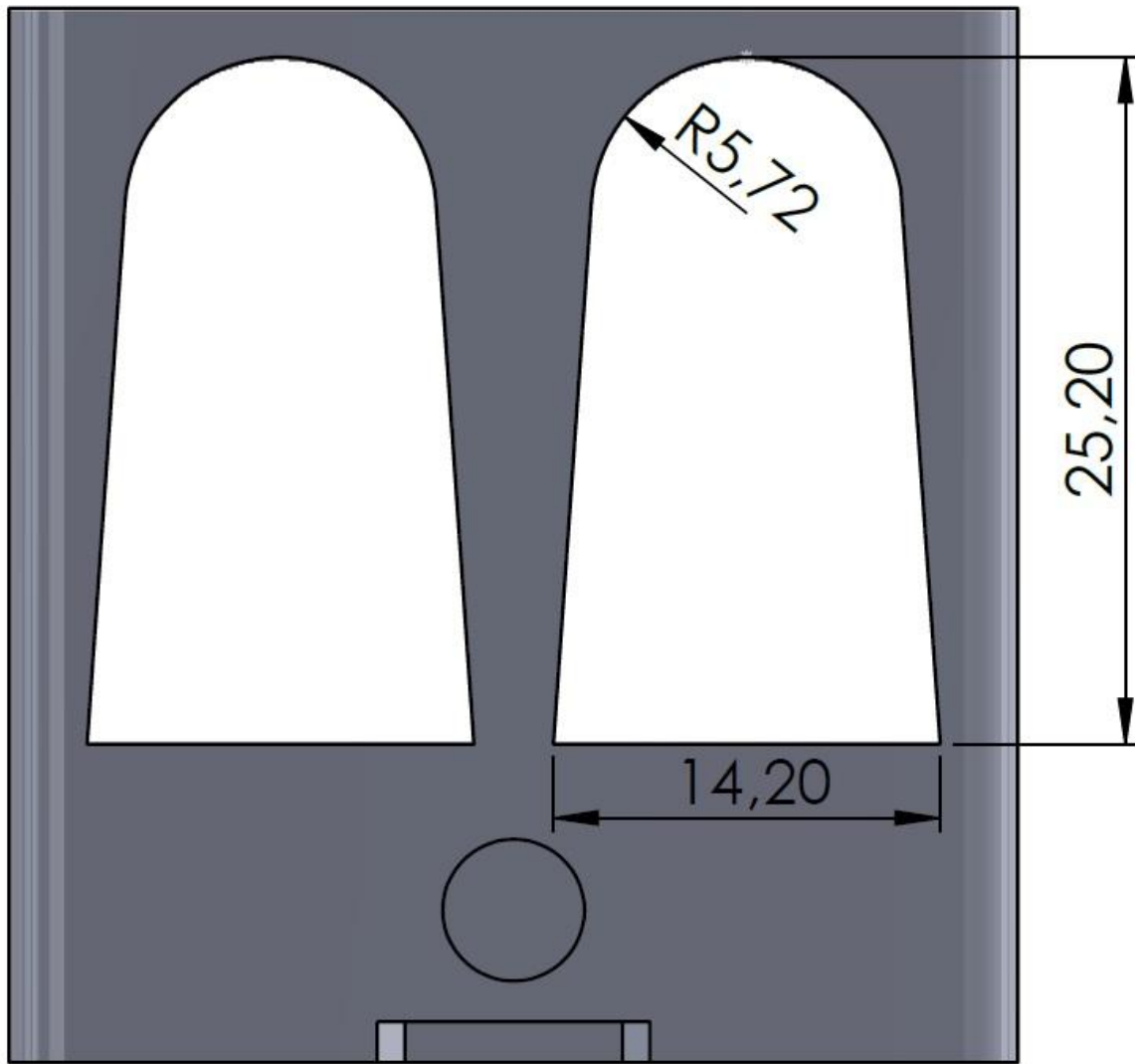
This part is a bit tricky and requires the correct orientation of the two parts before insertion.

Obviously you only want to do this part once the magnets have been installed, as once inserted, removal of the two parts can be difficult.

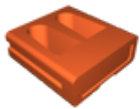


Annex

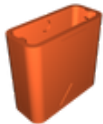
The dimensions of the version with bigger holes:



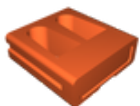
Model files



case-core.stl

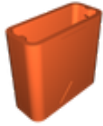


case-cover.stl



case-core-without-magnet-holes.stl

☐ The model without the holes to install the magnets



case-cover-without-magnet-holes.stl

☐ The model without the holes to install the magnets



case-core.sldprt

☐ SOLIDWORKS 2020 file



case-cover.sldprt

☐ SOLIDWORKS 2020 file



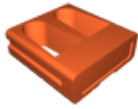
case-core-without-magnet-holes.sldprt

☐ SOLIDWORKS 2020 file

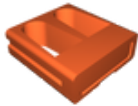


case-cover-without-magnet-holes.sldprt

☐ SOLIDWORKS 2020 file



case-core-with-bigger-earplug-holes.stl



case-core-without-magnet-holes-with-bigger-earplug-... .stl



case-core-with-bigger-earplug-holes.sldprt

☐ SOLIDWORKS 2020 file

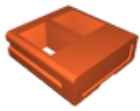


case-core-without-magnet-holes-with-bigger-earplug-... .sldprt

☐ SOLIDWORKS 2020 file



case-core-for-cylindrical-earplugs.stl



case-core-without-magnet-holes-for-cylindrical-earp... .stl



case-core-for-cylindrical-earplugs.sldprt

📄 SOLIDWORKS 2020 file



case-core-without-magnet-holes-for-cylindrical-earp... .sldprt

📄 SOLIDWORKS 2020 file

Print files



ce3pro_funda-tapones-inferior-v3.gcode

🌀 PLA 📏 0.40 mm 📏 0.20 mm ⌚ 2.62 hrs ⚖️ 19 g

📄 With 3 wall line count & 15% infill

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