



Lockable Sliding Box With Two Compartments



Ordinary Contraptions

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Summary

A simple two-way lockable sliding box for small objects.



3.98 hrs



2 pcs



0.20 mm



0.40 mm



PLA



26 g



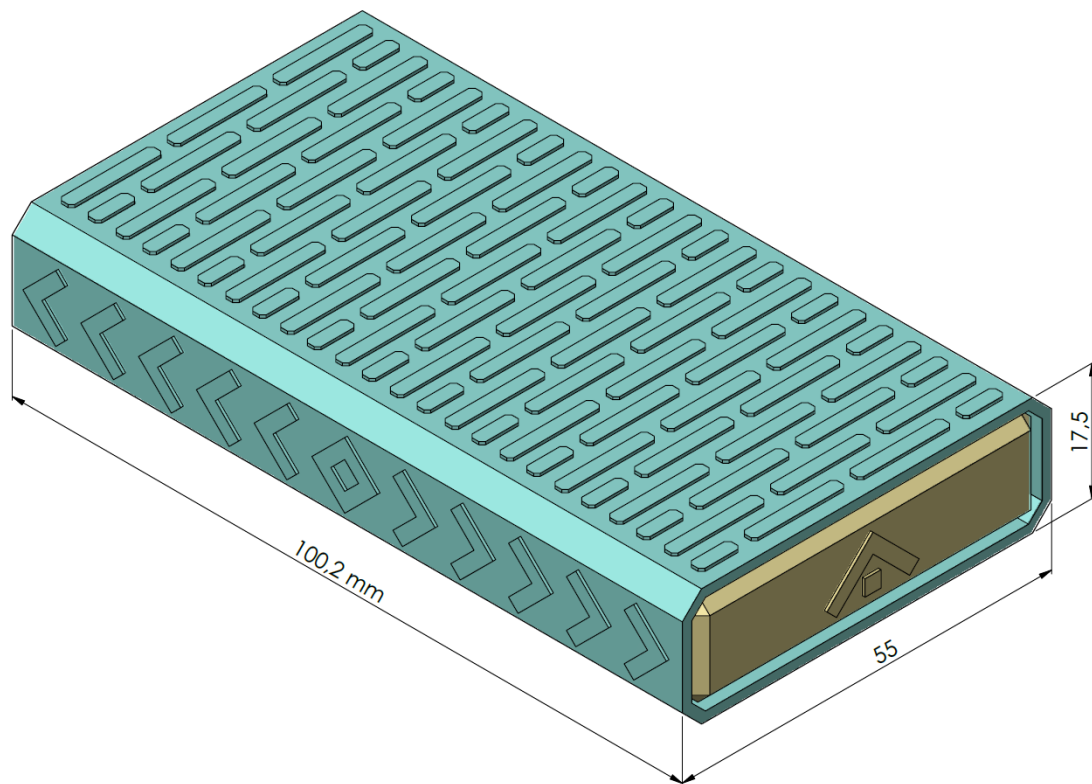
Ender 3 Pro

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[simple](#) [smallpartsstorage](#) [locking](#) [ordinarycontraptions](#)

As said in the description, this model is a lockable two-way sliding box.

Before explaining the mechanism itself let's begin with the general dimensions of the finished assembly:

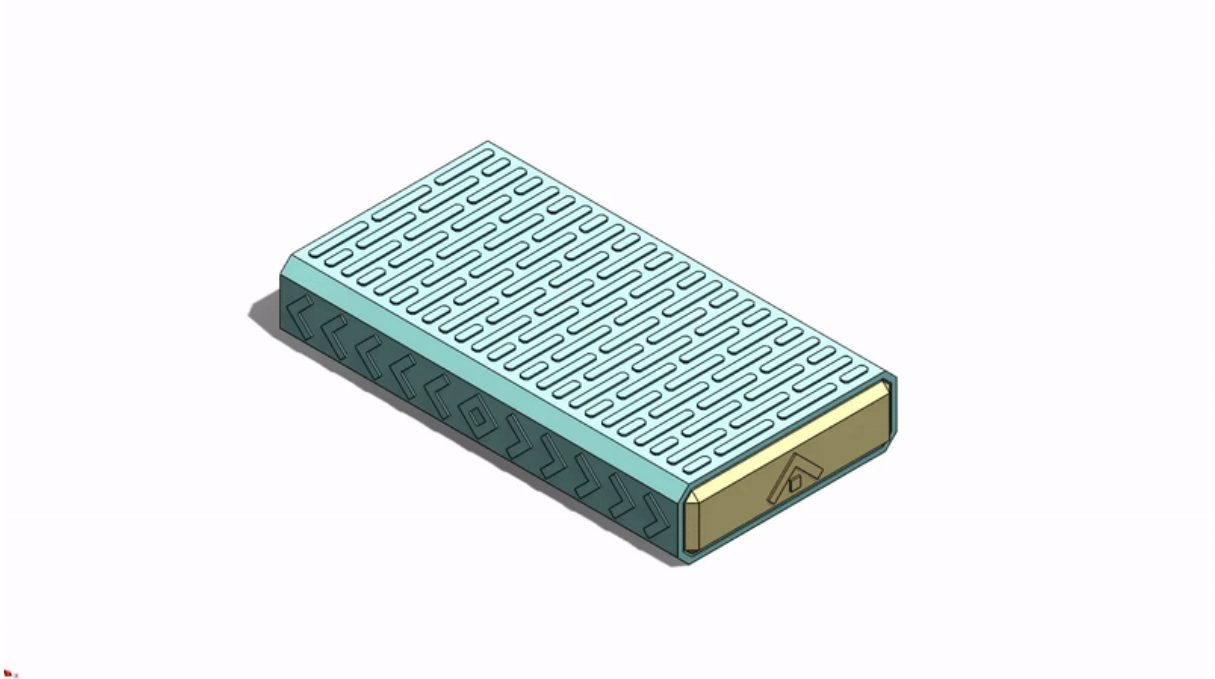


The set it's composed by two pieces:

- The **case** that acts as a lid and which contains the stops for the mechanism to function.
- The **core** were the compartments and the rails are located. The are two tipos of cores:
 - The **simple core**, witch only has a rectangular and a circular compartments.
 - And a **more compartments core**, witch, as it's name indicates, it has 4 partitions in total: 2 small, 1 medium and a big one.

The two types of cores use the same case model.

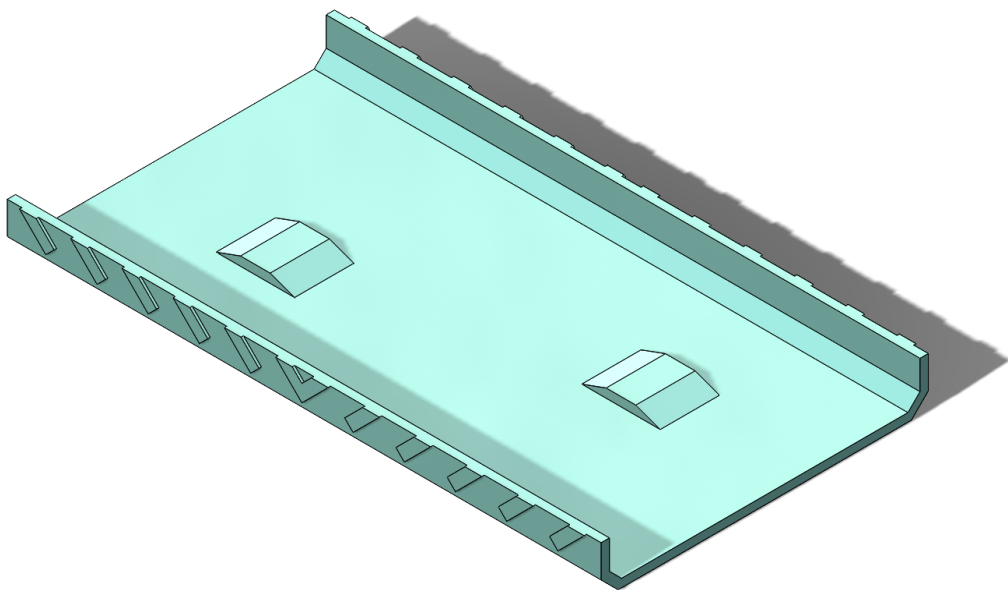
To reveal it's compartments, you will need to push in one side of the core, revealing the compartiment appearing in the opposite direction, as seen in the following gif:



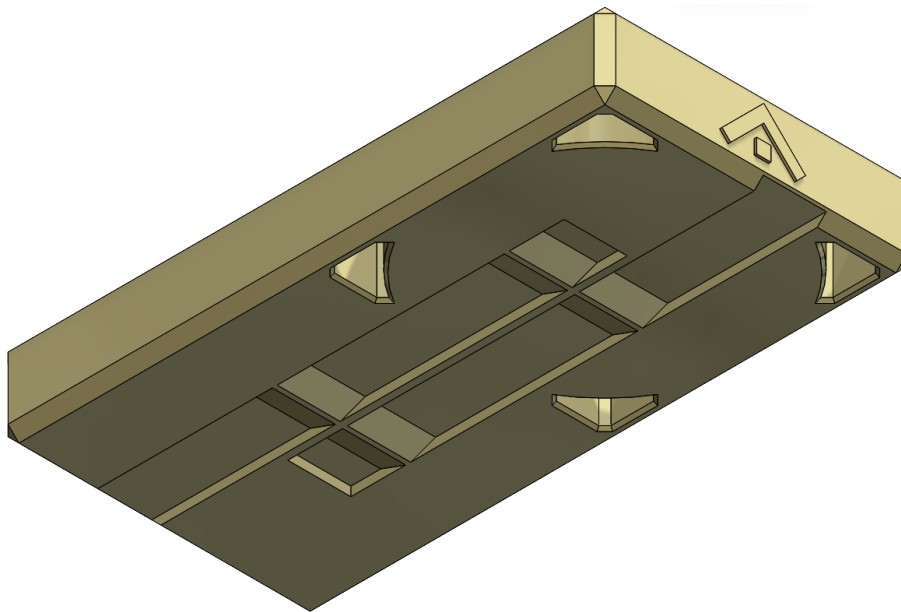
If you look closely, in the simple core model, you will see a small rectangle or circle under the arrow, this way indicating witch compartment will appear in the other side if you push.

In the more compartments core model only the arrows are present. Also, the arrow indicates witch way is “up”, preventing that you throw your stored objects to the floor.

Speaking about the mechanism itself, this works with two pairs of identical but opposite sets of rails and stops. As seen in the following two pictures:

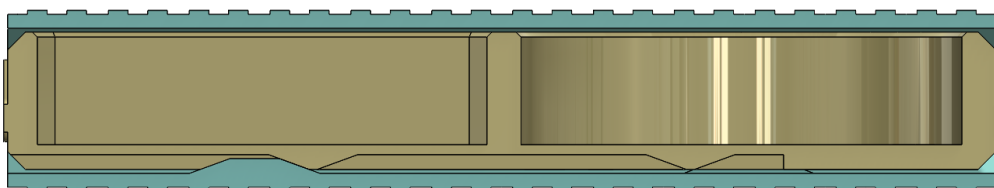


In this one we can see the two stops in the case (obviously the rendering is a section of the case).

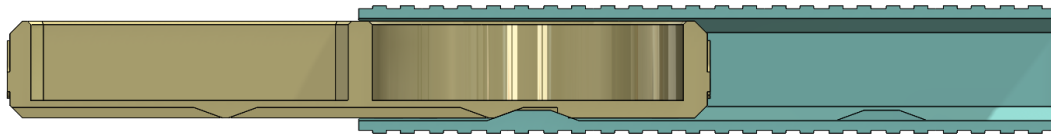


And in this one we can see the two rails in the core.

These function in the following two locked-up states:

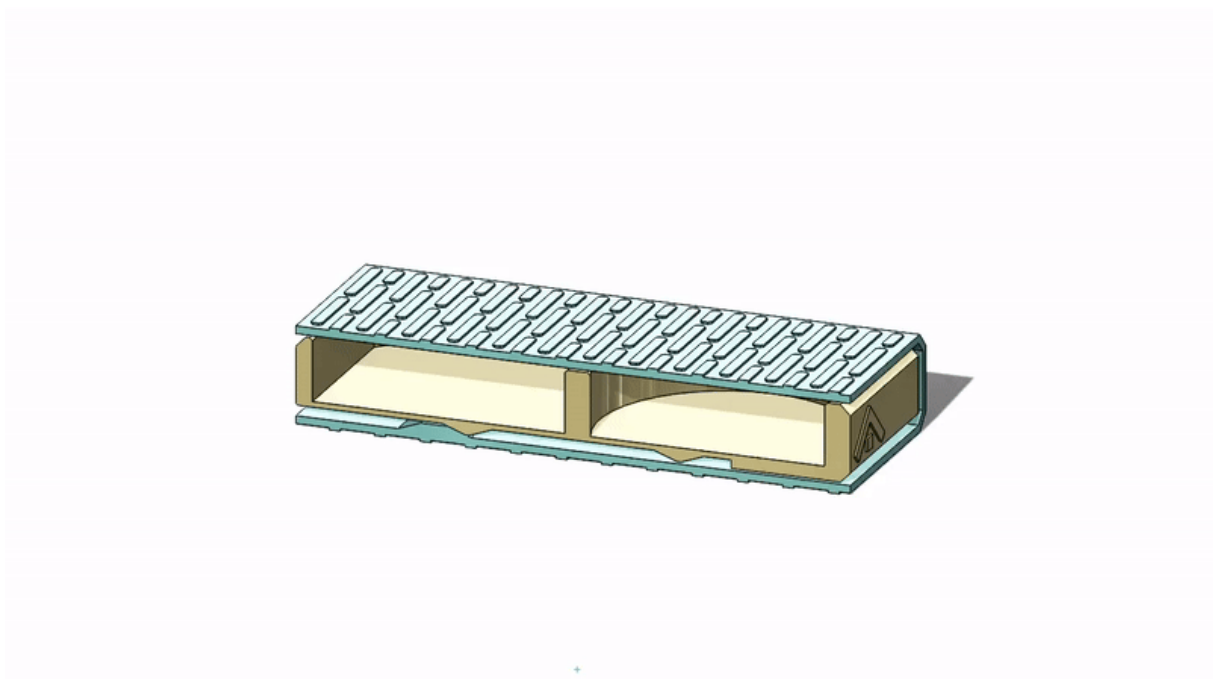


This one is the closed state, where the two sets of stops lock the case shut.



And this one is an open state (in this case the rectangular compartment is open). In this case only one of the two stops lock the case open.

In the following gif we can see the whole case changing process:



To conclude the description of the model, I see it necessary to mention that the tolerances and settings I applied to the model were chosen to work with my particular filaments and printer.

I don't really know how the model will work (or if it will work at all) with other filaments and printers.

Print Settings

Printed in PLA, at 0.2 mm resolution and 20% infill.

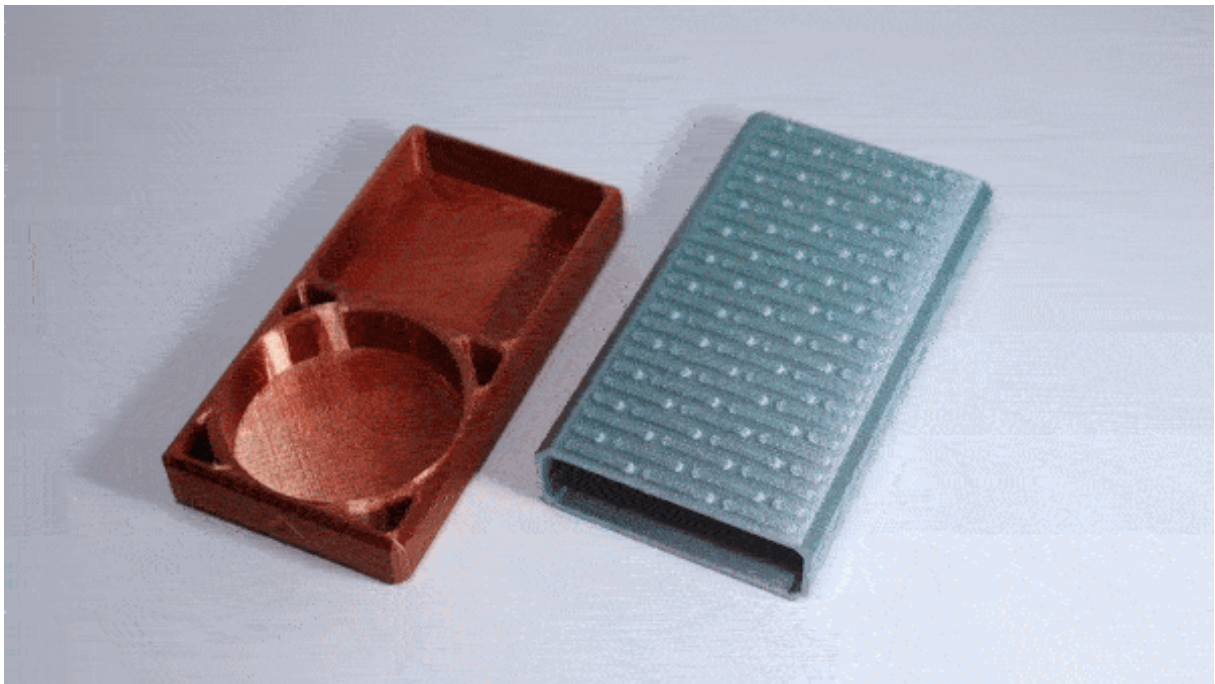
In order to have a good, print I would recomend to print the case vertically with the “brim” seting turned on in Cura. The is no need for supports in this part.

For the core, I would print it horizontaly and with the supports turned on and the “support overhang angle” set to 50o. This way you ensure that the rails are printed correctly.

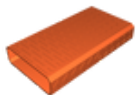
Assembly

Once the parts are printed, the assembly process couldn't be simpler. Just slide the core into the case, of course, this will need to be in the correct orientation with the case stops.

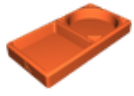
The whole process can be seen in the following gif:



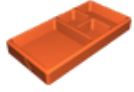
Model files



case.stl



simple-core.stl



more-compartments-core.stl

Print files



ce3pro_case.gcode

🌀 PLA 🌀 0.40 mm ≡ 0.20 mm ⌚ 3.98 hrs ⚖️ 26 g

☐ Case model with brims



ce3pro_simple-core.gcode

🌀 PLA 🌀 0.40 mm ≡ 0.20 mm ⌚ 3.33 hrs ⚖️ 21 g

☐ Core model with supports

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