



Enigma Puzzle Box



LoboCNC

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Summary

A riddle wrapped in a mystery inside an enigma.

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This original design puzzle box, with hidden latches, sliding panels, a mystery dial, and covered with runic symbology, is the perfect place to keep your most valuable keepsakes safe (from anyone without a hammer). It requires just the right sequence of dial and panel motions to open it. Or to fully close it. It's actually not that diabolical, making it great for kids.

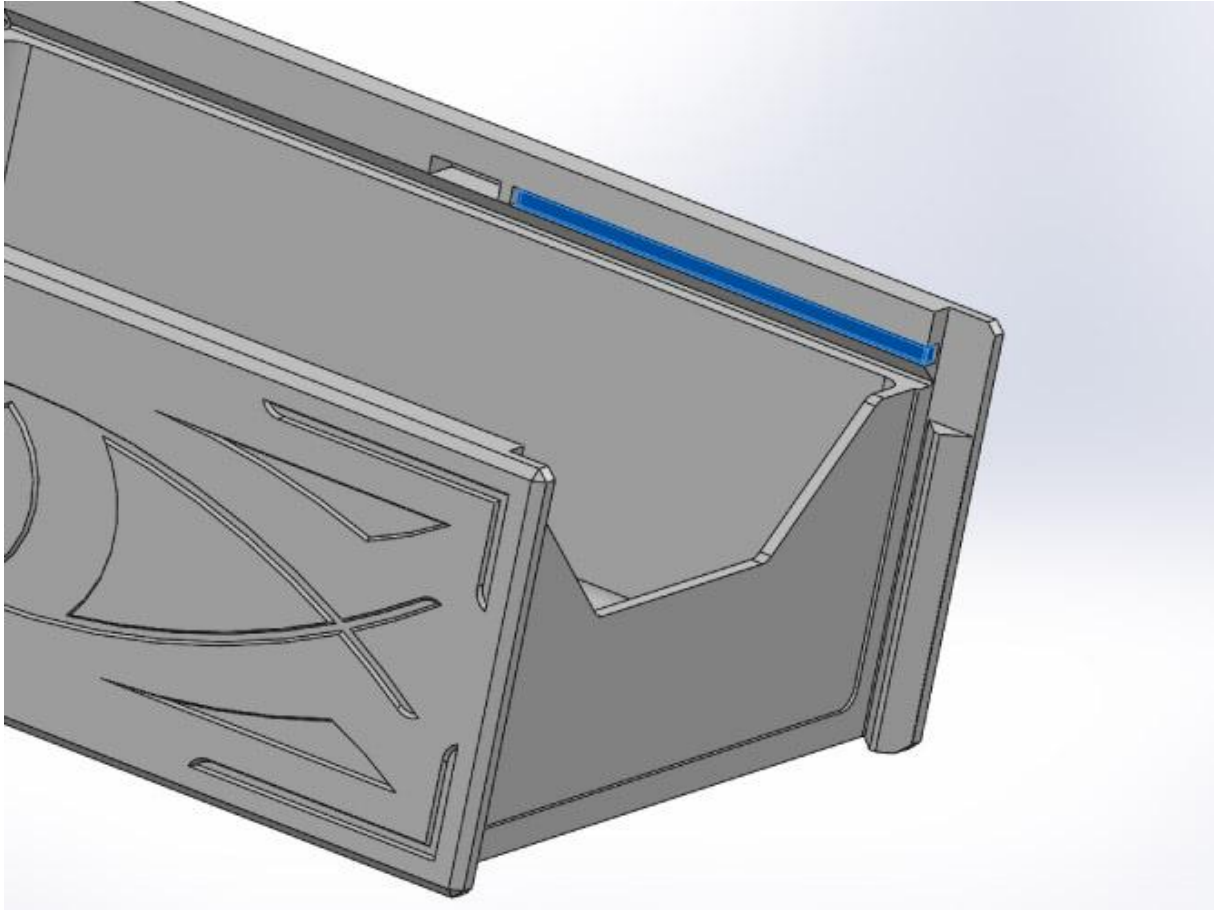
Printing

I printed this in Pearl Mouse PLA with Black for the accent colors. No supports are required for any of the parts. Use exactly 0.2mm layers to make the build-in removable supports print correctly. I would also recommend using a 0.4mm or smaller nozzle. Print 2 of each latch piece and on of everything else.

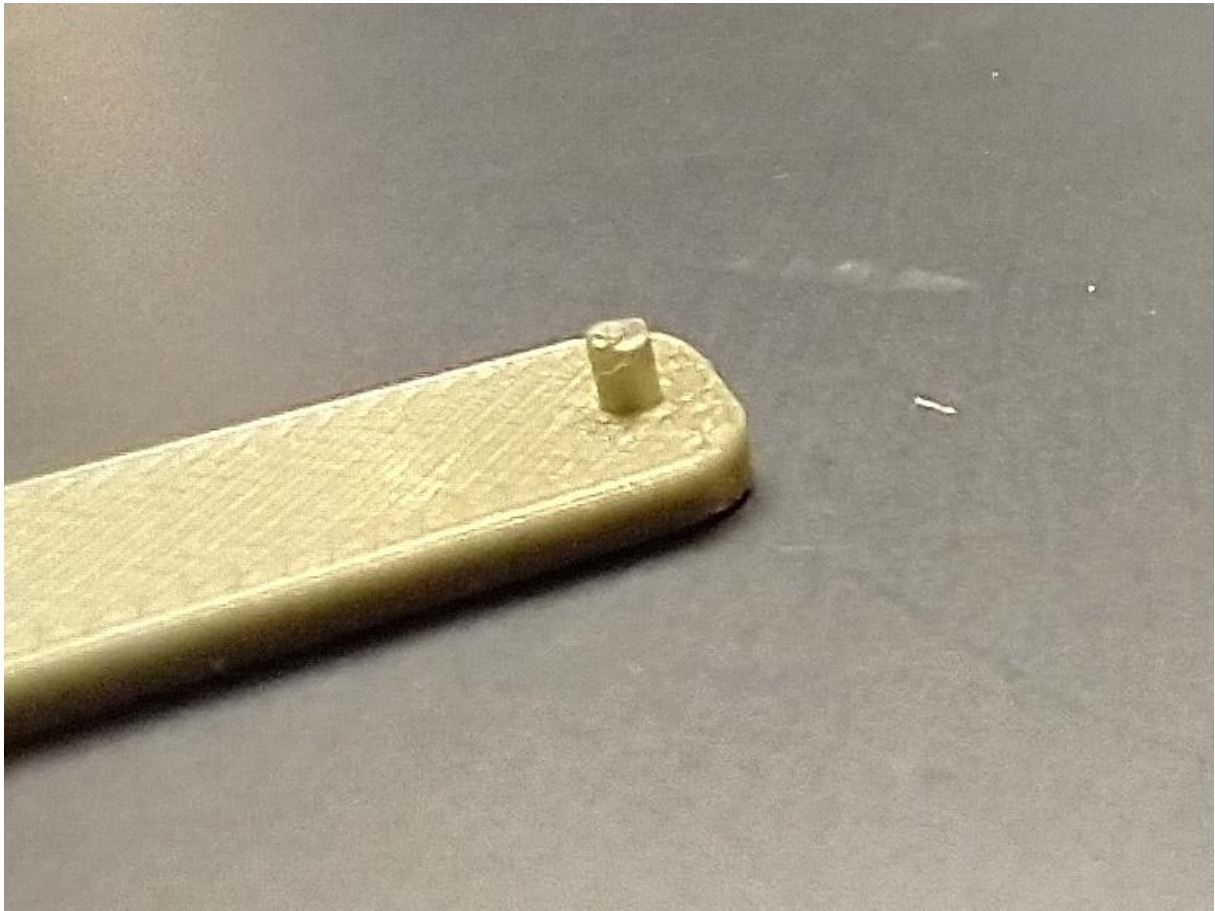
To get the accent colors, print the first layer of both sides and the dial in your accent color, and then change the filament to print the rest in the main color. For the lid, print the first 38 layers (up to 7.6mm) in the main color and then print the rest of the layers in your accent color.

Assembly

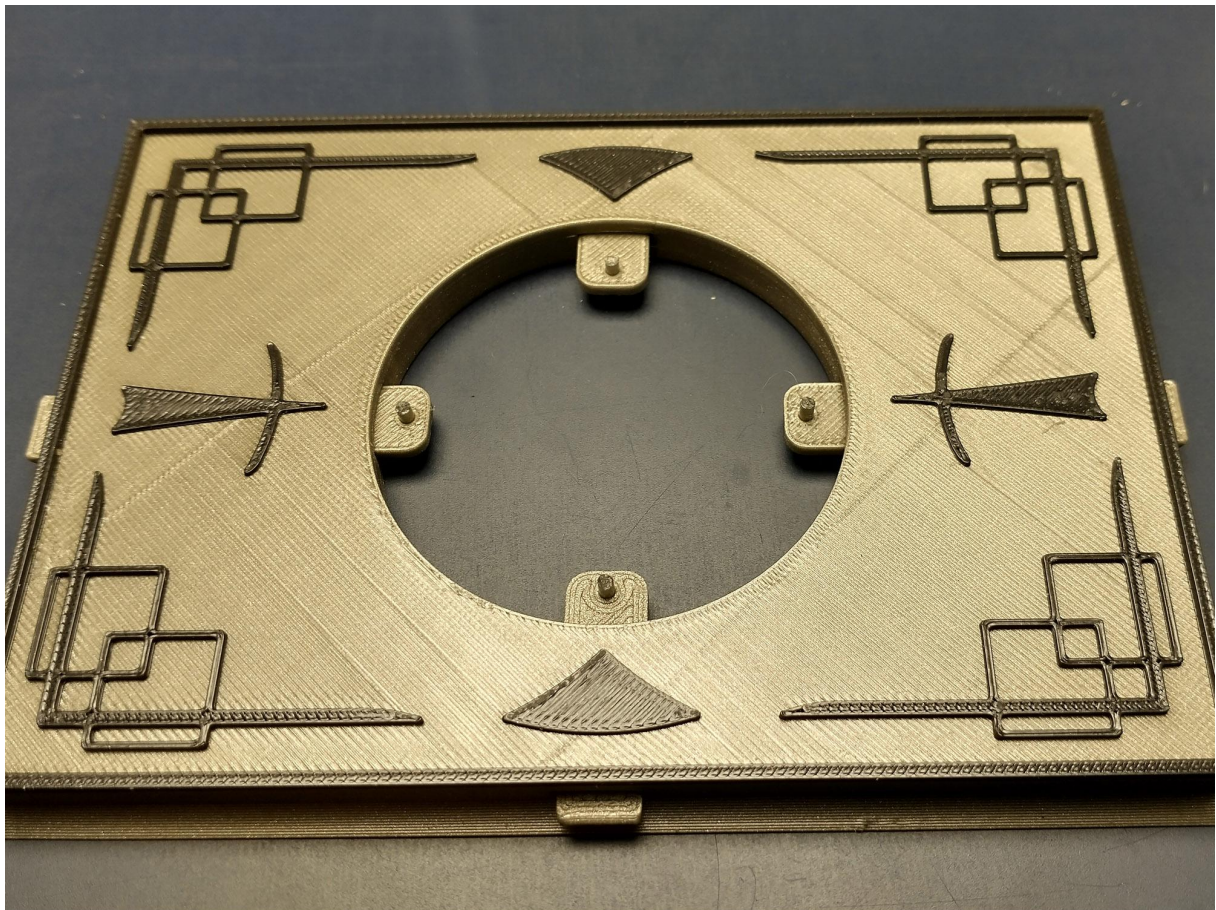
First note that the main box part has 2 built-in break-away supports on either side in the upper slots. One is highlighted in blue on the photo below. These should just pull out cleanly.



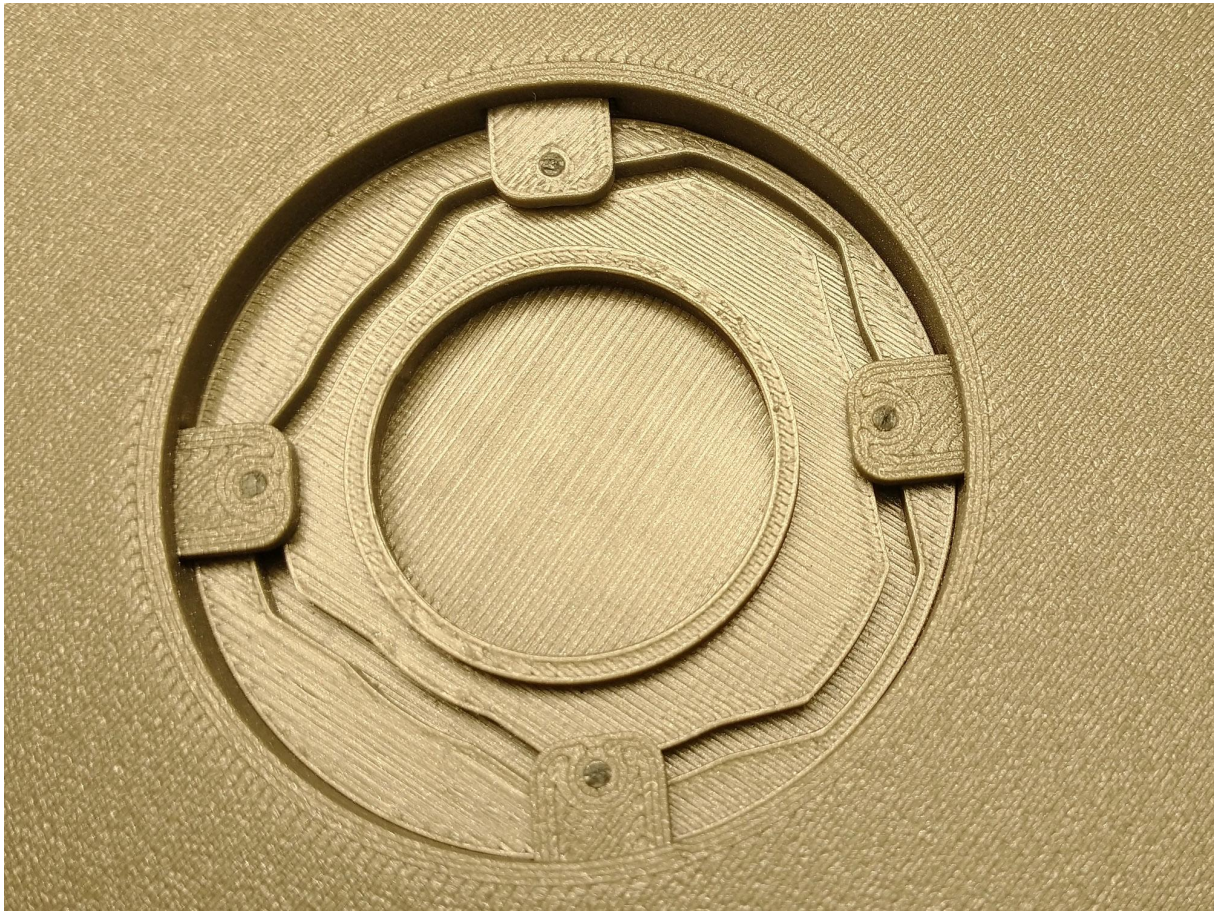
The Latch pieces each need a small length of filament to act as a pins that fit into the dial. The holes in the ends of the latches are a tight fit on 1.75mm filament, so start off cutting about a 15mm length and cut a taper on one end. Jam the tapered end into the hole first and then tap in partway through. cut the tapered end off flush with the one side of the latch and the other end should protrude by 2.5mm as shown in the photo below:



Insert the 4 latches into the hole in the cover with the pins facing up as shown:

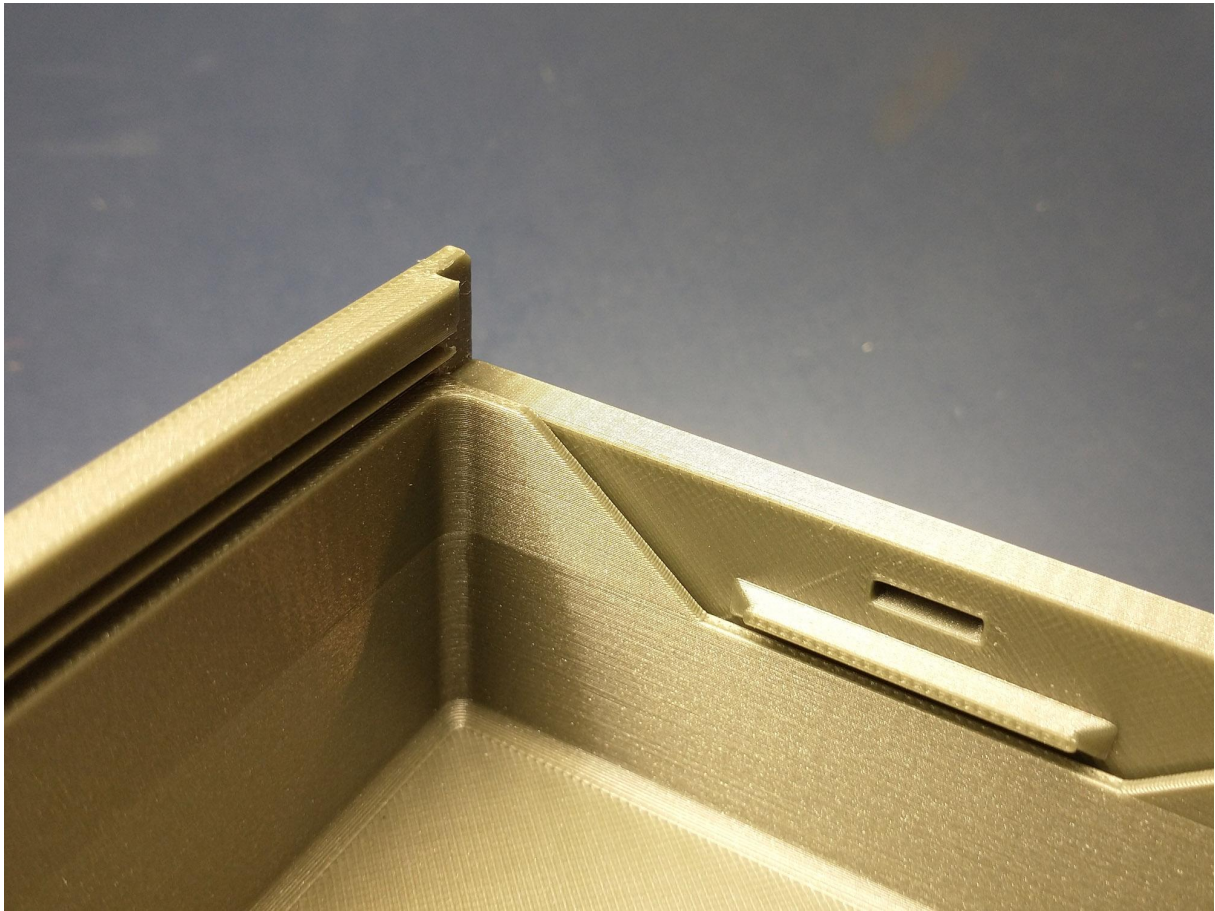


Flip the whole thing over and place the dial in the center hole. Slide the latches in or out so that all 4 fit into the groove in the bottom side of the dial:

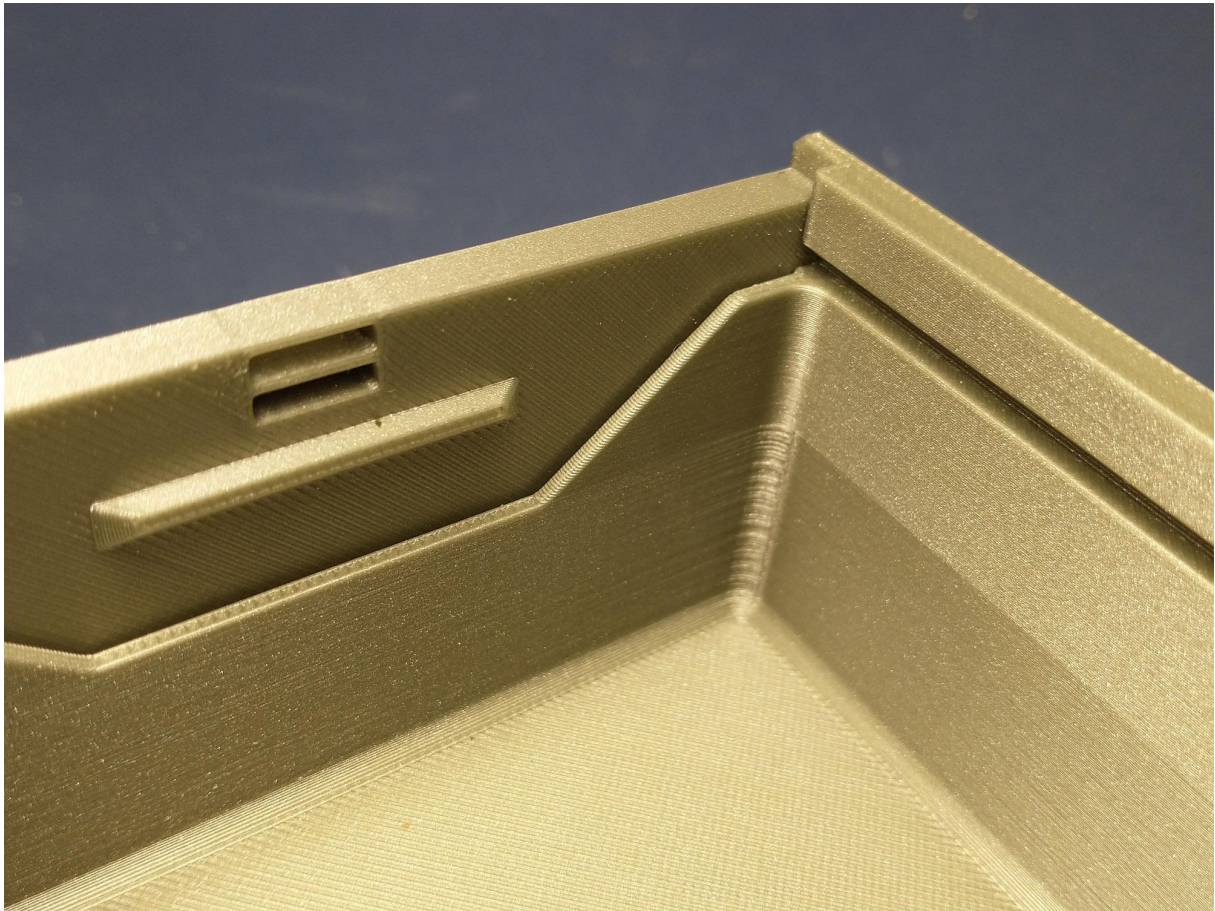


Now press the dial bottom onto the underside of the dial and press click it onto place.

One of the two side pieces had just one hole on this inside. Slide it onto the grooves on the end that allows it to drop down about 1/2" from flush with the top:



The other side piece has 2 holes in the end, and it should slide into the grooves on the end that only allows it to drop down about 1/4":



Getting the Lid On or Off

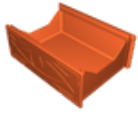
Now comes the tricky part. First note that as you turn the dial, the latches on all 4 sides will move in and out – from retracting flush to sticking out 2.5mm to sticking out 5mm. Moving these latches in and out in the right sequence will allow you to get the top in place.

Start with all 4 latches sticking out an equal amount on all sides. Now, If you lift body of the box up, one side will.. drop down just a little, but the other will drop down enough to state sliding the lid on. As you start sliding the lid on, it'll go almost all the way. Next, fiddle with the dial until the lid can slide all the way on. (You're doing this blind, but that's what makes it fun!)

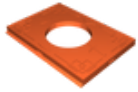
Next, turn the dial until the final exposed latch, is flush with the end of the lid. Slide that end up flush with the top. Then rotate the dial some more until you can fully lift the second side of the box. Give the dial another 1/8th turn and everything is locked up!

Just reverse this process to get the box back open.

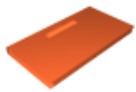
Model files



pb-box.stl



pb-lid.stl



pb-side1.stl



pb-side2.stl



pb-dialbot.stl



pb-dial.stl



pb-latchlong.stl



pb-latchshort.stl

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