



## Art Deco Styled Box



EBD Design Studio

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### Summary

A lockable box with Art Deco styling and customisable panels.

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A simple lockable box with Art Deco styling and customisable panels. To open/close the box just turn the central dial and the lid will release and can be lifted off.

### Design and Materials

This was designed in OnShape CAD and printed with Orca Slicer on Creality K1C, Ender-3 S1 Pro and Ender-3 V3.

I used Amazon Basic Silk Gold PLA and CC3D Silk Antique Gold PLA (Panels and Dial), CC3D Chocolate Brown PLA (Base, Side Frame, Upper Lid) and Jayo Wood PLA+ (Lower Lid, Gear, Sliders). Choose your own colour combinations!

## Printing

Choose two Front Panel designs, two Side Panel Designs and whether to use the Blank or Design Dial. You'll need two each of the Sliders and Side Frames.

Panels were printed at 0.16mm with 3/4/3 Walls/Top/Bottom and 15% Rectilinear, whilst the rest were at 0.2mm with 3/3/3 and 15% 3D Honeycomb.

For the multi-colour effect I changed filament for the last 1mm (Panels) or 2mm (Dial). To get the shine I used Archimedes Chords for the spiral and printed the top layer at 40mm/s speed.

The Gear, Upper Lid and Side Frames need a small amount of support - I used Normal/Snug and changed the top interfece density to 0.2mm and object distance to 0.8mm - all came away cleanly, though I did a little sanding on the Gear to make it more smooth.

## Finishing

Make sure that the Sliders fit into the Slots in the Base - they should be snug so the lid won't rattle too much, but not forceably tight - a little sanding may help here. Then put the Dial into the hole in the Top Panel and work it around a few times to smooth the faces where they touch.

Finally I used my [PLA Polishers](#) to remove any little blobs from the surfaces (don't press too hard on the shiny parts!).

## Assembly

To test the assembly I used Blu-Tack, a sticky putty-like material which is easy to remove afterwards. This only seems available in the UK, but similar brands I can find include Poster Putty, Mounting Putty, Prestik and Patafix. I used this for joining the Lids together and for the Dial and Gear.

Start with sliding the Top Panel into the Upper Lid - the edges and central hole should line up.

Then take the Lower Lid, and put the Sliders in place such that they extend off the edges. Then place the Gear in the middle so that its square peg is aligned with the sides (ie. not like a diamond) - this is the locked position. Add the Upper Lid assembly, then place the Dial on top of the Gear with the Sun/Moon Left/Right. Make sure you can rotate it to retract and extend the Sliders.

Now slide the Side and Front Panels into the Base, and slide the Side Frames into the gap at the sides.

Finally pop the lid on top and rotate the Dial to lock it.

Once all fits and works, you can apply some glue between the Lower Lid and Upper Lid assembly, where the Gear meshes with the Dial and a little line along the lower edge of the Frame part of the Side Frames. All Done!

## Remixing


I've provided STEP files for all parts plus Blanks so that you could apply your own designs. Please do post your results!





Support me on Ko-fi


EdinBearDragon

## Model files

 **STL** 17 files

 **top-panel.stl**

 **dial-design.stl**

 **dial-blank.stl**



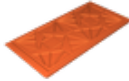
**front-panel-design-1.stl**



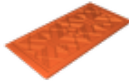
**front-panel-design-2.stl**



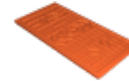
**front-panel-blank.stl**



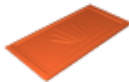
**side-panel-design-1.stl**



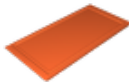
**side-panel-design-2.stl**



**side-panel-design-3.stl**



**side-panel-design-4.stl**



**side-panel-blank.stl**



**side-frame.stl**

☐ Print 2



**upper-lid.stl**

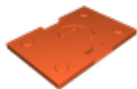


**gear.stl**

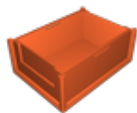


**slider.stl**

 Print 2



**lower-lid.stl**



**base.stl**



**STEP**

17 files

**side-panel-blank.step**

**side-panel-design-4.step**

**side-frame.step**

 Print 2

**dial-blank.step**

**lower-lid.step**

**side-panel-design-3.step**

**top-panel.step**

**upper-lid.step**

**front-panel-blank.step**

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**front-panel-design-1.step**

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**side-panel-design-2.step**

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**gear.step**

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**base.step**

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**side-panel-design-1.step**

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**dial-design.step**

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**front-panel-design-2.step**

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**slider.step**

 Print 2

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