



Clear Resin 3D Prints with PCBWay

Created by Ruiz Brothers



<https://learn.adafruit.com/clear-resin-3d-prints-with-pcbway>

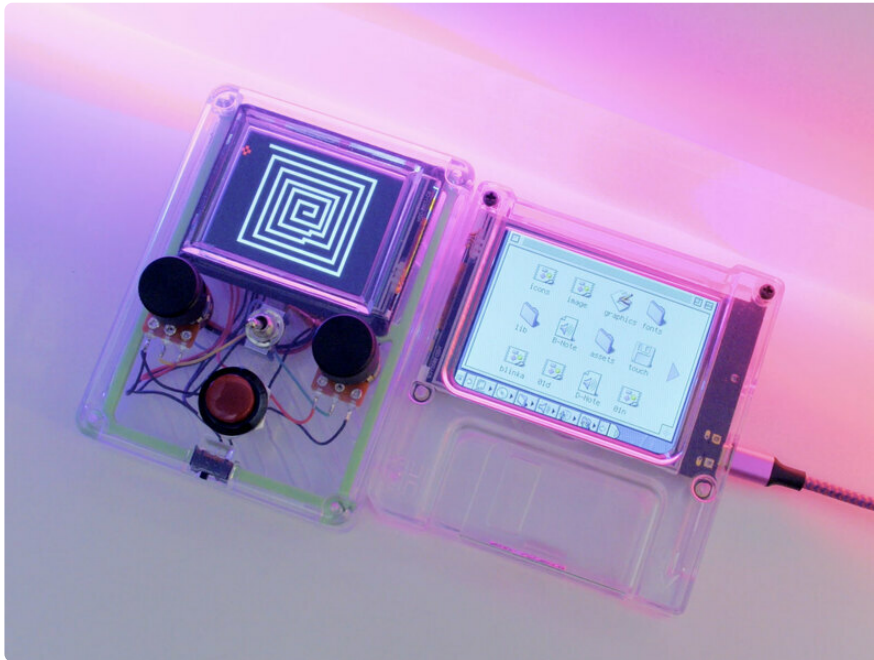
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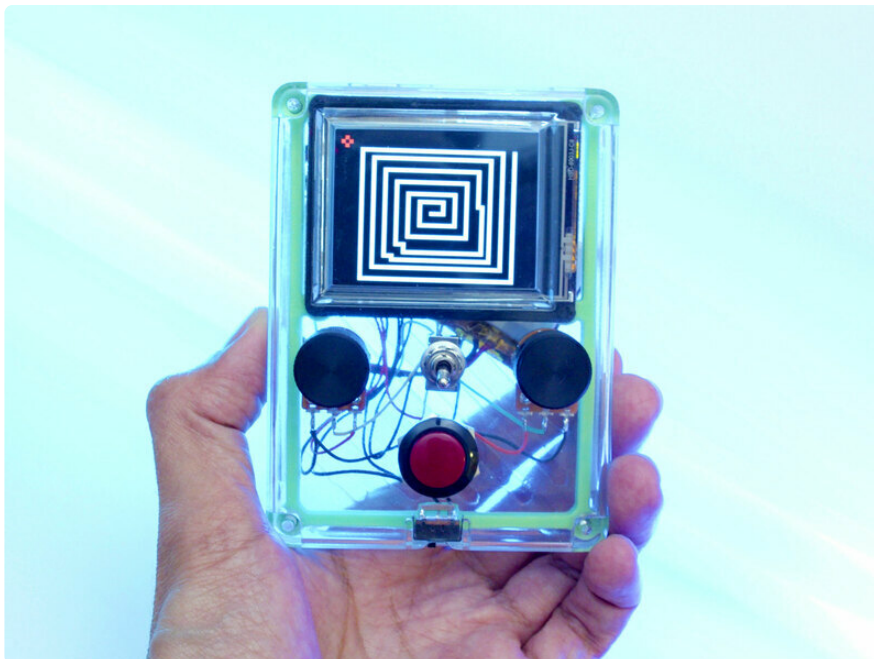
Overview

<https://youtu.be/SsvZZx0RXUY> (<https://adafru.it/18Cw>)



You can make high quality 3D printed parts in crystal clear resin using a 3D printing service from [PCBWay](https://adafru.it/18Cx) (<https://adafru.it/18Cx>).

This is a good option for makers who don't want to deal with the hassle and mess of 3D printing in resin. With PCBWay, you can simply upload your STL files and choose from a wide range of materials.



In this guide, you'll learn which materials to use to create transparent parts that are ideal for recreating the clear see-through electronics of the 1990's.

Learn Guides

The following guides feature 3D printed parts that were used for testing the resin material.

- [USB Drive Floppy Disk with PyPortal \(https://adafru.it/18Cy\)](https://adafru.it/18Cy)
 - [Etch-a-Sketch Drawing Toy \(https://adafru.it/18Cz\)](https://adafru.it/18Cz)
 - [Adabot LEGO Compatible MiniFig \(https://adafru.it/18CA\)](https://adafru.it/18CA)
 - [Adabot Solder Dispenser \(https://adafru.it/18CC\)](https://adafru.it/18CC)
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Design Considerations

3D Model Requirements

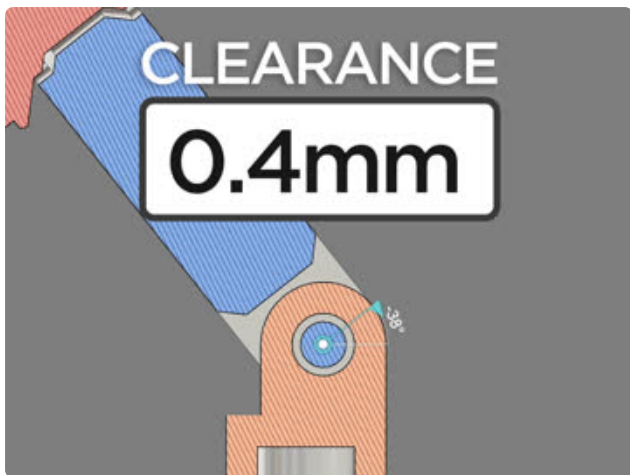
Below are some guidelines that need to be considered in order to have your models properly 3D printed. These are specific to PCBWay's system checks.

- File Size: **50MB** maximum
- Supported file formats: **.stl, .obj, .step, .stp**
- Thinnest Part: **0.8mm**
- Wall Thickness: **1.2mm**

Models should be manifold (watertight) and not have any broken holes.

If you're making enclosures, consider the following guidelines

- Minimum wall thickness: **0.8mm**
- Minimum snap fit clearance: **0.1mm**



Print-in-Place

If you're making mechanical moving parts (AKA print-in-place) consider the following guidelines

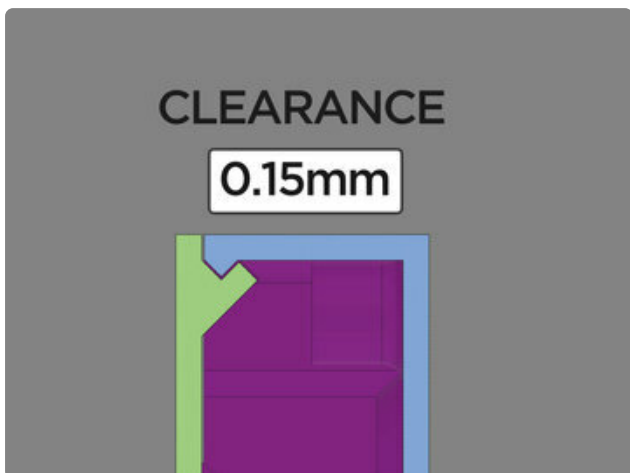
Minimum clearances: 0.3-0.4mm

Minimum diameter: 2.2mm

Minimum wall thickness: 0.8mm

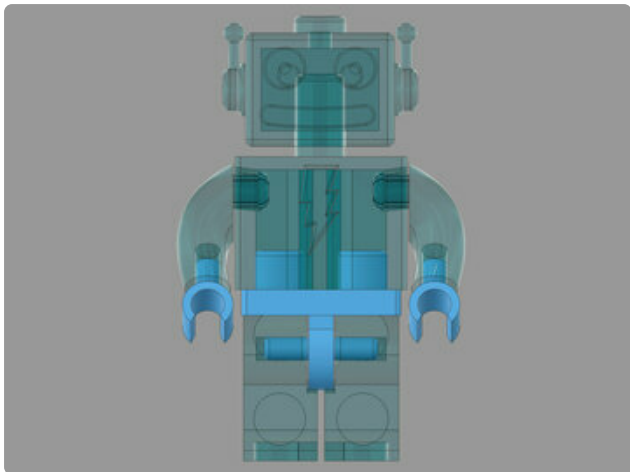
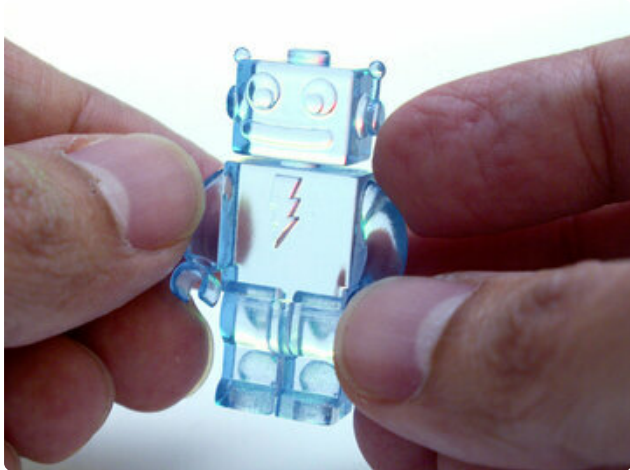


In this double-hinged crank, the clearance between the surfaces creating the hinge is 0.4mm. The diameter of the pin is 2.2mm while the minimum thickness of the part is 1.6mm.



Snap Fit

In this snap fit enclosure, the wall thickness is 1.6mm. The clearance between the snap fit features are 0.15mm-0.2mm.



Unified Models

This original model featured separate parts that are supposed to be moveable but because the clearances were below the recommended minimum, the individual pieces were merged together resulting in a unified solid model.

Uploading Files

Service	Price	Build Time
PCB Prototype	From \$5/10pcs	Build Time: 24 hours
PCB Assembly	From \$30	100+ component vendors
Flex,Rigid-Flex PCB	From \$46.74	Build Time: 6-7 days
HDI PCB	From \$349.68	Build Time: 7-8 days
CNC machining	From \$25	Build Time: 7-9 days
3D printing	From \$4.98	Build Time: 3-4 days

Start by going to PCBWay's website and select the 3D Printing Service.

PCBWay Website

<https://adafru.it/18Cx>

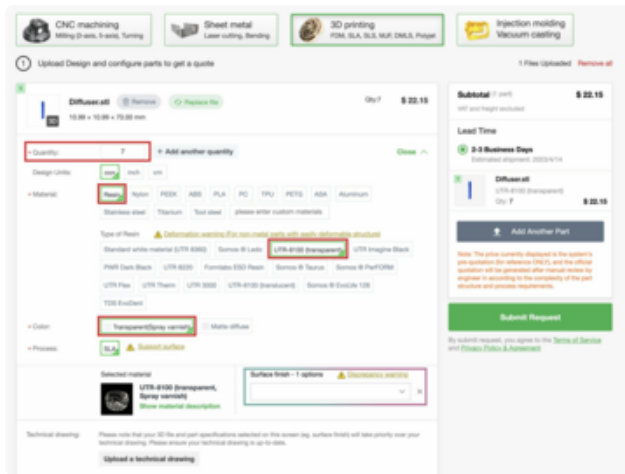
3D printing
FDM, SLA, SLS, MJF, DMLS, Polyjet

1 Upload Design and configure parts to get a quote

+ Select CAD files

File size < 50 MB (3D CAD: *.stl, *.obj, *.step, *.stp)
You can add up to 12 rows of files. To ensure the efficiency of order review, do NOT upload the compressed ZIP folder.
Note: No broken holes in the design documents. Wall thickness > 1.2mm, and the thinnest part ≥ 0.8mm.

In the **+ Select CAD files area**, click to open the dialog for choosing your desired 3D model.



In the **Quantity** section, enter your desired amount.

Select your part's desired units of measurements.

Choose the following options for crystal clear prints

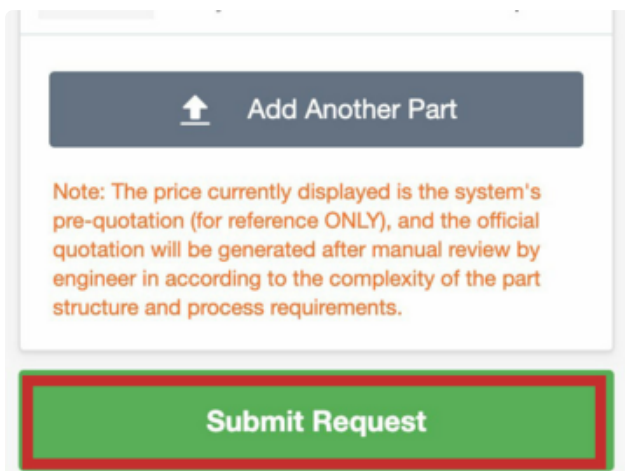
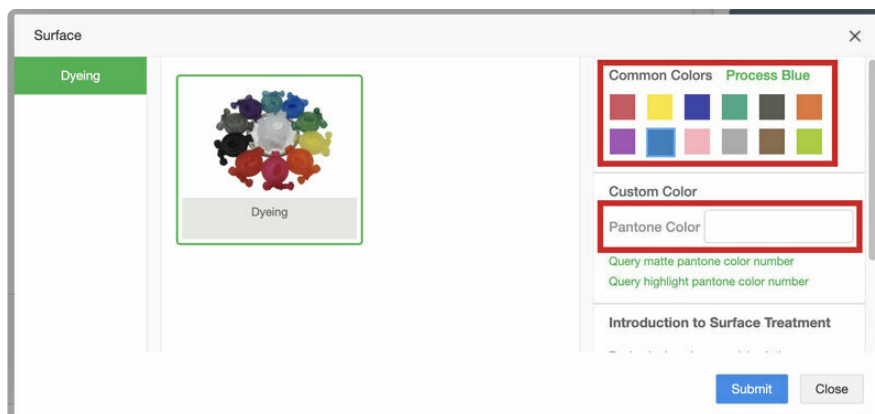
Material: Resin

UTR-8100 (transparent)

Color: **Transparent (Spray Varnish)**

Process: **SLA**

In the **Surface Finish** section, click the dropdown menu to open the color dialog. Choose from the color swatches or enter a custom **Pantone Color**.



Submit Parts

When ready, click **Submit Request** to proceed to payment and shipping details.

System checks and Delays

If your model violates any of PCBWay's system checks, you could delay your order by a day or more depending on your response time. PCBWay does follow up with you if your parts have issues before proceeding with your order.