



Cranky Adabot Solder Dispenser

Created by Ruiz Brothers



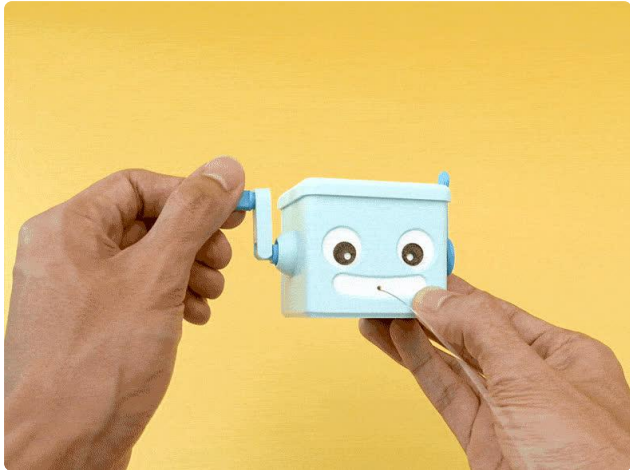
<https://learn.adafruit.com/cranky-adabot-solder-dispenser>

Last updated on 2022-12-01 03:42:05 PM EST

Table of Contents

Overview	3
<ul style="list-style-type: none">• Hand Cranked Solder Dispenser• 3D Printed Kit• Soldering Noob? Learn How to Solder!• Parts	
3D Printing	6
<ul style="list-style-type: none">• 3D Parts• Spool Inner Diameter• Design Source• Design Source• Gyroid Infill• Surface Patterns• Colors• Build Plate Adhesion• Dual Extruded Crank• PLA Filament	
Assembly	10
<ul style="list-style-type: none">• Starbond Super Glue• Add Eyes, Pupil and Mouth• Attach Ear Cup to Cover• Place Ear Cup• Install Holder to Cover• Install Crank to Holder• Install Solder Spool to Holder• Installing Cover• Pop Socket• Install Antenna• Final Assembly!	

Overview



Hand Cranked Solder Dispenser

Make solder time fun with Adabot and a hand cranked solder caddy! Keep your workspace tidy with this cute 3D printed solder dispenser. The crank is a print-in-place design with hinge and free spinning handle.



3D Printed Kit

We designed this kit as a free download. This guide walks through the 3D printing and assembly.

This is deceptively simple design that's overly engineered. It's got a lot of different techniques going on that make this a good example how to make snap fit assemblies with 3D printed parts.

Soldering Noob? Learn How to Solder!

If you're a new comer to the land of DIY electronics, we've got some great learning material for soldering. Check out the learn guide and video linked below.

- [Excellent Guide to Soldering \(\)](#)
- [Collins Lab: Soldering \(\)](#)



Parts

Adafruit shop stocks a few different sizes of solder wire. Also a great assortment of tools and accessories! Be sure to browse, search and check them out.

1 x [StarBond Super Glue](#)
EM-150 Medium Premium Cyanoacrylate

<https://www.amazon.com/Starbond-EM-150-Medium-Premium-Cyanoacrylate/dp/B00C32MHJU/>



[Solder Wire - RoHS Lead Free - 0.5mm/.02" diameter](#)

If you want to make a kit you'll need some solder. This 0.1lb / 50g spool is a good amount, not too much (like 1 lb spools) and not too little (like those little 'pocket...
<https://www.adafruit.com/product/2473>



[Solder Wire - SAC305 RoHS Lead Free - 0.5mm/.02" diameter](#)

If you want to make a kit you'll need some solder. This 0.1lb / 50g spool is a good amount, not too much (like 1 lb spools) and not too little (like those little 'pocket...
<https://www.adafruit.com/product/1930>



Solder Wire - 60/40 Rosin Core - 0.5mm/0.02" diameter - 50 grams

If you want to make a kit you'll need some solder. This 0.1 lb (about 50 grams) spool is a good amount, not too much (like 1 lb spools) and not too little (like those little... <https://www.adafruit.com/product/1886>



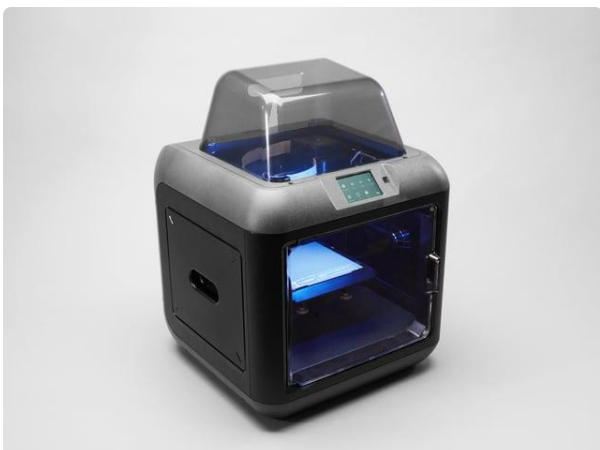
Digital Genuine Hakko FX-888D (936 upgrade)

Known by engineers for making excellent quality tools & soldering irons! This is a genuine Hakko FX-888D with digital temperature control! We worked hard to get... <https://www.adafruit.com/product/1204>



Hakko Brass Sponge Solder Tip Cleaner

This brass sponge is super glam and super useful. Preferred by many soldering pros for cleaning off the tips of their soldering irons, it never needs wetting, won't cool down the... <https://www.adafruit.com/product/1172>



Monoprice Inventor II 3D Printer with Touchscreen and WiFi

The Monoprice Inventor II 3D Printer Touchscreen with WiFi is a perfect entry-level 3D printer with small footprint and reliable performance. It comes equipped with... <https://www.adafruit.com/product/3897>



Filament for 3D Printers in Various Colors and Types

Having a 3D printer without filament is sort of like having a regular printer without paper or ink. And while a lot of printers come with some filament there's a good chance...

<https://www.adafruit.com/product/2080>

3D Printing



3D Parts

STL files for 3D printing are oriented to print "as-is" on FDM style machines. Original design source may be downloaded using the links below.

Thingiverse Download

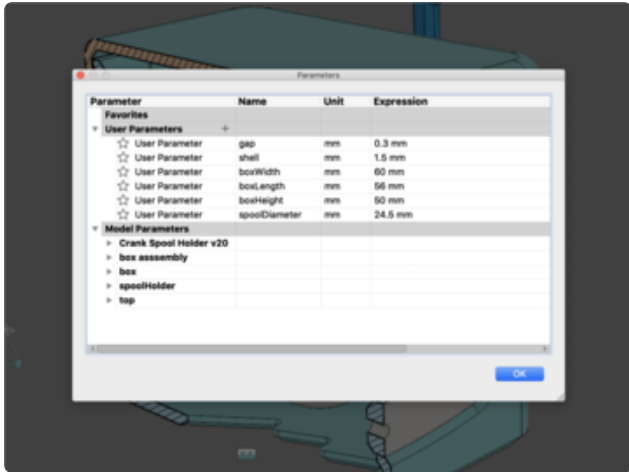
Cults3D Download

MyMiniFactory Download

Spool Inner Diameter

The spool holder in this project is designed to house spools with an inner diameter of ~1-inch.

- 24.50 mm

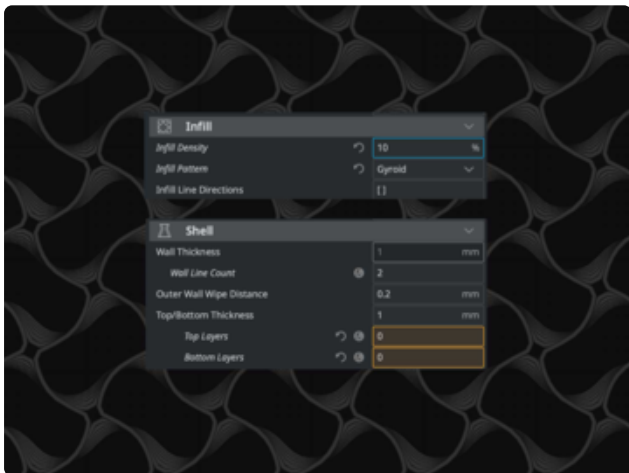


Design Source

The project source file is available to download and contains original sketches and parametric timeline. The fusion 360 archive features user parameters for quickly adjusting the diameter of the spool holder, shell thickness and overall tolerance of the snap fits.

Design Source

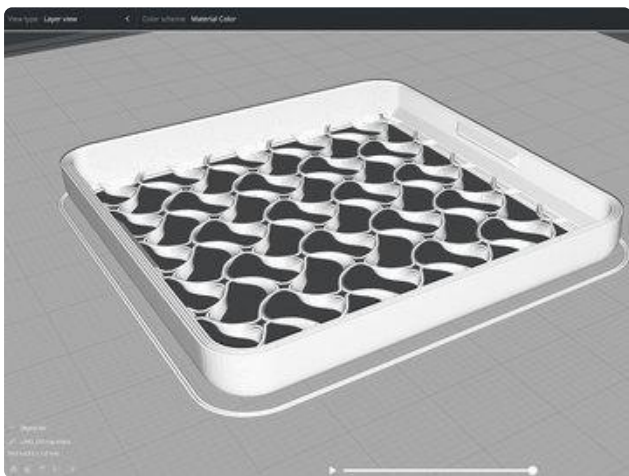
The project source file is available to download and contains original sketches and parametric timeline. Use the fusion 360 archive or STEP file.



Gyroid Infill

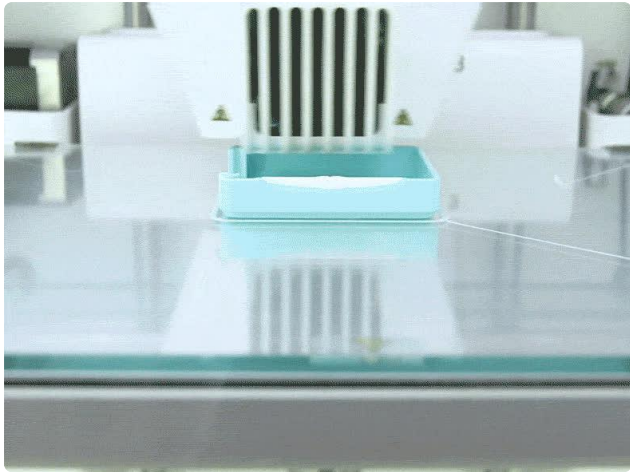
The top cover is printed with Gyroid infill so it has this neat pattern that makes it a bit stretchy. In the CURA slicing software, set the top and bottom layers to 0 and the infill pattern to Gyroid.

We wanted the cover to have this effect so that I could see the solder spool through the top.



Surface Patterns

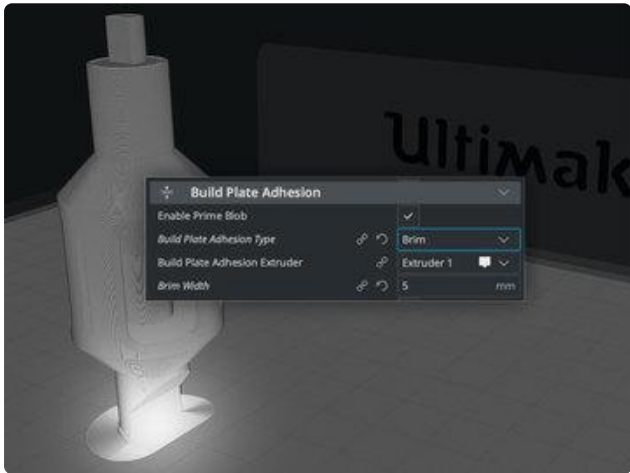
This technique could also be done using different patterns such as the triangles or a honeycomb. This could be one way to create grills for ventilation or speaker holes. It's an easy way to add a little bit of complexity to an otherwise simple part.



Colors

The parts are printed using a combination of colors. The adabot head box is dual extruded using a teal and white color while the pupils are printed separately in black and glued on after.

Single color versions are available in the parts list below.



Build Plate Adhesion

The CSS-holder.stl part has a small surface area that could get knocked off the build plate while printing. A brim will improve the adhesion to the bed. This adds a single layer around the perimeter of the model. This thin layer can be removed after printing by peeling it from the bottom.

Here's list of the parts with their assigned colors I used in this project. Feel free to use whatever colors you like!

- Light Blue – Head, Top Cover, Spool Cover
- White - Eyes, Mouth
- Blue – Left Antenna, Crank
- Pink – Spool Holder
- Black – Pupils

Parts List

- CSS-box-head.stl
- CSS-eye.stl
- CSS-mouth.stl
- CSS-holder.stl
- CSS-top-blank.stl
- CSS-crank-cover.stl
- CSS-crank-ear.stl

- [CSS-crank-handle.stl](#)
- [CSS-pupil.stl](#)
- [CSS-top-bolt.stl](#)
- [CSS-antenna.stl](#)

Dual Extruded Parts (Optional)

- [CSS-box-head-a.stl](#)
- [CSS-box-head-b.stl](#)

Dual Extruded Crank

The crank was dual extruded in teal and dark blue but it can be printed in a single color. The antenna on the other ear is printed in just a dark blue and snap fits into the little ear cup piece.

PLA Filament

Here's a list of filaments I used in this project. Some can be purchased in either 2.85mm or 1.75mm dimeters, use whichever fits your 3D printer.

- [Teal Blue PLA – MeltInk3D \(\)](#)
- [White PLA – Ultimachine \(\)](#)
- [Neon Blue PLA – MeltInk3D \(\)](#)
- [Pink PLA – MeltInk3D \(\)](#)
- [Black PLA – MeltInk3D \(\)](#)

Note: Adafruit does not carry all the filament types used. Search on Amazon or other distributors for the other types of filament.

Assembly



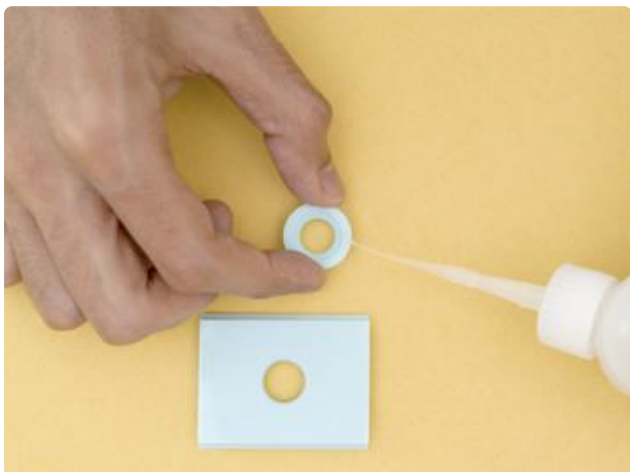
Starbond Super Glue

We suggest using [Starbond Super Glue, EM-150 Medium](#) (). The starbond super glue includes a very fine tipped nozzle, perfect for applying a very thin line of adhesive.



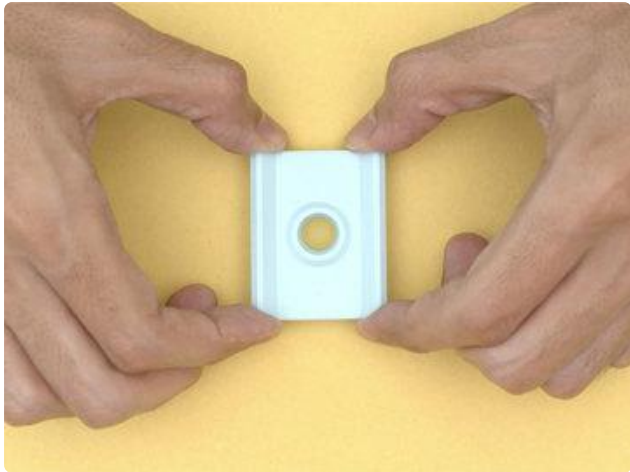
Add Eyes, Pupil and Mouth

Carefully apply super glue over the eyes and place them into the socket. Proceed to attach the mouth and pupils. This only needs a drop of super glue. Tweezers can help assist with parts placement as they offer finer control.



Attach Ear Cup to Cover

Grab the ear cup and crank cover pieces. The ear cup needs to be attached to the correct side of the cover (the surface that touched the 3D printing bed). Add a bit of super glue along the bottom of the ear cup.



Place Ear Cup

Carefully place the cover over the center of the ear cup. Make sure the holes are lined up as best as you can. Hold it in place for a few seconds to allow the parts to set and glue to cure.



Install Holder to Cover

Insert the spool holder into the center hole of the cover with the peg going through the ear cup.



Install Crank to Holder

With cover now over the spool holder, install the crank by press fitting the hub over the peg. Make sure the flat edges are lined up before installing.



Install Solder Spool to Holder

Now is a good time to install a spool of solder. Insert the holder through the spool and firmly press it to the middle of the cylinder. The spool should have a snug fit.



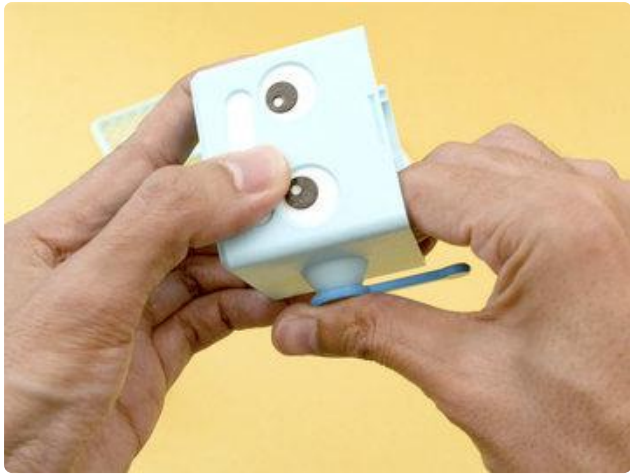
Installing Cover

The cover slides into the box by fitting the groves through the railing. Line up the edges with the rails on the box and insert the cover. Adjust the spool holder as the cover slides into place.



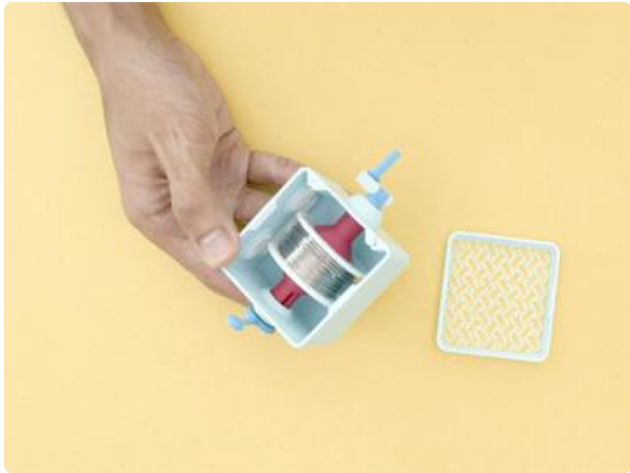
Pop Socket

The holder fits inside the enclosure and pops into a socket just behind the ear. Press on the crank to insert the spool holder into the socket. It should pop into place.



Install Antenna

The antenna has a connecting peg that fits into a hole on the side of the ear cup. It should have a snug fit. Optionally super glue it in place.



Final Assembly!

It's fairly easy to take to take things apart so you can swap out the solder when it gets low. Now you can make your time soldering parts a bit more fun.



I find it really satisfying to use, especially if you do a lot of soldering. Could be a great way to keep your solder from getting all tangled up. The crank could also be used for projects with trim pots or rotary encoders.

