3D Printed Tesla Cable Holder

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https://learn.adafruit.com/3d-printed-tesla-cable-mount

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Overview

We recently converted to fully electric vehicles and now we have new charging cables to deal with.

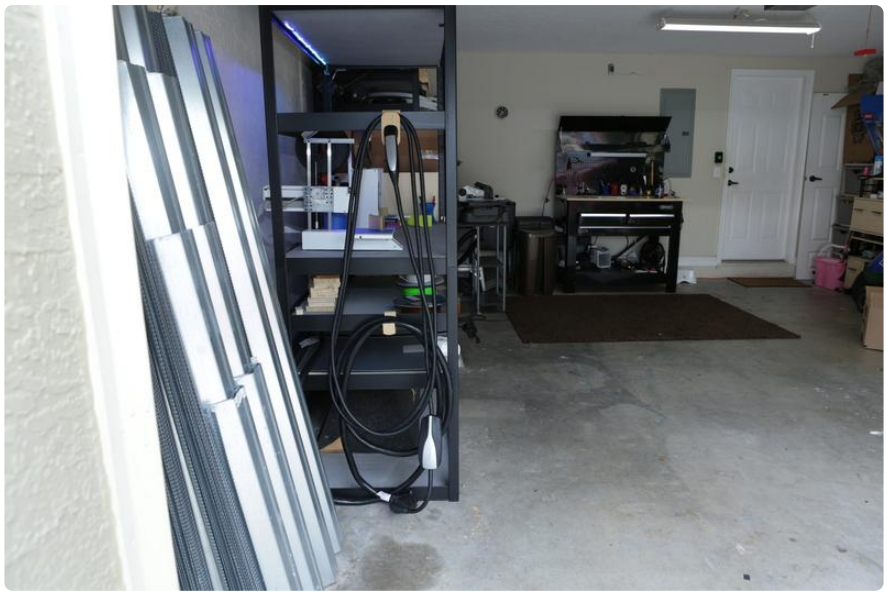
In this project we'll show you how we designed and 3d printed a mount for our Tesla charging adapter.

We didn't want to drill any holes into the wall so we designed it to clip onto our shelves. It also doubles as a cable organizer!

The curve along the neck of the hanger allows the cable rest on. The hook on the back clips onto the flat side of the shelving, which also acts a clamp so it's secured in place.

This works quite well and we're pretty happy since we don't have to leave our charger on the floor. We think this was a great exercise in practical 3D printing and hope this inspires you to create solutions around your work space!

We shared our design as a free to download so other folks can make their own. The source is also available so anyone can remix and modify!



Ultimaker 2+ 3D Printer

The Ultimaker 2+ is one of our favorite 3D printers on the market. It's a well-built open-source compact machine with an excellent UX. Every inch of the...
https://www.adafruit.com/product/2673

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...
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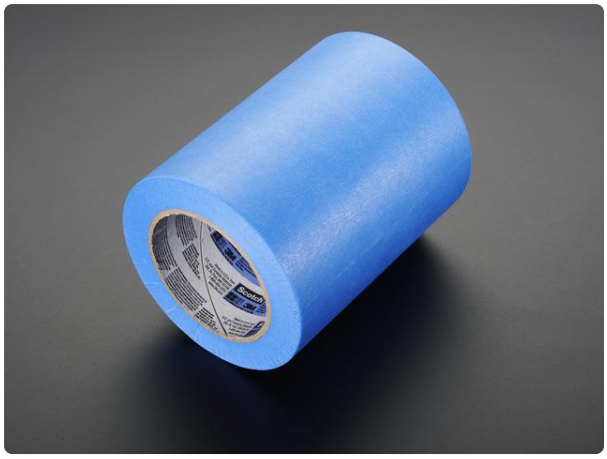


Blue Masking Tape for 3D Printing Plates

OK yes, it's just masking tape. A big honkin' roll of I'm blue da-ba-dee-da-ba-die masking tape.Removing 3D printed parts can be tough. Sometimes pieces get stuck to...

https://www.adafruit.com/product/2416

Flush diagonal cutters

These are the best diagonal cutters, large super-comfortable grip to use and have strong nippers for perfect trimming of wires and leads. I've used my pair every day for years.

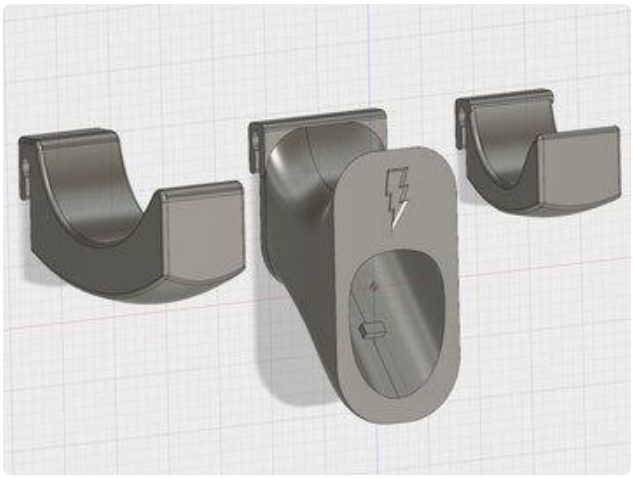
https://www.adafruit.com/product/152

Precision Straight Tweezers - Rhino SW-11

King Arthur carried Excalibur and Thor wields Mjölnir, but the Electrical Engineer? She will always have a pair of excellent tweezers at the ready such as these Rhino...

https://www.adafruit.com/product/3096

3D Printing



The 3D printed parts are fairly easy to make with most common home desktop 3D printers that are on the market.

And if you don't have access a 3D printer, you can order our parts by visiting our Thingiverse page and have someone local 3D print the parts and ship them to you.

We sketched out the profiles Using Autodesk Fusion 360 and formed a solid model by lofting between profiles.

It's parametrically driven so it's easy to make small adjustments which will come in handy when testing for tolerances.

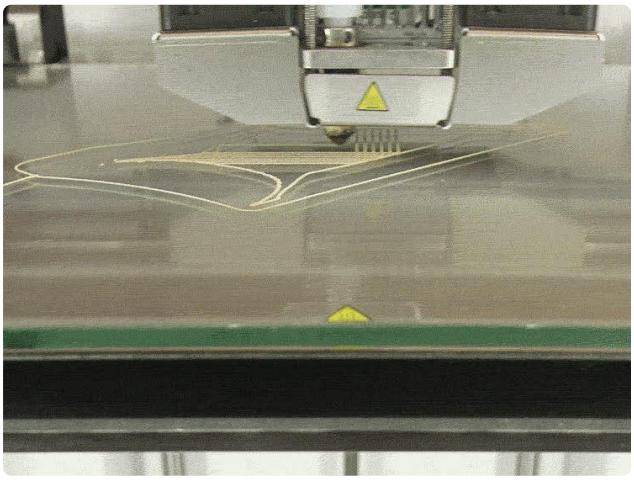
Download Fusion360 files

Download from Thingiverse

Download from Youmagine

Download from Pinshape

Slice Settings

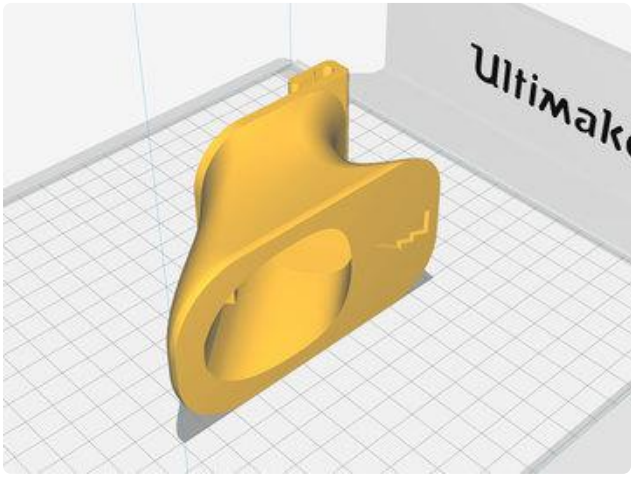


Download the STL file and import it into your 3D printing slicing software. You'll need to adjust your settings accordingly if you're using material different than PLA.

220C Extruder Temp
65C for heated bed
1.0 Extrusion Multiplier
.4mm Nozzle
0.38 Extrusion Width
.2mm Layer Height
20% infill
Supports
Skirt
60mm/s | 120mm travel speed

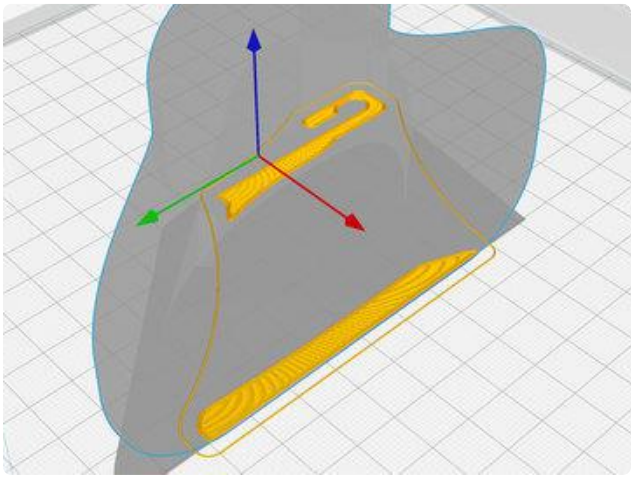
First, move the model on the Z axis so that is -.6mm. This will create a flat bottom to adhere to the print bed.

Orientation



Oriented the part down on it's side. This will lay the layer lines parallel with the load. There's a bit of overhang near the bottom so added support material is needed.

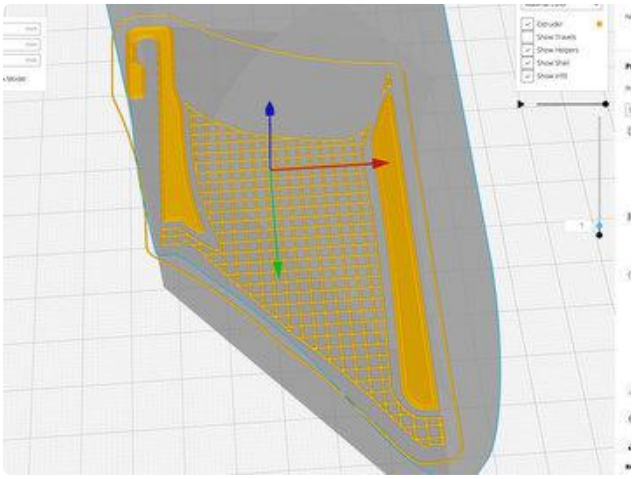
Supports



Support material produces a scaffolding like structure that provides the overhang with something to lay on.

In cura, set the supports placement to: touching bed.

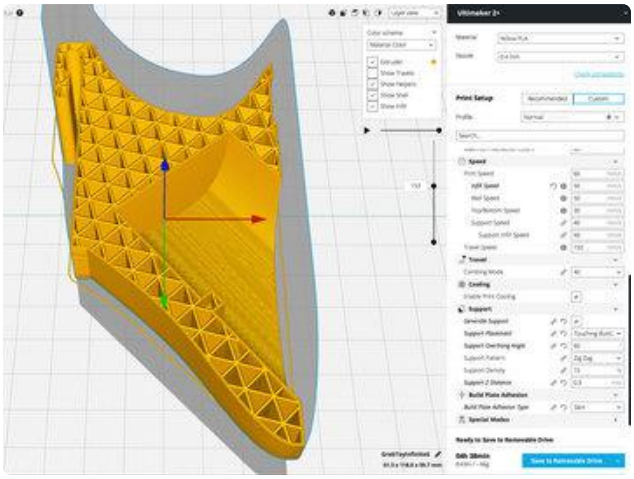
Set the overhang to 60 degrees and the support pattern to zig zag.



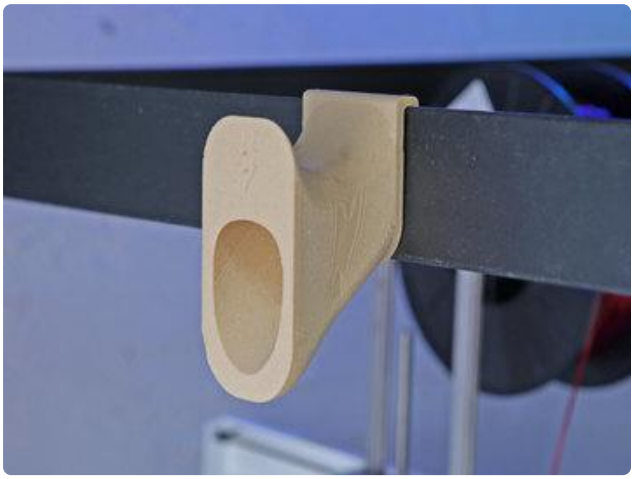
Support density is 15% with a Z distance of .3mm

Infill

We set the infill to 20% with a Triangle pattern. We also dropped infill and wall speeds to 50mm/s.



Assemble



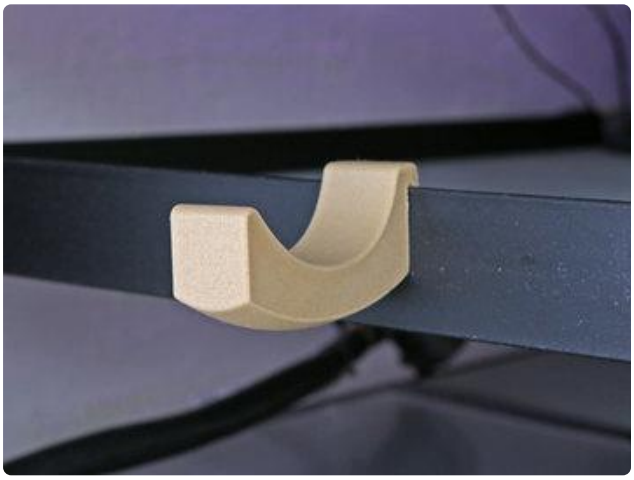
Attaching holder

To attach the holder, position it at an angle and then apply a small amount of force the upper part of the clip. The clip portion of the model will click and then securely attach to the side of the shelf.

Latch

When holstered, the top edge actually supports the plug connector and keeps it from slipping out. It's easy to remove thanks to the clearance around the connector.

There's also a curve along the neck of the hanger to allow the cable rest on. The hook on the back clips onto the flat side of the shelving which also acts a clamp so it's secured in place.



Cable holder

We also design two sizes of standalone clips to hold additional extension cables.

These are useful for thicker cables to help organize the attached power-brick on the charging cable.

And that's it! This works quite well and we're pretty happy since we don't have to leave our charger on the floor. We think this was a great exercise in practical 3D printing and hope this inspires you!