



StrongArm: A Table & Desk holder (hook) for bags and purses and headphones



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Summary

I wanted a strong & portable hook to hang bags or purses from a table. 10-40 lb holding capacity (depends on filament)

[Household](#) > [Office](#)

Tags: [pursehook](#) [table](#) [bagholder](#) [utilityholder](#) [purse](#)
[hanger](#) [hook](#) [bag](#) [bagclip](#)

Update: 2/8/2023 : Added a variant with an even stronger total load capacity by addressing the weakest bend in the first model, but you can't push it quite as far into a desk because of the curve. See "Variants" for which one to print.

Why I made this

I wanted a strong portable hook to hang bags or purses from a table. I looked at some existing hooks but when printed in PETG I found them to be somewhat weaker than expected, even when printed in multiple perimeters. Some other models looked a little stronger, but demanded you

use a table of limited thickness and exerted forces in ways that might make the holders prone to slipping or scratching table surfaces if printed in certain filaments.

I took an existing model and re-modeled it from scratch with my own modifications in Fusion 360, conducting a crude FEA to determine where it was weakest and adding mass and smoothing to those areas to spread the strain out.

How to print this

- I recommend adding 100% infill modifiers (as shown in the pictures) to reinforce the weakest points as determined by a crude FEA analysis in Fusion 360. These points appear to be the two bends shown.
- I used **40% gyroid infill** and **5 perimeters** at a layer height of 0.2 mm and top/bottom thicknesses of a minimum of 1.0 mm solid infill. This strengthens the model significantly.
- For people using Bambu Slicer, I've included a 3MF project with the suggested 100% infill modifiers pre-placed and a setup to print in Prusament PC-CF.
- You can use any filament you'd like , but do be aware that strength and breakage mode at failure (bend vs shatter) will vary significantly with filament choice. If you're expecting a lot of load on the hook, I'd recommend printing with something like good quality PLA or Polycarbonate Carbon Fiber which have high tensile strengths. Be aware, however, that many PLAs will creep with load over time.
- Supports not required (print on the side).

Performance

- This improved model should handle at least ~10 lb with ABS or PLA (but test it before you trust it!).
- I also tested a part printed in Prusament's PC-CF filament (shown) which was able to handle 40 lb in a bag overnight (pictured).
- I have not tested it to breaking or deformation in any filament. If you test this to destruction, please take proper safety cautions, and use your own good judgement here. The standard liability disclaimer: I take no responsibility for anything you do with this part/any failures of claimed performance, etc.

Variants:

- Two variants are provided, one with a sharper angled inside corner (upper right in the first photo) as you push it into a table edge, and one with a broader fillet curve.

- The curved one is stronger in principle but may not seat quite as satisfyingly against a squared table edge because of the fillet introduced to add strength. If this doesn't bother you and the minor extra material doesn't either, and you want the strongest option, then this one is what you want instead.
- My load testing to 40 lb in PC-CF is with the weaker of the two options (sharp inside corner). I have not load tested the stronger one, but expect it will perform better.

This remix is based on



Desk Bag Hook

by PieSupplies



Purse Hook

by sention

Model files

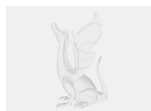


strongarmhook.stl



strongarmhook_bambuslicer_withrecommendedmodifiers.3mf

☐ For Bambu Slicer (used SoftFever Edition) with Prusament PCCF



strongarmhook.step

☐ STEP file for CAD people



strongerarmhook_curved-inside-edge.stl

☐ This model should be stronger than the other sharp corner inside edge version

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