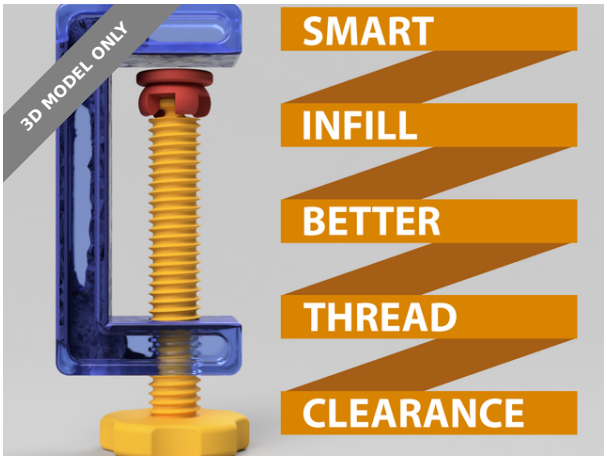


C-Clamp / G-Clamp 01 - 04 (Smart infill, better clearance)

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VIEW IN BROWSER

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Summary

I've created this C-Clamp (or G-Clamp if you like to call it this way) because of three reasons.

Hobby & Makers > Tools

Tags: tool diy fusion360 clamp tools handtools handtool cclamp clamping clamps gclamp

Introduction

I've created this C-Clamp (or G-Clamp if you like to call it this way) because of three reasons.

1. For my upcoming enclosure build I'll need some clamps to hold parts together.
2. To train my Fusion 360 skills
3. I've never printed threads on my (new) 3D printer. So it was a good way to tests what threats are easy to print an working reasonable well.

As usual I've attached the Fusion 360 file to make adjustments easier for you. You will also find a factory file with the settings from my Prusa MKS2 and PLA from Das Filament.

During the design phase I used this https://goo.gl/YcnZ7b to test various threads, diameter, offset etc. combination to find a good working and printable thread. Perhaps it's a good idea to print this first to test if the combination is suitable for your printer, too. Also it might a good starting point for your own thread tests.

Desciption

- C-Clamp 01 (red"C"): Unchanged
- C-Clamp 02 (yellow "C"): Like @waveapps I wasn't sure about the retainers of the shoe. Now they are about 3 times thicker. I haven't printed them yet because my printer is busy, but unless the gaps didn't change everything should still work. @wavapps reported a slight bending on the lower part of the clamp so I've added a cut out to the lower part of the "C" with half of the depth of the original cut outs. I haven't done this initially because I was afraid of to thin walls or screws but this might be a good compromise.
- C-Clamp 03 (blue "C"):Thicker retainers like for clamp 02 (but all the shoes are interchangeable) and a full depth cut out on the lower part of the "C" Because of the cut out the depth is now slightly bigger.
- C-Clamp 04(clear blue “C”): C-Clamp 04 is based on C-Clamp 03 but has a bit more clearance for the thread. I still prefer C-Clamp 03 but this might be a bit more compatible with printers from different brands or quality.

How to use the modifier / smart infill

This is a technique CNC Kitchen showed in a video a while ago. You can find all the details here:

If you want to know how to use this specific modifier just check this little video:

History

- Update 2017/09/04: Link to thread test (https://goo.gl/YcnZ7b) added
- Update 2017/08/09: You're preferring screw clamps? Try this (https://goo.gl/LvzV1z).
- Update 2017/08/02: Based on the feedback from @wavapps I've added to additional versions of the C-Clamp
- Update 2022/12/30: Smart-infill modifier for C-Clamp 03 and C-Clamp 04 added. This allows you to load a modifier that adds additional

stiffness to the part by adding 100% infill to those areas of the part that do get the most stress under load.
- Update 2022/12/30: Added C-Clamp 04 that has a bit more thread clearance. Additionally I've added a modifier for C-Clamp 03 and C-Clamp 04 that can be added to the slicer and allows a 100% infill in areas where the stress is large under load.

Side note

I'm new to 3D printing and I've to learn everything. I believe that making things on your own from the very first step is harder but finally you will get things done. Because of that I try not to download lot of things but create them from scratch. Even if they already exists. By sharing those things I hope to get feedback that I can improve my skills. So don't be angry if I upload things which already exists here.

Print instructions Category: Hand Tools Print Settings

Printer Brand: Prusa

Printer: Prusa Mk2

Resolution: 0.2

Infill: 30%

Notes:

You might want to add some support below the cut outs of the "C" if you print it lying on the bed.

This remix is based on



None

Model files

C-Clamp 01 - 3mf — 2 files

- c-clamp-01high.3mf
- c-clamp-01low.3mf

C-Clamp 02 - 3mf — 2 files

- c-clamp-02low.3mf
- c-clamp-02high.3mf

C-Clamp 03 - 3mf — 2 files

- c-clamp-03low.3mf
- c-clamp-03high.3mf

C-Clamp 04- 3mf — 2 files

- c-clamp-04low.3mf
- c-clamp-04high.3mf

C-Clamp 01 - stl - low 3 files

- c-clamp-01cclow.stl
- c-clamp-01stampstamplow.stl
- c-clamp-01platformplatformlow.stl

C-Clamp 01 - stl - high 3 files

- c-clamp-01platformplatformhigh.stl
- c-clamp-01cchigh.stl
- c-clamp-01stampstamphigh.stl

C-Clamp 01 - stl - ultra 3 files

- c-clamp-01platformplatformultra.stl
- c-clamp-01ccultra.stl
- c-clamp-01stampstampultra.stl

C-Clamp 01 - step 1 file



c-clamp-01.step

C-Clamp 01 - f3d

1 file



c-clamp-01.f3d

C-Clamp 02 - stl - low

3 files

c-clamp-02stampstamplow.stl

c-clamp-02platformplatformlow.stl

c-clamp-02cclow.stl

C-Clamp 02 - stl - high

3 files

c-clamp-02platformplatformhigh.stl

c-clamp-02cchigh.stl

c-clamp-02stampstamphigh.stl

C-Clamp 02 - stl - ultra

3 files

c-clamp-02stampstampultra.stl

c-clamp-02ccultra.stl

c-clamp-02platformplatformultra.stl

C-Clamp 02 - step

1 file



c-clamp-02.step

C-Clamp 02 - f3d

1 file



c-clamp-02.f3d

C-Clamp 03 - stl - low

4 files

c-clamp-03stampstamplow.stl

c-clamp-03modifiermeshbody1_study-1-shape-optimizat... .stl

c-clamp-03platformplatformlow.stl

c-clamp-03cclow.stl

C-Clamp 03 - stl - high

4 files

c-clamp-03cchigh.stl

c-clamp-03stampstamphigh.stl

c-clamp-03modifiermeshbody1_study-1-shape-optimizat... .stl

c-clamp-03platformplatformhigh.stl

C-Clamp 03 - stl - ultra 4 files

c-clamp-03stampstampultra.stl

c-clamp-03ccultra.stl

c-clamp-03modifiermeshbody1_study-1-shape-optimizat... .stl

c-clamp-03platformplatformultra.stl

C-Clamp 03 - step 1 file



c-clamp-03.step

C-Clamp 03 - f3d 1 file



c-clamp-03.f3d

C-Clamp 04- stl - low 4 files

c-clamp-04stampstamplow.stl

c-clamp-04modifierbodylow.stl

c-clamp-04cclow.stl

c-clamp-04platformplatformlow.stl

C-Clamp 04- stl - high

4 files

c-clamp-04cchigh.stl

c-clamp-04platformplatformhigh.stl

c-clamp-04stampstamphigh.stl

c-clamp-04modifierbodyhigh.stl

C-Clamp 04- stl - ultra

4 files

c-clamp-04modifierbodyultra.stl

c-clamp-04stampstampultra.stl

c-clamp-04ccultra.stl

c-clamp-04platformplatformultra.stl

C-Clamp 04- step

1 file



c-clamp-04.step



C-Clamp 04- f3d 1 file



c-clamp-04.f3d

Find source .stl files on Thingiverse.com

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