

## Sturdy print-in-place draw latch

 **ConceivablyEngineering**

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### Summary

This is a small but sturdy latch that can be printed in place. It has a flat surface for your printing pleasure. No...

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[togglelatch](#)

This is a small but sturdy latch that can be printed in place. It has a flat surface for your printing pleasure. No supports, no rafts, no brim. Just the way we like it.

This kind of latch is typically called tension latch, toggle latch, toggle clamp, pull latch or others. However, I like the name draw latch most for this kind of latch.

Tolerances are between 0,2 and 0,3 mm. I printed it with a lower middle-class delta printer (FLSUN QQ-S) with a resolution of 0,15. The key to a printing success is slight under-extrusion, especially on the first layer. The snapshot of the printed sample (straight from the printer, no post-processing) shows that I overdid the underextrusion a bit.

In terms of sturdiness: print thick shells (I did 1,2mm), infill is only of secondary importance

This latch can be attached with up to four screws, at maximum M3. Glueing is also conceivable.

A nice addition to a standard latch is an integrated geometry at the moving parts that fixes the toggle and restricts movement in undesirable directions (see little nibs in dimensions drawing). I believe this is best possible with additive manufacturing.

Benefits of this model:

- print-in-place (for the glory of 3D printing)
- sturdy (... for a 3D printed latch made of plastics)
- compact dimensions
- integrated guiding geometry
- somewhat visually pleasing

Drawbacks of this model:

- not sturdy (... compared to non-printed, non-plastic latches)
- subpar printers might have issues with the tolerances

I have not tested this latch much. However, both of my use case were satisfactory.

Designed with FreeCAD, quickly rendered with CADRays.

Conceivably Engineering - Little competence, big smiles.

## **Print Settings**

### **Printer:**

FLSUN QQ-S

### **Rafts:**

No

### **Supports:**

No

### **Resolution:**

0.15

### **Infill:**

Depends on your application.

## Filament:

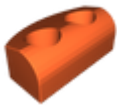
Janbex Grey, Basicfil black PLA Category: Parts

## Model files



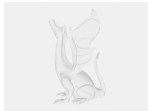
large\_display\_toggle\_with\_anchor\_130254.stl

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latch\_anchor.stl

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draw\_latch.fcstd

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toggle\_with\_anchor.stl

[Find source .stl files on Thingiverse.com](#)

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