Anycubic Kossel Linear Plus Glass Bed Clamp

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VIEW IN BROWSER

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Summary

Update 27Jan20 In printing something wider than usual, I discovered that the underside of my part cooling duct hit the...

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Update 27Jan20

In printing something wider than usual, I discovered that the underside of my part cooling duct hit the clamp bolt head on one of the side clamps (at a radius of 110mm). I've redesigned the clamp bolt head to be a lever. This alleviates two problems, firstly the width of the bolt head is less on the build plate side of the clamp and a collision is less likely (not impossible - it depends what you've set as your printable radius and which part cooling duct you're using (I'm using Facocero's Thingiverse 3850300). If the printable radius is less than 110mm, collision is avoided - the Anycubic default seems to be 105mm), and secondly, David_J's problem of the bolt being a little too tight to undo comfortably, because now the bolt head is the shape of a small spanner / wrench and gives a little extra leverage. As a feature, when tightened, the lever parks with its protruberance perpendicular to the build plate, as shown in the photo. This is now version

1.2, which I printed 3 bolts at a time in orange Sunlu PLA+ with 0.2mm layers (0.5mm nozzle), 3 perimeters and 10% infill.

Update 13Nov19

Following from David_J's comment about the clamp screw being difficult to unscrew, I've produced a design for a small spanner / wrench for those who have this difficulty. I've printed this in silver Sunlu PLA+ with 0.25mm layers (0.5mm nozzle), 5 perimeters and 20% infill.

Update 21Oct19:

I have extended the fixing bolt holes to allow additional, tighter adjustment towards the build plate (an additional 0.925mm). This is now version 1.1, and the Onshape link will now take you to this version.

Initial version 31Jul19:

I hadn't found a suitable clamp to hold my borosilicate glass build plate on my heated bed, so I set about designing one from scratch. I used Onshape for the original drawing, so if you want to do any adjustments to the original drawings you can find them with this link:

https://cad.onshape.com/documents/ec0d91ee24f4f9e61d9240a1/w/4435b4504876d0c24c086cef/e/5444b0fb228acd7783f3b459

The Anycubic Kossel Linear Plus has a 240mm diameter build plate held in place on a triangle formed from 2020 profile aluminium extrusion.

I regularly use my heated build plate at 70°C, so I printed the clamp in PETG because of it's higher temperature tolerance when compared to PLA (glass transition at about 80°C versus 60-65°C, but also added a silicone gasket in the form of self-amalgamating tape, to help insulate the PETG, just in case I want to use a bed temperature higher than 80°C. I glued this in place with a clear impact adhesive. If you use the same stuff, don't allow your gaskets to touch or they will amalgamate and prevent you removing your clamp!

I printed the clamp bolt/screw in Sunlu PLA+ because the threads are better defined than with PETG, and the screw doesn't touch anything hot and so won't melt or distort.

As well as the printed parts, you'll need 2 off M3 x 8mm socket button screws (these fit in the recess) and M3 T-nuts for each clamp.

Print Settings

Printer:

Anycubic Kossel Linear Plus (Delta)

Rafts:

No

Supports:

No

Resolution:

0.2mm first layer then 0.15mm

Infill:

25%

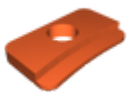
Filament: Esun (PETG) & Sunlu (PLA+) PETG (blue) & PLA+ (orange)

Notes:

The degree of infill doesn't appear to be critical.

Category: 3D Printer Parts

Model files



clamp.stl

spanner.stl

clamp_bolt.stl

clamp_bolt_v12.stl

clamp_base_v11.stl

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