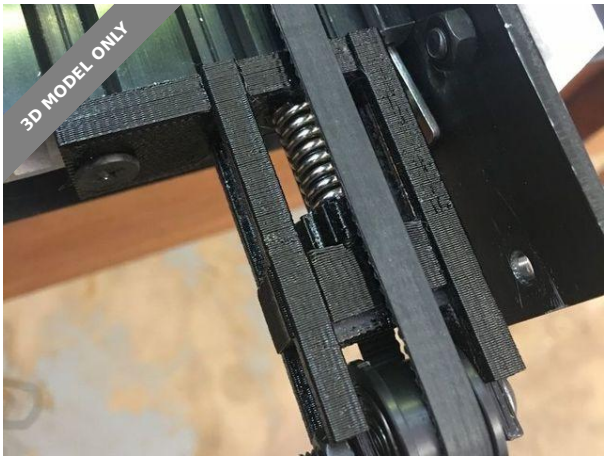

parameterizable belt tensioner

r robmlr

VIEW IN BROWSER

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Summary

This is a belt tensioner I developed to assist in tracking down vibration problems on my printer. It has [may have] a...

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Tags: 2020 belttensioner openscad gt2 vslot

This is a belt tensioner I developed to assist in tracking down vibration problems on my printer. It has [may have] a knurled knob for reproducible adjustment.

Update 03 April 2018: Modified to work with 20t toothed idler, M3 or M5 spindle. For this size idler the knurled knob around the m5 nut is too small to be useful. Instead I just use a flathead screwdriver from the sides to turn the nut. I advise using a silver nut so you can mark one face with a permanent marker and count the turns so you have some choice over belt tension. This version is shown in the photo with the blue part, with the belt feeding under the gantry and using my GT2 tooth side belt clip.

The parts should be easily available but as supplied it is designed specifically for an OpenBuilds/Ooznest 'smooth idler pulley' (22mm diameter, 16.2mm high) and to fit on 2020 v-slot extrusion configured for pulling an OB gantry plate on wheels. [20t idler parts added with update]

You are welcome to tweak the scad file for your needs! The key variables you will want to change are partsOnly and beltVoffset. If you need to change the idler dimensions much smaller the belt will rub against the mount, so you will need to do a bit of work to make appropriate space. Also note the 'reg2020flip' boolean to control which side the hole for mounting to the extrusion goes on -- or just remove this cube and create your own mount.

Hopefully you find the code sufficiently well documented, if not clear -- apologies in advance otherwise :-)

Also some parts definitely need support to print. The STL files supplied have been processed with MeshMixer to include the supports, that's what I use.

You can easily overtighten to stretch and deform your belt with this, and after it runs out of stretch the mechanism will transfer vibration artifacts to your prints. Don't do that.

parts needed

idler wheel - STL files are sized for OpenBuilds 'smooth idler pulley' or generic 20t m3/m5 axis idler wheel

m5 bolt, 25-30mm

2x m5 nuts

spring - like for print bed (came with my cheap i3 clone, bought many off ebay, m5 bolt fits inside)

Category: 3D Printer Parts

Model files

at1bf_mm.stl

at1b_mm.stl

at1tw.stl

at1.scad

at1b_mm_20t.stl

at1c_mm_20t.stl

at1c_mm.stl

at1b_20t.stl

Find source .stl files on Thingiverse.com

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