Flatbed Knitting Machine

Scarlett Sparks

VIEW IN BROWSER

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Summary

A simple flatbed knitting machine with big dreams

Hobby & Makers   >   Other Ideas

Tags: knitting   crafts   knittingmachine   textiles   knittingmachines   knittingtool

Find the full code and documentation in the GitHub repository.

There is a video walkthrough of the code, assembly, and basic use on my YouTube; I also recommend checking out the full series about the project if you want all the context about why certain features are designed the way they are.

HARDWARE AND SUPPLIES

For the bed:

- latch-hook knitting machine needles (KR830 / KR838 / KR850), one per needlebed slot for each bed (IMPORTANT: THESE NEEDLES CANNOT BE SUBSTITUTED)
- self-adhesive foam weatherstrip (or similar; for sponge bar), 1/4" - 3/8" wide, enough length to span all connected needlebeds, plus a small trimming allowance

- pan-head machine screws:
    - #4-40 x 1/2", 4 per needlebed (for back cover)
    - #4-40 x 3/4", 2 per needlebed (for sponge bar)
    - #6-32 x 1/2", 8 (for carriage rests/clamps)
- screwdriver
- scissors or utility knife (to cut foam weatherstrip)
- bolt and nut for the clamp: I use a 5/16" x 3.5" metal eyebolt here but if you wish you can generate 3D printable nuts and bolts using popular libraries such as Nut Job

For the carriage:

- pan-head machine screws:
    - 4x #6-32 x 1/2"
    - 6x #4-40 x 1/2"
    - 6x #4-40 x 1/4"
    - 2x #4-40 nuts
    - 2x #4 washers
- pliable jewelry wire, approx. 6-7" (15-18cm)
- sandpaper
- screwdriver
- pliers
- side cutters/nippers (if cutting the wire)
- safety goggles (if cutting the wire)
- super-glue

PRINTING

A table of suggested settings can be found in the project documentation.

Tested on Ender 3v2 with PLA and PLA Pro filaments, 0.4mm nozzle.

Z-seam alignment is important for most parts, to prevent bumps on sliding surfaces. I set mine to "sharpest corner", which placed the seam out of the way of cams, rails, and other sliding surfaces.

Most larger parts can be printed at 20% infill and 0.2 layer height, though if you have the option to use "adaptive layers" that may work well for parts which feature rounded corners. I recommend 100% infill for the tCam and stripperPlate parts, and for the clamp nut and bolt if using.

Most parts should lay flat and require no or minimal supports; the following parts have significant overhangs where support is recommended:
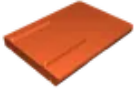
- carriageRests
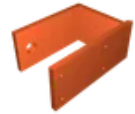- yarnCarrierCover
- tCam (under pivot)

Model files
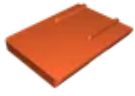
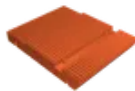**carriagerest_l.stl**

carriagerest_r.stl

clamp.stl

clamp_deep.stl

clamphead.stl

needlebed_std.stl

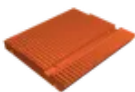**backcover_std.stl**

spongebar_std.stl

needlebed_mid.stl

backcover_mid.stl

spongebar_mid.stl

backplate_mk2.stl

tcam.stl

tpointer.stl

yarnfeeder.stl

yarncarriercover.stl

stripperplate.stl

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