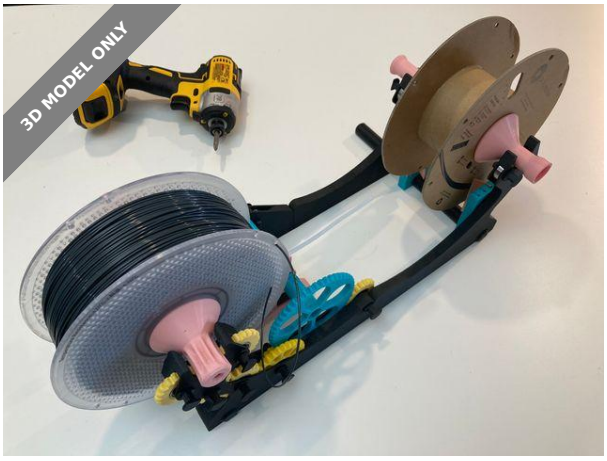
Printables by JOSEF PRUSA



Pastamatic - Filament Spool Winder for Bambu Lab X1C/P1P AMS (level winder with self reversing leadscrew)

GekoPrime

VIEW IN BROWSER

updated 26. 10. 2023 | published 26. 10. 2023

Summary

Mechanical transfer device for respooling filament. Prints on a single plate. Open source, CAD files available

3D Printers > Bambu Lab Parts & Upgrades

Tags: filament filamentspoolholder fusion360 winder spoolwinder bambu bambulab ams pastamatic

I tried another spool winder but found it finicky and delicate.

I designed this winder from scratch to be simple and robust, using the same self reversing leadscrew mechanism found on industrial cable winders

Why pick this model:

- Prints on a single build plate

- Doesn't require heat set inserts or exotic hardware
- Fusion and STEP files are available, remixes welcomed
- Generous clearances, simple mechanisms
- Designed to be a tool, not a project

Print time:

- ~500 grams of filament
- ~22 hours on Bambu Lab X1
- ~5 minute assembly
- ~2 minute spool transfer

Hardware requirements:

- 14x 608 skate bearings
- A scrap of PTFE tubing
- An electric screwdriver or drill with a bit cut from 1⁄4 inch hex stock (most cheap quick change Philips bits in the US fit this requirement)

Print settings:

- Any. I used "0.16mm Optimal" in BambuSlicer with 5% adaptive cubic infill
- **Use 100% concentric infill for spindle_male_driven**
- Try the STLs if you have a problem with the 3mf files. I've added (xN) to each file name so you know how many to print

Materials:

- Any. I used Polyterra and iiidmax PLA+
- **Use TPU for tpu_consumable_wiper_blade.** I used Priline 98a. The wiper blades aren't 100% required but they help keep the windings nice and tight

Assembly and usage:

- Demo video
- Assembly video
- **The side that says "Pastamatic" needs to face outwards, away from the spool**
- **The filament needs to come in under the target spool, like this: O___O**
  - [not like this: O¯"⌐"⌐"O]
- **The drill/driver needs to run clockwise, as though you're screwing something in**
- Accelerate slowly until the winder gets started

Change log

- 2023-05-28
  - Initial release
- 2023-05-29
  - Fix a minor export glitch in "leadscrew_tooth"
  - Increase the number of “pin_short” instances in the 3mf from 6x to 8x
- 2023-05-30
  - Add a second prearranged 3mf with two plates to avoid overlap warnings
  - Disable autogenerated brims for the single plate 3mf
  - Add STLs for people who have trouble with the 3mf
- 2023-06-03
  - Add a ring to passive_target_cradle to prevent the far end of the target spool lifting if a user lets the the drill hang loose
  - Add a pin to driven_target_cradle prevent the leadscrew popping out
  - Fix a minor clearance issue where a dovetail didn't fit quite right
- 2023-06-05
  - Revert passive_target_cradle to the old drop-in style
  - Posted a spindle retention clip as a remix
- 2023-09-30
  - Reduce chamfer on the crossbars to prevent them falling over when bed adhesion is poor
  - Add some holes to the crossbars to make them easier to screw down
  - Add some popular acessories to the all-in-one .3mf

How to contribute:

- Post your make, it keeps me motivated to improve the model when I see people using it!
- Post your feedback, idea or remix in the comments!
- There are a few improvements and accessories in development as remixes, check those out if you‘re up for the alpha/beta tester experience
  - Adapter for 37mm gear motor
  - Source spool holder for 5 KG spools

Credits:

- @MiklosKiszely_486882 for the original idea
- @Psycho Shaft for the drag/tensioner concept
- thang010146 for YouTube videos of mechanical mechanisms, particularly the self reversing leadscrew for a level cable winder

This remix is based on

Bambu Lab P1 / X1 / X1C / X1CC Filament Spool Switcher & Winder if you use AMS

by Miklos Kiszely

Model files

Print Files 21 files

pastamatic_filament_winder_by_gekoprime_2023-06-05.3mf

This is a very tightly packed plate. If you encounter errors use the STLs instead

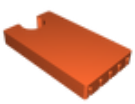
pastamatic_filament_winder_by_gekoprime_2023-09-30_... .3mf

Slightly newer version with some accessories included, not well tested

alternate_spindle_female_long_pastamatic_filament_w... .stl

1x_spindle_male_passive_pastamatic_filament_winder_... .stl

2x_crossbar_pastamatic_filament_winder_by_gekoprime... .stl



1x_wiper_mount_right_pastamatic_filament_winder_by_... .stl

8x_pin_short_pastamatic_filament_winder_by_gekoprim… .stl

1x_double_idler_pastamatic_filament_winder_by_gekop… .stl

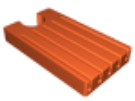
1x_driven_target_cradle_pastamatic_filament_winder_… .stl

1x_passive_target_cradle_pastamatic_filament_winder… .stl

2x_source_cradle_pastamatic_filament_winder_by_geko… .stl

1x_leadscrew_pastamatic_filament_winder_by_gekoprim… .stl

1x_spindle_male_driven_pastamatic_filament_winder_b… .stl



1x_wiper_mount_left_pastamatic_filament_winder_by_g… .stl

1x_leadscrew_pin_pastamatic_filament_winder_by_geko… .stl

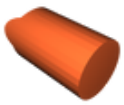
2x_tpu_consumable_wiper_blade_pastamatic_filament_w... .stl

2x_spindle_female_pastamatic_filament_winder_by_gek... .stl

5x_idler_pastamatic_filament_winder_by_gekoprime_20... .stl

1x_leadscrew_block_pastamatic_filament_winder_by_ge... .stl

7x_pin_long_pastamatic_filament_winder_by_gekoprime... .stl



1x_leadscrew_tooth_pastamatic_filament_winder_by_ge... .stl

Source Files - 2023-06-03

2 files

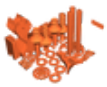
pastamatic_filament_winder_by_gekoprime_2023-06-03.f3d

pastamatic_filament_winder_by_gekoprime_2023-06-03.step

Archived

28 files

2x_crossbar_pastamatic_filament_winder_by_gekoprime... .stl



pastamatic_filament_winder_by_gekoprime_2023-06-03.3mf

This is a very tightly packed plate. If you encounter errors use the STLs instead

pastamatic_filament_winder_multicolor_by_gekoprime_... .3mf

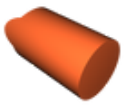
1x_passive_target_cradle_pastamatic_filament_winder... .stl

extra_long_spindle_for_3kg_spools_2023-05-28.3mf

pastamatic_filament_winder_by_gekoprime_2023-05-28.f3d

pastamatic_filament_winder_single_plate_by_gekoprim... .3mf

pastamatic_filament_winder_by_gekoprime_2023-05-28.step



leadscrew_tooth_fixed_2023-05-29.3mf

pastamatic_by_gekoprime_spindle_female_2x.stl

pastamatic_by_gekoprime_source_cradle_2x.stl

pastamatic_by_gekoprime_leadscrew_pin_1x.stl

pastamatic_by_gekoprime_pin_long_6x.stl

pastamatic_by_gekoprime_idler_6x.stl

pastamatic_by_gekoprime_wiper_blade_tpu_2x.stl

pastamatic_by_gekoprime_leadscrew_1x.stl

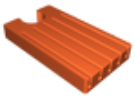
pastamatic_by_gekoprime_leadscrew_block_1x.stl

pastamatic_by_gekoprime_passive_target_cradle_1x.stl

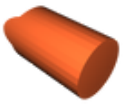
pastamatic_by_gekoprime_spindle_male_driven_1x.stl

pastamatic_by_gekoprime_spindle_male_passive_1x.stl

pastamatic_by_gekoprime_driven_target_cradle_1x.stl



pastamatic_by_gekoprime_wiper_mount_left_1x.stl

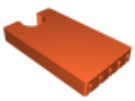


pastamatic_by_gekoprime_leadscrew_tooth_1x.stl

pastamatic_by_gekoprime_double_idler_1x.stl

pastamatic_by_gekoprime_pin_short_8x.stl

pastamatic_by_gekoprime_spindle_female_long_optional .stl



pastamatic_by_gekoprime_wiper_mount_right_1x.stl

pastamatic_by_gekoprime_crossbar_2x.stl

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