



Filament Pelletizer

 **Make3D Company Limited**

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updated 11. 12. 2022 | published 11. 12. 2022

Summary

This tool is used for making pellets out of filament remains for our plastic crusher pellet extruder.

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Tags: [filament](#) [recycling](#) [recycled](#) [pellet](#) [filamentpelletizer](#)

Introduction:

This is a filament pelletizer, designed to make pellets out of filament remains. This tool was created for testing our [Plastic crusher pellet extruder](#) for Original Prusa MK3S 3D printer.

The development of this product was possible due to funding from Royal Academy of Engineering Alumni Grant 2022/2023.

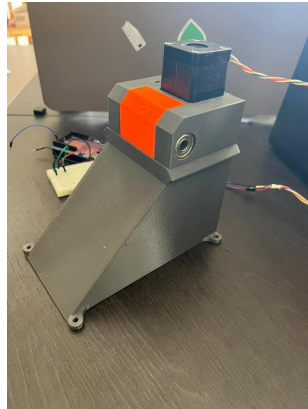
Required hardware:

1. Stepper motor, Nema 17, 1 pc, <https://www.prusa3d.com/product/stepper-motor-e-axis-extruder/>
2. Metal sheet, 1 pc, 5x10x1 mm
3. Bearing, 608 2Z, 2 pcs, <https://www.prusa3d.com/product/bearing-608-2z/>
4. Bondtech drivegear, set, 1pc, <https://www.prusa3d.com/product/bondtech-drivegear-set/>

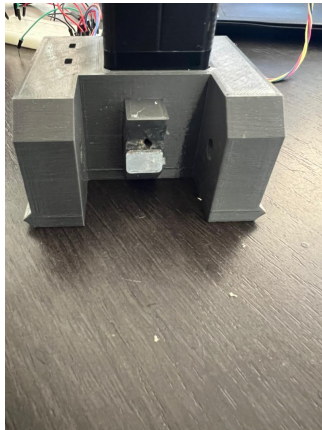
5. M3x18 bolt, 4 pcs
6. M3x40 bolt, 2 pcs
7. Idler spring, 2 pcs, <https://www.prusa3d.com/product/idler-spring/>
8. Arduino UNO, Stepper driver, 12V power source
9. 8mm drill bit
10. Cordless drill
11. Super Glue

Assembling:

1. Insert bearings in each of the large holes on the sides of the main body.



1. Place the metal sheet at the lower part of the “V” shape of the main body, and use super glue to attach it.



1. Insert Bondtech gear in the shaft of the stepper motor, and screw it using the grub screw
2. Insert the stepper motor in the main body
3. Use four M3x18 bolts to attach motor to the body
4. Place the Bondtech gear without the grub screw at the opening of the clip. And insert the shaft of the Bondtech gear in the clip
5. Insert the clip in the side of the main body
6. Insert a nut in each of the rectangular holes on top of the main body
7. Put the idler springs on the M3x40 bolts

8. Insert the bolts with the spring in the hole of the clip, and tighten until the spring is slightly compressed. Don't over-tighten!
9. Do the wiring using [this](#) instructions.
10. Insert a drill with 8mm bit through the bearings and the cover.
11. Download the code for the Arduino from [our git repo](#) and upload the code to the Arduino using the [Arduino IDE](#). The motor should start running.
12. Attach the assembly on the tank.
13. Pelletize the filament remains.

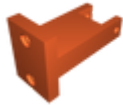
Print settings:

Filament PETG

Model files



tank.stl



clip.stl



cover.stl



main-body.stl

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