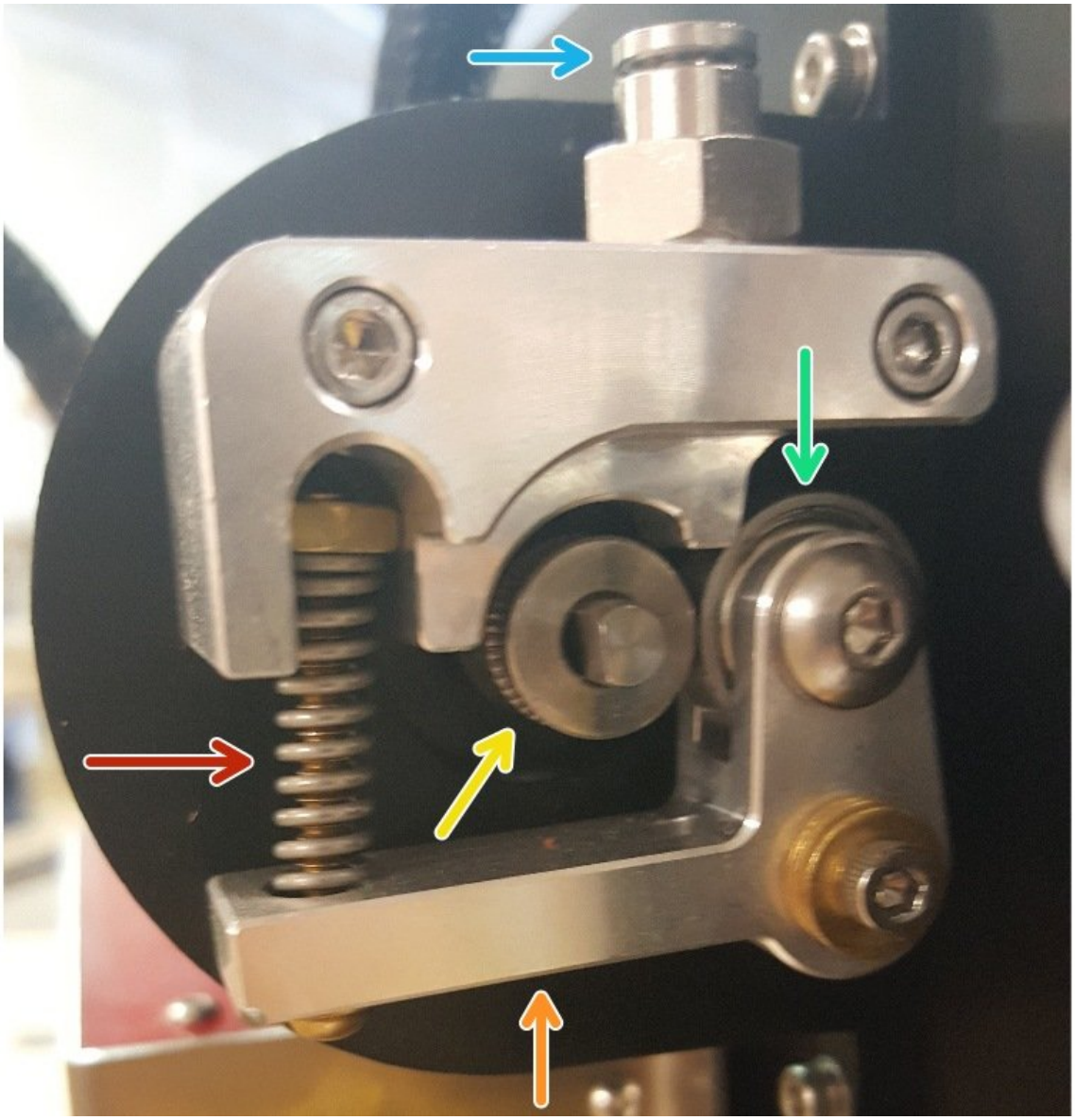
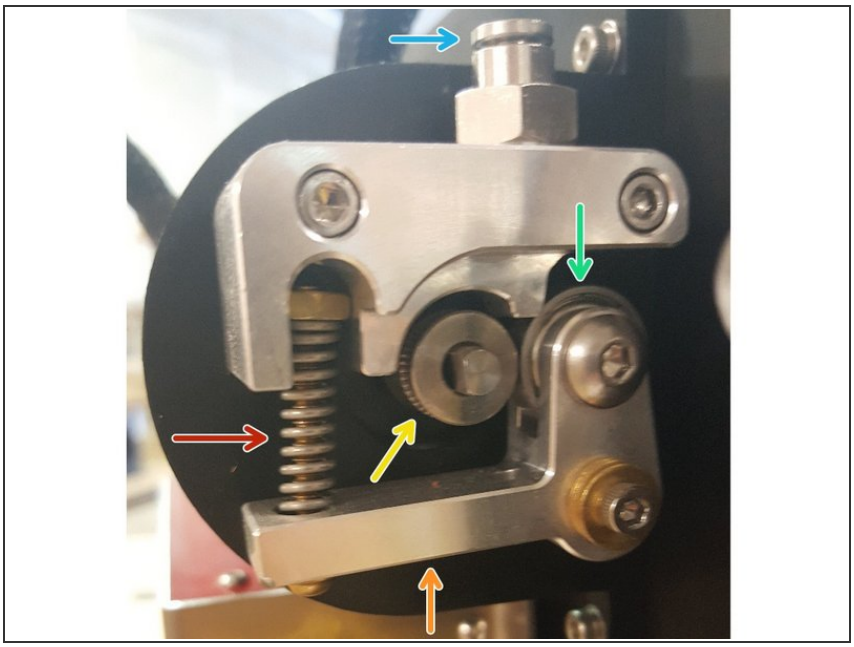
Filament Drive Guide

Written By: BoXZY

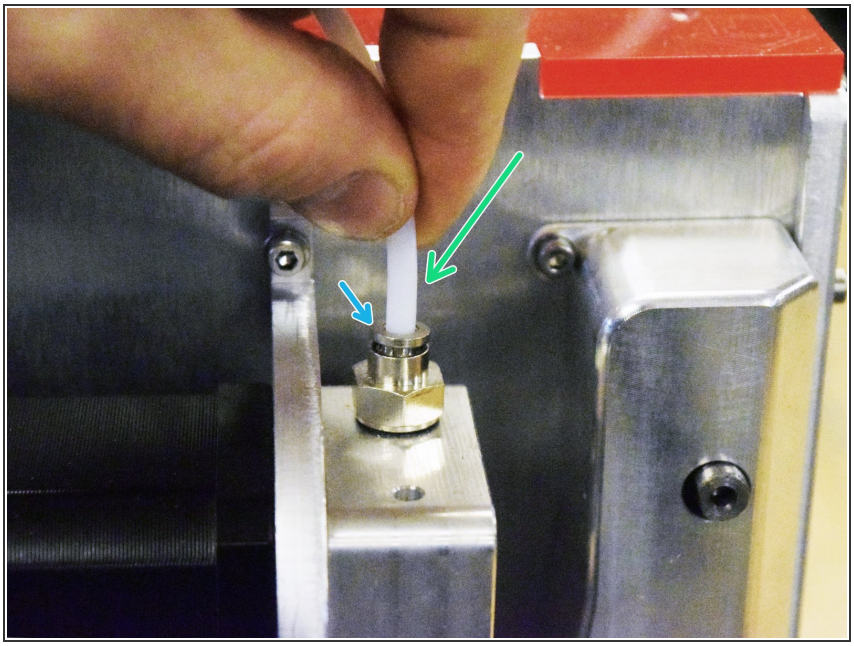


Step 1 — Examining the Filament Drive



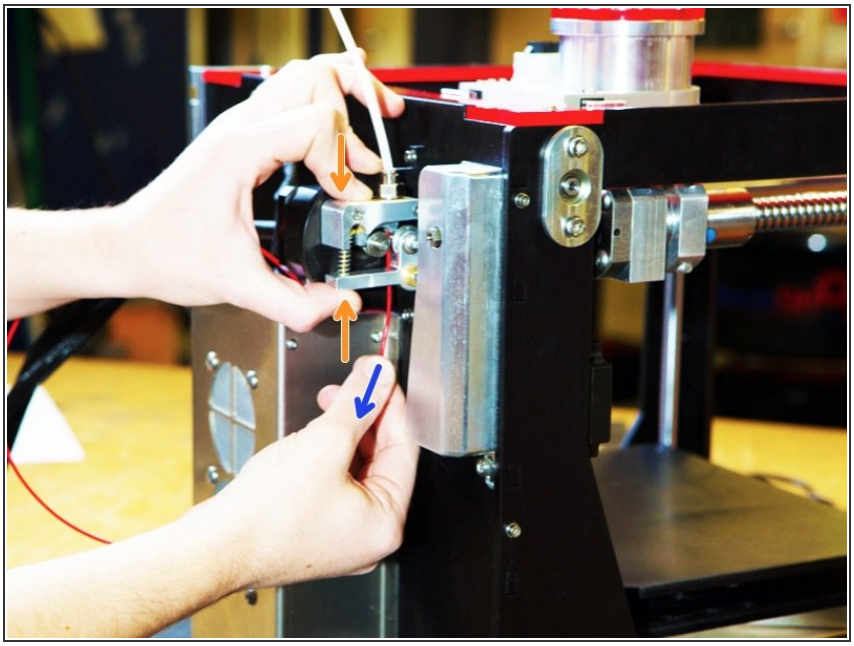
- This image is the Filament Drive system, it consists of a *Nema17 Stepper Motor* and the following:
  - Tension Spring
  - Tension Lever
  - Filament Drive Gear
  - Filament Guide Bearing
  - Filament Tube Connector

Step 2 — Filament Drive: Part I



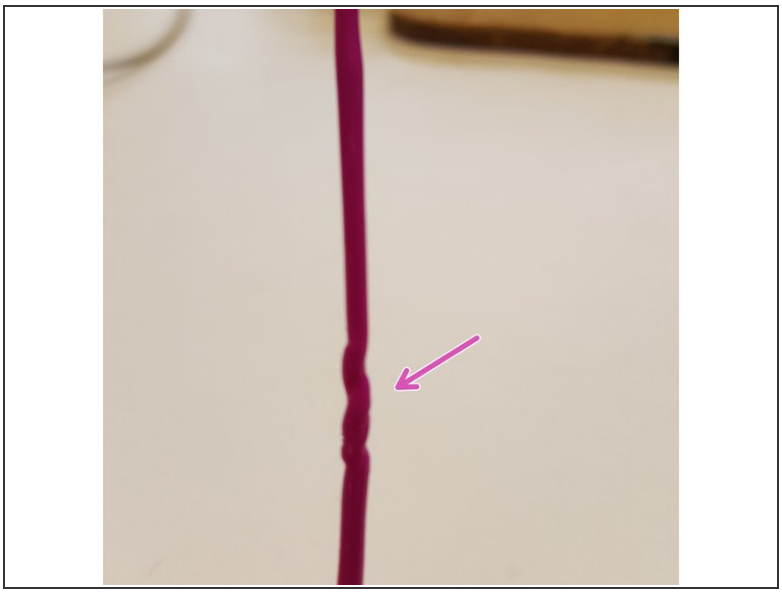
- If your 3D Printing Attachment is **Not Extruding** check your Filament Tube Connection
  - Make sure that the **Filament Tube** is connected to the **Filament Tube Connector**
  - **Push down** on the *Filament Connector* to push the Filament Tube into the Connector

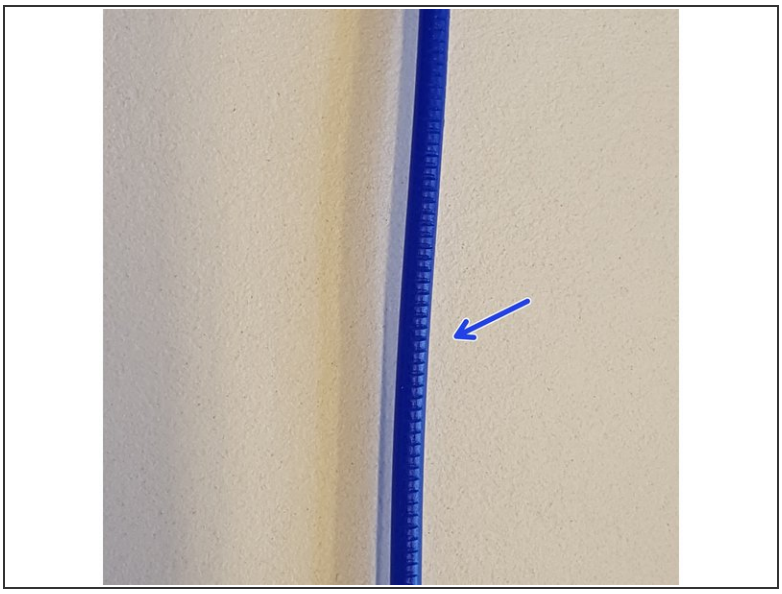
Step 3 — Filament Drive: Part II



- In your BoXZY Interface turn your *Extruder Temperature* **ON** and set the temperature to **180** degrees
  - When the Temperature reaches 180 turn the *Extruder Temperature* **OFF**
- Use one hand to **squeeze** the **Tension Lever** and the **Top of the Filament Drive System**, as indicated by *orange arrows*
- With your other hand, pull the **Filament** fully out of the *Filament Drive System, Filament Tube and 3D Printing Attachment*

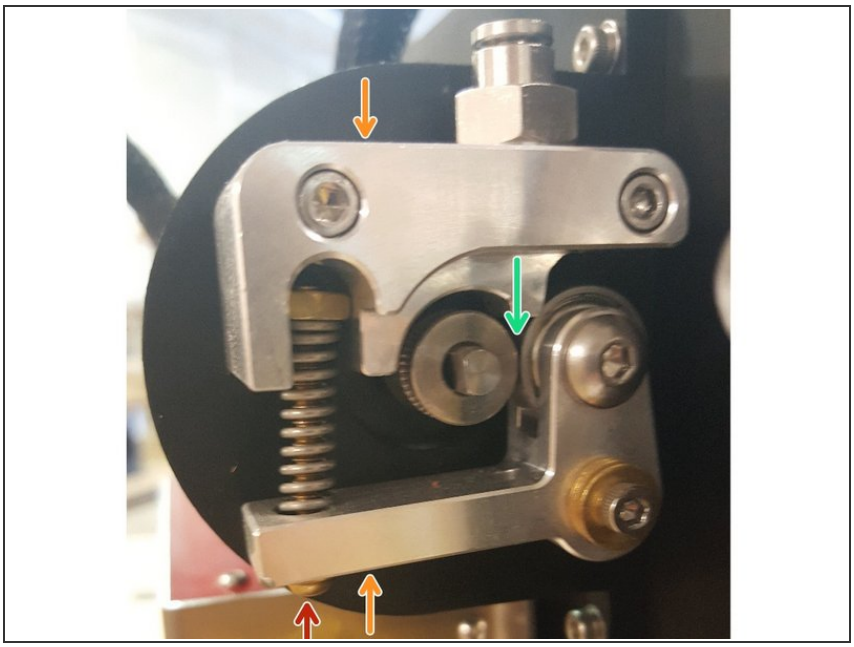
Step 4 — Filament Drive: Part III





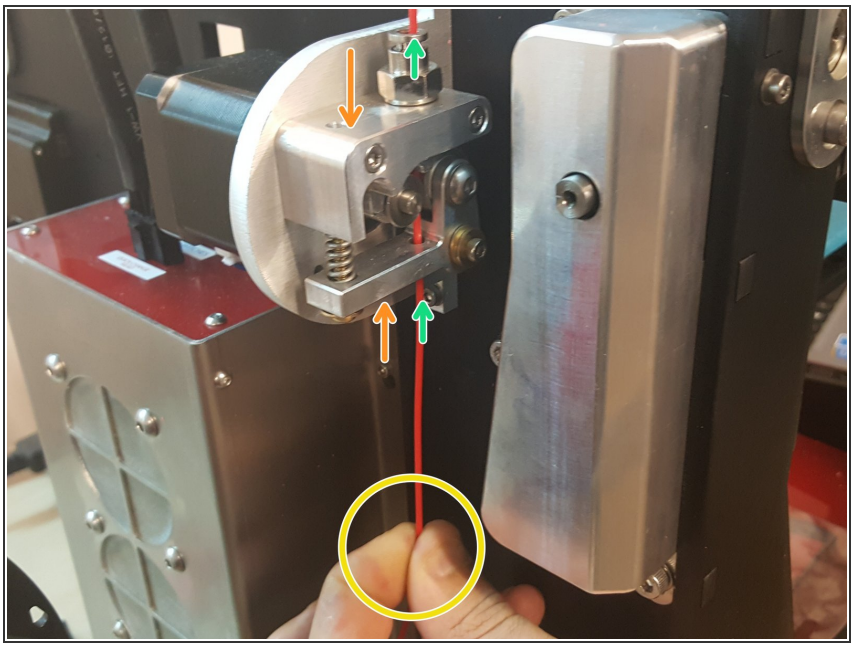
- Let's examine the Filament that you just pulled out of your Filament Drive
- The *first image* is an example of bad Filament that will be a problem in the Filament Drive
  - Cut the kinked Filament off, if you have this problem
- The *second image* is an example of Filament that is **ideal**
  - The Filament should have a shallow ridge pattern caused by the Filament Drive Gear, this means that there is adequate extruding force generated by the Filament Drive Gear
  - If you **do not** see these ridges your Filament Drive Gear and Bearing are *too loose*

Step 5 — Filament Drive: Part IV



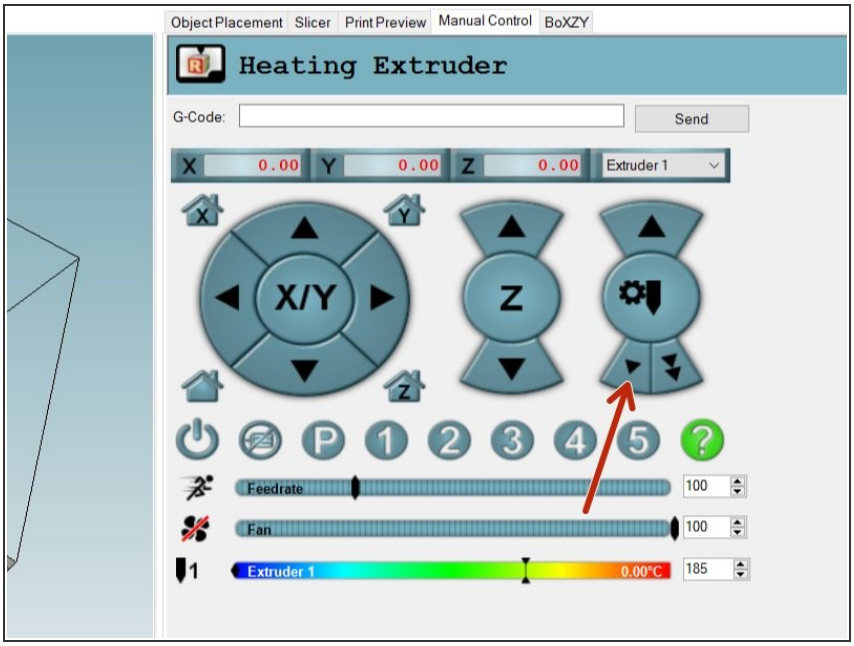
- Let's look at the Tension between the Filament Drive Gear and Tension Bearing
- Squeeze the Tension Lever by applying pressure where the *orange arrows* are indicate in the image
  - This will open the gap between the Filament Drive Gear and Bearing
  - Insert a thin piece of paper, printer paper works well, between the Filament Drive Gear and Bearing
    - Release the Tension lever and pull the paper out
    - If you tear the paper there is too much tension
    - You do not want the paper to be loose enough that it is not held in place when there is tension
    - Use a **Flat Head Screwdriver** to *loosen* or *tighten* the Tension Spring Bolt to make the Gap between the Gear and Bearing bigger or smaller

Step 6 — Filament Drive: Part V



- **Squeeze** the **Tension Lever** by applying pressure where you see the *orange arrows* in the image
- **Insert** the **Filament** through the entire *Filament Drive*
  - The Filament should stick out of the Filament Drive an inch or two
- **Hold** the **Filament** below the Filament Drive with *two fingers*
  - **Do Not** pull on the Filament, just squeeze your fingers together and apply pressure to the Filament

Step 7 — Filament Drive: VI



- Use the **BoXZY Interface Manual Controls** to manual drive the *Filament Drive*
  - Use the **Extrude Button**, indicated by the *red arrow* in the second image
- You ***should not*** be able to Hold the Filament by squeezing your fingers as the Filament Drive pull/pushes the Filament
  - If you are able to keep the Filament Drive motor from pulling/pushing the Filament you may have an issue with the motor or potentiometer in the electronics

