

HOW TO CHANGE MAKERBOT+ FLAMENT

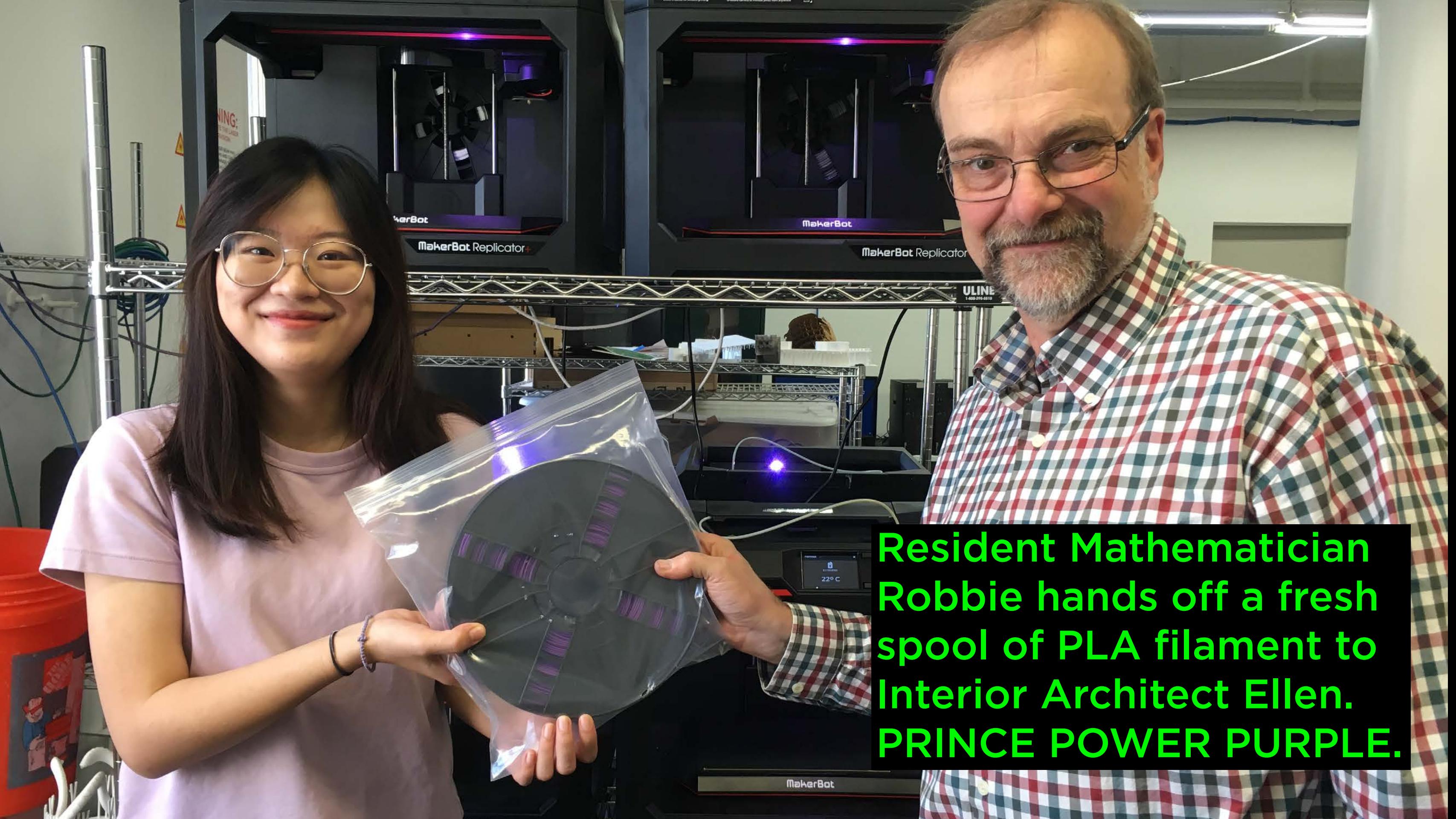
FRESH 16 OCTOBER 2019

NOTE

This document is NOT
a substitute for hands-on
training. Ask your teacher
or a lab tech for a tutorial.

Printer out of filament? Clogged extruder nozzle? Need a color that isn't loaded in one of the printers? You'll need to unload the filament (unless it is already completely out) and then reload (or load a new spool of) filament.

There are more spools in the cabinets. If the cabinets are locked, asked a lab tech to open up for you. **Changing filaments on the MakerBots** is easy but takes about 10 minutes, and there are a few steps that require extra attention.



**Resident Mathematician
Robbie hands off a fresh
spool of PLA filament to
Interior Architect Ellen.
PRINCE POWER PURPLE.**

NOTE: only use lab-supplied PLA filament (Polylactic Acid, a thermoplastic polymer that is derived from renewable resources, more specifically from corn starch or sugar cane.) Do not bring in exotic, 3rd-party filaments, as we do not have Safety Data Sheets (SDSs) for them. Our goal is to operate by the highest standards of health and safety,



Remove the spool from the bag it's in. Put the bag aside for storing the spool you are removing.

A brand-new spool? The end of the filament is secured through a pair of holes in the edge of the spool. Gently release.



Voila!

MakerBot Replicator+

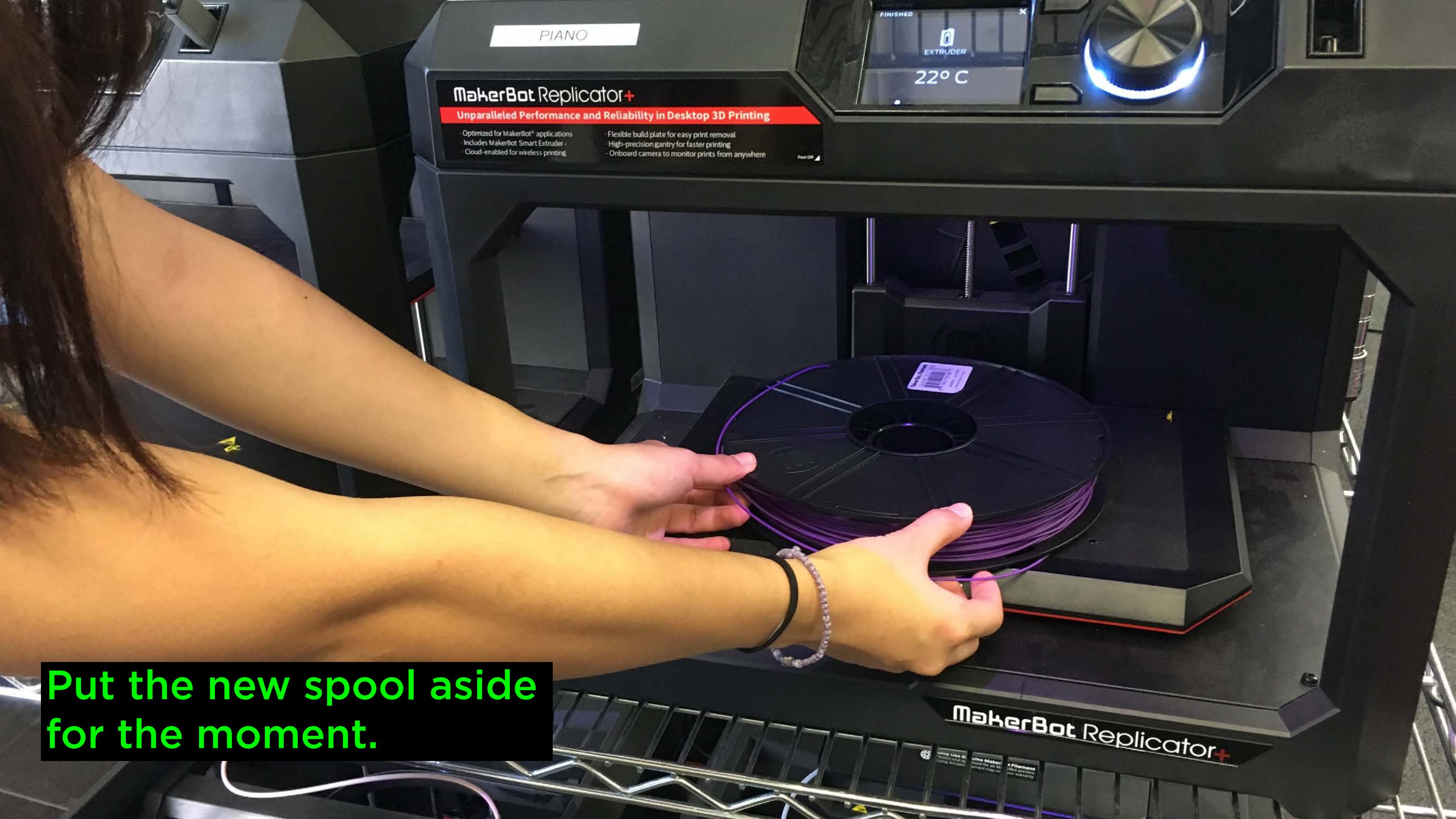
MakerBot

MakerBot Replicator+

Unparalleled Performance and Reliability In Print

- Optimized for MakerBot® applications
- Includes MakerBot Smart Extruder+
- Cloud-enabled for wireless printing

- Flexible build plate
- High-precision extrusion
- Onboard filament detection



Put the new spool aside
for the moment.

If there is still filament on the spool you'll need to unload it. If the spool is completely done, you can skip ahead to removing the spool.

esktop 3D Printing

easy print removal

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Now, on the printer, use
the knob to scroll through
the menu to 'filament' ...



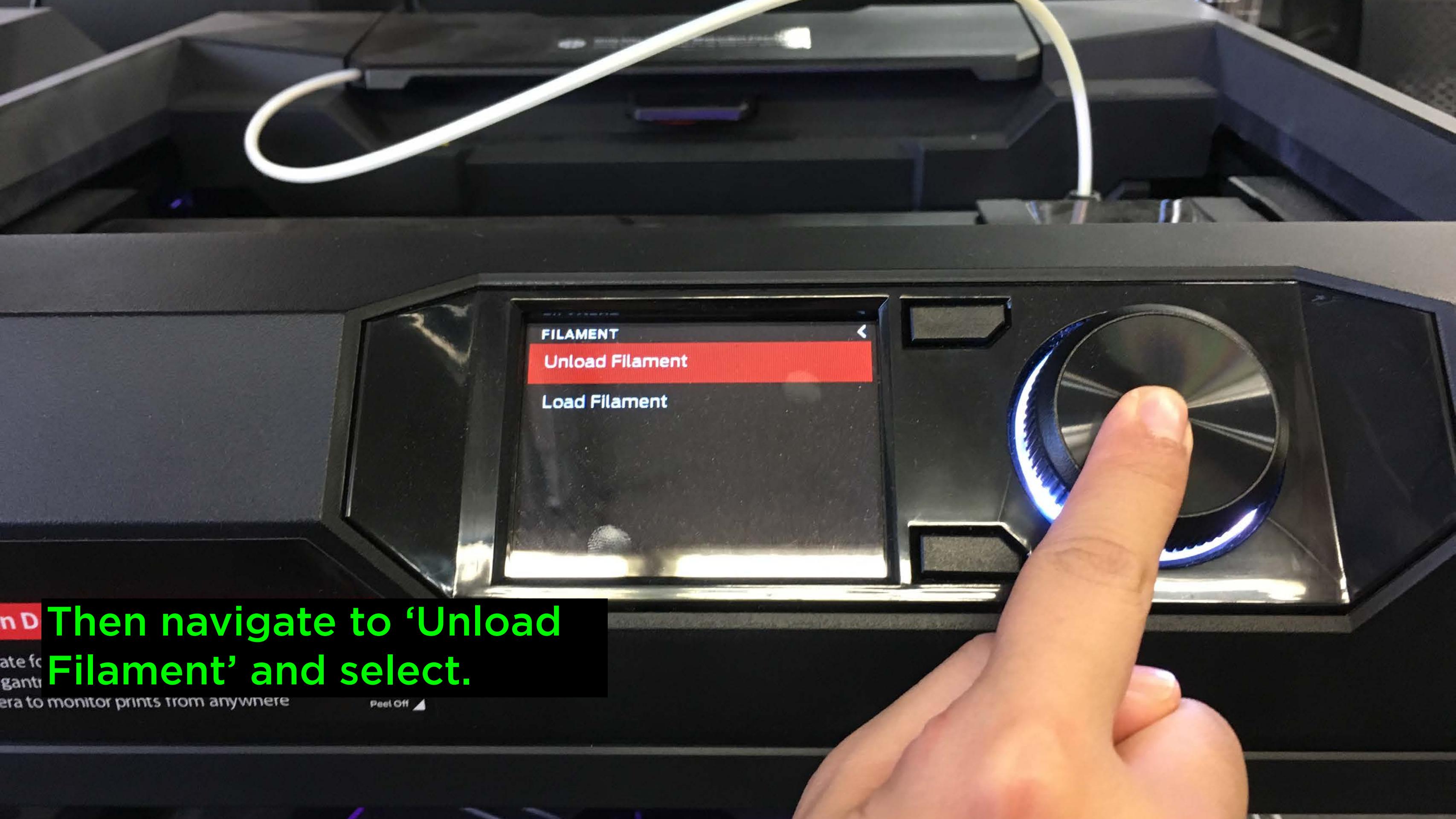
esktop 3D Printing

for easy print removal

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... then press down on
the knob to select.

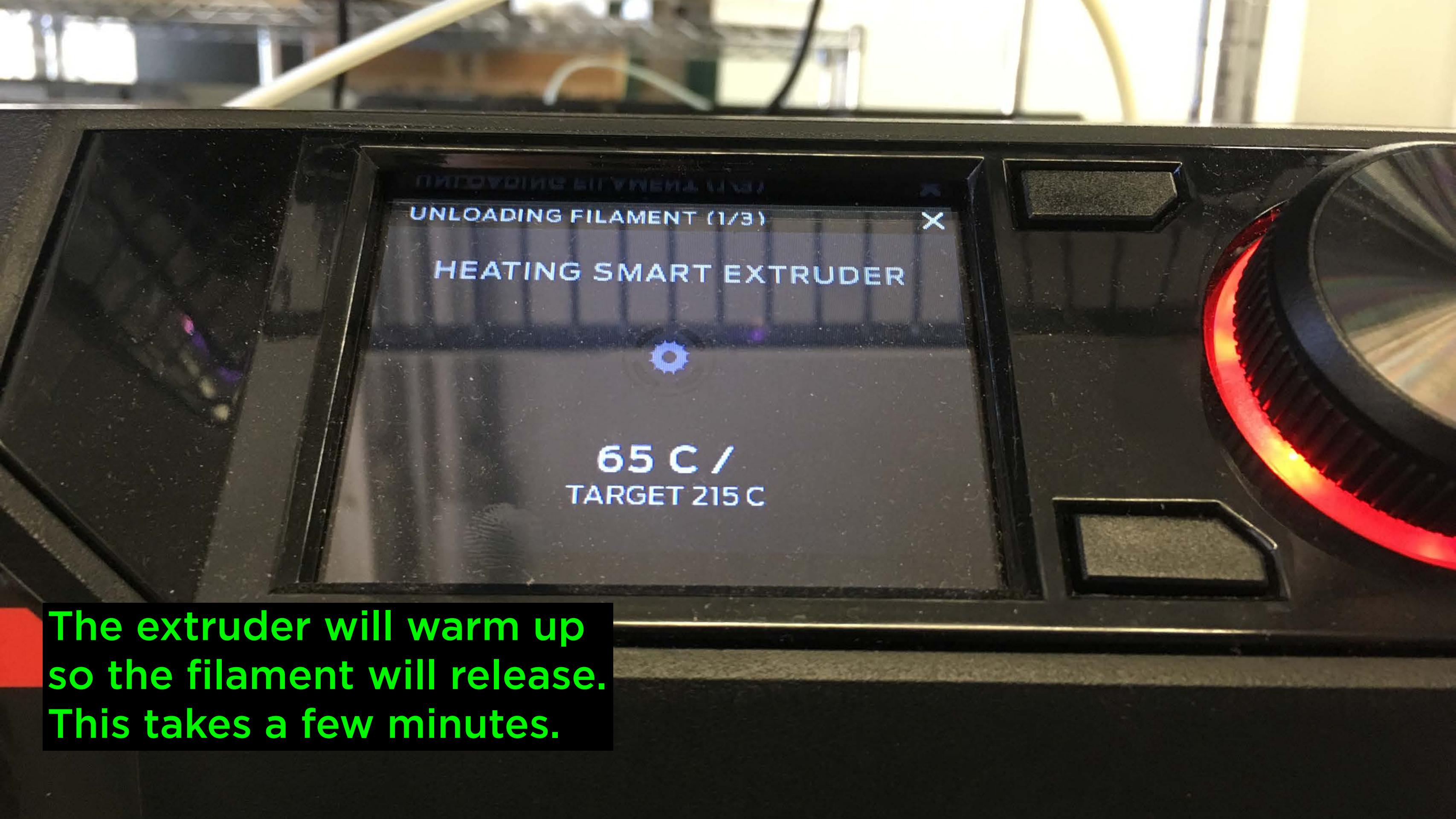




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Then navigate to 'Unload
Filament' and select.

Peel Off ▾

A close-up view of a 3D printer's filament spool. A glowing red heating element is wrapped around the spool, indicating it is active. The printer's control screen is visible in the background, showing the filament unloading process.

ПРИГОДИТЬ ВЫМЕЩАНИЕ ПЛЕНОК

UNLOADING FILAMENT (1/3)

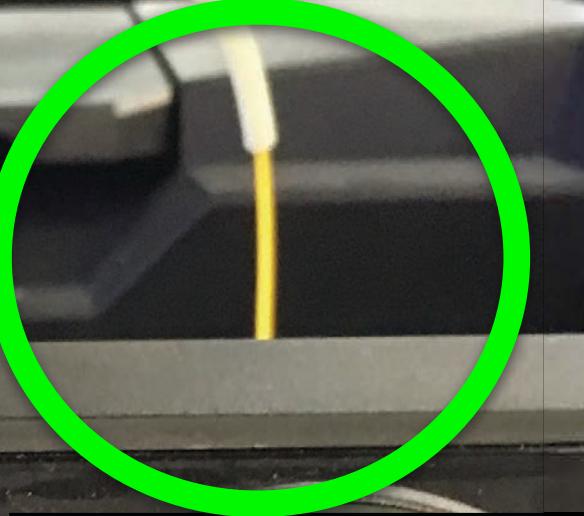
X

HEATING SMART EXTRUDER



65 C /
TARGET 215 C

The extruder will warm up
so the filament will release.
This takes a few minutes.



Once the nozzle has heated, the filament should pop out easily.

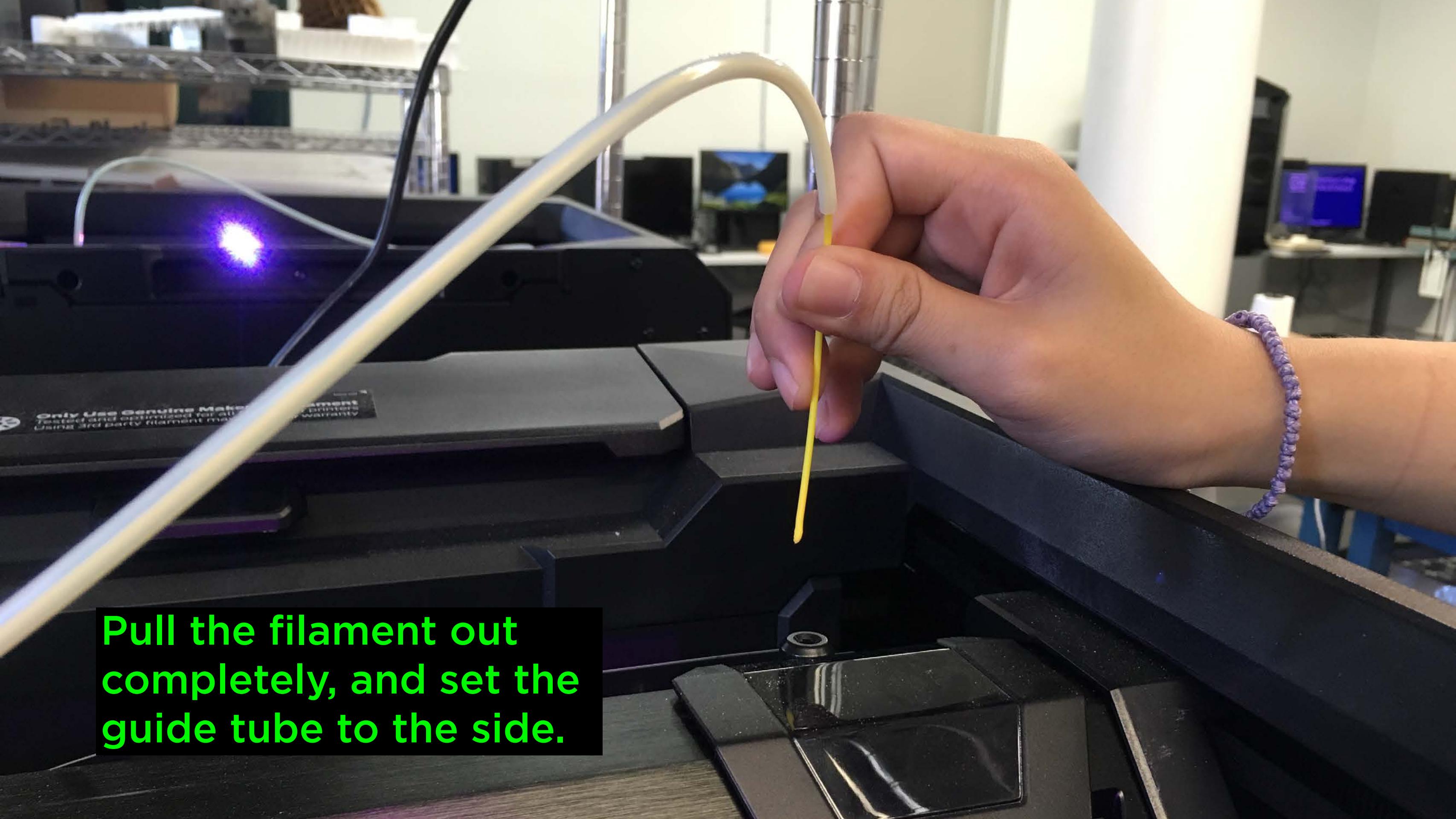
UNLOADING FILAMENT (2/3)

PLEASE WAIT



While your Smart Extruder unloads the
filament.

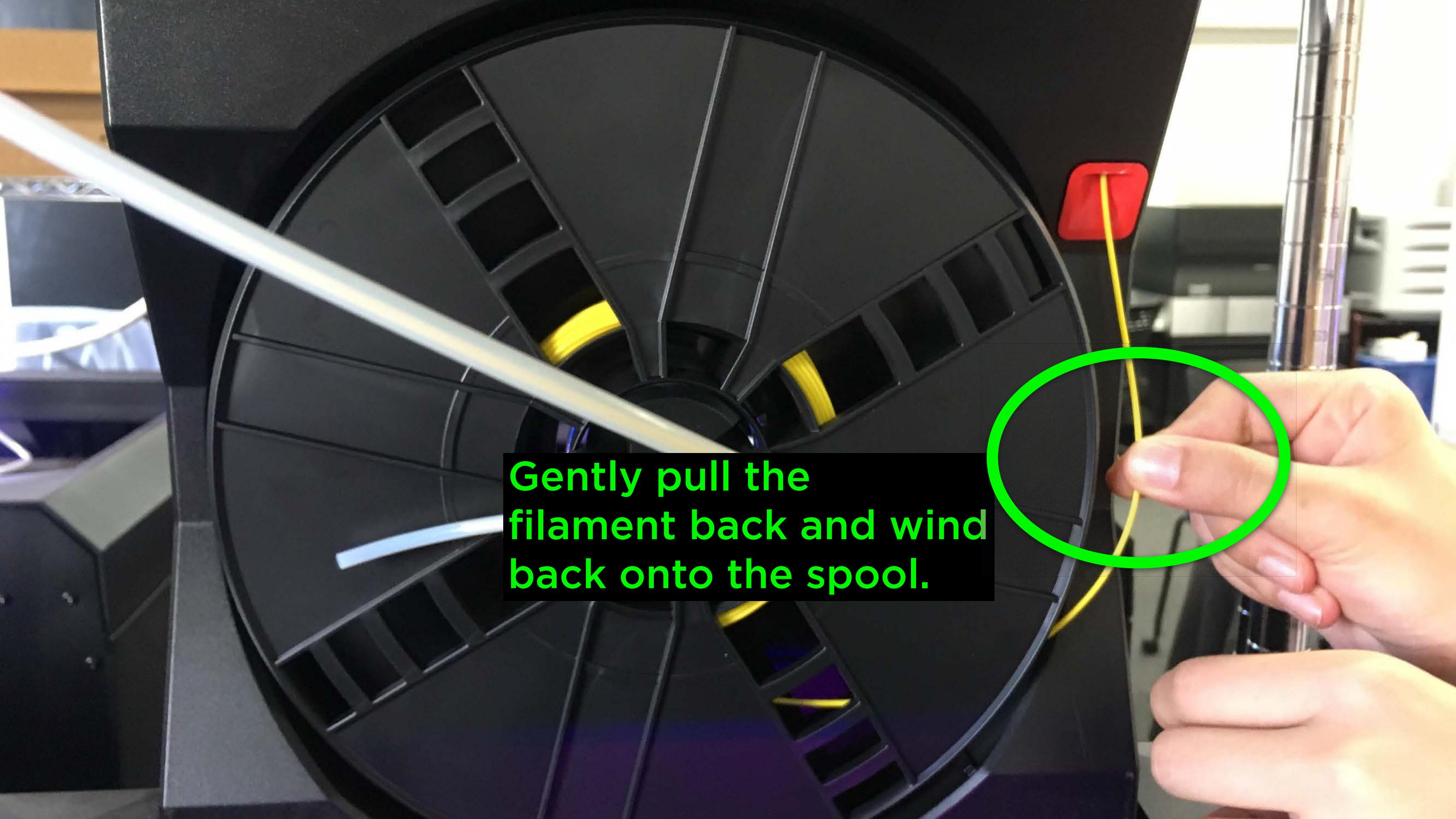
Peel Off ▲



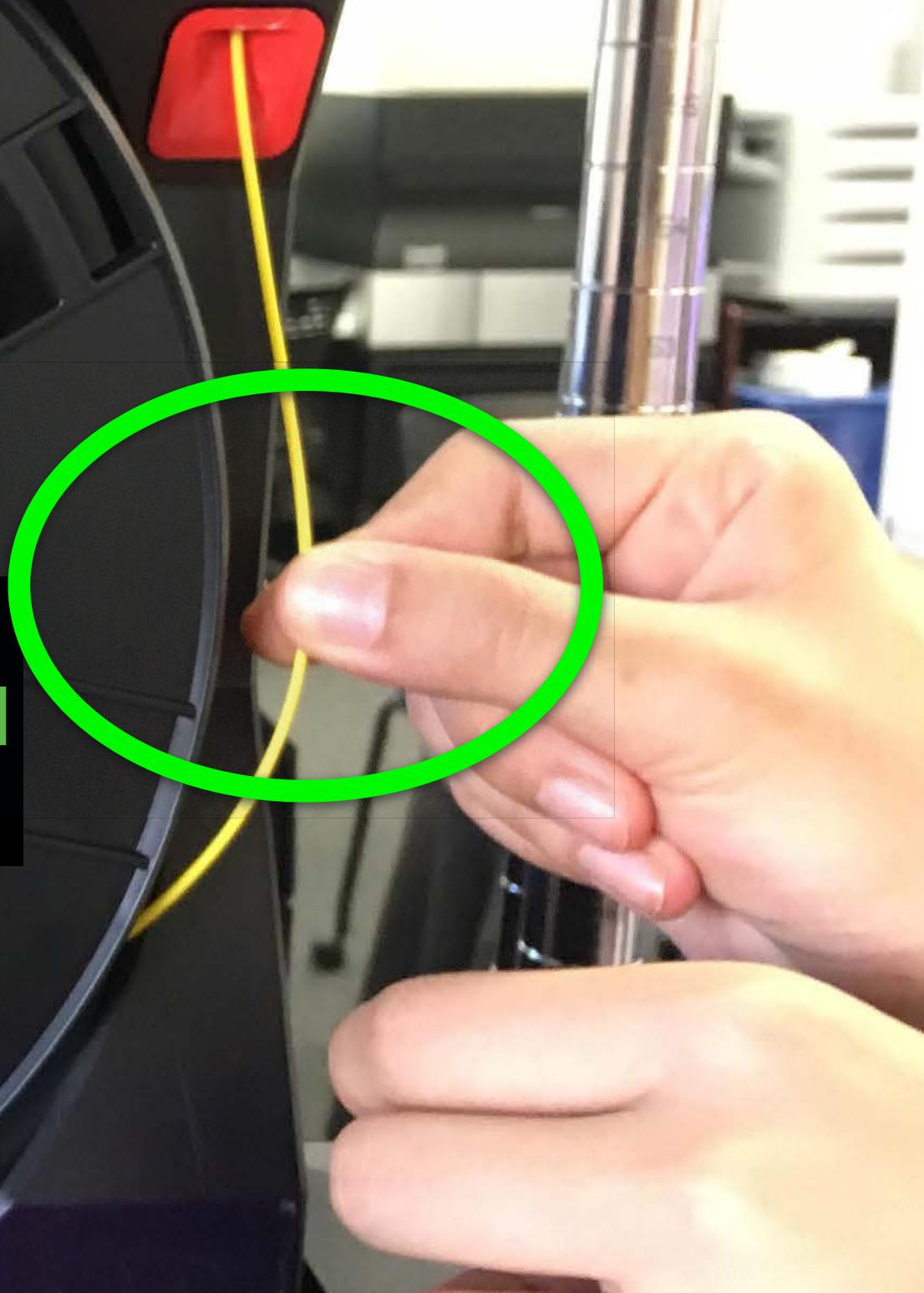
Pull the filament out completely, and set the guide tube to the side.

Press down this button
to release the filament
holder...

... and gently lift all the way
up until it clicks into place.

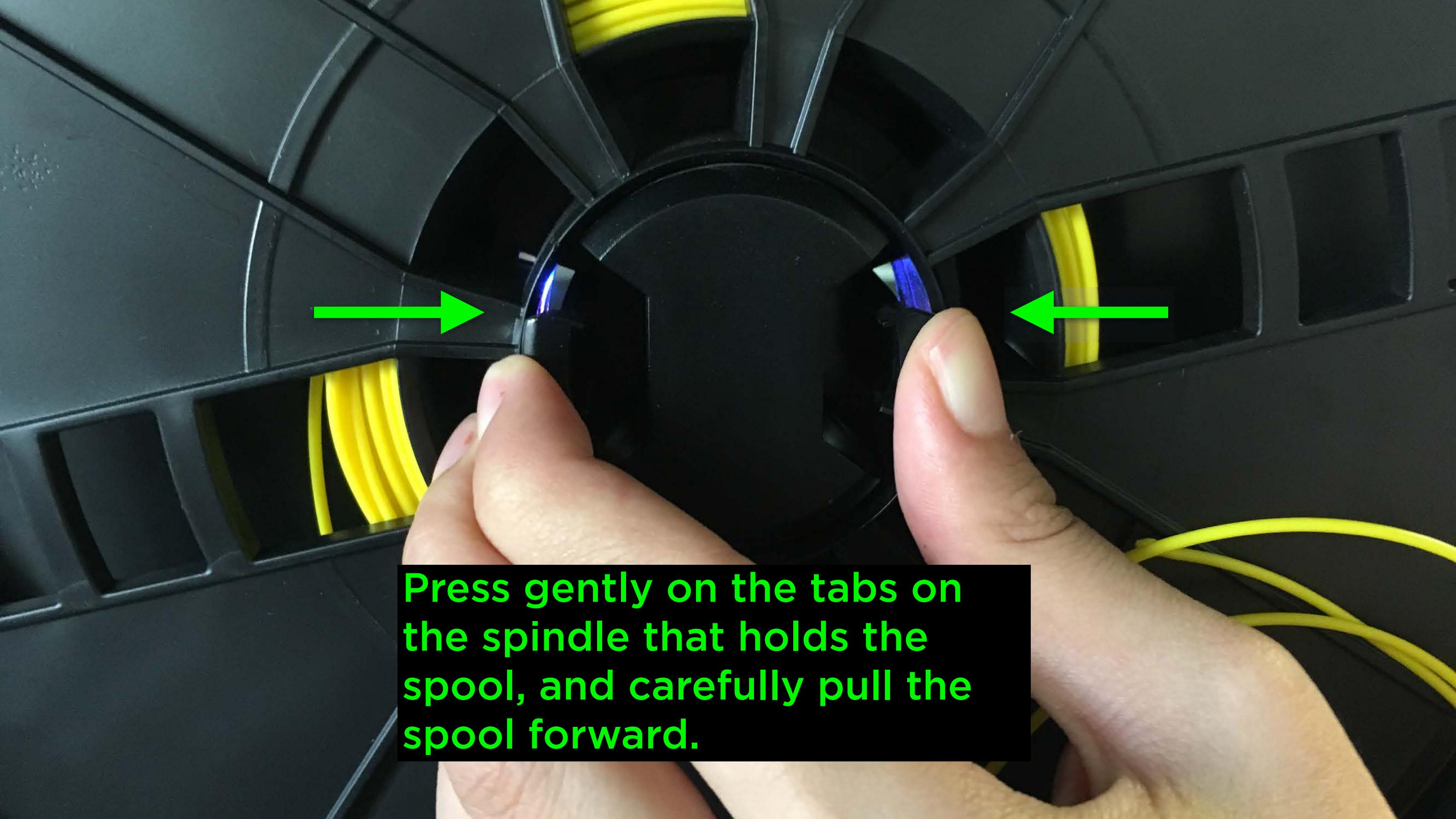


Gently pull the
filament back and wind
back onto the spool.

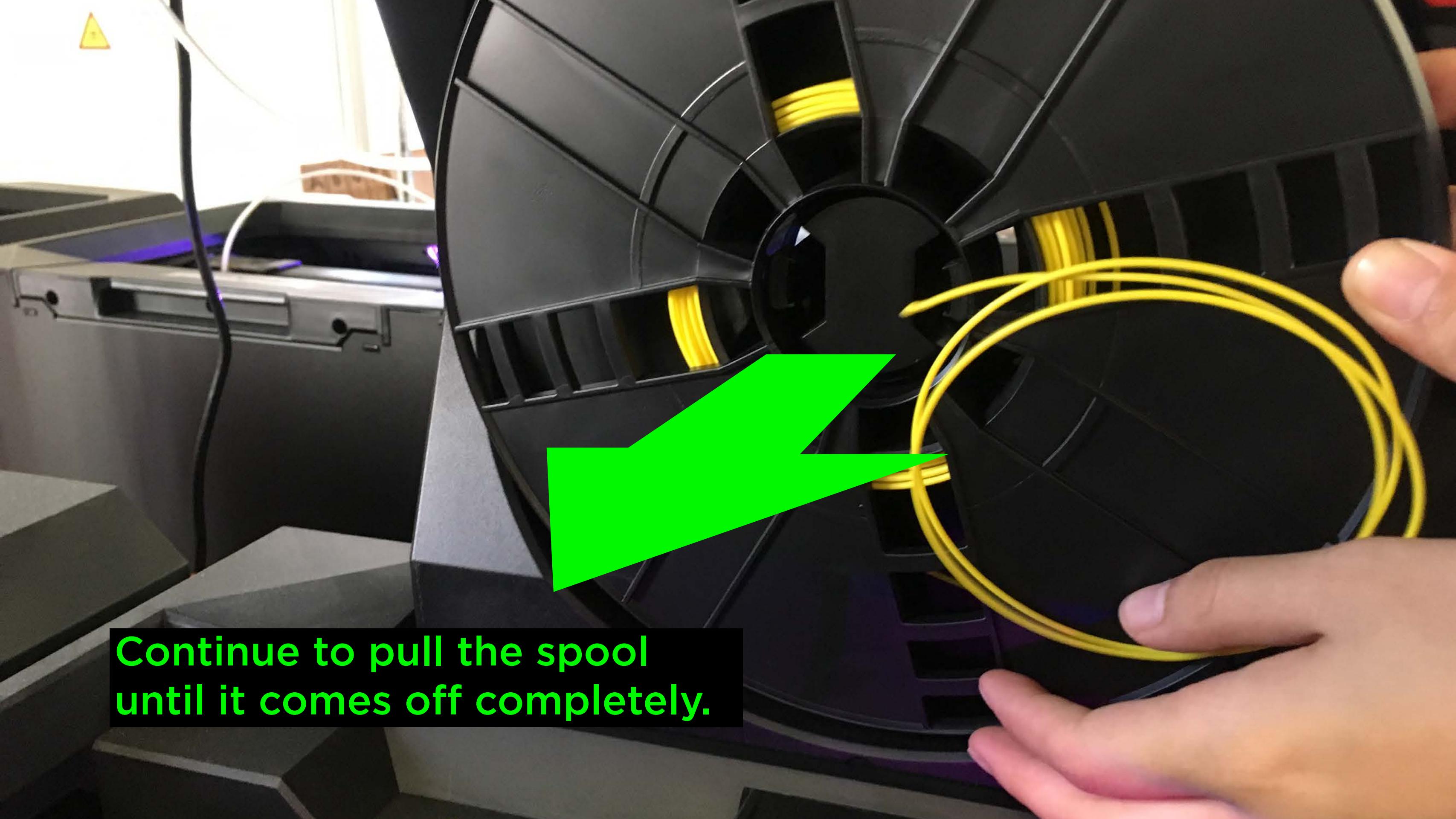




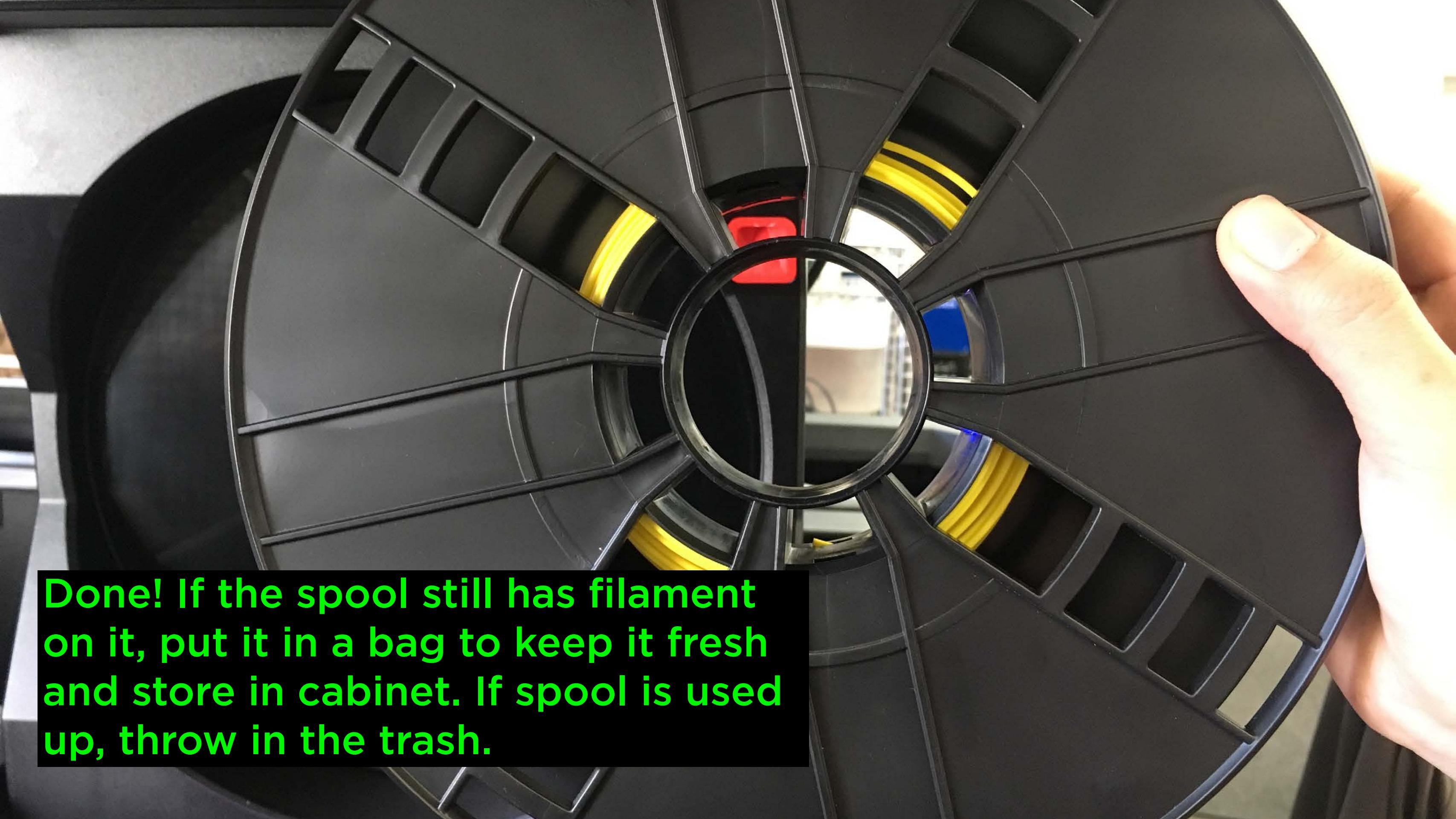
The end! Wind back on spool.



Press gently on the tabs on the spindle that holds the spool, and carefully pull the spool forward.

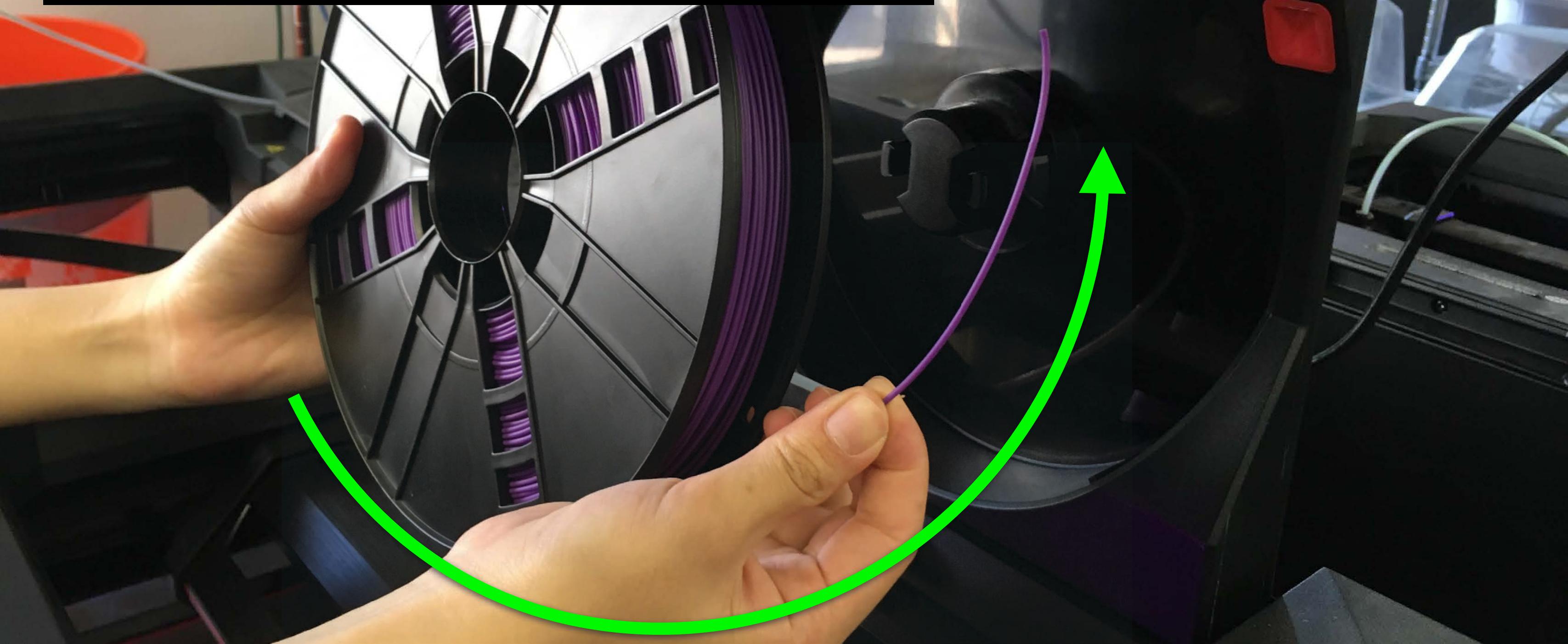


**Continue to pull the spool
until it comes off completely.**



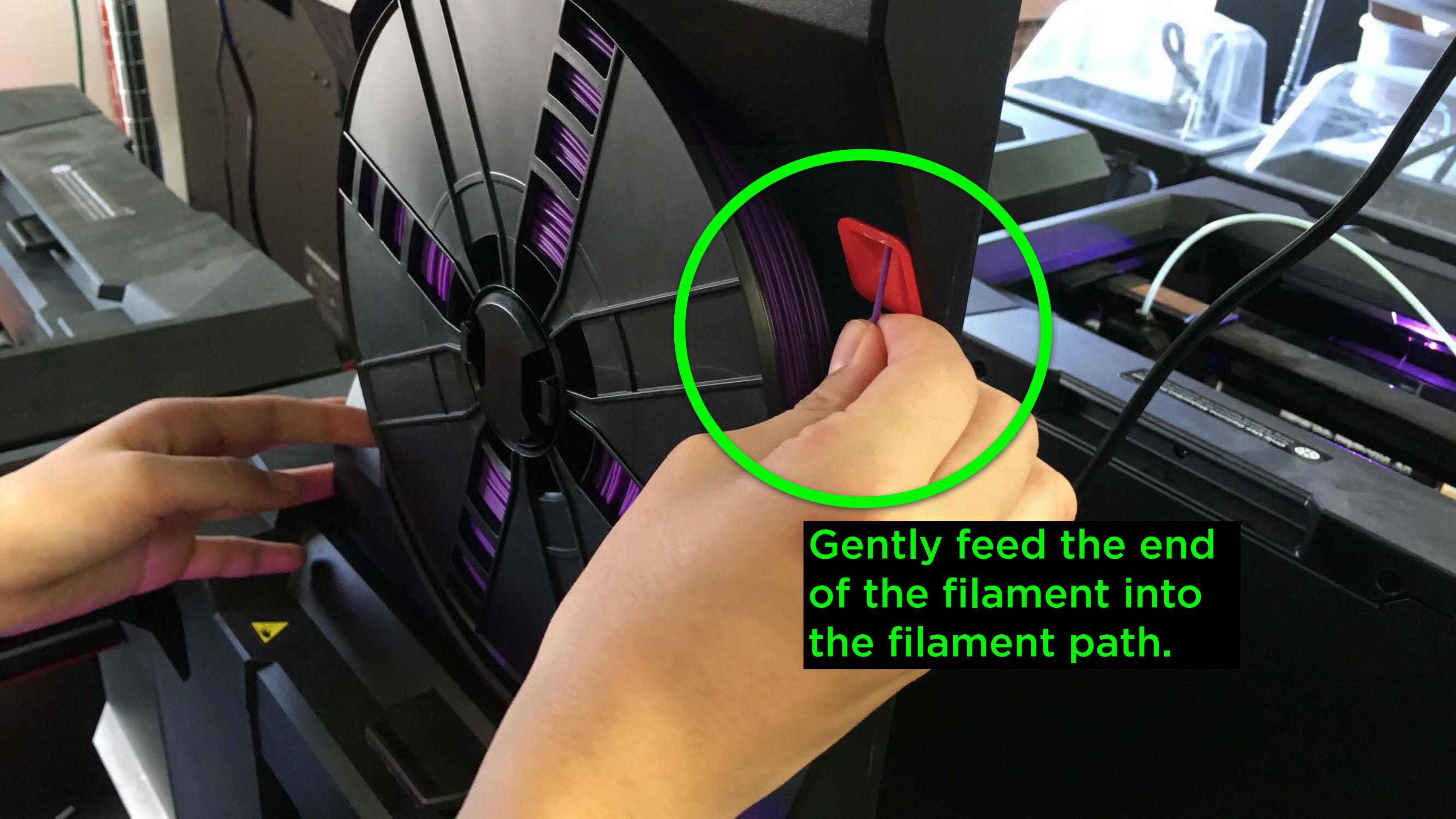
Done! If the spool still has filament on it, put it in a bag to keep it fresh and store in cabinet. If spool is used up, throw in the trash.

Now grab the new filament. Make sure that as you are facing the spool, it is unwinding counter-clockwise as shown:

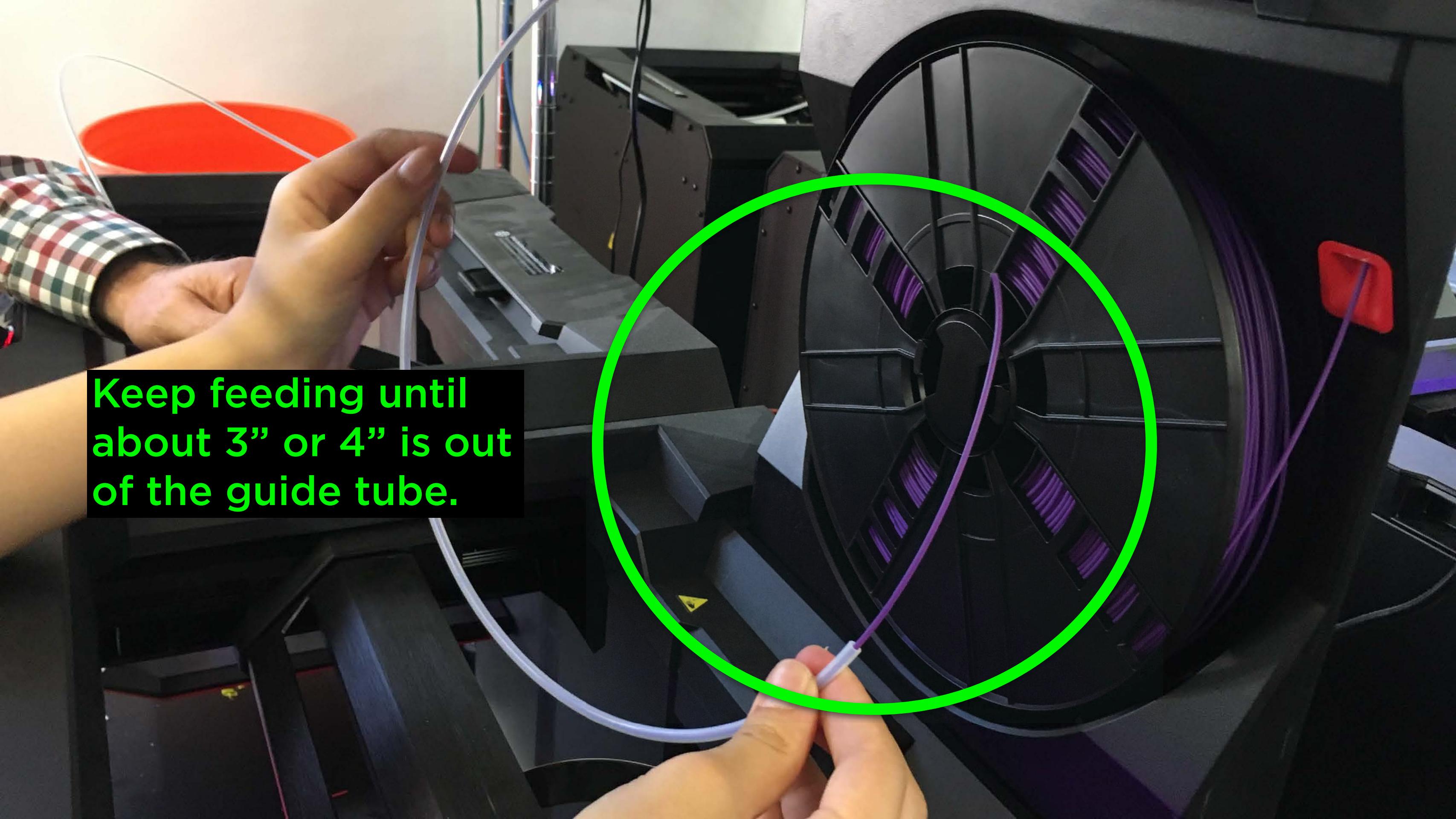




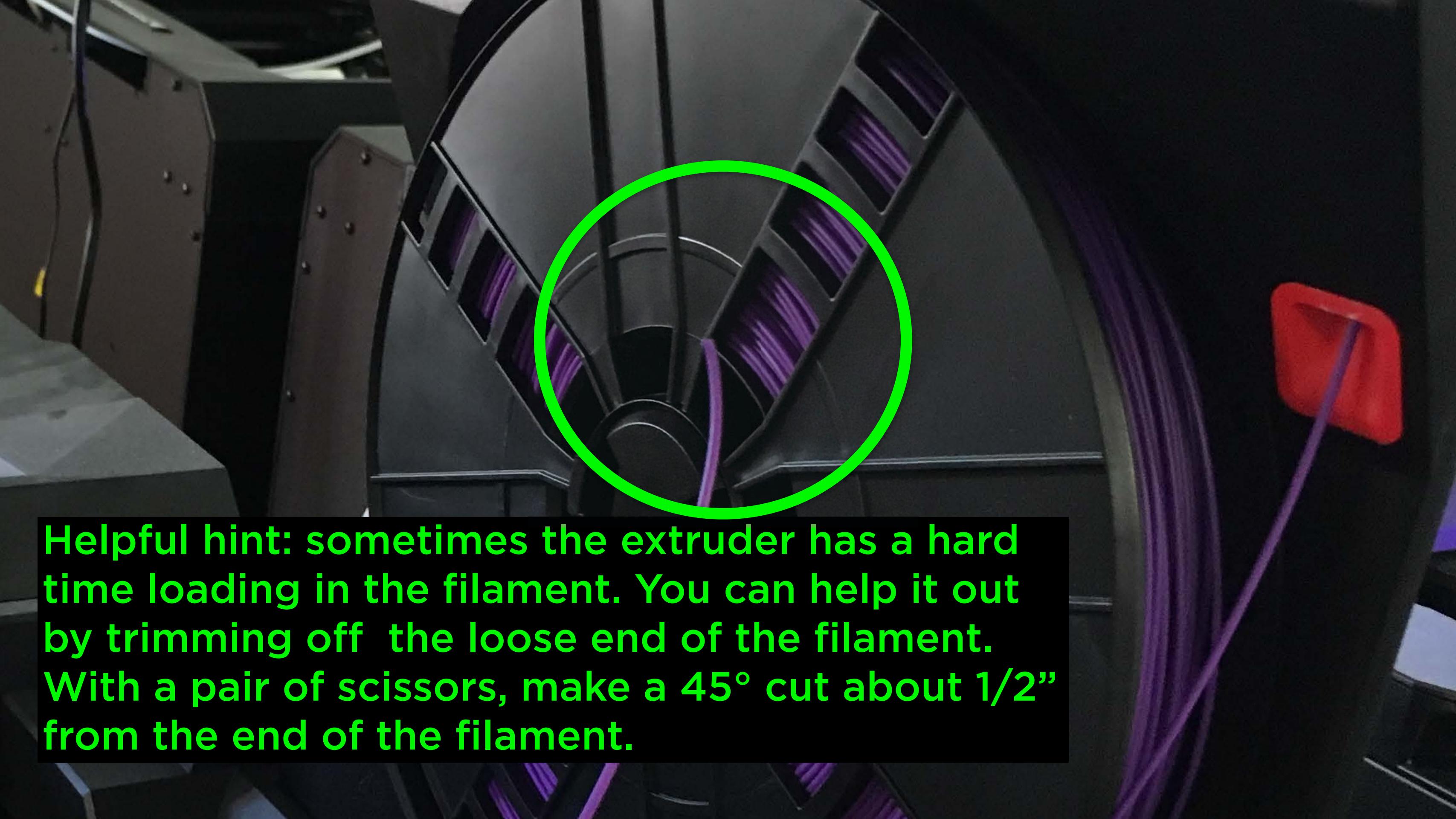
Place the spool on the spindle and push forward until it clicks into place.



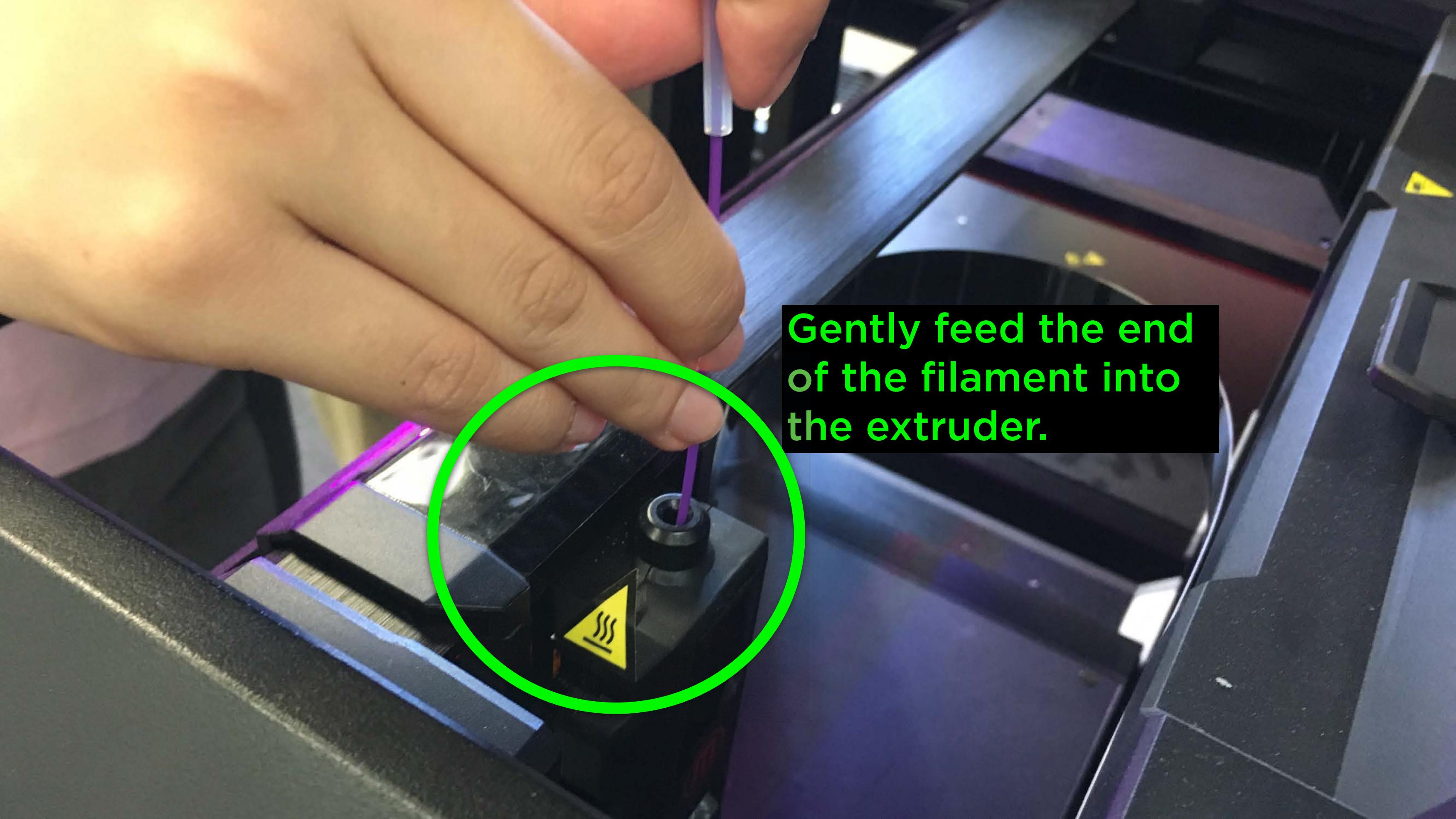
Gently feed the end
of the filament into
the filament path.



Keep feeding until
about 3" or 4" is out
of the guide tube.



Helpful hint: sometimes the extruder has a hard time loading in the filament. You can help it out by trimming off the loose end of the filament. With a pair of scissors, make a 45° cut about 1/2" from the end of the filament.



Gently feed the end
of the filament into
the extruder.

Load the filament spool holder: With one hand, hold the top of the holder, and with the other, press down on the release button. Gently lower until it locks into place.



UNLOADING FILAMENT (3/3)
UNLOADING COMPLETE

*It is now safe to remove filament from
your Smart Extruder.*

Continue

Peel Off ▾

Now hit ‘Continue.’

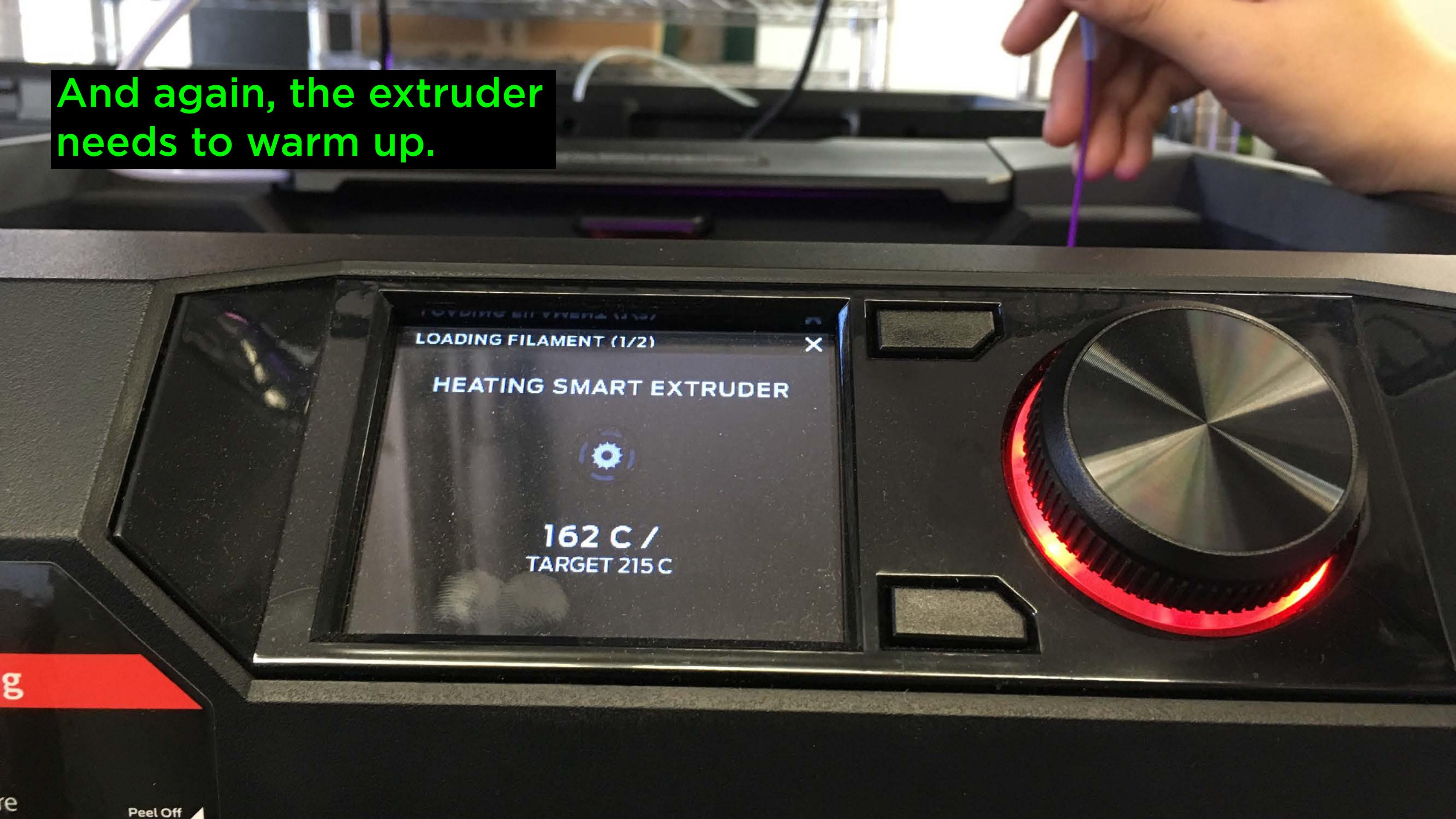
Navigate to ‘Load Filament’ and select.

FILAMENT

Unload Filament

Load Filament

And again, the extruder
needs to warm up.





As it is finishing the warmup, gently apply downward pressure to the filament (but don't force it.) You should feel the extruder grip the end of the filament and start pulling it in.

LOADING FILAMENT (2/2)

Push your filament
into the extruder until
you feel it being
pulled in.

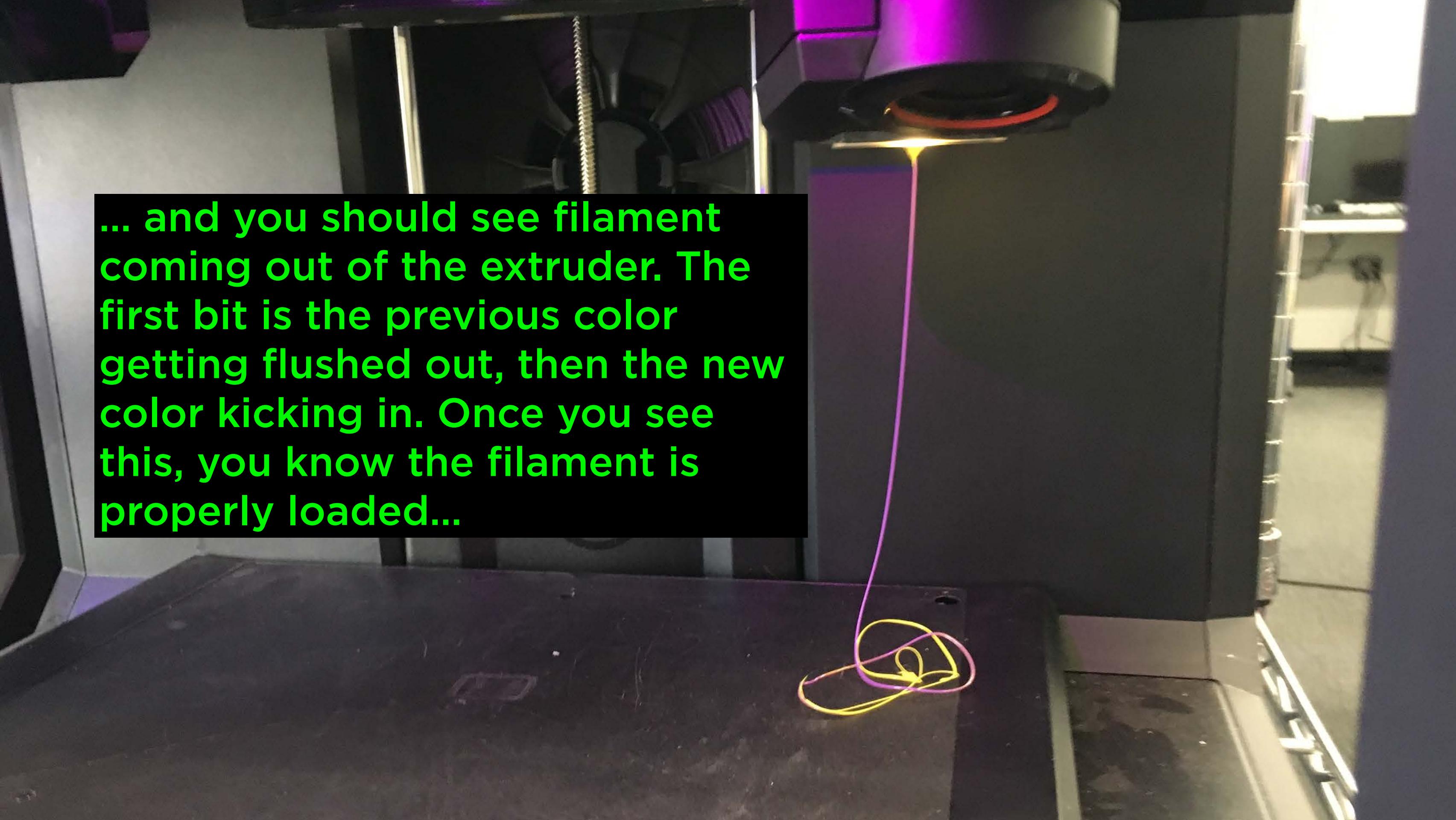
Wait until you see
filament begin to
extrude.



Filament Is Extruding

You'll see this...

... and you should see filament coming out of the extruder. The first bit is the previous color getting flushed out, then the new color kicking in. Once you see this, you know the filament is properly loaded...



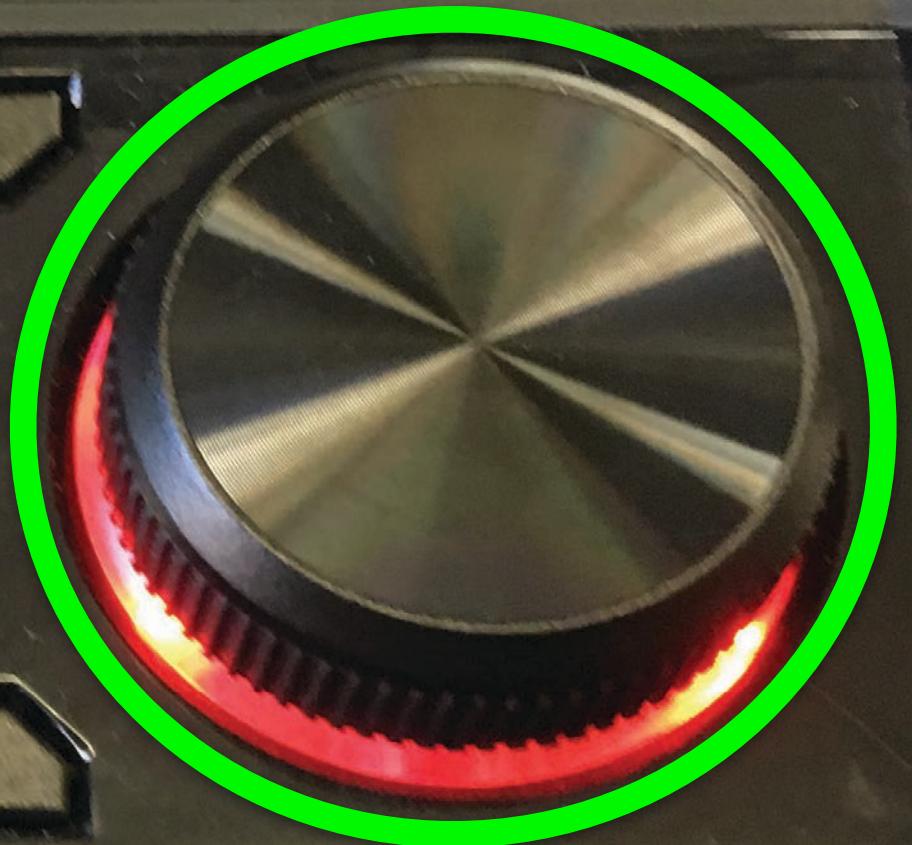
LOADING FILAMENT (2/2)

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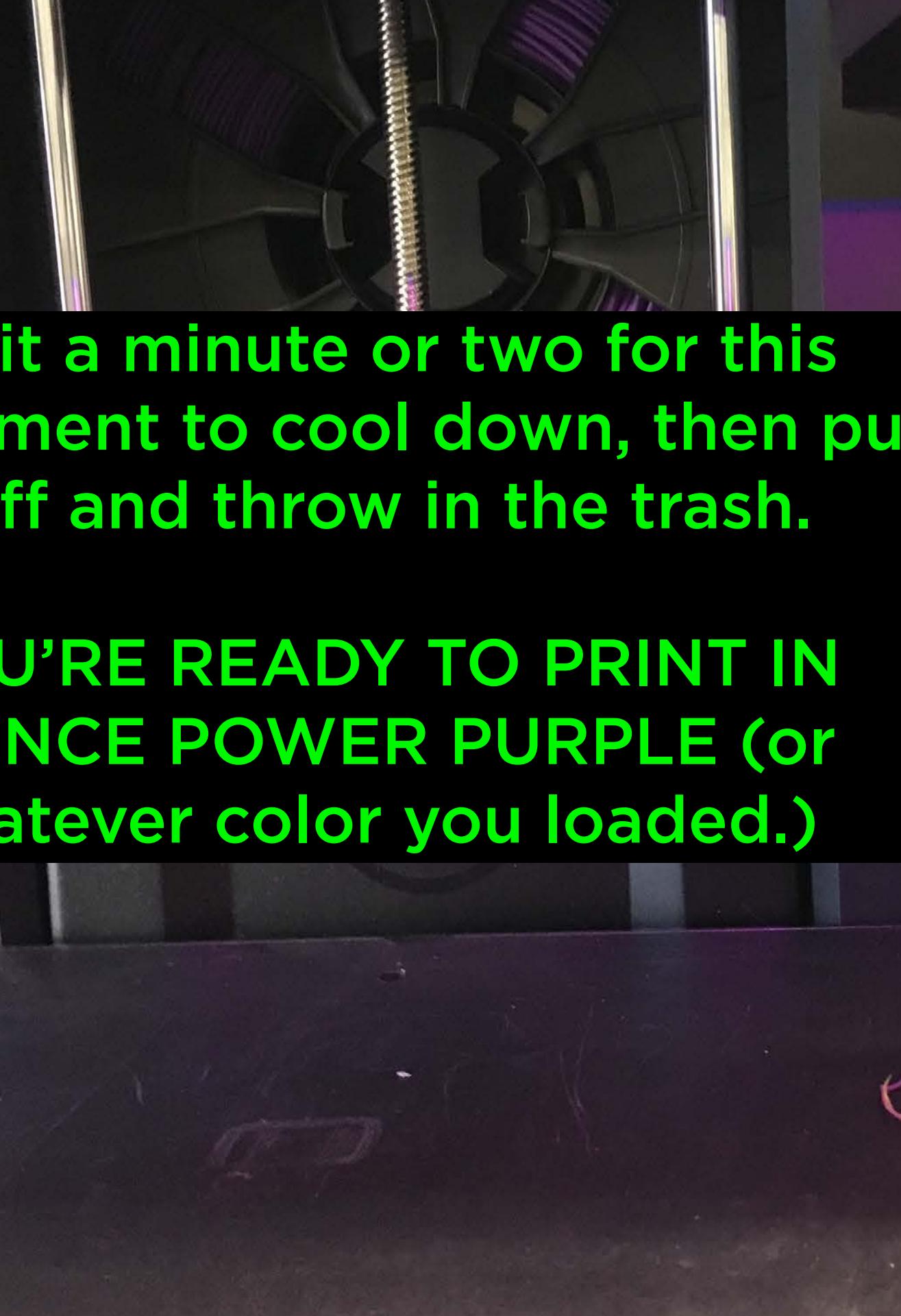
Filament Is Extruding



... then press the button to let
the MakerBot know it's done.



Press the 'back' button
to navigate back to
the 'Home' screen.

A close-up view of a 3D printer's extruder area. A spool of purple filament is mounted on the left, and a thin strand of purple filament hangs vertically from the nozzle. The printer's metal frame and some internal components are visible in the background.

**Wait a minute or two for this
filament to cool down, then pull
it off and throw in the trash.**

**YOU'RE READY TO PRINT IN
PRINCE POWER PURPLE (or
whatever color you loaded.)**

