

# DREMEL DIGILAB

## 3D45 Unclog Extruder

**⚠ WARNING** Read the Dremel 3D45 manual and these instructions before unclogging the extruder in your Dremel 3D45. Failure to comply with the warnings and instructions may result in fire, equipment damage, property damage, or personal injury.

**Always unplug Dremel 3D45 from its power before performing any service procedures.** Failure to do so may result in personal injury and equipment damage.

**Use only Dremel approved materials and components.** Use of object materials, or 3D objects other than Dremel approved object materials and genuine Dremel components may void warranty.

Repairs on the Dremel 3D45 may require the use of special tools (pulling devices and bearing press). Authorized repair centers have trained repair technicians and equipment necessary to perform these repairs.

For the location of the repair center near you, please look on our web site at [www.Dremel3D.com](http://www.Dremel3D.com) and follow the link for 'Support'.

### PRE-SERVICE PREPARATION

This document will outline the steps necessary to clear a clog in the heatsink tube assembly caused by the filament bulging up inside the tube. If the filament becomes clogged, neither loading nor unloading will be possible. Tube clogging can occur by either using an old filament that's kept in the open for a longer duration or from 3rd party filaments with lower transition temperatures.

#### Tools Required:

- Unclog tool
- Brush
- Scissors
- Pliers
- 2mm Hex bit or Hex wrench (Allen key)
- 2.5mm Hex bit or Hex wrench (Allen key)
- T10 Torx bit or screwdriver (no longer than 4 inches).

#### Preventative Measures:

In order to help avoid clogging please follow the recommendations below.

1. Only use Dremel filament.
2. Always unload the filament from the printer when not in use.
3. Always wait for the extruder to cool down see thermometer icon on screen empty.
4. Store your filament in a dry environment with a desiccant bag and clip the free end of the filament to the two holes in the spool to prevent filament getting tangled or brittleness.

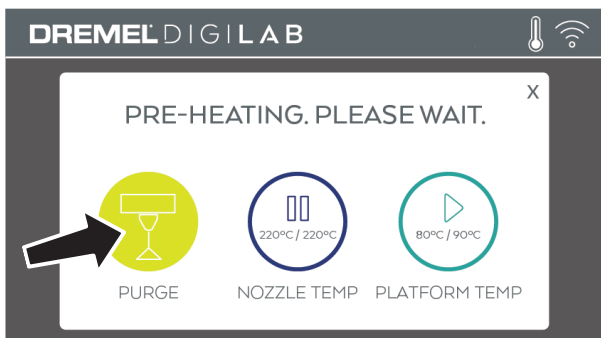
***Please call Dremel service center for help in unclogging your extruder.***

# SERVICE INSTRUCTIONS

[Please click here for Video Tutorial](#)

## Option A) Purge Filament:

1. Pre-heat the extruder, go to Tools/Pre-heat. Wait until the extruder reaches the recommended temperature for your filament then click on purge when the icons turns green. Check for filament extruding. If there is no filament coming out your nozzle, please go to the next step.

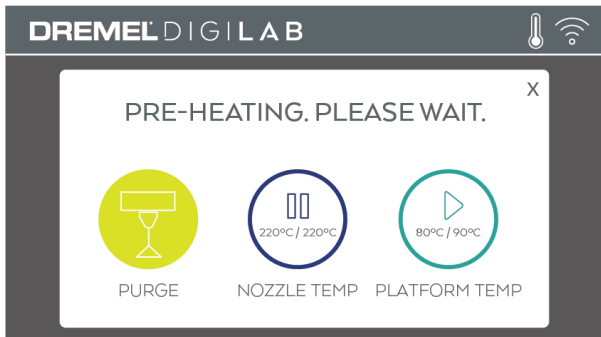


2. Go to filament, select edit/view settings and increase the temperature of the extruder by 10°C go back to preheat and purge. Check for filament extruding. If there is no filament coming out your nozzle, please go to step X.

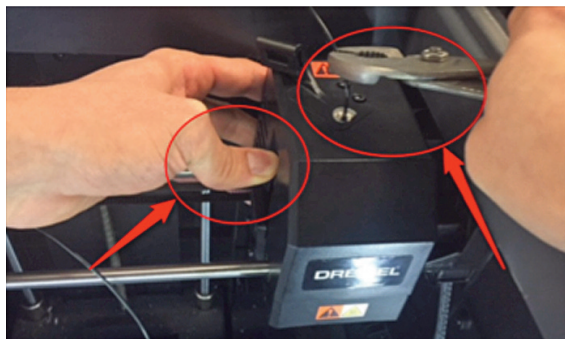
**Tip:** A good way to speed up the pre-heat process of the extruder is to click the pause icon on the screen for the platform temperature, this will allow your 3D printer nozzle to heat up faster.

## Option B) Pull Filament:

1. Pre-heat the extruder, go to Tools/Pre-heat. Wait until the extruder temperature reaches the recommended temperature for your filament.



2. Grab the filament end that is available with the pliers, push on the side lever in the extruder to release tension on the filament and pull the filament at the same time with pliers.

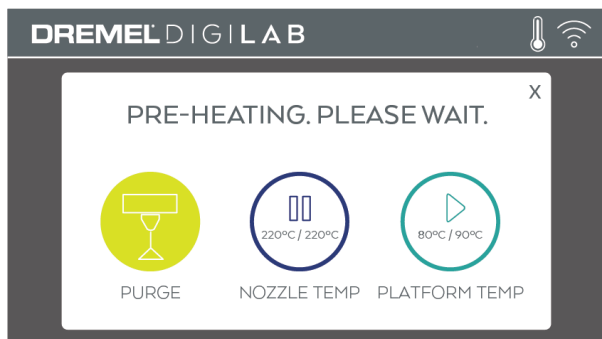


## Option C) Push Filament:

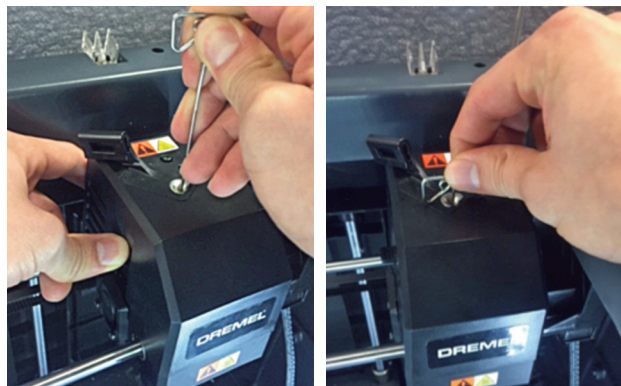
1. Cut filament.



2. Pre-heat the extruder, go to Tools/Pre-heat. Wait until the extruder temperature reaches the recommended temperature for your filament.



3. Push down on the lever on the side of extruder to release tension on the filament, and push the filament with a light force using the unclog tool. Check for filament extruding.



## Option D) Check for Clogs in Stepper Motor:

**CAUTION** Use proper anti-static precautions when performing this replacement.

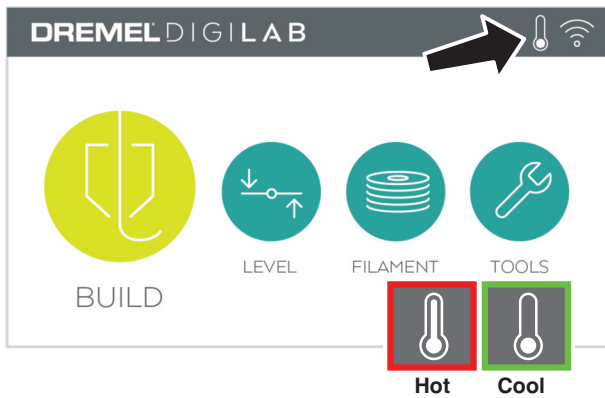
Discharge static electricity before beginning. Work on a static-free surface.

It is possible for filament to get stuck on the stepper motor, or to have a buildup of filament on the stepper motor drive gear (gear used to move filament through the extruder). To clean up the stepper motor drive gear, it is required to disassemble the extruder.

Follow the instructions below to disassembly your extruder and clean the stepper motor gear.

### 1. Bring Printer to Safe State for Service.

- Turn on the printer, and verify that the temperature icon reads cool (see thermometer icon empty), if it is not cool (full thermometer), allow adequate time for the nozzle and bed to cool.



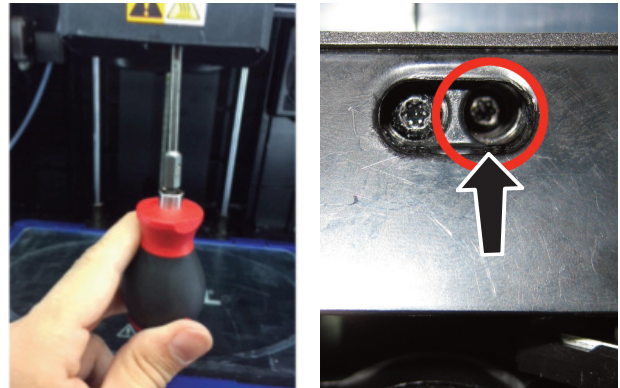
- Turn off the printer
- Unplug the printer

### 2. Remove Top Cover on the Extruder.

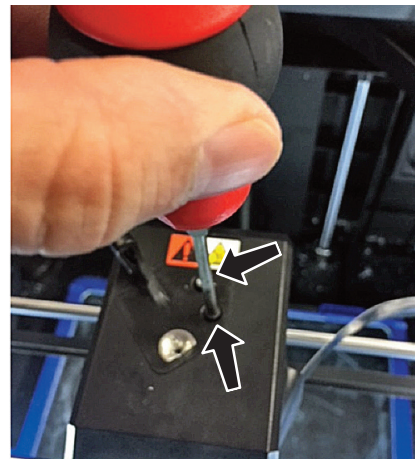
- Cut the filament just before the intake on the top of the extruder.



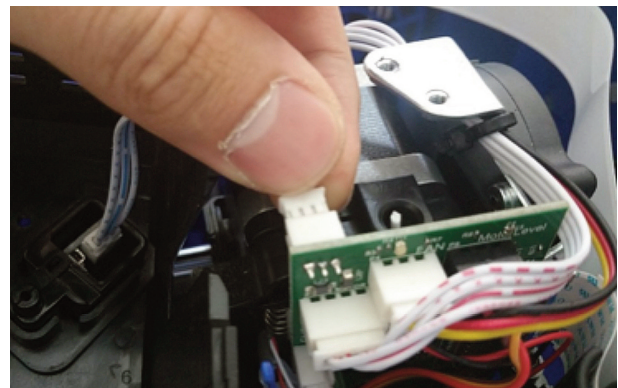
- Remove screw located on the right side of the hole using the T10 Torx screwdriver. The first picture below shows the location of the screw, the second picture a bottom view of the area where the screw is located, circled in red is the screw that needs to be removed.



- Unscrew the two screws on the top of the filament guide bracket using the 2.5mm bit or Hex wrench

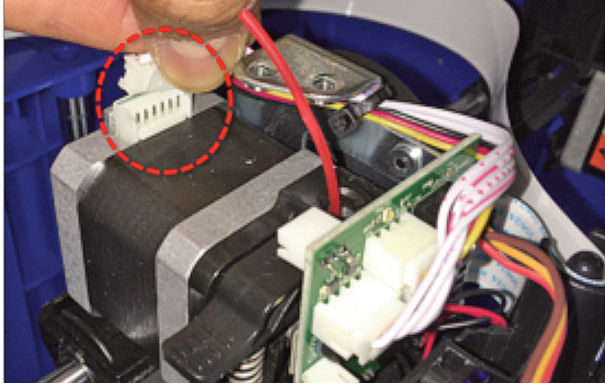


- Remove the top cover.
- Carefully unplug filament run out switch from the extruder circuit board, ensuring to pull from the plastic plug and not the wires; pulling the wires can damage the connection to the extruder. Please see picture below.

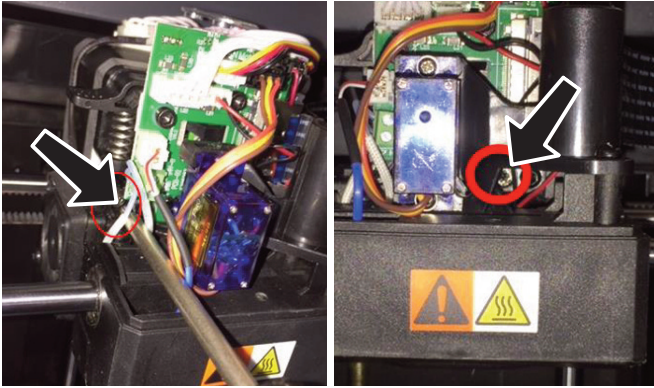


### 3. Removing the Extruder Motor.

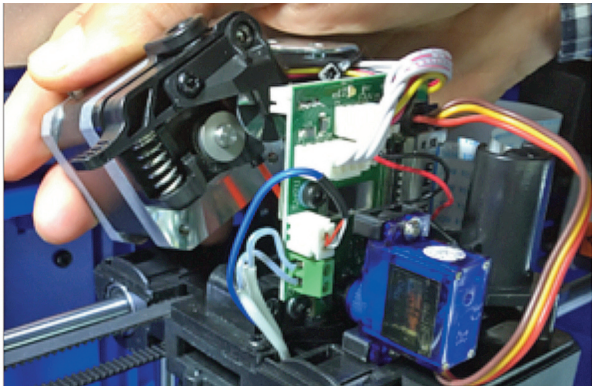
- a. Disconnect the white extruder terminal block from the extruder connector as shown in the picture below. Ensure to grab the block and avoid pinching the wires.



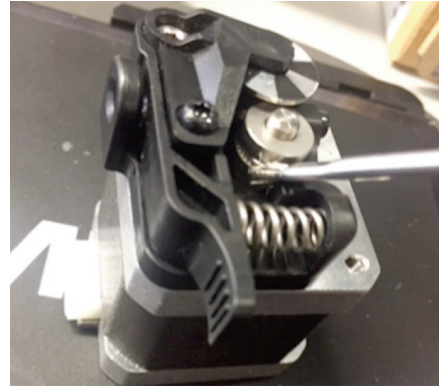
- b. Unscrew the two motor screws below using the Torx screwdriver, as shown in the picture below. Please ensure that the screws once fully unscrewed, should still be left inserted in the extruder chassis hole.



- c. Pull the extruder motor assembly away from the printer (vertically) as shown in the picture below.



4. Cleaning the stepper gear. There might be filament residue in your stepper motor gear, use your brush to clean the gear of the stepper motor.



### 5. Replace Extruder Motor.

- a. Place the extruder motor on the chassis. Extruder motor screw holes should line up with holes in the chassis.
- b. Tighten the two hex screws with 2.5mm Hex wrench. Refer picture under Step 3b.
- c. Plug in the white terminal block on the extruder connector as shown in picture under Step 3a (encircled).

### 6. Replace Top Cover.

- a. Attach the filament runout switch wires of the cover to the extruder circuit board. Refer picture under Step 2d.
- b. Place the new top cover over the extruder.
- c. Replace the two 2mm screws onto the cover. Refer picture under Step 2c.

### 7. Test the Machine.

- a. Plug in and turn on the 3D45.
- b. Navigate to "Filament" and follow the on screen instructions to load filament.
- c. Build a file on the machine to ensure the 3D45 printer is working correctly.

**Congratulations!**  
You are now ready to build. **Build On.**