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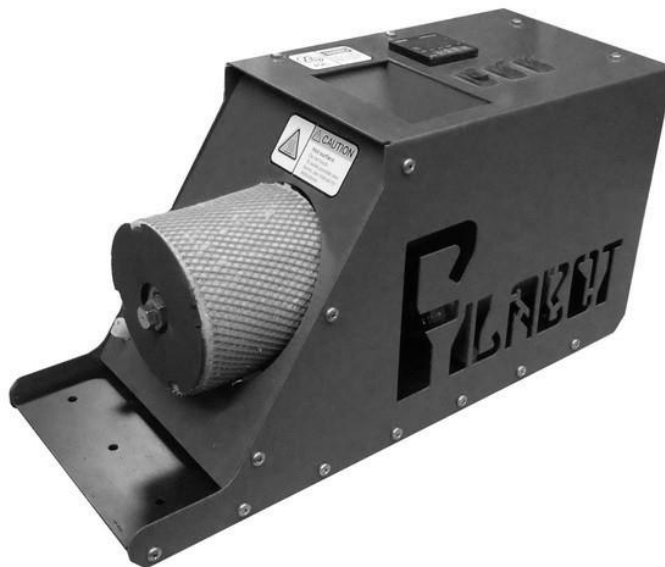
Filabot Original™ and Filabot Original EX2

Operation Manual

This manual applies to the Filabot Original™ and Filabot Original™ EX2 from Triex® LLC.

Safety

- Be sure to thoroughly read the Operator's Manual and be familiar with the machine before beginning to extrude.

- Do NOT extrude PVC plastics with this device. PVC emits toxic gases when heated.

- Use this device only to extrude plastic filament for 3D printing. No other use has been tested or approved for safety or applicability by Filabot.

- The Filabot Original™ filament extruder is designed for indoor use only. Do not use it outdoors or on wet or damp surfaces.

- Do not use the extruder if any parts are missing or damaged. If you notice any damage to the unit, unplug the device immediately and contact Filabot for assistance.

- Use the device only with the specified input power of your purchase (ex. 110V/220V Filabot Extruder). The electrical components inside are machine specific, using the device with the wrong input power is likely to damage the electrical and/or electronic components of the device.

- Do not modify or alter this device without prior specific authorization from Triex® LLC. Unauthorized modifications may impact the safety or normal operation characteristics of the device, and void the warranty.

- Never extrude a plastic unless you are absolutely certain of the type it is. Never mix plastic types.

Contact Filabot with any questions or concerns before installing, using, adjusting, or maintaining the device.

General Specifications and Application

Filabot Original™ is a desktop filament extruding system, which makes plastic filament for 3D printers.

The Filabot Original™ filament extruder produces plastic filament in 3 common diameters (1.75mm, 2.85mm, and 3mm).
The Filabot Original™ makes filament from standard, widely-available plastic pellets, or from recycled plastics from a variety of sources.

Inputs: The following plastics are the only verified plastics that can be extruded from the Filabot Original or EX2. We are constantly testing new plastics, and will add them to the list as we verify that they can be processed.

- PLA (Polylactide)
- ABS (Acrylonitrile Butadiene Styrene)
- HIPS (High Impact Polystyrene)
- ULTEM
- PC (Polycarbonate)

Electrical requirements: 110/115/120 VAC, 60-cycle, single-phase power with supplied power cord; or 220/230 VAC, 50-cycle single-phase power with supplied power cord, and country specific adaptor.

Power usage: The Filabot™ will use about 400~600 watts, depending on heater temperature settings.

Output: 3mm or 1.75mm diameter plastic filament, using provided interchangeable nozzles

Dimensions: 17in x 7in x 9in (43cm x 18cm x 23)

Weight: ~28 pounds (13kg)

Setup

Place the Filabot Original™ on a secure, stable supporting surface at least as large as its base. Extra space will be useful as a spot for tools and supplies. The support should be at a convenient height for operator use. The support must be located no further away from an electrical outlet than the length of its power cord.

Do not place anything against the Filabot Original™. It requires unrestricted airflow, for cooling, proper operation and to keep the electronic components from overheating.

As the controls and input hopper are located on the top of the device, do not place any other items on top of the enclosure. Do not store anything inside the device, as this could result in mechanical or heat-related issues.

Operation

PLASTIC NOTE: When using commercial pellets, rely on the maker's identification of the type of plastic. When using recycled plastic, check the markings on the item(s) to determine which type of plastic you are using. Do not mix types of plastic, as this may cause issues extruding or affect processing times, both in the extruder and in the printer.

The following is a table of general processing temperatures. Notice that the processing temperature may not be the same as the melt temperature.

Plastic Type	Processing Temperature
PLA	150ºC - 190ºC
ABS	160ºC - 190ºC
HIPS	190ºC - 210ºC
Ultem	350ºC - 400ºC
PC	170ºC - 220ºC

NOTE: The temperature ranges in the chart are approximate. It will require some trial and error to determine the right processing temperatures as the temperature you are extruding in will affect it. Keep notes of actual temperature settings with different types of plastics, along with other operational notes, to develop a procedure that works well in your application.

Break in Steps: These steps need to be followed with a new Filabot Original extruder to ensure proper filament extruding. These steps are to clean out the extruder from the manufacturing process. This should be done in a well ventilated area. For general cleaning steps look at the Cleaning and Maintenance section of this manual.

Step 1: Install the 3mm Bolt Nozzle. Use a socket to tighten the bolt into the end of the extruder. This can be done with the extruder all the way off.

Step 2: With all switches off, flip the "Main Power" and "Temperature Controller" switches from "OFF" to "ON" the temperature controller will now turn on.

Step 3: Press the "Up" or "Down" Buttons. This will make a dot blink in the bottom of the screen near the green numbers.

Blinking Dot

Step 4: Move the decimal, using the Decimal Place Selector, to the place that you would like to adjust the temperature.

Step 5: Adjust the desired temperature using the "Up" and "Down" buttons.

Decimal Selector "DOWN" and "UP" adjustment

"SET" Button x2

Step 6: Once the desired temperature is set, press the "Set" button to lock it in. Pressing once will change the green numbers to a countdown of the relay, pressing it again will change to the display of the desired temperature. Repeat process to change or lower temperature.

Step 7: Wait for the extruder to reach the set temperature, typical warm up time is roughly 30 minutes.

Step 8: Once the desired temperature is reached fill the hopper of the extruder about half way, then flip the "Extrude" switch from "OFF" to "ON," This will start turning the feed screw. It will take a few seconds for the pellets to be fed towards the nozzle. Light smoke may come out of the extruder at this point. This only occurs during the break in procedure.

Step 9: As filament starts to extrude guide it to the ground so that it can coil up. This filament will most likely have debris and contaminants in it which is left over from the manufacturing process. Do not use this filament in your 3D printer. Extrude all the pellets that were put in the hopper, if the filament coming out still looks to have contaminates after this step, extrude more pellets to further clean the system.

Step 10: Discard the "break in" filament that was just extruded.

Filament Production:

Step 1: Select the nozzle for the size filament you desire to make. ANYTIME after first use will require you to heat the system up before switching nozzles, doing otherwise could damage the machine or parts. Once the extruder is heated up, and with the "Extrude" switch off, you can remove the nozzle with a wrench. Bear in mind you are working with hot materials, BE CAREFUL when removing the nozzles, and never touch with your hands. Once the nozzle is out replace it with your desired size.

Step 2: With extruder at the correct temperature for the plastic that is being extruded add pellets to the hopper and flip the "Extrude" switch from "OFF" to "ON."

Step 3: If using the ground coil method place the extruder so that the front, where the filament comes out, is next to the edge of a table. Table should be between 24in to 40in tall. If using the spooler system, refer to the spooler operators manual on how to set it up.

Step 4: Slowly guide the filament into its natural spiral, either direction works fine. The start of the spiral is the hardest part, but once it has spiraled around twice it generally will take care of itself and coil

Step 5: After the filament has coiled a few more times, carefully measure the filament diameter from the filament in the coil. If filament is too large increase the temperature of the of the extruder by a few degrees, of if the filament is too small lower the temperature a few degrees. Dial this in for your application.

Step 6: Once enough filament has been made to print the desired part, shut off the extruder. From here the filament can either be spooled or fed directly into the 3D printer.

Care and Maintenance

The Filabot Original™ requires only minimal occasional maintenance, consisting of cleaning the device as needed, vacuuming out the hopper or purging out the plastic inside the extruder chamber.

Check for any signs of damage, wear, or deterioration. If there are any signs of wear, overheating, or deterioration, contact Filabot for guidance on how to proceed.

Troubleshooting

There are some common issues and questions we receive from people about the Filabot. Most of the time the fixes can be done yourself and is not a problem with the actual machine. Here are the most common issues and solutions to them:

Problem	Possible Issue	Solution
Extruding slow	-Low temp.	Raise temp.
Not Extruding	-Low temp -Bridge	-Raise temperature -Raise temp. to 20ºC-50ºC over the extrusion temperature. Let it stand, begin trying to extrude again
Bubbles in filament	-Too high temp. -Damp plastic	-Lower temp. -Dry Plastic
Filament Diameter -Too small or too big	-Too small: Temperature too high -Too large: Temperature too low	Small- Raise temperature a couple degrees Large- Lower temperature a couple degrees *re-check after a couple min.

If problems persist, please call Filabot for further assistance.

Warranty Information

The Filabot Original and Filabot Original EX2 both have a one year warranty. This included replacement of any part that breaks. Warranty is void if system is opened up. Only Triex LLC technicians are allowed to service the internal parts. For more information use Filabot.com

Parts, Supplies, and Accessories

Filabot provides replacement parts, supplies, and accessories to provide the best user experience. If you have any questions or need any special parts please let us know. The following is a list of the general items that we have available.

- Pellets
- Colorants
- Filabot Reclaimer
- Filabot Spooler
- Hopper Extension