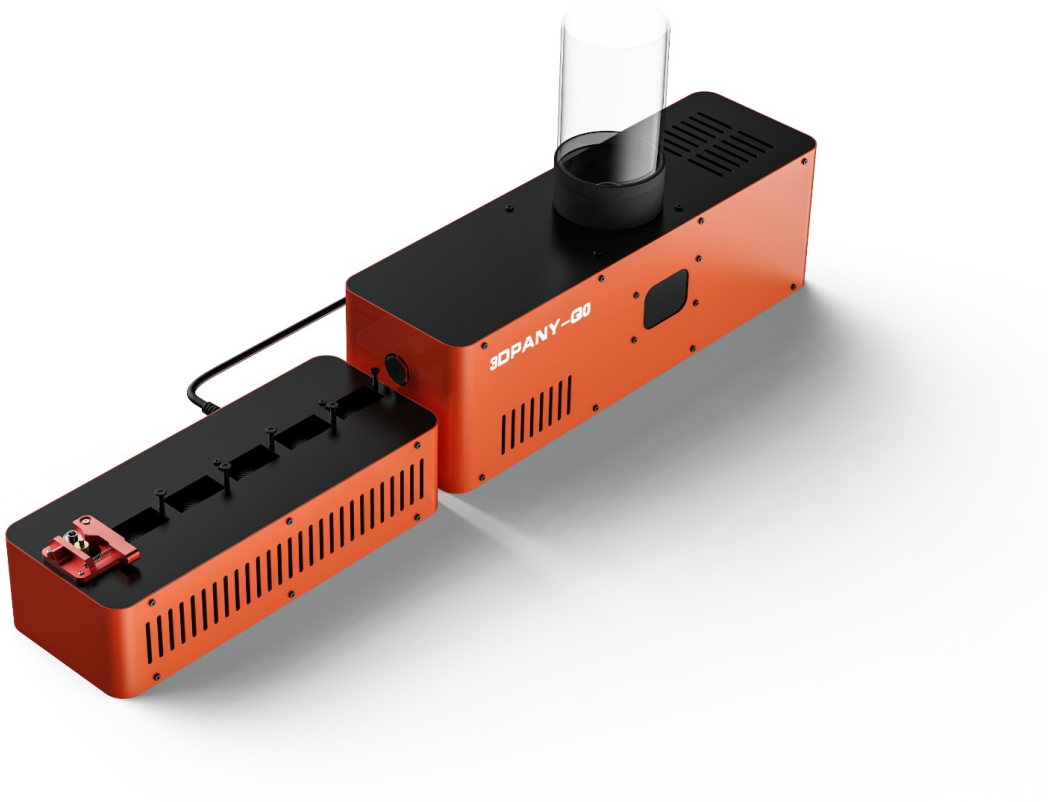
3DPANY

Desktop Filament Extruder User Manual

Model: Q0



Read this manual carefully before installation, operation, maintenance, and troubleshooting. Keep this manual for future reference.

Version: Q0-EN-V1.0 | Product: Desktop Filament Extruder

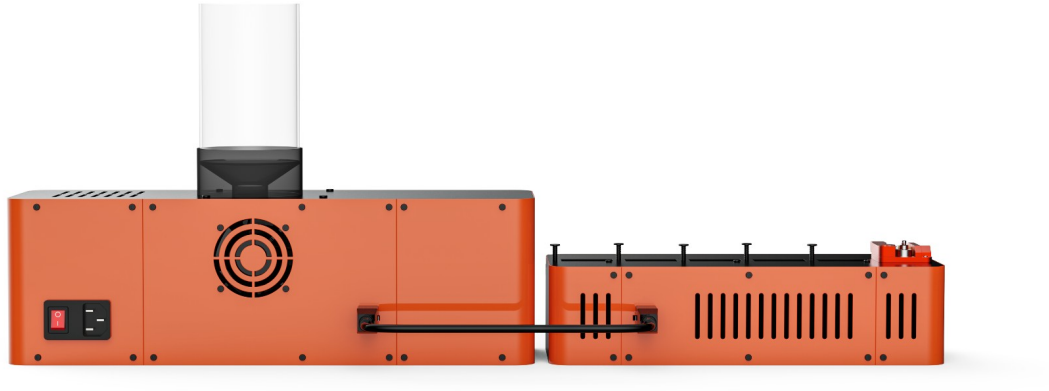
1. Product Overview

The 3DPANY Q0 is a desktop filament extruder designed for turning compatible raw materials or prepared plastic waste into 3D printing filament. It uses a separated extrusion and traction/winding layout to make operation, diameter adjustment, and maintenance easier.

The machine supports common 3D printing materials with processing temperatures below 300°C. Before use, always verify the material type, model, and melting temperature range.



Front view of 3DPANY Q0



Rear view with power inlet, fan, and cable connection

Key Use Notes

- Only process clean materials that are compatible with the selected temperature setting.
- Do not feed metal, glass, stones, screws, wire, or other hard foreign objects into the extruder.
- The extruder motor cannot start until the machine has reached the set temperature.

2. Technical Specifications

Item	Specification
Product Name	3DPANY Desktop Filament Extruder
Model	Q0
Dimensions	Length 700 mm × Width 120 mm × Height 280 mm
Power	300 W
Hourly Output	300 g/h
Maximum Temperature	300°C
Supported Materials	PLA, ABS, PETG, TPU, PC, PET, PA, and other materials below 300°C
Supported Feedstock Size	0.1-5 mm raw material or prepared recycled waste
Voltage Options	110 V or 220-240 V
Extrusion Diameter	1.75 mm / 2.85 mm / 3.0 mm
Screw Type	Single screw
Temperature Control	Two independent temperature-control zones
Effective Extrusion Speed Range	50%-100%

Before Operation

- Confirm the exact material type and its recommended melting/processing temperature.
- A temperature set below the material melting temperature may overload the extruder and damage the equipment.
- A temperature set too high can make the output too liquid and prevent the filament from forming properly.

3. Safety Precautions

Warning

- Incorrect temperature settings, foreign objects, or long motor stalls may cause equipment damage.
- Do not touch hot parts during operation. The heating area and nozzle can reach high temperatures.
- Keep children and unrelated personnel away from the machine during operation.

3.1 Power Safety

- Use the correct voltage version: 110 V or 220-240 V. Confirm the machine label and local power supply before connection.
- Use a grounded power outlet and keep the power cord away from heated parts, sharp edges, and moving mechanisms.
- Turn off the machine and unplug it before maintenance, cleaning, disassembly, or long periods of non-use.
- Do not operate the machine in wet environments or near flammable materials.

3.2 Material and Feeding Safety

- The feedstock must be clean and compatible with extrusion below 300°C.
- Never feed metal, glass, stones, sand, screws, blades, wire, or other foreign objects. These objects can damage the screw, barrel, nozzle, and motor.
- If the material is wet, dry it before extrusion. Wet material may cause bubbles, unstable diameter, or poor surface quality.
- Do not force-feed large pieces. Prepare raw material or waste into 0.1-5 mm pieces before feeding.

3.3 Operating Safety

- The extruder will not start until the set temperature is reached. This protects the motor and screw from overload.
- If the extruder stalls or makes abnormal noise, stop extrusion immediately and check the material type and temperature settings.
- Do not leave the equipment unattended for long periods while it is heating or extruding.

4. Operation Procedure

Follow the procedure below for normal extrusion. Settings may vary depending on material type, additives, recycled content, and moisture level.

Step	Action	Description
1	Prepare material	Confirm the material type/model. Dry the material if needed. Make sure the feedstock size is 0.1-5 mm.
2	Check the machine	Confirm that the nozzle, screw, hopper, cable, and traction/winding unit are correctly installed.
3	Connect power	Connect the correct voltage and make sure the machine is placed on a stable, flat surface.
4	Set temperatures	Set the two heating zones according to the material melting/processing temperature.
5	Preheat	Wait until the actual temperature reaches the set temperature. The extruder cannot start before this condition is met.
6	Start extrusion	Start the screw motor and set the extrusion speed within the effective range of 50%-100%.
7	Guide the output	When molten plastic starts to exit the nozzle, guide the filament through the traction/winding path.
8	Adjust diameter	Keep extrusion speed stable and adjust traction speed until the required filament diameter is reached.

4.1 Temperature Setting

- Always identify the material type, model, and recommended melting temperature before heating.
- Do not set the temperature below the material melting temperature. Low temperature may cause high resistance, motor stall, and equipment damage.
- Do not set the temperature excessively high. Overheating can make the output too liquid and prevent filament formation.

4.2 Extrusion Speed

- The effective extrusion speed range is 50%-100%.
- For stable filament, avoid frequent large changes to extrusion speed after the extrusion flow becomes stable.
- When adjusting filament diameter, keep extrusion speed unchanged and adjust traction speed instead.

5. Filament Diameter Adjustment

Filament diameter is mainly adjusted by controlling the balance between extrusion speed and traction speed. For consistent diameter, first stabilize the extrusion temperature and extrusion speed, then adjust traction speed.

Condition	Adjustment	Result
Diameter too thick	Increase traction speed	Faster traction stretches the filament more, making the diameter thinner.
Diameter too thin	Decrease traction speed	Slower traction stretches the filament less, making the diameter thicker.
Diameter unstable	Check temperature, moisture, feedstock consistency, and traction path	Dry material and stable feedstock help improve diameter consistency.

5.1 Adjustment Method

- Keep the extrusion speed unchanged during diameter adjustment.
- Adjust only the traction speed to change filament thickness.
- Higher traction speed produces thinner filament.
- Lower traction speed produces thicker filament.
- After each adjustment, wait for the output to stabilize before measuring again.

Recommended Practice

- Make small adjustments and measure the filament repeatedly.
- Keep the filament path straight and avoid sudden pulling or bending.
- Use dry, clean, and uniform material for better diameter stability.

6. Common Problems and Solutions

Problem	Possible Cause	Solution
Bubbles in extruded filament	Material contains moisture or volatile components.	Dry the material before extrusion. Confirm the drying requirement for the specific material.
Filament cannot be pulled into shape; output is almost liquid	Temperature setting is too high.	Reduce the set temperature gradually until the output can form a stable filament.
Extruder motor stalls	Material temperature setting is incorrect, usually too low for the material being processed.	Immediately turn off the extruder. Confirm the material type/model and melting temperature before restarting.
Diameter is too thick or too thin	Traction speed is not matched to the extrusion flow.	Keep extrusion speed stable and adjust traction speed. Faster traction makes filament thinner; slower traction makes filament thicker.
Surface quality is rough or inconsistent	Moisture, contaminated material, unstable temperature, or uneven feedstock.	Dry and clean the material. Check temperature stability and feedstock size consistency.

Important Motor Stall Warning

- If the extruder stalls, stop the extruder immediately.
- Long motor stalls can damage the motor, screw, barrel, or control system.
- Restart only after confirming the material type, material model, and correct melting temperature range.

7. Maintenance and Care

7.1 Routine Cleaning

- After use, clean residual material according to the material characteristics and the machine status.
- Keep the hopper, feed area, traction path, and exterior clean.
- Do not use corrosive liquids, excessive water, or conductive liquids to clean the machine.
- Before cleaning, turn off the machine and allow hot parts to cool to a safe temperature.

7.2 Inspection

- Regularly check the power cord, connectors, screws, cable, fan, and traction/winding structure.
- If abnormal sound, smell, vibration, motor stall, or overheating occurs, stop operation and inspect the machine.
- Replace worn or damaged parts before continued use.

7.3 Storage

- Store the machine in a dry, clean, and ventilated place.
- Keep raw materials and recycled waste sealed to avoid moisture absorption.
- Do not place heavy objects on top of the machine.

8. Warranty Policy

Warranty Item	Warranty Period
Complete Machine Warranty	1 year

The complete machine is covered by a one-year warranty. Damage caused by incorrect temperature settings, foreign objects such as metal or glass, improper voltage, unauthorized modification, or operation outside this manual may not be covered.

9. Important Notice

- This manual is intended as a general operation guide for the 3DPANY Q0 desktop filament extruder.
- Material processing temperature can vary by brand, model, additives, colorants, recycled ratio, and moisture level. Always confirm the actual material requirements before operation.
- The user is responsible for selecting compatible materials, using correct temperature settings, and preventing foreign objects from entering the machine.
- 3DPANY may update product appearance, structure, software, or accessories without prior notice. The actual product shall prevail.

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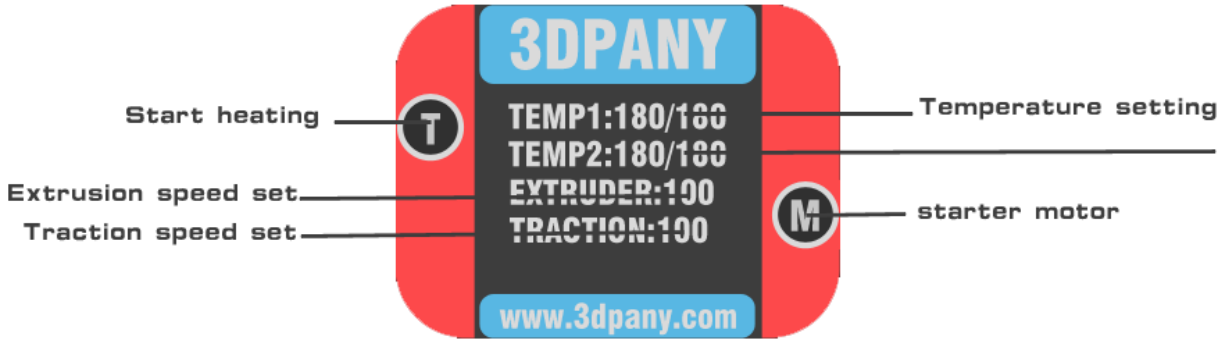
Desktop 3D Printing Filament Recycling Solution



Recycle compatible 3D printing waste and raw materials into usable filament.

Appendix A. Control Panel Interface

The control panel is used to set heating temperature, extrusion speed, and traction speed, and to start heating and the motor.



Q0 control panel layout and button functions

Item	Function
T button	Start heating. Set the required temperatures first, then press the heating button.
Temperature setting	Set TEMP1 and TEMP2 according to the material type and its melting temperature range.
EXTRUDER	Set extrusion speed. Recommended effective range: 50% to 100%.
TRACTION	Set traction speed. Keep extrusion speed unchanged and adjust traction speed to control filament diameter.
M button	Start the motor/extrusion after the machine reaches the target temperature. The motor cannot be started before the set temperature is reached.

Operating Notes

- Always confirm the material type, grade/model, and melting temperature before setting TEMP1 and TEMP2.
- If the temperature is set below the melting temperature of the material, the screw may stall and the machine may be damaged.
- Never feed metal, glass, or other foreign objects into the machine.
- If the extruded filament contains bubbles, dry the material before extrusion.
- If the output is too soft or cannot be pulled into filament, reduce the temperature setting appropriately.