

Filament Recycling Extruders (for 3D print waste)

DT Workshop Equipment Reference — D&T / STEM resource for school workshops | 3D Printing, Laser & CNC

Filament recyclers shred failed prints and waste PLA into granulate and extrude it back into fresh 1.75 mm filament, closing the 3D printing waste loop. Desktop systems teach circular design and sustainability in the print lab.

Key Features

- Shredder and extruder units
- 1.75 mm filament output
- Temperature-controlled extrusion
- Spool winding systems
- Filament consistency feedback

Typical Uses in the Workshop

- Recycle failed prints and supports
- Produce fresh filament from waste
- Teach circular economy principles
- Reduce material costs

Safe Operation

1. Sort and shred the waste plastic
2. Dry the granulate before extrusion
3. Extrude at the set temperature
4. Measure the filament diameter
5. Wind it onto spools evenly

SAFETY NOTES

- Extruders are hot - keep hands clear
- PLA fumes irritate - ventilate the area
- Do not recycle unknown plastics
- Clean the hopper with power off
- Store filament dry after spooling

Maintenance & Consumables

- Clean the extruder screw and nozzle
- Check the shredder blades
- Replace worn heater parts
- Calibrate the diameter sensor
- Keep the granulate dry

Specification & Buying Notes

Desktop recycle systems suit a science or engineering club rather than a whole class. Quality extruders keep diameter consistent; cheap ones produce unusable filament.