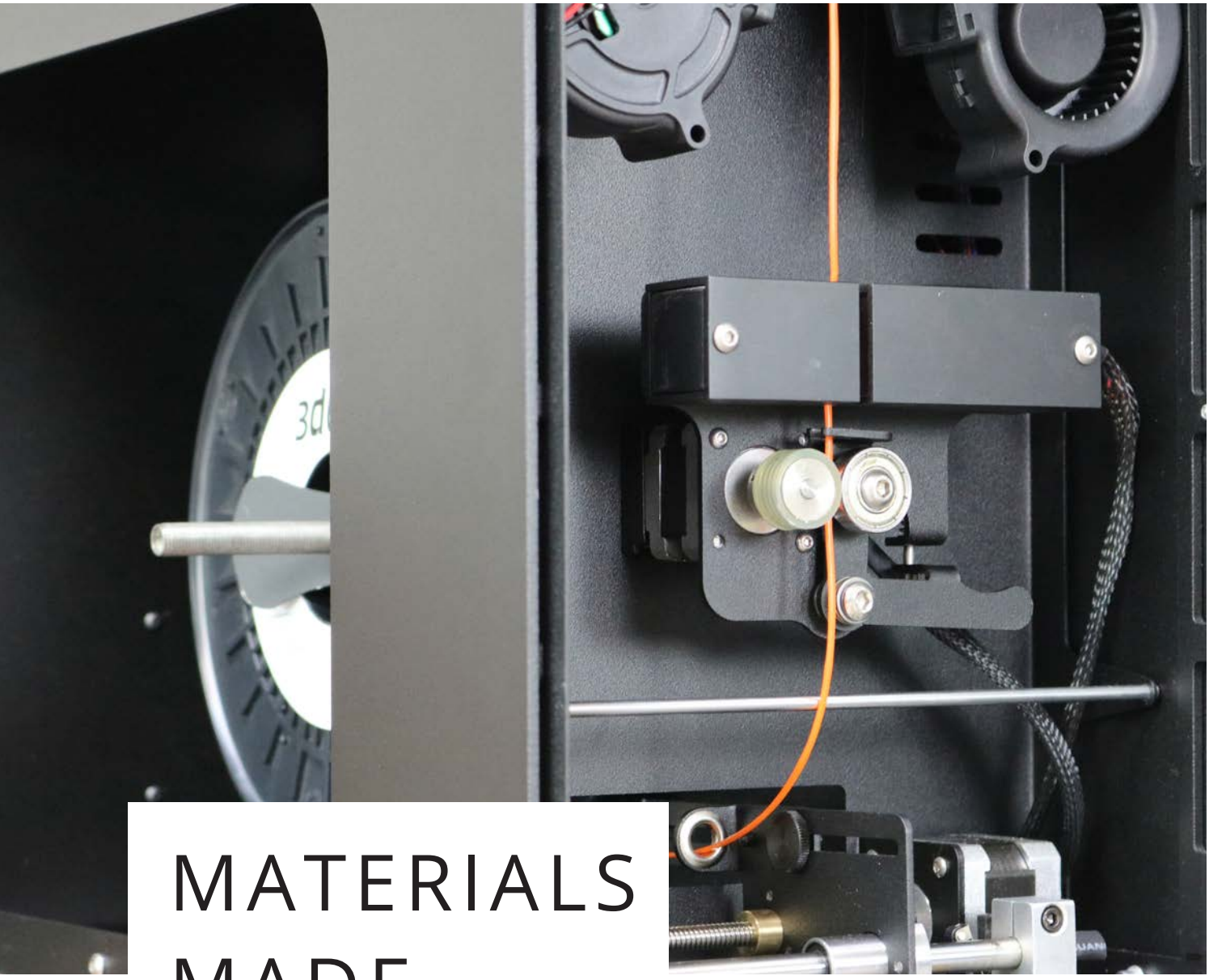
3devo's PRODUCTS AND SERVICES

FILAMENT EXTRUSION

WITHIN REACH

3devo

MATERIALS MADE **SIMPLE.**



MATERIALS MADE **SIMPLE.**

3devo is a young high-tech engineering company based in The Netherlands with a mission to empower innovators and creators around the globe. By providinging a filament extrusion ecosystem - this allows everyone to get the most out of their projects whether it’s for research, education, experimentation or manufacturing.

Innovators no longer have to depend on business schedules and unreliable suppliers, but instead, take matters into their own hands.

3devo makes working with materials easier than ever before.

esa

CASE STUDY

A race towards groundbreaking discoveries

An agency that explores new materials and technologies for space applications, requires the freedom to experiment and innovate - without wasting resources in the process. 3devo was able to bring freedom and efficiency to ESA's research and development procedure with the Composer 450 Filament Maker.

THEIR CHALLENGE

Spaceship EAC researchers constantly work towards enhancing the current capabilities of ESA's spaceflight programs. Researchers use 3D printing to prototype ideas for different projects. Typically, they use only small quantities of printing filament with specific properties. The low demand for these custom materials made it difficult to source.

OUR SOLUTION

By adding the Composer 450 Filament Maker to their setup, Spaceship EAC ganined the ability to develop 3D printing filament in-house. Our solution supports experimentation with different polymers - serving as the perfect solution for small-scale testing.

OVERALL IMPACT

ESA researchers have successfully used the extruder to develop custom quantities of **PLA** and **PEKK** based filaments, to print them under vacuum, and to recycle these materials in a 3D printing closed-loop cycle.

"Our 3devo filament maker has met our expectations and the buying experience was so quick, that we were able to get started immediately"

— *Stefan Siarov, Spaceship Team Member at EAC/ESA*

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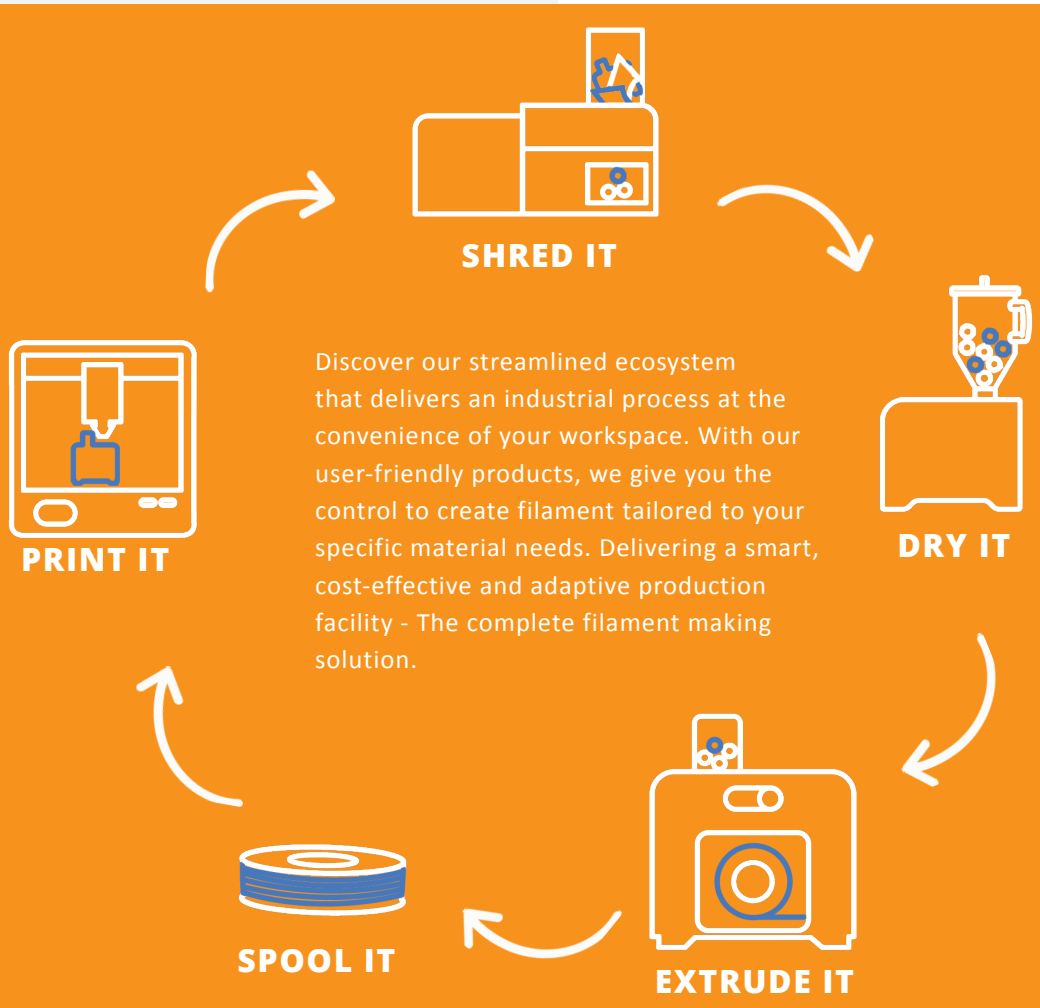
THE ROUTE TO SUSTAINABILITY

A process made simple



Discover our streamlined ecosystem that delivers an industrial process at the convenience of your workspace. With our user-friendly products, we give you the control to create filament tailored to your specific material needs. Delivering a smart, cost-effective and adaptive production facility - The complete filament making solution.

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SHR3D IT PLASTIC SHREDDER

We squeeze the most into it,

So you can get the most out.

The SHR3D IT Shredder is a high-performance addition to your industrial setup - power through your day with a wide range of applications with our shredder. Combining the capabilities of an industrial grade shredder and a granulator.

EFFORTLESS RECYCLING

Convert old plastics into high-quality 3D printing granules of any desired size in just one run. Designed for effortless operations, SHR3D IT features accessible compartments that facilitate cleaning, material changing, and filter screen replacement for custom grain sizes.

5 KG / HOUR
Quickly recycle massive amounts of any polymer

SHREDDER & GRANULATOR

ADJUSTABLE
Easy access for quick cleaning, filter changes, and knife replacements

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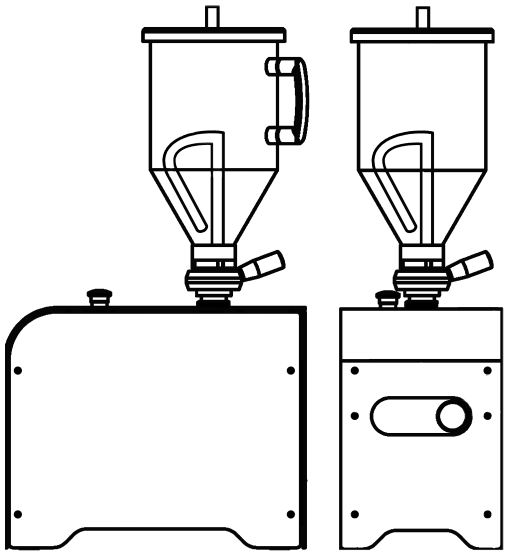
AIRID POLYMER DRYER

Eliminate moisture complications



If you work with hygroscopic plastics, then you know how easily it absorbs moisture. The polymer chains that form the plastic allow for the moisture to slip inside. Moisture can happen instantly, but drying takes a while. Your pellets aren't going to become dry immediately. Depending on the level of moisture and types of plastics, it could take hours for your load to dry out.

Luckily, 3devo's drying system works quickly. In fact, it can dry up to 1 Kg of pellets within 3 hours.

CUSTOMIZE

Air flow, temperature and stirring speed

PRESETS

Available for standard materials

5 LITERS

Hopper volume

1KG/3HRS

Drying capacity for PA6

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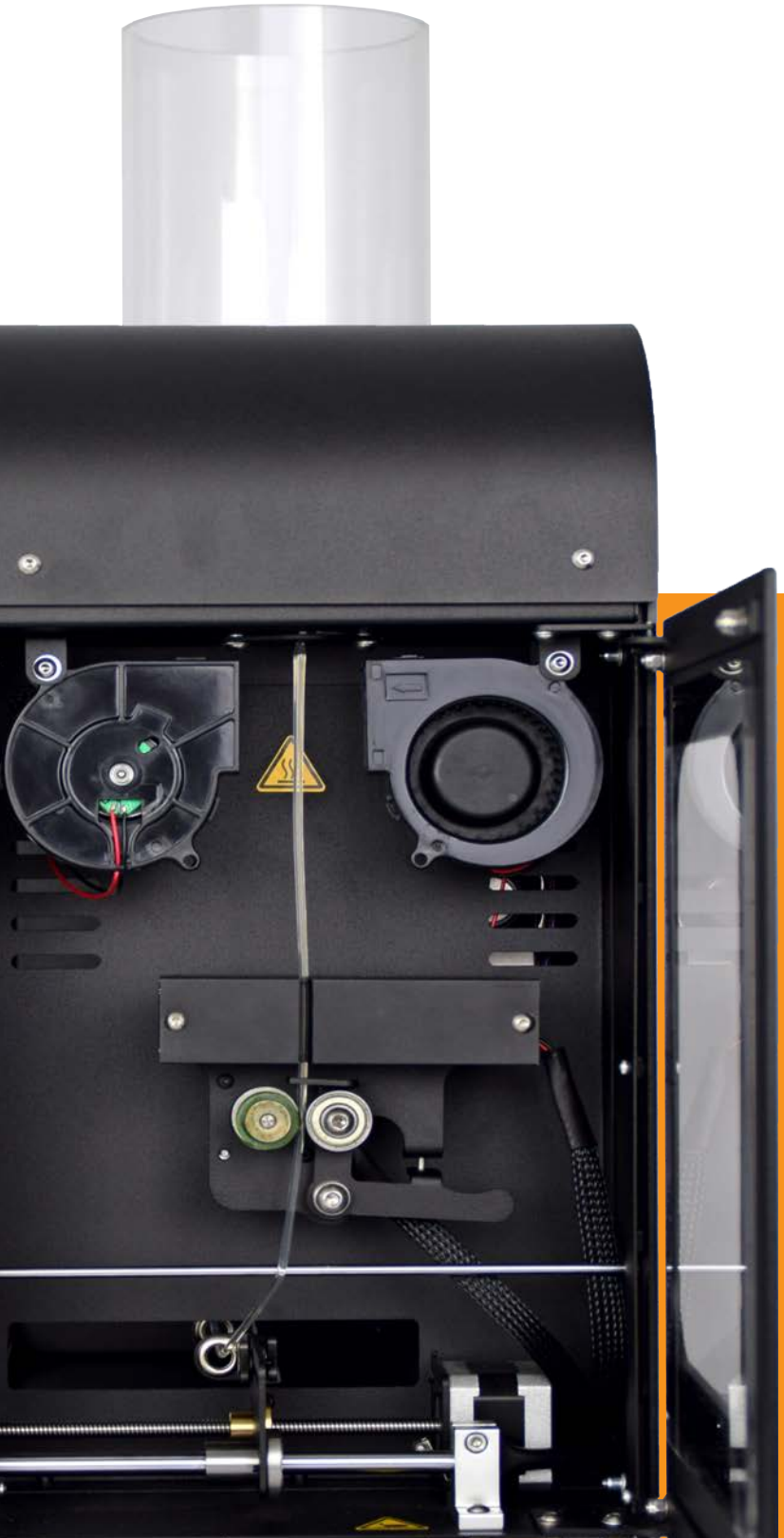
COMPOSER AND **PRECISION** DESKTOP FILAMENT MAKERS

A Complete Filament Production Line. Packed into one machine.



Our filament makers are specialized, result-oriented machines with industrial quality power. Making materials simpler than ever to work with, while offering even more possibilities in manufacturing and innovation.

Give yourself the freedom to create your own custom filament. Increase control over your filament and minimize material waste and shorter time leads.

TEMPERATURES
Handles temperatures up to 450 °C

ADVANCED HEATING SYSTEM
Each heater is handcrafted in-house to ensure top quality.

NEATLY SPOOLED FILAMENT
Create custom spool dimensions with neatly rolled filament - every time.

CONTROL PANEL
Easily accessible display settings with standard material pre-sets

DEVOVISION

Visually understand your material.

There isn't a better pair than our filament makers and DevoVision. DevoVision makes it easy to analyze filament in real time through software integration. Simplifying workflows while maximizing productivity.

DevoVision is the first of its kind application to show an overview of your extrusion history, allowing you to compare previous extrusions to find the settings that work for your application. You can say goodbye to having to estimate and predict certain setting – Now, you simply can retrieve old logs and replicate the same outcome. Desktop extrusion has never been easier.

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COMPOSER

FILAMENT MAKER

Designed for mixing

The Composer Series targets material mixing and experimentation, allowing innovators to develop custom filament from a wide variety of polymers and additives. With a mixing screw, this delivers quality material compounding. The Composer Series is ideal for:

- **RESEARCH AND DEVELOPMENT**
- **COMPOUNDING**
- **EXPERIMENTING**

PRECISION

FILAMENT MAKER

Designed for production

The Precision Series enables mass production of 3D printing filament with improved speeds and diameter accuracy. With a high-flow extruder screw, this allows the filament to be produced at high speeds while maintaining diameter precision. The Precision Series is ideal for:

- **PRODUCTION**
- **MASS MANUFACTURING**
- **ACCURACY**

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FILAMENT TAILORED TO YOUR NEEDS.

Any material. Anytime.

3devo brings together the resources and expertise for advancements in design, materials, and experimentation for one of the most famous additive manufacturing technology - FDM printing.

Our wide-range in material settings have been extensively tested by our engineers so that you can produce the best results. Here are a couple of our most popular materials:

PLA
Low temperature, low cost, biodegradable

ABS
Low-cost and durable

PETG
Durable, transparent

TPE
Rubber-like behavior with thermoplastic processability

TPU
High flexibility, high durability

NYLON (PA)
Flexible, durable, excellent surface finish

PC
Lightweight, transparent

PVA
Water soluble and biodegradable

PEI
High strength and high thermal stability

PEEK
Outstanding mechanical strength, thermal resistance, chemical stability

**** Listed above are just a few of our most commonly used materials for extrusion***

MAKE YOUR FILAMENT STRONGER, LIGHTER, FASTER , AND BETTER

Through additives.

With our Composer series, you can develop unique filaments that can assist in your discovery in application performance. Be the creator of your own customized filament, through the use of additives.

WOODFILL

Woodfill gives 3D prints the look and feel of wood and can also even offer a smell. Adding a touch of softness to the filament.

COLORANTS

Colorants give pigment to the filament. The colorant added must be compatible with the virgin polymer.

CARBON FIBER

Carbon Fiber increases the properties-to-weight ratio, making 3D prints lighter and dimensionally stable for structural applications.

GLASS FIBER

Glass fiber is a great reinforcement to increase mechanical strength and dimensional stablity.

METAL POWDERS

Metal Powders add weight, while giving filament the look of metal. Causing parts to look like aluminum, copper, or gold.

CARBON NANOTUBES

CNTs improve the strength and the properties-to-weight ratio of the composite. They are also the solution to print conductive parts.

CERAMIC

Ceramic fillers can dramatically increase the thermal resistance and dimensional stability of the composite.

DEVOCARE

Comprehensive Service and Warranty Plan

Maximize efficiency while minimizing downtime. DevoCare fully supports businesses, institutions, and professionals who use 3devo products for education, research, material development, or manufacturing. We understand time is valuable, that is why DevoCare is a one-stop for service and support from 3devo experts, so most issues can be resolved immediately.

PRIORITY EMAIL SUPPORT

Quicker responses to support emails, queries and complaints.

PERSONALIZED ONLINE TRAINING

Receive a 45-minute orientation on using your 3devo Filament Maker.

MACHINE REPLACEMENT

Hot-swap feature for filament makers needing off-site repair.

PHONE SUPPORT

A dedicated hotline for urgent support, connecting you to 3devo engineers and material scientists.

ENTERPRISE DEVOCARE

Get top-tier service and extended warranty for your fleet of filament makers, shredders and dryers.

DEVOTRAINING

Learn about filament extrusion from the professionals!

DevoTraining is an in-depth, hands-on workshop on desktop filament extrusion. Helping to equip you with practical and up-to-date knowledge of filament making and plastic recycling. Guiding you towards solutions by our team of engineers and material scientists. Whether you're an expert or just beginning to experiment with materials - there's a course dedicated to your needs.

WORKSHOPS

3 customizable programs, varying from getting started to becoming an expert in filament extrusion.

LOCATION

1-2 day workshops organized at 3devo headquarters, Utrecht, with all materials and resources provided.

COURSE LEVELS

DEVONOVICE: *Beginner - Half Day*
If you are looking for a course that shows you how to operate your filament maker and make standard filament, then DevoNoviceis ideal for you.

DEVOPROFICIENT: *Intermediate - 1 Full-Day*
This full-day course dives deep into compounding, troubleshooting and maintaining your filament maker.

DEVOMASTER: *Advanced - 2 Full-days*
Are you working with high-performance materials and need to reduce filament fluctuations? DevoMaster will guide you through advanced extrusion methods in just 2 days.

Learn more about ***DevoTraining***

FILAMENT MAKER

Product Specifications

Heating System	Temperature max.	350 series max temperature of 350 °C
		450 series max temperature of 450 °C
	Band heater	Ceramic
	Heating zones	4
	Independent controls	Yes
Output	RPM range	2- 15 RPM
	Filament diameter range	0.5- 3 mm (0.02- 0.12 inches)
	Optical sensor accuracy	43 microns (1.69 mils)
	Nozzle extruder	Diameter 4 mm (0.16 inches)- Replaceable
Extruder System	Screw/Barrel alloy	High chromium and molybdenum steel alloy
	Hardening treatment	Nitrided
	Compression	3 stage
	Extruder design	Swappable
	Material mixing zone	Composer series ONLY
Energy	Consumption average	300- 400 W
	Consumption max.	1300 W
	Voltage	110- 230 V
	Frequency	50- 60 Hz
Capacity	Hopper volume	2 liters
	Spool holder	1
	Spool size	Diameter 240 mm (9.4 inches)
		Width 120 mm (4.7 inches)
Size & Weight	Dimensions	506 x 216 x 448 mm
		19.2 x 8.5 x 17.6 inches
	Weight	Extruder (Without box) 24.5 kg (54 lbs)
		Extruder + box 27 kg (59.5 lbs)
Connection	Firmware updates	Regular updates
	Extrusion data analysis	*DevoVision* application

FILAMENT MAKER MODELS

Material Applications

Composer Series (350 & 450 Models)	Purpose	For mixing, compounding & experimentation
	Screw	Mixing screw
Precision series (350 & 450 Models)	Purpose	For high-quality mass production
	Screw	High-flow screw
Models	**350 model**	Max temperature of 350 °C for engineering polymers
		PLA, ABS, PC, PS, PETG, TPU, TPE, PPS, PVA, Bio PE, NEW PET and PA (6,12, 66)
	450 model	Max temperature of 450 °C for engineering polymers **AND** high-performance polymers
		PEEK, PC, PS, PEKK, PAEK, PEI, PSU, PES, PTFE, PVD+

SHR3D IT PLASTIC SHREDDER

Product Specifications

Hardware	Dimensions *excluding hopper	550 x 310 x 310 mm
		21.7 x 12.2x 12.2 inches
	Blades- shredder	9 RPM
		6 premium shredder blades
		Reversible rotation
	Blades- Granulator	900 RPM
		3 superior granulator knives
		Replaceable
	Blades- Hardening treatment	High carbon and chromium air hardened steel
	Color	Industrial black exterior
Energy	Consumption	1100 W
	Voltage	220 – 230 V
	Frequency	50 – 60 Hz
Accessibility	Operation	3 push buttons: On / Off / Emergency stop
	Clean	Quick and easy access
	Adjust	Simple to change filter
	Repair	Replaceable knives
Output	Speed	5.1 kg 2.85 PLA filament / hour *
		4.0 liter 2.85 PLA filament / hour *
	Granulate diameter range	Filter screen hole size or smaller
		2 – 4 mm (0.08 – 0.16 inches)
	Regrind filter	4 mm (0.12 inches) included

**** Achieved with chopped up 2.85 mm PLA filament. Results may vary depending on the size and shape of the soon-to-be shredded object***

AIRID POLYMER DRYER

Product Specifications

Hopper	Volume	5 liters
	Assembly	Quick-release
	Drying capacity	1kg / 3 hr (for PA6)
	Hopper material	Stainless steel polished
Temperature	Stable temperature control	Up to 160 °C
Materials	Compatiblity	Granulates, flakes and powders
	Material pre-sets	PLA, PA6, PA66, TPU, PC, and PEEK
	Settings	Presets for standard materials
	Material amount	Recommendation: 1 to 3 kg
Energy	Consumption	900 W
	Voltage	220- 230V
	Frequency	50- 60 Hz
Accessibility	Clean	Easy to clean
	Stirring	Integrated stirring mechanism: Adjustable speeds
	Air flow	Adjustable

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GENERAL INQUIRIES
info@3devo.com

MORE INFO
www.3devo.com/LearnMore