Сириус

Development of an extruder model for 3D printing with granular materials.

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Sirius | 00 July 2020

PITCH

STRUCTURE	EXAMPLE (IT DIRECTION)
For whom (target segment)	For large, medium and small businesses, as well as for individual entrepreneurs.
Who are unhappy (current alternative)	Conventional extruders use plastic filaments. Businesses and entrepreneurs are unhappy with the high prices for filament.
Our product (your product category)	Our product is a 3D printer extruder.
Which allows (key decision)	Which allows you to more cost-effectively and faster to print 3D models of various parts without loss of quality.
Unlike (alternative solutions)	Unlike simple extruders that use plastic filaments, our extruder uses plastic pellets, which makes the printing process 10-15 times more cost effective.
We have done (the key functionality of your product for specific solution to the problem)	We have adjusted the conventional extruder for a funnel for plastic granules, thereby speeding up the flow of plastic without losing print quality.

PITCH

For whom?

For large, medium and small design firms and developers, as well as for individual entrepreneurs, designers.

Who are unhappy

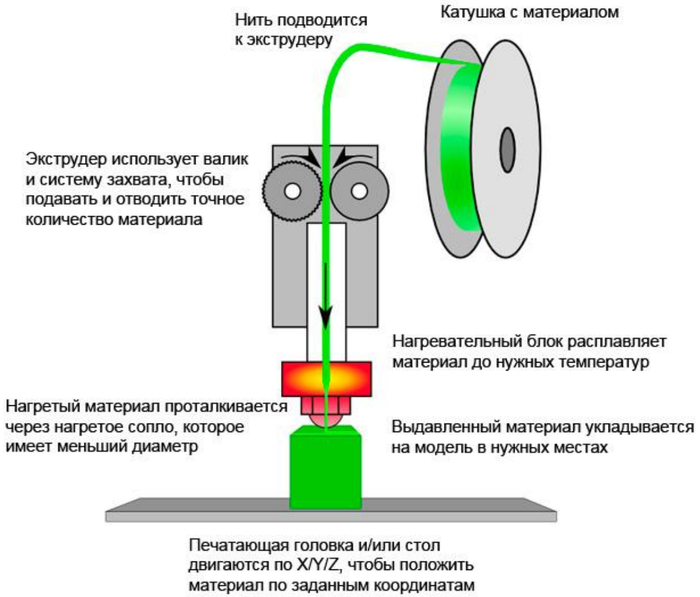
- Expensive plastic rods
- Limited users
- Low throughput

POTENTIAL BUYER

It allows

- Cost effective
- Quickly
- Various dimensional details
- No loss of quality
- Waste-free recycling cycle

Unlike

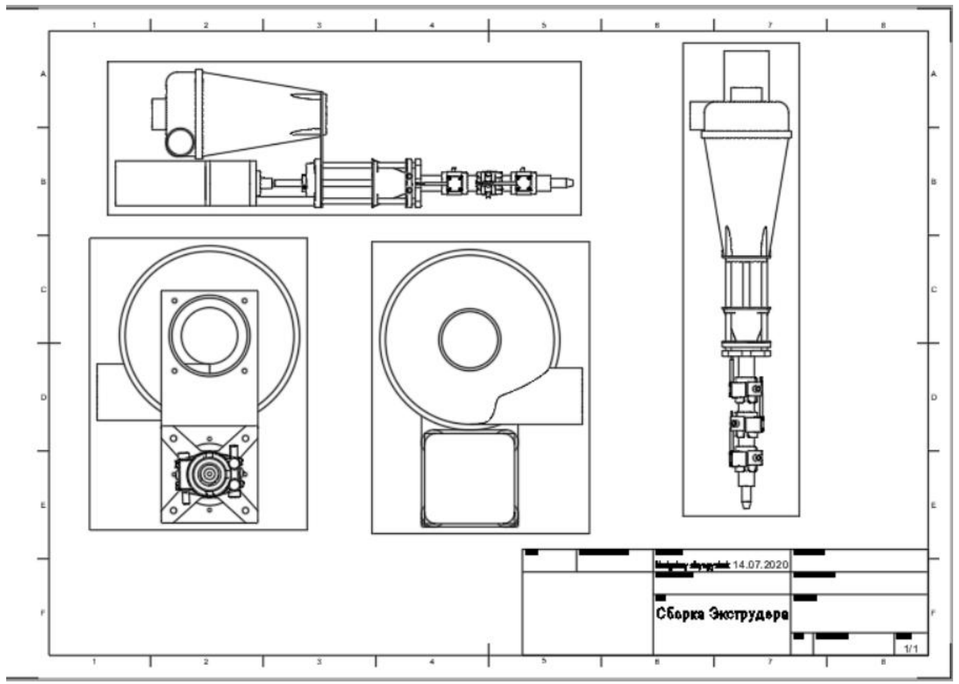


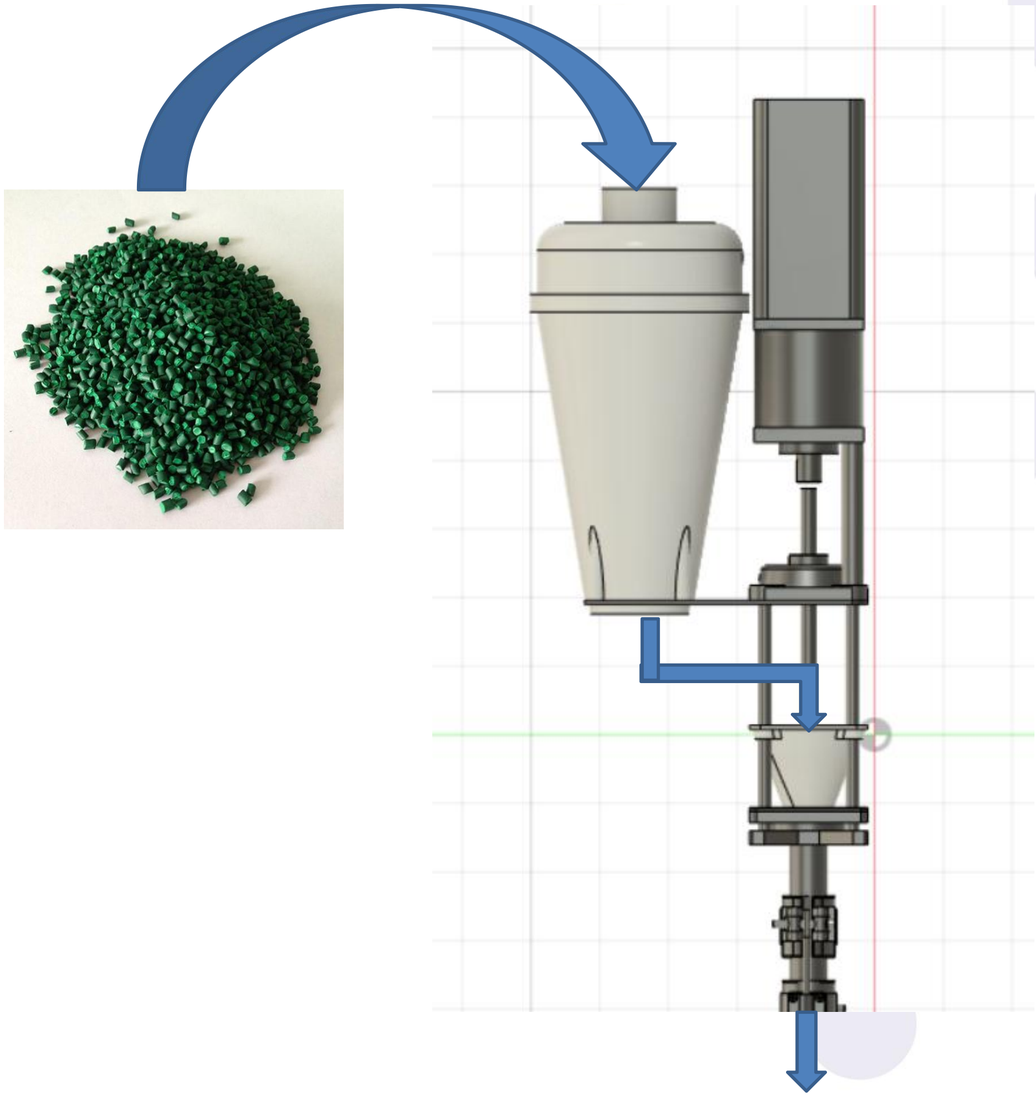
FDM extruder —X15→ **Plastic bar**

Our extruder —X→ **Plastic granules**

Our result

Key functionality of our extruder





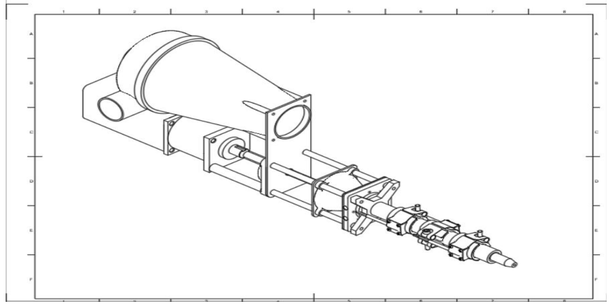
PROJECT WORK

Tasks: what tasks were set at the beginning of the project?
Development of a new model of a 3D printing extruder, the consumable of which is plastic granules. Research the market.

Development: tasks performed in the course of work on the project, difficulties encountered, solutions.
Lack of experience in Fusion 360. Drew additional knowledge on the Internet.

Skills: Tell us what key skills you have acquired / improved during the work on the project.
Search and analysis of solutions available on the market, design in the Fusion 360 system, Polygon 2.0 slicer program.

Outcomes: How did you manage to implement your plans?
At this stage of the project, we have assembled a model of the extruder.



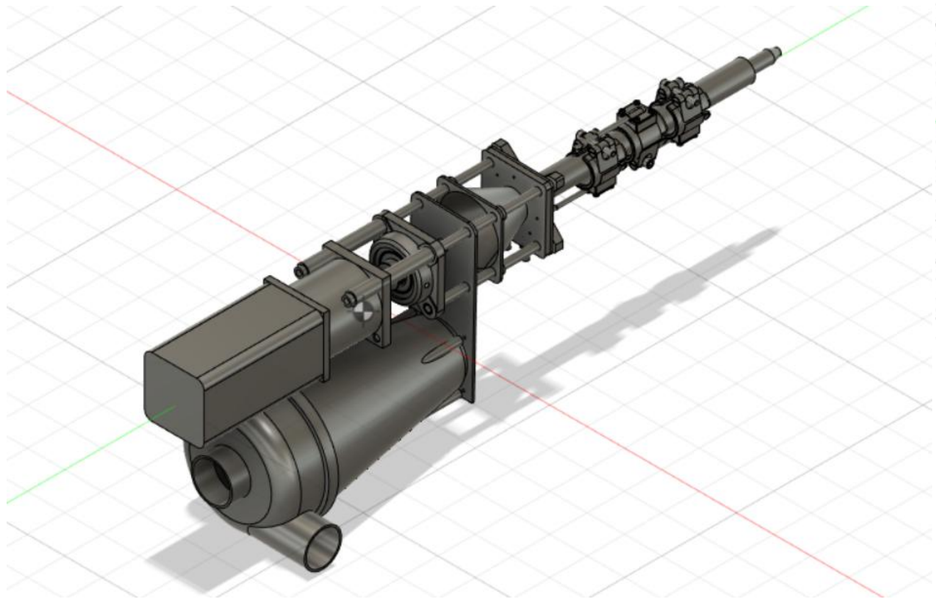
Our product

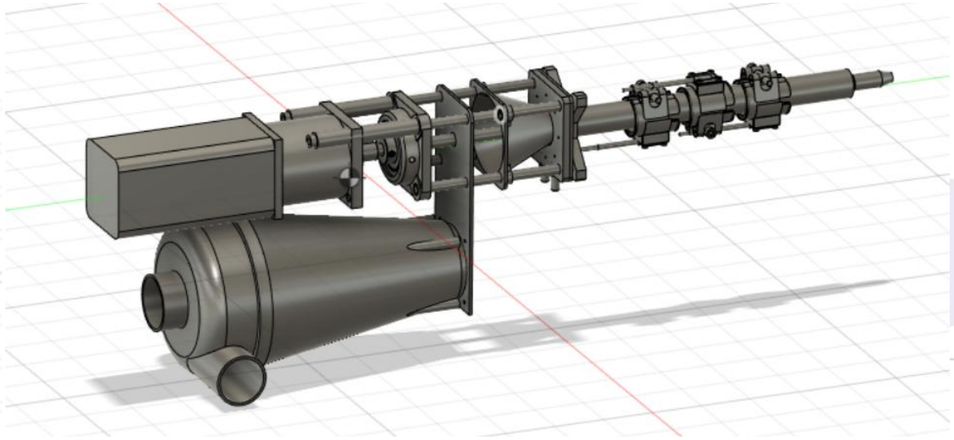
YOUR SOLUTION / PRODUCT

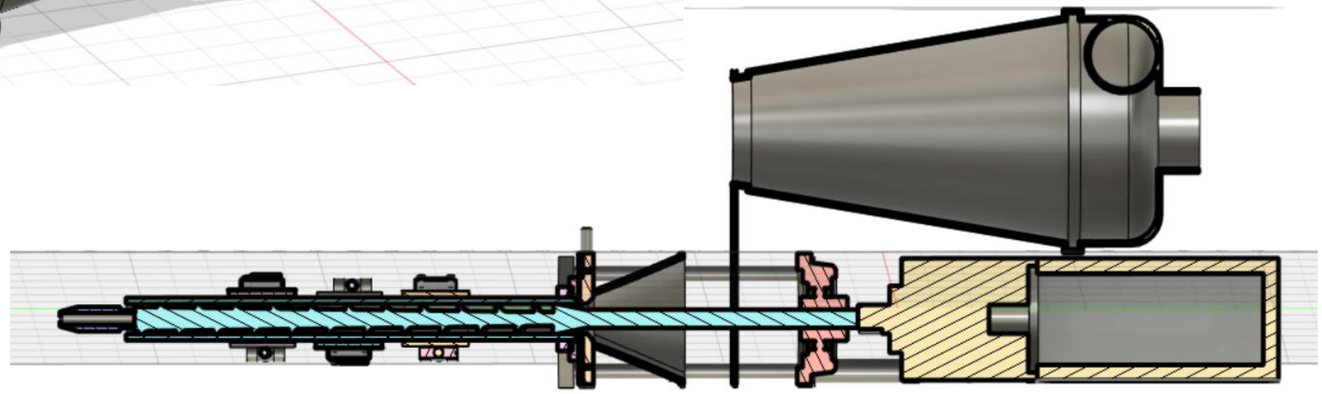
Value: Compact, cheap, convenient, efficient.

Solution: Minimum dimensions and affordability.

Screenshots:

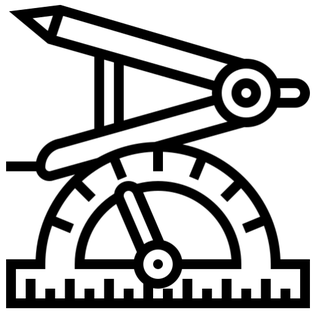


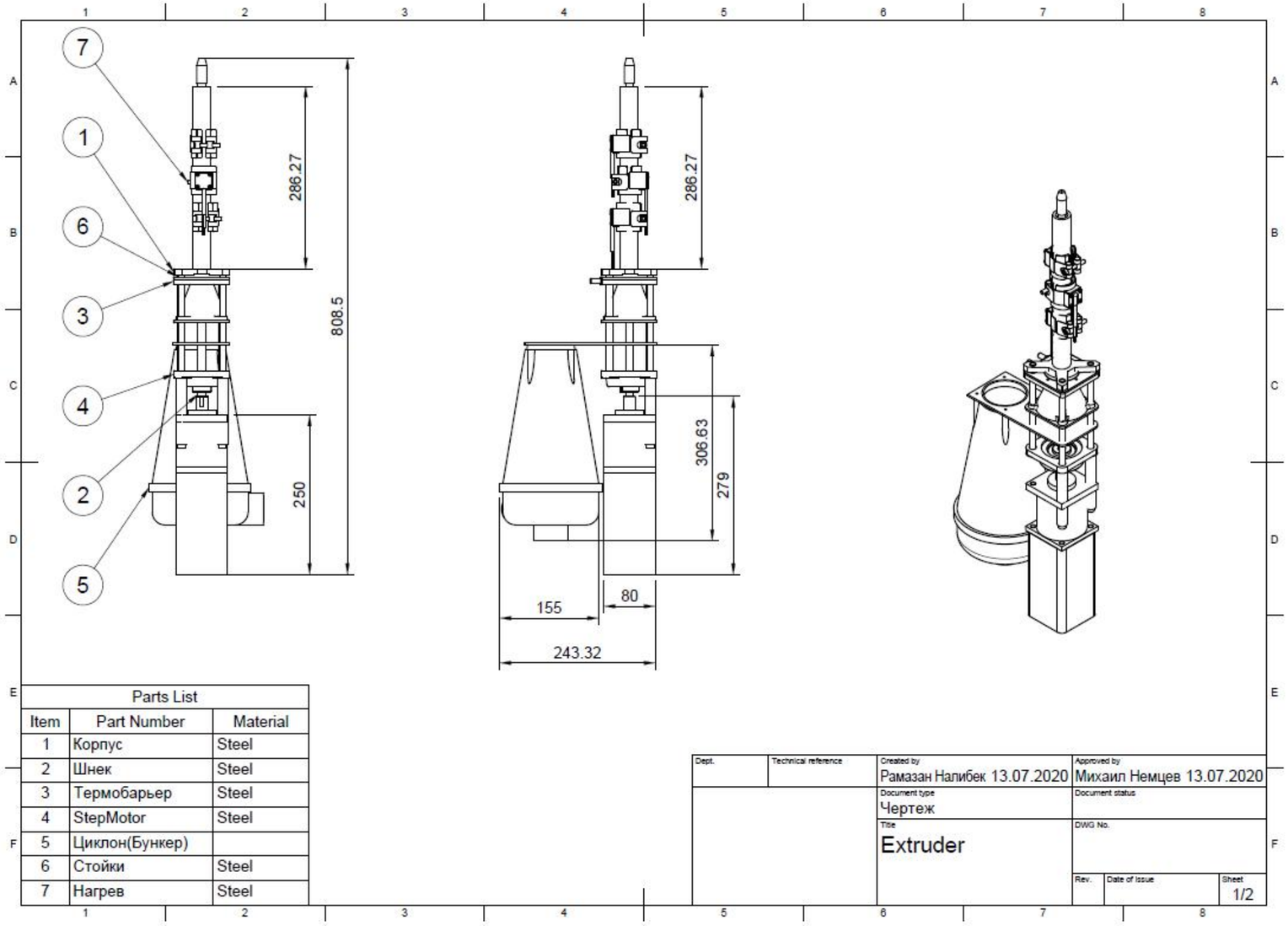




Storytelling: Assembly, development of matrix operating modes, patent, website and version creation 2.0

Extruder Drawing





Parts List		
Item	Part Number	Material
1	Корпус	Steel
2	Шнек	Steel
3	Термобарьер	Steel
4	StepMotor	Steel
5	Циклон(Бункер)	
6	Стойки	Steel
7	Нагрев	Steel

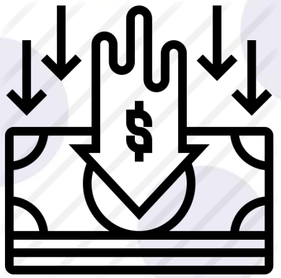
Dept.	Technical reference	Created by: Рамазан Налибек 13.07.2020	Approved by: Михаил Немцев 13.07.2020
		Document type: Чертеж	Document status:
		Title: Extruder	DWG No.
			Rev. / Date of issue / Sheet: 1/2

TECHNOLOGY

What is at the heart of your decision?
extrusion (extrusion is a technology for producing products by forcing a viscous melt of material or thick paste through a forming hole).

What other hypotheses and options were there?
A full-cycle extruder including plastic shredding and further printing.

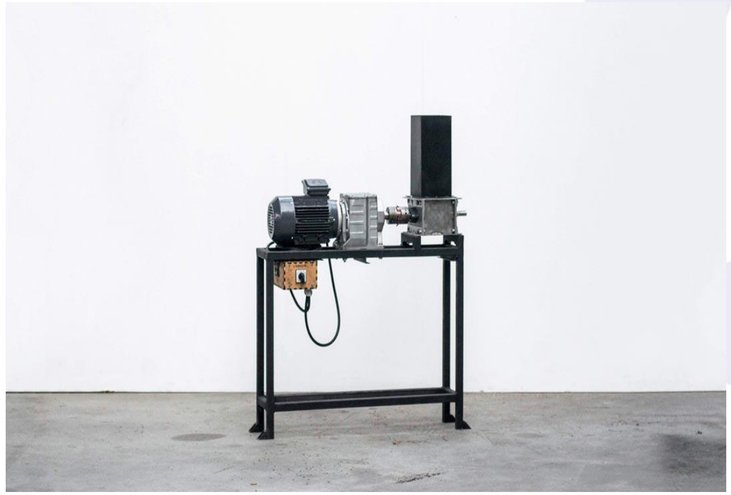
The location of the extruder in the horizontal plane.



Why did you decide on this particular solution? Productive, cheap. It is also the most difficult unit in this design.

Extruder

+



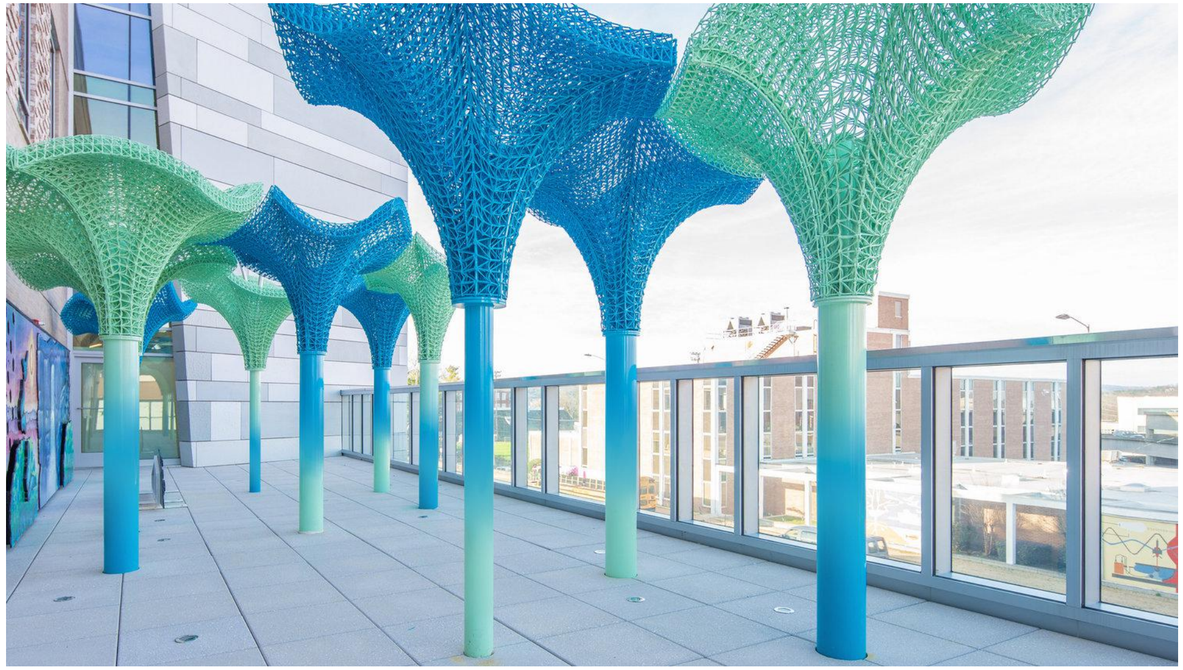
Schroeder

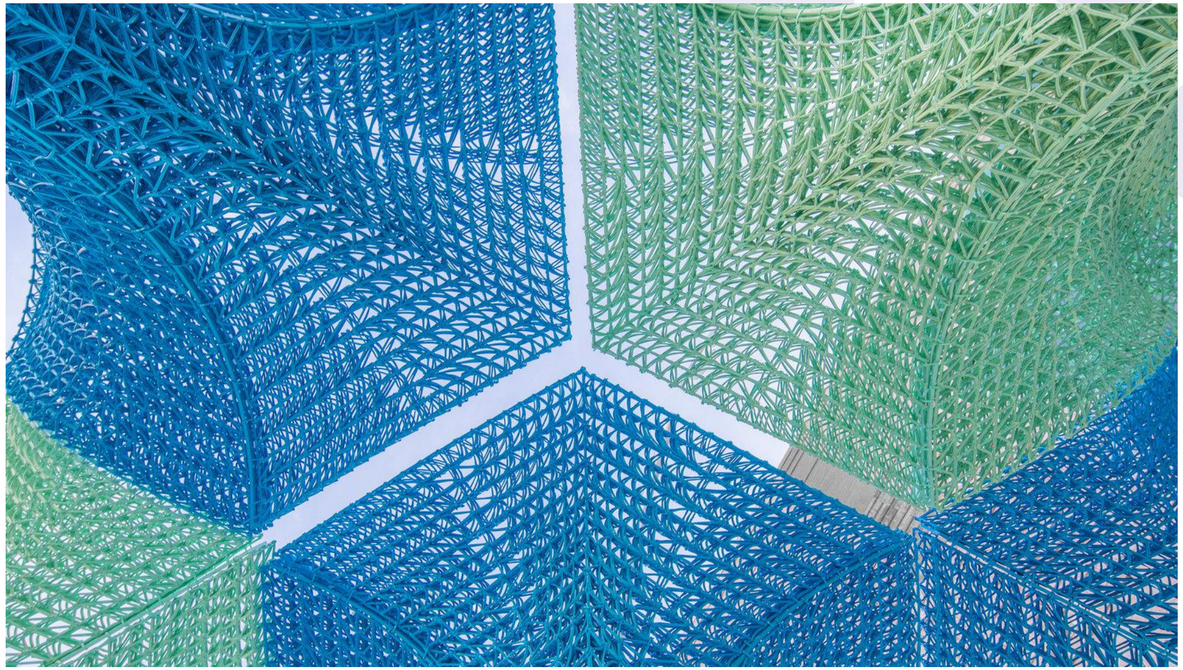
TECHNOLOGY

Proprietary or borrowed technology? The New Raw, Precious Plastic and Titan Robotics.

Why is this technology unique (if it is)?

The extrusion process itself is not unique, but its areas of application and materials, for example, the creation of matrix composite forms in the construction industry, are relevant and in demand.

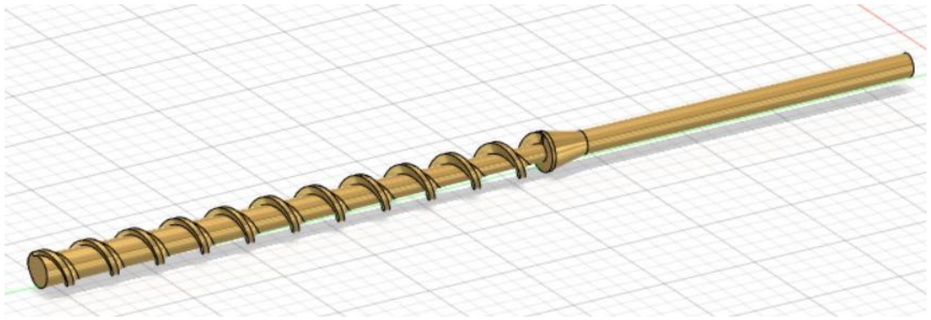




Commercializability

A way to monetize?
This is the sale of the extruder itself Sale of art objects for parks and recreation areas

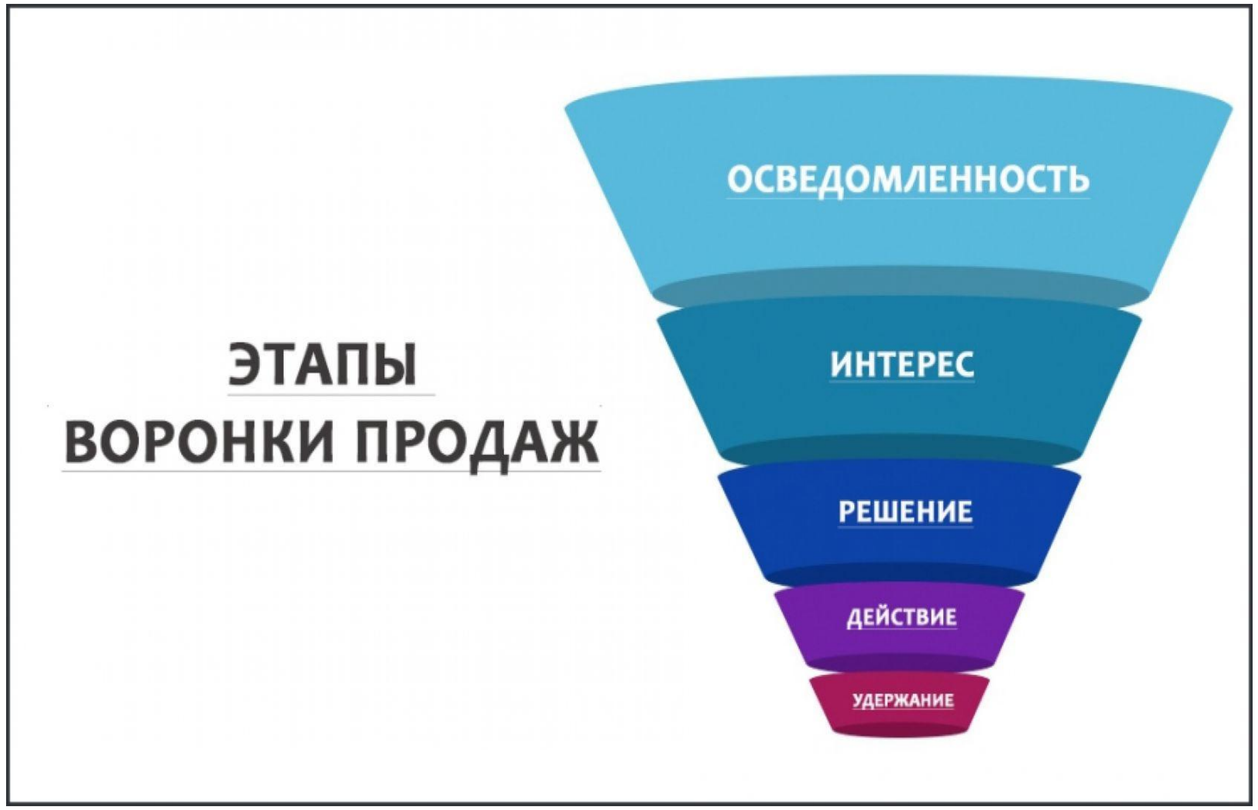
Market size?
There are NO extruders on the market like ours.



Product development and implementation costs

Name	Price
total cost extruder	69600 rubles
Screw	30,000 rubles
Servo	9600 rubles
Nozzle	2000 rubles
Drivers	10,000 rubles
Thermal barrier	5000 rubles
Heating the elements	13,000 rubles

PROMOTION AND SALES CHANNELS



Channels for attracting users / clients.

WE THANK YOU FOR YOUR ATTENTION!

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