Plastic Extrusion Machine

Extrusion is a continuous process where plastic flakes are inserted in the hopper and extruded into a line of plastic. These lines can be used to make new raw material (3d printing filament), granulate, spinned around a mold or up to you to find new creative ways.

Difficulty: Hard
Duration: 5 day(s)
Categories: Robotics, Energy, Science & Biology

Cost: 192 EUR (€)

Contents

Introduction
Step 1 - Hopper: cutting metal plates
Step 2 - Hopper: drilling metal plates
Step 3 - Hopper: welding metal plates
Step 4 - Hopper finishes
Step 5 - Barrel
Step 6 - Barrel
Step 7 -
Step 8 -
Step 9 -
Step 10 -
Step 11 -
Step 12 - Nozzle
Step 13 -
Step 14 -
Step 15 -
Step 16 -
Step 17 -
Step 18 - Barrel holder
Step 19 -
Step 20 -
Step 21 -
Step 22 -
Step 23 - Framework
Step 24 -
Step 25 -
Step 26 -
Step 27 -
Step 28 -
Step 29 -
Step 30 -
Introduction
The extrusion machine has quite a specific output, a line. This is well suited to make new granulate and 3D printer filament. However use your creativity and you will find other applications for it as well. Change the nozzle for different shapes and sizes, turn it around a mold to make lamps or a handle for a knife.
The extrusion machine consists in 6 different elements: the hopper, the barrel, the nozzle, the barrel holder, the framework and the electronics.

Materials
- Metal sheet plates
- Metal tubes

Tools
- Angle grinder
- Protective glasses
- Milling machine
- Arc welding machine

http://preciousplastic.com/videos/download/
Step 1 - Hopper: cutting metal plates

Get the metal sheet plates. Take measurements following the blue prints and cut the sheets with a grinding machine and sand metal edges.
Step 2 - Hopper: drilling metal plates

Prick the plate with a hammer and drill the metal plates on the milling machine.
Step 3 - Hopper: welding metal plates

Make a pyramid with the plates and weld them together

Step 4 - Hopper finishes
Step 5 - Barrel

Step 6 - Barrel
Step 7 -

Step 8 -

Step 9 -
Step 10 -

Step 11 -
Step 12 - Nozzle

Step 13 -
Step 18 - Barrel holder

Step 19 -
Step 22 - 

Step 23 - Framework
Step 32 -

Step 33 - Attach it to the frame
Step 35 -

Step 36 - Engine
Step 37 - Improvements and learn

**Suggestion:** Currently, the nose decided the amount of plastic that comes out. However, a better way to do this is by adding a controllable engine. There are different ways to control the speed of an engine by using different controllers or regulators.

**How to use the machine**
Clic here to watch our online video (starting from 15:09) to learn how to use the machine.
Thanks!