Filament Extruder: A Free Manufacturer of Material for a 3D Printer

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We built a machine, a semi-automatic filament extruder used as a resource for 3D printing in the FDM technology - so popular and widely available today for almost every production method. We started our project by gathering information and collecting plans on the principles of operation of this type of devices for both professional and amateur use, after proper thinking and deciding what effect we expect, we decided to adapt our extruder to the processing of commonly available material and treated as waste, we took into account many materials, but the best results were obtained during tests with PET caps for disposable packaging (PET bottles), our device offers a multitude of possibilities for embossing various other materials used in 3D printing. The construction began with designing individual parts in CAD programs, then we created a preliminary outline of the electrical installation as well as control and regulation of the extrusion, tension, cooling process and winding the finished product on a spool. The time has come to make the object physically, we took care of cutting, welding, turning, milling and any other mechanical processing, we prepared an electric box in accordance with the standards used in the production of professional control cabinets for industrial machines, the project also included a lot of parts and assemblies made using 3D printing. . We took care of the user's safety through the use of appropriate shields and thermal insulation, and we used safeguards to protect the machine from damage due to an operator's error.