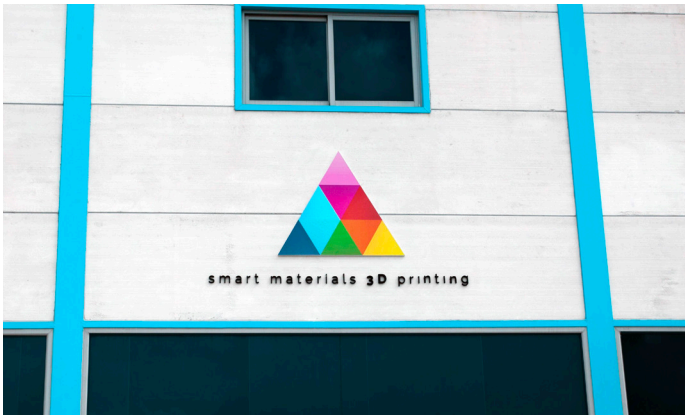
Saving more then 96% of the Cost Compare with Tradition Machining Procedure



"3D printing and specific materials design are today's answer to the future problems and needs. In this case JCR 1000 was the perfect solution."

— Antonio Peláez
Director of Smart Materials 3D

smart materials 3D

Company
Smart Materials 3D

Website
https://smartmaterials3d.com/en/

Industry
FDM Filaments manufacturer

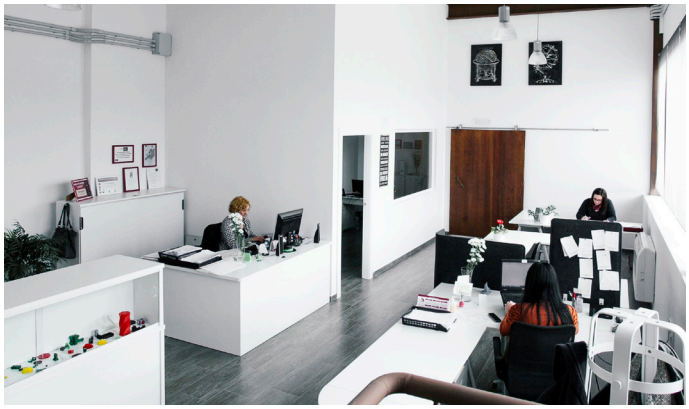
Challenge
- Manufacturing costs of the moulds.
- Long waiting time between making the order and receiving the mould.
- High depreciation costs of moulds made for small orders.

Solution
- Reduced costs per unit, as this technique is **more competitive** than machining systems currently used for the manufacture of moulds.
- Raw materials are cheaper.
- Waiting time for moulds reduced by more than 50%
- No financial investment required for the moulds
- Allows for the manufacture of functional prototypes at a very low cost.

Introduction
Smart Materials 3D is focused on the analysis, design, manufacture and improvement of materials for FDM 3D Printing process, intended for a big variety of applications. Our company arises from the industrial sector of the polymers transformation, giving specific answer to problems in the 3D printing sector.

Through our advanced laboratory, our specialized staff and our production lines we are able to develop and produce the most demanding materials for FDM applications, being compatible with the widest range of commercial 3D printers.

Through our prior knowledge in the development of polymers we have specialized in the design of specific materials for several applications in a wide range of activity sectors.



Results

The following steps have been followed to resolve the case:

1. A design was produced for an improved, universal piece, adaptable to any type of reel used in the production line within Smart Materials, adjustable in terms of both diameter and length.
2. The 3D Sicnova JCR 1000 printer was used to print both sides of the piece, with an exceptional finish, perfectly adapted to the screwing, centering and tightening procedures.
3. Printing material was used that was specifically developed for the piece to with stand impact and shock without becoming damaged or broken.

Smart Materials 3D Laboratory

Production Process

- Foundation with Sand Mold. Realisation of the Model Plate
- Make a master model to make a sand casting mold (in the cases presented for aluminium casting)
- Manufacture of a functional coupling for the filament spool as an alternative to ordering a machined part
- One of the metal couplings for the plastic filament spooler used by the company Smart Materials 3D for 3D printing breaks.

Smart Materials 3D Material Testing

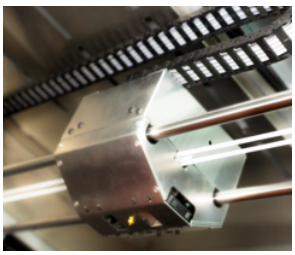
We estimate we saved:

- A saving of more than 96% in costs €18.30 compared with the €575 of traditional machining procedures.
- 100% savings in investments, since no replacement parts are needed for future possible breakages.
- A saving of more than 77% of waiting time, 8 hours of printing in the JCR 1000 compared to 2 weeks of the machining delivery time.
- 60% savings in number of tools, due to an improved design, thus making it adaptable to all models of reels.

3D Printer used

JCR 1000 is the industrial 3D printer developed by Grupo Sicnova to meet the demands of the industry in terms of printing volume, precision, reliability and variety of materials. With a double extruder of 1.75 mm and a closed and heated environment, it ensures reliable printing for industries and professionals of all kinds.

- Industrial 3D printer from Grupo Sicnova with FFF technology (Fused Filament Fabrication)
- Maximum print volume: 1000 x 600 x 600 mm
- Enclosed and heated environment with controlled temperature
- Possibility of printing with two materials in the same piece
- Manufactures pieces in a large variety of thermoplastic materials with different properties



About 3DGBIRE

3DGBIRE are the UK and Ireland's premier professional 3D printing experts. We sell, service and support market-leading products and share our knowledge through professional training programs. Our mission is to help companies to integrate 3D printing into their business with ease and efficiency. Our 360-degree service takes you from implementation to training and on to providing only the best local after care, we want to ensure our customers believe in our products like we do. Our Business Development Team can help you with more information on 3D printing integration and systems

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