



## Model Maker Turns to EnvisionTEC to Provide the Highest Accuracy to its Clients

Printmakr is a subsidiary of Steamforged Games Ltd (Steamforged). Originally established in Worcester by Aitch Parker in 2017 under the name Clockwork 3D Printing, the company served as a bureau, providing 3D printing services to businesses across the UK.

During this time Manchester based Steamforged approached Aitch to undertake some 3D printing for its new 'Guild Ball', table top fantasy medieval football game. The contract was to produce master models to support the production of figures for their Kickstarter campaign.

Having seen the results of the 3D prints and service, and being impressed, Steamforged approached Aitch about the potential of him working directly for them. After discussions Steamforged invested in both Aitch and his business, and now they form a part of Steamforged games.

Today as PrintMakr it services the needs of Steamforged, whilst also still acting as a bureau, fulfilling the needs of external clients.

Interest in the external bureau services is growing, not just for the production of gaming figures but with other manufacturers, interested in the quality results PrintMakr is capable of.

### Why look at 3D printing?

As with the Jewelry industry, prior to the adoption of 3D printing, models were traditionally produced by hand, either from clay or wax to be directly cast or to produce molds for mass production.



Characters from the Steamforged game 'God Tear' and inset one of the models printed in RC90 resin on the EnvisionTEC Desktop XL.

### PrintMakr

#### Industry:

Toy and Model production & Bureau services

#### Machines:

Desktop XL

#### Materials:

RC90

Both methods were time consuming and required many hours of skilled working of the materials to produce the models. Neither produced the quality provided by 3D printed solutions.

PrintMakr works with digital sculptors, and from the very beginning has been purely digitally sculpting models. The business prides itself on high end, high quality work and the detailed figures it brings to the tabletop gaming market.

The use of digital design and 3D printing allows it to achieve this quality and accurately translate the CAD designs into real world objects. The speed of modern 3D printing also means that re-printing models and producing multiple different iterations is far easier.

The use of materials such as EnvisionTEC's RC series allows for the production of models with exceptional surface quality that reflect the original vision of the designer.

Having the ability to produce such fine detailed models allows this detail to then be transferred from the master to the mold. This in turn ensures subsequent mass produced resin cast or metal models look as close to the original as possible.

## Why EnvisionTEC?

With a range of machines available in the market, and with the number growing daily, the PrintMakr team understood the importance of getting the right model. One that would reproduce the intricate details of their customer models and require little finishing.

Aitch began the process of exploring the market, looking at what the competition were using and visiting forums and websites to look for recommended brands and technologies. After looking at the competition including seeing FormLabs machines, PrintMakr contacted distributor GVUK and had a demonstration of the EnvisionTEC desktop printers. The results were startling, providing far superior print quality and speed.

The team settled on an EnvisionTEC Desktop XL for its impressive build size and quality, combined with RC90 resin to provide crisp, clean and robust prints. The printer was also compatible with the in house Z-Brush CAD software.

## The Outcome

The quality of the bureau service provided by PrintMakr has resulted in a growing appetite for its services. This in turn is starting to push the limits of the current 3D printer. The team are now investigating the potential of moving to a larger Perfactory model printer to give them even more capacity without compromising on speed and accuracy.



Any imperfections are easily removed prior the production of a mold.



The above production multi-part resin cast miniature demonstrates the intricate detail that remains even in mass production. This particular piece was produced for Atlantic Miniatures.

***"We are currently looking to increase our print capacity to meet demand. EnvisionTEC's range allows you to start small and grow as your needs grow. The best thing is that the quality of the prints is not compromised as your machine gets larger."***

***- Aitch Parker, PrintMakr.***

## EnvisionTEC materials and 3D Printers for Manufacturing

EnvisionTEC offers a full range of desktop, full-production and high-speed continuous 3D printers for the production of highly detailed models. This includes solutions for the toy, film and animation industries.

The EnvisionTEC range provides model makers with the ability to produce highly detailed models that can be used for visual mock ups, photo/film shoots and master patterns for molding.

### Just some of the EnvisionTEC materials for Manufacturing

- **ABS Flex White** - An ideal solution for a wide variety of manufacturing, including snap-fit and assembly applications requiring some elasticity.
- **E-Model** - A tough material, suitable for high quality prototypes and production-quality end use parts.
- **E-Glass** - A transparent material featuring excellent surface finish and feature resolution, E-Glass 2.0 is an ideal solution for simulating clear plastics.
- **HTM 140 V2** - High temperature molding material for non-metal masters.
- **R5/R11** - R series produces robust, accurate, and functional parts with a good balance of rigidity to functionality. Ideal for master patterns in rubber molding applications.
- **RC SERIES** - Resins containing ceramic particles, capable of building tough, temperature resistant and stiff parts at very high resolutions. Ideal for silicone molding. RC series can also be finished in a variety of ways including painting or plating.
- **Q-View** - A material capable of impressive print speeds for the full build envelope. Put custom design pieces into the hands of your customers in record time. Q-View is also ideal for silicone molding applications.
- **LS600** - An extremely durable photopolymer with high impact resistance. For use in the production of very accurate parts with high feature detail.
- **PIC Series** - Castable materials. Ideal for printing jewelry, dental and other parts requiring exceptional detail and surface finish.
- **Photosilver** - A temperature resistant material that produces excellent surface finish. A ceramic filled photopolymer that produces highly detailed parts with crisp features.

***“Other machines just did not offer us the high-quality detailed prints we needed.”***

- Aitch Parker, PrintMakr.

### With Thanks

Huge thanks to Aitch Parker at PrintMakr ([steamforged.com/printmakr](http://steamforged.com/printmakr)) for his support in the production of this case study. Also to Graham Dicks at GVUK and all the companies for permission to use their images.

### About EnvisionTEC

EnvisionTEC is a leading global provider of professional-grade 3D printing solutions. Founded in 2002 with its pioneering commercial DLP printing technology, EnvisionTEC now sells a range of printer configurations based on six distinct technologies that build objects from digital design files. The company's premium 3D printers serve a variety of medical, professional and industrial markets, and are valued for precision, surface quality, functionality and speed.

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