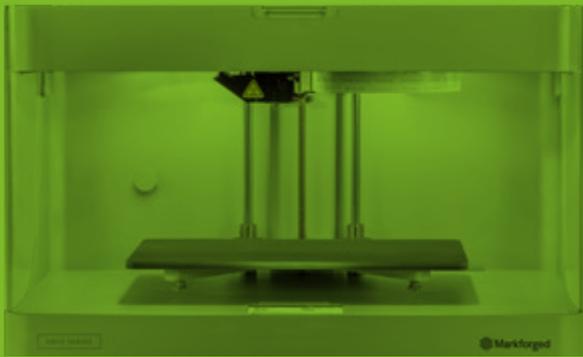


5 Questions with: Matt Hill, MD at MHDE

Technology used: Markforged Composite Series Printers



MHDE, specialists in the engineering of high quality bespoke systems and products have embraced Markforged technology from HK3D.

We got a chance to talk to their Managing Director, Matt Hill and asked him 5 questions about how the technology is transforming their workflow and processes.

At MHDE, you have the in-house talent and capacity to take a customer through from design to low volume production, how have your Markforged printers added value in this process?

Markforged printers have added value in a number of ways. Firstly, in our design process we can be more efficient to develop a design and get it through multiple prototype stages.

This can be either through printing prototypes and form samples for assessment and trial, through to tooling to enable a welded structure or more complex machined part to be manufactured quicker and at a lower cost.



Secondly, value is added by enabling us to produce end user components through additive manufacturing (AM).

The quality and strength of parts from our Markforged printers means we can design certain components with the sole intention of providing a fully functioning and aesthetically pleasing printed product for the customer.

We've also been able to optimise some components for customers specifically for batch printing where we can hold the same part pricing, regardless of quantity. This is great for our customers because if the demand changes we can react quickly without affecting the cost per item.

You have been supplying parts directly from the Markforged printers to customers, what sort of feedback have you received from these clients?

Our clients for printed parts have been really pleased both with the quality and also the strength of the parts we have produced. We've had customers who have been surprised to hear that the part was actually 3D printed, given how good the surface quality was. We've also completed testing with customers using hydraulic test machines to assess the strength of components for specific applications.

This was a really interesting process as the parts achieved more than 10X the working load requirement. Our Mark 2 enabled us to design the continuous carbon fibre strand layout within the print setup in order to achieve the strength we needed for a given loading condition.

After owning 2 Markforged 3D printers for 6 months, what was it about the technology that led you to make use of the HK3D print farm for production?

Our 2 in-house printers enabled us to complete some functional test prototypes for our customers. In doing so, the parts were so good that we wanted to continue with the same process for the higher batch volumes.

The HK3D print farm enabled us to simply expand our capacity from 2 printers to several printers, running 24 hours per day in order to meet the batch production demand. We could print the exact same files on any of the farm machines in order to achieve a consistent batch of components without having to wait for extended lead times.

We reduced the total estimated lead time for completing the order from over a year to just a few weeks.

Have you explored other 3D printing technologies, and if so, how did they compare to the Markforged?

We have explored other printing technologies and in particular other print manufacturers producing FFF printers.

We've done this, and continue to do this, so that we're aware of what products and technologies are available to us as engineers. So far the results we've seen from printers using similar technology is that the print quality isn't quite what we would expect to achieve with our markforged printers.

We've also been looking at other additive technologies such as the Form2 SLA printer and are keeping a close eye on the progression of metallic AM.

HK3D and MHDE have been working together for just over 6 months now, what would you tell others about the service that you have received?

The service and support we receive from HK3D has been excellent. The people at HK3D have been keen to understand how we work as a business and how reactive we are to meet our customer needs.

Inevitably with new technologies and advancements there are always learning curves and problems to overcome.

So far working with HK3D, this has been done very quickly and efficiently to enable us to keep offering the customer satisfaction that we strive for every day.



Amy, Director at MHDE