# cadmicro



## CASE STUDY

USING CARBON FIBER 3D PRINTING TO PROVIDE FUNCTIONAL PROTOTYPES & END USE PARTS



## **ABOUT TAYMER INTERNATIONAL**

With more than 50 years' experience producing machines, Taymer International has developed leading edge equipment including optical quality inspection systems, highly accurate length measurement machines, and various cable printers designed to meet specific needs. Taymer leads the field in producing various vision systems to meet the high speed in-line requirements in the production of wire, cable, pipe, tube and similar products.

Some of the features that their vision systems can provide are as follows:

- Detect surface defects (Including pinholes, scratches, discolorations)
- Detect diameter defects (Lumps and Neck-downs, incorrect diameter)
- Neck-downs, incorrect diameter)
- $\cdot$  Identify poor print quality and missing print

• Measure print legend interval and re-calibrate the print distance

- Find cable wrapping defects
- Measure wrapping distance, wrapping angle, and other surface features
- Inspect surface color quality

## WHY 3D PRINTING?

Taymer wanted to be able to iterate faster on complex geometry parts. They started to explore the Markforged systems and after testing some samples parts they realized just how strong the test prints were. They even took parts around the office to see if anyone could break it with their hands, needless to say no one could. With 3D printing, they can print and test a few designs in a day and make a decision very quickly about which parts will go to a machinist if they have to be made of metal.

Whenever I need a part that looks professional, has outstanding mechanical properties, and in a timely manner, I can count on the X7 to do just that.

Adrian Ma, Mechanical Design Engineer Taymer Taymer started with 2 Mark Two's and later added the X7 into their line-up. The printers are mainly used for prototyping new designs to make sure they function the way they are intended to, before ordering them from a machinist. Due to the mechanical properties of Markforged's Onyx filament and the capability of the printers to extrude continuous reinforcement fibers, some parts of their products can be substituted for parts printed using the Markforged printers.



## WHAT BUSINESS RESULTS HAVE YOU SEEN FROM 3D PRINTING?

Taymer has seen amazing print qualities from their Markforged printers. This makes their team confident when they have to substitute metal parts with long lead times for 3D printed ones. Their team has even been given test prints of other printers printing the same part and can see a clear quality difference between Markforged and other printers.

Having their Markforged printers definitely makes R&D much more efficient, which allows them to feel more confident when placing the order to the machinist knowing that everything works as it's supposed to.

## HOW OFTEN ARE THEIR 3D PRINTERS RUNNING?

During busy months where a lot of their parts can be printed instead of machined, the team at Taymer finds themselves needing to coordinate a print queue system between colleagues. All the printers are running simultaneously, with many more prints needed afterwards. In normal times, things aren't so busy, but it goes to show just how valuable the printers have been for Taymer's business.

At Taymer, they would often need to use different camera lenses for different applications. Because of the change in working distance between different lenses, they would be required to change our camera mounting system quite frequently. Because of the Markforged printers, they are able to print new brackets that are strong enough to hold the camera system in a timely manner.

### WHY DID TAYMER CHOOSE TO WORK WITH THE CAD MICRO TEAM?

The team at Taymer choose to work with CAD Micro because of the prompt service replies, and ease of doing business. The shipping of consumables is incredibly quick, and on the rare occasion something goes wrong, the CAD Micro team is always there to help out.



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