



LayerWise converted Marianne Forrest's design files into CAD and optimised part orientation for serial SLM production.

Marianne Forrest

LAYERWISE EXCELS IN SERIAL PRODUCTION OF PERSONALIZED JEWELLERY ITEMS

Flexible and economic production of Marianne Forrest titanium watch cases using SLM

WHEN ART MEETS TECHNOLOGY

London-based silversmith Marianne Forrest has acquired a reputation for fine craftsmanship coupled with the broadest range of products designed to tell the time. Her watches are made as individually crafted one-off pieces or for batch production.

"From each of my laser built watch designs I typically sell ten to twenty pieces," says Marianne Forrest. "Manually crafting a series of watches is extremely time consuming and I thought automated

production of certain watch parts are too expensive. Thanks to selective laser melting (SLM), I am able to spend more time on the creative side of designing watches while having multiple watch case designs serial produced at an affordable cost."

LayerWise is the first production centre in Belgium that exclusively focuses on this additive manufacturing method for metal parts. "At LayerWise, we reverse the entire process," marks Jonas Van Vaerenbergh, director of the industrial division. "Instead of removing material using traditional metalworking methods, SLM





▲ *"Sho" is the smallest watch that Marianne Forrest could make by hand.*



SLM made it possible to produce the tiny cases for these Titanium watches, which are too small to be made by hand. ▶

successively builds up very thin horizontal layers by selectively melting metal powder with a laser beam. The technology is capable of producing the most complex part shapes that often cannot be made any other way."

SLM AS A CRITICAL TIMESAVER

Forrest explains she first sent the four watch case designs she had drawn in Rhino software to LayerWise. "There, they converted the files into CAD, and optimised part orientation for serial SLM production to minimise manual work afterwards.

"By outsourcing some of my production work to LayerWise, I also save a tremendous amount of time," remarks Forrest. "Manually crafting a watch case requires me to cut sheet metal, file it by hand, and join the pieces through soldering. The SLM production batch also contained watch cases that were simply too small to be made by hand."

"So far, my tiny titanium watches have attracted a lot of attention at jewellery galleries, goldsmith fairs and tradeshows such as the 2010 TCT Conference in Coventry, UK. In particular for jewellery artists like myself it makes sense to benefit from the flexible SLM services provided by LayerWise, rather than having to invest in expensive production equipment."

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Marianne Forrest

I previously had some parts of my Palaeolith line of watches produced at another SLM firm. Despite the brilliant quality of the stainless steel parts, it took me forever to manually cut away their support structures."

SLM production flexibility made it possible to mix the four different watch case designs in a single production batch totalling 70 watch cases. Van Vaerenbergh explains that SLM allows smaller series or even personalized items to be combined in a single production batch, which drastically reduces the price per unit.



▲ *Some parts of the "Palaeolith" line of watches have also been produced using SLM.*