

SUBSTANCE

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A GOS Midnight Sun timepiece crafted with Damascus steel

Forged Beauty

By Keith W. Strandberg

Once used for Viking swords, Damascus steel is resurfacing in watchmaking.

Damascus steel, also known as pattern welded steel, is an artisanal forging process that has long been used in sword- and knifemaking. This special steel is not only stronger and lighter than normal steel, but also looks more interesting, as the pattern welding process creates a unique and incredibly beautiful design.

Recently, several watchmakers have used pattern welded steel and other metals to great effect in watchmaking.

THE PROCESS

I spoke with Patrik Sjögren, the founder of GoS, who has used pattern welded steel in many of his watches. Based in Sweden, Sjögren uses an ancient Viking method of pattern welded steel, partnering with metal forger and bladesmith Johan Gustafsson.

To create these beautiful patterns, the bladesmith starts with at least two different types of steel and forges them together into one solid piece, then folds and forges them again, repeatedly. Every time the steel is folded over, it doubles the number of layers. One of the most important skills of the bladesmith is the ability to forge the steel together, using his hammer in a way that ensures every layer is distinctly folded.

When the bladesmith is done with the steel, it can have hundreds of different layers. How the bladesmith deforms the steel now determines the pattern. The pattern runs throughout the steel, not just on the

surface, and is revealed by etching the steel in acid. Different steels react differently to the acid, and this creates the contrast.

"The Damascus steel for our cases is hand-forged stainless, and Gustafsson is the only steelmaker who can create the same kind of dense patterns you see in carbon-based Damascus steel," explains Sjögren. "It comes to us a flat rod, 7 or 8 mm thick, and it is machined by us into a case ring. Then we send it off to a CNC manufacture that completes the case."

To create the Damascus steel, it's at least a day's backbreaking work for the forger. "The best Viking swords had a core of pattern welded steel," Sjögren says. "It was possible to have the steel thinner and longer using pattern welded steel, so the sword was flexible and still very sharp because of the mixture of the steel types. Some argue that the Vikings brought the technique from the East, and that may well be true, but there is evidence that the Vikings created this kind of steel themselves and the craftsmanship of the old Viking swords was incredible."

Watchmaker Peter Speake-Marin made a watch using the Japanese mokume-gane method, which is similar to the Damascus steel technique, but uses precious metals. The base is made of silver and white-gold, folded together many times and compressed. Then the engraver scars the material and runs the plate through two rollers to re-

flatten the metal; the plate is then placed in acid. The silver oxidizes while the gold remains clean and the resulting blend of gold and silver is created due to the pressure of the press bonding the two together.

THE RESULT

The patterns are stunningly beautiful and truly artisanal in nature, requiring highly skilled handiwork to gain the desired effect. "The use of mokume-gane in this dial—the first watch to launch my collection of art miniature unique watches—was to generate the impression of movement of the two dragons," says Speake-Marin.

"The watch is called Fighting Time and the two dragons are chasing each other for eternity counterclockwise around the dial with the futile intention of slowing down time. The base material cut in a circular fashion adds the impression of movement through its swirling design. It was the first I made and remains one of the strongest dials I have ever made."

Sjögren will continue to use Damascus Steel in his watches in the future. "The patterns a master bladesmith can create are very organic and beautiful and I find it very interesting to use that aesthetic in watchmaking," Sjögren says. "My goal as a watchmaker is to approach the craftsmanship as seriously as possible."

goswatches.com
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