

When it Comes to the Details, Only the EnvisionTEC 3D Printer Will Do

The largest full-service jewelry and watch store in the Northwest relies on a 3D printer from EnvisionTEC for building castable patterns that require detail such as pave and millgraining.

In 2011, the Jewelry Design Center in Spokane, Wash., made the leap to 3D printing with the Perfactory Aureus from EnvisionTEC.

The 39-year-old company was already the largest full-service jewelry and watch store in the Northwest. But the venture into 3D printing has helped the company expand its custom jewelry business and deliver models faster for customers, helping to transform overall operations. The company recently opened a second location in nearby Kennewick, partly due to growth in its custom jewelry business.

“We date back to hand-carving. That’s been our foundation,” said Brian Toone, the owner of the Jewelry Design Center, a longtime family business. “But our 3D printer has allowed us to grow and do things we never thought we could do by hand. The technology has changed the business so dramatically, we’re always pushing what we can do ...”

Today, the jewelry team regularly runs its [Perfactory Aureus](#) — EnvisionTEC’s best-selling 3D printer for low production of customized jewelry — to print patterns that will eventually be casted and crafted into beautiful bejeweled designs.

“We use it every night,” said Jon Nowaski, a CAD specialist who manages 3D printing and production at the center. “Sometimes, we do two shifts a day.”

Back in 2011 when he bought it, Toone recalled, he thought the Aureus was expensive, but he wanted to go for top-of-the-line 3D printer that was proven in the market. Today, he notes that Aureus was well worth it, calling it “incredibly reliable.”



The Jewelry Design Center in Spokane, Wash., routinely creates custom jewelry with CAD software, as shown here, and transforms it into a finished piece, as shown below.





Brian Toone, Owner, Jewelry Design Center, Spokane and Kennewick, Washington.

The Jewelry Design Center primarily prints in [EnvisionTEC's EC500 material](#), which delivers detail at 25 microns resolution on the Aureus. It also has a melting point of 250 degrees Celsius, which means zero ash content on a complete burnout when creating an investment casting.

Within EnvisionTEC's library of castable materials for the jewelry market, EC500 is also known for its print speed. Up to 15 rings can be made in 5.7 hours, lending itself to easy overnight production.

Today, the Jewelry Design Center does everything from custom rings and pendants to bangles.

In 2011, Nowaski estimated the company did 30 custom jewelry jobs a month, but today, it averages 70, with spikes during holidays. "Last December, we did 100 we're probably doing over that this year," he said. "The business has changed dramatically."

The company also has deepened its commitment to 3D printing recently with the purchase of a 3D scanner. Now, in addition to scanning cherished heirlooms to preserve files, the center can scan organic shapes like leaves, which it can then replicate through 3D printing. Mimicking those designs would have been very difficult in the past without highly experienced artists carving wax.

Being a progressive jewelry company, the Aureus isn't the company's only 3D printer either. The Jewelry Design Center also owns a Formlabs 3D printer, but they don't use it for final castable models. Toone said that lower-priced machine is used only to show customers a quick plastic prototype before they make a final print on the Aureus.

"They do have a castable resin, but the detail is not there," Nowaski explained. "I'm not going to grow a pave ring in the Formlabs."

The same is true with any fine detail, really. "With millgraining, you have better details with the EnvisionTEC."

While much of that has to do with the quality of the printer, the wax content of EnvisionTEC's proprietary material also plays a role.

"With EnvisionTEC, you have some wax in there," he said. "Formlabs, they have straight plastic, which has a residue during the burnout process."