Press release

Data generation in 3D: scan and get started

Extraordinary items made from solid wood — that has been the motto of Josef Wochner GmbH & Co. KG since the company was founded in 1934. The joinery is now living up to the company's claim of offering exclusive wooden items once again — reproducing a hand-carved unique product using a five-axis processing center for the very first time. The product is the basic body of a lyre, requested by a lyre manufacturer. HOMAG generated the data that Wochner needed using the new "3D scanning" service.

Josef Wochner GmbH & Co. KG was founded by Alfons and Josef Wochner. At the time the company was founded, the brothers produced turned pieces, shells, pillars, decorative tips, and later barometer cases, clock housings, and much more. Today, the company, with its headquarters in Rosenfeld-Heiligenzimmern on the edge of the Black Forest, has developed into a high-tech supplier business employing a staff of 50, and has excelled as a provider of exclusive wooden items, in accordance with the company's claim.

The various products that the company produces range from classic shapes, through modern models, to extraordinary individual items. This is where Wochner clearly stands apart from other wood processing businesses. The company primarily uses solid wood to manufacture its products, which include small series goods, individual items, and prototypes, mainly for clocks and clock collectors. However, the company's product range also includes technical housings, loudspeaker boxes, safes and covers for safes, cases and caskets for expensive jewelry, humidors, and collector cabinets. "Anything that's fun really!" says Managing Director Adrian Wochner.

And there was certainly a great deal of fun to be had with the latest project: reproducing the basic body of a lyre for a special customer who manufactures special lyres. The individual postprocessing steps that this customer performs by hand means that he determines the final shape of the lyre and the ultimate resonance properties, but can have a CNC machine carry out the more strenuous preparatory work. This presented Wochner with the challenge of producing parts that had previously been carved by hand by machine in a small series.

Whenever Wochner had previously produced unusual parts, this was done based on completed data volume models, as these parts were mostly designed by the company itself or by designers. Adrian Wochner explains what was different this time: "In this situation, we were dealing with an artist who carved the parts out of a block of wood with his bare hands and had never used a CAD program before or anything like it. Generating the production data was a challenge."

So how did Wochner obtain the appropriate CAD data? "We asked HOMAG to digitalize the sample part. We work closely with Ralf Raböse, a service employee at HOMAG, and he drew our attention to this 3D scanning option when he was here in the factory."
HOMAG has been offering this service for around a year. Using a special procedure, objects of any size and shape can be scanned and then digitalized. The entire process takes place without any contact, meaning unique items or workpieces with sensitive surfaces can be scanned without any risk of damage.
The clear advantage: complex parts do not have to be measured and re-designed, which takes a lot of effort. After a short time, the finished data is available for processing, i.e. for reproducing the workpiece.

That was also the reason Wochner decided to try out the "3D scanning service" offered by HOMAG. The model that Wochner had received from the customer was a hand-carved unfinished part. In CAD terms, the part was difficult to capture, which is why 3D scanning was the only alternative for obtaining model data. The only requirement: the data format of the 3D model had to be capable of being processed with the Alphacam software that Wochner uses. On request, HOMAG also creates individual CNC programs with the HOMAG Group programming system wood**WOP** 7.

According to Wochner, the order for generating the data ran very smoothly: "We were able to process everything very quickly in collaboration with Mr. Raböse from HOMAG. Based on a photo of the workpiece, within a very short time we received an offer to generate the data through 3D scanning. We then handed over the hand-carved part to HOMAG, and received the data model very quickly."
The part was then reproduced and processed on the HOMAG BMG 511 five-axis processing center. "For the trimming, a three-axis machine was sufficient — however, the bore holes have a certain slant and so the five-axis machine was the ideal machine

for those," explains Wochner. The part was simulated and programmed using the Alphacam software.

According to Adrian Wochner, the end customer is very happy with the result. "I think the 3D scanning is a great service and I would recommend it to any company that has workpieces that are almost impossible to capture in CAD programming. If you only have parts like this occasionally, and HOMAG acts as a central point that offers the data for a good and reasonable price by means of scanning, I think that's a good alternative," says Wochner.

At the moment, the company has two basic bodies for the lyre in processing — and it looks like this won't be the last order. Regardless of what parts are requested in what size and shape in the future, reproduction is easier than ever.

Source for images: HOMAG Group AG/Josef Wochner GmbH & Co. KG

Figure 1: A specialist at HOMAG guides a hand scanner around a piece of art and creates a 3D model for reproduction on the CNC.

Figure 2: HOMAG has created the 3D model with the scanner and Wochner has used this model to generate a CNC program with Alphacam and has trimmed the reproduction.

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