

■ Laukhuff GmbH & Co. KG, Germany

Musical and Technical Masterpieces

The art of organ building at the highest level with modern CNC techniques: Laukhuff relies on a five-axis milling center from Spinner with Sinumerik 840D sl for small-series production.

At Laukhuff in Weikersheim, Germany, tradition and modernity merge together in a way that cannot just be seen, but also heard. The family-run company, with almost 200 years of history, is the international leader in organ building – as a supplier to the best-known organ builders and as a provider of its own complete developments. The company operates on a global level with 150 employees, considering itself a craft enterprise rather than an industrial company. Company CEO Hans-Erich Laukhuff emphasizes: “In our carpenter’s workshop, and when manufacturing organ pipes, we are hardly able to use any machines because 90 percent of the work has to be done by hand. When it comes to cutting, however, this is a different matter. Here we use modern milling and turning machines with innovative Sinumerik CNC equipment, so that we can keep productivity levels as high as possible.”

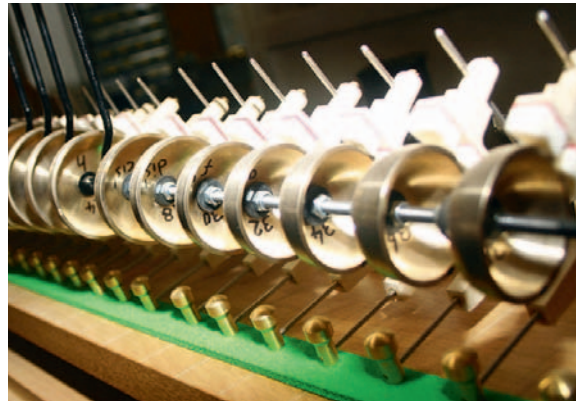
If required, the masters of organ building will supply everything from a single source. He explains: “If requested, we will take on all the tasks involved in the design, the manufacture of individual parts and the installation on-site. We even make the bench seat and the key lights ourselves, as there are no usable solutions in the market.”

The high level of perfection shown by the organ builder is reflected in the optics, in the haptics and naturally in the sound of the instruments. It also has a positive effect on their reliability. After all – quite unusually in these fast-moving times – it is not necessary to plan the replacement of a Laukhuff organ for more than 100 years. However, a few spare parts will still be required.

Despite the fact that this high quality is globally recognized, this family-run company is still facing constant cost pressure. To achieve a high throughput in cutting applications, the company uses five CNC turning machines and three CNC milling machines – together with their latest acquisition: a five-axis CNC center (3+2) from Spinner’s U-series, with modern Sinumerik 840D sl.

Impressive price-performance ratio

Company owner and CEO Hans-Erich Laukhuff and Production Manager Walter Rhein have already had positive experiences with Sinumerik. However, since mid-2009, they have been relying on the Spinner



Walter Rhein is very satisfied with the five-axis Spinner U5-620 with Sinumerik 840D sl

With the Sinumerik-controlled Spinner U5-620, Laukhuff uses new options for the more productive manufacture of organ components, such as chimes

machine tool factory in Sauerlach for the first time and using the U5. According to the production manager, this decision was based on the price-performance ratio and the small space required by the machine in contrast with comparable machines from other manufacturers. The U5-620 only needs 2,000 x 2,400 millimeters of surface area, but achieves travel distances of 620/520/460 millimeters in the X/Y/Z-axis direction.

The new Spinner machining center has high-quality individual components, including 32 tools as standard, a double arm for rapid tool changes and linear axes on roller bearing guides. Michael Schulz, Spinner sales representative at Hollenbach GmbH, confirmed: "This enables us to achieve rapid feed speeds of 48 meters per minute in all directions. Even in terms of accuracy and surface quality, our U-series sets a high standard."

In terms of the productivity and quality increases that can be achieved, the organ builder expects the acquisition of the Spinner machine to be amortized within a short period of time. Ultimately an organ builder will often manage without time-consuming retooling, as Rhein confirmed: "In the cutting applications for our organ pipe tuners, we used to have to retool three times and needed around 13 minutes just for clamping – which doesn't even take into account the downtime while retooling. The five axes mean that production is now possible in a single clamping, within around eight minutes. All in all, we are at least twice as fast as a result."

Graphically-animated user interface

Like many medium-sized contract manufacturers, the organ builder's employees also program directly at the machine. CNC specialist Kurt Stüdle is totally convinced about the Sinumerik 840D sl because it is powerful, safe to operate, user-friendly and reliable. But the CNC user interface, tailored to shopfloor pro-

gramming, also scores highly: graphically-animated and logically-structured, ShopMill is great, particularly for beginners. Production Manager Rhein explains: "Even a fitter who has only just finished his training, without any extensive programming experience, can work with it after brief instructions."

CNC professional Stüdle adds: "Even on complex components using the 3+2 axis machining, I can create lots of programming steps with ShopMill. If I reach the limits when entering certain contours, or if

» In cutting applications for our organ pipe tuners, we used to have to retool three times. Now it is possible in a single clamping and we are at least twice as quick as a result. «

Walter Rhein, Manager of Cutting Applications at Laukhuff

I am quicker with DIN, then I can switch from the graphic to the text-oriented DIN interface at the touch of a button." For additional employee safety, the Safety Integrated software solution is also integrated in the Sinumerik 840D sl. This means that it is possible for the user to safely track his program's production process in setup mode with the machine doors open.

Laukhuff is certain, based on the experience gained, that he has made the right decision with the Spinner-Siemens combination. The technology and the continuously fast service from both companies, have convinced him: "If there is a problem, we are helped very quickly – which is not always a given with other manufacturers in this particular industry." ■

info
contact

www.siemens.com/sinumerik
alois.penzkofer@siemens.com