

■ Gewinde Ziegler AG / GSA AG, Switzerland

Standardized Interface Promotes Flexibility

Gewinde Ziegler AG / GSA AG uses a heavy-duty Leadwell LTC-60CXXL turning center equipped with Sinumerik 840D sl CNC and its standardized, easy-to-use Sinumerik Operate graphical user interface to produce flexible, high-quality spindle shafts.



Photos: Gewinde Ziegler AG / GSA AG

Tempered roller screw actuators make environmentally friendly, energy-efficient, and highly accurate feed drives a reality

Any manufacturing company relying on the small-series production of customized components for up to 90 percent of its output must be highly flexible if it is to operate economically and meet tight delivery schedules. For Christoph Meier, CNC technology manager at Gewinde Ziegler AG / GSA AG in the Swiss town of Horriwil, flexibility was the main reason he chose the Leadwell LTC-60CXXL turning center, which can process metal bars up to 400 mm in diameter and 6 m in length (or up to 9 m in length if the additional support chuck behind the spindle drive is used). "Instead of waiting five to eight months for an outside sub-contractor, we are now able to pre-turn even large threaded spindles within a week or two, after which we can temper and grind them. This reduces delivery times to two or three months and is one of our main competitive advantages allowing us to survive even in a high-cost area like Switzerland," explains Meier.

Easy programming – thanks to the graphical user interface

When it came to the CNC controller, the CNC technology manager chose the Sinumerik 840D sl based upon positive previous experience with the device. With its multi-channel technology, the control is able to manage the VDI 60 turret with its 12 tool slots, the tailstock with rotating center, the main spindle and the feed drives. As Meier explains, he was impressed by the specific benefits of this control concept after seeing it used on smaller turning and milling machines. As far as he is concerned, its best feature is the Sinumerik Operate graphical user interface: "The interface displays animated graphics for every work step, meaning that even inexperienced staff are able to create sizable NC programs within a very short time." As Meier notes, it can no longer be taken for granted that the ability to pro-



» **Thanks to the NC programs created directly on the machine using Sinumerik, our staff is able to work reliably from the very first piece.** «

Christoph Meier, CNC Technology Manager, Gewinde Ziegler AG/GSA AG

gram in standard DIN ISO language (G-code) will be part of the day-to-day skill set of a metal processing specialist. The concept of graphical, parameterized work steps offers an innovative alternative in this regard, allowing even complex NC programs to be created much quicker and easier right on the machine itself. The Sinumerik Operate user interface even lets users create, edit, and manage detailed tool lists, with all the included tools also represented by icons. "Thanks to the NC programs created directly on the machine using Sinumerik, our staff is able to work reliably from the very first piece," says Meier.

Economical single-part production

The animated 3-D simulation of programmed processing steps, including the tools and clamping devices, also ensures a high degree of process reliability. With the costly procurement of high-quality chrome-nickel alloy blanks often taking several months, process reliability plays a crucial role in ensuring continued economic viability. The benefits of 3-D simulation are particularly apparent in the manufacture of single part and small-series items, including the heavy-duty long roller screw actuators used in electric injection molding machines and sluice gates, for example. This drive technology is increasingly replacing conventional hydraulic drive technology, with its associated risks to the environment and difficult commissioning and adjustment procedures. The roller screw actuators produced by Ziegler are mostly made-to-order and are also used as drive components in machining centers and other specialized machines, in automation, and also in automobiles.

A single user interface for all machines

The benefits of the Sinumerik 840D sl have persuaded Ziegler to acquire a smaller Leadwell LTC-25ALM turning center, which is equipped with

a Sinumerik 828D and will be used for training purposes. Like its larger, high-end sibling, this entry-level CNC offers all the required functions for easy and efficient programming through the same Sinumerik Operate programming and user interface. This allows trainees to immediately apply the knowledge they have gained here in the company's production environment. "That represents another highly practical benefit of the Sinumerik control system concept: all of the PLCs on our turning and milling centers have exactly the same programming and operator interface. This means our employees are able to switch between different machines within a



Colored graphics showing the work area and work-piece and animated simulation of the programmed processes ensure optimal process reliability in the manufacture of customized threaded spindles

very short period of time, increasing the flexibility with which we can deploy our staff," says Reto Ziegler, managing director in Horriwil, summing up the benefits of Siemens CNC control systems. ■

info
contact

www.siemens.com/sinumerik
hans-peter.kueng@siemens.com