

Military to Medical:

Milling and turning operations with Siemens



sinumerik

Established in 1977, CNC Industries, a division of X-L Engineering Corp., is a high-precision, 20-person shop in Elk Grove Village, Illinois. While the parent company is diverse in its markets, CNC Industries has evolved from primarily a military sub-contractor into its current model as a supplier of high-premium, production-run medical instruments.

As its name implies, this shop focuses on CNC machining operations, mostly milling and turning. As Kurt Wendhack, general manager, explains, "The majority of the work we do today is in stainless steel, primarily heat-treated 17-4 ph." This particular grade of stainless steel has excellent strength and superior hardness combined with corrosion resistance, making it ideal for various medical, surgical and dental apparatus.

Below Left: DMG TWIN 32 dual-spindle turning center with Siemens SINUMERIK 840D powerline CNC.

Case Study • CNC Industries



SIEMENS

Siemens

Case Study • CNC Industries (continued)



The machines used at CNC Industries produce high-precision medical instruments mostly from heat-treated 17-4 ph stainless steel, a material of superior hardness, strength and corrosion-resistance, therefore challenging to machine.

At the heart of this operation are three DMG TWIN Series dual-spindle turning centers, used for multiple tasks, according to Wendhack. These turning centers are typically used for high-level machining of bar, shaft and chuck workpieces, with a unique work area designed around the dual-spindle configuration. With integrated drives on both the main and counter spindles, these TWIN Series turning centers provide indexing 12x servo turrets with 0.1-second indexing, 1.0g acceleration, rapid traverse to 1,181 ipm and 8,000 rpm spindle speeds. The overall control is a Siemens SINUMERIK 840D powerline CNC, used for axis movement and spindle movement. "With a PC-type Windows operating system, the complex and powerful CNC is nonetheless easy to use and allows us to store our programs right in the machine hard drive, though we maintain back-up files, as well," observes Wendhack.

He continues, "Set-ups on a multi-function machine like the DMG TWIN 32 models we have at CNC Industries can be an arduous task. So a key part of our buying decision was the ease with which set-up data could be input into the machine's controller. The functionality of the 840D addressed this concern and made a significant impact on our buying decision."

The SINUMERIK 840D is a sophisticated CNC that offers a wide range of specialized functions for milling, drilling, turning, grinding and handling technologies. It provides users innovative features that increase productivity on the manufacturing floor, especially the challenging segments of high-speed and five-axis machining.

From the builder's perspective, DMG uses various controls on its broad line of eight turning center families, though the vast majority utilize Siemens CNC units, some with the company's ShopMill and ShopTurn software packages. These complement the DMG suite of software programs, designed especially for the job shop sector, to provide faster programming, tool path simulation and machine kinematic data.

Bob Reed, the DMG area sales manager serving CNC Industries, comments, "We had an ideal combination of machine, control and software to offer this customer. The materials they run, combined with their typical production quantities, translate into a real challenge for a machine tool builder. We needed to help them optimize their efficiency on the very first part, while providing ongoing flexibility to meet the variety of their workload. In the TWIN 32, with the Siemens CNC onboard, we are able to provide this customer the whole package."