A prototype and short-run production shop whose operators had no prior CNC experience reduced setup and running time by 20 percent using a machine with Sinumerik.

Josh Johnson, vice president of Continental Machine in Rockford, Illinois, says his prototype and short-run production shop must run lean. There can be no excessive programming, setup, or machining time of any kind or the shop loses.

Continental Machine has a variety of CNC milling, turning, wire EDM (electrical discharge machining), hole popping, and grinding machines, as well as various sheet metal and plastic injection-molding machinery. The shop produces a wide variety of metal and plastic prototypes, including window hardware, bicycle components, automotive parts, chemical processing equipment, medical devices, and food-service equipment.

Materials used are also wide ranging, including aluminum, CRS (cold-rolled steel), tool steels such as A2 and D2, zinc, brass, copper, bronze, titanium, and a variety of engineered plastics such as glass-filled Delrin.

Recently, the shop purchased a Fryer Easy Turn-21 CNC Combination Lathe, controlled by a Sinumerik 840D sl numerical control. The operators at Continental had limited experience with CNC and none whatsoever with the Siemens protocol.

Fast ramp-up and quick payoff
Johnson says, “The setup is extremely easy. Teaching the tools and altering the lengths and diameters is kept very simple. After the initial learning curve, which took only a few days, the operators picked up on the conversational programming right away. One of the best features on the machine is that you can still turn the parts by using the electronic handwheel and just one function, such as hogging off material automatically or putting on a tapered thread.” He says this feature allows operators to quickly and efficiently prove out part programs.

The result has been at least a 20 percent improvement in the overall cycle time on most part programs. This substantially increases work product output.

Exclusive use of Sinumerik controls
Sue Ostrander, sales manager at Fryer Machine Systems, says Fryer selected the Sinumerik 840D sl numerical control for all its milling and turning machines, a move the company recently announced to the industry. Fryer manufactures a diverse line of more than 50 models of high-quality CNC machine tools in Patterson, New York, and is well respected for its quality and innovation.
“Moving to the Sinumerik 840D sl platform was the next step in Fryer’s ongoing commitment to providing our customers with the most innovative machine tools,” Ostrander says. “The Siemens solution allows end users to achieve higher productivity through easy and intuitive features and step-by-step on-screen programming. This enables them to dramatically reduce setup, programming, and tooling times while significantly increasing output.”

“The Sinumerik 840D sl modular design allows us to take full advantage of the superior mechanical features in our machines,” says Larry Fryer, Fryer president and CEO. “Siemens has been helpful and very thorough in its training and after-sales service. The ShopTurn program now enables us to accurately determine tool path, potential collisions, tool changes, and real-world run time. This makes operators’ jobs much easier, with the added benefit of allowing us to estimate much more accurately than ever.” Johnson says the CNC has substantial hard-drive space, allowing most programs to be stored directly on the machine, though the company does maintain a backup system.

**Sinumerik 840D at Continental Machine**
- Milling of prototypes using a wide range of metals and engineered plastics
- Fryer Easy Turn-21 CNC Combination Lathe with Sinumerik 840D sl numerical control helps reduce setup and cycle times more than 20 percent

“Fryer has always been known for our easy conversational controls, and the move to Siemens has allowed us to greatly enhance this feature,” Fryer says. “The 840D sl menu-driven system combines an advanced geometry calculator that displays the part while the operator is programming it. Sophisticated solid-model graphics allow the operator to verify the part program with more clarity than ever before,” he says.

**Partnering to meet customer needs**
Fryer is impressed with the automatic tool setup and easy part setup with the Sinumerik CNC. Fryer says auto-run mode is where many operators experience difficulty. Siemens and Fryer Machine Systems together created an electronic-handwheel-run mode that gives the operator a safer way to prove out program execution, both forward and backward, using a standard electronic handwheel. Fryer says, “Siemens provides us with a highly flexible solution that is critical to our ability to meet the specific needs of each customer. Our enhanced capability to offer the same control for both turning and milling gives Fryer machines a unified platform that is very important to customers both in the short term and for long-range expansion. This platform, coupled with Siemens’ quality and reliability, is invaluable to us in competing in today’s aggressive marketplace.”