

User-Friendly Gear Measurement

GOOD TIMING LEADS TO PARTNERSHIP BETWEEN PROCESS EQUIPMENT AND SCHAFER GEAR

Matthew Jaster, Associate Editor

Schafer Gear Works, Inc., headquartered in South Bend, IN, is a producer of high-precision, custom-engineered gears and machined parts. The company saw a fortunate expansion of new business at the end of 2009 and needed to expand its gear capacity. Around the same time, the Process Equipment Company (PECo), located in Tipp City, OH, was dispatching representatives to discuss the advantages of its gear measurement systems.

“We needed to make a quick decision based on our increase in business, and PECo had a machine that was ready to go” says Doug Fozo, quality manager at Schafer Gear. “The timing was perfect, and we had confidence in PECo and what they had to offer us.”

Schafer Gear soon purchased PECo’s ND300 gear measurement system. The ND300 offered a user-friendly, intuitive software platform that made Jim Shinall, quality technician at Schafer Gear, very excited. “We had been using an outdated Höfler gear checker that was very difficult to find support for,” Shinall says. “The ND300 gives us immediate network assistance from PECo representatives. They can walk me through any problem we might have directly online. It also stores every part on the server, so **continued**



PECo's data acquisition and Renishaw 3-D probe technology enables the machine to generate measurements on various surfaces (All photos courtesy of PECo).



The ND300 from PECO fit perfectly with the gear measuring needs at Schafer Gear thanks to its service and support benefits.



The ND300 comes with a three-year warranty, telephone service response and remote software support.

I can recall anything I need to. The network capabilities are a huge advantage for us.”

PECo’s proprietary data acquisition algorithms and Renishaw 3-D probe technology produce true 3-D measurements in an error-compensated work envelope. This enables the machine to generate comprehensive measurements on various surface orientations. Thanks to off-the-shelf probing technology, the probes are less costly to replace, allow for quick-change tooling and are easy to find if a replacement is needed. The ND300 can measure down to 120 DP or 0.21 module and gives customers the ability to measure and analyze components that customers previously just had to assume were correct or had to test functionally on roll testing equipment.

Using a combination of linear displacement and volumetric algorithms, the ND300 maintains accuracy throughout the measuring zone, making it possible to inspect several features of a part and accurately relate them to one another. PECO’s unique proprietary spatial mapping algorithms enhance the accuracy of the system, providing inspection throughout the entire measuring volume.

Schafer Gear put the ND300 to work immediately on internal and external gears, helical, spur, bevel, worm and cluster gears, as well as standard profile splines and flat root splines. “The machine has been running 10 hours a day since installation,” Shinall says. “It supports our production floor and has been a great help in handling our new business.”

The Microsoft Windows platform on the ND300 is easy to use, designed for custom software development and can interface with the latest computer hardware and operating systems. Shinall finds that the charts and data are “easy to read and accessible.” The remote programming package allows for work to be done from an office away from the production floor.

Additionally, the ND300 offers features that can eliminate runout. It also has multiple standards that are built directly into the system. After a couple of clicks, Shinall can pull up any information he needs for a specific job. “The system reads between the lines,

so to speak; it lets us do things our old gear checkers could not accomplish. There's also a feature that will let you put a gear on the machine, and it will tell you what it is. We don't always get a print, so the reverse engineering capabilities are another advantage."

Stan Blenke, executive vice president at Schafer Gear, believes the purchase of a new gear measuring machine is vital for several reasons in this economy. "First of all, it allows us to keep up with machine tool technology. Second, it increases productivity through improved efficiency, reduction of waste and eliminates bottlenecks. This helps us retain existing customers and generate new business. It also helps retain employees by allowing them to work with the latest technology in the industry."

Blenke says that Schafer Gear continues to see many large corporations consolidating clients, outsourcing and changing suppliers to reduce costs. The company wants to maintain its presence in the gear market by reducing production costs and enhancing product flow without compromising its quality standards.

The ND300 was brought in to support Schafer's expanding business ventures and give the company an opportunity for more business in the future. "There's a trend toward more gear grinding at Schafer, and we plan to expand our capabilities in this area," Blenke says.

If the opportunity presents itself for further investment in gear measuring equipment, Shinall believes Schafer will continue to work with PECO.

"The service support that PECO provides is outstanding. The support team calls us frequently and asks how things are going with the machine. They call us to ask about any problems before we call them. It's really a fresh approach to business."

Brian Slone, general manager equipment division at PECO, takes pride in the company's rapid response rate. "Our system was designed from the very beginning with support in mind. All of our components are modular for easy, quick replacement if needed and our software was designed to take advantage of Internet-based support and upgrade requests.

All of our machines, from the first one installed a decade ago to the machine shipped recently to Italy, are Internet ready for remote access support."

PECO offers a three-year warranty on its measurement system as well as telephone service response and the remote software support. On-site service is available if a technician is needed to come out and work directly on the machine.

"Over the past decade, our machines have averaged a Mean Time

Between Failure of over four years," Slone says. "The ND300 is consistently dependable and our reputation for going the extra mile on technical support is just one of its many features."

The purchase of gear measurement equipment involves the technology benefits and all the bells and whistles included. In the case of Schafer Gear, a decision was made with these factors in mind, but PECO's customer service, technical support and immediate avail-

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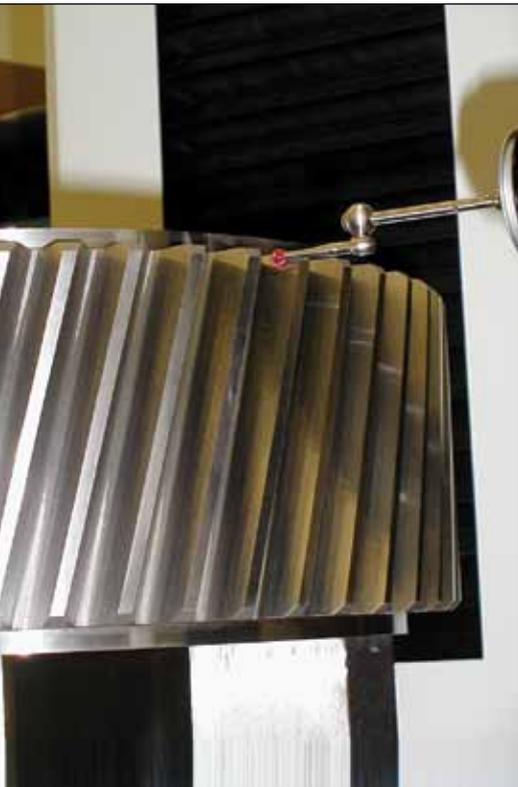
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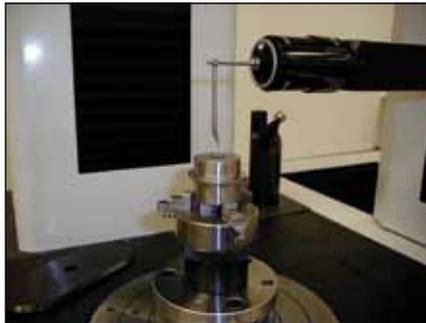
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With next day service and proficient software update installation, Schafer Gear will continue to look at PECo gear measuring products in the future.



ability played a larger role in the company's final decision.

"PECo installs updates and provides next-day service. We've reported no mechanical issues since start-up," Foza says. "PECo would have an advantage over anyone else if and when we need another gear measurement machine on the production floor." ⚙️

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