

PMPA Member Tornos Finds Success in its Industry Expertise and Cutting Edge Product Design

In 2019, at its new headquarters in the Chicago suburb of Des Plaines, Illinois, Tornos Technologies US celebrated its 60th anniversary as one of the world's leading producers of Swiss-type automatic lathes and multi-spindle machines. But to understand the full scope of the company's illustrious history, one must travel further back in time to more than a century ago in the municipality of Moutier, Switzerland. Since the late 1800s, the region had become famous for its innovation in the production of high-precision automatic turning machines. In 1914, Tornos opened up shop in Moutier and began manufacturing Swiss-type automatic lathes. In 1930, Tornos introduced the Tornos M10, the first mass produced Swiss-type lathe, one of several machines made by the company that were firsts of their kind in the industry. Other machines that defined the company's success were the CNC 632, the first CNC multi-spindle machine, and the Tornos DECO and MultiDeco Swiss machines, of which more than 10,000 have been installed across the globe.

"Previously, we were known for only high-end machines, but we have added to our portfolio and now offer machines for every need and budget," says Daniel Maerklin, president at Tornos Technologies US. "We believe that we are the company with the best Swiss turning processes, because of our expansive history in the industry and our wealth of knowledge to produce a simple to complex part for a customer."

Thanks to the Swiss machines' tight tolerances and high precision, Tornos' technology found early success in the watchmaking industry making various parts such as crowns, winding mechanisms, various screws and balances. In recent decades, there has been greater demand to meet certain production standards and requirements in industries such as dental, automotive, medical and electrical. This demand for highly precise specialty parts with tight tolerances led to sustained success for Tornos over the years.

"We are able to provide the customer with the fastest cycle times on a part, because we have an expansive database of parts that we've already made and have created solutions for," Mr. Maerklin says. "In addition to our machines, it is the process and application side that is responsible for much of our innovation."

While Tornos earned its reputation by pioneering Swiss technology in the 19th Century, the company is now defined by its ability to change with the times by focusing on the aspects that are driving today's leading



tech companies in other industries, such as product design, ergonomics and user-friendliness. A Tornos machine that may best encompass all these modern elements is its SwissNano, a colorful, compact and high-precision machine designed for small workpieces. The SwissNano is one of the smallest and energy-efficient machines of its kind. The machine is also ergonomically designed with a control panel on a swivel arm fitted with an electronic hand wheel for easier access to the machine's tools.

"There is no machine like the SwissNano in terms of precision, footprint and design," Mr. Maerklin says. "Function determines the design, and when you look at how the machine is designed, it really focuses on access and ergonomics."

Another part of what puts Tornos on the cutting edge of Swiss machining technology is the smartphone- and tablet-friendly software it uses to program its machines, TISIS. TISIS is a part of what is known in the company as Industry 4.0 and is a communication and programming software, which also can monitor a customer's machine fleet and can help them decide which machine to use for a specific part. It also enables users to assess each machine's options, reduces the risk of collisions and resulting stoppages and also improves production efficiency. The software also allows users to program machines using graphics that they can drag and drop a cycle or use ISO codes.

"We look for ways to make life easier and be productive for our customers," says Paul Cassella, applied technology manager at Tornos Technologies US. "We partner with them to produce ways to be faster, because if they are successful, we are successful."

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As one of the founding PMPA members, Tornos has greatly benefitted from the organization over the years. The company particularly benefits from PMPA's various conferences, including its National Technical Conference.

"The National Technical Conference is a really great place for exchanging notes with our customers," Mr. Cassella says. "I always found it extremely interesting,

and getting to listen to the customers discuss their ideas helps me form new ideas on my own that I can bring back with me."

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VUCA: We Can't Plan. We Can Prepare.

workholding, tool and coating options make materials that used to be considered extremely difficult to machine now routine and manageable in our operations. Some materials that were considered impossible to machine are now, thanks to these developments in technology, merely difficult to fabricate.

Parts made from less free-machining materials generally sell for a higher price per part, often because fewer shops are quoting because of the material. Is your shop needlessly avoiding opportunity because of "old thinking" about materials? I saw tungsten carbide being machined at HORN in Tübingen, Germany. Nobody thinks of machining

tungsten carbide, and yet, it is possible. What profitable jobs are going unquoted because your shop doesn't machine that grade of material?

We are living in a VUCA world. We can prepare for the surprise impacts, or we can merely react. The news reports (and common sense) tell us that the market is bound to soften. While we can't know exactly when, we can take steps now to diversify our markets, customers, processes and materials to minimize our downside when that day comes. We have had a nice multi-year run. It is probably a great time to take stock of what we have grown into and rebalance accordingly.

2 GREAT BLOGS!

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Why Join PMPA? GROW!

To grow and profit today, you have to work smarter. You have to relentlessly eliminate waste. PMPA is the way to expand your knowledge and increase your capabilities in order to grow your business. Through daily interaction with PMPA staff members, you have access to our expertise on important issues. You're also able to tap the collective knowledge of your peers: those who have "been there" and "done that."

Through the meetings, resources and online connections, reports and more, we give you the tools to grow. We look at emerging markets and let you know what's hot and what's not. PMPA programs help you understand your markets so you can make sense of the issues. And we provide relevant information to help you make informed decisions.