

Polygon Solutions, Inc.

Polygon Solutions, Inc. designs, manufactures and distributes precision rotary (wobble) broaching tools and tool holders. The company's products are used primarily in lathes, mills, CNC machines and screw machines.

The manufacturer offers a complete line of standard hexagon, double hex, square and hexalobular (6-lobe) rotary broaching tools. Specialty products include custom spline, involute, serration, spur gear and micro-shaped rotary broaches, with additional shapes available upon request.

Polygon Solutions was founded two years ago in Fort Myers, Fla. with a plan to manufacture the industry's most advanced, most user-friendly rotary broaching tools.

"The concept of using a cutting tool to make a square or hexagon-shaped hole was not new," says Peter Bagwell, the company's product engineer. "A similar tool was first patented in 1914. But the concept has evolved considerably over the last century.

"Rotary broaching tools were first used on screw machines in the 1950s," Mr. Bagwell continues. "And in the 1970s, an adjustment-free model was introduced, taking a lot of the complexity out of the process."

Polygon Solutions' innovative tools and tool holders are the next generation in the rotary broaching category. The company's tools allow customers to cut a wide range of holes and shapes into their own products. The manufacturer currently serves the medical, aerospace, automotive, fastener and plumbing industries.

"In the medical field, the technology for bone screws and orthopedic devices is expanding rapidly," Mr. Bagwell says. "These small implants have very unique parts and fasteners that are made by rotary broaching."

In the automotive market, Polygon Solutions sells to auto manufacturers, as well as aftermarket and customizing shops. "Some of our customers make motorcycle parts, such as small shifter gears that require a unique-shaped hole," Mr. Bagwell explains.

"The smaller shops usually don't have the equipment to make those precision holes, so they come to us for the rotary broaching tools. In such cases, we do a bit of reverse engineering as part of our service.

"These are not very big tools," he adds. "Most of the sizes we offer are under an inch in diameter. Oftentimes, we have



to draw the tool and get it approved before we proceed. There's quite a lot of work involved before we even begin the manufacturing."

Last month, Polygon Solutions received a Manufacturing Leadership 100 Award in the Innovative Enterprise category. The ML100 Awards honor companies and individuals that are shaping the future of global manufacturing.

Polygon Solutions is one of the PMPA's newest members. "PMPA is great for finding and sharing new ideas," Mr. Bagwell says. "There are ideas out there we never thought of. When you see another member dealing with a new idea, it makes you think ahead."

Mr. Bagwell is a big fan of the PMPA's Statistics and Financial Management Report. "I really enjoy that report, especially because we're a small company," he says. "The report provides a large industry overview that we probably couldn't obtain on our own.

"I also use the online resources that PMPA offers," Mr. Bagwell continues. "Part of the PMPA website includes a technical section. We've used that in the past. The fact that it's right there on the association's website is very handy. When I'm online, I also read the PMPA Speaking of Precision blog by Miles Free.

"I use the Listserves, too," Mr. Bagwell adds. "I participate in both the Technical and the Quality Listserves. So far, I've been getting a lot more out of them than I've been able to put in. There's a wealth of knowledge to draw from. I have never seen such a sharing of information anywhere else in the industry."

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