

Hail to the Quick-Change King

Quick-change capabilities are far and away the most demanded feature for workholding tools, and everyone's finding their own niche to fill.

Alex Cannella, News Editor

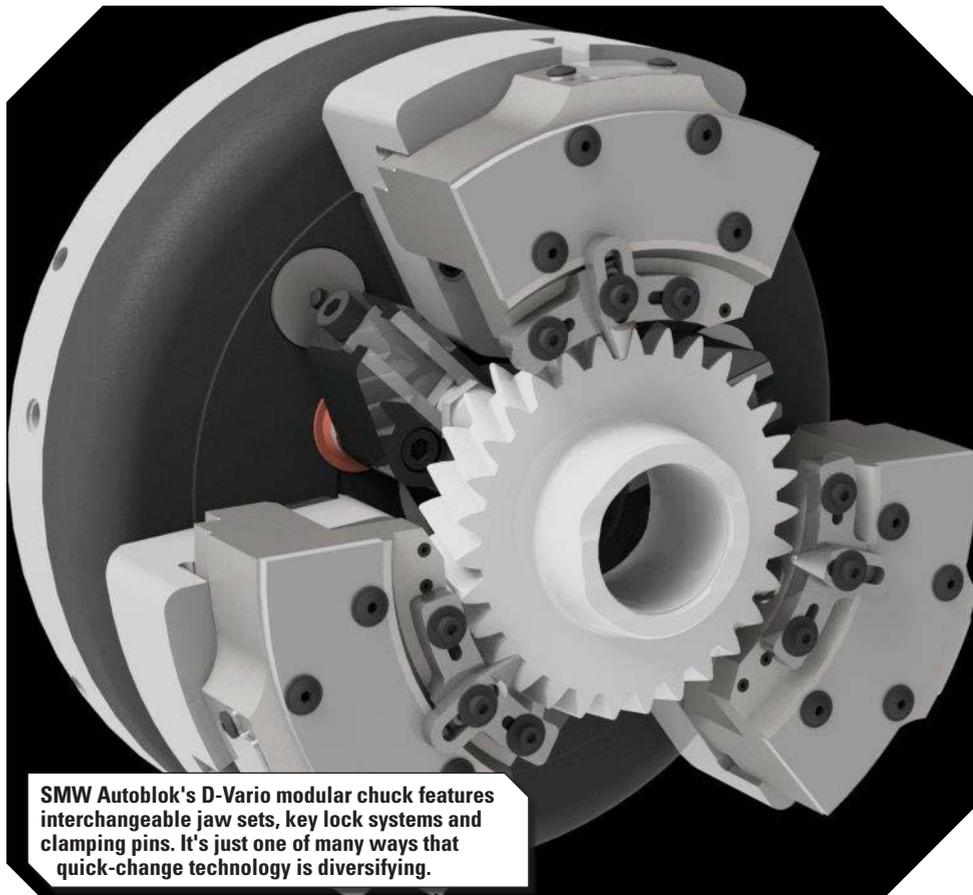
It's the year of the quick-change tool. From chucks to mandrels, workholding manufacturers across the industry are seeing a continuing trend from their customers: give us more quick-change. This year is no different. In fact, quick-change may be gathering even more steam, as manufacturers are seeing a universal spike in demand for quick-change capable products.

"The biggest thing our customers want is they want their spindles to stay running," Tim Zenoski, global product director for workholding at Gleason said. "And they want the workholding to be completely tool-less or something they can change over in minutes or seconds."

This isn't a new phenomenon. Quick-change has been gaining steam for some time, but now, bigger than ever, it's on everybody's lips. For everyone we talked to, it was the number one thing their customers were requesting. It's an increasingly common mantra these days to "do more with less," so it shouldn't come as much of a surprise that quick changeover solutions, which scratch that exact itch, are hot right now.

"It all comes down to how many dollars it costs to run a machine for a period of time, and how efficiently that machine can run/produce workpieces during this period," David Jones, precision workholding manager at Emuge, said. "In any light all companies look at this value, and machine uptime is utterly important to all of them. This is where quick-change, or even part family adaptability, come into play."

But there's more to quick changeover's current popularity than just natural appeal. Economic factors are also coming into play. With some industrial sectors taking hits (like, say, the energy sector), some companies are left in the lurch with a sudden lack of business,



SMW Autoblok's D-Vario modular chuck features interchangeable jaw sets, key lock systems and clamping pins. It's just one of many ways that quick-change technology is diversifying.

and many of them are turning to quick-change products to try and make up for losses caused by rough markets and economic conditions by streamlining their processes to cut expenses elsewhere.

"Every time the economy takes a downturn, we see a renewed interest in 'how can we make it faster, better, and change over quicker?'" Larry Robbins, vice president of sales and marketing at SMW Autoblok, said. "Well, right now, there's certain shops that are in dire straits, and they're looking for any way to increase profitability...and that's where quick-change comes into play. Whether it be a chuck or an entire system, interest peaks in times like this."

While quick-change manufacturers are seeing increased demand for their

products, they're also seeing more demanding requests. Customers are constantly asking for much the same of what's being demanded of them: better products that can do more with less. According to Robbins, customers are asking for products that are "better, faster, smarter."

"That's kind of hard with chucks," Robbins said. "Because there's really nothing smart about a piece of steel. A piece of steel is a piece of steel is a piece of steel, all day long."

It's a bit difficult to imagine how to reinvent something as simple as a chuck. Quick-change workholding has been around for decades now, and pretty much everyone manufactures a quick-change capable product of some kind,

“It used to be there would be people coming in every time you change the workholding out who are just specialists. And the days of that are gone.” **Tim Zenoski, Gleason**



Spline workholding is just one of the options provided by Positrol.

and with so many competent options already on the market, the question becomes: how do you innovate a piece of steel? How do manufacturers differentiate themselves and stick out from the crowd?

Companies are taking a number of different approaches in carving out their niches. SMW has put together several products with additional convenient features thrown in. Take their sealed chuck technology, for example, which is a feature on many of their products. SMW's sealed chucks do everything their other chucks do, but are also “permanently greased” and offer 2000 hours of labor without maintenance. While Robbins says that a lot of people are used to putting in grease every eight hours or so during production, they always get customers that are less familiar with the process, some of whom don't even realize they need to grease the chuck in the first place. SMW's sealed chuck feature eases the fuss of having to constantly grease your chucks while removing one potential way to meet with disaster.

SMW has also seen success with several of their Type D series diaphragm chucks, such as the D-Vario, a modular chuck. The chuck comes with extra jaw sets, key lock systems and clamping pins that can be swapped out with each other for different size projects. Also convenient is SMW's online D-Vario Configurator, which crunches the numbers to tell you which parts you need for a certain size gear.

Gleason has doubled down on the faster part of the “better, faster, smarter” demands customers are making. The new Quik-Flex Plus workholding system allows for a changeover in less than 30 seconds. It's a modular product, with a base part permanently installed in the work spindle and different workholding upper parts that can be swapped in and out of the base almost like ratchet bits.

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Simplicity is another factor Gleason has been focusing on, which according to Zenoski, is also appealing to their customers.

"A lot of our customers in the industry lack the experienced tool setup people they once employed," Zenoski said. "In the past workholding changes would be made by dedicated personnel that would cater the machine each time workholding changes had to be executed. But

these days are long gone. Without setup specialists, a straightforward workholding system has become more appealing than ever. The lack of specialists, as well as the industry's dearth of young talent in general, makes it imperative that new systems can be easily picked up by untrained personnel. Hence, anything more user-friendly is welcome to get new hires up to speed faster."

Without those specialists, it's easy to see the appeal of a straightforward work-

holding system that can be easily picked up by untrained personnel. A lack of specialists, as well as the industry's current dearth of talent as a whole, means that making anything more user friendly can get new hires up to speed faster is always going to be appealing.

Positrol is a specialty manufacturer that's always working small orders across a high variety of industries, and they've diversified themselves accordingly. They have 25 different products (including, yes, quick-change options), and if none of those are what you're looking for, they regularly come up with custom solutions for any specialized tasks you need done. They use a six step process where they look at your needs and technical requirements, determine the best tool for the job, and then manufacture and test it upon approval.

"We specialize in 25 different areas," Eric Weber, VP of sales at Positrol said. "Which gives us a very high degree of confidence that we can tackle any job."

Hainbuch, meanwhile, has seen success with their line of mandrels.

"Most people for years thought [mandrels were] a weak workholding solution, and we've proven that you can

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Hainbuch has seen success with their line of ID mandrels.

clamp IDs just as well as ODs,” Larry McMillan, Great Lakes regional sales manager at Hainbuch, said.

Hainbuch’s overcame the mandrel’s reputation with a different, stronger design that combines different materials and a new clamping system. Where most competitors use spring steel for their mandrels, Hainbuch is utilizing vulcanized segments made of solid steel. They also have opted to use parallel clamps, which provide grip force down an entire piece and addresses one of mandrels’ biggest weak points. The parallel clamp gives Hainbuch’s mandrels an advantage over even OD chucks in some situations, as it allows the mandrel to provide a solid grip without clamping down on part of the outside of the product.

Hainbuch has also developed a system that allows you to not only swap out different size tools, but also switch between a mandrel, a collet and a three-jaw, giving their system extra versatility without compromising changeover time.

But even as they work to produce new solutions to make other companies operate more efficiently, workholding manufacturers are also finding new ways to improve their own processes. From new



“We’re a designer and manufacturer, just like our customers. So we deal with the same issues that our customers deal with. So we live and breath their life, as well.”
Eric Weber, Positrol

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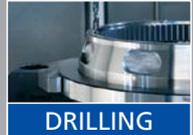
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software to equipment, workholding manufacturers are often looking for better ways to deal with many of the same issues their customers want solutions for.

“We’re constantly reinventing ourselves, because we have to,” Robbins said. “If we become complacent and we don’t constantly innovate, then we’re just another person in the game, we’re just another person supplying a chuck. We want to supply a solution. We want to give a customer the ability to come to us, say ‘here’s the issues I have in my facility, here’s the 15 ports we’re having a problem with, what can you do to help us?’”

One upgrade SMW has incorporated is *Esprit*, a program that takes virtual prototypes and simulates the roughing and cutting process on them. The program allows SMW’s engineers to directly upload a product and select the proper tool for the job, then shows a complete simulation of the manufacturing process. Once the simulation checks out, it’s off to the cutting tools. For the particularly cautious, you can double check on the physical machine by using a “no touch” run to make sure the process is working

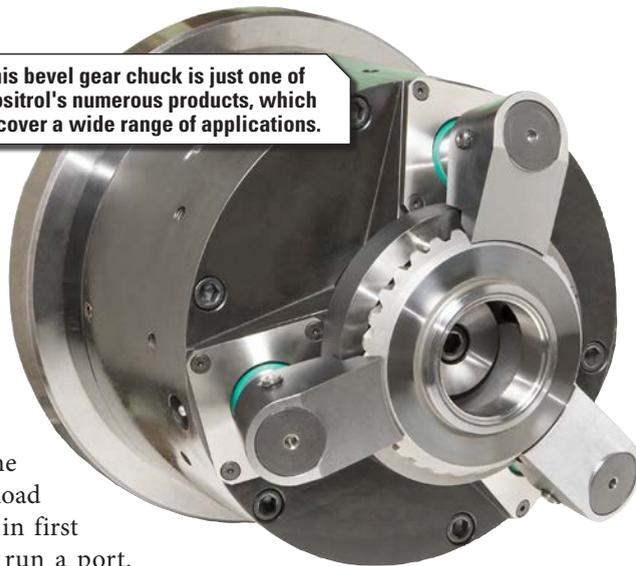
as simulated.

“Adopting [*Esprit*] has taken our programming time and cut it at least in half,” Robbins said. “It’s allowed us to be proactive to customers’ needs, so if a customer needed reduced delivery time, it allows us to create a program and program offline. And someone can program at night, download it, and someone can come in first thing in the morning and run a port. Before, somebody had to stand at the machine and program.”

Gleason, meanwhile, is working with modular systems for many of their standard product lines. Over the years Gleason has developed automated systems for design to manufacturing to ensure consistent execution.

“Rather than redesigning workholding every time for an application that is slightly different, we build from our modular solutions to perfectly fit customers’ requirements. It’s simplifying

This bevel gear chuck is just one of Positrol's numerous products, which cover a wide range of applications.



and perfecting the product to the point where our engineers can concentrate their efforts on the more complex tasks.”

Some manufacturers, such as Positrol, are even designing their own equipment to improve their workflow, which makes sense when you think about it.

“We’re a designer and manufacturer, just like our customers,” Weber said. “So we deal with the same issues that our customers deal with. So we live and breath their life, as well.”



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Workholding companies are essentially manufacturers that supply other manufacturers, and it's not much a surprise that they have many of the same needs and wrestle with the same issues as the people they sell to, including the need to become more streamlined and "do more with less." For Positrol, the answer to that problem is the same as it is for everyone else:

Give us more quick-change. 

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“It's an increasingly common mantra these days to “do more with less,” so it shouldn't come as much of a surprise that quick changeover solutions, which scratch that exact itch, are hot right now.”

Hainbuch touts mandrels that can compete with OD chucks without gripping the face of the gear.



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