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September 2021



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It's that time of year again. Time to send the kids back to school. And with that, things become quieter around the house. If only we were around the house to bask in the peace that comes with the quiet. BUT, we're all busy bumping, grinding, and hitting deadlines at the shop, right? There's always too much to do, and, yeah, yeah, we all know, not enough time to do it...

Speaking of school, and further, learning, this month we've got a spotlight with the Robert E. Morris Company who is headquartered down in Windsor, Connecticut, but are set to open the doors of their new technical center in Dover, New Hampshire. We're pleased to welcome them to “our turf” here in the Granite State and are proud to call them neighbors! Read on to learn more about their latest initiative and what it means for the overall arch of their company and the services they're providing in the manufacturing sector. Exciting times to be sure!

We've also welcomed another spotlight from Del Williams who has put together a fantastic piece about rotary surface grinding and a nice investigative dialogue about a new technology from DCM Tech that helps us bolster our grinding efficiencies. We figured it would be of interest to many of the readers of The Gateway, so, feel free to let us know if you're enjoying these types of articles. And of course, if you've got an idea for an article, or a submission of your own, please feel free to send it along!

Hope you all are doing well and doing your best to stay cool. It's been quite warm here in the Northeast...

All our best,



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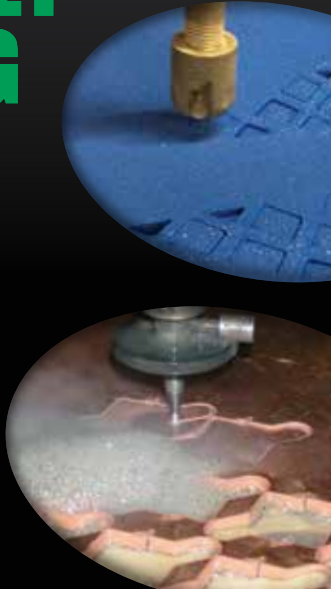
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TRACING THE ROOTS WITH THE ROBERT E. MORRIS COMPANY.
SET FOR EXPANSION WITH NEW FACILITY IN DOVER, NH.

Morris Group, Inc.

The Robert E. Morris Company reached out with the good news that they were expanding their geographic footprint, and we couldn't wait to hear more about what they've got cooking, so, we figured we'd let them fill you on the news, and while we had them, we asked the usual questions to give the Gateway readers an idea of who they are, where they've been, and where they're headed. Without further ado...



“We actively try to expand our offering moving higher in the supply chain for our customers by providing them completed subassemblies as well as machined parts. To do this we need a broad line of capable and flexible machine tools. Our relationship with The Robert E. Morris Company has helped us maintain our competitive edge.”

FIRST OFF, WE HEAR THERE IS SOME GOOD NEWS COMING OUT OF THE ROBERT E. MORRIS CAMP. WHAT'S THE LATEST DEVELOPMENT?

The Robert E. Morris Company is excited to announce the opening of a new technical center in Dover, New Hampshire! This new technical center brings us closer to our customers for better service from all aspects. It creates a local service hub with a local service manager to handle technical service questions and dispatch our local service technicians. With this new location, The Robert E. Morris Company will provide constantly improving service to our customers with better response times and lower travel costs.

We will be holding a Grand Opening event at our Dover technical center on September 15 and 16, 2021! This will be one of the many planned events at the new center offering technology demonstrations and much more. The Robert E. Morris Company will be utilizing this center to offer more local “lifelong learning” opportunities to our customers as well as frequent demonstrations of the latest technology from our builders and partners. We will be holding monthly networking events where local shops, OEMs, and college and tech center students can meet and hold valuable discussions.

We designed and built this facility with customers in mind. The Showroom will always have the latest technologies from our manufacturers, partners and vendors. This will allow local manufacturers the opportunity to learn about new technologies to help reduce the cost of their production. We also incorporated a large training room for seminars and lifelong learning for all of our products.

PLEASE, FILL US IN ON THE HISTORY OF THE ROBERT E. MORRIS COMPANY:

Since its founding by Robert E. Morris and his wife, Dorothy, in 1941, The Robert E. Morris Company has grown to be one of the Northeast’s most respected machine tool distributors. The Robert E. Morris Company provides CNC machine tools, tooling and accessories, and related engineering and support services to manufacturers of precision machined parts in the New England states plus Northern New Jersey and Eastern New York, including the New York metro area and Long Island. Currently family owned by 3rd generation, Bradley R. Morris, The Robert E. Morris Company is in its 80th year of helping customers do more with less.

Our mission is to help manufacturers maintain a competitive advantage in the world economy by improving productivity. More simply stated, we help you do more, with less.

WHAT ARE THE ROBERT E. MORRIS COMPANY'S OPERATIVE OFFERINGS? WHAT DO YOU DO?

The Robert E. Morris Company represents the following machine tool lines:

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The Robert E. Morris Company is one of the most respected machine tool distributors in the Northeast. We have whole or partial exclusive rights in Connecticut, Massachusetts, Maine, New Jersey, New Hampshire, New York, Rhode Island, and Vermont. We cover all areas of chip manufacturing including Vertical and Horizontal Machining Solutions, Turning and Mill-Turn Machining Solutions, Swiss Machining Solutions, Grinding Solutions, and large part machining Solutions.

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ANY ADDITIONAL POINTS YOU WOULD LIKE TO TELL POTENTIAL BUYERS ABOUT?

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WHAT ONE THING WOULD YOU LIKE PROSPECTIVE CUSTOMERS TO KNOW ABOUT YOUR COMPANY?

The one thing beyond the information above that is important to know, is that The Robert E. Morris company mitigates any risk that is associated with change or new technologies.

Robert E. Morris Company credits two main ingredients for successful longevity:

Technology

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People

Staying competitive means embracing continual change and new technologies. We seek out employees who are bright, dedicated, entrepreneurial and open to change. Nearly two-thirds of all our associates fill application engineering and customer service roles. Our employees are charged to make decisions and act in accordance with our company motto: customers first, suppliers second, employees third, and owners last. In short, Robert E. Morris Company is here to serve!



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METALS AND ALLOYS: ADVANCED ROTARY SURFACE GRINDERS DELIVER “ENDLESS POSSIBILITIES” AND TIGHTER TOLERANCES

This month's industry spotlight is brought to us by Del Williams, a technical writer who lives in Torrance, California.

To combat the loss of more seasoned operators to retirement, job shops are turning to more modern, automated surface grinders.

Machine shops that grind metal or alloy surfaces flat to remove material or achieve a precise thickness now have “endless possibilities” to improve their precision as well as production speed and control with more advanced, automated units.



Today’s rotary surface grinders offer sophisticated sensors and controls that can reliably achieve tighter dimensional tolerances, flatness, parallelism, and surface finish in much less time. The equipment can be used to grind flat metals, alloys, and ceramics to precise dimensions before polishing.

Operator control over the process is unsurpassed with the new automated grinders. The user can enter the specific requirements, for example: 712 RPMs on the spindle, 22 RPMs on the table, with a down-feed rate of .003 inches per minute, with a certain dwell cycle. Essentially, the machine can be programmed to meet just about any requirement.

Compared to traditional grinding equipment with manual controls that require experienced machinists familiar with the nuances of each machine, these automated units consistently produce higher quality parts in less time. As a result, a growing number of machine shops are installing new grinders that can be operated by less experienced personnel while still achieving the desired results.

SOLVING THE SKILLED OPERATOR RETIREMENT PROBLEM

In machine shops that work with metals and alloys, factors such as thickness, parallelism, and surface condition are often dictated in the specifications. Grinding is also often utilized to remove significant amounts of material to bring a stock sheet or plate to precise dimensions.

To do this, machine shops primarily utilize surface grinders with a reciprocating table and a horizontal spindle that turns the grinding wheel, but the process is very slow.

“Reciprocating table grinders are precise, but the material removal rate is slow and multiple passes are required,” says Erik Lawson, Engineering Manager at Winona, MN-based DCM Tech, a designer and builder of industrial rotary surface grinders.

Older rotary surface grinders are another option but can be problematic in the hands of less experienced operators. With limited control of spindle speeds as well as manual controls, the older equipment requires sophisticated operators that can factor in complex calculations. Considerable expertise and experience are required, which can be a challenge as skilled operators retire.





AUTOMATED ROTARY SURFACE GRINDERS

In modern vertical spindle, rotary table surface grinders, the table rotates with the workpiece held firmly in place underneath a vertical spindle. The grinding is not performed by the peripheral edge of the wheel, but by the entire diameter of the abrasive surface, which facilitates grinding performance and consistency.

“With rotary table surface grinders, the entire part passes through the wheel, which is more efficient than reciprocating table grinders that may have workpieces wider than the grinding wheel,” says Lawson.

Today, surface grinders are designed with much more advanced sensors and controls that automatically maintain very tight tolerances, removing material down to within one ten-thousandth of an inch of the final thickness. Digital technology allows for an interface with easy-to-use touchscreen controls. When combined with automation, surface grinder operators are no longer required to be highly trained individuals.

For example, rotary units such as DCM Tech’s IG 280 SD, with a 24” variable speed table and 20HP variable speed grinding spindle motor, make it possible for virtually anyone to successfully operate a unit. One example of innovation available in this model involves the automation of the initial contact between the abrasive wheel and the part, which typically had to be finessed by the operator. With this updated option, advanced sensor technology detects vibration and can automatically fine-tune not only the pressure of the spindle motor but how quickly it moves the wheel down onto the part. When the machine senses the abrasive wheel has contacted the part, it automatically begins the grind cycle.

“Automatic part detection eliminates the need for the operator to do time consuming, error prone ‘manual touch offs’ where they would manually feed the [grinding] machine until it just touches the surface of the part before backing off and restarting it,” says Lawson.

With regard to production efficiency, the advanced rotary surface grinders are also much faster than reciprocating grinders because the units can get much closer to the required precise dimensions before any finishing steps. This capability can reduce or even eliminate some lapping and polishing steps.

With a conventional surface grinder, if stock with standard thickness needs to be ground down, an operator would stop short of the required removal and leave an unpolished surface. Using another machine was often required to remove the remaining material but this can take excessive time and labor.

“A rotary surface grinder will usually finish the work of a reciprocating grinder in a fraction of the time. For the manufacture of carbide blocks, one OEM was able to document a 14X improvement in cycle time by replacing

a reciprocating grinder with a DCM rotary surface grinder,” says Lawson.

The process also consistently achieves high throughput and eliminates variability, which enables machine shops to achieve high-quality final parts, batch after batch.

In addition, programmable Human Machine Interface (HMI) controls allow operators to enter virtually any requirement into a touch screen. This capability enhances shop processing flexibility, so it is easy to adjust any grinding factor to prevent an issue from reoccurring.

For routine processes the use of a variety of grind “recipes” with sets of parameters for specific parts can further speed production, enhance quality, and aid in quick changeover.




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“Load monitoring allows the user to set limits so the machine does not overtax the part being ground or overload the spindle. If something a little unusual happens it can continue without interruption or shutting down,” says Lawson.

He adds that the automated units also contribute to a safer, cleaner shop environment because the grinding is accomplished under an enclosed shroud that contains the debris and prevents it from entering the work area.

As the tolerances for metal and alloy grinding become stricter and production requirements more demanding, machine shops that take advantage of advanced, automated rotary surface grinders will outperform rivals even as experienced operators retire.

“With automated rotary surface grinders, a machinist can be trained to be proficient at operating the equipment by lunch on the first day. It just takes a few hours of training, not decades of experience as with older machines,” concludes Lawson. He adds that systems incorporating full automation are now being developed that will use a robot to load, set up, and run parts without an operator nearby.

“Different grind recipes can be set for different customers, material types, or even part numbers so complex programming or data does not need to be entered at the start of each job. A new recipe can be created for job variations, such as a different finish or number of parts,” explains Lawson.

The grinder can also be programmed to take corrective actions on subsequent passes if the workpiece is a little off on the first pass. There is no need to pick up the workpiece and measure it after every move as with older machines.

According to Lawson, the automation provided by advanced rotary grinders allows operators to set up the machine and then attend to other tasks. The machine does not need to be constantly monitored because it has built-in load monitoring.

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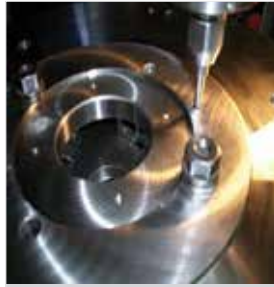


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