

# THE RECORD

Published by the National Tooling and Machining Association

## INSIDE THIS ISSUE

Earn Free Tools for Your Favorite School! p 10

Should I Buy Or Build? pp 20-21

Tempted To Poach? Don't: Special Editorial From Roger Atkins p 24

*and so much more ...*

# ATTRACTING, RETAINING, AND DEVELOPING YOUR WORKFORCE

# DMG MORI Manufacturing USA

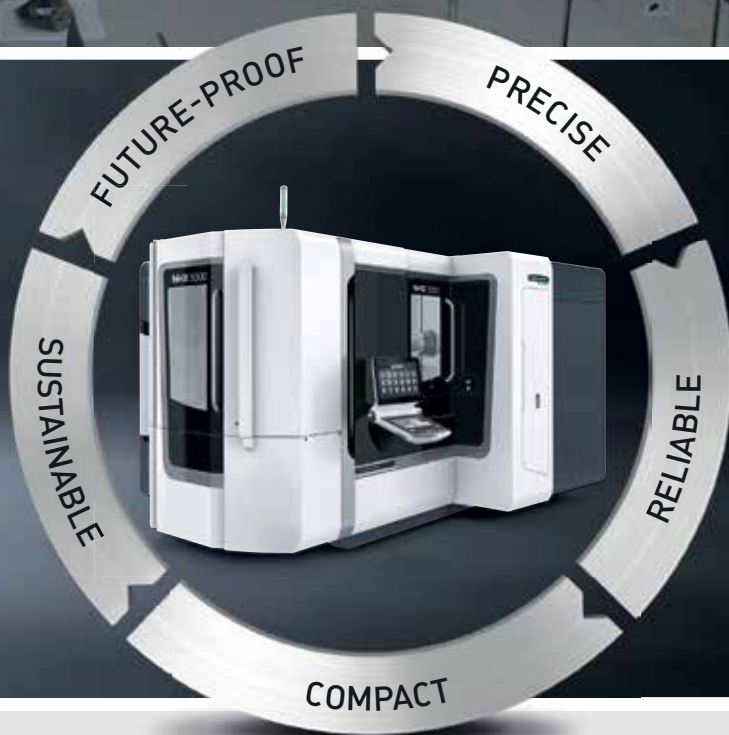
**DMG MORI**

DMG MORI's hub for Manufacturing  
and Automation solutions  
in the United States



- + 221,000 square foot
- + 100% carbon neutral
- + 100 machine per month production capacity
- + Fully integrated Industry 4.0 factory
- + Fully automated machining utilizing DMG MORI technology & software
- + Home to USA Horizontal Excellence Center and Spindle Rebuild Center

## # AUTOMATION EXCELLENCE



JOIN OUR TEAM!

**DMG MORI Manufacturing USA, Inc.**  
3601 Faraday Avenue  
Davis, CA 95618

Recruiting@DMGMORI-usa.com  
**DMGMORI.COM**



CHECK OUT OUR  
EVENT PAGE!

[EVENT.DMGMORI.COM](https://event.dmgmori.com)



## Table of Contents

President's Update 4

### IN THE NEWS

New Member Highlights	6-7
Finger Lakes Deploys Automated Gauging Workstations	8
Year-end Offer: Earn Free Tools for Your Favorite Schools	10
In Memoriam - Timothy Henry Martens	10
Global Shop Solutions Celebrates 5th Anniversary of ERP Software	12
DMG MORI – Innovative Solutions for Future-Proof Manufacturing	14
Mexican Cutting Tool Manufacturer Wins #Ancatooloftheyear2022	15
CAD/CAM Software Helps Local Apprentices Earn Certification	16-17

### FEATURES

Manufacturing With Street Cred	18
Can't Find Enough Machinists: Should I Buy Or Build?	20-21
Meeting Today's Manufacturing Challenges With New Training Tools	22-23
<b>Tempted To Poach? Don't: Special Editorial From Roger Atkins</b>	<b>24</b>
Transformation of Manufacturing: Recruit & Develop Skilled Workers	26-27

### MEMBER BENEFITS

The 3 E's of Culture?	28
What You Learned in Kindergarten and How You Attract Workers	30
What's My Business Worth?	32

## THE RECORD

### OPERATIONS & EDITORIAL

Roger Atkins, President  
Doug DeRose, Editor  
Rena Montedoro, Editor

### ADVERTISING INQUIRIES

To advertise in The Record, or for information on publishing your corporate newsletter or sales literature, contact Rena Montedoro at 716-290-1925 or [rmontedoro@ntma.org](mailto:rmontedoro@ntma.org) for advertising and editorial content.

### DESIGN & LAYOUT

Bluebird Branding  
[www.bluebirdbranding.com](http://www.bluebirdbranding.com)

© 2022 NTMA

### NTMA EXECUTIVE COMMITTEE

Alan Ortner, Chairman  
*Sirois Tool Co., Inc. – Berlin, CT*

Gillen Young, Vice Chairman  
*Custom Tool – Cookeville, TN*

Eric Hagopian, Board Member  
*Pilot Precision Products – South Deerfield, MA*

Bonnie Kuhn, Board Member  
*Kuhn Tool & Die Company – Meadville, PA*

Kevin Ahaus, Board Member  
*Ahaus Tool & Engineering, Inc. – Indianapolis, IN*

Tom Sothard, External Board Member  
Debbie Holton, External Board Member



## ADVERTISE IN THE RECORD!

With access to over 3,000 print subscribers and a large digital distribution audience, advertising in The Record ensures your message will be in front of audiences that care about your products and services.

Contact [rmontedoro@ntma.org](mailto:rmontedoro@ntma.org) for additional information.

**OOPS WE MADE A MISTAKE!** Our sincere apologies to New Scale Robotics for misprinting the article byline (October Edition Pg. 28). The article was written by Stefan Fiedich and New Scale Robotics is a Certified Systems Integrator for Universal Robots not Fanuc.

## Upcoming NTMA National Events



Chapter Leadership Summit 2023  
Date & Location TBD

## What's Your Story?

### Send Us Your Story

Each issue of The Record will feature stories from members – and we want to hear from you. Send us stories of success, or those that fit the theme of the month's issue. The submission deadline is the first of the month prior to publication.

Contact Rena Montedoro at [rmontedoro@ntma.org](mailto:rmontedoro@ntma.org)

### Upcoming Themes for The Record

#### DECEMBER

The Year In Review

#### JANUARY

Vision for 2023



# PRESIDENT'S UPDATE

It's amazing that NTMA was founded in 1943 by a group of company leaders and friendly competitors who identified the collective need for a skilled workforce. It was their foresight that led to much of the machinist training of that day, which has evolved over time to the training opportunities we see today. The reality is... despite best efforts what was started in 1943 did not progress to the point of sustainability. Today, our industry is still struggling to solve the problem. One may ask the question why has the problem not been solved? I will give you three reasons from my desk as to why I think these issues have not been solved.

**#1** Ebb and flow of the industry. Whether large or small manufacturers, we have all experienced the ups and downs of our industry. We know what it is like to be on the mountain tops and then the depths of the valley when it comes to manufacturing. Unfortunately, while in the valley the only thing that survives is what produces product/revenue and everything else ceases. While this approach may be a good business decision, the fallout, often training, is what needs to continue and it ceases. During those valley times, training is seen as an un-needed expense, highlighted by the fact most valley experiences result in employee reductions. So as industry begins to improve and we start our climb out of valley back to the mountain tops, training is the last thing to come back on line. Then our industry finds itself already behind for training and the recruiting of new machinists. To top this thought off, in my career every major downturn described above, our industry comes out with less workers than we started with. We find some retire, yet others cannot stand the ups and downs of the industry and choose to change occupations.

**#2** Qualified training. Early in my career it was the OEM's, our customers, who had the large manufacturing facilities and the people and the monies to train those entering our industry. Small and medium sized manufacturers picked from the pool of

workers trained by the large OEM type companies. While it may not have been the best or perhaps the most ethical method of hiring it was accepted by the OEM's. They knew they had the wherewithal to sustain a training program, small business did not. Then well into my career the transition started where many OEM's were getting out of having their own internal manufacturing and thus the responsibility for training fell on the backs of the small/medium sized manufacturers. While we may survive the peaks and the valleys, the reality is we have not sustained successful training to meet the ebbs and flows of the industry.

**#3** Resurgence of American manufacturing. While our country has begun to realize the importance of US manufacturing, especially in the last couple years due to the massive supply chain issues of offshore manufacturing, training has become a free for all. The need for training is now seen as the next frontier of manufacturing's need and many have jumped on the training wagon. This could be seen as great news, however understanding a gap in manufacturing training does not necessarily equate to having the knowledge, skill set and qualifications to teach manufacturing skills. Now enters the Government who says "we are here to help." While, the need is evident, what is not evident is the government's ability to truly solve the problem. As the government often does they simply throw money at the problem as the most visible solution. We have seen millions of dollars invested in various programs and solutions with little result. Associations like NTMA who think "skilled workforce" 24 hours a day, 7 days a week, and 365 days a year understand the problem and are committed to solving it. While we work on our own time and monies to train skilled workers, the government compounds the issue by supplying funding to colleges, universities and other groups, although well intended, many of these programs are lacking in their understanding of the shop floor and how to attract and retain employees

in manufacturing. Training a skilled workforce is not a hot new trend it's an ongoing issue NTMA has been tackling for 79 years.

In a recent survey of NTMA members, of those responding 86% identified "On the Job Training" as their number one source of training while local trade schools were identified by 43% as their second source of training. One must ask, does this indicate that the government's monies are not making it to their intended training targets? Also in the survey, recruitment and retention were two of the top five concerns of our members along with inflation, recession, and raw materials. As seen by our own surveys, "WORKFORCE DEVELOPMENT" remains a critical element of our businesses and our industry. So what can we do about the on-going problem which is projected to only get worse as the baby boomers leave the workforce? We could, as small/medium size businesses continue to go it alone and have a few winners and a lot of losers, or we can join and work together for the good of all our companies and our industry. Today, the US needs all US manufacturers to be winners.

NTMA is committed to growing our association to a size that we cannot be overlooked by our country's leaders. Other than the National Association of Manufacturers (NAM), most associations are too small to make a difference in this critical time for our industry and just do what they can. I am committed to each of you to do more and with your help to grow NTMA. We are poised to be the Face and Voice of small and medium sized manufacturers to make a difference and solve the problems from 1943. I hope you will join me on the Journey!

**There is Strength in Numbers.**

Roger Atkins, President – NTMA



**CGTECH**  
**VERICUT**

N5760M01  
(TOOL - 4 DIA. OFF. - 4 LEN.  
(Center drill .500 holes - A0)  
N9520M6  
N9525T5  
N9530G0G90A0.S5000M3  
N9535G54X-4.8Y-2.  
N9540G43H421.H8  
N9550G98G812-2.77R-2.42F100.  
N9560X0.Y-2.  
N9570X4.8753Y-2.  
N9580Y2.  
N9590X0.Y2.  
N9600X-4.8Y2.  
N9610X0.Y0.2-2.02R-1.67  
N9620G80  
N9630M5  
N9640G49G91G28Z0.M9  
N9650G28X0.Y0.A0.  
N9660M01  
(TOOL - 5 DIA. OFF. - 5 LEN.  
(Drill .500 holes - A0)  
N9670M6  
N9675T6  
N9680G0G90A0.S5000M3  
N9685G54X-4.8Y-2.  
N9690G43H521.H8  
N9700G98G812-3.3R-2.42F60.  
N9710X0.Y-2.  
N9720X4.8753Y-2.  
N9730Y2.  
N9740X0.Y2.

# TAKE YOUR MACHINING TO THE NEXT LEVEL



[www.cgtech.com](http://www.cgtech.com) • 949-753-1050

# NEW MEMBER HIGHLIGHTS

## MICRO METALS, INC. Rocky Mountain Chapter



Located 6272 feet above sea level in Colorado Springs, Colorado, Micro Metals Inc. has been a leader in sheet metal fabrication and manufacturing since 1972. Its Rocky Mountain location offers proximity/transportation efficiencies to businesses in the Midwest, West and South. Micro Metals invests in its facilities and equipment. With its 141,000 square foot facility, secured 208,000 square foot outside storage area and state-of-the-art machinery and tools, Micro Metals is a full-service, single source manufacturer. Their investment in machinery and facilities equates to time and money savings for customers.

Micro Metals is a family owned and operated business and is committed to manufacturing products in the USA. Micro Metals supports our customers and their needs, while continually improving in the areas of workplace safety, accreditation and process certification. We value our team and are proud of our top-notch, experienced employees who care about producing high quality products for our customers. Micro Metals specializes in all manner of custom metal manufacturing and is a full-service, single source manufacturer. Micro Metals works with a host of industries, local and abroad to include telecommunications, energy climate control, construction, secure storage, aerospace, government, oil, gas and more.

4715 North Chestnut Street, Colorado Springs, CO 80907  
(719) 593-8367

[www.micrometalsinc.com](http://www.micrometalsinc.com)

## At NTMA, We're Social. Follow Us!



[www.twitter.com/NTMATalk](http://www.twitter.com/NTMATalk)



[www.facebook.com/NTMA-1434772713457309/](http://www.facebook.com/NTMA-1434772713457309/)



[www.linkedin.com/company/ntma](http://www.linkedin.com/company/ntma)



[www.youtube.com/channel/UCWz78MHNBXqkxAHKqbUARzg](http://www.youtube.com/channel/UCWz78MHNBXqkxAHKqbUARzg)

## CAMERON MACHINE SHOP, INC. North Texas Chapter Member



Cameron Machine Shop is a full service machine shop. With a 21,400 square foot facility, we offer all types of general machine work and welding with a fully equipped inspection facility. Our ability to provide quality workmanship and service is based on three components:

- Our employees have vast experience and knowledge with a third having been with Cameron over 20 years
- Our 21,000 square foot facility allows employees to work effectively and efficiently
- We have the machinery to produce precision quality parts of all sizes

All industries sectors are serviced with precision manufacturing of all types of metals and plastics, manual and CNC machining capabilities, low volume quick turn services, competitive pricing, and welding and fabrication capabilities. We are proud to be a family, woman owned and operated company.

404 N Bowser Rd., Richardson, TX 75081  
(972) 235-8876

[www.cameronmachineshop.com](http://www.cameronmachineshop.com)

## BROWN INDUSTRIES, INC. Kansas City Chapter Member



Brown Industries is a medium sized precision producer of machined components supporting OEM's primarily in the construction and food industries. Founded in 1976 by Larry Brown. Brown Industries came under new ownership in August 2020. Under the name sake of the late founder, tremendous strides have been made to modernize manufacturing practices and restore Brown's reputation as the most efficient production precision manufacturer in the region.

Brown Industries sits in the heart of Kansas City, MO and is comprised of over 20 CNC lathes and mills spanning 27,000 sq-ft of active manufacturing space. The latest capability expansions include an 11-pallet pool horizontal mill and a 9-axis dual spindle mill turn accompanied by a 35kg robot tender. Through leveraging automation, the team at Brown Industries is excited to usher in the next generation of Made in America.

2307 Indiana Ave, Kansas City, MO 64127  
(816) 231-2454

[www.brownindustries.com](http://www.brownindustries.com)

**IACMI- THE COMPOSITES INSTITUTE**  
Education Institute Member



The Institute for Advanced Composites Manufacturing Innovation (IACMI) or IACMI—The Composites Institute is a partnership of industry, academic and governmental organizations joining forces to benefit the nation's energy and economic security. We accomplish this by bringing low-cost, energy-efficient advanced composites to commercial readiness through the collaborative and innovate work of our members and core partners. IACMI is one of 17 institutes that make up Manufacturing USA, a national network connecting people, ideas and technology to secure U.S. global leadership in advanced manufacturing. This network seeks to build the national manufacturing workforce, advance technology, create new products and reduce the costs and risks to individual companies associated with these activities. Out of IACMI's workforce development efforts in manufacturing emerged ACE: America's Cutting Edge. ACE is an IACMI-led, national workforce initiative supported by the Department of Defense to restore the prominence of the U.S. machine tools sector. The ACE training focuses on Computer Numerical Control (CNC) machining fundamentals but is geared towards anyone interested in manufacturing, from high school students to experienced machinists looking to expand their skills.

2360 Cherahala Boulevard, Knoxville, TN 37932  
(304) 690-2343  
[www.iacmi.org](http://www.iacmi.org)

**WAL-TEK INDUSTRIES, INC.**  
Arizona Chapter Member



Wal-Tek Industries, Inc. was established in 1997 by Joseph Walach, a Polish refugee who emigrated to the United States in the 1980s. Joseph began his journey in Detroit before moving to Phoenix. After being fired from a machine shop, he started Wal-Tek Industries with a single CNC mill. The company has since grown to more than 40 people and over 30 CNC machines. In 2019, Brandon Brooks stepped in as Wal-Tek's General Manager. A long-time business associate of Joseph's, Brandon was motivated by the opportunity to build on Joseph's legacy. Once Brandon and Joseph formed their partnership, the company decided to launch the Fabrication Division, with an emphasis on tube laser processing and precision sheet metal fabrication. Under our leadership team, Wal-Tek is committed to building a positive company culture that empowers each team member to reach their full potential and accomplish their personal and professional goals. Our collaborative, team-centered approach enables us to develop unparalleled workplace relationships and create long term business partnerships with our clients and vendors, thus creating the opportunity for us to deliver the highest quality custom manufactured components on the market.

20804 N 20th Ave., Phoenix, AZ 85027  
(623) 587-4611  
[www.waltekindustries.com](http://www.waltekindustries.com)

**NTMA ADVOCACY**

# VIRTUAL raffle

DRAWING ON  
FRIDAY DECEMBER 2ND 2022  
5PM EST

ALL PROCEEDS BENEFIT  
THE NTMA GOVERNMENT AFFAIRS ADMINISTRATIVE FUND

ONE	\$20
THREE	\$50
TWELVE	\$100
THIRTY SIX	\$250

SCAN THE QR CODE TO PURCHASE TICKETS & VIEW PRIZES

*thank you to our sponsors!*

## FINGER LAKES WORKFORCE DEVELOPMENT CENTER DEPLOYS AUTOMATED GAUGING WORKSTATIONS FROM NEW SCALE ROBOTICS



Ready-to-use educational kits include a collaborative robot, hardware, and course materials for hands-on training in robotics and automated metrology for the manufacturing workforce

New Scale Robotics has deployed six Q-Span Workstation EDU Kits at the Finger Lakes Workforce Development (FWD) Center at Monroe Community College in Rochester, NY. The ready-to-use kits help colleges and universities easily add hands-on robotics and metrology courses to their workforce development programs for advanced manufacturing.

Q-Span EDU Kits feature a Universal Robots UR3e collaborative robot mounted on a sturdy mobile workstation table. Kits include additional hardware, software and course materials for hands-on training in both collaborative robots and basic metrology. Hardware components in the kit, such as a conveyor, part trays and reference gauges, are easily added to or removed from the table for different lab exercises.

“We focus on rapid training, retraining and upskilling of technical workers in demand by local employers,” said Dr. Robin Cole, Vice President, Economic and Workforce Development and Career Technical

Education at Monroe Community College. “New Scale Robotics and Universal Robots made it easy for us to expand our FWD Center course offerings with these educational kits, ready to implement and tailored to the needs of technical training programs like ours.”

The Q-Span Workstation EDU Kits give educational program directors an easy way to offer two complementary courses — the Universal Robots UR Program for Education and the New Scale Robotics Intro to Metrology course — without the need to remove the UR robot from its secure position on the mobile workstation table.

The UR Program for Education covers the fundamentals of controlling the collaborative robot and includes labs for manipulating objects, using conveyors, palletizing and other common robotics use cases in advanced manufacturing. The New Scale Intro to Metrology course covers the basics of metrology and includes labs for automated gauging using robotic calipers.

“U.S. manufacturers need employees with experience in collaborative robots and a basic understanding of metrology for quality control and process improvement,” said Stefan Friedrich, Marketing

Manager at New Scale Robotics. “By adding these courses, the FWD Center continues to give job seekers a competitive edge through hands-on training with the latest and best technologies for advanced manufacturing.”

### **About New Scale Robotics**

*New Scale Robotics helps manufacturers automate manual gauging. Our Q-Span® Workstations combine measurements from a wide variety of gauges with robotic part handling and automated data logging. They improve efficiency, capacity, and real-time reporting of quality departments. Based on flexible and teachable collaborative robots, Q-Span Workstations are do-it-yourself (DIY) automation kits that fit into existing workflows. They help quality teams reduce errors, increase throughput, and better utilize skilled labor in small-batch, high-mix manufacturing. Easy to deploy without specialized training, they deliver return on investment (ROI) in less than ten months.*

**New Scale**  
Robotics

[www.newscalerobotics.com](http://www.newscalerobotics.com)





**COMPACT CNC AUTOMATION**

# **FLEXIBLE PALLET TOWER**

**FOR 4 AND 5 AXIS MILLING MACHINES**

**INCLUDES FASTEMS MMS FOR FASTER PAYBACK AND GREATER EFFICIENCY**



**Is this for me? Check [fastems.com/fpt](https://fastems.com/fpt)**

## YEAR-END OFFER: EARN FREE TOOLS FOR YOUR FAVORITE SCHOOLS

Choose best-in-class cutting tools, tool holders and workholding products from BIG DAISHOWA and support your local manufacturing training program at the same time.

From November 1 to December 31, 2022, BIG DAISHOWA will donate a tooling certificate valued at 20 percent of every order from an NTMA member company to the buyer's school of choice.

"This is a way for us to support our partners and customers in the NTMA and continue to show our commitment to workforce development," said Jack Burley, President & COO of BIG Daishowa Americas. "When buyers select their favorite local school programs, they are sending resources to train their own future machinists and engineers."

1. *The qualifying minimum order is \$5,000 (earning a \$1,000 tooling certificate).*
2. *Place the order through your local distributor and request "Drop-ship from BIG DAISHOWA."*
3. *Add "BD-Schools" as a line item on your order. Certificates will be sent by February 2023.*

"We've been active in NTMA for many years. Our purpose is to advise members on applying technology to reduce set ups and cycle times, improve part finishes, and lower costs through longer tool life. I hope this special promotion will be an incentive for those who have not tried our products yet," Burley said. BIG Daishowa offers 9 products lines of precision tooling, workholding, and tool management systems aimed at reducing both the overall process time and the cost per part.

Popular products include face mill holders, end mill holders, collet chucks, angle heads and tapping adaptors. The world-leading KAISER Boring System, high performance Sphinx Drills and Unilock Workholding systems are also available, as are CAT, BT, HSK and Capto systems.

If your machine is equipped with a BIG-PLUS spindle, remember that BIG DAISHOWA is the official licensed provider of BIG-PLUS tool holders in North America. Don't accept any substitute "dual contact" products on your valuable machines.

View or download the latest product guide, or find your local distributor, at <https://us.bigdaishowa.com>.

As a member of the BIG DAISHOWA Group (Osaka, Japan), BIG DAISHOWA Inc. has grown into a recognized global tooling provider, with manufacturing facilities in North America, Switzerland and Japan. In addition, BIG DAISHOWA is the North American representative of Speroni tool measuring machines, Sphinx high performance drills, mptec measuring stands, Tekusa spindle cleaners and the UNILOCK zero-point workholding system.



For more information, contact BIG DAISHOWA, Hoffman Estates, IL at 224-770-2999, e-mail [bigdaishowa@us.bigdaishowa.com](mailto:bigdaishowa@us.bigdaishowa.com) or visit [www.us.bigdaishowa.com](http://www.us.bigdaishowa.com).

## IN MEMORIAM - TIMOTHY HENRY MARTENS

Timothy Henry Martens, 51, of Topsfield, MA passed away unexpectedly on 9/18/22 at his beloved vacation home in Jackson Hole, Wyoming. He was with his wife Wendy and some very dear friends at the time.

Tim was the son of the late Martinus and Joanna (Tournoy) Martens, both of whom emigrated to the U.S. from Eindhoven, Holland. He was extremely proud of his Dutch heritage, firmly believing in the adage "If you ain't Dutch, you ain't much!"

Tim spent most of his childhood and young adulthood in Topsfield, graduating from Masconomet High School in 1989 before heading off to college at the University of Arizona. After two years he transferred to Indiana University (Go Hoosiers!) from which he received his B.S. in 1996.

After working in England and traveling extensively in Europe, Tim settled with his first wife, Elizabeth Goldner, in Amesbury MA, where his daughter

Samantha was born in 1997. Being a father to Samantha was one of his greatest joys, and she remained the light of his life until the day he died.

Tim joined the family business, M & H Engineering of Danvers, eventually becoming a co-owner with his brothers. Tim went on to become president of the highly successful precision machining company, as well as holding leadership roles in both national and local machining associations.



# HEIDENHAIN



Reliable processes for exact,  
dynamic and efficient production

Machine tools that are equipped with controls, encoders, drive technology and machine monitoring software technology from HEIDENHAIN provides that clear competitive edge you've been looking for.

Ask for  
**HEIDENHAIN**  
on your next  
machining  
center

## GLOBAL SHOP SOLUTIONS CELEBRATES THE 5TH ANNIVERSARY OF ITS CLOUD ERP SOFTWARE

Global Shop Solutions, a leading provider of ERP software to manufacturers around the globe, is proud to celebrate the 5th year anniversary of its Cloud ERP product. An investment of high importance to customers, the adoption of Cloud ERP greatly surpassed the five-year forecast.

Designed to make technical support easier and reduce the total cost of ownership for manufacturers, Cloud ERP simplifies the software through increased speed, improved accessibility, stronger security, automatic data and systems backups, and more. According to

---

“Our Cloud ERP is a result of listening to customers and responding to their needs”

---

George Thuo, Director of Cloud Technology for Global Shop Solutions, Cloud ERP caught the attention of current and prospective customers from the start. “Like most new Global Shop Solutions products, our Cloud ERP is a result of listening to customers and responding to their needs,” says Thuo. “Several years ago, a growing number of prospective ERP buyers began asking if our ERP system was offered in the cloud. Based on the demand, I assembled a team to develop the product, which we launched in 2017. Five years later I am proud to say we have more than doubled our forecasts for the number of Cloud ERP users and made ERP software better for hundreds of manufacturers.”

Cloud-based ERP software offers many advantages, starting with lower system costs. With Cloud-based ERP, companies can maintain ERP at a very reasonable price because the ERP vendor performs these tasks for the customer. Another advantage is the ability for employees to access their company's ERP system from anywhere, including at-home workstations or in real time at multiple facilities.

When the COVID pandemic hit in 2020, the demand for Cloud ERP skyrocketed. “As many of our customers began sending employees to work at home, they needed easier external access to their Global Shop Solutions ERP system,” says Thuo. “We had a lot of customers scrambling to move to the cloud so they could continue operations with increased speed and accessibility.”



### LOOKING AHEAD

In 2017, about 25 percent of new Global Shop Solutions customers opted for Cloud-based ERP. Currently, about 65 percent of new customers choose that route. Thuo expects these numbers will continue to climb, in large part due to security concerns. “With cyberattacks increasing in the manufacturing market, Cloud-based ERP costs less to protect the integrity of the system, especially for smaller manufacturers who can't afford to have IT or security experts on staff,” says Thuo. “Our Cloud ERP helps customers avoid malware attacks because it's protected with the best technology.”

Going forward, ERP providers will have to integrate security into their product, and the cloud is a great option. We will continue to innovate to protect manufacturers while making their day-to-day life simpler with Cloud ERP.”

### About Global Shop Solutions

*We simplify your manufacturing.™ Global Shop Solutions ERP software provides the applications needed to deliver a quality part on time, every time from quote to cash and everything in between including shop management, scheduling, inventory, accounting, quality control, CRM and 25 more. Available in the cloud or on premise, our manufacturing customers benefit from real-time*

*inventory accuracy, improved on-time delivery, lower administrative costs, increased sales and improved customer service.*

*Headquarters in The Woodlands, Texas includes a state-of-the-art R&D facility and Global Shop Solutions training center. Through its offices in the U.S., Mexico, Indonesia, Singapore, Australia, New Zealand and the United Kingdom, the company supports thousands of manufacturing facilities in over 25 countries and nearly 30 industries. For more information please visit [globalshopsolutions.com](http://globalshopsolutions.com).*



[www.globalshopsolutions.com](http://www.globalshopsolutions.com)



**IMPROVE  
QUALITY  
COLLABORATION  
COMMUNICATION  
COMPLIANCE**



High QA quality management software brings quality and manufacturing together.

Manage, monitor, document and share the manufacturing quality process internally and throughout your supply chain.

**GET A FREE DEMO**  
[www.highqa.com/NTMAdemo](http://www.highqa.com/NTMAdemo)

 [www.highqa.com](http://www.highqa.com)

 [/highqa](https://www.linkedin.com/company/highqa)

 [info@highqa.com](mailto:info@highqa.com)

 888.727.1266



- Tool Holders
- Boring Tools
- Cutting Tools
- Workholding
- Tool Measuring

**NEW NAME. SAME PROMISE.  
HIGHER PERFORMANCE. GUARANTEED.**

BIG KAISER is now BIG DAISHOWA

While the name is different, we remain committed to the core promise we made more than 30 years ago: Higher Performance. Guaranteed.

You don't compromise and neither will we. Our mission is to find the best solution for you and deliver it with a personal commitment of efficient and measurable performance improvements.

(224) 770-2999 | [bigdaishowa@us.bigdaishowa.com](mailto:bigdaishowa@us.bigdaishowa.com) | [bigdaishowa.com](http://bigdaishowa.com)



## DMG MORI USA'S SOLUTION CENTER – INNOVATIVE SOLUTIONS FOR FUTURE-PROOF MANUFACTURING



DMG MORI USA presented current innovations and holistic technology solutions for the future of manufacturing on more than 2,000 square meters, with 23 high-tech machines as well as 7 automation solutions.

**At Chicago Tech Days taking place at the Americas headquarters in Hoffman Estates, DMG MORI presented its extensive portfolio of automated and digitized manufacturing solutions for competitive production.**

Automation, digitization, and advanced technology integration – at Chicago Technology Days in Hoffman Estates from September 11 through 15, 2022, DMG MORI presented a variety of comprehensive answers to the current unknowns in machine tool manufacturing. At their in-house event, DMG MORI utilized 21,000 sq ft / 2,000 sqm of the showroom to showcase 23 high – tech machines live during the event, thereof 3 premiere machines and a premiere automation solution.

Over 1,350 visitors from more than 730 companies came out to Hoffman Estates to visit the latest technologies and innovations at Chicago Technology Days, which was over 3 times the amount that was expected. With this event overlapping with IMTS in Chicago this year, the demand for this local event came from DMG MORI USA's customer base, wanting more one – on – one time with DMG MORI's industry experts than other events allow.

Several machines on display were automated with innovative workpiece or pallet handling as well as collaborative robots. In addition to the well-known Rotary Pallet System, DMG MORI showcased the premiere automation MATRIS Light as a highlight on the universal lathe NLX 2500/700. With the collaborative robot MATRIS Light, DMG MORI offers a highly flexible automation solution for the efficient variable-mix and variable-volume production, which is quickly deployed when needed, and equally quick to remove when not in use.

The US premiere of the NTX 500 was another major highlight at the event, with the integrated robot IMTR – In Machine Traveling Robot. The NTX 500 is the most compact model among the NTX series for highly productive 6-sided complete machining of complex workpieces, which makes this machine fill a niche specifically for the medical industry perfectly. Another innovation on display was the non-contact on-machine measuring system, which automatically enables to measure workpieces in machine tools with its cutting-edge sensing technology, by using a non-contact type laser scanner from NIKON. The integration of DMG MORI's sensing technology and NIKON's measurement technology leads to high-speed and high-accuracy measurement.

At the hotspot of machining in the USA, the integration of technologies and processes was also a focal point. This included complete machining on 5-axis machining centers as well as the impressive turn & mill machines, mill-turn machining centers and Additive Manufacturing technologies. In addition, integration solutions for gear milling and grinding reinforced the range of products. The resulting complexity was broken down holistically with intelligent digitization tools. The workshop-oriented operator supported TULIP and the successful customer portal my DMG MORI completed the portfolio at the event.

DMG MORI offered presence to their DMG MORI Qualified Partners, to provide customers with a holistic approach as a total solution provider – from machine, to automation, digitized processes, over to equipment, training, and financing options. There was no question visitors couldn't find an answer to, at the Chicago Technology Days this September.

# DMG MORI

[www.dmgmori.co.jp/en/](http://www.dmgmori.co.jp/en/)

# NO SIMPLE TOOL - MEXICAN CUTTING TOOL MANUFACTURER SJ TOOLS WINS #ANGATOOLOFTHEYEAR2022 FOR A CUTTING TOOL WITH FIVE OPERATIONS IN ONE

**JG Group from Poland were second time winners of the virtual category for their beautiful and highly creative model of a Hummingbird that attracted significant industry votes**

The first ever Mexican winner, SJ Tools wowed the market with a cutting tool that combined multiple features into a single tool where all features were finished with a very accurate surface finish. The complexity of the design was possible through ANCA's flexible iGrind software that offers its users a myriad of advanced features. SJ Tools drill point was special with a roughing tip just below the drill point to carry out high speed drilling and chip management.

Into its fifth year, ANCA's industry first competition announced winners live at the international trade show IMTS in Chicago, IL earlier this month. The 'Oscars' of the Cutting Tool industry, participants and winners achieve important brand recognition with a reach of over two million across extensive media and social media coverage as well as money and other prizes.

Patrick Boland, Co-Founder at ANCA comments: "Every year I am delighted by the skill and creativity of our customers and how they apply the ANCA technology to design and manufacture market leading cutting tools. I think it is very important to recognize the amazing results we see across our industry and ANCA's Tool of the Year is a chance to get together and celebrate our vibrant and innovative industry."

JG Group won the virtual category with an excellent display of creativity and third runners up for the main ANCA Tool of the Year. The effort and creative thinking process coupled with intimate knowledge of the iGrind and the CIM3D software enabled them to design a life size model of the "Hummingbird" which was both beautiful and an impressive application of design. Aleksandra Semeniuk, Design Manager at JG GROUP has been producing cutting tools as well as machine parts and tooling for industry since 2005. "The ANCA Tool of the Year competition inspires tool companies all around the world and brings a breath of fresh air to our daily work, stimulates creativity and allows us to break down barriers."

## NO SIMPLE TOOL - SJ TOOLS TAKES THE ANCA TOOL OF THE YEAR MAJOR AWARD

Edwin Juarez, CEO of SJ Tools said: "There is no simple tool. That is why I want to highlight the engineering, design and manufacturing team since they worked hard analyzing each of our client's operations to be able to create this tool. The experience and dedication of each team member that works at SJ Tools leads us to these achievements. It was created by observing, analyzing and detecting the needs of our client, and thus be able to create this solution."

Independent judge, John Saunders who is the President of Saunders Machine Works (SMW) and founder of YouTube channel NYC CNC said, "Congratulations to the winners! The application of both software and the ANCA grinding technology was truly remarkable. The complexity, detail, and quality of the tools was outstanding. Thank you to ANCA for inviting me to be part of the tool of the year competition and helping to share our passion for educating the manufacturing community about the precision and capabilities of CNC tool grinding."

### WINNER MAIN CATEGORY: SJ TOOL

- First Runners Up: ARCH Cutting Tools
- Second Runners Up: TDM Cutting Tools
- Third Runners Up: JG Group

### WINNER VIRTUAL CATEGORY: JG GROUP

- First Runners Up: Centrum Techniki MACRO Sp. z o.o.
- Second Runners Up: Xiamen Golden Egret Special Alloy Co.,Ltd

### ANCA TOOL OF THE YEAR

There are two competition categories to recognize both the functionality and creativity of cutting tool manufacturers.

- The main prize goes to #MadeonANCA tools and entrants will be judged on the form and performance of their cutting tool.
- The second category is for virtual tools as the "Most innovative tool design." Entrants are encouraged to be creative and use ANCA tool design software to push ideas to their limits.

The winner of #MadeonANCA receives \$10,000 AUD worth of ANCA innovations for parts, accessories or software that fit your grinding needs and the winner of the most innovative virtual tool will receive the full CIM software package.

### SPONSORS

**1) Oelheld:** The first runner up of #MadeonANCA received from Oelheld Fluid Technology: 1,000 liters of oil (a free first filling for an ANCA grinding machine)  
**GDS:** The second runner up of #MadeonANCA received from GDS a µGrind ANCA collet adaptor.

**2) TYROLIT:** The third runner up of #MadeonANCA received from TYROLIT - Schleifmittelwerke Swarovski K.G a free set of standard grinding wheels for a CNC tool grinder, and a training session for two people.

**3) Piranha:** The first and second runners up of the virtual tool category received one set of cooling Line Kit from Piranha.

The competition was based on the passion and the craft of tool making and celebrated our highly skilled tool grinding community.

### The top five finalist tools were judged on the following criteria:

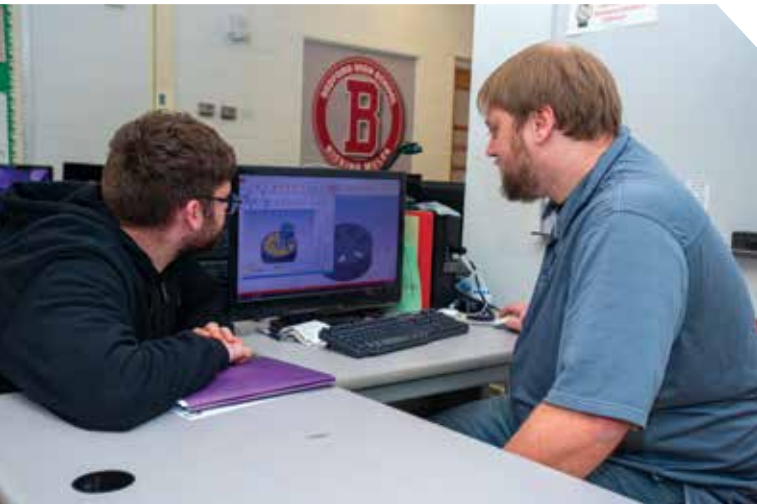
- Best surface finish in Ra (roughness average) value on the flute or gash surface
- The tool that was closest to the nominal tolerance as stated on the drawing in terms of diameter and profile (i.e. if the tolerance on diameter was +/- 0.010mm and the tool was measured to 0.005 ranked favorably)
- Tool that was ground to the tightest tolerance as per the drawing (i.e. the tool with the lowest tolerance ranked favorably)
- Level of complexity (i.e. in terms of the number of steps, profiles ranked favorably)

**ANCA**  
**CNC MACHINES**  
[www.anca.com](http://www.anca.com)

## CAD/CAM SOFTWARE HELPS LOCAL APPRENTICES EARN CERTIFICATION

The Western Lake Erie Chapter of the National Tooling and Machining Association (NTMA) has been around for years, providing advocacy, advice, networking opportunities, and other services to area machine shops. One of its most valuable and valued services is its apprenticeship school.

The school is a full four-year program that is aligned with the state of Ohio's apprenticeship initiative, which gives Ohioans ages 18 and older the opportunity to learn a career from skilled workers while earning a full salary and completing classroom work. For apprentices in the machinist program,



guidelines require 2000 hours of on-the-job training and 144 hours of classroom work for each of the four years of the program.

Most of the apprentices in the program are employee sponsored, so they are working their regular shifts, training as they work. The NTMA's classroom work reinforces that training by teaching fundamentals like manufacturing processes, technical writing, and communication. Because classroom work is intended to strengthen what apprentices are learning at work, this chapter of the NTMA employs instructors who are straight off the shop floor.

"Our unique approach to teaching is that all of our instructors are directly from the trade," said CAD/CAM Apprenticeship Instructor, Chris Weigel. "We bring the

best practices we use every day to the classroom." Weigel has been the fourth year CAD/CAM instructor for this NTMA chapter for nine years. "The advantage of having instructors who are also machinists is that we are continually learning new things in a live environment, then bringing them to the classroom."

During the day, Weigel is a journeyman machinist/manager at Innovative Machine & Manufacturing, a full-service design and machining firm in Millbury, OH. His CAD/CAM software and high speed machining knowledge is something he is glad to share.

"If I can use what I'm doing every day to help these apprentices get ahead, I'm happy to do it," said Weigel. "Things move faster these days—and not just in terms of high speed machining. Every shop wants you to use less material and make parts faster. They put a premium on machinists who know how to use CAD/CAM software to make better parts faster."

Because the NTMA's program rents space from local high schools and community colleges, students do not have hands-on access to CNC machines. Some may consider that a detriment, but Weigel likes the arrangement.

"In the fourth year, we are only focused on learning Mastercam® CAD/CAM software (CNC Software, LLC Tolland, CT) and what it can do," said Weigel. "Our students learn machining at work."

He emphasized that, by the end of his class, apprentices need to be ready to program complex, multi-axis and high-speed projects on their own. "When they get to me, most students have seen the programmers at their companies use software, but they're usually not ready to use it themselves," said

Weigel. "One of my favorite things is seeing students realize how much more they can do switching from conventional programming to using Dynamic Motion technology along with Verify and Backplot."

Mastercam Verify and Backplot functions let users see the entire machining process, allowing them to find and correct errors and collisions before parts are machined. Dynamic Motion technology enables students to generate toolpaths that result in faster cycle times and less tool wear. Compared to traditional cutting methods that use only the nose of the tool, Dynamic Motion toolpaths use the full flute length for less machine vibration, more consistent tool wear, and extended tool life.

By controlling side cuts, the tool does not overload. Weigel introduces Dynamic toolpaths in the classroom through simple 2D projects that require contouring and drilling. Students learn how to draw wireframes. They learn to work in three axes, then four, along the way learning how the choices they make affect part integrity, process efficiency, and more.

"I love introducing Dynamic Motion technology," says Weigel. "Students are skeptical until they see it in Verify and Backplot, and then they're amazed at what software can help them accomplish."

Weigel encourages students to experiment with toolpaths, learning how to use their knowledge and skills to find the best way to machine a part. In so doing, they develop the confidence they need to program and run their own toolpaths, rather than rely on a master programmer.

"There's zero reason to crash from the programming side if you use Mastercam," said Weigel. "It gives you all the tools you need to make sure that does not happen."

The projects that students create originate from educational materials supplied by Mastercam Reseller FASTech, Inc., Findlay, OH, which include a project book for students and an instructor manual. Each project gives apprentices a print and any relevant



information—like materials and machines. Then they use CAD/CAM software to program the part. Each project is designed to build on the next one, reinforcing what the students have already learned while introducing new skills. The projects provide suggested toolpaths, but Weigel prefers his students look at those only if they get stuck. He wants them to first use what they know to create their own toolpaths.

“There are a hundred ways to approach each part,” said Weigel. “Half of the battle is finding the way that makes sense for the user.”

One of the biggest lessons Weigel’s students learn focuses on the comprehensive capabilities of Mastercam. For example, if a CAD model does not provide everything needed to make a toolpath work efficiently, the software’s powerful CAD suite and CAM programming tools provide a complete solution to take parts from design through production.

“Having the ability to design and toolpath all in one package makes everything more efficient,” said Weigel.

Especially exciting to Weigel’s students is seeing what Verify and Backplot can do for them. As they work through more and more complex projects, they use Backplot to identify and correct potential problems. Then Verify lets them run their processes from beginning to end to see if their toolpaths run as intended. As each class advances, Weigel often turns to FASTech to provide additional coursework or support as needed.

The Mastercam Reseller, located in northern Ohio, has been an active partner with the NTMA’s Apprenticeship Program for quite some time, both supplying donated or deeply discounted educational materials, teaching classes, and helping the program grow. And in Weigel’s case, even more than that.

“I honestly can’t say enough good things about FASTech,” said Weigel. “The team is always willing to take the time to help out—whether it’s to send new materials or answer a question.”

It was, in fact, a FASTech sales and technical representative who mentored Weigel, encouraging him to become a teacher himself. “I’ve had the pleasure of working with Kevin Richardson since the start of my journey in this trade. I would call at least once a week when I got stuck,” said Weigel. “I actually had FASTech’s number memorized.”

While Mastercam is robust enough to run the most complicated parts, its user interface is simple enough for even the newest programmers to understand. Since Weigel teaches the fourth year CAD/CAM class, his students have been exposed to programming prior to taking his class. However, he occasionally runs across hesitant users.

“There are not many, but some students just aren’t comfortable with computers,” said Weigel. “They’re usually tentative for a period of time, but then they see how much they can do with CAD/CAM software, and it clicks into place.”

Weigel recalls one especially resistant apprentice. He entered the program later in his career, wanting to earn his journeyman certification.

“He swore up and down that he would never use any software,” recalled Weigel. “Eventually he stopped fighting me and finished the class, but I always wondered what happened to him.”

A few years later, Weigel found out.

“A new apprentice from the same company started my class and I asked if he knew my old student,” he said. “He told me that my former student was now the lead Mastercam programmer for the company.”

“I knew he’d come around,” said Weigel.

**Mastercam**

<https://www.mastercam.com>

## ONE VOICE: FEDERAL GOVERNMENT ADVOCACY PROGRAM

As US manufacturing continues to navigate the unique challenges and changes brought on by the last year – and a change in administrations – it remains important to have a partner in advocacy. NTMA helps provide this support by working closely with the team at One Voice: the combined federal government advocacy program representing small-and medium-sized business manufacturing in the US.

With regulations, policy, and shop safety all constantly evolving, One Voice has a wealth of fantastic resources, developed to help keep your shop informed and prepared for whatever comes next. In addition to ongoing COVID-19 response information – in line with any and all changes that our industry may need to know – the team at One Voice also provides informative policy webinars, news releases, educational materials, video recaps, and much more. Don’t forget about the Talking With One Voice podcast – every episode, the One Voice advocacy team breaks down how the latest news from Washington impacts manufacturing businesses across the country.

It’s yet another way your shop can get quick, concise information on everything from tax development to loans and even workforce development issues. You can send in your key questions to be answered by emailing [onevoice@policyres.com](mailto:onevoice@policyres.com). We hope you continue to utilize this key partner in One Voice – one that ensures that millions of manufacturers across the country have their voices heard.

Please visit [www.metalworkingadvocate.org](http://www.metalworkingadvocate.org) for more information.

**www.OneVoiceInfo.org**  
ONE VOICE COVID-19 (CORONAVIRUS)  
RAPID RESPONSE WEBSITE

Your source for trustworthy information.

- Keep your workplace safe
- Find resources for workers
- Get tax and loan information
- Stay on top of government directives

A JOINT EFFORT BY NTMA AND PMA

# Manufacturing With Street Cred

By Catherine Ross, AMT Director – Smartforce, and Kathy Keyes Webster, AMT Managing Editor

“

I hold the future of manufacturing above everything, and the next generation workforce is the future of manufacturing.

By: Catherine Ross, AMT Director – Smartforce, and Kathy Keyes Webster, AMT Managing Editor



Photo: Andrew Crowe, Founder, New American Renaissance Tour; instructor of advanced manufacturing technology at Ranken Technical College, St. Louis; and manufacturing workforce speaker.

**G**rabbing a hoodie in one hand and blue and white collars in the other, Andrew Crowe is dragging youth and manufacturing communities together as part of his New American Manufacturing Renaissance (AMR) Tour, a nine-city speaking engagement that culminated with his appearance at IMTS 2022.

A former machinist who is now an instructor of advanced manufacturing technology at Ranken Technical College in St. Louis, Crowe knows how manufacturing can open possibilities and change lives. Seeing such great potential while also being keenly aware of the disconnects, he created the Elevate Institute of Advanced Manufacturing Technologies, a program that brings together companies, educators, and the next generation of aspiring youth to fill critical manufacturing jobs.

In an effort to raise awareness and funding for the program, Crowe started speaking about the subject whenever and wherever he could, including Gardner Business Media’s Top Shops Expo 2021 event. Because of his credibility with every constituency involved,

Crowe is now a much sought-after speaker. He has been dubbed a leader of the American Manufacturing Renaissance, and it’s a title he embraces.

“I hold the future of manufacturing above everything, and the next generation workforce is the future of manufacturing,” says Crowe. “We all need to do a better job of reaching the next generation. The AMR tour is just part of what I’m doing to ensure manufacturing has a bright future in America.”

## CROWE HITS ON SOME COMMON THEMES IN HIS AMR TOUR, WHICH BEGAN IN APRIL:

- *Students are completely unaware of manufacturing jobs because they are disconnected from how things are made.*
- *Kids that do see the light often want to be entrepreneurs.*
- *Manufacturers desperate for young blood need to learn how to reach disadvantaged communities.*
- *Schools need to connect students with technical careers earlier. “I wish I saw IMTS when I was in middle school. IMTS shows you what’s real, what’s coming and what you can dream of,” Crowe says.*

- *Manufacturers want diversity, but they need to know how to create a welcoming environment that works for everyone to retain workers.*

Crowe frankly discusses today’s challenges, but he always communicates in a way that translates into showing others how they can create positive outcomes. He is the modern, urban version of a revival minister preaching the gospel of Made in America.

“Seeing how things were made lit a big fire under me, and I believe manufacturing can turn America around at a grassroots level,” he says. “We can have a resurgence of small and medium job shops if we just sit down at the table and talk about how we can elevate each other.”

At IMTS 2022, Crowe spoke on a workforce panel at the Job Shops Workshop-Day 1, on the main stage in the Grand Concourse, and at the Smartforce Student Summit.



Watch on IMTS+ at  
<https://tinyurl.com/mrz7n6e6>

# NTMA MEMBERS

## Optimize Your Machine Tool Performance, Productivity and Profits with Royal Products!



For over 70 years, Royal Products has been helping manufacturers squeeze every last drop of performance out of their CNC machine tools. Our broad range of tooling, workholding, automation, and mist-control products help reduce setup times, increase throughput, improve part accuracy, and enable unmanned production. Optimize your production today with Royal Products.

### Royal Quick-Grip™ CNC Collet Chucks



- Ten-second collet changes
- Ultra-precision accuracy – 0.0002" TIR or better
- Industry-leading gripping range – 0.062"
- Superior rigidity, gripping torque, and tool clearance

### Royal I.D. Workholding Systems



- Internal gripping offers full machining access to the entire length of the workpiece O.D.
- Parallel expansion for optimum accuracy and gripping torque
- Custom systems available – up to 25" diameter

### Royal Mist Collectors



- Low-cost, highly efficient mist and smoke collectors keep your shop clean and your workers healthy
- Over 150,000 units operating in over 50 countries worldwide
- Exclusive Royal Risk-Free Performance Guarantee

### Royal Rota-Rack™ Parts Accumulator



- Safely collects a large volume of finished parts for hours of unmanned production on bar-fed CNC lathes
- Heavy-duty design handles up to 700 lbs. of parts
- Easy to setup and install – no interface with CNC control is required

For Additional Performance Solutions, visit [www.royalproducts.com](http://www.royalproducts.com)



WE CAN'T FIND ENOUGH MACHINISTS!

# SHOULD I BUY OR BUILD?

By: Bill Padnos, AMPED & NTFM Executive Director

## HOW CAN MANUFACTURERS GET THE SKILLED PEOPLE THEY NEED WHEN THE SUPPLY/DEMAND SITUATION IS SO TILTED AGAINST THEM?

In some respects, it's a typical buy-or-build choice. A machine shop can either "buy" skilled machinists direct from others or "build" them in-house by training individuals with the aptitude to learn the technical skills needed by a machinist.

You might think the "buy" strategy is an immediate fix. However, you will be competing in a very shallow pool for available talent. Most of all, how loyal is that machinist going to be if he/she is just looking for a higher paycheck.

If your business strategy to fill open positions is to relying on buying talent from others, you are limiting your talent pool and most of all, hiring machinists that are only loyal to a higher paycheck. But if you build —by developing talent through a modern apprenticeship program — you'll find yourself with a highly skilled, motivated and loyal workforce in just a

few years. It may require more time and money upfront, but building is the better strategy.

### HERE ARE THE ANECDOTAL FACTS THAT ARE KNOWN BY ALL:

- Apprenticeship develops highly skilled employees suited to the unique requirements of your workplace;
- Apprenticeship leads to innovation at the host firm;
- Apprenticeship lowers long-term recruitment and training costs; and
- Only a small percentage of apprentices go elsewhere after they complete training.

But, how can you measure these kinds of benefits? Shop owners can easily estimate the cost of apprentice wages, as well as the cost of the related instruction. You can also get a reliable cost estimate for the time mentors spend with apprentices. Measuring benefits is

more challenging, owing to the difficulty of measuring apprentice productivity over several years.

Nevertheless, there has been a lot of recent research on the impact of apprenticeships.

This is why NTMA continues to be a champion for Registered Apprenticeship and we were recently recognized by the Department of Labor as an Apprenticeship Ambassador because of our strong

commitment to filling the skills gap by providing access to training and educational resources that are industry-backed, industry-tested, and industry-proven fundamentals of machining.

---

**HERE ARE THE TOP FACTS AND STATISTICS:**

**98%**

Of employers which currently employ apprentices experience additional benefits to their business, including addressing skills shortages and providing value for money.

**87%**

Of employers say apprenticeships helped them develop relevant skills for their organization.

**74%**

Of employers say apprenticeships helped them improve the quality of their service and products.

**78%**

Of employers say apprenticeships helped them improve productivity.

**33%**

Of employers say apprenticeships helped improve diversity within their business.

---

Surveys and academic studies aside, common sense tells us that manufacturing companies would have abandoned apprentice training if it failed to produce net positive results. But they haven't. On the contrary, industry touts their apprentice systems. In fact, we are celebrating National Apprenticeship Week in November because we know from experience that apprenticeship program graduates are skilled, productive, loyal and fully versed in workplace processes and protocols in a way buying your talent simply can't provide to your long-term success.

**NTMA TRAINING AND EDUCATIONAL RESOURCES**

**Through NTMA's Mechanical**

**Aptitude**, manufacturing companies can assess the understanding of basic mechanical principles, along with the application to everyday shop situations.

This test is appropriate for candidates that will work in a technical setting, as well as on and around manufacturing equipment.

**NTMA developed NTMA-U,**

a fully online educational program that provides both the related instruction for a machinist apprenticeship and specific incumbent worker training.

**The NTMA OnRamp to**

**Manufacturing** program is designed to help individuals discover if they are ready to take next steps in the field of manufacturing. This short introductory online course was designed help shops become proactive in removing the barriers that have hindered their ability to find new workers.

**NTMA's Pre-Apprenticeship**

program is designed to develop entry-level skills for secondary and post-secondary students for employment at a manufacturing company and/or enhance the skills set for existing employees.



NTMA can help deliver an empowered workforce, providing you benefits that will positively impact your bottom line. For more information, visit <https://ntma.org/workforce-development/> or reach out to Bill Padnos at [bpadnos@ntma.org](mailto:bpadnos@ntma.org).

# Meeting Today's Manufacturing Challenges With New Training Tools

By: Gisbert Ledvon, HEIDENHAIN Corporation

The manufacturing industry went on a few rollercoaster rides over the last decade. Many may remember the big financial crisis that started right after IMTS 2008 closed. This caused many manufacturing sectors to stop investing in and hiring new talent. Therefore, many trade schools lost enrollment and, in turn, the funding to invest in new machinery and technology. At the same time, the baby boomer generation (1946 – 1964) started to leave the workforce which was not overly concerning because the job market in manufacturing declined due to more offshoring to low-labor-cost countries like China. This led many school counselors and parents of high school children to guide the students towards non-manufacturing college degrees and not even consider a career in manufacturing via an apprenticeship program.

Fast forward to March 11, 2020, when the WHO declared a pandemic due to COVID-19. Now suddenly, the manufacturing industry became the center of the attention as we learned that we could not even produce simple medical devices and supplies in this country. That is when the reshoring trend gained momentum and the manufacturing industry was crying for talent, but the pipeline was empty.

The current trend of the baby boomer generation leaving the workforce, also called the Great Resignation, has decreased the talent pool for manufacturing professionals even more. This trend is leading to an even higher demand for the next generation of manufacturing professionals and these jobs certainly pay more than being a college graduate who sometimes decides to work as a barista or restaurant worker.

\*“The days of having a college diploma guarantee a good job have long been over. More

and more, college graduates are not only seeing employers shrug their shoulders at diplomas, but also the job opportunities that are available to them often don't pay enough to cover their student loan debt.” (Source *CHICAGO TRIBUNE* article May 2022)

According to NAM (www.nam.org), 2.1 million manufacturing jobs could go unfilled through 2030. Currently, there are more than 850,000 open manufacturing jobs in the US. Over the last three to five years, we've already seen educators at high schools, community colleges and four-year degree institutions invest more resources in manufacturing career curriculums though at the same time not necessarily taking advantage of the latest teaching and manufacturing technologies. Some educators think they can just dust off some of the equipment they purchased 10 years ago and be ready to bring students back to their classes and place them easily at manufacturing companies after graduation.

This will not work if the teachers and administrators listen to what the industry is facing and how the students now prefer to learn.

## CURRENT INDUSTRY CHALLENGES

**First, it's important to note the industry's current challenges.**

- Finding and keeping skilled professional CNC operators.
- Combatting global competition and reshoring issues.
- Incorporating the new digital manufacturing and Industry 4.0.
- Meeting the need of increased flexibility in the manufacturing process, such as with small lot sizes.

## NEW TALENT EXPECTATIONS

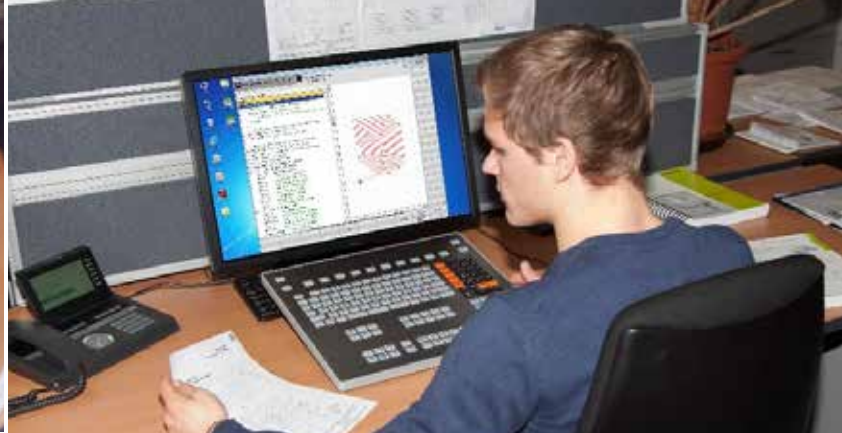
We don't have to look too far to see how technology advancements over the last decade have transformed how our young people function. Children as young as twelve often own a cell phone, and that cell phone is certainly not a flip phone anymore. This means instant access to information for them, including learning/entertaining videos at any given time of the day.

**Because of all this, today's youth have several common expectations when considering career paths:**

- Flexibility to learn in or outside of the classroom.
- Expect instant gratification.
- Look for ways that they can make a difference in their future job/career.
- Seek out exposure to new technology.
- Be part of a community with the same or similar values.
- Make money to fund a modern lifestyle.
- Be provided job opportunities after school or while in school.

What does all this mean for technical schools? Well, they need to listen to their potential students on one hand and the Industry who is looking for talent on the other. Trend to new flexible teaching tools: The machine tool industry and respective CNC control producers have recognized the trend to new more flexible teaching tools for a while and many now offer modern and more engaging tools. Let's start with machining software and programs available that enable virtual training classes, for example, the HEIDENHAIN interactive training tool or, in short, HIT. This tool allows the teacher to create a virtual classroom and offer machine tool training as a complete curriculum. It not only addresses specific CNC programming topics but it starts out with many fundamental machining sessions. This includes things like identifying what are the different axes on a milling machine, how they work and what type of cutting tools are used with them, etc.

After every learning chapter, HIT provides a test for the student and if he/she passes, they can move on to the next level. For example, if the student mastered the 3-axis machine



programming, the next session will be on 3 plus 2 and then eventually full 5-axis machining training. The teacher can follow the progress at any time, assign homework and even create their own training module within the software because it is developed on a Moodle platform (open-source software) that is widely used in universities and colleges worldwide. Another flexible modern teaching tool are downloadable machine programming stations. For example, options to learn how to program a 5-axis machine tool are available for download from HEIDENHAIN and are fully functional with a digital kneeboard. These programming stations don't require special hardware and can be downloaded to the student's laptop or a PC used in the classroom or at home.

It is important for educators to note that machine tool programming can be done in different formats. Some use G-code which takes some training as it requires specifying codes to describe a geometry, tool path or any special function; this necessitates a deep understanding of math to calculate tangent lines to radiuses or circles, etc. That is why many schools have invested in CAM systems to program a CNC machine which requires another investment and skillset for the teachers. Don't get me wrong, a CAM system is very powerful when it comes to full 5-Axis programming, however, there are more effective and less expensive ways to engage the student to get the same or better results.

Modern CNCs offer conversational language formats, and at HEIDENHAIN, we call this KLARTEXT. That translates to "easy to understand" programming syntax like for arcs, lines and points, etc. Here codes are not used, but answers to questions instead. For example, within HEIDENHAIN CNCs, there are interactive windows on which the student/

operator just answers some questions, and the control will create a full drilling or trochoidal cycle. The simulation and graphic capabilities of the programming stations allow the students to see immediately what they programmed in a 3D model on which they can zoom in and out like they do on their photos in their mobile devices. If the school administrators are using a KLARTEXT system in a downloaded format and want to upgrade to a real machine keyboard for the classroom, they can simply add this piece of hardware from HEIDENHAIN and connect it to their existing PCs or laptops. This creates a setup similar to as if the student was right in front of the actual machine.

The next level up from that is the acquisition of "digital twin" machining software that not only simulates a machining tool path and workpiece but also the entire machine kinematic which is very important when simulating 3+2 parts or full 5-axis machining functions. The use of a digital twin shows the student if they programmed the part right without colliding with the machine table or other expensive machine components like spindle tool holders, etc. Overall, the manufacturing industry is in a transition to the digital shop floor and is hungry for talent that understands that basic concept. This means less paper, more machine connectivity, process planning and monitoring. Here again, an educator does not need to break the bank to teach the next generation of manufacturing professionals how to monitor machine efficiency, establish a maintenance plan and connect via MT-Connect or OPC-OA protocol either to a simulator software or a real machine. To meet this need, HEIDENHAIN also offers software called StateMonitor which provides access to machine monitoring task and outputs sophisticated data analytics that can be interfaced into ERP or MES systems. This software works on mobile devices

as well as stationary PCs and can be rented or purchased at special school pricing via the HESP (HEIDENHAIN Education Support Program), providing easy access to industry 4.0 and the digital shop floor education.

To summarize, the industry is hungry for the next level of talent, not the next machine operator simply pushing buttons and running programs that a programmer had to create for them. The new generation machinist is looking for more relevant, engaging and flexible learning tools so they can be prepared for an exciting career path in manufacturing. Let us veterans in the industry make it happen. We at HEIDENHAIN are excited to be a part of it and are ready to help schools transition their teaching methods towards the digital shop floor career path. For more information, contact: [tncapplications@heidenhain.com](mailto:tncapplications@heidenhain.com) or [gledvon@heidenhain.com](mailto:gledvon@heidenhain.com)



---

**FOR ABOVE REFERENCE:**  
CHICAGO TRIBUNE: TRADE SCHOOLS EQUALLY  
RESPECTABLE TO 4-YR COLLEGES

*The days of having a college diploma guarantee a good job have long been over. More and more, college graduates are not only seeing employers shrug their shoulders at diplomas, but also the job opportunities that are available to them often don't pay enough to cover their student loan debt.*

A Special Editorial From Roger Atkins, President NTMA

# TEMPTED TO POACH? DON'T



Roger Atkins, President NTMA

**“Our collective goal should be to encourage, inspire, recruit, develop and train the next generation of manufacturers.”**

Over the course of my career, I have seen great highs of the manufacturing industry and I have seen the lows. While the lows of course are the toughest, even the wins revealed practices and actions I did not like to see. The lows produce devastating layoffs, reduced hours, closures and foreclosures all obvious to any viewer and easy to discuss. During the highs, destructive or negative activity is much harder to detect and discussed less. While less than stellar tactics during the high times seem to fall under the radar, they are still very bad for the industry.

In 2022 we have seen the industry again improve to pre-pandemic levels. While pre-pandemic levels are a great improvement, one of the results in our post-pandemic world is the lack of skilled workers. Many manufacturers are desperately seeking skilled workers. The temptation to “poach” employees from other

shops is very real. I can tell you, regardless of how you might justify this action in your own mind, it is wrong and not good for anyone, most especially you. In manufacturing, like in life, integrity is everything and it only takes a few or even one poor decision to lose the trust and integrity that may have taken you years to build.

There is no doubt employees may choose to leave and go to other shops, but they should not be unethically influenced by other shops to do so. In rummaging through some old papers, I found a document entitled *A Pledge to Principles of Business Conduct*. It listed 10 principles with number “7” stating, “Refrain from enticing away the employees of others, through misleading advertising or otherwise.”

**Our collective goal should be to encourage, inspire, recruit, develop and train the next generation of manufacturers.** An overwhelming task when looked at it alone, so don’t go it alone. Join local or national groups already fighting the fight for new workers. Does it take time, energy, commitment, and money? Absolutely. However, the return on the investment is long-term sustainability, not short-term gain. Commitment at this level not only develops new workers but cultivates loyalty and appreciation, not the here today gone tomorrow mentality. Some say they are afraid to train because the person may leave.

This maybe a possibility, but the logic is flawed. Risk is inherent in life and business. Commitment and perseverance is the key to overcoming fear of the unknown.

Considering today’s need for skilled workers, I want to encourage and remind the manufacturing industry to refrain from the temptation to poach other companies’ employees, directly or indirectly. It may seem to solve an immediate need, but this type of tactic will come back to haunt you and does not help the industry at large. As the saying goes, “What Goes Around Comes Around”. During my career, I have had multiple competitors let me know that one of my employees was at their shop applying, giving me the chance to rectify any issues that employee had at our company and the chance to keep him/her. I am forever grateful for good competitors whose integrity was greater than that temptation.

The old Ben Franklin quote says it best, “We must hang together, or assuredly we shall all hang separately.” Reality is, men have been coming together for mutual protection and advancement for almost as long as they have been on earth. When faced with a challenge or need, take the “High Road” and you will never have to justify your decision to others, especially yourself. Let us all be examples for the US Manufacturing community.



**ALPLAN** | EXCEED  
YOUR LIMITS

# ULTIMATE STABILITY

DISCOVER THE WORLD'S MOST STABLE ALUMINIUM

ROLLED AND READY-MILLED  
ALUMINIUM PLATES FOR  
IMPROVED PRODUCTIVITY

# Transformation of Manufacturing Puts Responsibility on Companies to Recruit & Develop Skilled Workers With a Strong Work Ethic

By: Eric Hagopian, CEO – Pilot Precision Products

Despite the pandemic, the manufacturing sector has thrived while other parts of the economy have suffered deep declines. While the government did its best to keep the economy afloat during this unprecedented time by printing money, it didn't print competent, well equipped, and motivated people to fill the growing number of manufacturing jobs. In fact, until 10-15 years ago, the government was more interested in pushing vocational training of young people out of schools and encouraging everyone to go to college regardless of whether they could afford it or had any interest.

When "smokestack" companies were the heart of our economy, schools prepared workers for careers in industry. I sound like my dad when I say, "Back in my day, schools offered everything from home economics to auto mechanics, early childhood development, metalworking, woodworking, mechanical drawing, electronics, printing, etc." Students graduated from high school with a choice: Go to work, join the military or, for those that had the grades and the money, college.

Those who went to work in manufacturing, had a basic knowledge of many disciplines and could get a job at a "smokestack" company where a vertical integration strategy of doing everything in-house included apprenticeship and journeyman training opportunities. You could get a job making a living wage and work your way up through the company, all the way to the top if you wished. The opportunities were bountiful because working for those companies was more than a job. It was a way of life. Small- and medium-sized businesses benefited from those large smokestack businesses in terms of work opportunities and skilled labor.

## A NEW WORLD TO CONQUER

Fast-forward many years. The smokestack companies are gone, and so are the embedded vocational training programs. Today, students and their parents have to decide whether young Johnny or Mary-Lou should get on a college or vocational track by the end of 8th grade! When I was that age, I just wanted to ride my dirt bike, and the last thing I was thinking of was what I wanted to be for the rest of my life. The pressure today's kids are under is unbelievable as the manufacturing sector continues to suffer from the negative perception of the "Three Ds" – Dark, Dirty, and Dangerous.

That impression couldn't be further from the truth. However, parents knowing nothing about careers in manufacturing, or guidance counselors with perceptions of careers frozen in the 80s, are encouraging kids to do anything but go into manufacturing! Such misguided advice exacerbates the shortage of young people pursuing careers in manufacturing.

Baby Boomers were, and many still are, great workers! They were trained how to behave, show up, be respectful, follow directions, learn, and do whatever it takes to do the best job possible. We are regretfully saying goodbye to many people in this amazing group of talented men and women as they enter retirement and enjoy their later years. Good for them, and bad for us who remain in the workforce.

As a Gen-Xer raised by parents of the "Silent Generation," the highest moral and ethical standards were drilled into me from childhood. Sadly, that wasn't the case for many in my generation. Making things more difficult is the fact that the schools and parents no longer require as much from kids as my parents

expected from me. Everyone's a winner? Not a chance! But nowadays, we are told we all are winners and we should embrace our dreams and dispose of reality. This approach simply doesn't work in manufacturing. We need the few, the proud, the MACHINISTS!

## GOING THE EXTRA MILE

Having grown up in a family machine shop, Hoppe Tool, Inc. in Chicopee, MA, I worked my way up the ranks and wound up as co-owner with my brother, Doug. We knew what we learned and did our best to maintain the family business. We grew it by 6X and successfully sold the company, but not before learning about staffing. Doug was a great teacher and recognized our need to train young high-potential learners early.

He was way ahead of his time. As a result, we had many terrific people joining our ranks at an early age. Doug would teach "class" in our company's conference room after hours on his and the employees' own time. He taught programming, CAD, basic metallurgy, metrology, GD&T, etc. All this from someone who didn't go to college. "Blasphemy!" the higher education establishment might say, but it worked for us as we developed a crew of amazing workers who helped us grow our business.

At some point the company got too big, Doug's time was too tight, and we had to rely on others. We turned to our local vocational high schools, but they didn't have suitable programs. The programs they had were using antiquated equipment and teaching outdated technology. I didn't have the capability to train like Doug, and he was busy leading manufacturing, so I turned to my NTMA chapter mates.

We banded together to create a powerhouse of interested company owners and managers. The team lobbied through NTMA during legislative conferences, fly-ins to Washington, DC, and outreach to local and state government officials. We made friends in our governor's office, with local economic development people, workforce development people, and more. We literally "recruited" an army to fight the war for talent.

It worked! Vocational schools received funding both privately through our chapter and publicly through federal and state grants. They used the funds to purchase new equipment, computers, software, etc., and they hired outstanding teachers. A new era was upon us, and life was good once again for shop owners and managers. Until it wasn't.

Despite new online capacity for training machinists, we learned that we could only supply about 25% of the people we needed due to retirements, never mind growth. So, we started running PR campaigns, company tours, etc., to get parents, students, and educators to see the insides of our factories. We made great progress, but it wasn't enough.

## OVERCOMING TODAY'S OBSTACLES

We are in a new era. An era of "it's not my fault" and "it's not my job," which is maddening to many of us as we invest millions of dollars in the latest manufacturing technologies. Between the trickle of competent learners pursuing careers in manufacturing and the dumbing down of America's youth, we've finally hit a wall. Now, we've got to hire and train more people and expect less in return? Not for American manufacturers!

COVID laziness and woke nonsense make finding, training, and especially retaining, co-workers even more difficult. As a result, we have added a new worker that isn't lazy, doesn't want any time off, never asks for a raise, and never complains. Enter the robot/co-bot. I remember when automation came on scene back in the early 2000s. Our employees said, "We're being replaced by robots!" I had to assure everyone that we needed automation to grow and that I'd hire more people if they embraced automation, and it worked. Everyone adapted, we hired and retained great people, and grew like crazy.

Now we have co-bots and affordable robots that work collaboratively with our people and machine tools. These robots do jobs that help to keep shops going despite the shortage of trained workers. We are easily able to purchase these machines and integrate them with our production lines while we continue nurturing new talent. Due to wokeness, egregious

wage and hour laws, eye-watering insurance premiums for poor-quality coverage, and flex time, automation is, frankly, preferred. Nevertheless, we still must attract and retain best-in-class talent to perform more work with fewer people.

Competitive wages were always a key to having a great workforce, but today's worker demands things like unlimited vacation, wages beyond what we can afford, and company-funded 401k plans, etc. Of course, these things come at a high cost, especially if the workers are not the best of the best. If we are to afford those benefits, we need to see increased productivity, adoption of new technology and the ability to effectively keep the machines running beyond workers' shifts. (A variation of lights out manufacturing)

Those improvements are possible with the new workers, provided they are properly trained. The government won't train workers on a large scale in taxpayer funded schools, so it's industry's responsibility to train workers, but today's industry isn't comprised of the same types of smokestack companies that existed years ago.

## A MODEL THAT COULD WORK FOR YOU

At Pilot Precision Products, we have ongoing partnerships with our local vocational schools to work with cooperative education students. These young people start in the 11th grade and work while they attend high school. The company is not able to employ these young people until they turn 18, unless they are part of a school program. This arrangement is the only way they can work in our factory. We show them a strong work ethic, a world-class facility, and a long-term path to support a family or whatever living arrangement they seek.

When we run tours for local students, I like to first show them the parking lot. I walk them through the lot and point out all the fast cars and new pickup trucks our people can afford working at Pilot. Because most young people don't have a clue about what they want in life, the cars are the thing they understand. "Work here and I could afford a new car?" they think. Some of the parents who go on the tours don't have cars as nice as some of our young

workers drive, so even parents understand this opportunity could be a good future for their children and encourage them to seek training for a career in manufacturing. Seeing our world-class, super modern and safe factory makes them feel even more strongly about their children building careers in manufacturing.

In the final analysis, we need a major course correction in America. Our schools need to stop teaching kids that they need to attend expensive colleges that don't teach them a trade and don't prepare them to make enough money to pay off their student loans, or expect the taxpayers to pick up the tab. We need schools (and parents) to instill a strong work ethic in students and equip them with problem-solving skills and, above all else, show these kids that they need to compete! In real life, everyone doesn't get a trophy, and it's about time that parents stop encouraging their kids to expect one.

Our company is growing. Product development teams are busy making plans for new product integrations and we need GREAT people to replace the great people who will retire over the next five years. Step up, volunteer on your local vocational high school advisory board or community college board. Encourage your young co-workers to go to job fairs at local high schools and vocational schools. Open your shops, conduct tours, and engage with families in your community.

We've been doing those things and have been fortunate to keep our company staffed. The minute we stop, the flow of talented young people will stop. Remember, only about 25% of your retirement age workers will be replaced by new workers. Are you ready to face the future?



[www.pilotprecision.com](http://www.pilotprecision.com)

# THE 3 E'S OF CULTURE?

By David Capkovitz, EBITDA Growth Systems

What is Culture? Merriam Webster defines culture as “the set of shared attitudes, values, goals, and practices that characterize an institution or organization”. My definition of Culture is a living and breathing attitude that permeates everything that is done inside an organization. Culture has the power to strengthen, divide, or eliminate teams. That leads me to answering the question... Is Culture important? From my seat there is a resounding “YES”.

In this article I will go into why Culture is important and how it contributes to the bottom line through the three E's.

## A GOOD CULTURE CREATES ENGAGEMENT

If you have ever been in an organization with a poor culture, I am sure you have a keen memory of that experience. What we have seen in poor cultures is the following (this is a small sample).

1. Employees do not have a place to share issues that need to be addressed.
2. When employees do share issues they are not dealt with.
3. Employees have not spoken to their managers in days, weeks, or months.
4. There is no camaraderie amongst teammates.
5. Employees don't feel like the team is winning.

When an employer, manager, or team lead engages an employee to enhance positive communication and help with issues they may be dealing with, the culture is influenced in a good way. It is in this engagement that the cultural magic starts to happen. The next step of this engagement is the action around the leader where they eliminate roadblocks, deal with open issues, and share the score. This type of activity gains trust and creates influence where an employee will start to believe in the leader. This engagement is not just walking around in discussion with the team, but stepping in front of issues and assuring

that employees have what they need, and that they understand the direction the company is going in. An example of good engagement is a monthly “town hall” where leadership shares goals against performance (good, bad, and ugly). In this setting sharing the true performance of the company will cause radical transparency and garner trust. This type of setting will allow each departmental head time to share good things that are happening, and issues leadership has been able to solve. This setting is also a prime place to recognize teammates for their above and beyond contributions. This “town hall” coupled with a daily walk around is where the owner gets to know their team and becomes a leader that eliminates daily roadblocks in order to drive a high level of engagement.

## A GOOD CULTURE CREATES ENJOYMENT

When leadership has clear and unambiguous goals for the team and continues to share the performance score on a consistent basis, they will notice that the team will start to enlist in “the cause”. It is very clear that we all like to win. When the goals and score are shared, it is human nature for the team to want to drive to meet or beat the goals when they know that leadership has their backs. When this happens, the team starts to win. When the team starts to win there is a large amount of enjoyment.

Enjoyment mixed with constructive engagement drives drama and poor behavior out of the organization. This creates an atmosphere of self-policing amongst the entire team where focus on the main thing is always the main thing. In this environment poor attitudes do not thrive, and sceptics become believers. This environment is highly attractive and contagious.

## A GOOD CULTURE IS ENLISTING

In a culture where: (1) employees know what is expected of them, (2) leadership will help solve any issues that are causing heartburn for the team, and (3) communication is at a high level, there will be

a positive mindset. This positive mindset of winning creates a group of determined positive people. Where there is a group of positive people there becomes an attraction. Not only will the team enlist in tasks that take the company to the next level, but they will also share these positive experiences with friends and family. When the word gets out that the company is a great place to work, people will come looking. Now an enlisting movement begins to emerge both inside and outside the organization. This solves one of machinist industry's biggest struggles - finding good people. We all want people that want to win, people that want to contribute in a positive way, and people that want to stay. We can have all of these things through a good culture.

When a team shares an attitude that reflects the values, goals, and practices of winning, the company has a good culture. This all starts by leadership truly caring about the team. The leadership has to care to engage their people. Leadership has to care in order to be willing to listen to their team and eliminate roadblocks. Leadership has to care enough to share the organizational goals and the running score on a consistent basis. And leadership has to care to celebrate great behavior. Leadership cannot fudge caring; employees will see right through it. The team will know that leadership cares by their actions, not by just what is said. When the team knows this, leadership will start to see the beginning of a wonderful future.

Take the steps necessary to grow your culture into a great culture. No matter where you are in this journey, you can always take another step in achieving a stronger culture. Take this step and keep making a difference in our great industry.



[www.ebitdagrowthsystems.com](http://www.ebitdagrowthsystems.com)

# 5 REASONS TO CONSIDER OUR NEWEST 5-AXIS MACHINE

THE GENOS M560V-5AX

Building on Okuma's flagship GENOS M-Series product line, the new GENOS M560V-5AX answers a market need for an affordable, compact 5-axis vertical machine, with no compromise on design or accuracy.

1. Fully equipped 5-axis machine at an affordable price
2. Double column structural design
3. Ergonomic design reduces operator burden
4. Automation-friendly integration
5. Available with ECO suite plus energy-management system

Learn more, visit [okuma.com/genos-m560v-5ax](http://okuma.com/genos-m560v-5ax)



Together, we're moving manufacturing forward.

**OKUMA**  
OPEN POSSIBILITIES

# X PAND YOUR WIRE EDM CAPACITY

PARTNER WITH ONE OF THE LARGEST WIRE EDM FACILITIES IN THE COUNTRY WHEN YOU NEED EXTRA CAPACITY

# XACT

Wire EDM Corporation

- Wire EDM Services
- Small Hole EDM
- Laser Part Marking



Proud Member



ISO 9001:2015 Certified

**800.798.9228**  
[www.xactedm.com](http://www.xactedm.com)

## WHAT YOU LEARNED IN KINDERGARTEN CAN IMPACT HOW YOU ATTRACT WORKERS

By: Rob Felber, President - Felber Public Relations & Marketing

**Remember show and tell?** You always wanted to have the coolest idea to wow your kindergarten classmates. Attracting workers for your manufacturing operation is much like that precious time in class.

You have limited time and attention to get your message across. Your mission then was to quickly show them what precious bauble you brought from home and hope they thought it was as cool as you did.

The same goes for attracting workers, however, you are not just speaking to a small classroom audience. Now, your audience is vast. While the geography of your target for workers might be limited by those that want to work close to where they live, you have to not only show & tell how great it is to work for your company, but you have to battle thousands of distractions competing for their attention.

There are multiple strategies you can employ to “show & tell” potential employees. There is no one silver bullet tactic, you might need to use a combination of tactics.

Consider a mix of traditional and digital methods to advertise for new employees. Traditionally, radio is a strong and inexpensive way to reach a captive audience; the audience that aligns with similar interests to your current workforce. Consider sports or music genres. Poll your staff to see if there are stations that are listened to more. Radio, while you have the ability to focus on a particular audience, is a broadcast method that reaches thousands. But, not everyone listening is a prospect. Much like billboards or bus advertising, this method is used far and wide to reach as many people as possible (and hopefully some of them are looking to change jobs).

Digital advertising on the other hand can be both highly targeted and measurable. Digital, such as the social media platforms of Facebook, YouTube, and LinkedIn allow you to drill down with such tactics as specific geography, job titles, experience, and interests. You can adjust your budget up and down and even pause your campaign in seconds, unlike the commitment to billboards or newspaper ads that are all-in commitments. Digital allows more control over the creative message and is easier to test market multiple methods, reviewing the data to see

where the best engagement is found. Using digital permits a better show & tell with a video. Employee testimonials, plant tours, messages from supervisors and management, the sky is the limit on the creativity you can deploy with targeted, measurable online campaigns. You can even drive traffic directly to applications and interview schedules, giving the prospective employee control over the process.

Use what you learned at show & tell in kindergarten to prepare the best, most diverse message you can to attract prospective employees. The impression you make now, during recruitment, will carry through to the company culture and retention for years to come.

To learn more about marketing to prospective employees visit [www.felberpr.com](http://www.felberpr.com) or contact [RobFelber@felberpr.com](mailto:RobFelber@felberpr.com)



**Felber**  
PR & Marketing

Visit us at [www.felberpr.com](http://www.felberpr.com) for more information.

# NTMA & AMT TECHNOLOGY AWARDS NOMINATIONS NOW OPEN

The NTMA and AMT Technology Awards are designed to recognize and share excellence for those whose use of technologies are strengthening the precision manufacturing industry.

## There are two award categories:

- *Technology Excellence Award*
- *Leadership and Culture Excellence Award*

If you would like a nomination form for either category, please visit: <https://ntma.org/resources/ntma-awards>.

**Submission Deadline is December 2, 2022**

## WINNERS IN EACH CATEGORY RECEIVE:

- Social media exposure on NTMA and AMT platforms
- Featured Article in The Record
- Recognition at the MFG Meeting - Spring 2023
- Free Registration and Hotel at the MFG Meeting
- Plaque to be given out at MFG Meeting
- If applicable, National Associate Member (NAM) to provide social media exposure for winner
- Hosted webinar in 2023



paperlessPARTS 

## Moseys Increases Revenue 10% with Paperless Parts

Moseys' homegrown quoting system **relied on email threads and spreadsheets**, resulting in significant bottlenecks that inhibited company growth.

### The Solution

Paperless Parts' streamlined, organized software enables Moseys to produce quotes more efficiently, saving them time and resources and contributing to a lift in revenue.

### The Results

- ✔ Moseys increases quoting volume significantly due to faster quote turnaround
- ✔ Moseys sees a 10% increase in revenue
- ✔ Moseys reduces staff involvement in quoting

Visit [www.paperlessparts.com](http://www.paperlessparts.com) to learn more.



“

I love the ability to visually see the workflow so I can put my time and energy into places where there's friction or challenges that are slowing down what our customers need.”

**JEFF JACKSON**  
Business Development Manager

**Moseys**

## WHAT'S MY BUSINESS WORTH?

By: Troy Roberts, CEO at Beanstalk Collaborative Community Wealth, LLC.

As you consider retirement, or a change in career path, it's natural to wonder what your manufacturing business is worth. You may be looking forward to a sale funding your retirement dreams, or maybe using them to start a new business—or a new life. The tricky part is that figuring out your company's value depends on a lot of factors; some within your control and some that fall outside of it.

To get the most out of selling your business, you need to know a few helpful facts, and, perhaps more importantly, you need to know what you don't know. Let's run through a few important points on valuation for any business owner who's considering selling their manufacturing business, today, in a decade, or in a generation.

There are a handful of aspects of valuing your business that you have a lot of control over, so long as you're willing embrace that control and wield it well:

**1. Who you sell the business to** - Size matters. The greater the number of interested parties competing to buy your business will positively impact its valuation. The size of your company's revenue and EBITDA (earnings before interest, taxes, depreciation, and amortization) will determine the number and type of interested buyers for your business. If your revenue is \$10M or less (with EBITDA of \$1M or less) your options will generally be limited to an internal sale, individual buyers, community wealth buyers, and the occasional strategic buyer. If your revenue is in the \$25M-\$100M range, you might be big enough to be a platform or roll-up and command a higher price, but those buyers are less likely to protect the business's legacy, employees, or the company's positive impact on your community. If you sell to the employees, to relatives, or an individual buyer, you run the risk of having to seller finance the sale, putting you at risk to take back control of the business if it fails under new ownership. On the upside, it might be easier to pin down the buyer's intentions for the company's future.

**2. How you sell the business** - Your company's value will depend greatly on the method for valuation and the kind of sale you use. Asset-based valuations in

a liquidation setting will definitely yield the lowest valuations for a going concern. A better indication of true "market value" involves multiplying your company's trailing 12 months EBITDA by the multiple for comparable current transactions in your industry. Of course, there are many company risk factors unique to your company that can enhance or detract from the comparable market multiple. The market-based comparative is just the starting point. And getting this valuation right means having a trusted financial team that understands the true economics of the business.

**3. Upgrade with valuation enhancers** - A combination of intentional tweaks and some thoughtful, comprehensive implementations can significantly increase the value of your business for a buyer. Consider hiring a Controller or CPA on staff, evaluate and strengthen your management team, switch to GAAP Accounting, and have your financials audited, go for any quality certifications that apply to your focus industries, implement an MRP/ERP system, and look into ways to diversify your customer list. These changes are just a few of the kinds of operational improvements that should increase the applicable multiple by several turns applied to your companies trailing 12 month's EBITDA.

**4. Who is on your team during the sale** - Remember when we mentioned knowing what you don't know? Having a team of experts on your side is essential to get the proper value for your company. There are lots of people around all of us who have opinions on what it should be worth, but if you don't know your diamonds, you must know your jeweler. Assemble a team, including legal counsel and tax accounting both experienced in mergers and acquisitions (M&A). Both are needed to make sure the negotiated price squares with the valuation on a pre- and after-tax basis, based on your specific situation. They can also help you through the process, so a savvy buyer can't play mind games, or pull a bait-and-switch. The most important thing: Start tackling these steps now. You may be 5 years from retirement, or maybe 30, but it's never too early to put valuation-enhancing practices in place. Your wallet will thank you after

the sale, and in the meantime your employees and customers will thank you too!

If all of this has your head spinning, that's totally understandable. Getting those experts on your team is essential for exactly these reasons. Imagine trying to upgrade your company while poring over the nuances of the tax code, or trying to read about your state's M&A legal requirements and regulations... Not fun. Don't do it.

Instead, consider contacting Beanstalk Collaborative Community Wealth. We help manufacturing business owners understand their company's value, as well as the opportunities and options available when they're ready to leave and start their next phase. (Full disclosure, sometimes we buy those businesses ourselves, as part of our "buy, build, and hold" community wealth model. We keep companies in their communities, protect living wage jobs, and preserve owner legacy.) We also want to help any manufacturing owner make their business stronger because without these companies, the American economy is a whole lot weaker, and the community benefits generated by American ingenuity exemplified by small manufacturing businesses is extinguished.

If you're interested in talking to us about your business's value or succession plan, feel free to reach out to us. We want to share our experience and expertise with you.

Beanstalk Collaborative Community Wealth, LLC (BCCW) is a holding company dedicated to providing attractive financial & legacy-protecting opportunities to transitioning owners in the manufacturing industry, while preserving and growing businesses, and jobs. Learn more at [beanstalkccw.com](http://beanstalkccw.com).





# Take a fresh approach to shipping.

## As a member of NTMA, you can save big!

NTMA members can receive discounted shipping rates on eligible services. Sign up for the FedEx Advantage® discounts program for free to start saving on eligible services.

## With the FedEx Advantage program, you'll get\*:

<b>50% off</b>	FedEx Express® shipping
<b>30% off</b>	FedEx Ground® shipping
<b>30% off</b>	FedEx Home Delivery®

To enroll, go to [PartnerShip.com/NTMA-FedEx](https://PartnerShip.com/NTMA-FedEx)

\* FedEx shipping discounts are off standard list rates and cannot be combined with other offers or discounts. Discounts are exclusive of any FedEx surcharges, premiums, minimums, accessoril charges, or special handling fees. Eligible services and discounts subject to change. For eligible FedEx® services and rates, please call 1.800.GoFedEx 1.800.463.3339. See the applicable FedEx Service Guide for terms and conditions of service offers and money-back guarantee programs.



# PILOT Precision Products

## COMPLETE TOOLING CAPABILITIES



## EXCLUSIVE & Extended Promotion for NTMA Members!

From now until the end of the year, we're running an exclusive promotion on our TetraFeed & DOMX products for NTMA members.

Scan the QR code to browse our catalogs & request a quote to claim the promotion!



[lp.pilotprecision.com/tetrafeed-and-domx](http://lp.pilotprecision.com/tetrafeed-and-domx)



### DOMX PROMO

Get a Free Holder buying one of the following options:

- ▶ 50 inserts 3/4" or 20mm Holder
- ▶ 70 inserts 1" or 25mm Holder
- ▶ 90 Inserts 1-1/4", 32mm or Capto Holder

Valid From July through ~~Oct. 31, 2022~~

EXTENDED THROUGH:  
**December 31st, 2022**

### TETRAFEED PROMO

Buy 10 Inserts/Pocket, Get a FREE Tool Body!

Valid From July through ~~Oct. 31, 2022~~

EXTENDED THROUGH:  
**December 31st, 2022**

# NTMA Member Marketplace

Advertise Exclusively With the Nation's Largest Precision Machining Network!



**GREGORY A. KASZEI**  
President

14459 Foltz Parkway  
Strongsville, Ohio 44149  
Email: [CARDINALMACHINE@aol.com](mailto:CARDINALMACHINE@aol.com)

Phone: (440)238-7050  
Fax: (440)238-7051



beanstalk  
collaborative  
community  
wealth, LLC

Troy Roberts, CEO



Bill Smith, Co-Founder

\* Legacy Protection

\* Preserve your Business through Succession Planning

\* Learn about our mission to safeguard U.S. manufacturing

[www.beanstalkccw.com](http://www.beanstalkccw.com)



## The life force for your machines.

Do you know that proper use of the correct metalworking fluid has an extraordinary leverage effect on stability, quality, performance and therefore on the costs of your production? Our machining experts can help you turn your metalworking fluid into a key success factor.

**Test us. It's worth it.**

[blaser.com/testus](http://blaser.com/testus)



**Our Liquid Tool. Your Success.**

# NTMA Member Marketplace

Advertise Exclusively With the Nation's Largest Precision Machining Network!

**O-D TOOL & CUTTER, INC.** 

**CNC GRINDING**  
**KEVIN M. O'DONNELL**  
 PRESIDENT  
 ISO 9001 CERTIFIED  
*Family Owned Since 1959*

KEVIN@ODTOOL.COM PO Box 372  
 PH: 508.339.7507 150 GILBERT STREET  
 FAX: 508.339.5667 MANFIELD, MA 02048  
 CELL: 508.341.5576 WWW.ODTOOL.COM

**YOUR AD HERE!**

Interested? Contact Rena Montedoro for more information - [rmontedoro@ntma.org](mailto:rmontedoro@ntma.org)

**UNITED**

**CENTERLESS GRINDING & THREAD ROLLING**


**Normand J. Goulet III**  
 Vice President  
 Manufacturing Engineer

25 Rosenthal Street ■ East Hartford, CT 06108  
 phone: (860) 289-2987 ■ fax: (860) 289-3142  
 web: [www.unitedcgtr.com](http://www.unitedcgtr.com) ■ email: [njgoulet@unitedcgtr.com](mailto:njgoulet@unitedcgtr.com)

**INDUSTRIAL GRINDING INC**

*Specialists In Precision Grinding  
 Ceramics - Flame Spray - Plasma Coatings  
 Spindle Repair - Large O.D. - I.D. Surface Grinding  
 AS9100D ISO 9001:2015*

2306 Ontario Avenue, Dayton, Ohio 45414  
 PH 937-277-6579 FAX 937-277-4536  
[www.industrialgrinding.com](http://www.industrialgrinding.com) + [sales@industrialgrinding.com](mailto:sales@industrialgrinding.com)



**We drill diameters as small as 0.078" up to 180" deep.**

**Honing, turning, milling & surface grinding, too.**

**RAPID QUOTES: [www.betar.net](http://www.betar.net)**

John Lohse, Owner - Chapter President, NTMA New Jersey, Phila & NE Pennsylvania

QUALITY > INTEGRITY > ON TIME DELIVERY

 **PRECISION PROFILES**  
 PRECISION MACHINING SINCE 1994

**CORE CAPABILITIES**

- > Turbine Component Manufacturing
- > Precision grinding (up to 136" in length)
- > Multi-Axis Milling, Machining, & Turning
- > Saw Cutting (straight, angle, radius, angle + radius)
- > Wire EDM

**\* EFFICIENT RESPONSE TIMES**  
 WE REGULARLY STOCK STAINLESS STEEL ALLOYS SUCH AS:  
**403, 405, 410, 415, & 422**

ITAR REGISTERED  
 US/CA JCP CERTIFIED (CAGE CODE Available Upon Request)  
 SAM REGISTERED  
 ISO 9001:2015 REGISTERED  
 SMALL BUSINESS (<25 Employees)

45727 STATE HIGHWAY 27, TITUSVILLE, PA 16354 > 814-827-9887 > [precisionprofilesllc.com](http://precisionprofilesllc.com)

**ANOPLATE**

**Tim Stone**  
 VP of Business Development

**ANOPLATE CORPORATION - an ISO 9001/14001 Registered Firm**

459 Pulaski Street Phone: 315-471-6143 x134  
 Syracuse, NY 13204-1134 Email: [tstone@anoplate.com](mailto:tstone@anoplate.com)

For more Information: [www.anoplate.com](http://www.anoplate.com)

Office Fax: 315-471-7132 Cell: 315-679-6265

 **Partner Ship**

Freight shipping discounts with YRC, XPO, Saia and more.  
[PartnerShip.com/54ntma](http://PartnerShip.com/54ntma)



NATIONAL TOOLING AND MACHINING ASSOCIATION

1357 Rockside Rd.  
Cleveland, OH 44134

Manufacturing America's Future



READY  
WHEN  
YOU  
ARE



Scan for  
WCE4 product details

