

# DAY 1

MONDAY | SEPT 11 | 2023

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# SHOW DAILY

THE OFFICIAL FABTECH PUBLICATION

## TODAY'S EVENTS

### Keynote: FABx Tech Talks

8:30 – 10:00 AM  
Lakeside Center Ballroom

### LEADERSHIP EXCHANGE

#### Advanced Manufacturing: Trends and Technologies Changing the Future of Metal Fabrication

12:30 – 1:30 PM  
Lakeside Center Ballroom

### Careers in Welding Trailer

During Show Hours  
Booth B25111

### AWS Welding Competition

During Show Hours  
Booth B25096

### FABTECH Merchandise Truck

During Show Hours  
Booth B19111

## David Feherty Brings Humor and Life Lessons to FABTECH

Get ready for a lively FABTECH keynote tomorrow from the hilarious and outspoken golf pundit David Feherty. In addition to being golf's most in-demand commentator and analyst, he is one of the strongest advocates for U.S. troops, both in the line of duty and when they return home.

More recently, David has become renowned for his live performances. His quirky style delivers behind-the-scenes stories of life on the golf circuit. These include many Tiger Woods anecdotes including some unintentional innuendo in his on-air description of a massive Tiger Woods drive at the Masters.

And now David is bringing that sharp wit and colorful personality to FABTECH to share great life stories and behind-the-scenes moments from life on the PGA Tour. Don't miss tomorrow's keynote, "A Nasty Bit of Rough with David Feherty."

### Irish Origins

Considered by some to be the Charles Barkley of golf television, he is unafraid to speak his mind or use salty language. He is also remarkably open about his past. Born in 1958 in County Down, Northern Ireland, Feherty may not have been the Tiger Woods of his generation. But he held his own in both the European Tour and the PGA Tour. After turning pro in 1976, he won five tournaments and



finished in the top ten twice in the European Tour's Order of Merit. In his two years on the PGA Tour, he earned a second-place finish at the New England Classic. On the international front, Feherty represented Ireland in international competition and captained the victorious 1990 Alfred Dunhill Cup team. In addition, he played for Europe on the 1991 Ryder Cup team. And he has competed against golfing legends such as Jack Nicklaus and Arnold Palmer.

In 1997, Feherty retired from professional golf. He quickly gained distinction as an on-course reporter and golf analyst. He has a column in Golf Magazine called Sidespin and is a *New York Times* and Booksense best-selling author of four books: *A Nasty Bit of Rough*, *Somewhere in Ireland a Village Is Missing an Idiot*, *An Idiot for All Seasons*, and *David Feherty's Totally Subjective History of the Ryder Cup*.

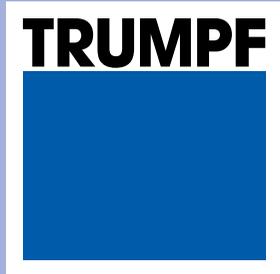
His rise to fame even led to prime-time talk show called Feherty on the Golf Channel where he interviewed a who's who of the golf and celebrity world. This includes Bill Clinton, Donald Trump, Jack Nicklaus and Bobby Knight. These days, he is lead analyst and broadcaster for LIV Golf.

### Golfing Tales

His keynote presentation at FABTECH will include plenty of stories about the golfing greats and their mischievous caddies, of course. Some of them may never have been heard on television due to their irreverent nature. He pokes fun at friends such as Nick Faldo, Colin Montgomerie and Sam Torrance as well as legends such as Ben Hogan, Lee Trevino and Arnold Palmer. Yes, the stories will be hilarious. But many are illuminating, too. Some showcase the greatness of leading lights of the golfing

continued on page 16

September 11-14, 2023 / Booths A2104 and B15001



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AMADA is dedicated to preserving the global environment by actively reducing CO2 emissions, promoting waste reduction and reuse, and protecting biodiversity throughout all our operations. At FABTECH 2023, we will demonstrate how fabricators can achieve unprecedented levels of automated productivity while prioritizing environmental sustainability. Join us to witness the North American debut of two automated robotic bending systems equipped with Automatic Tool Changers. In addition, you can verify the remarkable advantages of AMTES (Autonomous Mobile Transport Engineering System) for fully automated blank-to-bend processing and tracking. Moreover, we will showcase our latest generation 4ie control, making our machines easy, efficient, environmentally-friendly, and evolutionary.

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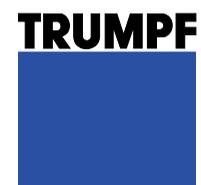
**LC C1 AJ Fiber Laser/Punch Combination Machine** – Unlock maximum part processing flexibility with this machine's fiber laser cutting and turret forming capabilities.

**FLW 3000 ENSIS M3** – Experience the high-speed, high-quality, automated fiber laser welder demonstrated via video feed from AMADA Global Innovation Center (AGIC) in Japan.

In summary, AMADA's presence at FABTECH 2023 is a testament to our commitment to a sustainable future. Join us at the event to witness cutting-edge technology that enables unprecedented productivity while safeguarding the Earth's environment. Together, let's shape a more eco-friendly manufacturing landscape. ■

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# FABTECH Preview: TRUMPF Inc. Introduces Laser Blanking System for Flexible, High-Volume Cutting

At FABTECH 2023 (booth A2104), high-tech company TRUMPF will showcase the latest advancements in precision sheet metal fabrication and applications. A highlight this year is the TruLaser 8000 Coil Edition, a new laser blanking solution TRUMPF is launching in North America. The TruLaser 8000 Coil Edition can process up to 25 metric tons of coiled sheet metal from start to finish without any human intervention. It is an attractive option for companies interested in flexible, high-volume solutions for sheet metal fabrication, including automotive suppliers and automakers, electrical cabinet manufacturers, elevator producers, and HVAC manufacturers.

"The TruLaser 8000 Coil Edition is another solution from TRUMPF that helps North American customers to join the drive toward greater sustainability in manufacturing while simultaneously boosting efficiency," says TRUMPF Inc. Head of TruLaser 2D Salay Quaranta. "Com-

pared to conventional laser cutting machines, this setup allows companies with high volume manufacturing to save up to 1,700 metric tons of steel a year, which can equate to saving approximately 4,000 metric tons of CO2 and reducing material costs."

## Impressive flexibility extends to volume production

TRUMPF's new system helps companies enjoy the benefits of laser processing even in high-volume production environments. "Volume manufacturers often use die presses for blanking operations, but that means they need to adjust or even replace the tool whenever they make the slightest modification to their components, ultimately costing time and money," adds Quaranta. "Many industries are seeing significant reductions in the scale of individual production runs, which makes modifications even more costly and time intensive. The laser



allows users to carry out these modifications without requiring a new tool, so it's much easier, faster, cheaper and more flexible."

The TruLaser 8000 Coil Edition has already been successfully implemented by customers in Europe, for example, to produce high-strength aluminum structural components for vehicle-body manufacturing. Early adopters note production benefits resulting from the laser blanking system's high flexibility and quality. They also highlight that the system requires fewer tools than conventional blanking presses.

## Material savings for sustainable production

Coil production enables more efficient nesting of parts. Conventional sheets are limited by their four outer edges, which often makes it difficult for production workers to make full use of the entire sheet. Unused sections of the sheet either must be discarded as scrap or melted down. A coil solves this problem by allowing users to nest an almost endless number of parts on the sheet, which reduces material consumption by around 15 percent. Compared to conventional blanking presses, the new system also heralds a significant reduction in construction and logistics costs. The TruLaser 8000 Coil Edition

makes production more profitable by eliminating tooling costs, optimizing material use, reducing assembly costs, and boosting flexibility in production.

Compared to conventional 2D laser machines, material flow is different and leads to lower cycle times and new automation opportunities in high-volume production series. The system is designed for thin sheet processing, can handle sheet thicknesses of up to 0.25 inches, and can be flexibly adapted to any contours.

TRUMPF's TruLaser 8000 Coil Edition makes its North American debut at FABTECH 2023, but is now available for purchase in the United States, Canada and Mexico. ■

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# State of Manufacturing Panel to Discuss Automation, Digitalization and Other Key Trends Shaping the Industry's Future

The manufacturing industry faces new opportunities, challenges, and trends each year. These are captured in annually in Fictiv's State of Manufacturing survey of industry leaders. Key findings will be laid out in Thursday's State of Manufacturing 2023 panel. A select group of industry experts will unpack and discuss the survey findings and share insights on key trends impacting the manufacturing industry to help you navigate 2023 and beyond.

In addition, our panelists will examine new avenues of global supply chain diversification, will:

- Provide tips on how to boost productivity in the face of engineering workforce shortfalls.
- Offer their views on Artificial Intelligence (AI) and its impact on manufacturing.
- Consider the merits of sustainability in manufacturing and digital manufacturing implementation.

Don't miss the State of Manufacturing 2023 Panel.

## Don't Fear Automation

The State of Manufacturing report details the continued trend of automation in the industry. Some are hesitant to commit to full-fledged automation and digitalization, said one of today's panelists Scot Lindemann, CEO of Mission Design & Automation. His company develops custom process and equipment solutions that simplify automation for manufacturers. These solutions help them to conceptualize, specify, build, program, and install automation tools.

"There's hesitation because of many things – learning curve, the barrier to entry in robotics if you've never had them before – so we've been advising manufacturers who know they need to automate to just get started," said Lindeman. "Work with an integrator to take small steps. You don't have to boil the ocean – getting started one step at a time can make a huge impact on the success and longevity of automation initiatives."



Another panelist Sabrina Paseman, General Partner at Omni Venture Labs, added that outdated software may be getting in the way of the desire to automate. Omni Venture Labs is a DeepTech Fund that is investing in the digital transformation of the industrial and manufacturing industries. She believes outdated software prevents many from making real progress in automation.

"We are motivated by unlocking human potential through elimi-

nating tedious, dangerous, and monotonous tasks and investing in empowering humans to excel at what they are best at - designing and creating the solutions of the future," she said. "Manufacturing is the backbone of our economy, and there have been some exciting technical advancements in the past decades. However, it hasn't gotten the software facelift that a lot of other sectors have benefited from."

This causes two problems: The first is that the inefficiencies around the tedious tasks required for being in the manufacturing profession make it a largely unappetizing industry to enter. It's becoming increasingly hard to find skilled workers to enter the field. The second is that the highest quality candidates are aging and looking into retirement, leaving a wide knowledge gap that the industry is having trouble filling, Paseman added.

"The manufacturing industry has to change to attract new workers and to fill these knowledge gaps, and the best way to do so is to embrace digital transformation of the industry," she said.

She recommended adopting tools that support employees and off-

continued on page 14

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## Solving the Welder Shortage with Cobots

How two companies overcame skepticism and embraced the benefits of automation

Although compounded by the global COVID-19 pandemic, the current welder shortage is nothing new. The aging welder workforce, the lack of a substantial new generation of welders, and career advancements/ transitions along with an unprecedented surge in the demand for metal components across all industries caused a headache for welding shops long before the pandemic. But that brewing storm strengthened to a hurricane once the pandemic hit.

"COVID has hurt us pretty bad," explained Mark Moyer, plant manager at Advanta Southeast LLC, Manning, S.C., a company that offers turnkey industrial metal fabrication services. "The labor shortage is still very tight at the moment due to stiff local competition for welders."

The company is far from alone in grappling with the skilled welder shortage — Fig. 1. After seeing production capacity and quality levels compromised, many manufacturers



have turned to automation and robotics to bridge the gap between the number of welders needed in their respective industries and the number of available qualified welders.

Another such company is Industrial Mfg. Services (IMS), Lancaster, S.C., a manufacturer of fabricated metal components for OEMs in the heavy-machinery industry. The company decided to embark on the route to automation as contracts continued to pour in while finding skilled welders remained a challenge.



"We always knew automation was going to be the way forward," said Warren Earl, vice president of IMS.

Although automation offers companies many benefits, the transition can pose some challenges. Keep reading to find out how Advanta Southeast and IMS adopted collaborative robots (cobots) to overcome the skilled welder shortage.

### Challenges on the Road to Automation

Both companies experienced some of the following obstacles as they moved toward automation. For manufacturers, these challenges are often based on the welding teams' initial experiences with traditional robots. The common concerns expressed are understandable.

**Fear of being replaced by robots.** Many companies hedge on robotics due to employees' resistance to change and questions about whether or not their jobs will be replaced. When Advanta Southeast started looking into investing in robot technologies, the company's workers were initially hesitant and skeptical. "Employees were afraid of losing their jobs," Moyer said.

**Extensive training to learn complex systems.** Companies that are already time-strapped are worried about the complex level of robotic technologies, especially when some welders may not be tech-savvy enough to operate complex solutions. For that reason, extended

training and onboarding along with extensive support are often cited as concerns. It stands to reason that the more a welder tries to get a handle on a robot, the less time they spend on profitable jobs and contributing to throughput.

"Some managers questioned just how efficient welding robots could really be as far as learning to program them and set them up," Moyer said. This can ring true for high-mix, low-volume projects. Many may ask, "Does the programming time trump efficiency?"

### High equipment and training costs.

On top of concerns dealing with technological complexity, equipment performance, and staff pushback, a lot of welding shops do the math and realize that the capital investments for traditional robots, exacerbated by the costs of extended setup times and prolonged support services by robot integrators, are high. This can make manufacturers perceive target return on investments (ROIs) as unattainable in the short term. A 2019 study by McKinsey

& Co. confirmed these concerns (Ref. 1). The study reported that 53% of respondents said their top challenge in implementing industrial robots was the costs.

### Technological Innovations Overcome Challenges in Robotics Integration

Despite the hurdles companies may face when considering robotics systems to automate their production processes, there are innovative solutions available that aim to democratize robotics use and make automation investments more affordable. Developed with proven technologies from renowned brands, new welding cobots and their surrounding equipment are becoming easier to use. Many also eliminate the complexities of traditional industrial robot setups.

When researching welding automation systems, apart from considering inherent functionalities, manufacturers should ask themselves the following questions:

continued on page 8

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## Solving the Welder Shortage with Cobots continued from page 7

- How are the welding automation systems installed?
- What is required to program the welding automation systems?
- How easy is it to configure the welding automation systems for different applications?



To make welders more receptive to cobots, during vendor demos, many fabrication shops are now asking welders to test-drive the systems to see how comfortable they are with the setup and how the systems work.

Programming ease will inevitably affect the welder's adaptability. The harder the system is to learn,

the less likely it will be adopted by welding teams, so selecting a cobot that is easy to program is key. An important factor that can affect the ease of programming is whether the robotic welding system needs to be programmed on a robot interface or on a commonly used device, like a phone or tablet. Cloud capabilities and an intuitive interface are additional factors that can help users fix issues quickly and in real time.

Helping them avoid some of the challenges associated with robotics integration, Advanta Southeast and IMS both opted for an automated cobot welding solution that could be programmed with a simple app on a mobile device. This meant that the teams did not need to learn robotics programming.

At first, the welders at IMS were skeptical about how easy the cobot would be to use because the company had tried other cobots and noticed few distinct advantages regarding simplicity and programming times. However, after the onboarding progress, the welders were able to start using the cobot in about half an hour.



"Programming a traditional robot takes at least an hour," explained Justin Payne, manufacturing engineer at IMS. "It took me four minutes and 19 seconds at one welding cobot station."

Advanta Southeast pointed out that thanks to the limited programming needs of its selected system, welders started to enjoy working with cobots. At the company, the cobots were dedicated to mundane and repetitive tasks, while welders were assigned more value-added jobs, thus improving employee efficiency and job satisfaction.

Both companies also experienced accelerated throughput, which allowed them to take on more work despite the skilled welder shortage.

Advanta Southeast was able to expand its offerings and take on new types of projects in different locations. For example, the company was recently awarded a large new mandate of towers for Rivian, Irvine, Calif., a provider of electric vehicles. These projects would have been impossible for the company to take on prior to adopting its welding automation systems.

"We increased our output to 400% compared with manual welding," added Moye.

IMS has also seen an uptick in diversified work. To date, the company has not experienced any problems with part consistency, repeatability, and quality.

### Welding Automation Is the Way Forward

Offering ultra-short programming times and intuitive interfaces that guide welders to configure jobs in as little as ten minutes, welding cobots are a game-changer. With cobots overcoming the apprehensions of welding shops, both Advanta Southeast and IMS consider welding cobots to be the wave of the future.

As IMS Manufacturing Engineer Matt Blowers affirmed, "I would tell anybody if they're on the fence or questioning it, go for it. They won't regret it." ■

WJ Reference 1. Teulieres, M., Tilley, J., Bolz, L., Ludwig-Dehm, P. M., and Wagner, S. 2019. Industrial Robotics: Insights into the Sector's Future Growth Dynamics. McKinsey & Co., New York. ROB GOLDIEZ (rgoldiez@hirebotics.com) is CEO of Hirebotics, Nashville, Tenn.

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# Beyond Automation: The Slower, More Flexible Path to Success

How to move from cost-based to time-based thinking in your fab shop

by Lincoln Brunner, Published in the June 2023 issue of *The Fabricator*®

When Apple's "Think Different" campaign debuted in 1997, it featured a who's-who of famous innovators — among them Amelia Earhart, Miles Davis, and Mahatma Gandhi — who took decidedly idiosyncratic approaches to their pursuits. In doing so, the iconoclasts featured in the campaign redefined their fields.

Rajan Suri thinks fabricators and manufacturers should dare to do the same — both in how they run their shops and how they approach the very concept of productivity.

Suri, author of "It's About Time" and founder of the Center for Quick Response Manufacturing at the University of Wisconsin-Madison, believes that most manufacturers think wrongly about productivity and profitability not because they're unintelligent or bad at what they do, but because they measure money rather than time. Specifically, as he points out in numerous publications, they focus on how quickly their machines can create parts rather than the time it takes for those parts to move from order sheet to machines to a customer's delivery bay.

"The big picture is that long lead times add a lot of inefficiencies to the whole process," Suri said. "Long lead times create a lot of other overhead costs. And if you focus on shortening lead time, not only do you take a lot of costs out of your process, [but you also] get better quality, better on-time delivery, and so on. That's what QRM is essentially saying — focus on reducing lead time as a driver and you'll get the benefits."

## Of Spaghetti and Cells

Accommodating those new priorities requires a business to rethink many aspects of its operation, beginning with the machines it buys

and how it positions them in the shop to optimize the time parts spend in production.

To Suri, it's all about minimizing what he calls "white space" on the proverbial map of a part's journey through the shop.

Often, parts follow a "spaghetti flow" through a shop: A part gets laser-cut from a sheet, for instance, then moves to a press brake across the floor, and from there gets tacked to an assembly at a third station before getting welded at a fourth and then stacked on a pallet where it awaits shipment. At all those stations and in between, white space in the production flow kills whatever efficiencies the company might gain during each fabrication process because the machines have not been physically positioned to complement each other in a way that shrinks the white space.

"Think in terms of, 'How can I find commonalities between parts in order to create a cellular layout?' because without the part families or the commonality of the cell layout, parts typically go to different departments that have the machines that they need," Suri said. "Purely automating one operation only means that when you get to that department, you get that operation done faster—but you've still got to jog around your spaghetti flow ... and you just did a hurry-up-and-wait."

"Putting the parts together based on similar characteristics so that they can all use a group of machines that are in one area and creating the cell essentially takes weeks and weeks out of lead time in many factories," he noted. "You can have more automated work cells where you hook together two or three or four machines in a sequence. That's effective if you're making very much the same product again and again

in high volume. For most of the shops that I'm working with, which are high-mix, low-volume or custom production, that is just not a feasible alternative."

Suri noted that multifunctional machines that can punch, cut, and bend (for example), are probably better suited to long production runs of similar parts. Shops living on a consistent diet of small volumes might do well to implement what Suri calls a QRM cell: A combination of machines that can easily and nimbly adjust to highly variable customer demand, in the long run, will likely prove much more profitable.

The idea is to co-locate an array of machines that are more specialized themselves, but when grouped together offer a fabricator a wide array of options so they can respond to a wider array of demands.

"Having a slightly lower level of automation but putting machines together in one place and having the flexibility to take notice of exactly what the customer needs — that's more what I think a lot of shops need in many cases," Suri said. "It depends obviously on their customers and the market, but for the smaller job shops with really high mix/low volume, then the cells with less automation seem to take less investment and are more flexible."

"As long as those machines are all in the same cell, people can move the parts back and forth in any sequence."

## Adjusting to a Time-based Mindset

Of course, rearranging a shop like that normally means rearranging the way a shop approaches its entire business, from part flow all the way back to order-taking. The main idea is to squeeze time, rather than costs, out of the process.

**Trim Batch Sizes on Purpose.** One of the tenets of traditional shops is securing high-volume business to ensure cost efficiencies. However, doing business that way creates excess white space (lead times) in the production flow: wait time for materials, time needed to move large numbers of parts from station to station, time that parts sit waiting for the next process, and the time parts sit on pallets waiting for shipment.

There's a better way, if an entire operation is oriented to accommodate it — smaller batch sizes that shrink the white space between processes.

"Switching to smaller batch sizes ... appears to be more costly from the traditional point of view," Suri said. "But in fact, because of the shorter lead times and the fast turnaround, you actually end up making more money, and it costs less."

**Resource Utilization.** Suri also preaches the virtue of maintaining spare capacity. This may seem antithetical to eliminating white space, but maintaining flexibility means not doing what so many shops have set as their goal: 100% utilization of their people and machinery.

Why not strive for that? Because running flat-out all the time negates the possibility of responding quickly to unexpected demand from current customers, and more important, to requests from new customers. Their orders might take only a short time to fill, but if you've maxed out your capacity, you've precluded the chance to make a new customer happy and secure new business down the road. You may have optimized your operation for your current book of business, but what happens if that business dries up? Instead of having new business

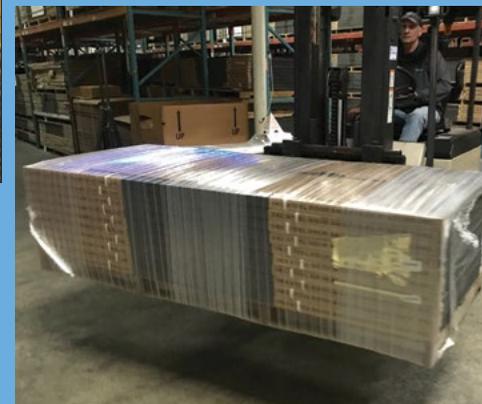
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AMADA is committed to treating the global environment with utmost respect by actively reducing CO<sub>2</sub> emissions, promoting waste reduction and reuse, and safeguarding biodiversity throughout all our processes. At FABTECH 2023, AMADA will showcase how fabricators can achieve unprecedented levels of automated productivity while placing a strong emphasis on environmental sustainability. Attendees will have the opportunity to witness the North American debut of two automated robotic bending systems equipped with Automatic Tool Changers. The event will also highlight the remarkable advantages of AMTES (Autonomous Mobile Transport Engineering System), enabling fully automated blank-to-bend processing and tracking. Additionally, demonstrations will feature new machines incorporating AMADA's latest generation 4ie control (*easy, efficient, environmentally-friendly, evolutionary*).



**EGB 1303 ARse**  
Robotic Bending System

North American **DEBUT**

**EGB 1303 ARse Robotic Bending System** — New electric press brake fully automated, including robotic part handling with auto tool change, to move from part to-part unattended.

**VENTIS 3015 AJ (6kW) Fiber Laser** — Innovative beam control technology creates higher quality cutting by improving surface quality and reducing dross.

North American **DEBUT**

**EGB 6013 ARce Robotic Bending System** — New high-speed fully automated electric brake used for small parts. Unattended robotic bending system with auto tool change.

**HRB 1003 ATC Press Brake w/ Automatic Tool Changer** — U.S. manufactured press brake with Automatic Tool Changer, offers great cost-to-performance value. Uses HRB ATC tooling manufactured in the U.S.

**EGB 6020 ATCe Press Brake** — High-speed electric Auto-Tool-Change press brake for precise processing of high-mix, low-volume production parts.

**BREVIS 1212 AJ (3kW) Compact Fiber Laser** — Compact stand-alone 3kW Fiber laser for smaller parts up to 4' x 4'. Equipped with a Rotary Index.

**REGIUS 3015 AJ (12kW) with Automation and Part Sorting** — High-speed, 3-axis linear drive system combined with Variable Beam Control Technology and packed with features to support autonomous operation. Full automation combined with AMTES provides highly-efficient unattended processing, part sorting and tracking.

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## State of Manufacturing Panel

continued from page 6

load repetitive tasks, giving them room to spend more energy on tasks that require creativity, critical thinking, and problem-solving. Further, she said to implement knowledge-based training models. These models leverage the expertise and experience of the most skilled workers within the organization. By capturing and digitizing their knowledge, tools can be created that assist lower-level machinists in performing at the level of tenured professionals. This democratization of knowledge not only bridges the skill gap but also empowers the entire workforce to reach their highest potential.

“As the manufacturing industry faces the challenge of a shrinking pool of skilled workers, embracing digital transformation becomes increasingly important to ensuring continued growth and success,” said Paseman. “By investing in smart manufacturing solutions and knowledge-based training models, manufacturers can unlock the full potential of their workforce.”

### The Rise of Digital Manufacturing

Fictiv, the author of the annual State of Manufacturing report, will be well represented on the panel. Fictiv is an operating system for custom manufacturing that makes it faster, easier, and more efficient to source and supply mechanical parts. It orchestrates a network of partners around the globe for high-quality manufacturing, from quote to delivery. To date, Fictiv has manufactured more than 20 million parts for early-stage companies and large enterprises alike, helping them innovate with agility and get products to market faster. That puts the company in a good position to amass the data from a great many sources that forms the basis of the State of Manufacturing report.

During Thursday’s panel, Riley Hall, head of product marketing at Fictiv, will go into many of the details of the report including the need for local machine shops to embrace digital manufacturing.



“Local machine shops are over capacity and having challenges supplying low-volume, high-mix mechanical parts,” said Hall. “This is causing delays in project schedules and can ultimately lead to reduced capitalization from delayed market launch of new products. Digital manufacturing can be a solution to this problem.”

Hall will explain one of the report’s findings that too much time is being spent by engineering teams on sourcing activities. As components become more complex, skilled engineers are increasingly required to

source, vet, and manage suppliers. This reduces the time spent on engineering activities, thus delaying innovation and extending project timelines.

Don’t miss Thursday’s State of Manufacturing 2023 panel and hear what our experts have to say about the future. You will also get a full rundown of the findings of this year’s report and be able to obtain your own copy. ■

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# FAB to FINISH Production Experience Returns to FABTECH — Adds New Production Step

FABTECH 2023 will once again feature CCAI's popular FAB to FINISH Production Experience. The program, launched at FABTECH 2017, enables show attendees to experience the production of a part first-hand, from fabricating to finishing. The process starts at the Mazak Optonics booth where participants pick up a souvenir laser cut part and a production route card. The cards direct attendees to participating FINISHING exhibitors where they experience a variety of finishing operations.



The first stop in the FINISHING Pavilion takes participants to the Mighty Hook booth where they pick up a hanger. The hanger enables touch-free transport of the part throughout each step and is also used to appropriately position the part for pretreating, powder coating, and curing. At the coating step, participants can choose a color and try their hand at powder coating their own part.



Some participants will receive route cards that include a selective plating process. For this route in addition to a hanger, participants will receive a mask when they

arrive in the FINISHING Pavilion. The mask will cover the area of the part that will be plated after the pretreat, powder coating, and curing processes. Prior to plating,

the mask used during the previous production steps is removed then, a copper plating is applied.

continued on page 16



Visit us in Booth D40600

## CCAI Industrial Finishing Online Courses

**CCAI offers a series of Industrial Finishing Online Courses based upon CCAI's popular training manuals. Upcoming courses start dates:**

**Powder Coating for Industrial Finishing Applications:**  
 • October 2, 2023

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**New Course for 2023**

**Pretreatment for Industrial Finishing Applications:**  
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Each six- or seven-week course will cover all aspects of the finishing processes to provide a thorough understanding of each technology.

These self-paced courses are instructor-led with opportunities to interact with the instructor and other students, including weekly quizzes, forum discussions and a final exam project.

Visit the CCAI website for complete course details and registration information.

[www.ccaiweb.com/academy](http://www.ccaiweb.com/academy)



# David Feherty Brings Humor and Life Lessons to FABTECH

continued from page 1

world and what they are really like as people.

Feherty claims he began as a broadcaster exactly ten minutes after Tiger Woods turned professional. As a result, he had a front row seat to his rise to greatness, the turmoil of his personal life and his long battle to win his last major aged 47 at the Masters in 2019 after an 11-year drought. He saw Woods battle through intense personal issues, a messy divorce and a catalog of injury woes to finally regain the crown. He is unequivocal about Tiger being the greatest of all time and someone who single-handedly revolutionized golf and took its profile to new levels. Although his 14 majors are four short of the tally racked up by Jack Nicklaus, Feherty believes Tiger had to win those in an era containing a much stronger and deeper field.

“He’s the greatest player that’s ever lived; no one has ever played golf like Tiger Woods,” he said.

## Not Only Golf

On the surface, the show may seem of interest only to golfing enthusiasts. This couldn’t be further from the truth. While he will tell countless sporting stories, many of them will

appeal to a much wider audience due to their humorous nature and how his tales diverge into all kinds of other nooks and crannies of existence. He typically sprinkles his keynotes with amusing as well as heartfelt tales related to his many errors in life. He will touch on areas such as divorce, his many parenting challenges, and long battles with depression and drug and alcohol addiction.

One of Feherty’s popular stories concerns his victory at the Scottish Open in 1986. Following the event, he disappeared on a two-day bender and lost the trophy. That didn’t deter his addiction. He estimated that at his peak, he was drinking 2 or 3 bottles of Irish whiskey and popping 40 Vicodin daily. That may be one of the reasons why he never enjoyed much success on the PGA Tour. His two years on the U.S. circuit were marred by constant substance abuse. He finally regained control of his life in 1996 with the help of golfing great Tom Watson. Tom helped introduce him to Alcoholics Anonymous and made sure Feherty attended meetings regularly until he was out of danger.

Another common topic during his talks is the USA. He became a United

States citizen many years ago and now lives in Dallas, Texas. He often pokes fun at American audiences and tells them not to be so critical of their own country. He chose to make this great nation his home and says it compares more than favorably to most places in the world.

## Helping Our Troops

Golf isn’t Feherty’s only love. He is also passionate about helping our troops and is even more so since he began an American citizen. He is the co-founder of Feherty’s Troops First Foundation. He partners with fellow co-founder and foundation Executive Director Rick Kell.

After visiting deployed troops in the Middle East, Kell was invited to visit patients recovering from serious combat injuries. He shared his experiences and ideas with Feherty. Together they launched the Troops First Foundation to develop, operate and support wellness, quality of life and event-based initiatives for post-9/11 combat-injured Warriors. Its initiatives provide housing to wounded veterans and their families, establish connections among service members to give them a critical support network in an effort to combat the veteran suicide

crisis, coordinate an opportunity for service members to leave the battlefield on their own terms, and provide service dogs to assist in everyday life.

“We need to show our deep gratitude to those who served our country by helping them now in their time of need,” said Feherty.

## One of the Highlights of FABTECH

Without doubt, Tuesday’s keynote, “A Nasty Bit of Rough with David Feherty,” promises to be one of the highlights of the FABTECH week. As well as funny, it will be at times poignant, inspiring and definitely unpredictable.

It is quite likely that he will end the talk by inviting questions from the audience. Many attendees want to know about his interactions with specific golfing greats. Others ask about what made them stand out from the pack. But some are more interested in his personal struggles and the life lessons he wishes to pass on. He is more than happy to answer any questions thrown at him.

Come see David Feherty on Tuesday, unplugged and uncensored. ■

# FAB to Finish Production Experience

continued from page 15



New to FAB to FINISH this year, all participants can check their powder coating skills with a final stop at the DeFelsko booth. Using testing instruments, they can measure the coating thickness and consistency on their part and compare the results to a “gold standard” part that will be on display in the DeFelsko booth.

After completing the fabrication and finishing processes, participants can take their part home as a souvenir of their time at FABTECH. ■

## This year’s FAB to FINISH participating exhibitors include:

### Fabrication

Mazak Optonics – A3502

### Hooks & Masking

Mighty Hook – D40713

### Pretreat

DuBois Chemicals – D40130

GAT Finishing Systems – D40308

Henkel – D40721

### Powder Coating

Gema USA Inc. – D40311

Nordson Corp. – D40302

Sames – D40321

Trimac Industrial Systems – D40118

### Curing

Nordson Corp. – D40302

Vulcan IR Systems – D40034

Trimac Industrial Systems – D40118

### Selective Plating

Quaker Houghton/Sifco – D40507

### Testing

DeFelsko Corp. – D40121

## Beyond Automation continued from page 10

ready and waiting, you're searching for new business while your machines and people stand idle.

"The biggest thing is looking for machines that are flexible rather than fast," Suri said. "A lot of times, people want a machine that can just ... turn out 100,000 parts in an hour, but those machines typically have really long setups. So, if you have a machine that's slower but can be changed over very quickly, the slower speed is compensated by the fact that you have fast changeover and short lead times."

For shops facing material shortages from supply chain issues, Suri suggests that they could make better use of resources by seeking orders for current stock rather than seeking raw material stock for current orders.

"Look at the stock you have on hand that is already with you that is maybe from other orders that didn't go out or that you just happen to have and get your salespeople to ... go after new markets and new customers," Suri suggested. "If you have cells that are flexible and with short lead times, you can actually pivot very fast to serving new customers with materials you already have."

**Time-based Sourcing.** One of the recurring refrains across the entire North American manufacturing world after the pandemic is reshoring — or at least sourcing much closer to home to avoid the nightmarish wait times suffered by so many businesses that depended on goods from Chinese vendors that arrived weeks or months late during the worst Covid-related delays.

Vying for cheaper parts might have once paid off nicely, but in a time-based system that relies on and aims for short lead times and smaller part runs, sourcing materials closer to home actually boosts the bottom line, Suri maintains.

"Ideally, I would say get in a time machine, go back 20 years, and decide not to outsource those parts to China — but it's too late for that,"

Suri joked. "Use this opportunity to develop alternative suppliers that are possibly apparently more expensive but are local and have short lead times. You can combine that with the cost savings if you

have both [foreign and domestic] suppliers in place, so you can place a bulk of your orders to the distant suppliers that might have longer lead times and have fill-in orders filled in by a local supplier." ■

Contributing Editor Lincoln Brunner can be reached at [lbrunner@thefabricator.com](mailto:lbrunner@thefabricator.com).

Center for Quick Response Manufacturing, [qrm.engr.wisc.edu](http://qrm.engr.wisc.edu)

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The FABTECH Bistro is a convenient place for exhibitors and attendees to eat, meet and network. Located in the Lakeside Center Ballroom and S100 Ballroom, the FABTECH Bistro will be open on event days from 11AM-2PM and feature a buffet menu that will change daily. Reservations are not required and credit cards are accepted.



**LOCATION:**  
North Hall – Booth B19111  
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Conference-at-a-Glance

Monday, September 11

TECHNOLOGY	8:00 AM	10:00 AM	12:00 PM	2:00 PM
3D/ADDITIVE MANUFACTURING			<p>■ <b>F12:</b> Fundamentals of Additive Manufacturing for Fabricators <b>Room S502A</b></p>	<p><b>NEW!</b> ■ <b>F13:</b> Additive Metal Products Are Ready, Are You? How Do You Accept Them and Put Them to Work? <b>Room S502A</b></p>
AUTOMATION	<p><b>NEW!</b> ■ <b>F20:</b> Automation: A Basic Crash Course &amp; Getting Started for Small Manufacturers <b>Room S404BC</b></p>	<p><b>NEW!</b> ■ <b>F21:</b> Evaluating Business Case ROI &amp; Affordable Automation Solutions <b>Room S404BC</b></p>	<p><b>NEW!</b> ■ <b>F22:</b> Where Do You Fall in the Automation Spectrum? Comparison of 3 Different Automation Levels <b>Room S404BC</b></p>	<p><b>NEW!</b> ■ <b>F23:</b> Creating Process Improvement Through Automation for Your Fabrication Business <b>Room S404BC</b></p>
FINISHING		<p><b>NEW!</b> ■ <b>C11:</b> Lean &amp; Green Curing: Save Space, Time &amp; CO<sub>2</sub> <b>Room S253B</b></p>		<p><b>NEW!</b> ■ <b>C13:</b> Under the Gun: How Powder Guns Work and Troubleshooting Tips <b>Room S253B</b></p>
		<p>■ <b>C21:</b> Introduction to Powder Coating System Design <b>Room S253C</b></p>		<p>■ <b>C23:</b> Cleaning Up Costs in Your Pretreatment Process <b>Room S253C</b></p>
		<p><b>NEW!</b> ■ <b>C31:</b> Don't Take Safety for Granted <b>Room S253D</b></p>		<p>■ <b>C33:</b> Improving Your Masking, Racking, and Paint Removal Processes <b>Room S253D</b></p>
FORMING & FABRICATING	<p>■ <b>F40:</b> All About Press Brakes <b>Room S403A</b></p>	<p>■ <b>F41:</b> Roll Forming Justification, Basics, and Lubricants <b>Room S403A</b></p>	<p>■ <b>F42:</b> Coil Slitting, Leveling &amp; Deburring <b>Room S403A</b></p>	<p>■ <b>F43:</b> Coil Storage Solutions <b>Room S403A</b></p>
	<p>■ <b>F50:</b> Tube Bending Challenges <b>Room S403B</b></p>	<p>■ <b>F51:</b> Slitting Thin and Surface Critical Materials <b>Room S403B</b></p>	<p><b>NEW!</b> ■ <b>F52:</b> Accuracy &amp; Precision in Tube Laser Cutting <b>Room S403B</b></p>	<p><b>NEW!</b> ■ <b>F53:</b> Improving Lubrication Performance: Health, Safety &amp; Environmental Impacts in Tube Working Operations <b>Room S403B</b></p>
JOB SHOP	<p>■ <b>F60:</b> Do You Know How Much Money You Are Losing Due to Equipment Breakdown? <b>Room S404D</b></p>	<p><b>NEW!</b> ■ <b>F61:</b> Identify Disruption Trends &amp; Operational Risks in Technology <b>Room S404D</b></p>		<p><b>NEW!</b> ■ <b>F63:</b> Leveraging Activity Based Costing to Ensure Growth and Profitability <b>Room S404D</b></p>
LASER			<p>■ <b>F72:</b> Robotic Laser Welding <b>Room S502B</b></p>	<p><b>NEW!</b> ■ <b>F73:</b> Laser Cutting and Drilling <b>Room S502B</b></p>
LEAN			<p><b>NEW!</b> ■ <b>FW1:</b> The Doctors Will See You(r Shop) Now: A HMLV Lean Boot Camp (12:00–5:00 PM) <b>Room S501D</b></p>	
MANAGEMENT	<p><b>NEW!</b> ■ <b>FW2:</b> Leadership Skills: How to Become a More Effective Leader - Workshop (8:00 AM–12:30 PM) <b>Room S402B</b></p>			<p><b>NEW!</b> ■ <b>F93:</b> Empower a Business Owner: Recession Impact, Value &amp; Finance Options <b>Room S402B</b></p>
MARKETING & SALES		<p><b>NEW!</b> ■ <b>F111:</b> How to Better Your Digital Marketing <b>Room S404A</b></p>	<p><b>NEW!</b> ■ <b>F112:</b> Differentiate Your Marketing: Using Culture &amp; Messaging <b>Room S404A</b></p>	<p>■ <b>F113:</b> Business Builders Workshop: Best Practices for Strategic SMB Sales Growth <b>Room S404A</b></p>
ROBOTICS	<p><b>NEW!</b> ■ <b>F120:</b> Smart Robotic Cells: Labor Shortage Solutions for Surface Finishing Applications <b>Room S401D</b></p>	<p><b>NEW!</b> ■ <b>F121:</b> Robotic Solutions to Create Better Work Environments and Employee Retention <b>Room S401D</b></p>	<p>■ <b>FW3:</b> Getting Started in Industrial Robotics: What You Need to Know Workshop (12:00 - 4:30 PM) <b>Room S401D</b></p>	
SMART MANUFACTURING	<p><b>NEW!</b> ■ <b>F130:</b> Drive Smart Manufacturing Through Assessment &amp; Modern Workflows <b>Room S402A</b></p>	<p><b>NEW!</b> ■ <b>F131:</b> Communicate &amp; Prepare Your Shop for The Factory of the Future <b>Room S402A</b></p>	<p><b>NEW!</b> ■ <b>F132:</b> Getting Started with Data Collection &amp; MES Systems <b>Room S402A</b></p>	<p><b>NEW!</b> ■ <b>F133:</b> The Impact of Transformation Technologies 4.0 in the Industry <b>Room S402A</b></p>
STAMPING		<p><b>NEW!</b> ■ <b>S11:</b> Sensors for Die Protection-Make Die Crashes a Thing of the Past <b>Room S501A</b></p>	<p>■ <b>S12:</b> Automatic In-Die Part Quality Monitoring &amp; Tool Adjustments <b>Room S501A</b></p>	<p><b>NEW!</b> ■ <b>S13:</b> Estimating Metal Stamping Dies <b>Room S501A</b></p>
		<p>■ <b>S21:</b> Maximizing Progressive Die Performance During Production <b>Room S501BC</b></p>	<p><b>NEW!</b> ■ <b>S22:</b> Methods and Tips for Solving Progressive Die Problems <b>Room S501BC</b></p>	<p><b>NEW!</b> ■ <b>S23:</b> Alternative Stamping Methods <b>Room S501BC</b></p>
WORKFORCE DEVELOPMENT	<p><b>NEW!</b> ■ <b>F140:</b> Boost Your Brand &amp; Your Recruiting Strategies to Become an Employer of Choice <b>Room S401BC</b></p>	<p><b>NEW!</b> ■ <b>F141:</b> Reality Check: It's a Lack of Workforce Readiness that is Holding Manufacturing Back, Building a Talent Plan for the Future <b>Room S401BC</b></p>	<p><b>NEW!</b> ■ <b>F142:</b> Building a Premier Talent Pipeline &amp; Reducing Turnover <b>Room S401BC</b></p>	<p>■ <b>F143:</b> How To Build Exceptional Teams <b>Room S401BC</b></p>
WELDING	<p><b>W1:</b> Welding Qualification and Certification to AWS Codes and Standards <b>Room N230AB</b></p>			<p>10:00 AM - 12:00 PM</p>
	<p><b>W2:</b> D17.1 Specification for Fusion Welding for Aerospace Applications <b>Room N231</b></p>			<p>12:00 PM - 4:00 PM</p>
	<p><b>W11:</b> Professional Program - Day 1 <b>Room N138-N140</b></p>			<p>8:00 AM - 5:00 PM</p>

Schedule subject to change. Detailed Conference Program session descriptions, speakers, pricing, room locations and more can be found at [fabtechexpo.com/conference](http://fabtechexpo.com/conference).

■ Basic ■ Intermediate ■ Advanced

# Winning the Workers: What It Takes for Manufacturers to Compete in Today's Tight Labor Market

By Justin Geach, global director of marketing, Master Fluid Solutions, Published in the March 2023 issue of *MetalForming* magazine

In 2021, a record-breaking 47 million people quit their jobs, beginning what economists term The Great Resignation. This trend impacted every industry, including the manufacturing sector, which already was

struggling from a decades-long labor shortage. Deloitte predicts that as many as 2.1 million manufacturing jobs could remain unfilled by 2030, despite reshoring of production and growing manufacturing

demand. Research by The Manufacturing Institute paints a similar picture, finding that 93 percent of executives report struggling to find candidates with enough skills for their vacant roles. According to

the National Association of Manufacturers, more than two-thirds (77 percent) of executives surveyed also expect to have ongoing difficulties finding and retaining talent throughout the foreseeable future.

This difficult labor market has developed alongside the long-term trends of outsourcing of manufacturing jobs and underfunding trades and vocational education. While manufacturing jobs have begun to return, interest from the labor force continues to lag. It's up to manufacturers to create a desirable workplace and win back workers. Here are four actions manufacturers can take to do so.

## Invest in Automation

Manufacturers look to automation technology to improve operational efficiency, control costs, and augment the lack of workers—but automation can offer much more. A 2022 report by Deloitte noted that Gen Z and other young people entering the workforce primarily are interested in careers focusing on digital skills, but the public is not really aware of how advanced manufacturing technology has become.

Deloitte analysts theorize that in addition to providing the expected efficiency gains, implementing more automation technology throughout an operation could make it a more appealing place to work for the next generation. Eliminating repetitive tasks with AI and other software, or reducing physical strain with the help of collaborative robots that directly assist workers (also known as 'cobots'), could also help improve labor retention.

## Strengthen Company Culture and Reputation

Negative news of company culture and poor management practices can spread quickly among others in the industry, especially in small markets, making it difficult to fill vacant positions. Improving your

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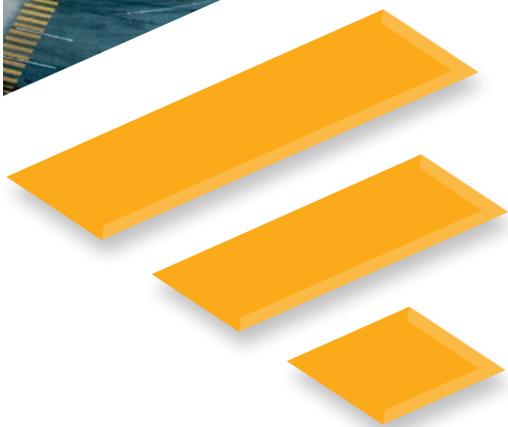
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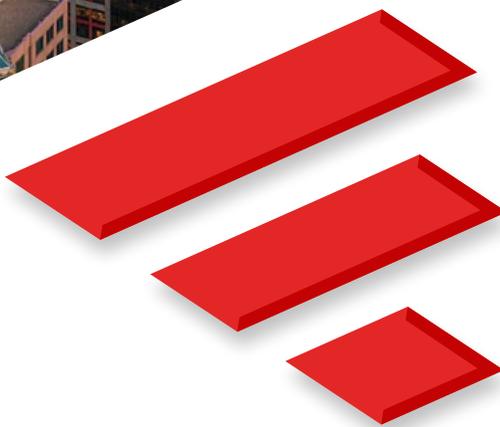
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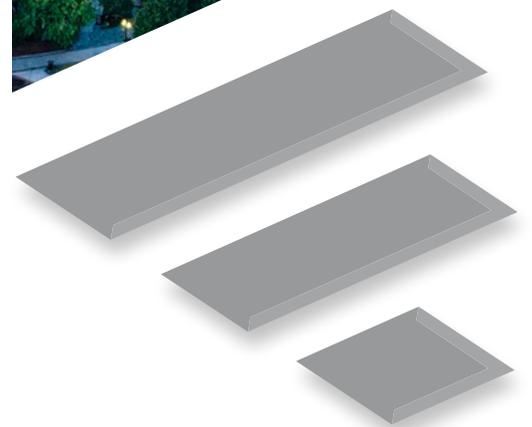
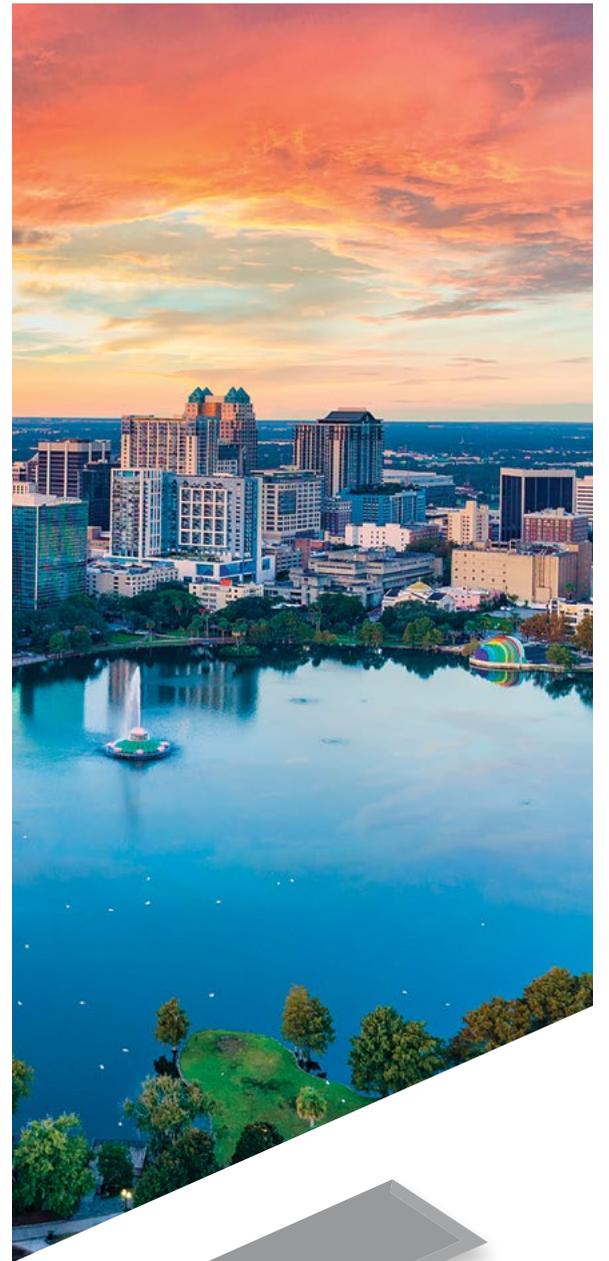
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## Winning the Workers continued from page 20

company's reputation can be as simple as prioritizing employee wellness. When possible, consider allowing a flexible schedule so workers can attend to personal and family needs and maintain a

healthy work-life balance. Ensure shift supervisors and other middle managers adhere to the highest standards of conduct with employees, listening to their feedback and treating workers fairly.

When people feel respected and empowered at their jobs, it creates a highly attractive company culture. Well-regarded employers will have higher retention rates and more qualified applicants competing

for roles. If a company stands out in the market, it may be less susceptible to overall labor-shortage challenges.

### Offer Competitive Wages and Benefits

According to research by Morning Consult, pay has been the primary driver of The Great Resignation, with 63 percent of workers leaving their jobs because of inadequate salaries. To reduce turnover, many companies have considered increasing pay—studies show that just a \$1/hr. raise can improve retention by 2.8 percent.. As a result, recruiting employers need to match or exceed these higher wages to attract new talent.

In addition to higher salaries and wages, above-average benefits also contribute to an appealing employment package—examples include high-quality insurance and low employee premiums. Tuition-reimbursement programs, especially for industry-related degrees and training, also help attract talent interested in career advancement, and improve retention.

### Support Education

One of the best ways to attract workers: partner with local trade schools, community colleges and even vocational high schools. Doing so will provide access to a well-trained talent pool from which to recruit, and it will improve your company's name recognition among entry-level workers.

Manufacturers can support trade schools by:

- Providing classroom materials—cutting fluids, for example
- Sending experts from the company to serve as guest lecturers
- Creating supplemental education materials
- Offering hands-on apprenticeship programs.

Manufacturers also should consider providing students with scholarships and other forms of assistance while they undergo training. ■



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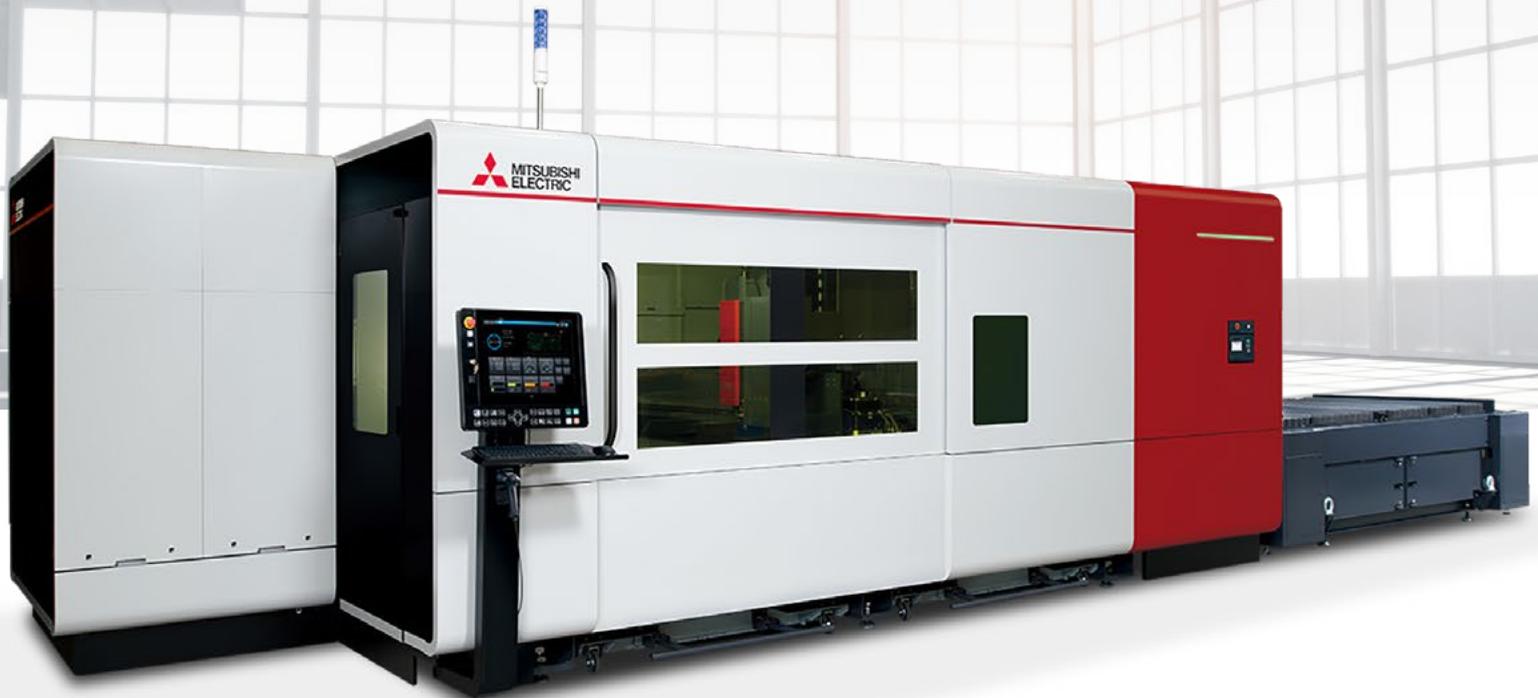
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