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THE MAKING OF A MACHINE GREEN



Manufacturers' sustainability goals include net zero emissions, and the decarbonization journey starts with energy-efficient machines PG 38

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A round up of robot innovations from the show





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FOR OPENERS

STEPHANIE NEIL EDITOR-IN-CHIEF

What's New in OEM...



In this issue of *OEM magazine*, we are excited to announce a few new things. First, we now have two OEM profiles. In addition to our typical business story that provides a glimpse into what other machine builders are doing to differentiate themselves, we are also introducing you to new PMMI members in a quick Q&A format conducted by Sean Riley. Turn to page 16 to read about Mettler Toledo Product Inspection, and to page 22 to learn about new PMMI member ONExia.

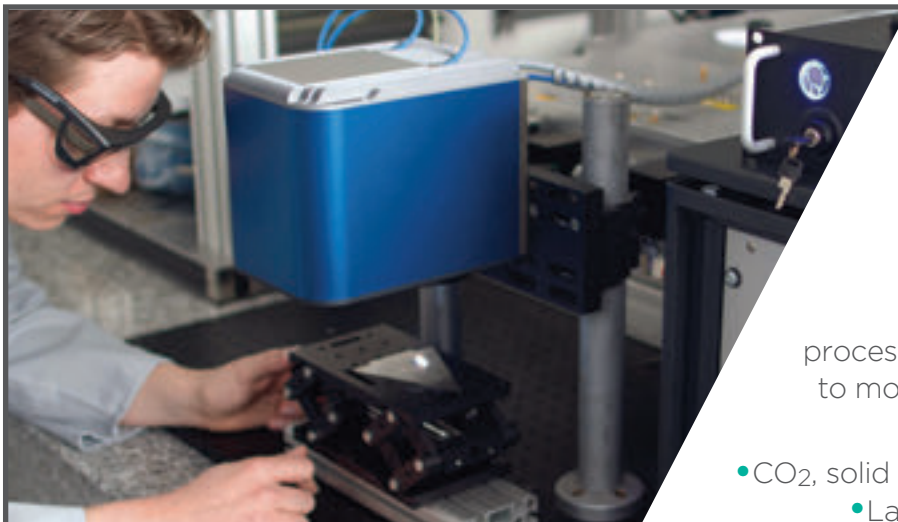
Second, because sustainability is a priority for every manufacturer in the world, we have added the “Green OEM” series. Here, we’ll dive into some of the issues that directly impact our readers. The first topic we tackle is “the green machine,” which looks at how OEMs can build energy-efficient equipment. Flip to page 38 to learn some of the steps you can take to

start down this path—if you haven’t already (or even if you have).

Third, here at PMMI, we are committed to workforce development, and part of that is attracting more women into this industry, while also helping them build a successful career. To that end, we now have a new section of the magazine dedicated to this issue. On page 59, Lisa Propati, general manager of Weiler Labeling Systems, a division of ProMach, and the new co-chair of the Packaging & Processing Women’s Leadership Network (PPWLN), talks about creating a career roadmap.

As always, I welcome your feedback and suggestions of what you want to read about. I look forward to seeing some of you in person at PACK EXPO East in Philadelphia!

Stephanie Neil is the Editor-in-Chief of OEM Magazine. She may be reached at sneil@oemmagazine.org or at www.linkedin.com/in/stephaniesneil.



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73% of consumers purchased groceries online in the last three months.



44% of manufacturers are shipping products direct to consumers.



22% of beverage companies plan to add new production lines for online orders.





EMERGING LEADERS

Alexandra Francis Drives Aftermarket Opportunities at BluePrint Automation

Natalie Craig, Contributing Editor

Alexandra Francis is responsible for BluePrint Automation's (BPA) aftermarket growth as the company's aftermarket lead. With the help of her team, Francis improved BluePrint Automation's aftermarket business and revenue. During the height of the pandemic, the company couldn't travel as much, which propelled Francis to develop an online training program that they could use to continue to support customers even when they were unable to be on site. She also created a revenue pipeline tool specifically for aftermarket, which is used to provide visibility on sales opportunities for service, spare parts, and to upgrade business monthly. At the end of 2021, Francis was also named an Emerging Leader On the Rise award winner by PMMI.



For more information on PMMI's Emerging Leaders Network or the On the Rise awards, visit: oemgo.to/emergingleaders

OEM Magazine interviewed Francis to learn more about her career and the industry trends that she has her eyes on.

OEM: What has your experience at BluePrint Automation been like?

Francis: My time at BluePrint Automation has been eye-opening. My leadership team has allowed me to learn multiple facets of the company so I can be well-rounded and have a full understanding of the entire process. I started as a part coordinator and took on additional responsibilities, earning a promotion to service coordinator. I began to develop the aftermarket project management role when I recognized there was an opportunity for improvement in how these projects were handled. In 2021, I received the aftermarket lead title and just recently took on the service lead role.

OEM: How does BPA support you as an emerging leader?

Francis: BluePrint Automation has always encouraged me to drive towards my goals, providing me assistance and direction when needed. I am often brought onto process improvement projects with leadership to provide additional input or views on how we can continue to improve the

company. My leadership team was extremely supportive when I made the decision to return to school and became my cheerleaders when I needed the extra boost of morale.

OEM: What is the most fascinating part of your job?

Francis: Have you seen some of the robotics that go along with our equipment? Watching these machines pick and place the products at the speeds that they do is extremely impressive. The ability of our engineers to design customized equipment for all our customers and watch it come to life is fascinating. I recently went to a customer's site whose machine was built over 20 years ago. And to know that we build machines that are durable and sustainable has made me appreciate the automation side of the industry.

OEM: What are some industry trends you are looking forward to?

Francis: Most recently, we started to work with a company that we met at PACK EXPO to develop and improve the technical support piece of our department. I am interested to see how we proceed with creating a self-serve option for our customers to contact us for technical support through an app or web portal.

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INDUSTRY NEWS



Applying Agile Practices to the Supply Chain

Agile in the manufacturing space means collaboration, short cycles of improvement, and including all roles and partners in the process.

Maria Ferrante, Senior Director of Marketing and Communications, PMMI

Agile practices are often associated with software development, a tactic in which developers use small sprints to make incremental improvements in applications. These improvements are released as they are developed, which is one of the reasons there are so many updates to apps we use on our phones, as an example. But agile models—as applied to improving manufacturing operations and alleviating supply chain issues—is a new approach, according to Paul Blacklock with the Foundation for Supply Chain Solutions (F4SS), an association of CPG executives.

Agility in the manufacturing space starts with a mindset of collaboration, short cycles of improvement, and looking at end to end solutions. One example Blacklock highlighted during his session at PMMI's Annual Meeting in Detroit this past November, was General Mills' need to increase capacity because of COVID-19.



Listen to this podcast on making market disruption a competitive advantage oemgo.to/marketdisruption

When COVID-19 hit, consumers started baking more, and demand for products like flour and sugar increased dramatically and somewhat unexpectedly. In response to this significant increase in demand, General Mills needed to increase capacity quickly. Traditional ways of finding contract packagers were not going to cut it; it was too long

of a cycle, Blacklock said. In order to move the ball forward in a matter of weeks rather than months, General Mills employed an agile manufacturing strategy.

The CPG got everyone together—manufacturers, suppliers, operations, maintenance, and line workers, etc.—to collaborate on potential solutions. The team got super creative by collaborating with partners on the outside, looking end to end for solutions, employing transparency, and including everyone involved in the process at all levels. There was a person, for example a maintenance guy, who would

never usually be invited to these types of meetings that had the piece of knowledge the team needed. Instead of looking at all the things they need to do in the next two years and focusing on what would not work, the team focused on what needed to be done now to make it happen quickly, Blacklock said.



Read this article on how to get better supply chain visibility at: oemgo.to/supplychainvisibility

Agile supply planning is demand focused not forecast focused. Using data from Walmart showing what is actually going through the registers, the team figured out production needs based on demand, not on forecast. This approach required putting everything on the table. “General Mills had to decide whether it was going to be efficient or agile. The company looked at relying more on labor because labor can do changeover quicker and easier. When you are looking at agile, you make different choices,” Blacklock pointed out.

To keep up with demand during COVID-19, SKU proliferation went away. That said, Blacklock does not see this reduction in SKUs as permanent. As he pointed out, consumers like choices. Late-stage customization is something

consumers want more of and manufacturers are trying to figure out ways to deliver despite supply chain challenges.

One way to ease supply chain issues, Blacklock suggested, is implementing supply chain control towers that provide real-time data to everyone in the supply chain that needs it. Traditionally, the logistics people get information about things, like delays in the port in L.A., and they then decide who needs to know this. If the data were available for the end-to-end supply chain to see, each function could then decide how what is happening would impact them. It is critical to have all stakeholders in the supply chain to be involved, and these types of solutions often come from people you would not expect.

Blacklock suggested this approach can be applied to improving production lines, but requires opening the firewall to get real-time data on machine performance so that OEMs can help ensure equipment runs at its best, as well as schedule maintenance and service at appropriate times. This may require that CPGs let OEMs get behind the curtain a bit more so they can see the data to help improve equipment performance, which in turn, helps them to better meet supply chain demands.

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MARKETING INSIGHTS



Hiring a Marketing Leader

Depending upon the needs of the organization, there are different skills and experience to keep in mind when choosing the right candidate.

Sharon Taylor, Director of Marketing, PMMI Media Group



Whether your marketing department is growing or you're planning for turnover, there's a good chance you'll be hiring for one or more marketing roles this year. According to the U.S. Bureau of Labor Statistics, 4.5 million people—or about 3% of the US workforce—quit their jobs in November 2021 as part of the Great Resignation. Just as employees are reassessing their job choice, organizations can reassess their needs and hire for the best value rather than simply filling a vacant position.

When hiring for a leadership position, specifically, consider the current state of the marketing department to plan for what leadership skills are most needed.

Leaders hold ultimate responsibility for their team's success as well as their own, so getting this hire right is vital to the health of the organization. Consider what skills and experience the right leader would bring for where the organization is right now. Does your new leader need to build the ship, right the ship, or stay the course?

Build the ship

Are you embarking on a digital transformation strategy or building a brand-new team? If so, you'll want to find a leader with the ability to create, communicate, and execute a vision. While this person should be able to define a clear

plan, they'll also need to adjust course when impacted by internal and external forces and then redirect back to the plan.

Special skills needed from this leader include the ability to evangelize the plan while building it and gain buy in from executive leadership (other department leaders) and the marketing team—if one currently exists.

If the marketing team doesn't yet exist, the leader will be creating and evangelizing the plan while hiring team members and managing campaign execution.

You'll be asking a lot of this new leader. If ever a time to stretch your budget to find the right candidate, this is it. Prioritize hiring someone who has experience developing marketing strategies over having industry experience. I might even prefer someone without industry experience to ensure a truly fresh perspective with new ideas introduced from outside industries.

To build the ship, keep these candidate keywords in mind: visionary, flexible, and accountable.

Right the ship

Sometimes you need a fresh start. If your last marketing leader was unsuccessful, it's doubtful this is wholly attributable to their abilities. Other factors such as internal relationships and strategic uncertainty across the organization likely played a role.

One of the first actions of a new leader will be to triage the department, assessing which projects and strategies to support, revive, or eliminate. Strong intuition will be key to this assessment. A focus on relationship building will be paramount and many—both within the department and cross-functionally—may need repair. A successful leader coming into this role will have a high degree of emotional intelligence with an ability to build trust.

Of the three hiring scenarios, this is the best option to hire for industry experience allowing the new leader to focus on fixing broken relationships and failed strategies without needing an industry crash course.

To right the ship, keep these candidate keywords in mind: emotionally intelligent, intuitive, and collaborative.

Stay the course

If your marketing department runs like a well-oiled machine, congratulations, you're doing better than most! However, that can also lead to concern when a department leader leaves. Will you be forced into a slump while a new leader gets up to speed, or worse yet, will the new leader reverse the trajectory of success?

Your new leader should be someone with a keen eye for optimizing opportunities and who can quickly assess the situation to determine which areas to leave as is and where to focus efforts on improving results or introducing new initiatives. Leaders who follow a servant-leader philosophy (leaders who focus on uplifting workers around them) will be most successful in this role as they're more likely to lis-

ten and empower employees in order to develop individuals and the team.

In today's tight job market, it can be a lengthy process to hire for any role and senior leadership positions typically take longest to fill. However, hiring for a role in this situation shouldn't be rushed considering there will be (perhaps unfair) comparisons to the previous leader. Take your time to find the right fit in both experience and alignment with the company culture.

As a well-run department, the remaining team members should be able to keep things running smoothly during the executive search. This is also the best scenario to promote from within if there is a worthy candidate since they will have learned from the previously successful leader. If you are set on hiring an external candidate, be sure to communicate this to the team to avoid giving a sense of false hope to anyone leading the charge in the interim.

To stay the course, keep these candidate keywords in mind: optimization, servant-leader, and results-driven.

To learn the four marketing techniques to focus on in 2022 go to <http://oemgo.to/marketing2022>

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SALES FOCUS

The Non-Negotiable Traits of a Successful Salesperson

Jay Spielvogel, Founder and CEO, Venator Sales Group



“The greatest sales call our new reps make is on us during the interview. Everything goes downhill once we hire them.”

Unfortunately, this is an all too common complaint we hear from sales managers across the globe. In truth, very rarely is it a “great” sales call on the part of the sales rep, more likely it was simply a broken vetting process. If we are going to hire successful reps, we need to consider a revision in the way we search and discover new salespeople, starting with a better list of non-negotiable traits. Most companies have a clear set

of expectations for new reps, but they aren’t taken into account when interviewing and hiring. These include:

- Targeting and penetrating new strategic accounts
- Digging into the business drivers behind the technical needs
- Executing coaching direction
- Navigating and aligning with all key stakeholders
- Managing a pipeline of opportunities to closure

Finding reps that can execute these behaviors requires a very tight list of non-negotiable traits beyond being professional and following up on pricing requests. At Venator Sales Group we use the acronym “CAFE” to identify four critical characteristics.

C = Coachability

Today, there are changes affecting every sales team—the least of which is global competition, risk aversion, and more complex purchasing processes.

To drive consistent revenue in this ever-changing selling environment, a salesperson must be able to receive and execute guidance and mentoring. This new environment demands a team effort with strong coaching and mentoring from sales management. The shift is away from the “lone wolf,” ego-driven salespeople that resist any form of coaching or accountability and dismiss it as unnecessary micro-management.

A = Aptitude

A salesperson must have the aptitude for assimilating a tremendous amount of information related to the constantly shifting client business and operational environments.

Successful selling requires the ability to link the economic value of your company’s solutions to operational results.

Many salespeople with strong technical backgrounds lack the competency or desire to integrate the non-technical value messaging into their sales process. Unfortunately, when the aptitude for “business-drivers” is lacking, a salesperson will simply pass along their proposals to the technical champion hoping they will be successful at gaining the necessary internal approvals.

F = Fearless

A salesperson must be comfortable executing a process that requires a complex, multi-stakeholder strategy. Many people lack the assertiveness and conflict management necessary to execute.

When questioned by their managers about their lack of performance, they justify non-action with a lack of time or a fear of overstepping and upsetting their main contact. Effective salespeople overcome their fear and break out of their comfort zone. They are willing to ask the tough questions, negotiate for high-level access, and maintain control of the sales process.

E = Engaging

A salesperson must have an engaging personality and the ability to draw others into a dialogue. They have a strategy for asking guided questions and “pivoting” appropriately to the other person’s answers regardless of whether the meeting is with a lower-level manager, director, VP, or a member of the C-suite.

If they lack this ability they will lull their prospect into a passive listening mode while they present features, benefits, and pricing. Conversely, a salesperson with an engaging communication style will exit every meeting with detailed information uncovered, including a well-defined set of next steps and action items.

These four traits are vital when recruiting salespeople if we are to break the frustrating and tiresome six-month cycle of hiring and firing.

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Innovation Through R&D, Acquisition, Consolidation, and Service

Mettler Toledo Product Inspection offers a broad selection of reliable inspection and measurement equipment that the company continuously advances to support customers' regulatory needs.

Melissa Griffen, Contributing Editor

To be defined as an “innovative” company is something every OEM wants. But there are many aspects of innovation beyond invention, and at Mettler Toledo, its innovative essence is rooted in equipment quality, safety compliance, and service.

Mettler Toledo, headquartered in Switzerland, provides a variety of measurement and precision instruments for the customer value chain. It started off as two separate companies—Toledo Scale, founded in 1901, and Mettler, founded in 1945. The two companies merged in 1989 and has since grown into a global organization with five business divisions, one of which is Mettler Toledo Product Inspection, based in Lutz, FL.

Mettler Toledo Product Inspection makes metal detectors, X-ray inspection, vision inspection, checkweighers, and track and trace technology for the food and life sciences industries. The concept of consolidating innovative strategies, knowledge, tools, and abilities of different companies is instrumental in the development of today's Product Inspection group, which grows at a rate of seven to 10% annually, with R&D representing 5% of net sales per year.

Alan Zeng, OEM business development manager at Mettler Toledo Product Inspection, emphasizes the company's ability to grow through acquisition. “We



Mettler Toledo Product Inspection's 270,000 sq. ft. facility in Lutz, FL. Here, 200,000 sq ft is used for production and the warehouse, and 70,000 sq ft is office space for sales, marketing, service, engineering, supply chain, and other business support functions.



Mettler Toledo

Location: Product Inspection in the U.S., Lutz, FL

Established: Mettler was founded in 1945, Toledo in 1901; the companies merged in 1989

Leadership: Patrick Kaltenbach, Mettler Toledo CEO; Jonas Greutert, head of the Product Inspection division

Revenue: \$3 billion (Mettler Toledo globally)

Employees: over 700 at Lutz headquarters

Field service personnel: 75 to 100

Facility: 270,000+ sq ft

Markets served: U.S., Central America, South America, and the Caribbean Islands

Industries served: Laboratory, industrial, and food retailing

Product range: Product inspection products include metal detectors, X-ray inspection, vision inspection, checkweighers, and track and trace solutions

Standard controls platform: PLC or PC-based depending on the models



Patrick Kaltenbach, CEO (bottom) and Jonas Greutert, Head of the Product Inspection Division.



The V31 vision machine in the onsite Applications Center. Here, customers can send in test products to receive a test report of the system's performance and capability prior to purchase.

look for companies who are also leaders in their markets and where their products complement or help to round out our offerings.”

Key acquisitions that have formed the Product Inspection division to date include:

- Hi-Speed, founded in 1953 and acquired by Toledo Scale in 1981, a maker of checkweighers.
- Safeline, a maker of metal detectors founded in 1989, acquired by Mettler Toledo in 1997.
- For vision inspection, CI-Vision, founded in the late 1970's, was acquired by Mettler Toledo in 2009.
- And PCE, founded in 1989, was acquired by Mettler Toledo in 2011, adding comprehensive track and trace with serialization and aggregation software to the company's product portfolio.

According to Zeng, the previous general manager of the Product Inspection group, Viggo Nielsen, had the vision of moving all of the machines and technologies into one place in order to utilize all of the brands' resources. Nielsen made

that vision a reality in 2018 by combining the business units, which previously were spread out in three locations, to a newly constructed 270,000 sq. ft., state-of-the-art facility in the Lutz, FL location. The next year, Nielsen retired and Margie Custin took over as general manager of the Market Organization (sales, service, and marketing) for Mettler Toledo Product Inspection.



Learn more about Mettler Toledo Product Inspection's move to Lutz, FL, and the appointment of Margie Custin. Go to: oemgo.to/custin

By consolidating operations the company is able to streamline customer service across metal detection, X-ray inspection, checkweighing, machine vision, and track and trace/serialization capabilities. This also increases efficiency with all machines being assembled in the same production location, as well as parts and procurement engineering.

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And further innovating on these acquisitions, Mettler Toledo was the first to invent digital metal detectors, Zeng says, noting the company then added foreign material detection for non-metal contaminants in addition to metal contaminants with X-ray technology, eventually becoming the largest X-ray machine producer for the food industry. Concerns about food safety have grown over the last decade and as product inspection is the mainstream method of assuring food safety, Mettler Toledo has utilized its resources to “grasp the opportunity and grow with it,” he says.

To that end, the company dedicates itself as a resource to its customers. It sends food safety advisors to customer sites, participates in industry seminars, joins food safety associations, and closely monitors the Food and Drug Administration to keep up with the latest in food safety regulations.

Benefits of Lean application and vFATs

As much as the company focuses externally on customer service, it also keeps internal operations at peak performance. The Florida facility runs on Lean manufacturing design principles, Zeng says, which allows for more efficient workflow by only keeping key personnel on the work floor for quick response times and building core components on site.

“Mettler Toledo has been incorporating Lean for many years. Our entire production process is set up on the principle of Lean, from how raw material is ordered and processed, to how equipment flows through the plant,” says Zeng.

The company has participated in multiple Five S programs to learn lean methodologies, applying the knowledge gained to all operations, from sales to production. Key performance indicators (KPIs) are used in all departments with progress information available to employees across the facility.

Zeng explains that early on in the application of Lean principles, Mettler Toledo would hire consultants to come and train the employees and through that process developed its own team of experts to train internally.

Furthermore, due to the COVID-19 pandemic, there are customer-facing processes, like factory acceptance tests (FAT), that have evolved with virtual technology. The company sets up professional cameras connected to Microsoft Teams or Zoom inside what it calls an “FAT room,” where machines are moved to create a more controlled environment. Multiple such rooms are inside the Florida facility in order to perform upwards of three virtual FATs (vFATs) per day. The vFATs have been so successful and efficient that the company will continue to offer them as an option if customers prefer that method in the future.

To that end, the company not only applies this virtual environment to FATs, but also to inspection and product testing. Customers will send product to Mettler Toledo which is tested on the machines the customers are looking

into—which they witness virtually—and then sent back with a report that shows the detection specifications, Zeng says.

Customers are a priority

Zeng explains that the Product Inspection group’s innovative drive is to improve customer workflows and make results more precise and reliable, to simplify user interaction, and to support customers’ regulatory needs. To emphasize the importance of the customer experience, Zeng notes that the service department is larger than the sales department. The local service has been set up so that it can reach out to any of its end users in driving distance, sending out field engineers—when COVID-19 restrictions and regulations allow—along with 24/7 telephone technical support.

The field engineers are trained by senior engineers, in classrooms by SMEs, and through self-learning via a web-based learning portal. The company also provides customer training on site through the field engineers as well as in its training center at the production facility conducted by service technicians. These services are offered in both English and Spanish.

When visiting a plant in person is not an option to maintain equipment, the company has a remote monitoring system in place to diagnose the machines and allow technicians to visually check if the machines are working at optimum level. This has expanded Mettler Toledo’s after-market services and grown its installation base, allowing the company to fix issues with the machines in a shorter timeframe to increase uptime.



The X33 (left) and X36 (right) X-ray Inspection Systems in one of five factory acceptance test rooms at the Lutz facility. Customers are able to witness and perform tests of their machines prior to shipment.

When asked about balancing standardized machine configurations with those requiring customization, Zeng says Mettler Toledo's first duty is to provide the customer what they need. "Our priority is to offer the best solutions and to meet the customer's needs, even [when it] requires customization."

Indeed, the company strives to provide excellent service as part of its machines. For example, a customer's initial product inquiry will be responded to within 24 hours. An assessment is completed first over the phone through Mettler Toledo's channel partners, followed up by an onsite visit to more fully understand the customer's application for product inspection and their upstream and downstream processes.

When a machine is ordered, a customer can expect a thorough review with engineering drawings for approval when necessary. The order's progress is continually communicated by the order management team throughout each step of the process, including handling and order changes.

Project management is also often customer-based. "We have established key account management, strategic account management, and project management teams based on market segments or dedicated customers," says Zeng. Mettler Toledo also maintains a close relationship with the end users to determine what their needs are in addition to keeping a close eye on market trends and new technologies to steer its new product development.

Employees are a priority

The company's service to customers can only be as good as its employees, which is why Mettler Toledo searches for and recruits talented individuals in science, engineering, marketing, and economics to fill diverse roles. "We look for individuals who are eager to collaborate, will take on various roles, adapt well to change, and are passionate to excel," Zeng says.

The OEM has organized an internship to help find these individuals. The internship targets universities, tech schools, and military retirees looking for their next employment opportunity. As a global company, these interns come from all across the world, and the internship moves the individuals around various departments so they can find the role that best suits them.

Mettler Toledo has also continued its internal women's leadership program each year, which has been a determining factor in the company's culture, Zeng says, noting there are a lot of female leaders across the organization, from



Alan Zeng is the OEM business development manager at Mettler Toledo Product Inspection.

department manager, to supervisor, to, of course, general manager Margie Custin.

The culture is rooted in a good work environment that provides employees with solid benefits and career development programs, enabling employees to climb the ranks to become leaders.

"We manage the people well, we invest in [them]," says Zeng.

Challenges ahead

Zeng acknowledges the disruptions in supply chain and labor shortage being significant challenges for the industry, including Mettler Toledo Product Inspection. As the company's supply chain is becoming increasingly global, its products are also becoming globalized, which means sourcing

components is an international affair. The issue that Zeng foresees is if a supplier cannot provide its components, the company must look for alternatives, which would need to be tested to ensure they can perform to the standards of the previous component. Additionally, such supply chain challenges can push lead times from four weeks to about 40 weeks—which is a problem for many OEMs right now.

Turn to page 25 to learn how to offset supply chain disruptions that are impacting lead times.

To counter these issues, Mettler Toledo is encouraging its engineers to stockpile parts. "We send out a lot of purchase orders to increase our safety stock," says Zeng. The company also uses forecasting technologies that allow them to see six months to a year ahead with the hope of countering challenges before they arise.

As for the labor shortage issue that also burdens every OEM and manufacturer these days, Zeng explains that the company's Lean practices help to mitigate this issue, and automation is brought in to shorten build times. But it is not enough; they still need people. "We've got a big billboard on the side of our building that says, 'We are hiring.' We try to let people know that our teams are growing."

From the billboard to LinkedIn posts, Mettler Toledo is spreading the word far and wide to find and attract that skilled and enthusiastic workforce mentioned above, because growth at the Product Inspection business will continue. Food and pharma safety will always be a priority, and the "innovative" Mettler Toledo is determined to deliver quality equipment coupled with top-notch service.

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oemgo.to/MTInspection





ONExia Expands End of Line Offerings

Sean Riley, Senior Director, Media and Industry Communications, PMMI

A recent addition to the PMMI family, ONExia Inc., based in Exton, Pennsylvania, has over 35 years of experience as an industrial distributor, custom machine integrator, and original equipment manufacturer. *OEM Magazine* recently sat down with ONExia's marketing manager Tim Pelesky to help introduce the company to fellow members and the industry at large.

Can you provide a brief history of the company?

Founded in 1984 by Greg Selke as Multitech, the organization evolved through various iterations before becoming ONExia Inc. in 2001. Initially an industrial distributor, ONExia began doing essential integration work that scaled into custom machines and turnkey robotic cells over the past 20-plus years of business. As collaborative robots (cobots) continue to gain a share of the market, ONExia continues to develop turnkey palletizing and packaging systems that enable manufacturers to automate operations that historically could not be done by industrial robots.

Why did ONExia decide to join PMMI?

Being from the Philadelphia area, we regularly participate in PACK EXPO East, showing our integration work with collaborative robots and end of line (EoL) solutions. As the market demands for our solutions increased, we expanded our work to include more solutions geared to packaging, like our PalletizHD collaborative palletizer. At that point, we realized the services provided by PMMI—including the additional shows and advertising options—were a perfect fit for our organization. Particularly as our business expands our presence within the end of line packaging automation marketplace.

Has ONExia participated in any other PMMI programs since becoming a member?

We've increased our show presence, adding PACK EXPO International to our 2022 participation in addition to PACK EXPO East. We are also part of Packaging World's Leaders in Packaging program and have participated in a handful of PMMI conferences in the year we've been members.

As a robotics integrator, what sets your company apart in the industry?

We have extensive experience designing and building custom automated machines for various industries, and our experiences with robots have led us to create a very successful line of EoL products. Specific to end of line automation, ONExia

Robotics, introduced in 2021, is a division of our integration team focused on implementing collaborative robots into packaging lines. Our collaborative systems are an alternative to standard packaging machinery, featuring custom software and a minimal footprint. With palletizing, case packing, and case erecting solutions, new and existing production lines can easily add our turnkey systems.

You mentioned PalletizHD is designed specifically for packaging. Can you provide more details on the palletizer?

Built on a durable and portable welded frame, the "HD" easily



Company Background

Established: 1984

Headquarters / manufacturing Location(s): Exton, PA

Executive team: Greg Selke, CEO; Andrew Cook, COO; John Walker, Sales Manager; Vince Kane, Engineering Manager

Number of Employees: 35+

Facility square footage: 23,000 sq ft

Range of products: End of line solutions including robotic case formers, robotic case packers, and collaborative robot palletizers

Annual revenue: \$10 to \$20 million

Geographical sales and support areas: USA and Canada

automates palletizing applications typically done by human labor. A high payload cobot featuring a 38-pound payload, the “HD” can handle heavy cases that are difficult for humans to stack consistently. It can stack pallets up to 90 inches in height by utilizing the built-in collaborative lifter. In addition, by using the high payload to pick multiple cases with one arm, the PalletizHD can increase cycle time without exceeding collaborative speed.

How does ONExia balance standardized machine configurations with those requiring customization?

Because of our history, we are flexible by nature and have very good systems in place to nimbly handle modifications and customization based on customer needs.

Once a customer issues a purchase order, what happens next? What can they expect?

We work closely with the customer before developing a specification and/or RFQ. A kick-off meeting—held in-person or virtually—includes a review of the proposal, a site inspection of the machine’s final location to determine special limitations, a schedule, initial criteria, technical reviews, and prototyping. From there, ONExia’s project team of engineers begins the design of the machine.

What’s ONExia’s process for factory acceptance tests (FAT)?

We work with the customer at the beginning of a project to create factory acceptance criteria, and that document drives the design before use at the FAT. Before shipment, we complete a vigorous round of testing to ensure the robotic cell works upon delivery.



Following shipment of the completed machine, ONExia provides on-site assembly and start-up or virtual start-up (if possible), training for employees, and complete documentation and manuals.

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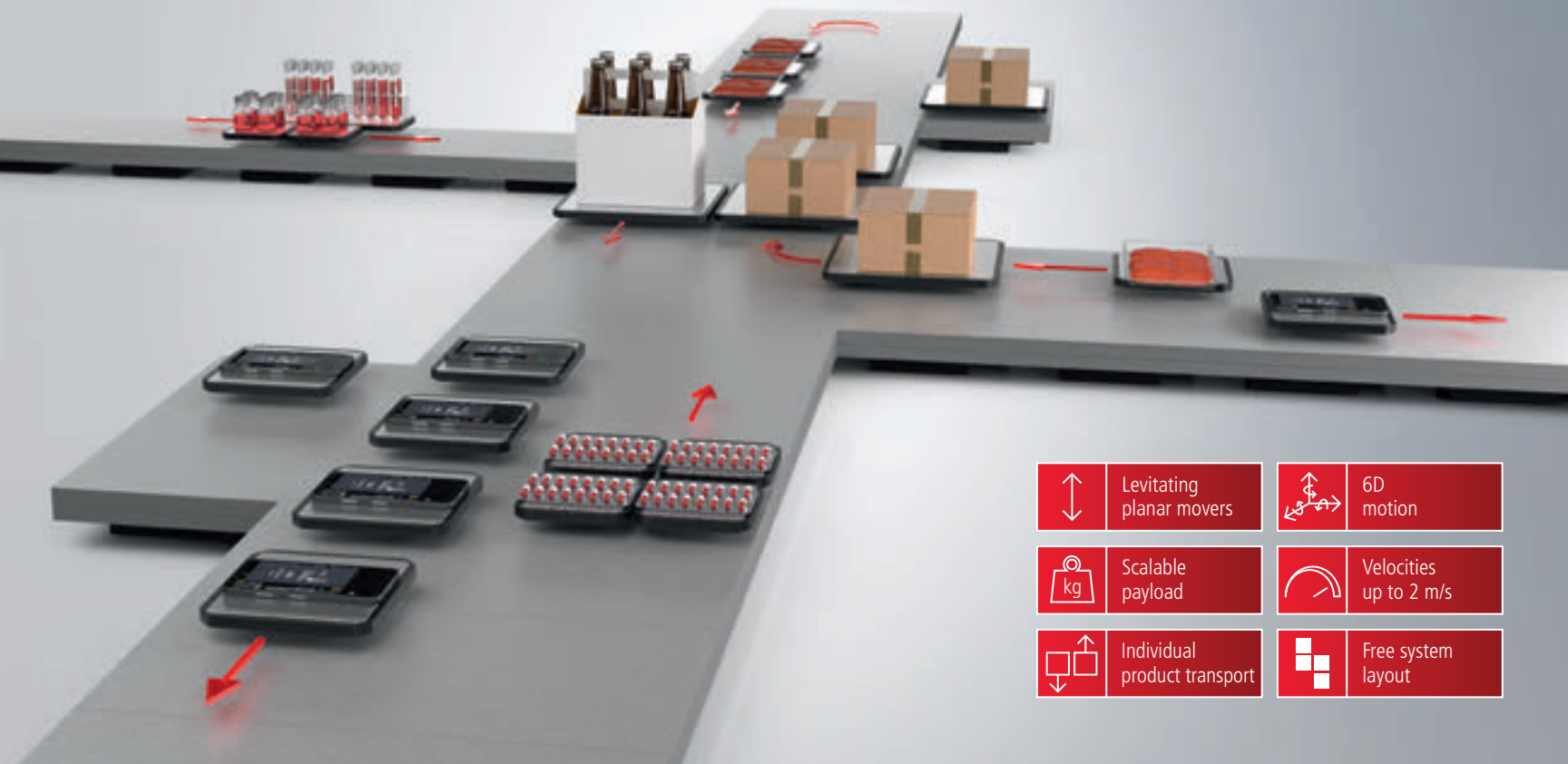
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Today's Volatile Supply Chain

Why lead times are an issue and what OEMs can do to offset delays.

Liz Cuneo, *Contributing Writer*



The issue of long lead times and supply chain delays are predicted to continue through 2022 as global supply chains and warehouses face closed ports, borders with restricted access, and the largest issue of all: wide-spreading labor shortages. PHOTO CREDIT: GETTY IMAGES

► COVID-19 DID MORE THAN JUST INTRODUCE A NEW FAST-SPREADING VIRUS ACROSS THE GLOBE. It shut down workplaces, schools, small and large businesses, and weakened supply chains across virtually every industry.

According to the “2021 End-of-Line Equipment Purchasing Trends and Design Insights” report conducted by PMMI, the Association for Packaging and Processing Technologies, manufacturers have reported that lead times have increased and certain componentry, such as specialized HMI and PLC equipment, is difficult to source in a timely manner. But components like these are not the only things facing delays, as many equipment parts and packaging

materials feel the strain of supply chain challenges.

These delays are caused by a number of factors—all rooted in the COVID-19 pandemic—including the widespread disruption of traditional shipping channels, a general lack of labor that has impacted OEMs’ ability to produce machinery, and a sharp increase in demand for packaging equipment—especially machinery and components that incorporate higher levels of automation.

Unfortunately, these issues are not easily solved as global supply chains and warehouses face closed ports, borders with restricted access, and the largest issue of all: widespread labor shortages. The lack of available workers



Due to the pandemic, certain materials and machine parts are getting more difficult to obtain and get delivered in a timely fashion. IMAGE COURTESY OF DRAKE.



While holding inventory goes against the idea of lean manufacturing, in today's climate, it can help maintain access to the materials and components that are in short supply.

IMAGE COURTESY OF DRAKE.

is forcing warehouses to run at less-than-full production capacity, creating less parts and equipment, and reducing accessibility to the consumers who require these parts and materials to make their businesses run.

“Staffing is one of the biggest issues. From shipping lanes to truckers, to factory workers on the plant floor. Either making machines or making CPG goods, people can’t get the workers,” says Bryan Griffen, PMMI’s director of Industry Services.

Labor shortage is a trend impacting businesses of all sizes. According to a recent study from Deloitte and the Manufacturing Institute, the pandemic outbreak initially erased approximately 1.4 million U.S. manufacturing jobs, undoing more than a decade of manufacturing job gains.

The trickle-down effect of not enough labor for one company, impacts the next company, which impacts the next. So, the industry faces material shortages and price increases, and the stress that goes along with these issues.

It’s no surprise that Griffen says that the thing that keeps OEMs up at night is none other than the supply chain. Specifically, the impact of the supply of components for machine builders and the struggle of getting equipment out to their customers. And the problem may go on longer than anyone would hope; according to insights from OEMs, end users, and government staff, delays are predicted to continue through 2022.

Best practices to ease supply chain burdens

While there may be no readily available solutions to the supply chain issues, there are some best practices that OEMs can adopt to make their supply chains more resilient and keep their operations running smoothly.

First, stay honest and open.

Since delays and shortages due to the pandemic are out of OEMs’ hands and just about all parties involved are feeling the strain, it’s best to foster an environment of honesty, trust, and a little patience.

“There’s not really a solution to it yet. The solution needed is to get trucking back online and get shipping to where it once was,” says Griffen. “However, the workaround now is everyone needs to be more open, upfront, and honest about what their shipping is looking

like right now. Don't promise fake times just to get the job. In the end that doesn't help anyone."

While it may be tempting to promise a short lead time to earn new business, it's not a good idea to make empty promises that will only lead to disappointment from everyone impacted. Keep in mind that while customers may be frustrated with longer lead times and delays, they are well aware of the mounting supply chain issues creating the problem.

"It's not a question that everything has slowed down; just be honest about actual lead times," Griffen says.

And regarding the issue of increased pricing, it is best to stay open and upfront about this issue as well. In today's climate, suppliers and CPGs are well aware of price hikes throughout the supply chain. According to Tom Ivy, president of Drake, CV-Tek, and RapidPak, the company has had three price increases in 2021, and they're not alone.

Second, plan ahead.

As lead times and customer frustration continue to build, planning ahead becomes more crucial than ever.

Ivy says an important thing to do is to pre-order parts and components as your budget allows, to get a leg up on the long lead times, especially with (traditionally) overseas products like electronics that face even longer delays than domestic parts.

"When an OEM produces a machine, we create an electronics package... and what we've done on our most popular systems is we pre-order those packages, so we get them in sooner than needed," says Ivy.

Since a lot of electronics are produced overseas, Ivy says these are having the biggest issue arriving to OEMs in a timely fashion. So, Ivy explained that if they budget to build 10 machines for the year, they will go ahead and order 10 electronics packages to have on hand—before they even need them.

While holding inventory goes against the idea of lean manufacturing, in today's climate it can help maintain access to the materials and components that are suddenly in short supply. If possible, plan to order components and parts in bulk that you know you will use in the coming year.

"Pre-order what you can if you have it in your budget. It is better now to have inventory sitting on a shelf than have customers who want machines but can't get them. Plan for the worst, hope for the best," says Ivy.

Third, diversify.

Another best practice to get ahead of long lead times is to diversify your materials and suppliers. Right now, certain materials and machine parts are getting more difficult to obtain in a timely fashion.

For example, Ivy says that "aluminum block, electronics, air cylinders, rubber items, and bulk plastics are very hard to find, as are most electric motors."

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Aside from ordering in advance, another idea to remedy this is to look for workarounds to receive the parts you need, whether that means looking at secondary suppliers, or tweaking your machine to utilize different parts and components. “Can we redesign small things or tweak our machinery to use parts that are easier to get?” asks Ivy.

Additional questions to consider include: Are there other suppliers closer to your plant that can get your parts any quicker? And, can you switch from an overseas supplier to something made in the U.S.? Ivy says that he and his team have managed to keep up with new lead time demands due to “pre-ordering raw materials, changing suppliers, and using items already in inventory.”

Supply chain issues and delays not only impact machine parts, but also raw materials. This has a trickle-down effect of impacting suppliers, consumer-packaged goods companies, and then ultimately consumers.

“CPGs, and then end users, are now not always getting the best quality of materials. And at this point CPGs have no choice. You take what you can get,” says PMMI’s Griffen.

If the materials that are going to be running on the packaging machinery change (or are less than the quality expected), this can cause problems for the machinery. One solution is to create machinery that can run off-spec.

“Machines today should be tolerable to run sub-quality film and material because you never know if you can get the perfect quality product. Consumers need to have food on the shelf, so we have to run what we have,” says Griffen.

Tweaking your existing equipment to run with different components or run different materials could make the difference in keeping production running or shutting down operations.

Lastly, lean into the community.

Another best practice OEMs should consider is leaning into peer and business relationships. For example, consider fostering the supplier relationship by visiting your supplier in person to create that personal bond.

“We’ve been going and visiting our suppliers in person or having personal meetings, so they understand the human on the other end, and it’s paying off. It’s one thing to disappoint a company and another to disappoint a friend,” says Ivy.

Fostering a relationship can afford you better customer service. Though it may not change the lead time problem, you may enjoy more honesty from your supplier.

Another way to lean into community is to consider joining The OpX Leadership Network, which brings together manufacturers and OEM experts to develop best practices and protocols for free industry adoption. The OpX Leadership Network Executive Council is the governing body for the network and is made up of approximately 50 North American manufacturing companies that work together to tackle the pressing issues affecting everyone, like long lead times and supply chain issues.

The network ensures CPG manufacturers, OEMs, and suppliers are well-connected and well-prepared to solve common operational challenges and make smarter business decisions.

Until we are back on track

The truth is that the issue of long lead times and supply chain delays are predicted to continue through 2022. According to experts, the overall problem is one that will work itself out over time, as more shipping lanes open back up and trucks are back in operation.

So, while there may be no concrete solutions to the issue of long lead times for OEMs, for now, the best course of action is to continue to be honest with your customers, plan ahead to the best of your ability, diversify your suppliers, and lean into community, all to keep operations running as smoothly as possible.

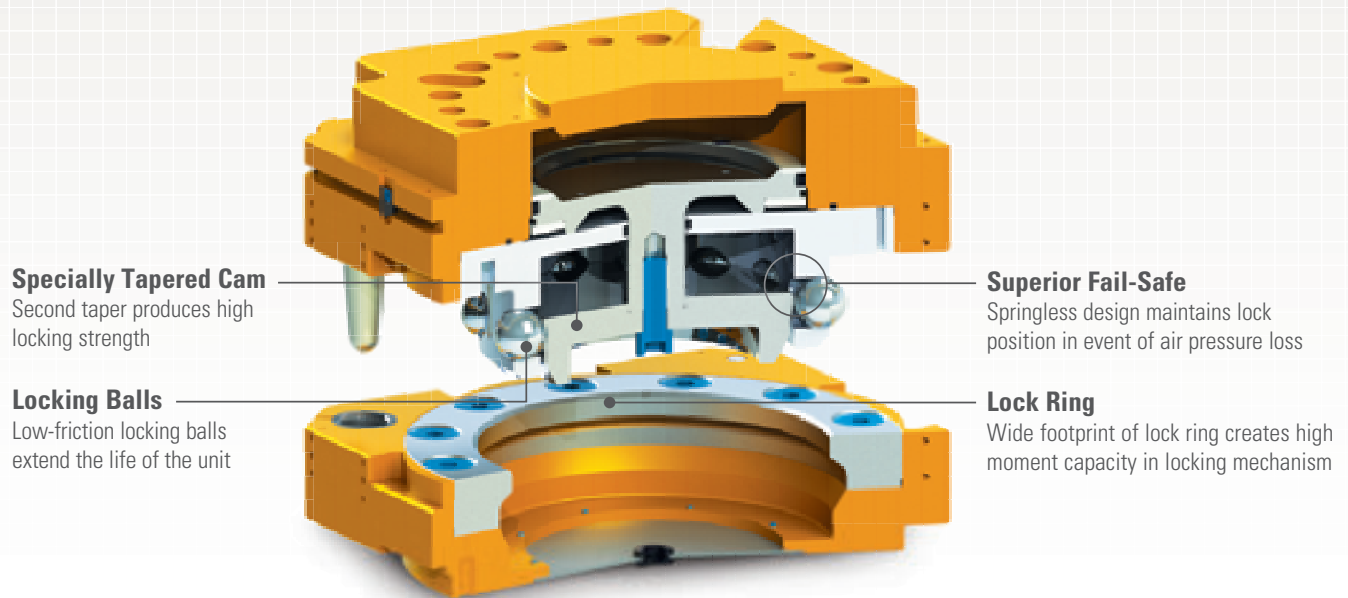


OEMs should consider using secondary suppliers and pre-ordering parts and components. IMAGE COURTESY OF DRAKE.

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PACK EXPO Las Vegas 2021 Innovations Report

By PMMI Media Group Editors

At a time when COVID-19-induced uncertainty seems to color nearly everything we see and hear, it was mighty nice to experience the in-person, hands-on, rock-solid, kick-the-tires certainty of a major trade show like PACK EXPO Las Vegas. It was the largest packaging and processing trade show in North America in 2021, drawing more than 23,000 attendees who showed up hungry for solutions. They were able to engage with more than 1,500 exhibitors across four expansive halls and more than 740,000 sq ft of exhibit space at the Las Vegas Convention Center.

Returning favorites at the show included the “Processing Zone” and “The Forum,” and there were also new features like the “PACK to the Future” exhibit. Networking flourished at events like the Packaging & Processing Women’s Leadership Network Breakfast, which saw more than 500 attendees, as well as the ever popular Emerging Leaders Reception.

As in years past—including 2020 when PACK EXPO International was canceled, and instead we covered a virtual event called PACK EXPO Connects—the editors of PMMI Media Group fanned out to see what kind of innovations the show exhibitors had on display. The full innovations report is divided into five main categories: Machinery, Sustainable Packaging, Robotics, Controls, and Pharma & Medical Device. Here, in the following pages, we’ve highlighted the innovations from the show floor that focus specifically on robotics for OEMs. This report is brought to you by:

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Out of some 100 qualified entries, four were named 2021 Technology Excellence Award Winners at PACK EXPO Las Vegas 2021:

Food and Beverage – Canovation’s CanReSeal® Beverage

General Packaging – P.E. Labellers’ Simpl-Cut®

General Processing – Hiperbaric’s HPP In-Bulk Technology

Personal Care/Pharmaceutical – Canovation’s CanReSeal® Personal care/Cannabis

Visit pwgo.to/7436 to learn all about them.



Robotics

What do you get when you mash up the words “sidekick” and “robot?” The answer was clear enough at Wyzo’s PACK EXPO Las Vegas booth, where the world’s first “sidebot” was on full display.

Wyzo (1) is a high-speed delta-style pick-and-place robot capable of 90 picks/min that is designed to work safely beside people—i.e., a robot that is a sidekick, otherwise known as a sidebot. It relies on two laser scanners from SICK that constantly screen the environment around the machine and notify the controller which of three zones an operator is in. If the operator is in the farthest zone, the speed of the delta robot is reduced. If the operator is in the middle zone, speed is reduced further. And if the operator is in the zone closest to the robot, speed is reduced yet again. Should the operator be so close as to come in contact with the robot, all motion comes to a halt.

Also making the Wyzo stand out is its use of the Genesis LiveDrive LDD 1800 Series of actuators, a high-torque direct drive solution designed for robotics and automation in food, packaging, pharma, and the electronics industries. These actuators provide high enough torque that robots can now be created without the need for a gear box. That brings a number of benefits. First, it means no lubrication, and because a typical delta style robot has its gearbox mounted directly above the product being packaged, these new Genesis actuators mean no more leaking of oil onto product. It also means a maintenance-free drive train. And finally, it greatly reduces the amount of space a finished machine occupies (1a).

1a



“The actuator is a complete package,” says David Lokhorst, vice president of technology at Genesis. “In it is a brushless DC electric motor, but the topology of the geometry is unique and it uses our live drive technology, which is a patented arrangement of the magnets within the motor to deliver that high torque density that we can achieve. It also includes two encoders for position sensing and safety, and a brake so that when the power’s off it holds in position. All of that is completely enclosed in a sealed enclosure that is rated IP67 for washdown purposes.”

Governing the Wyzo are two PC-based controllers from Keba. According to Frank Souyris, Wyzo CEO, this deliberate redundancy means that “while one is doing, the other is checking.”



1

▶ **WATCH** video of the Wyzo robot and Genesis actuator at pwgo.to/7404.

Another robotic format that is increasingly popular as manufacturers facing labor shortages need more flexible material-handling equipment to accelerate workflows is autonomous mobile robots (AMRs). At PACK EXPO Las Vegas, Vecna Robotics, a provider of pallet-handling AMRs, announced the release of its new Mark 3 software, which improves the speed and throughput of its robots’ pick-and-drop times while adhering to safety standards.

“The last 18 months had driven huge demand for AMRs like autonomous forklifts, but adoption has been held up by both safety concerns and performance-driven ROI,” says Daniel Theobald, founder and chief innovation officer, Vecna Robotics. “This software release mitigates these concerns.”

The Mark 3 release can be installed on-premises or in the cloud and provides critical updates, including:

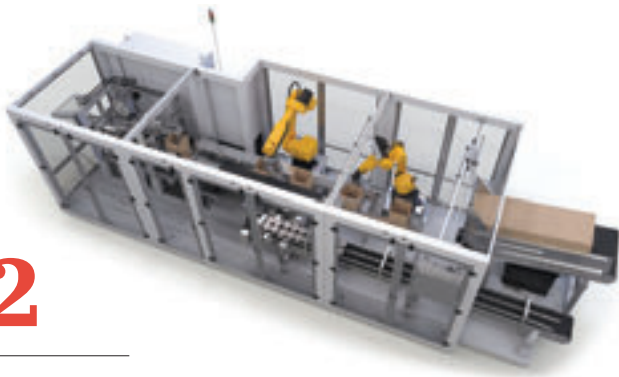
- **Speed:** Achieves a top speed of 3 m/s, 50% quicker interactions with pallet pickups, and better acceleration and deceleration times to improve average overall speed.
- **Free Space Reasoning:** Introduces proprietary updates to path planning and obstacle avoidance to improve performance and handling in tight spaces.
- **Safety:** Maintains the same rigorous safety standards as previous generations and complies with the American National Standards Institute B56.5 and Robotics Industries Association R15.08 safety standards.

The new software results from Vecna Robotics’ ongoing work to improve vehicle performance using data collected over time through its proprietary orchestration engine, called Pivotal. Pivotal assigns work to robot fleets based on real-time demand, resource availability, and proximity, and it collects performance metrics from the production floor. By using fleet data collected from performance sites over time, Vecna Robotics’ AMRs get smarter and faster over time, according to the company.

“Now, in addition to Vecna Robotics’ AMRs being the only self-driving forklifts equipped with path planning and obstacle avoidance, they are also the only pallet-handling AMRs that can deploy cloud-driven updates for immediate in-field performance improvements,” Theobald says.

Elsewhere in the robotics application space is the always popular category of case packing, and PACK EXPO Las Vegas exhibitors showed a number of examples. Among them was **Brenton Engineering**, a ProMach brand, which debuted a new model of the modularly designed RT1000 top-load robotic case packer system (2). Sam Weller, business segment manager of Robotics and Systems, says the RT1000 brings a higher level of efficiency to established CPGs with growing demand who are looking for automation promising higher throughput with same or reduced labor. Specific target markets and applications for the RT1000 include consumer/commercial packaged foods, household chemicals, and personal care products, among others. Brands that intend to add products or add pack patterns within a defined range without change parts should benefit from this system.

Weller says the system provides the flexibility needed to accommodate a wide range of products, and the ability to quickly program them into the system *on the fly*, without outside assistance. This is accomplished through a simple-to-use HMI that can be operated by staff with varied skill levels.



2

The model demonstrated on the show floor used a Fanuc robot in the case setup area that picks corrugated blanks, opens them, folds the minor flaps, and introduces the erected cases to a flight system. Once the cases are moved into the load station, another Fanuc robot loads product from the infeed.

Once cases are loaded and need to be closed, the floor model used top and bottom **Dekka** tape heads, but the machine offers a hot melt glue-seal option as well.

More generally, the system features a clean design with all cables and wires embedded into frame, and a modular component design that allows customers to use an existing case erector and sealer. Mechanical changeovers are automated and simple, and remote connectivity is available as well, with optional on-board cameras for remote support.

Brenton summarizes the RT1000 as a flexible solution

in a compact footprint that will be available in a rapid lead time at a competitive price. The single-skid design enables the machine to fit into a truck for easy transport and set-up.

▶ **WATCH** video of the RT1000 at [pwgo.to/7405](https://www.pwgo.to/7405).

Cobots aplenty

With unpredictable demand and mass customization pushing manufacturers to engage in less make-to-stock and more just-in-time manufacturing, flexible conveyance systems that allow for rapid changeover and batch sizes of one have grown in popularity. At PACK EXPO Las Vegas 2021, **B&R Automation** showcased its Mini-Geo conveyance system as well as its ACOPOS 6D planar conveyance system, both of which seek to address these trends.

The Mini-Geo is a modification of B&R’s ACOPOStrak shuttle transport system that is synchronized with an IRB 1200 robotic arm from **ABB** and several vision sensors. The ACOPOStrak uses independently controlled shuttles to transport products between processing stations as batches-of-one. Its design is particularly well-suited to the increasing demand for mass customization currently sweeping over many markets. By employing a series of looped tracks, ACOPOStrak is able to diverge and merge individual products into small, customized batches. Moreover, its set of looped tracks allows for parallel processing, meaning that multiple stations can perform the same process concurrently. If a piece of equipment—such as a bottle filler head—breaks down, remaining products can be redirected through a different route without ceasing production. The addition of the IRB 1200 allows the Mini-Geo to engage in automated changeover, and the vision sensors enable track and trace procedures.

Like the ACOPOStrak, the ACOPOS 6D (3) consists of separate movers that allow individual products to be transported as batches of one. However, rather than using motor modules to move along a track, the system employs planar movers that magnetically levitate above a tiled surface. By allowing for entirely free-form movement unimpeded by the limitations of a set track, the ACOPOS 6D can facilitate more precise and flexible positioning of products, while also reducing wear and tear on the system itself. The planar movers can also perform several special functions such as swirling liquids in small canisters, thus allowing solutions



3

to be mixed in pharmaceutical applications. All objects being shuttled can also be weighed, easing the process of both measurement and quality control.

According to Patrick McDermott, President of B&R Automation, both products seek to help end-users navigate as trends from the consumer market such as mass customization and increasing small batch orders trickle down to the industrial world. In addition, McDermott says that with smaller, more varied product runs becoming the norm, software changeover that allows for digital rather than physical line reconfiguration may become increasingly vital for companies struggling to keep up.

▶ WATCH a video demo of Mini-Geo at pwgo.to/7406.

Also featuring cobot solutions at its booth was **Mitsubishi Electric Automation, Inc.**, which debuted its ASSISTA collaborative robot during PACK EXPO Las Vegas. ASSISTA is designed to share its workplace with humans in a safe and efficient manner, and its unique internal wiring and piping reduces the risk of cables being caught or snagged, increasing uptime and decreasing the risk of needing repair, according to Jeff Brown, senior manager of new business development at Mitsubishi Electric Automation.

“This is a solution for replacing labor,” Brown says. “For example, if you have labor that is picking fruit while also detecting anomalies and then placing the fruit in a certain orientation, to replace this labor you need a specific robot, end-of-arm tooling, as well as a vision system that can detect different anomalies and determine what to do.”

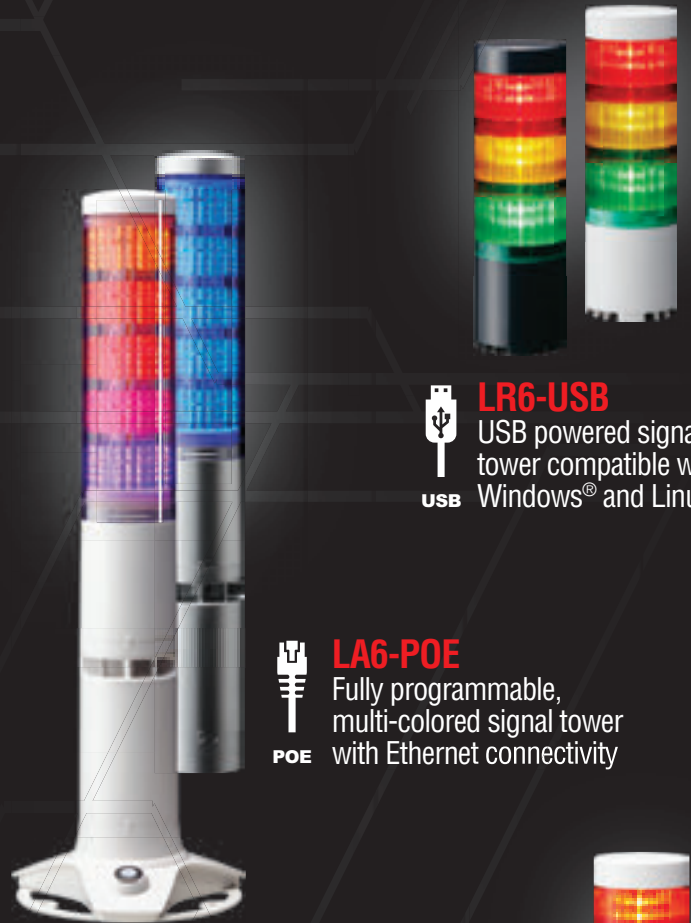
The ASSISTA also includes an H1 food-grade grease option for implementation in food processing facilities. For those customers with a focus on throughput and production, ASSISTA features accuracy that has been measured to be +/- 0.03 millimeters per cycle. Safety considerations include the elimination of hand and pinch points to protect hands and fingers of operators, and the robot reacts to its environment by going into a collaborative mode when operators approach it.

Finally, ASSISTA can be programmed without a teach pendant to be more easily operated by those without prior industrial robot experience. While ASSISTA is still compatible with a teach pendant, it can also be operated by buttons on the robot body or by “hand guiding” it to various positions.

▶ WATCH video of the ASSISTA at pwgo.to/7407.

In line with the trend of smaller cobots expanding into higher speed, greater capacity, and heavier payload territory, **Columbia/Okura LLC** recently upgraded its mini-PAL with the enhanced UR10e cobot arm by **Universal Robots**. Displayed at PACK EXPO Las Vegas, the upgraded system (4) increased its payload to 12.5 kg (27.55 lb), accommodating 2.5-kg heavier cases than its 10-kg pre-

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decessor and affording new application possibilities with heavier payloads.

The new model also replaces pressure-sensitive safety mats with area safety scanners on all sides of the equipment footprint. Three area safety scanners detect human presence in the palletizing work envelope. This ensures safe operation in collaborative mode when in the presence of human workers, while allowing the miniPAL to operate at maximum rates while people are not within the palletizing work zone.



The compact design also includes an automated lifting column for tall loads, dual stacking locations for continuous load building, built-in fork pockets for easy mobility, and intuitive pattern-building software for ease of use. The flexible miniPAL, with a total workspace footprint of 11 ft x 13 ft, can palletize at two pallet locations at once for optimized productivity. The robotic arm's lift height accommodates 84-in. load heights from the ground.

The system plugs into 110V AC wall power and can be set up in hours. A typical installation delivers an average payback in 8-10 months, depending on application and industry.

"The latest upgrades to miniPAL make an excellent mobile, collaborative palletizer even better," says Brian Hutton, president of Columbia/Okura LLC. "In this environment of critical labor shortages in every industry, miniPAL allows clients to quickly and cost effectively automate routine palletizing operations, and to redeploy existing resources to higher value activities."

▶ WATCH video of the new miniPAL 2.0 at pwgo.to/7408.

Picking, packing, fulfillment

A wide range of automation solutions for picking, packing, fulfillment, and palletizing were demonstrated at the **Fanuc** booth during PACK EXPO. Here we look at some of these solutions.

Fanuc's CRX cobot is an easy-to-use and flexible solution for a variety of applications, including palletizing, packing, inspection, and more. Built-in sensors on each axis can allow the CRX cobot to work safely alongside people without the need for expensive guarding. In addition, the CRX can operate for eight years maintenance-free, says Fanuc.

At the show, a Fanuc CRX-10iA/L equipped with an iRVision 3DV/200 vision sensor demonstrated case palletizing. The CRX used the 3DV sensor to find a case, pick it up from one pallet, and place it on another pallet.

The CRX collaborative robot offers the same level of performance. It supports several of Fanuc's features including iRVision and is a perfect fit for any application where collaborative robots can help customers achieve higher efficiencies. Also, interactive programming enables users to teach the cobot what to do using hand guidance or a new tablet interface with drag-and-drop icons.

Also a highlight at the PACK EXPO booth was Fanuc's DR-3iB/8L food-grade delta robot, which used 3DV iRVision and iRPickTool line tracking software to pick randomly oriented pieces of chicken from a continuous infeed conveyor. Equipped with a **Soft Robotics** gripper, the robot picked chicken breasts and reoriented them onto an out-feed conveyor. The cell features high-speed picking with product re-orientation. The DR-3iB sets a new standard for robotic food handling in terms of payload, speed, reach, and sanitation.

The DR-3iB delta robot is Fanuc's latest solution for picking and packing primary and secondary food products. Rated IP69K, the robot meets the strictest food-handling regulations. Its design features corrosion-resistant materials, an unpainted finish, and a fully enclosed body allowing it to tolerate high pressure/temperature and sanitizer wash down environments.

A powerful four-axis design and higher wrist inertia allows the DR-3iB/8L to handle 8-kg payloads at very high speeds. Improved repeatability maximizes accuracy, and a hollow wrist design keeps all gripper wires and piping tucked inside. In addition, a large work envelope featuring a 1600-mm reach (500-mm height) is ideal for applications that require more range such as reaching into tall boxes or handling product on wide conveyors.

The DR-3iB operates with Fanuc's latest R-30iB Plus controller with integrated intelligent functions such as iRVision, Force Sensing, Robot Link, Collision Guard, and Zero Down Time (ZDT).

Finally, an M-10iD/12 robot created random orders by picking from four homogenous totes, each with a 3DV/400 vision sensor mounted overhead. Each of the four sensors provided "best pick" locations from the homogenous totes, and then the robot picks parts to fill a customer order. Once the order is complete, the order tote will move to an LR Mate 200iD robot station also equipped with a fixed 3DV/400 to remove the parts from the bin for further order processing. The demonstration highlighted how the use of fully integrated robotic 3D Vision is an ideal solution for applications in the warehousing, logistics, and e-commerce markets.

The 3DV/400 Vision Sensor is lightweight and can be used as a fixed or robot-mounted 3D Vision camera. The 3DV/400 offers single snap 3D image acquisition enabling

faster bin picking and the ability to perform applications such as line tracking. Compared to conventional 3D vision sensors it provides better acquisition of shiny parts and offers a solution for glare caused by reflective parts. The 3DV/400 is part of Fanuc's iRVision suite of fully integrated and complete machine vision products for robot guidance and inspection. Fanuc designs all of the hardware and software specifically for Fanuc robots.

▶ WATCH video of Fanuc robotic solutions at pwgo.to/7409.

Palletizing/depalletizing

E-commerce boxes come in all shapes and sizes, which is impossible for a palletizing robot—programmed to pick and place specific items—to respond to. To deal with such challenging complex applications, **Yaskawa Motoman** partnered with **Mujin Corp.**—a provider of intelligent robot control systems—allowing the Yaskawa robot (5) to sense different shapes and sizes of packages on the fly.

During PACK EXPO Las Vegas, Yaskawa showed a palletizing and depalletizing robot integrated with Mujin's 3D imaging that automatically creates a path for the robot. The Mujin controller utilizes real-time perception, motion planning, and universal control. The controller is completely teachless, which means no coding or teaching of waypoints and makes any robot intelligent, allowing for use in applications that were previously too difficult or impractical.

Mujin controllers can automate any robot picking task from palletizing/depalletizing and piece/each picking in logistics to bin and container picking in manufacturing. Yaskawa Motoman's robotic automation and Mujin's patented 3D perception system with motion planning AI technology combine to highlight fast and precise picking of various shapes, materials, and packaging patterns.

▶ WATCH video of the robot in action at pwgo.to/7410.



Quest Industrial, a ProMach brand, used PACK EXPO Las Vegas to expand its robotic palletizing to more customers and markets. There it launched its new standardized Box Bot, the QB300 series (6).

The Box Bot, a space-saving robotic palletizer with a small footprint starting at just 8 ft x 10 ft, allows an operator to design and produce exact pallet patterns quickly and



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easily from bags to boxes and other product types. The new standardized version comes with the same features and benefits of the original Box Bot but is built for those customers who don't require a lot of added customization in their machine.

Implementing a robotic solution cuts down on labor costs, reduces risk of employee injury associated with manual palletizing, and increases predictability of a company's production output.

All models of the Box Bot QB300 series feature a Fanuc robot that provides higher stack patterns, which better maximize tractor-trailer loading for more efficient shipping. Creating patterns is accomplished through the QBox



custom pallet-building HMI-based software, the most technologically intuitive operator interface available on the market. The ability to build your own patterns saves time and money by eliminating the need to have a service programmer onsite to perform the task.

Separately, **Allied Technology** released a new performance series line of PicPac Palletizers, which doesn't require any coding from the end user. The new line of palletizers is a welcome addition to their current Cobot Series PicPac Palletizer (featuring a UR10e) released in 2019, and continues to meet the end-of-line packaging industry's need for a compact, mobile, and turnkey palletizing unit.

The Performance Series PicPac Palletizers are designed to accommodate higher payloads and faster cycle times with little-to-no compromise to the machine's footprint or mobility. The PicPac Palletizer requires no coding from the end user and makes pallet pattern building even easier with simple-to-use drag-and-drop software. This new line of palletizers is offered in two different models—the RS020n and RS050n—each equipped with an industrial robot arm from Kawasaki Robotics. It can drastically increase pallet changeover rate, improve palletizing reliability, and consolidate valuable floor space. This also enables plant managers to reduce unnecessary risks involved with heavy lifting and reassign those employees to more valuable positions, thus strengthening the existing workforce.

▶ WATCH video of Allied Technology's palletizing technology at pwgo.to/7411.

Depalletizing is a common manufacturing operation that has attracted a lot of attention over the past few years due to a variety of industrial labor issues, ranging from a shortage of available workers to efforts to reduce risk of worker injuries. To help address these issues around depalletizing operations, **Honeywell** has introduced its Smart Flexible Depalletizer, (7) which uses artificial intelligence to ease the implementation of robotic depalletizing technologies and minimize the need for manual labor to break down pallet loads.

Honeywell's vision and perception technologies are used to guide the depalletizer's robotic arm, allowing cases to be picked from a single—or mixed—SKU pallet in fixed or mobile locations. The company's computer vision technology identifies the location of every case on the pallet, while its artificial intelligence-driven perception software automatically recognizes a variety of packaging formats. The machine learning and motion planning used in the Smart Flexible Depalletizer optimize the movements of the robotic arm to ensure maximum picking speed. The system's control logic senses the weight of each item as the robot lifts it and automatically updates its gripping response to transfer each product securely. Because the system uses machine learning to operate, the more picks the robot performs, the more it learns and continues to improve in unloading pallets.

According to Honeywell, the Smart Flexible Depalletizer robot can work in conjunction with pallet conveyance autonomous mobile robots. This combination of technologies enables continuous operation of the system while providing the flexibility to stage pallets and empty stacks virtually anywhere the mobile robot is capable of traveling.

Dr. Thomas Evans, chief technology officer of Honeywell Robotics, says, "Reliable depalletizing rates are of growing importance as consumer preferences continue to accelerate the rate of packing and the increasing product mix warehouses and distribution centers handle every day. With the labor constraints warehouses and distribution centers are seeing in filling these manual roles, this solution can be an ideal fit to help keep up with daily order volumes."

▶ WATCH a video of the depalletizer at pwgo.to/7412.



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The Green Machine

OEMs' sustainability efforts need to include designing energy-efficient machines that support the industry's move to optimize energy usage and lower carbon emissions.

Stephanie Neil, *Editor-in-Chief*



► WHEN CONSIDERING SUSTAINABILITY, most machine builders are focused on how to modify equipment to handle the environmentally-friendly materials that manufacturers are adopting for product packaging. But as part of a bigger sustainability goal, lowering power consumption and becoming carbon neutral is also a priority for these companies. And many CPG, food and beverage, and pharma manufacturers are turning to OEMs to help create an energy-efficient “green machine” that will support their corporate sustainability initiatives.

According to a Capgemini Research Institute report on sustainable operations, of the 960 executives surveyed in industries ranging from aerospace and defense, automotive, industrial and capital goods, high-tech, consumer products, pharmaceuticals, and medical device manufacturing, 91% aim to achieve 100% renewable electricity and

87% plan to be carbon neutral by 2040.

Colgate-Palmolive is one of those companies on a mission to net zero carbon emissions by 2040. This past September, the CPG announced one step it's taking to reduce wasted energy in its product packaging facilities. Colgate is using Emerson's Aventics AF2 smart flow pneumatic sensors and an IIoT-enabled software architecture to precisely monitor compressed air flow in real time to identify leaks, optimize pneumatic processes, and improve air flow efficiency.

Using data gathered from Emerson's sensor technologies and analytics, Colgate has already seen about a 15% reduction in energy usage on several toothpaste and toothbrush packaging lines and expects even greater energy savings as the technology is rolled out more widely.

“Saving energy through air flow monitoring is just the

tip of the iceberg,” said Warren Pruitt, Colgate-Palmolive’s vice president, global engineering services, in a statement. “With a test-and-learn mindset, we’re able to scale successful lessons across our global footprint and help achieve our sustainability objectives.”



Read the full story on Colgate-Palmolive’s use of Emerson’s Aventics AF2 Smart Flow Sensors: oemgo.to/CKMgg

According to the companies, given the heavy reliance on pneumatics in large-scale consumer goods production, reducing the amount of energy associated with compressed air contributes not only to sustainability efforts, but also to overall equipment health and reliability.

Indeed, industry experts agree that compressed air, steam, and electromechanical systems are the biggest culprits when it comes to wasted energy. And OEMs have the potential to offset some of this by adding energy-efficient motors and drives, for example, or adding smart sensors and analytics that will help manufacturers understand how to lower energy usage in equipment.

Letting off steam

A common question is: “Where do I start?” And a common answer is, “Start by doing an assessment on where the greatest gains can come with the least amount of effort,” says Nathan Hedrick, national product manager at Endress+Hauser. “Typically, I find that some of the biggest energy consumers are compressed air and steam where small changes can lead to big savings.”

Endress+Hauser makes field instrumentations used to measure and monitor flow level, pressure, temperature, and liquids. “These instruments are the eyes and ears into the process and are important to sustainability efforts because they can generate baselines that can be monitored, measured, and reported on to see trends,” says Mark Thomas, Endress+Hauser’s industry marketing group manager.

Sean Silvey, product application specialist with Fluke Corp., a maker of electrical test and measurement tools, agrees that an energy assessment is a good first step. “But in energy, there isn’t a body of research for an industrial plant manager to use to set baselines for what ‘reasonable’ energy usage looks like in a manufacturing facility. So how do you assess what

portion of current energy usage is reasonable and what is wasteful? Or, of that wasteful portion, what provides high enough ROI to address? The ROI under discussion here is the cost per kilowatt hour as charged by the utility.”

Fluke’s power quality and energy analyzers troubleshoot power quality issues and discover the cost of wasted energy. Multiple parameters are measured simultaneously and displayed in formats that quickly describe overall power quality health. And understanding energy waste points is key. “Every system and operation has the potential to be a point of waste that can be mitigated or remedied,” Silvey says. “The goal is to map the energy use of specific equipment and processes to look at where energy is being wasted to quantify the waste and prioritize improvements or replacements based on the life of the equipment, as well as which modifications can deliver the best return on investment.”

Silvey’s “energy efficiency checklist” starts with a profile of energy usage and then tracing the energy consumption in order to understand energy waste points. He warns that manufacturers should not try to manage every kilowatt consumed by the facility, but instead divide the facility into the electrical infrastructure and then key systems. “The understanding of basic energy components enables an electrician to set up energy logging equipment to measure overall levels and quality of consumption and then trace when energy is consumed by what,” explains Silvey. “The biggest power savings come from determining when power usage peaks, evaluating overall power consumption compared to utility invoices, and possibly rebalancing loads.”



Colgate-Palmolive is using Emerson Aventics smart flow pneumatic sensors and IIoT-enabled software to monitor compressed air flow in real time.

By power logging each major system and mapping those costs against utility bills to quantify where and when consumption is occurring, companies can often realize savings by simple operational and schedule changes, Silvey says.

Measuring for more output

There are other ways to measure energy usage beyond checking the utility bill, and it starts with collecting the data from an energy meter connected to an equipment component—a conveyor, or a pump for example—and putting it into a historian as a way to maintain the history of the equipment to look for optimizations. “As you monitor it over time using a dashboard, you then have a data set and can use analytics to get efficiency,” says Gimmi Filice, senior product manager at GE Digital.

In addition to historians, manufacturing execution systems (MES), too, which are used for scheduling production lines, can be tied to facility management software to look at when different lines are idle and can be powered down. A large automotive manufacturer using GE Digital’s Proficiency MES software was able to save about 15% on energy usage just by looking at what lines were not running during certain hours in the evening and dimming the lights and shutting off high energy equipment, Filice says.

Other customers are taking the digital transformation tools to another level, like using artificial intelligence and digital twin technology to make predictions of how equipment will perform.

Data, it turns out, is an important aspect of energy tuning. However, looking at a portion of data may help tweak a machine or a line, but does not provide a holistic view, which is needed to truly optimize energy usage. “I’ve often found that our own instrumentation has a lot more unlocked potential in the form of unused data that users do not fully leverage to their benefit,” says Endress+Hauser’s Hedrick.

That is where new kinds of manufacturing data-capturing technologies are coming into play, like Sight Machine, a platform that converts un-

structured plant data into a standardized data foundation.

“A manufacturer should know how many units it’s producing, and should know how much energy it’s using, but they need to dial down to see where it’s being used...to get to that level of not just plant efficiency or line efficiency, but asset efficiency,” says Matt Smith, senior vice president of digital transformation for Sight Machine.

“The ability to make recommendations using Sight Machine is easy,” Smith says. “We have tools, we call them cookbooks, where you have recipes of what you want to



Fluke’s three-phase power quality analyzers can capture hundreds of power quality parameters so critical power quality events are never missed. Photo credit: Fluke



At the Schneider Electric Lexington smart factory, engineers use the Aveva software to view and optimize energy consumption across the factory floor. Photo credit: Schneider Electric

make, and we will tell you the most efficient way to make it by doing all the statistical weighing for you. Cookbooks look through all of the historical data and based on conditions, be it humidity, raw materials, etc., gives you your best set of running conditions using as little water as possible, for example.”

Looking toward the lighthouse

In 2020, Schneider Electric’s Lexington, Kentucky factory was recognized as a “lighthouse” by the World Economic Forum (WEF), which—together with McKinsey & Company in 2018—created the Global Lighthouse Network initiative. “Lighthouses” are companies that effectively use fourth industrial revolution (4IR) technologies to drive digital transformation. And as a result, these companies are recognized as beacons for others to follow.

The Lexington factory’s digital energy management strategy leverages IIoT connectivity with power meters and predictive analytics to capture greater energy consumption granularity in order to optimize energy costs. And the company has been able to reduce energy use by 26%, saw a 30% net CO2 reduction, and a 20% water use reduction. With that progress, last year the Schneider Electric factory, a 60-year-old brownfield facility which makes safety switches and circuit breakers, was selected by WEF as one

of only three facilities in the world to be named a “sustainability lighthouse.”

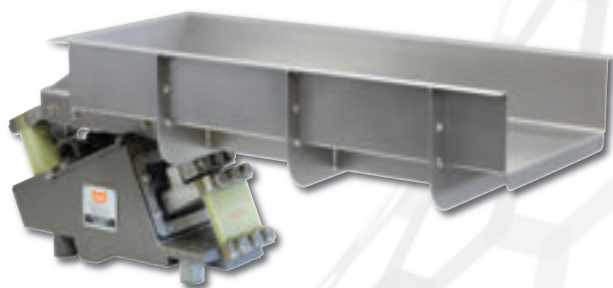
“It’s a testament to the work we’ve been doing in Lexington, and a reflection of the broader Schneider mission,” says Luke Durcan, Schneider Electric’s director of the company’s EcoStruxure platform. “We have been on the decarbonization sustainability path for many years.”

Schneider Electric uses some of its own technology to understand the actual base level in the plant, including its PowerLogic power meters, the EcoStruxure Power Monitoring Expert energy visualization and analysis tools that pull in metering and machine data at the control layer, and Aveva Insight, a cloud platform that uses artificial intelligence to create actionable information to improve asset reliability and operational performance. Aveva is able to integrate enterprise systems, MES, time series and non-sequential energy data, into a single cloud platform to do analysis.

Durcan agrees with Smith that the ability to track resource and energy usage not just at the plant level, but at the product level, is really important. The Lexington plant, for example, is a high volume, low mix facility, and when you are producing products the same way every day, managing the resources is straightforward. But that’s rarely the case. “A lot of things change, particularly in a batch manufacturing environment. The processes change,

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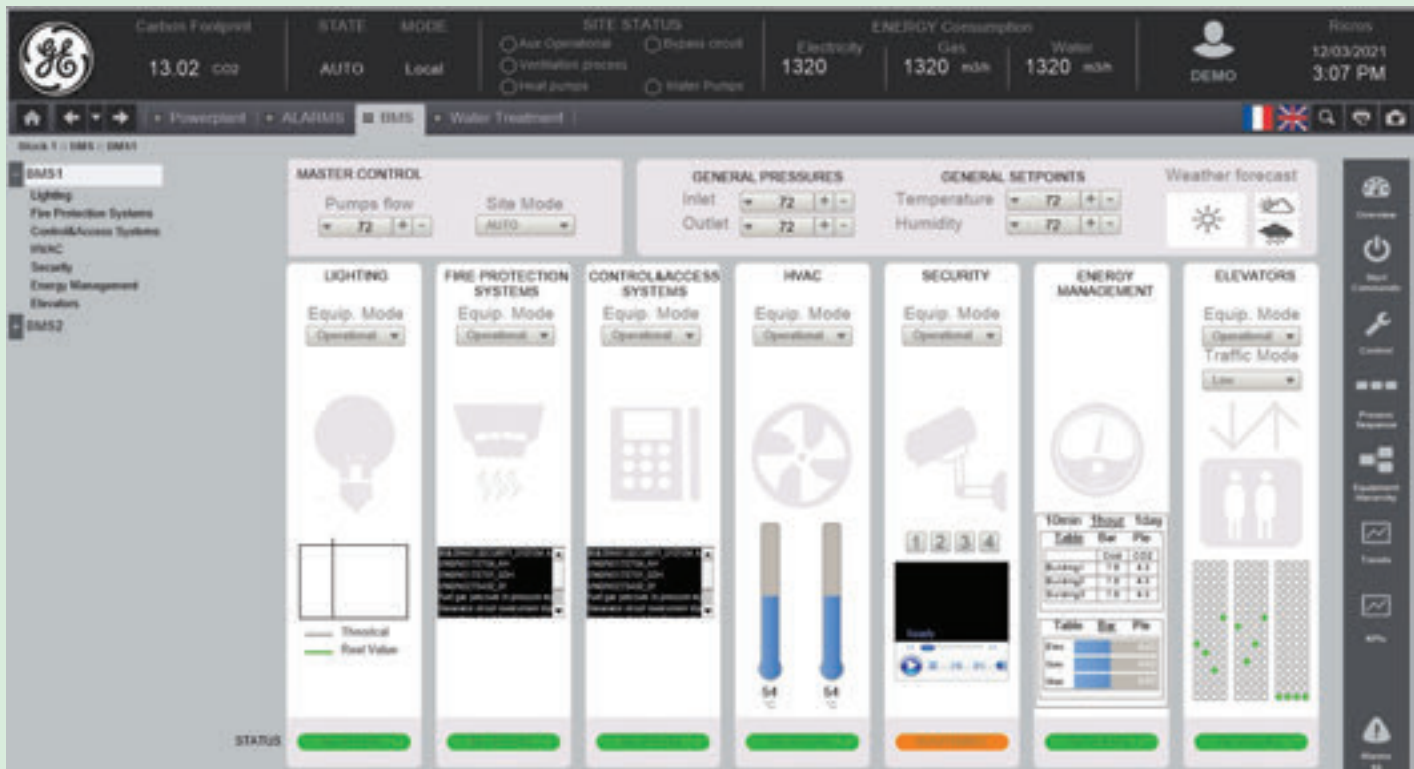
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The Emerson Aventics AFT flow sensor's calorimetric sensing cell measures air flow, pressure, velocity, volume, and energy.



GE Digital's Cimplicity HMI/SCADA provides a visual dashboard into energy consumption.



Listen to the unPACKed podcast: “Sustainability Secrets from Tetra Pak & Compass Group USA” at: oemgo.to/MONXr

the methods used to produce things are changing, so the ability to track resources and energy, not at the plant level but at the product level, is important,” notes Durcan. “You need to associate the resources with the actual product flowing through the facility. We have to think not just about what a plant does on a week to week or year to year basis, but what products are doing and how to optimize them.”

That means broadening the scope of not just what is happening in the plant, but also the extended supply chain. It can be difficult to collect all of that data, but it is an important paradigm shift when it comes to measuring energy usage.

Access PMMI’s Business Intelligence report, “End-of-Line Equipment Purchasing Trends and Design Insights,” which includes information on sustainability. Go to: oemgo.to/HyeYa

Every OEM can go green

Sustainability is a top priority for Mettler Toledo’s CEO, Patrick Kaltenbach. The company organized its GreenMT initiative to span that priority across the board, incentivizing employees to adopt a sustainable vision.

“He educated us. We put a lot of emphasis on the green aspect. So, in our R&D for new products, we contribute to that as well. Whoever contributes the most, gets an award of some sort,” explains Alan Zeng, OEM business development manager at Mettler Toledo Product Inspection.

Zeng gives the example of reducing energy use in X-ray generators. As an inspection device, results are very quantifiable. The company took the 100 watts of power originally needed to penetrate the product and reduced it to 20 watts for feasible applications using available technology. The 20 watt X-ray generators produce less heat, Zeng says, noting that newer technology in X-ray detectors allows you to take, for example, five roles of the detector instead of one to combine images, which then saves energy. “It’s not that we dream it up, it’s just that the technology is available and we utilize it,” he says.

Whether it be inventing new sustainable solutions or researching and applying what’s

already available through modern technology, every company can strive to lower its carbon footprint.

Turn to page 16 for an in-depth look at the Mettler Toledo Product Inspection group.

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ASSOCIATION NEWS

Sean Riley, Senior Director, Media and Industry Communications, PMMI



ELC: Change is Now

Jumpstart your 2022 by registering for PMMI's Executive Leadership Conference (April 24-26; Marco Island, Florida). This year's theme is Change is Now, and the meeting's education and networking line-up is guaranteed to help you navigate the latest industry trends and take your business strategy to the next level.

Meeting highlights include:

- Opening keynote featuring acclaimed generational expert Jason Dorsey, with a session on Millennials in Management
- Motivational keynote, Focus on You, from Brad Meltzer – host of History Channel's Lost History
- A 2022 economic outlook from the Institute for Trend Research (ITR) Economics
- Panel featuring your customer executives, their challenges and their insights
- Sessions on sustainability and workforce development
- Peer-to-peer roundtable discussions
- Spirit to Serve event—a catamaran excursion—benefitting the PMMI Foundation

Find out more and register at: pmmi.org/elc

Workforce

PMMI U Supports Mechatronics at Purdue University Northwest



Purdue University Northwest (PNW) needed to create a combination service and training system for people working on modern packaging equipment. This system uses a rolling toolbox for portability and selects mechanical, electrical, and measuring equipment suited to packaging equipment. Read how the PMMI U Skills Fund helped fund PNW's Mechatronics Engineering Technology program (see link below).

The PMMI U Skills Fund supported PNW's initiative, and any PMMI member can have these types of results for your local schools. Created by PMMI, the PMMI U Skills Fund is a resource intended to help you form meaningful partnerships with regional two- to four-year colleges, universities and/or technical/vocational schools, as well as other educational programs in your area. The PMMI U Skills Fund will match your company's contributions up to \$50,000 per year to fund regional education programs of your choice.

Whether you partner with a school to help strengthen an industry-related program, join forces with a STEM summer camp, coordinate a group of students to bring to PACK EXPO, or choose to invest in the future workforce in multiple ways throughout the year, the PMMI U Skills Fund is here to assist you with the financial obligations that come from these types of initiatives.

For more information and to apply, contact Kate Fioranti, senior manager, workforce development, PMMI at kate@pmmi.org or 571.266.4406.

Read more at: <http://oemgo.to/PNW>



Apply Today: 2022 PMMI Foundation Scholarships

Applications for the 2022 PMMI Scholarships are open now through March 31. These scholarships underscore PMMI's commitment to the future of the packaging and processing industry. With multiple scholarships available this spring—including the PMMI Member Family Scholarship—be sure to visit pmmi.org/foundation/scholarships to read up on eligibility requirements.

Become a More Effective Leader in 2022

If you're looking to become a more effective leader and manager, don't miss this chance to sign up for PMMI's 2022 Leadership Development Program. Returning in June, this six-month training course includes a 360-degree feedback evaluation, personalized development plan, one-on-one coaching sessions and more.

Learn more at pmmi.org/emerging-leaders-network/program.

PMMI U's Career Toolkit

Studies show there will be a shortage of two million workers over the next decade. Is your company ready? PMMI's Career Toolkit provides resources to help address the critical shortage of skilled employees and help promote awareness of careers in the packaging and processing industry. And check out our new "day in the life" video series!

Visit: pmmi.org/pmmiu/careertoolkit for more information.



Institute of PACKAGING PROFESSIONALS

Become a Mentor or Mentee with IoPP's Mentor Match

Last year, PMMI offered, on behalf of the Institute of Packaging Professionals (IoPP), the opportunity for a free membership and access to the Emerging/Rising Leader community on PackChat—The Packaging Ideas Exchange. If you haven't taken advantage of this offer yet, click here and use Promo Code PMMIELWL2021 to join for free!

And IoPP recently launched a Mentor Match Program, connecting IoPP members for focused mentee/mentorship. You only have to fill out a mentee or mentor profile with this program, then search the database for the best match. Once you find your counterpart, send a match request. It's that simple.

Participating in a mentorship program can bring you one step closer to achieving your career advancement goals. As emerging leaders in our industry, you are in the unique position to foster the growth of newly minted packaging professionals or invest in your own career growth, asking another industry leader to mentor you.

Industry Services

Cyber Insurance & Risk Mitigation

Through a partnership with the National Association of Manufacturers (NAM), PMMI is now offering a cyber insurance and risk management product designed specifically for manufacturers and their needs—NAM Cyber Cover. Find out how vulnerable your organization is to a cyberattack with a complimentary Cyber Risk Assessment at ahtins.com/nam-pmmi/. Contact George Forrester, SVP, Shareholder, Manufacturing Practice Leader—AHT at gforrester@ahtins.com or 703.623.4623.

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Free Industry Solutions EXCLUSIVE to PMMI Members

PMMI Manufacturing Excellence (MaX) is a collaborative Member Forum driving efficiencies and streamlining operations by sharing best practices for optimizing business, convening share groups to discuss best practices, and developing focused training to improve operations. Facilitated by PMMI's Industry Relations Committee, MaX Member Forum's three share groups—consisting of PMMI members—will focus on identifying challenges and creating solutions around sales, field service and engineering topics. Find out how you can participate and download our first free solution at pmmimaxmemberforum.org.

Help Your Business Benefit from Standards Development

Designed by PMMI, with support from The International Trade Administration, this free course walks participants through the fundamentals and importance of standards engagement and the development process. The course's three modules will increase your team's awareness and knowledge of U.S. and international standards, explain the U.S. and ISO standards development process, and show you how your company can participate in the development of ANSI and ISO standards. Find out more and register for FREE at pmmi-standardstraining.com.

Business Intelligence

Stay On Top of the Pharma Trends

In the upcoming 2022 Pharmaceutical Industry white paper, PMMI members will gain valuable insight into the major trends directing the course of the pharmaceutical industry. According to the white paper:

- 75% of pharma companies and CoMan/CoPacks interviewed have plans to increase their level of automation along their lines in the years ahead.
 - Nearly half of pharma manufacturers are collecting at least some data digitally now, with a handful of operations at leading manufacturers already gathering 100% of their data digitally.
 - Three out of five pharma manufacturers interviewed predict increasing capital budgets or at least maintaining a consistent level of spending in the next few years.
- Be on the lookout for the white paper release coming soon.

Business Intelligence

Emergency Podcast: Securing Critical Company Infrastructure

After Russia threatened nations that interfered with its invasion of Ukraine, the Biden administration urged U.S. firms to harden their cyber and digital defenses. PMMI's IT expert Andy Lomasky and OT expert Bryan Griffen offered the unPACKed with PMMI audience "Five Measures to Secure Company Infrastructure." Listen: pmmi.org/podcasts

Webinar Recording Available: Why Manufacturers Should Target Cobots

Missed January's Cobots webinar? The recording is now available online. During the webinar, experts at global research firm Interact Analysis shared their insight into the market associated with the key automation components used in industrial and collaborative robots, including the opportunity for motors, drives, precision gearboxes, sensors, machine vision, and end effectors.

Watch the webinar at: oemgo.to/webinars

In Memoriam

Bernie Lerner

Packaging and Processing Hall of Fame Member Bernie Lerner died on Dec. 11, 2021, at his home in Chagrin Falls, Ohio. Bernie was a successful entrepreneur, businessman, and inventor, with over 60 patents. Along with his brother, Hershey Lerner, he founded Automated Packaging Systems. Under Hershey and Bernie's leadership, APS grew into a global company with ten factories worldwide.

John C. "Jack" Nalbach

John C. "Jack" Nalbach died on Jan. 1, 2022, in Illinois. After serving with the Navy in Vietnam, Nalbach worked for his father's company, the John R. Nalbach Engineering Co., eventually becoming president. He continued to grow the company which ultimately expanded to become the Nalbach Group. Along with the start-up of Container Handling Systems Corp. (CHSC), the group grew by acquiring several local contract manufacturing companies, including Chicago Metal Fabricators, Ability Metal Company, Ultra Specialties, and several others.



EXHIBITOR'S CORNER

Plant Now, Harvest Later

Jeremy Adams, Exhibitor Services Manager, PMMI

Augustine “Og” Mandino, author of the bestselling book “The Greatest Salesman in the World,” put it best when he said, “always do your best. What you plant now, you will harvest later.” With just seven months to go until the doors open for the first time in four years for PACK EXPO International 2022 (Oct. 23-26, McCormick Place, Chicago), the time is now to plant your seeds.

This year’s event will serve as the most comprehensive packaging and processing event in North America, drawing in attendees from the world’s biggest companies, as well as small startups looking to scale up production and mid-size companies launching products and growing their brands.

Let’s look at action items you can start on now to secure success in the fall:

1. Focus on target prospects. While tens of thousands of attendees will descend on McCormick Place for this year’s PACK EXPO International, not every single attendee will be in need of the solutions you have to offer, nor will your answers be correct for every attendee. Meet with your team now and determine who your target prospects are that you should focus your pre-show marketing efforts on.

2. Water, feed, repeat. Once you’ve selected the prospects you want to focus on and grow into longtime customers, determine how you are going to nourish those seeds. Pulling together a list that includes every customer or prospect in your marketing database and sending a single, generic email highlighting your booth number at the show is highly unlikely to generate the ROI your team is seeking. In the age of personalization, your prospects want to feel unique. Use a myriad of media to accomplish this goal, including social media, email, direct mail, advertisements, and traditional print such as industry magazines. But again, focus these efforts on your target prospects, including key customers or accounts, and ensure your unique selling proposition is clear in every message you throw their way.

3. Help ease hesitations. Promotion via PMMI and PMMI Media Group products is the easiest and most productive way to ensure your current and potential customers know you will be at the show offering the solutions they need to solve their packaging and processing challenges. Access the Exhibitor Resource Center at packexpointernational.com/erc for a full suite of planning and promotional tools, including the complimentary customer invite program to offer free registration to your prospects, targeted sponsor-

ship and advertising opportunities and more. Getting those prospects to PACK EXPO International to see exactly what your company has to offer to them is the kind of opportunity that creates not just business but relationships for ongoing collaboration.

The decision to purchase packaging and processing solutions is a journey for your prospects, and that journey begins as soon as you secure your booth. Spend these next seven months planting and nourishing your seeds. Don’t rely on luck to make the return on investment from exhibiting at PACK EXPO International your team is expecting. Get and stay top of mind so that when the time has come, your harvest is full.

To learn more about opportunities to reach your prospects at PACK EXPO International 2022, contact Wendy Moore, trade show sales manager, at wmoore@pmmi.org or 571.612.3185.

PACK EXPO Las Vegas 2023 – Submit Your Application

Applications for booth space at PACK EXPO Las Vegas 2023 are now being accepted! The biennial event in Las Vegas will take place Sept. 11-13, 2023, at the Las Vegas Convention Center. Prospective exhibitors have until Monday, June 6 to submit their exhibit space application to be included in priority booth selection this summer. The priority booth selection process begins mid-June and will wrap up in August.

To submit your exhibit space application, please visit www.packexpolasvegas.com or contact the PMMI Trade Show Department at expo@pmmi.org for assistance.



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EMMANUEL CERF

“While 2021 started with many uncertainties, PMMI’s focus has always been on finding new and unique ways to bring our industry together – whether virtually or in person. From PACK EXPO Las Vegas to our Annual Meeting, PMMI members were ready to come together to learn, share and conduct business.”

VICE PRESIDENT, POLYPACK, INC. | CHAIRMAN OF THE BOARD, PMMI

The industry reunited and showed up in force at PACK EXPO Las Vegas and Southeastern Packaging 2021 – making it the largest packaging and processing trade show in the U.S. in 2021.

Strong attendance was exciting for all – for The Packaging Show, Technology Excellence Awards, The Forum and new features like the PMMI in the Future exhibit.

Supporting hundreds of events like the Packaging & Processing Owners' Leadership Network (POLN), 4th-5th editions, the PMMI (PMPI) 40th anniversary celebration content that was available through Nov. 16, 2021. [View more](#)

23,042	49%	42%	74%	1,534
Attendees	Up vs. last year	Content engagement	Registration completion	Exhibitors

2021 ANNUAL MEETING
and Technology Showcase

In November, over 100 member associations came together to network and learn at PMMI's Annual Meeting. Members had the opportunity to connect with their peers and learn through our award-winning speakers in our sessions in the halls of the Convention. Our highlights of the meeting were the host of the Year-After-Thanksgiving event where members had the opportunity to see a simulation in action from a safe perspective.

304	148	90
MEMBER ASSOCIATIONS	MEMBER COMPANIES	TRAVEL TRAVELERS

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VOICE OF THE CUSTOMER

The 60-Year Alliance Between Triangle Package Machinery and Goetze's Candy

These family-owned and operated businesses have been working together on packaging Caramel Creams for generations. The secret to their long-term relationship comes down to a matter of trust.

Stephanie Neil, Editor in Chief

There is a common request from manufacturers when it comes to working with machine builders, and that is to be better partners. They want to be able to rely on their OEMs. That means creating sturdy, safe, and reliable equipment. But when it comes down to building trust, it really is about culture and the personal relationships formed throughout the years.

Case in point: Goetze's Candy Company is the maker of the recognizable Caramel Creams known as "Bulls-Eyes" and "Cow Tales." The company has been in operation for over 125 years—since 1895 to be exact—when August Goetze and his son William entered the chewing gum business, which evolved into caramels.

Back in the early days, much of the candy production and packaging was done by hand. But in the 1960s, the company bought a machine from Triangle Package Machinery, and several decades later, Goetze's is still purchasing packaging machinery from Triangle. Currently, the candy company has nine vertical form fill seal (VFFS) machines of various models, seven combination weighers, and one inline weigher that dates back to 1976.

"The machine we had from the early 1960s was literally just replaced at the end of 2021," says Todd Goetze, President and COO at Goetze's Candy Company. "The machinery clearly is built for a long life and holds up."

What has also held up is the professional relationship between Goetze's and Triangle for the last 60 years. That stems, in part, from the fact that both companies have a deep-rooted history and similar culture. Goetze's is a sixth generation family-owned and operated manufacturer. And Triangle, established in 1923 and coming up on its centennial anniversary, is a third generation family-owned and operated OEM.



Family-owned Goetze's Candy has been in operation for over 125 years. Pictured here (from left to right) President and COO Todd Goetze, (fifth generation), and his niece and nephew Emily Goetze and Spaulding Goetze, III (sixth generation).

These business parallels create a familiarity that makes it easy to pick up the phone and ask for help. “If I’m looking for answers, I have the best shot of getting in touch with someone directly at a family-owned business. In fact, I have the personal cell phone numbers of several Triangle representatives and I can call them anytime, which makes all the difference in the world,” Goetze says, noting that his own company is managed by him and his brother, as well as his uncle and father. In addition, his niece and nephew—the sixth generation—have recently joined the company.

John Cooke, Triangle’s eastern sales manager, agrees that the two companies’ cultures create a strong connection. Cooke has been with the OEM for almost 30 years and the person he replaced retired after 30 years. “We have a lot of longevity,” he says. “Triangle as a company has been successful by building trust with customers and providing comfort that we’ll do what’s right for them. And anyone in the Goetze family can call if there’s a problem with a machine. Even if it’s not related to a Triangle machine, we will help them.”

Cooke comments that Triangle president Bryan Muskat always says that Triangle will be the company that fixes customers’ problems, whether they are Triangle’s or not.

This is not your father’s machine

Triangle equipment is used across a variety of food segments, from candy to fresh produce to frozen foods, and offers several packaging machines, including VFFS baggers, weighers, horizontal cartoners, tray packers, tray loaders, blending machines, pouch fillers, and more. In addition, Triangle machines support about a dozen different package styles.

Over the years, the company has modernized the machines with control technology, adding capabilities such as automatic changeover,



The Triangle inline combination weighers weigh the twist Caramel Creams and then they are bagged. Filled bags are moved via conveyors to Fallas Automation case packers.



After product goes through the Fallas Automation case packer, it is transported to robotic palletizers.



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or adding food-specific functionality that helps its manufacturing customers. At PACK EXPO Las Vegas 2021, for example, the company rolled out a liquid fill VFFS bagger designed for hot fill, pumpable foods, such as soup and sauces, which includes a unique servo controlled squeegee system that eliminates the liquid product from entering the seal area. This eliminates costly leaks and headspace inside the package and ensures quality seals when using heat seal jaws or optional ultrasonic sealing jaws for higher speeds.

“We are a leader in ultrasonic sealing,” Cooke says. “All of our current machines are designed to work with ultrasonic seals. And from a sustainability standpoint, putting ultrasonics on VFFS baggers uses less power than heat seal machines and uses less film.”

Goetze's Candy is not currently using the ultrasonic seals, but its machine set up for packaging the Caramel Creams is still very efficient. The product is weighed and bagged via Triangle machines. The filled bags are then moved via conveyors and fed into Fallas Automation case packers. The filled cases are then transported overhead to robotic palletizers.

“There's no question that over the years the machines have gotten better,” Goetze says. “When I was a kid working summers here on the bag machine, it took three of us—two people packing and one loading a pallet—and we were running roughly 70 bags per minute. Now, a typical system is running 110 bags per minute and has one person who is just monitoring it. The accuracy is better; the speeds are better. There is ease of use with touchscreens and alarm messaging that comes up on the screen when something is wrong. It even directs people where to find the problem, compared to the older machines which would just stop.” And if there ever is a problem that the internal team can't fix, Triangle support is a call away for remote diagnostics and problem-solving—at any time.

According to Cooke, an elevated level of service and support is what sets Triangle apart. “We've had employees in the parts department walk to work on a Sunday to ship something out if a customer calls looking for a part,” he says.

And having decades of experience with a customer has its advantages. “One



In 2021, Goetze's Candy replaced a bagging machine it had since the early 1960s with this Triangle vertical form fill seal (VFFS) bagger.

of my favorite stories with Goetze's Candy has to do with that machine from the 1960s," Cooke remembers. "It was about five years ago and Todd had called me for a part for that machine, which was a casted part of metal poured in a sand [mold], and we actually had one in stock and had [the machine] up and running the next day."

Another benefit of using the same OEM for so many years is the standardization of equipment and components which lowers the learning curve for operators and makes diagnosing problems easy. Troubleshooting equipment is often resolved onsite because machine technicians can swap parts in and out of the Triangle machines to diagnose problems quickly, says Goetze.

It also streamlines factory acceptance tests (FATs). "The last five machines we bought, we have not attended an FAT at Triangle," Goetze says. "We've relied on one of the field service engineers, Scott Kotsch, who knows us well enough and knows how we like the machines. He does the tests for us and he has been the one to do the startup on site. And it's worked well."

And when it comes to planning for future innovations and business expansions, Goetze will bring Cooke into the conversation to tap into his expertise as to how a machine will handle different packaging or speeds, and he relies on his honest feedback on what will work and what won't.

This honest communication is key to building trust and a long term partnership, Cooke says, noting the recipe for success here is to, "treat people the way you want to be treated."

Goetze is aware that there is a lot of great equipment out there, but there is no need to

deviate from this deep-rooted relationship that spans decades. "The way things are working now are working well, and they have been for generations."

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Watch this video on OEM's YouTube channel to see the Goetze's Candy packaging line in action



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APPLICATION BRIEF

Linear Servo Track System Allows Production-on-Demand for Liquid Filling

With the help of a track system from B&R, this Polish OEM is building machines that make it practical for liquid products CPGs, like cosmetics or pharma companies, to plan for short and specialized product runs.

Matt Reynolds, Editor, *Packaging World*

For CPGs hoping to launch new liquid products into industries like cosmetics, pharmaceuticals, and household chemicals and cleaners, highly customized or short runs have always been severely limited by cost and implementation times. Traditional customization methods made it unprofitable to release small batches.

Consider this scenario: The production department at a large cosmetics company at a manufacturing plant in the suburbs of a European capital takes a call. Someone from the marketing department is asking to order a small batch of shampoo for a promotional campaign. How big is the order? It's quite small at only 5,000 units. That's a problem in and of itself, but this marketing person is requesting a couple of changes, too, asking that the shampoo color be different, and filled into some custom bottles instead of the usual ones. Oh, and they'd also like to change the caps and the labels. And the deadline happens to be early next week.

These expectations wouldn't sound acceptable to most CPGs. Unless the product is already waiting on the shelf at the warehouse, it's simply unprofitable to apply so many changes to a well-oiled machine of a production line. At least, that used to be the case.

Today, Polish packaging machine builder Unilogo Robotics is trying to make these scenarios not only doable for



The core of the system is B&R's ACOPOStrak technology. It makes the entire line considerably smaller than it would otherwise be, and provides a high degree of flexibility, which is particularly important for the calculation of capital expenditures.

liquid product CPGs, but downright practical. It's Clean-line system—a new, fully automated packaging line based on B&R's ACOPOStrak transport system—makes short runs with high variability possible, in fact they can be deployed extremely rapidly and provide unprecedented optimization performance with just a few clicks.

Pioneer and visionary in the packaging technology market

Unilogo Robotics is a medium-sized Polish OEM that designs and manufactures solutions for the cosmetics,

chemical, and pharmaceutical industries, specializing in liquid product customization. According to its supplier B&R, the company's machines and production lines are the embodiment of innovation in its complete form, and of true engineering panache.

"Initially, we provided services to large corporations moving their manufacturing plants to Poland," says Tomasz Nowacki, founder of Unilogo Robotics. "After some time, large retail chains appeared, too, and began to roll out private labels. This changed the playing field: the market started to demand machines adapted to diverse bottle shapes, caps, and labels. At that time, we set ourselves the goal to create the highest-performing productive production line."

The company also set itself specific objectives and targets for its lines' productivity. Production batches are getting shorter and require constant machine changeovers, so Unilogo assumed that its line would always produce 12,000 to 15,000 units per shift, regardless of how complex the customer's components (bottles, corks, labels) are and if changeover would be required one, two, three, or four times.

E-commerce standards in B2B

An approach that has become a standard now at the consumer level is one we've all become familiar within e-commerce: speed and flexibility of service are currently universally required qualities. Is this approach also penetrating the B2B market? Most companies still have a traditional supply and production chain in place, built for an outdated sales model based on holding expensive product in inventory. According to B&R and Unilogo Robotics though, today's world demands immediate response and flexibility, a product-on-demand concept. Unilogo is preparing for such a revolution and is already gaining a competitive edge by using adaptive manufacturing in its design process.

Thanks to Unilogo's Cleanline, cosmetic, chemical, and pharma CPGs are able to implement production-on-demand, and the company says it will bring new dynamics into production and let their customers to realize meaningful savings in warehouse and product storage. Cleanline is an integrated system of robotic modules in the form of a compact production line, designed and developed in accordance with the Industry 4.0 concept. It includes a fully automated robotic production line for lotions, personal care products, perfumes, household chemicals, and similar liquid products, with changeover and start-up times of only a few minutes. Parts are 3D-printed to allow the line to work with any type of packaging and closure, and additionally make it possible to launch new packaging to the market within only a few days.

To watch a brief video highlighting features and capabilities of Unilogo Robotics' Cleanline, particularly its use of B&R's ACOPOStrak transport system go to oemgo.to/track

The biggest advantage of Cleanline is its flexibility,

which is an extension of its modular design. The whole line is based on building blocks that can be easily combined and adapted to the needs of the individual business, as well as expanded with new modules. Cleanline includes a module responsible for sorting and capping. With 3D-printed parts, a dosing module, labeling module, and a module responsible for packing the units into corrugated shippers and placing them on pallets. A part of the module is connected with the ACOPOStrak intelligent transport system by B&R.

ACOPOStrak Intelligent transport system

According to Nowacki, the innovation that makes Cleanline so versatile is the specially developed intelligent transport system. It is based on magnetic trolleys [also called movers in other linear servo contexts] that move along a magnetic track. The trolley shape makes it possible to handle and transport any pack type without having to perform a changeover. The core of the system is B&R's ACOPOStrak technology. It shortens the entire line considerably while making it extremely flexible and sustainable; particularly important for the calculation of capital expenditures.

The entire process takes place in an end-to-end system, without involving human operators or manual labor. What also makes Cleanline stand out is the fully robotic unpacking/packing module. A set of several robots autonomously unpack the pallets with the packaging units, as well as perform their blowing, laser marking, and feeding. Robots are also used at the final stage of packing of the finished products, and human labor is only required to transport the empty pallets and collect the loaded ones.

Capping module using 3D printing

After seven years of experiments, Unilogo Robotics successfully developed a capping module that it's really happy with. It is fully automated and uses 3D-printed format parts, allowing Cleanline to remain a 100% versatile machine, the company says. The whole system is efficient and optimized in terms of dimensions, occupying only 2.1 m of line length.

Cleanline as a whole complies entirely with the Industry 4.0 and Internet of Things (IoT) principles. This means, among other things, that the machine is coupled with a smart network. The entire process is very simple to control and monitor, and it can all be done in real time.

Control panel, OPC UA, and Pack ML to save more resources

Cleanline is controlled using a universal HTML5-based panel. This solution makes sure that all process parameters can be changed from a single place. On top of that, the panel can be expanded by adding features required in the

customer's process, as well as personalized and adapted to the individual expectations, the standards adopted in the relevant manufacturing plant, or simply to the operators' habits. Another advantage is the use of the Open Platform Communication Unified Architecture (OPC UA) technology. It makes it possible to monitor data, also in real time, and to access detailed reports, or even videos recording key



Cleanline as a whole complies entirely with Industry 4.0 and Internet of Things principles in that the machine is coupled with a smart network. The entire process is very simple to control and monitor, and it can all be done in real time, according to the company.

process stages or emergencies. Data is stored in the cloud, maximizing working convenience and making it possible to control the whole process from any place. This solution also significantly facilitates repair and maintenance of the line as well as shortens the response time of Unilogo tech support in emergency situations.

A particular advantage of the line for businesses with more than one production device is its compatibility with the PACK ML system, providing time savings, working comfort, and software standardization. Unilogo Robotics' initial goal was to provide a production line that would be able to unpack a pallet of empty packaging units, fill them, cap them, apply labels and pack them into boxes ready to be shipped to the customer, all done efficiently and involving as few people as possible.

"We believe that robotic Cleanline solutions will soon replace overly complicated and inefficient product customization and packaging systems," Nowacki says. "The market's future lies in flexible solutions enabling customization and series production in small batches. We look for companies that think like us and see this as their opportunity for success."

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WOMEN'S LEADERSHIP

Creating a Roadmap for Your Career... and Beyond

A conversation with Lisa Propati, Vice President and General Manager of Weiler Labeling Systems, a division of ProMach.

Stephanie Neil, Editor-in-Chief

In the first of a series of articles that will spotlight women in packaging and processing, we talk with Lisa Propati, VP and GM at Weiler Labeling Systems (WLS), part of ProMach's pharmaceutical business line that designs, manufactures, integrates, and supports technologically advanced rotary and in-line pressure sensitive labeling and label printing solutions. Propati, who is also the new co-chair of the Packaging & Processing Women's Leadership Network (PPWLN), reflects on her career in manufacturing and offers advice to others following a similar path.

OEM: Lisa, can you tell us a bit about yourself, personally and professionally?

Propati: Of course. Personally, I am married and have twin boys who are in college. My husband is self-employed, and I have three stepchildren who are already established in their careers as a teacher, a police officer, and an electrical engineer. I am an active outdoor person, a group fitness instructor at my local gym, and I love sports and engage in everything competitive or challenging. I also tend to seek out challenges in my professional life.

I started college right after high school and, thinking I already knew



Lisa Propati, Vice President and General Manager of Weiler Labeling Systems

everything, dropped out when I was 20. After spending a few years working at a clerical job with a manufacturing company within the printing industry, I realized that – in fact – I did not know everything and decided to go back to school at night; I finished my degree some years later. I continued working at the same manufacturing company the entire time and moved from the clerical job through multiple promotions. I ended my time with that company as the plant financial manager. I attribute this growth to hard work, perseverance, and a little bit of luck of being in the right place at the right time. My progression and growth were also accelerated through the mentoring

provided by managers who saw I was willing to listen and learn. One very notable lesson about setting and exceeding expectations stands out more than most. The lesson was: to be successful you must always have tangible, measurable goals, and a plan to reach those goals. My mentors helped me find a path to success, and eventually I obtained the confidence I needed to be successful on my own. Their belief in me helped me believe in myself.

After years with this company, I moved on to a higher-level finance role at a company that made sugar-free sweetener. When my twin boys were born, I recognized I needed a better work-life balance, so after years in manufacturing, I went to work in the financial industry in mutual fund operations. Once my kids went to school, I knew I had to get back into manufacturing, because I felt that was where the action and my passion were. From this point, until I joined WLS, I held positions at various manufacturing companies while continuously challenging my professional abilities and still maintaining the work-life balance I required. Even though my career was progressing, I still felt like I needed more of a challenge and that is when the Controller position at WLS came into my

view. I began my career at WLS in 2009 as the Controller and had responsibility for finance, IT, materials management, and human resources. When WLS joined ProMach, the president of WLS decided to retire, and I was asked if I would be interested in the job. I was both excited and nervous, but I knew that an opportunity like this would not be offered every day, and I was up for the challenge, so I said yes! I still have that excitement today and it truly has been my favorite job! Each day has been an opportunity to learn and to work with the team to improve and grow!

OEM: What made you decide to pursue a career in manufacturing, a predominantly male industry?

Propati: Before I had a degree, my first job was in manufacturing and the demographic was predominantly male, but I honestly never considered the industry demographics. Instead, I focused on the fun of seeing something made from start to finish. I liked working with the entire cross-functional team in manufacturing. In every manufacturing position I held, it was common to work with large groups of people towards solving problems. I really enjoy that dynamic. The manufacturing environment appeals to me and provides me strong motivation to go to work. I looked past the demographics and focused on the job, the interactions and the teams!

OEM: What advice would you give to other women who want to pursue leadership roles in manufacturing?

Propati: To be totally clear, my advice would be the same for men and women... Find a profession and industry that you like and that you are passionate about. Finding a

company that shares your goals of work-life balance and employee focus is very important. Then work hard, be honest, be a team player, and be genuine. Be confident that no matter what your gender, you have the skills to succeed. Educate yourself on your industry, and never stop learning. I have a sign in my office that inspires me every day. It's a quote from Louis L'Amour that says, "There will come a time when you believe everything is finished. That will be the beginning." It reminds me every day...never stop setting goals.

OEM: Have you ever encountered someone in your career that had preconceived notions about what a leader in the packaging industry should be like?

Propati: Yes. I was at my first trade show as the leader of WLS. I was talking with one of our vendors who didn't realize that my role at WLS was General Manager. We had been discussing our companies' business relationship, and it took him about five minutes before he realized my position in the company. He was visibly surprised, and his tone changed. It was clear he had not considered the possibility that a woman could be the leader of the company. He adapted and the conversation was great. He even wanted me to speak at his company event about women in leadership. We have maintained a great relationship. I was nervous going into that trade show because it was my first one in my new role, but I simply focused on the responsibilities I had as the GM of WLS, and it went well.

I have been fortunate in that I have not really had to endure a lot of visible gender bias in a leadership role or in other roles. When interviewing for a job, I look for an immedi-



PMMI's Packaging & Processing Women's Leadership Network (PPWLN) is sponsoring a cocktail reception at PACK EXPO East on Tuesday, March 22, Pennsylvania Convention Center, Room 204 C, 3:00-5:00 p.m.

ate supervisor who shares common goals and ideals that lead to forming a cohesive team. My advice to others is to interview the company you are going to work for as much as they are interviewing you!

OEM: What advice would you give someone who feels that their gender, or some other factor, is subject to some sort of preconceived bias?

Propati: If that role is your passion, and you run into bias-related roadblocks at that company, be creative and find out what you must do to dispel those biases. If you have exhausted all possibilities for change and the bias remains the same, find a role at another company where that type of bias isn't present. It sounds terrible that I am suggesting leaving a job, but life is short and sometimes you spend more time at work than at home, so you need to find an opportunity that makes you feel valued, appreciated, and happy. Companies have cultures; find one that thinks like you. Every company is different with different leadership, different opportunities, and different ways to contribute. Find one that is good for the asset that you are and that shares your passion.

OEM: Finally, Lisa, what advice do you have for women who would like to pursue certain dreams but are concerned gender discrimination could derail them?

Propati: Well, as I said on a prior question, my advice would be the same for men, women, anyone... First and foremost is to have confidence in yourself and your ability. Sometimes the biggest obstacle can be the voice in your own head telling you that you don't belong. Do not short-change yourself. Anywhere that you have the right skill sets and shared vision is where you belong. Find a good mentor; when you find someone who believes in you, you will believe in yourself! And that will last! Slow down, talk to people more, be relatable and genuine. Spend as

much or more time listening than you do with your nose to the grindstone; when you understand people's motivations, you will work much better together. And finally, you will make mistakes... that's okay! Work hard to overcome them.

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WORKFORCE DEVELOPMENT

An Eye on Employee Ownership

Dedicated to closing the gender and racial wealth gap, Below the Line is on a mission to acquire packaging and processing suppliers with 40 plus employees—one-third or more of which are people of color—to convert to employee-owned companies.

Stephanie Neil, Editor-in-Chief

OEM Magazine recently spoke with former packaging industry veteran Jill Miller to talk about her role as president and co-founder of Below the Line, Inc., an organization that aims to move employees and their communities from economic survival to sustainable prosperity. And the company's first step is to address the gender and racial wealth gap in the food and beverage packaging and processing industry. Here is an excerpt from that conversation.

OEM: Jill, what is the mission of Below the Line and what inspired you to start this company?

Miller: Below the Line's mission is to move employees and their communities from economic survival to sustainable prosperity. And our vision is to do this by addressing the racial wealth gap in the food and beverage packaging and processing industry.

We have two prongs as an organization. One is as an independent, private equity sponsor that acquires companies and converts them to employee ownership. And then the other is rooted in staffing and workforce development, and education through mentoring and partnerships, to bring able workers of color who may suffer from a variety of generational traumas, and bring them into the workforce, ultimately seeding their families for wealth.

OEM: You mentioned part of it being an independent, private equity sponsor. What does that mean?

Miller: What an independent sponsor is, we have essentially an advisory board and a couple of partners that are diverse, and know the industry inside and out. And what we bring to the table that's unique, is we care deeply about the industry. We care deeply that companies we acquire are turned over to the employees for wealth gap, but still maintain the legacy of that original company's founder. We do that with ready capital that's able to be deployed, which is funding to purchase acquisition targets. So essen-

tially, I'm quarterbacking the purchase of a company in this industry. And then we'll go in, and be the leadership team that immediately begins the transition to employee ownership. And then after a period of time, the independent sponsor and the operational partners will exit and leave the company in the hands of the employees and those that have emerged as the minority leadership team.

OEM: Are there certain qualities to a company that you are targeting to acquire?

Miller: Yes. So we're looking at companies in the packaging and processing space, probably an equipment supplier, one that is closely held, or a family-owned business. The size of it would be \$1 million-plus in EBITDA, 40-plus employees, with at least one-third being people of color, and moving from there. Once we would acquire the company, then we would begin to transition the ownership. We're not completely worried about what the leadership looks like today. The idea is that we have a pool of enough employees that are people of color, that we can start shifting the wealth gap for them and their families.

OEM: How do you prepare the company to be employee owned?

Miller: I think that's where all the fun work begins, and really hard work, too. So part of the advisory board that we put together is people of color from places like the West Side of Chicago or the South Side of Chicago. But there are also people who are doing a lot of work around industrial organizational psychology, and mentoring emerging leaders in people of color populations.

So, we would go in, purchase the company, work with the owner to make sure we're honoring their legacy—while trying to meet investment goals—and start creating a culture. We talk a lot, even in our own meetings, about culture, and how we want that to look. And some of it I've had to hold and say, "Until we know what we're buying, we can't



completely define how all this looks.” But what we do know, is that a lot of people need things like hope and optimism and resilience and efficacy. And we need to deal with the fact that some people may not be emerging as leaders when they are people of color, because there is generational trauma that’s been overlooked, or there’s been violence, or there’s anxiety, and they’re not feeling psychologically safe in an organization.

So, we need to look at all of those things as we unfold this. It’s going to take time. And I think that the transition is going to be about five years. And then from the financial scaffolding piece of that, there is a plan in place to take the funding, the acquisition; there will be a transition to a fund. It’s a little different approach than traditional private equity, or what a lot of people call an ESOP (employee stock ownership plan), because it’s designed specifically with wealth gap in mind. And in order to be successful, what we can’t just keep doing is what we’ve all been doing in business architecture for the last 200 years.

OEM: You want Below the Line to be a catalyst for change, but can one organization do that?

Miller: No, absolutely not. The CPGs so far are doing a great job in leading a conversation around supplier diversity. More can always be done, but equipment suppliers and some of the more custom houses aren’t very diverse in their ownership, and the CPGs don’t have the luxury of pressing or choosing a diverse supplier.

So, what really drove me, in running through some numbers, when I stepped back, I looked at about 500 suppliers in this industry. And this is when I still thought it was about being a woman. I found less than 4% out of 500 suppliers were female-owned or led. I could not find a single black-owned equipment supplier; and I hope I’m wrong. But to me, that’s appalling.

And it’s where I noted, “Oh my goodness. This is way bigger than women, right?” Because if you look at the consumer buy side of the industry, African Americans in this country have a \$1.2 trillion buying power, annually. If you just take the top 10 CPGs, African Americans have spent roughly over \$13 billion in the last 12 months. If you expand it outside of the top 10 classic grocery stores, these people have spent \$24 billion in the last year. And put super centers on top of that, and it’s another \$15 billion.

So, roughly I think packaging and processing equipment purchases in 2020 were \$10 billion. So, I interpret that in my mind, that this is what it says: For a community that has \$1.2 trillion in buying power, not a single item put in a grocery cart, or into their pantries was packaged or processed on a piece of equipment sold to the industry by a company that is black-owned. And fewer than 5% are female-owned. I only know this industry. I know it really well; [and] what I do know is if we don’t, together, figure this out, we don’t have a strategy to diversify the supplier base.

OEM: How can we get the packaging industry to unite?

Miller: So I think we’re one facet of that, right? We provide a model for exiting owners and founders to transition their companies to employees, while they meet their retirement needs and leave a legacy that can last generations. It might not be the legacy to their children they thought it would be, but it preserves and strengthens relationships with other suppliers and CPGs. And it allows more families to benefit from that wealth than just their own.

As an industry, we need to continue to shift our business architecture—to collaborating common ground, elevating one another—and have the hard conversations. So, from my perspective, the CPGs can financially support the work of companies like Below the Line right now, with either a planning grant, or critical launch funding gifts, making space and resources available. I figured out I needed to get this done, and I have made the biggest bet I have ever made, by staking my life savings and my kids’ college funds on this. Because until we acquire the first company and are successful, I’m funding this out of my own pocket.

And I know there’s a lot of desire to look at this. Owners who are looking to exit, should start opening up to the possibility of employee ownership, and get educated about it, and look at it as a realistic option for transition. I’m talking with some CPGs already about how Below the Line fits into their diversity, equity, and inclusion initiative, and promises how things like this enhance sustainability, and feed into social impact initiatives, such as breaking the poverty cycle, and bringing food to hungry mouths. There are a few that we’re going to be hopefully announcing some relationships with in the next three to six months.

OEM: What is the plan for Below the Line in 2022?

Miller: We are going full steam on working with established and emerging thought leaders in the industry on the racial wealth gap, and how we step forward together. I have a really wonderful and diverse group of partners and advisory board, industry and non-industry people who have pledged to break down barriers for people of color in this industry. We are also, hopefully, going to be announcing our operational partner, which will be very exciting. We were very selective on the criteria around who we wanted funding this acquisition, and that they had the same goals and values that we do. I am 24/7 listening for whispers in the wind, and hopefully finding the OEM that trusts us enough to give us the privilege of transitioning their life’s work into the hands of the employees.



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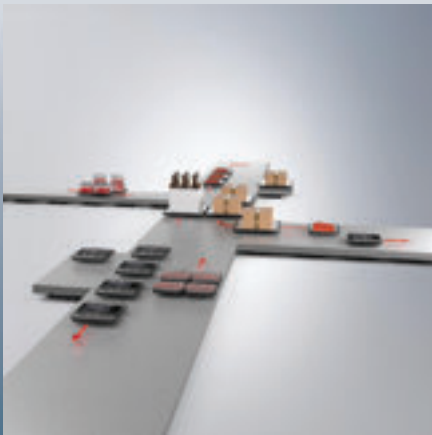
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Want to find out more? Chat to us online, call, or drop us an email. We look forward to hearing from you.



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Encoder Products Company



464276 Hwy 95, Sagle Idaho 83860

Phone: (800) 366-5412 **Email:** sales@encoder.com

encoder.com



Encoder Products Company (EPC) specializes in motion feedback devices. Our Accu-Coder™, Accu-CoderPro™, and Tru-Trac™ encoders come with an industry-leading three-year warranty. With faster delivery than most other encoder manufacturers, and same-day expedite options on select models, EPC will get you your encoders fast.

EPC has been a leading designer and manufacturer of motion sensing devices for more than 50 years. We understand that each industrial automation application is different, and that you need encoders that fit the needs of your applications. That's why our encoders are highly configurable, offering a wide array of shaft or bore sizes, output types, connector types, mounting options, and resolutions as high as 65,536 CPR. Our encoders also offer:

- Advanced Opto-ASIC and phased-array sensor design for reliable, stable output over a wide range of conditions
- Programmable encoder options, for the flexibility to program to your exact specifications
- Robust mechanical housings for your harshest environments
- Magnetic-based multi-turn absolute encoders that operate in the absence of power, without the need for gear trains or batteries
- Magnetic encoder modules with sealing to IP69K
- The all-in-one Tru-Trac™ family of linear measurement solution encoders, offering an integrated encoder, measuring wheel, and pivot arm in one unit

EPC's headquarters is right here in the USA, housed in our vertically-integrated, 100,000 sf. manufacturing facility. When you call EPC, you'll talk to real engineers and encoder experts who can help you find the right motion feedback solution for your application.



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ERIEZ

2200 Asbury Road, Erie, PA 16506 USA

Phone: 814/835-6000

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Eriez' equipment for the Packaging + Processing industries includes metal detectors and magnetic separators for metal contaminant removal, as well as a full line of vibratory feeders, conveyors and screeners.

Eriez' compact Vibratory Feeders handle high-speed packaging, difficult products like flour, leafy and gummy products, and high material flow applications. These electromagnetic drives are energy efficient, low maintenance with no moving parts, and can be mated with a range of sanitary and non-sanitary trays.

Eriez Xtreme Metal Detectors offer best-in-class performance to safeguard against both ferrous and nonferrous metal contaminants. This equipment is very effective for identifying and removing stainless steel fragments in conveyed, gravity flow and liquid line sanitary processing applications. Detectors are positioned at different locations throughout the process from bulk and raw material through final package inspection. There is no better solution to ensure your product is metal-free than using Eriez magnets for steel removal and using Eriez Xtreme® metal detectors to reject nonferrous metals like aluminum, brass, stainless steel and more.

Visit Eriez.com for FREE downloadable guides packed with information to help you choose the equipment you need to fit your unique application. Eriez.com features more than 250 packaging solutions, from our best-in-class vibratory feeders, conveyors, screeners, and metal detectors, to our wide selection of magnetic plates, grates and traps.

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Labeling

HERMA US Inc.



39 Plymouth Street, Suite 300, Fairfield, NJ 07004 USA
Phone: 973.521.7254 **Email:** info-usa@herma.com
www.herma.us



**Herma 500
Label Applicator**

HERMA US Inc. is a subsidiary of HERMA GmbH, a Germany-based provider of labeling machinery and self-adhesive labels and materials to the global packaging marketplace. HERMA GmbH's comprehensive range of products spans the labeling production process to include labeling machinery, a variety of adhesive materials, and finished self-adhesive products.

The HERMA 500 label applicator offers machine builders an ideal solution for integration into automation machinery. Its compact size and absence of external control box, combined with exceptionally high levels of precision and reliability, give the HERMA 500 significant advantages over competing modules.

Capable of achieving labeling speeds up to 200m/min, the HERMA 500 can handle label widths between 80-320mm and roll diameters from 300-600mm. A wide range of interfaces are available, including Ethernet IP for seamless integration into Allen Bradley-based control systems. A 4.3" on-board touchscreen provides localized control, if required.

HERMA also offers a "tamp" version of the HERMA 500, which incorporates a patented moving dispensing beak that allows the unit to achieve placement accuracy of better than +/- 1/64, even with very small labels. This iteration is widely used in assembly machines for medical devices and similar applications.





Linear Motion
Machine Components
Machine Control

igus®



PO Box 14349 • East Providence, RI 02914

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igus® has been manufacturing engineered plastics for more than 50 years, and develops each of the materials and all technology behind its products. Committed to using its innovative polymer materials to develop products that provide creative solutions and exceed customer expectations while delivering fast, accurate service, igus' polymer blends are used throughout its range of product lines of cable carriers, plastic bushings, spherical bearings, and linear bearings, guides, and slide tables. With constant advancement and technological breakthroughs, igus is continually expanding its range of materials, and performs rigorous testing to ensure every product meets and exceeds industry standards.

igus engineers develop more than 100 new polymer compounds each year for use in its self-lubricating linear guide systems and bearings. Each of these materials is tested extensively in the igus lab in Cologne, Germany. More than 10,000 tests are conducted on each material to analyze tribological properties, wear resistance, and more, and all results are placed into an extensive material database. Using this data, igus engineers can offer a precise prediction of the lifetime for bearings and linear systems in nearly any given application.

igus for packaging and processing manufacturers: drylin® linear, gantry and delta solutions as well as iglide® plastic bearings offer 100% self-lubricating, maintenance-free, and oil and grease-free operation at an overall cost savings when compared to metal linear and plain bearing systems. From single bearings, lead screws, or carriages, to custom motorized systems and with stainless, FDA and EU compliant options available, there is an igus® bearing solution available for nearly any application in the packaging and processing industries.

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Marketing & Trade Show Management

KONDRACKI GROUP

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Phone: 262.337.9797 **Email:** ray@kondrackigroup.com

www.KondrackiGroup.com

Need help with your marketing and trade shows and don't know where to begin?

We've been in your shoes and can help!

In the industry since 1994 as actual marketing and trade show managers for packaging OEMs, we now provide the same outsourced services to packaging OEMs.

We help packaging OEMs build brand awareness, create interest, and turn that interest into leads through marketing strategy and trade show planning.

MARKETING MANAGEMENT: We get to know you, your product, and your business goals first, then create a marketing strategy that meets your objectives and budget. We put that plan into action and do what's best for your business. Whether it's branding, paid advertising, customer testimonials, case studies, press mentions, videos, photos, or content development, we can handle it all.

TRADE SHOW MANAGEMENT: Sick of the daily reminder emails from show management? We eliminate your trade show headaches and make sense of all the rules, requirements and deadlines. We take the time to understand your product, your brand and your goals and create a trade show plan to meet your objectives. From layouts and ordering to build-out and tear-down, we have it covered.

EXHIBITS & DISPLAYS: We take a 360-degree approach to create quality, flexible options that adapt easily – helping you maximize your show investment. We connect your equipment with an informative message and eye-catching, head-turning display so you stand out from the pack.

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LEISTER TECHNOLOGIES LLC



1275 Hamilton Pkwy., Itasca, IL 60143 USA

Phone: 630/760-1000

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www.leister.us



Leister Technologies offers affordable and reliable industrial heating solutions like heaters, blowers and hot air blowers for manufacturers. The company's products can aid users in increasing cost-effectiveness and efficiency of their process systems. Whether for activating, heating, deflashing, melting, shrinking, sterilizing, drying, or warming, Leister has a solution for your industrial process. Try a MISTRAL or HOTWIND hot air blower with a nozzle to serve as an air knife to blow water off your products during production or to create a simple shrink tunnel when applying tamper evident seals prior to packaging. Pair one or multiple Leister air heaters with a high pressure blower to provide additional heat to a larger area within your production line. Is gate vestige, flash or problematic stringing an issue for you? No problem, place a Leister hot air blower in your process to quickly and easily deflash or remove any remnant plastic.

Hot Air for Industrial Processes - Wherever you need heat, Leister Technologies provides high quality hot-air blowers, air heaters and blowers, including a new line of air recirculation equipment. With a wide range of applications—include activating, heating, curing, melting, shrinking, welding, sterilizing, drying and warming to name a few, Leister offers the appropriate solution.

Quality Management - As an innovator, Leister commits to transparent and consistent quality management. Leister Technologies AG is certified to comply with ISO9001 quality standards. All processes are regularly audited and improved upon to comply with all quality-relevant criteria; therefore, our products enjoy a reputation of providing reliable service even after years of use and/or adverse conditions.

Testing and Certification - Our products are designed and developed to comply with nationally and internationally recognized standards. These include both product-specific—ISO, IEC, EN or UL—as well as application-specific standards. For our clients' protection, tests are carried out by accredited, independent, test institutes.

Application and Laboratory Testing - Leister's internal applications' laboratory allows for comprehensive testing of all manufactured tools and equipment.



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LENZE



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“The best machines and production facilities around the world use Lenze.”

Lenze is a leading automation company for the machine-building industry, and a specialist in Motion Centric Automation. As a systems supplier with solutions competence, Lenze works with you to create high-quality mechatronic products and packages, powerful systems consisting of hardware and software for machine automation, as well as digitalization services in areas such as big data management, cloud or mobile solutions, and software for the Internet of Things (IoT). We are a reliable partner with the knowledge and expertise to provide you with the best overall solutions reducing machine development times and enabling faster time-to-market.

If you are looking to implement cutting-edge machines and plant concepts, or modernize existing installations, you can trust Lenze. We help you choose the best solutions, providing energy efficient drive dimensioning, and are with you through the steps of project planning, implementation, and commissioning. We make it easy for precise implementation of your machine tasks.

As a global manufacturer of electrical and mechanical drives, motion control and automation technology, we provide automation solutions to the following industries: consumer goods packaging, automotive, material handling and logistics, robotics, and commercial pumps/fans. With a global network of engineers, sales representatives, and manufacturing facilities, Lenze is well-positioned to meet the motion control needs of customers worldwide. Lenze Americas, a subsidiary of German-based Lenze SE, is headquartered in Uxbridge, Massachusetts.

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Lubriplate Lubricants Company

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For more information contact:

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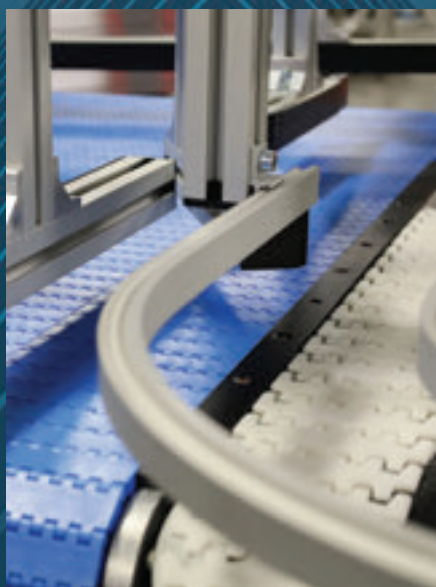
mk North America, Inc.

105 Highland Park Drive

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Since 1988, mk North America, Inc. has been engineering and manufacturing a wide variety of packaging, processing and factory automation solutions.

mk offers what no other conveyor company or aluminum extrusion company can offer – complete conveyor and aluminum extrusion lines.

mk's aluminum frame conveyors are built out of mk's t-slotted aluminum extrusion, which means they can be easily added to or have additional accessories mounted to them. This also means that mk conveyors are fully compatible with mk's aluminum extrusion and vice versa.

mk's line of VersaFlex conveyors are ideal for packaging and processing lines and provide seamless material flow across three-dimensional space. VersaFlex conveyors come in widths from 63 to 295 mm, and can be configured as straight running, with curves, vertically, wedge style or as alpenes.

Need a conveyor to handle heavy and wide loads or small and delicate parts? mk has you covered. With more than 30 different conveyor types – ranging from 50 to 3,000 mm wide – mk has the conveyor you need. Our conveyor line features not only VersaFlex flexible table top chain conveyors; but also belt conveyors, plastic modular belt conveyors, roller conveyors, timing belt conveyors and chain conveyors.

Our team of dedicated and highly qualified sales engineers will work with you from concept through delivery and beyond. At mk, we provide our customers with not only the best conveyor for each unique project but the best conveyor solution as well.

better products. better solutions. That's the mk guarantee.



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MORRISON CONTAINER HANDLING

335 W. 194th Street, Glenwood, IL 60425 USA

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Morrison Container Handling Solutions Designs Innovative Packaging Solutions – That Are All About Your Unique Container Handling Needs!

Innovation in pursuit of greater line efficiencies has kept Morrison Container Handling Solutions the leading manufacturer of custom container handling equipment for over 50 years. Utilizing a variety of our product lines to create a custom system for our customers unique container handling needs, we continue to manufacture timing screws, drive units, change parts, can openers, denesters, auto adjust rails and other integrated systems to address a variety of line related efficiency and productivity issues.

With PMMI Certified Trainers on staff, we fully back our customers with Support Built In®. From design to manufacturing and installation, our team assists yours with support every step of the way, even years down the line. We're your productivity partner.

Ask yourself: where does this container need to go? That's where Morrison can help and step in, innovating the best path so you can focus on reducing changeover time and increasing overall line efficiency.

FEEDING | TURNING | GROUPING | TWISTING | INVERTING | COMBINING | DIVIDING

Morrison has one clear objective: supplying you with the best solution to move your container where it needs to go, perfectly, every single time. No two containers are the same, so your handling systems shouldn't be either.

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We look forward to engineering your next container handling solution!

MORRISON
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Novanta is trusted technology partner to medical and advanced industrial OEMs, with deep proprietary expertise in photonics, vision and precision motion technologies. We engineer mission-critical core components and sub-systems that deliver extreme precision and performance, enabling our customers to improve productivity, achieve breakthrough performance and enhance people's lives. Through our globally recognized Novanta brands in advanced photonics, ARGES, Cambridge Technology, Laser Quantum and Synrad, we deliver tailored laser and beam delivery solutions to OEMs in a broad range of industrial and medical markets.

Novanta develops photonics solutions, specializing in cutting-edge components and sub-systems for laser-based diagnostic, analytical, micromachining and fine material processing applications. Powerful lasers, coupled with advanced beam steering and intelligent sub-systems incorporating software and controls, deliver extreme precision and performance, tailored to our customers' demanding applications. Unlike other laser or beam delivery providers who are limited to one technology and cannot offer integrated solutions, we deliver optional solutions through collaborative approaches, developing pivotal laser-based components and seamless sub-systems.

Through our photonics technologies, we deliver finely tuned laser sources and beam delivery systems that enable customers to improve their process, increase productivity and achieve breakthrough performance. We bring unprecedented value to our customers through engineer-to-engineer collaboration, a wide range of application expertise, and state-of-the-art application labs.

To learn more about Novanta visit www.NovantaPhotonics.com



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PATLITE (U.S.A.) Corporation



20130 S. Western Ave., Torrance, CA 90502 USA

Phone: 310-328-3222**Email:** sales@patlite.com**www.patlite.com**

Equipment Monitoring Made Easy

Since 1947, PATLITE has been committed to providing safety, security, and comfort to facilities throughout the world with innovative signaling devices. Some of the product offerings include programmable signal towers and audible alarms, IO-Link and PoE-enabled devices, and wireless data acquisition systems which indicate statuses remotely and in real-time. Putting a focus on quality, PATLITE products are designed to be rugged and versatile, while considering IP-ratings and conformity to industry standards, as well as the ease-of-integration with existing infrastructure.

Effortless Setup with IO-Link Devices

Standardizing factory devices into IO-Link allows for increased visibility of the overall production status, helping to enhance predictive maintenance and overall equipment effectiveness. It also eliminates the need for complex wiring or expensive interface converters, because the signaling devices can be installed and configured directly through an IO-Link master. PATLITE offers a range of IO-Link compatible devices such as the NE-IL and LR6-IL series.



The NE-IL is a multi-color beacon featuring a capacitive touch sensor. The 56mm-diameter compact beacon can display 7 colors in either a continuous or flashing pattern, as well as an 88dB buzzer tone. Its rugged housing is built to withstand harsh and demanding environments, and can even be operated with wet or gloved hands. The easy-to-control and versatile functions make these indicators ideal for pick-to-light and call button applications.

The LR6-IL is the IO-Link compatible version of PATLITE's signature LR series signal tower. It has a completely modular design, making it easy to configure with a full range of mounting options and accessories, including clear globe LEDs, a buzzer unit, and mounting brackets and poles. Additionally, the transmitter unit of the Wireless Data Acquisition System can be attached to the signal tower, enabling you to monitor your machines remotely and in real-time while also collecting the data for further analysis.

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Paxton Products, an ITW Company

10125 Carver Road. Cincinnati, OH 45242 USA

Phone: 800/441-7475

Email: sales@paxtonproducts.com

www.paxtonproducts.com



Paxton Products manufactures high efficiency centrifugal blowers and custom-engineered air delivery devices, used for drying, blow off, air rinsing and debris removal to improve product quality through better cleaning, labeling, marking & coding, and coating.

Centrifugal Blowers by Paxton are highly efficient, providing 150 - 1500 cfm of air at pressures of 30 - 100 inches of water. The new PX-series blowers achieve efficiencies up to 80%, generating more air power per horsepower than any other blower on the market, and reducing the horsepower required to do the job, with typically 5 - 10 hp reduction. Available in sizes from 3 - 20 hp, all Paxton blowers carry a full three-year warranty.

Air Delivery Devices are custom engineered to maximize drying, blow off and cleaning of products or surfaces. From a Cap Dryer and Can Dryer to an air knife design to air manifolds to our Pouch Dryer that effectively removes water from the top, bottom, and gusset, we'll configure what's needed for your application.

Paxton's Ionized Air Rinsing System efficiently removes particulates, dust and contaminants using powerful ionization coupled with Paxton's blowers and air delivery devices. Ionized air provides static control and elimination, so that dirt and dust do not adhere to surfaces. Paxton's Ionized Air Rinsing System has been configured for a variety of applications: bottle and can rinsing for high and low speed lines; glass or PET bottles and jars, including the hard to clean narrow mouth PET and 2-liter bottles; removal of dust, debris, cuttings or shavings prior to coating, rolling or packaging. Using the Ionized Air Rinsing System's innovation, Paxton improves cleaning quality of dairy cups and snack trays by eliminating dust and debris. Unlike other air rinsing systems, the Ionized Air Rinser Vac cleans the containers effectively without inversion of the containers.

The Power Dry Drying System is a pre-configured drying system, originally designed for date coding applications, but now setting the standard for a complete Air System that can be used for drying and blow off for a wide variety of cans, bottles and jars.



PAXTON
PRODUCTS

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Sensors & vision
Inspection & detection
Robotics

Pepperl+Fuchs, Inc.



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Sensor Solutions for the Packaging Industry

Pepperl+Fuchs is a leading developer and manufacturer of electronic sensors and components for the global automation market. We continuously set new standards in quality and innovative technology. With more than 70 years of experience in industrial automation, Pepperl+Fuchs has successfully solved diverse applications and continuously develops new technologies, all designed to make your processes more efficient.

The packaging industry constantly demands new and innovative solutions. Precision sensor systems from Pepperl+Fuchs, like those for presence monitoring, position and distance measurement, code reading, and identification, enable smooth processes in a wide range of packaging industry applications.

From ensuring fast feeding and accurate filling and dispensing to guaranteeing reliable packaging and cartoning, our solutions offer benefits for every stage of your automated packaging process. Pepperl+Fuchs provides the components you need to make your packaging process more efficient, reliable, sustainable, and above all, safe.

With locations on six continents, a global presence enables Pepperl+Fuchs to offer the best of both worlds: high engineering and service standards combined with flexible manufacturing capabilities. Create safe and efficient processes and prepare your plant for Industry 4.0 with intelligent sensor technology from Pepperl+Fuchs.



pf PEPPERL+FUCHS



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POBCO, Inc.

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POBCO Inc. is celebrating 93 years as a successful manufacturing business in Worcester, MA. POBCO remains a 4th generation, family-owned business with a growing employee family. Current ownership and employees emulate the work ethic and dedication of our predecessors. The excellence of our current and past personnel is the backbone of POBCO's globally respected brand.

POBCO recognizes that we are competing globally with quality suppliers of conveyor components. We appreciate every opportunity to quote and every order we earn. Thank you for considering POBCO for your roller chain guides, bearings, guide rails, rollers, sprockets, wear profiles, belt guides and custom machined parts. We look forward to supporting your engineers, manufacturing team, and purchasing agents in 2022.





HMI and Operator Interfaces

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Pro-Face America

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Pro-face is a leading global HMI supplier and offers the most reliable touchscreen operator interfaces and industrial computers in the automation solutions market.

Our core product offer includes Pro-face brand HMI software and hardware, and both panel and box style Industrial PCs. Pro-face offers dedicated and PC-based, open architecture, visualization and control systems. Our high powered, but easy to use software allows for a clear and functional operator interface.

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We continually upgrade our offerings to help keep your HMI applications on the cutting edge.

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Reid Supply, Parts & Supplies for the Manufacturing Industry

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www.reidsupply.com

Established in 1948, Reid Supply, also known as Reid Tool Supply back in the day, is a premier provider of industrial parts and supplies to the North American manufacturing market. We maintain strong partnerships with over 300 leading brands, such as Destaco, Kipp, Vlier, Northwestern Tool, JW Winco, CD Hardware, Colson, DimcoGray, Elesa, ER Wagner, Garr Tool, Little Giant, Mitutoyo, Starrett, and many more. As a preferred distributor, we can source the entire catalog of products from our vast supplier network – not just the products we stock daily in our warehouse.

We carry over 45,000 industrial parts that include knobs, handles, handwheels, latches, catches, hinges, workholding clamps, tooling and positioning, casters, leveling feet and more for any manufacturing application.

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We specialize in unmatched customer service and knowledge, that's what sets us apart. Our goal is to create solutions for your application by end of the business day. Our team takes pride in servicing our customers and want your experience to be as hassle-free as possible.

Reid Supply not only serves the Packaging and Food Processing industry, we can service virtually any industry such as Medical, Automotive, Machine Builders and MORE.

We offer price quotes in 4-hours or less, same-day shipping on stock items, eCommerce digital catalogs, and free downloadable CAD drawings on our website.

You may email our team at sales@reidsupply.com 24/7 or call us at (800) 253-0421. Response time is essential for us to be the best customer service team possible.

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Parts & Supplies for the Manufacturing Industry

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SLIDEWAYS, INC.



705 Plantation Street, Worcester, MA 01605 USA

Phone: 508/854-0799

Email: info@slideways.com

www.slideways.com



Slideways was founded in 1994 as a manufacturer of superior quality machined plastic components for the conveying, packaging and processing industries. We have built a reputation for reliable and responsive service with the flexible delivery of the correct part when it is required.

Our core products are used in food and beverage, pharmaceutical & bakery applications providing solutions that increase productivity and reduce cost. We specialize in conveyor equipment upgrades with quick turn-around providing increased productivity.

We provide solutions to your unique needs through:

Engineering and Design support, precision Machining with state of the art CNC equipment, offering a Full Line of Standard Components, Wear Components and Guides, Structural and Support Conveyor Components, Bearings & Leveling Feet, Plastic Extrusions, Guide Rail and Adjusting Components

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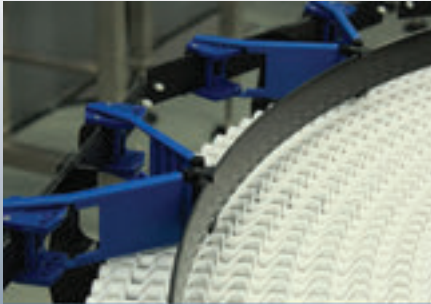
Field Measurement and Templates, Review of Mating Parts, Delivery Assurance

Slideways works with a wide array of machinable plastics offering the most advanced friction reducing, wear reducing, corrosion resistance and broad temperature range materials to suit most environments. We offer long and short run production with quick turn around.

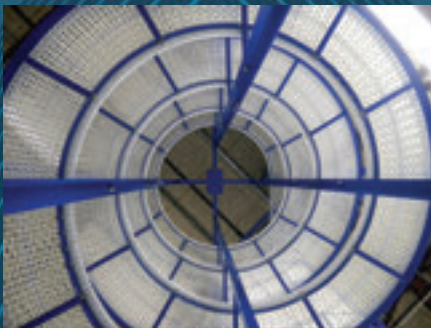


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Machine components
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Designing and manufacturing drum motors for belt conveyor applications in USA and Canada since 1985, utilizing cutting-edge production technology and automation, VDG ensures product quality, fast delivery, and superior customer support.

The VDG Drum Motor houses all drive components including motor and gear reducer inside the drum, for a safer, more efficient, and space optimized belt conveyor drive solution. Designed for 80,000 hours of service life before maintenance, the VDG Drum Motor minimizes downtime, reduces maintenance costs, and increases production.

The patented IronGrip™ lagging option on the VDG Drum Motor extends the life of the lagging and the belt. The IronGrip™ system is composed of steel bars welded symmetrically on the drum with hot-bond vulcanized lagging inserts between the bars, eliminating lagging delamination, reducing wear of the belt and lagging, and extending the lifespan of the conveyor system. With up to 40% more traction than standard rubber lagging, the IronGrip™ allows for less pre-tensioning while providing higher belt-pull.

The USDA approved SSV Series Drum Motor is an efficient, safe, and hygienic drive solution for food processing belt conveyors. It features IP69K rated sealing system and withstands up to 3,000 psi washdown pressure. With the belt profile machined directly onto the 316-stainless steel drum, it drives modular, wire mesh, and monolithic thermoplastic conveyor belts without the use of sprockets, eliminating gaps and crevices where food by-products build up, reducing water and time used for washdown by 50%, and increasing production.

The new permanent magnet IntelliDrive™ drum motor delivers over 40% increased electrical efficiency and performance, much wider belt speed selection without loss of torque or belt-pull, and a significant increase in electric motor lifespan compared to a traditional induction motor. With all drive components housed internally, the IntelliDrive™ achieves 96% mechanical efficiency, further decreasing energy consumption and cost.



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Sensors & Vision
Machine Components
Weighing



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WIPOTEC North America – weighing technology at its best: WIPOTEC North America is a subsidiary of the German weighing technology specialist WIPOTEC GmbH based in Kaiserslautern, Germany. WIPOTEC is a technology leader in the production of weighing and inspection systems. The company has a worldwide staff of over 1,000 employees, and subsidiaries in Europe, Asia and USA.

The core business of WIPOTEC is the development, production and integration of ultra-fast precision Weigh Cells and high-tech weighing systems for high-speed applications.

WIPOTEC Weigh Cells are used in a wide range of industrial production processes. Application examples include check weighing, product filling, dosing and price labeling systems, as well as integration into packaging machines. Furthermore, highly specific solutions, tailored to the needs of the customers, are implemented for the pharmaceutical industry to weigh capsules, tablets, syringes and vials, and in dry or wet food processing and packaging.

WIPOTEC Weigh Cells work according to the principle of Electro Magnetic Force Restoration (EMFR). They are based on the monoblock technology which makes them extremely precise and fast and enables them to render accurate weighing results even at highest speeds and under the most adverse conditions. Vibrations can be actively compensated within the weigh cell. The product range includes models which can weigh a mere microgram and others which can deal with loads up to 120 kg.

The heart of all WIPOTEC Weigh Cells is the monoblock, and it is manufactured in our in-house machining center using state-of-the-art CNC milling machines. The in-house development and project engineering departments enable the company to support unique customer requirements. For example, numerous combinations of infeed, outfeed and weighing conveyors are available for use with our weigh cells to provide complete weighing kits designed to easily integrate into OEM machines.

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At Yaskawa, we help you explore what's possible, and open new doors to opportunity. Rather than accepting the status quo, we invite you to wonder, "What if ...?" And then we make it possible. That dedication to engineering and innovation is what makes us different.

Experience is often the difference between solving a problem the right way and settling for "good enough." Our global expertise is unmatched and unquestioned, with 100+ Years of manufacturing excellence, 30 countries with sales, service, and manufacturing locations, and \$4.0 billion in global sales per year.

We provide both standard products and tailor-made solutions, all backed by proven quality and reliability. We continuously work to save you money, time, and energy, because we believe your machine can always run faster, smoother and more productively. It's about making the correct diagnoses, creating the right automation machinery, and implementing it in the best way possible. From case packing to labeling, filling to palletizing, Yaskawa can increase pack rates, improve throughput, and simplify motion and robotic control to maximize the performance of your machine.

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Over 500,000 Yaskawa Robots are at work worldwide, with 150+ models to choose from and the strength of decades of packaging application expertise. Yaskawa's Motoman robots are successfully picking, packing and palletizing a wide variety of food, beverage and consumer products for global CPG leaders.

Yaskawa low and medium voltage AC Variable Frequency Drives cover every automation application need in the industrial plant, with power ranges from fractional HP to 16,000 HP and a legendary reputation for reliability and advanced technology.



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The Zero-Max logo consists of a series of red slanted parallel lines to the left of the text "ZERO-MAX" in a bold, red, sans-serif font.

Material Handling Robots

FANUC America, fanucamerica.com

The M-1000iA robot can lift and manipulate heavy loads with versatility. Its serial link construction gives the robot a wider range of motion in every direction, with the ability to extend its arm upright or rotate backwards, which is not possible for typical heavy-payload robots with a parallel link mechanism. The robot has a 1000 kg payload, a 3,253mm horizontal reach, and a 4,297mm vertical reach. Powered by the FANUC R-30iB Plus controller, the M-1000iA offers the same intelligence and reliability that FANUC robots are known for, including integrated iRVision, force sensing, and Zero Down Time.



Safety I/O

Rockwell Automation, rockwellautomation.com

The Allen-Bradley FLEX 5000 analog safety I/O can help operators meet fail-safe requirements and minimize related downtime risks in a wide range of process applications where speed, frequency measurement, temperature, pressure, or flow sensor monitoring are required. The analog safety I/O modules offer integrated safety with systematic capability up to SC 3. The modules are TÜV certified up to SIL 3, PLe, Cat. 4. They also can be mounted in the same I/O bank with standard FLEX 5000 I/O modules to reduce system costs and complexity. FLEX 5000 I/O can also reduce downtime by providing easier access to additional process diagnostics via integrated HART in the Studio 5000 Logix Designer application. They can reduce overall footprint by allowing the direct termination of field signals. And can save engineering time via tight integration with instruction sets in PlantPAx 5.0.



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Motion Components

Emerson Bearing, EmersonBearing.com

Emerson Bearing has expanded its bearing line of motion transmission components known as track rollers. Track rollers, also referred to as idler rollers, are motion transmission components designed to work with all varieties of tracks and are often used in conveyor systems, cam drives, and a wide range of material handling systems. Emerson Bearing offers four configurations of track rollers: Plain O.D., Flanged O.D., V-Groove, and U-Groove. Custom designs and special features for track rollers include: Crowned profiles, double-flange rollers, non-metallic construction materials (e.g., urethane, nylon, etc.), specialty plating (e.g., zinc, chrome, etc.), specialty seals and lubricants, operating temperatures ranging from -30–225 °F; and special seals and lubrication provisions, which allow for operations in extreme temperature environments from -40–325 °F.



Electric Cylinders

Beckhoff Automation, beckhoff.com

Beckhoff AA3000 series electric cylinders are suited as direct drives for linear motion applications with high process forces and speeds. The series offers optimal force, dynamics, and a compact footprint combined with the advantages of servo technology, such as closed-loop positioning, safe positioning at a standstill, and high-energy efficiency. The integrated mechanism—composed of precise roller bearings, ball screw and guide—provides backlash-free, purely translatory motion. Furthermore, this results in very compact dimensions. The shaft end of the spindle features an external thread to mount conventional adapters, such as ball heads or clamping hooks typically used with pneumatic/hydraulic devices. The first product of the new series is the AA3033 electric cylinder, which is offered in two variants: 12,500 N peak force, 3,700 N continuous force, and 0.5 m/s maximum speed; and 6,250 N peak force, 1,850 N continuous force, and 1.0 m/s maximum speed. The flange size of the electric cylinder is based on ISO 15552 and has bolting points on both sides in case, for example, an application requires a swivel bolt connection. Beyond high resolution, the safe 24-bit multi-turn encoder offers the advantages of One Cable Technology (OCT) and an electronic identification plate for fast and simple commissioning.



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Sensors

Carlo Gavazzi, gavazzionline.com

Designed for challenging applications on mobile equipment, Carlo Gavazzi sensors assure the reliable detection of actuating parts, such as hydraulic pistons and gear speed, on mobile cranes, forklifts, and more. The ICS Series E1-approved inductive proximity sensors include an AISI 304 stainless-steel housing, -40 °F to 185 °F operating temperature range, and IP68 and IP69K ingress protection rating. They are shock resistant up to 100 g, continuous 40-g shock and vibration resistant to 20 g, and have an extended power supply range from 8 to 60 VDC.

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FINAL THOUGHTS

JIM PITTAS PRESIDENT & CEO, PMMI

PMMI 365 Days a Year



As we enter a new year and our industry continues to respond and adapt to the evolving needs of consumers and retailers, we at PMMI are always looking for ways to ensure we are delivering what our membership needs most. With that in mind, we recently took the pulse of our more than 960 members to find what you most value from us. Overwhelmingly the answer was the same: Increasing ways to connect with customers. You are looking to identify customers and what your customers are thinking to stay ahead of them with solutions that meet their business needs.

As we see with our largest PACK EXPO East show floor in history, and we saw in September in Las Vegas, the most transparent way that PMMI connects our membership with customers comes via our PACK EXPO Portfolio of Trade Shows. The industry reunited and showed up in force at PACK EXPO Las Vegas and Healthcare Packaging EXPO—making it the most extensive packaging and processing trade show in the U.S. in 2021. Almost half of the 23,000 attendees who attended the event were brand new to PACK EXPO Las Vegas, presenting new connections and potential customers to exhibitors. These connections are continuing at PACK EXPO East 2022, where the regional show has set a new bar for packaging and processing trade shows in the Northeast. In June, exhibitors will have the opportunity to reconnect with international customers at the largest packaging and processing event in Latin America, EXPO PACK México 2022 (June 14-17; Expo Santa Fe). Finally, we make our long-awaited return to Chicago for the most comprehensive packaging and processing trade show in the Western Hemisphere, PACK EXPO International (Oct. 23-26, McCormick Place.)

PMMI's trade shows are an invaluable way to connect with customers. Still, we have many other member programs that connect you to customers 365 days a year, including ProSource, our new members-only online directory, PMMI Media Group's lead-generating tools, and PMMI networks that convene CPGs and OEMs.

ProSource is an ambitious addition: a comprehensive online directory of packaging and processing technology suppliers connecting buyers with the machinery, material, and service suppliers they need. Designed from the

buyer's perspective, ProSource makes it easy for CPGs to find suppliers through its highly visual format, advanced filtering capabilities, and targeted search experience. It is a one-stop-shop where buyers can search using the plain language they understand to identify solutions.

PMMI Media Group keeps members connected to customers year-round through ads, editorial content, featured listings, and lead generating content, including whitepapers, webinars, videos, and 3D tours. Along with discounts on paid tools, all members are entitled to free, exclusive first access to the PMMI Media Group's tool chest of B2B marketing best practices and thought leadership articles. And groups like the OpX Leadership Network, Packaging & Processing Women's Leadership Network, and Emerging Leaders Network regularly bring together buyers and sellers and offer unique opportunities for PMMI members to meet and discuss critical industry issues with end users.

The best way to stay ahead of your customers' needs is to take advantage of PMMI's market research that provides actionable intelligence, both domestic and global, on things like industry trends, benchmarking, economic reports, and best practices. Utilize PMMI Media Group's custom research reports to explore the issues affecting your customers' business and identify opportunities to increase brand awareness and develop a unique market strategy. And finally, media brands like *Packaging World*, *ProFood World*, and the publication you are holding in your hand, *OEM magazine*, keeps you on top of emerging technologies and connected to the latest solutions, trends, and innovations in packaging and processing year-round.

I urge you to use this column as a launching point to investigate and take advantage of the tools PMMI provides every day for our members to find, know, and stay ahead of customers. We are launching a campaign this year to ensure we keep members abreast of the array of ways we do this. Our goal in 2022 is to make sure you know that, now more than ever, **PMMI is your answer—connecting you to customers 365 days of the year.**



Jim Pittas is the President & CEO of PMMI. He may be reached at jpittas@pmmi.org or at [linkedin.com/in/jimpittas](https://www.linkedin.com/in/jimpittas).

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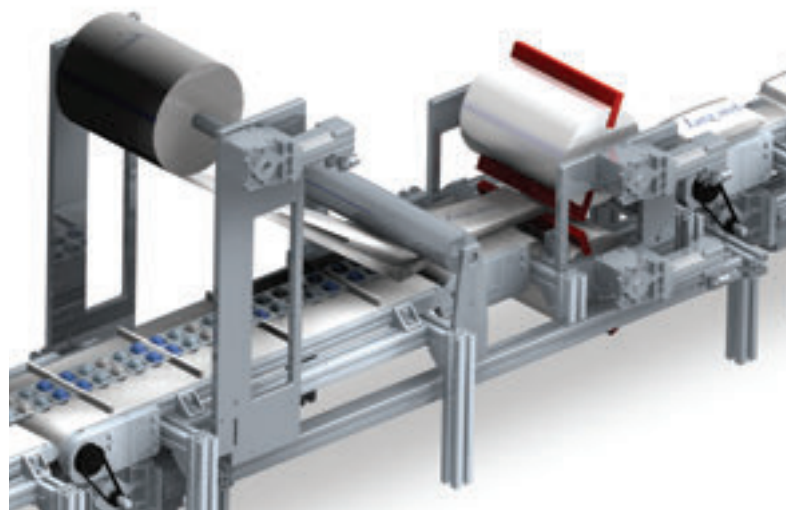
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