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January 2021

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EDITOR'S NOTE

Catching the Curve Ball

None of us could have predicted the impact of COVID-19 was going to have in 2020, and many questions are still lingering as we enter 2021. Will COVID-19 change the mindset of consumers? Will sustainability continue to be on the forefront of innovation in the packaging industry? What is the impact going to be from the increased use of single-use containers? And many more, all of which are putting our industry to the test to provide solutions. Some recent solutions include:

- Huggies announced its launch of biodegradable baby wipes in step towards its plastic-free goal. Kimberly-Clark estimates that it has removed 359 tonnes of plastic from its broader portfolio of baby wipes and wipe packaging in 2020. Aside from creating plastic-free wipes, it has removed the internal bags from large pack boxes.
- Mars Wrigley UK has unveiled redesigned packaging for some of its confectionery brands which it claims will mitigate the use of 51 tonnes of plastic per year. The lighter weight designs will be used to house products including sharing bags of M&Ms, Galaxy Counters, Skittles and Malteasers. On average, they contain 10 percent less plastic than the current range of packaging. They are anticipated to be launched in supermarkets April 2021.
- Amcor recently announced it launched its first recyclable shrink bag for meat, poultry, and cheese. Eco-Tite® R was launched in Europe, the first designed to be recycled, PVDC-free shrink bag for fresh and processed meat, poultry and some cheeses. Amcor Eco-Tite® R is designed to maximize shelf-life, maintain food safety, reduce food waste and can be recycled in existing polyethylene (PE) plastic recycling streams.

COVID-19 has indeed thrown us a wicked curve ball, but 2021 will continue to be a step forward in recyclability and sustainability. It will also be a step forward in combating the challenges the virus has brought upon the workforce. With the vaccine now being administered, we explore this topic further. Amongst the articles in this issue, we put COVID-19 in the spotlight to explore if employers should require the, now available, vaccination.

'Till next time,

Joan Mantini

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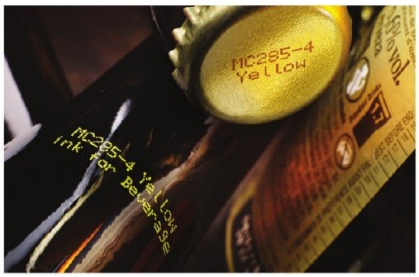

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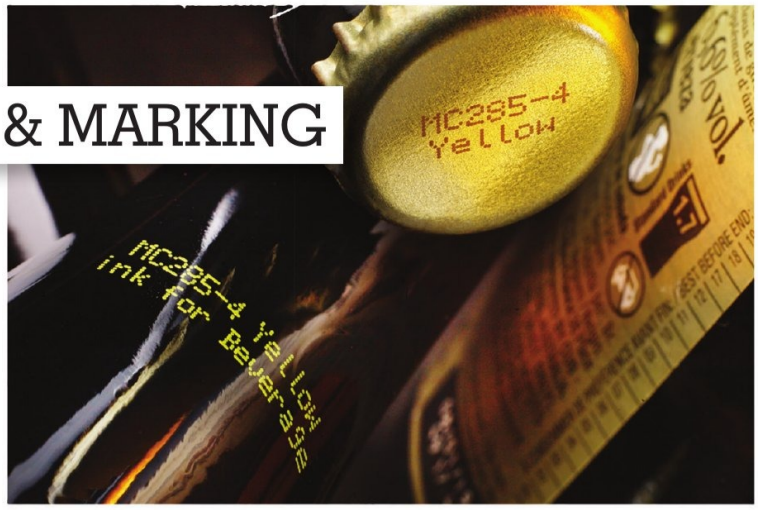


While CIJ coding is popular due its versatility, some manufacturers are shifting to laser to obtain crisper prints and deter counterfeiting, conditions permitting.

CHOOSING BETWEEN CO2 AND LASER CODING

By George Allen, Strategic Account Manager at Markem-Imaje

Codes on containers are often regarded as necessary evils but, in truth, they are significant components that provide product tracking and safety information.

Beverage coding is particularly challenging since the industrial environment has a variety of containers to code across many stock keeping units (SKUs), often with high speed lines, along with an ever tightening regulatory and compliance framework which demands traceability and fiscal marking.

At the consumer unit level, such as cans and bottles, continuous inkjet (CIJ) and laser are the main methods used for coding. Multiple factors are considered when determining what type of coding and marking equipment is best suited for a product. There is a balance that must be juggled to ensure that the chosen equipment addresses the following elements:

- Packaging material (paperboard, PET, HDPE, aluminum cans, glass, etc.);
- Production speeds;
- Product handling;
- Line automation (or lack thereof); and
- Line location for coding and marking equipment.

Further to the above is the battle over capital funding. How much can be spent? What is the total cost of the initial investment versus ongoing running costs?

CIJ is very popular as it can print easily and at extremely high speeds virtually anywhere onto a surface, though care must be taken to ensure the ink chosen will adhere to the packaging surface for the desired duration of the product's life in the market. However, where conditions permit, there is a shift away from CIJ towards laser.

While CIJ coding is popular due its versatility, some manufacturers are shifting to laser to obtain crisper prints and deter counterfeiting, conditions permitting.

Although lasers are more expensive to buy compared with CIJ coders, they reduce operating expenses. Apart from occasional filter

replacement, there is no maintenance and there are no ongoing consumable purchases. The installation time varies depending on the application and production line, but it is usually completed in days.

Also, laser codes tend to be crisper and their permanence aids in anti-diversion and anti-counterfeiting efforts. Indeed, this has led to laser's considerably large coding market share in high growth markets, such as China, where there are often concerns about whether a product is genuine.

In this article we explore which laser best suits a given production requirement.

CO2 lasers

CO2 lasers are primarily used on PET bottles and paperboard materials. The wavelength is always tailored to meet the application. The wavelength for a laser coding onto a PET bottle at 1,000 bottles per minute is different from that used on a 12-pack of soda in a paperboard carton running at 200 bottles per minute.

There are a variety of other factors that must be tested and reviewed before deciding on a CO2 laser application. How deep is the penetration of the laser onto a PET container? Where on a PET container should the laser code be placed (shoulder, top, etc.)? Does the material allow any contrast after the laser code is complete?

Lasers are available in different wattages. The degree of power is determined by the size of the code, code content, density of the material, and other factors. A pre-test will help determine the best application for the job.

CO2 lasers do not require complex guarding packages. Manufacturers place a polycarbonate shield around the area where the material is lased to provide protection. The beam emitted from a CO2 laser is generally absorbed by polycarbonate after contact, which prohibits any type of serious injury.

CO2 lasers are usually small enough to be positioned in the following areas:

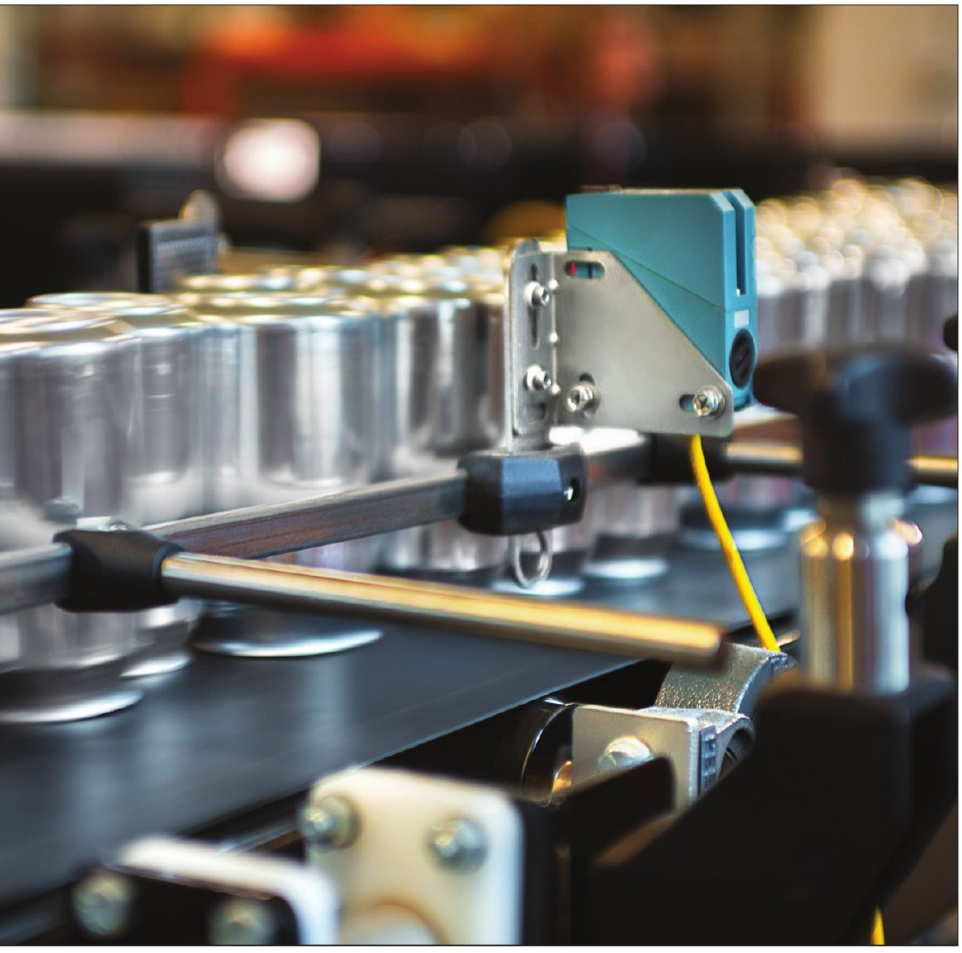
- On high-speed production lines;
- Inside blow molders;
- Inside labelers; and
- Inside high-speed cartoners.

Some of the above applications require lasers to be installed in tight confines, which often means installing a beam delivery system. This beam delivery system can be designed and customized with different tube lengths to allow the beam to be delivered in hard-to-reach areas. There are generally no speed issues as today's galvos (mirrors) move at high speeds to match the laser delivery.

Lasers are popular for printing on product labels where a premium-looking finish is required.

CO2 lasers are primarily used on PET bottles and paperboard materials.

Markem-Imaje's SmartLase® 350 as installed on a Sanpellegrino production line.



Very few companies offer fiber lasers suitable for high-speed beverage can coding.

Fiber lasers on beverage cans

Fiber laser coders are a relatively new product in the beverage industry. The ability to concentrate a highly intense beam of energy and focus it onto a beverage can is a highly technical and coveted science. While multiple companies offer fiber laser technology, beverage companies require a solution that includes the following:

- Ability to code cans on extremely fast lines;
- Fume extraction;
- Cooling;
- Customized guarding; and
- High-speed cameras, lighting, and sensors to validate code integrity.

Very few companies offer fiber lasers suitable for the ultra-high production speeds required by beverage can coding. These speeds can be up to 2,000 cans per minute (CPM). Beverage codes on cans are generally two lines with approximately 16 to 24 characters per line. They are also typically 2-3 mm in height. A fiber laser has a small window to place its code at these high speeds. The amount of time needed is code specific but is generally in the 25-millisecond range.

Product handling is paramount to successfully coding cans with a fiber laser at these speeds. Cans that are bouncing, banging into each other, or not properly indexed can be coded, but those codes may have defects making them unreadable. A smooth, consistent flow of cans will help ensure a repeatable and high-quality code.

The capital costs for fiber are greater than CO2 lasers, varying depending on wattage, guarding, and customization required. All fiber lasers require a guarding package that protects the operators so that no limb can be inserted, and to eliminate any

possible beam escape. The guarding must be interlocked for safety with weep holes to allow water or line lube to escape, but also designed to let an operator clean the laser head or adjust the height to accommodate a can height change.

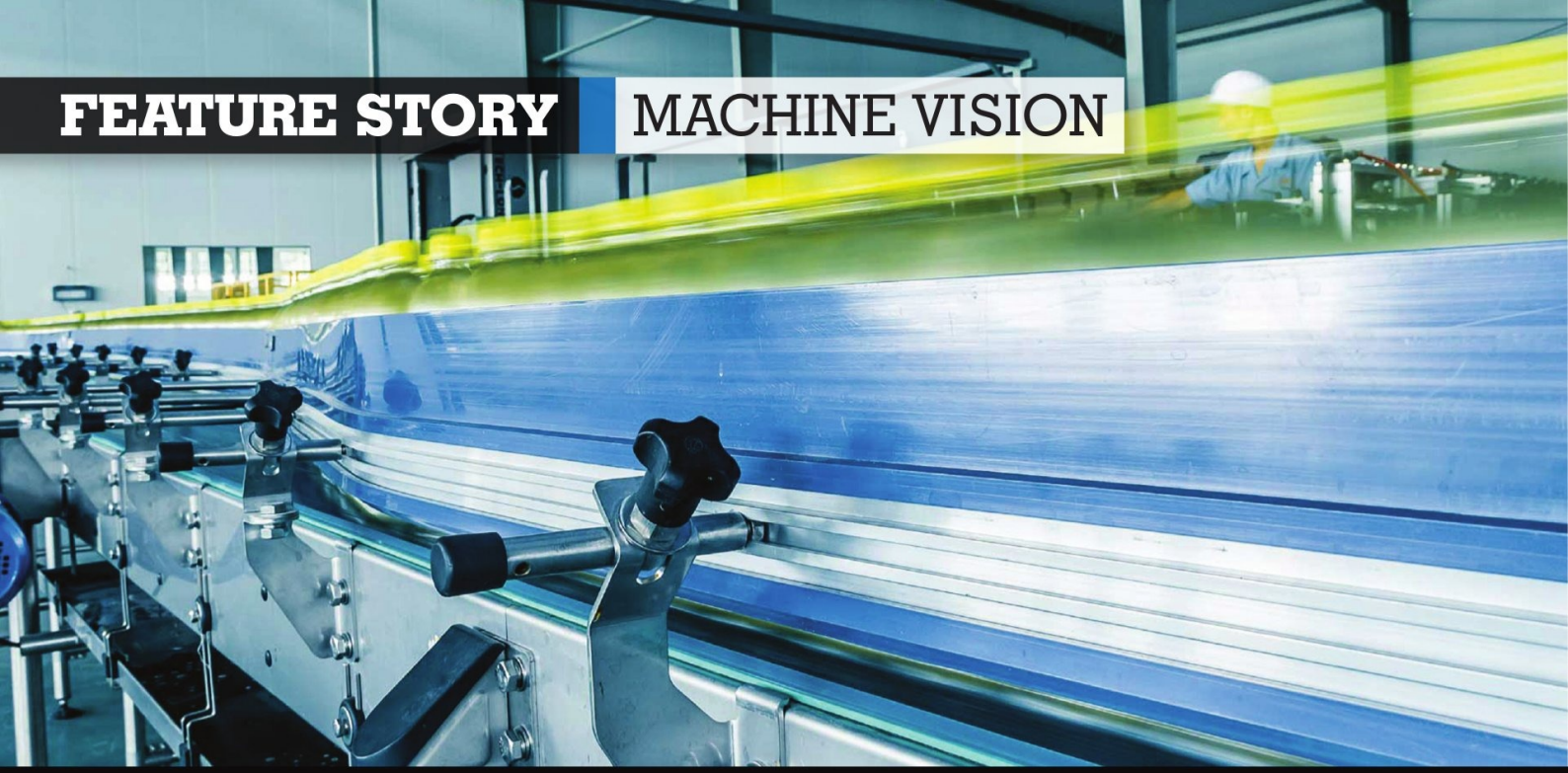
Fiber lasers are available in different watts, like CO2 lasers. The wattage is determined by several factors: line speed, material, code size, etc. Testing is recommended to specify the correct laser.

Laser technology is a clean option in the beverage industry, with an excellent return on investment. However, understanding which laser and the components required is vital when trying to match this industry's high speeds and complex lines to the correct laser. ■

About the Author

George Allen is the strategic account manager at Markem-Imaje, responsible for multiple beverage customers. He has been in the packaging industry for over 30 years and specializes in creating solutions for manufacturers with high-speed production lines that need laser technology, print and apply applications, CIJ printing, or networking solutions.

Markem-Imaje's SmartLase® F500 can code well over 100,000 cans per hour.



Manufacturers have improved performance with image-based color measuring approaches that enable color to be measured on the whole surface of the object.

UNDERSTANDING THE FUNDAMENTALS OF LINE SCAN CAMERAS

By Dr. Klaus Riemer, Product Manager, Chromasens GmbH

Compared to manual inspection, machine vision systems deploying area-scan cameras offer improved accuracy and far higher consistency, plus they work non-stop without suffering fatigue or requiring a paycheck. For all their advantages, however, there are limitations to area-scan cameras in more challenging machine vision tasks. For example, when an object under inspection is large, continuously moving, or the imaging task requires extremely high resolution without blurring, a line scan camera is a far better choice.

There are key differences between area-scan and line-scan cameras. Most important is how an image is acquired. Unlike an area-scan camera that captures the entire object in one 4:3 frame, a line-scan camera uses a single row of light-sensitive pixels that image across the object, line-by-line, accompanied by high intensity lighting. A completed image is built by stitching together the lines, much like a fax machine.

How line-scan cameras work

Here is how it works: Each pixel accumulates photoelectric charges relative to the light from the object imaged onto that pixel. Next, a readout register amplifies, adjusts and digitizes the charges, all while the next row of pixels is being exposed. The time between exposure and readout is the "line rate" calculated in kilohertz (kHz). To avoid under- or over-sampling an object, a programmable encoder connected to, say, a conveyor or web, measures speed and precisely synchronizes the camera in pulses. Each line of the image is then stitched together in a predetermined number to form a frame for analyzing with software. Any defects found are recorded on roll maps.

Because of this design, line-scan cameras excel at producing a flat image of cylindrical objects, at imaging very large objects with high resolution, or at producing images of objects in continuous movement past a fixed point, such as parts on an assembly line or web applications. Line-scan inspection applications are wide and varied including paper, rolls of metal, fiber, railway inspection, solar cells, textiles, pharmaceuticals, semiconductors and postal sorting. Plus, the cameras can fit into tight spaces, for example when it must see through rollers on a conveyor to acquire images of the bottom of a part.

Like most advanced technology, line-scan cameras are constantly improving in performance while becoming more and more affordable. Manufacturers are producing cameras with increasingly smaller pixels and higher line rates to detect increasingly smaller surface error sizes of PCBs and liquid-crystal displays, among others.

Additional trends to watch are explored in this article, specifically the use of line- scan cameras in color inspection and in the emerging 3D class of applications.

Color inspection

For many years line-scan cameras have been deployed in color inspection, a trend mainly driven by the needs of the printing industry. The three methods in line scan color imaging cameras are bilinear, trilinear and three-chip designs. The trilinear approach -- which uses three linear arrays (RGB channels) fabricated on a silicon die -- has gained strong support by imaging professionals because it captures details with outstanding color fidelity. Trilinear technology also simplifies camera design by requiring a smaller footprint and it reduces system-level costs with its use of standard lenses. In contrast, bilinear has less resolution than trilinear despite having the same number of pixels. Also, bilinear color information has to be interpolated since not ever pixel is imaged in all 3 colors.

The Trilinear approach calls for each of the three arrays to capture

Manufacturers have improved performance with image-based color measuring approaches that enable color to be measured on the whole surface of the object.

one primary color (RGB) simultaneously but at somewhat different locations on a moving object. To form a full color image the three color channels are combined. To compensate for the separation, referred to as spatial correction, the first and second arrays are buffered to match with the third. The downside of using only three channels is relatively low spectral resolution. Manufacturers have improved performance with image-based color measuring approaches that enable color to be measured on the whole surface of the object and not only on one spot – as it is with traditional spectrophotometers.

For truly accurate color inspection, this approach is needed, and for that, line scan cameras with more than three color channels are required. In general, increasing color channels reduces the resolution of area-scan cameras. However, line scan cameras still provide high spatial resolution despite adding high spectral resolution by use of more color channels. At Chromasens, we have engineered our truePIXA multispectral line scan camera, which features 6-12 spectral channels and stays in the 360-960 nm range, for these applications. The innovative multi-channel imaging technology provides accurate spectral and color output on varying substrates such as paper, plastics films and foils.

Precise color information based on images requires not only more color channels but also a homogeneous illumination and software for color calibration and color calculation. Getting all components from one supplier makes sure that the components fit to each other and makes the first steps easier.

It should be noted that in certain applications, color imaging is no longer enough, such as in currency inspection, electronics manufacturing and food sorting, where specific wavelengths are required that are either outside the visible spectrum or in between the RGB color bands. Multispectral imaging can be used to inspect in the near IR as well – up to 960 nm.

3D line scan inspection

Over the past years, machine camera manufacturers have introduced a variety of 3D methodologies, ranging from time-of-flight analysis and projected pattern correlation, to laser line/triangulation measurements and stereoscopic technologies. Of these, stereoscopic or just "stereo" has recently gained stronger traction, in particular in the semiconductor industry. Components, such as solder balls or pins which are used to connect wafers and dies, have to be inspected with 3D methods to measure precisely the critical height of the conducting elements. The typical dimensions of such components currently are around 50 µm, requiring a high optical resolution of the inspection systems in the range of at least 5 µm.

The basic operation behind stereo 3D resembles that of human vision: two sensors – in this case, linear sensors - in a stereo configuration are combined into one camera, resulting in two images being acquired of the same object from slightly different perspectives. This serves as the basis for triangulation, which involves an object point projected in both stereo images, and two image points that are the positions of the right and left cameras. ■

GLOBAL PACKAGING TRENDS IN A COVID-19 WORLD

UNDERSTANDING TRENDS AND CHALLENGES AFFECTING PACKAGING OPERATIONS ACROSS THE WORLD

By Jorge Izquierdo, Vice President, Market Development, PMMI, The Association for Packaging and Processing Technologies

Before the coronavirus (COVID-19) became a global pandemic, demand for packaging machinery around the world was on the rise. A 2019 report by Grand View Research projected the value of the packaging machinery market to reach $65.18 billion by 2025. However, the onset of COVID-19 produced significant disruptions in early 2020. According to PMMI's 2020 Economic Impact of COVID Report, the shutdowns of early spring prompted some consumer packaged goods (CPG) companies and other product manufacturers to postpone or outright cancel orders for packaging equipment, while others scrambled to rush orders and purchase replacement parts as they coped with spikes in activity. It may be months or even years before industries "normalize" following wide accessibility of a vaccine. However, the pandemic is already leaving its mark on the packaging operations of manufacturers—both in how these businesses cope with changing or continued consumer demands and how they evolve to survive and thrive in a no- or low-touch world. As seen over the last six months, the industry must continue to innovate to keep pace and develop solutions that will see them to the other side of this pandemic and beyond.

Consumers still dictate macro trends

eCommerce, customization and sustainability are three macrotrends that continue to influence the packaging decisions of brands. Before the onset of the pandemic, online sales in the United States were growing at 15 percent a year and 62 percent of consumers purchased products online for instore pick-up in 2019, according to PMMI's report Omnichannel Retail: Operating Harmoniously in an Integrated, Digitally Enabled Supply Chain. As brick-and-mortar retail outlets shut down in March, eCommerce effectively exploded. A Forbes article reported that in the first few months of stay at home orders, online revenue growth was up 68 percent from last year.

Expectations remain strong for eCommerce, even as brick-and-mortar retail has re-opened. McKinsey's survey of more than 20,000 consumers in Europe—also hard hit by COVID-19 in the spring, observed that digital adoption in Europe rose from 81 percent to 95 percent as a result of the crisis, with the grocery sector seeing the largest growth. Over 70 percent of respondents said they "expected to continue using digital services with the same frequency as they do now or even more often." For CPGs and other essential goods manufacturers, a larger focus on eCommerce can potentially require changes to packaging strategies such adopting omnichannel packaging that fits supply chain needs for both online and brick-and-mortar distribution.

In online retail, customization is increasingly important to equip brands with a competitive advantage in such a vast marketplace. As a result, packaging suppliers are quickly adapting their offerings to this demand-driven market. This requires CPGs and other product manufacturers to implement more automated solutions that are efficient and flexible to meet rapidly changing needs.

Sustainability also continues to influence the conversation around packaging as consumers remain attentive to the impact their purchases have on the environment. Though it feels as though COVID-19 sidelined discussions on sustainability in packaging, Gen Z and Millennials still represent $350 billion in spending power in the US alone. In 2019, McKinsey reported Gen Z would represent 40 percent of global consumers by 2020. As these demographics rise, so too must brand commitments to social and environmental awareness that align with

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Expectations remain strong for eCommerce, even as brick-and-mortar retail has re-opened.

Some manufacturers increasingly adopt machinery to allow more flexibility in production, packaging and the supply chain to re-organize product flow.

their beliefs. For many companies, this means incorporating and extending sustainability measures to packaging with light-weighting, right-sizing, use of recycled, recyclable or biodegradable materials and minimizing utilities and energy usage. Specifically, in Europe, the concept of a circular economy continues to dominate conversations around sustainability. Around the globe, our industry is driving innovation; and we see this in the ongoing push to improve sustainability across all packaging types throughout the supply chain.

Meet demands and overcome challenges

When the pandemic hit, CPGs and other manufacturers had to dramatically shift formats in order to address the supply shortage of goods deemed essential. Amid the closures of cafeterias and restaurants, meat brands switched from institutional offerings to supermarket formats. Cleaning supply brands accelerated production of larger format offerings amid rapidly escalating demand. Additionally, all manufacturers were met with challenges to operate with social distancing measures and appropriate personal protective equipment (PPE) in place to prevent virus outbreaks.

To meet these challenges, some manufacturers increasingly adopted reconfigurable, modular machinery to allow more flexibility in production, packaging and the supply chain to re-organize product flow. Increased customization of products in both e-tail and retail environments also accelerated investment in more automated machinery. Some manufacturing sites focused on digitizing their facilities to create agility and flexibility in product packaging and shipping while embracing automation to achieve higher efficiency and productivity.

Robotics feature prominently in discussions of automating eCommerce ready factories. Some companies implemented collaborative robots -cobots- designed to interact and perform with humans on a line, and others utilize more traditional robots to eliminate monotonous job functions. Autonomous mobile robots transport pallets and other heavy loads because they can navigate dynamic environments without physical or electro-mechanical guidance devices.

With manufacturing, challenges are often opportunities. Increased demand for various packaging formats and SKUs translates to an increased demand for filling and dosing machinery. Likewise, machinery designed for case handling solutions is also in demand to accommodate the expansion of e-commerce. Additionally, demand for more customizable and aesthetically pleasing packaging drives growth in labeling, decorating and coding. Brands that can include a claim about sanitation or health benefits will opt to customize labeling to communicate that to the consumer.

With the forecasted recession, the industry can expect to see growth in private labels and a reduction in premium and specialty foods, resulting in a decrease in premium packaging and an increase in budget-friendly formats. New technologies, solutions and education addressing the changing landscape of packaging amid COVID-19 were abundant at the inaugural PACK EXPO. ■

About PMMI

PMMI, The Association for Packaging and Processing Technologies, represents more than 900 North American manufacturers and suppliers of equipment, components and materials as well as providers of related equipment and services to the packaging and processing industry. Learn more at pmmi.org.

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NEW DEVELOPMENTS IN FROZEN FOOD PACKAGING

Contributed by the Reusable Packaging Association

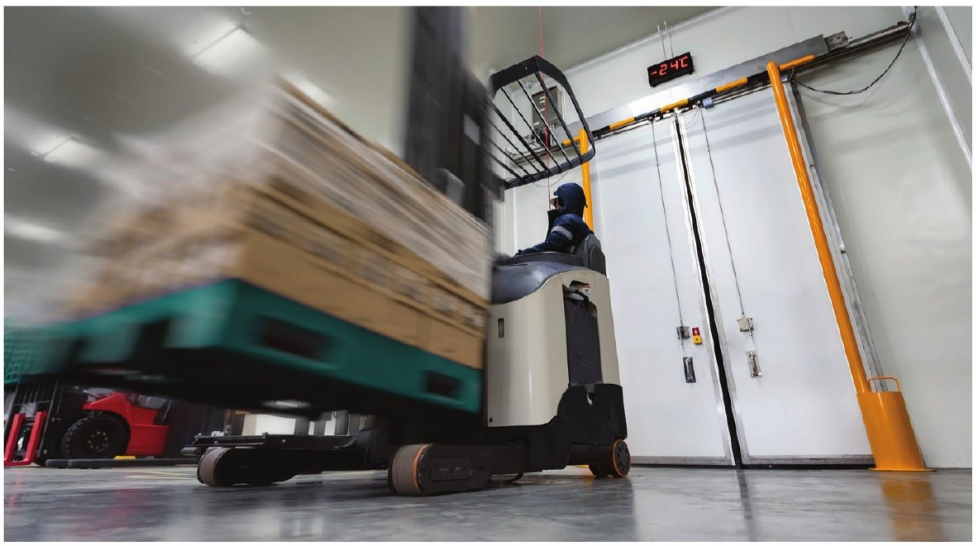
Frozen foods present a variety of supply chain challenges, especially when it comes to transport packaging. While prolonged exposure to sub-zero temperatures is perhaps the most obvious obstacle, higher product weights, inefficient handling processes, and food safety concerns also demand unique packaging performance characteristics. Fortunately, as is the case with many other challenging supply chains, reusable transport packaging (manufacturers and solution providers continue to meet these demands through innovative materials and designs for packaging items such as pallets, bulk bins, and handheld containers.

Reusable models enable higher performance from frozen food packaging

In a reusable model, it becomes economically feasible to build previously cost-prohibitive performance features into packaging. Innovative materials, design features, and technology which are far too costly to utilize in single-use packaging become cost-effective when that cost is spread over years and years of utilization. These features add value in many ways all across the supply chain, from more efficient handling processes to greater load stability to enhanced hygiene and traceability.

New reusable transport packaging concepts speed frozen food handling and restocking

Labor availability (or lack thereof) is a perpetual issue throughout the retail food supply chain, and the frozen segment is no

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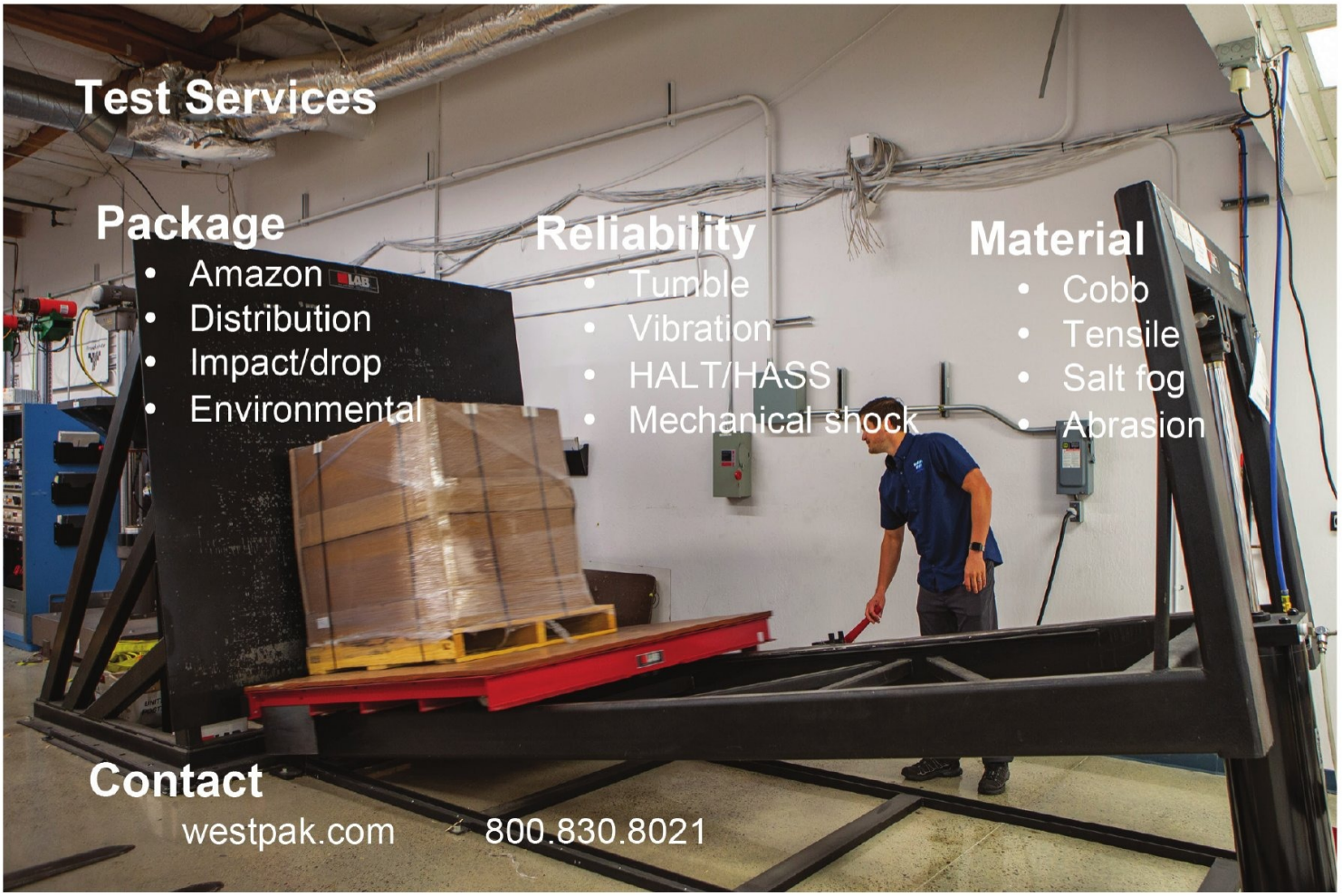
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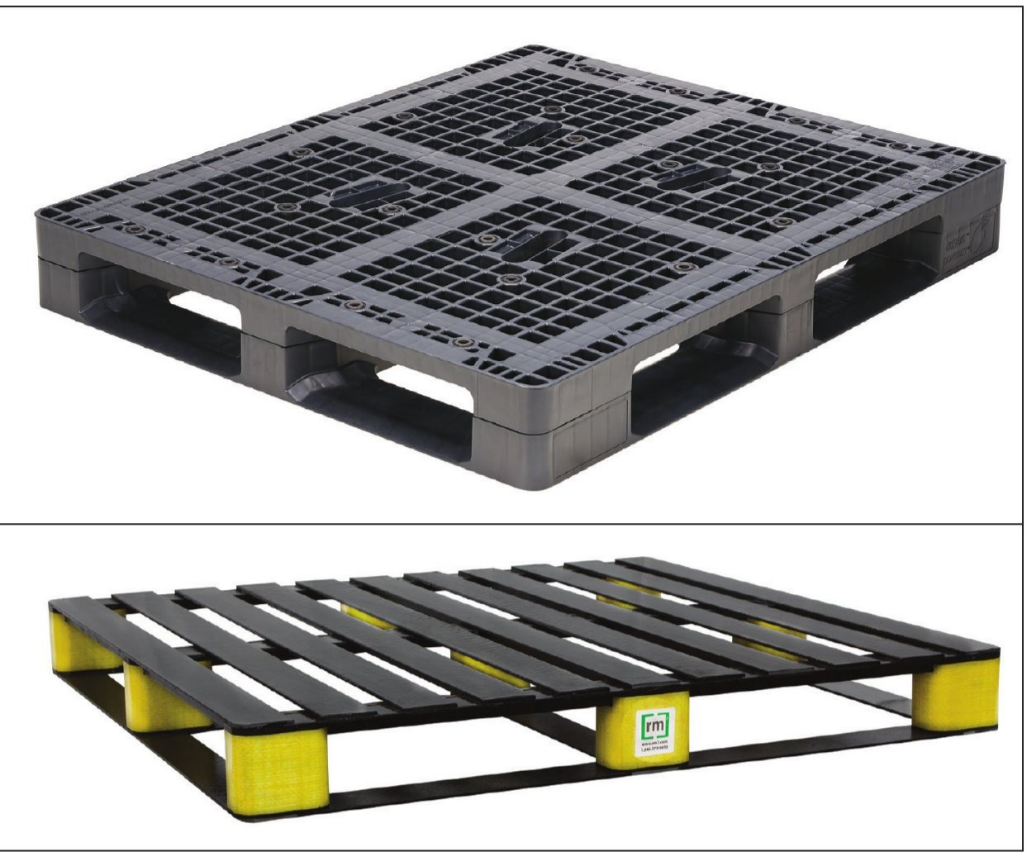


Reusable transport packaging manufacturers are designing products to improve inefficient processes and reduce labor burden.

exception. From packing to distribution to point of sale, unit- and pallet-level handling inefficiencies and lack of ergonomic design drive up both costs and risk of injury. To address these issues, reusable transport packaging manufacturers are designing products to improve inefficient processes and reduce labor burden.

Traditionally, restocking freezer wells requires a stock clerk to first open corrugated cardboard boxes and then reload the well a few bags of product at a time, depending on how much he or she can fit in their hands at once. In busy supermarkets where full truckloads of product can be restocked each day, this process becomes an ongoing, time consuming effort that is labor intense and inefficient; proprietary point-of-sale studies have shown the time required to restock a single section of the freezer area averages a full 45 minutes.

To address this issue, Technology Container Corp. (TCC) has recently developed a high-speed, reusable cartridge for restocking freezer wells to replace conventional corrugated cardboard shipper boxes. According to the company, TCC's solution is a reusable, corrugated polypropylene, open-top box that can be reused hundreds of times, and is ideal for high-velocity items such as frozen peas, french fries (chips) and other frozen vegetables typically merchandized in freezer wells. Product is packed directly into the open-top box (cartridge), which is then individually shrink wrapped and unitized. The cartridges also feature an easy-fold bottom for fast opening without the need for tape – and fast to knock flat when emptied. To restock freezers, retail associates simply remove the empty cartridges, take the shrink film off the new ones, and drop in full cases of product instead of individual bags. Trials have shown a reduced stocking time of just 5 minutes vs. the usual 45 minutes.

Innovative materials improve performance for heavy loads in freezing environments

Material brittleness and flexibility are major concerns when pallets and containers are subjected to temperature extremes. In the frozen food supply chain, extended exposure to sub-zero temperatures create performance issues for commonly-used materials such as wood and plastic. Heavier than average load weights, common in the frozen food sector, also presents both a material and design challenge. In order to ensure employee safety and minimize risk of product damage from pallet failure, reusable transport packaging providers are utilizing innovative materials and designs.

RM2 builds its IoT-enabled BLOCKPal pallets from a proprietary pultruded fiberglass composite which is stronger pound-for-pound than structural steel, with an edge rack capacity of 6,500 lbs. The composite construction of this pallet is also able to withstand temperatures from -40° F to 176° F without brittleness or deflection, even under heavy load, and results in a smooth, nonporous surface which is naturally resistant to pathogens and easily sanitized. Despite its heavy load bearing capacity, the pallet weighs just 55 lbs.

In September, ORBIS CORPORATION introduced its new Odyssey® 48x40 rackable plastic pallet for use in heavy-duty racking applications. The pallet's unique design features, including optional steel reinforcements and molded-in frictional elements, enable it to rack loads up to 2,800 pounds in unsupported racking. The Odyssey pallet is injection-molded, enabling a lightweight design of between 42 – 52 lbs, depending on the addition of optional reinforcements.

Continued innovation in reusable packaging technology address food safety concerns for frozen food

Food safety is an omnipresent concern across the food and beverage sector. As the FDA heralds in the New Era of Smarter Food Safety, pressure is mounting across the supply chain to leverage technology for better, faster traceability. As with all other high-value performance features, embedded technology is made economically-feasible in reusable packaging where it would be cost prohibitive in single-use packaging. Companies such as RM2 have embedded IoT technology within pallets, capturing temperature, location, vibration, and chain of custody, and transmitting this information in real-time to the cloud for monitoring and analysis. iGPS and others have embedded RFID tracking devices within their pallets, and unit-level sensors for reusable handheld containers is not far behind.

As the frozen food sector looks to meet both the shared and unique challenges of its supply chain, reusable transport packaging manufacturers continue to innovate, providing solutions that result in more efficient, economical, and technologically advanced supply chains for frozen foods. ■

World Leader in Pouch Making Machines

Leading company in manufacturing industry

For over half a century, Totani Corporation has manufactured pouch and bag making machinery. Since it's incorporation in 1961, Totani machines are now located in over 57 countries all over the world and are highly regarded by well-established companies.

Totani Corporation continues to excel in leading the industry in pouch making machinery.

Totani's original idea, technology and development, power change the common sense of pouch making.

Our pouch and bag making machines use various film materials to make pouches with storage stability and heat resistance.

Totani machines make high-speed, high-quality pouches, in various shapes, which can be used in a wide range of fields.

Totani Recycle Ready/Quick Changeover Pouch Machine

- Totani's CT-Series are THE most popular machines in North America.
- CT-35, CT-40, CT-60 and CT-80 can use Sustainable Films.
- Compact Pouch machines means less film waste and Quicker Change-Over.
- The most efficient pouch machines available.
- Totani America has the Best Technical Support.
- Totani is committed to the wise use of our natural resources.
- Recycle-Ready Films Can be produced at high speeds efficiently.

Totani innovations and enhancements have proven effective to improve efficiency in operation of recyclable stand-up pouches.

Dealing with web melt, print variation, shadow seals, and web instability were primary factors that went into Totani' s most recent pouch machine that features a number of enhancements and new proprietary technology.

Ask Totani innovations and enhancements prove effective in set-up and change over times for stand-up pouches.

Ask us about Totani' s most recent pouch machine that features a number of enhancements and new proprietary technology. ■

Contact Totani America Inc.
for more information.
sales@totaniamerica.com
920.632.7319

Given the infectivity of SARS-CoV2, it is realistic for employers to protect their employees and their business by requiring all employees to be vaccinated. (Widener, 2020) [photo courtesy Adobe Stock]

SHOULD EMPLOYERS REQUIRE COVID-19 VACCINATIONS?

By Neal Langerman, Ph.D.

Vaccines approved under Experimental Use Authorizations (EUAs) will be available soon. In theory, this should make re-opening businesses easier.

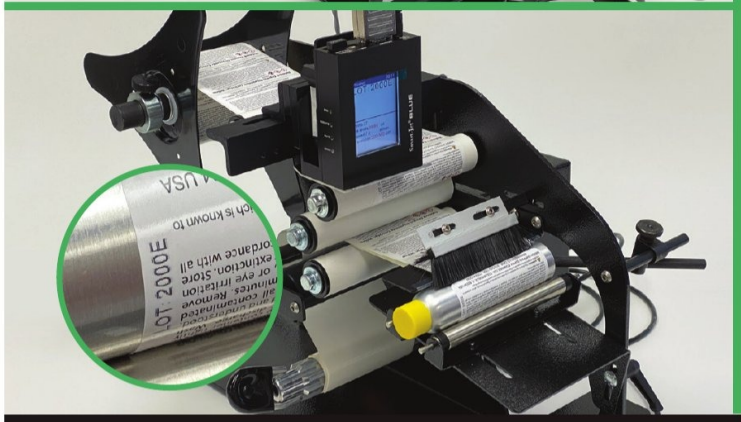
As immunity develops within the population, the case-count will drop, and the many restrictions will be eased. Realistically, individual immunity will require about 2-3 months following the initial vaccine dose to develop fully. At best, in the U.S., everyone who wants a vaccination should be able to get two doses by late second quarter 2021.

This will vary significantly in other parts of the world. But, one in three people polled in August said they would refuse to be vaccinated (Paulsen, 2020). The "anti-vax" presence on social media has grown significantly (Burki, 2020). In this environment, do you, as an employer, have a duty or moral responsibility to insist your employees be vaccinated—and can you do that?

The law makes it clear that a state government can mandate employee vaccinations. In the 1905 case of Jacobson v. Commonwealth of Massachusetts, the U.S. Supreme Court held that States have the authority to require vaccinations. The Americans with Disabilities Act (ADA) defines vaccinations and health screenings as "medical examinations" and, therefore, an employer-mandated vaccination must be job-related and consistent with business necessity. In the opinion of Dorit Reiss (Weise, 2020) of the Hastings College of Law "Legally, every employer can require it—you don't have to be a high-risk employer to require it. On one hand, employers will be concerned about pushback from employees. On the other hand, they'll also be concerned about COVID outbreaks that can be prevented." Other laws are addressed further by Widener (Widener, 2020).

While OSHA has been reticent dealing with the pandemic and has issued citations mainly addressing respirator use (Agency, 2020), the General Duty Clause of the Occupational Safety and Health Act makes it clear that the employer has a duty to take action to prevent illness from spreading in the workplace. There is clear precedent for vaccinations within the healthcare industry. Given the infectivity of SARS-CoV2, it is realistic for employers to protect their employees and their business by requiring all employees to be vaccinated. (Widener, 2020)

Carve-outs to the mandate for religious reasons, for medical reasons and, possibly, for personal/philosophical reasons should be provided. Large employers should consider offering onsite clinics, open to employees and their families for vaccination. Small employers can provide release time and compensation for employees to go to public-access vaccination locations.



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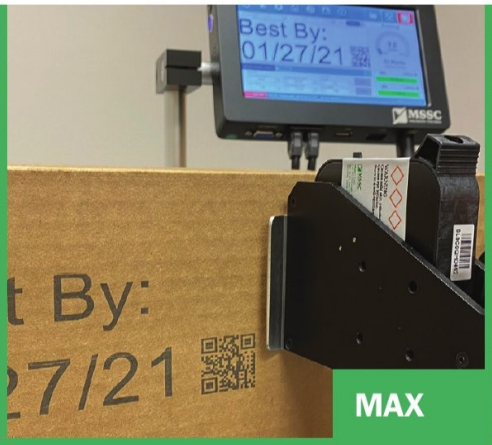
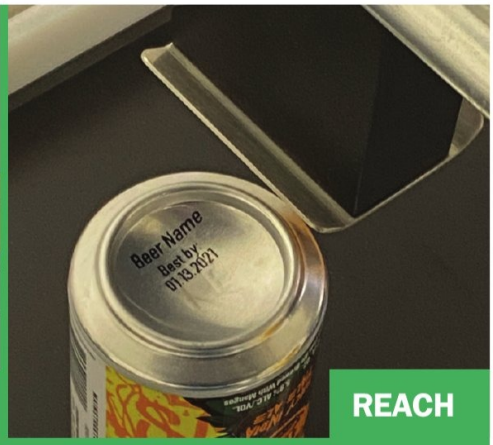


MAX



REACH

The Smart-Jet DUO product line is twice as nice.

The SMART-JET® DUO product line offers a complete range of printer capabilities utilizing the DUO Controller to set up and program up to two printer heads. The DUO PRO printer head gives you professional results with the production speed and resolution you require with a ½" printing area. For maximum print coverage, DUO MAX delivers with a print height coverage area of 1". And, the DUO REACH printer head shoots ink 2x as far for maximum reach. It's easy to see why the SMART-JET® DUO product line is beneficial in more ways than one.

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Employees should be reassured that if side effects occur, they will be taken care of medically and financially. Recent reports from the phase III trials suggest that vaccine recipients may exhibit moderate flu-like symptoms during the 24-36 hours following the second dose. Employees knowing they will not be penalized for staying home under those circumstances will be reassured and more willing to be vaccinated.

There are down-sides to such a mandatory requirement. Pushback by employees is certainly possible. If a union is involved, pushback could be complicated, depending on the contract. Since a vaccine approved under an EUA is considered "investigational," the application of existing laws, regulations and precedents is a bit uncertain. On this last point, Stephen Hahn (Weise, 2020) FDA Commissioner, said, "It's possible that some employers or schools will have questions or concerns about an investigational product issued an Emergency Use Authorization, which is why we will be as transparent as possible about the data and information we use to make our decision. This should help those organizations determine what is most appropriate for them." The message is clear: follow the FDA and CDC guidelines and recommendations.

What, then, should a business owner do? Legally, you can require employees to be vaccinated as long as you can make a credible argument of a business necessity. Protecting your production staff should be adequate. You must make the moral decision based on your beliefs and self-interests.

For me, I would urge all employees and their families to be vaccinated and provide incentives for them to do so. Certainly, a bonus of $100 per family member vaccinated is a small investment to assure a healthy employee base.

Stay safe and stay healthy. ■

About the Author:

Dr. Neal Langerman provides litigation support and expert testimony for both defendants and plaintiffs in litigation involving a wide variety of chemical-related issues. [Advanced Chemical Safety, www.chemical-safety.com]

Matthews Marking Systems

QUESTIONS AND ANSWERS

1. What are three benefits of your new powerful print management platform, the VIAjet™ L-Series thermal inkjet printer?

There are three primary benefits to our L-Series thermal inkjet printer. The first is the high-speed at which it can print crisp, quality marks. The L-series prints true 600 dpi at 200 ft/min and can print at speeds up to a blistering 1,600 ft/min at 75 dpi.

The second benefit is that precision isn't sacrificed at these speeds. Quality is critical, but precise placement is too which ensures accurate product traceability and outstanding branding.

The third primary benefit to the L-Series is MPERIA, our universal controller that provides centralized control, seamless business system integration and unparalleled scalability whether adding more printers, production lines, or even plants as the business grows.

2. This new inkjet printer provides high print resolution at very high speeds, why is that important with this new printer?

The ability to print 600 dpi at 200 ft/min is critical in high throughput production environments for several reasons. Whether marking for track and trace, branding, or retail shelf presence, our customers want to ensure their brand integrity is maintained in the markets they compete. Markets must be served and the old adage holds true: time is money. The high native resolution of our L-Series provides unmatched marking on porous and non-porous packaging materials. Customers get 100% readable GTIN-standard 1D barcodes and 2D codes as well as high quality marking of graphics and logos. And importantly, they get this without having to slow their production line.

3. Can you explain a bit about the Active Bulk Ink System (ABIS)?

Our new bulk ink system reduces the cost-per-mark, waste, and saves labor on changeouts and maintenance. More primitive bulk ink systems in the industry haven't always been able to step up to the plate and deliver, but here's why this system is different. ABIS is the first bulk ink system for thermal inkjet printers that actively monitors and adapts for minor environmental changes like temperature or relative humidity. These changes can play havoc with traditional ink delivery in TIJ printers: air-bubbles in ink lines, poor fluid transfer to the printheads, and the like. The dual-supply ABIS also allows uninterrupted printing as customers can swap ink supply units during production runs. Additionally, ABIS is connected and controlled through the MPERIA controller. This provides real-time information on system status, helpful guidance should an issue arise, and centralized control with remote access of both the L-Series and ABIS.

4. What makes the Active Bulk Ink System (ABIS) it different, faster, better, more cost-efficient, etc.

ABIS delivers incredible value to our customers with medium-to-speed production lines by increasing uptime while substantially reducing their cost per mark. Inherently more efficient compared to single-use ink cartridges, ABIS keeps lines up for longer intervals. You don't have to stop the line to change the ink supply

and your staff spends fewer labor hours by not having to swap out cartridges. Plus, the small installation footprint means excellent flexibility for customers facing space constraints.

5. What can end-users or CPGs expect when using this new ink system?

Customers can expect an excellent return on their investment when implementing ABIS. Cost reduction comes in the form of longer production runs with less downtime for changing cartridges and reduced ink costs driven by bulk supply. The typical downfalls of competitive bulk systems are nullified with active environmental monitoring and adaption. And ABIS handles both water-based and solvent-based inks, giving customers excellent marking on their porous and non-porous substrates.

6. What applications did you envision this new Ink System to work on? What feedback have you received so far from those who have used it?

Our new bulk ink system reduces the cost-per-mark, waste, and saves labor on changeouts and maintenance. More primitive bulk ink systems in the industry haven't always been able to step up to the plate and deliver, but here's why this system is different. ABIS is the first bulk ink system for thermal inkjet printers that actively monitors and adapts for minor environmental changes like temperature or relative humidity. These changes can play havoc with traditional ink delivery in TIJ printers: air-bubbles in ink lines, poor fluid transfer to the printheads, and the like. The dual-supply ABIS also allows uninterrupted printing as customers can swap ink supply units during production runs. Additionally, ABIS is connected and controlled through the MPERIA controller. This provides real-time information on system status, helpful guidance should an issue arise, and centralized control with remote access of both the L-Series and ABIS.

Nesquik, Ricoré and Chocapic Bio in Reusable Containers

Nestlé announced that it will offer reusable containers for Nesquik cocoa powder, Ricoré chicory and coffee drink, as well as Chocapic Bio cereals in partnership with the French retailer Carrefour and Loop – a global circular company. This is the latest result of Nestlé's efforts to reduce packaging through the use of alternative packaging delivery systems.

Consumers can access the cocoa, coffee and chicory drink, and cereal products in reusable stainless-steel containers through Carrefour's eCommerce delivery platform. By the end of the year, the products will be available online and in 10 Carrefour stores in and around Paris.

Once consumed, the empty containers are collected from the consumer's home or dropped off by the consumer in the stores. The containers are then cleaned, refilled and put back in Loop platform's circular system.

Experts from Nestlé's Institute of Packaging Sciences tested the new containers to ensure that they keep the product fresh and safe throughout the shelf-life.

Pregis Announced New MAX-PRO 24 Poly Bagging System

Pregis recently announced the North American launch of its Sharp Packaging Systems® MAX-PRO 24 continuous bagging system. This latest model in the MAX-PRO line can handle a wider range of products and bag sizes making it ideal for fulfillment operations with a broad eCommerce offering.

The MAX-PRO 24 includes highly-advanced automated technology, new web handling features that simplify operations and automated pass-through settings, resulting in lower operating costs. Predictive maintenance via Pregis' proprietary Maxwell intelligent interface, enables trouble-free operation. The system also includes an easy-to-use bag threading system and a user-friendly HMI control panel that simplifies operation and guides troubleshooting. Its low-force jaw is designed to make the machine safe, simple and cost effective to use.

The MAX-PRO 24 has a small footprint, but can accommodate bags that are up to 24-inches wide and 36-inches long. It handles products that weigh up to 10 lb. Its size allows the machine to fit into existing packaging lines while taking up less

floor space. Additionally, its innovative label side up, multiple exit conveyor system allows bags to leave the machine to the left, right, or rear, so it can be added into existing production lines more easily.

In addition to being simple to operate and easy to integrate into current operations and processes, the MAX-PRO 24 has a number of features that contribute toward reducing packaging costs. Zebra thermal printers permit direct printing onto packages for barcodes, graphics, and alphanumeric fonts. In order to maximize ribbon usage, reduced spacing between impressions has been incorporated, plus printing with alternative registrations and adjusting impression placements. All of these improvements help decrease thermal ribbon consumption by as much as 90 percent.

For more information, visit www.pregis.com.

(Image Credit: David Stoken)

Cruise Beverages Gets Carried Away with an Uplifting Brand Design

Cruise Beverages announced it is on a mission to help people

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find their happy place with the purest, most flavorful, nitro-infused CBD drinks in the world. And they're doing it with craft, quality and creativity – from the all-natural ingredients, to the unique flavor blends, to the company's proprietary processes.

The team at Studio One Eleven helped the Cruise B Happy brand tell its story of free-spirited fun and refreshment with updated branding, expressive flavor names and unique packaging graphics. Playful, uplifting illustrations speak to the brand's sense of freedom and relaxation, and the hand-drawn style reflects the craftsmanship of the product itself. A white background with flavorful pops of color feels clean and fresh, while tiny bubble imagery communicates delightful effervescence. The final design breaks free from convention.

Paxton's Ionized Air Rinser Vac Improves Quality of Dairy Cups and Snack Trays

Paxton Products announced a major step forward in dairy cup and snack tray quality with the release of the Paxton Ionized Air Rinser Vac System. The Ionized Air Rinser Vac offers food and dairy packagers an effective and cost-efficient solution for removing debris — that often comes from secondary packaging — from the containers prior to filling.

The Ionized Air Rinser Vac cleans the containers effectively without inversion of the containers. Ionized air dislodges the debris from the inner side walls and bottom surfaces as well as the outer surfaces of the containers, eliminating the static that causes the debris to adhere to the surfaces. A powerful vacuum then removes the debris from the containers.

Paxton's Ionized Air Rinser Vac System reportedly ensures that the packaged product is of the highest quality by removing dust and particulates that are present in even the cleanest food packaging environments, and are often introduced through secondary packaging. Designed working with a Fortune 500 food manufacturer, each air delivery and vacuum device is custom-engineered based on your product geometry and line speeds, and uses patented technology to maximize cleaning, while reducing maintenance.

For more information, visit www.paxtonproducts.com.

FANUC American and Plus One Robotics Deliver Automation Solutions to Fulfillment Customers

FANUC America and Plus One Robotics announced they have successfully paired their industry-leading technologies to meet the needs of their mutual customers in eCommerce.

The new flexible fulfillment solution incorporates a FANUC robot and Plus One's AI-powered PickOne perception system to identify, singulate, and sort a wide range of conveyable items without the need for traditional vision training. Powered by AI, the system can adapt to variations in product material, size and shape, as well as intermixed, random delivery. If any exceptions occur, Plus One's "Yonder" human-in-the-loop function notifies a "Crew Chief" who can remotely manage the exception, minimizing the interruption and providing seamless sustained automatic operation. Combined with a high-performance FANUC industrial robot, the system can outperform a comparable manual operation. Users benefit from shorter pick times and better order accuracy, inventory security, higher productivity, reduced operating expenses, and improved ergonomics.

FANUC America will feature this new robotic fulfillment technology in its Customer Experience Center (CEC) located at the company's headquarters in Rochester Hills, Mich.

Pour, Sip, and Savor Craft Cocktails from Bespoke Bottles (No Bartender Necessary

On The Rocks partnered with Berlin Packaging and their Studio One Eleven design team to create a portfolio of custom bottles perfectly suited for the sophisticated spirits.

Simplicity was top of mind when it came to both aesthetics and manufacturing, so Studio One Eleven borrowed cues from traditional spirits silhouettes when designing the sleek, round-shouldered bottle with a long neck. A mix of glass and PET in 100mL, 200mL, and 375mL sizes makes for a stunning collection that commands attention from the mini mart to your mini bar.

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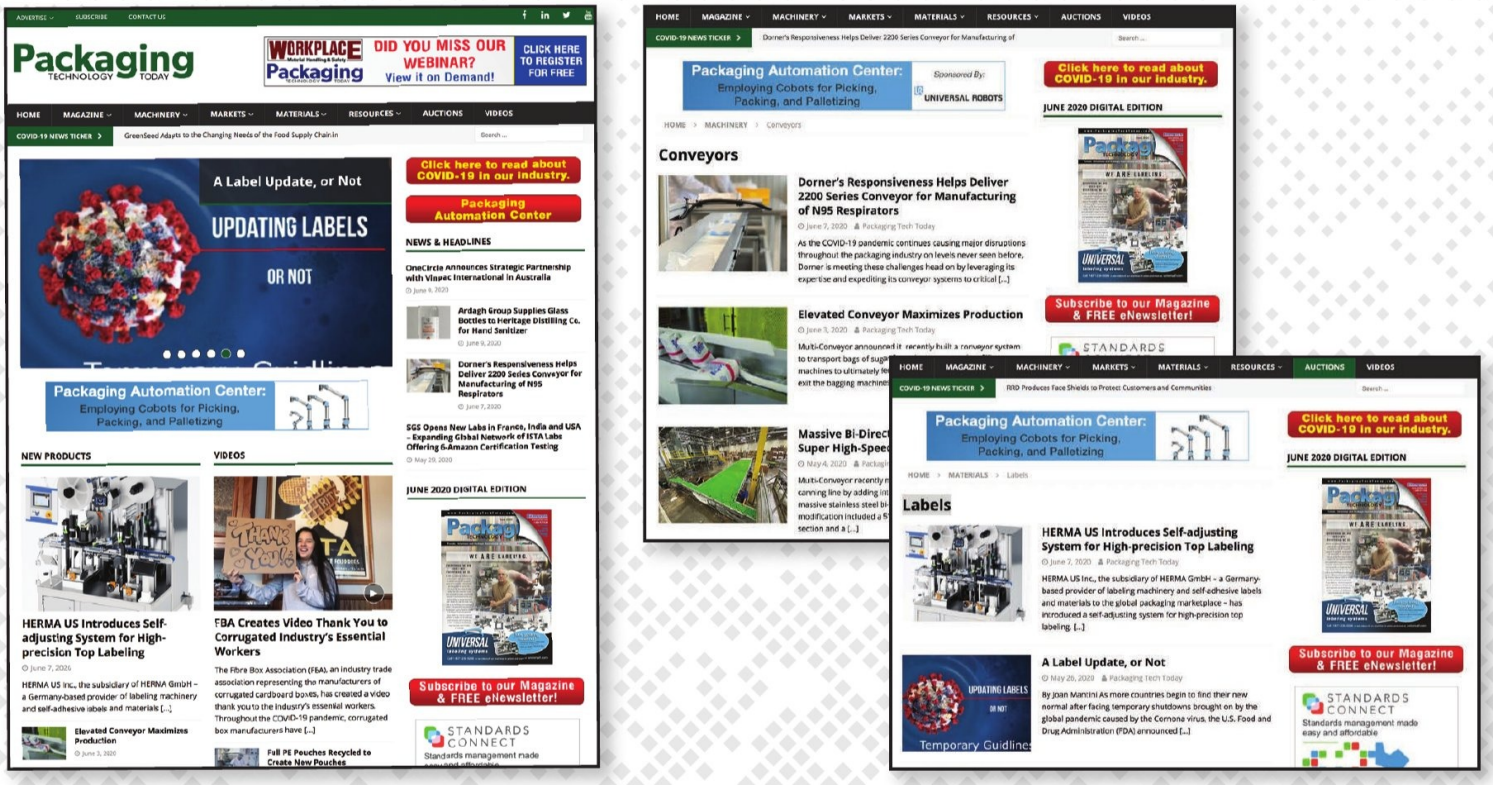
Industry News & Trends at Your Fingertips

Fast track to the content that will help you day-to-day in your packaging operation.



Machinery

- Caps & Closures
- Cartoning
- Case Packaging
- Coding/Marking/ Labeling
- Conveyors
- End-of-Line
- Filling & Form/Fill/Seal
- Inspection/Detection/ Vision
- Palletizing
- Robotics/Automation
- Serialization/Track & Trace
- Thermoforming
- Tray Forming/Sealing

Markets

- Beer/Wine/Spirits
- Beverage Packaging
- Cannabis
- Craft Beer
- E-Commerce
- Food
- Household
- Personal Care
- Pharmaceutical/ Medical

Materials

- Adhesives/Sealants
- Cans & Bottles
- Films & Coatings
- Flexible
- Ink
- Labels
- Paperboard/ Corrugated Cartons
- Rigid Containers
- Sustainable

Resources

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Dual Lane Hand Pack to Single File Merge Maximizes Production

Multi-Conveyor recently built a dual lane hand-pack line, made

up of a series of small conveyor sections, all joined by seamless transfers, that manually feed a new merging section to further semi-automate for this customer. These mild steel constructed conveyors will transport individual trays that will be hand-packed into cases. The new merge section will further increase productivity.

The 55' overall length system starts out with two straight running lanes of product, separated with a center rail that transfer to a 3' gapping conveyor with friction top belting. After pulling a gap, product takes a brief elevation to raise the product at a desired hand-packing height for insertion of the trays into corrugated cases.

Trays continue onto a plastic chain pack-table conveyor with a fixed end-stop that towers over two gravity roller conveyors on either where product is manually placed in open cartons. Note the product and cases used in this video is for demonstration purposes only.

Operators manually discharge the filled cases from each side of the hand pack where they'll simultaneously merge, without collision, down to single file and onto a customer's existing gravity roller.

LBP (low back pressure) transitions were used in each of the 6 belting transitions through the system. The 66" merge conveyor section employs ARB (active roller belt) technology to ensure a perfect merge.

For more information, visit www.multi-conveyor.com.

Packaging Spotlight

Schmalz is able to provide reliable solutions for a wide range of challenging applications within each of the main packaging segments; primary, secondary or tertiary. Innovation is a core value at Schmalz, every quarter we release new technologies to keep packages moving as fast as possible with the least amount of damage; products such as our Finger Gripper (OFG) for pick and placing delicate foods (primary) or the NEW Area Gripper (FQE) for applications involving high variation (secondary) or our new mobile lifting system called "MobilePicker" for logistics/warehousing (tertiary). Schmalz has 'The Total Package' you need, please check us out at WWW.SCHMALZ.COM

SCHMALZ

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