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34 SPECIAL FEATURE
AUTOMATION, ROBOTICS AND VISION SYSTEMS
In this special 34-page feature we look at the technology that is delivering smarter ways of working across industry sectors

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Building on successes for the future...

David Barber
CHAIRMAN, PPMA GROUP OF ASSOCIATIONS
(INCORPORATING PPMA, BARA AND UKIVA)

I believe the launch of a brand-new event highlighting the importance of robotics and systems integration to the future growth of the UK economy, is truly exciting (find out more on page 7). Automation UK’s introduction is a positive move that is designed to offer visitors another way of learning about how to improve their manufacturing methods and therefore efficiencies.

In case you don’t know, BARA is the British Automation & Robot Association that promotes the robotics and automation industries, and its aim in establishing a dedicated trade show for the sector is to shine a spotlight on the technologies. Co-located at the Automation UK event will be UKIVA’s MVC (Machine Vision Conference), the established industrial vision event that features a wealth of sector-specific exhibitors and expert presentations. Again, if this acronym is new to you, the UKIVA is the UK Industrial Vision Association that advocates the use of industrial machine vision technology throughout UK industry.

Extending our show portfolio strengthens the PPMA Group as a whole, for the benefit of everyone

The two bodies share an affinity based on the combined use of vision and robotics technologies within the production line.

These two trade associations are part of the PPMA (Processing and Packaging Machinery Association) Group, a coalition that spans the breadth of the automation, robotics and vision systems sectors and one that I am proud to be chairman.

We believe this new two-day event, to be held in Coventry next June, will be attractive to a broad range of visitors and will complement our established PPMA Show and PPMA Total Show, not rival them. Of course, the PPMA Total Show returns to the NEC this September and is set to host hundreds of participating companies (the show preview will dominate our next magazine).

Our trade association has a track record of delivering successful exhibitions and I would say that extending our show portfolio is to the benefit of all stakeholders across sectors.

The launch is great timing in terms of this magazine, as our annual automation, robotics and vision systems feature starts on page 34. It is genuinely remarkable how quickly the internet of things has become all-encompassing and today, practically all new equipment includes some kind of ‘smart’ elements to aid efficiencies and also to provide valuable data.

If you need to replace legacy equipment that is not as smart as it could be, even if it’s still functioning, you can find a range of the latest options across the feature pages.
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News

New exhibition delivers automation and robotics

A brand new exhibition highlighting the importance of robotics and systems integration to the future growth of the UK economy is being launched by BARA and UKIVA to champion the use and development of automation and industrial robots in British industry.

BARA (British Automation & Robot Association) is the respected advocate of the robotics and automation industries, while UKIVA (UK Industrial Vision Association) promotes the use of industrial machine vision technology throughout UK industry.

The two bodies share an affinity based on the combined use of vision and robotics within the end-to-end production line process and are part of the PPMA Group.

Recognising the vast potential of automation and robotics to British industry, BARA’s aim in establishing a dedicated trade show for the sectors is to shine a spotlight on the technologies and to highlight their true value to the wider economy. Automation UK, which debuted at the CBS Arena in Coventry between 20-21 June next year, will be the largest annual gathering of industry experts under one roof in the UK.

The event has been specially designed for businesses operating in the automation and robotics markets and will showcase the very latest products and services.

Co-located at Automation UK will be UKIVA’s MVC (Machine Vision Conference), the well-established industrial vision event that regularly attracts more than 500 visitors a day and features a wealth of sector-specific exhibitors and also expert presentations. www.automation-uk.co.uk

Zebra Technologies completes purchase of Matrox Imaging

Zebra Technologies Corporation has completed its acquisition of Matrox Imaging, a proven developer of advanced machine vision components, software and systems. This acquisition further expands Zebra’s offerings in the fast-growing automation and vision technology solution space following the launch of its fixed industrial scanning and machine vision portfolio and recent acquisitions of Adaptive Vision and Fetch Robotics. Zebra has a portfolio that includes hardware, software, services and solutions that digitise and automate workflows.

Paying tribute on Women in Engineering Day

Shine a light on aspirations

Domino marked this year’s International Women in Engineering Day in June by paying tribute to some of its female employees working in key technical roles. “Engineering doesn’t have to be male dominated and companies need to do more to be inclusive,” said Rachel Hurst, chief operating officer at Domino (seen here on the left) with colleagues Mariam Khalifey, Josie Harries, Susan Palmer and Natasha Jeremic.

Charity bike ride is raising cancer funds

A team of cyclists organised by Paul Gregory from Linx Printing Technologies has completed a 349-mile charity bike ride from St Ives in Cornwall to the company’s HQ in St Ives, Cambridgeshire, raising funds for its chosen charity of the year, Children with Cancer UK.
Russell Finex celebrated Her Majesty the Queen’s Platinum Jubilee with local dignitaries, charity heads and staff at its Feltham, London site where its industrial separation equipment is manufactured.

Held in a large marquee for 170 people, the event celebrated the occasion with speeches, jubilee celebration cakes, lunch and funfair games. The speeches focused on Her Majesty the Queen’s service to the country and Russell Finex’s continued focus on serving its customers and local community.

On the day, the company launched its summer fundraising effort for local cancer support charity The Mulberry Centre, by challenging its staff to a ‘21 Challenge’, to link with the Centre’s 21st anniversary. The staff will be creating their own personal challenges around the number 21.

“At Russell Finex, we pride ourselves in service to our customers and our community,” said md Ray Singh. “It’s why we’re still supporting 30- and 40-year-old machines for customers, why we’ve donated over £109,000 to good causes since 2014 and why our new partnership with The Mulberry Centre is so important to us as a business.”
Flexible manufacturing roadshow demonstrates factory of the future...

Industrial automation company Omron has taken its European Flexible Manufacturing Roadshow on the road to Bradford, featuring exclusive demonstrations of human-machine collaborative solutions not usually seen outside of a factory setting due to their size and scale.

Held in June at Strategic Partner Reeco Automation’s new dedicated Autonomous Mobile Robot (AMR) Centre in Rowan Park, Bradford, over 75 invited guests from manufacturers across the food & beverage, automotive and pharmaceutical sectors attended the event.

The 200 sqm demonstration area showcased a range of practical solutions for the factories of the future, enabling flexible and intelligent production improvements.

The roadshow allowed visitors such as Unilever, Procter and Gamble, Carlsberg and Morrisons to witness large-scale human-machine industrial automation solutions that address some of the key manufacturing challenges such as palletising, transportation and also traceability.

Facilitating more agile and flexible manufacturing with less reliance on manual labour, reduced energy consumption and increased OEE. Omron says its solutions are also future proofed for the digital era.

Many blue chip companies attended

Efficient slicing and sustainable packaging solutions for the food industry.

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Controlling the noise at work is all-important

Paul Taylor
Manager for Machinery Safety at TÜV SÜD Product Service

The Health & Safety Executive offers helpful guidance which sets out an employer’s legal obligations to control risks to workers’ health and safety from noise. Find out more here...

Employers and duty holders are required under the Provision and Use of Work Equipment Regulations 1998 (PUWER) to provide workers with equipment that meets relevant supply laws. They must also adhere to the Control of Noise at Work Regulations, and the Health & Safety Executive (HSE) offers helpful guidance which sets out an employer’s legal obligations to control risks to workers’ health and safety from noise. This includes detailed advice on how to select quieter machinery.

In its L108 document, the HSE states that noise-related damages are entirely preventable if:

• employers take action to reduce exposure to noise and provide personal hearing protection and health surveillance to employees
• employees make use of the personal hearing protection or other control measures supplied
• manufacturers design tools and machinery to operate more quietly.

Manufacturers of machinery are legally required to provide information about the noise emissions from their machinery if it exceeds certain levels. They are also legally required to ensure that machinery is designed and constructed to reduce noise risks to the lowest level, alongside use of protective measures and information relating to any remaining noise risk. Purchasers of machinery should therefore expect equipment that is being sold on the market to reflect progress in low-noise design.

To ensure that noise levels are minimised, not only should purchasers take noise into account when selecting machinery, it should also be maintained in accordance with manufacturers’ recommendations. Machines deteriorate with age and use and, if they are not maintained appropriately, they are likely to generate more noise because of worn parts, poor lubrication and the vibration of loose panels.

Appropriate maintenance should therefore prevent noise emissions increasing over time and ensure that the performance of a machine does not deteriorate so that it puts employees at risk from increased noise emissions. Likewise, it is vital to have a company policy in place that requires machinery operators to report any unusually high noise levels and that they regularly check that machines are operating properly.

The Supply of Machinery (Safety) Regulations 2008, which is the UK implementation of the European Union’s Machinery Directive, requires manufacturers and suppliers of machinery to comply with particular essential health and safety requirements (EHSRs):

• Produce machinery that can be used without risk, including risk from noise
• Alert users to residual risks including risks from noise – for example, when a noise test code produces noise emission values that do not represent noise emissions during intended uses of machines
• Include the information on airborne noise emissions in the sales literature describing the performance characteristics of the machines

Buyers of machinery should expect equipment that is being sold to reflect progress in low-noise design

• Provide information in the instructions accompanying the machinery, including instructions on how to reduce risks from noise
• How to install the machine for minimum noise
• Instructions for use of the machinery and, if necessary, any training of operators
• Information about the residual risks remaining, including noise risks
• Instructions on the measures to be taken by the user, including the hearing protection to be provided
• Information on airborne noise emissions, including the uncertainties surrounding these values.

HSE advises that machinery owners check with their manufacturer and/or supplier to ensure that the noise information they have made available is a reliable guide for the intended use of the equipment. A manufacturer should therefore state emission sound pressure levels that are representative of the noisiest operation in typical use of a machine. This means that they may provide noise emissions for more than one operating condition for some classes of machine.

Even though BS EN ISO 12001 states that noise emission data should represent the noisiest operation in typical use of the machine under test, it is worth noting that data may not always be supplied for the noisiest operation. If the purchaser has a specific use in mind for the machine, they can also ask the manufacturer to provide relevant noise data, but this is not a legal requirement.

Noise emission data from the manufacturer should include a noise test code reference or, if a designated standard has not been used, describe the measurement method and the operating conditions of the machinery during their stated noise measurements.

For more information contact
www.tuv-sud.co.uk
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Multivac UK has exclusively partnered with Gripple Automation to bring new automation solutions to the market to help users increase efficiency and reduce reliance on manual labour during production.

Gripple Automation’s ability to guide a project from concept through to actualisation is the reason Multivac partnered with the business to design and manufacture a new shelf-ready case packing unit to add to its automation product portfolio.

This new shelf-ready case packing unit is capable of working at high speeds with a compact footprint to provide a range of manufacturers with the ability to run their production lines at maximum efficiency with reduced overheads. The new unit is flexible and is compatible with a wide range of case and pack sizes.

In operation, the products being packed remain stable throughout the process due to the way the packs are loaded into the cases, which increases efficiency and reduces stoppages as well as incorrect pack counts.

“The new partnership with Gripple Automation is very exciting and allows us to offer an innovative standard solution to enable our customers to reduce overheads and re-direct existing labour to areas that need it most, which is key in today’s market,” says James Bedford, systems application manager at Multivac UK.

Meanwhile, md at Gripple Automation Darren Beardsmore believes its partnership with Multivac is critical for the company to continue to innovate and expand the industries it serves.

“We are continually refining our machines to further add value for Multivac and their customers and look forward to a long and prosperous relationship,” he says.

“The Gripple Automation case packer is an excellent addition to the Multivac portfolio,” says Multivac’s sales director Matthew Jackson. “This product range is the result of joint development and is aimed directly at the labour shortage challenges faced by our customers.

“This solution can be supplied as part of a complete line or as an individual unit, and customers can typically expect an 18-month return on investment,” he says.

Www.grippleautomation.com
Www.multivac.co.uk
Southgate Global highlighted a range of new product launches with a focus on sustainability at Packaging Innovations in May. Products on display included the RSW6 robotic pallet wrapper, the BP555 tape dispenser, a PWN4 air pillow system, an OP320 Optima shredder and the Xtegra Tegrabond water activated tape case taper.

On its stand, Southgate showed visitors to the exhibition its commitment to developing alternative products to significantly reduce waste and plastics content and promote the idea of a circular economy.

Since the new Plastic Packaging Tax was first announced, Southgate has been advising businesses to embrace the global solution to eliminating waste. “In the lead up to the tax being introduced, we have been working hard developing NPD which meets the criteria and offers an environmentally friendly alternative,” explains head of marketing at the company Darren Smith. “Our goal has been to have an eco-friendly alternative for all our packaging products, and we displayed a number of those at the exhibition.”

01553 692969
www.southgate.eu.com
Inline gas analysis increases quality while reducing costs

To cover all types of packaging machines, Witt has designed two analysers: the MAPY LE for flow packing machines with continuous gas flushing, and the MAPY VAC for tray sealing and thermoforming packaging machines with intermittent gas flushing.

For flow packers, a sample is continuously drawn from the closing form, fill and seal bag by means of a lance during the introduction of the protective atmosphere, and compliance with the desired gas mixture is monitored by the MAPY LE.

Meanwhile, the MAPY VAC analyses the inflowing protective gas directly in the sealing tool during the cycle of the packaging machine. If the adjustable limit values for O2 or CO2 are breached, MAPY VAC and LE give an alarm or stop the packaging machine directly. The whole process takes place automatically and at maximum speed.

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Plug-and-play conveyor platform delivers factory productivity gains

With the new light conveyor platform (LCP), Interroll is expanding its range of products with a platform-based material-flow solution which is designed to significantly increase the productivity of manufacturing processes.

Designed as a plug-and-play modular system, the LCP allows all systems integrators to implement scalable belt conveyor sections very easily in order to quickly meet customer-specific automation requirements for material flow. The high quality and availability of this solution is ensured by, among other things, the use of technology that has already proven itself many times with users across sectors worldwide.

Efficient material feed and discharge play a crucial role in realising the productivity potential of manufacturing cells, assembly and packaging stations. At the same time, rapidly changing process environments in other industries require flexible conveyor solutions that can easily adapt to new requirements. This, says the company, is what this new material flow solution for systems integrators and plant engineers achieves.

Corresponding LCP-based belt conveyors can be easily assembled from factory-preassembled and predefined modules without any engineering effort and can be put into operation quickly and safely via an autonomous machine control system, optionally without an additional programmable logic controller (PLC). However, depending on customer requirements and the application, connection to an external PLC with user-specific programming is also possible.

The LCP is designed to transport smaller conveyed goods, as well as boxes or polybags weighing up to 50 kg. The conveyors, which can also handle inclines or declines, are driven by compact and energy-efficient drum motors that have an efficiency of over 85%.

The fully modular system can be planned and assembled very easily and conveniently on the PC monitor using Interroll’s existing Layouter tool. This is designed to reduce overall project lead times. In addition, the predefined module sizes in different lengths and widths create the best conditions for fast production and delivery times.

During the development of the new platform, emphasis was also attached to maximum workplace safety, and it features an integrated emergency shutdown at the push of a button, complies with all relevant safety regulations and has quiet noise levels during operation.

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Markem-Imaje has unveiled the SmartLase F250 – a new compact and high-performance 20W fibre laser designed to deliver high-quality permanent coding on high density substrates.

With customers increasingly adopting laser marking solutions for more of their product identification and packaging applications, Markem says the SmartLase F250 is the ideal solution for modern fast-paced production lines. The unit is the first new product launched as a result of Markem-Imaje’s recent acquisition of laser coding and marking solutions company Solaris Laser.

Compact and intelligent, the SmartLase F250 is ideal for businesses seeking best-in-class code quality at high-speed where space is at a premium. Built for even the most challenging environments, the SmartLase F250’s controller, printhead and touchscreen user interface come with at least IP55 ingress protection level which provides long and reliable operation in harsh, dusty and humid conditions.

In operation, it reduces operational expenses through fewer line stoppages and by eliminating the requirement for ink. The SmartLase F250 delivers chemical-free production that helps businesses meet sustainability compliance goals.

Packed with features, the SmartLase F250 comes industry 4.0-ready with an array of industrial interfaces that enable its safe and seamless integration with even the most complex plant automation and manufacturing execution systems.

Once integrated, the intuitive user interface is designed to deliver an increase of up to 20% in operating efficiency.

“The SmartLase F250 combines speed and efficiency with simplicity, safety and sustainability,” says Alex Koudriashov, laser product marketing manager at Markem-Imaje. “Fewer line stoppages and the fact it uses no ink can radically reduce OPEX, while the elimination of chemical components makes it ideal for companies who are looking to reduce their impact on the planet. “The F250 is a printer designed with the future in mind.”

The SmartLase printer is a result of Markem’s acquisition of Solaris Laser
Bytronic Vision Automation has become the first company in the UK to be granted Logistics Partner Integrator (LPI) status by Cognex – the provider of vision systems, software, sensors, and industrial barcode readers used in manufacturing automation. And as an LPI partner, Bytronic says it can now help more companies find the right automation solutions to overcome labour shortages, energy price rises, supply chain pressures and other big challenges that are facing the industry today.

The accolade was given to Bytronic for its team’s expertise in automation and machine vision and positions the firm as a leading integrator of vision technology. After intensive training on-site and in the classroom, five members of the Bytronic team are now ‘C1’ qualified under the Cognex LPI programme, with all of them now working towards the higher-level ‘C2’ status later this year.

“The LPI programme combines online, classroom and onsite training and mentorship to cover all of the specialisms and expertise that logistics customers demand,” says Gavin Noble, field services manager (Europe) at Cognex Corporation.
Packline Materials Handling now offers a new stainless roll handling option with a vertical spindle attachment that also includes a bespoke hinged mechanism.

This hinged vertical spindle attachment was designed in response to a food industry customer to handle rolls of film and foil in a narrow, confined, and restricted space. Constructed from stainless steel, this roll handling solution is suitable for clean room high care environments such as those found in the food, drinks, pharmaceutical and medical industries.

The bespoke vertical spindle features a hinged mechanism to allow easy access and sideways loading onto the processing machinery in a narrow space. The hinged attachment enables the vertical spindle with the roll to turn to the left-hand or right-hand side, rather than the machine itself, allowing an operator to easily rotate the attachment to either side for loading onto the packaging machinery. During transportation, the vertical spindle is held centrally in position by a pin stop release mechanism.

This lifting solution also offers geared rotation and manual gripping mechanism with electric lift and lower functions.

The vertical spindle attachment has a gearbox with manual handwheel for the rotation to and from the vertical to horizontal orientations. A further handwheel provides the reel gripping and release action. In operation, rolls are securely gripped by the core (of either 3 in or 6 in size). This mechanism has a torque limiter fitted so that the clamping fingers do not over or under tighten.

“These features combine to make quick, easy and simple transfers with minimal operator effort which means that the reels can be handled surely and safely with minimum effort and complete confidence,” says director at Packline Teresa Winter.

Maximum lift capacity is 80 kg, to ensure stability while manoeuvring.

Verder is delighted with award

A peristaltic hose pump wins business excellence award

Verder’s Verderflex Dura 65 peristaltic hose pump has won the Global Business Excellence Award for Outstanding New Product/Service.

“Congratulations to Netherlands-based Verder Group for inventing the Verderflex Dura 65 (D65) peristaltic pump that is the first real development in hose pump technology since the arrival of the high-pressure hose,” said the chairperson of the judges. “The D65 pump offers high performance and takes up to 70% less space; hose changes are fast and easy with the unique connection system and the company has come up with an easy-to-use and control, robust pump that can be used in a wide range of industries for heavy duty operations.”

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Frozen and fresh foods can be handled on unit

Among the exhibits shown by Rovema at Hispack in May was the REVO 3800 S machine. This continuous form, fill and seal machine from the REVO series offers a modular design and is available as anything from a simple version for small budgets up to a more sophisticated machine with an inclined filling tube to pack fragile products gently.

Adaptable to continuous or intermittent packaging, the REVO can also process demanding packaging materials such as paper. At Hispack 2022, the company also displayed a pillow bag solution made of kraft paper with water vapour barrier for the frozen products industry. A kraft paper from Mondi was used which can be disposed of via the paper recycling stream.

Mondi’s functional barrier papers are a sustainable packaging alternative, especially for FMCG applications, and can be used as a substitute for plastics films and laminates.

The application that was demonstrated at the exhibition achieves an output of up to 130 pillow bags per minute and can be retrofitted to existing REVO S machines.

Mondi packaging material is produced from renewable raw materials procured from responsible sources. It is characterised by specific mechanical properties such as puncture resistance, flexibility, printability and protection against external influences. The coating technologies applied to these papers create adapted barriers against grease and water vapour and also ensure reliable sealability for products.

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Investment provides extended services for pharma clients

As part of its 100th anniversary celebration in May, the Optima Group inaugurated the CSPE (Comprehensive Scientific Process Engineering) Centre II where the Pharma division is expanding its production area for assembling, commissioning, and qualifying pharmaceutical filling lines to over 4,000 sq m.

The first lines were installed just seven months after the construction project began. The company is therefore now responding to customer requests and is further expanding the successful CSPE process for fast and safe production start-up of the integrated filling lines with isolators and freeze dryers.

“CSPE 2.0 enables an even higher level of integration,” explained Hans Buehler, md/ceo of the Optima Group at the event.

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Compact tray sealer can handle range of large formats flexibly

MPE UK has launched a versatile and compact tray sealer aimed at ready meals, fresh produce and meat products. Building on the company’s heat-sealing experience, the MPE i3 is high throughput technology capable of running large format trays while taking up minimal factory floor space.

The small footprint design of the robust and high speed i3 is ideal for growers, saving valuable floor space, while its simplicity offers efficient and rapid changeover between tray sizes.

Belying its small stature, the unit offers capacity for some of the deepest available tray sealing at 200 mm which are also perfect for the catering trade and meat processors handling joints and also sausages.

An all-electric machine with no pneumatics, the i3 brings energy savings for the food industry and quicker payback on investment.

It could also open funding streams through sustainability grants, says the company.

Future-proofed to take advantage of performance-enhancing software upgrades, features include a self-intuitive user interface, easy and quick tool changes, advanced self-diagnostics, rogue object detection and ‘smart spacing technology’. Pre-heating stations can reduce the already-fast 10-minute changeover to just five minutes.

Developed and manufactured in the UK, the i3 can be bespoke to a customer’s requirements.

MPE’s technical director John Hodgkiss believes the company’s investment in this latest addition to its range of tray sealers will pay dividends for food packaging companies, by offering a cost-saving but highly versatile alternative to the market which is easy to clean, easy to maintain and easy to operate.

“The i3 took just two months to get to market from the design stage,” he says. “Our design team is very flexible and quick in bringing great ideas through to the end product and we’re in a great position to provide the UK’s food processing companies of all sizes exactly what they need to stay ahead of the packaging innovation curve.”

With MAP as standard, the robust i3 is capable of 15 cycles per minute and is suitable for almost all packaging materials.

High pressure processing solution delivers decontamination of raw pet food products

Holmach and UHDE GmbH are introducing a process solution for manufacturers to maintain the nutritional benefits of raw pet food, while ensuring end user safety.

Biologically appropriate raw food (BARF) for dogs and cats offers health benefits, but nervousness relating to the handling of the raw product and the potential contamination from pathogens for both the consumer and their beloved pets, remains across the sector.

Holmach’s technology partner UHDE has been hosting high pressure processing (HPP) trials with a customer in Germany to address these concerns and they are now in the final stages of the project that will see final installation and manufacturing later this year.

From the outset, the priority for this project was to ensure the protection of the pet owner when they prepare the food. It was also a priority for the pet food manufacturer to ensure that its processes aligned with the needs of its retail partners, in terms of shelf life, and in-store display requirements.

Raw meat is HPP processed and then frozen until it’s ready for distribution. After defrosting, the shelf life of the raw meat is approximately 4-6 weeks. This pet food can be put next to human food in the fridge.

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Performance through Understanding
Sustainable digitalisation brings customised offers

At IFFA, Multivac’s group presidents Christian Traumann and Guido Spix outlined how the company intends to shape the future, in co-operation with its customers, by opening up new markets and market segments, and with advanced digitalisation and sustainability.

New packaging solutions which are sustainable, digital and customised to meet any requirements, were highlighted along with the company’s continued expansion.

With its processing and packaging solutions, for example, Multivac is also planning to open up new market segments. For example, a fully automatic line solution for portioning and packing poultry or fresh meat was presented at IFFA. Another solution is the R3, an application-optimised thermoforming packaging machine that can also process recyclable mono-materials such as polypropylene.

“The fusion of digitalisation and machine design is key, as well as solution sustainability,” explained Spix at the event. “In the era of Industry 4.0, machines and lines are becoming increasingly complex, especially in food production,” said Traumann.

“Digitalised lines of this kind significantly reduce product waste.”

The topic of sustainability plays a key role for Multivac in the development of packaging solutions as well as in other vital areas. For example, the company will be using green electricity to reduce the CO2 footprint of its production by 20,000 tons within the next three years. “Sustainability is an important facet of Multivac’s corporate strategy,” explained Spix.

Latest inspection solutions for x-raying taller products and metal detectors for harsh washdown environments

Loma Systems highlighted its latest technology in inspection solutions at IFFA 2022.

On display was the newest addition to Loma’s X5 series of x-ray inspection systems – the X5 SideShoot. Further defining the x-ray offering, X5 SideShoot complements existing applications including the X5 Pipeline x-ray inspection system for pumped and free flowing product. Being a sideview x-ray inspection system, X5 SideShoot is designed for taller products allowing accurate inspection where top down and bottom up x-ray solutions are not optimal. Also on display was Loma’s run-wet series, consisting of an IQ4 metal detector conveyor and a metal detector and checkweigher combination system. Designed to the latest EHEDG guidelines, the new machines offer cleaning efficiency for harsh washdown environments. The IP69 rated systems can withstand high-pressure and high-temperature cleaning regimes and run while still wet, thus maximising production uptime.

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Meeting hygiene demands of meat

Nord Drivesystems presented its drive portfolio at IFFA including its patented washdown-capable DuoDrive geared motor, the high-performance surface treatment nsd tupH as well as the SAFOMI-IEC adapter, a technical advance for mixing and agitation processes.

The nsd tupH surface treatment is described as an economical alternative to stainless steel, and treated surfaces are corrosion resistant, resistant to acids and alkalis and can even withstand cleaning processes with high-pressure cleaners and aggressive media. The nsd tupH version is available for most of the aluminium products in the Nord modular drive system and is therefore suited for hygienically sensitive applications in the food sector.

Meanwhile, visitors to the event saw the DuoDrive geared motor which, in hygienic wash-down design, integrates a high efficiency IE5+ synchronous motor into a single-stage helical gear unit.

Finally, the SAFOMI-IEC adapter is used for an agitator drive instead of a standard IEC adapter, to achieve higher operational reliability and less maintenance. It is available for MAXXDRIVE helical gear units in sizes 7 to 11 and covers maximum output torques from 25 to 75 kNm.

Protein packing demonstrations

Proseal’s role in fast, efficient and high-quality meat and poultry packing was highlighted at this year’s IFFA, where the company exhibited on parent company JBT Corporation’s stands.

The company showed its proven GT2e tray sealing machine and recently launched CP3 case packer, demonstrating its ability to provide a complete primary and transit packing solution for the effective sealing and onward delivery of trays.

To maximise throughput, both machines utilise Proseal’s special continuous infeed technology, which controls the flow of trays and creates a calm machine operating environment to ensure a smoother and more stable journey through the entire sealing and packing processes.

The GT2e and CP3 also have the versatility to handle a wide variety of tray materials and formats, while a major benefit of the GT2’s ‘e’ platform is the machine’s ability to handle any type of seal including atmospheric, MAP, vacuum MAP, skin, skin plus and skin deep, all of which deliver effective product protection to extend shelf life and reduce food waste.

Both machines therefore have the flexibility to adapt to changing market trends and consumer requirements, including both the introduction of alternative tray types to traditional plastic varieties and the increasing popularity of plant-based meat products.

Tray sealing solutions were shown

Lantech modular case erector capable of up to 30 erected cases per minute

• Unique vacuum pick up frame
• Ergonomic magazine for easy filling of case blanks
• Small footprint
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• Installed and commissioned with after sales support

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Anniversary year delivers new range of automation solutions

At IFFA, G Mondini celebrated its 50th anniversary with a new wave of automation solutions that included the neural vision series, the MCL140 crate loader series, loader MBL and its latest compact tray sealer.

The neural vision series delivers non-destructive inspection of product and skin packaging at high throughputs with accuracy. This solution ensures final skin pack integrity and full product compliance, through:

- Deep learning algorithms for quality control
- Camera training to ensure high accuracy across multiple defects, and
- Product properties and geometric recognition and categorisation.

Meanwhile, the new MCL140 crate loader series is available as a stand-alone solution, or it can be integrated into existing lines. Delivering multiple tray loading combinations with complex pick-up positions thanks to its special gripping system, the unit is compact and simplistic in design to provide flexibility for users.

At the show, the latest MBL loader was seen loading mince and burgers into trays at up to 120 per minute for mince or 360 burgers per minute with 98% accuracy.

“The MBL sets a new standard for ease of use, format changeovers, integration, and flexibility,” explains Ross Layton, managing director of G Mondini in the UK.

The latest tray sealer is called the Cigno, which is the new generation of compact automatic tray sealing equipment available from the company. With its lean design, the Cigno delivers an intuitive, fast, accessible solution requiring minimum training and low maintenance.

With rapid format changeover requiring no tools or trolley, the machine is described as the ultimate flexible, compact tray sealing solution.

The new MCL140 crate loader was demonstrated for the first time at IFFA

Cigno is the new generation of compact automatic tray sealing equipment

Energy-efficient and sustainable vacuum solutions for the meat industry were demonstrated throughout the six days

Busch Vacuum Solutions showcased its latest vacuum solutions for the processing and packaging of meat and alternative proteins at IFFA. The company welcomed visitors to its stand with energy-efficient and sustainable vacuum solutions that can deliver energy savings of up to 70%.

In addition to modular solutions, Busch primarily offers individual vacuum supplies that are adapted to customer needs in combination with customised service packages. Rising energy prices in particular are placing an ever-greater financial burden on processing companies.

As a result, the requirements placed on vacuum technology are also changing.

The use of energy-efficient vacuum technology in food processing and packaging is becoming more important, and centralising the vacuum supply enables additional savings potential as, for example, the high energy costs for cooling production can be lowered by reducing waste heat.

The Cobra Plus was on display at IFFA, an intelligent low-maintenance screw vacuum pump that is ready for Industry 4.0 with remote control, status monitoring and communication protocols.

The OTTO digital service was also presented for the first time at the event. These intelligent IoT solutions combine condition monitoring of vacuum pumps with attractive service packages, ensuring production downtime can be reduced, says the company.
Meeting the sustainable needs of meat/other protein products

On the Sealpac stand, visitors saw the latest packaging solutions based on three tray sealers and two thermoformers. These solutions increasingly rely on mono materials for improved recycling, are characterised by reduced film consumption, and process alternative materials such as paper into safe and attractive packaging.

Among other things, the company presented a complete line for the production of the resource-saving FlatMap packaging concept for sliced products, based on a minimum use of plastics and a high proportion of cardboard. It also demonstrated a thermoforming solution for high-speed packaging of burgers in recyclable film, as well as its new, modular PRO thermoformer.

REDUCED ENERGY USE
With the launch of the Amax-series, output can now be up to 50% higher while the integrated EnergyManager ensures minimum energy usage, and the servo technology reduces the air consumption by up to 90%. Each model demonstrates maximum flexibility and is capable of producing a wide variety of packaging concepts, including new types of film made from sustainable materials, as well as hybrid packaging concepts such as eTray or FlatMap.

At IFFA, visitors saw the new PRO thermoformer, which Sealpac says offers unmatched compactness, flexibility, modularity, and efficiency. This thermoformer can be easily configured to the customer’s specific needs via selection of the various modules.

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Installation News

Russell Finex has recently refurbished a worn Finex 22-inch sieve that has been in service at a Scottish labelling manufacturer for over 30 years. Noticing two such machines on a visit to the site, the service team sent one back to HQ for a thorough inspection and health report that was subsequently completed in a week.

When receiving the first machine back, the customer was surprised to find a brand-new refurbished machine after mistakenly thinking it was a brand-new replacement. He then happily sent the second sieve to be refurbished which was delivered back in May.

As well as refurbishments, the Russell Finex team also offers a range of aftersales support including remeshing, servicing and upgrade options. All are designed to maintain maximum performance from the equipment.

Service team restores a 30-year-old industrial sifter to factory new condition for a label producer in Scotland

Fortress Technology’s new Raptor Combi inspection system is assisting a new Irish start-up company to deliver its non-choke Tonstix concept – which involves dissolvable honey jelly pops to soothe young children’s throats. For co-founders of the innovative natural remedy firm Sinéad Crowther and Denise Lauaki, commissioning the installation of the Raptor Combi ensured full product integrity and COP compliance from the start.

Soothing Solutions’ first hygienically flow wrapped packages of Tonstix rolled off the production line in Co. Louth in March this year. Every product pack is inspected for contaminants and checkweighed by the company’s new Fortress Raptor Combi system, ensuring full HACCP and retailer COP compliance.

The product has been successful since launch, and the team already has ambitious plans to collaborate with the multinational pharma companies, confident that its concept and certified dosage delivery stick system will have widespread appeal. Mindful of these big plans, the co-founders intentionally selected an inspection system that would complement its production growth trajectory.

The Fortress system supplied by domestic distributor Advanced Packaging Machinery fulfilled this brief the minute it was unpacked. “In all my wildest dreams I never envisaged getting excited about a metal detector,” states Crowther. Considering the end user at every stage – the child – the inspection machine needed to provide the assurance of zero contaminations that could cause harm.

“The Raptor system went in seamlessly, it’s very user friendly,” she says.

“Frankly, it is the smartest piece of kit on our line, and it ensures full weighing accuracy, extremely sensitive metal contaminant detection levels, full traceability and exceeds all of our COP compliance requirements.”

Fully integrated with the company’s flow wrap machine, an operative manually loads five Tonstix per pack and slides the packs straight into the Raptor for inspection. At the other end, each box is packed onto pallets. The production rectangle flows seamlessly.

“When we give a supplier a brief the hope is that they get it straight off,” explains Lauaki. “This machine was engineered to our exact specifications and went in without a hitch.”

As Soothing Solutions scales up and enters new territories, the Raptor Combi automatically fulfils all the regulatory and bureaucracy requirements.

A high-performance system and a competitive price point, the Combi is capable of inspecting up to 150 ppm, in pack formats of up to 8 kg and measuring 300 mm by 400 mm.

Soothing Solutions’ Sinéad Crowther and Denise Lauaki with the equipment

The refurbished sieve is now in situ...
Pick and place delivers gains

RMGroup has supplied trade wipes manufacturer Allied Hygiene with a high-speed robotic pick and place cell for its flowpack production line that has improved outputs by 40%. The solution incorporates a case erector and case sealer by case handling equipment manufacturer Lantech, a strategic partner of the company.

Allied Hygiene needed a UK packaging and automation manufacturer who could offer a short lead time for production line equipment. A key part of this requirement was the availability of local service engineers for operator training, spares and consumables replacements, as well as ongoing and future service cover.

Given the space constraints on Allied’s flowpack production line, RMGroup installed its RMGPPC-1200 robotic pick and place cell, designed to allow ease of maintenance and clean down, while utilising minimal floor space. The robust 6 axis robot, which allows flexible and versatile packing, provides a cost effective, safe and high-speed solution.

This pick and place cell solution included a Lantech C-1000 case erector and a Lantech CS-300 case sealer, both of which have throughputs of 30 cases a minute. Lantech’s partnership with RMGroup, announced in July 2020, is said to provide end-users with safe, reliable and configurable automation, along with experienced system integration to develop an effective and flexible production line.

“This was the first equipment we have sourced from RMGroup and, given our time constraints, they fully met our brief,” says Andy Phippen, director at Allied Hygiene. “The pick and place cell rapidly improved our efficiencies and outputs by 40%, helping to reduce labour costs and allowing us to be more competitive for our flowpack range of products.

“Our working relationship with RMGroup was very good during a challenging period time wise, and although we have no immediate plans for further installations, any future expansion plans will certainly entail cooperation with RMGroup.”

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CKF Systems was contacted by bio-bean – a company that recycles spent coffee grounds into a fuel source – and was asked to design and build a bag packing cell for its Coffee Logs product. Now installed in bio-bean’s production facility in Cambridgeshire, the new system has improved health and safety and working conditions as well as increasing efficiency and streamlining its operations.

In fact, Ben Mills-Lamptey, bio-bean’s chief technology officer is pleased it chose CKF as a supplier for such a significant piece of equipment. “We look forward to partnering with them in the future as we expand our business further,” he says.

**COFFEE-RECYCLING FIRST** bio-bean is a rapidly growing organisation which began trading in 2013. The company launched the world’s first industrial-scale coffee recycling factory before developing and launching Coffee Logs, which are an environmentally friendly and sustainable fuel alternative for log burners and multi-fuel stoves.

The fully automated bag packing cell, designed and built by CKF Systems at its facility in Gloucester, was installed and commissioned in the customer premises last year.

In operation, the cell receives the manufactured, formed logs on the twin infeed conveyor from the production line. A dual cycle collation, pick and transfer system then provides accurate positioning, orientation and loading of 8 logs per cycle into the pre-conditioned open paper bag.

Using the latest vacuum technology from Piab and servo-driven vertical axis, the logs are inserted into the waiting bag. The load operation is then repeated, completing the filled bag containing sixteen Coffee Logs.

An automated bag delivery system has a magazine holding a stack of 90 flat pack bags, with a manually fed cassette allowing for bag replenishment while the machine is running. This ensures the constant availability of the machine with no interruption to production. The magazine conveyor and a custom designed vacuum head positions the bag ready for packing. The bag is conditioned from its flat pack format with a combination of precision pneumatic systems prior to being clamped in position. The pre-conditioning of the bag together with the programmed servo driven axis ensures bag integrity during the insertion of the orientated Coffee Logs.

Once the bag has been packed with the logs, it is automatically lowered and transferred from the filling area of the machine and onto the outfeed conveyor.

Control is provided to the machine through an Allen Bradley L30 ERMS PLC and 12 in PanelView Plus HMI, all mounted within a custom-built control panel. The machine is designed and built to pack 2,880 Coffee Logs per hour.

“The design and also the engineering of the Coffee Logs bag Auto Packer by CKF has successfully delivered for bio-bean,” explains Mills-Lamptey. “It’s an innovative solution that enables us to scale our production whilst retaining our fully sustainable product packaging.

“It has also enhanced the productivity and profitability of our business,” he says. “Throughout the project, CKF’s understanding of our manufacturing strategy, and in particular our packaging requirements, along with our current technical capability ensured key milestones were met,” he continues. “Like with most innovative and technically challenging projects, CKF was able to sufficiently address challenges which included variations in our technical requirements as well as supply chain issues arising from the COVID-19 pandemic,” he says.
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Delivery system makes print service productive

Glasgow-based print service provider MBM Print has installed a new Palamides Delta 502 Pro fully automatic, stack-forming delivery system to improve productivity while reducing operating costs.

Purchased from Friedheim International, the exclusive provider of Palamides equipment in the UK and Ireland, the unit was installed at MBM Print’s facility in East Kilbride in April.

It joins a range of digital, web and lithographic printing machinery at the site, slotting into this production line-up to strengthen the company’s diverse service offering, which includes complex data driven print and supply chain management.

Installing the powerful Palamides automatic delivery machine means the number of staff required to run the company’s saddle stitching machine has been significantly reduced, thus freeing up these employees to take on other jobs across the production process.

With more staff available for other tasks, MBM Print now has the potential to operate even faster, allowing it to deliver work to customers quicker and even take on additional projects – reducing costs and increasing productivity in the process, says Friedheim.

The Palamides Delta Pro range offers users a number of advantages over existing models – reducing costs and increasing productivity in the process, says Friedheim.

The Palamides Delta Pro range offers users a number of advantages over existing models – reducing costs and increasing productivity in the process, says Friedheim.

Increased operating sizes are offered to customers of the Delta Pro 502 and the larger Palamides Delta Pro 703. Both models also feature a new screen that is more operator-friendly than existing models, and which significantly improves the overall user experience.

Research found offering financing options as part of the sales process makes a significant positive contribution to revenues and also profitability.

Entitled Sealing the Deal: How Smart Financing programmes enable sales & profit; the new paper exposes the measurable difference integrated smart finance can make to a vendor’s bottom line. As part of the research, SFS interviewed 50 of its international vendor partners. Their responses highlight the consistent importance of such programmes across industries and on deals of all sizes.

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Components prove a reliable and safe option for designers

Design display company Portal Devices has used components from Elesa (UK) to deliver on its objective to provide engineering solutions and eliminate project difficulties from both an optical and mechanical perspective in its specialist products. These are at the heart of some of the best-known theme parks, famous planetariums, attractions and even integrated into simulation technology.

“We’ve found projection mounts and rigs that don’t live up to the quality required to be a common problem within our industry,” explains company founder Matt Roberts. “They must be reliable for years to come, rigid down to micron levels and robust enough to withstand rough handling.

SUPPLIER CHALLENGES

“After trying and testing a multitude of machine component providers, finding a balance of strength and weight can become a challenge,” he continues. “Fortunately, we came across Elesa (UK) and we’ve found its products to be the best on the market. And as we’re so reliant on our connecting clamps to act as the foundation to our new ‘POD’ projector mounts, we recommended this be a production area they explore.”

Elesa therefore not only provided a variety of machine components such as adjustable feet and knobs, but it has also reacted to the market demand for tube connectors and clamping elements. Portal Devices has just completed a project with these new components that provided stable joints.

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Not so very long ago, every magazine you picked up (and every PR company flogging stories to editors) were talking about this new-fangled thing called Industry 4.0... this complicated thing that needed explaining to everyone. We may moan about the British being late to the robot installation party, but you can’t say the same for UK PLC adopting and therefore benefiting from the fourth industrial revolution. It is genuinely remarkable how quickly the internet of things has become all-encompassing, and practically all the equipment that is now covered in the media, and this magazine is no exception, includes some kind of ‘smart’ elements to new equipment being developed.

But head of sales: automation at CME Ian Marks believes there is still a vast range of legacy automation systems that, because they don’t contain ‘smart’ features probably need to be replaced (even if they are still functioning). “The limitations of existing technology can begin to show in a number of ways,” he says. This could be in terms of connectivity between processes and machines, the lack of software, wireless sensors or other digital technologies that are required to operate within today’s smart factory environment.

The drivers for new investment will of course differ from company to company and market to market, but Marks argues that the use of robot systems and other programmable devices, as part of a fully automated manufacturing system, helps to achieve the highest levels of flexibility. “Their ability to adapt to changing production needs, through the use of machine vision, sensors, or connectivity with other technologies and factory MES systems, means that they are able to automatically select the correct programme, change tools or end effectors and perform the tasks needed for that particular product variant,” he says.

Of course, for many FMCG manufacturers today, the traditional concept of a production facility dedicated to a specific range of products is no longer appropriate. Instead, concepts are evolving around modular and much more flexible production cells, which may be linked by conveyor systems, or serviced by a combination of AGV or other autonomous vehicles, and a new generation of mobile robots.

The benefits of increased automation and the remote management of operations have been adopted by many food manufacturers, explains Torsten Giese of Ishida Europe. Monitoring systems are also being used increasingly for preventative maintenance advantages. “The data capture, and analytical abilities of these systems are able to help companies manage their operations more profitably,” he tells Machinery Update.

Over the next 34 pages, you will find all kinds of new technology contained in this automation, robotics & vision systems feature. Vision systems, of course, are the crucial enabling technology across many applications, and you will find many examples of the very latest. The adoption of robots is also outlined, as well as the automation platforms that deliver what the smart factory needs.

We hope you find it useful.
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BARA believes an open mind is vital when automating

Chairman of BARA (British Automation & Robot Association) George Thompson believes that although the automotive industry has been the first to embrace the benefits of automation and robotics, it does not mean there isn’t a tremendous amount that other sectors cannot learn from this, even if their budgets are on a smaller scale. Here, he explains his thinking.

There is a tremendous amount that other market sectors can learn from the automotive sector, but the same could also be said about parts of aerospace, food and drink, pharmaceuticals and to some extent even general industry. Each sector has things it does exceptionally well, and things on which it could improve.

For me, the important thing when thinking about automation, is to network all of the sectors together and to learn from each other. I like to refer to this as cross pollination. And what cross pollination will give us all, is a hybridisation of best practices from each sector. This, however, cannot be a single activity, it needs to be a continuous improvement process.

Of course, the common goal of all of these sectors is to improve the manufacturing process by driving out excess cost and also waste.

However, a common misconception is that because not every sector has the budget of the automotive companies, this means the adoption of automation and robotics is not possible. Personally, I’m not always convinced that the size of the automation budget is as important as the thought process that goes on before a decision to automate is taken. Whilst a realistic budget is important, having an open mind is also an imperative.

In the automotive sector, it is typically a given that to keep production costs to a minimum, automation is the key. This means that products are designed with a “how can we automate this?” process from the outset. It doesn’t matter if we are talking about traditional powertrain vehicles or electrified vehicles, the same discussions need to take place to automate the production of an engine or a battery pack.

I would argue that as soon as a decision is made to consider introducing automation, you should get as many reputable integrators in as necessary from a wide range of industry sectors for initial brainstorming. Just because something works to some extent as a manual process, it does not always mean that the same steps are needed when implementing automation.

Whether you are making a vehicle or a patisserie, sometimes a new set of eyes will see a better way of producing the end product. I believe our BARA website can help you start your journey in sourcing integrators and also in identifying technology.
Neil Sandhu, chair of the UK Industrial Vision Association (UKIVA), believes UK manufacturing is set to bounce-back with a renewed hunger for automation and robotics in the post-covid economy. This was a sentiment borne out at the association’s recent Machine Vision Conference, which saw a palpable spirit of renewed enthusiasm as visitors returned in large numbers to the event.

Machine vision has a symbiotic relationship with many automation and robotics technologies, which is why developments in vision are a good barometer of how the industry as a whole is faring, Sandhu says. At the event, there was a genuine sense of discovery among delegates who wanted to catch up with the latest technologies, and many with new automation projects to discuss.

This was encouraging to see, considering that charges of investment inertia and project conservativism are so often laid at the door of UK manufacturers.

Sandhu thinks the developments being seen in machine vision reflect an industry on the bounce-back. Established automation industry users like automotive, food & beverage and pharmaceutical are returning to the table with new projects. They want to take advantage of hardware developments such as 3D stereo cameras, snapshot time-of-flight and Short Wave Infra-Red (SWIR) that are powered by rapid communication speeds to enable processing of unprecedented amounts of data.

However, for robotics and automation to boost UK manufacturing growth, there has to be much greater adoption further down the supply chain and among smaller-scale production facilities. Those once cautious of complex programming, lighting and machine integration, are now taking their first steps with more accessible imaging technologies such as embedded vision.

The ability to create edge integrations and run applications directly on smart and programmable cameras, mean that projects once seen as too daunting and risky, have become affordable as well as achievable.

Artificial Intelligence and Deep Learning neural networks are offering powerful new opportunities to solve applications that have previously defied automation. While they are not a silver bullet for every project, we are likely to see rapid adoption of Deep Learning, especially as new entry-level systems now offer a chance for engineers to test the water.

Whether you are starting out on a vision journey, or keen to explore more of what machine vision can achieve, the industry has plenty to offer, and the UKIVA is part of this. We have a responsibility to support UK manufacturing growth, by educating UK machine builders, integrators and manufacturers to the possibilities.

“That’s why for next year’s UKIVA Conference, we are co-locating with BARA (The British Automation & Robot Association) for the first time and moving to a two-day event which will be held at the CBS Arena, Coventry on 20 – 21 June.

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‘Touchless’ trend needs automation

“Global supply chain disruption has led to meat processors increasingly embracing a ‘touchless’ trend of packaging automation,” says Stephanie Poole, senior business development & retail manager, food care NW Europe at Sealed Air, and she believes this change will also outlast the current global uncertainty.

Poole believes a combination of factors such as minimising food waste, increasing efficiencies, maximising food safety and dealing with labour shortages, along with ever-changing market demands, is driving this new trend for touchless packaging automation. “Meat processors are investing in intelligent vacuum packaging systems that reduce manual touchpoints to limit the reliance on labour, while also improving speed, safety and sustainability,” she says.

Automated vacuum packaging systems reduce the reliance on labour by replacing multiple human touchpoints with high-speed automation that delivers consistent throughputs. Systems can be seamlessly integrated into processing lines to ensure they are set at the right speeds to keep pace with the wider production schedule, therefore minimising any food wastage.

“The touchless trend has longevity beyond labour shortages, because reducing manual touchpoints can also minimise the risk of errors and waste, which can be caused by fatigue from repetitive meat packaging processes,” she says. “Automated vacuum packaging systems deliver high levels of accuracy and consistency, ensuring meats are tightly and properly packed every time.”

Vacuum packaging systems such as Cryovac brand VS2X and VS9X have been specifically designed to increase packaging speeds while improving food safety.  

B&R Automation’s ACOPOStrak transport system has delivered practical gains for Optima

A clever transport system has allowed Optima to join a filling and packaging machine easily

Optima has succeeded in joining a filling and packaging machine in a way that perfectly dovetails the two processes by adopting a special system that features B&R Automation’s intelligent ACOPOStrak transport system.

“For us machine builders, connecting different machine modules is always particularly challenging,” says Andreas Dreschner, technical sales manager at Optima. “For our application, there was no other system that offered the same kind of flexibility or met our requirements for speed and dynamics the way ACOPOStrak does.”

The new application was used for the first time in a filling and packaging line for a Dutch food retailer to produce single-serve aluminium coffee capsules. Each shuttle was equipped with a product carrier to hold one coffee capsule, which allows each capsule to move through the line entirely independently of the rest.

This feature makes it possible to group together any number of capsules on the fly during transport. “One challenge with this application were the gaps that arise during the manufacturing process,” says Dreschner. “This can be caused when capsules are rejected for failing to pass quality inspection, for example. However, the ability of ACOPOStrak shuttles to move independently means any gaps in the production flow can easily be closed.

Any capsules that fail to pass quality inspection are sorted out straight away, and ACOPOStrak immediately moves up the next capsule, so the flow of product continues.

After filling and sealing the coffee capsules, the filling line passes on twelve capsules at a time to the infeed of the packaging line, which has fifteen lanes. Here, the flexible shuttles of the B&R transport system have delivered benefits. ACOPOStrak receives groups of twelve capsules from the filling machine, and by the time they reach the packaging infeed, they’ve been regrouped in sets of fifteen.

In terms of footprint, Optima says its solution has a clear advantage over systems that use conventional technology for product grouping. “With a conventional construction using screws, the grouping function requires a machine frame with two fields, each 220 cm long,” explains Dreschner. “The new solution, however, adds just 80 cm to the overall length of the system, so it’s almost four metres shorter than before.”

Private label manufacturers who have to deliver products for a variety of different customers have been delighted with the kind of on-the-fly grouping flexibility that this system now offers.

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Digital journey pays dividends

Cama says its top-loading secondary packaging equipment delivers transferrable sector benefits

Following enhancements to its existing digital infrastructure – including improvements to digital twin and virtualisation solutions – Cama Group’s top-loading secondary packaging technology is now addressing the high-flexibility packaging requirements of a wider selection of industries in a ‘smarter’ way.

These advances in digitalisation, coupled with Cama’s in-house-developed robotic pick-and-place technology and advanced vision systems, mean that end users can maximise the total cost of ownership. The top-loading equipment – with its wide-ranging flexibility and adaptability – is capable of fulfilling packaging routines and processes that would, in the past, have required multiple separate installations.

“Our early decision to go as ‘digital as possible’ has certainly paid off for both us and our customers as we both realise the benefits of a fully interconnected and easily reprogrammable automation infrastructure,” explains Alessandro Rocca, sales engineering director at Cama Group.

“Clearer data pathways and data exchange have also bolstered our in-house developed robotic solution, which is a unique offering on the market,” he claims.

In operation, the robot-equipped top-loading packaging lines can accept a wide array of in-feed formats, while delivering multiple out-feed options, either in parallel, concurrently or batch-specific. The modular design of the BTG solutions means that additional modules can be added easily to increase the robot count to boost throughput.

This flexibility is compounded by changeover routines that often take a fraction of the time compared to industry norms. “By using HMI re-programmable servo systems, digital twins/virtualisation and RFID technology, we have significantly reduced changeovers in terms of both time and effort,” explains Rocca.

According to Massimo Monguzzi, R&D manager, at Cama, its in-house robotic solution has been fine-tuned over the years to work in perfect harmony with vision systems; and this tight integration is illustrated by the pick speeds and accuracies the company achieves. “In addition to robotic guidance, quality control is another major beneficiary of the contemporary vision solutions we deploy,” he says.

“Our experience of vision technology is very wide in terms of sectors, and it is a vital part of our contemporary technology offering,” Rocca adds.

Cama says that its digital approach fosters far greater modularity

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Vision reduces any code risks

Domino says it is helping customers to optimise production with new vision inspection systems

Domino Printing Sciences (Domino) has launched a new range of smart vision systems for automatic inspection and validation of product codes that fully integrate with the company’s existing coding automation software, QuickDesign. The system’s capabilities include validation of date codes, batch numbers, barcodes, and 2D-printed codes.

The R-Series was developed in consultation with customers following Domino’s acquisition of Lake Image Systems. Specifically designed to work with Domino coding automation software, printers, and coders, the new R-Series eliminates the need for manual code validation and inspection, significantly reducing the risk of an incorrect code leaving a manufacturing site unnoticed, while allowing for more efficient use and distribution of resources.

“With the R-Series, we can offer our customers a range of integrated vision systems that automate the checking of every code, so that unidentified coding errors and associated waste and costs become a thing of the past,” explains Andy Barrett, portfolio and requirements director at Domino.

“The R-Series completes a closed-loop coding solution from Domino, also encompassing our trusted printing solutions and QuickDesign coding automation software,” says Craig Stobie, global sector development director at the company. “By partnering with Domino to automate and validate their coding and marking systems, our customers can protect their operations from coding errors, reduce the risk of manufacturing waste, and increase overall equipment effectiveness and product yields.”

R-Series systems have been developed to integrate seamlessly into existing production lines. R-Series controllers can be run from a single human-machine interface with Domino ‘look and feel’, which is easy to learn and reduces the need for additional training.

Unlike other vision systems, the R-Series is specifically designed for coding and marking applications. The systems are optimised for Domino software, fonts, print characteristics, and inks and match the speed of Domino’s fastest printers, which means that manufacturers can code with confidence, knowing that every code that is printed can be checked and verified.

Domino’s R-Series offers automatic validation for users

Domino’s R-Series offers automatic validation for users

The R-Series is available as three separate products, with bespoke options available to cater for all requirements and budgets.

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Shemesh Automation will be incorporating robotics and an advanced vision system into its next generation of capping machines. This development, says the company, will introduce unmatched flexibility and enable higher speeds and enhanced accuracy in automatic caps, pumps, and trigger caps sorting.

Set for launch in September, the Attilus capping machine incorporates robotic and vision system technologies in both the cap sorting and cap fixing phases of the machine to provide the company’s most versatile capping machine to date.

A robotic sorter based on a Delta robot and an advanced vision system allows the machine to sort and orientate caps from the most complex screw tops to trigger and pump caps. It also utilises a pick & place Cartesian robotic arm (gantry two axis robot), which is servo-controlled, to track and deliver the caps to the bottles while in motion. This ensures smoother and faster production.

The capper operates at up to 80 ppm and includes bottle tracking and a synchronised gantry robot based on encoders and servos. Its integrated Siemens/AB PLC and HMI puts the operator in complete control, allowing simple programming and format changeovers. The robotic enhancement ensures changeover downtime is kept to a minimum (at under 20 minutes).

Standard Attilus features include servo-controlled torque QC and cap position QC, as well as an array of optional features such as: vision QC system for cap position, fully automatic servo-controlled changeover, bottle orientation for inclined neck bottles and ATEX/EX Compliance.

“Shemesh Automation has built a reputation for staying ahead of the curve and the Attilus is the perfect example of this – with the incorporation of robotics and advanced vision technology to deliver a faster, smoother and more versatile and even more accurate capping solution than ever before,” says Shemesh Automation CEO Shai Shemesh.

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Automation using mobile robots is presenting a raft of exciting new opportunities for improved efficiency and better utilisation of increasingly stretched workforces, says Jordi Artigas, chief engineer for mobile robots at ABB Robotics. Here, he explains the key benefits of mobile robots and provides some tips to consider when selecting any mobile robotic solutions.

Mobile robots, including both Automated Guided Vehicles (AGVs) and also Autonomous Mobile Robots (AMRs), are providing an increasingly viable solution for companies looking for ways to maximise the productivity and efficiency of their operations and to tackle labour shortages by empowering their existing workforces to work more effectively.

Recent developments in vision, navigation and artificial intelligence (AI), coupled with significant reductions in cost, have made autonomous robots increasingly suitable for an expanding range of tasks in a variety of environments. From industrial automotive manufacturing plants and logistics, distribution and fulfilment centres through to hospitals and even in restaurants.

A key advantage of the latest generation of AMRs is their ability to understand their operating environment, enabling them to navigate around obstacles and operate safely in the presence of human operators. In contrast to AGVs, which require guided paths such as magnetic tape or QR codes to navigate through their environment, AMRs can use data from cameras, laser scanners and other sensors to understand their surroundings and autonomously make the decisions needed to move within them.

By using the data to feed Simultaneous Localisation and Mapping (SLAM) algorithms, the robot can construct a map of its surroundings using the principles of triangulation to detect and locate reference points, which it can then use to find its way around. This same autonomous decision-making also enables it to react to the presence of obstacles and people, making AMRs increasingly safe to deploy alongside human workers at a site.

While a significant percentage of mobile robots are used in large-scale operations that are already familiar with robotic automation, their use is quickly extending into new sectors as operators become aware of the many advantages they can offer, especially as a means of supplementing depleted workforces. In the industrial sector, potential applications could include use in a wide variety of manufacturing environments that have traditionally relied on either conveyor belts or forklifts to transport goods around the factory floor, including plastics, metals and wood.

Here are some top tips to help ensure the right solution is chosen:

1. **Check the ROI**
   
The calculation used to produce the best ROI (return on investment) for mobile robots should consider key factors including the current costs of human labour that could be used more effectively, the potential for greater throughput, savings through reduced wastage and minimisation of errors and the costs of any safety
issues that are currently affecting production.

2. Consider service and support
While AGV and AMR solutions are becoming increasingly affordable, it is important to ensure that any cost savings are not achieved at the expense of service and support. Make sure to quiz suppliers about their ability to provide servicing agreements to ensure your solution will be maintained at peak performance, with 24/7 support if anything goes wrong in operation.

3. Don’t over-specify
For optimum efficiency, ensure that every mobile robot in your network is fully utilised to avoid missing out on the full benefits they can offer. While it can be difficult to know exactly how many robots you will need, advanced modelling tools can help you make the right calculation. Your supplier should be able to assist with this, too.

4. AGV or AMR?
While the term ‘AGV’ is often used interchangeably, there is a distinct difference between an AGV and an AMR, especially when it comes to price. AGV solutions are generally ideal where the robot will be expected to follow the same paths and where human operators are not likely to be present in the same working area.

For applications where the opposite is true, then AMRs can present the better alternative, providing the intelligence and flexibility to handle changing circumstances and with the safety built in to operate alongside people.

In the same way as industrial robots, the key to success in introducing mobile robots to your operation is to use them to enable your existing workers to be utilised more effectively. By taking over the tedious, dangerous and heavy tasks associated with transporting items around production or distribution environments, mobile robots offer the ideal solution to answering the issues of labour shortages, as well as providing the speed, efficiency and flexibility needed to satisfy the growing demands of today’s consumers for faster production and delivery.

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When Italian manufacturer of pastries Sfoglia Torino identified a need to speed up production on the line making its vol-au-vent cases, it began discussions with systems integrators Tiesse, based in Visano, just south of Lake Garda.

Kawasaki has developed a robotic solution to speed up delicate vol-au-vent case production.

With this successfully addressed, the focus turned to the design of the packaging procedures as the products emerged from the other end of the baking and cooling line.

FOUR KAWASAKI DELTA ROBOTS

The packaging station downstream of the cooling section is essentially a cabin housing the conveyor and four Kawasaki YF-03N Delta robots, each equipped with some special vacuum gripping devices that lift the individual vol-au-vent cases three at a time with precision and with speed.

A vision system provided by regular Tiesse partners TS Vision monitors the positioning for pickup and placement into the adjacent blister packs, and the complete system has proved to be a significant enhancement to line productivity.

The handling of foodstuffs has long been a key application area for Kawasaki robots and working with delicate and irregular shaped items like these pastry cases is always challenging.

Bosch Rexroth says it has produced a new solution that drastically simplifies the automation world, solves the real problems of customers and helps them overcome these challenges. With ctrlX AUTOMATION, the company has created an automation platform that removes the limitations of previous solutions.

ctrlX AUTOMATION is, so to speak, the smartphone of automation that breaks through the classic boundaries between machine controls, IT and the Internet of Things. With a Linux real-time operating system, consistently open standards, app technology for programming, web-based engineering and a comprehensive IoT connection, it reduces engineering and implementation effort between 30-50%.

It gives machine builders all the freedom of the app technology they recognise from smart devices and these apps can be created in a variety of programming languages.

The configuration and commissioning of the automation components is totally web-based without software installation. The development environment supports GitHub, an established developer community with more than ten million registered users worldwide.

This gives machine manufacturers access to virtually unlimited programming capacity and already written functions, as well as better internal collaboration in protected areas.

In hardware terms, ctrlX AUTOMATION is based on a new generation of multicore processors, which provide sufficient computing power for almost all automation tasks. The same high-performance central processing unit (CPU) can be integrated into embedded controllers (ctrlX CORE), industrial PCs (ctrlX IPC) or directly into drives (ctrlX DRIVE).

Bosch Rexroth says its system is very easy to use.
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New market development manager at Omron Garry Lewis thinks that blended working using collaborative robots (cobots) can help to redefine automation as a dynamic alternative for manufacturers.

“Rather than replacing workers, cobots can empower workers who want to work alongside robots,” he says. “This has the potential to reignite a passion for automation and robotics with those who can share the cobot vision and future potential.”

Cobots need to be programmed, operated, and maintained. They enable creative problem solving and inspire solution-oriented thinking. These machines can now step in to tackle heavy, tedious or unpleasant tasks, freeing their human colleagues up for more high-value work that requires more thought or a considered human touch. The key to success is using these new technologies effectively in roles that bring tangible benefits to a supply chain, where speed is of the essence as are the requirements for safety, maximum efficiency and flexibility.

End of line palletising is one example that are suited to cobots. The simple yet repetitive and physically demanding process of getting goods stacked is not suited to current staff shortages and an ageing workforce. Many robotic palletisers are still large, bulky systems that take up significant space in an environment where it is at a premium.

Robotic palletisers can positively impact the safety of employees, removing a significant cause of RSIs and more severe injuries, however they do introduce new machinery into the workplace, presenting a different kind of risk that needs to be overcome.

Safety considerations and programming can be an ongoing challenge. Therefore, the hurdles to implement robotic palletisers may seem too great. Recognising these challenges, Omron in collaboration with Reeco, has developed another approach to end of line palletising. Creating an easy, flexible, safe, and compact solution to getting stock palletised and ready for transport. The RB1200 is designed for small footprint installations. Giving facilities the benefits of robotic palletising without taking up too much space and restricting other operations. Available with fully integrated safety features, for quick deployment and compliance, each RB1200 system includes safety fencing for each pallet runway, thus restricting and monitoring entry points through the use of safety scanners.

Omron’s Garry Lewis believes the human/cobot mix breeds success.
software design quick and simple while interfacing seamlessly with the RB1200’s EasyStack visual software, plus its offline editor offers the flexibility to create and modify programs without being connected to the palletiser.

Reeco’s EasyStack visual software is designed to be flexible and maximise utilisation. The interface contains easy to understand visual aids which allows users to program new pallet formats quickly. Configuration takes a few steps with only basic pallet/box parameters and layer design/stack preference inputs required. EasyStack also reduces the changeover time for palletiser applications.

The tool is designed to be used by line operators without the need for engineering support. Plus, the plug and play palletiser can be redeployed between lines quickly to meet any changing site demands.

Its compact size reduces the footprint required for operation and comprehensive safety features allow for quick and compliant deployment. Software design is based on an intuitive and easy to learn interface and flexible use that works no matter the application, reducing downtime and maximising utilisation.

Ultimately, the RB1200 presents a pick rate of 12 items per minute and the ability to handle products up to 10 kg. In some applications, and with a reduced pick rate, payloads of up to 12 kg are possible.

In summary, much has been made of the growing need to invest in automation and robotics since the pandemic struck. However, what we are seeing is an awful lot of incremental improvements, rather than step changes as hesitancies remain over the human vs robot debate. The UK is viewed as a slow adopter of such technology, but it seems we may have turned a corner with vision systems becoming more capable and easier to use as well as robots getting faster. Crucially, with cobots being developed that can carry heavier weights, making them even more applicable for more applications which also makes them more viable to support the supply chain process.

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A cobot tool brings gains to palletising

Piab says its cobot palletising tool (CPT) helps to get more pallets out per day, meeting the needs of the eCommerce, logistics and warehousing sectors.

The flexible picking zone of Piab’s newly developed CPT enables multiple carton handling with cobots in every cycle at high speed. It allows users to palletise more boxes, ultimately leading to more pallets readily prepared for shipment each day.

The CPT is a smart and compact cobot gripper which allows customers to get more products out at the same time. Its multi-zone gripper surface picks several boxes, of the same or different shapes, in the same cycle. Including the piSMART valve unit further ensures maximum speed of operations.

By picking up several cartons and moving them at once, combined with adding little weight to the cobot arm, the wear on the robot is reduced, which ultimately leads to a longer cobot life.

The CPT consists of a pump unit and a suction plate that picks up the cartons. If a different configuration is required, only the suction plate needs to be exchanged. This reduces end-of-arm-tool cost by up to 80%, says Piab, while providing complete flexibility for users.

Equipped with the latest COAX vacuum generation technology, air consumption is reduced, while secure lifting power at maximum payload is ensured.

The CPT meets eCommerce’s need for speed

The components that make up the new vision installation solutions from Murrelektronik

Plug and play image options

Murrelektronik has expanded its decentralised automation technology with new vision systems

Murrelektronik now offers decentralised installation solutions specifically for industrial image processing.

The company now provides machine and system builders a ‘plug and play’ solution for connecting power supplies and enabling signal/data management for the smart networking of cameras in industrial production processes or logistics. The new solution for industrial image processing includes switches, distributors and feeders that can be mounted on the machine, as well as the corresponding high-performance cable and connector technology.

These components are designed to minimise installation effort and maximise performance for both new and existing machines and systems.

Efficient power supply and reliable data communication are the pillars of a functioning installation concept. The goal to combine a machine or plant’s devices into a system efficiently and economically. Murrelektronik’s modular vision installation solutions allow users to integrate a decentralised installation concept into existing system architectures as well as new machines and systems.

These components include the Xelity hybrid switch (which has connections for up to four cameras, handling smooth and error-free data communication), the Master Breakout Box (a power and signal distributor) and the Injection Box (a voltage and signal feeder).

Each is designed to be mounted directly in the machine environment near to the respective vision system.

“Our decentralised installation concept has the unbeatable advantage that we save our customers the time-consuming and expensive control cabinet installation,” says Carl Tyler from Murrelektronik UK. “Switch cabinets are not required as everything is IP67 and designed to be mounted in the field.

“Another advantage is that vision systems can not only be put into operation quickly and flexibly, but they also facilitate and accelerate further diagnostics during operation - significantly reducing system and machine downtime,” he tells Machinery Update.

“With our vision installation solutions, customers can trim their production processes to greater efficiency and higher throughput,” says Tyler. “As a result, they increase quality and avoid costly rework and also reduce the footprint of the machine with smaller or in some cases no cabinets.”

The CPT meets eCommerce’s need for speed
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See robots as part of the discussion

Martin Short of Sick UK believes cobots have crashed down accessibility barriers and emboldened engineers.

“Ask if robots could perform factory tasks a few years ago might have been dismissed as a pipe dream,” says Martin Short, a machine vision specialist at Sick UK. “However, collaborative robots have changed all that as they have crashed down barriers to accessibility and emboldened more engineering teams to seek out new production efficiencies.”

Once project planning gets underway, it could well be that the answer might not be a collaborative (or cobot) option after all, but instead specified from a broadening spectrum of robot types and payloads. Yet cobots have opened up the conversation and put robotics in the vanguard of a growing automation trend to redeploy staff more productively, and to improve overall equipment effectiveness.

Of course, robots must have eyes to ‘see’. As the use of robots expands, so machine vision systems develop to complement them. For every project, vision is saving development time by making systems easier to integrate, set up and use. Simple vision sensors can be configured in minutes to perform a pre-determined repeatable task, while programmable cameras can be uploaded with application-specific vision-guidance software that runs directly on the device itself. For more bespoke applications, high-precision streaming devices now provide super-high resolutions with rapid image-processing.

Robots need vision for localisation. Vision sensors detect the correct part, then let the robot know its position and orientation, even if it is moving. The vision system captures an accurate image of the scene, processes the image data and communicates the co-ordinates to the robot controller.

Ask if 2D or 3D is needed? A 2D vision sensor will be the correct solution when the image contrast is sufficient to extract data from a scene, but robotic applications frequently involve picking and placing, and often

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controller, and to configure in minimal time. It is true that advances in robotics, vision systems and digital ‘internet of things’ monitoring are combining to open the eyes of production teams to the opportunities for efficiencies that they did not even expect. Engineers can now feel confident in the prospects for a good return on investment.

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need three-dimensional measurements.

A challenging 3D vision application that is increasingly being automated is the need to pick parts out of a bin or stillage. To do so, a robot must be able to identify the uppermost part to pick from the pile, then orientate and remove it without damaging the product, or the robot gripper itself. Sick’s PLB 3D vision-guidance system, for instance, was initially developed to pick randomly orientated blanks, castings or forged metal parts, but now is used with robots of varying types, and is equally at home when picking small components in semiconductor production for instance. Sick’s focus has been to make it easy for engineers to integrate vision guidance systems to communicate directly with the robot.
PMA members have been meeting efficiency needs of customers across diverse product sectors and here, we highlight two of the most up to date robot and vision systems installations completed recently.

KnitMesh Technologies, for instance, is using Epson’s VT6L All-in-One 6-axis robot to produce millions of components quickly and accurately. The company’s knitted wire mesh components are produced in a range of metallic, mineral or synthetic materials and processed to deliver bespoke properties for a wide range of customer applications.

Many of KnitMesh’s projects involve high volumes of components and the company has historically relied on pneumatic-based automation systems to streamline its processes and meet production quotas on time. However, a recently secured contract to produce 48 million electric vehicle (EV) filter components over eight years, afforded the opportunity to move to a robotics-based automation solution instead.

“Pneumatic automation systems can be adapted quickly, but they are also unreliable and prone to breakages, which means they need continuous management,” explains Craig Jones, engineering manager at KnitMesh.

“By contrast, robotic solutions are faster, more accurate, and have a failure rate of virtually zero, offering huge benefits to our production processes. “Not only that, but they really engage our engineering team and give us the opportunity to progress our technical and manufacturing capabilities as a business,” he tells Machinery Update.

KnitMesh consulted with its long-term automation partner Nortech to identify the best robotics solution for its needs. After careful evaluation, Epson’s VT6L All-in-One 6-axis robot was selected.

“The Epson VT6L has a great feel and came highly recommended by our automation partner Nortech,” says Jones. “It only took 30 minutes to learn how to programme and felt so intuitive to use, making it a hit with our engineers.”

Since implementation, KnitMesh has experienced a tenfold reduction in downtime at its site.

DELIVERING FOR AUTOMOTIVE
Meanwhile, Acrovision has provided a Deep Learning vision solution for Toyota Motor Manufacturing UK. Toyota wanted an automated inspection system to replace, automate and enhance its current manual inspection process to improve quality reliability and efficiency.

Acrovision recognised that replacing a human decision-making process could not be achieved using traditional ‘rule-based’ camera technology. It therefore designed a solution using a combination of Cognex’s VisionPro PC Vision platform and ViDi Deep Learning tools, to create a bespoke offering with a customised front-end for the project.

This communicates directly with Toyota’s host tracking system via broadcast messaging providing the required individual vehicle information, which in turn determines which inspections are required for that particular vehicle.

This offer consisted of 17 x GigE PC cameras with external lights. As the vehicle moves along the track, the cameras are triggered multiple times to acquire images of the various inspection areas. These images are communicated back to the central PC for processing and decision making.

All relevant data is fed back to Toyota’s tracking system for logging of results/defects which triggers any faulty vehicles to be removed at the next checkpoint for corrections to be made.

The solution was designed to enable Toyota to add new or edit existing inspections, while in-depth training was provided to facilitate this process.

The installation has been so successful that Toyota has purchased a second system and is looking to implement similar Deep Learning technology for various other project ideas.

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Filter tests made safer with robots

Syntegon has worked with InfraSolution to develop an automated way to scan HEPA filters in barrier systems.

Syntegon and InfraSolution have launched the first system for automated HEPA filter scans in barrier systems used in the pharmaceutical industry, resulting in safety benefits for machine operators.

These HEPA filters are used for the preparation or filtration of ambient air in production rooms. As part of their quality management, pharmaceutical manufacturers are obliged to regularly check their performance with a goal to identify leakages and avoid serious consequences such as quality loss in the drugs being produced.

During the examination, an operator usually manually scans the HEPA filters with the help of a measuring probe and the test results are documented manually. This paperwork, says Syntegon, is outdated compared to other highly efficient production procedures where robots are already automating important process steps.

HEPA filters are also used beyond sterilisation tunnels. Filter integrity testing in barrier systems such as RABS, cRABS, or isolators is highly complex and requires operators to penetrate safety-critical areas. Furthermore, reducing operator intervention is especially important in barrier systems, which are designed to reduce or even eliminate the contact between humans and products.

InfraSolution and Syntegon are now putting an end to this risk by further enhancing LinearTwinScan, a system that InfraSolution initially developed for automated filter integrity tests in sterilisation tunnels. Its centrepiece is a robot arm called ‘integrated RobotScanFlex’ which automatically performs the integrity check of the filters.

Syntegon’s Versynta flexible filling platform (FFP) was selected as the first pilot project for the robots.
Selected as the first pilot project. This new modular small batch solution is an individually configurable machine including an integrated isolator for filling aseptic and highly potent liquid pharmaceuticals.

The filter scan system is under continuous development and will soon be available for use in all isolators, RABS and cRABS. Versynta FFP equipped with the iRSF system can be seen live for the first time at this year’s Achema (hall 3.1, booth C71) in Frankfurt, Germany this August.

A SIMULATION TOOL
In operation, a kinematic simulation tool uses the dimensions of the barrier system to determine the ideal mounting positions for the robot arm and simulates its complete motion sequence in advance.

Blind spots are a thing of the past: the automated filter integrity tests make sure that previously untested areas are now also covered.

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Heuft’s latest camera can include image processing with artificial intelligence (AI) to deliver improved speed and accuracy while reducing false rejection rates on a line.

AI has long been used in the image processing developed by Heuft in order to clearly distinguish genuine faults from harmless structures and thus minimise the false rejection rate during quality inspection. Using this technology in the new reflexx A.I. camera is designed to ensure full detection accuracy.

FALSE REJECTS ARE BELOW 1%
The image processing developed by the company has been using AI for more than ten years in order to classify the detected objects, to distinguish real faults from harmless structures such as water droplets, to implement a targeted teach-in and to reduce the proportion of falsely rejected acceptable products to far below 1% across its range of inspection equipment.

Makula also connects an automated ticketing system to its solution. Again, the QR code makes it easy for the operator to contact the support. All new requests are automatically linked to the information stored in the system. This makes it easier for service staff to solve problems quickly and efficiently.

“By storing the complete history of tickets of each machine and thus creating a digital life cycle for each one of them, recurring issues can be solved more quickly,” says Emkay Khan, ceo of Makula Technology.

Makula also has developed a platform that facilitates machine suppliers and distributors to easily digitalise their after-sales services and thereby earn revenue from the process.

At the heart of the solution is a database that centrally and safely stores all information relating to the machine fleet. This includes not only the model and serial numbers and the manuals with all their updates, but also a list of all maintenance, spare parts and malfunction reports that have been carried out.

Every process is documented and stored. All information is easily accessible via an individual QR code and thus from any smartphone.

By compiling the entire life cycle of their equipment in a digital profile, operators and factories are able to manage all their machines from a single place. With this form of complete machine resource management, OEMs can offer their customers a holistic portfolio of after-sales services and thus monetise their support by making it as efficient as possible.

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Smarter technologies are bringing benefits to many machine builders, systems integrators and also end users, as Scorpion Vision will attest.

The company talks about intelligence (AI) arriving in the fresh produce industry which means the waste associated with inaccurate trimming of vegetables is being slashed to zero (while also making flawless product presentation a reality).

“The arrival of AI has introduced a new world of opportunity for revolutionising the performance and efficiency of camera-driven cutting systems,” says Scorpion’s md Paul Wilson. “Our advanced stereo vision and neural network solution, the Scorpion 3D Neural Camera, can achieve repeatable precision when trimming vegetables.”

Combining 3D imaging with AI translates directly to bottom line benefits for farmers, processors and also packers through higher yields and reduced reliance on manual labour as well as delivering on sustainability metrics through waste savings.

Turning to robotics, CWM Automation has built a new robot test cell in its Lincolnshire factory to allow customers to see proof of concept for all their pick and place solutions. This facility includes an Autonox Delta robot with an mGrip modular gripping system for Soft Robotics attached.

Meanwhile, new edge solutions from Emerson are designed to simplify the creation of advanced IIoT applications. PACSystems Edge Solutions, a new portfolio of turnkey industrial edge hardware and software solutions, simplify selection and deployment, helping to reduce the time spent integrating, developing, and validating digital transformation projects.

From low footprint connectivity and computing to plantwide analytics and supervision, the portfolio is designed to deliver a scalable range of edge capabilities in fit-for-purpose packages.

Another new option that is designed to allow operations to become smarter comes from Stober Drives. The company has developed a new feature for the predictive maintenance of its geared motors that needs no additional sensors, cables, software, or other hardware components.

For this IoT solution, a configuration from the electronic nameplate of the geared motor can be applied or the data can be downloaded via an online service. Users do not need any special know-how to evaluate the data and handle it accordingly. This feature is already installed in new 6th generation drive controllers. Drive controllers of this series that are already in use will receive the function via firmware update, which will be activated automatically.

Smarter options are transforming production lines – even vegetables – and here you will find the very latest…

PPMA members are developing new products and also services to meet the demands of smart manufacturing…

Working in a smart way...
options opens up further opportunities in the smart, connected automation industry as well as new sectors such as automated guided vehicles in warehousing and logistics.

Other advantages of the AZ series include faster acceleration and deceleration compared to an equivalent servo motor, making it suitable for rapid indexing and applications that require short movements.

Just launched at this year’s Hannover Messe was the Han-Modular Domino Modules which Harting describes as the next level of modular industrial connectors. By using Han-Modular Domino modules, customers can save up to 50% installation space by integrating different transmission types in one module.

**TWO BUILDING BLOCKS**

Just as dominoes have two separate squares, a domino module is made up of two building blocks or cubes. The Han-Modular mating face is divided in two, resulting in an almost square surface in which even larger contacts can be accommodated.

Power, signal, data or compressed air as well as male and female contacts can now be combined in one module. This reduces the number of required interfaces per unit and the connection technology becomes smaller and more lightweight, as more modules and module types can now fit into one connector.

Finally, **Euchner (UK)** has employed a modular design to make the latest version of its Multifunctional Gate Box (MGB) safety door system fully customisable for maximum optimisation. So, more than simply providing safety door protection, the MGB2 Modular lets users implement numerous additional functions including locking modules, extension modules and submodules.

The new MBM bus module from Euchner is available in a version that connects to EtherCAT P, which means that every function of the MGB2 Modular can also be used with EtherCAT P.

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  - from CNC-controlled machine tools to intelligent building control systems

Scan to discover everything about the Beckhoff control system.
Reducing the complexity of operations

Zebra Technologies says its new machine vision and fixed industrial scanning solutions break through the crowded IoT market thanks to the modern Zebra Aurora software platform with Studio, Library, and Deep Learning options. Businesses can reduce complexity and costs by leveraging this intuitive, unified software platform with a modern user interface that can be easily set up, deploy and run both solutions and integrate into factory or warehouse systems. With Zebra Aurora, users can perform machine vision inspection and fixed industrial scanning on a single device, enabling everything from simple track and trace to complex quality inspection checks.

Only a software licence is needed by customers to upgrade.

One manufacturer needed a high-speed application and scanner to read up to 22,000 barcodes every hour as an extra layer of security to ensure the correct production of items involving a high level of data protection, personal privacy and customisation. Zebra worked with the company to deploy one of its fixed industrial scanner solutions at the production plant, which delivers circa 60,000 orders every day, with 11,000 barcoded items running through one of its production machines every hour.

At the time of deployment, the Zebra Aurora software made it easy to configure and deploy the scanner’s autonomous smart camera as it has all the intelligence needed on-board. The scanner proved its capability to deliver 100% data capture, even at high production speeds.

Robots handle eggs with ease

Farmers all over the world automate egg palletising with equipment from Dutch company Meggson that can handle up to 108,000 eggs per hour.

In addition to other systems developed in-house, each Meggson-built solution has a KR Quanotec robot with a special gripper at its heart. In each case, the robot is compact enough to allow extremely flexible cell design and delivers precision and reach. The grippers are designed to cope with different materials, such as cellular and plastic. Palletising eggs is just as successful as placing empty hatchery trays or egg humps in transport trolleys or placing them on a conveyor belt.

The robots use laser sensors to detect where they can pick up their respective cargo in operation.

The ROBOT TP300 automation solution, for example, makes it possible to arrange up to 108,000 eggs per hour on pallets and to place the empty containers on a conveyor belt in between. However, the equipment is also suitable for loading and unloading egg packing machines, palletising crates full of eggs, and also handling hatchery trays.

For its flexible, high-performance solutions, Meggson has relied on KUKA robots from the very beginning.

“KUKA makes the best robots, brings many years of know-how, and that strengthens our trust in KUKA,” says Gerwin van de Geer, product manager at Meggson. The robots work with the KUKA KR C4 controller, and after a short training session, customers of the machines can usually manage on their own. “KUKA has designed the perfect program that our farmers can handle well,” van de Geer points out. “That’s why they are very interested in working with a system from KUKA, and if the farmers are happy, so are we!”
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Perfect blend for line efficiencies

A coding upgrading project by Clearmark Solutions has enabled coffee roasters Lincoln & York to increase production efficiency by up to 25% at its Lincolnshire headquarters. By replacing legacy coding equipment across twelve lines with ICE Zodiac thermal transfer overprinters, the company can now create and edit labels quickly, enabling them to reduce changeover time between batches and cut waste caused by human error.

After experiencing rapid growth, Lincoln & York sought to replace its ageing coding equipment with a more reliable and flexible solution in a bid to increase uptime and deliver higher quality prints. The project saw Clearmark replace all existing coding equipment which now allows codes to be printed more efficiently across a range of flexible substrates, in a variety of colours, and at the various throughputs required. Flexible enough to print dates in any format or size, and in any Windows TrueType font, the superior ribbon capacity offered by the new coders means less downtime. In addition, the CLARiSOFT labelling software installed on each line allows operators to quickly create and edit label designs.

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Laser systems bring benefits

Macsa ID has installed two SPA CB 30 CO2 laser marking systems at Barcelona-based KH7 Lloreda – a manufacturer of kitchen cleaners and stain removers. The powerful laser units are primarily being used to mark cardboard boxes, and have been integrated into the same production line, to enable customisation and automatic format changes.

These units are marking the sides and front of cardboard boxes containing bottles of detergent, as well as sleeves and pallets, which are not shrink-wrapped, to reduce the overall use of plastics. For the side and front marking of the boxes, Macsa ID integrated both 30W CO2 lasers from its SPA CB 30 series into the production line and to facilitate marking on the adjacent side of the box, a laser marking station was also installed. To ensure high-quality print, the lasers are operating in static printing mode. As a result, three stopping points were added and synchronised with the laser equipment to regulate the direction of the boxes.

The equipment was installed, and a patch of laser additive was applied to the cardboard so that the appropriate contrast could be achieved within the customer required cycle time.

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The solution included Marca software from Macsa ID

A reliable and flexible system has been installed

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Corrugated converters offered inkjet postprint dilemma data

Corrugated converters wanting to know when inkjet postprint might pay off for them in operation can download the latest White Paper from Domino Digital Printing Solutions.

Written by print & packaging analyst & consultant Dr Sean Smyth, the White Paper examines the latest corrugated industry trends and is designed to educate and inform corrugated converters about the new capabilities provided by the latest technology developments in printing and finishing.

“As consumption of corrugated packaging continues to grow across the world, printing production efficiency has never been more important to cope with the increased demands from brands and retailers, in response to the latest consumer preferences and the continued growth in e-commerce,” says Smyth.

PRINT TECHNOLOGIES
This White Paper examines the corrugated industry structure looking at the different print technologies available and explains how converters can select the most appropriate print technology depending on their work mix with flexo, gravure and litho being increasingly challenged by the latest inkjet technology.

It also looks at the total cost of ownership (TCO) using a cost model to compare the cost of producing corrugated boxes using inkjet postprint, flexo folder-gluer and litho lamination enabling the economic crossover point to be determined.

Discover when inkjet postprint can pay at: https://go.domino-printing.com/PRApr22DownloadWP
Who’s done what and gone where...

Mosca Direct
Arron Widdowson has been promoted to UK sales director of Mosca Direct and in this new role, will oversee all sales activity for the UK business including management and development. He has been with the business for nine years and in this time, has excelled in his previous role as growth manager.

ABB
Gareth Jones has joined ABB as its new local division manager for drive products and system drives for motion in the UK, where he will lead a team including sales and segment managers as well as play a key role in growing relationships with ABB’s network of Value Providers.

Ulma Packaging
Alan Atkinson is the new sales manager for non-produce in the north east for Ulma Packaging UK. He brings 30 years of industry experience to the team to primarily focus on packaging options for dairy, bakery and also medical products.

Friedheim International
Mitchell Ball is now the converting & post print sales specialist at Friedheim, having rejoined the company from Duplo UK. He was previously in its service division as a technical engineer before moving into sales roles.

Fabcon Food Systems
Bobby White has joined Fabcon Food Systems as technical manager as part of the company’s new technical support department which also includes existing staff and a new sales engineer. He has joined Fabcon after an 18-month consultancy role which saw him leading a major product launch project for a UK-based snacks producer. He brings almost 40 years of engineering experience in food processing to his new technical role.

Omron Electronics
Garry Lewis has joined Omron as market development manager – food, beverage and commodities from his previous marketing & communications manager role at Mitsubishi Electric. In his new role, he is responsible for driving Omron’s brand, while creating demand within the strategic industry target market, covering the UK & Ireland. He also has responsibility for the vertical industry marketing plan.

Antalis Packaging
Tom Reid has been appointed to the role of national sales manager for stretch film by Antalis Packaging. He will help to educate users about pallet wrapping improvements that can be made via film and machine optimisation, alternative films or by using new equipment options.

BCAS
Jen Kershaw has joined the British Compressed Air Society (BCAS) in the new position of policy and membership officer. She will have two primary functions: to drive BCAS member engagement and satisfaction to ensure membership value, and to work on policy to influence legislation and regulation.

Sidel
Sidel’s commitment to providing specialist training for its customers around the world was recently reinforced with the award of the French Qualiopi certification. This independently assessed mark of quality for vocational training and skills development provides assurance that a training provider has rigorous quality management processes in place. In addition to virtual and onsite training, Sidel operates a global network of specialist training centres.
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## BAGGING EQUIPMENT

**Concetti**
- **Contact:** +44 7776 148129
- **Website:** www.concetti.com
- **Email:** t.miford@concetti.com
- **Address:** 23 Bradman Lake, Market Deeping, PE12 9XX
- **Contact:** E: info@allfill.co.uk
- **Website:** www.allfill.co.uk
- **Address:** Unit B, Bandit Way, Thame, Oxon, OX9 1SJ
- **Phone:** 01844 213177
- **Email:** sales@allfill.co.uk

**BAG SEALERS**

**Autopack Ltd**
- **Contact:** Unit 6, Upton Court, Rotherham, South Yorks, S61 3JU
- **Phone:** 01427 207917
- **Website:** www.autopack.co.uk

**Jentron International Ltd**
- **Contact:** Unit 16, Industrial Park, Rotherham, S61 3JU
- **Phone:** 01427 207917
- **Website:** www.jentron.co.uk

**RM Sealers Ltd**
- **Contact:** Valley Farm, Diggles, Usersfield, HR2 6QF
- **Phone:** 01424 843307
- **Website:** www.rmsealers.co.uk

**STATEC BINDER GmbH**
- **Contact:** Industriestrasse 32, 8200 Gliesheim, Austria
- **Phone:** +43 3112 3858 0
- **Website:** www.statec-binder.com

**Valco Melton UK**
- **Contact:** Hortonwood 32, Telford, TF3 9YP
- **Phone:** 01952 679771
- **Website:** www.valcomelton.com

**BANDING**

**Jentron International Ltd**
- **Contact:** Unit 6, Upton Court, Rotherham, South Yorks, S61 3JU
- **Phone:** 01427 207917
- **Website:** www.jentron.co.uk

**Marden Edwards Limited**
- **Contact:** Wrenburn, Denton Bk21 7SA
- **Phone:** 01509 511970
- **Website:** www.mardenedwards.com

**Sollis UK Ltd**
- **Contact:** Hampshire RG28 7BB
- **Phone:** 01256 899300
- **Website:** www.sollis.co.uk

**BLOOM MOULDS**

**KHS UK Limited**
- **Contact:** KHS UK Limited, Moneypak Business Park, Highlands Road, Shirley, Solihull, B90 4NF
- **Phone:** 0121 713 6900
- **Website:** www.khs.co.uk

**CAUGHTON MACHINES (CARTON BOARD)**

**WestRock**
- **Contact:** Unit M, Moby Park, Bracknell, Berkshire, RG12 1TG
- **Phone:** 01344 257074
- **Website:** www.westrock.com

**CAPPING**

**Adelphi Group**
- **Contact:** Mill Green Road, Haywards Heath, West Sussex RH16 2ZQ
- **Phone:** 01444 472100
- **Email:** sales@adelphi-group.com

**Autopack Ltd**
- **Contact:** Unit 6, Upton Court, Rotherham, South Yorks, S61 3JU
- **Phone:** 01427 207917
- **Website:** www.autopack.co.uk

**Cod Caper Ltd**
- **Contact:** Monument Business Park, Chapel Lane, Oxford, OX4 4UQ
- **Phone:** 01865 919940
- **Website:** www.codcaper.co.uk

**Capmatic Europa Ltd**
- **Contact:** T: +44 121 630 2002 / F: +353 188 31 695
- **Email:** sales@capmatic.co.uk

**Cartoning Machinery**

**WestRock**
- **Contact:** Unit M, Moby Park, Bracknell, Berkshire, RG12 1TG
- **Phone:** 01344 257074
- **Website:** www.westrock.com
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