# Issue 1, Volume XXXI, January/February 2020

The machinery only journal for processing & packaging | www.machineryupdate.co.uk

# Every drop counts

Much of our dairy feature covers new developments that are providing ultimate efficiencies for this market, where every penny saved in the manufacturing process helps the margins





### NEWS

The date has been announced for 2020's UKIVA Machine Vision Conference that will take place in Milton Keynes this May and will include a first ever panel discussion

### **NEW MACHINERY**

A range of bottling equipment available in two versions can handle a variety of different materials on one single unit to help drinks makers switch easily to meet changing needs Find out more on page 12

### INSTALLATIONS

A contract packer has expanded its pack types for frozen seafood



### PLUS

The PPMA offers a range of courses and seminars covering practical, technical and regulatory matters christine.jordan@ppma.co.uk



### Technology inspired by human talent

Cama Group is a leading supplier of advanced technology secondary packaging systems, continuously investing in innovative solutions. www.camagroup.com - cama3@camagroup.com





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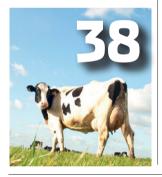
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#### **APPLICATIONS FOR FREE COPIES**

of Machinery Update are considered from specifiers, managers and purchasers of processing and packaging machinery in the UK.

ANNUAL SUBSCRIPTION: £35 (UK), £50 (Continental Europe), £65 (rest of world).

ISSN 0969-4145

#### PRINTED BY:

Brown Knight and Truscott North Farm Road, Tunbridge Wells Kent TN2 3BW Tel: 01892 511678

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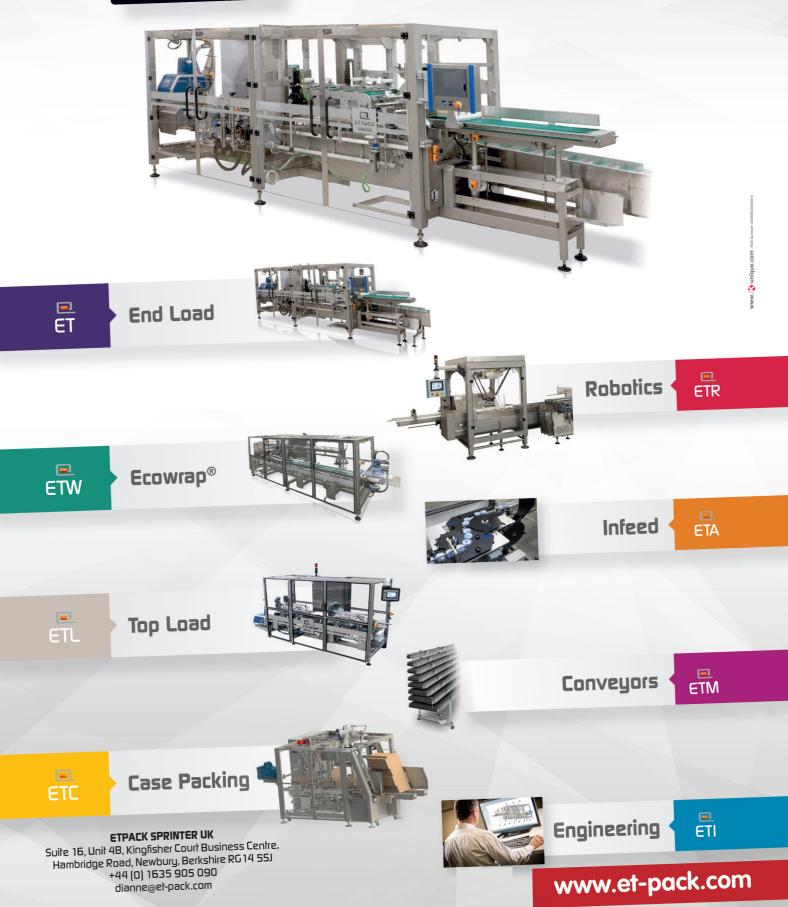


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### **PPMA** matters

### **Fine lines** with finer margins



### Tim Paul

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

t seems somewhat surreal that 13 months have passed since I first took the reins as chair of the PPMA Group of Associations. It's perhaps even more unbelievable that, after three-and-a-half years of political discourse and procrastination, the UK looks almost, possibly, maybe certain to be leaving the EU on 31 January this year.

To say that some commentators have "milked it" for selfpreservation is possibly an understatement; however, milk and all things dairy is certainly the buzz word for this edition of Machinery Update (our major feature starts on page 32).

Change invariably brings about numerous opportunities and threats, and the UK dairy industry is certainly not immune to any post-Brexit vexation. FMCG businesses have operated to low margins for some time, but dairy does seem to be particularly affected. Everyone is under pressure; most notably the farmers, based on the unit cost they receive for the raw material itself.

### Dairy would seem to be a prime candidate for serialisation, but will the margins allow it?

Maximising line efficiency within an industry that produces high volume and low margins is key; especially if free tariffs were to cease after the transitional period. However, there is also a growing move towards the on-cost of serialisation and, of course, also embracing the need for more eco-friendly packaging (which can also bring higher prices).

The UK has a good reputation for producing dairy produce; cheese being a good example. There are certainly comparisons to cheeses made in the UK and those made in France; therefore, any additional tariffs placed on exported UK produce will only serve to make it harder for UK suppliers.

Dairy businesses have certainly evolved over the past two decades; they've had to, but declining volumes in butters & spreads; yoghurts and block cheese are ongoing. It seems only dairy-free is on the rise in the supermarket just now along with some ranges of dairy drinks which seem to be enjoying an almighty caffeine rush, according to The Grocer's Top Products Survey.

The link to any increased traceability brings into play another group of players, such as machine vision and improved efficiencies through robot automation as well as general automation.

What was previously an option to automate is likely to become a need to stay competitive if tariffs are imposed on dairy goods between the UK and other European member states.

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# **STARTING POINT**

International Trade Shows Link Ltd. (UK Representative of Messe Düsseldorf) Exhibition House, 12 Hockley Court, Hockley Heath, Solihull West Midlands, B94 6NW Tel: +44(0)1564 781871, DDI: +44(0)1564 781870 E-mail: laura@itsluk.com, Website: www.itsluk.com







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### News



### Food machinery firm has new production site to meet demand

Midlands-based food processing machinery manufacturer Millitec Food Systems has invested  $\pounds$ 1.2 million in a new production site, a move that allows the company to treble its output and extend its ongoing R&D programme into robotics for the food processing industry.

The company has taken over a 20,000sq ft site in Draycott, Derbyshire as a result of record sales and significant growth for its food processing machinery including ultrasonic cutters, depositors, conveyors and specialist robotics. The move is expected to bring an additional 12 jobs to the area ranging from mechanical design engineers, machine vision/robotics specialists and also CNC machinists.

### Machine Vision event will host the industry in May, later this year

he 2020 UKIVA Machine Vision Conference and Exhibition will take place on 14 May 2020 at the Marshall Arena in Milton Keynes. With year on year growth since its inception in 2017, the event is rapidly becoming a fixture in the industry's calendar, says organisers UKIVA (UK Industrial Vision Association).

While the event will follow a similar format to previous years, with a comprehensive programme of technical seminars supported by an exhibition of products from leading companies in the industry, a new panel discussion session is being included for the first time this year.

"This event has always been characterised by providing a platform where visitors can learn about many different facets of machine vision," explains UKIVA chairman Allan Anderson. "This time, we plan



Save the date - Thursday 14 May

to take this a stage further by opening the afternoon session with a discussion forum, where a panel of leading experts will answer questions about any aspect of machine vision."

### Searching for UK's most talented young electronic engineers

RS Components is partnering with *Electronics Weekly* for the fourth year to launch EW BrightSparks, an initiative to showcase the brightest and most talented young electronics engineers. The competition is open to people in the UK aged between 18 and 30 who are working in or studying electronics and the winning entrants will be announced on 18 March with an awards ceremony taking place on 28 April.

Closing date for entries is 24 February and nominations can be submitted via www.electronicsweekly.com/ brightsparks



Liezl Orenzo-Javier has a new role

### The PPMA has new marketing manager to take it forward

Liezl Orenzo-Javier has been promoted to marketing manager at the PPMA Group of Associations following two successful years at the 600-member organisation.

She joined the marketing team in 2018 from the International Institute of Risk and Safety Management and has been responsible for marketing many PPMA events such as the PPMA Show, the Machine Vision Conference and the PPMA Group Industry Awards as well as the PPMA Conference that was launched last year.

"Liezl has done a fantastic job for us and her promotion is just reward for her sterling efforts," says PPMA coo David Harrison.



Freshers Foods bought a carousel

### A Total Show order proves a quicker fix

A carousel demonstrated by UPM Conveyors at the PPMA Total Show was purchased from the stand by Freshers Foods. It was then delivered to its Wigan site and operating the day after the show closed, as confirmed by operations director Jonathan Kearns.



### METAL DETECTION SERVICES ON AN XMAS MISSION Donation brings Xmas cheer

Metal Detection Services (MDS) donated to the Mission Christmas – Cash for Kids appeal once again this year. "This fundraising effort is aimed at ensuring children who are less fortunate than others receive a present to open on Christmas Day and we are happy to support it," explains David Hale, sales & marketing director at MDS.

### News

### Manufacturers in UK assured of post Brexit CE certification





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o ensure that CE marking certification remains seamless for UK clients after Brexit, TÜV SÜD has secured accreditation from DANAK (the Danish accreditation authority).

Acquiring the accreditation is part of TÜV SÜD's strategy to ensure that clients can maintain product CE certification and obtain new ones through TÜV SÜD, no matter what occurs with the Brexit situation.

The scope of the accreditation is identical to that already held by the UK notified body TÜV SÜD BABT, which is accredited by UKAS for four EU directives (marine equipment, radio equipment, EMC, machinery). TÜV SÜD's certification processes through either notified body are identical, delivering a seamless experience for maintaining or acquiring any product certification.

#### **NO STATUS CHANGES**

"As we are a UK notified body our clients rely on us to maintain thousands of CE marking certifications and now that the TÜV SÜD UK business has achieved notified body status outside of the UK, clients' CE marking status will not change, and they can continue to seamlessly distribute products within the EU after Brexit," explains Nathan Emery, certification body manager at TÜV SÜD.

If the UK leaves the EU without a transitional arrangement, TÜV SÜD BABT would cease to be a EU notified body, becoming a UK Approved Body. The new Danish accreditation will enable TÜV SÜD to issue dual certifications for both CE and UKCA (UK Conformity Assessed) marking.

### E-commerce platform launched for label and date code verification

OAL has launched a new E-commerce platform for components and services for its OAL Connected label and date code verification solutions. Integrated into the existing OAL Connected website, customers can simply add their desired products to the basket and checkout as they would with any other online shopping platform.

In just a few clicks, food and beverage manufacturers can choose the products they need from the company's full range of panel components, in-line scanners and hand scanners with related equipment, triggers, customer cards and also mechanical fixings.

www.oalgroup.com



The training team can be contacted

### The Smart Production Solutions – SPS – show celebrated in style



Over 1500 exhibitors filled the exhibition halls in Nuremberg last November

ver 63,000 visitors attended the 30th SPS exhibition to discover the latest products, solutions and trends in smart and digital automation from both national and international exhibitors.

Users and decision-makers alike found the answers to their automation questions on exhibitor stands, but also in the forum-based product presentations and expert talks as well as on guided tours of the event, says organisers mesago.

Despite the challenging economic climate, SPS once again proved itself to be the leading exhibition for smart and digital automation, it said. In fact, the number of exhibitors with their own stands was bigger than ever before. The international audience also appreciated the guided tours on machine learning and AI, product and machine simulation, industrial security in production, and cloud ecosystems. These gave a brief overview of the innovations and exhibits from the respective areas as well as real-life case studies.

This year's exhibition for smart and digital automation will be held between 24 – 26 November 2020 at Nuremberg Exhibition Centre, Germany. www.sps-exhibition.com



The two companies seal the deal

### Complete lines for pharma are supplied through partnership

Uhlmann Pac-Systeme, the system provider for packing pharmaceuticals in blisters, bottles and cartons, and supplier of end-of-line packaging, pester pac automation have become partners. The two companies will also now benefit from their combined expertise to offer their customers excellent solutions for holistic pharmaceutical packaging from one source.

After an initial phase, the companies' objective is to implement the first complete lines and projects by interpack, the global exhibition taking place in May this year. The two companies will also continue to operate as autonomous and legally independent entities.

This year must be one of automation for producers in the UK to be successful

UK manufacturers must tip the balance in favour of automation this year to avoid falling behind international competition, according to Fanuc UK's md Tom Bouchier.

"One of the arguments against automation is that it is too expensive, a belief especially pervasive amongst those that need it most – SMEs," he says. "But when you consider that we are about 30% less productive per hour than a German manufacturer, then the financial impact of not automating is clearly far greater." He blames lack of awareness as a major issue.



### MOODY DIRECT IS A GEA AUTHORISED DISTRIBUTOR Customer service is boosted

GEA has appointed Moody Direct as one of its authorised UK distributors for GEA pumps, valves, and homogenisers. This appointment represents a significant business opportunity for both organisations and provides UK customers with a dedicated channel for GEA pumps, valves and homogenisers across a broad range of industries including; dairy, food, beverage, pharmaceutical and chemical.



The IPB 2019 show was a success

### Shanghai event will move dates in 2020

The International Powder & Bulk Solids Processing Conference and Exhibition (IPB) will relocate for the first time to the upper floor of the Shanghai World Expo centre this year, which means that IPB 2020 will run from 29 – 31 July.

### **PACK EXPO Review**



# US exhibition delivered range of technologies across sectors

Pack Expo Las Vegas and Healthcare Packaging Expo last autumn broke all records for number of exhibitors, total floor space and visitors, according to show owner PMMI. Here's a flavour of the event

MMI, the Association for Packaging and Processing Technologies in the US reports that more than 2,000 exhibitors covering nearly 900,000sq ft of the Las Vegas Convention Centre welcomed over 31,000 attendees last September to its PACK EXPO event; an 8% increase from the 2017 show.

Rockwell showed food and pharmaceutical manufacturers new hygienic industrial control hardware during the event. The Allen-Bradley Kinetix VPH hygienic servo motors and a stainless-steel version of the Allen-Bradley PanelView Plus 7 graphic terminal both help minimise contamination during production and ease compliance.

The new terminal can be used on a machine in a 'splash' or contaminant zone without having to be covered or isolated. This helps to protect product quality and simplifies the cleaning processes, while removing obstructions to the HMI, so that operators can better monitor production runs.

At the same time, the new servo motors can improve machine reliability while enhancing consumer safety

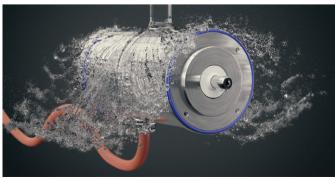


Bosch Packaging Technology showed the Pack 403HE for harsh environments

by meeting stringent hygienic standards.

For Optima, the show saw strong growth and interest in turnkey concepts from visitors. The demand for these products is strong in the pharmaceutical industry; however, the demand is also increasing in the food, cosmetics, and chemicals sectors. Other important topics discussed at the show were sustainability, digitalisation, and new applications.

The company presented a selection of its range of services from classic filling technologies for liquids to turnkey solutions and Optima's integrated life cycle management program,



The Kinetix VPH hygienic servo motors were launched by Rockwell Automation

Optima Total Care, which also integrates digital Smart Services. Visitors to its stand also learned about the latest applications of robot systems, their uses in aseptic processes, and other solutions for flexible production.

At the exhibition, Proseal

showcased its tray sealing solutions that satisfy the needs of a wide variety of products and applications including the increased

focus on sustainable packaging. The equipment on display demonstrated the company's ability to seal many different tray formats at fast speeds in line with individual customer requirements.

Proseal says that the increasing focus on more sustainable packaging is fuelling growing demand from both retailers and consumers for more environmentally friendly solutions, and this has led many food producers to explore alternative packaging materials. The company's entire range of tray sealing machines is readily equipped to handle this widening range such as board and pulp, enabling manufacturers to adopt new pack formats without additional and costly investment.

To meet these needs, Proseal showed its Halopack tray which it describes as the first fully hermetic cardboard MAP packaging. Halopack trays are produced on the Proseal SKR machine and the board base material is made from over 90% recycled cardboard.

Meanwhile, Bosch Packaging Technology has developed a new version of its fully automated horizontal flow wrapper Pack 403, which is specifically designed for harsh environment use.

The machine was presented with a Paloma pick-andplace robot, also designed for harsh environment use. The Pack 403HE comes with all

the proven

Halopack design

features of the Pack 403 and is suited for medium to high-speed wrapping. It can wrap a wide variety of products ranging from biscuits, chocolate, cookies and crackers to frozen foods or meats. It is optimised for deep cleaning, giving food manufacturers a faster way to keep products free from unwanted substances such as traces of peanuts or wheat.

www.boschpackaging.com www.optima-packaging.com

- www.proseal.com
- www.rockwellautomation.co.uk



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### **New Machinery**

# Bottling equipment can handle a multitude of materials for drinks

t the PPMA Total Show last year, AVE UK, part of the Della Toffola Group of Companies, exhibited its range of bottling equipment available in either Monobloc (filler/capper) or Unibloc (rinser/filler/capper) versions, which can handle a variety of different materials on a one single machine.

"With the current consumer/ retailer war on PET/plastics impacting the drinks and liquids industries, bottlers need affordable rinsing, filling and capping equipment to quickly change between either PET, glass or newer materials such as aluminium," explains Steve Bradley, AVE UK director.

He believes AVE's adaptable bottling machinery is an affordable weapon in the war on PET and can even help with any shortages of glass bottle supplies.

"Many of our current clients have dedicated lines which are only capable of handling PET bottles – the preferred pack type for the beverage sector," he tells *Machinery Update*.



Ave believes its latest range offers the material choices needed by bottlers

"The recent plastics backlash has therefore made many drinks producers hesitant to invest further in equipment which solely handles PET.

"Consequently, they are looking for flexible machines that are able to handle a variety of bottle materials, but with the assurance that changeover time between product recipes and materials is minimal," he says.

Ave UK says its latest range

provides much-needed multimaterial flexibility, allowing producers to expand their operations without fear of obsolescence.

AVE's Monobloc and Unibloc rinser/filler/cappers offer solutions between eight and 80-head fillers and have cleaning-in-place (CIP) as standard. They are suitable for operations of all sizes, from cottage industry to multi-nationals, and range from semi-automatic to speeds in excess of 60,000 bottles per hour.

Filling machines within the range include:

- Liquid (still and carbonated products);
- Gravity (still products);Counter-pressure
- (carbonated products);Volumetric (viscous products such as ketchups
- and sauces);
  Non-contact Electronic (still liquids, giving a longer shelf-life);
- Ultra-clean Non-contact Electronic (dairy products which require the highest standards of hygiene);
- and Mass Flow Electronic (non-conductible liquids such as oil).

The machines can be designed to cope with a variety of closure options, including plastic, roll-on pilfer proof (ROPP), twist-off, sports caps, stopper corks, corks and crown caps – all of which can be changed over within minutes.

www.aveuk.net

### Robotic software for vision-guided random flow picking and packaging has a new digital twin to speed things up

ABB's new PickMaster Twin software is equipped with digital twin technology for the first time, to shorten commissioning times from days to hours and cut changeover periods from hours to minutes. This is the third generation of the robotic software for visionguided random flow picking and packaging applications.

Digital twin technology allows customers to test out robotic configurations on virtual production lines before physical lines are



The PickMaster Twin software offers design benefits

built. When using digital twin technology, the simulated twin can be directly connected to production operations, which allows the picking process to be optimised virtually at the same time as the process is being implemented.

For customers, PickMaster Twin now offers greater flexibility and visualisation

of all complicated robotic manoeuvres designed for flow wrapping, tray loading, case and carton packing and handling applications.

Enabling offline programming of picking and packing tasks means users can create, simulate and test a complete robot installation in a virtual environment without having to disturb their actual production line. The software is available in a multitude of configurations and can work seamlessly with all ABB robots, and a range of virtual and physical machines. I 01908 350300 W www.abb.com

# New mobile robot offers strength and control gain

mron has launched a new mobile robot called the LD-250. With a payload capacity of 250 kg, the LD-250 is the strongest and newest addition to the company's LD series of mobile robots. Together with the Fleet Manager, which for the first time enables the control of multiple mobile robots with different payloads through one system, the company believes it will contribute to realising a more flexible and optimised autonomous material transport system.

This is designed to help factories worldwide meet the challenges they face in increasing the productivity and profitability of highmix production with the decreasing workforce in industrialised nations and rising labour costs in emerging countries.

The new LD-250 mobile robot has a 250 kg payload capacity and almost double



The LD-250 offers optimised materials handling

the surface area, so it can be used to transport large automobile components such as transmission blocks and voluminous packaging materials - things that would traditionally be moved by human workers using carts. To optimise the autonomous material transport system. customers can use Omron's Fleet Manager, which can control a diverse fleet of up to 100 of the company's mobile robots. These can consist of different payloads and capabilities, by conducting traffic management, battery

management, and navigation of vehicles. The mobile robot LD series can autonomously avoid people and obstacles while automatically calculating the best routes to transport material.

"Omron has been putting great resources in helping customers realise flexible manufacturing with our robotics technologies since the acquisition of US-based robotics company Adept Technology," says Motohiro Yamanishi, senior general manager of the Robotics Business Development Project at Omron's Industrial Automation Company. "The new LD-250 will be key in advancing that initiative a step further, by giving customers more choice when automating their material transport operation, an area rapidly being enhanced with mobile robots in industries worldwide." 101908 258258 www.industrial.omron.co.uk



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The CVGC comes as an addition to Coval's growing complete vacuum tool solutions, CVG, CVG-L, MVG.

Vacucom can offer solutions for all vacuum handling requirements, food, packaging, carton erecting, palletising to name a few. **Contact 01782 896025** sales@vacucom.co.uk for further information

### Full wireless communication and increased safety is delivered by cable-free floor scale

Mettler-Toledo's cable-free floor scale that was demonstrated at the PPMA Total Show last year is an entirely mobile unit offering the flexibility to be placed anywhere in a factory, thereby reducing the cost of construction and any electrical work.

It is also safer for operators in applications where burying equipment cables is not an option, as trip hazards are minimised for the end user while downtime from any cable damage is also reduced. Within an industrial environment, traditional floor scale projects can require careful consideration to determine location and placement, but this is not required with this new, washable option, and its wireless module is built on Bluetooth 5. I 0116 235 7070 W www.mt.com

No cables required for this scale



### **New Machinery**



### Wrapper has added safety features

The Ferret pallet wrapping system developed as a solution for wrapping big or awkward pallets, as it drives around the pallet as opposed to requiring a turntable, has now been extended into a new style with added safety features.

A footplate safety mat on the underside of the carriage has been installed to avoid foot crush, which Samuel Grant believes to be unique to the unit.

Meanwhile, the mobility of the Ferret mitigates risks involved in hand wrapping pallets as loads of all shapes and sizes can be wrapped and the machine can be taken to the load itself, removing the risk of unreliable load stability or staff injury. The use of high performance 33 layer stretch film coupled with locked out programs for consistency, ensures that loads are wrapped to the highest standard of load integrity, says the company.

The Ferret's magic eye can recognise the most unwieldy of shapes, to wrap allowing optimum stability during transport.

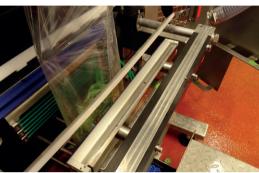
Other new features in the range include built in weight scales, integrated print portals, heat sealing bars and cutters to avoid stretch film tails, larger width film roll carriage sizes for speedier wrapping cycles, various roping options and variable stretch machines. OI13 270 7221 www.samuelgrant.co.uk

# VFFS machines deliver reduced materials usage

ertical form, fill and seal (VFFS) packaging machinery manufacturer GIC is now incorporating Ceetak's Quick Pulse Heat (QPH) sealing technology into its machines. The new agreement will allow GIC to incorporate Ceetak's QPH sealing technology at the design stage, ensuring the clean and uncompromised design

of its machines is retained. Integrating QPH sealing technology allows full

technology allows full calibration, control and diagnostics of the system via the GIC touchscreen. A dedicated Ceetak sealing page on the HMI enables the user to control all operating characteristics related to the sealing, cooling and release phases of the cycle. This page also allows the user to calibrate the system to ambient conditions, ensuring efficient use of



Including Ceetak's QPH sealing technology into the machines from GIC improves the performance and reduces film usage

the system, and diagnose any potential faults and warnings through a descriptive dialogue box.

A further benefit to GIC machine users is that the company's machines can now feature interchangeable jaws, allowing traditional heat seal methods or Ceetak's high integrity QPH sealing technology to be fitted or removed quickly. This gives operators flexibility in specifying methods of heat sealing polypropylene, polyethylene and laminates on the same VFFS machine. Tests by Ceetak have shown that QPH sealing technology, which ensures a high integrity, completely fused hermetic seal, can produce up to a 10% reduction in film usage and up to 25% reduction in film gauge along with minimal cleaning and maintenance. GIC and Ceetak

decided to form a closer working relationship in the spring of last year, following several years of Ceetak supplying components to GIC's machines using their technologies.

"Including Ceetak's QPH sealing technology into our machines improves the machine's performance and reduces not just the amount of film that is used but the amount of maintenance that is required," says Andy Beal, managing director of GIC. Wwww.ceetak.com Wwww.gic.uk.net

### Intuitively operated 2D cameras are designed to simplify programming of industrial robots

Programming robots with vision components usually requires both robotics knowledge and expertise in the manufacturer specific robot programming language, but not with the new offer from Basler. The company has worked jointly with drag&bot, a company whose software simplifies the programming of industrial robots, and has embedded the Basler pylon camera software suite for Linux into the drag&bot software.

The integration of the software suite makes it possible to install and calibrate Basler 2D cameras in the drag&bot software with just a few mouse clicks. Users benefit from the proven driver stability and simple camera configuration of the pylon software. The camera is then ready for use with image processing functions, especially for part location, and it can be used in robot applications via drag&bot's graphical user interface.

It is available in the UK from Multipix Imaging.

Basler cameras are integrated via the pylon camera driver for the Robot Operating System (ROS). An enhanced version of the pylon ROS driver is available for download via github and enables the integration of Basler 2D cameras into ROS projects. ROS is an open source framework for the development of robot systems. I 01730 233322 www.multipix.com

### New generation traysealer offers modular flexibility

isitors to Multivac UK's open day at the end of last year got to see its new TX 710 traysealer in action, a machine designed with maximum flexibility to deliver reliable, high output across a range of product sectors. It also boasts a reduced footprint and delivers lower costs for users.

The robust and spacesaving construction of the new machine has been designed to suit food packaging applications ranging from fish and vegetables through to meat, sausage, fish, poultry and dairy products along with various ready meal options. While its special die concept, called X-tools, optimises machine availability.

Traysealers generally see frequent changes of product, film and die and on this new machine, these can be performed with minimum production loss. For instance, each X-tool contains all the functions necessary for any packaging procedure to be performed. A die for MAP



The TX 710 traysealer from Multivac can handle multiple materials and foods

packs, for example, includes all the components required for modified atmosphere, while a MultiFresh die has all the components for producing vacuum skin packs.

#### **QUICKER SIZE CHANGES**

Operators can therefore change between different tray sizes and applications quickly.

Together with the X-tools, the transport systems for the trays and film enables a wide range of materials to be run with precision and reliability, says Multivac. The range includes various mono and composite plastics as well as those made from renewable raw materials such as the company's PaperBoard product.

Meanwhile, the Flow Manager system on the traysealer includes a pre-start function, a flow optimisation function and a tuning function to help deliver optimum product flow reliably in operation. 1 01793 425800 www.multivac.co.uk



The case packer is semi-automatic

### Case packer offers secure aggregation for pharma cartons

Romaco's Promatic PAK 130 semi-automatic case packer is ideal for secure aggregation of serialised pharmaceutical cartons.

It packs cartons into cases to conform with the most rigorous standards for the manufacture of tamper-evident pharmaceutical packaging and is designed to be connected to software solutions providing secure aggregation. Pharmaceutical manufacturers are free to decide which aggregation system they purchase and Romaco Promatic then configures the PAK 130 accordingly.

After serialisation, the secondary packaging is passed to the PAK 130, which aggregates the cartons as they are packed into cases at up to five cases a minute. Proof of originality is therefore established for both the secondary and the tertiary packaging in this way. O1252 4444334

www.pharmamachinery.co.uk



### **New Machinery**



Material is isolated in the process

### New high capacity tipper can handle mobile bins easily

A new open-chute High-Lift bin tipper from Flexicon hydraulically raises and dumps mobile bins into a hopper that feeds an integral flexible screw conveyor operating under loss-of-weight control. Bins weighing up to 1350 kg are rolled into a three-sided pen, where a lifting tongue centred inboard of the castors raises and seats the rim of the bin against a grate which, together with panelled side bracing, steadies the bin during the dumping cycle, and directs the discharge path of materials being handled.

The system automatically lifts a mobile bin at variable heights up to 3 m above floor level and dumps the entire contents of the bin into the hopper. 101227 374710

www.flexicon.co.uk

# Contamination concerns allayed in medical packs

Ima Packaging UK has launched an easy-toopen flow pack package for the medical sector. The packaging machinery manufacturer's new solution features two hermetic seals along the packaging's sides and a chevron-type airtight cross seal, addressing contamination concerns in medical packaging.

Specifically, the design allows sterile products to be removed from packaging without contamination with micro-organisms and particles. These particles, which may migrate from the packaging's exterior during the removal process, could previously pose a risk to patient health.

However, the design of the new Ulma solution means that the entire product can be opened without any contact with such particles, eliminating the possibility of contamination. The pack is sealed without leaks, has a leak-proof guarantee and uses a peelable film with already-integrated Tyvek or paper panels to enable ethylene oxide (EtO) sterilisation.

The new flow pack solution is also versatile and can be used to package differently sized products with quick and easy format changes. Because the packaging adjusts to the product's dimensions, manufacturers can therefore avoid the greater logistical costs and film use associated with traditional oversized packaging being used.

"Our innovative design makes these easy-to-open flow

pack solutions an ideal choice for medical manufacturers looking to ensure product and device integrity," says Dave Berriman, technical manager at Ulma Packaging. "Not only does this type of packaging remove the possibility of contamination, they also provide added sustainability benefits and a high level of adaptability." 1 01909 506504

The new packaging provides

added sustainability benefits

and high adaptability levels

www.ulmapackaging.co.uk

### A high specification checkweigher for food manufacturers can be integrated easily with existing inspection machines

At the PPMA Total Show last year, Fortress Technology in association with Sparc Systems unveiled a reliable, accurate, high-spec checkweigher. Aimed at food manufacturers seeking an affordable yet advanced standalone checkweigher that can be easily integrated with existing metal detector and x-ray inspection machinery, the SG420 is designed to ensure precise monitoring of weight with minimal customisations to existing inspection packing lines.



The flagship system utilises tried and tested precision checkweighing software and electronics engineered by Sparc Systems to reduce Multiple SG420 checkweighers in a manufacturing plant can be networked

product giveaway and protect consumers against short measures. Already approved to both OIML and MID (EC TAC) specifications, customers requiring an instant solution can benefit from a shorter machinery delivery lead time without compromising on any aspect of weighing performance, says the company.

Easy to calibrate, the SG420 can operate as a standalone checkweighing unit. Yet, for maximum efficiency, the ready to use cabinet can house a fully integrated system connecting to existing inspection machinery. Wwww.fortresstechnology.co.uk Www.sparc-systems.com



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### **New Machinery**



The new cleaners are built to last

### Vacuum cleaners are upgraded

Dustcontrol UK has launched its new and upgraded range of powerful Tromb vacuum cleaners. The trio of new additions to the Tromb family include the DC Tromb 400 dust extractor, DCF Tromb pre-separator and the combined DC Tromb Twin dust extractor and pre-separator.

The remodelled versions of the Tromb range meet modern safety requirements while offering ergonomic and modular functions. One of the major updates is that the new DC Tromb Twin model is separable, meaning the dust extractor and preseparator are easily detached and re-assembled from each other to make transport simple.

Other updates to the range include a simpler filter change system and a motor package that is easier to remove. In addition, improved motors and a sturdier chassis has seen the Tromb family go through a significant expansion and upgrade.

"The new range is not just powerful, robust and effective but also versatile and can handle all kinds of fine dusts and materials on a construction site, created from cutting concrete, sanding, grinding or drilling floors or walls, as well as dust from many other industrial factory processes," says James Miller, managing director of Dustcontrol UK. **1** 01327 858001

www.dustcontroluk.co.uk

### Paper bagmaker answers current retailer demands

ith several of the major multiples now indicating a preference for paper rather than recyclable plastics for flexible film applications. Ilapak has collaborated with packaging manufacturer Van der Windt Verpakking to develop a new bagging solution. An adaptation of the company's Vegatronic 6000 bagmaker, the new system can run off paper pillow packs and pouches that can be fully recycled via kerbside collection.

"Our engineers have modified the forming tube and sealing system of the Vegatronic 6000 to enable us to run a paper film," says Tony McDonald, sales and marketing director at Ilapak. "It is a fraction of the cost of other paper packaging machinery offerings plus it gives users the option of running original films on the same machine," he says.

Dutch packaging manufacturer Van der Windt Verpakking in co-operation

with its printer Cartomat. has successfully developed a paper film called CartoPaper that uses a special water-based non-extruded coating to support both sealing performance and compliance with the European standard EN643.2.

The main challenge of running paper on a vertical bag maker is that it is exceptionally prone to creasing, which can make it hard to produce a pack with straight lines and a perfectly formed gusset. The key to overcoming this issue is to hold the paper firmly in position and prevent it from creasing prior to sealing. Ilapak's engineers achieved this by modifying



The Vegatronic 6000 can now handle CartoPaper developed by Dutch firm

the forming tube to make the film path through the forming shoulder and the remounting system smoother, and with less acute approach angles. The sealing system on the Vegatronic 6000 also had to be re-engineered. 020 8797 2000

www.ilapak.co.uk

### Laboratory scale powder coating extruder is now upgraded with remote software support

Baker Perkins' MPX19 benchtop twin-screw powder coating extruder for academic, laboratory and development work has been upgraded with remote software support to enable Baker Perkins' engineers to log in to a machine anywhere in the world for fault-finding and software updates.

The MPX19 equipment incorporates features that replicate the range of Baker



The control system functionality matches production

Perkins' production scale extruders and ensures reliable www.bakerperkins.com

scale-up to their outputs. Applications include examining process problems, extending product lines, and developing new processes. The MPX19 is also an ideal tool for companies moving from batch to continuous processing that need to establish the processing parameters necessary to match their existing products. 101733 283000

# Latest technology is enhancing mid-range multihead weighers

shida Europe has launched an enhanced version of its mid-range multihead weighers that is designed to offer greater levels of performance in the fast and accurate weighing of a wide variety of dry, frozen and sticky products.

The new RVE Series, which has been further expanded to include a 24-head model alongside 10, 14, 16 and 20 head variants, now features Powerful Frequency Controlled Vibration (PFCV) technology, that provides greater control of the infeed of product at the top of the weigher and during transfer to the weigh hoppers. By being able to automatically vary both the amplitude and frequency of vibration, the weighers ensure a steady and consistent flow of product to maintain speed and efficiencies and eliminate the danger of overfill in the hoppers.

In particular, the new technology means the latest RVE models can handle sticky and larger, heavier items with greater ease. Another benefit of PFCV is that the machine can be easily retuned or adjusted to the requirements of different product types via the weigher's remote control unit.

This also means maximum performance can be retained throughout the lifetime of the machine without the need for mechanical adjustments. **1** 0121 607 7700 **w** www.ishidaeurope.com

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weighments per minute, which depends on the model chosen and the particular application

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### **Installation News**

### **Closed loop production provided for baby food**

hen a new baby food brand – BabyLed Foods – needed to move to a closed loop manufacturing process for its products, Riggs Autopack was contacted to supply a suitable volumetric depositor.

As with many artisan products, manufacturing of BabyLed products was started at home

and as it developed, a more automated way of depositing its goods into containers was required, but at the same time keeping the handmade feel of an artisan product.

Company owner Keith developed his products and informally gathered feedback from friends and family to prove his ideas in principle. With baby foods however, the need for SALSA or similar accreditation is a pre-requisite to any production process prior



BabyLed Foods is looking to install further products from Riggs

to selling product to the public. Following initial meetings and product trials, BabyLed purchased a Model 1000 Series 3 depositor from Riggs Autopack. This semi-automatic machine was supplied as a 'direct feed' configuration using rigid stainless-steel pipework to connect directly to the outlet on a mixing/ cooking vessel, thus creating the 'closed loop' production process that Keith needed. This direct feed system ensures there's no risk of product contamination during the transfer between the two pieces of equipment, and guarantee's the legal minimum temperature for filling hot products into glass jars.

And, says marketing manager at Riggs Scott Riley, Keith would not have been able to fill the jars quickly enough to ensure batch

integrity and product quality. The baby food products are still hand prepared and cooked in small batches, then filled into jars one at a time, thus keeping the artisan nature of this high-quality brand.

However, this initial production facility is now close to its limits and Keith is already looking at ways to further automate the production process with Riggs Autopack. 1 01282 440040 W www.riggsautopack.co.uk



The ZX robot range moves quickly

### Robots give productivity boosts

A Kawasaki robot has proved invaluable in helping Morris Brothers secure an export order for a new custom-built concrete moulding machine.

The Turkish customer needed a 3-station press capable of manufacturing large concrete slabs, and lots of them. In this application, the demoulding operation required each slab to be picked up using vacuum holders in the horizontal plane. The slabs are lifted and then rotated through 90deg into the vertical as the robot arm moves across to the adjacent stacking pallet, where they are placed vertically into storage and transportation racks.

The Kawasaki Robotics team had agreed that the company's ZX-165U robot was the most appropriate choice in this case: a heavy-duty machine which offered the speed and precision required, and which was easily capable of lifting the weights on the specification sheet. Kawasaki's ZX-165U robot is a 6 axis unit, with a reach of 2.651 metres. It features a rotating wrist which, even when fully laden, can rotate at 260°/sec whilst delivering guaranteed repeatable accuracy (at maximum reach) of +/- 0.3 mm.

Using this particular model of robot also provided Morris Brothers' new customer with another advantage, one which they hadn't specified but which was nevertheless warmly welcomed: inbuilt expansion potential, or future-proofing. 101925 713000 www.kawasakirobot.co.uk

### Healthy food bar manufacturer has installed x-ray inspection technology to ensure quality

Brighter Foods has invested in x-ray inspection technology from Loma Systems in a move that supports an increased emphasis in the company's product checking processes.

Brighter Foods has the capacity to make over a million bars a day for brand partners across the globe in the slimming, sport, organic, free-from and other niche categories. The firm's ongoing reliance in Loma's metal detectors has continued to provide



The X5C compact unit is being used

high levels of contamination detection, however, as a means of complying with code of practice stipulations, an increasing number of customers needed even greater checks through x-ray inspection. This, in addition to recommendations made in its BRC audit, highlighted that Brighter Foods should consider further investment in x-ray inspection capability.

Following a full audit of Brighter Foods' current operation, Loma recommended its X5C compact, which checks for a wide selection of contaminants from metal to hard plastics. 01252 893300 www.loma.com

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### **Installation News**

# Bespoke bulk combi system has delivered sugar inspection gains

hen a major UK sugar producer wanted to be sure of installing the most robust, precise and reliable system for metal detection and checkweighing, it sought the combined expertise of Fortress Technology and Sparc Systems. Together, the companies developed a custom-made solution – the Heracles checkweigher and metal detector packaging inspection system.

Prior to the installation, the manufacturer relied solely on a metal detector capable of identifying approximately 4.0 mm ferrous metals, 5.0 mm non-ferrous metals, and 6.0 mm stainless steel. As a result, addressing contaminant complaints impacted productivity.

With no checkweighing process in place, concerns were also raised about product giveaway. As the UK's leading processor of 1.4 million tonnes of sugar each year, the company was adamant it needed an entirely new



The equipment had to withstand any powder and dust build up in operation

inspection process to underpin its reputation for quality.

To increase and maintain safety and productivity, the

sugar producer opted for a totally bespoke solution combining the benefits of a Sparc checkweigher and a Fortress Stealth metal detector. "Our client implemented what they call a Gold Standard, a set of company-specific principles that they wanted to adhere to," explains Kevin Shackell, UK & Ireland sales manager at Fortress. "So, we created Heracles to make sure it met these criteria."

#### **REJECT DIFFERENTIATION**

In operation, the machine can differentiate between a metal and weight reject; if it's the latter, the producer simply reworks the product and sends it through to secondary packaging. "Already the client has reported significant improvement to its previous process, diminishing the frequency of false rejects and waste while increasing detection sensitivity by over 50%," explains Shackell.

This performance was delivered by the checkweighing station, which verifies the weight of each bulk pack – in this case, 25 kg or 50 kg. The system will, if required, provide a control feedback message to upstream equipment used to portion the product, signalling it to increase or decrease the fill quantity accordingly.

"It's quite rare that companies pack in 50 kg bags due to directives about safe manual handling," adds Shackell. "Yet, the client uses this format for exporting and we were able to deliver an automated solution that met its particular requirements."

Another of the client's key criteria fulfilled by the UK-made Heracles is its ability to endure harsh environments. www.fortresstechnology.co.uk www.sparc-systems.com

### A complete filling, capping and labelling line is currently being built to re-automate bottling operation after a fire

Karmelle is supplying a complete filling, capping and labelling line to Masons Yorkshire Gin to replace equipment destroyed in a fire at the distillery's facility earlier this year.

Masons approached Karmelle after the blaze in April, and has commissioned a new line comprising a rotary infeed table, a linear air rinser, a 4 head filler, a 'T' cork capping machine, two labelling systems and a rotary collection table.



This will help the company to re-automate its bottling operation in its new premises.

The new line is an improved version of the original design

Having supplied Masons' original bottling line, Karmelle was ideally placed to manufacture its replacement, and worked closely with the Masons team throughout the design process. The improved system is now in-build.

"Masons' original line was one of our most innovative bespoke systems to date, and this project has given us the opportunity to refine and add to it," says Peter Krawczuk, co-director at Karmelle. 1 01484 533356 2 www.karmelle.com

# Bespoke washing machines for oils

Bulk oil company Frylite has streamlined its operations with a bespoke washing machine developed and manufactured by Industrial Washing Machines Limited (IWM). The machine cleans and dries receptacles soiled with vegetable, rapeseed and soya oils, replacing a timeconsuming and tedious manual process.



The new bespoke washing machine has replaced the manual process

The company provides bulk oil to bakeries and restaurants in the way of storage tanks or buckets and also facilitate the removal of the waste oil to be reused for biofuel. Having previously purchased two other washers from IWM, Frylite engaged the creative mind of Mark Keating, an IWM sales and project engineer specialising in food and drink applications, to propose a solution for sanitising the heavily soiled and difficult to clean food receptacles.

"We were using a manual process for washing and we were also drying by hand, which was very time consuming," explains Gerard Lynch, maintenance engineer at Frylite. "We knew we would need a customised solution to automate cleaning, so we approached several companies for their suggestions and prices.

"Most came back with prices that were surprisingly high, but in contrast, the IWM offer was well within our budget, so we decided to place our order with the company."

Lynch says the design and production of the machine took several months because the company was continually making changes and improvements. "But once we'd finalised our requirements, IWM handled the project very efficiently and delivered our machine at exactly the time we'd been promised," he says. O121 459 9511 www.indwash.co.uk



The design and production of the machine was a fully collaborative effort

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### **Installation News**



### Laser marks are perfect for crackers

With increasing demand for direct laser marking from the food industry, Macsa ID UK is highlighting the suitability of its SPA CB30 PLUS laser system for marking the surface of baked dough products such as breadsticks and crackers.

The company's laser system has recently achieved a high definition mark on the surface of bread products. The machine enabled high speed marking without direct contact, helping to preserve quality and all the properties of the food item itself.

Despite their hard yet thin shape, the delicate breadsticks and crackers remain intact during the marking process. Macsa ID UK's CO2 laser creates a groove in the food surface that highlights the marking.

"Direct laser marking is being increasingly utilised by the food industry with manufacturers and processors recognising that eliminating unnecessary packaging and labels that cannot be recycled helps improve sustainability," says Neil Greatorex, md at Macsa ID UK.

"Marking directly onto food with laser technology reduces packaging costs and consumable waste helping to improve all important environmental credentials," he says.

Macsa ID UK's CO2 laser is designed to meet the most demanding coding requirements and can handle a wide range of substrates such as paper, cardboard, glass and plastics. 01462 816091 www.macsa.com

### Cobots deliver a flexible solution for toothpaste

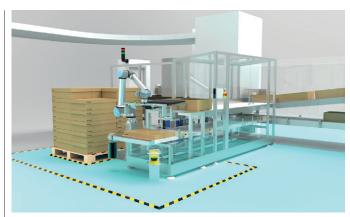
ctive8 Robots has delivered a collaborative robot solution that is considered an important step in a global healthcare giant's journey to implement flexible automation using cobots.

Previously, this toothpaste tube de-palletisation and loading application was heavily reliant on manual labour, causing bottlenecks in the production process.

This manual process was disjointed, with a single operator attempting to complete numerous sequential tasks.

With a requirement to meet a cycle time of 48 seconds per box, the new automation solution features one collaborative robot, selected for its payload and reach characteristics. In operation, it de-palletises the boxes of tubes and presents to an infeed conveyor system, feeding into a tube-filling machine. The box is deposited on a custom fixture where the cobot positions the box while utilising force detection capabilities.

This compensates for any



The new solution features one cobot selected for its payload and reach

variation in the box position on the pallet, to ensure that the final position is the same for each box. The box is clamped on the fixture as a vacuum nozzle is introduced to remove the plastic sheet, while the robot removes the box lid and deposits to a conveyor that feeds the existing recycling conveyor.

The box is finally manipulated to the infeed conveyor using a pneumatic pusher.

Optical sensors are used

to check for the removal of plastic sheets from within the box and safety sensors are integrated with the system to influence the robot running speeds for various conditions, based on operator proximity, mitigating the need for physical guarding. The safety sensors were utilised for this solution to comply with the customer's policy for no operator to come into contact with moving machinery. 01761 234376

www.active8robots.com

### Multi-million pound clinical trials project will see a complete bespoke system install

CME has been awarded the contract to manufacture an automated clinical trial line which will be the first major piece of equipment to be installed and developed within the new Medicines Manufacturing Innovation Centre. This new centre will be located in Renfrewshire, Scotland and is a collaboration between CPI, University of Strathclyde, UK Research and Innovation, Scottish Enterprise, AstraZeneca and GlaxoSmithKline (GSK).

CME's contribution to this project began when the company secured an initial contract for the design element of a complete bespoke system capable of receiving orders, filling bottles with the appropriate number of tablets or capsules of the requisite drug and strength, labelling bottles and consolidating those orders.

CME's design solution for filling bottles with tablets or capsules, while reducing the risk of cross

contamination of the bottles and the surrounding equipment/environment was instrumental in securing both the initial design contract, and also this new contract for the manufacture of the automated clinical trials line.

"This is an exciting project which targets the use of new and disruptive technologies to help bring medicines to market more quickly," says Paul Knight, md of CME. 01460 269500 www.cme-ltd.com

# A vacuum chamber machine is testing plastics bottles in R&D

ultivac UK has supplied a C 200 vacuum chamber machine to household and trade professional brand WD-40 to support its R&D team with the testing of plastics bottles.



A range of bottles are now tested

The company was looking for a new process to test for leaks from its wide variety of plastics bottles used across its many brands.

After seeing one of its suppliers use a vacuum chamber machine to pressure test for leaks on plastics bottles, WD-40 was inspired to change its process.

### **REDUCED TESTING TIME**

Grant Roberts, R&D associate scientist at WD-40 was recommended a C 200 vacuum chamber machine to perform the required bottle testing. The machine has enabled the business to reduce time spent testing for leaks and has reduced its manual 72 hour process down to under a six hour process. Not only did this save a considerable amount of time for the team, but it enabled them to improve the efficiency of their testing.

"The machine not only significantly reduces our testing time, but it is repeatable, reliable and easy to operate," says WD-40's Roberts. 01793 425800 Www.multivac.co.uk

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### **Installation** News

# Stable and safe palletising has been delivered without plastic

Robatech's AntiSlip gluing system has stabilised palletised bags of animal feed for UFA AG in Sursee, Switzerland for over ten years, which is why the company decided to equip its new bagging system with the same technology. The company has found that the contact-free hot melt spray application runs reliably and guarantees transport safety without requiring any plastic on its pallets.

In operation, the animal feed bags are palletised fully automatically using the AntiSlip gluing solution in the specialty plant in Sursee. So, when the new machine was purchased, the company decided once again, to avoid the use of too much plastic.

"Shrink wrapping would require more effort, space, and, assuming a throughput of 25,000 pallets per year, higher material costs," explains Urs Steiner, head of production at UFA Sursee. "Our customers must already dispose of the feed bags and they would then still have piles of film," he says. Up to 500 bags per hour are filled, sewn, and labelled in the new bagging plant. For subsequent palletising,



Adhesive is applied on both sides of the sack to allow an increase to ten layers



Safe transport is now guaranteed

two AX-Diamond spray heads apply four hot melt spirals to the surface of the passing feed sack without contact. After that, a robot stacks layers of three sacks each on the pallet for transit.

Once two layers are stacked, a lift moves the pallet upwards and presses the sacks against a press plate. This increases the adhesion between the layers, and the finished palletised stack can then be transported safely. Each layer is pressed, with the product counter of the Robatech application system ensuring that the last three sacks remain without any adhesive application.

"We aim for a high degree of automation," says Steiner. "Our philosophy is not to look for the cheapest, but the most reliable solution and there is no unscheduled downtime with Robatech devices." And with the new bagging system, the company has also been able to increase from eight to ten layers on a pallet. "A logistical advantage," he tells *Machinery Update*.

This meant modification of the existing adhesive application process to apply adhesive on both sides of each sack.

"Thanks to the high backward compatibility and the modular design of the Robatech products, that was no problem at all," explains Steiner.

■ 01268 490035
 ■ www.robatechgt.com

### Workflow consistency has been improved for drives production by including cobots

Invertek Drives, a global designer and manufacturer of variable frequency drives (VFDs), has incorporated two UR5 cobots (or collaborative robots) into the testing phase of its production line to improve workflow consistency.

When Invertek Drives started producing up to 400,000 VFDs a year at its new facility it needed a flexible automation solution able to switch between different jobs and part sizes throughout the production process. With the support of RARUK Automation, the UR5 cobot was deemed the perfect fit during testing because of its ease-of-programming, size and scalability.

"Our workloads can change every other minute, and we can manufacture over 15,000 variations of our products," explains Peter Evans, manufacturing engineering manager at Invertek Drives. "This means we need cobots that can handle the inspection and testing of constantly changing devices, all within a single production line."

The cobots also play a major part in quality control thanks to a specialist end-of-arm unit that was created by Invertek's in-house manufacturing engineering team. Equipped with a Cognex vision system, lighting controls, a fan-speed sensor and robotic finger, the specialised component enables a full range of complex tests such as visual inspection to be performed. 01462 670044

www.rarukautomation.com



Working 16-hour shifts, the cobots inspect and test the range of devices



More PET sizes will be made

### **Rotary stretch blow** moulder will deliver for Coca-Cola in PET

Gaseosas Leticia, the smallest Coca-Cola bottling plant in the world, turned to SMI to automate the production of PET bottles for the soft drinks by installing a new ultra-compact rotary stretch blow moulder from the EBS K ERGON range.

This Colombian company, which currently has four bottling lines, aims to widen its production capacity by bottling soft drinks under the Coca-Cola brand in 500 ml and 2 litre PET bottles thanks to the new EBS 4 K ERGON rotary stretch blow moulder. The bottle blower offers reduced energy consumption thanks to the preform heating module which is equipped with high energy efficiency IR lamps and a dual air recovery system. 0161 277 7840

www.smigroup.net

### Contract packer widens its service offer with machine

ontract packer Packopale has installed the Schur Star concept at its plant in France to offer customers a wider range of services.

"We had reached the point where our capacity and our packaging offer in general only just reached the market requirement in terms of innovation and flexibility," says Mr Condette, managing director of Packopale. "When introduced to the operational, logistical and promotional advantages of the Schur Star concept, we immediately saw the potential for us."

Packopale focuses on adapting its market offer to the frozen seafood segment, which appreciates the importance of flexible, reliable and safe packaging service.

"Not only can we now offer a packing process adapted to any product requirement

Lantech modular

cases per minute

CI 1000/CI 2000

case erector from Lantech

case erector capable of up to 25 erected



 from oddly shaped shellfish to be carefully hand-packed, over standardised products, packed fully automatically, or a solution in between

requiring a combination of automatic and manual packing," says Condette. "We can combine this with filling, weighing and counting equipment and also offer late differentiation through carton header application or direct print onto the bag during the packing process."

Frozen seafood is traditionally packed in classic pillow bags, but with the installation of the Schur Star packaging machine, Packopale's versatility in packaging solutions has been extended considerably. 1 00 49 461 99750 www.schur.com

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### **1.J. MATERS** Packaging and palletising systems

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Seafood is now packed in myriad styles and solutions

### **Installation** News

# Turnkey line for gin is meeting contract needs

Shemesh Automation (SA) has built a high speed multi-range fully automatic feeding, filling and capping line to bottle all sizes of gin at contract packer Beams Packaging Services.

Three years ago, the company's main bottling niche was miniature bottles (an average 50 ml in size), however, Beams' has now expanded to cover various bottle sizes of up to 700 cl. Beams approached SA to design and build a bespoke, high-speed feeding filling and capping line to handle all of the bottle sizes in its range.

The new line consists of SA's Stratum in-line double servo driven automatic liquid filling machine and Thoro, a mechanical cam design and double station torquemeasured capping machine. It is designed to provide



The new line is designed to offer the contract packer accurate, speedy bottling every time

accurate, leak-free capping to meet Beams' requirements. The capacity and speed of each unit afforded the contract packer the ability to fulfil each product range with minimal downtime between runs, thus reducing costly capital outlays, space and utility consumption.

"Shemesh offered a value proposition for the business which was hard for anyone to neither ignore nor compete with," explains Rick Lennard, head engineer at Beams International.

Equally critical to this project was the support and aftersales care offered by SA. "Today, I perceive Shemesh not only as an equipment supplier but a true partner to our success," says Lennard. 2020 7887 6004 www.shemeshautomation.com



Grippers were adapted for ease

### Bag gripper has upped the power

With Piab's hybrid bag gripper, Sapho has increased its cycle times so it is prepared for the winter business for road salt. The company's old bag gripper no longer provided the necessary performance and so it decided to invest in a new hybrid gripper.

"The impetus was that we wanted to get more power out of the machine and wanted to pack the pallets cleaner and more dimensionally stable," explains Uwe Grundstein, technical director at Sapho. "The technology, the know-how and the service convinced us of Piab and with the combination of robots and grippers, we are quicker at the time when it counts."

#### **ROBOTIC ARM IN USE**

In operation, the hybrid gripper attached to a robotic arm removes the sacks and bags from a roller belt on which they are placed after filling. It grabs the sacks from above, drives the forks on both sides between the rollers of the belt and picks up the bag on the underside. As a result, the bag lies on the massive gripper fingers during movement.

For the Piab hybrid bag gripper to fit exactly to the existing system, and to the roller belt used by Sapho, the fork spacing was adapted to the spacing of the existing rollers. 101509 857010 www.piab.com

### Three bagging systems will establish efficiencies and add value in Vietnam

Beumer will supply three bagging systems for the Long Son Petrochemicals complex in Vietnam, with installation scheduled for this year. The bagging systems for the LLDPE plants include three FFS-filling machines, three palletisers – called palletpac – and two stretch hood A packaging machines.

The form, fill and seal filling system fulfils three functions in one compact and spacesaving system. It forms bags from a prefabricated tubular PE film, fills them with product and seals these bags at a capacity of 2,000 bags per hour. Meanwhile, the palletpac bag palletiser handles the bulk materials easily, stacking the packaged items on to pallets, while the stretch hood A unit covers palletised goods with a stretchable film.

This keeps the pallets clean and protects them from sunlight and humidity while stored outside.

The aim of this project is to increase the efficiency of the

petrochemical complex and guarantee a high level of plant availability as well as adding value. The petrochemical industry runs 24/7 and so any disruption has consequences. 101530 441297 www.beumer.com



### Scottish veg processor adopts fresh thinking to pack sprouts

egetable processor Drysdales has become the first UK produce company to automate its sprout crate loading operation, futureproofing against potential labour shortages that could arise from Brexit. The Scottish company's investment in Brillopak's UniPAKer robotic cell has already yielded a return on investment thanks to its ability to consistently load bags of sprouts into crates at speeds in excess of 75 packs per minute with minimal manual intervention.

"No-one else is using a machine like this to pack sprouts into crates; this investment fits with our business philosophy of harnessing innovation in farming and production methods in order to stay at the top of our game and deliver the best quality produce and service to our customers," explains Drysdales' farming & facilities director Ian McLachlan.

At the start of last year, Drysdales embarked on



Brillopak's UniPAKer robotic cell has already yielded a return on investment

a project to install a new fully automatic sprout packing line. The line would comprise a vertical bagging machine, metal detector, checkweigher and crate packing system, all located on a mezzanine floor. This was to be the first time Drysdales had automated crate packing on its sprout processing lines, a decision driven largely by concerns about future labour supply.

One of the challenges of automating this operation was the number of possible pack and crate configurations. Sprouts are packed in a variety of bag sizes, from 200 g up to 500 g, and each retailer has its own crate format requirements.

"We needed the flexibility to accommodate different pack sizes and crate lengths, whole and half crates, landscape and portrait layouts and different volumes – from 10 packs up to 25 packs to a crate," explains McLachlan.

Brillopak's solution was the UniPAKer robotic pick and place cell that was originally engineered for packing bags of potatoes and apples into crates. The UniPAKer has been specifically designed to improve productivity and improve pack presentation on shelf.

Using a four-arm delta robot on a compact footprint, it will load up to 75 VFFS, tray sealed or flow wrapped packs per minute and is ideal for vegetables, fruits and salads up to 1 kg.

Two key elements of the UniPAKer solution address the challenges of pick and placing flexible bags containing small, moving spherical products at speed and accuracy: the use of vision technology to recognise and orientate the packs and the special design of the suction end-effector. Brillopak's approach to vacuum handling is different to others in that it manufactures its own heads using cups with independent vacuum generators, providing greater control during product handling. 101622 872907 www.brillopak.co.uk



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# WestRock Automated Packaging Systems

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### **Feature:** Dairy introduction

### Machinery Update takes a look at the very latest in dairy

quick glance through The Grocer magazine's **Top Products Survey** 2019 shows just how tough last year was for many product groups of the dairy industry. Butters and spreads haven't managed to halt their decline, block cheese has been losing ground (although snack products are on the up) and yoghurt sales have continued to fall. And while fewer fresh milk and yoghurt drinks have been purchased, coffee-focused brands have seen double digit growth.

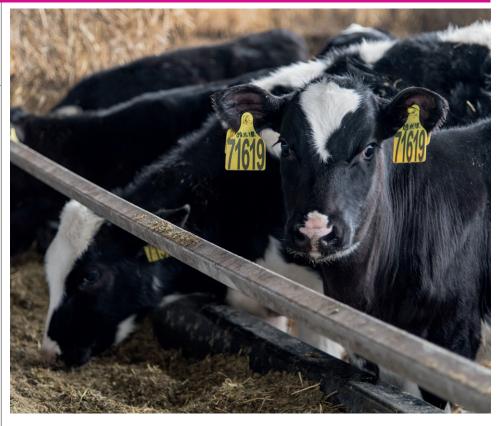
Many of the following 23 pages of this feature cover new developments that provide ultimate efficiencies for this market, where every penny saved in the manufacturing process really counts. The new equipment also facilitates new pack formats that are also essential for growth in this sector. While Arla Foods is tackling dairy waste through new packaging and labelling.

#### **STOPPING MILK WASTE**

According to Wrap, as a nation we waste about 490 million pints of milk every year, but by making some changes to the labels on its branded fresh milk and yoghurts, Arla wants to make people's lives a little easier and help cut food waste in the home. And that is why the company is switching from 'use by' labelling to 'best before' on its branded fresh milk.

Sparc Systems believes efficiency is key in a tough dairy market and it has developed inspection equipment to enable better quality control without slowing production rates. And this sentiment is borne out by our story covering artisan yoghurts and milk-based desserts which are being inspected by a split beam x-ray system from Mettler-Toledo.

At the same time, filling and sealing machinery supplier Grunwald UK has seen its dairy customers requiring larger capacity



# Innovating to survive

The dairy industry is under pressure which is why any economies in its manufacturing processes make a big difference machines with more automated add-on assemblies to minimise labour requirements and deliver lines with a capacity of up to 20,000 units an hour.

There are further stories across this feature that bear this out, with automation providing many benefits to dairy companies including milk itself as well as for ice cream. And, it is not just complete lines that are offering production gains in dairy, as can be seen by a combined flow and temperature filter monitoring sensor from Baumer that is maximising process optimisation at Müller Group company Homann for the range of dairy products it produces.

Although Brexit has seen some companies delaying investment in this sector, sales and marketing manager at CWM Automation Mike Holden tells *Machinery Update* that companies are still going forward with projects in anticipation of rising labour costs in the post-Brexit UK.

#### **HIGH HYGIENE STANDARDS**

Standards of hygiene are also key in this sector and this is where processing and packaging equipment plays an important role. Many of the following pages have hygiene at the forefront of the latest machinery, with new developments delivering gains for users across sectors, including almond milks.

Finally, we have covered several stories about the cheese sector, with particular emphasis on grated; slices and portioning to match the trends seen in the sector. Enjoy!

### **NEW** PRODUCT LAUNCH

# S 800

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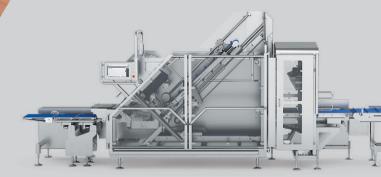
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### **Feature:** Dairy

### HepcoMotion has worked on a milk bottle trolley unit

echelec Automation has developed a new trolley collation and packing system for the dairy industry with the help of slides supplied by HepcoMotion. The TP1002 trolley packer is designed to provide fully automated, cost-effective trolley loading at faster operating speeds than current systems. The slides are required to provide the movement of the milk bottles within the new trolley packaging machine.

One of the key reasons why HepcoMotion was specified for this application was the high demands the dairy industry puts on its components to maintain machine up-time. For instance, when a Hepco V guide system shows sign of wear, the eccentric adjustment facility of the V bearings can be used to quickly and simply remove any play that has occurred. When the V bearings reach the end of their life, they can be replaced individually, and not as an entire set, saving both time and money.

This was particularly relevant in this highly demanding dairy environment, where 4 pint bottles (in a  $4 \times 5$  format) are loaded at speeds of 1 metre a second with a throughput of 240 bpm (bottles per minute).

#### A ROBOTIC ARM IS USED

The TP1002 trolley packer has been developed specifically to meet the demands of today's production environments. The system uses a robotic arm to quickly and efficiently load two static trolleys simultaneously, offering double the packing speed of conventional systems from a comparable footprint. It also offers the potential flexibility to allow the packing or palletising of shrink-wrapped product in the future.

Hepco's SL2 stainless steel linear guide is used on two axes in this machine; in the collation of the bottles into the 'shelf' format



# Slides give milk a flow

SL2 linear guides have been used to collate the milk bottles into the 'shelf' formats required (two shelves are being collated at one time), and to push the collated bottles into the head on the robot. With loads of 20 kg on collation and 40 kg when pushing into the robot head, Hepco's SL2 system is not stretched as its load capacity is up to 1000 kg.

As with most food packaging applications, each component of the TP1002 must be able to offer high resistance to corrosion in order to withstand the washdown regime. With a precision ground finish providing corrosion and wear resistance, Hepco says its

### The slides have provided a fit and forget solution for the trolley collation and packing

stainless steel SL2 is particularly suited to food industry machinery.

This design needed to be compact to ensure minimal floor space was required, but the system still had to be capable of providing the loads and speeds required. This application specified SL2 slides size 44 mm and 76 mm width to meet these requirements. SL2 also has miniature solutions, starting from size 12 mm width, for when space is at an absolute premium on a site.

A further benefit of the new system has been a significant reduction in labour; the TP1002 has halved the number of operators required from four to two. In addition, it loads in half the time of the four operators, enabling a higher product output. **1** 01884 243400 **W** www.hepcomotion.com

# Portioning the cheese 'to go'

Alpma has developed equipment to deliver quick and efficient mini-cheese portions to meet trends



Alpma has supplied high-speed lines to the US to deliver up to 600 portions a minute to packing

o meet the growing demand for 'to go' cheese, or mini portions, Alpma has developed solutions that produce portions of widely varying sizes, shapes and weights on a single machine. The Snack Line is described as flexible, hygienic and can be changed to suit different cheese sizes without tools.

Depending on the type of snack, the Snack Line delivers up to 600 portions per minute, and with accurate weights. In order to achieve this speed, the line travels in two lanes and can therefore handle up to 300 portions per lane each minute. The Snack Line then transfers the mini-portions in synchronised operation to the downstream flow wrapping machine.

#### ANY CUSTOM WEIGHT IS AVAILABLE

The range of cutting machines will cut a block of cheese into individual mini portions of 8 g sticks, or 12 g and any other desired custom weight up to 1000 g.

Most common snack portions are in the range of 25 g; 30 g; 40 g and 50 g, as well as twin sticks.

In operation, the process is a series of

stages to size reduce the incoming block of cheese into the required individual portion size. This is achieved with a series of wires and blades to precisely and accurately cut the block into smaller and smaller sizes and then to separate each portion and feed them into a packaging line either manually or fully automatically.

The range of equipment starts from 40-60 portions per minute with a semiautomatic line at an investment starting from £50,000 up to fully automatic cutting lines running at 600 portions per minute at a higher investment. Alpma has machines ranging from the entry-level HTII portion cutter to the full CUT32 and CC100 range of machines that are designed to deliver accuracy and efficiency with the minimum of waste. Indeed, for 12 g portions the company has a give-away of less than 1%. This is the level of accuracy of within 1 g for a natural product being cut and separated and delivered to a packaging machine for UK cheddar cheese at over 200 portions per minute. 101256 467177

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### **Feature:** Dairy

rtisan dairy products producer Ferme des Peupliers is using a new, split beam x-ray inspection system from Mettler-Toledo to guarantee the integrity of its yoghurts and milk-based desserts.

Operating in the heart of Normandy since 1947, farmhouse business Ferme des Peupliers has become a recognised brand that employs traditional methods to produce its dairy yoghurts and milkbased desserts and regularly wins medals at the Paris Agriculture Show. The plain or fruit-layer yoghurts are sold in glass jars and so the product quality is clearly visible.

In a strategic move to consolidate its quality assurance policy, the company's managerial team – combining expertise in farming, cattle breeding, processing and trade – chose a Mettler-Toledo x-ray inspection solution to meet its production constraints.

With 12 million jars of yoghurt produced per year, the company's primary focus was to implement an inspection strategy that would enable the farm to market its products with confidence, while providing added reassurance for its partners and buyers through quality assurance standards in its production process.

#### MANY EFFICIENCY GAINS

Although this represented a significant capital investment in relation to the size of the enterprise, after two years of use, Ferme des Peupliers is fully appreciating the benefits of the latest inline inspection technologies. Indeed, these technologies not only allow food manufacturers to improve contaminant detection and product quality, they also help increase production efficiency, says Mettler.

"We based our strategic decision on the experience of other businesses and



Mettler says the French dairy chose it for its fast, reactive service, and set-up of a project management interface

# Inspection is clear winner

### Machinery Update reports on how an artisan producer of dairy products is using x-ray inspection for integrity

our desire to guarantee our products' integrity while preserving our traditional production methods," says Edouard Chedru, co-manager of Ferme des Peupliers. "This approach also reassures the stakeholders in our distribution channels – including supermarkets and local sales networks – and opens doors to new markets such as Asia," he says.

With a range of over 40 yoghurts in glass jars and two filling sizes (125 g and 180 g), the challenge was to find an inspection solution for the single production line that would efficiently detect contaminants – such as glass and metal fragments – in still-liquid yoghurt products, and with some having a fruit layer. Use of a standard metal detector was not possible due to product humidity and the density of the glass packaging in combination with any aluminium seal.

After a consultation period during which Mettler-Toledo presented results of tests already conducted on this type of jar and machine, Ferme des Peupliers decided to install an X3730 system. This inspection system, which is not affected by changes in temperature, features twin horizontal beams and allows physical contaminant detection – including glass fragments in the glass jar – as well as visual quality checks of the yoghurt fill level.

The X3730 was fitted directly into Ferme des Peupliers' conveyor. The x-ray machine uses a side-to-side transfer from the main conveyor line onto the x-ray conveyor line and back again.

This split-beam x-ray solution increases detection sensitivity by imaging every glass jar twice in one pass. As each package is inspected from two different angles, blind spots are minimised, and physical contaminants can be detected in any position (even in the bottom on the jar). Furthermore, the aluminium seal on the glass jars doesn't affect the sensitivity of detection. Given the high x-ray absorption rate of glass, the 360-watt system installed at Ferme des Peupliers currently checks at 150 125 g jars per minute, or 120 180g jars per minute.

#### QUALITY APPRECIATED

"Even after using the X3730 for 24 months, we can appreciate the quality of the checks and reassurance this x-ray product inspection technology provides," explains Chedru. "We learned from other dairy producers' experience and chose to install the necessary equipment and implement best practice to guarantee our yoghurt and milk-based dessert quality.

"We're still improving and can learn a lot from analysing data collected by the new system, particularly to differentiate rejects by each error type."

An additional advantage of adopting the Mettler-Toledo inspection solution has been the ability to use x-rays to check the yoghurt fill levels, which guarantees conformity by visual analysis in the absence of standardised weighing.

"We wanted a system that met all our specifications, plus a partner with the same



Glass jar fill levels are now checked

drive as us who recognised how important producing high-quality yoghurt is for our business," adds Chedru. "Mettler-Toledo has supported us at every stage of the project and continues to assist us with fine-tuning to ensure the best possible settings for our production. "We appreciate the responsiveness of their team and their availability." 1 0161 848 8636 W www.mt.com





# New equipment is delivering benefit for cheese makers

rom slicing through to packing, the demand for faster, more automated solutions with a lower giveaway, delivering higher yield and higher quality product has risen in line with the decrease in available labour, pressure on margins and the requirements of both retailers and consumers in the cheese sector, according to Multivac UK.

In October last year, Multivac officially launched its new S 800 slicer to the UK market, along with several other products including the B 625 belt-fed vacuum chamber machine that bring benefits to the cheese sector. For instance, when developing the S 800 slicer, the company engaged with several small and also large cheese processors to ensure the machine solved the biggest challenges faced by producers and delivered the best quality product to their customers.

For instance, until the launch of the S 800 slicer, there had been a requirement to closely control product temperature prior to slicing in order to achieve optimum product quality.

The effect of this has been to increase costs due to the additional energy required to chill down the logs to the required temperature and the double handling of them in and out of chillers. The S 800 however, has a new design which means



# Getting the slices right

The S 800 from Multivac UK is bringing new features to cheese slicing for greater efficiency a significantly wider range of core temperatures can be tolerated before the slice quality is affected.

This delivers an immediate win for processors by reducing both energy and labour costs without affecting the product, says the company. The S 800's open-frame concept, ease of operation and simple changeover also mean that highly-skilled operators are no longer an essential requirement, freeing them up for other duties without affecting line efficiencies. Meanwhile, the new B 625 beltfed vacuum chamber machine has also been designed to suit all types of high volume cheese packing; whether a standard 20 kg cheese block, various

sized cheese wheels or even smaller portions. The B 625 also comes with various lid options to accommodate all cheese heights.

With two 1500 mm seal bars and an 800 mm distance in between, the new machine allows for the simultaneous packaging of multiple products and, due to the compact machine design, it can achieve over 3 cycles per minute, maximising high output performance.

#### **NEW FEATURES OFFERED**

Cheese vacuum packaging often faces challenges such as fatty seal areas, long maintenance schedules and regular cleaning requirements, all of which lead to a gradual decrease in production efficiency. The B 625 comes equipped with some new features to help combat these obstacles.

For instance, the heated evacuation filters eliminate icing and ensure consistent airflow and cycle times throughout the packing day. The sealing bar on balanced cylinders provides maximum seal integrity across the whole seal bar continuously. And finally, the manual tilting lid enables easy access for service, maintenance and cleaning tasks. I 01793 425800 W www.multivac.co.uk

Multivac UK says the S 800 slicer is perfect for many cheeses

# Almond milks are processed

As almond and other plant based milks are more popular, Silverson is providing process solutions

Imond and other plant based milks have become increasingly popular over the past few years and as a result, Silverson has been answering more enquiries from manufacturers of these products seeking process solutions. Indeed, one of these companies is predicting it will save over US \$1.1 million per year by using a Silverson mixer in its plant.

#### **REDUCING WHOLE ALMONDS SIZE**

This company wanted to reduce whole almonds to a small particle size so that it could use them to produce milk rather than almond paste. This, it said, had proved problematic to process. The almond paste was expensively sourced from abroad and when it arrived, the particles were too large and were 'blinding' the company's in-line filters. This paste then had to be refined through a wet milling stage which greatly increased process time as well as adding costs.

The whole almonds cost about

US \$2 less per kilo than almond paste – of which the company was using approximately 550 tonnes per year; and so, using whole almonds would accumulate to a huge estimated saving of about US \$1.1 million. Trials were run

at Silverson's test facility using the

The Pilot Disintegrator Plant was used to run the trials at Silverson Pilot Disintegrator Plant, comprising a Bottom Entry Mixer and an In-Line mixer with a fine slotted head. The aim of these trials was to reduce whole almonds down to a level where there was zero retention on a 100µm screen.

Whole almonds were added to the vessel and disintegrated by the Silverson Bottom Entry mixer, and after five minutes, the mixture was recirculated through the 600LS In-Line mixer for about 20 minutes to reduce the particle size further.

The results from the trial were very good, there were no particles retained by the 100µm screen and minimal oil separation after 24 hours at ambient temperature.

■ 01494 786331 ■ www.silverson.co.uk





#### **YPS** has supplied a second wrapper for London milks

orkshire Packaging Systems (YPS) has installed a second shrink wrapping line into Chew Valley Dairy, located in the heart of Chew Valley, Bristol. The dairy processes milk from its own farms to supply

stores, restaurants and caterers across the south-west region. It is also the supplier behind Yeo Valley yoghurts, as well as butters, creams, eggs and bread. Predominantly supplying the London market, Chew Valley makes daily milk deliveries to the capital and so ensuring its milks are processed, packaged and delivered in the shortest time possible, is a must. As a family-run business with a reputation for fresh products, exemplary customer service and utmost hygiene standards, the company wants to protect this reputation in the dairy industry.

Initially, YPS supplied the company with a stainless steel wrapping line consisting of a semi automatic sleeve sealer and shrink tunnel, to wrap 2 litre bottles of milk in 2 x 3 collations. This was a huge upgrade from the previous operation which involved manually packing the milk bottles into crates.

#### **INCREASES IN THE DEMAND**

After yet further increases in demand, overall growth and a concerted drive to increase capacity and efficiency, Chew Valley Dairy approached YPS for a second shrink wrapping line in November a couple of years ago. After investing in a new filling system to dispense the milk into the bottles, the dairy was finding that its shrink wrapping system needed to run faster than the semi-automatic system allowed.

The SS140 fully automatic milk machine from YPS was the ideal solution for Chew Valley. Supplied in full stainless steel, with low voltage electrics rated to IP66, the line is designed with the harsh dairy environment in mind and



# Milks are fit for a Queen

Milk in two litre packs is handled by equipment supplied to Chew Valley Dairy was fast enough to be fed directly from the filler. YPS installed the new equipment last year, and over the course of a weekend so as not to disrupt Chew Valley's production schedules. Indeed, the entire line was delivered, installed and up and running ahead of schedule within 48 hours.

This recent addition of a fully automatic milk machine has reduced the dairy's labour requirements by eliminating the need for manual handling from

**YPS** is pleased to have been able to help a fellow family firm to increase its productivity

an operator. It has also trebled production at Chew Valley and by matching the speeds of the filling line, the wrapper is achieving outputs of about 70 bottles per minute.

"We've experienced rapid growth in the last five years, and to make this possible, we need suppliers we can rely on," says Thomas Gay, managing director of Chew Valley Dairy. "YPS has so much experience in our sector, which makes them the only choice for our wrapping needs and the reason why we came back to them for a second line.

"We are even in discussions currently about a potential third machine," he says.
01924 441355
www.yps.co.uk

# **Bottle transfer**

#### UPM has helped automate the new line for BV Dairy

When BV Dairy was awarded a long-term contract to supply cultured milk drinks and drinking yoghurts, it made a multi-million pound investment in a new bottling line with an initial capacity of 4 million units a year. However, to meet future volume needs, the dairy commissioned equipment from UPM Conveyors to allow production of sixteen million units per annum.

As demand increased, the step to automate saw UPM Conveyors brought in to design a system to transfer bottles through each process stage from the filling in a high care area to capping; metal detection; labelling and finally to the flow wrapping and palletising. UPM used 3D solid modelling design software to create a 3D digital prototype using the design visualisation and simulation of product to ensure efficient product flow through the high care area through to packing.

LIAISON WITH SUPPLIERS

UPM then liaised with all the main equipment suppliers to integrate the conveyors which

involved testing the system at UPM prior to installation. This was necessary to effect the side transfer of product from each section of the system to eliminate any potential jams and resulting product damage.

UPM Conveyors has since been awarded an order for phase two of the project. O1753 548801 Www.upmconveyors.co.uk

UPM Conveyors was brought in to design a system capable of transferring bottles on line



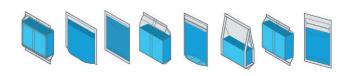
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ladimir Kayshev took over Pyatigorskiy Dairy, formerly a state-run operation dating back to the 1980s, in 2007 and at this time the equipment was in dire need of upgrading. Four years' later, Kayshev decided to invest heavily in the plant and gradually transform it into a state-ofthe-art dairy with equipment from Krones at its heart.

UHT milk remains Pvatigorskiv Dairy's main product. "Demand on the Russian market is growing year by year," says company president Konstantin Sukharev. Retailers prefer UHT milk because of its longer shelf life, and it meets the needs of consumers wanting to buy larger quantities, less frequently. In southern Russia, summertime temperatures can rise above 40deg C, so it would be complicated to keep larger quantities of fresh milk in the cold chain. And then there's the fact that UHT is the only feasible way for transporting milk to other parts of the vast country.

#### PET IS GETTING POPULAR

"At the same time, PET bottles are becoming increasingly popular as a packaging material for milk," explains Sukharev. "They have only been used for fresh milk so far, but now we have combined PET packaging and UHT milk – and for that we chose a Krones aseptic line."

PET has several things going for it as a packaging material, according to Sukharev.

- Consumers find PET bottles visually appealing and easy to use,
- bottling and packaging in PET can cost half as much as packaging in cartons,
- a PET filling line is far more flexible than a carton packaging line, since switching to different container sizes and shapes entails less effort and cost. This also enables



The PET-AseptBloc D aseptic block with H2O2 sterilisation consists of a stretch blow moulder, filler and capper

# PET line has offered gain

#### **Pyatigorskiy Dairy** in the South of Russia has invested in a line to meet consumer needs for UHT milk in PET

producers to respond flexibly to changing market demands, and

 carton packaging is more susceptible to damage during transport – with up to 1.5% of carton packaging compromised in the delivery and a second second second second delivery and second second second second second delivery and second second second second second second delivery and second second second second second second second delivery and second seco

delivery process. For the expansion of its production capacity, Pyatigorskiy is using an existing, Soviet-era building, but fitting it out with the latest UHT systems, homogenisers, and centrifuges. Renovations have been, and continue to be made, while production is ongoing: over 300 kms of piping and tubing have been replaced, four new carton packaging systems have been installed in addition to the new Krones aseptic line, and storage capacity for 200 metric tonnes of pasteurised milk and cream has been created.

The company plans to complete this construction phase by the end of the year. Today, the dairy can accept 300 metric tonnes of raw milk per day. The company plans to double that capacity by 2021.

The PET line from Krones is designed for aseptic filling of low and high-acid products. This versatility is important for the dairy because of the very different pH values of the two products it has so far run on the line: milk has a pH of about 6.8, while kefir's is circa 4.3. Pyatigorskiy fills the UHT milk into transparent containers and the kefir into round, opaque white containers. Both container varieties have a volume of about 900 ml.

At the same time, the preforms used for the white kefir bottles have an integrated low-level oxygen and UV barrier.

When changing over from kefir to milk, the PET-Asept D line is properly cleaned and sterilised with hydrogen peroxide (H2O2) in order to prevent contamination of the milk. Even the considerably higher viscosity of kefir does not present a problem for the aseptic block, says Krones.

It can operate for 144 hours each time before a two-hour sterilisation is required. "It's a great line," says Sukharev. "It runs outstandingly well with just two operators per shift, with Krones Academy coaches training these operators on site."

The company intends to gradually expand the range of products and containers processed on the PET line. It is already set up to fill yoghurt smoothies with and without fruit bits and to handle 1.3 litre and 300 ml bottles. The dairy also wants to bring a square-shaped bottle to market sometime in the future, with higher barrier properties that should increase the shelf life of UHT milk to an entire year.

#### LOGISTICAL CHALLENGE

"Some regions of Russia in the north and far east are logistically impossible to reach for as much as nine months of the year because of their extreme climates," explains Sukharev. And with transport from Pyatigorsk to these areas taking 21 days, extending the shelf life to longer than the 45 days you generally get with normal



UHT milk in PET is new in Russia

preforms, makes sense. The PET aseptic line was validated and went into operation last year. "The Krones line has opened up a new market segment for us," says Kayshev. "UHT milk in these containers is a brandnew and unique product on the Russian market and we are confident that we will be operating at full capacity on the new line within a year." 1 01942 845000 W www.krones.com



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#### SealScope makes cheese producers secure with seals

wo cheese makers have benefited from installing SealScope in-line seal inspection and monitoring technology from Engilico to guarantee the quality of its product offerings.

For instance, when Dutch company Hazeleger Kaas was introducing a new type of package, it optimised the performance of its horizontal flow wrap machines by deploying SealScope and when Schoeps wanted to deliver 100% quality for its bags of grated cheese, it installed the technology at its Belgium plant.

When Hazeleger launched a new re-sealable package for sliced cheese, it searched for the latest technologies in seal inspection to monitor and optimise the new packaging line by cutting out defects such as seals or wrinkles. To avoid any product in the seal, the positioning of the trays, the stacking of cheese on these trays and the relative positioning within the packaging film turned out to be crucial, says Engilico.

SealScope was evaluated and the expertise of packaging partners Selo and Omori Europe joining forces with Engilico turned out to be key in the implementation of the in-line seal inspection and monitoring system.

In operation, SealScope continuously monitors the sealing process and generates early warnings, which allows the operators to take corrective actions – for instance preventive cleaning

Schoeps reduced customer complaints on badly sealed packages drastically



# Sealing in freshness

The in-line system has delivered a range of quality benefits to a Dutch specialist cheese producer

Hozzarell

of the sealing station. As such, the SealScope monitoring tool helps to avoid any process drift and to keep the machine in optimal shape.

"We made a huge step forward in mastering our packaging line to guarantee our high outgoing quality," says Wim van Rijn, owner of Hazeleger Kaas. "We fully trust on the SealScope application for our packaging quality."

#### PRODUCT QUALITY INCREASE

When Schoeps appointed a new general manager, one of his first objectives was to increase outgoing product quality and he opted for SealScope to inspect its grated cheese bags for defective seals. As a result, the number of compromised outgoing products reduced drastically, to almost zero.

The grated cheeses are packed under a modified atmosphere in bags (neutral, printed and private label) starting from 500 g up to 5 kg. A common issue with MAP bags of grated cheese is that micro-leaks in the seal can lead to defective packages. Defective packages can be caused by folds in the seal or by cheese particles stuck in the seal.

Due to micro-leaks, the cheese bags lose their modified atmosphere condition which leads to product returns.

To inspect the integrity of seals, Engilico retrofitted two distance sensors on the sealing bars of the packaging machine and the responses of these sensors are measured during the closing of the sealing bars for every bag produced.

After installing SealScope, the outgoing quality increased significantly and today Schoeps has almost no customer returns of badly sealed packages.

"We drastically reduced our customer complaints on badly sealed packages," says Yannick Baudoux, general manager of Schoeps. "We fully rely on this system that checks every individual product." • 00 32 16 498 130 • www.engilico.com

# Aseptic line is supplying PET

A dairy in Israel is boosting its brand image with new PET rather than HDPE bottes for its milks

otvata Dairy by Strauss Group, well-known for its chocolate milk drink, was the first producer in Israel to manufacture extended shelf life (ESL) white milk in PET bottles, a ground-breaking development in the Israeli market. Now, the liquid dairy manufacturer has upgraded its 2 litre ESL milk bottle from HDPE to PET, thus introducing a completely new product for the country by installing another sustainable and flexible aseptic complete PET line from Sidel.

Yotvata had clear objectives around the launch of its new 2-litre PET milk bottle which is targeted towards family households. As a long-term business partner, Sidel supported Yotvata in designing and qualifying the new 2-litre PET bottle, helping the producer overcome any obstacle placed by the big size format, while enhancing users' convenience. The new design – which includes a reflection of the customer's branding on the top part of the container – concentrates the material's tightness in the gripping area to avoid any splashing effect when pouring the product in a glass.

#### **COUNTERBALANCING VACUUM**

Additionally, it is also counterbalancing the vacuum effect, which may impact products distributed via cold-chain.

Yotvata decided to purchase its second aseptic complete PET line from Sidel. "We already had a very positive experience with the Sidel Aseptic Combi Predis technology for PET production on the first line we purchased from them in 2014," explains Achiraz Horesh, COO at Yotvata. "This new packaging line will allow us to increase the production capacity on existing products while reducing our environmental footprint,



#### The 2 litre ESL milk bottle is produced on a second aseptic complete PET line from Side

mainly due to the switch from HDPE to PET and the bottle lightweighting potential offered by Sidel's integrated dry preform decontamination system."

Currently, the new line is producing 1 litre bottles plus the newly designed 2 litre bottle for milk in PET. Sidel says its flexibility makes it the ideal choice to address Yotvata's production needs around flavoured, ESL and UHT milk.

The line features Sidel's Aseptic Combi Predis, complemented by Capdis, combining preform and cap sterilisation, blowing and sealing functions in a single enclosure for a 100%-sterile filled and capped PET bottle.

The line also includes Sidel's RollQuattro, the proven and versatile high-speed roll-fed labeller, able to handle lightweight containers with extremely thin labels, plus conveying and end of line equipment. To make the most of its aseptic PET complete line, able to run at 13,500 bottles per hour, Yotvata also relied on Sidel's expertise in conveying, packing and palletising. 01707 292820

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### Bespoke lines are meeting a range of needs

French manufacturer of weighing, cutting, packaging and overwrapping equipment ixapack Global provided several complete lines in the dairy products sector last year.

For instance, an entire cutting and packaging line made up of different equipment adaptable to their products and dimensions, was designed to offer an Eastern European customer more flexibility in production while at the same time, a fully automatic dividing machine for cheese wheels was also devised.

#### **CHEESE WHEELS CUT IN PORTIONS**

This equipment allows the wheels to be cut into fixed weight angular portions, thanks to a vision system which adapts each portion's cutting to the holes that are present in the cheese. Fully automated, the machine takes care of the entire cutting process from the wheel input to its exit, in portions at about 80 per minute in operation.

In parallel to the dividing machine, a block cutter and a portioning machine were also installed at this customer's site, designed to manage the Euro blocks on the line. First, these 15 kg cheese blocks (dimensions 500 x 300 mm) are processed by the block cutter to be cut into loins. Then, the portioning machine takes over to cut the loins into mini-portions, measuring 100 x 75 mm.

#### **GAS INJECTION FOR THE CHEESES**

After cutting, these cheese portions are sent to common conveyors to be wrapped. Thanks to the company's new flow wrapping machine called Fresh & Packed, these portions can be individually packed while including gas injection into the bag. This Fresh & Packed machine, can reach a speed of up to 150 products per minute.

Finally, the company can supply a weighing-labelling module allowing the weight control of the portions as well as the application of a label on and/or under the product. Overweight products are ejected by an ejector module on the machine.

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Dairies can now control the temperature of their work environments and protect products

# Safe transit for plastics bottles

TrakRap is offering the new Milk Pack unit which offers retailer savings at back of stores

econdary packaging company TrakRap has developed a solution specifically for the safe transportation of plastics milk bottles – the TrakRap Milk Pack.

The Milk Pack helps organisations in the dairy industry overcome the problem of protecting the milk while they are being transported. With the inconsistent nature of plastics The Milk Pack

milk bottles under pressure, their limited compression strengths, the constant movement of the fluids inside them and the probability that the packs will be subjected to harsh handling during distribution, the packaging needs to be strong and reliable enough to protect the bottles while in transit.

The Milk Pack is created using

a specially developed linear, low density stretch film which is applied using the TrakRap machine a secondary packaging machine that eliminates the use of heat from the packaging process and therefore the need for energyintensive heat tunnels, reducing energy usage by as much as 95%. The film delivers maximum strength and consistently tight, high performing packs which are created using a high-tension application process to wrap the film around

the plastics milk bottles. Because thin stretch film is used, materials usage can be reduced by as much as 70% (versus shrink wrap), while the Milk Pack can also wrap a wide range of milk bottle sizes, from half-pint to four litre formats. **1** 01695 555576 **w** www.trakrap.com

# Making cheese meet the needs

BW Flexible Systems offers several technologies to meet the diverse demands of the cheese sector

he demand for cheese is strong and growing stronger and BW Flexible Systems is combining its expertise in cheese packaging to deliver several dairy industry installations.

When it comes to block cheese, the company offers several horizontal form, fill and seal options, including the UK-designed and built Rose Forgrove Integra. This is ideal for the block and sliced cheese markets and features speeds up to 120 blocks a minute, with long-dwell sealing jaws suitable for all MAP hermetic sealing, and featuring an hygienic and ergonomic frame.

BW Flexible Systems recently partnered with a major cheese packaging company to design a custom multi-line layout across several factories. Featuring a washdown infeed and tool-less belt removal, the Integra gives operators the ability to break down the machine for cleaning or maintenance quickly without the need for any specific tools.

Meanwhile, when food service companies need to upgrade their vertical grated cheese packs, the Sandiacre Novus and Verus machines can come into play. These projects face interesting challenges: they need to meet the dairy industry's stringent hygienic standards, tight floor space, and machine performance to hit customer-directed speed and accuracy requirements.

#### FITS INTO SMALL SPACES

The Novus's slim footprint helps it shine in installations where space is at a premium. Able to bag at speeds of up to 220 bags per minute, the Novus is a continuous motion vertical

Bagger offers both speed and flexibility to users

bagger that offers both speed and flexibility with a wide range of bag styles and configurations available. It is constructed of stainless steel with a fully enclosed body.

At the same time, the intermittent motion Sandiacre Verus has a sanitary design to make it suitable for even the most challenging environments and its servo-driven jaws provide high speed and high sealing integrity.

"Both machines offer quick changeovers and a wide range of bag sizes and are installed and trusted across Europe and the UK," says Ian Bickerdike, commercial director EMEA at BW Flexible Systems. 1 0115 967 8787

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#### New robot gives better milk yield and also wellbeing

ike many other industries, dairy farming is under increasing pressure to become more efficient and more productive. A company at the forefront of automated milking systems, Fullwood Packo, has partnered with Festo to deliver the flexibility and performance required in the modern dairy industry.

The company's latest and smartest M<sup>2</sup>erlin robot provides farmers with a robust system for voluntary milking cows. Using the automated, voluntary method, cows are free to walk into one of the milking robots' feeding stations at any point of the day. Once inside, each cow is identified, and the milking head is moved into position guided by the vision system to be fixed to the teats.

#### **INCREASED EFFICIENCIES**

M<sup>2</sup>erlin is developed around improving milk quality and cow wellbeing. Farmers can achieve increased efficiency and maximise productivity with each robot able to milk up to 70 cows per day. It offers flexibility in configuration, so farmers can choose to allow their herd completely unrestricted movement, or use directed traffic options to control feeding and milking parameters.

The ability for cows to choose when they are ready to be milked positively is designed to improve milk quality and yield. Automation further allows farmers to collect data about yield rates and quality, as well as the general health of each cow being milked.

"Herd management software gives farmers complete digital control over the milking, feeding, health and fertility of their herd," says Fullwood Packo's managing director Andrew Dodwell. "So, not only can an automated milking system like M<sup>2</sup>erlin enable farmers to use their time more efficiently and maintain a better work/life balance, it also provides



# Improving cows' lives

The milking robot from Fullwood Packo has been developed to improve milk quality, increase efficiency and maximise productivity a wealth of information about productivity and cow welfare."

Festo supplies complete cartesian robot assemblies, and pneumatic and controls kits for each M<sup>2</sup>erlin robot. These assemblies and kits mean that Fullwood Packo receives everything it needs for rapid incorporation into the M<sup>2</sup>erlin as a complete package. Festo supported Fullwood Packo with the original cartesian robot design – optimised for use in the demanding environment and application of the milking parlour.

This continues with ongoing software programming support and upgrades. It means that Festo can apply its automation experience in ensuring the build quality, reliability and performance of the critical parts on which the automated milking system depends. This includes adherence to the strict hygiene standards and harsh washdown regimes associated with food production.

"Our complete assemblies and kits drastically reduce the need for multiple component order numbers and significantly reduces time in purchasing and logistics," says Swapnil Khedekar, head of technical services at Festo UK. "The pre-assembled robots are built and tested by Festo and delivered on a Just in Time (JIT) basis using the Festo production capability – so all Fullwood Packo needs to do is connect them into their system on arrival."

By optimising the ordering process and developing preassembled automation solutions, Festo is providing ongoing support to Fullwood Packo in its strategy to improve the lives of dairy cows and their farmers. **1** 01252 775053 **w** www.festo.co.uk



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# Hygiene equals safety in dairy

Safety in the dairy processing industry starts with hygienic design of process equipment, says Acorn

ne area of design that is bringing significant process efficiencies and food safety improvements to the production floor is that of hygienic design," says Richard Hewitt, marketing manager at Acorn Industrial Services.

The basic principles of hygienic design are laid down by the European Hygienic Engineering and Design Group (EHEDG), which sets out clear guidelines for food manufacturing machinery and factories. In general, hygienic design requires that equipment is easy to clean, does not harbour germs, and reduces the risk of cross-contamination through cleaning fluids or other contaminants.

"Purchasing stainless steel machines labelled 'food grade' or installing workarounds, such as spacer-mounted bearing units, doesn't necessarily mean safe or clean operations either," says Hewitt. "To truly align food-safety and production efforts, organisations need to examine how every action around the food zone impacts their goals—and extend hygienicdesign thinking to every component involved in the process." lubricant from escaping. There are several design elements to prevent the typical causes of food safety problems such as trapped microbes, leaking lubricant and detergent damage.

One example is the bearing seal gutter concept, which takes a new approach to protecting against detergent ingress. Detergents are designed to penetrate minute gaps and crevices, so blocking this process is almost impossible. The gutter concept allows detergent through but guides it towards non-hazardous areas.

For instance, if detergent-laden water enters the top lip of the seal during washdown, it is guided around and out of the other side of the seal, either under gravity or if the bearing is active, by centrifugal force. A second seal at the back of the bearing stops contamination entering through the shaft inside the bearing unit.

"Incorporating hygienic design into



Incorporating hygienic design into the dairy processing area improves efficiency and safety

A prime example of a food safe product is SKF Food Line ball bearing units – Blue Range which follows the rules of hygienic design.

The new design helps prevent microbes from penetrating the bearing and

the dairy processing area adds one more piece to the production puzzle, ensuring efficiency is not only enhanced but product safety is improved," says Hewitt. 0800 8766 441

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Products have been supplied to handle a range of milk alternatives

# Keep control of the forces

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recision programmable electric actuators based on moving coil technology from SMAC are well-suited for applications in the dairy industry due to their ability to adjust to the viscosity of milks, yoghurts, butters and other liquids that can vary in thickness on a production line at a dairy.

"The most common SMAC applications of milk and milkbased drinks include filling, leak test, capping and ejection and sorting," says John Miewald of SMAC in the UK.

A recent example application has been at a company producing milk alternatives such as almond, soy and coconut. This company had used pneumatics to try to meet production rates between 70 and 140 cartons a minute, but this caused damage to cartons and line jams. Moving

to an all-electric solution from SMAC was the answer.

It gave the company control of the force and the repeatability in response time that it required to not miss or disturb the rest of the line feed of containers. Features appreciated were the Soft-Land, the programmable force, the cycle rate and the cycle life.

Another dairy bottling plant replaced its pneumatic solutions as air was proving too costly and inefficient. SMAC actuators provided better control, but also energy savings.

The actuators offer totally programmable force, position, and speed, and are designed to perform at exceptionally high speeds or very low speeds and with sub-micron accuracy and repeatability. The patented Soft-Land function gives accurate sensing of product location or dimensions. 101293 520147 www.smac-mca.com

#### Automating brings production benefit to ice cream maker

utomating the packing process of its awardwinning ice cream range with equipment from Endoline Machinery has enabled Marshfield Farm to improve production efficiency and dramatically decrease customer lead times, while packing 30,000 litres of ice cream per day.

Family run Marshfield Farm, which is now in its 30th year, produces over 30 flavours of ice cream at its Wiltshire-based, 1,100-acre organic farm, (home to 250 dairy cows).

Once the ice cream is made, it is put straight into blast freezers overnight. The following day, the ice cream is packed into either 5 litre or 4 litre outer boxes, outer cases are erected, the tubs packed within them, before being sealed and shipped to over 6,000 independent retailers across the UK.

#### HANDLING FROZEN GOODS

However, this process has traditionally been manual and, due to retail demand for the 5 litre tubs to be packed into individual cases for easier storage, the packing process was lengthy. Due to the frozen nature of the ice cream, it meant lead times were often longer as the packers could only manage small batch runs at any one time.

"The packing time was variable when completed manually and, due to the nature of ice cream, we ran the risk of the product melting in the small window we had,"

# <image>

# Lead times are slashed

"At its maximum speed we are now packing 15 cases a minute, which will enable us to grow the business in the future," says Will Hawking, owner of the Marshfield Farm business explains Marshfield Farm owner Will Hawking. "In addition, when manually erected and sealed, the cases were not always uniform, which left the product vulnerable further down the supply chain, and in transit to the customer."

Realising the potential efficiency gains he could make by automating the packing process, Hawking contacted Endoline Machinery. The company then installed a semi-automated fully integrated line within Marshfield Farm, incorporating its 221 fully automatic case erector, conveyor systems, stainless steel packing tables, its 702 fully automatic case sealer and a labeller from

Markem Imaje. Today, once the tubs of ice cream are taken from the blast freezer

are taken from the blast freezer, the entire packing process takes just 15 seconds, a reduction in time of over 80%. Once the cases are formed via the 221, they are transported via a powered belt conveyor to the packing stations where cages holding the product are delivered. As two workers are manually filling the cases, Endoline fitted the conveyor to an ergonomically friendly height for ease of use. The filled cases are then pushed on to a powered roller infeed conveyor to be automatically closed, and the top sealed by the 702 case sealer.

Before being manually palletised, the sealed cases are run through a fully integrated print and labeller printer.

Marshfield Farm packs the ice cream in two different case sizes, one for the 5 litre tubs, and a second case size for six, 4 litre ice cream tubs.

"Automating the packing process has significantly increased our production efficiency and sped up delivery times considerably," says Hawking.

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The company is now in its 30th year



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# Sensors are now making lines fast as well as safer

A combined flow and temperature filter monitoring sensor from Baumer is maximising process optimisation at Müller Group company Homann for the range of dairy products it produces

aumer has developed a flow and temperature sensor for filter monitoring applications in the dairy industry. Today, many foods such as yoghurts, milk drinks and quark are enriched with additional protein and these protein-rich foods are claimed to have nutritional benefits and to support the build-up of muscle. The production of these can be optimised if filtration processes are monitored using the right sensors which is why Homann, part of the Müller Group, has adopted them on its lines.

According to Frank Piatkowski, application and process engineer at Homann, Baumer's CleverLevel is the one-sensor solution for different media and since deploying these sensors, the company has seen a significant reduction in technical malfunctions.



Combined sensors are maximising processes

"Baumer products will be part of our considerations when we invest in new, state-of-the-art CIP installations and we appreciate that these innovative sensing solutions help us achieve our objectives of optimisation, despite the increasing complexities of our processes," he says.

The basis for proteins that can be used for food fortification is provided mostly by whey or skimmed milk and these need to be filtered step-by-step in order to increase protein concentrations. The objective is to obtain a concentration with as high a protein content as possible which is then dried and further processed.

This process is very energy intensive and its effectiveness largely depends on the condition of the filter. Calorimetric flow sensors can facilitate the monitoring of the condition of the filter which helps to optimise the quality and cost-efficiency of protein extraction.

Cross flow filtration technology is usually the preferred option for filter units used in the dairy industry, typically to increase the protein content in milk or whey where the media, the so called 'feeds', are pumped through filters until the remaining concentrate reaches the desired dry mass.

An indicator of the effectiveness of the filtration pumps (and therefore the filtration process) is usually a combination of temperature and pressure measurement. The pressure differential of the measured values before and after filtration means conclusions can be drawn about the effectiveness of the filter, such as clogging.

However, wouldn't a better and more direct option be, to measure the flow rate of the medium to know how the filtration process is working?

#### FLOW RATES FOR FILTRATION

For example, if the flow rate is too low, the filter clogs up faster and needs to be cleaned or replaced. When module batteries are connected in parallel, shifts and variations in flow patterns are a problem. If the flow rate is too high, the permissible pressure loss per module is exceeded and the modules telescope.

At the same time, temperature is an important factor to consider when filtering. For example, when temperature is selected at approx 122deg F, this favours filtration without denaturation of the thermo-sensitive whey protein, and this means that process temperatures must also be monitored.

Thermal flow sensors, such as the Baumer FlexFlow sensors are therefore designed as an effective, viable and costeffective solution for filter monitoring, as they measure not only the temperature,



As the sensors benefit from having no moving parts, they are virtually maintenance-free

but also the flow rate. Since these sensors benefit from having no moving mechanical parts, they are virtually maintenance-free and allow for reliable monitoring of the cross-flow filters.

Baumer believes the FlexFlow family of flow and temperature sensors represents one of the most extensive ranges of process sensors. Based on the calorimetric measurement principle, these sensors can monitor both flow velocity as well as media temperature.

They have IO-Link and, depending on settings and connections, either two switching outputs, or one switching and one analog output (4-20 mA/ 0-10 V). The PF20H and PF20S versions are suitable for hygienic and industrial applications.

The combination of two measuring functions in one sensor reduces the number of measuring points in closed systems and minimises costs of installation, service and storage. Thanks to their symmetrical, centred design, the sensors can be optimally installed in the process independent of their installation position and orientation which guarantees precise measurements and process safety.



The sensors have a stainless steel housing

Several sensors can be simultaneously configured via IO-Link which simplifies switching point adjustment for different process stages during set-up or batch changeover as well as saving time. Diagnostic data polling and evaluation is possible throughout and so increases system uptime.

FlexFlow sensors have a robust, stainless steel housing with integrated electronics and evaluation unit which eliminates the need for complex wiring and control cabinet assembly. Additional user interfaces are therefore not required which simplifies operation and allows for efficient process management. All models are temperature resistant to 150deg C and thus CIP (Clean-in-Place) and SIP (Steamin-Place) capable.

Just about every cycle in dairy products processing requires CIP and this reproducible process must precisely define detergent dosing, regardless of pressure and or temperature variations. At Homanns' CIP installations in Bottrop, dosing needed to be improved and Baumer's new CombiLyz conductivity sensor was the solution. Thanks to fast response time it ensures precise measured results at a maximum deviation of < 1%.

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utoCoding Systems and Sick UK are holding two one day events where they will be demonstrating the new 4Sight automatic print inspection solution.

If you have problems with partially printed, poor quality or missing codes on your products, the day is designed for you to see how 4Sight can resolve these issues.

These free to attend oneday events are being held at AutoCoding's demonstration suite in Runcorn on Tuesday 11 February and at Sick UK's offices in St Albans on Thursday 13 February. Visitors are being invited to see at firsthand how the 4Sight solution can check for presence, legibility and location of print, as well as deal with varying qualities of print.

The 4Sight software is powered by Sick AppSpace and uses the InspectorP



4Sight works with AutoCoding, but can be connected to any printer type

range of 2D cameras to create a camera-based solution for multiple inspection methods. The software is resident on the Sick camera, communicating directly with any brand of printer, with no requirement to 'teach' the camera what to look for; the software understands the intended message for printing.

4Sight's automatic set-up means there is no requirement for operators to configure features or regions of interest; the camera automatically adjusts, coping easily with variations in artwork, background and text location.

"4Sight uses new and innovative methods for print inspection, simplifying the process and making vision accessible to all budgets," says AutoCoding md Mike Hughes.

Each Technology Day will start at 9.30am and finish no later than 4.00pm. Registration is required by completing the form on either the AutoCoding or the Sick UK website. www.autocodingsystems.com www.sick.com/4Sightevent



Labels meet legal requirements

#### Self-adhesive labels are designed to create plant circuit marking

Phoenix Contact offers a wide range of labels which meet the legal requirements for correct plant marking and its new selfadhesive warning and hazard labels allow users to create custom circuit markings.

These pre-printed colour labels are provided as material off the roll. They are made of a soft, highly flexible PVC film that moulds itself to uneven surfaces and adheres reliably over the long term. In combination with quality ink ribbons, markings are produced that stand up to harsh industrial conditions.

This durability applies when using solvents as well as other industrial chemicals. The selfadhesive labels are suitable for use both indoors and outdoors, at ambient temperatures from -40deg C to +90deg C. 0845 881 2222 www.phoenixcontact.co.uk



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# **OEE software enables 10-15%** gains in production efficiencies

arkem's new application is designed to allow manufacturers to more easily access real-time and historical packaging line data, targeting key availability, performance and quality losses, as well as bottlenecks for the line overall. Implementable in days, it empowers companies not only to take the right corrective action quickly, but also to continuously monitor line efficiency KPIs and implement improvements. With CoLOS OEE, says Markem, gains of 10-15% on critical lines are achievable.

CoLOS OEE is an easy to set up, off-the-shelf application that is still 100% configurable, and provides the insights needed to improve efficiency within days of purchase. The tool is also scalable, so is suitable for a multi-step approach from one line to full-site deployment.

#### **COLLECTING THE DATA**

Because it is part of the CoLOS information management system, CoLOS OEE collects data from existing Markem-Imaje coders, or any OPCenabled packaging line devices, at two points along the line, with no requirement for any extra hardware or communications.

By analysing the data collected at these points, CoLOS automatically calculates the OEE KPIs which are defined as the following ratios:

- Availability: real versus planned production time
- Performance: real versus theoretical maximum line rate
- Quality: good versus total products produced.

Our tool is easy to use and install, says Markem-Imaje. 0161 864 8111 www.markem-imaje.co.uk A twell self-adhesive Labellers



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#### Components

### **Control software offers smarter factory benefits**

anaging the changes in data collection direct from devices and taking advantage of the opportunities they present, requires more sophisticated software such as LR Smartobserver, an 'out-of-the-box' application software product from ifm electronic. Indeed, the company uses this product successfully at its Tettnang plant in its filter monitoring in the sensor production area. Prior to installation, filters were replaced at regular maintenance intervals. In the process, filters were often replaced either too early when they were hardly dirty or too late, which in the worst case can cause costly production losses.

#### **CONDITIONING DATA**

Smartobserver software enables users to condition data acquisition primarily to see what is happening on their manufacturing plant right down to individual sensor level and then store



that data for analysis later. At the heart of

Smartobserver is the LR Agent CP which is the key to collecting data and is essentially configurable, bio-directional communicating interface software. It collects and handles the information from the machines in the manufacturing process and transmits it to other systems (for example databases, ERP systems, MES). In addition, LR Agent CP can send the required information back to the machines in the process.

The benefit of using Smartobserver is that it provides operators with details of the bigger picture as an analysis of what is occurring in their process which is driven by direct data collected from the sensors in their plant. Therefore, relying on historical data for estimations becomes unnecessary and irrelevant.

The result is improved condition monitoring of machines and installations, better analysis of energy consumption and optimum quality control of the processed products. 1 020 8213 0000 Wwww.ifm.com



The optoNCDT 1750 BL sensor

#### Laser sensor provides top accuracy

Precision sensor manufacturer Micro-Epsilon has extended its optoNCDT 1750 range of laser triangulation sensors with a new Blue Laser version for high speed displacement, distance and position measurements. The sensors are equipped with high performance lenses, laser control and evaluation algorithms to ensure precise measurements on different surfaces and materials.

The optoNCDT 1750BL series of Blue Laser triangulation displacement sensors has an integrated controller and are available in several models with measuring ranges from 20 mm up to 750 mm. Patented by Micro-Epsilon, the technology is designed to offer advantages over red-diode laser sensors.

For instance, as the blue laser spot does not penetrate the surface, the target is sharply imaged onto the sensor receiving element. This enables high resolution measurements and reliable signal stability on shiny and translucent materials.

The measuring rate is continuously adjustable up to 7.5kHz and can be individually adapted to suit each measurement task. Data output is via analogue or digital RS422 interface. Furthermore, the optoNCDT 1750BL provides two switching outputs that are controllable. Based on a smart web interface, the optoNCDT 1750BL is easy to use and set up. ■ 0151 355 6070 ■ www.micro-epsilon.co.uk

### Expanded range of conveyor components is meeting the needs of several industry sectors

WDS Components Parts is expanding its range of conveyor parts, with new guide rails, bracketry, bearing mountings and guides. These will complement the existing skate wheels, omni-wheels, support bases, connecting joints, mounting brackets, head mounts and clamps in its range.

"With the newest additions, WDS now offers a complete set of elements for the building, extension, maintenance and repair of materials handling systems," says Adrian Wells, product manager at WDS. "Typically, we supply conveyor parts to two types of customer: end users and specialist conveyor design and build firms," he continues.



More conveyor parts are available

"The latter make the main conveyor beds complete with powered rollers and/or drives."

However, as many sectors use conveyors, the company has built a portfolio of products that can serve a wide range of users including manufacturing companies, food processors, pharmaceuticals producers, electronics specialists, parcel and package distributors. The conveyors are also suitable for end-of-line operations. **1** 0845 606 6677 **2** www.wdsltd.co.uk



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#### **Components**

# Integrated digital solutions are offering record-breaking gains

Siemens has helped one of the world's most advanced and sustainable paint factories achieve unprecedented levels of speed and efficiency.

A ground-breaking collaboration between Siemens and AkzoNobel created a £100 m factory in Ashington, which connects the entire manufacturing process horizontally and vertically, allowing for the end-to-end digitalisation of the plant.

AkzoNobel believes the investment has enabled the business to make a stepchange on a scale not seen before, propelling it forward by 30 years.

The plant can now produce up to 33,000 different colours across a range of AkzoNobel brands, including Dulux, Dulux Trade, Cuprinol, Polycell, Hammerite and Armstead.

These improvements have reduced the time to market by 85%, in other words from three months to just two weeks.

The plant also aims to reuse 100% of its water and 90% of solvents back into the process once the materials have been treated in the onsite by-products plant. Meanwhile,

a biomass boiler and solar panels onsite produce 10% of the energy needed to power the plant, and any rainwater harvested is also used in the production process.

AkzoNobel estimates that the carbon footprint per litre of paint produced at Ashington has been reduced by 50%, compared to the facilities it has replaced.

And at the heart of these record-breaking

achievements is Siemens technology. The solution at Ashington connected every manufacturing process



vertically and horizontally, allowing the entire factory to communicate and become automated.

This integrated solution combines Siemens' SIMATIC

The site is now so agile that it only has to hold three day's stock for the over 3,500 range of products

PCS 7 control system, incorporating hundreds of Siemens Automation Systems, BATCH control

and two SIMATIC IT Manufacturing Execution Systems (MES) with AkzoNobel's enterprise business system. The business system from SAP (Systems, Applications and Products) manages operations such as delivery, logistics and customer relations.

The result is that the plant is exceptionally efficient producing paint in a pre-

determined order, based on input availability and machine performance, and that every activity, from the ordering of raw materials to the shipping of finished products, can be initiated without any human intervention.

Jeff Hope, AkzoNobel's head of the manufacturing unit at AkzoNobel Ashington, says the factory has become a blueprint for AkzoNobel's other sites around the world. "AkzoNobel is a large global organisation and we recognised that we needed to look to the long-term future," he says.

#### MEET CUSTOMER NEEDS

"The reason that we wanted to utilise the automation technology was to meet the ever-increasing production needs of our customers, continue to meet the safety regulations in the chemical and manufacturing industries, but also to achieve our own sustainability goals of reducing waste, reusing energy and using less solvent.

"It has taken a huge level of collaboration from AkzoNobel and Siemens to build this factory together," he explains. "In the chemical industry, processes are typically fixed and have been for years,





Siemens says the joy of its solutions is that there's no 'one size fits all', so technology has to be tailored each time

there's not a lot of innovation, so we were doing something entirely different here.

"The batch targets we're already meeting here are on a scale which has never been done before," he tells *Machinery Update*.

He believes the company is pushing manufacturing forward by decades. "We are re-engineering our business and our supply chain," he says. "We can't operate the plant in isolation, we have to bring our suppliers and customers on the journey too and so it's total supply chain transformation."

"The site is so agile that we can only hold three day's stock at any one time," explains Alex Wardle, process engineer at AkzoNobel Ashington. "We make 3,500 different products from this site, and traditionally that could have taken up to three months to do; but here the levels of automation mean that we are able to turn that production wheel in only two weeks."

"The complexity of this project was that AkzoNobel was looking at the scalability of its production facility," says Eric Bennison, account development manager at Siemens Digital Industries. "The joy of the Siemens solutions is that there's



The site covers about 100,000 sq m, or nearly the size of 14 football pitches

no 'one size fits all'; we have to work with customers to fully understand their needs and tailor our solutions to suit the specific market requirements.

"The deep relationship between Siemens and AkzoNobel has been paramount to the success of this plant."

#### **RESPONDING QUICKLY**

Covering an area of 100,000 sq m, roughly the size of 14 football pitches, the facility also has capacity to expand in order to support future growth plans.

"The automation allows AkzoNobel to be really agile, as they need to be able to respond quickly, dependent on seasonal demand – our solution makes this possible," says Mark Higham, general manager of process automation at Siemens.

He is keen to stress that the company can accommodate not only these large plants, but also cost-effectively address the small-scale ones as well. "We also have a range of tools that will help us easily migrate legacy control systems into the Siemens SIMATIC PCS 7 platform, thus enabling existing plants to be efficiently modernised," he says. I 0845 850 7600 Www.siemens.co.uk/ automation

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#### Components

# Compact drive controllers increase productivity gain

Performance of Leicht Stanzautomation's latest generation of automated multiple winders has increased dramatically following the specification of Stober's SI6 series drive controllers.

The Stober SI6 has been installed into the newest generation of ASW series automated multiple winders for the first time and are key to the cost effective productivity of the new system. Thanks to its economical space-saving design, the SI6 multi-axis drive concept gives the new Leicht system dramatically increased performance over previous generation systems.

#### **QUICKER REEL CHANGE**

What makes this generation of winding machines different is that the system changes the reels automatically. This means that production at the upstream punching machine does not have to stop, as the reel is simply changed for the next available reel as soon as the preselected quantity has been reached.

The highly dynamic drive controllers operate reliably, functioning unobtrusively in the background, even during the most challenging operations, says Stober.

Another space-saving



Performance has been increased significantly compared to the previous units

right-angle gear unit handles the precise feeding of the strip.

Consequently, the drive controller has enabled Leicht to increase performance of its new machines substantially.

"Dynamics and speed are extremely important for the user to be able to operate cost effectively," says Jurgen Leicht, managing director of Leicht. The faster the processes are, the more productive the machine is, as the time factor is critical for customers if they are to be competitive. "We have a total of seven drives installed in the system," he says.

To ensure complete reliability, Stober's STO (Safe Torque Off) and SS1 (Safe Stop 1) functions



The S16 drive controllers from Stober Drives save space in the control cabinet

are integrated within the Leicht systems. In the SI6 series, these are certified in accordance with EN 13849-1 and can be used without function tests that interrupt production.

"The drive controller has a width of only 45 mm and is designed as a multi-axis drive controller," says Markus Stolowski from Stober. "A single SI6 drive controller can control up to two axes and thanks to the multi-axis drive design, the number of axes to be controlled can be scaled without limit."

The individual devices are connected to the central PS6 supply module. As a result, there is no need for decentralised supply modules or fuses and cabling for each axis, and Leicht has saved a tremendous amount of space within the control cabinet. This means that Leicht's new generation systems enable customers to have a considerable number of winding machines in a small installation area.

Additionally, the new ASW is easily accessible and simple to use by operators. • 01543 458858 • www.stober.co.uk



Sick UK's smallest industrial device

#### UHF RFID reading and writing has now been shrunk in size

Sick has launched its smallest industrial UHF RFID read/write device of its kind, the RFUG10, creating new opportunities to integrate RFID track and trace capability in automated machines and mobile vehicles across production, materials handling, and logistics environments.

Almost half the size of the company's next-level, mid-range RFU620 reader, the RFU610 needs an installation space of just 80 x 92 x 38 mm and achieves a scanning range of 0.5 metres. It is ideal for shortrange auto-ident applications such as tracking of smaller parts, sub-assemblies and electronic components, automating validation of correct tool set-up on industrial machines, as well as monitoring consignment transfers onto smaller AGVs. **T** 01727 83112 www.sick.co.uk



ICS08 4 sensor wire DC is latest

#### Range of inductive sensors is extended

Carlo Gavazzi is extending its range of high-performance proximity inductive sensors by launching the stainless steel ICSO8 4 wire in M8 with an operating distance up to 4 mm. The ICS series is ideal for times when space is limited. 101276 854110 w www.carlogavazzi.co.uk



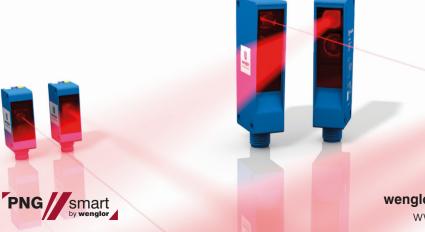
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#### Regulations

### Ensure your machines are compliant

#### Paul Taylor HEAD OF INDUSTRIAL PRODUCTS (UK) AT TÜV SÜD

When starting a project, it is vital to ensure that the CE/UKCA marking is considered from the start, as well as who is going to take the responsibility for it to ensure your new machine is compliant. Read on...

s I've outlined in previous articles, despite Brexit, the actual process for manufacturing compliant machinery will have little effect from a legal perspective. In the United Kingdom, machinery end-users will start to see a UKCA mark on compliant machinery, while machinery users in the European Union will still see a CE marking. Neither of these can be applied unless the machine has been proven to meet the requirements of the Machinery Directive and any other applicable directives.

#### **REVISIONS OF PUWER**

When the Provision and Use of Work Equipment Regulations (PUWER) first came into force in 1992 it included a very simplistic view on CE marking as the end user only had to check that the equipment concerned carried a CE Mark. If it did, they were able to presume conformity. PUWER was updated in 1998 and one of the more important but easily overlooked changes was that the onus was now put on the end-user to make sure that the equipment complies with all relevant legislation such as CE marking. These changes were re-enforced with further changes in June 2002.

When building machines, or when combining machines to produce an assembly of machines, it is easy to get things wrong and end up with a project that requires a lot of rework and ends up going over budget or overtime. To this end, it is vital to ensure that the CE/UKCA marking is considered from the start. If this isn't done, common problems that occur include:

- Equipment being installed before a final layout is agreed so that machines have to be moved and rework is required
- Consideration not given to a safety related control system at the start leads to a number of problems when linking different machines with different performance levels
- Not considering control system functionality so that feed conveyors are not stopped when a process

Equipment is often designed and installed with no thought as to what happens either upstream or downstream, or who takes the responsibility for which parts, and who takes responsibility for the final assembly.

#### **EQUIPMENT IS LINKED**

This can be exacerbated when equipment is sourced from outside the European Economic Area, or existing equipment is linked to new equipment.

When starting a project, it is therefore vital to decide who is going to take the responsibility

#### Before accepting and paying for any new machines, check that they conform to the Machinery Directive

is stopped, resulting in damaged products at best and injury at worst

- Machinery that is not inspected before installation subsequently reveal non-compliances, resulting in disagreements about who pays to put it right – the supplier, the contractor or the user
- Control colours not being agreed means that different suppliers may use different colours, leading to confusion. The European Standard allows for green, white, black or grey for 'start' and red, white, black or grey for 'stop', so even if the supply chain complies with the standard, errors and confusion can occur.

for the CE/UKCA marking and lay down the ground rules. Decide what Performance Level the machine will come under, using EN ISO 13849 and ensure all suppliers are aware of what is required.

#### FOLLOW EN STANDARDS

Make sure they all understand which EN Standards to follow, and that they have copies of the Standards. A good tip is to ask for sample declarations before deciding on suppliers, so that you can check to see if they contain the correct information.

When you issue purchase orders, ensure there is a clause about CE/UKCA marking which states whose responsibility it is. A solution to this is to use a User Requirement Specification (URS) when purchasing new equipment, which will outline your requirements for the equipment supplier. A URS should include statements such as:

- The machine must comply with all applicable European and UK legislation (list all applicable directives)
- Euro-norm standards should be used to achieve compliance with the essential safety requirements of all applicable directives
- Documentary evidence demonstrating compliance with all applicable directives will be required
- A Declaration of Conformity will be required
- A CE/UKCA marking will be applied to the machine, preferably on the maker's nameplate
- A full operation and maintenance manual that complies with EHSR 1.7.4 of the Machinery Directive will be required.

Before accepting and paying for any machines, check that they meet the requirements of the order and also that they conform to the Machinery Directive. A pre-purchase audit is a useful system that can help machinery buyers ensure that equipment is both safe and correct.

■ For more information contact ■ www.tuv-sud.co.uk TÜV SÜD is the PPMA Group's technical and legislative partner



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#### **Who What Where**

### Who's done what and gone where...

#### Lenze



has been appointed to the newly created role of senior vice president automation

**Burkhard Balz** 

systems at Lenze. He has joined the company to lead the systems business segment and continue the growth in the division.

#### Metall+Plastic



**Christian Heuer** has joined Metall+Plastic as managing director,

succeeding Thomas Bertsche, who will be retiring in May this year. The 53-year-old graduate engineer brings expertise needed in the cleanroom industry to his new role at the Germany based company.

#### **Domino Printing**



Chris Webb has joined Domino as the new

group human resources director and the latest member of its executive team.

#### Yamato Scale

Chun Ha has joined Yamato's UK operation from Japan where he has

served as general manager for global sales since joining Yamato in July 2015. More recently, he has been an executive officer and deputy executive general manager of the automatic weighing business unit. He brings a wealth of experience to the Yamato Scale Dataweigh team, having joined Yamato in Japan from Schneider Electric where he undertook several senior roles.

#### **Apex Dynamics**



Andrew Parsons has joined Apex Dvnamics as national

sales manager, and brings experience spanning two decades in engineering and motion control technology, both internally and in providing external support for customers and integrators.

#### allpack packaging

**Nigel Elton** has joined allpack packaging as

its inaugural head of sales, bringing a track record of UK and international sales success spanning more than two decades to the new role. He will focus on developing and leading the sales team and help the company diversify into new sectors.

#### Antalis



**Stuart Bates** has joined Antalis as solutions sales manager, a

newly created role that will see him lead the development of the company's in-box solutions, automation and void reduction business. The appointment comes as part of the company's response to the environmental and social concerns around packaging. He has spent the last 14 years working for Ranpak, more recently in its automation division.

### A hat trick for Domino Printing

**Domino Printing** Sciences is seen celebrating another successful year at The Manufacturer MX Awards, achieving awards in three categories at the celebration of British manufacturing held in November, was nominated for seven awards this time, walking away with the Supply Chain Excellence and People and Skills accolades, and the runner-up prize for the



last year. The company The night was a celebration for everyone at the company

Manufacturer of the Year 2019. This is the third year in a row that Domino has won awards at the prestigious event. Awards are presented

following a rigorous and detailed review of each company's entry by groups of judges who visit each factory in turn to inspect processes and interview management and staff.

"I've never felt prouder, not only having won these awards, but upon hearing comments from peers on how much they admire the team bond that we have here at Domino." says Carl Haycock, UK printer operations director at the Cambridge-based company.

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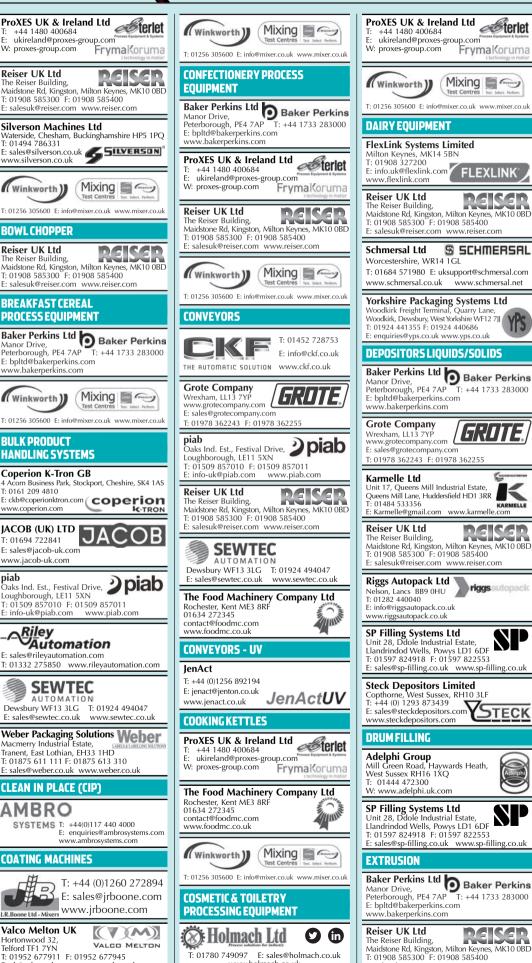
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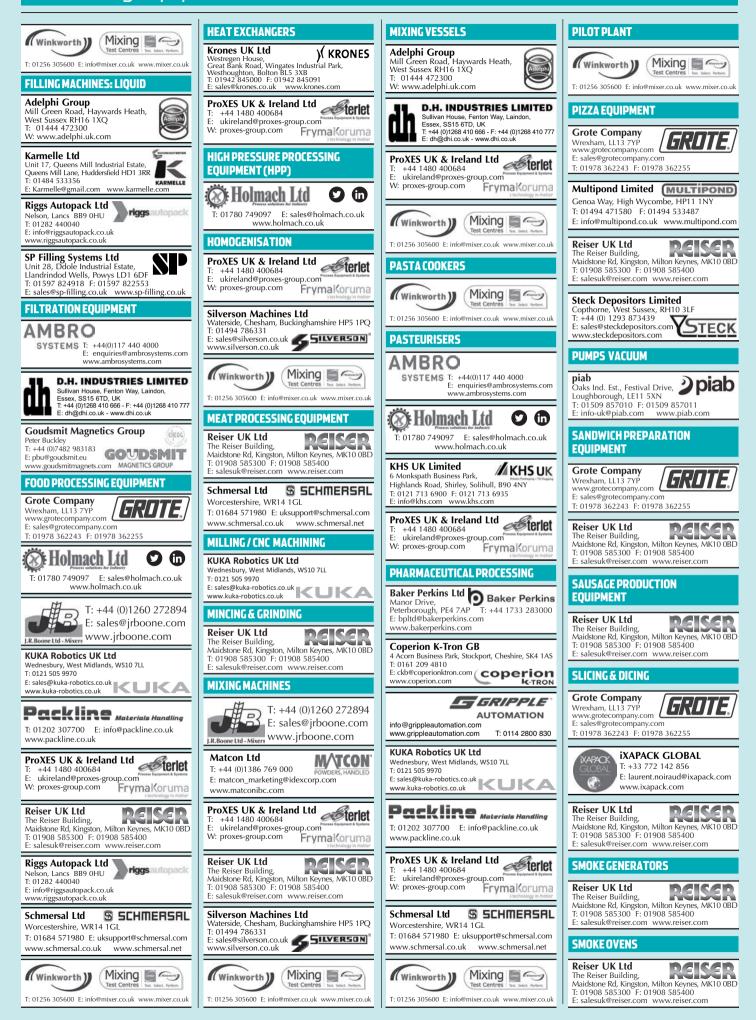


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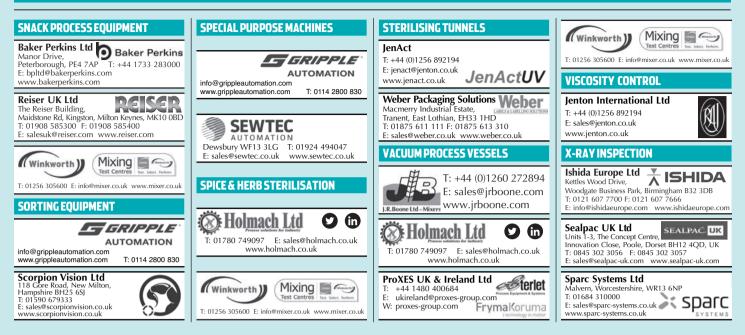
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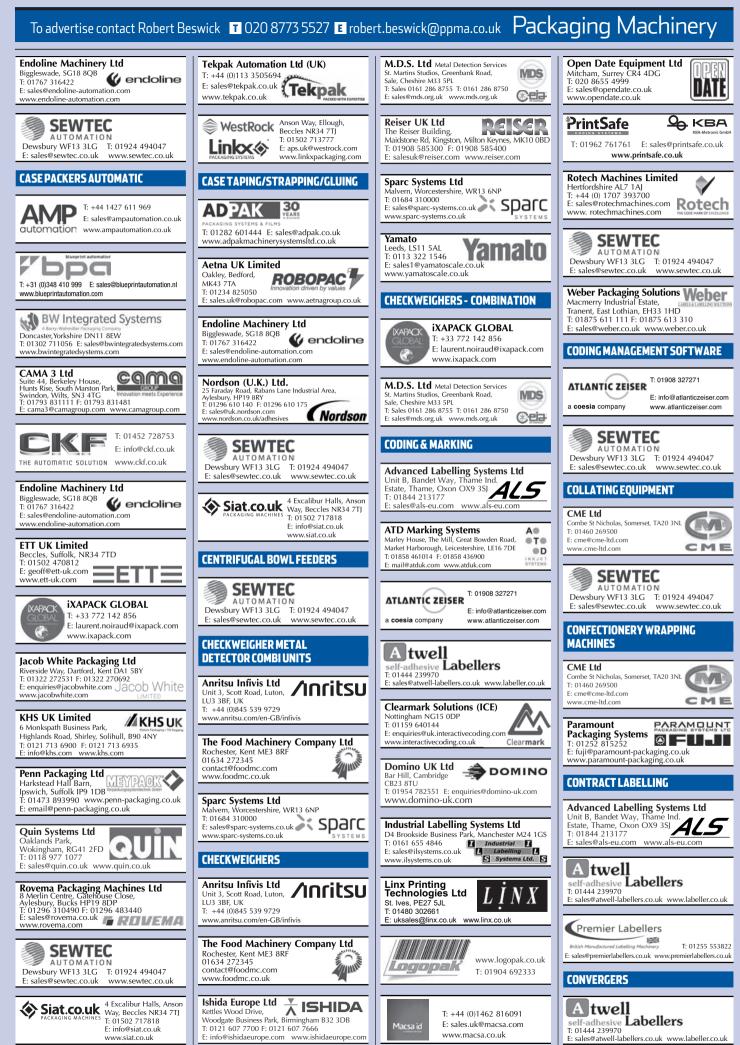
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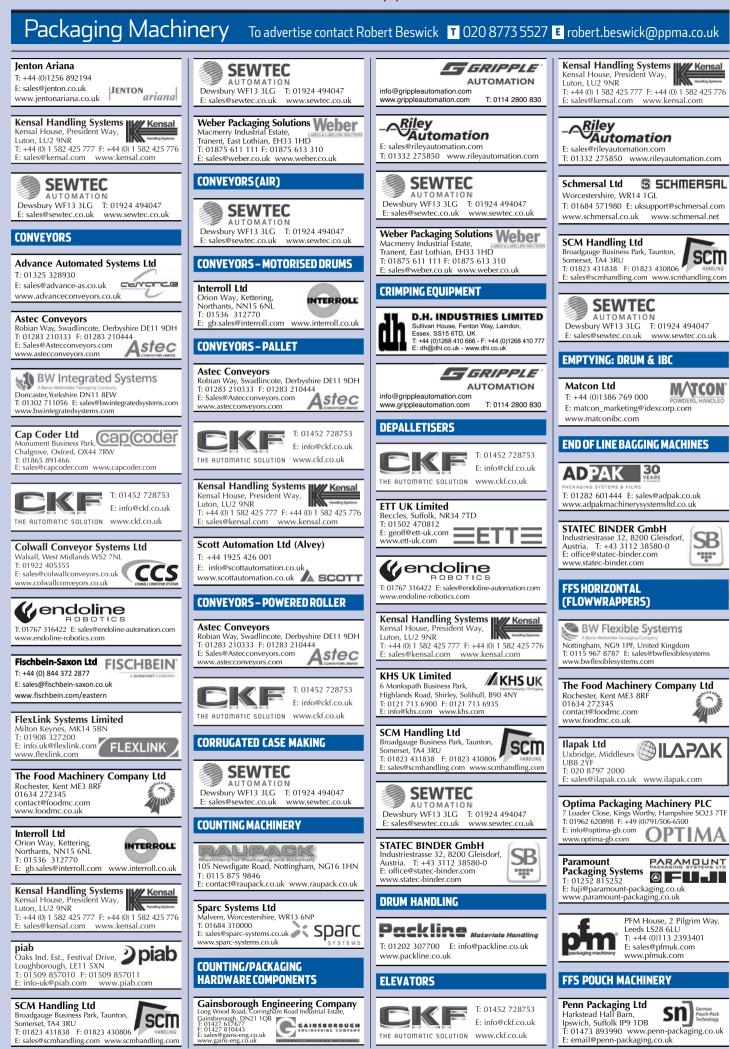
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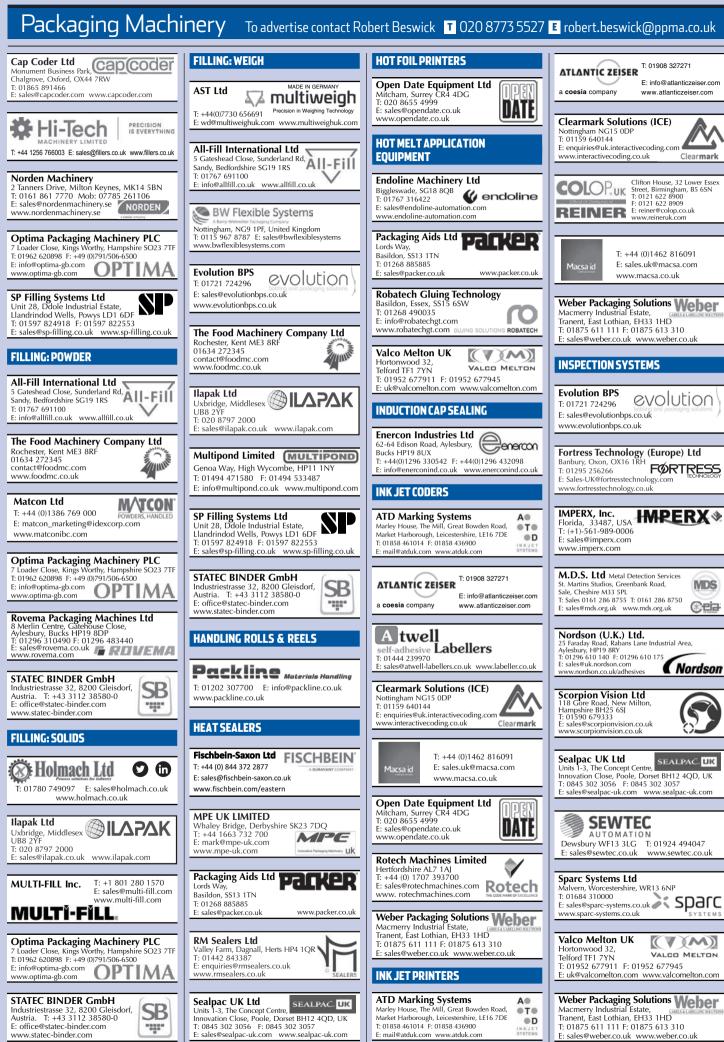
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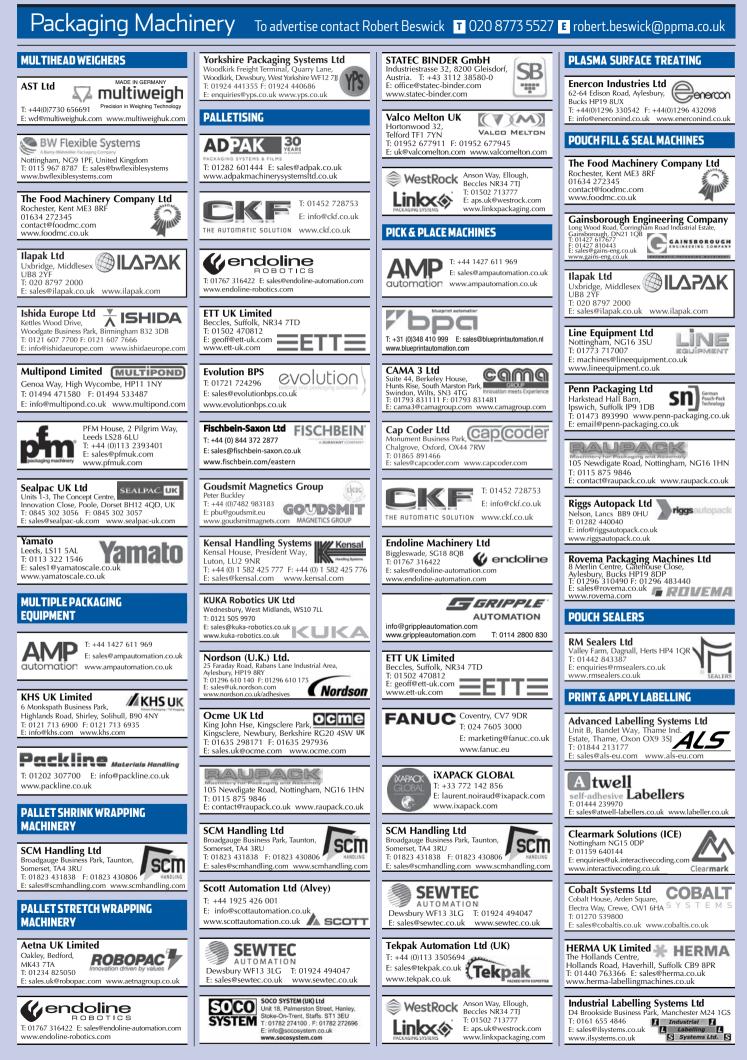
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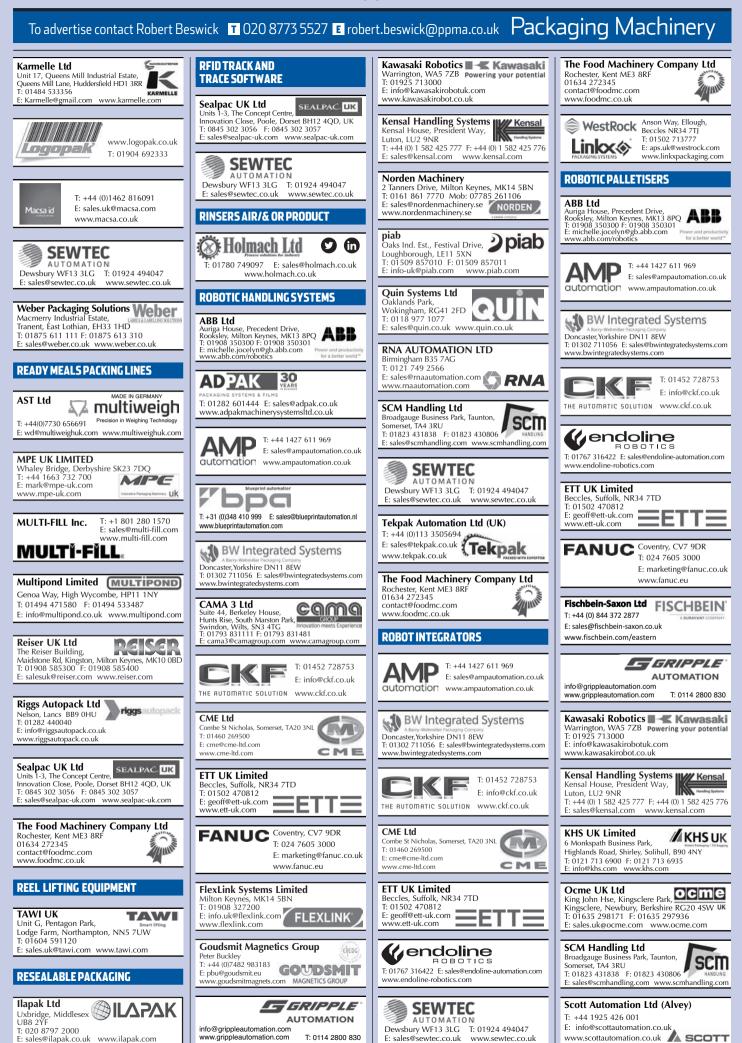
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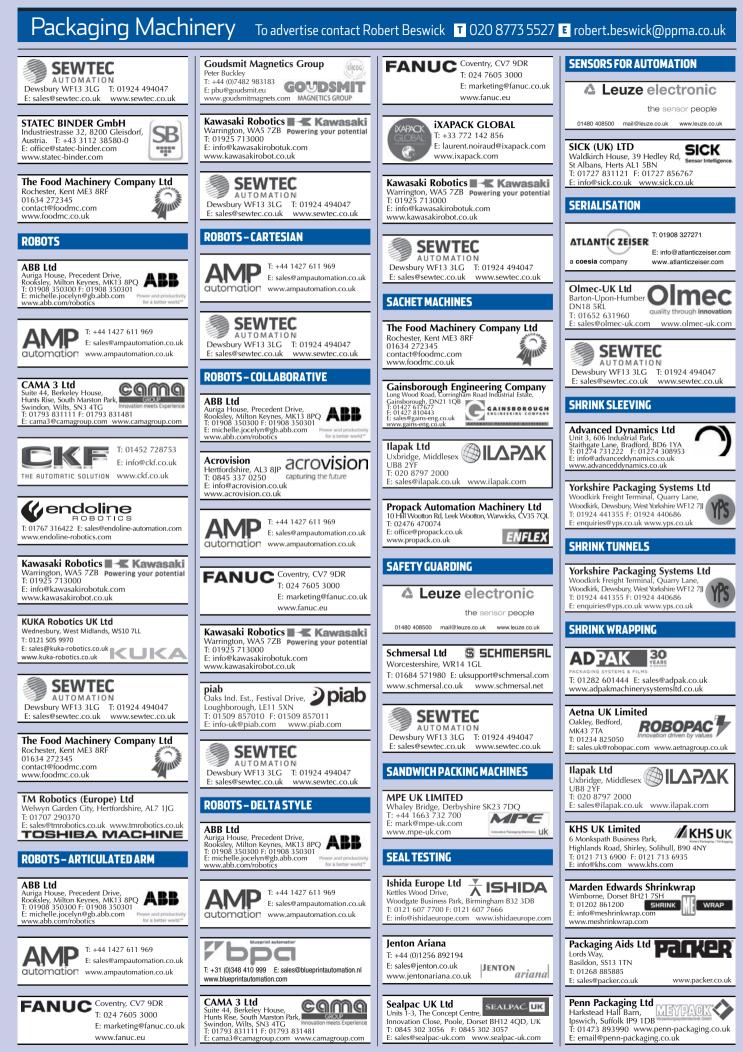
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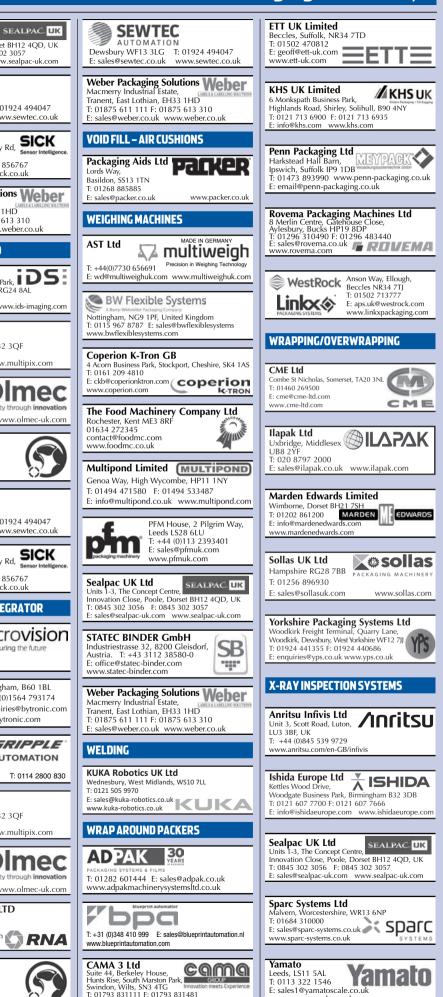


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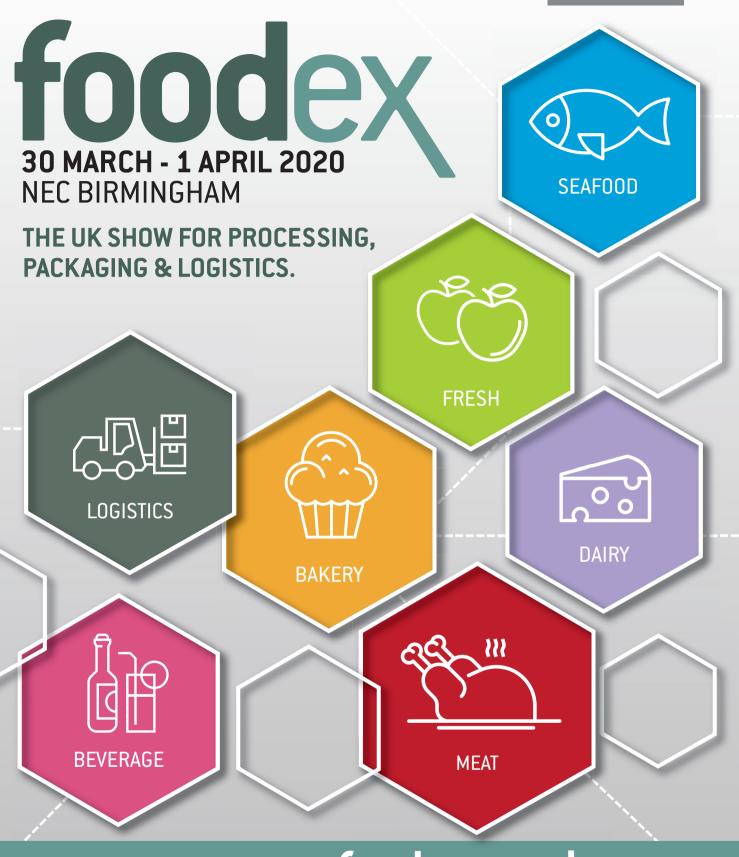
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