

PPMA

Issue 6, Volume XVII. November/December 2006

Machinery

UPDATE

The only 'machinery only' journal for processing and packaging



PALLETISERS

One to a line concept gains ground



PPMA SHOW REPORT

Phone-cameras run authenticity checks



TOILETRIES AND COSMETICS

Aesthetics drive improved quality

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Machinery UPDATE

THE JOURNAL OF THE PPMA

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PPMA UPDATED DAILY

Success and new blood

There are a number of reasons why this year's PPMA Show in September turned out to be one of the most successful of the past few years and the most important could be seen immediately the doors opened on the very first day.

It was quite obvious that visitors had come with clear ideas about what they wanted to see, set about finding it quickly and then quit the show just in time to miss the rush hour! Each of the three days attracted virtually the same number of visitors – some 6300 in total – and the pattern of early arrival and late afternoon departure on each was the same.

This suggests a high degree of planning and intent, which is borne out by the visitor survey. Some 67 per cent of visitors questioned said they planned a capital investment in the following 12 months while two thirds of them said that time, or rather lack of it, was an issue.

Further support came from the exhibitors themselves. Although largely anecdotal, reports of substantial interest, inquiries and potential business remain remarkably convincing in their consistency and volume. Some even went as far as to suggest that PPMA 2006 had been their best show ever.

I believe the layout of the show helped also, with the choice of a large yet neat single hall giving visitors an easy route to the exhibitors they had come to see on what appeared to be fairly strict, self-imposed timetables. A four hour stay at the exhibition was the most popular, with nearly two thirds of visitors spending between four and six hours – evidence again of a "down to business" approach.

It is also clear from the research that visitors were able to find what they wanted and that while trade exhibitions generally face challenging times, the PPMA Show and the Total Processing & Packaging exhibition – which takes place at the NEC next May – are bucking the trend and maintaining a high level of visitor interest.

Indeed, this is the prime reason that PPMA members are supporting Total 2007 in such numbers and have booked over 70 per cent of the space sold so far. Some 69 per cent of this year's PPMA Show visitors questioned also said they would be going to the Total exhibition next year.

Plans for Total 2007 now include a web site that will provide visitors with a much more comprehensive tool for planning their attendance than ever before with very much more information on exhibitors and their products.

Again it's all about time. For if there is one thing that PPMA 2006 has shown us clearly it is that visitors want to be able to plan their day and be in and out in four to six hours. And at Total, potentially well over twice the size of PPMA, the issue of time becomes even more pressing.

Meanwhile, a successful show is also a good opportunity for the PPMA to showcase its services as a trade association and work to attract more suppliers of processing and packaging machinery into membership, particularly processing.

Presentations made during the show have led to several new members signing up (see page 8), and there are many more in the pipeline.

One result of this new blood is that the PPMA has further enhanced its ability to speak with authority for the machinery industry.

More importantly, it adds weight to the PPMA's leading role in exhibitions and determination to ensure that buyers and suppliers of processing and packaging machinery come together in the most efficient and mutually beneficial fashion.



Chris Buxton
Chief Executive, PPMA

COMPANY NEWS

TNA signals move into food processing machinery

Australian-based food packaging machinery specialist TNA has signalled a move into processing equipment, initially for the snack industry but ultimately to cover all food processing.

This will include not only the design and installation of integrated packaging and processing equipment but also fully integrated operational elements such as power supply, voice and data cabling, wastewater management and building design.

"Our goal is to evolve from being a manufacturer of packaging machinery to pioneering the supply



Food processing: TNA nut and legume fryer is said to use less oil

of seamless packaging and processing solutions," says Alf Taylor, TNA managing director.

Mario Pino, TNA's international sales manager for processing adds: "There are many experts in the world, manufacturing high quality equipment, but only produce a small piece of the entire line.

"TNA's processing division will provide customers with a complete processing and packaging solution to allow the complete integration of their operation."

Typical of the equipment now on offer is TNA's nut and legume fryer, said to be particularly economic on oil, and a spiral conveyor for product heating, cooling or proofing applications.

THE PPMA SHOW 2006

Visitors and exhibitors hail success of PPMA Show

With a strong buying culture in evidence and a brisk pace of enquiries, September's PPMA Show has been judged a great success by visitors and exhibitors alike.

In post show research, 67 per cent of visitors questioned said they planned a capital investment within the following 12 months, while 91 per cent of exhibitors declared themselves satisfied with the results of the show.

Significantly, the show has also generated strong support for the Total Processing & Packaging Exhibition 2007, which takes place at the NEC in May.

Some 69 per cent of the PPMA Show visitors questioned said they would be going to Total 2007, while 87 per cent of PPMA exhibitors polled said they intended to exhibit there.

Purchasing plans over the next 12 months uncovered by the survey included 16 per cent of visitors looking to spend over £500,000, 9 per cent between £250,000 and £500,000 and 21 per cent between £50,000 and £250,000.

"The mood of the PPMA Show was extremely upbeat," comments Ian Crawford, exhibition director



Brisk pace: PPMA 2006 hailed by all as a great success

for the PPMA Show and Total Processing & Packaging 2007.

"Exhibitors reported strong enquiry levels and several sales and orders were secured during the exhibition. And the indication of healthy capital investment during 2007 bodes well for a successful Total Processing & Packaging 2007."

Asked about issues that affect them, 82 per cent of PPMA Show visitors questioned said that awareness of the latest technology was particularly important.

Some 51 per cent said the show had satisfied their need completely or very well while a further 34 per

cent said they were quite well satisfied.

"This is extremely encouraging," says Chris Buxton, PPMA chief executive. "It is clear that visitors are finding what they want and that while trade exhibitions generally are facing challenging times, the PPMA Show and the Total Processing & Packaging exhibition are bucking the trend and maintaining a high level of visitor interest.

"This is the prime reason that PPMA members are supporting the next event, Total 2007, in such numbers and have booked over 70 per cent of the space sold so far."

ORDERS AND INSTALLATIONS

Orders for block cheese cutters top €5 million

Cheese machinery specialist Alpma GmbH has reported a record €5 million of orders from around the world in August for block cheddar cheese cutting lines. The company delivered its one hundredth block cheese cutting line this summer and now has 24 lines installed in the

UK. Performances of under 0.5 per cent giveaway and an overall yield of 96 per cent are routinely experienced says the company.

Domnick Hunter is to supply Real Crisps, Newport, with a Maxigas nitrogen generator to be used in MAP. The system operates from compressed air.

Thermo Electron has supplied Border Biscuits, Lanarkshire, with a Goring kerr DSP3 metal detector. Six other Thermo units

are in operation at the factory, including one metal detector supplied 20 years ago.

Kliklok-Woodman has delivered a TL5 trolley loader to handle 2 litre pe bottles of milk at Glanbia Foods, Drogheda, Ireland.

Romaco UK has supplied Brecon Pharmaceuticals with its tenth Romaco blister packer, a platen-sealing Noack 623, linked to a Promatic PC4200 cartoner, the first to be installed in the UK.

Total exhibition web site will allow visitors informed choice

Plans for the Total Processing & Packaging 2007 website that will provide visitors with a comprehensive tool for planning their attendance have been announced by joint organisers the PPMA and Reed Exhibitions.

The website allows exhibitors to include a huge amount of information about their company and products, all of which will be easy to access by visitors registering for the show.

"The aim is to enable visitors to plan their visit as much as possible, locating the products and services they are interested in and sourcing detailed information about the companies that can deliver them," explains show marketing manager James Coleman.

"It provides an extension to the exhibition, providing visitors with detailed information that allows them to make an informed choice about how best to spend their time there."

The website has been designed to fit the structure of the event, with dedicated sections for the eight industry sectors that the show covers: pack design and marketing; FMCG processing; packaging materials; ancillary support and contract services; print and decorative finishes; packaging machinery; supply chain; and industrial plant.

The website will also offer a special facility whereby a personal show plan can be prepared and emailed to each pre-registered visitor, providing them with the locations of the stands they wish to visit and a suggested route to cover them all.

For further information consult www.totalexhibition.com

PPMA Show broadens scope and reaches wider audience

The PPMA Show has broadened its scope and is now appealing to a much wider audience while the PPMA itself has enlarged crucial areas of its membership, improved export services – particularly in China – extended its range of technical services, increased its support for process members and is now meeting with key government decision makers on a more frequent basis.

These were among principal achievements of the Association over the last 12 months, chief executive Chris Buxton told an invited audience on the first day of the PPMA Show 2006.

Mr Buxton, who joined the PPMA in September of last year, added that further PPMA activity in his first 12 months had seen the PPMA seminar programme broadened, with separate programmes established on regulatory and technical matters, and the launch of an all new PPMA web site.

Membership of the Association now stood at an all time high but, significantly, explained Mr Buxton, the proportion of members supplying process equipment had been expanded.

"The association has reviewed every aspect of the services that PPMA offers to ensure that they are tailored to the needs of the process members as closely as the packaging community."



Chris Buxton: Broader scope and wider audience for PPMA Show

Relations with government had also been intensified, said Mr Buxton, with the PPMA increasing its involvement with the Engineering and Machinery Alliance, a group of trade associations sharing a common set of objectives in support of the engineering industry.

"The PPMA has also been elected to the steering group of the CBI sponsored Trade Association Forum and through these vehicles 2006 saw us engaged in one to one meetings with a host of senior figures such as Alun Michael (when he was Trade and Industry Secretary), John Healey, Financial Secretary to the Treasury and Margaret Hodge."

Topics included a variety of

issues such as 'family friendly' employment law, statistics, and tax incentives for investment in new technology to help meet the ever growing challenges presented by globalisation and low overhead economies such as China, India, Russia and, more recently, Brazil.

Technical support for members and users of machinery through the past year had been very much concerned with interpreting the WEEE Directive through direct contact with the National Weights and Measures Laboratory.

This, explained Mr Buxton, took place against a background of continuous work in Brussels on shaping technical standards, most recently two covering the use of robots and safety issues within certain classes of packaging machine.

"Participation in writing Standards has been a principal source of the PPMA's technical status and influence with the DTI, HSE, major equipment users and the equivalent trade associations in other countries," Mr Buxton pointed out.

"Participation in the development of Standards also provides the PPMA with the knowledge to keep members fully aware of events and also gives the Association the authority to organise seminars and training courses on Standards and legislative matters."

PEOPLE

New md for Romaco UK

Romaco UK sales director David Dixon (left) has taken over as managing director in succession to Brian Moore (right) who has retired after 14 years with the company and over 35 years in the packaging machinery industry. Before joining Romaco Mr Moore was managing director of CE King while Mr Dixon, who joined Romaco in 2000, was previously managing director of Campak in the UK, having started his career with Rose Forgrove.



New members sign up

THE PPMA CONTINUES TO ATTRACT NEW MEMBERS FROM ACROSS THE ENTIRE MACHINERY INDUSTRY.

ABAR AUTOMATION

Robotic systems handle food, fresh produce and pallets

Abar Automation specialises in robotic systems for loading products such as food and fresh produce into outer cases or returnable crates and also for palletising.

Core products include the LR-80 pick-and-place robot cell for loading crates and outer cases, able to deal with a diverse range of products. Special versions have been developed recently to give gentle handling for soft citrus fruits and flow-wrapped packs of courgettes or sweetcorn.

The larger M410ib palletising robot is capable of loading pallets from multiple production lines. Where capacities are low the robot can also be fitted with an attachment to allow empty pallets to be taken from a stack and placed onto the loading conveyor, so avoiding the cost of dedicated pallet de-stacking equipment. Further attachments can also be provided for placing layer sheets.

Abar's DS-602 crate de-stacker has been upgraded to servo motor

control and is now capable of de-stacking 25 supermarket crates a minute.

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ALLIED PHARMA MACHINERY

Pharmaceutical and packaging machinery from around the world

An agency business, Allied Pharma Machinery supplies pharmaceutical and packaging machinery from leading suppliers around the world and was formed in September 2004 by the two joint managing directors, Andy Bannister and Russell Gardner. Both have over 15 years experience in packaging and pharmaceutical equipment.

The aim of the company is to provide a portfolio of machinery that offers a particular synergy when line solutions are required.

Allied Pharma Machinery is split into two sectors, the core being pharmaceutical equipment from suppliers including PAM, capsule fillers; MAR, liquid fillers for ampoules, vials and syringes; Brevetti CEA, inspection machinery for vials, syringes and so

forth; and Lodge, mixers, dryers and fluid bed processors.

The second part of the business includes end-of-line equipment for the food and beverage industries: Sotemapack, shrinkwrappers and wraparound case-pakers; OLI, case packers and palletisers; and Pace, bottle unscramblers.

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ILPRA SYSTEMS (UK)

Tray sealers to thermoformers and one-stop shopping

Packaging machinery from Ilpra Systems extends from bench-mounted semi-automatic tray sealers to automatic thermoform-fill-seal systems for liquids such as jam and honey, MAP versions for meat and cheese, and vertical bagging machines.

To offer 'one stop shopping' the company also produces consumables such as polypropylene, aPET and cPET trays, as well as lidding films, and has recently doubled its workforce in the UK to cope with demand.

September's PPMA Show saw the first UK exhibition appearance of the Easyform thermoformer, a compact machine built in stainless steel and anodised aluminium, with IP65 protection, for small and medium production levels in the food and medical device industries.

Able to work with both flexible and rigid material, the machine is available in two versions – the Easyform N for sealing only and the Easyform VG for both vacuum and vacuum and gas packaging.

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INDUSTRIAL TECHNOLOGY SYSTEMS

Process control, management information and vision systems

Established in 1991, Industrial Technology Systems (ITS), has a background in process control, management information and vision systems, and is now one of the largest integrators in the UK.

Services extend from feasibility studies and consultancy through to full turnkey project implementation, validation services, support and training for packaging, manufacturing and processing.

ITS specialises in the design and implementation of business improvement plans, batch control, process control, energy monitoring and machine vision systems, while also offering a range of complementary services including validation, manpower support and regulatory compliance training.

As an independent company ITS has Approved Solution Provider status with AspenTech, Cognex, Rockwell, Eurotherm, Honeywell, Pantek, Siemens, Citect, Schneider Electric, Wonderware, Werum Software & Systems, Mitsubishi and several other principal technology providers.

ITS' experience covers a broad range of industries, with projects carried out in automotive, biopharmaceutical, chemical, electronic and electrical, food and beverage, medical device, nuclear, packaging, petrochemical, pharmaceutical and public utilities.

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Abar Automation: Robotic systems for case and tray packing

New members continues in our next issue

METTLER-TOLEDO

Three head metal detector counters orientation effect

A metal detector that uses three search heads to ensure the highest levels of sensitivity and, in particular, compensate for the detection difficulties traditionally caused by the 'orientation effect', has been developed by Mettler-Toledo Safeline for meat processor Rea Valley Speciality Foods, Shrewsbury.

The system is used to monitor frozen meat in blocks up to 25kg and, although fitted with much wider than usual apertures, retains high sensitivity says the manufacturer as a result of the new R-Series Profile detectors employed.

Three heads, one at 90deg across the conveyor and two angled left and right at 40deg, were chosen to counter the orientation effect, in which a non-spherical particle of metal is easier to detect when passing in one orientation, compared with another.



Searching at different angles: One of three heads on the Mettler-Toledo system

As Mettler-Toledo Safeline explains, typically a piece of ferrous wire is in the most difficult orientation to detect when it is at 90deg to the direction of flow and the easiest when aligned along the conveyor belt. For non-ferrous and stainless steel wires, the reverse applies.

"The three-headed metal detector has performed better than our expectations," says Rea Valley

factory manager Mark Jones.

Mike Bradley, product inspection division business manager at Mettler-Toledo adds: "Our solution has not only improved metal detection levels, but has also enabled an increase in plant productivity by successfully accepting and testing larger pack sizes."

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ORION PACKAGING SYSTEMS (UK)

Stretchwrap for windows cuts transit damage

Affordable Windows Systems, Blackpool, has reduced transit damage to its pvc windows, doors and conservatory components substantially with the use of a spiral stretchwrapper purpose built by Orion Packaging.

The machine, based on a semi-automatic low profile series 500 wrapper with an electronically operated top platen and remote control foot switch, is able to handle loads up to 1700mm wide and up to 2250mm tall.

"Complaints and recalls have

been drastically reduced and we anticipate the machine will therefore have paid for itself within a matter of months," says Afford-



Transit pack: Stretchwrap protection for windows

able Windows' managing director Micky Gaughan.

"The other advantage is that the end product now looks far more professional, instilling greater confidence among our customers."

Orion Packaging managing director Walter Williams adds: "Semi or automatic stretchwrappers are an ideal solution for the window industry as a large variety of product sizes and shapes can be easily accommodated."

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ROMACO

Strip-packing line trebles capacity for HydraChem

HydraChem, the Billingshurst, West Sussex, manufacturer of chlorine-based sterilisation tablets and powders, has installed a Romaco packaging line as a key element of its expansion plans, replacing three old heatseal machines and automating the previously manual cartoning operation.

Production capacity has trebled and the new line, consisting of a Siebler HM1/160 vertical four-side seal strip-packing machine and a Promatic P91 intermittent motion cartoner, has also halved product wastage.

"We have increased efficiency both in terms of manpower utilisation and the numbers of



Strip-packing: Higher output and lower waste from new Romaco line

finished packs we can produce each day, which has effectively trebled," says HydraChem production manager Tony Willer. "In addition, the high accuracy of the Siebler has resulted in a 50 per cent reduction in tablet wastage."

Mr Willer explains that the Romaco system was chosen due to the fact that it is driven not mechanically but electronically. "A far more modern and reliable solution," he says.

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PLANET FLOWLINE

Twin lane tray sealer handles frozen desserts for Heinz

Heinz Frozen & Chilled Foods at Okehampton, Devon, has installed a high speed twin lane Tecnovac Cronos tray sealing machine for a range of frozen desserts in 95mm diameter round trays.

Supplied by UK representative Planet Flowline, the machine accepts trays at random from a spiral freezer in a single lane, which is then split into two lanes by a diverter belt before entering the machine.

The trays are spaced on an infeed belt and then, when 12 are collated, arms automatically transport the trays to the tool, where they are sealed and the film is profile cut. When a further 12 trays are in position, they are transferred to the tool at the same time as the sealed trays are removed onto the discharge conveyor. Speed is 120 trays a minute.

The machine supplied to Heinz is for atmospheric sealing of frozen products but can also be equipped for MAP.

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Lidding desserts: Trays are sealed 12 at a time on the Tecnovac machine

ILAPAK

Flow-wrapper extracts air to give six-month shelf life

A flow-wrapper that employs an in-line vacuum system to extract trapped pockets of air from products before wrapping is allowing Sonora Foods to achieve a shelf life of six months on its Discovery brand of tortillas.

The Ilapak VacMap machine was developed in conjunction with Sonora to allow bakery items to be flow-wrapped and given the same shelf life as thermoformed packs, but at lower cost and higher throughput.

It can be used as a conventional flow-wrapper, for modified atmosphere packaging, or with the vacuum system, providing production flexibility.

"Manufacturers can easily switch from one format to another so if production requirements change from, for example, an ambient product to a product requiring greater shelf life, then they can meet the demand immediately and maintain full capacity," explains Ilapak.

Sonora is running its line at 48 packs a minute and has also reduced labour costs with the VacMap's fully automatic feed system compared with previous thermoforming lines. These required tortillas to be fed by hand,



Extra shelf life: Air is extracted from tortillas by the Ilapak VacMap machine immediately prior to wrapping

which meant two or three operators per packing line.

Film costs have also been reduced significantly as the VacMap uses around half the material of a thermoformer, says Ilapak.

Brian Ridgway, managing director of Sonora Foods explains: "We worked closely with Ilapak to develop this packaging solution to meet customer demand for better pack presentation and a fresher appearance combined with a long shelf life.

"There was no packaging

machine on the market capable of achieving this so we approached Ilapak and they agreed to work with us to develop a technical solution.

"We are delighted with the result. The packs look excellent and because they are print-registered we can achieve a much higher quality presentation for maximum shelf impact. Customers perceive the contents of a flow-wrapped pack to be fresher than a thermoformed pack, giving an important marketing advantage."

T: 0208 797 2000

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DAN PALLETISER

High-speed palletisers go to News International

News International is taking delivery of 20 high-speed MK9 palletisers from Dan Palletiser for installation its new printing facilities and, if necessary, will be able to upgrade the machines in the

future from 70 to 90 bundles a minute.

"A number of companies are now capable of supplying palletisers with product speeds of 70 bundles a minute. However, Dan-Palletiser

offered one of the simplest solutions. It is also well engineered and the price was right," says Ian Dickson, group chief engineer at News International.

Newspaper bundles are delivered

by low friction spiral conveyors to the palletiser systems which not only palletise, but also wrap and label the pallets.

● Four MK9 palletisers have also been purchased by Johnston Press.

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Training for QC: Filling hall at Wiseman's Dairies, Bellshill

HALO TRAINING

Dairy adopts on-demand QC training package

Halo Training has developed a CD-based On Demand Training (ODT) package for production and maintenance staff involved with the quality control procedure in the filling halls at Wiseman's Dairies, Bellshill.

This procedure checks that the correct quantity of milk is filled into the pe bottles and that the correct labels and coloured caps have been applied.

Halo explains that Wiseman's had taken the view that traditional training manuals were either not read or sufficiently understood. So the dairy called on Halo to develop an e-learning programme that would help familiarise new staff with the procedure and act as a reference aid for existing engineers who only occasionally use the equipment.

At the centre of the QC system is a PC that provides batch information and has several engineering and diagnostic screens.

So the Halo ODT programme is split into several categories: an overview of the dairy operation from milk procurement through to depot delivery; how to operate the computer; how to fault find major components; how to access information from the database; reference documentation; and fault

finding charts.

"ODT offers a cost-effective means of delivering good quality training without the associated overheads of setting up and running a separate department," says Calum Robertson, automation training engineer at Robert Wiseman's.

"We recognised an urgent need to strengthen the training of our engineering personnel and the ODT programme offered an easy-to-use, engaging and visually stimulating learning environment with no need for dedicated training staff. Its modular approach was particularly appealing."

A bespoke system, ODT uses multimedia technology to teach



On-screen instruction: Part of the bar code scanner maintenance routine

machine operators, maintenance staff, supervisors and other production staff about manufacturing processes, and how to operate and maintain machines safely and easily.

Each ODT package incorporates animation, video and audio material to help demonstrate machine operating functions and procedures – for example, cleaning and maintenance, troubleshooting and health and safety issues.

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MARCO WEIGHING SYSTEMS

Portion control system cuts giveaway on exotic veg

Prepared vegetable packer Exotic Farm Produce, Boston, Lincolnshire, has reduced giveaway for sweet potatoes with a second six-station LineMaster portion control system from Marco Weighing Systems.

The delicate nature of the vegetables handled by the company dictates that they are packed by hand, rather than automatically, and the weight variances between individual items may be as high as 20 per cent. This, points out Marco, makes it difficult to meet average weight legislation while minimising giveaway, especially in packs which may contain only a dozen or so items.

As Exotic's factory manager David Cordes explains: "Products like asparagus are notoriously difficult to pack and our level of giveaway can be excessive."

The first system was installed for single packs of asparagus and packs of multi-component vegetables, while the latest is dedicated to sweet potatoes.

The LineMaster workstations operate on a "takeaway" basis in which, rather than achieve target weights by adding product to the tray placed on a scale, product is



Portion control: Operators are guided by a traffic light system

weighed out from larger containers and the loss in weight recorded.

This, says Marco, gives a much faster process by eliminating double handling and provides greater control of consistency and final weight. The LineMaster's tolerance indicators guide the operator through the portion weighing process via a simple traffic light display.

The LineMaster system records every individual pack weight in its database and constantly analyses the data for trends resulting from

factors such as changes in operator effectiveness and product batch variations.

"Based on this real time information, the process continually adjusts the target weight limits at every station in order to optimise the average pack weight. These subtle changes in target weight limits are transparent to our operators and reduce giveaway to almost zero," says David Cordes.

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PACKAGING AUTOMATION

Heat sealers secure window to novel BBQ pack

Packaging manufacturer FFP Packaging Solutions, Northampton, has bought two PA182 heat sealing machines from Packaging Automation to seal a transparent window into its new Qbag barbecue pack.

The aluminium foil bag retains moisture and allows meat and vegetables to be cooked with sauces and marinades on a barbecue, while the film window allows cooking progress to be monitored. The window peels away for additional ingredients to be added and, at the end of cooking, the Qbag can be used for serving.

Packaging Automation helped develop a compact production line and also developed special tooling



for the PA182 machines that place and heat seal the windows into position.

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SANDIACRE PACKAGING MACHINERY

Form-fill-seal cuts costs for big bags of pipe fittings

Plastic pipe fittings manufacturer Wavin UK, Chippenham, has adopted a form-fill-seal approach to packing its pipe connectors, reducing labour costs and also cutting 20 per cent from the cost of materials compared with the pre-made, hand-tied bags used before.

Following the installation of a Sandiacre TG600-L bagging machine, Wavin is now presenting its fittings in lots of five or ten in pillow packs measuring 600mm wide x 900mm long. Speed is three bags a minute.



Reduced costs: Large form-fill-seal bags for pipe fittings

Individually counted through the hopper to achieve the required count, the fittings are momentarily arrested by a catcher halfway down the 2.5 metre long forming tube to eliminate risk of damage to the product itself and to the bag, which is held by a special support.

Sandiacre points out that the TG600-L machine will also allow Wavin to meet market demands for reduced packaging in landfill by offering biodegradable packaging film to its customers in the future.

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PPMA SHOW REPORT

SEPTEMBER'S PPMA SHOW PROVIDED A HOST OF MACHINERY TO BE SEEN FOR THE FIRST TIME.
THIS REPORT REVIEWS A SELECTION.

TURPINS PACKAGING SYSTEMS

Neck tag applicator can be moved from line to line

A neck tag application system that can be taken from filling line to filling line to apply special promotions at speeds up to 320 a minute was announced by Turpins, which has just concluded an import agreement with the Australian manufacturer Reeltek Systems.

The Protag tag – which can be a folded leaflet with a number of pages of information – is cut from a reel and placed over the neck of the container, with a lock flap holding it firm against the closure.



Special promotions: Protag neck tag system from Australia

A small dab of hot melt can also be applied to secure the base of the tag to the container if required.

The machine will straddle an existing conveyor and can be supplied with two application heads, allowing continuous running as reels of tags are renewed.

T: 01255 423402

E: sales@sleevit.com

DOMINO UK

Mobile phone-cameras can check product authenticity



Checking authenticity: The bar code is scanned and sent to the database for checking. The user then receives the verdict

Visitors to the this year's PPMA Show witnessed the first public demonstration of a new anti-counterfeiting system that allows mobile phone-cameras to verify a product's unique serialised barcode and so confirm its authenticity, or point to possible fraud.

The solution, shown by Domino's integrated solutions group, effectively transforms a mobile phone into a hand-held scanner that can operate in real-time anywhere in the world using low-cost, high-speed data transfer. There is no need for separate scanners, laptops or other computing equipment.

"The combination of the camera-mobile phone, which most people now carry, and easy-to-use software offers enormous benefits across a multitude of applications and environments, from basic product identification to authenticating the 'pedigree' of pharmaceuticals, where counterfeiting and substitution can have disastrous consequences," says Simon King, director of

Domino's integrated solutions group.

A range of camera-phones programmed with specially-adapted decoding software can scan serialised barcodes ranging from linear to 2D DataMatrix and also handle RFID codes. The software analyses the image of the code captured by the camera-phone, identifies the code and translates it into its unique alphanumeric serial number and streams the data to a secure database for checking against pre-set identification criteria.

Depending on the application, the process may only entail checking and verifying the code content, but by linking the camera-phone to a secure database additional levels of authentication can be added by effectively 'texting' the data to the database via a secure SMS or mobile link.

Providing the camera or the user, or both, has the correct level of security clearance, the phone can access the secure database via an automatic link to check if the

unique number can be matched. Data is then returned to the mobile phone in whatever format is required – via SMS, as photographic evidence or mobile message – to confirm that the product is genuine or alert the end-user to defects or possible counterfeiting.

The system can be configured to administer additional levels of identification and layers of security. For example, a 'first level' product check might simply confirm that the product is as it should be, while 'second level' verification might interrogate the database to confirm additional information such as size, quantity, date, brand, and so forth.

"The software can incorporate all sorts of checks, depending on clients' needs: for example, the ID number of the product, a name or short description, details of the product logistics, customs and excise data and payments, and so on," explains Simon King.

T: 01854 782551

E: enquiries@domino-uk.com



AUTOMAC UK

MAP system uses stretch film for simplicity and lower cost

A modified atmosphere wrapping system for trays of fresh meat and produce using high barrier stretch film was launched on the UK market by Automac UK, the British arm of Italian film and machinery manufacturer Gruppo Fabbri.

The Atmopack system employs a relatively simple machine to produce a stretch-wrapped tray similar in appearance to a flow-wrap but with the 45 micron film elongated by up to 100 per cent.

As a result of the relatively low cost of the machinery, and economy in the use of film, the machine is said to be capable of giving a payback in less than one year as well as occupying a much smaller footprint than other systems.

In operation, trays entering the machine are elevated into a simple pusher mechanism that sends the tray through a forming box over

which film, already sealed at the base, is stretched.

Gassing then takes place and cross seals are made while the film is held secure, giving a pack that is leak proof and said to be capable of withstanding a pressure of 4 bar.

The Atmopack runs at speeds up to 40 trays a minute in MAP mode and, says Automac, can be changed over from one tray size to the next in 4-5 minutes. It has a built-in diagnostics system and measures just 3.2 metres long including infeed and outfeed.

The film used, PeBar, is also



Stretchwrap MAP: Atmopack wraps 40 trays a minute

made by Gruppo Fabbri and is a five layer pe-evoh co-extrusion with a permeability of less than 50cc/m² x 24 hours. Film width is 420-750mm.

T: 01606 831113

E: automacuk@gruppofabbri.com

INTEGRAPAK

Drinks sachet has enclosed drinking straw for hygiene

A method of creating drinks sachets with a completely enclosed and hence sterile drinking straw – and also making ice lollipops – was announced by Integrapak, UK representative of the Spanish horizontal sachet machine manufacturer Volpak.

The Duo is a contoured stand-up pouch into which a polypropylene straw is secured and then sealed into the top flange of the pack. Easy tear notches allow the top of the flange to be removed for the straw to be used.



Sealed-in straw or stick: Duo system for drinks or lollipops

If the contents are to be frozen as a lollipop, then notches can be provided at the base of the pack to allow it to be torn open lengthwise.

The packaging concept runs on a Volpak Series SP machine at speeds up to 40 a minute, or 80 in duplex mode. Volumes up to 330ml can be handled.

There is also the option of a contoured cut at the top of the pack for promotions and tokens.

T: 01420 593680

E: integrapak@integrapak.co.uk

T FREEMANTLE

Integrated autoloader for cartoner keeps costs down

Freemantle launched its latest cartoner, an automatic end-load machine equipped with an integral slimline autoloader that is just 100mm or so wider than the 250mm maximum product length handled by the machine.

As a result of the integration, with no separate controls or power source required for the autoloader, Freemantle says it is able to supply a complete system for little more than the cost of just a cartoner of equivalent performance.

The reduced width of the autoloader contrasts with traditional barrel loaders which, to accommodate the product length and give sufficient stroke to load the carton are usually more than twice as wide as maximum product length.

Instead of using pushers operated by a traditional cam system, the Freemantle machine employs pushers connected to the flights of the autoloader by sliders. These act against a cam track set at approximately 45deg across their path, creating the end-load movement virtually almost inside



End loading: Pies are fed into the pushers of the Freemantle cartoner

the length of the product.

Incoming product is accepted by the system at random, held against a gate and transferred onto timing belts that create the correct pitch for the flights.

A standard, rather than bespoke system, the product transfer arrangement is said to give the benefits of a more simplified mechanical and control system, smaller footprint, lower build cost

and also greater efficiency.

The system also incorporates an element of accumulation to accommodate a short stoppage by the cartoner.

Capable of speeds up to 200 a minute, the Freemantle machine is able to handle containers from 110 x 50 x 20mm up to 250 x 225 x 80mm.

T: 01724 276908

E: sales@tfreemantle.com

AUTOMATED PACKAGING SYSTEMS

Bag-on-roll system is aimed at mail order fulfilment

A bagging system to overprint and present large pre-made bags for loading was introduced by Automated Packaging Systems to suit applications such as mail order fulfilment and short-run operations.

The new Autobag 255 OneStep can handle bags 100-400mm wide by 130-680mm long and employs



Larger bags: Autobag 255 OneStep prints and seals at 20 a minute

a thermal transfer printer installed on the top of the machine so that

bags are printed and indexed to the loading point in a single step.

This eliminates queuing and risk of the wrong product or numbers of products being inserted. An optional monitor screen can be fitted to remind the operator what should be in the bag.

The machine is able to run at speeds up to 20 bags a minute and can be changed over from one bag size to the next in less than 2 minutes, says Automated Packaging Systems.

T: 01684 891400

E: contact@autobag.co.uk

Thermal transfer for hard, irregular and porous surfaces

A coding system that combines the programmable, variable data capability of thermal transfer with the ability of hot foil or tampon printing to mark hard, irregular or porous surfaces was introduced by Overprint, UK representative of the Italian manufacturer Eidos.

Typical applications include electrical and electronic components, plastic identification straps, closures, motor parts and carton blanks, particularly those produced in short runs or packed and identified on a just-in-time basis.

Instead of making a direct transfer from the inked ribbon onto the substrate, the Eidos Coditherm first prints the image onto a plain carrier ribbon, which is then advanced to the marking area. Here the image is transferred to the pack or component by a roller or pad, using heat and pressure.

Variations include a roller system to rotate cylindrical items in front of the coding head and a



Double transfer: Coditherm is able to handle difficult substrates

system to transfer images into recesses.

The Coditherm operates at a resolution of 300 or 600dpi, and gives a maximum image area of 260mm long x 100mm wide, allowing a number of items to be placed in jigs or other transport systems and coded simultaneously.

Various forms of inked and carrier ribbons are available, to suit the porosity and surface finish of the material to be coded, and there is also a choice of ink ribbon colours.

Programming is via a choice of methods, including USB memory stick, network or wireless.

T: 01895 824090

E: info@overprint.co.uk

Diverter with vision system checks quality and sets route

Raque showed a four lane Schreyer diverter-converger equipped with a vision system to demonstrate the concept of monitoring different products arriving at random for outer pack and bar code quality, and then diverting them to the appropriate outfeed lane for the next stage of production. One lane is left free to handle rejects.

The diverter-converger is able to operate at speeds up to 300 a minute and, to illustrate its capabilities, was shown reading a

single line of 12-point type on trays of three different products, which were then directed to the appropriate outfeed.

However, the vision system itself is capable of making 12 reads a second and can be set up to monitor virtually all elements of an outer pack, including presence of additional promotional labels or missing print, and also reject any rogue packaging.

Applications so far include a sorting system that makes optimum use of downstream packaging equipment by sending ten lanes of product to 13 lanes in a programmed pattern.

T: 01905 642820

E: sales@raque.co.uk

MECAPLASTIC

Pack venting system gives food extra shelf life

The Valvo-Pack venting system for food packaging introduced by Mecaplastic is said to differ from other valve systems by continuing to function – opening and closing – during the entire life of the pack, from initial in-pack cooking through to reheating by the consumer, typically in a domestic microwave.

As a result, says Mecaplastic, tray-packed chilled food products with a typical shelf life of 4-5 days can have their life extended to 45 days without using modified atmosphere, and also retain colour and texture.

The Mecaplastic dispenser cuts a 4-5mm hole in the lidding film over which the one-way valve is sealed. The valve opens at 70deg C to allow the release of gas during in-pack pasteurisation and seals at the same temperature, so ensuring the pack is properly sealed under positive pressure.

During reheating by the consumer the valve again operates only when 70deg C has been reached, helping to maintain pressure and steam within the pack and so prevent overcooking or drying out.

● A fast change tooling system for tray sealing machinery was also demonstrated for the first time in the UK by Mecaplastic, which showed how its new Partial Tooling arrangement could reduce changeovers from typically 15 to less than 5 minutes.

A trolley system is used to bring the new tooling to the machine and receive the previous tools while a tooling pre-heating system is available to reduce start-up time.
T: 02476 351300
E: administration@nutripack.co.uk

SPRINGVALE EQUIPMENT

Quick-change stick-packers give variety of pack sizes

Two new fast size change stickpack machines were announced by Springvale Equipment, UK representative for the Italian manufacturer Boato Pack.

On both the six lane Tornado S6 and the four lane Tornado S4 size changeover is achieved simply by exchanging the forming tubes, loading a new reel of appropriate width material and resetting the pitch of the slitter knives to create six or four webs to suit the new pack width.

Length is set from the control panel by adjusting the servo motor driving the drawdown mechanism while dosing is via a tangential flow volumetric doser or separately controlled augers for powders and servo driven pump for liquids.

The Boato Pack Tornado S6 is able to produce stickpacks from 17 to 50mm flat stick width and is aimed in particular at contract packers being able, typically, to make 22mm diameter sticks of coffee powder, 35mm diameter sticks of cappuccino powder and also 50mm sticks of drinking chocolate.



Fast changeover: Boato Pack Tornado S6 stick-packing machine

Maximum stick length is 200mm and speed is up to 60 packs a minute per lane.

In the liquid version the machine can be used for products such as sweet and savoury sauces, alcohol or yoghurt with 50ml of product typically running at 35-40 sticks a minute per lane and smaller volumes up to 60 a minute per lane.

The S4 machine offers stick widths of 30-100mm and can produce a pack up to 200mm long. Depending on the dosing arrangements, cycle speed can be

up to 60 a minute producing packs of products such as washing powder or prepared sauces at speeds up to 240 a minute.

Good seal quality is said to be achieved by the use of separate jaws, each individually adjustable for temperature and pressure.

Most important, points out Springvale, both Tornado models offer particularly high output from machines measuring just 1900 x 2000 x 1850mm.

T: 01420 542505
E: springvale@springequip.co.uk

ALLIED PHARMA MACHINERY

Faster image processing improves vial inspection

Pharmaceutical container inspection specialist Brevetti CEA, Italy, announced a newly uprated system for vials, ampoules and syringes, with faster image capture and processing said to give considerably higher reliability at speeds up to 36,000 items an hour.

Like its predecessors, the new Brevetti system is aimed at finding

foreign bodies in liquid as well as detecting surface flaws in the container itself.

It operates in just the same way as earlier machines by spinning the vials or ampoules in front of cameras, stopping the rotation, and using any movement then detected within the container to indicate a foreign body.

Cracks are detected by looking for changes in colour and shade as the container is spinning slowly in front of the camera.

Now, however, the use of a new parallel processor has trebled the

power of the machine, allowing 24 images around the circumference of a container to be acquired and analysed in the same time previously taken to handle eight.

This means that smaller defects and foreign bodies can be distinguished from background noise and that higher efficiency in detecting defects such as hairline cracks allows rejection thresholds to be set lower, reducing risk of false rejects.

T: 01252 356789
E: sales@alliedpharma.com

SUNALA

Ink jet printer provides label rolls or singles in 600dpi colour

The VP2020 ink jet label printer newly available in the UK from Sunala prints full colour roll-fed labels and tags at 600dpi resolution and speeds up to 50 a minute. Users can print labels one at a time or generate entire rolls with variable content including bar codes and serial numbers.

This flexibility makes the printer well suited for the changing requirements of industrial and retail supply chains, as Sunala's managing director Sue Brocklehurst explains.

"The emergence of mass



Short runs: VP2020 colour ink jet label printer for singles or rolls

customisation, one-to-one marketing and e-fulfilment has presented new challenges to manufacturers and logistics managers, with package labels requiring an ever-increasing amount of printed information in ever-decreasing print runs," she points out.

"In reality, this means nearly every label has to be customised in some way, so the need for fast and accurate label printing is paramount."

Sunala claims that inclusion of colour on a label can reduce search time and errors in looking for a product by up to 80 per cent.

T: 01942 674440

E: info@sunala.com

SANDIACRE ROSE FORGROVE

Bagger gives better access and takes up less space

Sandiacre's new Novus 350 high speed vertical form fill-seal machine is the result of an industrial design exercise that, amongst other things, has seen access to the machine substantially improved and allows the controls to be interchangeable between left and right.

The footprint of the machine, built in stainless steel, has also been reduced compared with the previous TG350-RC model.

In place of the traditional electrical box, to the right or left of the machine, all electrics and electronics are now carried in integral cabinets accessible from the side, while all forming parts are accessible over a full 180 degrees via L-shaped guards that swing back to give an unrestricted view.

Mounting ports are provided on both sides of the machine for the control pod, allowing the machine



New design: Sandiacre Novus 350 bagging machine offers improved access

to be readily re-handed to suit any future changes in factory layout.

The Novus is controlled with four servo drives for the film feed and the horizontal and vertical drives of the sealing jaws and the back seal, giving speeds up to 200 bags a minute in continuous motion.

Alternatively, when larger heavy bags are being produced, the machine can be set to run in intermittent mode. Bag width range is 60 to 350mm while length is infinitely variable from 60mm upwards.

T: 0115 967 8787

E: sales@rose-forgrove.co.uk

PACKAGING AUTOMATION

Rotary pot filler will handle a variety of products

Shown for the first time, the new Fastfill 100 rotary pot filler and sealer from Packaging Automation is a twin lane machine capable of handling up to 100 pots a minute. It can be equipped to fill liquids such as sauces and yoghurt, dry products such as cereals or nuts and semi-viscous products with particulates.

A combination of layered dry and liquid, or liquid and particulate product, can also be produced with no loss in performance, says the company.

Pots up to 130mm in diameter and up to 140mm deep can be accommodated in 90deg quad-



Twin lane: Fastfill 100 machine handles up to 100 pots a minute

rant tooling sections that simply lift in and out of place. Pot closure is by pre-cut lidding media or from a reel while a clip-on overcap can also be added.

Filling systems for both liquids and solids can be installed around the carousel while the liquid product hoppers can be fitted with both agitators to ensure particu-

lates remain in suspension as well as wall scrapers to handle products that are filled hot, such as cheese dips.

The Fastfill 100 can also be equipped for gas flushing to handle avocado based dips and other oxygen sensitive products.

T: 01565 755000

E: info@pal.co.uk

SELO-BOLLANS

Stainless steel bagger sets price-performance challenge

A stainless steel bagging machine and multihead weigher combination said to offer a particularly competitive price-performance ratio was demonstrated for the first time by Selo-Bollans, recently appointed UK representative for the Italian manufacturer Sabalpack.

The Lion is Sabalpack's top-of-range bagging machine and is able to produce bags up to 360mm wide and run at speeds up to 70 a minute for a wide range of products such as pasta, pet food, cereals, dried fruit, confectionery and bakery. In addition it is able to create multipacks from smaller bags, offering a maximum capacity of 15 litres.

Mechanically driven, the Lion is said to provide an economic unit with an intrinsic simplicity that ensures reliability. Typical is the powered film unwind, which is surface driven for ease of control.

At PPMA the machine was demonstrated with a Sabalpack Arrow ten-head combination weigher equipped with product



'Competitively priced': Stainless steel Lion bagging machine from Sabalpack

contact parts that unclip for off-machine cleaning. Maximum capacity is 3 litres and running speed is up to 60 drops a minute.

Software supplied with the machine is able to provide production statistics such as number of packs produced in a period, speed and average weight.

characteristics from a number of good packs passed through the machine. The size and density of potential contaminants is then entered and the machine electrically imposes the image of the contaminant on the product image to assess its capability for differentiation.

This process is dynamic, with the machine running through the image processing algorithms available to it and selecting the formula or formulae that distinguish the contaminants most clearly.

The IX-GA machine is also able

At the same time the software is said also to help increase accuracy and efficiency by monitoring and managing the product flow through the linear vibratory feeders to the weigher's top tier of hoppers.

T: 0151-644 9393
E: info@selo-bollans.co.uk

to spot missing items or damaged products and can be readily set up to distinguish between 'legitimate' metal, such as clips on the ends of sausages or aluminium tins, while still monitoring and identifying unwanted items.

It features a Windows XP operating system while an auto-set function enables the X-ray output and sensitivity level to be set up automatically for each product. Conveyors and belts are manufactured to IP66 and the main body to IP65.

T: 0121 607 7700
E: info@ishidaeurope.com

COBALT IS

Software sets coders and checks primary packaging

A new automated packaging control and line set up system was demonstrated by Cobalt as the latest application of its Sentinel code verification process. Access to the single point control is via biometric authentication or password.

At the start of a batch an authorised supervisor selects the product to be packed by scanning the barcode on the production schedule or works order, or from the product database.

The Cobalt Sentinel then distributes the product set-up data to the ink jet coding, primary pack validation and print-apply labellers on the line, eliminating risk of human error.

During packaging every pack is checked against the expected value for the batch with any incorrect product rejected and counted. When repeated incorrect packaging is detected, alarms are initiated, and the line brought to a stop.

Best before and use-by dates are passed to coding equipment during batch set-up, allowing for offset calculation and incorporating day and date change practices for each product. All changes to settings are recorded, with user name, date and time.

Secondary case labelling is also controlled from the Cobalt Sentinel, with label design and variable data being selected to correspond with the product being packed.

To ensure accuracy in reading outer case coding, the system checks the label as it is printed, and then checks that the label has been properly applied.

T: 01606 42500,
E: sales@cobaltis.co.uk

ISHIDA EUROPE

X-ray machine operates with self-learning facility

An X-ray inspection system able to detect foreign bodies and impurities down to 0.3mm as a result of a "self-learning genetic algorithm" was launched in the UK by Ishida, having been proven on the market in Japan, where it is made.

The self teaching element of the new Ishida IX-GA operates by first learning the product

Falling size and cost paves way to One for each line

AS PALLETISERS COME DOWN IN SIZE AND COST, SO THE OPTION OF A SEPARATE MACHINE FOR EACH LINE HAS BECOME MORE ATTRACTIVE, WRITES MARTIN KEAY.

The most fundamental decision to be taken when choosing a palletiser is not what type of machine to use – high-level, low-level, gantry, robot – but whether to have dedicated machines, each serving a single production line, or a system that feeds production from several lines into one or a number of palletisers.

Several factors influence this decision including line speeds, factory layout, space at the end of production lines and of course cost. But this is not new.

What is new is that the balance between opting for a dedicated palletiser or a palletising system is now tipping firmly in favour of dedicated palletisers, compared with ten years ago when a palletising system was the more likely choice.

This change in buying habits is due to two main factors – the reducing cost of dedicated palletisers and the shrinking size of these machines, particularly the skid mounted variety which arrives in a freight container as a complete unit ready for use.

There is also an increasing recognition that a palletiser is not just a “nice to have” addition to a production line which gets justified when production output rises or manual lifting begins to look unsafe, but an essential piece of equipment for any production line which needs to be costed in at the start of a project.

Another factor in favour of the dedicated palletiser is the change in senior management thinking which now views a production line as a discrete asset that can be moved from factory to factory and from country to country as market demands change. Without a dedicated palletiser a production line is not complete.

Compact robot palletisers

Typical of the latest generation of compact skid mounted palletisers is the i-Pal supplied by Orion Packaging Systems. This consists of a spherical robot which, together with pallet conveyors and a pick-point, is mounted on a steel



Skid mounted: i-Pal robot arrives in a shipping container ready for work

skid. On arrival, the unit can be simply rolled out of its shipping container and positioned at the end of the production line, ready for use.

Its universal gripper head allows it to palletise a wide range of products and it is also equipped with an automatic pallet changing system for uninterrupted operation.

The i-Pal is available on a rental basis and can work with cases, trays or other packs measuring from 200 x 150 x 80mm up to 600 x 400 x 400mm. Speed is 20 products a minute and it can be optionally equipped with a layer sheet dispenser.

A completely transportable robot palletising

cell that can be moved quickly from one line to another – so ensuring maximum utilisation – has been introduced by Engsol UK, which represents the German manufacturer ETT. The basic frame that supports the machinery is compact for transport, but readily extendable to the working position.

Palletising patterns are calculated automatically by the machine, which also incorporates layer sheet storage, and is available with a range of grippers to suit all products.

“This new development in palletising technology opens the doors to many companies who in the past could not justify a dedicated cell per

PALLETISERS

production line," says Engsol managing director Geoff Yallop.

GMP palletisers

The drivers for choosing dedicated palletisers in the pharmaceutical industry are different from those of other industries where the value of products and need for good hygiene and product containment are not so acute.

These factors have already resulted in the development of combined case-packers and palletisers, but the development by Pester of a GMP palletiser that can be located in a clean room is likely to be a significant development and the start of a new trend in palletiser design.

Five and six axis industrial robots are employed, sized to cope with heavy products such as those found in the personal care industry or to cope with the smaller packs more common in the pharmaceutical industry. High accuracy is claimed and speeds up to 15 cycles a minute are possible, using multiple picking tools.

Automatic pallet magazine loaders are available along with dual pallet stations for continuous operation and multiple product identification should a single palletiser be employed at the end of several lines. The robots can also be configured to apply and verify case labels, insert slip sheets and even change their own tooling to cope with different products.

IMA developed its Flex Palletiser as a compact, versatile machine capable of palletising with a four or six axis Fanuc robot while also being able to checkweigh incoming cases and identify them with ink jet codes or labels. The machine can also be equipped with a large capacity empty pallet magazine with automatic handling of empty and full pallets.

Robots rule

Palletisers based on industrial robots are of course particularly suitable for use as dedicated palletisers.

For example, in addition to bag and box palletisers Abar Automation is now supplying robotic bucket and drum palletisers based on its A1200 robot. This four axis unit can be combined with a self adjusting pick-up hand to operate with different sizes and weights of container while product can be fed from single or multiple production lines.

Where capacities are low the robot can also be fitted with an attachment to allow empty pallets to be taken from a stack and placed onto the loading conveyor, so eliminating the cost of

pallet de-stacking equipment. Further attachments can also be provided for placement of slip or layer sheets.

The ZP1 palletiser from Italian manufacturer CAM, which occupies a footprint of just 2 x 2 metres, has been specifically designed to sit at the end of a packing line, and can be fitted with a gripper or suction head, and single or multi pick-off heads to handle shrinkwrapped collations or cases. Speed is up to 12 placements a minute, or more with the multi pick-off device.

The system has industrial PC based controls, which give memory for up to 1000 products, allowing size changeover within about 5 minutes, says UK representative Campak. Various options are available, including a three or ten empty pallet feeder magazine, and automatic layer pad application.

Recent installations include two lines for a major pharmaceutical manufacturer in Ireland, handling cases of both cartons and naked bottles which are also checked by the integral case checkweighers.

Samas, part of the Italian OPM Group, builds a complete range of robotic palletising systems, from a budget priced unit machine using a simple three axis robot, called the Compact, right up to fully automated, centralised systems incorporating multi-axis robots from companies such as Fanuc and Kuka, together with LGVs, labellers, and pallet wrappers.

In its most basic format the Compact machine has a footprint of just 3.50 x 2.27 metres, weighs 1.5 tonnes and can make up to eight picks a minute, with multiple tooling allowing the 60kg payload to be fully utilised if required. Slip sheets can also be handled and empty pallets retrieved from a magazine.

Although Samas makes its own column robot for multiple line applications, the company is increasingly integrating robots from other specialists, explains UK representative Hansel UK. Normally these larger multi-axis robots can provide up to ten picks a minute and handle payloads in excess of 500kg.

In the UK Samas has installed systems in a diverse range of applications including stacking plastic crates onto trolleys, palletising frozen blocks of meat, palletising cases of cereal bars and also display trays of after dinner mints.

Gantry palletisers

With so many robot palletisers to choose from it is easy to overlook the value of the gantry or pick-and-place palletiser. Gantry machines are



Pick-and-place: CP-G Robot from Italian manufacturer Apsol can lift 40kg

very effective, low cost and compact dedicated palletisers and lend themselves to being added to even the most crowded production lines because, in contrast to a robot palletiser, the bulk of the mechanism is mounted above the pack conveyor and pallet position.

For example, the Palsys GRP-40 marketed in the UK by AMJ Maters is a compact, fully automatic gantry robotic palletiser with a pallet magazine and dispenser for 15 pallets and a low-level pallet conveyor to allow the full pallet to be removed by a pallet truck. Capacity is eight to nine cycles a minute with one or more packs placed on each.

One of the most recent to be installed in the UK has been designed so that a second gantry robot can be added to serve a future second production line. This means that as a single machine serving one line the GRP-40 occupies a footprint of 4060 x 3460mm and ultimately, as a twin palletiser for two lines, will occupy an area of 4060 x 4860mm.

A further example is the Euroimpianti Skilled 101, now available in the UK from Aetna UK. Said to be particularly easy to programme, it operates within a footprint of just 9sq metres, making it well suited to applications where floor space is at a premium. Its modular design also makes self-installation a



GMP palletiser: New machine from Pester is designed for operation in cleanrooms



Transportable: ETT palletiser can be moved on a compact frame that extends to the working position

practical consideration, says Aetna UK. Speed is 8-10 cases a minute with a 25kg capacity.

A zoned safety system based on light beams and photocells gives continuous operation by allowing a completed pallet to be withdrawn while, in an adjacent zone, the machine is starting to load the next pallet.

Then there is the CP-G Robot from the Italian manufacturer Apsol, represented in the UK by Integrapak.

This overhead gantry pick-and-place palletiser, with three independent axes powered by brushless motors, is said to have a particularly sturdy framework, allowing it to handle lifts up

to 40kg. Multiple grippers, which are able to handle different size items without change parts, can be employed to pick up to four cases per cycle, giving speeds up to 1000 cases an hour. Layer patterns are changed by the operator by inserting data from the touch screen panel or using the integral self-teach system.

In its basic version the CP-G robot loads the pallet while it is on the ground, allowing the machine to work without being fastened to the floor, and so be moved from one production line to another. Optional equipment includes an automatic pallet transport system, layer sheet feeder and automatic pallet magazine.

Sack palletisers

Sack palletising has always been a field where dedicated palletisers have been preferred over complex palletising systems not least because sacks have a tendency to change shape when they are conveyed for long distances.

Here, as in other areas of palletisation, there is an increasing use of industrial robots as the main palletising mechanism, but a new machine developed by Italian manufacturer Concetti – UK representative Golconda – is combining robot technology with traditional low level palletiser mechanisms.

On the Concetti PS-3A sack palletiser each layer is created on a twin stripper plate platform equipped with motorised pushers on all four sides. Each sack is picked and placed onto the stripper plates by a gripper tool that can rotate through 360deg and is driven along the x and y-axes by servo motors and a system of toothed belts.

Once the layer has been formed, the stripper plates open to deposit the layer on the pallet and then close and apply compression to the top of the stack to ensure a level base for subsequent layers. Speed is up to 100 bags an hour.

As on a standard low level palletiser the pallet remains on the conveyor while the stripper plate assembly rises to deposit each layer onto the pallet and once the full pallet has discharged, lowers to form the new pallet load.

Golconda says the PS-3A is ideal for products that are aerated or bags that are irregular or need to be overlapped. The result is said to be improved presentation and a more secure stack.

Dutch manufacturer Verbruggen has installed a number of sack palletisers in the UK market, among the most recent being a PM-HE 400 supplied to flour miller Heygates' Downham Market mill to handle a range of sacks in 16, 20, 25 and 32kg sizes.

The machine is a small, simple unit capable of a number of stacking patterns and incorporates a full stacking bin to support the bags on three sides as they are palletised to prevent them slipping out of place.

Elsewhere in the UK Verbruggen, represented by RJ Herbert Engineering, has supplied palletisers for applications including potatoes, coal, and pet food.

Palletising systems

Despite the advantages of dedicated palletisers it is important not to lose sight of the benefits of palletising systems. The usual rationale for preferring a system rather than a series of dedi-

icated machines is cost. So for instance if the choice is between four dedicated palletisers and a single palletiser plus conveyor system it may well be that the lowest cost option is the system.

However price is not the only factor. Many packaging lines are fitted into very congested factories and there may not be enough space to put even the most compact dedicated machine at the end of each line and so the only option is to convey packs to a remotely located palletising system.

The logistics issue

Logistics is another issue. With separate palletisers it is usually necessary to handle empty and completed pallets with separate fork lift truck movements at every palletiser. However, in a palletising system all of the machines can be supplied with empty pallets from a single magazine and the full pallets can be discharged onto a common conveyor, typically into a pallet wrapping or strapping machine.

For example, Adpal has recently supplied a major UK biscuit manufacturer with a fully automatic turnkey robotic palletising system consisting of two Newtec Palletisation Pal Vite 410i robots each handling three lines of different products.

The six pallet build positions are serviced by an automated pallet transfer car system to deliver up to three different types of wooden pallet to the robots.

Cases of biscuits are conveyed to the infeeds

of the two robots, with bar code scanning to verify and sort the respective products. Cases are then picked row by row for palletising and full pallets collected by the same twin position transfer system for transport to a fully automatic pallet stretch-wrapping machine also supplied by Adpal.

Another way of creating a systems approach is to take one or more robotic palletisers to the various lines on a transfer car.

This was the solution from Adpal for a major UK producer of wall coverings where a 'multi pallet' robotic palletising system is able to handle up to 16 different pallet loads at once.

The two MP35 robots move on transfer cars between several lines with empty pallets fed into the system by a twin transfer car. Layer sheets are picked by the robots themselves from magazines mounted at floor level.

Operating speed is typically up to 24 cases a minute, with varying sizes of case and a variety of layer patterns.

Industrial robots are the core of an increasing number of palletising systems, but it is worth remembering the advantages of high-level palletisers that are the basis of most high speed palletising systems.

The high-level palletiser has two main advantages: high output, because layers can be formed with the minimum of pack movements, and compact footprint because the layer forming operation takes place over the top of the pallet handling systems. ■

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For full details of all PPMA members able to supply palletisers, consult the PPMA machinery finder service, tel: 020 8773 8111, or visit www.ppma.co.uk

TOILETRIES AND COSMETICS

THE CONSTANT FLOW OF PRODUCT LAUNCHES MAKES THE ALREADY COMPLICATED COSMETICS AND TOILETRIES SECTOR AN EVEN MORE DEMANDING ENVIRONMENT.

MIXING AND PROCESSING

Aesthetics drive improved quality and consistency

Arguably, the aesthetics of the product are more important in toiletries and cosmetics than in any other sector – probably including food and drink. And while primary pack quality is essential, the appearance of the visible product itself through the pack plays an increasingly important role in consumer purchasing decisions.

So it is hardly surprising that many of the mixing and processing innovations for the industry aim to provide greater consistency in product quality, even where there are cost implications for the customer. This is especially true in the high-value market for active skincare and cosmetics – so-called “cosmo-ceuticals” – combining as it does elements of both personal care and pharmaceuticals.

Romaco may be best-known for its conical vacuum processors with external recirculation, the FrymaKoruma Dinex and MaxxD systems, but the latest addition to its range – the RoTwin – is a completely new departure.

Sales manager for process and primary packaging at Romaco UK, Nick Ruecroft explains: “This is a quite different concept, in that we have gone for the industry standard of a hemispherical vessel with twin rotor/stator sets. We’re trying to bridge the gap between the shear that can be obtained using a piston homogeniser and the flexibility of the rotor/stator system.”



That flexibility includes the ability to run the two sets of rotors and stators singly or together, and in counter or co-rotating mode. This allows the amount of shear force and ease of pumping of

a given product to be regulated. An inducer draws product down to the homogeniser and optimises recirculation, says Romaco.

The company claims that particle size is a key issue in both pharmaceuticals and cosmetics, notably where improved absorption through the skin is the objective. The aim with the RoTwin is to take particle size down to sub-micron or even nanoscale levels.

“The only downside to the system,” says Nick Ruecroft, “is that, although deflectors give a distinct recirculation path, batch times are slightly longer than with external recirculation.” In the worst cases, he explains, this can prolong processing times by a third. “But the fact is that, in most circumstances, for batches of premium cosmetics the process times are not as important as the final quality of the product.”

Fine tuning

Romaco FrymaKoruma’s Dinex system allows fine-tuning of the process cycle to suit the needs of particular products. Axial adjustment of the stator regulates the

lower part of the vessel, Mr Ruecroft explains. Recirculation to the lower level can be beneficial when very small batch sizes are required or where a foaming product needs to be fed under-level. Standard volumes on the Dinex range are from 150 litres up to 5200 litres with a 5-tonne working capacity. But one industrial detergents installation outside the UK runs a 14-tonne operating capacity.

The MaxxD is used both in food and cosmetics,



Reducing droplet size: Romaco RoTwin (above and left) is aimed at improving cosmetics quality

offering both a multi-chamber rotor/stator system and an alternative colloid head in a single vacuum processing system.

Earlier this year, Ytron-Quadro became a UK supplier of vacuum mixing units from French manufacturer VMI Rayneri. Equipment includes the Trimix, which is said to allow the handling of complex rheologies in a single vessel, and can be supplied in versions suitable for vacuum or pressure. It is fitted with side-scraping mixing arms, a contra-rotating central mixing system and a bottom-entry high-shear homogeniser.

According to Ytron-Quadro managing director Dudley Bradley, the intensive movement in the vessel ensures a homogeneous mix and efficient heat transfer. Vessel sizes range from a 3 litre lab unit to 20,000 litres.

But the core Ytron-Quadro range remains the Ytron Y directed jet mixer, the Ytron ZC powder incorporation unit and the Ytron Z in-line emulsifier. The latter can be used to process those creams and lotions which are either a water-in-oil or oil-in-water emulsion. The inline process, says Mr Bradley, produces a more consistent, superior quality emulsion in less time than conventional in-tank high-shear mixers.

The single-pass processing also creates a more consistent emulsion, he claims, with longer shelf life and stability, since there is less likelihood of phase separation.

Dudley Bradley points out that when carbomer and polymer powders are dispersed as rheology modifiers or structure-building agents in personal care products, in-tank technologies will often produce insufficient shear to reliably reduce particle size and so-called "fish-eyes" or clumps of powder. Alternatively, processing times may have to be extended to ensure uniform dispersion. Quite apart from the cost and operating implications of this, he argues, over-processing may also reduce the effective viscosity of the product.

Significant vacuum

Ytron-Quadro claims that its Ytron ZC unit addresses these issues. A significant vacuum in the reactor housing, created by the interaction between rotor and stator, ensures that powders are drawn down into the reactor head. Here, particles are subjected to intense mechanical shear prior to hydration into the liquid stream.

The Ytron Y is typically used in the batch dilution of "high active" surfactants. In a recent installation, two side-entry units were supplied to dilute 70 per cent sodium lauryl ether sulphate (SLES) in batches of 30,000 litres. Other applications can include the thorough mixing of colour into viscous creams, gels and lotions.

Working with partners including Axomatic, Excel Packaging Machinery is able to provide complete personal care and cosmetics lines, including mixing and homogenising. This equipment includes under-vacuum mixer-homogenisers, part of a range of Axomatic mixers with capacities from just 5 litres for laboratory use up to 3000 litres.

For lab-scale high-shear mixing, Silverson Machines has launched the L5 Series, which for

the first time features digital controls. Functions include a programmable timer, speed control with a wide range, ammeter and tachometer, all operated from the digital touch screen. The system is said to ensure repeatability when carrying out standardised tasks such as QA testing.

Over 40 interchangeable mixing units are available for use with the L5 range. Options include sealed units, tubular assemblies for narrow-necked or small containers, twin-headed duplex disintegrator units and a special in-line assembly. Capacity is up to 12 litres.

The company is equally proud of the consistent results achieved when the same processes are repeated on small and large-scale mixers. Long-term customer Peter Black Toiletries and Cosmetics confirms this point. A spokesman says: "Their laboratory mixers are equally good as the production size machines in the factory. When we scale up from the laboratory mixers, around 20g, to full production units, around one tonne, the results are always uniform and constant."

Of course, it is not only mixing which is required on a small scale. For heating and cooling creams, emulsions and pastes, Grunwald UK is offering the Terlet Terlotherm scraped surface heat exchanger. A compact version of the system is designed as a pilot plant, and is mounted on skids for manoeuvrability. The heat transfer area of 0.25sq metres is said to be ideal for experimental work or small-scale production.

The design includes a single mechanical product seal which, says Grunwald, does not need to be disturbed when opening the machine for inspection or for removal of the double-acting scraper blades. The same approach can be used to manufacture different sized units to suit the throughput required.

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Mixer range: Axomatic 60 from Excel Packaging

CLEANING, FILLING, SEALING, CAPPING

Small footprints and easy changeover

Romaco has announced its new-generation LVI liquid filler, and is planning the launch of a version tailored to the needs of the cosmetics industry later this year or early in 2007.

According to David Dixon, managing director of Romaco UK, easy access for cleardown is a major priority, but a small footprint and quick changeover capability were also key considerations in the design. High speeds, on the other hand, are not so important, and output is likely to be in the 60-100bpm range. It will offer particular benefits to customers filling difficult bottle shapes, with puck-handling as a solution, while the subsequent capping stage is designed for equally difficult closures and dispensers.

Increasingly, says John Pym, director at Excel Packaging Machinery, customers are looking for air-cleaning systems before the filling stage. Brand owners are less likely to tolerate dust – especially fine fibre particles – in product. In fact, says Mr Pym, with their concern for the aesthetics of their often high-value products, cosmetics brands can be more demanding even than the pharmaceutical industry.

Excel's principal, Italian manufacturer Omas, has introduced the continuous-motion GTS-20 bottle-blower which can achieve speeds up to 180 bottles a minute on oval or square containers. An infeed scroll takes bottles into the machine, where they are gripped and inverted in



High speed rotary filler: IMA Multifill F840 can be fitted with up to 24 heads

the turret before being blown and aspirated.

The company has also sold a number of semi-automatic blowing units equipped with two air-cleaning heads, rather than the 20 heads of the new automatic GTS-20.

But when it comes to filling, the main concern that Excel, like many other suppliers, identifies among customers is the need for flexibility. Even in what can be a relatively high-margin industry, machinery pricing can be a thorny issue.

At the capping and closing stage, says Excel, this has meant that changepart requirements have often been reduced in order to contain costs. But when it comes to French partner BCM's range of bottle unscrambling equipment, the demands of versatility have pushed the machine concept in the opposite direction. Now the machine manufacturer is increasingly offering changeparts where in the past many of these parts were fixed.

BCM supplies a range of unscramblers and

orientation machines for plastic bottles, jars and other containers. The machines can unscramble bottles and load them on to pucks at speeds up to 350 a minute.

Roll-up filling units

Certainly where filling is concerned, maximum flexibility and minimum downtime are key. Omas recently supplied one cosmetics industry customer with a complete line, in this case for filling perfume containers at speeds up to 120 a minute. In this installation, the Omas Total docking system allows the customer to move easily from volumetric filling to vacuum filling by using different roll-up units which fit into the same machine base.

Overall, Total modules are available for volumetric, gear pump, vacuum, peristaltic and particularly flowmeter filling which has become popular as a result of reduced downtime for cleaning.

A recent introduction to the Omas Total range

is a fully servo-driven filler. Servo drives operate the nozzle dive, pump filling and volume adjustment, with product parameters quickly retrieved from the memory.

As Excel's John Pym explains, the bigger international brands are less likely to work with co-packing partners that offer limited line flexibility. "If they're not equipping themselves for short runs and changeovers, the business is likely to go overseas," he comments.

But even where the filling technology is constant, says Excel, by having additional roll-up units a company can make significant savings on downtime between products. While one unit is being cleaned off-line, the second can be rolled up to start the new production run.

Another company with its sights set firmly on both production flexibility and turnkey installations in cosmetics and toiletries is IMA UK. The group has invested heavily over the last few years in developing the machine portfolio for its cosmetics division.

Sales manager Barry Chadwick notes that, along with the familiar cost and time arguments put forward in favour of turnkey lines, the ability to run a single factory acceptance test can make a huge difference for customers.

Among the more recent equipment from IMA is the Multifill F840. This high-speed rotary filler can be fitted with up to 24 filling heads, with rated output speeds reaching 450bpm. Maximum dosing volume on the servo-driven machine is 1000ml, with an ability to handle all types of plastic and glass bottles. The company says that, with optional automatic CIP/SIP, the system is ideal for big batch production.

Net weight filler

While the F840 uses volumetric filling, the IMA Electrofill is a net weight filler, ideal for viscous or foaming liquids. Versions are available with between 16 and 36 filling heads, again dosing up to 1000ml. IMA offers the option of a monobloc, which combines the filler with one or two closing options, including a capper with 6-12 heads. Speeds can be up to 300bpm. Again, CIP and SIP versions are available, and the machine can handle any bottle shape in plastic or glass.

At the capping stage, IMA now has the F850 series for a range of pumps, screw-on and press-on caps. Like the F840 filler, it is servo-driven for rapid size changeover and minimum maintenance. Versions are available in AISI 304 or AISI 316 stainless steel, in accordance with GMP standards, and Atex Zone 1 rated machines can be specified for flammable liquids.

Paris launch for cosmetics jar filling line

Italian manufacturer Marchesini has chosen November's Emballage exhibition in Paris to launch a new filling and packing line for jars of cosmetics. The line includes two new machines, the MAV50 vertical cartoner and the MCV850 vertical case packer, as well as an MV545 jar filling and capping machine and a Neri SL200DL2T labeller.

The new MAV50 is a vertical, intermittent cartoner in which the transport system has been designed to prevent scuffing by contact with the static parts of the machine, while the new opening mechanism picks the carton from a horizon-

tal magazine, turning it for filling from the top.

The jars, carried in pucks if required, are picked up and placed in the carton by a pick-and-place system which also loads leaflets either at the bottom of the carton – folded up around the product – or placed on top of the jar.

Cartoned jars are then passed to the new MCV850 vertical case-packer, a balcony style machine and the first Marchesini vertical case packer to use robot technology. Speed is up to 15 cases a minute.

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Turntable tube filler: Axomatic Optima 10 from Excel



Diagonal loop: IWK's latest tube filler, the TFS 80-1, uses the company's established system

Waldner offers a filling and closing system for glass or plastic jars in the cosmetics industry. Jars are fed in a single lane to the rotary table, with gentle handling ensuring that pre-printed containers are not scuffed. Using an indexing gearbox, the continuous motion machine delivers the jars to the filling station, which may use either a volumetric piston pump or mass flow meter. Up to six jars can be filled simultaneously.

The lidding station can apply either pre-cut lids or rollstock material, placing, cutting and sealing the lidding before transporting the containers out of the rotary table to a separate monobloc capper.

According to Waldner, format changes are simple, with the rotary table removed "in seconds" without tools, fill volumes altered via the touch screen and a new lid magazine installed.

When it comes to tube filling, IMA has the CO.MA.DI.S CD1090 machine, capable of speeds of up to 90 tubes a minute. Plastic and laminate tubes can be run on the machine, which operates a hot air sealing unit, while the filler features PLC control via a touchscreen. The design of the base of the machine is said to facilitate four-side access for maintenance, while size change has been simplified on the latest version, and can be carried out without tools.

IWK's latest tube filler is the TFS 80-1 for speeds up to 100 containers a minute, both plastic and metal. This machine is based on the same principle as the servo driven IWK TFS 80-2, TFS 80-4 and TFS80-6 tube filling machines, able to reach speeds of 150, 340 and 510 tubes a minute respectively. Indeed, since the launch of the concept in the late 1990s, IWK has sold over 40 of the TFS 80-6 machines alone.

Using a diagonal loop design, tubes are loaded and discharged horizontally, while the filling, closing and coding are carried out in the vertical plane.

Apart from tube filling and cartoning machinery for the cosmetics and toiletries industries in general, IWK says it has had particular success in the haircare market with several lines delivered for tube filling linked to IWK cartoning machinery for multipacks containing tube, bottle, booklet, sachet and glove/leaflet.

Speeds up to 21,000 an hour

Excel Packaging Machinery works with Axomatic on tube filling and closing. The company's Optima range of semi-automatic and automatic machines begins at speeds of just 1200 tubes an hour, and can reach up to 21,000 an hour. Complete lines from processing through to cartoning are supplied with recent deliveries including dedicated systems for mascara, cosmetic dispensers and two or three-colour toothpaste.

For its part, Romaco has the Unipac range of

tube fillers. The latest addition, the U20100, incorporates many of the features of the U2080, including fast changeover and high flexibility, but adds servo-driven pistons and diving injectors.

Another type of filling which is important for certain parts of the industry is vertical form-fill-seal. According to FJ Pistol Machine Services, which supplies the Piltz range of sachet machinery in the UK, the German company now has many international customers in both the cosmetics and pharmaceutical sectors.

Since Piltz first ventured into VFFS in 1975, says Pistol, it has developed a wide range of feeding options, so that anything from solids, powders and granules to free-flowing liquids and pastes can be packed in four-side sealed rectangular or profiled sachets. Options include a choice of easy-opening devices and 'bottle-neck' seals for easy dosing, while speeds extend to 1000 sachets a minute with a choice of feed technologies.

According to Pistol, the possibility of using VFFS to produce combined packs containing

Capless induction sealer for L'Oréal

Relco UK is supplying a second capless induction sealer to L'Oréal Poland, providing interesting comparisons with the first.

The machine is the latest FCS machine, cutting and sealing the foil in a single operation, compared with the previous model which used a pick-and-place system for the foil disc. This means that cycle time is faster allowing the five head sealer to reach speeds of 100 containers a minute.

Another new feature of the machine is an

accumulation and auto-feed device to manage the flow of jars through the line.

According to Relco, sealing before capping is growing in popularity among cosmetics manufacturers. This, says the company, is because it allows companies to fit the cap afterwards in the knowledge that there will be no potential problems regarding cap fit, torque or heat-affected re-seal liners.

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both liquids and granules is of particular benefit to the cosmetics industry.

Another champion of VFFS is Koerber Medipack UK, which has the MediSeal company as part of its parent group. MediSeal specialises in sachet machines, with the LA300 as its principal system for personal care and cosmetics. Once again, the intermittent-motion machine can be equipped to handle a wide range of products, from folded tissues or powders to high or low-viscosity liquids. Contoured or shaped sachets can be produced as well as conventional square or rectangular shapes.

Draw-off is by servo-driven rubber rollers, allowing rapid adjustment of sachet length and also minimising stress on the material. While the LA300 uses heat sealing, the LA400 was shown for the first time at this year's Achema exhibition with an ultrasonic sealing system.

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Labelling cylindrical items: Sessions' RC30 uses a walking beam for indexing the containers

As well as PLC control, the rotary machine features options including laser printing of variable data and a camera-based OCV/OCR verification system. It is also possible to link the labeller to PC-based management software, and make it compliant with electronic records regulations such as 21 CFR part 11, says IMA.

Top speeds on the Libra Sensitive Roto are around 21,000bph, and the system can apply labels to both sides of round, oval or square bottles while also being equipped with a gluing station to handle outserts for flat-sided containers.

As in other industries, customers are continually pushing for higher labelling speeds, says Sessions of York. But improved registration and the ability to run different label substrates on the same machine also figure prominently among their priorities.

One constant now is the need for equipment to handle clear labels. Here, Sessions uses a capacitance scanner to fix the label position on the web, says machinery division manager Peter Haw, but ultrasonic scanning technology is also available for high-end, high-speed applications.

Accurate label registration is vital with the smaller containers used for many cosmetics and personal care products. "It's especially important for point-of-sale," says Mr Haw. "If you have one label in a line of ten that is misaligned, it really shouts out. We have a pick-and-place unit to address this issue."

Normal tolerance on positioning is ± 0.5mm, he says, but much greater accuracy can be provided if required by the customer.

Like equipment suppliers at other stages of the line, labelling system companies are increasingly having to address the needs of contract packers.

The Sequence range of machines, says Sessions, can handle the full range of bottle shapes: oval, round, square and rectangular.

For jars and other containers, Sessions tends to use a puck system to build maximum versatility into a machine. Peter Haw explains: "It becomes a materials handling issue. How do you get the particular container past the labelling head at the speed that the customer requires – which may be up to 60 a minute?"

Small cylindrical products

According to Sessions, the small containers that are so typical of the cosmetics industry pose particular challenges. Its RC range of machines may have been around for 25 years, but with the more recent addition of PLC control and onboard diagnostics, the RC30 in particular has evolved into a ready solution.

"Small cylindrical products such as eyeliners and lipstick are very difficult to transport through the labelling process," says Peter Haw. "The RC30 uses a walking beam, which transports product on its side to an indexing carousel."

Similar methods are used in sleeving, with Turpins Packaging Systems' Sleeveit horizontal system applied to tamper-evident or full-body sleeves for eyeliners, mascaras and lipsticks. Again, a walking beam transport system is used, indexing the product gently through each station.

Sleeves are cut and applied while the container remains horizontal, before indexing to a station which positions the cut sleeve accurately for the desired overhang. The sleeve is then fixed in this position, before the packs transfer to the tunnel section, rotating during the shrinking process for the best appearance.

LABELLING

High levels of QA follow pharma procedures

The overlap between the pharmaceutical industry and cosmetics/personal care is equally in evidence at the labelling stage. Suppliers such as IMA UK are offering the industry systems with high QA specifications, such as the Libra Sensitive Roto.

Bar codes, batch numbers and other fixed and variable data can be added to the sleeve as it is applied with the inclusion of an onboard printer. By avoiding the need for additional labels, Sleevevit says this capability has proved to be a real cost benefit for the personal care sector.

For labelling cartons rather than primary packs, Partners in Packaging has introduced the Etipack System 9 for print-apply application in both pharmaceuticals and cosmetics. The high-speed system offers variable and sequential printing, and is able to reach speeds up to 200 labels a minute in print-apply mode or twice that when applying labels without overprinting.

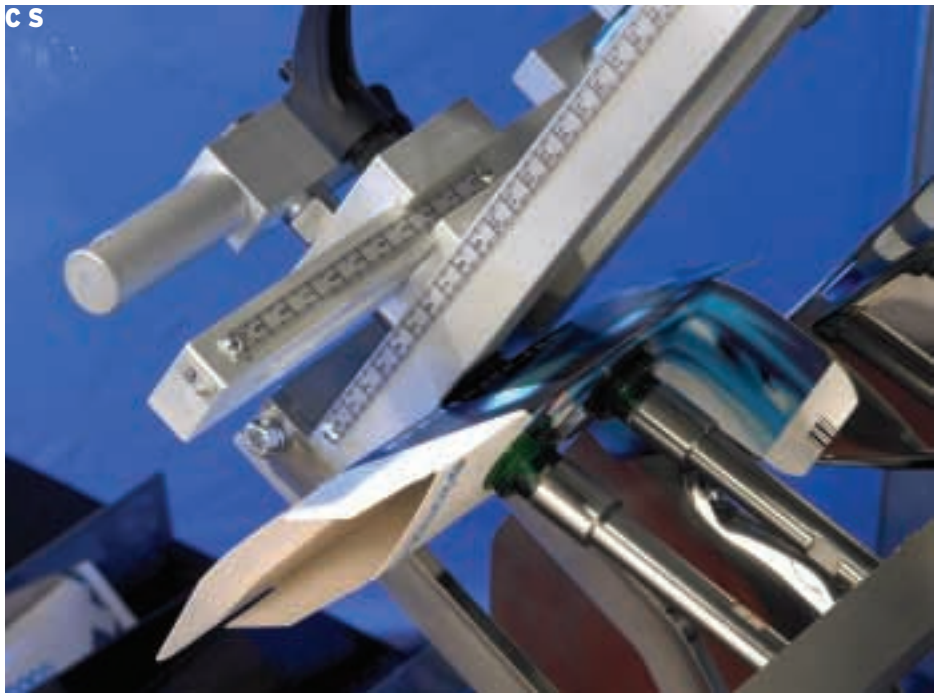
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Positive cartoning opening: Romaco Promatic cartoners use two suction cups

pick-and-place for leaflets and inserts and is built on a balcony basis for ease of access and maintenance.

Another vital element in quality presentation, particularly for fragrances, is of course carton overwrapping. IMA's BFB AC60 is said to be a low-cost machine designed for quick changeover, and can reach speeds of 60cpm. The adjustable folding box ensures that expenditure on change parts is contained, says Barry Chadwick while new design features facilitate smooth handling right through the wrapping process, he claims.

To complement the overwrapper, IMA supplies the BFB Skin Wrap Tunnel. This was specifically designed to meet the needs of wrapped fragrance cartons, says the company, and shrinks the film to a "skin-tight high quality finish".

Having already made inroads into the French cosmetics and toiletries industries with the TM85 trailing edge overwrapper, Marden Edwards has launched the TM100 machine to produce the same quality of wrap on a greater range of carton sizes. The TM100 is aimed at all applications where shelf presentation is paramount and is said to produce a tight, wrinkle free wrap with crisp end folds and a lateral seal position which is positioned on the trailing edge.

The machine is designed to provide simple "de-skilled", rapid product size changes and for the size and position of the lateral seal to be easily controlled.

The machine combines the latest servo technology coupled with traditional mechanical design. This means that all the motions that do not alter when the product is changed from one size to another are connected with cams and levers. However the film draw and the pack



Tight wrap: Marden Edwards has introduced the TM100 trailing edge overwrapper

transfer are driven by servo motor so that the film cut length is automatically set by the machine controller and the infeed pusher automatically optimises its position and stroke depending on the size of the pack.

Standard options for the machine include a film slitter and powered rewind unit – allowing one film width to be stocked for many different pack sizes – a tear tape unit to add an easy open tab to assist unwrapping and a print registration system.

For the last few years, Romaco has been working on extending its range of Promatic cartoners which, explains Romaco UK managing director David Dixon, involved going back to first principles in developing a small-footprint machine range that offered GMP design, easy access and

CARTONING AND OVERWRAPPING

Flexibility the key in cartoning and overwrapping

The theme of flexibility is carried through the cartoning stage for IMA, which singles out the Flexa horizontal cartoner for cosmetics applications. Available in continuous and intermittent versions, it offers speeds of around 200 a minute on a relatively small footprint. Again, IMA has opted for servo drives in key applications, with touchscreen machine status monitoring and access to size data.

IMA claims that its belt carton transport system ensures the smoothest forming and closing as well as product and leaflet insertion.

For lower output requirements, the IMA Easy copes well with low speed and large size applications. The intermittent motion machine has a top production speed of around 80 cartons a minute, says the company.

Meanwhile, sales manager Barry Chadwick calls IMA's Vertima vertical cartoning machine "the contract packers' dream". It uses servo

quick changeover. Output has also been raised.

Starting with the intermittent motion P91, which reaches speeds of around 90cpm, Romaco has since added 200cpm, 300cpm and most recently a 400cpm continuous motion version of the machine.

The Promatic range is said to take particular account of the high-quality cartons that are so prevalent in the cosmetics and toiletries industry. "In earlier design concepts, a blade was put into the flat carton blank to open it prior to loading, or pressure was put on the carton edge, but either of these approaches can damage the carton," says David Dixon.

Instead, the Promatic range uses positive opening from two suction cups. Once the blank is opened, says Mr Dixon, the machine's careful handling continues with support for the base to supplement the more conventional "finger" grip across the width of the carton.

Servo drives

The more recent additions to the Promatic range, such as the 300cpm PC 4300, are equipped with servo drives with logic control. As well as the implications for ease of programming and minimal maintenance, Romaco points out, the resulting precision of machine movements helps to further reduce the likelihood of damage to cartons.

CAM, represented in the UK by Campak, has both vertical and horizontal cartoning machines and says that over 9000 of its low-cost AV vertical machines have been installed worldwide. For more complex, or higher speed, applications the company recommends its AVC continuous-motion machine. This is particularly relevant to the automatic loading of erected cartons where the product needs to be kept upright.

As an alternative, CAM's HV/HG continuous horizontal system uses positive carton opening devices and comes with a complete range of automatic feeding systems for the products themselves and additional items such as leaflets.

Like IMA, CAM combines expertise in cartoning with a strong offering in overwrapping. The company says it has installed the first of its new RV/P machines, claimed to be one of the fastest on the market. The machine, delivered to a manufacturer of lotions and creams, is able to overwrap and spot-seal cartons at speeds up to 180 a minute, says CAM, while retaining wrap quality.

For simpler, round-the-clock production, CAM has the AP overwrapper. A recent installation in the UK of this in-line film feed system, in this case equipped with teartape application, saw

seven machines going to a major customer in the industry.

For overwrapping display presentation packs, Adpak has recently supplied semi-automatic L-sealers to companies wrapping products including Estée Lauder perfume gift boxes and Tommy Hilfiger cosmetics.

In automatic L-sealing, Adpak has the AD6000 range, introduced a couple of years ago. This equipment is said to ensure that there is virtually no air inside the wrap giving a clean look after shrinking without excess film, unsightly ears or the risk of wrinkling on the underside. It can be used as a standalone or inline system.

For continuous side-seal wrapping, the BVM range marketed by Adpak is equipped with a system for trimming the seal, and can achieve speeds up to 250 packs a minute.

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Deodorant cases: produced on the Cama system

which, combined with a precise release of film tension in the pre-heated upper sealing bar, can provide a film saving of as much as 10 per cent, explains Partners in Packaging. As well as collations with or without base boards or trays, the machine can wrap individual packs while a shrink system can be added for a side film overlap.

When it comes to shrink for transit, Adpak says it has developed sleeve wrappers and tailored infeeds specifically to meet the high quality requirements of customers wrapping shampoos, body washes and deodorants. Both semi and fully-automated versions are available.

Another company focusing on sleeve wrapping for transit is Erapa. Its machines, which the company says include the latest collation and safety systems, can again be tailored to customer needs. This means the wrappers can either be integrated with existing infeed units, or equipped with a new infeed supplied by Erapa.

Also for wrapping bottle collations in polyethylene film, Pester Pac Automation has already installed versions of the Pewo-Pack 450 shrinkwrapper. This combines a compact design with a balcony-style design for hygiene and easy access. A multi-axis robot is used to orientate and collate up to 12 bottles at a time and the 450 is able to handle up to 300 bottles a minute. Simple changes to the robot gripper head and infeed pusher plate allow different bottle sizes to be wrapped, while there is also a version available for cartoned products.

Yorkshire Packaging Systems has recently supplied three Rochman shrink-wrapping systems to the Bradford factory of Hallam Beauty, formerly Harmer Personal Care, contract manufacturers of cosmetics and hygiene products which includes both shampoos and shower gels.

COLLATION WRAPPING FOR TRANSIT

Combining speed with gentle pack handling

With such importance now attached to the appearance of toiletries and cosmetics packs, end-of-line functions such as collation shrink or stretchwrap and case-packing are frequently required to combine speed with gentle handling.

Partners in Packaging says the ServoFox stretchwrapper from MAF, Germany, manages to pull this off by using – as the name suggests – servo drives for speeds up to 50 cycles a minute, an increase of 30 per cent over the previous model says the company.

The ServoFox uses a patented stretch method



Preference for shrink-wrapping: Hallam Beauty has installed three Rochman shrinkwrappers

To achieve shelf-ready packaging the initial order was for one unit with a new built-in pack clamp and backup sensor allowing both trayed and trayless packs to be produced. The second and third shrinkwrappers were installed in the following ten months and almost 95 per cent of the factory output is now being shrink wrapped.

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CASE-PACKING AND END-OF-LINE

Meeting the automation challenge

Some of the greatest challenges for machine builders come when they are asked to replicate the flexibility of a manual packing system in an automated format – especially where space is limited.

Pester Pac Automation UK says this is exactly

how the company's Pewo-Form Top-Loading Casepacker (TLC) came about. A major cosmetics manufacturer in Germany needed to pack tubes and cartons into cases on the same line, and so simple changeover is provided courtesy of of snap-on/snap-off infeed chain carriers and a replacement robot head. This is said to be achievable in just 15 minutes.

For cartoned product, the TLC takes items from a dual-lane servo-driven infeed, with the tubes inside the cartons always orientated so the cap is in a downwards position. The robot picking head then loads collations of six cartons into cases at speeds of 30 cases a minute or more, says Pester Pac.

Tubes without cartons are presented to the TLC on their sides, caps leading. They are pushed into self-orientating pucks, flipped upright and turned through 45deg. Again, collations of six are picked up by the robot and loaded into cases erected on the TLC machine.

The same theme of compact design is taken up by Italian manufacturer Cama, specifically with its monobloc case-packing system for deoderants. Instead of using a wraparound approach, Cama has two robots with carbon fibre arms. The first of these picks and places an empty pocketed plastic tray into the pre-formed case. The second then loads each collation of six deoderant bottles into position. Case sealing is integrated into the monobloc, all on a footprint of less than 3 x 2 metres. Speeds can be up to 40 cases a minute.

One of the distinguishing features of toiletries and personal care, according to Cermex UK, is the wide range of bottle and container shapes. Says area manager Dick South: "Many of them look great on shelf, but are a nightmare to handle." He adds: "This is one of the reasons why

we've done a tremendous amount of work for companies such as L'Oréal, both in the UK and around the world."

Any container that needs a puck to support it through the earlier filling and packing processes should set warning lights flashing at the case-packing stage, he warns.

Cermex has tackled similar challenges to Pester Pac in using a robotic system to casepack a single product in two formats: tubes and tube-in-carton combinations. As Dick South explains, this is a common problem for multinationals supplying the same personal care brand from a single production line to different countries.

Even where the primary pack combination is more standardised, changes in the retail supply chain make flexibility an increasing requirement at the transit packing stage. Cermex says that the parallel requirements of transit and shelf-ready packaging have led it to introduce the SW side-loading casepacker, which can cope with both RSC and wraparound blanks. Speeds can be up to 15 cases a minute.

In the UK, the retailers' focus to date in insisting on shelf-ready packs has been the food and drink industry. However, many in the toiletries and cosmetics sector are planning ahead, looking

at combining capabilities for a single-piece pack with a tearout and a two-piece shelf-ready option on the same machine, says Mr South.

"Some packing operations need to retain a full wraparound capability along with a tearout or a two-piece pack, and some people need to do all three," he reports.

Compact machine design

IMA says that the latest version of the BFB CP18 side-loading case-packer is particularly suitable for packing individual or bundled cartons or trays into pre-glued RS cases. According to sales manager Barry Chadwick, the fact that product is stacked directly in front of the main pusher helps to make the machine especially compact. The cantilever design makes for easy access, he adds, and the horizontal case magazine is easily replenished.

Forced opening of the case with suction cups ensures that it is perfectly square at the loading stage. Closing is with either tape or hot melt.

Of course, even with all these degrees of automation available, some brands and contract packers prefer the flexibility of a hand-packing operation at end-of-line. For example, Transnorm supplies different types of conveyor to Runcorn-

based personal care specialist EC De Witt, including table-top conveyors for manual packing into cases. Other Transnorm conveyors are used to link upstream inline machinery.

A subsidiary of CB Fleet in the US, De Witt produces brands including Witch and T-Zone in skincare, Clinomyn in oral hygiene and Summer's Eve in feminine hygiene.

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If cost wasn't an issue, bottlers would go for pressure sensitive labelling every time says Mark Heath, sales manager with Krones UK. "Pressure sensitive machines are easier to maintain, plus the labels look much better than wet glue – particularly where filmic labels are used – and don't peel off when the bottle is sitting in an ice bucket."

However, cost is an issue for every bottler, which is why, despite the obvious advantages of pressure sensitive labels, the economics of wet glue labelling have long assured its position as the label application method of choice for the bottling industry.

That was until a decision by one of the world's largest breweries, Heineken, to switch to pressure sensitive labelling for its complete range of bottled beers signalled a break in tradition. Two other major breweries followed suit, triggering an industry-wide shift towards self adhesive labelling.

While the main reason for this move is label aesthetics, improvements in bottle drying and label applicator technology have also made self adhesive labelling a more viable proposition.

Historically, a 'wet' production environment prevented breweries from applying pressure sensitive labels on-line. "To put a pressure sensitive label on a bottle, the bottle has to be absolutely dry and in a brewery environment it isn't, so bottlers had to buy in bottles that were labelled by the glass manufacturer," explains Mark Heath. "Significant developments in bottle drying technology have now made it possible for bottlers to apply pressure sensitive labels on-line."

In addition, label applicators have become quicker. "One of the biggest disadvantages of pressure sensitive labelling versus wet glue labelling has always been speed," points out Mr Heath. "A wet glue labeller can produce 70,000 bottles an hour. Pressure sensitive labels are on a web, which makes them difficult to run at high speeds. However, web speeds have increased considerably in recent years and some applicators can now achieve in excess of 115 metres a minute compared with, say, 30 metres a minute three or four years ago."

A flexible labelling system introduced by Krones has also eliminated some of the risk associated with investing in pressure sensitive technology. The company's Modul concept allows wet glue labelling and pressure sensitive labelling to be combined using a plug-and-play design that allows the APS 2 applicators for pressure sensitive labelling and the wet glue

Thin is in for decorative labelling

A SHIFT FROM WET GLUE TO PRESSURE SENSITIVE IN THE BREWING INDUSTRY AND THE ADVENT OF LINERLESS LABEL APPLICATORS ARE AMONG KEY DEVELOPMENTS IN DECORATIVE LABELLING.



High speed: Harland Pulsar system applies ultra-thin labels at elevated speeds

stations to be easily interchanged. Users even have the option of using the pressure sensitive and wet glue stations simultaneously. A premium product could, for example, have a no-label look for body and back, plus a classic, wet glued neck ring.

Elsewhere in other industries, where the use of pressure sensitive labels is well established, manufacturers are looking to drive down costs by using thinner label materials.

However, downgauged materials present a number of problems, as Des Dunleavy, marketing manager with Harland Machine Systems,

explains. "You get a lot of static with thinner materials, so when they are dispensed off the beak, they are difficult to control."

Harland has developed its Pulsar continuous motion label applicator specifically for dealing with ultra-thin labels at high speeds. The label supply reel unwinds at a constant speed, reducing the effects of inertia within the system to the point where only a single dancing arm is required at the unwind, and none at all on the backing web rewind. Labels are taken up one at a time by an intermediate transfer belt which changes the on-reel pitch to product pitch.

DECORATIVE LABELLING

While label web unwind speed and delivery speed to the transfer belt is controlled to match labels to products in numerical terms, the transfer belt itself runs at the higher linear speed of the product feed. In this way, as labels are taken from the web, the normal 3mm interval between them is automatically increased and adjusted to the product pitch.

Once the label is picked up on the transfer belt, its position is sensed and adjusted momentarily up or down, to correct any deviation before product feed speed is resumed for application.

Because the label is controlled on the transfer unit, it no longer has to jump across an air gap while being accelerated for application, the point at which low gauge materials tend to misbehave.

Sessions of York says it overcomes dispensing problems with thinner materials by upgrading braking tension on the web, using powered unwind units to even out reel weight throughout a run, and using a glassine backing to inhibit web breakage. The company's machine division manager, Peter Haw, notes that thinner labels – in particular transparent labels either on opaque or transparent backing webs – also pose problems for scanning the label, both on the machine to arrest the web and after application to detect label presence on the product.

To address these issues, Sessions uses capacitance scanners, which detect the change in web thickness as opposed to visually scanning for end of label colour change. "This enables us to detect the label gap even when it can't be seen," explains Peter Haw. "To spot label presence when the label is clear we can coat it with an invisible ultra violet varnish and use UV scanners to detect it."

Peter Goff, UK sales manager with Herma UK, says the key to dispensing thin film labels is consistent, constant tension and sensors which are capable of detecting those materials. "The Herma applicator has always had a very straight web pass, so there's virtually nothing between where you unroll the labels and dispense them."

In addition, Herma's 400 range of applicators features a patented inductive label sensor, which measures the difference in thickness between a label and its carrier. Herma says this makes the unit ideal for sensing clear labels on a clear carrier – even at high speeds.

In common with some other labelling systems manufacturers, Sessions of York has gone one step further and pioneered a system which is



Handling clear labels: Herma 400 Series machines use an inductive label sensor

capable of applying linerless labels in both top and side mounted modes.

Perforated labels in web format are driven across a pair of twin conveyors. When the perforated joint reaches the point of the interface between the two conveyors, the first conveyor stops and the second accelerates, to break the perforation. The detached label is then transported to the end of the conveyor and waits there. When the product passes by, the conveyor starts and the label is applied.

Linerfree system

Similarly, Xact (a division of the Lawtons Group) has joined forces with Danish equipment manufacturer HM Labelling to bring the Linerfree system to the UK market. The first installation of the system was three years ago in Denmark, when Arla Foods installed one of the systems for carton and pallet labelling, and has since seen savings of 30 per cent on labelling costs – including indirect savings such as fewer stops, lower stock costs, faster label changes and minimal maintenance.

There's no denying that the linerless label proposition sounds attractive – particularly to the ecologically-minded manufacturer. However, as Sessions' Peter Haw concedes, linerless labels do have their limitations: "You are limited with shapes, in that you have to have sufficient common area between the shapes of labels to attach them together and keep them together. For example, a diamond shape would be difficult because you wouldn't have enough intrinsic strength in the web. So the majority are ovals, rectangles and squares."

A system that potentially offers greater flexibility is the Lightspeed LaserSoft, which is in development at Harland. By bringing together three technologies – digital printing, die-cutting and continuous motion application – the system

gives the end-user complete control over the labelling operation. "Users will be able to change the design of labels when they want to, include on their labels exactly what they want to, print on demand and die cut to the profile they want. It really lends itself to big users of pressure sensitive labels who run dedicated products, because the actual capital cost of the unit will be expensive," says the company.

At the heart of the concept is a laser die cutter which enables the system to cut the profile of the label while it is on the web, in contrast to more conventional systems that require die cutting to be undertaken on press. After die cutting, the line strips off the remaining matrix, accelerates the cut labels to product pitch and applies them using the Pulsar system.

Another current focus area for Harland is the integration of vision systems into the labelling operation. "We're seeing increasing demand from manufacturers of toiletries and cosmetics for systems that incorporate vision technology, because the look of their products is so key to customers. A lot of supermarkets will reject goods with poorly applied labels, so producers can't afford to get it wrong."

Harland can deliver systems which combine label application with on-line vision inspection, checking that batch codes are correct and that labels are applied accurately. It has also launched a bottle turning device which uses vision to check that bottles are correctly orientated before labels are applied.

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For full details of all PPMA members able to supply decorative labelling machinery, consult the PPMA machinery finder service, tel: 020 8773 8111, or visit www.ppma.co.uk

Adding up the true cost of lost production

Companies using pressure sensitive labelling machines could be in for a shock if they calculated the complete cost of lost production as a result of both poor machine utilisation and reduced efficiency from unsuitable equipment and materials.

That's the conclusion of machinery and materials supplier Pago, which has developed a computer programme called Pago IQ to help analyse cost and performance issues with labels and labelling machinery.

"In one case involving a toiletry product and a rotary machine we calculated that a more appropriate label with better quality materials could have saved downtime costing around £300,000 in a year," explains a spokesman for the company.

The programme works from a series of inputs including basic data on the product being manufactured such as filling speeds, factory gate price, all value added factors including the cost of the packaging, actual post-labelling output and machine downtime.

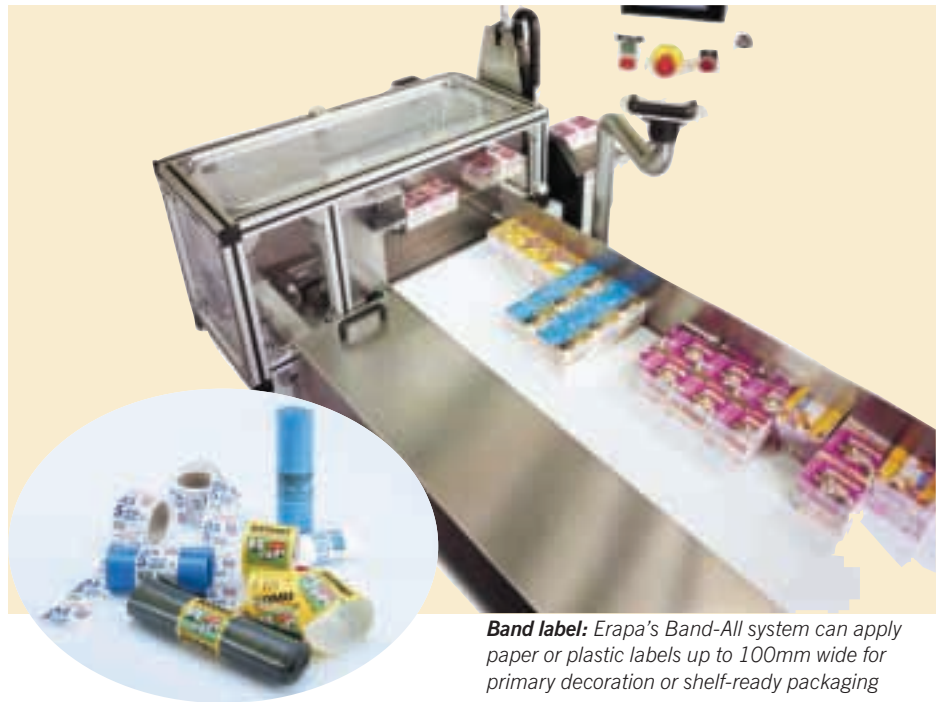
"That downtime can be caused by any number of things, but it gives a starting point to identify the line efficiency, versus the utilisation factor," explains Pago.

"If someone has a complex business in which there are a lot of changeovers, then their utilisation will be low because of the number of changes that they make. But they may be able to run very efficiently when they are running."

In Pago's experience, low utilisation as a result of high complexity means that lines rarely reach their theoretical efficiency levels anyway.

"In that sense it's a guide, helping people understand the basis of making decisions on what machines to purchase because obviously, if you've got a highly fragmented business you want machines that are extremely quick to set up – with minimum changeover time between sizes – and you want them to be capable of reaching maximum speed very quickly."

Nevertheless there is an inescapable link between machines and materials, points out Pago. A simple web threading path can, for example, eliminate risk of edge nicks in the reel and the possible consequence of web breaks.



Band label: Erapa's Band-All system can apply paper or plastic labels up to 100mm wide for primary decoration or shelf-ready packaging

"Very often what prevents the machine achieving its efficiency is that the materials are not specified correctly. But you can't solve a problem by putting expensive labels through an incorrectly specified machine, particularly if the often cheaper machine can't be set up quickly."

The Pago IQ programme also includes a complete checklist for operators, helping them identify some 54 different material-related problems although, as the company has found, just 15 label quality issues account for some 80 per cent of problems experienced with labelling machines.

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ERAPA (UK)

Banding system saves material

The range of Band-All banding equipment from Erapa can apply labels up to 100mm wide at speeds up to 35 a minute or, used with plain paper, create shelf-ready packaging or band products such as rolls of plastic sacks.

The range extends from a desktop model to fully automatic lines, with models available to apply bands to ready meals trays, reducing materials cost compared with board sleeves.

Bespoke arch sizes are offered to the user's specification and machines can be manufactured in stainless steel if required.

Paper or polypropylene film bands can be printed or plain and printed on line with variable information such as bar codes and best before dates.

For shelf-ready packaging, the desired number of items are banded together before case-packing and then removed as a single item at the point of sale.

Erapa points out that once the product is on the shelf, the shelf-stacker only needs to tear the band off, so avoiding use of knives or scissors.

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PREMIER LABELLERS

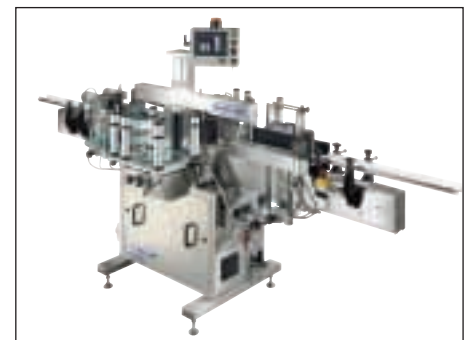
Five applicators for pharma

Premier Labellers has supplied Sauflon Pharmaceuticals with three Premier 200 pressure sensitive labelling machines while a further two units are now on order as well.

The machines are able to apply front, back and wraparound labels to most shapes of container and are fully adjustable, with a touch-screen control in which 500 label formats can be stored for immediate recall.

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Chosen for pharmaceuticals: Premier 200 pressure sensitive labelling machine

PAGO UK

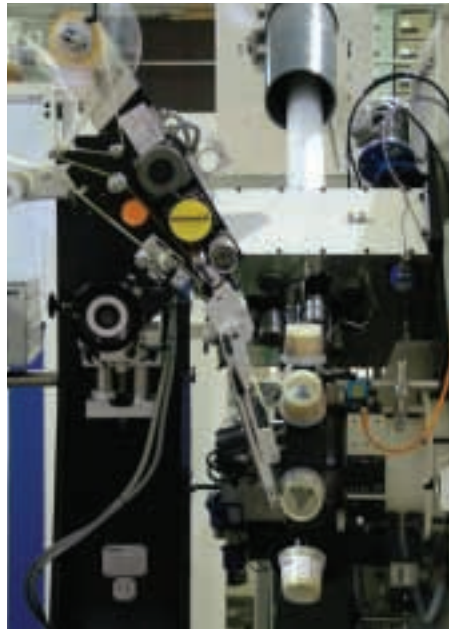
Wraparound or patch pot labelling

A rotary labelling system that allows conical and cylindrical pots to be decorated with full wraparound or patch labels at speeds up to 120 pots a minute, and then be restacked ready for transfer to a filling line has been developed by Pago and Dutch manufacturer Offset Machines.

At the heart of the system is an eight station wheel that indexes vertically to be fed with pots, rotates them on variable speed mandrels in front of the labelling head – or heads – and then brings them round to the restacker. Here, after optional check-counting, the pot stacks arrive on a buffer table for collection by the operator.

This indexing wheel – based on Offset's established pot printing equipment – is in fact capable of speeds up to 450 pots a minute, the limitation being label dispense speed and label length. Containers of 50-180mm diameter and a maximum height of 200mm can be handled.

The PagoMat labelling head has a heavy duty support within the pot handling machine, allowing it to be positioned to suit the product, and is



Pot labelling: Rotary system developed by Pago and Offset Machines

microprocessor controlled with memory for details of 99 products.

Offset's pot handling system can easily and quickly be set up for different pot dimensions. Feeder height, feeding screws, guiding bars and restacker belts are said to be capable of being set within minutes.

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TURPINS PACKAGING SYSTEMS

Sleeve labelling on a budget

Turpins has announced the latest version of the Sleevevit SleeveMaster SL sleeve labelling machine which is now equipped with servo drive and PLC control.

Aimed at lower volume users, the machine is able to apply sleeves to all types of products up to 100mm diameter – both round and non-round – using low cost changeparts and can also register the sleeve to the container. Sleeves from 50 to 300mm in length can be applied.

Mounted astride a conveyor and housed in an integrated guarded enclosure, the SleeveMaster SL machine is said to provide all the necessary elements of product separation, timing, sleeve application and line control in a compact package.

A full range of preheat and final shrink-tunnels using recirculated hot air is available together with the Shrinkmaster 2000 unit which operates using steam.

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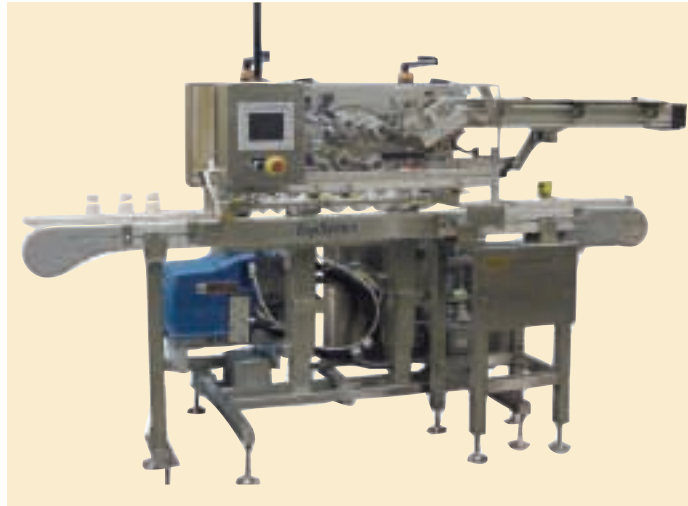
PARTNERS IN PACKAGING

Topserter adds leaflets to bottles at 300 a minute

An applicator for patient information leaflets and booklets that fixes the folded document to the top of a primary pack at speeds up to 300 a minute has been introduced by Partners in Packaging, UK representative of the US manufacturer MGS.

Based on a four head high speed rotary pick-and-place unit, the TopSertter II applies outserts from 25 x 25 x 1mm thick to 75 x 75 x 4mm thick to caps on bottles measuring from 25 x 65mm high to 100 x 200mm high.

Bottles arriving on the infeed conveyor are controlled using a driven scroll feed, which pitches them into position for a dot of peelable adhesive to be applied to the top of the cap. The continuous motion rotary pick-and-place feeder then applies the patient booklet or leaflet.



Top of bottle: TopSertter can place leaflets at 300 a minute

The TopSertter II features missed outsert feed detection and is fitted with an easy-load ergonomic high capacity leaflet magazine. Security systems including bar code scanners, vision systems and smart sensors can also be

incorporated in the machine.

In addition, MGS TopSertters can also be used to apply patient information leaflets and booklets to the side of bottles and cartons.

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KHS UK

Extra flexibility in aseptic filling from neck ring isolator

Aseptic cold filling equipment from KHS can now be equipped with a neck ring isolator system that allows Class 100 cleanroom conditions to be maintained from the neck ring upwards, so allowing the machinery to handle a variety of container body shapes without modification.

"Today it could be plastic bottles, tomorrow carton bottles – everything is possible", says the company.

To maintain class 100 cleanroom conditions, sterile air is supplied directly to the neck ring isolator through a HEPA filter



Flexibility: Neck ring isolator allows a variety of container shapes to be handled

with laminar flow achieved immediately above the open bottle mouths. A slight overpressure is also maintained in the isolator.

Compared with the KHS ACF dry sterilisation system using mini isolator technology, the new neck

ring system operates with just 10 per cent of the volume, says KHS, reducing sterile air consumption and also the use of chemicals for cleaning.

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EXCEL PACKAGING MACHINERY

Bagger is aimed at operations in harsh environments

A vertical form-fill-seal machine aimed in particular at operations in harsh conditions is now available in the UK from Excel Packaging Machinery, representative of the Italian manufacturer Pentavac.

Built in stainless steel, the Penta 3100 employs electrics sealed to IP65 and can be equipped with liquid pump dosers, elevators for mozzarella cheese, multihead weighers, auger fillers for powders and volumetric dosers.

Excel points out that the height of the machine and the large maximum bag dimensions of 375mm wide and 600mm long – using a double stroke facility – make it particularly suitable for multipacks of food as well as bulk bags of rice, pasta, salt, and salad.

An intermittent motion machine, the Penta 3100 is capable of speeds up to 42 bags a minute.

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D2 FOOD SYSTEMS

Space-saving tray sleever

The automatic D2100 PGS pre-glued tray sleever from D2 Food Systems has been specially designed with a small footprint and is capable of handling up to 60 packs a minute.

Available as a stand-alone unit or as part of a complete end-of-line system, the sleever is fully adjustable, with no change parts, and can handle a variety of outers from full sleeves to watchstrap varieties.

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DIARY DATES
sponsored by
Machine Building
DRIVES & AUTOMATION
NEC, Birmingham, UK, February 14 & 15, 2007

15-17 November: Brau Bevale beers and soft drinks industry exhibition. Nuremburg. Details: www.brau-bevale.de

20-24 November: Emballage 2006 packaging machinery and materials show. Paris. Details: www.emballageweb.com

2007

30 January - 2 February: Upakovra packaging and converting machinery exhibition. Moscow. Details: www.messe-duesseldorf.de

8 February: PPMA Seminar on the operation of the RoHS Directive which restricts use of certain materials in electrical and electronic equipment. Details: John Cowdrey: 020 8773 8111, john.cowdrey@ppma.co.uk

8 March: PPMA Seminar: Machinery risk assessment, for both users and suppliers of machinery. Marriott Hotel, Northampton. Details: John Cowdrey: 020 8773 8111, john.cowdrey@ppma.co.uk

7-10 March: Sino-Pack 2007, packaging machinery and materials exhibition. Pazhou, China. Details: www.2456.com/sino-pack

14-15 February: IPOT - imaging, photonics and optical technology,

machine vision and displays technology show. NEC Birmingham. Details: www.ipot.co.uk

14-15 February: Machine Building, Drives and Automation show. NEC Birmingham. Details: www.machinebuilding.co.uk

18-21 March: Pro2Pac food and drink processing and packaging exhibition. ExCel, London. Details: www.pro2pac.co.uk

29 March: PPMA Seminar: Clean in place systems. Details: John Cowdrey: 020 8773 8111, john.cowdrey@ppma.co.uk

3 May: PPMA Seminar: Update on the latest working of the Machinery Directive, for both users and suppliers of machinery. Details: John Cowdrey: 020 8773 8111, john.cowdrey@ppma.co.uk

15-18 May: Total Processing and Packaging Exhibition. NEC Birmingham. Details: www.totalexhibition.com

15-18 May: The Packaging Innovation Show. NEC Birmingham. Details: www.totalexhibition.com

27 June: PPMA Seminar on ready meals processing and packaging. Details: John Cowdrey: 020 8773 8111, john.cowdrey@ppma.co.uk

Machine Building
DRIVES & AUTOMATION
NEC, Birmingham, UK, February 14 & 15, 2007
www.machinebuilding.co.uk

Big issues move on

EACH YEAR, THE PPMA SHOW PLAYS HOST TO DISPLAYS BY ENGINEERING COMPONENT SUPPLIERS, AND A VISIT TO SOME OF THESE IS PERHAPS THE BEST WAY TO IDENTIFY IMMINENT AND MEDIUM TERM TRENDS IN MACHINE BUILDING TECHNOLOGY. THE BIG ISSUES OF ONE YEAR ARE QUICKLY REPLACED BY THOSE OF THE NEXT. BY BOB DOBSON.

In the world of engineering design some themes seem to recur year after year. To the layman this may suggest that there is no development – that the relevant technologies are not advancing. But these are in fact the big issues that design engineers are addressing, the cutting edges where technology is advancing, the moving goal posts where it is difficult to score but fatal not to.

Over a number of years each theme will resolve itself, but invariably it will be replaced by another.

For instance, open communications using fieldbuses was a hot topic for the best part of a decade but there was barely a mention of it at this year's exhibition, indicating that the technology has matured and that users are comfortable with its implementation.

In its place, safety has risen to the fore again, as has cost control of the design and engineering functions and reduced cost of ownership through better information, increased integration and reduced maintenance.

Issues such as these can be dry, abstract and uninspiring when simply spoken about, but seeing the advances on moving displays and talking to the real experts who man the stands can really bring home ideas and lead to solutions to problems that may otherwise seem intractable. Thus making the effort to spend a day at the NEC is usually repaid quickly and generously.

PPMA show stalwart Lenze showed solutions to several current issues on its stand. On safety it noted that the European Machinery Directive requires machine builders to ensure that set-up, operation and maintenance have to be achievable without endangering health or compromising safety. For drive systems this means protection from moving parts.

Its new L-Force Highline servo drives include on-board safety modules, which incorporate 'safe torque off functionality', dedicated connection to safety sensor systems, monitoring of the connection and safe stop function. The mod-

ules plug into the drives and can be swapped out in seconds should the need arise to change them.

Other features and functions can also be added to the L-Force drive via a range of plug-in modules, so allowing the drive to be completely personalised to its duty. Modules are available for various communications options, analogue and digital input/outputs for systems connection, LEDs for diagnostics, USB adapters for PC connection, resolvers and other feedback devices, sensors, failsafes, and so forth.

Should the duty change the drive can be reset simply by replacing appropriate modules. Similarly, a failed module can be stripped out and replaced. Thus the costs associated with initial set-up, maintenance and resetting for new duties can be reduced significantly.

Simplify design

The need to reduce build costs has also had motion control specialist Quin looking for innovative solutions. This company was a pioneer in motion control 20 years ago and has always kept itself at the cutting edge of the technology with a steady stream of advances. But it was never a bunch of boffins working in an ivory tower – it always kept its feet firmly in its customers engineering offices and let the market shape its future.

For many years it made a comfortable living by simplifying machine design, doing away with gearboxes, clutches, driveshafts and much of the mechanical paraphernalia that used to define machine building, and replacing them all with direct drive servos. The operation of these could then be co-ordinated through Quin's motion control technologies.

At a previous PPMA show Quin surprised many of its competitors with its latest development. Rather than the expecting electronic wizardry and powerful software, Quin instead launched a mechanical product! This was a case packer. Sleek, powerful and flexible, it embod-



Bespoke drive: New servo drive from Lenze can be customised in seconds with plug-in modules

ied the principle that Quin's designers held dear of using servos to simplify operation.

Quin had taken the view that many machine builders were moving from their mechanical heartland into Quin's drives and control territory, and they could reverse the trend. The case packer was an immediate success and went on to found a whole new market segment for the company. This initiative was complemented this year with the announcement that Quin has formed a partnership with Endline the case erecting, packing and closing specialist.

Development efforts have now turned back to motion control technologies, so Quin offers a full suite of up-to-the-minute products including servos and drives, communications, software, operator interfaces, positioning slides, gearheads, and linear motors.

The big crowd puller of this year's PPMA

stand was its latest development in motion control programming, Quin Logic Control (or QLC). This takes the company's powerful motion control programming language, with many built-in functions, and integrates PLC functionality that meets the IEC 61131-3 standard. The result is a cost-effective solution for the machine-builder, avoiding need for an external PLC for local machine sequential control.

In keeping with Quin's design philosophy of true distributed control, functions are located locally within each axis rather than in a central controller. This allows for virtually unlimited expandability with no need to add ever faster central processors that require ever higher network bandwidth to each drive.

Sick was using its stand to showcase what it claims is the world's smallest safety laser scanner. Its new S300 generates a protected field radius of up to 2 metres, through a 270deg arc, and is expected to find applications in working areas within machines, production lines, robot cells, vehicles, storage facilities, and the like.

The S300 works by constantly scanning a laser through the area being protected. During set up the unit 'learns' the position of fixed objects and also the range of moving objects, so that during subsequent scans it can recognise additional objects and, if necessary, raise the alarm. Despite being small and lightweight (102 x 152 x 105mm and 1.2kg), it is as fully featured as Sick's workhorse S3000 scanner, meeting all up-to-date standards and able to communicate over a safety fieldbus.

Information needs

Machine designers now understand that clear and timely information is vitally important to operators, which has led to the proliferation of human machine interfaces (HMIs) or graphic display panels. These can be positioned at critical points around a machine or plant and provide on-the-spot information about virtually any aspect of the machine and its performance.

They can process raw data into useful information in the blink of an eye, and present this in the most appropriate way – as a message, a value, a graphic, a video or an alarm.

Pro-face's new AGP3000 series of HMIs breaks new ground on several fronts, with the 50 model range categorised into three classes:

- M (multimedia) class that enables recording/playback of video footage. This, says Pro-face, is an industry first and will find uses in many areas. One such use is in a food factory where visual product appearance is absolutely



Information for operators: Monitor panel from the new Pro-face AGP 3000 series

critical, another is the hygienic industries where manual checking can be automated with a video feed to one or more HMIs.

- C (control) class that enables some control previously undertaken by a separate PLC to be brought on-board the HMI using expanding I/O capability.

- S (standard) class, which has new functions in addition to the specification of current models.

A third company demonstrating a field device with on-board PLC capability was inverter manufacturer Control Techniques. The onboard PLC feature of its new Commander SK series of general purpose drives is said to save machine builders money by removing the need for an external PLC and power supplies, while integrated fieldbus options minimise the need for external I/O to interface with the drive. The saving in control panel space alone can be significant in jobs of all sizes.

Marlin Stainless, a division of AEG, was celebrating its first year of business at the PPMA Show, having launched itself at last year's event. Its core products are stainless steel washdown and clean in place motors and gearboxes that ease maintenance duties in clean and hygienic industries and thus help contain running costs.

The Marlin stainless motor has an IP66 rating that permits high-pressure hose wash downs, which is much quicker than brushing, and a smooth body with round terminal box

that have no awkward angles or crevices to trap debris or breed germs. Further, there is no motor plate to catch food because the motor information is etched into the body.

Being a standard IEC metric unit, it simply drops into place when used to replace a standard motor. Marlin motors are offered in power ratings of 0.18-7.5 kW in metric frame sizes up to 132 as TEFC machines. Smaller units (up to 0.75 kW) are also available from 63 frame size as TENV machines. ■

For further information:

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Sick
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ALLEN CODING SYSTEMS

Transfer printer switches from intermittent to continuous

Thermal transfer printers introduced at the PPMA Show in September by Allen Coding included a new multi-lane model and a coder than can be switched instantly from intermittent to continuous motion operation.

The continuous/intermittent motion thermal transfer printer is the Allen 55sst which incorporates software to enable the machine to be switched immediately from one mode to the other. Speed is up to 350 prints a minute and 400mm/sec in intermittent mode and 750mm/sec in continuous motion.

The advantage, says Allen Coding, is that a single printer model can be employed on both intermittent and continuous motion machines throughout a factory, providing interchange-ability in the event of a fault, reduced spares holding and simpler servicing arrangements.

A compact unit, the 55sst offers a print area of 53 x 80mm (intermittent motion) and 53 x



Twin mode: Allen 55sst printer runs in intermittent or continuous motion

125mm (continuous motion).

The TP 4100 multi-lane printer is available with up to 16 heads for applications such as stick-packing machines or thermoformers. The system operates at 300dpi with print speed adjustable between 30 and 150mm/sec and, points out Allen Coding, is able to cycle faster than cross-web reciprocating systems while also giving closer print centres.

Also introduced by Allen were its LaserSystem Plus laser coders available in 10 and 30W versions for static or dynamic coding duties.

An Ethernet connection is included as standard and, simply by changing lenses, the lasers' marking area can be extended to 250 x 250mm.

New software from Allen included a networking system to allow up to 32 printers to be set up from a single point, avoiding risk of operator error, and the Allen Tracker package which provides automatic auditing of all operator actions in conformity with 21 CFR part 11.

T: 01707 379 500
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WEYFRINGE LABELLING SYSTEMS

Low cost print-apply unit is based on latest Datamax

The DB2 low cost print-apply system now available from Weyfringe is aimed at applications involving automatic labelling of a few thousand products a day.

Based on the new heavy duty H Series printer from Datamax,



Low cost: New DB2 print-apply labelling machine

the system is capable of labelling the top or side of products with, for example, details of ingredients and EAN 128 bar codes.

T: 01642 490121
E: sales@weyfringe.co.uk

SESSIONS OF YORK

Tray to tray labeller for vials

Contract packer Wasdell Packaging has bought a Sessions RC30 cylindrical product labeller to identify vials.

Able to handle items of 10-30mm diameter the RC30 for Wasdell was supplied with a hot foil printer with print presence detection and a pharma code reader.

In addition, the RC30 is equipped with an optional tray-to-tray handling system in which, rather than be ejected at random after labelling, vials are turned through 90deg and moved singly on to a catchment tray.

T: 01908 659224
E: label.info@sessionsofyourk.co.uk

WEBER MARKING SYSTEMS

Bar-code label applicator and software speed timber coding

Irish timber supplier Glennon Bros Timber has bought a portable trigger-operated Weber FasTagger label applicator and Legi label creation software to identify a range of components for the construction, pallet and fencing industries.

The applicator is powered by compressed air and uses pre-printed reels of labels, stapling them to the timber at rates up to



Faster coding: Weber FasTagger can apply 100 labels a minute

100 a minute. Previously a hand stapler was employed, but proved slow and inefficient.

The Legi label creation software allows Glennon Bros to print its own EAN 13 bar code labels on demand using an existing Zebra

printer, reducing lead times and the need to carry a huge range of pre-printed labels for the various lengths and cross-sections of components supplied.

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