

**PPMA**

Issue 2, Volume XVIII, March/April 2007

# Machinery

## UPDATE

The only 'machinery only' journal for processing and packaging



**BLISTER PACKING**

# Shorter runs demand extra versatility



**INSPECTION**

## X-ray moves into the mainstream



**READY MEALS**

## Aluminium trays put the pressure on sealing

# CONTENTS

ISSUE 2, VOLUME XVIII. MARCH/APRIL 2007

## Machinery UPDATE

THE JOURNAL OF THE PPMA

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### FEATURES

#### 13 Pro2Pac preview

Some of the exhibits at this new exhibition for food processing and packaging, 18-21 March.

#### 17 Ready meals report

Ready meals manufacturers are having to balance traditional considerations of cost, line speed and shelf life against retailers' eagerness to move upmarket.

#### 33 Inspection

Reports on the latest systems for contaminant detection, product sorting and container and label monitoring.

#### 40 Blister packing

Shorter runs put versatility first: Continued expansion in the contract and generic drug sectors has increased demand for short-run, versatile blister packing machinery.

#### DIARY DATES

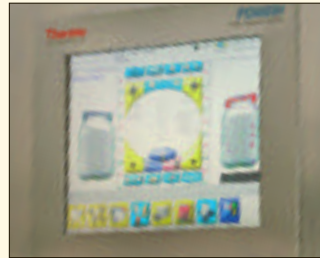
sponsored by

**Machine Building**  
DRIVES & AUTOMATION

Forthcoming events. 39



*Katsouris Fresh Foods has installed further PA Vision 400 tray sealers. 17*



*Thermo Scientific has announced a new range of X-ray machines. 33*



*Uhlmann Blister Express provides fast changeover and 500 a minute. 41*

### REGULAR FEATURES

#### 6 News and people

PPMA seminar programme gets under way: Total exhibition promises to meet visitor objectives: Company news: Appointments.

#### 10 Machinery in action

In-house case-maker cuts costs: Custom built checkweigher with coding: Drinks pouches case-packed at 560 a minute.

#### 48 Labelling, coding, marking

New generation print-apply units identify kegs: Custom ink jets for sandwich pack coding: Wobbling labels add sales appeal.

#### 50 Component matters

Sensors: Modern machine design makes great use of sensors to control and record performance. A brief refresher on the basics.

#### 52 New machinery

Tablet filling line: Sorting for sliced tomato: Low cost overwrapper: Fixed geometry homogeniser: Gas controller for MAP.

### CLASSIFIED

#### 53 Machinery and services

### BUYERS' GUIDES

#### 54 Ancillary equipment

#### 56 Processing equipment

#### 58 Packaging machinery

### PROCESSING SPOTLIGHT

**Pro2Pac preview:** Bizerba, The Food Machinery Co and Urschel are among those with food processing equipment. 13

**Ready meals report:** Growth in stand-up pouches favours post-fill processing: Continuous cook-quip-chill.process. 17

**New machinery:** Fixed geometry homogeniser aids process repeatability: Flow-controller reduces gas consumption for MAP. 72



# Gold plated WEEE?

Oh dear, here we go again, reading too much into European Directives and broadening the scope way beyond what was intended in Brussels. Some go so far as to call it gold-plating!

Whatever the terminology, and however well intended, this time it is the Environment Agency that is doing the 'gold plating' and the Directive is the Waste Electrical and Electronic Equipment Directive, affectionately known by one and all as the WEEE Directive.

On the usual and not unreasonable principle of making the polluter pay, the purpose of the WEEE Directive is to force the manufacturer, importer or business user of the equipment to pay for its recycling at the end of its life, which given the pretty short life of most consumer durables these days seems quite sensible.

But the WEEE Directive was never really intended to apply to all electrical equipment, only those categories listed in the Directive – mostly consumer durables – one of which, to give an example is 'large household appliances'. The 'indicative list' in the Directive confirms what we would all understand by this term: fridges, freezers, cookers, ovens, washing machines and so forth.

However our civil servants, undoubtedly with all good intentions, have decided to put a very broad interpretation on this 'indicative list'. Apparently because the word oven appears in the list any oven, whether used at home or in a hotel or in industry, is now classified as a large household appliance!

So, according to our Government, a 70 metre long biscuit oven is a large household appliance and in the scope of the WEEE Directive. I can't believe this was really intended.

The consequence of all this is that not only will suppliers have to allow for the cost of recycling the electrical equipment at the end of its life, whenever that might be, but users of this equipment will also have to pay to dispose of existing equipment. So either way machine users will end up paying.

Our Government maintains that they are simply implementing the Directive passed to them by Brussels. However, and quite predictably, it appears that some of our EU neighbours have chosen quite different approaches. Ireland for instance has decided to exclude all business-to-business equipment from the scope of WEEE.

Germany is quite clear that packaging machinery is excluded from scope but the UK Government appears to be saying that packaging machinery is an electrical tool and so is included in scope unless it is 'a large-scale stationary industrial tool' in which case it is exempt.

Following this line of reasoning raises the absurd prospect that a machine such as a shrinkwrapper that would typically be sold without wheels would suddenly come into the scope of the Directive if it was sold as a standalone machine with castors attached.

Ironically this legislation does not apply to electrical components, only complete equipment. So if, by some accident, at the end of a machine's life its electrical equipment became separated from the machine, then the panel, motor wiring and so forth would not be covered by WEEE!

Because of these different approaches in Europe, the PPMA is now joining other members of the UK's Engineering and Machinery Alliance to press Brussels for new and tighter wording that will eliminate opportunities for different countries to make different interpretations. All we want is a level playing field.



*Chris Buxton*

Chief Executive, PPMA

## PEOPLE

## New European management for Hayssen-Sandiacre

HayssenSandiacre has announced a new management structure following the acquisition of Sandiacre Rose Forgrove (SRF) by Barry-Wehmillier.

**Simon Lagoe**, (right) previously SRF managing director becomes managing



director, European operations, of the newly formed Hayssen-Sandiacre, while **Mike LaPare** becomes director in charge of a new business unit for Rose Forgrove. **Dave Clark**, previously managing director of Hayssen Europe, Thetford, steps up to become aftermarket director – HayssenSandiacre Europe.

**Mark Verheyden** (right) is the new managing director at Linx Printing Technologies. He was previously



vice-president, marketing, for Accu-Sort, a bar code scanning business which is also part of the Linx parent company Danaher Corporation.

**Thorsten Föcking** has become product director for lasers at Domino Printing Sciences. He was previously laser business development manager and has held positions with Rofin-Sinar and Sator Laser, now part of Domino.

**Mark Banks** has been appointed head of design at Packaging Automation. He was previously with Manesty where he held positions as head of applications engineering and head of product development.

**Andrew Bellew** has joined Addington Engineers, the tray erector and specialist custom-built machinery manufacturer, as a sales engineer.

## TRAINING

# PPMA seminar programme for 2007 gets under way

The PPMA's 2007 regulatory training course programme gets under way in April with a course on machinery risk assessment, to be followed during the year by five further seminars and training courses on machinery and electrical equipment legislation.

"Machinery risk assessment is a skill that all engineers need to acquire and our popular training course on the subject is being run again this year," comments PPMA technical consultant Martin Keay.

"There is also our course on the Provision and Use of Work Equipment Regulations (PUWER) which affects all companies that use machines."

This year the events are being held in conjunction with the Manufacturing Technologies Association and Picon, the printing and converting machinery trade association. All are aimed at both suppliers and users of machinery and will be held at the Marriott Hotel Northampton.

In particular, 2007 sees the introduction of two key pieces of legislation that affect

manufacturers, importers and users of machinery and electrical equipment: the Waste Electrical and Electronic Equipment Directive and the New Electromagnetic Compatibility Directive, both of which are included in the programme.

This year's programme also includes seminars on the new Machinery Directive 2006/42/EC that will have significant effects on manufacturers and importers of machines as well as companies that create assemblies of machines.

Other seminars will deal with the new Electromagnetic Compatibility Directive and functional safety of control systems. Sponsors for the series include process equipment specialist Matcon.

### The 2007 programme

**Machinery risk assessment** (18 April): What is "a suitable and sufficient risk assessment" that will satisfy the Health and Safety Executive? Companies are expected to carry out machinery



risk assessments not only when new equipment is designed, but also for existing plant that is in daily use and particularly before machinery is modified.

**The new Machinery Directive** (3 May): The new Machinery Directive has now been published and, while many of its requirements are similar to the current legislation, there are some significant differences which will impact on machine manufacturers, companies that create assemblies of machines and machinery importers.

Manufacturers of partly complete machines now have to comply with specific requirements as well as issuing a Declaration of Incorporation.

Potentially the most costly change to the Directive is the requirement that the fixing systems of fixed guards must

## COMPANY NEWS

## Label verification system wins international innovation award

The Veri-Pack label placement and verification system developed by Dimaco (UK) has won international business analyst Frost & Sullivan's 2006 Product Innovation Award in the food inspection and traceability category.

The system checks that the labels on food packs are correct and validates the over-printed data at

line speeds up to 200 labels a minute, helping to reduce product recall and supermarket fines, by preventing incorrectly labelled food products entering the distribution chain.

Frost & Sullivan notes that: "The increasing emphasis on food safety and the measures employed for countering bioterrorism and other threats to the food supply chain have resulted in the growing popularity of food traceability systems.

"In several parts of the world, there is a growing trend of using

short shelf life fresh and convenience foods, making over-printed data even more critical in food packs... Dimoco's Veri-Pack is a key innovation."

Vertical form-fill-seal machinery manufacturer **Gainsborough Industrial Controls (GIC)** has been sold to its current applications manager Andy Beal, who becomes managing director, and Luke Murphy, a Yorkshire businessman with a financial background.

The company was started 20 years ago by Stuart Wordsworth, who is retiring.

remain attached to the guards or to the machinery when the guards are removed.

#### **WEEE and ROHS Directives**

(27 June): The effects of the Waste electrical and electronic equipment Directive (WEEE) are as clear as the effects of the Restrictions of the use of certain hazardous substances in electrical and electronic equipment Directive (RoHS).

However, this seminar will examine their effect on machine tools, printing and converting machinery and processing and packaging machinery where it is much less clear how the legislation should apply and if it does who should register and who should pick up the bill for recycling.

**Provision and Use of Work Equipment Regulations** (11 October): This course will help anyone who is responsible for the purchase, use, maintenance or modification of work equipment to gain a thorough understanding of their responsibilities under this legislation and what it does and does not cover.

**New Electromagnetic Compatibility Directive** (22 November): Compared with the current directive, the new EMC Directive contains significant departures that will have particular impact on companies

that combine equipment together to make fixed installations.

It now applies to components and sub-assemblies as well as electrical apparatus and procedures for claiming conformity to the Directive have changed as have the requirements for what used to be called the technical construction file.

**Functional safety of control systems** (22 November): The functional safety of control systems is one of the most contentious subjects in CE marking with fierce debates on the relative importance of circuit architecture, selection of components and the safety integrity of components and systems.

This seminar will discuss the relative merits and likely uses of the different standards and provide practical examples of how they can be applied to conventional hard-wired safety circuits and to software synchronised machines and machines that use safety bus systems, safety PLCs and safety critical software.

For full details of PPMA 2007 training courses and seminars, including discounts for multiple bookings, contact Emma Corney at the PPMA.

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**New owners for GIC:** Andy Beale (left) with Luke Murphy

Andy Beal, six years with GIC, has worked in the packaging machinery industry for over 25 years and says: "The new ownership team is very well

balanced between good technical and industry knowledge and also the commercial know-how of running private businesses."

**Selo UK** is the new name for food processing and machinery specialist Selo-Bollans, which has become a wholly owned subsidiary of Selo, based in Holland.

**Smurfit Kappa Machine Systems** has been appointed leading UK sales and technical distributor for the range of Rembrandt case and tray erectors and case packers built by the American-Dutch company Lantech.

## LEGISLATION

## PPMA calls for clearer scope in WEEE regulations

The PPMA is calling on the EC to amend the Waste Electrical and Electronic Equipment (WEEE) directive to tighten up the scope and reduce the opportunities for different countries to make different interpretations.

Working with other members of the UK's Engineering and Machinery Alliance, the Association will be asking for much clearer definitions to ensure that industrial equipment is excluded from legislation aimed essentially at consumer durables.

Under the legislation the manufacturer, importer or business user of the equipment must pay for recycling at the end of its life.

"The WEEE Directive was never intended to apply to all electrical equipment, only those categories listed in the directive – mostly consumer durables – such as fridges, freezers, cookers and ovens," points out PPMA technical consultant Martin Keay. "However it seems that in the UK any oven is to be included, even a 70 metre long biscuit oven."

"Other countries have, however, taken a different approach with Germany, for one, quite clear in excluding packaging machinery from its scope."

## COURSES

### Powder processing

Process equipment specialist Matcon, Moreton-in-Marsh, is hosting a two-day conference 'Lean Manufacturing for Powder Processing' on 21-22 March. The programme will include speakers from industry and the academic world and, says the company, bridge the gap between theory and practice. Further information on [www.matconibc.com/conference](http://www.matconibc.com/conference)

## COMPANY NEWS

# New factory and products planned by Bradman Lake

The Bradman Lake Group is to bring production of Autowrappers and Europack brand machinery under one roof this summer in a new 60,000 sq ft factory now being completed in the south of Norwich.

The new premises will increase capacity for primary wrapping, case-packing and shrink-wrapping equipment, replacing separate and outgrown sites at Norwich and Beccles, while also housing a combined R&D and engineering team for both brands. Cartoning machinery remains at the established Bradman Lake site in Bristol.

At the same time the group has announced that a series of new products is to be launched, demonstrating the results of an integrated engineering and development programme covering all parts of the organisation, formed in 2004.

The first of these developments, to be unveiled later this year, is a series of end-of-line robots.

"Our recent organisational development will gain additional pace once we move to the new manufacturing centre," says Simon Wheatley, Bradman Lake Group CEO.

In the meantime, the group has launched a new high speed Autowrappers flow-wrapper and completed a number of installations in which integration of the various group technologies is evident.

The new Flowtronic 120XS is aimed in particular at the confectionery industry and is able to handle up to 1200 bar sized products a minute as a result of an improved multi-axis servo drive that includes driven unwinds on the autosplice reelholders for enhanced web tension control.

In addition, there is a fully automatic web tracking device that allows the machine to maintain precise lateral positioning of the material around the product at elevated speeds and automatic no-product/no bag and no-gap/no-seal facilities.

Also standard is a 'soft jaws' feature that senses any extra resistance as a result of misplaced product, backs off instantly and allows a double wrap to pass through for subsequent rejection without stopping the machine.

Integrated packaging lines built by the Bradman Lake Group are increasingly incorporating robotics as well as vision cells, one recent example being a combined machine that loads bakery products into both a flow-wrapping machine for retail packs and cases or trays for the catering market.

Labour saving apart, the

## TOTAL PROCESSING &amp; PACKAGING EXHIBITION

## Visitor survey identifies key objectives to be met at Total

With over 700 exhibitors from 25 countries taking part in the Total Processing & Packaging show, visitors to the NEC this May look set to meet one of their key objectives identified in pre-show visitor research – "to find better ways of doing things".

The research has been carried out by Total Processing & Packaging organisers Reed Exhibitions and the PPMA in order to assess visitor needs and intentions and also gauge opinions on the current business climate. The survey was carried out in late

2006 among visitors to the inaugural Total exhibition in 2004.

Important themes identified for 2007 include sustainability, packaging minimisation, implications of packaging-related legislation, energy efficiencies and conservation, and functional packaging. As with most trade shows, there was a constant demand for innovation and in the packaging sector in particular an interest in green issues.

Most respondents were confident of the future of their own company, with 58 per cent

experiencing growth while some 49 per cent said they were likely to make major investments in the UK within the next three years.

The research findings also revealed considerable crossover among visitors between the different supply chain areas.

In no area were less than 50 per cent involved in processing or less than 68 per cent involved in packaging. On average, each respondent was involved in approximately three areas of the supply chain.

Exhibition director Ian

advantage of the system is that the robots can be programmed to balance the operation for efficiency, giving priority to the flow-wrapper in the event of a reduced infeed of product, while using the catering packs to accept any peaks.

On a further system supplied for loading frozen food products, the vision system employed on the robots to locate the product on the conveyor has also provided an additional quality control function.

Accuracy is such that oversize burgers can immediately be recognised and rejected for reworking, reducing giveaway compared with the previous purely mechanical system.

The Bradman Lake monobloc top load carton erector-loader-closer is, says the company, now proving its space saving qualities compared with separate carton erectors, robots and carton closers linked on a common conveyor.

Feeding is, of course, always a major consideration in flow-wrapper operation, particularly the need for accumulation to even out the peaks and troughs of many food

and confectionery processes.

Autowrappers' initial solution was its Verso-stor accumulation system, which consists of a series of shelves, the width of a row of products, which are supported between two chains. The shelves are loaded with product a row at a time, with the chain indexing the shelves upwards when each row has been positioned.

The latest accumulation system, which operates on a single level for low headroom applications, accepts products in single lane and so, in place of the more usual series of shelves, employs an endless chain with pockets to store and then return product to the line on a first-in/first-out basis.

This chain is driven at a speed that synchronises with the rate of supply while the degree of accumulation required – to balance input with the capacity of downstream equipment – is achieved by lengthening or shortening the amount of chain given over to storage.

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Crawford says that this type of visitor profile underlines the appropriateness of Total Processing & Packaging.

"The breadth of coverage of the supply chain that our exhibition offers is unique and it will help visitors seek out complete solutions to their packaging and processing requirements."

Mr Crawford points to one visitor highlighted in the research, a frozen food manufacturer who complained of losing sales as a result of the poor stand-out of his simple plastic bags compared with more elaborate packs used in the chilled sector. "Finding an appropriate solution is where processing, packaging and design can all play a part," he comments.

"At the same time, more

'elaborate' packs are also under pressure from the green lobby in terms of overpackaging, while pressures for cost reduction come from several directions. Again, this will often require an integrated approach to find a solution."

While increasing EU legislation and threats from cheap imports continued to concern all visitors, many remained upbeat about future prospects.

"With exhibitors demonstrating their capabilities over a wide range of disciplines and market sectors, Total Processing & Packaging will play an important role in this process," believes Mr Crawford.

On-line registration for Total Processing & Packaging is now open at [www.totalexhibition.com](http://www.totalexhibition.com)

AUTOBOX

# In-house case maker cuts inventory and storage costs

Industrial cleaning products manufacturer Numatic International, Chard, has installed an in-house case-making system from Autobox to handle a wide range of case sizes required for over 4000 cleaning products, many of them built to order.

As a result, the company is now able to purchase one standard stock size of sheeted corrugated board, helping to reduce inventory levels and factory storage space, while producing cases on a just-in-time basis.

Printed or plain boxes for high volume products, such as the Numatic Henry vacuum cleaner continue to be out-sourced.

The Autobox case-making system consists of an SC164 slitter used to cut correct sized blanks from the stock corrugated sheet and a Boxmaker 1070 to slot and crease the blanks ready for finishing, either with a hot melt glue gun or pneumatic stapler,



**On demand cases:** *Autobox Boxmaker 1070 at Numatic International*

also supplied by Autobox.

The 1070 stores frequently used box sizes in the machine memory or can be changed over to produce a new case size or style in under a minute. The whole system requires just one person to operate, says Autobox.

"Everyone loves the Autobox system," says Andrew Smith, manufacturing manager at Numatic. "It is a great success and

is amazingly easy to operate. Not only are we using it to service our day-to-day production requirements, but our R&D team also use it to prove packaging designs for new products.

"We have achieved our objectives of reducing packaging costs and inventory levels as well as freeing up storage space."

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E: info@autobox.co.uk

ISHIDA EUROPE

## In-line multihead weigher raises output of sticky ready meals

An installation of an Ishida in-line multihead combination weigher in France has demonstrated how this type of machine is able to automate packing of sticky and generally difficult products often still handled manually.

The Ishida Fresh Food Weigher has been supplied to Le Magicien Vert which produces a range of fresh and frozen ready meals involving sticky and part liquid products such as paella and fricassee of lamb.

Manual packing was slow, labour intensive and, points out Ishida, the repetitive tasks faced by staff involved continual bending and lifting.

The company first carried out tests on a circular multihead weigher, which were promising in terms of improved speeds, but as site director Philippe Blanc explains: "This type of weigher was not suitable in terms of product changeovers and did not cope too well with the tendency of the products to bunch together."

On the Ishida machine hoppers are arranged in linear tiers with product fed by a row of eight belts that can be comfortably supervised by a single operator, who adds or

removes product, or swaps product from belt to belt, to maintain an even flow.

As a result of the new machine speeds have gone up to 35 packs a minute and manual handling reduced so that the entire line can be run by four operators rather than the nine required previously.

Product changeovers on the weigher, which handles up to 25 different recipes each day, take around 15 minutes, says Ishida.

This speed is partly due to the 'pit stop' installed by Ishida next to the weigher, which carries racks of clean, ready-to-switch contact parts including belts and hoppers.  
T: 0121 607 7700  
E: info@ishidaeurope.com

METTLER-TOLEDO

## Custom-built checkweigher also codes and checks print

AstraZeneca's Macclesfield factory has installed a custom-built Garvens S2 pharmaceutical checkweigher, equipped by Mettler-Toledo also to add batch and expiry dates to prescription size packs of Zomig migraine treatment, then check the presence of the print before checkweighing.

Mettler Toledo explains that AstraZeneca was concerned that traditional OCR scanning would prove too sensitive and so deliver false readings while density sensing or 'blob detection' would not check the print sufficiently.

The specification also called for checkweighing to a tolerance of  $\pm 200\text{mg}$ , giving accuracy sufficient to establish that the



**Coding and checkweighing:** *The Modified Garvens S2 machine*

patient information leaflet was present.

Coding is via a Wolke ink jet printer and the print checking is carried out by a Sick pattern matching sensor, chosen for its ability to recognise the given number of pixels in a specified print area.

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**PPMA.CO.UK**  
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SPRINGVALE EQUIPMENT

# Drinks pouches case-packed by robot at 560 a minute

A high speed robotic case-packing and palletising line able to handle up to 560 drinks pouches a minute has been devised and built by Canadian manufacturer Langen Packaging, part of Molins Packaging Machinery, for the Toronto based drinks company SipTop.

The line, which replaces a much slower robotic system capable only of 140 pouches a minute, has also reduced labour requirements by 70 per cent and is allowing SipTop to keep pace with increasing demand for drinks in 200ml pouches.

Case-packing is carried out on an LRC-400 loading cell consisting of four M420i Fanuc robots fitted with tooling developed by Langen to handle three case formats: an eight count of IV iced vodka drink, a ten-count of juice pouches in a variety of flavours and a 24-count of mineral water. Product is fed in four lanes.

Key to the high speed of the machine says Langen is a new gripper system in which one suction cup handles one pouch and an optimised vacuum system that maintains sufficient force for reliable and efficient handling, but



**High speed case-packing:** Langen robot cell at SipTop

avoids excessive suction that could damage a flexible pack.

Completed cases are taken to the LRC-600 palletising cell equipped with two M410i Fanuc robots fitted with multi-function tooling, a pallet dispenser, two slip sheet stations, a turntable and conveyor system.

In addition to varying pallet patterns and quantities, the location and number of slip sheets inserted can be customised to suit different customers while the LRC-400 and LRC-600 cells have been kept separate, to allow cell one to be maintained while the other

remains in service.

The LRC-600 cell also features one manually loaded infeed that allows SipTop to perform their quality checks. During these checks a randomly selected pallet is depalletised and checked for pouch and case integrity as well as other quality assurance procedures. The manual infeed allows cases to be smoothly re-introduced into the system.

In the UK, Langen products are available through Springvale Equipment.

T: 01420 542505

E: [springvale@springequip.co.uk](mailto:springvale@springequip.co.uk)

AETNA UK

## Stretchwrap guards against fretting with aluminium

Faced with increased demand for stretchwrap as transit protection, aluminium stockholder and processor SPA Aluminium has bought a second Robopac Spiror stretchwrapper from Aetna UK.

The first was acquired in 1996 and has been in continuous use ever since.

"The new machine had to be capable of handling a range of products of different sizes without having to adjust the settings," explains SPA's general manager Keith Dowry. "We also needed to reduce wrap time and finally, we needed quick delivery."

SPA chose the Spiror 300 HP model, which can handle products 25-250mm wide and 20-170mm high without adjustment, while minimum length is 800mm and maximum length is infinite. The machine also has electronically variable conveyor and ring speeds to give optimum film overlap and linear speed.

The Spiror 300 HP uses both plain and printed standard 250mm wide film, from 15 to 50 micron thick, and runs at speeds up to 30 metres a minute.

"Historically transport 'fretting' was always a problem for boxed goods and aluminium coat-hangers and painters used tissue paper and strapping to deliver their products in pristine condition to the end user," explains Aetna.

"Today the use of stretch film, which is both cheap and highly effective in keeping packs tight during transport, is the wrap of choice. Stretch film is particularly gentle because the load is spread over a larger area than, for instance plastic strapping."

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MJ MAILLIS UK

## Purpose-built strapper cuts time to secure pallets

Hanson Building Products has reduced the strapping time for pallets of bricks with a purpose-designed polyester strapping machine installed at its manufacturing site in Surrey.

The Vario Master VM9469 strapping machine was developed by Maillis specifically for the brick

industry and includes a range of upgraded features including a high-tension version of the Maillis MJM GS41strapping head.

Cycle time for strap application is now 6 seconds.

"Reducing the strapping process to the bare essentials ensures the most dependable, lowest-maintenance system available," says MJ Maillis.

The machine is powered by two electric motors and is said to reduce strap waste by making the friction weld seal at the strap ends.



**Faster strapping:** Vario Master unit at Hanson's brick works

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BBK LABELLING AND CODING

## Labelling and coding range

Exhibits are taken from the company's range of coders and decorative, promotional and print-apply labelling machines.

These include standard dispensing systems, semi and automatic machines with servo drive, top and base systems, wrap-around systems, pallet labellers and desk-top printers for mono or four-colour output.

Information is also available on bespoke machinery and product handling systems designed around proven labelling head technology.

T: 01628 473670

E: sales@bbk-labelling.co.uk

BIZERBA UK

## Weighing, slicing and vac packers

Food processing equipment on show includes weighing scales – with basic printing to intelligent PC-based systems, including full colour – and slicers for virtually every application, up to speeds of 250 slices a minute.

There are also vacuum packers – from single chamber tabletop models through to floor standing and double chamber units – as well as weigh-price labelling and checkweighing equipment.

T: 01442 240751

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CHALCROFT CONSTRUCTION

## Design and build for food factories

Chalcroft's food projects division offers a complete factory design and build service for any food process and has particular experience in providing controlled atmospheres for high-care processes. Clients include Nestle Purina and Cranswick Foods.

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# Pro2Pac PREVIEW

PRO2PAC IS A NEW EXHIBITION FOR FOOD AND DRINK PROCESSING AND PACKAGING. IT TAKES PLACE ALONGSIDE IFE07, THE UK'S LARGEST FOOD AND DRINK EXHIBITION, AT EXCEL, LONDON DOCKLANDS, 18-21 MARCH, AND COVERS EQUIPMENT, SERVICES AND MATERIALS. OVER 60 EXHIBITORS ARE TAKING PART. MORE INFORMATION FROM WWW.PRO2PAC.CO.UK

D2 FOOD SYSTEMS

## Tray and lid package

On show for the first time is the company's new automatic, low cost Smoothseal 2800R lid sealer for aluminium foil trays.

A compact, in line machine, the 2800R is said to offer major space-saving benefits, as well as high outputs and quick and simple die changeover.

It is available to buy or for short or long term rental as part of D2's Smoothsolution package which also includes Smoothpack aluminium foil trays, Smoothpeel lidding film, and Smoothdome clip-on or heat sealable lids.

T: 01582 622111

E: sales@d2foodsystems.com

DAWSONRENTALS

## Inflatable food chill stores

Information is available on a new inflatable chill store for indoor or outdoor use that can be linked with others in multiple installations to provide additional storage space when required.

It measures 4.8 x 6.8 x 2.8 metres high.

Details are also available on the Dawsonrentals range of temperature control equipment, which includes cold stores, blast chillers and freezers, fluid chillers,

tempering units and freezer tunnels.

T: 01623 516666

E: sales@portable-cold-storage.co.uk

T FREEMANTLE

## Sleeving and cartoning

Freemantle is showing examples from its range of sleeving and cartoning machinery. This extends from a simple carton sealer selling for less than £5500 through to high speed fully automatic machines.

Recent innovations include the slimline autoloader to provide substantial space savings over traditional end-load carton loading systems

T: 01724 276908

E: sales@tfreemantle.com

INDUSTRIAL WASHING MACHINES

## Compact washer for utensils

The EDI 4 is the latest utensil washer from Industrial Washing Machines and is particularly compact, occupying a space of just over 0.6sq metres.

It offers a wash area of 660 x 540 x 850mm high, enabling a standard baking tray to be stood vertically inside the cabinet and, like the larger models in IWM's range of cabinet washers, has a

self-cleaning stainless steel interior.

The unit is said to be economic to run, with a water usage of just 4.5 litres per cycle. Wash and rinse cycles are programmable and use temperatures up to 85deg C.

T: 0121 459 9511

E: sales@indwash.co.uk

JENTON INTERNATIONAL

## Converging 120 packs a minute

The new Jenton Ariana PackStream converger can combine two, three or four lanes into a single lane with variable speed and pack spacing.

Speed is up to 120 packs a minute, taking multiple lanes from equipment such as thermoformers down to a single lane for weigh price labelling, metal detection and so forth.

The height of the infeed system can be controlled independently of the height of the converger frame, providing easy adjustment to match pack depth.

T: 01256 892194

E: sales@jenton.co.uk

LOCK INSPECTION SYSTEMS

## Slimline metal detectors

The Compact Vertical Fall metal detector is the latest slimline addition to Lock's MET 30+ range and is 25 per cent smaller than previous standard systems.

Designed to monitor incoming bulk raw materials in both



Lock Inspection: Met 30+3f triple frequency metal detector

## PRO2PAC PREVIEW

granular and fine powder form – even in severely restricted spaces – the unit includes a reject flap that can be cleaned on the spot rather than be removed from the line.

Also shown is the MET 30+ 3f, a triple frequency detector capable of monitoring products in both plain and metallised packaging. The optimum frequency is automatically selected by the machine.

T: 0161 624 0333

E: marketing@lockinspection.co.uk

PPMA AND PPMA PUBLISHING

## Machinery finder service

Full details are available on the range of services provided by the PPMA, particularly the Machinery Finder facility.

Copies of the current *PPMA Processing and Packaging Machinery Directory* are on sale at a special exhibition price and there is also a range of PPMA publications covering the latest safety regulations and EU Directives.

Full details are available on the current series of PPMA training courses, while visitors to the stand can register for their own free copy of *Machinery Update*, the journal for buyers and specifiers of processing and packaging machinery.

T: 020 8773 8111

E: administrator@ppma.co.uk

MARLIN STAINLESS

## Hose down stainless motors

Marlin's stainless motors and gearboxes are said to enhance hygiene, being easy to clean and hose-down resistant, thereby eliminating contamination hazards such as flaking paint and rusty surfaces.

The motors and gearboxes are both IP66 rated and the Marlin Stainless AC three-phase motors

are IEC metric dimensioned to be fully interchangeable with standard motors, either as original equipment or retrofit items.

In addition to the hygiene benefits, the Marlin motor's ability to withstand wet and demanding conditions can provide significant savings on components, man hours and downtime, says the company.

T: 01270 270022

E: motors@marlinstainless.co.uk

PFM PACKAGING MACHINERY

## Flow-wrapping and bagging

The new Pearl flow-wrapper, on show in the UK for the first time, is said to be a versatile machine for companies producing multiple size packs and for contract packers. It was developed initially for the bakery, confectionery and produce markets.

Also on display is PFM's MBP10 multihead weigher, one of a range of machines with eight to 24 heads, and an Azimuth vertical bagger.

Capable of handling nuts, biscuits, confectionery, bread rolls and numerous related items, the Azimuth can operate at speeds up to 85 packs a minute to produce an assortment of different bag styles, including the stand-up Steelo bag with fin-sealed corners.

T: 0113 239 3401

E: sales@pfm-ltd.co.uk

RAVENWOOD PACKAGING

## Labellers use no backing paper

The Nobac 125 labeller is a new system that employs linerless labels, eliminating the need for non-recyclable backing papers and making reel changes quicker and easier.

Also shown is the Nobac 500 sleeve, an inline machine capable of applying sleeves in five formats: top, top and side, top and two sides, C-wrap, and full wrap.



**PFM:** The new Pearl flow-wrapper is on show in the UK for the first time

The new Nobac 400V variant is an applicator aimed at C-wrap applications and, in addition to regular shaped packs, is also capable of labelling irregular items such as whole birds.

T: 01603 404650

E: paul@ravenwood.co.uk

THE FOOD MACHINERY CO

## Low cost plant for co-extrusion

The Anco SD97 co-extrusion machine being launched by the Food Machinery Co is said to be the first of its type to be priced at a level that allows smaller companies to invest in this technology.

With prices starting at £8599, the SD97 is capable of producing up to 3600 pieces of 50g in an hour.

Further exhibits include Joni cooking kettles with internal steam generators and stirrers and FoodMc JV-Vac packers available from £1250.

T: 01634 272345

E: sales@food-machineryco.com

URSCHEL INTERNATIONAL

## Food cutting equipment

Urschel's exhibits are taken from the company's series of food cutting equipment which covers a complete range of applications with over 50 machines available to slice, dice, mill, shred, segment cut, granulate and strip cut.

Industries served include snacks, dairy, bakery, and

confectionery as well as meat and vegetable processing.

T: 0116 263 4321

E: international@urschel.com

WDS COMPONENTS

## Wheels and castors

WDS has introduced a new range of wheels and castors covering a range of applications from light duty to resistance to corrosive chemicals.

Options for the food and pharmaceutical industries include nylon, rubber and polyurethane tyres on various centres.

T: 0113 2909852

E: sales@wdsLtd.co.uk

WITT GAS TECHNIQUES

## Non-destructive leak testing

Latest in the Witt range of Leak-Master leak detection systems for MAP, the Mapmax is an automatic in-line micro leak detection system which is non destructive and uses CO<sub>2</sub> detection technology, eliminating, says Witt, the need for costly helium testing. Portable versions of Leak-Master detection systems are available for random testing duties.

There is also the Pack-Vac leak detection system, now available in two versions, for detecting leaks without the need for a trace gas and one with a special attachment for testing leaks from vacuum packs.

T: 01925 234466

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# READY MEALS REPORT

READY MEALS MANUFACTURERS ARE INCREASINGLY HAVING TO BALANCE TRADITIONAL CONSIDERATIONS OF COST, LINE SPEED AND SHELF LIFE AGAINST THE RETAILERS' EAGERNESS TO GO UPMARKET, SOMETIMES FAVOURING MATERIALS SUCH AS ALUMINIUM OVER PLASTICS, AND THE NEED FOR FUTURE-PROOFING TO CATER FOR TOMORROW'S UNPREDICTABLE REQUIREMENTS.

INGREDIENTS HANDLING AND PROCESSING

## Growth in stand-up pouches favours post-fill processing

**F**ine control is as essential for post-fill heat processing as it is for pre-fill cooking. New for the Lagarde range of autoclaves supplied by Holmach is the Samantha industrial PC control said to improve accuracy, control and speed of response. Secure access ensures that only authorised personnel can change settings.

With growing requirements for access to batch data, the traceability benefits of the system are also important, explains Holmach managing director Chris Holland. All outputs are in PDF format, so they can be e-mailed or analysed easily, while there is also a range of templates for submissions to regulatory bodies.

Recent installations of Lagarde autoclaves have included Holmesterne Foods in North Yorkshire which is using the equipment for pasteurisation and sterilisation of different products including, for example, ham hocks and lamb shanks in sauce, both packed in stand-up pouches.

Bramigk & Co supplies the Satori Stocktec range of autoclaves for pasteurisation and sterilisation. Control technology is advanced, says director Linda Berrett, and over 2500 units have been installed worldwide. But, despite the experience of Holmach, she says: "There is no specific trend towards autoclaving ready meals. The majority at the moment appears to be cooked and packaged in the conventional way."

Nonetheless, she adds, the growth of sauces and ready meals in stand-up pouches does seem to favour post-fill heat processing, rather than pre-cooking or hot-filling.

D2 Food Systems has its Vortex cook-

quench-chill system, which is said to combine high throughput with consistent results. Recent installations have included systems for cooking potatoes and one for pasta as an ingredient in deli snacks, at Greencore, in East London.

With pasta especially, claims D2 managing director Dave Edwards, this type of process is the only method that will ensure consistent cooking and quality.

### Continuous process

Meanwhile, BFS Europe is now supplying the US-built Lyco Clean Flow cook-quench-chill system which uses a horizontal auger to carry product through the various stages of the machine in a continuous process.

As a result, points out BFS, production and labour costs are reduced and flexibility improved, since there is no need for continual transfer of batches in tote bins, each of which needs to be cleaned and maintained.

Instead, the automatic cleaning cycle between product runs on the Clean Flow can take as little as 15 minutes, the company says.

Process parameter controls and sensors continually monitor and correct conditions inside the apparatus when necessary.

Kecol Pumps has a system said to be ideal for manufacturers needing to transfer high-viscosity pastes and creams from drums and process containers such as IBCs and Eurobins.

A typical application in ready meals, says Kecol, might be triple concentrate tomato paste in single or multiple pallet-mounted drums. The articulated Powerprime air-powered stainless steel pump will decant the contents of four drums on a pallet, without requiring their removal, while residues and product waste are kept to "a very minimal amount".

For dry ingredients handling, Bramigk has the Guerin Systems range, and equipment from IKA, Germany, for mixing and dispersion.

"IKA has supplied equipment to sauce manufacturers for homogenising and also powder and ingredient incorporation into the liquid phase," explains Bramigk director Linda Berrett. "Due to the configuration of the shear zones, it is impossible to get agglomerations of



**Continuous process:** Lyco Clean Flow cook-quench-chill system from BFS Europe uses auger transport

the dry powder into the liquid phase."

IKA is able to supply mixing and homogenising systems from lab scale up to high-volume batch or continuous machines. Test facilities are available at both Guerin and IKA, Bramigk points out.

### Extending shelf life

When it comes to extending shelf life for ready meals, autoclaving has recently received a lot of attention – and, by all accounts, a fair number of new adherents.

"A number of people in the industry are using, or looking at, autoclaves," says Dave Edwards, managing director of D2 Food Systems. But, he argues: "Autoclaves have their place for certain products, but not for others."

In fact, with tray sealers high on the list of equipment that D2 supplies, Mr Edwards understandably champions modified atmosphere packaging (MAP). "The majority of our tray sealers now use MAP, and nowadays, the consistency, speeds and residual levels are all positive," he explains. "Five or 10 years ago, speeds were much slower, and people worried much more about the quality of the seals."

It is true, says D2, that some components in a multi-component meal will benefit more than others from MAP. Indeed, with the way the industry is evolving, particularly premium ranges, items such as protein and vegetables may well be increasingly packed separately in future, Mr Edwards speculates. This would allow different methods of extending shelf life to be used on each pack.

For his part, Holmach managing director Chris Holland maintains that MAP and autoclaving each work well with very different types of product. So, for instance, raw and sliced meats clearly benefit from MAP. "Here, you get a shelf life pickup of up to 14 days without having to do much else," he says.

But, he goes on: "With composite ready meals, with liquids and products that give off gases over time, MAP does not give a shelf life pickup, and the atmosphere inside the pack becomes mixed." MAP technologies work best, he argues, where individual types of food are packed separately.

Conversely, products said to benefit from autoclave pasteurisation, as well as from its typical 14-to-21-day extension of shelf life, include curries, casseroles and dishes such as chilli con carne.

Some retailers require autoclaving for slower-turnover items in, for example, ranges of

Indian cuisine, Mr Holland explains. But in other cases, manufacturers of these types of ranges autoclave all their recipes – faster and slower-selling – because they believe there is a benefit in flavour as well as shelf life. He estimates that around half the manufacturers of Indian ethnic ready meals in the UK are now using autoclave pasteurisation.

Adding to the debate, Brian Hemsley, sales director at G Mondini points out that the additional shelf life of 12 or 13 days achievable with MAP is undermined by the potential effect on product appearance. "Certain products such as pasta and cheese tend to fuse together, and after a few days the appearance is not good," he says.

That said, brands and retailers may be willing to absorb the extra cost of MAP in order to gain even only two days extra shelflife, while the appetite appeal remains.

### Seal quality for retorting

Where Mondini tray-sealing lines have been specified in conjunction with retorts, Mr Hemsley argues, the company's reputation for seal quality has been a major customer consideration. Autoclaving of trays at customers such as Geest and Blue Crest is giving shelf life of 24 or 28 days, he says. But he agrees that best results are obtained with pre-mixed, homogenous products such as Indian meals.

So it seems that the perfect shelf life extending solution for composite ready meals is an elusive goal, and is still likely to involve some sort of compromise between shelf life gain, product appearance and cost.

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**D2 Food Systems**  
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**Holmach**  
T: 01780 749097  
E: sales@holmach.co.uk

**Kecol Pumps**  
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**G Mondini (UK)**  
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DENESTING, WEIGHING AND DOSING

## Denesting trays in damp and cold conditions

While smooth, reliable denesting is clearly a vital element in any tray-filled ready meals line, difficult conditions can make it hard to achieve.

For example, Sewtec Automation is now offering a twin-magazine tray denester specifically for harsh food environments, having developed the machine for a manufacturer that required a stainless steel unit suitable for the damp, cold conditions of a lasagne line.

The IP65-rated unit, which can be manufactured either in anodised aluminium or stainless steel, features quick-release pre-set magazines for different tray sizes. Either standalone or integrated controls can be specified, as can either central or integrated vacuum and a portable or fixed design.

The maximum tray size is 200 x 350mm, depositing one at a time, and 150 x 200mm when two are deposited simultaneously. The system will denest up to 60 trays a minute and Sewtec says that the air consumption of 0.48 litres per cycle is particularly low for this type of application.

Moving on to the filling stage, manufacturers are understandably wary about how they treat their higher-value meal components and, traditionally, manual feeding has been seen as a cost-effective solution. This was certainly the case at French canned ready meals supplier William Saurin, but is equally often true for chilled, tray-packed ready meals.

Saurin looked for a multihead weigher able to offer the speed, accuracy and reliability necessary for weighing and dosing key elements of its 74 ready meal recipes. Clearly, an ability to handle a wide range of products was essential and a small footprint was also a necessity.

Ishida Europe devised a system consisting of two 16-head weighers, feeding a single custom-designed distribution system. This now allows Saurin to achieve speeds up to 360 containers a minute for a sausage-and-lentil product. Other recipes being handled include cassoulet, turkey blanquette, boeuf bourguignon, tartiflette (potatoes with cheese) and coq au vin.

According to factory director Lionel Maynard, the accuracy of the weighers is such that Saurin can minimise giveaway on high-value



**Twin multihead dosing:** Ishida system for Saurin, France, provides speeds up to 360 drops a minute



**Denesting in harsh environments:** IP65 rated unit developed specifically by Sewtec

components while also giving consumers "a fair deal". Given that most recipes contain meat, hygiene considerations were also paramount.

As many meals become more complex, lines have to be longer, with a wider range of dosing and depositing systems. One recently-installed tray filling and sealing line from Waldner, Germany, stretches to over 25 metres length across four lanes.

### Multi-chamber design

The stainless steel construction, which was installed for a French customer, includes cup slats to run trays in either mono formats or multiple-chamber designs with one or more side pocket. The quick-release mechanism also

allows fast, tool-free changeover, says Waldner UK, and the tray magazine can be changed with equal ease, simply by substituting a different cassette. The line is designed to run at speeds of 40 cycles, or 160 trays a minute, says applications engineer David Pratt.

Fillers for pumpable liquids on the line include a Waldner Unimat system with an X-Y-Z-axis depositor. This provides exactly control over the position and height of the fill into each chamber. The Z axis comes into use where deeper trays are being filled.

For non-pumpable products, Waldner has the Multi-DOS vacuum-assisted pocket filler. This draws accurate weights of product smoothly from a hopper, and places them with equal accuracy. It can be used for items as diverse as vegetables, couscous, rice and pasta.

All the main assemblies can be easily removed for cleaning. In fact, along with ease of operation, ease of access and overall cleanability were among the main reasons why the company won this contract, says Waldner.

The company also supplied the denesting unit at the beginning of the line. In addition, sufficient space has been left in the production area for a third-party multihead weigher and manual feeding, if required.

Like Waldner, Mondini has seen the amount of line space dedicated to the various filling and

depositing technologies grow. Sales director Brian Hemsley says that this stage of a typical ready meal line might need between 12 and 15 metres for the various pieces of equipment, with perhaps an additional 5 metres left for subsequent installations. A checkweighing function can also be included on the line.

"Any company operating in this area will be looking for complete flexibility, and the ability to create new meals and recipes in the future," says Mr Hemsley.

Relying on manual tray-loading to supplement the line equipment will be increasingly viewed as a last resort, he adds, by companies that are keener than ever to cut overheads to a minimum.

### Lasagne a speciality

Lasagne lines, with stations for loading fresh pasta, cheese and other toppings, are one of Mondini's specialist offerings, achieving speeds of up to 120 packs a minute.

For good hygiene reasons, 'stainless steel throughout' is increasingly the 'recipe' followed by builders of ready meal lines. But for some very specific functions, steel may not be the most appropriate material.

For example, Hi-Tech Machinery points out that its Hibar pump is still being installed on ready meal lines, equipped with ceramic rotary valves, now shown to require no maintenance or replacement for over ten years, even when running at 70 cycles a minute. The sleeve is also ceramic.

This contrasts with the performance of other materials used in rotary valves explains sales manager Jim O'Neill. "Most types of stainless steel will try to friction-weld themselves together in a short time," he says. "And with most plastics, you have problems of expansion and contraction. The majority of protective coatings will also wear off, and so require frequent maintenance."

Ceramic, Mr O'Neill claims, has none of these shortcomings and can be machined to very tight tolerances. It gives an especially clean cut-off, he says, and will cut through most large particles if necessary. This is a particularly important capability given the tendency for increasingly large particles in today's recipes, he adds.

Products and components filled using Hibar pumps include sauces with vegetable pieces, Italian sauces incorporating whole cherry tomatoes, sweet and sour sauce and also black bean sauce.

More specialist operations within the filling and depositing stage of the ready meal line include dry herb application and coating with oils or fats. Apple Engineering says it spent many months developing its Herb and Powder Applicator, designed specifically to apply a wide range of dry herbs and spices to meat packed in PET trays. According to Apple, the unit can be adapted to deposit breadcrumbs, savoury powders and flavourings onto a wider range of ready meals.

Saturn Spraying Systems says that the application of fats to frozen oven ready products such as roast potatoes is a significant growth area for the company. Heated versions of Saturn's Discmatic spinning disc machine are being used in conjunction with products coated in garlic-flavoured olive oil, 'basted with beef dripping' and 'basted with butter'. The latest system of this sort was installed towards the end of 2006.

Ethnic ready meals have also benefited from Saturn technology over the past year, says the company, with the flavour marinade being applied to prepared, sliced chicken using Discmaster and Discmatic machines.

The spraying of pizza bases with oil remains a success story for Saturn, with recent orders coming from the UK and Canada. Even customers in Italy, the home of pizza, have come to Saturn for its technology.

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**Saturn Spraying Systems**  
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**Sewtec Automation**  
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**Waldner UK**  
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LIDDING AND SEALING

## Aluminium trays put the pressure on sealing

The choice of packaging materials used for tray-and-topseal ready meals has always depended on a number of factors. The type of heat process and consumer cooking used, the quality of barrier required and the need to heat seal quickly and reliably have always influenced the exact specification of tray and film.

But now, as retailers work at differentiating ready meals ranges, and consumers are asked to be more aware of environmental considerations, quality and 'sustainability' perceptions are also increasingly coming into play.

For example, G Mondini has seen particular growth in demand for smoothwall aluminium in ready meals and wider prepared foods markets. According to sales director Brian Hemsley, this poses particular challenges and speed limitations at the closing stage, since the uncoated aluminium itself offers no sealing surface.

### Running lines faster

"The quality of the seal is very much down to the pressure exerted," says Mr Hemsley. "Because of our strength in this area, we can run these lines faster than anyone else, at speeds of 11 or 12 cycles a minute." This compares with speeds for sealing plastic trays of non-spilling product of 16 or 17 cycles a minute, he explains.

Mondini says the use of servo drives allows the company and its customers to fine-tune sealing lines to the handling needs of each specific application. While outputs can vary from just 20 packs a minute up to 400, most Mondini ready meals lines installed run between 40 and 120 packs a minute.

The popularity of the seven machine models in its Evolution traysealing range has taken off in the last three or four years, claims Mondini, to the point where there are now around 120 machines installed in the UK for different types of food product.

D2 Food Systems and its materials sister company D2 Europack have also responded to increasing industry interest in smoothwall aluminium. In fact, managing director Dave Edwards says that the companies' earlier emphasis on a number of different tray materials has now shifted decisively towards alu-



**Semi-automatic:** Lari 3 sealer from Caveco, Italy, now represented by Record Packaging Systems

minium. "Smoothwall is now associated with higher quality prepared foods, and is a fast-growing market," he says.

He points out that Marks & Spencer and Tesco have both chosen aluminium for new premium ready meals ranges. In fact, in the case of Tesco's new Fresh range, nearly two-thirds of the 18 upmarket recipes in the range are in foil rather than plastics or board.

Since messages about dual-ovenable aluminium are not filtering down to consumers – or even being pushed very hard by brands and retailers – this focus on foil also suggests renewed consumer interest in traditional, rather than microwave, cooking.

Specific premium presentations from D2 include the Smoothdome PET lid, which can be heatsealed to a complementary smoothwall tray on the latest generation of Ulma Scorpius machines. The dome, which rises some 60 or 70mm above the top of the tray, can be used for uncooked whole poultry or joints of meat, says Mr Edwards.

But a snap-on version of the dome has already been used by one retailer for duck pieces in sauce. There is no reason, he says, why versions of the PET lid – which is formed with a heatsealable PE layer on the rim – could not be sealed to the tray to differentiate similar prepared foods in future.

D2 cites the recyclability of aluminium as one of the reasons why retailers are favouring foil over plastics. Others have noted the trend to look for alternatives to those polymers such as cPET which grabbed a large slice of the ready



**Repeat orders:** Katsouris Fresh Foods now has four Packaging Automation Vision 400 tray sealers

meals market during the 1990s. But not all agree that aluminium is the favourite to replace them.

Heat seal specialist Proseal believes that the trend towards using fibre-based packaging for sandwiches and other fast food is also being taken up by the ready meals market.

**RF sealing systems**

But Proseal pinpoints another way in which packaging and sealing preferences for ready meals can affect recyclability and overall environmental performance. Even a monolayer plastics tray needs to be laminated with a heat-seal layer, polyethylene onto a polyester tray, for instance. This means that the tray itself, and even any production waste, is not recyclable, says the company.

Like other tray-sealer companies, Proseal has been exploring radio frequency (RF) sealing as an alternative to heatseal and has been collabo-

seals can both be produced on the same material.

“RF is still relatively new, and further development work will take place in the coming months and years to refine the systems and bring a range of machines to the commercial market,” says Proseal UK director Steve Malone. Even so, Proseal sees RF sitting alongside heatseal as an alternative to – not necessarily a replacement for – the more traditional sealing technology in specific applications.

Adpak has represented Italian tray-sealing specialist Reepack for only a few months, but is already seeing some unexpected benefits. Area sales manager Tony Roberts, who is responsible for Adpak’s food division, says he already has the answer to one customer’s request for a line to seal 120 board/PE trays a minute thanks to Reepack’s German factory, which can offer just such a system. In fact, the Reefast 1000 is able to seal up to 130 trays a minute.



**High speed:** Ishida QX-1100 seals up to 200 trays a minute

Most of Reepack’s tray-sealing business is in more conventional areas, with top speeds of around 18 cycles a minute. On the RK60 machine, speeds go down to 6-8 trays a minute, but Mr Roberts emphasises that the system is still automatic. Other machines in the range include the Reematic, with an output of eight large trays a minute, while for off-line sealing, Adpak has Reepack’s bench-mounted system.

rating with RF applications specialist Stanelco on a sealing system based on this technology. Production waste can be reused, since there is no need for lamination, and weld seals and peel

sealing machine, launched in the UK at last year’s Foodex-Meatex exhibition, is said to be the first machine to offer speeds of 200 packs a minute, while at the same time maximising

flexibility between tray formats. As well as servo control, the line incorporates a new gripper arm design, Ishida's Inside-Cut seal system, and the ability to adjust seal width and 3D profile. Tool handling, and even tool design and manufacture, have been simplified, according to the company.

### Integrated checkweigher

A checkweigher integrated within the machine means that over or underweight packs can be identified prior to sealing, so potentially saving lidding film and cutting tray wastage. For MAP, the gas mix is continually analysed and adjusted where necessary. A 'sleep mode' facility avoids condensation on the tooling, and ensures that the machine is always ready for immediate use after pauses in production.

Record Packaging Systems is now distributing tray-sealing equipment from Italian manufacturer Cavoco, said to be the third largest producer of such machinery in Europe. The range starts with the Lari 3 semi-automatic machine, and is topped by the hydraulically operated Automa and Gamma fully-automatic systems.

All Cavoco systems have the option of vacuum skin packing which, Record argues, greatly enhances the appearance of the product.

Tray-sealing systems available from Erapa UK include the fully automatic GV80 and semi-automatic GV52, both from Vacuum Pump, Italy. The stainless steel GV80, protected to IP65 standards, can be combined with gas flushing, MAP, tray denesting, tray-filling and weighing. Conveyors can be programmed with soft start-stop facilities for spillable products.

Repeat customers for Packaging Automation include Katsouris Fresh Foods in London, specialising in pasta ready meals and cauliflower cheese-type products. The company's two sites now employ four automatic Vision 400 tray sealers each capable of speeds up to 18 cycles a minute and running four impression tools to give outputs up to 72 trays a minute. The system can operate with or without MAP.

For manual tray-sealing, Planet Flowline has recently installed several Tecnovac Olympia S machines, equipped with fully-automatic film wind. These have been supplied for products as diverse as prawns, meat portions and sausages. Tooling can be interchanged with the entry-level Athena machine and both machines can be rented, as well as purchased.

Higher-speed systems from Tecnovac include the Linear 500, with a maximum throughput of

60 a minute. Tooling can be changed over in ten minutes.

Finally, FP Packaging Machinery has recently supplied a snap-on tray lidding unit to a major French ready meals producer. The lids, which incorporate a fork, are applied to film-sealed plastic trays of single-serve pasta at speeds up to 40 a minute although FP says the lidding stage could manage 65 a minute.

Vacuum suction pads lift each lid from an inclined stack, holding it in place until a tray is indexed into position underneath it.

Each tray is stopped at a pneumatically-actuated gate, then released into the lidding area against a second gate. The lid is placed and tamped in a single movement, thanks to a customised plate which surrounds the vacuum grippers.

The reciprocating placer uses a servo drive and an integral and expandable PLC, so that control can extend to gating sequences and guarding. Equally, the servo controls allow size changes to be carried out rapidly.

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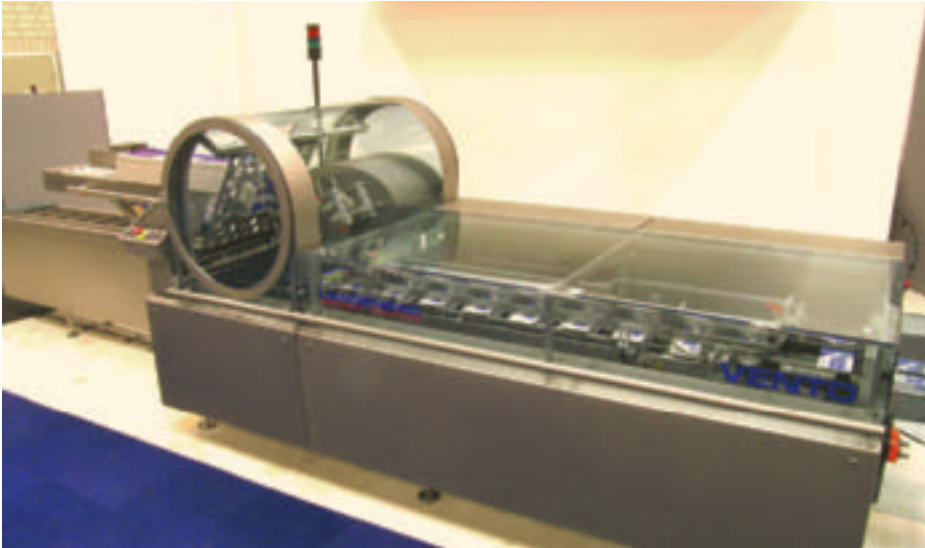
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**Langenpac Vento:** Fewer parts are said to mean more competitive pricing and easier maintenance

CARTONING AND SLEEVING

## Frozen trays pose challenge for high speed cartoning

**T**rays of product, especially when they are frozen, can be distorted and difficult to handle at high speeds. Preparing them for cartoning can be a particular challenge, and one which Kliklok Woodman helps to address with its Rotary Transfer System (RTS).

The RTS allows trays to be received from upstream equipment narrow edge leading. A combination of software and belt technology helps to position the tray, which then enters the rotary turret where a right-angle turn smoothly sweeps the tray into the infeed conveyor of the cartoner.

Kliklok Woodman cartoners suitable for ready meals are available in speed ranges up to 250 cartons a minute. The smallest machine, the CCI, is a fully-automatic option said to be a cost effective solution for speeds up to 40 a minute. As the company says, this may be suitable for smaller producers, or larger manufacturers needing additional seasonal capacity.

The mid-range SFR cartoner will handle outputs up to 150 a minute, with different infeed options and a servo-driven version.

Represented in the UK by Springvale Equipment, Langenpac has its intermittent-motion Breeze and continuous-motion Vento cartoners, which incorporate servo drives and quick-change features. Breeze machines will run at speeds up to 80 a minute, handling cartons up to 15in pitch while the Vento can handle up to



**Banding trays:** BandAll units from Erapa (UK) can apply bands up to 100mm wide

450 a minute using cartons up to 9in pitch.

Langenpac stainless steel cartoners were recently delivered to two ready meals producers in North America. One of these is a Californian rice-based meal manufacturer which uses the 'billboard' effect of the carton to promote the healthy positioning of its range.

Rather than being dragged along the chain inside the cartoner, the blanks are positively carried along by lugs in the product path. In this case, gable-top tooling helps to differentiate the carton from competitors. The cartoner manages speeds between 80 and 100 a minute, says Springvale.

### Tapered carton

The second installation is for a microwaveable ready meal packed in a tapered carton. Once again, this provides a valuable point of difference for retail, but poses particular challenges at the carton erection stage.

The rice-based contents, packed in a bag, are manually loaded onto the infeed at speeds of 60ppm. Tapered lugs in the product path again

protect the carton graphics by carrying the blank, and also accommodate the tapered sides. The speed challenge was overcome by using a double-pitch indexing belt and angled carton magazine with a dual feeder.

Frank Van Bentum, sales manager at Langenpac in the Netherlands, says: "A key aspect of our new machines is the lower parts count, which is the result of lean engineering and customer interaction." He adds: "Lower parts counts lead to more competitive pricing and easier maintenance."

Kliklok Woodman offers both cartoning and sleeving machinery, but notes that increasing numbers of brands and retailers are switching to sleeves for microwaveable ready meals.

The Certiwrap range of wraparound sleeving machines, which includes the 150-a-minute C150, features quick, three-dimensional size change, allowing changeover times of less than 10 minutes, says the company. These sleeving systems can also accommodate tray 'doming', where the film lid expands in production.

D2 Food Systems is now supplying the Sure-sleeve machine for pre-glued sleeves. Designed by Italian sleeving and cartoning specialist Rama, the system takes up 1.5 metres of line length and will apply anything from full-length sleeves to watchstraps at speeds up to 60 a minute.

Typically, smaller ready meals operations are still sleeving by hand, employing two or three staff to keep up with a 40 or 50 a minute production line, points out D2 managing director Dave Edwards. So payback through automation can be relatively fast. Crucially, though, if there is a problem at the sleeving stage, the use of pre-glued blanks means that they can be applied by hand, if necessary.

Landor Cartons reports it has recently sold two new designs from the Vimco range of sleeving equipment. The Italian company's machines are built in stainless steel as standard, with either an in-line or tangential infeed, as required. One of the two models has the capability to switch quickly between round and rectangular trays, says Landor.

Maximum machine speeds are 80 and 150 trays a minute. Material overlap is said to be minimised at the hotmelt gluing station, with the option of a pre-gluing module to bond the sleeve to the tray and so help prevent in-store tampering.

As an alternative to sleeving, banding has distinct material-saving advantages. Erapa UK, which supplies BandAll band applicators,

points out that pre-glued board sleeves have to be made to a fixed maximum size to compensate for manufacturing tolerances. Bands, on the other hand, are applied with the same tension around each pack. One reel can hold 2000 individual bands.

Paper or plastic bands can be supplied 29, 48, 75 and 100mm wide, in anything from full-colour designs to simpler decoration. Applicators can include overprinters for variable information such as barcodes and best before dates. Erapa points out that the same system can contribute to shelf-ready packaging (SRP) solutions, holding a collation together until it is lifted on-shelf, at which point the band can be easily removed.

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END-OF-LINE

## Wraparound case packing suits multipacked pots

**C**ama Group installed equipment for both electronic sleeving and wraparound case-packing, both at high speeds, at a French customer last year.

In this installation, small cups containing sweetcorn are put into board sleeves in either single or twin-layer formats at speeds up to 200 cups a minute. The multipacks are then collated in a pocket conveyor before being transferred using a two-axis robot for wraparound case-packing at speeds of 13-26 cases a minute.

The combined operation has a relatively compact footprint, says Cama, and offers good access for the operator.

Small cups of this sort are used internationally for a number of different food applications. The availability of high-barrier plastics versions means that microwaveable snack pots containing products such as fish and vegetables can now be sealed and sold as ambient, long-life foods.

For end-of-line operations which are otherwise manual, Endoline has its 100 series of case-formers. The machine folds the lower flaps, then holds the case open and steady to allow packing to take place. The simple operation has few moving parts, says Endoline, and requires no adjustment when moving from one case size to another.



**Wraparound case-packing:** Cama machine handles multipacked pots at 13-26 cases a minute

The company's 200 series of fully automatic erecting machines can handle cases for transit and trays with hinged lids and other display features. Finally, the 310 series of pick-and-place machines provides fully automated loading of cases and trays, and is particularly suitable for companies moving away from repetitive manual handling operations.

**Twin level packing station**

One ready meals producer has installed Endoline's twin-level hand-packing stations on three manual sleeving lines. Here, pack consumables are held on one level, and product on the other. Endoline 200 case erectors were installed on three higher-speed lines running automatic sleeveers at speeds of 60 packs a minute.

Another manufacturer took delivery of Endoline's type 221 case erector, designed to handle smaller, shelf-ready units at higher speeds. Case erecting speeds rose from 12 to 20 a minute, says the supplier.

As well as providing end-of-line systems based on Fanuc robots, Pacepacker Services also builds its own multi-axis servo system designed specifically for packing into retail crates and boxes, at speeds up to 120 packs a minute. Using vision systems, the equipment can also identify a variety of pack characteristics in preparation for picking or palletising, such as colour, size, product, weight and even orientation.

Crate de-nesters are also available, with the standard unit holding 20 crates and storage for 40 more.

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QUALITY CONTROL AND TRACEABILITY

**Costs fall for X-ray inspection**

The bulk of small-to-medium size ready meal producers are still likely to have just the minimum requirement of metal detection on their lines says Darren Eaton, product inspection service manager at Thermo Scientific. X-ray inspection remains very much the preserve of the larger operations.

This is despite much greater competition in the X-ray market, and a gradual erosion of equipment prices. Mr Eaton notes that the first generation of what is now Thermo Scientific's Goring Kerr range had a price tag of around £120,000 some 10 or 15 years ago. A similar mid-range machine now might be priced at £30,000-£40,000, he says, depending on the reject mechanism.

The PROx, introduced in mid-2006, is the fifth generation of Goring Kerr X-ray equipment. Its key distinguishing feature, according to the company, is that it offers greater competition on cost since improved manufacturing costs have allowed prices to be reduced by up to 10 per cent compared with the previous range.

Thermo Scientific says it now offers a complete range of X-ray systems. Entry-level equipment includes the EZx, introduced just over a year ago, and offering basic contaminant detection. In fact, says the company, it can be seen as an alternative to ferrous-in-foil metal detection.

At the top end of the market, the company now offers a range of equipment from Italian specialist Dylog. Here, applications requiring higher processing power would typically include glass-in-glass detection.

In the UK especially, with retailer own-label dominating the chilled ready meals market, product protection goes hand-in-hand with brand protection when it comes to quality control. "Suppliers to the more upmarket chains such as Marks & Spencer are put under some pressure to use X-ray, if possible," says Mr Eaton. "People are afraid of the press coverage with any contamination scare."

Bone is one of the leading contaminant risks for meat-based meals, he points out. "In fact, virtually every UK poultry supplier has X-ray equipment, and where a meat supplier does not have a suitable system in place, meal manufacturers will be pushing them to install one."



**Non-invasive:** Celsius microwave thermometry system from Loma can reduce freezer costs

Nonetheless, fluctuating ingredient prices and continued pressure on retail pricing will sometimes leave makers of meat-based meals with little option but to use cheaper sources of supply. Where a given ingredients shipment is seen to pose a particular risk (pieces of stone in vegetables is another potential hazard), or line components such as rubber washers are thought to have contaminated a specific product batch, says Mr Eaton, customers can use Thermo Scientific's product inspection service.

**Try before you buy**

This service allows manufacturers either to ship a batch of product to Thermo Scientific's site for high-sensitivity X-ray inspection, or to install equipment temporarily at their own site. Mr Eaton is the first to admit that, although this can act as a one-off service to address specific problems, it also has a "try before you buy" function. "It does sometimes help to persuade manufacturers that they need their own in-house X-ray systems," he says.

Another, very different, element in quality control which is of vital importance to the chilled meals market in particular is temperature monitoring. Loma Scientific says its Celsius microwave thermometry system can deliver real savings to companies, and offers substantial benefits compared with alternative systems.

Traditional methods of temperature measurement include thermocouple probes and infra-red systems, Loma points out, but both have their limitations. Probes can be easily broken, cause product wastage and are generally only accurate to ± 1.5deg C, it maintains. Infra-red is unable to take readings beyond the product surface.

Microwave thermometry is non-invasive, and

takes an equilibrium temperature, rather than one from the outside or middle of the product. Because the system is accurate and consistent, says the company, manufacturers no longer have to overcompensate with lower settings on their chillers and freezers.

According to Loma, one ready meal producer is taking off-line temperature readings every 30 minutes, and is using the Celsius system to make savings of over £40,000 a year. It is also useful for the frozen sector, where one producer has been able to run its freezer 4deg C higher.

Auto ID systems integrator Cobalt IS explains that the growing tendency to pack multiple short-run products on a single line makes the validation and verification of codes and labels an especially important aspect of ready meals quality control. The use of Cobalt Sentinel means that the entire process is controlled from a single point, says the company.

Biometrically-approved access at the beginning of a product run allows the operator to identify a specific item. Set-up parameters are automatically sent to the ink jet coders, validation systems and print-apply labellers for primary and outer packaging. This avoids the risk of inconsistencies and errors where individual

pieces of equipment need to be reset manually.

Every pack is checked to ensure that all data is correct for the batch, and any product is rejected without interrupting the flow of production.

When dealing with all types of food and pharmaceutical supplier, coding and labelling specialists increasingly need to offer comprehensive systems for product traceability. Although radio frequency (RFID) tagging receives the most attention, says Codeway sales manager Barry Day, traditional and 2D barcoding can also hold huge amounts of supply chain data. And they can do it for individual items.

### Extra data with 2D codes

"You can apply a secondary code with time and date of production and batch data, and that won't incur extra costs," he points out. "I promote 2D codes such as Datamatrix, because they can compress a lot of data and still use standard GS1 identifiers."

Some manufacturers prefer to use standard bar codes, even for internal and traceability data. Mr Day points to the example of Pukka Pies in Leicester which uses the EAN 128 symbology on individual cartons.

Machine-readability is key, he says. While price barcodes are the only instore codes that are currently machine-readable, retailers are keen to have similarly scannable codes for key data such as best before dates, he says. For this reason, debate is now focusing on whether Reduced Space Symbology (RSS) should be used to encapsulate this type of data. ■

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For full details of all PPMA members able to supply equipment for ready meals, consult the PPMA machinery finder service, tel: 020 8773 8111, or visit [www.ppma.co.uk](http://www.ppma.co.uk)

# INSPECTION

LATEST SYSTEMS FOR CONTAMINANT DETECTION AND CONTAINER, CODE AND LABEL MONITORING

## CONTAMINANT DETECTION

### X-ray moves into the mainstream

As X-ray technology moves into the mainstream it seems to be developing in two, distinctly different directions.

At one end of the market, suppliers are focusing on broadening the capabilities of X-ray systems, with high specification units that offer mass measurement, missing product detection and fat analysis. At the other end, suppliers are going back to basics, focusing their efforts on developing affordable and user-friendly equipment that shakes off perceptions that X-ray is somehow 'difficult to use' and 'unreliable'.

Smiths Detection is one company that is focusing firmly on adding value with X-ray. Terry Woolford, manager, product inspection, says: "More and more people are looking to get additional value from their systems – it seems there's a move towards integrating X-ray into process control."

One area in which Mr Woolford says X-ray can enhance process control is in fat analysis. Smiths Detection's Eagle FA X-ray system incorporates an on-line fat analyser, which means it not only checks for foreign body contamination, but also verifies the chemical lean (CL) of meat products.

"Meat buyers and importers don't always know the fat content of the meat that is coming into their factory," explains Mr Woolford. "If they know what they are buying they can negotiate with their supplier and only pay for what they have received."

Another 'value adding' function which can be carried out by Smiths' units is the detection of product caught in seals. "Our systems can tell the user when they've got product trapped in the seal before the seal degrades and the pack becomes useless. Supermarkets will return a whole shipment based on one or two leakers," comments Mr Woolford.

Smiths has supplied dozens of X-ray systems

to UK food plants to carry out the combined job of a metal detector and checkweigher. Using an X-ray machine to fulfil the role of contaminant detector and checkweigher also takes some of the sting out of the cost of X-ray, because although the technology has come down in price in recent years, it is still pretty steep compared to the more modestly priced metal detector.

Smiths is by no means the only company to be pushing the mass measurement capabilities of X-ray machines.

Anritsu's KD74 Japanese-built series of machines, which is distributed by Selo UK, features a mass measurement function which enables the unit to act as a checkweigher and detect missing product as well as broken and mis-shapen products. All these functions are controlled via a 15in colour touchscreen that also incorporates the X-ray image monitoring screen.

### Calculating weights

Loma, part of Spectrum Inspection has long been extolling the virtues of mass measurement in calculating individual weights in multi-compartment products. This 'zonal' weighing function is particularly valuable for identifying miss-

ing components in boxes of chocolates or multi-compartment lunch packs.

But do food companies really want a machine that can verify product weights and identify missing items, or do they actually just want a system that does "what it says on the tin", namely find contaminants?

### Pressure from retailers

While there is a clear justification for these additional functions in certain applications, many adopters of X-ray are ready meals companies who are switching to X-ray under pressure from retail customers.

Recognising this, Mettler-Toledo has gone back to basics with its latest system, the AdvanChek. "This machine is purely a contaminant system designed around food industry requirements," explains Ian Robertshaw, sales account manager with Mettler Toledo.

"We've taken away the functions that a lot of companies, to be completely honest, don't use. I'd say it is for somebody in the ready meals industry who is being pushed by a retailer to start doing some proper contaminant detection on a foil package, who doesn't want mass measurement and just wants a reliable contaminant detection system. The only thing the operator has to input is the belt speed and the name of the product."

Cintex, now part of Spectrum Inspection, was one of the first companies to bring X-ray into the realms of affordability with the launch of its XR system, a few years ago. The XR is still going strong and, for example, was recently installed at Healthbars Unlimited to inspect cereal, fruit and nut, energy and carob bars.

Healthbars Unlimited knew it needed to go further than a conventional metal detector, as occasionally stones and other contaminants from the fields come in with organic fruit, nuts and seeds, but wasn't that keen to pay X-ray prices.

Cintex recommended the XR X-ray system, a low cost system that is priced in line with many metal detectors.

It uses the same computer electronics and user interface as the Cintex range but includes a new, low power WASC (wide angle, self cooled) X-ray design which has fewer moving parts and



**Combination X-ray machine:** Anritsu's KD74 X-ray machines have a mass measurement facility

occupies minimum space. With an overall length of 1.8 metres including integral reject system, the system fitted into the limited space available. Ease of operation is assured by a backlit LCD with simple touchscreen controls.

Other developments in X-ray have focused on improving performance in specific applications.

### Better sensitivity

Ishida Europe entered the UK X-ray market last October with its IX-GA range, already a commercial success in Japan. Ishida says its USP is Genetic Algorithm (GA) technology. "The machine can learn to look for certain types of contamination, which means it can achieve better detection sensitivity and reliability than machines with standard algorithms, and other types of contaminant won't suffer," explains new product development manager Rich Rotkirch.

Smiths Detection, meanwhile, has introduced a new technology called MDX (Material Discrimination X-ray), which allows detection of 'softer contaminants' that previously passed unchecked through X-ray machines. "To give you an example, we can actually find golf balls in bulk flow potatoes. A normal X-ray machine can't find that because there's no real difference in density between the two," says Terry Woolford, manager, product inspection. "MDX does this by discriminating between organic and inorganic materials."

The company has recently launched a four-beam X-ray system, leaving no escape route for contaminants lurking in the bottom of glass jars.

"Current systems are limited because they can't see round the bottom of a container, so contaminants can hide. If you want 100 per cent coverage, the only way to do it is with a four-beam system," says Mr Woolford. He adds that Smiths Detection has already received orders from two of the world's five largest baby food manufacturers.

A twin-beam system for upright jars, cans, bottles and boxes is one of the units in the POW-ERx series, a new X-ray range currently being launched by Thermo Scientific. The POWERx family consists of 16 models which are collectively capable of inspecting products ranging from small pharmaceutical glass vials to large cases. The range is said to use high resolution detectors and advanced image analysis software to achieve the highest possible sensitivity and lowest possible false reject rates. Virtual Contaminant Testing software is available to simulate various contaminant types, sizes and positions and quickly determine how to achieve the best

performance in each monitoring application.

Advances in X-ray might be more exciting, but it doesn't mean innovation in metal detection is dead. Admittedly, sensitivity levels are nearing their limits, however, judging by recent new product development, some metal detection suppliers believe there is still room for further improvement.

"One of the problems we have in terms of delivering high performance is stability – customers can set up the machines for very high sensitivity, but unless the metal detector is stable, they will get false rejects," explains Mettler-Toledo's Ian Robertshaw.

The company has redesigned the coil system on its pharmaceutical metal detector, the Tablex, to give it more stability. In addition, Mettler-Toledo has launched a new series for the food industry, branded the R-Series Profile. Three units are in operation at Shrewsbury-based Rea Valley, a manufacturer of tongue products for the deli and pre-pack market.

Rea Valley turned to Mettler-Toledo because it wanted to invest in equipment that was capable of isolating minute metal particles and slithers of metal in frozen meat products weighing up to 25kg.

The application presented a number of challenges. The general rule in metal detection is 'the smaller the aperture, the greater the sensitivity', however the large product required a correspondingly large aperture. Secondly, while Rea Valley needed to guard against slithers of metal, the 'orientation effect' makes it more difficult to detect non-spherical particles.

So Mettler-Toledo specified a triple-head configuration which addresses these issues by maximising the opportunity for detecting metal. By positioning one metal detector straight across the conveyor and the other two angled at 40deg, the chance of any orientation effect occurring is minimised.

### Redesigned coil system

A redesigned coil system is also the basis of the latest introduction from Thermo Scientific. In launching the Apex metal detector, the company claims it has improved sensitivity by up to 20 per cent over the previous generation of products. The Apex incorporates 'multi-coil' technology, which uses several emitter coils to make magnetic flux more consistent in the aperture, improving signal levels and hence detection performance.

S+S Inspection has also improved the stability of its metal detector to make it less suscepti-

ble to electronic and mechanical interference, while reducing the size and weight of the head.

"One of the things manufacturers are very concerned about is the amount of space the equipment takes up on a line, because to most people, it is an insurance policy that doesn't add any value whatsoever to production," says Richard Lines, managing director of S+S Inspection's UK business.

Indeed, space restrictions were a major consideration when the company was asked to devise a solution for inspecting individual cake portions at Devonvale Bakery in Honiton. Conventional equipment was too big for the restricted, metal-free space available between the labelling station and the packing line, but the compact Consense-D slotted neatly into the line. S+S also extended the length of the outfeed conveyor to allow contaminated product to be easily removed.

### Four frequencies

S+S has also launched the Genius Quattro metal detector, which uses four frequencies, allowing it to monitor products with a variety of characteristics while achieving low false alarm rates.

In fact, metal detectors with multiple operating frequencies are becoming increasingly common in the food industry, driven in part by the widespread use of metallised film.

Loma and Cintex at Spectrum Inspection recently introduced the industry's first variable frequency metal detector with an IP69K rating. This allows the machine to resist the harshest of manufacturing conditions, such as washdown using water at pressures of 80-100 bar, and temperatures of 80deg C, from a distance of 100-150mm.

The unit is said to deliver a 'quantum leap' in immunity from vibration, electrical interference, case distortion and thermal shock.

Anritsu claims to be the only manufacturer offering metal detectors that operate simultaneous dual wave frequencies. "Most metal detectors have either one frequency or two frequencies that can only operate individually," explains Chris Keenan at UK representative Selo UK. "This feature allows the operator to set one frequency to detect stainless steel, and the other to detect ferrous metals – ensuring the best possible accuracy for both types of metal."

Lock's high frequency detector – which was originally only available on horizontal heads – is now also available as a 'Wafertin' and free fall model. The detector works at 875kHz and is



**Latest X-ray machine:** Thermo Scientific has launched the POWERx series of 16 models

thought to be one of the highest frequency models for food. Its sensitivity to stainless steel in dry products makes it ideal for the snack industry, according to Lock. Most recently, Lock combined the high frequency with its triple frequency machine, the 3f, to make a 3f/hf model, which operates at three frequencies: 875, 286 and 100kHz.

Fortress Technology makes the point that ease of use for both operations and maintenance staff is a key issue and has therefore developed a facility for its Phantom metal detector to learn, save and recall easily the characteristics of multiple products.

In particular the machine is said to respond quickly to changes in product effect, with the calibration (phase adjustment/learn) allowing the detector immediately to learn and store the characteristics of each product.

Often it just takes an individual pack to achieve this, says Fortress, so minimising any interruption to production. Generally the function is initiated by the operator by a single key press, but for some products that can change over a production run it can be automatic.

Even so, where automatic calibration is chosen, limit controls ensure that contaminated product cannot be learnt and ignored, while the Phantom includes as standard a number of fail-safe features to ensure that any automatic reject device is monitored for proper operation.

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## CODES AND LABELS

## Checks avoid consequences of bad codes

The consequences of incorrect or illegible coding and labelling are serious stuff for packaged product producers, as Barry Day, sales manager at Codeway, points out.

"If a case is incorrectly marked or the bar code doesn't work, suppliers face fines. In the worst case scenario, if a consignment is found to be faulty, the retailer may reject the complete lorry load and charge a penalty fee for the inconvenience."

After being fined for incorrect labelling of products, a major jam factory installed the Codeway CheckRite system and now runs a number of production lines with self-checking as part of the standard process. Operating at speeds up to 250 jars a minute, the systems verify that containers are labelled correctly by checking bar code information.

Dimaco's Veri-Pack is available as an on-line and off-line label verification system. It checks that the correct labels have been applied to packs and verifies all essential pre-printed and overprinted data such as sell-by and use-by dates, price and weight information.

Meanwhile, Logic TPS has just designed a complete container handling system for checking 2D matrix codes and batch information printed around the circumference of the screw caps on eye dropper bottles.

Working with its principal PCE in Germany, which built the OCR and 2D matrix code cameras incorporated into the system, Logic developed a unit that only allows bottles giving positive read signals to pass to the next packaging stage, with unacceptable containers being rejected and moved into a secure storage bin.

A tray unloading unit removes the eye dropper bottles from collapsible trays and diverts them into three lanes on an indexing conveyor. The bottles are then fed three at a time into a servo controlled indexing starwheel, which presents them to the Minismart cameras. They then rotate through 2.5 revolutions to enable the codes to be read before the starwheel indexes round to a reject station, where any bottles with incorrect codes or missing information are ejected from the line.

In the pharmaceutical industry, Paul Osborne,



**Label verification:** Veri-Pack system from Dimaco checks all pre-printed and overprinted data

director of Hapa-Laetus UK, says the ability not only to read bar codes but also grade them according to their print quality is a major advantage for manufacturers.

"Codes can be subjected to processes that degrade their readability during pharmaceutical packaging," he explains. "If a manufacturer has a system that can verify the code and give its readability grade, they can prove they are getting codes out of the door that are readable by point of sale and other types of scanners in the supply chain."

Hapa-Laetus says it can carry out such checks at line speeds of 600 packs a minute using its Inspect wt. The system consists of three application modules: one and two dimensional bar code reading, print quality control (OCV/OCR) and bar code quality checking. Its modular design is said to make it more versatile with, for example, a single camera used with more than one application module at the same time (bar code and OCR/OCV together).

It also means the system can be extended by adding other application modules, with minimum revalidation requirements.

### For further information:

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## CONTAINERS

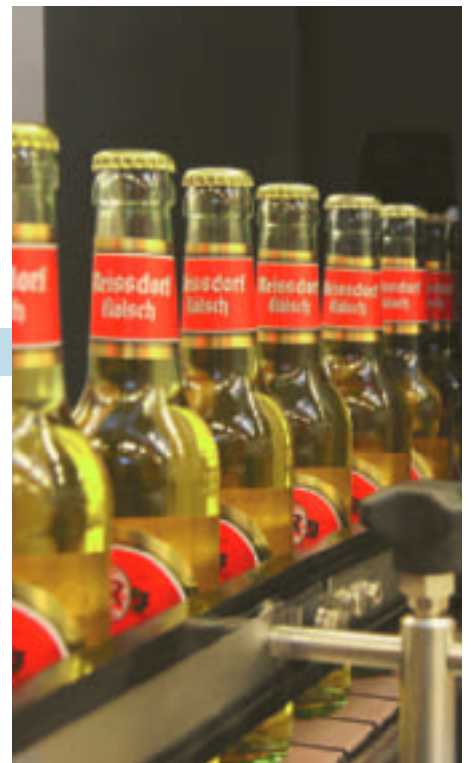
## Camera system rejects variety of defects

For pre-fill inspection, ICS Inex offers a range of systems that inspect incoming containers from base to finish, detecting even the most subtle defects.

The SAFI, for example, scans product surface and sub-surface defects using a two camera inspection system. It rejects chipped finish, overpress, lineovers and out of rounds in a variety of finish diameters including widemouth containers.

For post-fill inspection of rigid round or cylindrical containers, ICS Inex has also introduced the Gemini 3D non-contact inspection system. The system is described as a practical alternative to labeller-based inspection, as it provides a clean, adhesive and dust-free environment for inspection. Proprietary 3D technology enables containers to be inspected without orientation.

Heuft has drawn on experience in X-ray technology in developing the Heuft eXaminer for the beverage industry. The foreign body detection system, which was designed with the detection of glass splinters in mind, can examine up to 72,000 bottles an hour using a proprietary linear transport system.



**Inspection for bottles:** Heuft FinalView monitors the external appearance of filled bottles

Also new from Heuft is the Heuft FinalView, a system for checking the external appearance of filled bottles. High resolution colour cameras combined with object-oriented image processing are said to provide precise inspection of 'no label' look labels.

The main advantage of a new fill height technique developed by Krones versus camera or infra-red technology is that there is no source of radiation. This means there is no need for any approval or extended protective measures, plus the results are not affected by the bottle's shape and colour or by the light transmittance of the product.

The technology works by measuring the change in a capacitor's capacity (the two measuring legs and the bottle form the capacitor), and is equally suitable for glass and plastic containers.

The system is also said to offer a favourable price-performance ratio while accuracy is usually within 1.5mm of the target fill height.

For inspecting vials, ampoules and bottles containing injectable liquid, Adelphi Manufacturing recommends the German-built RMCA range of machines from Rota.

Besides verifying fill volume, the machines inspect product for glass fragments, particles and fibres, and check the packaging for cosmetic defects such as cracks, black specs and missing stoppers.

The inspection turret provides a double sequence of spinning and inspection by two cameras for particle inspection and a third camera for fill level detection. The system can handle containers of up to 52mm in diameter at speeds up to 24,000 an hour.

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**Inex Inspection Systems**  
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**Krones UK**  
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For full details of all PPMA members able to supply inspection equipment, consult the PPMA machinery finder service, tel: 020 8773 8111, or visit [www.ppma.co.uk](http://www.ppma.co.uk)

## Soft gel capsules checked by OCR

RNA has adapted its tablet inspection machine to accommodate soft gel capsules, using a system of rotating the capsules for OCR to be employed to verify logos and/or dosage over 360 degrees of the surface – an achievement the company believes to be an industry first.

Previously the system was used purely for carrying out single and double-sided inspection of tablets – checking for surface defects, chips, cracks and bubbles, and undersized product, and verifying the presence and legibility of multiple characters stamped or printed on both surfaces using OCR and/or OCV.

The system consists of a stainless steel vibrating bulk hopper, a stainless steel bowl



feeder, a two-camera system and an air blast reject mechanism.

T: 0121 749 2566  
E: rna@rna-uk.com

## All round inspection for one-side faults

The Autosort MC-DX72 sorter from Radix offers all-round inspection to detect defects that can be seen on one side of the product only, for example, the green top of a sliced carrot, a mouldy peanut or a bad crisp buried in the product.

A new ejector configuration combined with fast acting pneumatic valves also promises to ensure accurate removal of defects and contaminants with minimal wastage of good material.

A purpose designed 'Snapshot' processing engine capable of inspecting more than 500,000 items a minute lies at the heart of the

sorter technology, according to Radix, while higher speed line-scan cameras allow detection of defects as small as 0.5mm. Using four specific wavelengths for illumination is said to give a wealth of information, including high speed analysis of spectral signature. This enables detection of subtle colour differences and even contaminants the same colour as the product.

In addition to colour, the sorter can detect size or shape defects in snacks, nuts, biscuits, rice cakes and so forth.

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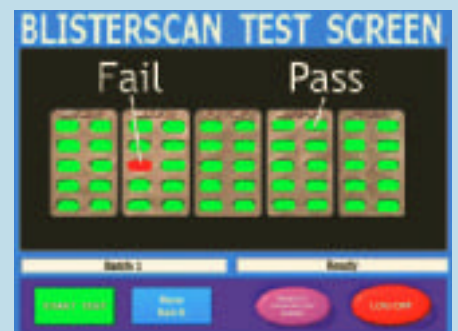
## Validatable NDT on blister packs

The BlisterScan from Sepha is a validatable, non-destructive alternative to the methylene Blue Dye test.

Pass or fail indication is not subject to operator interpretation while leaks and weak seals as small as 10 microns can be detected across the full width of the blister web, and the individual leaking pocket identified.

Sepha points out that this precise fault location allows blister line engineers to trace the exact source of quality inconsistencies including pinholes in packaging material, inconsistent sealing temperatures, material indexing problems or tool imperfections, such as burrs on sealing plates.

Unlike blisters subjected to the Blue Dye test, the non-destructive nature of the BlisterScan test allows packs that pass to be re-introduced to the line while product from failed



blisters can be deblistered intact and immediately repackaged.

As a result, explains Sepha, one BlisterScan user packing a product valued at £1 on a blister line running on a single shift, calculated the payback on one BlisterScan machine to be less than 25 days.

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## DIARY DATES

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DRIVES & AUTOMATION

**18-21 March:** Pro2Pac food and drink processing and packaging exhibition. ExCel, London. Details: [www.pro2pac.co.uk](http://www.pro2pac.co.uk)

**26-27 March:** PETnology Europe conference and exhibition on drinks and beverage packaging in PET. Munich. Details: [www.petnology.com](http://www.petnology.com)

**2-5 April:** Gulf Pack 2007 packaging exhibition. Dubai. details: [www.gulfpack.info](http://www.gulfpack.info)

**18 April :** PPMA Seminar: Machinery risk assessment, giving practical hands-on experience using structured techniques based on European standards. Marriott Hotel, Northampton. Details: John Cowdrey: 020 8773 8111, [john.cowdrey@ppma.co.uk](mailto:john.cowdrey@ppma.co.uk)

**3 May:** PPMA Seminar: Update on the latest working of the Machinery Directive, for both users and suppliers of processing and packaging machinery. Marriott Hotel, Northampton. Details: John Cowdrey: 020 8773 8111, [john.cowdrey@ppma.co.uk](mailto:john.cowdrey@ppma.co.uk)

**5-10 May:** IFFA exhibition for the meat industry. Frankfurt. Details: [www.iffa.com](http://www.iffa.com).

**15-18 May:** Total Processing and Packaging Exhibition. NEC Birmingham. Details:

[www.totalexhibition.com](http://www.totalexhibition.com)

**15-18 May:** The Packaging Innovation Show. NEC Birmingham. Details: [www.packaginginnovationshow.com](http://www.packaginginnovationshow.com)

**13-15 June:** Pharmintech exhibition for the pharmaceutical, personal care and nutraceutical industries. Bologna. Details: [www.pharmintec.it](http://www.pharmintec.it)

**20-22 June:** Interphex Japan: pharmaceutical, cosmetics and detergent manufacturing exhibition. Tokyo. Details: Reed Exhibitions, tel: 020 8910 7743

**27 June:** PPMA Seminar: Update on the WEEE/RoHS regulations for both users and suppliers of processing and packaging machinery. Marriott Hotel, Northampton. Details: John Cowdrey: 020 8773 8111, [john.cowdrey@ppma.co.uk](mailto:john.cowdrey@ppma.co.uk)

**10-12 July:** ProPak China 2007 exhibition. Shanghai. Details: [www.propakchina.com](http://www.propakchina.com)

**11 October:** PPMA Seminar: Provision and use of work equipment regulations (PUWER). Includes practical advice on how to evaluate safety and to design guarding systems. Marriott Hotel, Northampton. Details: John Cowdrey: 020 8773 8111, [john.cowdrey@ppma.co.uk](mailto:john.cowdrey@ppma.co.uk)

# Machine Building

DRIVES & AUTOMATION

NEC, Birmingham, UK, February 13 & 14, 2008

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# Shorter production runs put Versatility first

CONTINUED EXPANSION IN THE CONTRACT AND GENERIC DRUG SECTORS HAS INCREASED DEMAND FOR SHORT-RUN, VERSATILE BLISTER PACKAGING MACHINERY.

**S**ervo controls that keep sealing time constant regardless of machine speed, and reciprocating carriages to give an extended D-cam motion for platen style tools are just two ways in which blister packaging machinery manufacturers have responded to calls for higher efficiency in short runs within the pharmaceutical industry.

The first absolves users from carrying out a series of validation procedures at different speeds to establish the optimum speed for a different product, while the second allows continuous motion and hence higher web speeds using flat tools.

Indeed, if the feed characteristics of the tablets should change, either during the batch or from batch to batch, then the constant sealing time feature also means that the output of the blister packer can be raised or lowered without losing validation.

When shorter runs only involve cartoning or labelling – rather than the blister pack itself – recent developments also include late stage customisation systems to allow high speed blister machinery to be kept employed efficiently on much longer runs.

Moves to a greater proportion of contract, and to some degree generic production, with frequent demand for short-order solutions have, of course, fuelled the drive to make short runs pay.

Ultimately this comes down to the ability to cope with a variety of substrates, rapid changeover, reduced downtime and ease of validation, so that short runs to meet just-in-time ordering become viable. At the same time contract packers can then begin to offer short runs on a truly commercial basis, rather than as fill-in contracts to keep machines occupied.

For example, Steve Kemp, business development director at Brecon Pharmaceuticals, believes the role of the packaging services provider has changed significantly in recent years.

"It's not so long ago that the contract sector was viewed merely as a cost-effective way of



**Latest line:** Brecon Pharmaceuticals' new Noack 623 blister packer and Promatic 4200 cartoner

dealing with products which were perhaps not the most important or profitable in a company's range," he says. "Today, as far as much of our business is concerned, quite the reverse is true – many of our customers are asking us to pack key products, or to handle complex jobs demanding a high level of skill. Our customers are rightly focusing on their key competences of product development and production; our key competence is packaging, so that as partners, we complement each other perfectly.

## Adaptable equipment

"Personnel skills and training are of course essential but we do rely on equipment that is adaptable to market demands. Last year, for example, we were the first UK company to install a Pill-protect system to ensure compliance with BS8404 child-resistance legislation. We also need to be able to accommodate a wide range of batch sizes – on the one hand, many small batches for delivery to different markets, while on the other, we can expect longer runs as customers use outsourcing strategically."

The company is the largest user of platen-

sealing Noacks in the UK, with four 760s and six 623s supplied by Romaco, and is also one of the biggest success stories in its sector. Having increased turnover by a factor of six in just five years, Brecon was last year acquired by AmerisourceBergen, one of the world's largest pharmaceutical services companies.

Indeed, according to Romaco UK managing director David Dixon, changes in the market and the resulting shifts in production patterns have been key factors in Noack's sales growth in recent years.

"Noack has always advocated flexibility and high equipment utilisation over the headline measure of blisters per minute," he explains. "A decade ago that meant that there was a significant proportion of the market that did not look for flexibility first – companies were running larger batches and often had the luxury of dedicated lines so that changeover times were almost irrelevant. Lines could stand idle for days or even weeks at a time.

"However, with consolidation across the industry comes increasing competition from the internal market and the result is that all produc-



**Continuous motion:** Reciprocating carriage carries the heating panel and tools on Uhlmann's Blister Express

ers now have to maximise utilisation of every line: idle equipment is simply not an option in today's highly competitive market.

### High utilisation will win

"The drive to smaller batches and shorter delivery times to satisfy customer and market demands dictates that flexibility, with high equipment utilisation, will win hands down over the simple potential for throughput speed."

Quality, regulatory and customer expectations have undoubtedly added to the complexity of operations at Brecon Pharmaceuticals.

Among challenges outlined by operations director Andrew Billington are increased demand for more complex base materials and cold form packs, more mixed fill packs with as many as five different products per blister, and greater rigor in the range of process measurement tests required, including enhanced validation requirements, leak integrity testing and even measurement for consistency in the thickness of blister pocket walls.

"Significant investment in technology and increased automation has helped us to address

many of these requirements," he explains. "Machines now have a battery of detection devices – high product sensors, eject verification, splice detection, Pharmacode reading and so on. We have fitted colour cameras as standard on all new lines to ensure product integrity and have also installed a Hapa printer so that we can offer on or offline printing of blister foils, a more and more common request.

"Minimising changeover and cleaning times is essential to profitability, particularly as we generally have to strip machines down much further at batch end to comply with more rigorous cleaning and cleaning verification procedures. GMP-compliant design of blister machines and quick change features are therefore essential."

One way of cutting downtime is to integrate a cartoner with the blister machine under a single control system. This ensures compatibility and allows data to be extracted from one source, which makes record keeping and diagnostics that much simpler. It also eliminates the requirement for a blister magazine to transfer the blisters to the cartoner, since feeding is continuous.

Indeed, eliminating the job of manually re-

stocking magazines reduces downtime further and removes a potential source of misfeeds.

Said to be the fastest single lane blister line in the world, Uhlmann's latest integrated blister line, the Blister Express Centre 500 operates at speeds up to 500 blisters a minute – 20 metres a minute web speed – and requires just 20 minutes for a full three-dimensional size change.

### Small batch efficiency

Made up of a B1550 thermoformer, MultiTab feeder and C2504 cartoner, the line continues the Blister Express concept launched initially by Uhlmann at Interpack in 1999 for high efficiency in particularly small batches, this time offering enhanced efficiency for batches in the range 30,000 to 150,000 blisters.

A continuous motion machine, the B1550 nevertheless avoids the cost of rotary tooling by using platen-style stations that move with the web in a D-cam motion for thermoforming, coding, perforation and cutting. This means that tool sizes are relatively small, lower cost and easy to handle for changeover.

The machine also shares the new frame construction pioneered in 2005 by Uhlmann for its ultra-high speed B1880 thermoformer, which is based on a frame cast from mineral reinforced polymer, rather than the conventional welded steel.

The result is a monolithic construction that absorbs vibration and creates a particularly quiet, stable base for the working parts. In addition, the casting process is able to include built-in channels for air and cooling water, eliminating some pipework.

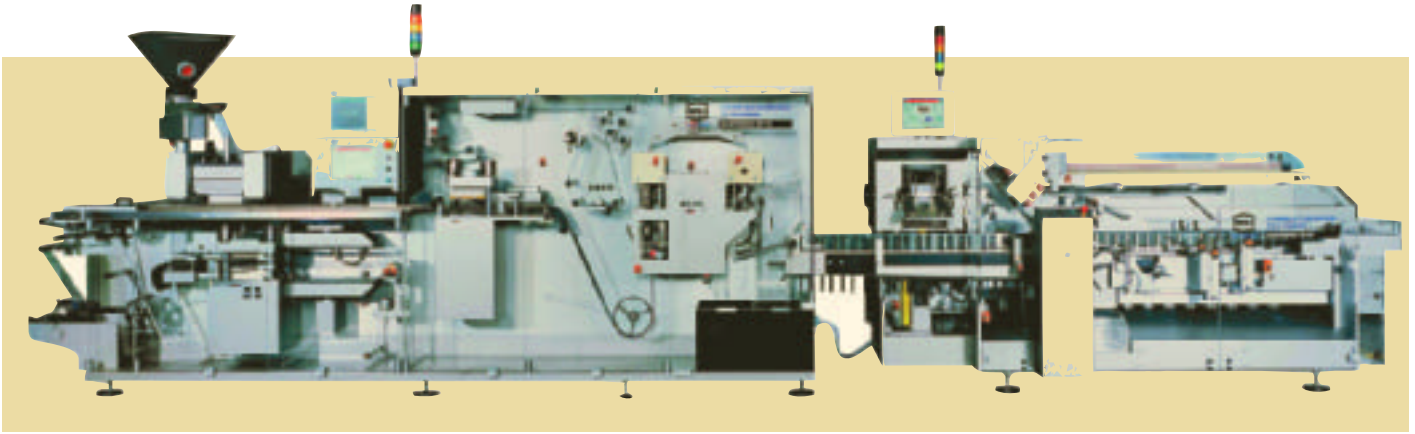
The combination of continuous motion with operating heads that track the web in a D-cam motion starts with the heating section where Uhlmann has introduced a near infra-red heating panel that operates without contact with the film.

This is mounted above the forming tools, running on a reciprocating carriage with film temperature monitored to within  $\pm 5$  deg C via an infra-red pyrometer. Before entering the heating station the film is taken through an ionised air jet curtain to eliminate static and remove any dust with vacuum.

A dual reelholder for the forming film, with a flying splice for continuous running, is included within the machine footprint under the filling section, rather than as an external item, reducing floorspace and cost.

For feeding, Uhlmann has developed the new MultiTab station specifically for the BEC 500

## BLISTER PACKING



**Short to medium runs:** IWK Blisterpac BP 10 (left) is integrated to the Cartopac SI 10 intermittent motion cartoner in a line just 7.8 metres long

line. Tablets are fed down the channels of a vibratory feeder onto a series of format plates that index to the rear of the web, for handling by a multi sucker pick-and-place plate which synchronises with the web motion via a linear servo motor drive.

Tablets are picked on individual suction heads able to handle shingling products and also accept up to 0.5mm thickness variation in the product. This avoids misfeeds and potential reject packs said to be common with these products in other feeders.

Prior to sealing by a rotary system, the blisters are inspected for correct fill. Also, throughout the multiple stroke area, the web is indexed continuously to avoid tension. Perforating, coding and punching are carried out by individually driven and positioned floating stations, to assure the accuracy of the process. However, only good blisters are punched and accepted positively upwards into the in-line feed to the transfer mechanism for the cartoner. Any reject blisters are simply left in the web and allowed to continue through the punching station and are then cropped into a reject bin.

In this way, points out Uhlmann, the reject blisters not only have quite a different appearance from good blisters, but for added security will also usually not fit in the carton.

Blister placement into the continuous motion cartoner infeed is via a series of platforms on a reciprocating beam that tracks the movement of the cartoner's product chain.

This servo driven cartoner, with push button size change, is equipped with a new mounting arrangement for the leaflet feeder which, for ease of maintenance, can slide completely clear from the rear of the machine. A checkweigher module is also integrated in the cartoner's out-feed to cross check that cartons are correctly filled.

A compact mid-range blister packing line, which can be changed over – including cleaning

– in less than an hour, has been launched in the British Isles by IWKA PacSystems, the UK subsidiary of German manufacturer IWK Verpackungstechnik.

Measuring just 7.8 metres long, the line consists of two servo driven machines, the BP 10 blister packer – available with either intermittent platen or continuous rotary sealing – and the Cartopac intermittent motion SI 10 cartoner, linked by a direct blister transfer mechanism. Speed is up to 330 blisters and 165 cartons a minute.

"The new line is aimed at short to medium run blister packing where regular changeover is required," explains Derek Moore, managing director at IWKA PacSystems. "Including cleaning this takes less than an hour although the purely mechanical changeover can be achieved in under 20 minutes."

### Constant sealing time

Servo drive and intelligent controls on the BP 10 blister packer keep sealing time constant during speed changes, so reducing substantially the cost of validation and downtime for changeover. The machine is part of a range that also includes the BP20, based on the same concept and capable of 600 blisters a minute.

The SI 10 cartoner is equipped with linear motors on the product/leaflet pre-insertion and loading stroke, allowing distances and retraction speeds to be matched to the product, reducing cycle times.

"Overall the result is a cartoning speed up to 165 a minute against the more common 60-100 a minute maximum for traditional intermittent motion cartoning machines," says Derek Moore. "This is approaching the speed of continuous motion cartoners, but without the cost and space requirements of a barrel loader."

Romaco's first integrated line was launched last year and is now in operation at a European contract packer. The T6 series initially consists

of a 600 a minute Noack 9000 blister machine coupled to a continuous motion Promatic PC 4000 cartoner capable of 200 or 300 cartons a minute.

According to Romaco the Noack 9000 stands apart from other recent launches in this market in that it is billed as "the machine for every challenge" and "addresses widely diverging requirements with a single machine concept".

The modular design enables users to specify their sealing method of choice – platen or rotary – while retaining commonality of parts, servicing and operation across different models in the range. Additionally, says Romaco, existing Noack users will benefit from the compatibility of format tooling between their existing 600, 760 and 900 series machines.

Key features of the 9000 range include open-standard XML communications, which allows a high level of integration with downstream and ancillary equipment, and fast changeover aided by feeding systems that are readily exchanged.

IMA's latest mid-speed integrated line is the continuous motion C80-A81 capable of 400 blisters and 250 cartons a minute. Particular attention has been given to speed of size changeover and machine cleaning, says the company, while only one operator is needed for the whole line.

A single central microprocessor capable of storing all size data controls both the C80 blister machine and the integrated cartoner while a computer system is also optionally available to provide specific production statistics and trouble-shooting facilities.

The C80 blister machine is also available in a standalone version with a speed of up to 600 blisters a minute – on three lanes – and can be linked with all existing cartoners and wallet machines.

Brazilian manufacturer IWKA Fabrима has introduced the Blisterflex Hi-Pro low cost medium output thermoformer aimed at both

## BLISTER PACKING

conventional tablet blisters as well as vials.

In particular, the deeper draw available from the machine compared to most blister-packers – some 25mm compared with the more usual 12mm – allows vials and syringes to be handled on the same machine as tablets and capsules.

Speed is up to 60 cycles a minute while the forming area is 230mm wide with an index of 110mm. All the usual materials can be handled including cold form alu/alu.

To reduce cost, the machine is driven by a mix of conventional AC frequency controlled drives and servo motors, which are used on the web advance for indexing accuracy, as well as to maintain smoothness. Format parts are said to be easily handled for changeover without tools.

In addition, says IWKA Fabrima, the new Hi-Pro can run tools made originally for a popular medium format thermoforming machine from another principal European manufacturer.

Output is up to 200 blisters a minute and the machine can be linked to a low cost IWKA Fabrima cartoner or, for higher speeds, the IWKA range of SC cartoners.

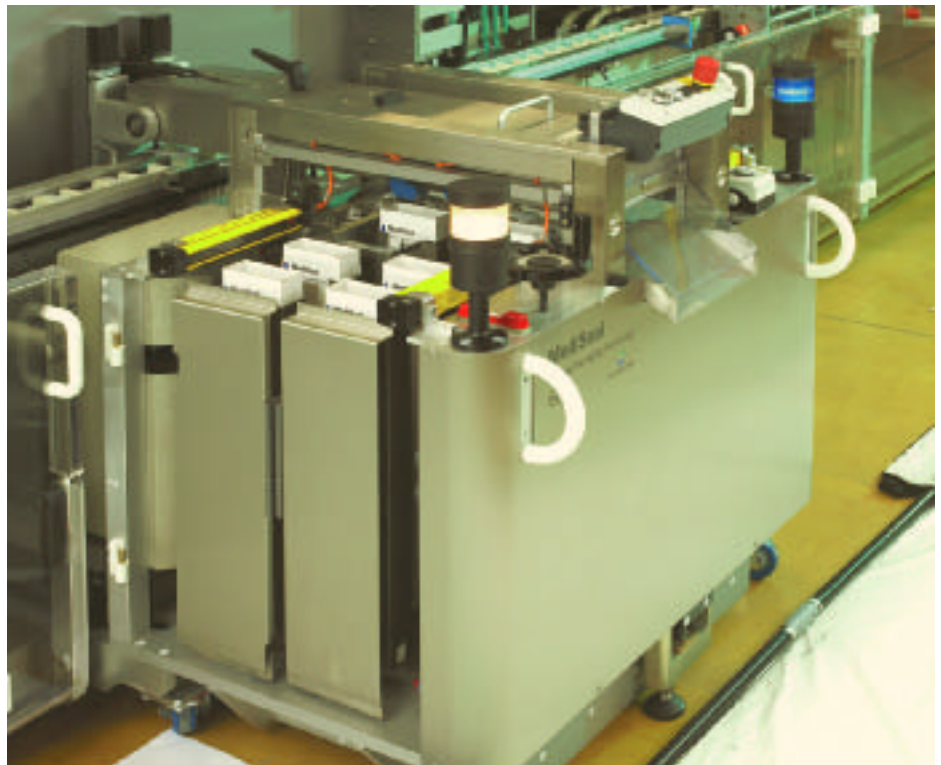
The range of servo driven blister machines from MediSeal, part of Koerber Medipak, now extends to machines with outputs of 800 blisters a minute, including integrated lines with intermittent motion cartoners to handle up to 300 cartons a minute.

### Platen and rotary sealing together

All except the largest machine in the range, the platen sealing CP 1200, can be built with a choice of platen or roller sealing. However, the MediSeal CP200 incorporates both methods of sealing in a single machine, the only one of its type in the world says Koerber Medipak, providing a flexible basis for development work and sidestepping debate on the most appropriate sealing method for a particular blister.

The range of servo driven machines is complemented by a range of classical shaft driven thermoformers, said to provide cost effective thermoforming for parenteral as well as for solid dose products. Bridging the technologies is the recently introduced CP500 that provides relatively deep draws of 25-30mm for pre-filled syringes, vials and the like.

Most recently, MediSeal has announced the CP400e blister machine claimed to offer "an unbeatably attractive price/performance ratio". This single lane blister packing line – nominal output up to 400 blisters a minute – is said to be particularly flexible, with modular construction allowing it to be customised to meet any cus-



**Late stage customisation:** Mobile BIB-BOB system from MediSeal stores blisters in board cassettes

tomers requirement. Thanks to the use of the latest servo drives, format changes can be carried out in less than 30 minutes.

When short runs only involve cartoning – rather than making the blister pack itself – late stage customisation systems allow high speed blister machinery to be kept employed efficiently on long runs.

The MediSeal BIB-BOB system – blisters into box - blisters out of box – was exhibited in the UK for the first time at the PPMA Show 2005 and operates with blisters from a high speed thermoformer fed into cassettes for short-run printing and cartoning on separate machines.

It allows very small, country specific packaging lots to be combined for blister packaging, typically improving machine utilisation by 30 per cent, according to simulated trials run by MediSeal, using actual production data.

At the heart of the system is the BIB-BOB module, a mobile storage unit that automatically removes the blisters from the thermoformer and stacks them in corrugated board cassettes holding 75-100.

Depending on production requirements, these cassettes can be removed from the module for separate storage, or kept in the module, which is then wheeled away and used to feed a standalone cartoner, typically a low speed intermittent motion machine. Customer specific information can be added to the blisters by a printing system on the blister machine itself or immediately prior to cartoning.

Last year MediSeal also announced a new security arrangement for the BIB-BOB system,

based on a 2D code applied within the blister packer to identify the blister to separate printing and packaging processes.

Another method of late stage customisation has been developed by Pago, using print-apply labelling to supply language specific packs in low volumes.

The PagoLSC system also includes a leaflet feeder and clear plastic outsert label in which the leaflet is attached to the pack and accessed by the patient using perforations in the label. Packaging security is via a vision system that reads 2D matrix codes printed on the generic carton, the leaflet and label.

Also included in the system is a range of print and database software. Label text is controlled by validated checks that cannot be altered in the

## Compact machines

Machines in the Korean-built Hoonga range of blister packers and cartoners, now available in the UK and Ireland through Logic TPS, are said to be compact for their output and also, priced in \$US, to offer particularly good value for money.

Typical of the range are the HM200R and HM400R, which both feature balcony construction, are controlled by an industrial PC with a colour touchscreen and can handle a full range of plastic materials as well as cold form aluminium.

Despite an output of 200 blisters a minute the HM200R is only 2.5 metres long, and the 400-a-minute HM400R is just 200mm longer.

packing cell. GMP quality systems audit print clarity, and report individual job and order compliance.

### Bespoke feeding systems

As solid dose products have become more complex so the variety of blister pack layouts has continued to grow – for example chevron shaped formats that allow more product to be packed in one blister or packs that incorporate two or more different products. Indeed, according to tablet and capsule feeding systems manufacturer Electro-mec (Reading) the number of product shapes has also increased dramatically – from standard round bi-convex tablets to flat or elliptical and multi-faceted shapes, some of which can be brittle or fragile and prone to chipping or breaking if not handled correctly.

The result, says the company, is a marked increase in bespoke project work. At its simplest this involves feeding different products simultaneously into one blister pack and Electro-mec has installed multiple sets of its EMF feeders over a single blister forming machine or created split hoppers to allow multi-product feeding from a single feeder.

The EMF feeders employ individual feed tubes that accurately place each tablet or capsule into the blister form. This precise placement, says the company, ensures minimal misfills, even for shallower cold-formed blister packs, and eliminates the risk of tablets shingling or chipping during the filling process.

Specially-designed pack layouts handled recently have also included a 'looped cycle' layout where the first dose has to be isolated. The blister form for this dose is therefore placed on its own at a right angle to the other two lines of

capsules to enable the first dose to be effectively highlighted.

Electro-mec has also introduced its Orbital Brush aimed in particular at handling tablets and capsules whose shape and size can prevent them lying flat or flush within the blister form. Current solutions include rotary and static brushes but, points out the company, rotary action can sometimes draw product out of the pockets while a static brush may not be able to reach all affected tablets.

Instead, the Orbital Brush pad is lowered towards the web to a position where it just touches any protruding tablets and is simultaneously swept through 360deg while keeping the pad parallel to the web. The direction of the pad is then reversed and at the end of this cycle the pad is lifted back to its starting position.

### Minimum changeover

To provide maximum flexibility and enable a variety of different products to be handled on the same feeder with minimum changeover time, Electro-mec has also developed a special EMF Feeder with an interchangeable feed system.

This allows the traditional feeder tube layout of the EMF to be removed and a flood box with paddles to be inserted in its place. In this way, easy-to-handle product shapes, which find their own way into blister forms, can be handled with maximum throughput, while individual placement is available for more awkwardly shaped capsules and tablets.

Recent installations of the EMF Feeder include one in which blister packer filling speed have been lifted by over 20 per cent, lifting throughput from 35-40 packs a minute to almost 50.

## provide high output



**Compact:** Hoonga HM400R runs at 400 a minute

Changeovers for both machines, says Logic TPS, are 15-25 minutes and 20-30 minutes respectively, thanks to the use of servo controls and a self adjusting system.

Keith Gooch, Managing Director of Logic

TPS, says the competitive cost of the machinery, spares and change parts provides users with a completely new option when it comes to upgrading blister packing lines.

"In the past, the fact that tooling can be expensive but often interchangeable between machines of the same make, has favoured staying with one supplier when installing new equipment," he explains.

"However, with the Hoonga machines, change part costs are no longer a major consideration and the reduced operating costs mean a purchasing decision can be based solely on the capital outlay and cost per blister of the new line."

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E: sales@logictps.com

## BLISTER PACKING

Meanwhile, MediSeal has introduced its new Flexible Feeding system that enables tablets with wide dimensional tolerances and tablets of different sizes to be fed into larger pockets using a single format set. The heart of this solution is a newly developed tool which can handle two tablets of different sizes.

The example exhibited at last year's PPMA Show was designed for tablets in the range 8-9mm diameter and a height of 2.8-3.5mm, so economising on feeding tooling as well as shortening changeover times.

The capability for highly accurate feeding is now, therefore, a reality but there remains a possibility of misfills and empty pockets, especially when specialist feeding equipment is not installed. Moreover, product from start-up and test runs still needs to be recycled – especially when high value product is being packed – and so there remains a requirement for deblistering.

The latest in Sepha's line of deblistering machines is the new semi-automatic Mini Press-Out Universal unit aimed particularly at small batches and able to handle push-through blisters, child-resistant blisters, circular packs and multiple products.

Sepha's Press-Out Universal models employ an emptying mechanism said to provide gentle

handling for even the most fragile tablets and in automatic format, with magazine feed and variable speed control, can process up to 50 blisters a minute.

For push-through blister packs, the Press-Out Manual is a portable hand-operated option, able to handle up to 20 blisters a minute using a single set of adjustable tooling and adjusts in 2 minutes to accommodate all blister sizes. The Press-Out Standard is an automatic option for push-through blisters, handling up to 60 a minute.

VisioTec, Uhlmann's specialist inspection company, has recently introduced the Vision4U system, giving 100 per cent non-destructive testing of blisters.

The machine is based on the VisioLeak rotary turret, which has 12 heads to lift all the blisters from the line and carry out leak detection using vacuum chambers and mechanical pressure over the lidding foil of each blister pocket. Sensors measure the deflection force of the foil, which indicates whether the pocket is intact or leaking. Speed is up to 300 blisters a minute and pinholes from 20 micron upwards can be detected.

Before entering the VisioLeak, blisters are also checked from below the web by a vision system for foreign matter between the product and pocket, as well as any cosmetic imperfections. A

printing system is also available to identify all rejects before ejection from the line or leave the rejects blank, printing just the good blisters.

### For further information:

**Electro-mec (Reading)**  
T: 0118 958 2035  
E: info@electromec.co.uk

**IMA UK**  
T: 01189 772323  
E: hotdesk@imauk.co.uk

**IWKA PacSystems**  
T: 0870 0113794  
E: info@iwkapacsystems.co.uk

**Koerber Medpak**  
T: 01753 754865  
E: info@uk.koerber-medipak.com

**Pago**  
T: 01206 755206  
E: machines@pago.com

**Romaco UK**  
T: 01480 435050  
E: uk@romaco.com

**Sepha**  
T: 028 9182 4252  
E: sales@sepha.com

**Uhlmann UK**  
T: 01252 743120  
E: info@uhlmann.co.uk

### DISPLAY BLISTER PACKING

## Stanley combats waste with ffs line

Stanley Hand Tools' manufacturing plant at Hellaby, Rotherham, is now blister packing knife blades on a new form-fill-seal line supplied by Anchor Plastics Machinery, UK representative for the German manufacturer Koch.

The work of a project team from all three companies, which also established the design, the line incorporates a number of waste-saving ideas, including forming the blisters without skeletal waste. Blister loading and sealing are automatic and the Koch KBS-PT line incorporates flexible tool carriers that make it possible to pack a number of different products on one machine.

The line can also be readily integrated with a cartoner if required in the future.

"The fast cycle times of the Koch machine impressed me; these were most important for our financial justification," says Brian Hale, manufacturing engineer at the Stanley Hellaby site. In addition he notes that the Koch control system – which include extensive diagnostics



**Saving materials:** New pack style for Stanley blades

and a modem – are particularly user friendly "just like your home computer and so easy to update or edit".

Relco UK, has recently added a new shuttle welder to its range for jobs such as sealing pvc and PET-G blister packs. The RWA series can be supplied as a 3.5, 5 or 7kW model and as a press only, single tray or twin tray version and incorporates a front-opening gull-wing interlocking guard to provide easy access.

Personna International is using a Packaging Automation PA182 semi-automatic hand-turned rotary table heat sealing machine to close trial quantities of blister packs for a new range of razors and blades. The machine was supplied on an open-ended hire arrangement.

Finally, Teneo (UK) has enlarged its range of impulse and constant heat sealing equipment with a new hand-held ultrasonic clam shell sealer to seal or tack lightweight clam shells and blister packs with a 3 x 5mm spot weld.

Able to handle OPS, PSP, PVC and EPS containers, the sealer is now used in a number of industries including cosmetics, fashion accessories, hardware, contract packing and bakery.

### For further information:

**Anchor Plastics Machinery**  
T: 01895 824301  
E: info@anchor-pm.co.uk

**Packaging Automation**  
T: 01565 755000  
E: info@pal.co.uk

**Relco UK**  
T: 01923 241231  
E: paul.rollason@relco.co.uk

**Teneo (UK)**  
T: 01472 250868  
E: info@teneouk.com

For full details of all PPMA members able to supply blister packing machinery, consult the PPMA machinery finder service, tel: 020 8773 8111, or visit [www.ppma.co.uk](http://www.ppma.co.uk)

LOGOPAK INTERNATIONAL

# New generation print-apply units identify kegs for Coors

Coors Brewers has installed four new generation Logopak 515TK beer keg labelling systems at its Burton-on-Trent, Tadcaster and Alton breweries where four sizes of container from 30 to 36 gallons are now identified at speeds up to 600 an hour.

The machines are smaller and faster than previous Logopak systems and are housed within stainless steel enclosures installed on support structures over keg arrestor devices. Labels, measuring 70 x 40mm, are printed and applied under the control of Logopak's established iLEAP 64 control system.

Product data is held on each machine with automatic provision of consecutive numbers, production dates, best before dates and shift identifiers.

A pneumatically operated trap-



*Enclosure-mounted: Logopak 515TK labeller is smaller than its predecessor*

door under each applicator opens and closes in order to prevent ingress of water or leaking keg spray while heating inside the enclosures keeps the labels in optimum condition.

Industrial bar code scanners are

also fitted within the enclosures to read a two digit bar code on the label, a good read indicating a labelled keg, a no read sending that keg down a reject leg.

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E: salesonweb@logopak.net

IMAGE UK

## Small character ink jet printer offers increased versatility

The 9040 small character ink jet printer from Imaje is said to incorporate the best features of its predecessors and provide increased versatility.

It is available with one or two

print heads, each with one or two jets, and three resolutions of 71, 115 and 178dpi. Capable of printing up to eight lines of text – dual head, twin jet versions – the 9040 can achieve print speeds up to 5.5 metres/sec with a character height of 0.7-18.2mm.

Features include an automatic nozzle rinsing system with an internal cleaning cycle for reliable start-ups, and a jet speed control

system for enhanced print quality.

In addition to the one or two printheads, single or twin-jet versions, there is an IP65 option for humid and dusty environments, a high speed version for the beverage industry and the 9040 Contrast which uses pigmented inks, typically for coding onto dark substrates.

T: 01928 599420

E: drhodes@uk.imaje.com

LINX PRINTING TECHNOLOGIES

## Customised ink jet coders handle new sandwich packs

Uniq Foods at Northampton has now installed 24 customised Linx 6800 continuous ink jet printers to code new style triangular board skillet sandwich packs for Marks & Spencer with real time data such as time of production, line number and lane position.

Customisation includes multi-lane software that enables the operator to switch printers on all lines to the required date offset – for products with shorter or longer shelf life – and detectors to sense improperly closed packs.

These 'box shut' detectors inhibit the printers from coding



*Sandwich coding: Uniq Foods is using customised Linx ink jet printers*

directly onto exposed sandwiches, so creating scrap, and allow open packs to be taken off line for closing before being re-run.

T: 01480 302100

E: uksales@linx.co.uk

MARKEM SYSTEMS

## Transfer printer will complete codes despite host machine stoppage

Markem has announced a retrofittable upgrade that allows its SmartDate 5 thermal transfer coders to sense a machine stop and ensure that date and batch codes are not lost as a result.

"In continuous coding

operations – particularly bagging and flow-wrapping – missed or incomplete codes can occur if the packaging film is stopped during the printing cycle," Markem points out.

To prevent this happening, the

new 'relative motion' feature automatically detects the slowing of the film and completes a readable code, even if the film comes to a stop halfway through the printing process.

Markem says that during a

three-month trial period, involving over 15 million prints, the SmartDate 5 eliminated all non-printed packs despite the normal incidence of line stoppages.

T: 0161 333 8400

E: england@markem.com



**Compact ink jets:** Xact Industrial has introduced the Matthews SX range

XACT INDUSTRIAL

## Compact large character ink jets suit cases and trays

Xact Industrial has introduced two large character ink jet printers, the Matthews SX7 and SX16 valve jet models, in which the print head, controller and ink system are all combined in a single compact unit.

Installation is said to be simple – straight from the box in a matter

of minutes – and with no need for special technical knowledge, while there are three password protected levels and memory for up to 100 messages.

Aimed at coding porous surfaces such as cases and trays, both SX units can print at speeds up to 61 metres a minute with characters up to 14mm high on the SX7 and 32mm high on the SX16. The water based inks are held in easy change bottles.

T: 0151 479 3020

E: info@xactpackaging.co.uk

PAGO

## Wobbling labels add sales appeal to Young's bottled beer

London brewers Young's has installed a Pagomat 6/2A pressure sensitive label applicator to apply Pagomedia 'wobbler' promotional leaflet labels to the tops of beer bottles.

Developed by Pago for use on bottles with small cap diameters, the labels hang on a narrow transparent strip and begin to shake at the tiniest vibration or movement of air, hence the name wobbler.

Bottles are presented along a slat conveyor to the labeller which is equipped with an overhead product sensor to ensure accurate application to the bottle cap. Speed is up to 30,000 bottles an



**Gaining attention:** 'Wobbler' labels are applied by a Pago machine

hour or 62 metres a minute.

The "wobbler" itself incorporates a multi-page booklet folded to 50mm wide x 60mm high with a 20mm hanger arm.

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# Control and record

MODERN MACHINE DESIGN MAKES GREAT USE OF SENSORS TO CONTROL AND RECORD PERFORMANCE. BOB DOBSON OFFERS A QUICK REFRESHER ON THE BASICS, CONCENTRATING ON THE MOST POPULAR.

**M**ost sensors are now available with communications ability, so that they can be connected to a control network and work in concert with the many other parts of a machine and its control system. The control network's central computer can be set up to record a sensor's reading at intervals to provide the basic data from which sophisticated operational and production analyses can be developed.

The main functions of sensors are to measure physical states – pressure, temperature, and so forth – movements of either parts of their host machine, or throughput of objects. A profusion of sensors is available to meet the many different requirements of engineers.

## Photo-electric

Many different types of sensor are classified as photo-electric, with subtle distinctions between how they work and where they are used. Essentially they are presence detectors, able to say whether something is in position or not. As such they are typically used for counting objects as they pass along a conveyor belt, to measure production rates, or to detect the entry of a workpiece into a particular zone of a machine and thus initiate a sequence of actions to be performed on the workpiece.

Their principle of operation is that an emitter transmits a constant light signal or beam and this is detected by a receiver. An object passing through the beam path blocks the signal from being received, so causing the sensor to switch and either change state or count interruptions. In subtle variations, photoelectric switches can be tuned to specific colour – light frequencies – to 'see' transparent or semi-transparent objects, or to have time delays, suiting them to many different tasks.

Photo-electric switches can be physically configured in different ways. For instance emitter and receiver can be separate bodies, which must be individually mounted and aligned; or they can be side by side in the same housing, in which case a separate reflector plate has to be mounted opposite the sensor to bounce the signal from one back to the other.

Typically photo-electrics use a high frequency pulsating beam of light which is effectively a unique signature within its working environment. This virtually eliminates false readings caused by changes in ambient light. However, in applications where a really fast response is required it is necessary to use unmodulated light, which is slightly more susceptible to false readings.

Optical sensors have many advantages, making them particularly popular with machine builders. Generally, if installed properly and used correctly, they are robust and reliable and, as non-contact devices are not subject to wear or risk of damaging items to be sensed.

They can also have a very long detection range; many industrial photo-electrics can reliably detect at 25 metres or more, while variations used in security applications may have a range several multiples of this. Any material can be detected by a photoswitch – even those that are highly transparent, such as high quality glass, will absorb a proportion of the light signal.

Photo-electrics are ideal for high speed production environments because of their instantaneous response. They are also reliable and easy to install and maintain, with usually a quick

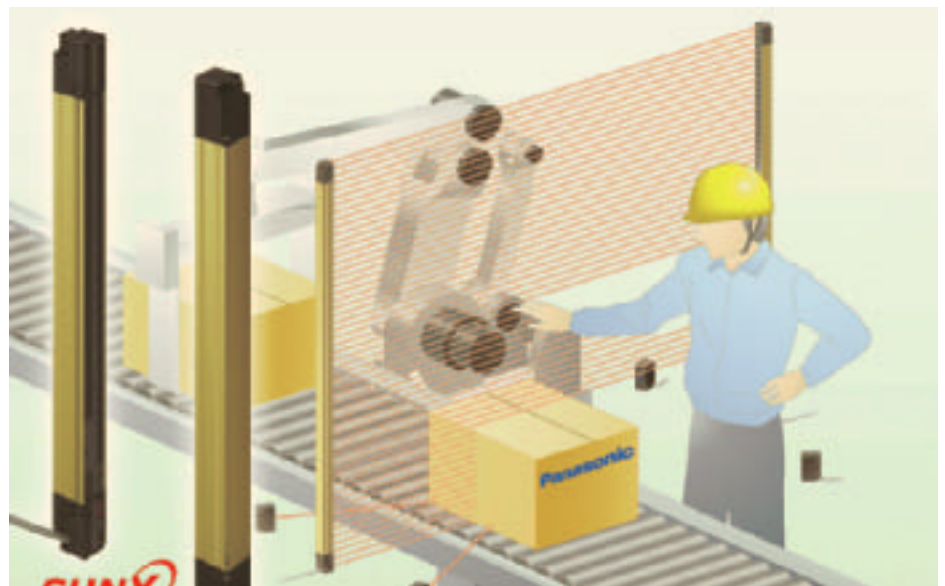
wipe down of the lens the only maintenance required.

One of the drawbacks of photo-electrics is that selection of the right type for each application can seem a bit daunting. However, it is straightforward; they are classified by their physical structure, by the frequency of the light beam, by the sensing mode and by the output circuitry.

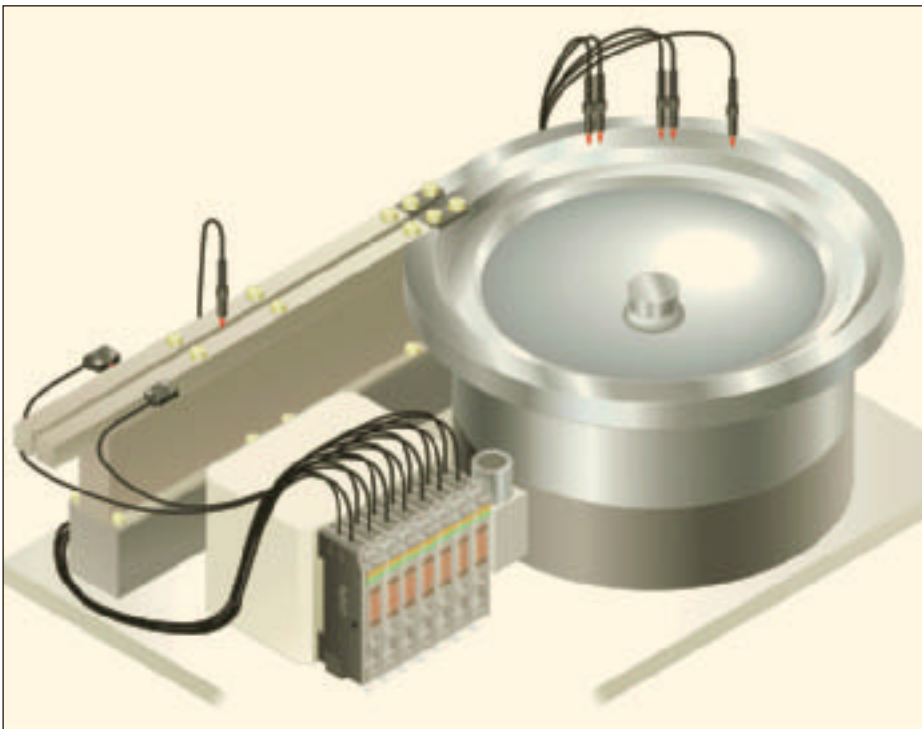
## Proximity

Proximity sensors operate in a manner similar to photo-electric, in that they can detect the presence or approach of a target object without contact. They are better suited to some working conditions than photo-electric, typically being robust enough for harsh environment installation, although their signal resolution may in some circumstances be less precise.

The operating principle is that rather than a light beam they emit an electromagnetic field which is disturbed when approached by a metal object. The degree of disruption is measured electronically to give an indication of the object's distance from the sensor, although such sensors are often used in a simple present/absent mode rather than to determine actual location.



**Photo-electric:** Muting function of Sunx SF4AH light curtains from Panasonic allow operator intervention into the process under controlled conditions



**Fibre optics:** A number of Panasonic FX302 sensors used to detect items at various stages in a bowl feeder



**Colour mark sensor:** Sunx LX100 from Panasonic detects colours or registration marks

There are also versions that rely on magnetism or electrostatic discharge rather than electromagnetism.

Proximity sensors are often used in place of limit switches, which need physical contact with the object to operate, thus making them susceptible to wear and damage.

Typically they are used in severe working conditions and are constructed to IP67 or a similar standard so are resistant to water, oil, dust, dirt and other environmental problems. They generally prove to be precise, particularly when two or more fast moving targets are to be detected. Disadvantages include that they only work with metal objects and their detection range is very small.

### Pressure sensors

Some machine control systems require the measurement of pressure of a liquid or gas. There

are two common types of pressure sensors: mechanical, which rely on a diaphragm or other deflection type mechanism, and electronic, which use a diffused semiconductor transducer. Not surprisingly, mechanical is generally giving way to electronic.

Generally the pressure sensor selected has to be matched to the fluid with which it is to operate and one should check whether they are measuring gauge (absolute) or differential pressure.

Additionally pressure can be measured using a strain gauge principle similar to a load cell, as described below

### Linear displacement

A linear voltage displacement transducer (LVDT) comprises three coils, a primary and two secondaries, and a slidable magnetic core. Current is transferred from the primary coil to the secondaries via the core. When the core is in its central position the secondaries receive equal current, giving a zero differential and therefore zero readout. But moving the core in one direction or the other will favour a particular coil and the growing differential is proportional to linear displacement.

The phase of the output (compared with the excitation phase) enables the electronics to know in which half of the coil the armature lies and therefore whether it is a displacement to the left or right.

The strength of the LVDT sensor's principle is that there is no electrical contact across the transducer position sensing element which for the user of the sensor means clean data, infinite resolution and a very long life.

### Magnetostrictive

A magnetostrictive transducer comprises a sensor element, a signal converter and a position magnet. The signal converter applies an electrical pulse to the sensor element and simultaneously starts a timer.

The magnetic field generated around the sensing element by the electrical pulse interacts with the field of the position magnet and produces a mechanical pulse.

The mechanical pulse travels back down the sensing element where a sensor in the signal converter detects it and stops the timer.

As the speed of the mechanical pulse is constant, the time taken for the pulse to reach the sensor can be used to measure the position of the magnet accurately. Typically the mechanical pulse travels at a speed of 2800 metres/sec and the cycle process is repeated 1000 times a second.

### Load cells

Load cells are based on strain gauges and comprise a long length of conductor arranged in a zigzag pattern or comb on a membrane. When subjected to load the conductor is stretched and its electrical resistance increases. Strain gauges are mounted in the same direction as the strain and often in fours to form a full 'Wheatstone Bridge'.

### Torque

Strain gauges can also be used to measure the torque in a rotating shaft. Most torque sensors need slip rings to connect the sensing head attached to the rotating shaft to the static control electronics, but non-contact versions are also available.

They use Wheatstone Bridges as described above, so small that they use piezo levels of power, glued to the shaft. Rotation of the shaft causes the combs of the gauges to deform and thus change electroresistivity.

Because the power levels are so small they can be both measured and powered via a radio frequency link rather than hard wiring through slip rings.

This non-contact technology has been pioneered in the UK and has reached a level of mature development such that it is now finding users around the world. ■

For further information on PPMA members able to supply sensing devices consult the PPMA machinery finder service, tel: 020 8773 8111, or visit [www.ppma.co.uk](http://www.ppma.co.uk)

LOGIC TPS

## Tablet filling line provides flexibility and fast change

A compact semi-automatic tablet filling line able to handle bottles of all sizes with no need for change-parts has been announced by Logic TPS, UK representative of the Swiss manufacturer Zellweg.

Offering speeds of 30-35 containers a minute, the line is less than 3 metres long and is said to be well suited to clinical trials filling as well as contract packers handling a wide range of different products. Size change takes under 2 minutes.

It uses a walking beam transport system that can be readily adjusted to handle different diameter bottles and is equipped with an electronic tablet counter from Collischan, together with a screw



*Price competitive: Zellweg compact tablet filling line*

or press capper station.

In addition, a powder or liquid filler or combinations of filling systems can be fitted.

"The Zellweg line is not only very compact, it is extremely price

competitive when compared with other systems providing a similar output," says Keith Gooch,

managing director of Logic TPS.  
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E: sales@logictps.com

CKF SYSTEMS

## Sorting system delivers pliable slices for placement

An automatic sorting system that separates pliable products from bulk – such as sliced tomato and cucumber – into individual slices for placing on sandwich bread slices or pizza toppings has been developed by CKF.

Line speeds of 120 pieces a minute have been achieved.

Bulk product is held in a storage hopper mounted directly above an



*Sorting slices: CKF system delivers up to 120 items a minute for placing*

inclined sortation conveyor fitted with a profiled belt surface and a series of strategically positioned sortation elements.

The conveyor section strips rows of product from the hopper and feeds them through the sorting section to create a single lane of slices for presentation to the placement system.

The sorting system can be interfaced directly with either manual or automated placement arrangements and can incorporate in-line vision inspection facilities.

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E: info@ckf.co.uk

PLANET FLOWLINE

## Two models added to range of bottle unscramblers

Two bottle unscrambling machines, one with automatic size change, the other an entry level model, have been added to the Italian built Fava range available in the UK from Planet Flowline.

The auto size change machine is the 2050 AP, on which the operator is able to change from one container size to another at the touch of a button. No changeparts are required.

Containers are fed to selectors on a rotary carousel via a counter-rotating cone, as with other machines. However, the containers can enter the vertical selectors either base or neck first which, points out Planet Flowline, improves the selection efficiency.

Once in the selector, the pincers softly adjust to the pre-set bottle dimensions and a camera detects upside down bottles, which are then rotated 180deg before being released onto a discharge conveyor.

Speed on 330ml bottles is 15,500 an hour.

The other unscrambler is the Fava 1600E, a low price, entry level machine capable of handling 10ml bottles at speeds of 17,000 an hour.

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E: info@planetflowline.co.uk

**New Machinery continues on page 72**

MARDEN EDWARDS

## Low cost end-fold overwrapper can handle up to 45 packs a minute

The Evo-Fold automatic end-fold overwrapper launched by Marden Edwards is an entry level machine capable of speeds up to 45 packs a minute, typically for applications such as tea, confectionery,

cosmetics and tobacco products.

"The price of the Evo is actually less than many automatic shrink-wrappers capable of wrapping products at similar speeds," says Marden Edwards.

"In addition, BOPP overwrapping film is less expensive and less wasteful than the shrink film equivalent and overwrapping consumes much less energy than shrink tunnels," the company adds.

The new machine has been designed to be built on a batch basis, helping to reduce the cost of manufacture.

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E: sales@mardenedwards.com

YTRON-QUADRO (UK)

# Fixed geometry homogeniser gives process repeatability

A high-pressure emulsifier and homogeniser that uses a fixed geometry size reduction system to achieve sub micron particle size, so eliminating the wear and maintenance requirements of traditional valve-based systems, is now available in the UK from Ytron-Quadro.

Applications cover a range of products in the pharmaceutical, food, personal care and chemical industries.

Built in the US by Microfluidics, the Microfluidiser employs an interaction chamber of fixed size and shape, according to the application, into which the starting fluid is pumped at a constant pressure up to 40,000psi.

The ceramic and diamond

interaction chambers, which are designed to withstand potential abrasion, contain fixed micro-channels through which the product passes at speeds up to several hundred metres a second, creating the extremely high shear rates and impact forces required for ultra fine suspensions and emulsions.

Batch and continuous operation is possible as well as single or multiple pass modes. Laboratory units are capable of processing as little as 14ml, which can be directly scaled up to full production size models.

Pharmaceutical products handled by the Microfluidiser process so far include injectables, antibiotic dispersions, inhalables,

ointments and steroids.

Typical performance on a pharmaceutical emulsion processed by the system is particle size reduction in one pass from 0.83 micron to 0.06 micron. Another example of size reduction is a phthalocyanine pigment dispersion reduced from 99 per cent below 15 micron to 99 per cent below 0.43 micron in a multiple pass operation.

Food products typically include flavour and colour emulsions, fat substitutes and starch dispersions. A typical performance is a flavour emulsion reduced in particle size from 1.64 micron to 0.17 micron in a single pass.

T: 01494 792898

E: sales@ytron-quadro.co.uk

WITT GAS TECHNIQUES

# Flow controller reduces gas consumption for MAP

Savings of up to 30 per cent in gas consumption for modified atmosphere packaging (MAP) within the food and pharmaceutical industries are claimed for the KD 100-1A electronic gas flow control system introduced by Witt.

The system operates by automatically regulating the gas flow until the required oxygen level is shown to have been reached, using non-destructive gas analysis via a sensor with  $\pm 0.2$  per cent repeatability.

The flow control system has an RS232 interface with ASCII output for remote recording and transfer of line settings including date, time and the measured values.

The gas supply is monitored by pressure switches, with low pressure triggering an alarm and causing the line to shut down immediately.

At the same time the system will however compensate for pressure fluctuations in the gas supply and the speed of the line or size of packages.

T: 01925 234466

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GLENVALE PACKAGING

# Semi-automatic capsule filler can produce 2500 an hour

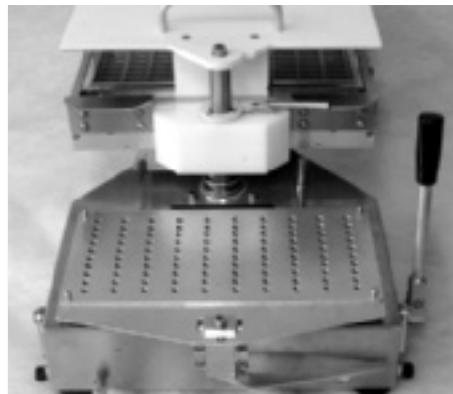
The MultiPharma OPM capsule filling machine will open, fill and lock 100 capsules at a time and is said to be the first semi-automatic device with the capsule loader included within its frame.

This, explains Glenvale Packaging, makes the operation faster and simpler for the operator, allowing higher production speed,

while removing any risk associated with moving the individual parts to another station.

So, when empty capsules are separated, the caps of the capsules remain in the same tray and rotate together with the loader.

Output is up to 2500 an hour and all standard capsule sizes can be handled including hard and vegetarian versions.



**Faster filling:** OPM capsule filler is simple to operate

T: 01933 673677

E: coleman@glenvale-pkg.demon.co.uk

EASIWEIGH

# In-line ten-channel combination weigher runs at 70 drops a minute

The DRP10-10 in-line ten-channel automatic combination weigher from Easiweigh is said to be suitable for a wide range of products – particularly in the fresh produce, seafood and ready meals

markets – and offers low drop height to help avoid risk of product damage.

Capable of 70 drops a minute the machine employs a vibratory feed system and is computer-

controlled for simple operation and fast changeover from one product or weight to another. Construction is in stainless steel with contact parts quickly removable for cleaning.

Features of the machine include automatic tare zeroing and self-correction weight checks to prevent underweight.

T: 01733 202088

E: gsh@btconnect.com